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CITY OF Salem AT YOUR SERVICE

Land Use Application

Planning/Permit Application Center
City Hall / 555 Liberty St. SE / Room 320 / Salem, OR 97301-3513
503-588-6173 * planning@cityofsalem.net

If you need the following translated in Spanish, please call 503-588-6256.
Si usted necesita lo siguiente traducido en español, por favor llame 503-588-6256.

(For office use only)
Permit #:

Application type

Please describe the type of land use action requested:

Subdivision Modification

Work site location and information

Street address or location of subject property	Battle Creek Road and Reed Road
Total size of subject property	32.55 Acres
Assessor tax lot numbers	083W12B/Tax Lot 1600 and 1699, 083W11D/Tax Lot 400
Existing use structures and/or other improvements on site	Vacant
Zoning	RS and RM
Comprehensive Plan Designation	Single-Family and Multi-Family
Project description	Modifiy-SUB-ADJ19-08 & UGA17-03MOD1 approval

People information

	Name	Full Mailing Address	Phone Number and Email address
Applicant	Westwood Homes LLC	12700 NW Cornell Road Portland, OR 97229	
Agent	Brandie Dalton Land-Use Consultant	Multi/Tech Engineering 1155 SE 13th St, Salem, OR 97302	503-363-9227 bdalton@mtengineering.net
Paid By			

Project information

Project Valuation for Site Plan Review	
Neighborhood Association	Morningside Neighborhood Association
Have you contacted the Neighborhood Association?	○ Yes ⊙ No
Date Neighborhood Association contacted	
Describe contact with the affected Neighborhood Association (The City of Salem recognizes, values, and supports the involvement of residents in land use decisions affecting neighborhoods across the city and strongly encourages anyone requesting approval for any land use proposal to contact the affected neighborhood association(s) as early in the process as possible.)	
Have you contacted Salem-Keizer Transit?	○ Yes ⊙ No
Date Salem-Keizer Transit contacted	
Describe contact with Salem-Keizer Transit	
Type the name and address of the Homeowners Association (If none, type "N/A".)	

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Application type

Please describe the type of land use action requested:

Subdivision Modification

Work site location and information

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Print Name: Julie Singer Date: 02-09-2021 4:49 PM PST

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Application type

Please describe the type of land use action requested:

Class-1 Adjustment (Lot Depth)

Work site location and information

Street address or location of subject property	Battle Creek Road and Reed Road
Total size of subject property	32.55 Acres
Assessor tax lot numbers	083W12B/Tax Lot 1600 and 1699, 083W11D/Tax Lot 400
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Application type

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Class-1 Adjustment (Lot Depth)

Work site location and information

Street address or location of subject property	Battle Creek Road and Reed Road
Total size of subject property	32.55 Acres
Assessor tax lot numbers	083W12B/Tax Lot 1600 and 1699, 083W11D/Tax Lot 400
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Class-1 Adjustment (Lot Depth-Double Frontage)

Work site location and information

Street address or location of subject property	Battle Creek Road and Reed Road
Total size of subject property	32.55 Acres
Assessor tax lot numbers	083W12B/Tax Lot 1600 and 1699, 083W11D/Tax Lot 400
Existing use structures and/or other improvements on site	Vacant
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Application type

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Class-1 Adjustment (Lot Depth - Double Frontage)

Work site location and information

Street address or location of subject property	Battle Creek Road and Reed Road
Total size of subject property	32.55 Acres
Assessor tax lot numbers	083W12B/Tax Lot 1600 and 1699, 083W11D/Tax Lot 400
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Application type

Please describe the type of land use action requested:

Class-2 Adjustment (Lot to Depth ratio)

Work site location and information

Street address or location of subject property	Battle Creek Road and Reed Road
Total size of subject property	32.55 Acres
Assessor tax lot numbers	083W12B/Tax Lot 1600 and 1699, 083W11D/Tax Lot 400
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Class-2 Adjustment (Lot to Depth Ratio)

Work site location and information

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- **I (we) hereby give notice of the following concealed or unconcealed dangerous conditions on the property:**

Electronic signature certification: By attaching an electronic signature (whether typed, graphical or free form) I certify herein that I have read, understood and confirm all the statements listed above and throughout the application form.

Authorized Signature: Roberrt Nunn

Print Name: Roberrt Nunn **Date:** 02-09-2021 3:15 PM PST

Address (include ZIP):

Authorized Signature:

Print Name: **Date:**

Address (include ZIP):

(For office use only)		
Received by	**Date:**	**Receipt Number:**

Not using Internet Explorer?
Save the file to your computer and email to planning@cityofsalem.net.

DigiSign Verified: D4FE8B6F-1FC2-4562-81CC-C966C1C97FE3

CITY OF Salem AT YOUR SERVICE

Land Use Application

Planning/Permit Application Center
City Hall / 555 Liberty St. SE / Room 320 / Salem, OR 97301-3513
503-588-6173 * planning@cityofsalem.net

If you need the following translated in Spanish, please call 503-588-6256.
Si usted necesita lo siguiente traducido en español, por favor llame 503-588-6256.

(For office use only)
Permit #:

Application type

Please describe the type of land use action requested:

Class-2 Adjustment (Street Grade)

Work site location and information

Street address or location of subject property	Battle Creek Road and Reed Road
Total size of subject property	32.55 Acres
Assessor tax lot numbers	083W12B/Tax Lot 1600 and 1699, 083W11D/Tax Lot 400
Existing use structures and/or other improvements on site	Vacant
Zoning	RS and RM
Comprehensive Plan Designation	Single-Family and Multi-Family
Project description	Modifiy-SUB-ADJ19-08 & UGA17-03MOD1 approval

People information

	Name	Full Mailing Address	Phone Number and Email address
Applicant	Westwood Homes LLC	12700 NW Cornell Road Portland, OR 97229	
Agent	Brandie Dalton Land-Use Consultant	Multi/Tech Engineering 1155 SE 13th St, Salem, OR 97302	503-363-9227 bdalton@mtengineering.net
Paid By			

Project information

Project Valuation for Site Plan Review	
Neighborhood Association	Morningside Neighborhood Association
Have you contacted the Neighborhood Association?	○ Yes ⊙ No
Date Neighborhood Association contacted	
Describe contact with the affected Neighborhood Association (The City of Salem recognizes, values, and supports the involvement of residents in land use decisions affecting neighborhoods across the city and strongly encourages anyone requesting approval for any land use proposal to contact the affected neighborhood association(s) as early in the process as possible.)	
Have you contacted Salem-Keizer Transit?	○ Yes ⊙ No
Date Salem-Keizer Transit contacted	
Describe contact with Salem-Keizer Transit	
Type the name and address of the Homeowners Association (If none, type "N/A".)	

DigiSign Verified: D4FE8B6F-1FC2-4562-81CC-C966C1C97FE3

Authorization by property owner(s)/applicant

***If the applicant and/or property owner is a Limited Liability Company (LLC), please also provide a list of all members of the LLC with your application.**

Copyright release for government entities: I hereby grant permission to the City of Salem to copy, in whole or part, drawings and all other materials submitted by me, my agents, or representatives. This grant of permission extends to all copies needed for administration of the City's regulatory, administrative, and legal functions, including sharing of information with other governmental entities.

Authorizations: Property owners and contract purchasers are required to authorize the filing of this application and must sign below.

- **All signatures represent that they have full legal capacity to and hereby do authorize the filing of this application and certify that the information and exhibits herewith submitted are true and correct.**
- **I (we) hereby grant consent to the City of Salem and its officers, agents, employees, and/or independent contractors to enter the property identified above to conduct any and all inspections that are considered appropriate by the City to process this application.**
- **I (we) hereby give notice of the following concealed or unconcealed dangerous conditions on the property:**

Electronic signature certification: By attaching an electronic signature (whether typed, graphical or free form) I certify herein that I have read, understood and confirm all the statements listed above and throughout the application form.

Authorized Signature: Julie Singer

Print Name: Julie Singer **Date:** 02-09-2021 4:49 PM PST

Address (include ZIP):

Authorized Signature:

Print Name: **Date:**

Address (include ZIP):

(For office use only)		
Received by	**Date:**	**Receipt Number:**

Not using Internet Explorer?
Save the file to your computer and email to planning@cityofsalem.net.

DigiSign Verified: 801C5E03-A0EA-446C-A80B-4FF08B0376C8

CITY OF Salem AT YOUR SERVICE

Land Use Application

Planning/Permit Application Center
City Hall / 555 Liberty St. SE / Room 320 / Salem, OR 97301-3513
503-588-6173 * planning@cityofsalem.net
If you need the following translated in Spanish, please call 503-588-6256.
Si usted necesita lo siguiente traducido en español, por favor llame 503-588-6256.

(For office use only)
Permit #:

Application type

Please describe the type of land use action requested:

Class-2 Adjustment (Street Grade)

Work site location and information

Street address or location of subject property	Battle Creek Road and Reed Road
Total size of subject property	32.55 Acres
Assessor tax lot numbers	083W12B/Tax Lot 1600 and 1699, 083W11D/Tax Lot 400
Existing use structures and/or other improvements on site	Vacant
Zoning	RS and RM
Comprehensive Plan Designation	Single-Family and Multi-Family
Project description	Modifiy-SUB-ADJ19-08 & UGA17-03MOD1 approval

People information

	Name	Full Mailing Address	Phone Number and Email address
Applicant	Westwood Homes LLC	12700 NW Cornell Road Portland, OR 97229	
Agent	Brandie Dalton Land-Use Consultant	Multi/Tech Engineering 1155 SE 13th St, Salem, OR 97302	503-363-9227 bdalton@mtengineering.net
Paid By			

Project information

Project Valuation for Site Plan Review	
Neighborhood Association	Morningside Neighborhood Association
Have you contacted the Neighborhood Association?	○ Yes ⊙ No
Date Neighborhood Association contacted	
Describe contact with the affected Neighborhood Association (The City of Salem recognizes, values, and supports the involvement of residents in land use decisions affecting neighborhoods across the city and strongly encourages anyone requesting approval for any land use proposal to contact the affected neighborhood association(s) as early in the process as possible.)	
Have you contacted Salem-Keizer Transit?	○ Yes ⊙ No
Date Salem-Keizer Transit contacted	
Describe contact with Salem-Keizer Transit	
Type the name and address of the Homeowners Association (If none, type "N/A".)	

DigiSign Verified: 801C5E03-A0EA-446C-A80B-4FF08B0376C8

Authorization by property owner(s)/applicant

***If the applicant and/or property owner is a Limited Liability Company (LLC), please also provide a list of all members of the LLC with your application.**

Copyright release for government entities: I hereby grant permission to the City of Salem to copy, in whole or part, drawings and all other materials submitted by me, my agents, or representatives. This grant of permission extends to all copies needed for administration of the City's regulatory, administrative, and legal functions, including sharing of information with other governmental entities.

Authorizations: Property owners and contract purchasers are required to authorize the filing of this application and must sign below.

- **All signatures represent that they have full legal capacity to and hereby do authorize the filing of this application and certify that the information and exhibits herewith submitted are true and correct.**
- **I (we) hereby grant consent to the City of Salem and its officers, agents, employees, and/or independent contractors to enter the property identified above to conduct any and all inspections that are considered appropriate by the City to process this application.**
- **I (we) hereby give notice of the following concealed or unconcealed dangerous conditions on the property:**

Electronic signature certification: By attaching an electronic signature (whether typed, graphical or free form) I certify herein that I have read, understood and confirm all the statements listed above and throughout the application form.

Authorized Signature: Roberrt Nunn

Print Name: Roberrt Nunn **Date:** 02-09-2021 3:15 PM PST

Address (include ZIP):

Authorized Signature:

Print Name: **Date:**

Address (include ZIP):

(For office use only)		
Received by	**Date:**	**Receipt Number:**

Not using Internet Explorer?
Save the file to your computer and email to planning@cityofsalem.net.

Tree Conservation Plan Adjustment Application

Planning/Permit Application Center
City Hall / 555 Liberty St. SE / Room 320 / Salem, OR 97301-3513
503-588-6173 * planning@cityofsalem.net
If you need the following translated in Spanish, please call 503-588-6256.
Si usted necesita lo siguiente traducido en español, por favor llame 503-588-6256.

(For office use only)
Permit #:

Work site location and information

Street address or location of subject property	4700 Block of Battle Creek Road
Lot size	32.55 Acres
Proposed use or type of development	Subdivision
Original Tree Conservation Plan (TCP) case number	TCP19-14
Associated Subdivision/Partition case number	SUB-ADJ19-08 & UGA17-03MOD1

People information

	Name	Full Mailing Address	Phone Number and Email address
Applicant	Westwood Homes		

Project information

Total number of trees on subject property prior to development	192
Number of trees to be removed under original TCP	137
Number of additional trees to be removed under all previously approved TCP Adjustments	
Number of trees to be removed under this TCP adjustment	130
Total number of trees to be removed	130
Total number of trees to be retained	62
Percent of original trees retained after this adjustment	32%
Description of trees to be removed (species and size [dbh])	See Attached Narrative

Reason for adjustment (attach additional pages if needed)

See Attached Narrative

Authorization by property owner(s)/applicant

***If the applicant and/or property owner is a Limited Liability Company (LLC), please also provide a list of all members of the LLC with your application.**

Copyright release for government entities: I hereby grant permission to the City of Salem to copy, in whole or part, drawings and all other materials submitted by me, my agents, or representatives. This grant of permission extends to all copies needed for administration of the City's regulatory, administrative, and legal functions, including sharing of information with other governmental entities.

Electronic signature certification: By attaching an electronic signature (whether typed, graphical or free form) I certify herein that I have read, understood and confirm all the statements listed above and throughout the application form.

Authorized Signature: Brandie Dalton

Print Name: Brandie L Dalton Date: 1-25-2021

(For office use only)		
Received by	Date:	Receipt Number:

Not using Internet Explorer?
Save the file to your computer and email to planning@cityofsalem.net.

Section 2 (to be completed by staff)

Is TCPA inconsistent with approved TCP (or most recently approved TCPA)?	Yes	No
Are more than 5 additional trees to be removed?	Yes	No
Are less than 25% of total trees retained?	Yes	No
Are riparian trees/native vegetation to be removed?	Yes	No
Are significant trees to be removed?	Yes	No

If "Yes" is checked for any of the above questions, refer to extended review. Otherwise, review over-the-counter.

Check one of the following:
1. Adjustment to be reviewed over-the-counter.
2. Adjustment to be referred to Current Planning for extended review.

Section 3 (to be completed by staff)

Staff Finding: Adequate staff review has been completed in order to issue a decision on the proposed Tree Conservation Plan Adjustment. The Urban Planning Administrator or designee hereby elects to: (Check appropriate box.)

Approve this adjustment to TCP _____ pursuant to SRC 808.040. Staff has established that all applicable requirements of SRC Chapter 808, Preservation of Trees and Vegetation, have been met or shall be met by conditions of approval. The applicant shall be subject to the requirements of this decision, which is binding on the property until the issuance of a Notice of Final Completion. Any conditions or replanting requirements imposed by this approval shall be in addition to, and not in lieu of, any other conditions or replanting requirements previously or subsequently required for the original Tree Conservation Plan and any concurrent adjustments made thereto.

Deny this adjustment to TCP_____ pursuant to SRC 808.040. The applicant has failed to demonstrate adequate justification for the removal of trees proposed for removal under this adjustment and/or the applicable requirements of SRC Chapter 808, Preservation of Trees and Vegetation, have not been met.

Approval

Approval of this Tree Conservation Plan Adjustment shall require compliance with the following conditions as authorized by SRC 808.040(e):

1. The property owner, developer, and all representatives thereof shall comply with the **conditions attached hereto as Attachment 1**.
2. The property owner, developer, and all representatives thereof shall comply with the following additional condition(s):

Date of Decision:

Staff Name:

Staff Signature:

Appeals: Pursuant to SRC 300.420(e)(1)(C), the decision on a Tree Conservation Plan Adjustment may be appealed, pursuant to SRC 300.1010. Only the applicant or the owner of the subject property have standing to appeal the decision on a Tree Conservation Plan Adjustment. The decision of the Hearings Officer on appeal shall be the final decision of the City.

Attachment 1: Additional Conditions of Approval
Attachment 2: Tree Conservation Plan Adjustment

Attachment 1: Additional Conditions of Approval

The submitted Tree Conservation Plan Adjustment is consistent with the provisions of SRC Chapter 808. The developer, and all representatives thereof, shall comply with all applicable SRC Chapter 808 development standards, and shall comply with the following conditions:

1. No tree designated for removal on the approved Tree Conservation Plan Adjustment shall be removed prior to the Tree Conservation Plan Adjustment approval date.

2. Any changes to the approved Tree Conservation Plan Adjustment must be submitted to the Community Development Department in the form of another Tree Conservation Plan Adjustment application for review and approval.

3. No tree designated for preservation may be removed or critically damaged unless and until a Tree Conservation Plan Adjustment application is submitted to the Community Development Department and approval has been granted by the Planning Administrator. Failure to preserve trees marked for preservation may result in a civil penalty.

4. Prior to and during any grubbing, grading and construction activities, **all trees designated for preservation shall be protected from removal or critical damage. Trees designated for protection shall be clearly marked on-site.**

5. All trees and native vegetation designated for preservation under the tree conservation plan shall be marked and protected during construction. Any heritage tree or significant tree shall require that at least 70 percent of a circular area beneath the tree measuring one foot in radius for every one inch of dbh be protected by an above ground high-visibility silt fence, or its equivalent. **No grubbing, grading, construction, vehicle parking, or storage/disposal of materials/fill shall be allowed inside the protective fencing**. Protection measures shall continue until the issuance of a Notice of Final Completion for the single family or two family dwelling.

6. Each lot or parcel within the development proposal shall comply with the tree planting requirements set forth in SRC 808.050.

UNTIL FURTHER NOTICE, SEND ALL TAX STATEMENTS TO:
Boulder Hill LLC
Robert W. Nunn, Manager
1000 SW Broadway, Suite 1400
Portland, OR 97205-3089

REEL 1950 PAGE 327

AFTER COMPLETING RECORDING, RETURN THIS DOCUMENT TO:
Evans, Freeby & Jennings, LLP
Attorneys at Law
280 Court St. NE
Salem, OR 97301

BARGAIN AND SALE DEED

ROBERT W. NUNN, Trustee under the EVELYN M. COBURN LIVING TRUST, dated March 15, 1995, GRANTOR

Conveys to

BOULDER HILL LLC, an Oregon Manager-Managed Limited Liability Company GRANTEE

All the following real property situated in Marion County, State of Oregon, specifically described on Exhibit "A" hereto and by this reference incorporated herein, generally described as: Tax Lot 100, Tax Account No. R32164; Tax Lot 200, Tax Account No. R32163, and Tax Lot 601, Tax Account No. R32158.

The true and actual consideration for this transfer is other than money.

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES AND TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930.

Dated this 23rd day of May, 2002.

GRANTOR
Evelyn M. Coburn Living Trust, dated March 15, 1995

By: Robert W. Nunn, Trustee

STATE OF OREGON, County of Marion) ss.

Personally appeared before me this 23rd day of May, 2002, Robert W. Nunn, as Trustee and acknowledged the foregoing instrument to be his voluntary act.

OFFICIAL SEAL
JAIME LYNNE TREMBLY
NOTARY PUBLIC - OREGON
COMMISSION NO. A322597
MY COMMISSION EXPIRES APR 18, 2003

Jaime Lynne Trembly
Notary Public for Oregon
My Commission Expires: 4/18/03

MAY 29 2002

EXHIBIT A

LEGAL DESCRIPTION
Map 8S-3W-11D; Tax Lots 100, 200, and 601:

Tax Lot 100
Account No. R32164

Beginning at the Northeast corner of the Southeast Quarter of Section 11, Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon; thence South 0° 30' West along the East line of said Section, a distance of 929.74 feet, more or less, to the North line of that tract of land described in Document No. 116205 Circuit Court Journal for Marion County; thence westerly along the North line of said tract, a distance of 125.00 feet; thence South 0° 30' West parallel with the East line of said Section 11, a distance of 303.27 feet to a point on the northerly line of that tract of land conveyed to Kathryn L. Young, Linda S. Schaeffers and Robert W. Nunn by deed recorded in Reel 1021, Page 231, Deed Records for Marion County, Oregon; thence South 67° 30' West along said northerly line a distance of 398.72 feet to the Northwest corner thereof; thence South 14° 34' 00" East 370.20 feet to the Southwest corner of said tract; thence North 89° 47' 36" West 51.83 feet to the Southeast corner of that tract of land conveyed to Dale E. Christison and Darlene A. Christison by deed recorded in Reel 76, Page 282, Deed Records for Marion County, Oregon; thence North 14° 34' 00" West along the easterly line of said Christison tract, a distance of 350.00 feet to the Northeast corner thereof; thence South 67° 30; 00" West along the northerly line of said Christison tract, a distance of 131.77 feet to a point which is 660.00 feet West of the East line of said Section 11, thence North 0° 30' East parallel with the East line of said Section 11, a distance of 1454.12 feet to a point on the North line of the Southeast Quarter of said Section 11; thence easterly along said North line, a distance of 660.00 feet to the point of beginning.

Contains 19.57 acres of land, more or less.

****

Tax Lot 200
Tax Account No. R32163

Beginning 10 chains West of the Northeast corner of the Southeast quarter of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, State of Oregon, and running thence South 26.62 chains; thence North 23°45' West 9.68 chains; thence North 50°45' West 4.80 chains; thence North 15° East 16.60 chains; thence East 3.35 chains to the place of beginning in Section 11, Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon.

SAVE AND EXCEPT: Beginning in the center of a County Road at a point which is North 89°49' West 315.48 feet and North 22°30' West 876.91 feet from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon; thence North 67°30' East 232.90 feet; thence North 14°34' West 350.00 feet; thence South 67°30' West 281.20 feet to the center of said County Road; thence South 22°30' East along the center of said County Road 346.50 feet to the place of beginning.

SAVE AND EXCEPT: Beginning at the point of intersection of the Northerly line of County Road No. 839 (commonly known as Battle Creek Rd.) and the Easterly line of Market Road No. 25 (commonly known as Reed Road) and being in the Southeast quarter of Section 11, Township 8 South, Range 3 West, of the Willamette Meridian, Marion County, Oregon; thence South 38°11'36" East 31.00 feet along the Northerly line of said County Road No. 839 to a point; thence North 13°09'17" West 51.01 feet to a point on the Easterly line of said Market Road No. 25; thence South 14°53'45" West 27.00 feet along said Easterly line to the point of beginning.

SAVE AND EXCEPT that portion of the premises herein described lying within the limits of roads, streets and highways

Tax Lot 601
Tax Account No. R32158

Beginning at the Southeast corner of that tract of land conveyed to Kathryn L. Young, Linda S. Schaeffers and Robert W. Nunn by deed recorded in Reel 1021, Page 231, Deed Records for Marion County, Oregon which point is recorded as being North 0° 30' East 1064.65 feet from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon; thence South 0° 30' West along the East line of said Section 11, a distance of 208.73 feet, more or less, to a point on the northerly right-of-way line of Kuebler Boulevard; thence South 69° 58' 53" West along the northerly right-of-way line, a distance of 24.48 feet, more or less, to an angle point in said right-of-way line; thence South 63° 02' 05" West along said right-of-way line a distance of 102.74 feet to an angle point in said right-of-way line; thence South 54° 40' 44" West along said right-of-way line a distance of 167.14 feet to the Southeast corner of that tract of land conveyed to Bernard F. Bednarz and Miriam L. Bednarz, husband and wife, by deed recorded in Volume 681, Page 328, Deed Records for Marion County, Oregon; thence North 14° 34' West along the East line of said Bednarz tract, a distance of 222.00 feet to the Northeast corner thereof; thence North 67° 30' East along the southerly line of said tract described in Reel 1021, Page 231, Deed Records, a distance of 345.77 feet to the point of beginning.

Contains 1.44 acres of land, more or less.

MAY 29 2002

REEL:1950 **PAGE: 327**

May 29, 2002, 02:46 pm.

CONTROL #: 59651

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 36.00

ALAN H DAVIDSON
COUNTY CLERK

THIS IS NOT AN INVOICE.

MAY 29 2002

REEL 3602 PAGE 265
MARION COUNTY
BILL BURGESS, COUNTY CLERK
05-07-2014 11:26 am.
Control Number 360612 $ 56.00
Instrument 2014 00014759

After recording return to:

Robert W. Nunn
Sussman Shank LLP
Suite 1400
1000 SW Broadway
Portland, OR 97205-3089

Send all tax statements to:

Robert W. Nunn
0841 SW Gaines Street, Unit 606
Portland, OR 97239

FATCO S-2014

WARRANTY DEED

Robert W. Nunn, Grantor, conveys and warrants to Pringle Creek LLC, an Oregon limited liability company, Grantee, all of Grantor's tenant in common interest in the real property described on Exhibit A.

The liability and obligations of Grantor to Grantee and Grantee's heirs and assigns under the warranties and covenants contained herein or provided by law are limited to the amount, nature, and terms of any right or indemnification available to Grantor under any title insurance policy. Grantor has no liability or obligation except to the extent that reimbursement for such liability or obligation is available to Grantor under a title insurance policy.

The property is free of encumbrances except (a) as specifically set forth herein, (b) encumbrances ascertainable from viewing the property, and (c) encumbrances, covenants, conditions, restrictions, and easements of record.

The true and actual consideration for this transfer is $-0- and consists of or includes other property or other value given or promised.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR

215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

DATED this 15 day of November, 2013.

GRANTOR:

Robert W. Nunn

STATE OF OREGON)
) ss.
County of Multnomah)

This instrument was acknowledged before me on November 15, 2013 by Robert W. Nunn.

OFFICIAL SEAL
SUSAN E BUCHANAN
NOTARY PUBLIC-OREGON
COMMISSION NO. 466455
MY COMMISSION EXPIRES APRIL 05, 2016

NOTARY PUBLIC FOR OREGON
My Commission Expires: 4/5/16

15923-002\PRINGLE CREEK WARRANTY DEED (01722624);1

Exhibit A

Beginning at a point which is 315.48 feet N. 89° 49' W. and 1223.41 feet N. 22° 30' W. and 301.80 feet N. 67° 30' E. from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian In Marion County, Oregon; thence S. 14° 34' E. 370.20 feet; thence N. 67° 30' E. 429.93 feet to a point on the East line of said Section, which point is 1064.65 feet N. 0° 30' E. from the Southeast corner of said Section; thence N. 0° 30' E. along said East line 397.79 feet; thence S. 67° 30' W. 534.60 feet to the place of beginning and containing 4.07 acres of land.

Together with an easement for road and right-of-way purposes over the following described parcel, beginning at a point which is located North 89° 49' West 315.48 feet and North 22° 30' West 1,223.41 feet and North 67° 30' East 30.00 feet from the Southeast comer of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, Marion County. Oregon;

Thence from said point of beginning continuing North 67° 30' East 351.80 feet to a point on the northerly line of a tract of land described in Deed Book 469, page 411 of Marion County Deed Records;

Thence North 22° 30' West 50.00 feet to a point;

Thence South 67°30' West 351.80 feet to a point on the easterly right-of-way line of Battle Creek Road (Market Road No. 25);

Thence South 22° 30' East along said easterly right-of-way line 50.00 feet to the point of beginning.

REEL: 3602 **PAGE: 265**

May 07, 2014, 11:26 am.

CONTROL #: 360612

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 56.00

BILL BURGESS
COUNTY CLERK

THIS IS NOT AN INVOICE.

REEL 3602 PAGE 266
MARION COUNTY
BILL BURGESS, COUNTY CLERK
05-07-2014 11:26 am.
Control Number 360612 $ 56.00
Instrument 2014 00014760

After recording return to:

Robert W. Nunn
Sussman Shank LLP
Suite 1400
1000 SW Broadway
Portland, OR 97205-3089

Send all tax statements to:

Robert W. Nunn
0841 SW Gaines Street, Unit 606
Portland, OR 97239

FATCO 5-2014

WARRANTY DEED

Kathryn L. Young, Grantor, conveys and warrants to Sheep Trail LLC, an Oregon limited liability company, Grantee, all of Grantor's tenant in common interest in the real property described on Exhibit A.

The liability and obligations of Grantor to Grantee and Grantee's heirs and assigns under the warranties and covenants contained herein or provided by law are limited to the amount, nature, and terms of any right or indemnification available to Grantor under any title insurance policy. Grantor has no liability or obligation except to the extent that reimbursement for such liability or obligation is available to Grantor under a title insurance policy.

The property is free of encumbrances except (a) as specifically set forth herein, (b) encumbrances ascertainable from viewing the property, and (c) encumbrances, covenants, conditions, restrictions, and easements of record.

The true and actual consideration for this transfer is $-0- and consists of or includes other property or other value given or promised.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR

215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

DATED this 20 day of November, 2013.

GRANTOR:

Kathryn L. Young
Kathryn L. Young

STATE OF WASHINGTON)
) ss.
County of King)

This instrument was acknowledged before me on November 20, 2013 by Kathryn L. Young.

NOTARY PUBLIC FOR WASHINGTON
My Commission Expires: 10-09-17

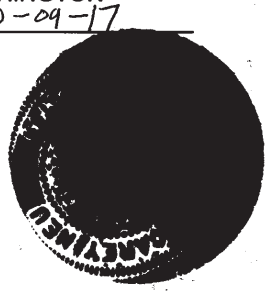


Exhibit A

Beginning at a point which is 315.48 feet N. 89° 49' W. and 1223.41 feet N. 22° 30' W. and 301.80 feet N. 67° 30' E. from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian In Marion County, Oregon; thence S. 14° 34' E. 370.20 feet; thence N. 67° 30' E. 429.93 feet to a point on the East line of said Section, which point is 1064.65 feet N. 0° 30' E. from the Southeast corner of said Section; thence N. 0° 30' E. along said East line 397.79 feet; thence S. 67° 30' W. 534.60 feet to the place of beginning and containing 4.07 acres of land.

Together with an easement for road and right-of-way purposes over the following described parcel, beginning at a point which is located North 89° 49' West 315.48 feet and North 22° 30' West 1,223.41 feet and North 67° 30' East 30.00 feet from the Southeast comer of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, Marion County. Oregon;

Thence from said point of beginning continuing North 67° 30' East 351.80 feet to a point on the northerly line of a tract of land described in Deed Book 469, page 411 of Marion County Deed Records;

Thence North 22° 30' West 50.00 feet to a point;

Thence South 67°30' West 351.80 feet to a point on the easterly right-of-way line of Battle Creek Road (Market Road No. 25);

Thence South 22° 30' East along said easterly right-of-way line 50.00 feet to the point of beginning.

REEL: 3602 **PAGE: 266**

May 07, 2014, 11:26 am.

CONTROL #: 360612

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 56.00

BILL BURGESS
COUNTY CLERK

THIS IS NOT AN INVOICE.

REEL 3602 PAGE 267
MARION COUNTY
BILL BURGESS, COUNTY CLERK
05-07-2014 11:26 am.
Control Number 360612 $ 56.00
Instrument 2014 00014761

After recording return to:

Robert W. Nunn
Sussman Shank LLP
Suite 1400
1000 SW Broadway
Portland, OR 97205-3089

Send all tax statements to:

Robert W. Nunn
0841 SW Gaines Street, Unit 606
Portland, OR 97239

FATCO S-2014

WARRANTY DEED

Linda S. Schaefers, Grantor, conveys and warrants to Margalou LLC, an Oregon limited liability company, Grantee, all of Grantor's tenant in common interest in the real property described on Exhibit A.

The liability and obligations of Grantor to Grantee and Grantee's heirs and assigns under the warranties and covenants contained herein or provided by law are limited to the amount, nature, and terms of any right or indemnification available to Grantor under any title insurance policy. Grantor has no liability or obligation except to the extent that reimbursement for such liability or obligation is available to Grantor under a title insurance policy.

The property is free of encumbrances except (a) as specifically set forth herein, (b) encumbrances ascertainable from viewing the property, and (c) encumbrances, covenants, conditions, restrictions, and easements of record.

The true and actual consideration for this transfer is $-0- and consists of or includes other property or other value given or promised.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR

215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

DATED this 27th day of November, 2013.

GRANTOR:

Linda S. Schaefers

Linda S. Schaefers

STATE OF OREGON)
) ss.
County of Linn)

This instrument was acknowledged before me on November 27th, 2013 by Linda S. Schaefers.

Electra L. Wisegarver

NOTARY PUBLIC FOR OREGON
My Commission Expires: October 28, 2015

15923-002\MARGALOU LLC WARRANTY DEED (01722700);1

OFFICIAL SEAL
Electra L. Wisegarver
NOTARY PUBLIC - OREGON
Commission No. 462691
MY COMMISSION EXPIRES October 28, 2015

Exhibit A

Beginning at a point which is 315.48 feet N. 89° 49' W. and 1223.41 feet N. 22° 30' W. and 301.80 feet N. 67° 30' E. from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian In Marion County, Oregon; thence S. 14° 34' E. 370.20 feet; thence N. 67° 30' E. 429.93 feet to a point on the East line of said Section, which point is 1064.65 feet N. 0° 30' E. from the Southeast corner of said Section; thence N. 0° 30' E. along said East line 397.79 feet; thence S. 67° 30' W. 534.60 feet to the place of beginning and containing 4.07 acres of land.

Together with an easement for road and right-of-way purposes over the following described parcel, beginning at a point which is located North 89° 49' West 315.48 feet and North 22° 30' West 1,223.41 feet and North 67° 30' East 30.00 feet from the Southeast comer of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, Marion County. Oregon;

Thence from said point of beginning continuing North 67° 30' East 351.80 feet to a point on the northerly line of a tract of land described in Deed Book 469, page 411 of Marion County Deed Records;

Thence North 22° 30' West 50.00 feet to a point;

Thence South 67°30' West 351.80 feet to a point on the easterly right-of-way line of Battle Creek Road (Market Road No. 25);

Thence South 22° 30' East along said easterly right-of-way line 50.00 feet to the point of beginning.

REEL: 3602 **PAGE: 267**

May 07, 2014, 11:26 am.

CONTROL #: 360612

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 56.00

BILL BURGESS
COUNTY CLERK

THIS IS NOT AN INVOICE.

THIS SPACE RESERVED FOR RECORDER'S USE

After recording return to:
Battle Creek LLC
5450 Zena Road NW
Salem, Ore 97304

Until a change is requested all tax statements shall be sent to the following address:
as above

File No.: 7081-1584060 (VJC)
Date: December 09, 2010

FATCO 1584060

STATUTORY BARGAIN AND SALE DEED

Battle Creek LLC, an Oregon Manager-Managed Limited Liability Company, Grantor, conveys to **Battle Creek LLC, an Oregon Manager-Manager Limited Liablity Company**, Grantee, the following described real property:

See Legal Description attached hereto as Exhibit A and by this reference incorporated herein.

The true consideration for this conveyance is **TO EFFECT LOT ADJUSTMENT.** (Here comply with requirements of ORS 93.030)

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, OF CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930 AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, OF CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009.

Dated this _____ day of _____, 20____.

Battle Creek LLC, an Oregon limited liability company

Julie A. Singer

By: Julie Singer, Manager/Member

STATE OF Oregon)
)ss.
County of Marion)

This instrument was acknowledged before me on this 3 day of Feb, 20 11 by Julie Singer as Manager/Member of Battle Creek LLC, on behalf of the limited liability company.

Vicki J Carlson

Notary Public for Oregon
My commission expires: 8-17-13

OFFICIAL SEAL
VICKI J CARLSON
NOTARY PUBLIC - OREGON
COMMISSION NO. 441020
MY COMMISSION EXPIRES AUG. 17, 2013

Battle Creek LLC Parcel

Beginning at the ¼ Corner of section 11 and 12, township 8 South, Range 3 West, in the Willamette Meridian, City of Salem, Marion County, Oregon; thence North 89°30'08" East 340.87 feet; thence North 89°45'32" East 325.36 feet; thence North 00°25'43" West 391.40 feet; thence North 85°22'14" East 465.02 feet to the West right of way of Market Road 56 (Strong Road); thence along the West right of way of Market Road 56 (Strong Road) the following courses North 63°05'45" West 61.91 feet; North 15°54'49" East 69.83 feet; North 11°04'59" West 247.08 feet; thence South 89°15'44" West 1049.02 feet; thence South 00°25'53" East 362.47 feet; thence South 89°35'40" West 299.22 feet; thence South 00°25'53" East 395.00 feet; thence North 89°35'40" East 299.22 feet to the point of beginning. Containing 17.69 acres of land more or less.

REEL: 3257 **PAGE: 221**

February 04, 2011, 10:57 am.

CONTROL #: 288079

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 51.00

BILL BURGESS
COUNTY CLERK

THIS IS NOT AN INVOICE.

REEL 4431 PAGE 84
MARION COUNTY
BILL BURGESS, COUNTY CLERK
01-04-2021 02:49 pm.
Control Number 633873 $ 121.00
Instrument 2021 00000261

After recording, return to:
Boulder Hill, LLC
841 S Gaines St. Unit 606
Portland, OR 97239

Send tax statements to:
Boulder Hill, LLC
841 S Gaines St. Unit 606
Portland, OR 97239

For zero consideration.

Property Line Adjustment Deed

Boulder Hill LLC, hereinafter called Grantor, 841 S Gaines St, Unit 606, Portland, OR 97239, is the owner of real property located in City of Salem, Marion County, Oregon described in Exhibit D of Reel 4345, Page 413, Marion County Deed Records and referred to herein as Property A, and more particularly described on Exhibit A, which is attached hereto and by this reference incorporated herein. Boulder Hill LLC, hereinafter called Grantee, 841 S Gaines St, Unit 606, Portland, OR 97239, is the owner of real property located in City of Salem, Marion County, Oregon, referred to herein as Property B, more particularly described on Exhibit B, which is attached hereto and by this reference incorporated herein.

The purpose of this Property Line Adjustment Deed (Deed) is to effect a property line adjustment between Property A and Property B such that Property A will be reduced in size by approximately 11.44 acres and will hereafter consist of only the land described on Exhibit C, which is attached hereto and incorporated herein by this reference, and Property B will be increased in size by approximately 11.44 acres and will hereafter consist of the land more particularly described on Exhibit D, which is attached hereto and incorporated herein by this reference.

NOW THEREFORE, in order to effect the property line adjustment and to create the reconfigured properties as described on Exhibits C and D, Grantor does hereby grant, transfer, and convey unto Grantee all of that certain real property situated in Marion County, Oregon, described on Exhibit E, which is attached hereto and by this reference incorporated herein.

"BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301, AND 195.305 TO 195.336, AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS

INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301, AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010."

The true and actual consideration for this transfer, stated in terms of dollars is N/A; however, the actual consideration consists of other property or values which is the whole consideration. The purpose of this Deed is to effect a property line adjustment, and the two parcels are to remain separate and distinct.

This property line adjustment deed is executed this 29 day of December, 2020.

Grantor
Boulder Hill LLC

By: _____
Robert W. Nunn, Manager

STATE OF OREGON)
) ss.
County of Multnomah)

This instrument was acknowledged before me on December 29th, 2020, by Robert W. Nunn, as Manager of Boulder Hill LLC.

OFFICIAL STAMP
KELLI MOORE
NOTARY PUBLIC - OREGON
COMMISSION NO. 985391
MY COMMISSION EXPIRES APRIL 04, 2023

_____
Notary Public—State of Oregon
My commission expires: April 4, 2023

Grantee
Boulder Hill LLC

By: _____
Robert W. Nunn, Manager

STATE OF OREGON)
) ss.
County of Multnomah)

This instrument was acknowledged before me on December 29th, 2020, by Robert W. Nunn, as Manager of Boulder Hill LLC.

OFFICIAL STAMP
KELLI MOORE
NOTARY PUBLIC - OREGON
COMMISSION NO. 985391
MY COMMISSION EXPIRES APRIL 04, 2023

_____
Notary Public—State of Oregon
My commission expires: April 4, 2023

Exhibit A

All that real property situated in the Southeast Quarter of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, City of Salem, Marion County, Oregon and being more particularly described as follows:

Beginning at a stone scribed "CS +" at the quarter corner common to Sections 11 and 12; thence South along the East Section Line of said Section 11 South 00°14'26" East 929.74 feet to a 5/8" iron rod marking the Northeast corner of the lands described in Circuit Court Journal for Marion County, Document Number 116205; thence South 89°15'34" West 125.00 feet to a 5/8" iron rod marking the Northwest corner of the lands described in said Circuit Court Journal; thence parallel to the East line of said Section 11 South 00°14'26" East 301.76 feet to a 5/8" iron rod marking the Southwest corner of the lands described in said Circuit Court Journal being on the North line of a Tract of land described in Reel 3602, Pages 265-267, Marion County Deed Records; thence along said North line and the South line of the lands describe in said Circuit Court Journal North 66°37'10" East 135.93 feet to the East Section Line of said Section 11; thence along said East Section Line South 00°14'26" East 399.57 feet to a 5/8" iron rod at the Northeast corner of Partition Plat 2019-36; thence along the North line of said Partition Plat and its extension South 66°40'29" West 430.19 feet to a 5/8" iron rod at the Southwest corner of the tract of land described in Reel 3902, Pages 265-267, Marion County Deed Records; thence North 88°55'37" West 51.89 feet to a 1/2" iron rod at the Southeast corner of a tract of land described in Reel 3936, Page 295, Marion County Deed Records; thence along the East line of said Tract North 15°05'22" West 349.18 feet to a 5/8" iron rod; thence along the North line of said Tract South 66°37'10" West 126.08 feet to a 5/8" iron rod at the Southeast corner of a tract of land described in Reel 1548, Page 519, Marion County Deed Records; thence along the East line of said Tract North 00°14'26" West 266.94 feet to a 5/8" iron rod at the Northeast corner of said Tract; thence along the North line of said tract South 65°48'13" West 240.60 feet to a 5/8" iron rod on the East Right of Way of Battle Creek Road; thence along said East Right of Way North 38°10'55" West 271.23 feet to a 5/8" iron rod; thence North 66°00'02" East 334.26 feet to a 5/8" iron rod; thence North 49°48'56" East 66.86 feet to a 5/8" iron rod; thence North 18°41'57" East 52.94 feet to a 5/8" iron rod; thence North 01°24'53" West 736.20 feet to a 5/8" iron rod; thence North 55°13'28" West 1.33 feet to a 5/8" iron rod; thence 104.21 feet along a 170 foot radius curve to the left (the chord of which bears North 72°47'08" West 102.59 feet) to a 5/8" iron rod; thence South 89°39'12" West 120.54 feet to a 5/8" iron rod on the East Right of Way of Reed Road; thence along said East Right of Way North 14°53'44" East 80.88 feet to a 5/8" iron rod on the East-West quarter section line of said Section 11; thence along said quarter section line North 89°37'45" East 878.77 feet to the Point of Beginning and containing 26.29 acres, more or less.

The Basis of Bearing for this legal description is North 14°53'44" East along found monuments in the centerline of Reed Road.

RENEWS: 12-31-2022

Exhibit B

All that real property being described as Tax Lot 601 in Reel 1950, Page 327, recorded in Marion County Deed Records also being the lands described on Partition Plat 2019-36, Marion County Book of Town Plats and being more particularly described as follows:

Beginning at a 5/8" iron rod at the Southeast corner of the tract of land described in Reel 3602, Page 265, Marion County Deed Records in the Southeast Quarter of Section 11, Township 8 South, Range 3 West of the Willamette Meridian; thence along the South line of said tract South 67°24'55" West 344.88 feet to the Northeast corner of the tract described in Reel 3032, Page 486, Marion County Deed Records; thence along the East line of said tract South 14°47'28" East 222.00 feet; thence along the North Right of Way of Kuebler Boulevard the following three calls: North 56°39'11" East 167.25 feet to a 5/8" iron rod with aluminum cap; North 64°58'18" East 102.80 feet to a 5/8" iron rod with aluminum cap; North 71°57'25" East 28.52 feet to the East line of said Section 11; thence along said section line North 00°30'00" East 202.84 feet to the Point of Beginning and containing 1.43 acres, more or less.

The Basis of Bearing for this legal description is North 00°30'00" East along the East line of Section 11 as depicted on Partition Plat 2019-36.

RENEWS: 12-31-2022

Exhibit C

All that real property situated in the Southeast Quarter of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, City of Salem, Marion County, Oregon and being more particularly described as follows:

Beginning at a stone scribed "CS +" at the quarter corner common to Sections 11 and 12; thence South along the East Section Line of said Section 11 South 00°14'26" East 929.74 feet to a 5/8" iron rod marking the Northeast corner of the lands described in Circuit Court Journal for Marion County, Document Number 116205; thence South 89°15'34" West 125.00 feet to a 5/8" iron rod marking the Northwest corner of the lands described in said Circuit Court Journal; thence North 26°43'24" West 58.32 feet to a 5/8" iron rod; thence North 00°14'26" West 37.46 feet to a 5/8" iron rod; thence South 89°45'34" West 186.35 feet to a 5/8" iron rod; thence North 67°31'04" West 54.12 feet to a 5/8" iron rod; thence South 38°35'19" West 352.65 feet to a 5/8" iron rod; thence 47.92 feet along a 100.00 foot radius curve to the right (the chord of which bears South 52°19'05" West 47.47 feet) to a 5/8" iron rod; thence South 66°02'50" West 16.74 feet to a 5/8" iron rod; thence North 23°57'10" West 203.18 feet to a 5/8" iron rod on the South line of the tract of land described as Exhibit C in Reel 4345, Page 413, Marion County Deed Records; thence along said South line North 66°00'02" East 10.21 feet to a 5/8" iron rod; thence along the East line of said Exhibit C the following three calls: North 49°48'56" East 66.86 feet to a 5/8" iron rod; North 18°41'57" East 52.94 feet to a 5/8" iron rod; North 01°24'53" West 736.20 feet to a 5/8" iron rod at the Northeast corner of said Exhibit C; thence along the North line of said Exhibit C the following three calls: North 55°13'28" West 1.33 feet to a 5/8" iron rod; 104.21 feet along a 170.00 foot radius curve to the left (the chord of which bears North 72°47'08" West 102.59 feet) to a 5/8" iron rod; South 89°39'12" West 120.54 feet to a 5/8" iron rod on the East Right of Way of Reed Road; thence along said East Right of Way North 14°53'44" East 80.88 feet to a 5/8" iron rod on the East-West quarter section line of said Section 11; thence along said quarter section line North 89°37'45" East 878.77 feet to the Point of Beginning and containing 14.85 acres, more or less.

The Basis of Bearing for this legal description is South 00°14'26" East along the East line of Section 11 per Marion County Survey Record 39260.

RENEWS: 12-31-2022

Exhibit D

All that real property situated in the Southeast Quarter of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, City of Salem, Marion County, Oregon and being more particularly described as follows:

Beginning at a 1/2" iron pipe at the Southwest corner of Parcel 1, Partition Plat 2019-36, Marion County Book of Partition Plats; thence along the West line of said parcel North 15°31'54" West 222.00 feet to the Northwest corner of said parcel being on the south line of the tract of land described as Exhibit D in Reel 4345, Page 413, Marion County Deed Records; thence along said South line the following two calls: South 66°40'29" West 85.31 feet to a 5/8" iron rod; North 88°55'37" West 51.89 feet to a 1/2" iron rod at the Southeast corner of a tract of land described in Reel 3936, Page 295, Marion County Deed Records; thence along the East line of said Tract North 15°05'22" West 349.18 feet to a 5/8" iron rod; thence along the North line of said Tract South 66°37'10" West 126.08 feet to a 5/8" iron rod at the Southeast corner of a tract of land described in Reel 1548, Page 519, Marion County Deed Records; thence along the East line of said Tract North 00°14'26" West 266.94 feet to a 5/8" iron rod at the Northeast corner of said Tract; thence along the North line of said tract South 65°48'13" West 240.60 feet to a 5/8" iron rod on the East Right of Way of Battle Creek Road; thence along said East Right of Way North 38°10'55" West 271.23 feet to a 5/8" iron rod at the Southwest corner of the tract of land described as Exhibit C in Reel 4345, Page 413, Marion County Deed Records; thence North 66°00'02" East 324.05 feet to a 5/8" iron rod; thence South 23°57'10" East 203.18 feet to a 5/8" iron rod; thence North 66°02'50" East 16.74 feet to a 5/8" iron rod; thence 47.92 feet along a 100.00 foot radius curve to the left (the chord of which bears North 52°19'05" East 47.47 feet) to a 5/8" iron rod; thence North 38°35'19" East 352.65 feet to a 5/8" iron rod; thence South 67°31'04" East 54.12 feet to a 5/8" iron rod; thence North 89°45'34" East 186.35 feet to a 5/8" iron rod; thence South 00°14'26" East 37.46 feet to a 5/8" iron rod; thence South 26°43'24" East 58.32 feet to a 5/8" iron rod marking the Northwest corner of the lands described in Circuit Court Journal for Marion County, Document Number 116205; thence parallel to the East line of said Section 11 South 00°14'26" East 301.76 feet to a 5/8" iron rod marking the Southwest corner of the lands described in said Circuit Court Journal; thence along said South line North 66°37'10" East 135.93 feet to the East Section Line of said Section 11; thence along said East Section Line South 00°14'26" East 399.57 feet to a 5/8" iron rod at the Northeast corner of Parcel 1, Partition Plat 2019-36; thence along the East line of said parcel South 00°14'26" East 202.84 feet to the North Right of Way of Kuebler Boulevard; thence along said North Right of Way the following three calls: South 71°12'59" West 28.52 feet to a 5/8" iron rod with aluminum cap; South 64°13'52" West 102.80 feet to a 5/8" iron rod with aluminum cap; South 55°54'45" West 167.25 feet to the Point of Beginning and containing 12.86 acres, more or less.

The Basis of Bearing for this legal description is South 00°14'26" East along the East line of Section 11 per Marion County Survey Record 39260.

Exhibit E

All that real property situated in the Southeast Quarter of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, City of Salem, Marion County, Oregon and being more particularly described as follows:

Beginning at a 5/8" iron rod at the Northeast corner of Parcel 1, Partition Plat 2019-36; thence along the North line of said parcel and its extension South 66°40'29" West 430.19 feet to a 5/8" iron rod at an angle point on the North line of the tract of land described in Reel 3032, Page 486, Marion County Deed Records; thence along said north line North 88°55'37" West 51.89 feet to a 1/2" iron rod at the Southeast corner of a tract of land described in Reel 3936, Page 295, Marion County Deed Records; thence along the East line of said Tract North 15°05'22" West 349.18 feet to a 5/8" iron rod; thence along the North line of said Tract South 66°37'10" West 126.08 feet to a 5/8" iron rod at the Southeast corner of a tract of land described in Reel 1548, Page 519, Marion County Deed Records; thence along the East line of said Tract North 00°14'26" West 266.94 feet to a 5/8" iron rod at the Northeast corner of said Tract; thence along the North line of said tract South 65°48'13" West 240.60 feet to a 5/8" iron rod on the East Right of Way of Battle Creek Road; thence along said East Right of Way North 38°10'55" West 271.23 feet to a 5/8" iron rod at the Southwest corner of the tract of land described as Exhibit C in Reel 4345, Page 413, Marion County Deed Records; thence North 66°00'02" East 324.05 feet to a 5/8" iron rod; thence South 23°57'10" East 203.18 feet to a 5/8" iron rod; thence North 66°02'50" East 16.74 feet to a 5/8" iron rod; thence 47.92 feet along a 100.00 foot radius curve to the left (the chord of which bears North 52°19'05" East 47.47 feet) to a 5/8" iron rod; thence North 38°35'19" East 352.65 feet to a 5/8" iron rod; thence South 67°31'04" East 54.12 feet to a 5/8" iron rod; thence North 89°45'34" East 186.35 feet to a 5/8" iron rod; thence South 00°14'26" East 37.46 feet to a 5/8" iron rod; thence South 26°43'24" East 58.32 feet to a 5/8" iron rod marking the Northwest corner of the lands described in Circuit Court Journal for Marion County, Document Number 116205; thence parallel to the East line of said Section 11 South 00°14'26" East 301.76 feet to a 5/8" iron rod marking the Southwest corner of the lands described in said Circuit Court Journal; thence along said South line North 66°37'10" East 135.93 feet to the East Section Line of said Section 11; thence along said East Section Line South 00°14'26" East 399.57 feet to the Point of Beginning and containing 11.44 acres, more or less.

The Basis of Bearing for this legal description is South 00°14'26" East along the East line of Section 11 per Marion County Survey Record 39260.

REEL: 4431 **PAGE: 84**

January 04, 2021, 02:49 pm.

CONTROL #: 633873

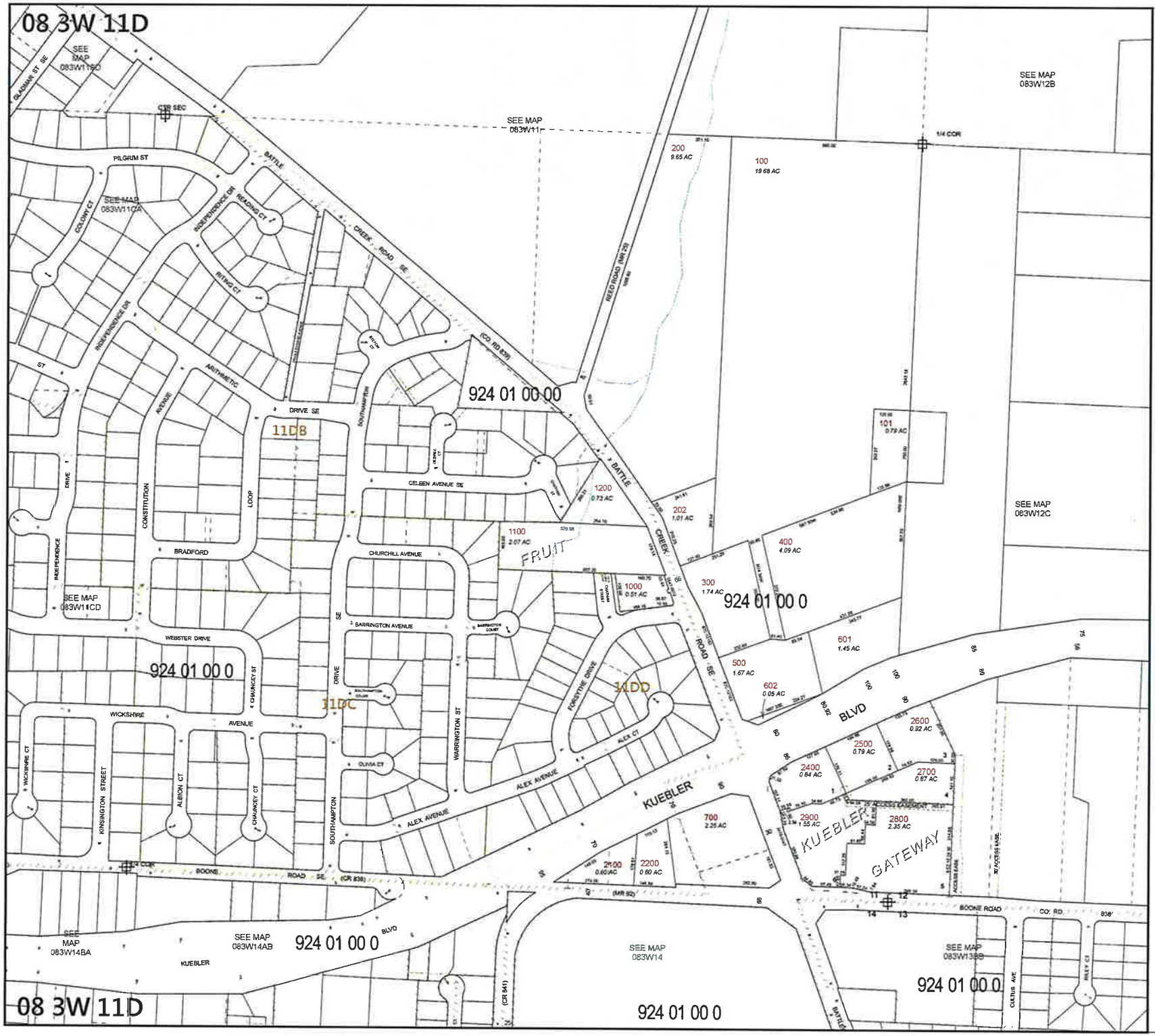
State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 121.00

BILL BURGESS
COUNTY CLERK

THIS IS NOT AN INVOICE.



08 3W 11D
SALEM

MARION COUNTY, OREGON
SE1/4 SEC11 T8S R3W W.M.
SCALE 1" = 200'

LEGEND

LINE TYPES

- Taxlot Boundary
- Historical Boundary
- Road Right-of-Way
- Easement
- Railroad Right-of-Way
- Railroad Centerline
- Private Road ROW
- Taxcode Line
- Subdivision/Plat Bndry
- Map Boundary
- Waterline - Taxlot Bndry
- Waterline - Non Bndry

CORNER TYPES

- 1/16TH Section Cor.
- 1/4 Section Cor.
- DLC Corner
- Section Corner (16, 15, 21, 22)

NUMBERS

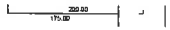
Tax Code Number
000 00 00 0

Acreage
0.25 AC

All acres listed are Net Acres, excluding any portions of the taxlot within public ROWs

NOTES

Tick Marks: A tick mark in the road indicates that the labeled dimension extends into the public ROW



CANCELLED NUMBERS

201	1400	2302
301	1500	2303
501	1600	
502	1601	
600	1700	
603	1800	
700A1	1801	
701	1900	
702	1901	
703	2000	
800	2001	
801	2002	
900	2101	
901	2102	
902	2201	
1001	2300	
1300	2301	

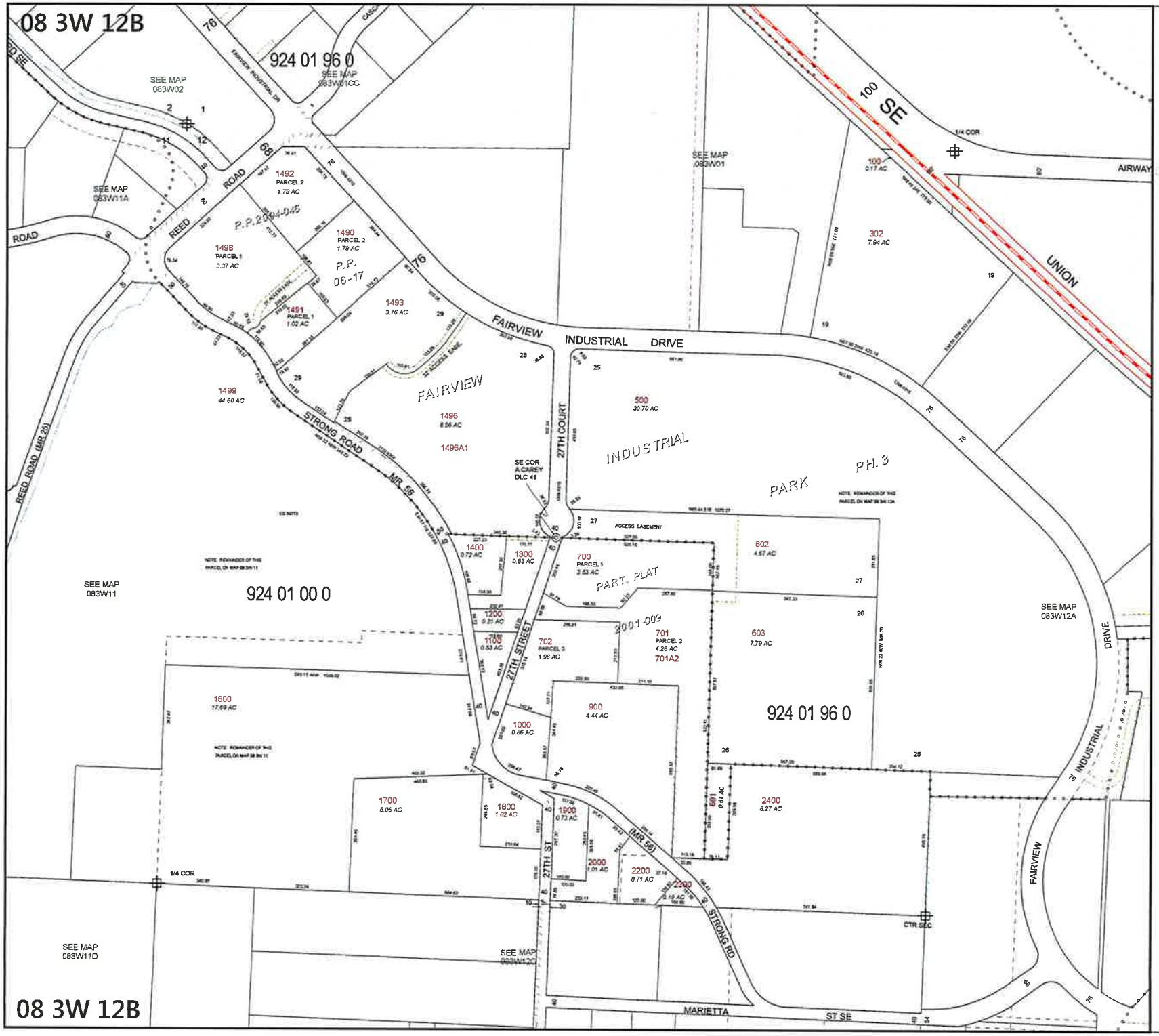
DISCLAIMER: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY

Assessors Office Cartography Dept

FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT
www.co.marion.or.us

PLOT DATE: 1/24/2018

SALEM
08 3W 11D



08 3W 12B
SALEM

MARION COUNTY, OREGON
NW1/4 SEC12 T8S R3W W.M.
SCALE 1" = 200'

LEGEND

LINE TYPES

Taxlot Boundary	Historical Boundary
Road Right-of-Way	Easement
Railroad Right-of-Way	Railroad Centerline
Private Road ROW	Taxcode Line
Subdivision/Plat Bndry	Map Boundary
Waterline - Taxlot Bndry	Waterline - Non Bndry

CORNER TYPES

+ 1/16TH Section Cor.
1/4 Section Cor.
DLC Corner
16 15 Section Corner 21 22

NUMBERS

Tax Code Number
000 00 00 0

Acreage
0.25 AC
All acres listed are Net Acres, excluding any portions of the taxlot within public ROWs

NOTES

Tick Marks: A tick mark in the road indicates that the labeled dimension extends into the public ROW

CANCELLED NUMBERS

200	1498A1
201	1498A2
202	1498A3
300	1500
301	1601
400	2100
401	
402	
501	
502	
503	
600	
700A1	
701A1	
800	
1494	
1497	

DISCLAIMER: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY

Assessors Office Cartography Dept

FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT www.co.marion.or.us

PLOT DATE: 1/24/2018

SALEM
08 3W 12B

FATCO 1584124

Space above this line for Recorder's use.

After recording, return to:
Battle Creek, LLC
Attn Julie Singer
5450 Zena Road NW
Salem, Oregon 97304

Send tax statements to:
(same)

STATUTORY BARGAIN AND SALE DEED

The State of Oregon, acting by and through the Oregon Youth Authority, Grantor, conveys to Battle Creek, LLC, Grantee, the property described in the attached Exhibit A ("the Property") subject to the terms, conditions and reservations set forth below,

Reservation of Mineral Estate

Grantor excepts and reserves to itself, its successors and assigns all "minerals" as defined in ORS 273.775(1), including soil, clay, stone, sand and gravel, and all geothermal resources, as defined in ORS 273.775(2), together with the right to make such use of the surface as may be reasonably necessary for prospecting for, exploring for, mining, extracting, reinjecting, storing, drilling for, and removing, such minerals, materials and geothermal resources. In the event use of the Property by a surface rights owner would be damaged by one or more of the activities described above, then such owner shall be entitled to compensation from the state's lessee to the extent of the diminution in value of the real property, based on the actual use by the surface owner at the time the state's lessee conducts any of the above activities.

The true and actual consideration for the conveyance is the exchange of an equivalent parcel of land to be deeded to Grantor.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR

COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009.

Dated this 1 day of February 2011.

STATE OF OREGON, acting by and through its Oregon Youth Authority

By: _____
Colette S. Peters, Director

STATE OF OREGON)
) ss.
County of Marion)

On this 1st day of February, 2011, before me personally appeared Colette S. Peters, Director, who being duly sworn stated that she has the authority to sign the document as the Director of the Oregon Youth Authority, and acknowledged the foregoing instrument to be the voluntary act of the Oregon Youth Authority, and that he executed the foregoing instrument on behalf of said state agency, acting on behalf of the State of Oregon.

_____
NOTARY PUBLIC FOR OREGON
My commission Expires: 4/6/13

OFFICIAL SEAL
JEAN MARIE BERGEN
NOTARY PUBLIC - OREGON
COMMISSION NO. 437253
MY COMMISSION EXPIRES APR. 6, 2013

*Jean Marie Bergen

Exhibit A

Beginning at the ¼ Corner of section 11 and 12, township 8 South, Range 3 West, in the Willamette Meridian, City of Salem, Marion County, Oregon; thence North 00°25'53" East 395.00 feet; thence South 89°35'40" West 299.22 feet; thence South 00°25'53" East 395.00 feet; thence North 89°35'40" East 299.22 feet to the point of beginning. Containing 2.71 acres of land more or less.

REEL: 3257 **PAGE: 222**

February 04, 2011, 10:57 am.

CONTROL #: 288079

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 51.00

BILL BURGESS
COUNTY CLERK

THIS IS NOT AN INVOICE.

REEL 3602 PAGE 265
MARION COUNTY
BILL BURGESS, COUNTY CLERK
05-07-2014 11:26 am.
Control Number 360612 $ 56.00
Instrument 2014 00014759

After recording return to:

Robert W. Nunn
Sussman Shank LLP
Suite 1400
1000 SW Broadway
Portland, OR 97205-3089

Send all tax statements to:

Robert W. Nunn
0841 SW Gaines Street, Unit 606
Portland, OR 97239

FATCO S-2014

WARRANTY DEED

Robert W. Nunn, Grantor, conveys and warrants to Pringle Creek LLC, an Oregon limited liability company, Grantee, all of Grantor's tenant in common interest in the real property described on Exhibit A.

The liability and obligations of Grantor to Grantee and Grantee's heirs and assigns under the warranties and covenants contained herein or provided by law are limited to the amount, nature, and terms of any right or indemnification available to Grantor under any title insurance policy. Grantor has no liability or obligation except to the extent that reimbursement for such liability or obligation is available to Grantor under a title insurance policy.

The property is free of encumbrances except (a) as specifically set forth herein, (b) encumbrances ascertainable from viewing the property, and (c) encumbrances, covenants, conditions, restrictions, and easements of record.

The true and actual consideration for this transfer is $-0- and consists of or includes other property or other value given or promised.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR

215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

DATED this 15 day of November, 2013.

GRANTOR:

Robert W. Nunn

STATE OF OREGON)
) ss.
County of Multnomah)

This instrument was acknowledged before me on November 15, 2013 by Robert W. Nunn.

OFFICIAL SEAL
SUSAN E BUCHANAN
NOTARY PUBLIC-OREGON
COMMISSION NO. 466455
MY COMMISSION EXPIRES APRIL 05, 2016

NOTARY PUBLIC FOR OREGON
My Commission Expires: 4/5/16

16923-002\PRINGLE CREEK WARRANTY DEED (01722624);1

Exhibit A

Beginning at a point which is 315.48 feet N. 89° 49' W. and 1223.41 feet N. 22° 30' W. and 301.80 feet N. 67° 30' E. from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian In Marion County, Oregon; thence S. 14° 34' E. 370.20 feet; thence N. 67° 30' E. 429.93 feet to a point on the East line of said Section, which point is 1064.65 feet N. 0° 30' E. from the Southeast corner of said Section; thence N. 0° 30' E. along said East line 397.79 feet; thence S. 67° 30' W. 534.60 feet to the place of beginning and containing 4.07 acres of land.

Together with an easement for road and right-of-way purposes over the following described parcel, beginning at a point which is located North 89° 49' West 315.48 feet and North 22° 30' West 1,223.41 feet and North 67° 30' East 30.00 feet from the Southeast comer of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, Marion County. Oregon;

Thence from said point of beginning continuing North 67° 30' East 351.80 feet to a point on the northerly line of a tract of land described in Deed Book 469, page 411 of Marion County Deed Records;

Thence North 22° 30' West 50.00 feet to a point;

Thence South 67°30' West 351.80 feet to a point on the easterly right-of-way line of Battle Creek Road (Market Road No. 25);

Thence South 22° 30' East along said easterly right-of-way line 50.00 feet to the point of beginning.

REEL: 3602 **PAGE: 265**

May 07, 2014, 11:26 am.

CONTROL #: 360612

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 56.00

BILL BURGESS
COUNTY CLERK

THIS IS NOT AN INVOICE.

UNTIL FURTHER NOTICE, SEND ALL TAX STATEMENTS TO:
Boulder Hill LLC
Robert W. Nunn, Manager
1000 SW Broadway, Suite 1400
Portland, OR 97205-3089

REEL 1959 PAGE 327

AFTER COMPLETING RECORDING, RETURN THIS DOCUMENT TO:
Evans, Freeby & Jennings, LLP
Attorneys at Law
280 Court St. NE
Salem, OR 97301

BARGAIN AND SALE DEED

ROBERT W. NUNN, Trustee under the EVELYN M. COBURN LIVING TRUST, dated March 15, 1995, GRANTOR

Conveys to

BOULDER HILL LLC, an Oregon Manager-Managed Limited Liability Company GRANTEE

All the following real property situated in Marion County, State of Oregon, specifically described on Exhibit "A" hereto and by this reference incorporated herein, generally described as: Tax Lot 100, Tax Account No. R32164; Tax Lot 200, Tax Account No. R32163, and Tax Lot 601, Tax Account No. R32158.

The true and actual consideration for this transfer is other than money.

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES AND TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930.

Dated this 23rd day of May, 2002.

GRANTOR
Evelyn M. Coburn Living Trust, dated March 15, 1995

By: Robert W. Nunn, Trustee

STATE OF OREGON, County of Marion) ss.

Personally appeared before me this 23rd day of May, 2002, Robert W. Nunn, as Trustee and acknowledged the foregoing instrument to be his voluntary act.

OFFICIAL SEAL
JAIME LYNNE TREMBLY
NOTARY PUBLIC - OREGON
COMMISSION NO. A322507
MY COMMISSION EXPIRES APR 18, 2003

Jaime Lynne Trembly

Notary Public for Oregon
My Commission Expires: 4/18/03

MAY 29 2002

EXHIBIT A

LEGAL DESCRIPTION
Map 8S-3W-11D; Tax Lots 100, 200, and 601:

Tax Lot 100
Account No. R32164

Beginning at the Northeast corner of the Southeast Quarter of Section 11, Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon; thence South 0° 30' West along the East line of said Section, a distance of 929.74 feet, more or less, to the North line of that tract of land described in Document No. 116205 Circuit Court Journal for Marion County; thence westerly along the North line of said tract, a distance of 125.00 feet; thence South 0° 30' West parallel with the East line of said Section 11, a distance of 303.27 feet to a point on the northerly line of that tract of land conveyed to Kathryn L. Young, Linda S. Schaeffers and Robert W. Nunn by deed recorded in Reel 1021, Page 231, Deed Records for Marion County, Oregon; thence South 67° 30' West along said northerly line a distance of 398.72 feet to the Northwest corner thereof; thence South 14° 34' 00" East 370.20 feet to the Southwest corner of said tract; thence North 89° 47' 36" West 51.83 feet to the Southeast corner of that tract of land conveyed to Dale E. Christison and Darlene A. Christison by deed recorded in Reel 76, Page 282, Deed Records for Marion County, Oregon; thence North 14° 34' 00" West along the easterly line of said Christison tract, a distance of 350.00 feet to the Northeast corner thereof; thence South 67° 30; 00" West along the northerly line of said Christison tract, a distance of 131.77 feet to a point which is 660.00 feet West of the East line of said Section 11, thence North 0° 30' East parallel with the East line of said Section 11, a distance of 1454.12 feet to a point on the North line of the Southeast Quarter of said Section 11; thence easterly along said North line, a distance of 660.00 feet to the point of beginning.

Contains 19.57 acres of land, more or less.

****

Tax Lot 200
Tax Account No. R32163

Beginning 10 chains West of the Northeast corner of the Southeast quarter of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, State of Oregon, and running thence South 26.62 chains; thence North 23°45' West 9.68 chains; thence North 50°45' West 4.80 chains; thence North 15° East 16.60 chains; thence East 3.35 chains to the place of beginning in Section 11, Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon.

SAVE AND EXCEPT: Beginning in the center of a County Road at a point which is North 89°49' West 315.48 feet and North 22°30' West 876.91 feet from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon; thence North 67°30' East 232.90 feet; thence North 14°34' West 350.00 feet; thence South 67°30' West 281.20 feet to the center of said County Road; thence South 22°30' East along the center of said County Road 346.50 feet to the place of beginning.

SAVE AND EXCEPT: Beginning at the point of intersection of the Northerly line of County Road No. 839 (commonly known as Battle Creek Rd.) and the Easterly line of Market Road No. 25 (commonly known as Reed Road) and being in the Southeast quarter of Section 11, Township 8 South, Range 3 West, of the Willamette Meridian, Marion County, Oregon; thence South 58°11'46" East 30.00 feet along the Northerly line of said County Road No. 839 to a point; thence North 13°09'17" West 51.01 feet to a point on the Easterly line of said Market Road No. 25; thence South 14°51'43" West 47.00 feet along said Easterly line to the point of beginning.

SAVE AND EXCEPT that portion of the premises herein described lying within the limits of roads, streets and highways.

Tax Lot 601
Tax Account No. R32158

Beginning at the Southeast corner of that tract of land conveyed to Kathryn L. Young, Linda S. Schaeffers and Robert W. Nunn by deed recorded in Reel 1021, Page 231, Deed Records for Marion County, Oregon which point is recorded as being North 0° 30' East 1064.65 feet from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon; thence South 0° 30' West along the East line of said Section 11, a distance of 208.73 feet, more or less, to a point on the northerly right-of-way line of Kuebler Boulevard; thence South 69° 58' 53" West along the northerly right-of-way line, a distance of 24.48 feet, more or less, to an angle point in said right-of-way line; thence South 63° 02' 05" West along said right-of-way line a distance of 102.74 feet to an angle point in said right-of-way line; thence South 54° 40' 44" West along said right-of-way line a distance of 167.14 feet to the Southeast corner of that tract of land conveyed to Bernard F. Bednarz and Miriam L. Bednarz, husband and wife, by deed recorded in Volume 681, Page 328, Deed Records for Marion County, Oregon; thence North 14° 34' West along the East line of said Bednarz tract, a distance of 222.00 feet to the Northeast corner thereof; thence North 67° 30' East along the southerly line of said tract described in Reel 1021, Page 231, Deed Records, a distance of 345.77 feet to the point of beginning.

Contains 1.44 acres of land, more or less.

MAY 29 2002

REEL:1950 **PAGE: 327**

May 29, 2002, 02:46 pm.

CONTROL #: 59651

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 36.00

ALAN H DAVIDSON
COUNTY CLERK

THIS IS NOT AN INVOICE.

MAY 29 2002

Business Name Search

New Search | Printer Friendly

Business Entity Data

05-24-2018
14:29

Registry Nbr	Entity Type	Entity Status	Jurisdiction	Registry Date	Next Renewal Date	Renewal Due?
063953-96	DLLC	ACT	OREGON	02-07-2002	02-07-2019	
Entity Name	BOULDER HILL LLC					
Foreign Name						

New Search | Printer Friendly

Associated Names

Type	PPB	PRINCIPAL PLACE OF BUSINESS				
Addr 1	0841 SW GAINES ST					
Addr 2	UNIT 606					
CSZ	PORTLAND	OR	97239		**Country**	UNITED STATES OF AMERICA

Please click here for general information about registered agents and service of process.

Type	AGT	REGISTERED AGENT			**Start Date**	02-07-2002	**Resign Date**	
Name	ROBERT		W	NUNN				
Addr 1	0841 SW GAINES ST							
Addr 2	UNIT 606							
CSZ	PORTLAND	OR	97239		**Country**	UNITED STATES OF AMERICA		

Type	MAL	MAILING ADDRESS				
Addr 1	0841 SW GAINES ST					
Addr 2	UNIT 606					
CSZ	PORTLAND	OR	97239		**Country**	UNITED STATES OF AMERICA

Type	MGR	MANAGER			**Resign Date**	
Name	ROBERT	W	NUNN			
Addr 1	0841 SW GAINES ST					
Addr 2	UNIT 606					

CSZ	PORTLAND	OR	97239		Country	UNITED STATES OF AMERICA

New Search Printer Friendly

Name History

Business Entity Name	Name Type	Name Status	Start Date	End Date
BOULDER HILL LLC	EN	CUR	02-07-2002	

Please read before ordering Copies.

New Search Printer Friendly

Summary History

Image Available	Action	Transaction Date	Effective Date	Status	Name/Agent Change	Dissolved By
	ANNUAL REPORT PAYMENT	01-26-2018		SYS		
	ANNUAL REPORT PAYMENT	01-11-2017		SYS		
	ANNUAL REPORT	03-16-2016		FI		
	NOTICE LATE ANNUAL	02-11-2016		SYS		
	AMENDED ANNUAL REPORT	01-20-2015		FI		
	ANNUAL REPORT PAYMENT	12-26-2013		SYS		
	ANNUAL REPORT PAYMENT	03-08-2013		SYS		
	NOTICE LATE ANNUAL	02-08-2013		SYS		
	ANNUAL REPORT PAYMENT	02-29-2012		SYS		
	NOTICE LATE ANNUAL	02-10-2012		SYS		
	ANNUAL REPORT PAYMENT	03-15-2011		SYS		
	NOTICE LATE ANNUAL	02-11-2011		SYS		
	ANNUAL REPORT PAYMENT	02-23-2010	02-22-2010	SYS		
	NOTICE LATE ANNUAL	02-12-2010		SYS		
	ANNUAL REPORT PAYMENT	01-06-2009		SYS		
	ANNUAL REPORT PAYMENT	01-11-2008		SYS		
		01-30-2007		SYS		

	ANNUAL REPORT PAYMENT					
	ANNUAL REPORT PAYMENT	01-06-2006		SYS		
	ANNUAL REPORT PAYMENT	12-30-2004		SYS		
	ANNUAL REPORT PAYMENT	01-02-2004		SYS		
	AMENDED ANNUAL REPORT	03-04-2003		FI		
	NOTICE LATE ANNUAL	02-14-2003		SYS		
	ARTICLES OF ORGANIZATION	02-07-2002		FI	Agent	

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AMENDED ANNUAL REPORT

Corporation Division
www.filinginoregon.com

E-FILED
Jan 20, 2015
OREGON SECRETARY OF STATE

REGISTRY NUMBER

6395396

REGISTRATION DATE

02/07/2002

BUSINESS NAME

BOULDER HILL LLC

BUSINESS ACTIVITY

REAL ESTATE - LEASED FOR FARM USE

MAILING ADDRESS

0841 SW GAINES ST
UNIT 606
PORTLAND OR 97239 USA

TYPE

DOMESTIC LIMITED LIABILITY COMPANY

PRIMARY PLACE OF BUSINESS

0841 SW GAINES ST
UNIT 606
PORTLAND OR 97239 USA

JURISDICTION

OREGON

REGISTERED AGENT

ROBERT W NUNN

0841 SW GAINES ST
UNIT 606
PORTLAND OR 97239 USA

If the Registered Agent has changed, the new agent has consented to the appointment.

MANAGER

ROBERT W NUNN

0841 SW GAINES ST
UNIT 606
PORTLAND OR 97239 USA

By my signature, I declare as an authorized authority, that this filing has been examined by me and is, to the best of my knowledge and belief, true, correct, and complete. Making false statements in this document is against the law and may be penalized by fines, imprisonment, or both.

By typing my name in the electronic signature field, I am agreeing to conduct business electronically with the State of Oregon. I understand that transactions and/or signatures in records may not be denied legal effect solely because they are conducted, executed, or prepared in electronic form and that if a law requires a record or signature to be in writing, an electronic record or signature satisfies that requirement.

ELECTRONIC SIGNATURE

NAME

ROBERT W NUNN

TITLE

MANAGER

DATE SIGNED

01-20-2015

ASSIGNMENT OF MEMBER'S INTEREST IN LIMITED LIABILITY COMPANY

Robert W. Nunn, successor trustee, of the Evelyn M. Coburn Living Trust, dated March 15, 1995, as amended (the "Trust"), hereby assigns to ROBERTA ANN STRAUSBAUGH, all of the Trust's interest as a member in that certain limited liability company known as BATTLE CREEK LLC, an Oregon Manager-Managed Limited Liability Company.

DATED: August 23, 2005

Robert W. Nunn, Successor Trustee

CONSENT AND RESIGNATION OF MANAGER

The undersigned, being the Manager of BATTLE CREEK LLC, an Oregon Manager-Managed Limited Liability Company, hereby consents to this assignment, with the understanding that all of the terms and provisions of the operating agreement shall continue to apply, and hereby resigns as manager.

By: Robert W. Nunn, Manager

ACCEPTANCE OF ASSIGNMENT AND ELECTION OF MANAGER

The undersigned accepts the assignment of the membership interest, subject to the terms and conditions of the operating agreement, and hereby elects JULIE A. SINGER as manager.

Julie A. Singer power of attorney for Roberta Anne Strausbaug
Roberta Ann Strausbaugh

8.12.05 18:02
C:\WINDOWS\TEMPORARY INTERNET FILES\OLK2053\ASSN-BATTLECREEK.DOC

ENTERED 8/5/05

Phone: (503) 986-2200
Fax: (503) 378-4381

Change of Registered Agent/Address—Corporations/LLC

Secretary of State
Corporation Division
255 Capitol St. NE, Suite 151
Salem, OR 97310-1327
FilingInOregon.com

Check the appropriate box below:

☑ CHANGE OF AGENT AND ADDRESS
(Complete only 1, 2, 3, 4, 5, 6, 11)

☐ CHANGE OF ADDRESS ONLY
(Complete only 1, 7, 8, 9, 10, 11)

REGISTRY NUMBER: 063951-98

NOTE: Use this form for Cooperatives or Business Trusts.

In accordance with Oregon Revised Statute 192.410-192.490, the information on this application is public record. We must release this information to all parties upon request and it will be posted on our website.

For office use only

Please Type or Print Legibly in **Black** Ink. Attach Additional Sheet if Necessary.

1) **ENTITY NAME** BATTLE CREEK LLC

CHANGE OF REGISTERED AGENT AND OFFICE

2) **THE REGISTERED AGENT HAS BEEN CHANGED TO:**
Julie Singer

3) **THE NEW REGISTERED AGENT HAS CONSENTED TO THIS APPOINTMENT.**

4) **ADDRESS OF THE NEW REGISTERED OFFICE** (Must be an **OREGON** Street Address which is identical to the registered agent's business office.)
5450 Zena Road NW
Salem, OR 97304

5) **THE STREET ADDRESS OF THE NEW REGISTERED OFFICE AND THE BUSINESS ADDRESS OF THE REGISTERED AGENT ARE IDENTICAL.**

6) **EXECUTION**
(Must be signed by one corporate officer or director for a corporation or a member/manager for a limited liability company.)

Signature: Julie A Singer
Printed Name: Julie Singer
Title: Manager

CHANGE OF REGISTERED AGENT'S BUSINESS OFFICE ONLY

7) **NEW ADDRESS OF REGISTERED AGENT** (The business address of the registered agent has changed to the following **OREGON** Street Address.)

8) **THE STREET ADDRESS OF THE NEW REGISTERED OFFICE AND THE BUSINESS ADDRESS OF THE REGISTERED AGENT ARE IDENTICAL.**

9) **NOTIFICATION**
☐ The corporation has been notified in writing of this change.

10) **EXECUTION**
(Must be signed by the registered agent or a corporate officer or director for a corporation or a member/manager for a limited liability company.)

Signature:
Printed Name:
Title:

11) **CONTACT NAME** (To resolve questions with this filing.) Julie Singer

DAYTIME PHONE NUMBER (Include area code.) (503) 581-7930

FEES
No Processing Fee

131 (Rev. 1/04)

ENTERED 2/15/11

Phone: (503) 986-2200
Fax: (503) 378-4381

Amendment to Annual Report—Limited Liability Company

Secretary of State
Corporation Division
255 Capitol St. NE, Suite 151
Salem, OR 97310-1327
FilingInOregon.com

REGISTRY NUMBER: 063951-98

ENTITY TYPE ☑ DOMESTIC ☐ FOREIGN

In accordance with Oregon Revised Statute 192.410-192.490, the information on this application is public record. We must release this information to all parties upon request and it will be posted on our website.

For office use only

Please Type or Print Legibly in **Black** Ink.

To change the Registered Agent, use Change of Registered Agent/Address, Form 131

1) **NAME OF ENTITY** BATTLE CREEK LLC

2) **PRINCIPAL PLACE OF BUSINESS** (Street Address)
5450 Zena Road NW
Salem, OR 97304

3) **ADDRESS FOR MAILING NOTICES**
5450 Zena Road NW
Salem, OR 97304

LIST MEMBERS AND/OR MANAGERS NAMES AND ADDRESSES

4) **MEMBERS** (Name and street address)
Roberta Ann Strausbaugh
2482 Kuebler Road South
Salem, OR 97302

5) **MANAGERS** (Name and street address)
Julie Singer
5450 Zena Road NW
Salem, OR 97304

6) **EXECUTION**
Signature: Julie A Singer
Printed Name: Julie Singer
Title: Manager
Date:

7) **CONTACT NAME** (To resolve questions with this filing.)
Julie Singer

DAYTIME PHONE NUMBER (Include area code.)
(503) 581-7930

FEES
No Processing Fee

154 (Rev. 7/04)

ENTERED 2/15/11

New folder for each LLC

THE OPERATING AGREEMENT

OF

BATTLE CREEK LLC

Manager Managed

by

Kathleen A. Evans

Evans, Freeby & Jennings, LLP
Attorneys at Law
280 Court St. NE
Salem, Oregon 97301

Telephone: (503) 588-5670
Fax: (503) 588-5673

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Securities Law Disclosure

The percentages of ownership (membership interests) of BATTLE CREEK LLC have not been registered under the Securities Act of 1933, as amended (the "Securities Act"), or the securities laws of any state. The membership interests are offered and sold in reliance on exemptions from the registration requirement of the Securities Act and such laws, and particularly regulations enacted by the Securities and Exchange Commission effective April 15, 1982 pertaining to certain offers and sales of securities without registration under the Securities Act of 1933.

The Company will not be subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, and will not file reports, proxy statements and other information with the Securities and Exchange Commission, or any state securities commission.

The membership interests of BATTLE CREEK LLC have not been, nor will be, registered or qualified under federal or state securities laws. The membership interests of BATTLE CREEK LLC may not be offered for sale, sold, pledged, or otherwise transferred unless so registered or qualified, or unless an exemption from registration or qualification exists. The availability of any exemption from registration or qualification must be established by an opinion of counsel for the owner thereof, which opinion of counsel must be reasonably satisfactory to BATTLE CREEK LLC.

Article One

Organization of Company

Section 1. The Limited Liability Company

This Operating Agreement is entered into and shall be effective as of the Effective Date, by and among the Company, the persons identified on Exhibit A of this Agreement as Initial Members and Kathleen A. Evans, "*Organizer*."

Section 2. Organization

By executing and filing the Articles, Organizer has created or will create the Company in accordance with and pursuant to the Act. Consistent with the Act and the Articles, the Initial Members hereby provide for the regulation and management of the affairs of the Company.

Section 3. Nature of Business

The Company is organized to accomplish the following purposes:

A. To provide consolidated management of the assets held by the Company;

B. To manage and/or develop real estate owned or acquired by the Company;

C. To provide an orderly buy-sell arrangement between the members of the Evelyn M. Coburn family to keep Company assets in the family;

D. To promote family harmony by insuring that any disputes will be resolved privately by arbitration rather than publicly through the courts;

E. To assist in preventing family assets from going through probate upon the death of any family member; or alternatively to simplify any probate proceeding which may be required;

F. To establish and maintain an order of succession and control of family assets;

G. To consolidate fractional interests in family-held assets;

H. To increase family wealth;

I. To establish a method by which annual gifts can be made without fractionalizing family assets;

J. To restrict the right of non-family members to acquire interests in family assets;

K. To prevent the transfer of a family member's interest in the Company as a result of a failed marriage;

L. To provide protection to family assets from claims of future creditors of members;

M. To provide flexibility in business planning not available through trusts, corporations, or other business entities; and

N. To promote knowledge of and communication about the family assets and business among family members.

In order to accomplish its purposes, the Company may conduct any lawful business and investment activity permitted under the laws of the State of Oregon and in any other jurisdiction in which it may have a business or investment interest. The Company may own, acquire, manage, develop, operate, sell, exchange, finance, refinance and otherwise deal with real estate, personal property and any type of business as the Members may from time to time deem to be in the best interest of the Company. The Company may engage in any other activities which are related or incidental to the foregoing purposes. The Company may engage in any lawful business permitted by the Act or the laws of any jurisdiction in which the Company may do business. The Company shall have the authority to do all things necessary or convenient to accomplish its purpose and operate its business.

Section 4. Defects as to Formalities

A failure to observe any formalities or requirements of this Agreement, the Articles or the Act shall not be grounds for imposing personal liability on the Members for liabilities of the Company.

Section 5. No Company Intended for Nontax Purposes

The Members have formed the Company under the Act, and expressly do not intend hereby to form a partnership under either the Oregon Revised Partnership Act or the Oregon Uniform Limited Partnership Act or a corporation under the Oregon Business Corporation Act. The Members do not intend to be partners one to another, or partners as to any third party. To the extent any Member, by word or action, represents to another person that any other Member is a partner or that the Company is a partnership, the Member making such wrongful representation shall be liable to any other Member who incurs personal liability by reason of such wrongful representation.

Section 6. Rights of Creditors and Third Parties

This Agreement is entered into among the Company and the Initial Members for the exclusive benefit of the Company, its Members, and their successors and assigns. The Agreement is expressly not intended for the benefit of any creditor of the Company or any other Person. Except and only to the extent provided by applicable statute, no such creditor or third party shall have any rights under the Agreement or any agreement between the Company and any Member with respect to any Contribution or otherwise.

Section 7. Title to Property

All Company Property shall be owned by the Company as an entity and no Member shall have any ownership interest in such Property in the Member's individual name or right, and each Member's interest in the Company shall be personal property for all purposes. Except as otherwise provided in this Agreement, the Company shall hold all Company Property in the name of the Company and not in the name or names of any Member or Members.

Section 8. Payments of Individual Obligations

The Company's credit and assets shall be used solely for the benefit of the Company, and no asset of the Company shall be Transferred or encumbered for or in payment of any individual obligation of any Member unless otherwise provided for herein.

Notwithstanding the foregoing, the Manager may help facilitate the satisfaction of any death or estate tax obligations owed by a member or by a member's estate. For example, the Manager may elect to make any distributions authorized under this Agreement either directly to the appropriate persons or institutions or to the trustee of any deceased member's trust or to the personal representative of the deceased member's probate estate. The Manager may rely upon the written statements of the deceased member's fiduciary (be that a trustee or a personal representative) as to all material facts relating to these payments; the Manager shall not have any duty to see to the application of such payments. Further, the Manager is authorized to purchase and retain in the form received, as an asset of the Company, any property which is a part of the deceased member's trust or probate estate. In addition, the Manager may make loans, with or without security, to the deceased member's trust or probate estate. The Manager shall not be liable for any loss suffered by the Company as a result of the exercise of the powers granted in this Section.

Article Two

Members

Section 1.Authority to Act

No Member shall have the power or authority to bind the Company unless the Member is a Manager or the Member has been authorized by the Managers to act as an agent of the Company in accordance with this Agreement.

Section 2. Two Classes of Members

There shall be two classes of members.

A. Members of Class A shall have both Economic Rights and Management Rights and shall have the ability to vote on all matters and to elect the Managers of the Company. Whenever this Agreement requires a certain percentage vote to act, that percentage shall always refer to Class A membership interests; Class B membership interests shall be referred to only for those matters specifically listed in paragraph C below. All Class A Members shall be entitled to vote on or consent to any matter submitted to a vote or consent of the Members. In addition to any other actions which, by virtue of the Act, the Articles or this Agreement require a certain consent of the Members, the following actions require the consent of a Majority of the Class A Members:

1. Fixing the number of Managers;

2. Electing the Managers;

3. Setting or adjusting the compensation or benefits of Managers;

4. Removing any Manager without cause;

5. Removing any Manager for cause;

6. Filling any vacancy created by the resignation, removal or death of a Manager;

7. Filling any vacancy created by the increase in the number of Managers;

8. Approving any transaction involving an actual or potential conflict of interest between a Member or a Manager and the Company;

9. Determining the amount, if any, and timing of any guaranteed payments to Members;

10. Approving any transaction involving an actual or potential conflict of interest between a Member and the Company;

11. Changing the nature of the business of the Company;

12. Incurring a Company debt other than in the ordinary course of business; or

13. Taking or approving any action or transaction which is reserved to the Members by the Act, the Articles or this Agreement without any express statement of the extent of Member action required.

B. In addition to any other actions which, by virtue of the Act, the Articles or this Agreement, require the unanimous consent of the Members, the following actions require the consent of 80% of the Class A Members:

1. Compromising any Contribution obligation;

2. Amending or restating the Articles;

3. Amending or restating this Agreement;

4. Approving any action to sell, lease, exchange, mortgage, pledge or other transfer or disposition of all or substantially all of the Company Property, other than in the ordinary course of business;

5. Merging the Company with another Entity;

6. Dissolving the Company; or

7. Admitting an Additional Member.

C. Members of Class B shall have only Economic Rights and the ability to vote on those specific items listed below. They shall have no other Management Rights; they do not have the power to vote to elect the Managers; and they have no power to bind the Company. In addition to consent of 80% of the Class A Members, the following actions also require the consent of 80% of the Class B Members:

1. Amending or restating the Articles;

2. Amending or restating this Agreement;

3. Approving any action to sell, lease, exchange, mortgage, pledge or other transfer or disposition of all or substantially all of the Company Property, other than in the ordinary course of business;

4. Merging the Company with another Entity;

5. Dissolving the Company; or

6. Admitting an Additional Member.

Section 3. Limitation of Liability.

Each Member's liability shall be limited as set forth in this Agreement, the Act and other applicable law. A Member will not be personally liable, merely as a Member, for any debts or losses of the Company beyond the Member's respective Contributions and any obligation of the Member under Article Five to make Contributions, except as otherwise provided by law.

Section 4. Indemnification

The Company shall indemnify the Members, for all costs, losses, liabilities, and damages paid or accrued by such Member, and advance expenses incurred by the Member, in connection with the business of the Company, to the fullest extent provided or allowed by the laws of Oregon except that this provision shall not provide indemnification for:

A. Any breach of a Member's duty of loyalty to the Company or its Members as described in this Agreement;

B. Acts or omissions not in good faith which involve intentional misconduct or a knowing violation of law;

C. Any unlawful distribution under the Act; or

D. Any transaction from which the Member derives an improper personal benefit.

Section 5. Actions of Members

A. Special Meetings. Special meetings of the Members, for any purpose or purposes, unless otherwise prescribed by statute, may be called by any Class A Member or Members holding at least 10% of the Class A Capital Interests.

B. **Place of Meetings.** The Class A Members may designate any place, either within or outside of Oregon, as the location for any meeting of the Members. If no designation is made, or if a special meeting be otherwise called, the place of meeting shall be the principal executive office of the Company in Oregon.

C. **Notice of Meetings.** Except as provided below, written notice stating the place, day and hour of the meeting and the purpose or purposes for which the meeting is called shall be delivered not less than 10 nor more than 50 days before the date of the meeting, either personally or by mail, by or at the direction of the person calling the meeting, to each Member entitled to vote at the meeting to be called. If mailed, such notice shall be deemed to be delivered two calendar days after being deposited in the United States mail, addressed to the Member at the Member's address, as it appears on the books of the Company, postage prepaid.

D. **Meeting of All Members.** If all of the Members entitled to vote shall meet at any time and place, either within or outside of Oregon, and consent to the holding of a meeting at such time and place, such meeting shall be valid without call or notice, and at such meeting lawful action may be taken.

E. **Record Date.** For the purpose of determining the Members for any purpose, the date on which any required notice is mailed shall be the record date for such determination of the Members.

F. **Quorum.** Members entitled to vote, represented in person or by proxy, with aggregate Sharing Ratios in excess of 50% shall constitute a quorum at any meeting of the Members. In the absence of a quorum at any such meeting, the Members so represented may adjourn the meeting from time to time for a period not to exceed 60 days without further notice. However, if the adjournment is for more than 60 days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each Member of record. At such adjourned meeting at which a quorum shall be present or represented, any business may be transacted which might have been transacted at the meeting as originally noticed. The Members entitled to vote present at a duly organized meeting may continue to transact business until adjournment, notwithstanding the departure during such meeting of Members whose absence would cause less than a quorum to remain. In the event an action requires the consent of the remaining Members or some portion thereof, the foregoing quorum rules of this Section shall be applied by substituting "remaining Members" for "Members" therein.

G. **Manner of Acting.** If a quorum is present, a Majority of those Members entitled to vote shall act for the Members, unless the vote of a different proportion or number or both classes is otherwise required by the Act, the Articles, or this Agreement. Unless otherwise expressly provided herein or required under applicable law, Members who have an interest in the outcome of any particular matter upon which the Members vote or consent may vote or consent upon any such matter and their Capital Interest, Sharing Ratios, vote or consent, as the case may be, shall be counted in the determination of whether the requisite

matter was approved by the Members. In the event an action requires the consent of the remaining Members or some portion thereof, the foregoing rules of this Section shall be applied by substituting "remaining Members" for "Members" therein.

H. **Proxies.** At all meetings of the Members, a Member may vote in person or by a proxy executed in writing by the Member or by a duly authorized attorney-in-fact. Such proxy shall be filed with the Company before or at the time of the meeting and may be of any duration except that a Member who shall appear in person at a meeting shall void any outstanding proxy for so long as such Member is in attendance.

I. **Action by Members Without a Meeting.** Action required or permitted to be taken at a meeting of Members may be taken without a meeting if the action is evidenced by one or more written consents describing the action taken, signed by Members sufficient to have approved the actions or resolutions at issue had a duly called meeting been held at which all Members were in attendance and delivered to the Company for inclusion in the minutes or for filing with the Company records. Action taken under this Section is effective when the necessary Members have signed the consent, unless the consent specifies a different effective date. The record date for determining Members entitled to take action without a meeting shall be the date the first Member signs a written consent.

J. **Waiver of Notice.** When any notice is required to be given to any Member, a waiver thereof in writing signed by the person entitled to such notice, whether before, at, or after the time stated therein, shall be equivalent to the giving of such notice.

K. **Telephonic Meetings.** With respect to a particular meeting or generally with respect to future meetings, the Members may permit any or all Members to participate in the meeting by, or may permit the conduct of the meeting through, use of any means of communication by which all Members participating may simultaneously hear each other; provided the notice of such a meeting shall state that the Members may participate in such a fashion and describe how any Member may notify the Company of the Member's desire to be included in the meeting. A Member participating in such a meeting is deemed to be present in person at such meeting.

Section 6. Books, Records, Reports and Information

Each Member shall have the right to receive the reports and information required to be provided by this Agreement. Upon reasonable request, each Member, and the Member's agent and attorney shall have the right, during ordinary business hours, to inspect and copy, at the requesting Member's expense, the books and records which the Company is required, by the Act and this Agreement, to keep.

Article Three
Managers

Section 1. General

A. **Initial Managers.** Robert W. Nunn shall serve as the Initial Manager.

B. **Term.** Each Manager shall hold office until the Manager resigns, dies, dissolves (if an entity other than an individual), or is removed or replaced.

C. **Election.** Except as otherwise provided herein, Managers shall be elected by the Class A Members.

D. **Resignation.** Any Manager may resign at any time by giving written notice to the Members. The resignation of any Manager shall take effect upon receipt of notice thereof or at such later time as shall be specified in such notice; and, unless otherwise specified therein, the acceptance of such resignation shall not be necessary to make it effective. The resignation of a Manager who is also a Member shall not affect the Manager's rights as a Member and shall not constitute a withdrawal as a Member.

Section 2. Action by Managers

The rights and powers of the Managers hereunder shall be exercised by them in such manner as they may agree. In the absence of an agreement among the Managers, the following shall apply:

A. **Place of Meetings.** The Managers may designate any place, either within or outside of Oregon, as the location for any meeting of the Managers. If no designation is made, or if a special meeting be otherwise called, the place of meeting shall be the principal executive office of the Company in Oregon.

B. **Notice of Meetings.** Except as provided below, written notice stating the place, day and hour of the meeting and the purpose or purposes for which the meeting is called shall be delivered not less than 10 hours nor more than 50 days before the date of the meeting, either personally or by mail, by or at the direction of the Managers or person calling the meeting, to each Manager. If mailed, such notice shall be deemed to be delivered two calendar days after being deposited in the United States mail, addressed to the Manager at the Manager's address as it appears on the books of the Company, with postage thereon prepaid.

C. **Meeting of All Managers.** If all of the Managers shall meet at any time and place, either within or outside of Oregon, and consent to the holding of a meeting at such time and place, such meeting shall be valid without call or notice, and at such meeting lawful action may be taken.

D. **Quorum.** More than half of the Managers, represented in person or by proxy, shall constitute a quorum at any meeting of Managers. In the absence of a quorum at any such meeting, the Managers so represented may adjourn the meeting from time to time for a period not to exceed 60 days without further notice. However, if the adjournment is for more than 60 days, a notice of the adjourned meeting shall be given to each Manager. At such adjourned meeting at which a quorum shall be present or represented, any business may be transacted which might have been transacted at the meeting as originally noticed. The Managers present at a duly organized meeting may continue to transact business until adjournment, notwithstanding the withdrawal during such meeting of that number of Managers whose absence would cause less than a quorum.

E. **Manner of Acting.** If a quorum is present, the act of a Majority of the Managers who are present, in person or by proxy, shall be the act of the Managers, unless the vote of a different proportion or number is otherwise required by the Act, the Articles, or this Agreement. Unless otherwise expressly provided herein or required under applicable law, Managers who have an interest in the outcome of any particular matter upon which the Managers vote or consent may not vote or consent upon any such matter and their vote or consent, as the case may be, shall not be counted in the determination of whether the requisite matter was approved by the Managers.

F. **Proxies.** At all meetings of the Managers, a Manager may vote in person or by a proxy executed in writing by the Manager or by a duly authorized attorney-in-fact. Such proxy shall be filed with the Managers before or at the time of the meeting and may be of any duration except that a Manager who shall appear in person at a meeting shall void any outstanding proxy for so long as such Manager is in attendance.

G. **Action by Managers Without a Meeting.** Action required or permitted to be taken at a meeting of the Managers may be taken without a meeting if the action is evidenced by one or more written consents describing the action taken, signed by Managers sufficient to have approved the actions or resolutions at issue had a duly called meeting been held at which all Managers were in attendance and delivered to the Company for inclusion in the minutes or for filing with the Company records. Action taken under this Section is effective when the necessary Managers have signed the consent, unless the consent specifies a different effective date.

H. **Waiver of Notice.** When any notice is required to be given to any Manager, a waiver thereof in writing signed by the person entitled to such notice, whether before, at, or after the time stated therein, shall be equivalent to the giving of such notice.

I. **Telephonic Meetings.** With respect to a particular meeting or generally with respect to future meetings, the Managers may permit any or all Managers to participate in the meeting by, or may permit the conduct of the meeting through, use of any means of communication by which all Managers participating may simultaneously hear each other. A Manager participating in such a meeting is deemed to be present in person at such meeting.

Section 3. Authority of the Managers

Subject to the limitations and restrictions set forth in the Act, the Articles and this Agreement (including, without limitation, those set forth in this Article), the Managers shall have the sole and exclusive right to manage the business of the Company and shall have all of the rights and powers which may be possessed by Managers under the Act and the Articles including, without limitation, the right and power, on behalf and in the name of the Company, to:

A. Institute, prosecute, and complain and defend in all courts in the Company's name;

B. Purchase, take, receive, lease or otherwise acquire, own, hold, improve, use and otherwise deal in or with real or personal property or any interest in real or personal property, wherever situated;

C. Sell, convey, mortgage, pledge, create a security interest in, lease, exchange, transfer and otherwise dispose of a part of the Company Property in the ordinary course, subject, however, to the restrictions set forth in Article Two, Section 2, regarding a disposition of all or substantially all of the Property, which must be approved by the Members as set forth therein;

D. Purchase, take, receive, subscribe for or otherwise acquire, own, hold, vote, use, employ, sell, mortgage, lend, pledge, otherwise dispose of and otherwise use or deal in or with other interests in or obligations of any other Entity;

E. Make contracts or guarantees, incur liabilities, borrow money, issue Company notes or other obligations that may be convertible into other securities of the Company, or include the option to purchase other securities of the Company, or secure any of the Company's obligations by mortgage or pledge of any of the Company Property, franchises or income;

F. Lend money, invest or reinvest Company funds or receive and hold real or personal property as security for repayment of funds so loaned, invested or reinvested, including, without limitation, the loans to Managers, Members, employees and agents;

G. Be a promoter, incorporator, general partner, limited partner, member, associate or manager of any partnership, joint venture, trust or other Entity;

H. Conduct the Company's business, locate its offices and exercise the powers granted by the Act and the Articles within or without Oregon;

I. Elect or appoint Managers, employees or agents of the Company, define their duties, fix their compensation and lend them money and credit;

J. Make and alter this Agreement not inconsistent with the Articles or the laws of Oregon for managing the Company's business and regulating its affairs;

K. Pay pensions and establish pension plans, profit sharing plans and other benefit or incentive plans for any and all of its current or former Managers, Members, employees and agents;

L. Make donations for the public welfare or for charitable, scientific or educational purposes;

M. Transact any lawful business that will aid governmental policy;

N. Indemnify a Member or Manager or any other person as and to the extent not inconsistent with the provisions of the Act or the Articles;

O. Cease the Company's activities and dissolve.

Section 4. Restrictions on Authority of Managers

In addition to any other consent requirements contained in the Act, the Articles, or this Agreement, each Manager shall not have the authority to, and covenants and agrees that it shall not, do any of the following acts without the consent of a Majority of the Managers in addition to any required consent of the Members:

A. Determining the amount and kind of property available for and the timing of distributions;

B. Admitting an Additional Member;

C. Accepting a Substitute Member; or

D. Expelling a Member.

Section 5. Duties and Obligations of Managers

In addition to such other duties and obligations as Managers may have, Managers shall be responsible for the following:

A. The Managers shall cause the Company to conduct its business and operations separate and apart from that of any Manager, including, without limitation:

1. Segregating Company Property and not allowing Company Property to be commingled with the funds or other assets of, held by, or registered in the name of, any Manager,

2. Maintaining books and financial records of the Company separate from the books and financial records of any Manager, and observing all Company procedures and formalities, including, without limitation, maintaining minutes of Company meetings and acting on behalf of the Company only pursuant to due authorization of the Members,

3. Causing the Company to pay its liabilities from Company Property, and

4. Causing the Company to conduct its dealings with third parties in its own name and as a separate and independent entity.

B. The Managers shall take all actions which may be necessary or appropriate

1. For the continuation of the Company's valid existence as a limited liability company under the laws of Oregon and of each other jurisdiction in which such existence is necessary to protect the limited liability of the Members or to enable the Company to conduct the business in which it is engaged and

2. For the accomplishment of the Company's purposes, including the acquisition, development, maintenance, preservation, and operation of Company Property in accordance with the provisions of this Agreement and applicable laws and regulations.

C. The Managers shall be under a fiduciary duty to perform the duties of Managers in good faith, in a manner they reasonably believe to be in the best interests of the Company and its Members, and with such care as an ordinarily prudent person in a like position would use under similar circumstances. In discharging these duties, a Manager shall be fully protected in relying in good faith upon the records required to be maintained under this Agreement and upon such information, opinions, reports or statements by any other Manager, Member, or agent, or by any other person, as to matters the Manager reasonably believes are within such other person's professional or expert competence and who has been selected with reasonable care by or on behalf of the Company, including information, opinions, reports or statements as to the value and amount of the assets, liabilities, profits

and losses of the Company or any other facts pertinent to the existence and amount of assets from which distributions to the Members might properly be paid.

Section 6. Right to Rely on Managers.

Any Person dealing with the Company may rely (without duty of further inquiry) upon a certificate signed by any Manager as to:

A. The identity of any Manager or any Member;

B. The existence or nonexistence of any fact or facts which constitute a condition precedent to acts by a Manager or which are in any other manner germane to the affairs of the Company;

C. The Persons who are authorized to execute and deliver any instrument or document of the Company; or

D. Any act or failure to act by the Company or any other matter whatsoever involving the Company or any Member.

E. The signature of any Manager shall be necessary and sufficient to convey title to any Company Property or to execute any promissory notes, trust deeds, mortgages, or other instruments of hypothecation, and all of the Members agree that a copy of this Agreement may be shown to the appropriate parties in order to confirm the same, and further agree that the signature of any Manager shall be sufficient to execute any "statement of company" or other documents necessary to effectuate this or any other provision of this Agreement. All of the Members do hereby appoint the Managers as their attorney(s)-in-fact for the execution of any or all of the documents described in this Section.

Section 7. Liability and Indemnity of the Managers

A Manager is not personally liable for any debt, obligation or liability of the Company merely by reason of being a Manager and is not liable to the Company or its Members for monetary damages for conduct as a Manager. A Manager who performs the duties as Manager in accordance with this Agreement shall not have any liability by reason of being or having been a Manager. The Company shall indemnify the Managers and make advances for expenses to the maximum extent permitted under the Act. However, this provision shall not eliminate or limit a Manager's liability for:

A. Any breach of a Manager's duty of loyalty to the Company or its Members as described in this Agreement;

B. Acts or omissions not in good faith which involve intentional misconduct or a knowing violation of law;

C. Any unlawful distribution under the Act; or

D. Any transaction from which the Manager derives an improper personal benefit.

Article Four

Conflicts of Interest and Confidential Information

Section 1. Duty of Loyalty

Each Member and Manager shall be entitled to enter into transactions that may be considered to be competitive with, or a business opportunity that may be beneficial to, the Company, it being expressly understood that some of the Members and Managers may enter into transactions that are similar to the transactions into which the Company may enter and the Company and each Member and Manager waive the right or claim to participate therein. Notwithstanding the foregoing, Members and Managers shall account to the Company and hold, as trustee for it, any property, profit, or benefit derived by the Member or Manager, without the consent of the Members or Managers, in the formation, conduct and winding up of the Company business or from a use or appropriation by the Member or Manager of Company Property, including information developed exclusively for the Company and opportunities expressly offered to the Company.

Section 2. Other Self Interest

A Member or Manager does not violate a duty or obligation to the Company merely because the conduct furthers the interest of the Member or Manager. A Member or Manager may lend money to and transact other business with the Company. The rights and obligations of a Member or a Manager who lends money to or transacts business with the Company are the same as those of a person who is not a Member or a Manager, subject to other applicable law. No transaction with the Company shall be voidable solely because a Member or a Manager has a direct or indirect interest in the transaction if the transaction is approved or ratified as provided for herein.

Section 3. Confidential Information

The Members and Managers recognize and acknowledge that as Members or as Managers they will have access to, be provided with and, in some cases, will prepare and create Confidential Information. Neither a Member nor a Manager shall, either while a Member or a Manager or subsequent to Cessation, use or disclose any Confidential Information, either personally or for the use of others, other than in connection with the Member's or Manager's activities on behalf of the Company. Nor shall a Member or a Manager disclose any Confidential Information to any Person who is not a Member or Manager, not employed by the Company or not authorized by the Company to receive such Confidential Information, without the prior written consent of the Company. Each Member and each Manager shall use reasonable and prudent care to safeguard and protect and

prevent the unauthorized use and disclosure of Confidential Information. The obligations contained in this Section shall survive for as long as the Company, in its sole judgment of a majority of the Class A members, considers subject information to be Confidential Information.

Section 4. Conflicts of Interest

The Members hereby acknowledge that: (a) Evans, Freeby & Jennings, LLP, an Oregon limited liability partnership, ("*EF &J*") has represented the Evelyn M. Coburn in connection with the formation of the Company and the drafting of this Operating Agreement; (b) that each of the other parties has been advised to seek independent counsel in connection with such matters; and (c) that EF & J does not represent any Member either directly or indirectly through the Company. Payment of EF & J's attorney fees by the Company shall not alter or amend any of the relationships contemplated in this paragraph.

Article Five
Capital Contributions

Section 1. Initial Contributions

Each Member shall contribute the consideration described for that Member on Exhibit A or in the Member's Admission Agreement at the time and on the terms specified on Exhibit A or in the Member's Admission Agreement. If no time for Contribution is specified, the Contributions shall be made upon the Member's signing an Admission Agreement. The value of the Contributions, other than cash, shall be as set forth on Exhibit A or in the Member's Admission Agreement. No interest shall accrue on any Contribution and no Member shall have the right to withdraw or be repaid any Contribution except as provided in this Agreement. Each Additional Member shall make the Contribution described in the Member's Admission Agreement. The value of the Additional Member's Contribution and the time for making such contribution shall be set forth in the Admission Agreement.

Section 2. Additional Contributions

In addition to the Initial Contributions, the Managers may determine from time to time that Additional Contributions are needed to enable the Company to conduct its business. Upon making such a determination, the Managers shall give written notice to all Members at least ten Business Days prior to the date on which such Contribution is due. Such notice shall set forth the amount of Additional Contribution needed, the purpose for which the Contribution is needed, and the date by which the Members should contribute. Each Member shall be entitled to contribute a proportionate share of such Additional Contribution. No Member shall be obligated to make any Additional Contributions except as otherwise required by law. In the event any one or more Members do not make their Additional Contribution, the other Members shall be given the opportunity to make the Contributions not otherwise made.

Section 3. Enforcement of Commitments

In the event a Member fails to make a Contribution when due, the following may occur.

A. **Collection.** The Managers shall give any Delinquent Member a notice of the failure to make a required Contribution. If the Delinquent Member fails to make the Contribution (together with any costs associated with the failure and interest on such entire obligation at the Default Interest Rate) within ten Business Days of the giving of notice, the

Managers may take such action as is deemed appropriate, including but not limited to enforcing the Contribution obligation in the court of appropriate jurisdiction in Oregon or the state of the Delinquent Member's address as reflected in the Agreement or in the Member's Admission Agreement. Each Member expressly agrees to the jurisdiction of such courts but only for the collection of contributions.

B. **Compromises.** The Managers may compromise any Contribution obligation of a Delinquent Member.

C. **Advance of Delinquent Contribution.** The Managers may elect to allow the other Members to contribute the amount of the delinquent contribution in proportion to such Members' Sharing Ratios, with those Members who contribute ("*Contributing Members*") to contribute additional amounts equal to any amount of the delinquent contribution. The Contributing Members shall be entitled to treat the amounts contributed pursuant to this section as a loan from the Contributing Members bearing interest at the Default Interest Rate secured by the Delinquent Member's interest in the Company. Until they are fully repaid the Contributing Members shall be entitled to all distributions to which the Delinquent Member would have been entitled. Notwithstanding the foregoing, no obligation to make an contribution may be enforced by a creditor of the Company unless the Member expressly consents to such enforcement.

Section 4. Maintenance of Capital Accounts

The Company will maintain a Capital Account for each Member on a cumulative basis in accordance with federal income tax accounting principles as set forth in Treasury Regulation §1.704-1(b)(2)(iv). Each Member's Capital Account will be equal to:

A. The amount of cash and the fair market value of the property contributed to the capital of the Company by the Member (net of any liabilities secured by such contributed property assumed by the Company or to which such contributed property is subject), but excluding any loans to the Company; plus

B. The Member's allocable share under Article Six of any income and gain, or items thereof, of the Company (including any income and gain exempt from federal income tax and including any items of gain, as computed for book purposes, under Treasury Regulation §1.704-1(b)(2)(iv)(g), with respect to property properly reflected on the books of the Company at a value that differs from the adjusted tax basis of such property, but excluding items of income or gain, as computed for tax purposes, as described in Treasury Regulation §1.704-1(b)(4)(i)); less

C. The Member's allocable share under Article Six of any loss or deduction, or any items thereof of the Company (including any items of depreciation, depletion, amortization, and loss, as computed for book purposes under Treasury Regulation §1.704-1(b)(2)(iv)(g),

with respect to property properly reflected on the books of the Company at a value that differs from the adjusted tax basis of the property, but excluding items of depreciation, depletion, amortization, and loss, as computed for tax purposes as described in Treasury Regulation §1.704-1(b)(4)(i)); less

D. The amount of cash and the fair market value of property distributed to the Member (net of any liabilities secured by the distributed property assumed by the Member or to which such distributed property is subject); less

E. The Member's allocable share under Article Six of any Company expenditures described in Internal Revenue Code §705(a)(2)(B), including items treated as §705(a)(2)(B) expenditures by Treasury Regulation §1.704-1(b)(2)(i); and

F. Otherwise adjusted as required pursuant to Treasury Regulation §1.704-1(b)(2)(iv).

Article Six
Allocations

Section 1. Pro Rata Allocation

A. **Determination of Income and Loss.** The Company's profits or losses for each fiscal year will be determined as of the end of that fiscal year by the Company's accountants in accordance with federal income tax accounting principles, consistently applied, utilizing that method of accounting employed in the federal income tax informational return filed by the Company for that fiscal year.

B. **Allocation of Profits and Losses.** Subject to the special allocations and limitations set forth below, the profits and losses of the Company for each fiscal year will be allocated among the Members pro rata in proportion to their respective ownership percentage, as set forth on Exhibit "B."

C. **Special Allocations and Limitations.** The Members intend that all allocations will be pro rata; however, in order to comply with federal income tax regulations regarding the substantial economic effect of Company allocations, in the special circumstances described in such provisions, all allocations of Company income, gain, loss, and deductions are subject to the special allocations and limitations described below.

D. **No Right to Demand Return of Capital.** No Member will have any right to any distribution except as expressly provided in this Agreement. No Member will have any drawing account in the Company.

E. **Optional Revaluation of Company Property.** Upon the occurrence of (i) a subsequent contribution of money or property to the Company by a Member as an additional capital contribution, (ii) the admission of a new Member, or (iii) a distribution of money or property by the Company to a retiring or continuing Member in exchange for his or her capital interest, or otherwise as provided in this Agreement, the Manager may elect to increase or decrease the respective Capital Accounts of all Members to reflect a revaluation of all Company property on the books of the Company, but:

1. Such adjustments must be based on the fair market value of the property on the date of adjustment;

2. The adjustments must reflect the manner in which the unrealized income, gain, loss, or deduction inherent in such property (that has not been reflected in the Capital Accounts of the Members previously) would be allocated among the Members under

this Article if there were a taxable disposition of the property for the fair market value on the adjustment date;

3. Thereafter, the Capital Accounts of the Members must be adjusted in accordance with Treasury Regulation §1.704-1(b)(2)(iv)(g) for allocations to them of depreciation, depletion, amortization, and gain or loss, as computed for book purposes, with respect to the property; and

4. Thereafter, the Members' distributive shares of depreciation, depletion, amortization, and gain or loss, as computed for tax purposes, with respect to the property will be determined so as to take account of the variation between the adjusted tax basis and the book value of the property in the same manner as under Internal Revenue Code §704(c) and Treasury Regulation §1.704-1(b)(4)(i).

F. **Transfer of Membership Interest by Member During Fiscal Year.** If, after compliance with the requirements relating to transfer herein, any Member transfers any of his or her Membership Interest during any fiscal year of the Company by sale, exchange, transfer, assignment, gift, death, operation of law, or in any other manner, the income, gain, loss or expense of the Company allocable to the transferred membership interest will be prorated between the transferor and the transferee in accordance with the number of days during the fiscal year each party owned the ownership interest in question; but the gain or loss realized by the Company from an insurance recovery or a condemnation award will be allocated to the owner of the ownership interest on the date of the transaction.

Section 2. Special Allocations and Limitations

A. **Limitations on Allocations of Loss.** In no event will any Company loss or deduction, or item thereof, be allocated to any Member to the extent that the Member has, or would have as a result of the allocation, an Adjusted Capital Account Deficit in the Member's Capital Account as of the end of the Company taxable year to which the allocation relates. Any loss or deduction, the allocation of which to a Member is disallowed by the foregoing restriction, will be reallocated to those Members who do not have an Adjusted Capital Account Deficit as of the end of such taxable year.

B. **Company Minimum Gain Chargeback.** If there is a net decrease in Company Minimum Gain during any Company taxable year, each Member will be specially allocated, before any other allocation of Company income, gain, loss, or deduction for the taxable year, items of Company income and gain for the taxable year (and, if necessary, subsequent years) in proportion to and to the extent of an amount equal to each Member's share of the net decrease in Company Minimum Gain determined in accordance with Treasury Regulation §1.704-2(g)(2). This paragraph is intended to comply with, and will be interpreted consistently with, the "minimum gain chargeback" provisions of Treasury Regulation §1.704-2(f).

C. **Member Nonrecourse Debt Minimum Gain Chargeback.** Notwithstanding any other provision herein, except the foregoing paragraph, if there is a net decrease in Member Nonrecourse Debt Minimum Gain attributable to a Member Nonrecourse Debt during any taxable year of the Company, each Member who has a share of the Member Nonrecourse Debt Minimum Gain attributable to such Member Nonrecourse Debt, determined in accordance with Treasury Regulation §1.704-2(i)(5), will be specially allocated items of Company income and gain for such year (and, if necessary, subsequent years) in an amount equal to such Member's share of the net decrease in Member Nonrecourse Debt, determined in accordance with Treasury Regulation §1.704-2(i)(4). Allocations pursuant to this paragraph will be made in proportion to the respective amounts required to be allocated to each Member pursuant thereto. The items to be so allocated will be determined in accordance with Treasury Regulation §1.704-2(i)(4). This paragraph is intended to comply with, and will be interpreted consistently with, the partner nonrecourse debt minimum gain chargeback provisions of Treasury Regulation §1.704-2(i)(4).

D. **Qualified Income Offset.** Notwithstanding any other provision of the Agreement the foregoing two paragraphs, in the event any Member for any reason receives an Adjustment Item for any fiscal year that results in an Adjusted Capital Account Deficit for that Member, the Member will be specially allocated items of Company income and gain (consisting of a pro rata portion of each item of Company income, including gross income, and gain for the year) in an amount and manner sufficient to eliminate the Adjusted Capital Account Deficit, if any, created by such Adjustment Item as quickly as possible. This paragraph is intended to comply with the "qualified income offset" requirements of Treasury Regulation §1.704-1(b)(2)(ii)(d) and will be interpreted and applied consistently therewith.

E. **Offsetting Allocations.** Any special allocation of items of income, gain, loss, or deduction pursuant to this Section will be taken into account in computing subsequent allocations of Company income, gain, loss, or deduction pursuant to this Article so that the net amount of any items so allocated and all other income, gain, loss, deductions, and items thereof allocated to each Member will, to the extent possible, be equal to the net amount that would have been allocated to each Member if the special allocation had not occurred.

F. **Allocations with Respect to Contributed or Revalued Property.** Notwithstanding any other provision of this Article, in the event Internal Revenue Code ("IRC") §704(c) or IRC §704(c) principles applicable under Treasury Regulation §1.704-1(b)(2)(iv) require allocations of Company income, gain, loss, or deductions for income tax purposes in a manner different than otherwise provided in this Article, the provisions of IRC §704(c) and the regulations thereunder will control such allocations among the Members for income tax purposes. Any item of income, gain, loss, and deduction with respect to any property (other than cash) that has been contributed to the Company by a Member or that has been revalued for Capital Account purposes under this Section pursuant to Treasury Regulation §1.704-1(b)(2)(iv) and which is required or permitted to be allocated to such Member for income tax purposes under IRC §704(c) so as to take into account the variation between the tax basis of such contributed or revalued property and its fair market

value at the time of its contribution or revaluation will be allocated solely for income tax purposes in the manner so required or permitted under IRC §704(c) using the method described in Treasury Regulation §1.704-3 (or any successor regulation) selected by the Manager.

Article Seven
Distributions

Section 1. General

Notwithstanding anything contained in this Agreement or the Articles to the contrary, no distribution shall be made in violation of ORS 63.229. If any such wrongful distribution is made, the provisions of ORS 63.235 shall determine each Person's liability and the remedy, if any, therefor.

Section 2. Distributions

Except as otherwise provided in this Agreement, the amount, if any, to be distributed shall be determined by the Managers. Unless expressly required otherwise, all distributions to the Members or to Transferees shall be in proportion to their percentage of ownership interest, as set forth on Exhibit "B" hereto.

Section 3. Liquidating Distributions

In the event the Company is dissolved and the business and affairs are wound up, distributions shall be made pursuant to Article Eleven.

Section 4. Amounts Withheld

All amounts withheld, pursuant to the Code or any provision of any state or local tax law with respect to any payment, distribution or allocation to the Members, shall be treated as amounts distributed to the Members pursuant to this for all purposes under this Agreement. The Managers are authorized to withhold from distributions, or with respect to allocations, and to pay over to any federal, state or local government any amounts required to be so withheld pursuant to the Code or any provisions of any other federal, state or local law and shall allocate any such amounts to the Members with respect to which such amounts were withheld.

Article Eight
Additional Members

Section 1. Admission

Persons may be added as Additional Members upon terms and conditions approved by the Members and Managers. Notwithstanding the foregoing, a Person shall not become an Additional Member unless and until such Person:

A. Becomes a party to this Agreement as a Member by signing an Admission Agreement and executes such documents and instruments as the Managers may reasonably request as may be necessary or appropriate to confirm such Person as a Member in the Company and such Person's agreement to be bound by the terms and conditions hereof;

B. Provides the Company with evidence satisfactory to counsel for the Company that such Person has made each of the representations and undertaken each of the warranties contained in the Additional Member's Admission Agreement; and

C. If the Person is not an individual of legal majority, the Person provides the Company with evidence satisfactory to counsel for the Company of the authority of the Person to become a Member and to be bound by the terms and conditions of this Agreement.

Section 2. Accounting

No Additional Member shall be entitled to any retroactive allocation of losses, income or expense deductions incurred by the Company. The Managers may at the time an Additional Member is admitted, close the Company books (as though the Company's Fiscal Year had ended), make pro rata allocations of loss, income and expense deductions to an Additional Member for that portion of the Company's Fiscal Year in which such Member was admitted, and equitably adjust capital accounts and book values of assets in accordance with the provisions of Code Section 706(d) and the Regulations promulgated thereunder. ORS 63.185(4) shall not apply in the event of the admission of an Additional Member.

Article Nine
Transfers of Interests

Section 1. Restriction on Transfers

Except as otherwise permitted by this Agreement, no Member or Transferee shall Transfer all or any portion of such Person's interests in the Company. In the event that any Member or Transferee pledges or otherwise encumbers any of such Person's interests in the Company as security for the payment of a debt, any such pledge or hypothecation shall not constitute a Transfer but shall only be made:

A. Pursuant to a pledge or hypothecation agreement that requires the pledgee or secured party to be bound by all of the terms and conditions of this Article; and

B. Upon the consent of the Members.

A Transfer of an ownership interest in a Member or Transferee that is an Entity shall not constitute a Transfer of such Entity's interests in the Company.

Section 2. Permitted Transfers

Subject to the conditions and restrictions set forth in this Article, a Member or Transferee may at any time Transfer all or any portion of such Person's interests in the Company to:

A. Any other Member;

B. Any member of the transferor's Family;

C. Any revocable living trust created by a Member, where the Member retains the power to revoke that trust;

D. The transferor's executor, administrator, trustee, or personal representative to whom such interests are Transferred at death or involuntarily by operation of law;

E. Any Purchaser in accordance with this Article.

Section 3. Conditions to Permitted Transfers

A Transfer shall not be treated as a Permitted Transfer unless and until the following conditions are satisfied:

A. Except in the case of a Transfer of a Person's interests in the Company at death or involuntarily by operation of law, the transferor and Transferee shall execute and deliver to the Company such documents and instruments of conveyance as may be necessary or appropriate in the opinion of counsel to the Company to effect such Transfer and to confirm the agreement of the Transferee to be bound by the provisions of this Article. In the case of a Transfer of a Person's interests in the Company at death or involuntarily by operation of law, the Transfer shall be confirmed by presentation to the Company of legal evidence of such Transfer, in form and substance satisfactory to counsel to the Company. In all cases, the Company shall be reimbursed by the transferor and/or Transferee for all costs and expenses that it reasonably incurs in connection with such Transfer.

B. Except in the case of a Transfer at death or involuntarily by operation of law, the transferor shall furnish to the Company an opinion of counsel, which counsel and opinion shall be satisfactory to the Company, that the Transfer will not cause the Company to terminate for federal income tax purposes or under the Act and that such Transfer will not cause the application of the rules of Code Sections 174(g)(1)(B) and 174(h) (generally referred to as the "tax exempt entity leasing rules") or similar rules to apply to the Company, Company Property, the Managers, or the Members.

C. The transferor and Transferee shall furnish the Company with the Transferee's taxpayer identification number, sufficient information to determine the Transferee's initial tax basis in the Person's interests in the Company Transferred, and any other information reasonably necessary to permit the Company to file all required federal and state tax returns and other legally required information statements or returns. Without limiting the generality of the foregoing, the Company shall not be required to make any distribution otherwise provided for in this Agreement with respect to any Transfer until it has received such information.

D. Except in the case of a Transfer of a Person's interests in the Company at death or involuntarily by operation of law, either:

1. Such a Person's interests in the Company shall be registered under the Securities Act of 1933, as amended, and any applicable state securities laws, or

2. The transferor shall provide an opinion of counsel, which opinion and counsel shall be satisfactory to the Company, to the effect that such Transfer is exempt from all applicable registration requirements and that such Transfer will not violate any applicable laws regulating the Transfer of securities.

E. Except in the case of a Transfer of a Person's interests in the Company at death or involuntarily by operation of law, the transferor shall provide an opinion of counsel, which opinion and counsel shall be reasonably satisfactory to the other Members, to the effect that such Transfer will not cause the Company to be deemed to be an "investment company" under the Investment Company Act of 1940.

Section 4. Right of First Refusal

A. **Limitation on Transfers.** No Transfer may be made hereunder unless the Seller has received a bona fide written offer (the "*Purchase Offer*") from a Person (the "*Purchaser*") to purchase the Offered Interest for a purchase price (the "*Offer Price*"), in writing signed by the Purchaser.

B. **Notice.** Notice of that Purchase Offer, together with a copy thereof, must be given by the Seller to the Company and each Member. First the Company, and then if the Company declines, then the other Members, shall have the right to purchase the Offered Interest at either: (i) the same terms designated in the Purchase Offer (but without the necessity of making any earnest money deposit); or (ii) upon the terms and at the price set forth in Section 5, Paragraphs A and B, below; whichever the purchaser (whether that be the Company or any or all of the other Members) shall choose.

C. **Consideration Period.** The Company shall have 120 days after receipt of Notice and a copy of the Purchase Offer to exercise its right of purchase. If the Company chooses not to exercise that right, then the other Members shall have a period of 120 days after the expiration of the Company's Period within which to exercise their rights of purchase, on a pro rata basis; if any of the Members choose not to exercise their rights of purchase, then the other Members may opt to exercise those rights in their stead, for their own benefit.

D. **Acceptance.** Written notice of the exercise of rights to purchase shall be sent to the Seller. Thereafter, the purchaser shall have a period of 90 days within which to close the purchase at such time and at such location as the purchaser may determine.

E. **Sale Pursuant to Purchase Offer.** If neither the Company nor any Members opt to exercise their rights to purchase, then the Seller may sell the Offered Interest to the Purchaser at any time within 15 days after the expiration of the Consideration Period, provided that such sale shall be made on terms no more favorable to the Purchaser than the terms contained in the Purchase Offer and provided further that such sale complies with other terms, conditions, and restrictions of this Agreement that are applicable to sales of a Person's interest in the Company and are not expressly made inapplicable to sales occurring hereunder. In the event that the Offered Interest is not sold and the transaction not closed in accordance with the terms of the preceding sentence, the Offered Interest shall again become subject to all of the conditions and restrictions of this Agreement.

Section 5. Option to Purchase at Death

Upon the death of a Member, the Company shall have the option to purchase the membership interest of the deceased Member, upon the terms and conditions set forth in this paragraph. The option will expire 120 days after the Company has received written notification of the death of the deceased Member and the appointment of the deceased Member's appropriate fiduciary (whether that be a court-appointed personal representative, or whether it be a successor trustee under a trust which owns the Membership Interest ("*Fiduciary*"). In the event that the Company does not choose to exercise this option to purchase, then the other remaining Members shall have the option to purchase the membership interest of the deceased Member, upon the terms and conditions set forth in this paragraph. Their option commences upon the expiration of the Company's option and continues for a period of 120 days thereafter. The option may be exercised only in writing and by delivery to the appropriate fiduciary for the deceased Member.

A. **Valuation of Member's Interest.** Upon an election by the Company or the remaining Members ("*Purchaser*") to purchase the interest of a deceased Member, the value of the deceased Member's interest shall be determined by agreement of the parties, or, if they cannot agree, by a third party appraiser acceptable to both the Purchaser and the duly authorized fiduciary of the deceased Member (whether that be a duly appointed personal representative or a successor trustee) ("*Seller*"). If agreement cannot be reached as to an appropriate appraiser, then either party may petition the Presiding Judge of Marion County Circuit Court to appoint an appraiser, and the costs of that petition process shall be divided equally between the parties. Prior to selecting the third-party appraiser, each party shall provide to the other the amount each will accept as the value of the deceased Member's interest. In the event that the value established by the third-party appraiser is equal to or less than the value proposed by the Purchaser, the cost of the appraisal shall be paid solely by the Seller; in the event that the value established by the third-party appraiser is equal to or greater than the Seller's proposed value, then the cost of the appraisal shall be paid solely by the Purchaser. In the event that the value established by the third-party appraiser is between the values established by both parties, the cost of the appraisal shall be divided equally.

B. **Payment for Member's Interest.** The purchase price for the deceased Member's interest shall be paid in 30 substantially equal, consecutive annual payments, including principal and interest. Interest shall accrue at the prime rate in effect on the date of the event giving rise to the election to purchase as quoted by the Wall Street Journal or, if that publication becomes unavailable, another reputable source chosen by vote of the Members. The first payment shall be made not later than one year following such date. The Purchaser may prepay the remaining amount of the purchase price at any time.

Section 6. Prohibited Transfers

Any purported Transfer of a Person's interests in the Company that is not a Permitted Transfer shall be null and void and of no force or effect whatever; provided that, if the Company is required to recognize a Transfer that is not a Permitted Transfer (or if the Company, in its sole discretion, elects to recognize a Transfer that is not a Permitted Transfer), the interest Transferred shall be strictly limited to the transferor's Economic Rights with respect to the Transferred interests, with amounts otherwise available for distributions first applied (without limiting any other legal or equitable rights of the Company) to satisfy any debts, obligations, or liabilities for damages that the transferor or Transferee may have to the Company. In the case of a Transfer or attempted Transfer of a Person's interests in the Company that is not a Permitted Transfer, the parties engaging or attempting to engage in such Transfer shall be liable to indemnify and hold harmless the Company and the other Members from all costs, liability, and damage that any of such indemnified Persons may incur (including, without limitation, incremental tax liability and lawyers' fees and expenses) as a result of such Transfer or attempted Transfer and efforts to enforce the indemnity granted hereby.

Section 7. Rights and Obligations Arising out of Transfers

A. A Transfer (including a Permitted Transfer) of a Person's interest in the Company to a Person who is not a Member does not itself dissolve the Company or entitle the Transferee to become a Member or exercise any Management Rights. A Person who is not a Member who acquires a Person's interests in the Company but who is not admitted as a Substitute Member shall be entitled only to the Economic Rights with respect to such interests, and shall have no right to any information or accounting of the affairs of the Company, and shall not be entitled to inspect the books or records of the Company.

B. An assignment of an interest in the Company by a Member (the "*Assigning Member*") to any other Member (the "*Acquiring Member*") shall cause the Acquiring Member's Membership Interest to increase to the extent of such assigned interest (including both Economic Rights and Management Rights) and the Assigning Member's Membership Interest to decrease to the extent of the such assigned interest. If a Member acquires an interest in the Company from a Transferee, the Member shall acquire both the Economic Rights with respect to such interest and the Management Rights with respect to such interest, and the Management Rights of the Member from whom the Transferee's interest was obtained shall decrease accordingly. The Assigning Member shall not be released from liabilities to the Company, including without limitation Contribution obligations, but notwithstanding this the Acquiring Member shall be liable for any obligation to make Contributions with respect to the interest in the Company that the Acquiring Member so acquires. ORS 63.185(4) shall not apply to an Acquiring Member's acquisition of an interest in the Company as set forth above.

C. In the event a court of competent jurisdiction charges a Membership Interest with the payment of an unsatisfied amount of a judgment with interest, to the extent so charged the judgment creditor shall be treated as an Transferee.

D. Unless and until admitted as a Substitute Member, a Transferee shall only enjoy the rights of an assignee, as defined in ORS 63.249.

Section 8. Acceptance of Transferee as Substitute Member

A. Subject to the other provisions of this Article, a Transferee may be admitted to the Company as a Substitute Member, with all of the Management Rights of a Member, to the extent Transferred, only upon satisfaction of all of the conditions set forth below.

1. All Managers, and Remaining Members with aggregate Sharing Ratios in excess of 80% of the remaining Membership Interests, consent to the admission.

2. The Transferee shall become a party to this Agreement as a Member by executing such documents and instruments as the Managers may reasonably request as may be necessary or appropriate to confirm such Transferee as a Member in the Company and such Transferee's agreement to be bound by the terms and conditions hereof.

3. The Transferee shall pay or reimburse the Company for all reasonable legal, filing, and publication costs that the Company incurs in connection with the admission of the Transferee as a Member with respect to the Transferred interests.

4. The Transferee shall provide the Company with evidence satisfactory to counsel for the Company that such Transferee has made each of the representations and undertaken each of the warranties contained in the documents and instruments referred to above.

5. If the Transferee is not an individual of legal majority, the Transferee shall provide the Company with evidence satisfactory to counsel for the Company of the authority of the Transferee to become a Member and to be bound by the terms and conditions of this Agreement.

6. A Transferee who becomes a Substitute Member has, to the extent of the interests assigned, the rights and powers and is subject to the restrictions and liabilities of a Member under the Act, the Articles and this Agreement, and, to the extent of the interests assigned, is also liable for any obligations of the transferor to make Contributions, but is not obligated for liabilities reasonably unknown to the Transferee at the time the Transferee becomes a Member.

7. Neither the Member and any subsequent transferor is released from any liability to the Company by virtue of such Transfer or admission, even if the Transferee becomes a Substitute Member and even if the Member whose Membership Interest is being transferred ceases to be a Member by virtue of such act, but the Member ceases to be a Member when one or more Transferees become Substitute Members with respect to the Member's entire Membership Interest.

B. ORS 63.185(4) shall not apply in the event of the admission of a Substitute Member.

Section 9. Distributions and Allocations re: Transfers

If any Person's interest in the Company is Transferred during any Fiscal Year in compliance with the provisions of this Article, profits, losses, each item thereof, and all other items attributable to such interest for such Fiscal Year shall be divided and allocated between the transferor and the Transferee by taking into account their varying interests during such Fiscal Year in accordance with Code Section 706(d), using any conventions permitted by law and selected by the Managers. All distributions on or before the date of such Transfer shall be made to the transferor, and all distributions thereafter shall be made to the Transferee. Solely for purposes of making such allocations and distributions, the Company shall recognize such Transfer not later than the end of the calendar month during which it is given notice of such Transfer, provided that, if the Company is given notice of a Transfer at least ten Business Days prior to the Transfer the Company shall recognize such Transfer as the date of such Transfer, and provided further that, if the Company does not receive a notice stating the date such interest was Transferred and such other information as the Managers may reasonably require within 30 days after the end of the Fiscal Year during which the Transfer occurs, then all such items shall be allocated, and all distributions shall be made, to the Person who, according to the books and records of the Company, was the owner of the interest on the last day of the Fiscal Year during which the Transfer occurs. Neither the Company nor the Managers shall incur any liability for making allocations and distributions in accordance with the provisions of this Section, whether or not the Company or the Managers have knowledge of any Transfer of ownership of any interest.

Article Ten
Cessation of a Member

Section 1. Cessation

A Person shall cease to be a Member upon the happening of any of the following events:

A. The withdrawal of a Member;

B. The expulsion of a Member;

C. The Bankruptcy of a Member;

D. The transfer of a Member's entire membership interest;

E. In the case of a Member who is a natural person, the death of the Member or the entry of an order by a court of competent jurisdiction adjudicating the Member incompetent to manage the Member's person or estate;

F. In the case of a Member who is acting as a Member by virtue of being trustee of a trust, the termination of the trust (but not merely the substitution of a new trustee);

G. In the case of a Member that is a separate Entity other than a corporation, the dissolution and commencement of winding up of the separate Entity;

H. In the case of a Member that is a corporation, the filing of articles of dissolution or its equivalent, for the corporation or the revocation of its charter; or

I. In the case of an estate, the distribution by the fiduciary of the estate's entire interest in the Company.

Section 2. Withdrawal

A Member may voluntarily withdraw from the Company upon six months' written notice. Upon withdrawal, the Member shall enjoy only Economic Rights and no Management Rights, in accordance with ORS 63.249.

Section 3. Expulsion

A Member may be expelled from the Company upon a determination by the Managers that the Member has been guilty of wrongful conduct that adversely and materially affects the business or affairs of the Company, or has willfully and persistently committed a material breach of the Articles or this Agreement, or otherwise breached a duty owed to the Company or the other Members, to the extent that it is not reasonably practicable to carry on the business or affairs of the Company with the Member. An expelled Member shall be treated as having withdrawn voluntarily from the Company on the date of the expulsion determination and withdrawn in breach of this Agreement.

Section 4. Rights upon Cessation

In the event that any Person ceases to be a Member, the Person shall be treated as an assignee, enjoying only Economic Rights and no Management Rights, pursuant to ORS 63.265 and 63.249, from the date of Cessation until such time as the Person has received all distributions to which the Person is or may be due under this Agreement.

Article Eleven
Dissolution and Winding Up

Section 1. Covenant Not to Cause Dissolution

Except as otherwise permitted by this Agreement, each Member hereby covenants and agrees not to take any voluntary action that would cause the Company to dissolve and notwithstanding any provision of the Act, the Company shall not dissolve prior to the occurrence of a Dissolution Event.

Section 2. Dissolution Events

The Company shall dissolve and commence winding up and liquidating upon the first to occur of any of the following Dissolution Events:

A. The vote of the Members to dissolve, wind up, and liquidate the Company;
B. The happening of any other event that makes it unlawful, impossible, or impractical to carry on the business of the Company; or
C. The occurrence of an event which results in the Company having no Members.

Notwithstanding anything in ORS 63.621 to the contrary and except for the events which may cause judicial and administrative dissolution under ORS 63.621(5) and (6), the foregoing events are the exclusive events which may cause the Company to dissolve.

Section 3. Continuation

Upon the occurrence of any Dissolution Event set forth above, the Company shall not be dissolved or required to be wound up if, within 120 days after such event, 80% of the remaining Class A Members agree to continue the business of the Company. Upon any such election to continue the business, all Members shall be bound thereby and shall be deemed to have consented thereto. Unless such an election is made within the 120 day period, the Company shall wind up its affairs. If such an election is made within the 120 day period, the Company shall continue until the occurrence of another Dissolution Event; provided that the right to continue the business of the Company shall not exist and may not be exercised unless the Company has received an opinion of counsel, in a form and content satisfactory to the Company, that the Company would not cease to be treated as a partnership for federal income tax purposes upon the exercise of such right to continue.

Section 4. Winding Up

Upon the occurrence of a Dissolution Event and unless the election to continue the business of the Company is made, the Company shall continue solely for the purposes of winding up its affairs in an orderly manner, liquidating its assets, and satisfying the claims of its creditors and Members, and no Member shall take any action that is inconsistent with, or not necessary to or appropriate for, the winding up of the Company's business and affairs. To the extent not inconsistent with the foregoing, all obligations in this Agreement shall continue in full force and effect until such time as the Company Property has been distributed. The Manager shall be responsible for overseeing the winding up and dissolution of the Company, shall take full account of the Company's liabilities and Property, shall cause the Company Property to be liquidated as promptly as is consistent with obtaining the fair value thereof, and shall cause the proceeds therefrom, to the extent sufficient therefor, to be applied and distributed in the following order:

A. *First*, to the payment and discharge of all of the Company's debts and liabilities to creditors other than Members;

B. *Second*, to the payment and discharge of all of the Company's debts and liabilities to Members;

C. *Third*, the balance, if any, to the Members in accordance with their share of the profits, after giving effect to all distributions and allocations for all periods.

Section 5. Rights of Members

Except as otherwise provided in this Agreement,

A. Each Member shall look solely to the assets of the Company for the return of Contributions and shall have no right or power to demand or receive property other than cash from the Company, and

B. No Member shall have priority over any other Member as to the return of Contributions, distributions, or allocations.

Section 6. Notice of Dissolution

In the event a Dissolution Event occurs or an event occurs that would, but for provisions of Section 3 above, result in a dissolution of the Company, the Managers having knowledge of such event shall, within 30 days thereafter, provide written notice thereof to each of the Members and to all other parties with whom the Company regularly conducts business (as determined in the discretion of the

Members) and shall publish notice thereof in a newspaper of general circulation in each place in which the Company regularly conducts business (as determined in the discretion of the Members).

Article Twelve

Taxes

Section 1. Elections

The Managers may make any tax elections for the Company allowed under the Code or the tax laws of any state or other jurisdiction having taxing jurisdiction over the Company, including but without limitation, elections:

A. To adjust the basis of Company Property pursuant to Code Sections 754, 734(b), and 743(b), or comparable provisions of state or local law, in connection with transfers of interests in the Company and Company distributions;

B. With the consent of the Members, to extend the statute of limitations for assessment of tax deficiencies against Members with respect to adjustments to the Company's federal, state, or local tax returns; and

C. To the extent provided in Code Sections 6221 through 6231, to represent the Company, the Managers, and the Members before taxing authorities or courts of competent jurisdiction in tax matters affecting the Company, the Managers, and the Members in their capacities as Managers or as Members, and to file any tax returns and to execute any agreements or other documents relating to or affecting such tax matters, including agreements or other documents that bind the Members with respect to such tax matters or otherwise affect the rights of the Company, the Managers, and Members.

Section 2. Taxes of Taxing Jurisdictions

To the extent that the laws of any taxing jurisdiction require, each Member requested to do so by the Managers will submit an agreement indicating that the Member will make timely income tax payments to the taxing jurisdiction and that the Member accepts personal jurisdiction of the taxing jurisdiction with regard to the collection of income taxes attributable to the Member's income, and interest and penalties assessed on such income. If the Member fails to provide such agreement, the Company may withhold and pay over to such taxing jurisdiction the amount of tax, penalty and interest determined under the laws of the taxing jurisdiction with respect to such income. Any such payments with respect to the income of a Member shall be treated as a distribution for purposes of Article Seven. The Managers may, where permitted by the rules of any taxing jurisdiction, file a composite, combined or aggregate tax return reflecting the income of the Company and pay the tax, interest and penalties of some or all of the Members on such income to the taxing jurisdiction, in

which case the Company shall inform the Members of the amount of such tax interest and penalties so paid.

Section 3. Tax Matters Partner

The Managers shall designate one of their number or, if there are no Managers eligible to act as tax matters partner, any Member as the tax matters partner of the Company pursuant to Code Section 6231(a)(7). Any Member designated as tax matters partner shall take such action as may be necessary to cause each other Member to become a notice partner within the meaning of Section 6223 to the Code. Any Member who is designated tax matters partner may not take any action contemplated by Code Sections 6222 through 6232 without the consent of the Managers.

Article Thirteen

Banking, Books, Records, and Accountings

Section 1. Banking

All funds of the Company will be deposited in a separate bank account or in an account or accounts as will be determined by the Manager. Such funds may be withdrawn from such account or accounts upon the signature of such person or persons as are designated by the Manager.

Section 2. Books, Records, and Accountings

At the expense of the Company, the Managers shall maintain records and accounts of all operations and expenditures of the Company. At a minimum the Company shall keep at its principal place of business the following records:

A. A current list of the full name and last known business, residence, or mailing address of each Member and Manager, both past and present;

B. A copy of the Articles and all amendments thereto, together with executed copies of any powers of attorney pursuant to which any amendment has been executed;

C. Copies of the Company's federal, state, and local income tax returns and reports, if any, for the three most recent years;

D. Copies of the Company's currently effective written operating agreement and all amendments thereto, copies of any writings permitted or required under the Act and copies of any financial statements of the Company for the three most recent years;

E. Minutes of every meeting of the Members and the Managers and any written consents obtained from Members or Managers for actions taken without a meeting; and

F. A statement prepared and certified as accurate by the Managers which describes the amount of cash and a description and statement of the agreed value of other Property or consideration contributed by each Member and which each Member has agreed to contribute in the future, the times at which or events on the occurrence of which any additional Contributions agreed to be made by each Member are to be made, and if agreed upon, the time at which or the events on the occurrence of which the Company is dissolved and its affairs wound up.

G. The Managers shall provide reports at least annually to the Members at such time and in such manner as the Managers may determine reasonable. In addition, if the Company indemnifies or advances expenses to a Manager in connection with a proceeding by or in the right of the Company, the Company shall report the indemnification or advance in writing to the Members.

Article Fourteen

Amendment

This Agreement may be amended, restated or modified from time to time only by a written instrument adopted by the Members and Managers, as set forth in Articles Two and Three. No Member or Manager shall have any vested rights in this Agreement which may not be modified through an amendment to this Agreement.

Article Fifteen

Definitions

The following terms used in this Agreement shall have the following meanings (unless otherwise expressly provided herein);

A. **"Act"** shall mean the Oregon Limited Liability Company Act.

B. **"Additional Contribution"** shall mean any Contribution made pursuant to Article Five, Section B.

C. **"Additional Member"** shall mean a Member, other than an Initial Member, who has acquired a Membership Interest from the Company.

D. **"Adjusted Capital Account Deficit"** shall mean a deficit balance in any Member's Capital Account at the end of any fiscal year, after adjustment to reflect any Adjustment Items, to the extent that the deficit exceeds the amount of a Member's shares of Company Minimum Gain and Member Nonrecourse Debt Minimum Gain (if any) that the Member is deemed to be obligated to restore pursuant to Treasury Regulation §§1.704-2(g)(1) and 1.704-2(i)(5).

E. **"Adjustment Items"** shall mean adjustments, allocations, and distributions described in Treasury Regulation §§1.704-1(b)(2)(ii)(d)(4), (5), and (6).

F. **"Admission Agreement"** shall mean the agreement between a Member and the Company described in Section YZ below; Article Five, Sections A and C; and Article Eight, Section A.

G. **"Agreement"** shall mean this Operating Agreement as originally executed and as amended or restated from time to time.

H. **"Articles"** shall mean the Articles of Organization of the Company as filed with the Secretary of State of Oregon as the same may be amended or restated from time to time.

I. **"Bankruptcy"** shall mean, with respect to any Person, bankruptcy as defined in ORS 63.001(3).

J. **"Business Day"** shall mean any day other than Saturday, Sunday or any legal holiday observed in Oregon.

K. **"Capital Account"** shall mean the account maintained with respect to a Member determined in accordance with Article Five, Section 4.

L. **"Capital Interest"** shall mean a Person's positive Capital Account as it may be adjusted from time to time.

M. **"Cessation"** shall mean any action which causes a Person to cease to be Member as described in Article Ten hereof.

N. **"Code"** shall mean the Internal Revenue Code of 1986 or corresponding provisions of subsequent superseding federal revenue laws.

O. **"Company"** shall refer to BATTLE CREEK LLC.

P. **"Company Minimum Gain"** shall mean, as of any date, the amount of gain, if any, that would be recognized by the Company for federal income tax purposes, as if it disposed of property in a taxable transaction on that date in full satisfaction of any nonrecourse liability secured by the property, computed in accordance with Treasury Regulation §1.704-2(d)(1).

Q. **"Company Property"** shall mean any Property owned by the Company.

R. **"Confidential Information"** means information or material proprietary to the Company or proprietary to others and entrusted to the Company, whether written or oral, tangible or intangible, which a Member obtains knowledge of through or as a result of the Member's activities on behalf of the Company. Confidential Information may include, without limitation, data, know-how, trade secrets, designs, plans, drawings, specifications, reports, customer and supplier lists, pricing information, marketing techniques and materials, and manufacturing techniques and processes, whether related to the Company's past, present or future business activities, research or development, or products.

S. **"Contributing Members"** shall mean those Members making Contributions as a result of the failure of a Delinquent Member to make Contributions as described in Article Five.

T. **"Contribution"** shall mean, with respect to any Member, the amount of money and the initial value of any Property (other than money) or the fair market value of services contributed or to be contributed to the Company with respect to the interest in the Company held by such Person.

U. **"Default Interest Rate"** shall mean the lesser of any maximum legal rate or the then-current prime rate quoted by United States National Bank of Oregon, N.A. plus 3 percent.

V. **"Delinquent Member"** shall mean a Member or Transferee who has failed to fulfill a Contribution obligation.

W. **"Dissolution Event"** shall mean the events identified in Article Eleven, Section B.

X. **"Economic Rights"** shall mean, with respect to any Membership Interest, a Person's share of the profits, losses, capital and distributions of Company Property pursuant to the Act, the Articles and this Agreement but shall not include any Management Rights.

Y. **"Effective Date"** shall mean the date the Articles are filed.

Z. **"Entity"** shall mean any general partnership, limited partnership, limited liability company, corporation, joint venture, trust, business trust, cooperative or association or any foreign trust or foreign business organization.

AA. **"Family"** shall mean a Member's spouse, natural or adoptive lineal ancestors or descendants, and trusts for which any of them are more than insignificant beneficiaries.

BB. **"Fiscal Year"** shall mean the Company's fiscal year, which shall be determined pursuant to Code Section 706.

CC. **"Initial Contribution"** shall mean the initial Contribution made pursuant to Exhibit "A".

DD. **"Initial Members"** shall mean those Persons identified on Exhibit A attached hereto and made a part hereof by this reference who have executed the Agreement and an Admission Agreement.

EE. **"Majority"** shall mean, with respect to the Members or the remaining Members, greater than 50%, in terms of Sharing Ratios, of all the Members or all the remaining Members required to vote on a given topic; provided however, in the case of a meeting of the Members at which a quorum is present, "Majority" shall mean greater than 50%, in terms of Sharing Ratios, of the Members or remaining Members who are present, in person or by proxy at such meeting.

FF. **"Management Right"** shall mean the right of a Member to participate in the management of the Company, including the rights to information and to consent or approve actions of the Members.

GG. **"Manager"** shall mean a Person designated or selected to manage the affairs of the Company under this Agreement.

HH. **"Member"** shall mean each of the parties who executes a counterpart of this Agreement as an Initial Member and each of the parties who may hereafter become Additional or Substitute Members.

II. **"Membership Interest"** shall mean a Member's entire interest in the Company including such Member's Economic Rights and Management Rights.

JJ. **"Member Nonrecourse Debt"** has the same meaning as "partner nonrecourse debt" set forth in Treasury Regulation §1.704-2(b)(4).

KK. **"Member Nonrecourse Debt Minimum Gain"** means an amount, with respect to each Member Nonrecourse Debt, equal to the Company Minimum Gain that would result if such Member Nonrecourse Debt were treated as a Nonrecourse Liability, determined pursuant to Treasury Regulation §1.704-2(i)(2) and (3).

LL. **"Member Nonrecourse Deductions"** has the same meaning as "partner nonrecourse deductions" set forth in Treasury Regulation §1.704-2(i)(2). The amount of Member Nonrecourse Deductions with respect to a Member Nonrecourse Debt for a Company fiscal year equals the excess, if any, of: (A) the net increase, if any, in the amount of the Company Minimum Gain attributable to such Member Nonrecourse Debt during the fiscal year over (B) the aggregate amount of any distribution during the fiscal year to the Member that bears the economic risk of loss for such Member Nonrecourse Debt to the extent the distributions are from proceeds of the Member Nonrecourse Debt and are allocable to an increase in Member Nonrecourse Debt Minimum Gain attributable to the Member Nonrecourse Debt, determined pursuant to Treasury Regulation §1.704-2(i).

MM. **"Net Cash Flow"** shall mean, for any given fiscal period of the Company, the amount by which (1) the gross cash receipts received by the Company during that fiscal period exceed (2) the sum, without duplication, of (a) all cash operating expenses of the Company during that fiscal period, (b) debt service payments made during that fiscal period on all indebtedness of the Company, (c) payments made during that fiscal period on account of the maintenance, leasing, repair, replacement, or improvement of property of the Company, and (d) all amounts allocated during that fiscal period, in the reasonable judgment of the Manager, to reserves established to meet the reasonable needs of the business, including working capital and capital improvement requirements and for reserves for unknown or unfixed liabilities or contingencies of the Company.

NN. **"Nonrecourse Deductions"** has the meaning set forth in Treasury Regulation §1.704-2(c). The amount of Nonrecourse Deduction for a Company fiscal year equals excess, if any, of the net increase, if any, in the amount of Company Minimum Gain during that fiscal year over the aggregate amount of any distributions during that fiscal year of proceeds of a Nonrecourse Liability that are allocable to an increase in Company Minimum Gain, determined pursuant to Treasury Regulation §1.704-2(c).

OO. **"Nonrecourse Liability"** has the meaning set forth in Treasury Regulation §1.704-2(b)(3).

PP. **"Permitted Transfer"** shall mean a Transfer of a Person's interest in the Company in accordance with Article Nine, Section 2.

QQ. **"Person"** shall mean any individual or Entity, and the heirs, executors, administrators, legal representatives, successors, and assigns of such "Person" where the context so permits.

RR. **"Property"** shall mean any property, real or personal, tangible or intangible, including money and any legal or equitable interest in such property, but excluding services and promises to perform services in the future.

SS. **"Regulations"** shall mean proposed, temporary and final regulations promulgated under the Code in effect as of the date of filing the Articles and the corresponding sections of any regulations subsequently issued that amend or supersede such regulations.

TT. **"Sharing Ratio"** shall mean the proportion that a Person's share of profits bears to that of all Person's entitled to share in profits.

UU. **"Substitute Member"** shall mean a Person who would otherwise be a Transferee but who has been admitted to all of the rights of membership (including Management Rights) as to the portion of a Member's Membership Interest being Transferred; provided however, it shall not include an existing Member who increases the Member's interest by acquiring an interest in the Company from another Person.

VV. **"Transferee"** shall mean the owner of Economic Rights who is not a Member and as such has no Management Rights.

WW. **"Transfer"** shall mean, as a noun, any voluntary or involuntary transfer, sale, or other disposition and, as a verb, voluntarily or involuntarily to transfer, sell, or otherwise dispose of; and shall include, without limitation, any sale, assignment, exchange, gift, devise, bequest, descent, pledge, hypothecation, lien, encumbrance, attachment, levy, foreclosure, sale by legal process, or other change in ownership, whether voluntary, involuntary, or by operation of law. The term transfer as used in this Agreement shall also include any filing by or against a member under any bankruptcy, reorganization, receivership, or other laws providing relief for debtors (collectively, Debtor Relief Laws). The term transfer shall not, however, include any gift, assignment, or sale to the Company, nor shall it include any such transfer in trust for the benefit of the spouse, children, or descendants of a member, or any transfer by a member to his or her spouse of an undivided interest in any membership interest, provided that in either such case, the transferring member shall retain all voting rights with respect to the membership interest so transferred.

Article Sixteen

Miscellaneous

Section 1. Application of Oregon Law

This Agreement, and the application of interpretation hereof, shall be governed exclusively by its terms and by the laws of Oregon, and specifically the Act.

Section 2. Construction

Whenever the singular number is used in this Agreement and when required by the context, the same shall include the plural and vice versa, and the masculine gender shall include the feminine and neuter genders and vice versa.

Section 3. Counterparts

This Agreement may be executed in counterparts, each of which shall be deemed an original but all of which shall constitute one and the same instrument.

Section 4. Execution of Additional Instruments

Each Member hereby agrees to execute such other and further statements of interest and holdings, designations, powers of attorney and other instruments necessary to comply with any laws, rules or regulations.

Section 5. Headings

The headings in this Agreement are inserted for convenience only and are in no way intended to describe, interpret, define, or limit the scope, extent or intent of this Agreement or any provision hereof.

Section 6. Heirs, Successors and Assigns

Each and all of the covenants, terms, provisions and agreements herein contained shall be binding upon and inure to the benefit of the parties hereto and, to the extent permitted by this Agreement, their respective heirs, legal representatives, successors and assigns.

Section 7. Notices

Any notice, demand, or communication required or permitted to be given by any provision of this Agreement shall be deemed to have been sufficiently given or served for all purposes if delivered personally to the party or to an executive officer of the party to whom the same is directed or, if sent by registered or certified mail, postage and charges prepaid, addressed to the Member's and/or Company's address, as appropriate, which is set forth in this Agreement. Except as otherwise provided herein, any such notice shall be deemed to be given three business days after the date on which the same was deposited in a regularly maintained receptacle for the deposit of United States mail, addressed and sent as aforesaid.

Section 8. Rights and Remedies Cumulative

The rights and remedies provided by this Agreement are cumulative and the use of any one right or remedy by any party shall not preclude or waive the right to use any or all other remedies. Said rights and remedies are given in addition to any other rights the parties may have by law, statute, ordinance or otherwise.

Section 9. Severability

If any provision of this Agreement or the application thereof to any person or circumstance shall be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application thereof shall not be affected and shall be enforceable to the fullest extent permitted by law.

Section 10. Waivers

The failure of any party to seek redress for violation of or to insist upon the strict performance of any covenant or condition of this Agreement shall not prevent a subsequent act, which would have originally constituted a violation, from having the effect of an original violation.

Section 11. Arbitration

If any controversy or claim arising out of this Agreement or the parties' relationship cannot be settled, the controversy or claim shall be settled by arbitration in accordance with the rules of the American Arbitration Association or Arbitration Services of Portland, Inc., whichever organization is selected by the party which first initiates arbitration by filing a claim in accordance with the rules of the organization, as then in effect, and judgment on the award may be entered in any court having jurisdiction. Nothing herein, however, shall prevent a Member or the Company from resort to a

court of competent jurisdiction in those instances where injunctive relief may be appropriate or for purposes of expelling a Member.

Section 12. Attorney Fees

In the event arbitration is instituted to enforce or determine the parties' rights in connection with the Company or duties arising out of the terms of this Agreement or the parties' relationship or a suit or action permitted herein is brought, the prevailing party shall recover from the losing party reasonable attorney fees incurred in such proceeding. The determination of who is the prevailing party and the amount of reasonable attorney fees to be paid to the prevailing party shall be decided by the arbitrator(s) (with respect to attorney fees incurred prior to and during arbitration proceedings) and by the court or courts, including any appellate court, in which such matter is tried, heard, or decided, including the court which hears any exceptions made to an arbitration award submitted to it for confirmation as a judgment (with respect to attorney fees incurred in such confirmation proceedings).

Section 13. Entire Agreement

This Agreement and any other document to be furnished pursuant to the provisions hereof embody the entire agreement and understanding of the parties hereto as to the subject matter contained herein. There are no restrictions, promises, representations, warranties, covenants, or undertakings other than those expressly set forth or referred to in such documents. This Agreement and such documents supersede all prior agreements and understandings among the parties with respect to the subject matter hereof.

BATTLE CREEK LLC

By: Robert W. Nunn, Manager

MEMBERS
Evelyn M. Coburn Living Trust, dated March 15, 1995

By: Robert W. Nunn, Trustee

EXHIBIT A

ORGANIZER: Kathleen A. Evans

* * * * * *

INITIAL
MEMBER CONTRIBUTIONS:

CLASS A MEMBERS,
HOLDING A TOTAL OF ONE PERCENT (1%)
OF ALL MEMBERSHIP INTERESTS:

NAME AND ADDRESS	CONTRIBUTION	VALUE	%
Evelyn M. Coburn Living Trust, dated March 15, 1995, c/o Robert W. Nunn, Trustee 1000 SW Broadway, Suite 1400 Portland, OR 97205	1% of the real property described on the deeds attached to the Admission Agreement		100%

CLASS B MEMBERS,
HOLDING A TOTAL OF NINETY-NINE PERCENT (99%)
OF ALL MEMBERSHIP INTERESTS:

NAME AND ADDRESS	CONTRIBUTION	VALUE	%
Evelyn M. Coburn Living Trust, dated March 15, 1995, c/o Robert W. Nunn, Trustee 1000 SW Broadway, Suite 1400 Portland, OR 97205	99% of the real property described on the deeds attached to the Admission Agreement		100%

EXHIBIT B

LEDGER OF OWNERSHIP

BATTLE CREEK LLC

MEMBER'S NAME	PERCENT OF OWNERSHIP	TRANSFEREE	PERCENT TRANSFERRED
Evelyn M. Coburn Living Trust dated March 15, 1995	100%		

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FILED
FEB -7 2002
OREGON
SECRETARY OF STATE

ARTICLES OF ORGANIZATION

Limited Liability Company

of

BOULDER HILL LLC

Article 1: The name of the company shall be BOULDER HILL LLC.

Article 2: The duration of the company shall be perpetual.

Article 3: The name of the initial registered agent is Robert W. Nunn, and the street address of the initial registered office is:

1000 SW Broadway, Suite 1400
Portland, OR 97205

Article 4: The address where the Division may mail notices is:

Robert W. Nunn
1000 SW Broadway, Suite 1400
Portland, OR 97205

Article 5: The name and address of each organizer is:

Kathleen A. Evans
280 Court St. NE
Salem, OR 97301

Article 6: This company will be managed by a manager(s).

Kathleen A. Evans	Organizer
Signature	Printed Name	Title

Person to contact about this filing: Kathleen A. Evans, (503) 588-5670.

2.6.2 11:08 Coburn JH\Articles

Evans, Freeby & Jennings, LLP
Attorneys at Law
280 Court Street N.E., Suite One
Salem, Oregon 97301
(503) 588-5670

2-7-02

I certify that this is a true copy of the original and of the whole thereof.

Article Two

Members

Section 1.Authority to Act

No Member shall have the power or authority to bind the Company unless the Member is a Manager or the Member has been authorized by the Managers to act as an agent of the Company in accordance with this Agreement.

Section 2. Two Classes of Members

There shall be two classes of members.

A. Members of Class A shall have both Economic Rights and Management Rights and shall have the ability to vote on all matters and to elect the Managers of the Company. Whenever this Agreement requires a certain percentage vote to act, that percentage shall always refer to Class A membership interests; Class B membership interests shall be referred to only for those matters specifically listed in paragraph C below. All Class A Members shall be entitled to vote on or consent to any matter submitted to a vote or consent of the Members. In addition to any other actions which, by virtue of the Act, the Articles or this Agreement require a certain consent of the Members, the following actions require the consent of a Majority of the Class A Members:

1. Fixing the number of Managers;
2. Electing the Managers;
3. Setting or adjusting the compensation or benefits of Managers;
4. Removing any Manager without cause;
5. Removing any Manager for cause;
6. Filling any vacancy created by the resignation, removal or death of a Manager;
7. Filling any vacancy created by the increase in the number of Managers;
8. Approving any transaction involving an actual or potential conflict of interest between a Member or a Manager and the Company;

Article Three

Managers

Section 1. General

A. **Initial Managers.** Robert W. Nunn shall serve as the Initial Manager.

B. **Term.** Each Manager shall hold office until the Manager resigns, dies, dissolves (if an entity other than an individual), or is removed or replaced.

C. **Election.** Except as otherwise provided herein, Managers shall be elected by the Class A Members.

D. **Resignation.** Any Manager may resign at any time by giving written notice to the Members. The resignation of any Manager shall take effect upon receipt of notice thereof or at such later time as shall be specified in such notice; and, unless otherwise specified therein, the acceptance of such resignation shall not be necessary to make it effective. The resignation of a Manager who is also a Member shall not affect the Manager's rights as a Member and shall not constitute a withdrawal as a Member.

Section 2. Action by Managers

The rights and powers of the Managers hereunder shall be exercised by them in such manner as they may agree. In the absence of an agreement among the Managers, the following shall apply:

A. **Place of Meetings.** The Managers may designate any place, either within or outside of Oregon, as the location for any meeting of the Managers. If no designation is made, or if a special meeting be otherwise called, the place of meeting shall be the principal executive office of the Company in Oregon.

B. **Notice of Meetings.** Except as provided below, written notice stating the place, day and hour of the meeting and the purpose or purposes for which the meeting is called shall be delivered not less than 10 hours nor more than 50 days before the date of the meeting, either personally or by mail, by or at the direction of the Managers or person calling the meeting, to each Manager. If mailed, such notice shall be deemed to be delivered two calendar days after being deposited in the United States mail, addressed to the Manager at the Manager's address as it appears on the books of the Company, with postage thereon prepaid.

I. **Telephonic Meetings.** With respect to a particular meeting or generally with respect to future meetings, the Managers may permit any or all Managers to participate in the meeting by, or may permit the conduct of the meeting through, use of any means of communication by which all Managers participating may simultaneously hear each other. A Manager participating in such a meeting is deemed to be present in person at such meeting.

Section 3. Authority of the Managers

Subject to the limitations and restrictions set forth in the Act, the Articles and this Agreement (including, without limitation, those set forth in this Article), the Managers shall have the sole and exclusive right to manage the business of the Company and shall have all of the rights and powers which may be possessed by Managers under the Act and the Articles including, without limitation, the right and power, on behalf and in the name of the Company, to:

A. Institute, prosecute, and complain and defend in all courts in the Company's name;

B. Purchase, take, receive, lease or otherwise acquire, own, hold, improve, use and otherwise deal in or with real or personal property or any interest in real or personal property, wherever situated;

C. Sell, convey, mortgage, pledge, create a security interest in, lease, exchange, transfer and otherwise dispose of a part of the Company Property in the ordinary course, subject, however, to the restrictions set forth in Article Two, Section 2, regarding a disposition of all or substantially all of the Property, which must be approved by the Members as set forth therein;

D. Purchase, take, receive, subscribe for or otherwise acquire, own, hold, vote, use, employ, sell, mortgage, lend, pledge, otherwise dispose of and otherwise use or deal in or with other interests in or obligations of any other Entity;

E. Make contracts or guarantees, incur liabilities, borrow money, issue Company notes or other obligations that may be convertible into other securities of the Company, or include the option to purchase other securities of the Company, or secure any of the Company's obligations by mortgage or pledge of any of the Company Property, franchises or income;

F. Lend money, invest or reinvest Company funds or receive and hold real or personal property as security for repayment of funds so loaned, invested or reinvested, including, without limitation, the loans to Managers, Members, employees and agents;

G. Be a promoter, incorporator, general partner, limited partner, member, associate or manager of any partnership, joint venture, trust or other Entity;

H. Conduct the Company's business, locate its offices and exercise the powers granted by the Act and the Articles within or without Oregon;

I. Elect or appoint Managers, employees or agents of the Company, define their duties, fix their compensation and lend them money and credit;

J. Make and alter this Agreement not inconsistent with the Articles or the laws of Oregon for managing the Company's business and regulating its affairs;

K. Pay pensions and establish pension plans, profit sharing plans and other benefit or incentive plans for any and all of its current or former Managers, Members, employees and agents;

L. Make donations for the public welfare or for charitable, scientific or educational purposes;

M. Transact any lawful business that will aid governmental policy;

N. Indemnify a Member or Manager or any other person as and to the extent not inconsistent with the provisions of the Act or the Articles;

O. Cease the Company's activities and dissolve.

Section 4. Restrictions on Authority of Managers

In addition to any other consent requirements contained in the Act, the Articles, or this Agreement, each Manager shall not have the authority to, and covenants and agrees that it shall not, do any of the following acts without the consent of a Majority of the Managers in addition to any required consent of the Members:

A. Determining the amount and kind of property available for and the timing of distributions;

B. Admitting an Additional Member;

C. Accepting a Substitute Member;

D. Expelling a Member; or

E. Taking or approving any action or transaction which is reserved to the Managers by the Act, the Articles or this Agreement without any express statement of the extent of Manager action required.

and losses of the Company or any other facts pertinent to the existence and amount of assets from which distributions to the Members might properly be paid.

Section 6. Right to Rely on Managers.

Any Person dealing with the Company may rely (without duty of further inquiry) upon a certificate signed by any Manager as to:

A. The identity of any Manager or any Member;

B. The existence or nonexistence of any fact or facts which constitute a condition precedent to acts by a Manager or which are in any other manner germane to the affairs of the Company;

C. The Persons who are authorized to execute and deliver any instrument or document of the Company; or

D. Any act or failure to act by the Company or any other matter whatsoever involving the Company or any Member.

E. The signature of any Manager shall be necessary and sufficient to convey title to any Company Property or to execute any promissory notes, trust deeds, mortgages, or other instruments of hypothecation, and all of the Members agree that a copy of this Agreement may be shown to the appropriate parties in order to confirm the same, and further agree that the signature of any Manager shall be sufficient to execute any "statement of company" or other documents necessary to effectuate this or any other provision of this Agreement. All of the Members do hereby appoint the Managers as their attorney(s)-in-fact for the execution of any or all of the documents described in this Section.

Section 7. Liability and Indemnity of the Managers

A Manager is not personally liable for any debt, obligation or liability of the Company merely by reason of being a Manager and is not liable to the Company or its Members for monetary damages for conduct as a Manager. A Manager who performs the duties as Manager in accordance with this Agreement shall not have any liability by reason of being or having been a Manager. The Company shall indemnify the Managers and make advances for expenses to the maximum extent permitted under the Act. However, this provision shall not eliminate or limit a Manager's liability for:

A. Any breach of a Manager's duty of loyalty to the Company or its Members as described in this Agreement;

Signature Certificate

Document Reference: KADUFLIZAILAE95HCSLB4M

RightSignature
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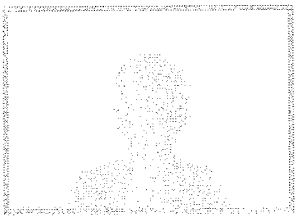
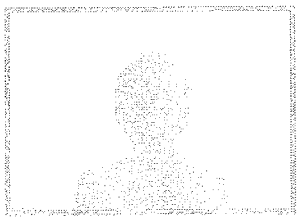


Nunn Winship
Party ID: KVTH7TJ4ZKDHD4SP2C2YN3
IP Address: 72.168.160.145
VERIFIED EMAIL: nunn.winship@gmail.com

Electronic Signature

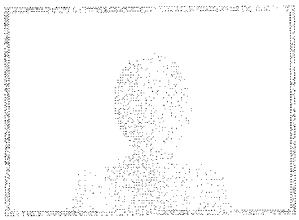
Multi-Factor Digital Fingerprint Checksum: ab9879e467c7f34859c384b0a739900ee8b86dd7



Murray Nunn
Party ID: 3GUDINITB4HJU75MFLYAW9
IP Address: 73.11.30.65
VERIFIED EMAIL: wallenda1@comcast.net

Electronic Signature

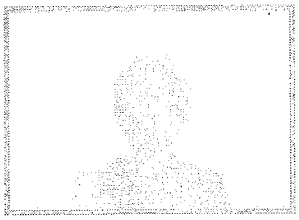
Multi-Factor Digital Fingerprint Checksum: c975c0fbcaacb0335e34cf6666e9bb0aaf3c0244



Carol Gross
Party ID: LCNY83IFALMPXHEG8VYTGG
IP Address: 50.137.32.77
VERIFIED EMAIL: g.cgross@comcast.net

Electronic Signature

Multi-Factor Digital Fingerprint Checksum: f61d1b4e12c9fde7a4b69323ae5e6df388bec795



Linda Schaefers
Party ID: XBF9X5JMAKS35NHSN9REGP
IP Address: 98.155.243.141
VERIFIED EMAIL: lschaefers1@q.com

Electronic Signature

Multi-Factor Digital Fingerprint Checksum: 24dcb0194abae6699858cb889499cf69ebaa02ba

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Signature Certificate

Document Reference: KADUFLIZAILAE95HCSLB4M

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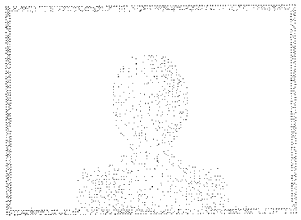
Kathy Young
Party ID: 9LUJ77ILTJ2M5YSGJNUZM3
IP Address: 73.97.130.255
VERIFIED EMAIL: kathyy@seanet.com

Electronic Signature:
Kathryn L. Young

Multi-Factor Digital Fingerprint Checksum: 454fd84929b31836648fcb94274051e83ada682b



Robert Nunn
Party ID: XSS27XJUGKCEJPESSY2S5A
IP Address: 70.97.160.105
VERIFIED EMAIL: robert@robertnunn.com

Electronic Signature:
Robert Nunn

Multi-Factor Digital Fingerprint Checksum: a7b30f4fc1abef98bd7a3a7e086c8737240fc613

Timestamp	Audit
2017-04-21 17:17:35 -0700	All parties have signed document. Signed copies sent to: Nunn Winship, Murray Nunn, Carol Gross, Linda Schaefers, Kathy Young, Robert Nunn, and Robert Nunn.
2017-04-21 17:17:35 -0700	Document signed by Carol Gross (g.cgross@comcast.net) with drawn signature. - 50.137.32.77
2017-04-21 17:14:34 -0700	Document viewed by Carol Gross (g.cgross@comcast.net). - 50.137.32.77
2017-04-17 10:03:20 -0700	Document signed by Linda Schaefers (lschaefers1@q.com) with drawn signature. - 98.155.243.141
2017-04-17 01:09:33 -0700	Document viewed by Linda Schaefers (lschaefers1@q.com). - 98.155.243.141
2017-04-16 19:35:24 -0700	Document signed by Nunn Winship (nunn.winship@gmail.com) with drawn signature. - 72.168.160.145
2017-04-16 19:33:17 -0700	Document viewed by Nunn Winship (nunn.winship@gmail.com). - 72.168.160.145
2017-04-16 15:35:06 -0700	Document signed by Kathy Young (kathyy@seanet.com) with drawn signature. - 73.97.130.255
2017-04-16 15:33:53 -0700	Document viewed by Kathy Young (kathyy@seanet.com). - 73.97.130.255
2017-04-16 15:14:10 -0700	Document signed by Murray Nunn (wallenda1@comcast.net) with drawn signature. - 73.11.30.65
2017-04-16 15:11:58 -0700	Document signed by Robert Nunn (robert@robertnunn.com) with drawn signature. - 70.97.160.105
2017-04-16 15:11:50 -0700	Document viewed by Murray Nunn (wallenda1@comcast.net). - 73.11.30.65
2017-04-16 15:10:43 -0700	Document viewed by Robert Nunn (robert@robertnunn.com). - 70.97.160.105

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Signature Certificate

Document Reference: KADUFLIZAILAE95HCSLB4M

RightSignature
Easy Online Document Signing

2017-04-16 15:10:43 -0700 Document created by Robert Nunn (robert@robertnunn.com). - 70.97.160.105

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UNANIMOUS CONSENT ACTION OF THE MEMBERS OF BOULDER HILL LLC

We consent to the sale of all real estate owned by Boulder Hill LLC substantially on the terms contained in the counter offer to Westwood Homes LLC dated April 14, 2017. Robert Nunn, manager of Bolder Hill LLC, is authorized to make modifications to the sale as he deems appropriate, and he is authorized to take all actions and deliver such documents as may be necessary or convenient in connection with the sale.

F. Carol Gross — Dated: April 21 2017

F. Carol Gross

Murray C. Nunn — Dated: April 04/16/2017 2017

Murray C. Nunn

Robert Nunn — Dated: April 04/16/2017 2017

Robert W. Nunn

Linda Schaefer — Dated: April 4/17/2017 2017

Linda S. Schaefers

Dated: April 04/16/2017 2017

Nunn Winship

Kathryn L. Young — Dated: April 04/16/2017 2017

Kathryn L. Young

d.

DURABLE GENERAL POWER OF ATTORNEY

I, **ROBERTA A. STRAUSBAUGH**, dohereby make, constitute and appoint my daughter **JULIE A. SINGER**, of Salem, Oregon my agent and attorney in fact (hereinafter called "agent"), with power and authority:

1. **SUPPORT**. To make expenditures for my care, maintenance, support and general welfare, and to distribute such sums as are necessary for the care, maintenance, education and support of members of my immediate family who are or become dependent upon me for support.

2. **MANAGEMENT**. To take possession of, manage, administer, operate, maintain, improve and control all my property, real and personal; to insure and keep the same insured; and to pay any and all taxes, charges and assessments that may be levied or imposed upon any thereof.

3. **COLLECTIONS**. To collect and receive any money, property, debts or claims whatsoever, now or hereafter due, owing and payable or belonging to me; and to forgive debts; and to give receipts, acquittances or other sufficient discharges for any of the same.

4. **FINANCIAL INSTITUTIONS**. Enter into any transaction with and contract for any services rendered by a financial institution, including continuing, modifying, or terminating existing accounts; opening new accounts; drawing, endorsing, or depositing checks, drafts, and other negotiable instruments including those drawn on the Treasury of the United States, the State of Oregon or any other state or governmental entity, and to accept drafts; acquiring and transferring certificates of deposit; withdrawing funds deposited in my name alone or in my name and the name of any other person or persons; and providing or receiving financial statements. "Financial institutions" means banks, trust companies, savings banks, commercial banks, savings and loan associations, credit unions, loan companies, thrift institutions, mutual fund companies, investment advisors, brokerage firms, and other similar institutions.

5. **INVESTMENTS**. To retain any property in the hands of the agent in the form in which it was received; and to make investments and changes of investments in such securities, including common and preferred stocks of corporations or other property, real or personal, as my agent may deem prudent.

6. **DEBTS**. To pay my debts and other obligations.

7. **LITIGATION**. To sue upon, defend, compromise, submit to arbitration or adjust any controversies in which I may be interested; and to act in my name in any complaints, proceedings or suits with all the powers I would possess if personally present and under no legal disability.

8. **ACQUISITION**. To bargain for, buy and deal in property and goods of every description.

9. **DISPOSITION**. To sell, convey, grant, exchange, transfer, option, convert, mortgage, pledge, consign, lease and otherwise dispose of any of my property, whether real or personal.

ENTERED
2/5/15

10. **BORROWING**. To advance or loan the agent's own funds on my behalf; and to borrow any sums of money on such terms and at such rate of interest as my agent may deem proper and to give security for the repayment of the same.

11. **INSURANCE AND ANNUITY CONTRACTS**. To purchase, maintain, modify, renew, convert, exchange, borrow against, surrender, cancel, make claim to and collect or select payment options, and deal with all types of insurance or annuity contracts, public and private, including Medicare, Medicaid, Social Security, Workers' Compensation, long-term care, Medicare supplement, and life insurance.

12. **AGREEMENTS**. To make and deliver any deeds, conveyances, contracts, covenants and other instruments, undertakings or agreements, either orally or in writing, which my agent may deem proper.

13. **VOTING**. To appear and vote for me in person or by proxy at any corporate or other meeting.

14. **SAFE DEPOSIT BOX**. To have access to any safe deposit box which has been rented in my name or in the name of myself and any other person or persons.

15. **WITHDRAWAL OF FUNDS**. To withdraw any monies deposited with any bank, mutual savings bank, credit union, savings and loan association, mutual fund, money market account, investment advisor or broker in my name, or in the name of myself and any other person or persons and generally to do any business with any such financial institution or agency on my behalf.

16. **TAXES AND ASSESSMENTS**. Pay any tax or assessment; appear for and represent me, in person or by attorney, in all tax matters; execute any power of attorney forms required by the Internal Revenue Service, the Oregon Department of Revenue, or any other taxing authority; receive confidential information from any taxing authority; prepare, sign, and file federal, state and local tax returns and reports for all tax matters, including income, gift, estate, inheritance, generation-skipping, sales, business, FICA, payroll, and property tax matters; execute waivers, including waivers of restrictions on assessment or collection of tax deficiencies and waivers of notice of disallowance of a claim for credit or refund; execute consents, closing agreements, and other documents related to my tax liability; make any elections available under federal or state tax law; and delegate authority or substitute another representative with respect to all matters described in this paragraph.

17. **GOVERNMENT BENEFITS**. To do and perform any act necessary or desirable in order for me or my spouse to qualify for and receive all types of government benefits, including Medicare, Medicaid, Social Security, veterans', and workers' compensation benefits. The power granted under this paragraph shall include the power to dispose of any property or interest in property by any means (including making gifts or establishing and funding trusts) and the power to name or change beneficiaries under insurance policies, pay-on-death arrangements, retirement plans and accounts, and any other assets, provided that any disposition or designation shall be consistent with the purposes expressed under this paragraph.

18. **TREASURY BONDS**. To purchase U.S. Treasury Bonds or other instruments

ENTERED 2/15/08

redeemable at par in payment of federal estate taxes.

19. **ADDITIONS TO TRUST**. To add any or all of my assets to a trust created by me alone or in conjunction with one or more other persons and already in existence at the time of the creation of this power if the trust provides that the income and principal shall be paid to me or applied for my benefit during my lifetime.

20. **BUSINESS INTERESTS**. To continue as a going concern any business interest owned by me, either individually or as a co-partner.

21. **RETIREMENT ACCOUNTS**. To act on my behalf in dealing with my pension and retirement plans, including the power to make IRA contributions, IRA roll overs, voluntary contributions, borrow from any retirement plan, elect or select pay out options, and take any other steps which I might take on my own behalf with regard to my retirement and/or IRA/pension plans.

22. **MAIL**. To redirect my mail.

23. **CUSTODY OF PAPERS**. To take custody of my Will, deeds, life insurance policies, contracts, securities, or other important papers.

24. **GIFTS**. To make gifts outright or in trust to or for the benefit of the natural objects of my bounty and charitable organizations, in such amounts, at such times, and upon such terms as my attorney deems appropriate, provided that my attorney may make only such gifts as are consistent with my income and wealth and as I might have been expected to make.

25. **DISCLAIMER**. To renounce and disclaim any property or interest in property or powers to which I may become entitled, and to file any such disclaimer with appropriate courts or persons, and to consider my estate planning and the reduction of estate taxes in exercising such powers.

26. **ALTERNATE**. In the event that my daughter **JULIE** is unable or unwilling to act for me, I name my granddaughter **TAMMY LEE HARDT**, of Springfield, Oregon as successor agent and attorney-in-fact, with the power and authority provided in this instrument.

27. **SUBSTITUTION AND DELEGATION**. To appoint and substitute for my said agent any agents, nominees or attorneys to exercise any or all of the powers herein and to revoke their authority at pleasure.

28. **APPOINTMENT OF GUARDIAN OR CONSERVATOR**. In the event it becomes necessary to appoint a guardian, limited guardian or conservator of my person or estate, I request that my attorney-in-fact herein named be appointed.

GENERAL AUTHORITY. I authorize my agent for me in my name generally to do and perform all and every act and thing necessary or desirable to conduct, manage and control all my business and my property, wheresoever situate, and whether now owned or hereafter acquired, as my agent may deem for my best interests and to execute and acknowledge any and all instruments necessary or proper to carry out the foregoing powers, hereby releasing all third persons from

ENTERED 2/5/18

responsibility for my agent's acts and omissions and I empower my agent to indemnify all such persons against loss, expense and liability.

THIRD PARTY RELIANCE. Third persons may conclusively rely upon the continued validity of this Power of Attorney until receiving actual knowledge of its revocation. Third persons may conclusively rely on a copy of this instrument in its entirety or to any portion thereof certified as such by my agent.

DURABILITY. These powers of attorney shall be exercisable by my agent on my behalf notwithstanding that I may become legally disabled or incompetent.

GOVERNING LAW. All questions pertaining to validity, interpretation and administration of this power shall be determined in accordance with the laws of Oregon.

IN WITNESS WHEREOF, I have hereunto set my hand this 28th day of July, 2005.

Roberta A. Strausbaugh

STATE OF OREGON)
) ss.:
County of Marion)

On this 28th day of July, 2005, personally appeared **ROBERTA A. STRAUSBAUGH** and acknowledged the foregoing instrument to be her voluntary act and deed.

OFFICIAL SEAL
KIMBERLEY WEATHERFORD
NOTARY PUBLIC - OREGON
COMMISSION NO. 382508
MY COMMISSION EXPIRES JUL. 8, 2008

Kimberley Weatherford
Notary Public for Oregon
My Commission Expires: July 8, 2008

ENTERED 2-5-16

DURABLE GENERAL POWER OF ATTORNEY

I, **ROBERTA A. STRAUSBAUGH**, dohereby make, constitute and appoint my daughter **JULIE A. SINGER**, of Salem, Oregon my agent and attorney in fact (hereinafter called "agent"), with power and authority:

1. **SUPPORT**. To make expenditures for my care, maintenance, support and general welfare, and to distribute such sums as are necessary for the care, maintenance, education and support of members of my immediate family who are or become dependent upon me for support.

2. **MANAGEMENT**. To take possession of, manage, administer, operate, maintain, improve and control all my property, real and personal; to insure and keep the same insured; and to pay any and all taxes, charges and assessments that may be levied or imposed upon any thereof.

3. **COLLECTIONS**. To collect and receive any money, property, debts or claims whatsoever, now or hereafter due, owing and payable or belonging to me; and to forgive debts; and to give receipts, acquittances or other sufficient discharges for any of the same.

4. **FINANCIAL INSTITUTIONS**. Enter into any transaction with and contract for any services rendered by a financial institution, including continuing, modifying, or terminating existing accounts; opening new accounts; drawing, endorsing, or depositing checks, drafts, and other negotiable instruments including those drawn on the Treasury of the United States, the State of Oregon or any other state or governmental entity, and to accept drafts; acquiring and transferring certificates of deposit; withdrawing funds deposited in my name alone or in my name and the name of any other person or persons; and providing or receiving financial statements. "Financial institutions" means banks, trust companies, savings banks, commercial banks, savings and loan associations, credit unions, loan companies, thrift institutions, mutual fund companies, investment advisors, brokerage firms, and other similar institutions.

5. **INVESTMENTS**. To retain any property in the hands of the agent in the form in which it was received; and to make investments and changes of investments in such securities, including common and preferred stocks of corporations or other property, real or personal, as my agent may deem prudent.

6. **DEBTS**. To pay my debts and other obligations.

7. **LITIGATION**. To sue upon, defend, compromise, submit to arbitration or adjust any controversies in which I may be interested; and to act in my name in any complaints, proceedings or suits with all the powers I would possess if personally present and under no legal disability.

8. **ACQUISITION**. To bargain for, buy and deal in property and goods of every description.

9. **DISPOSITION**. To sell, convey, grant, exchange, transfer, option, convert, mortgage, pledge, consign, lease and otherwise dispose of any of my property, whether real or personal.

ENTERED 2/5/15

10. **BORROWING**. To advance or loan the agent's own funds on my behalf; and to borrow any sums of money on such terms and at such rate of interest as my agent may deem proper and to give security for the repayment of the same.

11. **INSURANCE AND ANNUITY CONTRACTS**. To purchase, maintain, modify, renew, convert, exchange, borrow against, surrender, cancel, make claim to and collect or select payment options, and deal with all types of insurance or annuity contracts, public and private, including Medicare, Medicaid, Social Security, Workers' Compensation, long-term care, Medicare supplement, and life insurance.

12. **AGREEMENTS**. To make and deliver any deeds, conveyances, contracts, covenants and other instruments, undertakings or agreements, either orally or in writing, which my agent may deem proper.

13. **VOTING**. To appear and vote for me in person or by proxy at any corporate or other meeting.

14. **SAFE DEPOSIT BOX**. To have access to any safe deposit box which has been rented in my name or in the name of myself and any other person or persons.

15. **WITHDRAWAL OF FUNDS**. To withdraw any monies deposited with any bank, mutual savings bank, credit union, savings and loan association, mutual fund, money market account, investment advisor or broker in my name, or in the name of myself and any other person or persons and generally to do any business with any such financial institution or agency on my behalf.

16. **TAXES AND ASSESSMENTS**. Pay any tax or assessment; appear for and represent me, in person or by attorney, in all tax matters; execute any power of attorney forms required by the Internal Revenue Service, the Oregon Department of Revenue, or any other taxing authority; receive confidential information from any taxing authority; prepare, sign, and file federal, state and local tax returns and reports for all tax matters, including income, gift, estate, inheritance, generation-skipping, sales, business, FICA, payroll, and property tax matters; execute waivers, including waivers of restrictions on assessment or collection of tax deficiencies and waivers of notice of disallowance of a claim for credit or refund; execute consents, closing agreements, and other documents related to my tax liability; make any elections available under federal or state tax law; and delegate authority or substitute another representative with respect to all matters described in this paragraph.

17. **GOVERNMENT BENEFITS**. To do and perform any act necessary or desirable in order for me or my spouse to qualify for and receive all types of government benefits, including Medicare, Medicaid, Social Security, veterans', and workers' compensation benefits. The power granted under this paragraph shall include the power to dispose of any property or interest in property by any means (including making gifts or establishing and funding trusts) and the power to name or change beneficiaries under insurance policies, pay-on-death arrangements, retirement plans and accounts, and any other assets, provided that any disposition or designation shall be consistent with the purposes expressed under this paragraph.

18. **TREASURY BONDS**. To purchase U.S. Treasury Bonds or other instruments

ENTERED 2/5/18

redeemable at par in payment of federal estate taxes.

19. **ADDITIONS TO TRUST**. To add any or all of my assets to a trust created by me alone or in conjunction with one or more other persons and already in existence at the time of the creation of this power if the trust provides that the income and principal shall be paid to me or applied for my benefit during my lifetime.

20. **BUSINESS INTERESTS**. To continue as a going concern any business interest owned by me, either individually or as a co-partner.

21. **RETIREMENT ACCOUNTS**. To act on my behalf in dealing with my pension and retirement plans, including the power to make IRA contributions, IRA roll overs, voluntary contributions, borrow from any retirement plan, elect or select pay out options, and take any other steps which I might take on my own behalf with regard to my retirement and/or IRA/pension plans.

22. **MAIL**. To redirect my mail.

23. **CUSTODY OF PAPERS**. To take custody of my Will, deeds, life insurance policies, contracts, securities, or other important papers.

24. **GIFTS**. To make gifts outright or in trust to or for the benefit of the natural objects of my bounty and charitable organizations, in such amounts, at such times, and upon such terms as my attorney deems appropriate, provided that my attorney may make only such gifts as are consistent with my income and wealth and as I might have been expected to make.

25. **DISCLAIMER**. To renounce and disclaim any property or interest in property or powers to which I may become entitled, and to file any such disclaimer with appropriate courts or persons, and to consider my estate planning and the reduction of estate taxes in exercising such powers.

26. **ALTERNATE**. In the event that my daughter **JULIE** is unable or unwilling to act for me, I name my granddaughter **TAMMY LEE HARDT**, of Springfield, Oregon as successor agent and attorney-in-fact, with the power and authority provided in this instrument.

27. **SUBSTITUTION AND DELEGATION**. To appoint and substitute for my said agent any agents, nominees or attorneys to exercise any or all of the powers herein and to revoke their authority at pleasure.

28. **APPOINTMENT OF GUARDIAN OR CONSERVATOR**. In the event it becomes necessary to appoint a guardian, limited guardian or conservator of my person or estate, I request that my attorney-in-fact herein named be appointed.

GENERAL AUTHORITY. I authorize my agent for me in my name generally to do and perform all and every act and thing necessary or desirable to conduct, manage and control all my business and my property, wheresoever situate, and whether now owned or hereafter acquired, as my agent may deem for my best interests and to execute and acknowledge any and all instruments necessary or proper to carry out the foregoing powers, hereby releasing all third persons from

ENTERED 2/5/18

responsibility for my agent's acts and omissions and I empower my agent to indemnify all such persons against loss, expense and liability.

THIRD PARTY RELIANCE. Third persons may conclusively rely upon the continued validity of this Power of Attorney until receiving actual knowledge of its revocation. Third persons may conclusively rely on a copy of this instrument in its entirety or to any portion thereof certified as such by my agent.

DURABILITY. These powers of attorney shall be exercisable by my agent on my behalf notwithstanding that I may become legally disabled or incompetent.

GOVERNING LAW. All questions pertaining to validity, interpretation and administration of this power shall be determined in accordance with the laws of Oregon.

IN WITNESS WHEREOF, I have hereunto set my hand this 28th day of July, 2005.

Roberta A. Strausbaugh

STATE OF OREGON)
) ss.:
County of Marion)

On this 28th day of July, 2005, personally appeared **ROBERTA A. STRAUSBAUGH** and acknowledged the foregoing instrument to be her voluntary act and deed.

OFFICIAL SEAL
KIMBERLEY WEATHERFORD
NOTARY PUBLIC - OREGON
COMMISSION NO. 382508
MY COMMISSION EXPIRES JUL. 8, 2008

Kimberley Weatherford
Notary Public for Oregon
My Commission Expires: July 8, 2008

ENTERED 2-5-16

ASSIGNMENT OF MEMBER'S INTEREST IN LIMITED LIABILITY COMPANY

Robert W. Nunn, successor trustee, of the Evelyn M. Coburn Living Trust, dated March 15, 1995, as amended (the "Trust"), hereby assigns to ROBERTA ANN STRAUSBAUGH, all of the Trust's interest as a member in that certain limited liability company known as BATTLE CREEK LLC, an Oregon Manager-Managed Limited Liability Company.

DATED: August 23, 2005

Robert W. Nunn, Successor Trustee

CONSENT AND RESIGNATION OF MANAGER

The undersigned, being the Manager of BATTLE CREEK LLC, an Oregon Manager-Managed Limited Liability Company, hereby consents to this assignment, with the understanding that all of the terms and provisions of the operating agreement shall continue to apply, and hereby resigns as manager.

By: Robert W. Nunn, Manager

ACCEPTANCE OF ASSIGNMENT AND ELECTION OF MANAGER

The undersigned accepts the assignment of the membership interest, subject to the terms and conditions of the operating agreement, and hereby elects JULIE A. SINGER as manager.

Julie A. Singer power of attorney for Roberta Anne Strausbaug
Roberta Ann Strausbaugh

8.12.05 18:02
C:\WINDOWS\TEMPORARY INTERNET FILES\OLK2053\ASSN-BATTLECREEK.DOC

ENTERED 8/5/05

Phone: (503) 986-2200
Fax: (503) 378-4381

Change of Registered Agent/Address—Corporations/LLC

Secretary of State
Corporation Division
255 Capitol St. NE, Suite 151
Salem, OR 97310-1327
FilingInOregon.com

Check the appropriate box below:

☑ CHANGE OF AGENT AND ADDRESS
(Complete only 1, 2, 3, 4, 5, 6, 11)

☐ CHANGE OF ADDRESS ONLY
(Complete only 1, 7, 8, 9, 10, 11)

REGISTRY NUMBER: 063951-98

NOTE: Use this form for Cooperatives or Business Trusts.

In accordance with Oregon Revised Statute 192.410-192.490, the information on this application is public record. We must release this information to all parties upon request and it will be posted on our website.

For office use only

Please Type or Print Legibly in **Black** Ink. Attach Additional Sheet if Necessary.

1) **ENTITY NAME** BATTLE CREEK LLC

CHANGE OF REGISTERED AGENT AND OFFICE

2) **THE REGISTERED AGENT HAS BEEN CHANGED TO:**
Julie Singer

3) **THE NEW REGISTERED AGENT HAS CONSENTED TO THIS APPOINTMENT.**

4) **ADDRESS OF THE NEW REGISTERED OFFICE** (Must be an **OREGON** Street Address which is identical to the registered agent's business office.)
5450 Zena Road NW
Salem, OR 97304

5) **THE STREET ADDRESS OF THE NEW REGISTERED OFFICE AND THE BUSINESS ADDRESS OF THE REGISTERED AGENT ARE IDENTICAL.**

6) **EXECUTION**
(Must be signed by one corporate officer or director for a corporation or a member/manager for a limited liability company.)

Signature: Julie A Singer
Printed Name: Julie Singer
Title: Manager

CHANGE OF REGISTERED AGENT'S BUSINESS OFFICE ONLY

7) **NEW ADDRESS OF REGISTERED AGENT** (The business address of the registered agent has changed to the following **OREGON** Street Address.)

8) **THE STREET ADDRESS OF THE NEW REGISTERED OFFICE AND THE BUSINESS ADDRESS OF THE REGISTERED AGENT ARE IDENTICAL.**

9) **NOTIFICATION**
☐ The corporation has been notified in writing of this change.

10) **EXECUTION**
(Must be signed by the registered agent or a corporate officer or director for a corporation or a member/manager for a limited liability company.)

Signature:
Printed Name:
Title:

11) **CONTACT NAME** (To resolve questions with this filing.) Julie Singer

DAYTIME PHONE NUMBER (Include area code.) (503) 581-7930

FEES
No Processing Fee

131 (Rev. 1/04)

ENTERED 2/5/11

Phone: (503) 986-2200
Fax: (503) 378-4381

Amendment to Annual Report—Limited Liability Company

Secretary of State
Corporation Division
255 Capitol St. NE, Suite 151
Salem, OR 97310-1327
FilingInOregon.com

REGISTRY NUMBER: 063951-98

ENTITY TYPE ☑ DOMESTIC ☐ FOREIGN

In accordance with Oregon Revised Statute 192.410-192.490, the information on this application is public record. We must release this information to all parties upon request and it will be posted on our website.

For office use only

Please Type or Print Legibly in **Black** Ink.

To change the Registered Agent, use Change of Registered Agent/Address, Form 131

1) **NAME OF ENTITY** BATTLE CREEK LLC

2) **PRINCIPAL PLACE OF BUSINESS** (Street Address)
5450 Zena Road NW
Salem, OR 97304

3) **ADDRESS FOR MAILING NOTICES**
5450 Zena Road NW
Salem, OR 97304

LIST MEMBERS AND/OR MANAGERS NAMES AND ADDRESSES

4) **MEMBERS** (Name and street address)
Roberta Ann Strausbaugh
2482 Kuebler Road South
Salem, OR 97302

5) **MANAGERS** (Name and street address)
Julie Singer
5450 Zena Road NW
Salem, OR 97304

6) **EXECUTION**
Signature: Julie A Singer
Printed Name: Julie Singer
Title: Manager
Date:

7) **CONTACT NAME** (To resolve questions with this filing.)
Julie Singer

DAYTIME PHONE NUMBER (Include area code.)
(503) 581-7930

FEES
No Processing Fee

154 (Rev. 7/04)

ENTERED 2/5/16

CLASS-1 ADJUSTMENT

The applicant is requesting a Class-1 Adjustment to Section 511.010 (Development Standards) Table 511-2, Lot Standards.

The adjustment is to allow Lot 27 to have a lot depth of about 59 feet where 70 feet is required.

Adjustment Criteria-SRC 250.005(d)(1) Criteria

(1) An application for a Class 1 adjustment shall be granted if all of the following criteria are met:

(A) The purpose underlying the specific development standard proposed for adjustment is:

(i) Clearly inapplicable to the proposed development; or

(ii) Clearly satisfied by the proposed development.

(B) The proposed adjustment will not unreasonably impact surrounding existing or potential uses or development.

Applicant Findings:

(A) The purpose of lot depth is to provide adequate room for a single-family dwelling and required setbacks. This helps provide a buffer between buildings. The applicant is requesting a 16% adjustment to the lot depth requirement for Lot 90. As shown on the site plan, Lot 27 has a lot depth of 59' where 70' is required. Lot 27 has a greater than 70-foot lot depth, however, the lot is odd in shape, therefore, the average lot depth is about 59', has shown on the site plans.

Lot 27 is 10,658 square feet in size. There is an adequate building envelope for this lot. All setbacks will meet or exceed the requirements, providing buffering from adjacent structures.

Therefore, the intent of the lot depth is equally meet by the proposed reduced lot depth.

(B) Adequate setbacks can be provided on Lot 27. The additional length of the odd shaped lot will provide additional landscaped area for Lot 27. Therefore, the decrease in lot depth will have no effect on the surrounding uses.

CLASS-1 ADJUSTMENT

The applicant is requesting a Class-1 Adjustment to Section 511.010 (Development Standards) Table 511-2, Lot Standards.

Lot 75, Lots 89-93, Lots 101, 102, and 103 do not meet the minimum 120-foot lot depth requirement for double frontage lots.

Proposed Lot Depth:

Lot 75: 118'
Lots 89-93: 118'
Lot 101: 118'
Lot 102:111'
Lot 103: 115'

Adjustment Criteria-SRC 250.005(d)(1) Criteria

(1) An application for a Class 1 adjustment shall be granted if all of the following criteria are met:

(A) The purpose underlying the specific development standard proposed for adjustment is:
(i) Clearly inapplicable to the proposed development; or

(ii) Clearly satisfied by the proposed development.

(B) The proposed adjustment will not unreasonably impact surrounding existing or potential uses or development.

Applicant Findings:

(A) The purpose of lot depth is to provide adequate room for a single-family dwelling and required setbacks. The applicant is requesting an adjustment to the lot depth requirement for double frontage lots, like Lot 75, Lots 89-93, Lots 101, 102 and 103.

As shown on the site plan, Lot 75, Lots 89-93, Lots 101, 102 and 103 have lot depths of about 111 to 118 feet. In order to provide setbacks and adequate distance from right-of-way, lot depth of 120 is required. However, the applicant is asking for a 2 to 9-foot reduction in that lot depth. The lot depths provided for the lots will still meet the purpose of the code by allowing for an adequate building envelope and setbacks. Therefore, there will be an adequate building envelope and setbacks for this lots. All setbacks will meet or exceed the requirements.

Therefore, the intent of the lot depth is equally meet by the proposed reduced lot depth.

(B) Adequate setbacks can be provided on these lots, because these lots have a great lot depth that other lots within the subdivision don't have. The length of the lots will still provide adequate setbacks and landscaped area. Therefore, the adjustment to lot depth will have no effect on the surrounding uses.

Coburn Estatest Subdivision

Adjustment Class-2 Application
Table 511-2 (Lot Standards)

Proposal:

An adjustment to lot to depth ratio is being requested for proposed Lots 34-42, Lots 45-49, Lots 51-56, Lots 69-71, Lot 27, and Lot 87.

Lots 34-42, Lots 45-49, Lots 51-56, Lots 69-71 are located within the RM2 zone. The minimum lot width required for townhome lots in the RM2 zone is 20 feet with a minimum lot depth of 70 feet. Table 514-2 only allows a maximum lot depth of 300% of average lot width.

Lots 27 and 87 are located within the RA zone. The minimum lot width required for lots in the RA zone is 40 feet with a minimum lot depth of 70 feet. Table 510-2 and 511-2 only allows a maximum lot depth of 300% of average lot width.

The applicant is requesting an adjustment to the lot width to lot depth maximum.

Adjustment Criteria-SRC 250.005(d)(2) Criteria

(A) The purpose underlying the specific development standard proposed for adjustment is:

(i) Clearly inapplicable to the proposed development; or
(ii) Equally or better met by the proposed development.

(B) If located within a residential zone, the proposed development will not detract from the livability or appearance of the residential area.

(C) If more than one adjustment has been requested, the cumulative effect of all the adjustments result in a project which is still consistent with the overall purpose of the zone.

Applicant's Reasons:

(A) The applicant is requesting a zoning adjustment to Tables 514-2, 510-2 and 511-2. The minimum lot width required for lots in the RA/RS zone is 40 feet with a minimum lot depth of 70 feet. The minimum lot width for townhome lots within the RM2 zone is 20 feet with a minimum lot depth of 70 feet. Tables 514-2, 510-2 and 511-2 only allows a maximum lot depth of 300% of average lot width

The applicant is requesting an adjustment to the lot width to lot depth maximum.
In order to provide street connections and circulation, the size and layout of the lots had to be taken into consideration. Due to the location of the lots and street connections, the long and narrow lot were created.

The purpose of this requirement is to avoid creating long narrow lots. As stated above, in order to provide for future development of the lot and street connection, the layout of the lots had to be taken into consideration.

The longer lots does not affect the rest of the subdivision or the proposed lots. The longer lot actually provides for larger setbacks and buffers. The longer lots will also allow for adequate development. Therefore, the proposed adjustment equally or better meets the standard.

(B) The subject property is zoned RM2 and RA and is located in a residential area. The RA and RM2 zones allow for this property to be subdivided.

The subject property is located on the northeast intersection of Kuebler Boulevard SE and Battle Creek Road.

The surrounding properties are zoned and used as follows:

North: PH (Public Health); vacant land and existing single-family dwellings
East: RA (Residential Agriculture); vacant land and existing single-family dwellings
South: RA (Residential Agriculture); vacant land and existing single-family dwellings
West: Across Reed Road, FMU (Fairview Mixed-Use); vacant land and existing single-2

The proposal will have little to no impact on the surrounding neighborhood. The purpose of this requirement is to avoid creating long narrow lots. As stated above, in order to provide street connections and circulation and an adequate subdivision layout, the size and layout of the lots had to be taken not consideration. Due to the location of the lots, topography and required street extensions, creating shorter lot depth is not feasible.

The longer lot does not affect the rest of the subdivision or the proposed lots. In order to meet the lot to depth ratio other lays would be affected and street connections would not be feasible.

Therefore, in order to meet lot requirements for other lots within the subdivision and provide all required street connection, longer lots were created. Therefore, by providing a layout that meets code and circulation requirements, this proposal will not detract from the livability or appearance of the residential area.

Any conditions placed on the subdivision will require Code compliance, which will help ensure minimal to no impacts on the neighborhood.

(C) The proposed adjustment will not affect surrounding existing or proposed development. The applicant is requesting more than one adjustment.

CLASS-2 ADJUSTMENT

The applicant is requesting an adjustment to SRC 803.035(c):

> ***(c) Alignment and Grade. All streets shall be designed with a vertical alignment that conforms to the Public Works Design Standards. No grade of parkway, major arterial, or minor arterial shall exceed 6 percent. No grade of a collector street shall exceed 8 percent. No grade of a local street shall exceed 12 percent.***

There are several local streets proposed within the subdivision that exceed the 12% maximum street grade. The applicant is requesting an adjustment to allow these internal local streets to be developed with a street grade over 12%, up to 15%.

Adjustment Criteria-SRC 250.005(d)(2) Criteria

(A) The purpose underlying the specific development standard proposed for adjustment is:

(i) Clearly inapplicable to the proposed development; or

(ii) Equally or better met by the proposed development.

(B) If located within a residential zone, the proposed development will not detract from the livability or appearance of the residential area.

(C) If more than one adjustment has been requested, the cumulative effect of all the adjustments result in a project which is still consistent with the overall purpose of the zone.

Applicant Findings:

(A) The applicant is requesting an adjustment to street grades. As shown on Sheet 1 of 1, Slope Exception Areas Plan, sections of A Avenue, C Avenue, I Avenue, H Street, M Street, J Avenue, N Street, O Street, and P Avenue within the subdivision will have sections of the roadway with up to a 15% street grade. Due to the topography of the site and the proposed street alignment with existing streets, several streets will exceed the 12% street grade allowed. The areas proposed for slopes in excess of 12% are denoted on the plans and will not exceed a single run length of 200 feet.

The intent of the maximum street grade is to allow vehicles to climb and descend the street safely in all conditions. The internal streets proposed will provide safe and efficient circulation throughout the project. The intent is to construct the streets to provide safe and efficient conditions.

The maximum length of any one section of the 15% grade is 200 feet or less, with sections of flatter slopes between the steep sections. This limits distances, limits the ability of any vehicle to have a speed "run-up" occur while traveling down the roadway.

The increased street grade facilitates access to the lots and property along its route such that quicker exits from the street into driveways can be achieved with reduced cuts and fills into the lots and driveways.

We believe that the intent of the standard is being met; therefore, the proposal equally meets the intent of the maximum street grade standard.

(B) Due to topography and existing streets in this area, the proposed streets are typical to that in any other development in configuration. The use of a steeper roadway will reduce the need for excessive cut or fill slope. This has a positive impact to the surrounding areas. The street will be designed to Public Works standards and will provide efficient access to the lots and property adjacent to its route, therefore, the greater street grade will not distract from the livability or appearance of the residential area.

(C) The applicant is requesting more than one adjustment. The cumulative effect of all the adjustments result in a project which is still consistent with the overall purpose of the zone. Therefore, this criteria is not applicable.

Subdivision

February 17, 2021

PROPOSAL:

The applicant currently has approval through the SUB-ADJ19-08 & UGA17-03MOD1 approval.

Original Approval:

The subject property is about 52.80 acres in size and zoned RA (Residential Single Agriculture). The applicant is proposing to divide the subject property into 214 single family residential lots (within 11 Phases/Sections).

Section E: 16 lots
Section G: 22 lots
Section I: 18 lots
Section J: 17 lots
Section F: 15 lots
Section H: 25 lots
Section K: 15 lots
Section A: 24 lots
Section D: 25 lots
Section B: 17 lots
Section C: 15 lots

Proposed:

The subject property is about 32.55 acres in size and zoned RA (Residential Single Agriculture) and RM2 (Multi-Family Residential). The applicant is proposing to divide the subject property into 171 residential lots (within 4 Phases/Sections).

Section A: Lots 1-76 (Lots 34-72 are designed for townhomes)
Section B: Lots 77-100
Section C: Lots 101-134
Section D: Lots 135-171

The applicant is also requesting alternative street standards as outlined in the narrative and on the site plans. Along with an adjustment and alternative street standard request to street grade and an adjustment to lot depth requirements. Both adjustments have been addressed in the narrative below and were approved with the original SUB-ADJ19-08 & UGA17-03MOD1 approval.

SITE VICINITY and CHARACTERISTICS:

The subject property is located on the northeast intersection of Kuebler Boulevard SE and Battle Creek Road. The subject property is identified as 083W11D/Tax Lots 100, 200, 400, and 601; 083W12B/Tax Lot 1600. The subject property is located within the City limits and the Urban Growth Boundary. UGA 17-03MOD1 was issued on November 21, 2019 for the subject

property.

The surrounding properties are zoned and used as follows:

North: PH (Public Health); vacant land and existing single-family dwellings
East: RA (Residential Agriculture); vacant land and existing single-family dwellings
South: RA (Residential Agriculture); vacant land and existing single-family dwellings
West: Across Reed Road, FMU (Fairview Mixed-Use); vacant land and existing single-family dwellings

COMPLIANCE WITH THE SALEM AREA COMPREHENSIVE PLAN (SACP):

Citizen involvement is provided via the City of Salem notification process necessary for the subdivision application which allows public comment. The City's Plan is acknowledged to be in compliance with State Land Use Goals. The public notification process is implemented by the Planning Administrator with written notification to property owners. The published notice will identify the applicable criteria. Through the notification process all interested parties are afforded the opportunity to review the application, comment on the proposal and participate in the decision.

In addition, the SACP and its implementing ordinances are adopted by the City through the public hearing process of the City Council ordinance procedure. The subject property is within the city limits and is within the urbanized area. The proposal does not affect the size or location of the city limits or urban growth boundary.

The Statewide Planning Goals are implemented by the adopted goals and policies of the SACP and its implementing ordinances and facility plans. The proposal accommodates the Statewide Goals by being located within an adopted Urban Growth Boundary.

The SACP Residential Development Goal requires the promotion of …. "*. . . a variety of housing opportunities for all income levels and the adequate supply of developable land to support such housing."* The SACP is implemented by the zone and subdivision codes under the provisions of SRC Chapter 510 and 205. The proposal is for a single family development.

The proposal meets SACP General Development Polices 7, 10, 12 and 13 which encourage structures and their sitting in all residential developments to optimize the use of land. The proposed subdivision optimizes the land by providing 171 lots on 32.55 acres. The proposed subdivision is in compliance with the code.

The development is sited and designed to minimize the adverse alteration of the natural terrain, the potential for erosion and adverse effects upon the existing topography and soil conditions. The proposal encourages natural open living spaces by providing larger than average lots. The proposed lots range in size from 5,500 square feet to 13,195

square feet in size, with and average lot size of 6,753 square feet.

The property is within the Urban Growth Boundary and the Urban Services Area; however, UGA17-03MOD1 was issued on November 21, 2019. Thus, meeting the SACP Growth Management Goal.

All internal streets are shown on the site plan. The proposed internal streets will all be built to public street standards to be consistent with the existing surrounding street system. Therefore, meeting SACP Transportation Policy 19.

CRITERIA AND APPLICANT'S REASONS ADDRESSING UDC 205.010(d)(1):

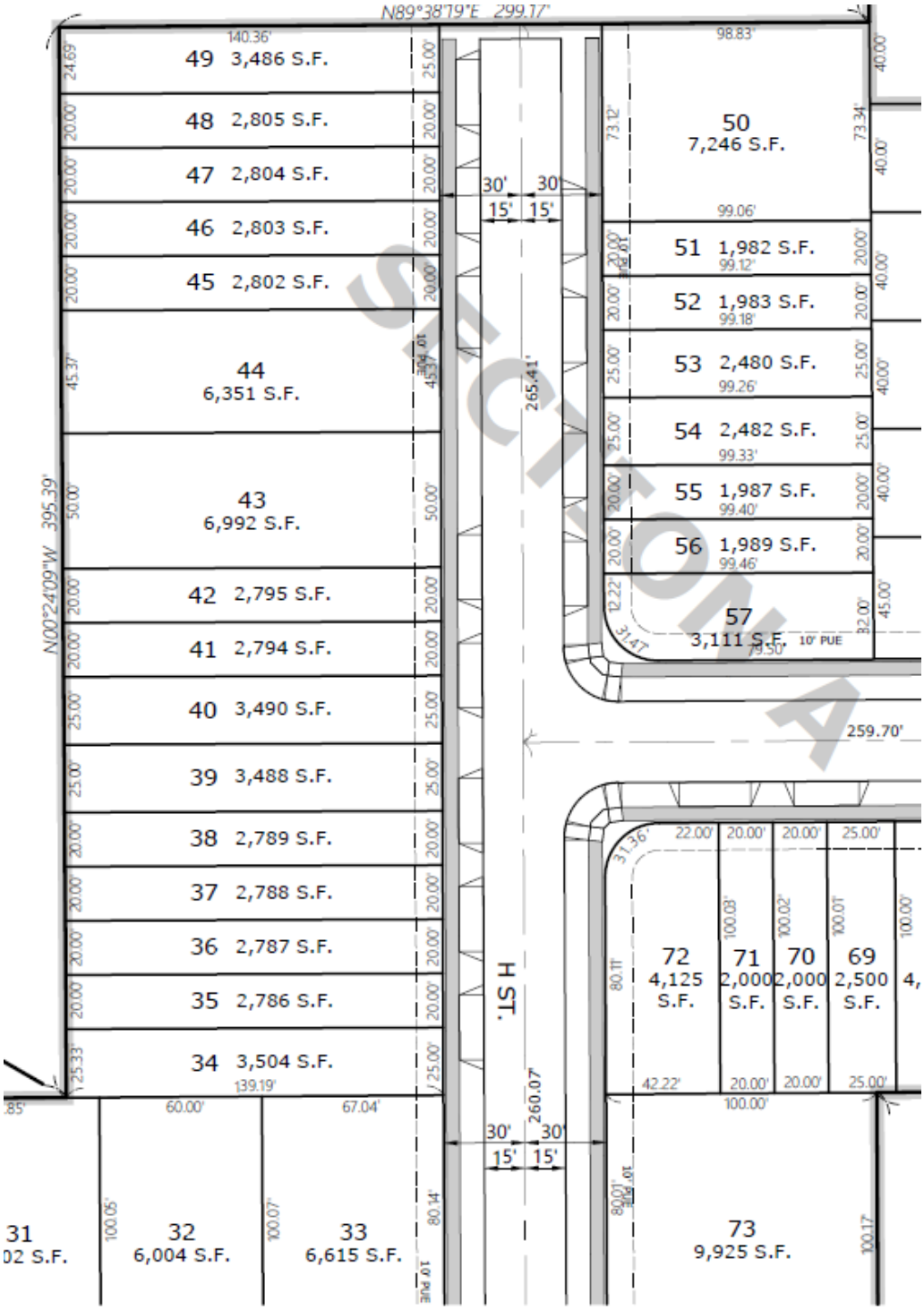
The intent of the subdivision code is providing for orderly development through the application of appropriate rules and regulations. Pursuant to the application of the current enabling statutes, these regulations are those cited in UDC 205.010(d) and UDC 205.015(d). The decision criteria for subdivisions without a concurrent variance under UDC 205.010(d) and UDC 205.015(d) must be found to exist before an affirmative decision may be made for a subdivision application.

(1) The tentative subdivision plan complies with the standards of this Chapter and with all applicable provisions of the UDC, including, but not limited to, the following:

The Salem Revised Code (SRC), which includes the Salem Zoning Code, implements the Salem Area Comprehensive Plan land use goals, and governs development of property within the city limits. The subdivision process reviews development for compliance with city standards and requirements contained in the Subdivision Code, Zoning Code, Salem TSP and the Water, Sewer and Storm Drain System Master Plans, and adopted design documents applicable to residential development. The proposed meets all applicable provisions of the Salem Revised Code.

(A) Lot standards, including, but not limited to, standards for lot area, lot width and depth, lot frontage and designation of front and rear lot lines.

Proposed Lots 34 through 72 are zoned RM2 and will be developed with attached townhomes. The lots within the RM2 meet lot area. However, Lots 34-42, Lots 45-49, Lots 51-56, and Lots 69-71 do not meet the lot to depth ratio, therefore, and adjustment to this standard has been requested.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48 2,805 S.F.
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46 2,803 S.F.
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50 7,246 S.F.
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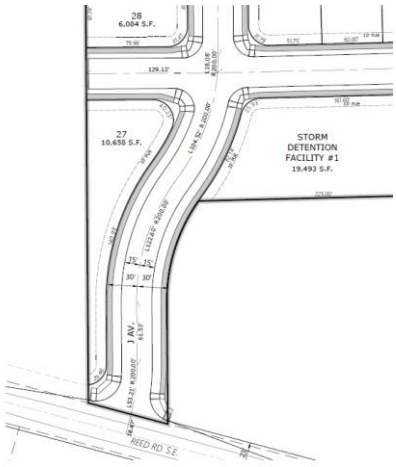
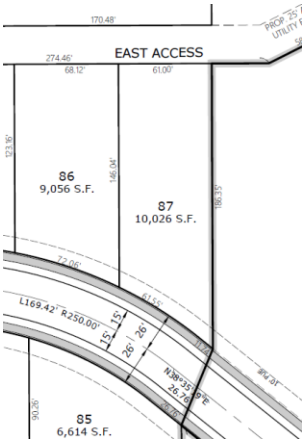
71 2,000 S.F.
70 2,000 S.F.
69 2,500 S.F.
73 9,925 S.F.
31
02 S.F.
32 6,004 S.F.
33 6,615 S.F.
SECTION A

Minimum Lot Area and Dimensions: As shown on the site plan, all the RA zoned lots meet lot size (4,000 square feet) and lot dimension (40’ by 70’) standards as required under UDC Chapters 510 and 511. The proposed lots range in size from 5,500 square feet to 13,195 square feet in size, with and average lot size of 6,753 square feet. There are 3 flag lots within the proposed subdivision, Lots 11, 99, and 100.

Lot 27 on the site plan is odd in shape, however, it can be built with adequate setbacks and an adequate building envelope of about 1,700 square feet. This will allow the development of a smaller home, while maintaining adequate setbacks.

Lots 27 and 87 do not meet the lot depth requirements. Therefore, an adjustment to this standard has been required.





Additional reviews occur at the time of building permits to assure compliance with the zoning code. Compliance with conditions of approval to satisfy the subdivision ordinance is also checked prior to city staff signing the final subdivision plat.

The proposal can conform to applicable conditions imposed as necessary to ensure that development conforms to the standards of the subdivision code and with existing development and public facilities. Expect for those lots mentioned above, the proposed subdivision is in compliance with lot standard requirements and required access. Therefore, this criteria has been met.

(B) City infrastructure standards.

Water, sewer, storm drainage plans will be submitted to the Public Works Department for final plat and construction plan approval at the final plat stage. The tentative site plan illustrates the location of the public utility lines. The proposal meets applicable Salem Area Comprehensive Plan Residential Policies for properties within the Urban Growth Boundary. The proposal encourages the efficient use of developable residential land. Public facilities and services are or will be available to serve the site, including services such as water, sanitary and storm sewer and fire/life/safety services. Therefore, this criteria has been met.

(C) Any special development standards, including, but not limited to, floodplain development, special setbacks, geological or geotechnical analysis, and vision clearance.

There are no wetlands or floodplains located on the subject property.

A geological assessment dated July 20, 2018, was provided, and approved as part of the original approval. The assessment outlined the nature, distribution of underlying geology, and the physical and chemical properties of existing soils; an opinion as to stability of the site, and conclusions regarding the effect of geologic conditions on the proposed development as required. See attached geological assessment.

This criteria has been met.

(2) The tentative subdivision plan does not impede the future use or development of the property or adjacent land.

The proposal is for the entire subject property and will be developed into 171 lots. The southern portion of the property is no longer a part of the subdivision per PLA20-24 approval. As shown on the site plan. A shadow plan for the southern portion of the site has been provided in order to show how development will connect to the proposed subdivision within compliance with Code.

All surrounding properties have direct access onto the existing street system. All 171 lots will have direct access onto the existing street system as well. The subdivision does not impede the future use of the property or adjacent land. Therefore, access to adjacent properties is not necessary.

(3) Development within the tentative subdivision plan can be adequately served by City infrastructure.

Water, sewer, storm drainage plans will be submitted to the Public Works Department for final plat and construction plan approval at the final plat stage. The tentative site plan illustrates the location of the public utility lines. The proposal meets applicable Salem Area Comprehensive Plan Residential Policies for properties within the Urban Growth Boundary. The proposal encourages the efficient use of developable residential land. Public facilities and services are or will be available to serve the site, including services such as water, sanitary and storm sewer and fire/life/safety services.

Water, sewer, storm drainage plans will be submitted to the Public Works Department for final plat and construction plan approval at the final plat stage. The tentative site plan illustrates the location of the public utility lines. Sewer/storm/water has been provided to all lots as required by UGA17-03MOD1.

In conclusion, the location and design of the proposed subdivision allows for public sanitary sewer, water service, and storm drainage to be conveniently provided. Therefore, this criterion has been satisfied.

Proposed StormWater Management System:

Stormwater quality and quantity are required for this development. An LID (low impact development) Stormwater technique will be used to mitigate the increase in pollutants contributed from development. This system may also be used to provide storage and water quantity control. The exact system will be determined at the time of design. Any proposed technique will meet City of Salem Stormwater Management standards in means and methods to provide all aspects of Stormwater management. A Preliminary Stormwater Drainage report dated May 17, 2019, was approved as part of the original approval and has been provided as part of this submittal.

(4) The street system in and adjacent to the tentative subdivision plan conforms to the Salem Transportation System Plan.

The major street system is in place due to prior development. Reed Road located to the west and Battle Creek Road located to the south of the site will provide access into the development. Both Reed Road and Battle Creek Road are designated as a ‘minor arterial’ on the Salem Transportation System Plan.

The existing and proposed street systems conform to the City’s Transportation Plan. All street design and improvements will be determined through the subdivision review process, and regulated through the Conditions of Approval. The proposed internal streets will be designed to street standards.

The major street network in the area has been established and is consistent with the Transportation System Plan which implements the Comprehensive Plan. Public Works Department will address any applicable requirements for right-of-way conveyance that might be required because of this subdivision.

A Traffic Impact Analysis (TIA) dated June 20, 2018 and a Traffic Memo dated July 27, 2018, were approved as part of the original approval and have been provided as part of this application package.

The applicant is requesting alternative street standards for the proposed internal streets, to 50-feet in width where 60-feet is required. The site topography and shape create a physical constraint that makes it very difficult to comply with the standard right of way width of 60 feet.

The existing street system and proposed street improvements will be in compliance with the STSP. All lots are in compliance with the UDC/SRC.

The layout of the lots and internal streets take into account the topography and vegetation of the site, such that the least disruption of the site, topography, and vegetation will result from the reasonable development of the site.

The subdivision code requires City approval of lots be suitable for the general purpose for which they are likely to be developed. No lots can be of such a size or configuration that is detrimental to public health, safety, or welfare or sanitary needs of users of the parcel or lot.

The applicant is also requesting an adjustment and alternative street standard to street grade. As shown on the street section provided, J Avenue, K Street, and M Street will have a street grade over 12%. Due to the topography of the site and the proposed street alignments with existing streets, along with required stub street connections, these proposed streets within the subdivision exceed the street grade allowed.

The intent of the maximum street grade is to allow vehicles to climb and descend the street safely in all conditions. The internal streets proposed will provide safe and efficient circulation throughout the subdivision. As shown on the street sections provided, there is only curtain sections of each street that will exceed the allowed street grade. All streets within the proposed subdivision will be designed to provide safe and efficient conditions.

There are several access points provided throughout the proposed subdivision which provide alternative access options.

The intent of the standard is being met; therefore, the proposal equally meets the intent of the maximum street grade standard.

The major street network in the area has been established and is consistent with the Transportation System Plan which implements the Comprehensive Plan. Public Works Department will address any applicable requirements for right-of-way conveyance that might be required because of this subdivision.

Therefore, the existing street system and proposed street improvements will be in compliance with the STSP.

The subdivision plan takes into consideration the topography and vegetation of the site. The alternative street standards allow lots of sufficient size and dimensions for future development. The lot dimensions are illustrated on the tentative site plan and are in conformance to the minimum standards in UDC 510 and 511.

Transportation Planning Rule Review:

The City of Salem's TPR encourages a reduction in automobile trips by capitalizing on transit opportunities and by creating an environment that encourages people to walk. The proposed subdivision is a "limited land use decision" pursuant to Oregon Revised Statute (ORS) 197.015, and has therefore been reviewed for consistency with the State's TPR multi-modal connectivity requirements.

In conclusion, the development will provide bicycle and pedestrian facilities on-site to encourage people to walk and reduce vehicle trips. The development on the property will allow residents to reduce vehicle usage, by the convenience of bicycle and pedestrian paths to and from the uses and existing sidewalk system. Therefore, the proposed subdivision is in compliance with the intent of the TPR to reduce vehicle usage and encourage other modes of transportation to and from the site.

(5) The street system in and adjacent to the tentative subdivision plan is designed so as to provide for the safe, orderly, and efficient circulation of traffic into, through, and out of the subdivision.

The subject property is located in a developed and developing area where improved streets and sidewalks exist and continue with new development. The local street system serving the development provides the necessary connections and access to the local streets and circulation system serving this residential neighborhood.

Block Length: Blocks shall be a maximum of 600 feet between street centerlines. The length of the blocks was taken into consideration at the time of design layout. There are more than enough street connections within the proposed development, therefore, block lengths are in compliance with the code.

The proposed subdivision provides vehicle and pedestrian connections throughout the development. By providing these connections, the intent of providing a maximum block

length and connectivity have been met. Adding additional streets to break of block length would only create unsafe circulation. As shown on the site plan, the proposed subdivision provides a safe an efficient circulation pattern throughout the development for vehicles and pedestrians. Therefore, additional streets are not necessary.

Access to, within, and from the development must be consistent with applicable requirements of the Transportation Planning Rule Requirements (TPR) that requires that development provide connectivity between land uses and transportation. Under the Rule, developments are responsible for providing for the safe and efficient circulation of vehicles, bicycles, and pedestrians into, through, and out of a development. The proposal develops the subject property within an established residential area where local and arterial streets and mass transit facilities exist. These facilities connect the transportation system to the surrounding residential neighborhoods.

The Public Works Department will address the level of street improvements that are roughly proportional to assure conformance to the development to subdivision code and applicable transportation system plan requirements. Completion of conditions of approval prior to the signing of the final plat will satisfy this criterion for the subdivision application.

Street Grade: There are several local streets proposed within the subdivision that exceed the 12% maximum street grade. The applicant is requesting an adjustment and alternative street standards to allow these internal local streets to be developed with a street grade over 12%, up to 15%.

In conclusion, the proposed street plan provides the best economic, safe, and efficient circulation of traffic possible under the circumstances. The proposed subdivision demonstrates this review criterion can be met. Therefore, this criterion has been satisfied.

(6) The tentative subdivision plan provides safe and convenient bicycle and pedestrian access from within the subdivision to adjacent residential areas and transit stops, and to neighborhood activity centers within one-half mile of the development. For purposes of this criterion, neighborhood activity centers include, but are not limited to, existing or planned schools, parks, shopping areas, transit stops, or employment centers.

The subdivision is served with adequate transportation infrastructure and the street system adjacent the property conforms to the Transportation System Plan and provides for safe, orderly, and efficient circulation of traffic into, through, and out of the subject property on to the public street system.

Therefore, via paved streets and sidewalks, safe and convenient bicycle and pedestrian access will be provided to the site and to adjacent neighborhoods. Therefore, this criteria has been met.

(7) The tentative subdivision plan mitigates impacts to the transportation system consistent with the approved Traffic Impact Analysis, where applicable.

The proposal is for a 171-lot subdivision. A Traffic Impact Analysis (TIA) dated June 20, 2018 and a Traffic Memo dated July 27, 2018, was approved with the original approval and have been provided as part of this application package. The proposed subdivision plan mitigates impacts to transportation system by providing adequate access and circulation for all 171 lots. Therefore, this criterion has been met.

(8) The tentative subdivision plan takes into account the topography and vegetation of the site so the need for variances is minimized to the greatest extent practicable.

All lots are in compliance with the UDC/SRC. Therefore, no variances have been requested.

(9) The tentative subdivision plan takes into account the topography and vegetation of the site, such that the least disruption of the site, topography, and vegetation will result from the reasonable development of the lots.

The subdivision code requires City approval of lots be suitable for the general purpose for which they are likely to be developed. No lots can be of such a size or configuration that is detrimental to public health, safety, or welfare or sanitary needs of users of the parcel or lot.

The subdivision plan takes into consideration the topography and vegetation of the site. The proposed lots are of sufficient size and dimensions to permit future development. The lot dimensions are illustrated on the tentative site plan and are in conformance to the minimum standards in UDC 510 and 511. Final conformance to minimum lot size and buildable lot area will be confirmed when the final plat is submitted to the City for review and approval.

There are 192 trees located within the boundary of the site. One-hundred and thirty (130) trees are designated for removal. The applicant is preserving 32% of the tree on the site. Trees designated for removal are within the right-of-way, the building envelop or within an area close to the building envelope, which have the potential of being damaged during grading and construction. Therefore, the removal of these 130 trees is necessary for development of the site.

There are eleven (11) Oregon White Oaks 24” in diameter or greater located throughout the site. The applicant is removing six (6) of these significant trees.

J Avenue-Oak 24” Remove
Strong Road-Oak 32” Remove
A Avenue-Oak 60” Remove
A Avenue-Oak 28” Remove
A Avenue-Oak 24” Remove
Lot 118-Oak 30” Remove

All Oregon White Oaks designated for removal are within the right-of-way, the building envelops or within an area close to the building envelope, which have the potential of being damaged during grading and construction.

The layout of the lots takes into consideration the topography and vegetation of the site. All lots are in compliance with the UDC. Therefore, no variances have been requested. Therefore, this criteria has been met.

10) When the tentative subdivision plan requires an Urban Growth Preliminary Declaration under SRC Chapter 200, the tentative subdivision plan is designed in a manner that ensures that the conditions requiring the construction of on-site infrastructure in the Urban Growth Preliminary Declaration will occur, and, if off-site improvements are required in the Urban Growth Preliminary Declaration, construction of any off-site improvements is assured.

The property and development is located inside the Urban Service Area (USA). However, an Urban Growth Preliminary Declaration (UGA17-03MOD1) was issued on November 21, 2019. All conditions of UGA17-03 have been or will be met with the approval of this subdivision proposal. Therefore, this criterion has been met.

TREE CONSERVATION/REMOVAL PLAN

There are 192 trees located within the boundary of the site. One-hundred and thirty (130) trees are designated for removal. The applicant is preserving 32% of the tree on the site. Trees designated for removal are within the right-of-way, the building envelop or within an area close to the building envelope, which have the potential of being damaged during grading and construction. Therefore, the removal of these 130 trees is necessary for development of the site.

There are eleven (11) Oregon White Oaks 24” in diameter or greater located throughout the site. The applicant is removing six (6) of these significant trees.

J Avenue-Oak 24” Remove
Strong Road-Oak 32” Remove
A Avenue-Oak 60” Remove
A Avenue-Oak 28” Remove
A Avenue-Oak 24” Remove
Lot 118-Oak 30” Remove

PHASED SUBDIVSION 205-015(D)

Criteria. A tentative phased subdivision plan shall be approved if all of the following criteria are met:

(1) The tentative phased subdivision plan meets all of the criteria for tentative subdivision plan approval set forth in SRC 205.010(d).

Applicant Findings: The subject property is about 32.55 acres in size and zoned RA (Residential Single Agriculture) and RM2 (Multi-Family Residential). The applicant is proposing to divide the subject property into 171 residential lots (within 4 Phases/Sections).

Section A: Lots 1-76 (Lots 34-72 are designed for townhomes)
Section B: Lots 77-100
Section C: Lots 101-134
Section D: Lots 135-171

The proposed phased subdivision meets all the criteria for a tentative subdivision as outlined above under SRC 205.010(d).

(2) Connectivity for streets and City utilities between each phase ensures the orderly and efficient construction of required public improvements among all phases.

Applicant Findings: The major street system is in place due to prior and new development. Reed Road located to the west and Battle Creek Road located to the south of the site will provide access into the development. Both Reed Road and Battle Creek Road are designated as a 'minor arterial' on the Salem Transportation System Plan.

The existing and proposed street systems conform to the City's Transportation Plan. All street design and improvements will be determined through the subdivision review process, and regulated through the Conditions of Approval. The proposed internal streets will be designed to street standards.

The major street network in the area has been established and is consistent with the Transportation System Plan which implements the Comprehensive Plan. Public Works Department will address any applicable requirements for right-of-way conveyance that might be required because of this subdivision.

The proposed phased subdivision will not impede the future development of other phases as shown on the site plan. All phases will have access to the internal street system and the existing street system.

Each phase will ensure the orderly and efficient construction of the required improvements as required by Conditions of Approval and Code compliance.

Therefore, this criteria has been met.

(3) Each phase is substantially and functionally self-contained and self-sustaining with regard to required public improvements.

Applicant Findings: Each phase is required to provide the needed improvements to accommodate that phase. Due to the required conditions of approval and City standards all four (4) Phases/Sections will be functionally self-contained and self-sustaining as shown on the site plans.

The subject property is about 32.55 acres in size and zoned RA (Residential Single Agriculture) and RM2 (Multi-Family Residential). The applicant is proposing to divide the subject property into 171 single family residential lots (within 4 Phases/Sections).

(4) Each phase is designed in such a manner that all phases support the infrastructure requirements for the phased subdivision as a whole.

Applicant Findings: The applicant will be required to comply with conditions of approval that will be designed to ensure that the phases are developed to support the infrastructure requirements for each phase and the subdivision as a whole. See attached site plans.

TRANSMITTAL

MULTI/TECH
ENGINEERING SERVICES, INC.

DATE: January 25, 2021 **JOB #:** 6234

TO: Planning Division
Community Development
Room 305

PROJECT: Coburn Estates

FROM: Brandie Dalton, Land-Use Planner

RE: ***TREE CONSERVATION PLAN ADJUSTMENT FOR TCP19-14***

ENCLOSED IS A TREE CONSERVATION PLAN ADJUSTMENT FOR THE COBURN ESTATES SUBDIVISION (SUB-ADJ19-08 & UGA17-03MOD1). AFTER BEING OUT ON THE SITE, IT WAS DETERMINED THAT THE TREE COUNT IS 192 (184 NOTED IN ORIGINAL APPROVAL TCP19-14) TREES WITHIN THE BOUNDARY. FURTHERMORE, DUE TO TA CHANGE IN PROPERTY BOUNDARIES AND FURTHER DEVELOPMENT OF THE SITE, THE TREE PLAN NEEDED TO BE ADJUSTED. THE APPLICANT IS REQUESTING A TREE CONSERVATION ADJUSTMENT IN ORDER TO REMOVE 130 TREES (137 NOTED IN THE ORIGINAL APPROVAL). ON DECEMBER 3, 2019, THE APPLICANT WAS GIVEN APPROVAL TO REMOVE TREES ON THE SITE THROUGH TREE CONSERVATION PLAN (TCP) 19-14.

SRC 808.040(D):

(1) THERE ARE SPECIAL CONDITIONS THAT COULD NOT HAVE BEEN ANTICIPATED AT THE TIME THE TREE CONSERVATION PLAN WAS SUBMITTED THAT CREATED UNREASONABLE HARDSHIPS OR PRACTICAL DIFFICULTIES.

APPLICANT FINDINGS: TCP 19-14 ALLOWED THE APPLICANT APPROVAL TO REMOVE 137 TREES ON THE SITE WHILE PRESERVING 47 TREES (26%), OF THE ORIGINAL TREES WITHIN SUB-ADJ19-08 & UGA17-03MOD1.

AFTER STARTING WORK AND GRADING ON THE SITE, IT WAS DETERMINED THAT THERE ARE ACTUALLY 192 TREES ON THE SITE AND THAT 130 TREES WILL NEED TO BE REMOVED.

THE APPLICANT IS REQUESTING THE REMOVAL OF 130 TREES ON THE SITE. THESE TREES NEED TO BE REMOVED IN ORDER TO AVOID DAMAGING THE TREES OR CAUSING SAFETY ISSUES LATER DUE TO UNSTABLE TREES. SEVERAL OF THE TREES ALSO NEED TO BE REMOVED BECAUSE THEY ARE NOW LOCATED WITHIN RIGHT-OF-WAY. THEREFORE, THE APPLICANT IS REQUESTING APPROVAL TO REMOVE 130 TREES ON THE SITE.

Multi/Tech Engineering Services, Inc.
1155 13th Street SE
Salem OR 97302

(503) 363-9227 PHONE
(503) 364-1260 FAX
office@mtengineering.net

(2) When the Tree Conservation Plan Adjustment proposes the removal of a significant tree, there are no reasonable design alternative that would enable preservation of the tree.

Applicant Findings: There are eleven (11) Oregon White Oaks 24" in diameter or greater located throughout the site. The applicant is removing six (6) of these significant trees.

J Avenue-Oak 24"	Remove
Strong Road-Oak 32"	Remove
A Avenue-Oak 60"	Remove
A Avenue-Oak 28"	Remove
A Avenue-Oak 24"	Remove
Lot 118-Oak 30"	Remove

(3) When the Tree Conservation Plan Adjustment proposes the removal of a tree or native vegetation within a riparian corridor, there are no reasonable design alternatives that would enable preservation of the tree or native vegetation.

Applicant Findings: There is no riparian corridor located on the subject property. Therefore, this criteria is not applicable.

(4) When the Tree Conservation Plan Adjustment proposes to reduce the number of trees preserved in the original tree conservation plan below 25 percent, only those trees reasonably necessary to accommodate the proposed development are designated for removal.

Applicant Findings: The proposed TCPA will result in the removal of 130 trees while preserving 62 trees (32%), which is 7 trees less than originally proposed for removal.

Tree Inventory

Total Trees on Site:	192
Trees to be Removed:	130
Trees to Remain:	62

If you have any questions regarding this issue please feel free to contact us. Thank you.

Brandie Dalton
Land-Use Planner
bdalton@mtengineering.net

Multi/Tech Engineering Services, Inc.
1155 13th Street SE
Salem OR 97302

(503) 363-9227 PHONE
(503) 364-1260 FAX
office@mtengineering.net

Tree Variance

Proposal:

The subject property is about 32.55 acres in size and zoned RA (Residential Single Agriculture) and RM2 (Multi-Family Residential). The applicant is proposing to divide the subject property into 171 single family residential lots (within 4 Phases/Sections).

There are 192 trees located within the boundary of the site. One-hundred and thirty (130) trees are designated for removal. The applicant is preserving 32% of the tree on the site. Trees designated for removal are within the right-of-way, the building envelop or within an area close to the building envelope, which have the potential of being damaged during grading and construction. Therefore, the removal of these 130 trees is necessary for development of the site.

There are eleven (11) Oregon White Oaks 24" in diameter or greater located throughout the site. The applicant is removing six (6) of these significant trees.

J Avenue-Oak 24"	Remove
Strong Road-Oak 32"	Remove
A Avenue-Oak 60"	Remove
A Avenue-Oak 28"	Remove
A Avenue-Oak 24"	Remove
Lot 118-Oak 30"	Remove

Criteria

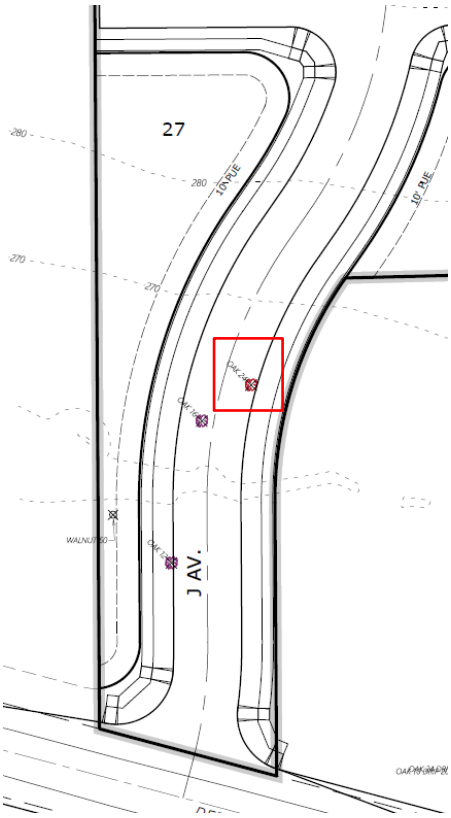
Tree Variance 808.045(d)(1):

1) Hardship-

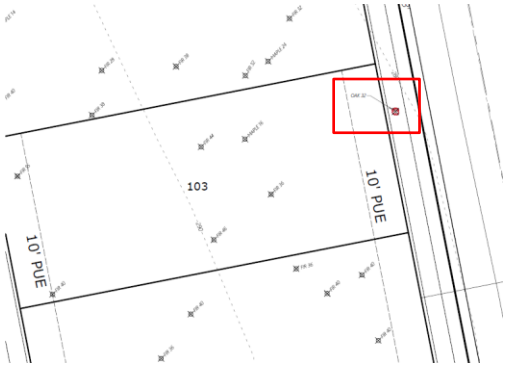
(A) The site being developed is 32.55 acres in size and zoned RA and RM2. All Oregon White Oaks designated for removal are within the right-of-way, the building envelops or within an area close to the building envelope, which have the potential of being damaged during grading and construction. The site has been designed to accommodate a safe and efficient circulation system, adequate parking, and meet the standards all while taking into consideration topography, stormwater detention, and street connections.

Due to the topography and required street connections on the site, these areas where the trees are located couldn't not be avoided and therefore, created a hardship by impacting how the site could be laid out. Therefore, the trees proposed for removal are located within the proposed accessways and the proposed building envelopes.

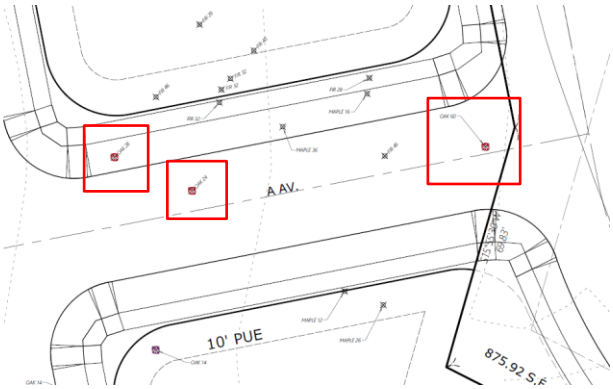
The 24” Oregon White Oak designated for removal is located within the area where a sidewalk is required. J Avenue is necessary in order to provide street connections and circulations throughout the subdivision.



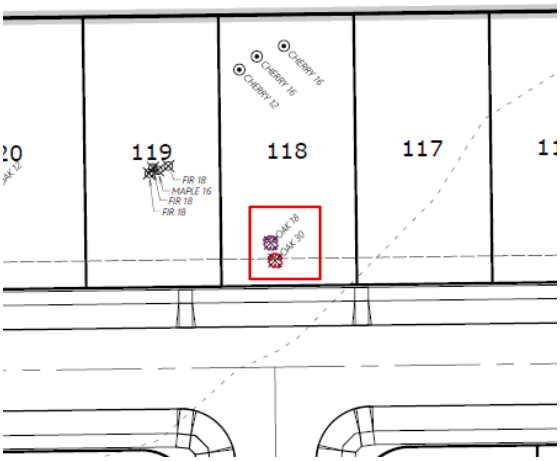
The 32” Oregon White Oak designated for removal is located within Strong Road area where a sidewalk is required.



The 24”, 28”, and 60” Oregon White Oaks designated for removal are located within A Avenue. A Avenue is necessary in order to provide street connections and circulations throughout the subdivision.



The 30” Oregon White Oaks designated for removal is located within Lot 118. This tree is located in the driveway location and potential building area and will be affected by the construction of a driveway and/or a sidewalk. This tree must be removed to accommodate a driveway and sidewalk.



(B) The proposed variance is the minimum necessary to allow the lawful development of the site. There are 11 significant trees (Oregon White Oaks) located throughout the subject property. The applicant is requesting to remove 6 of those significant trees in order to develop the site.

COBURN GRAND VIEW ESTATES

T. 8 S., R. 3 W., Willamette Meridian
Sec. 11D Tax Lots 100, 200, 400 & 601 - Sec. 12B Tax Lot 1600
City Of Salem, Marion County, Oregon

Owner / Developer:

WESTWOOD HOMES LLC

12700 NW CORNELL RD.
PORTLAND, OREGON 97229

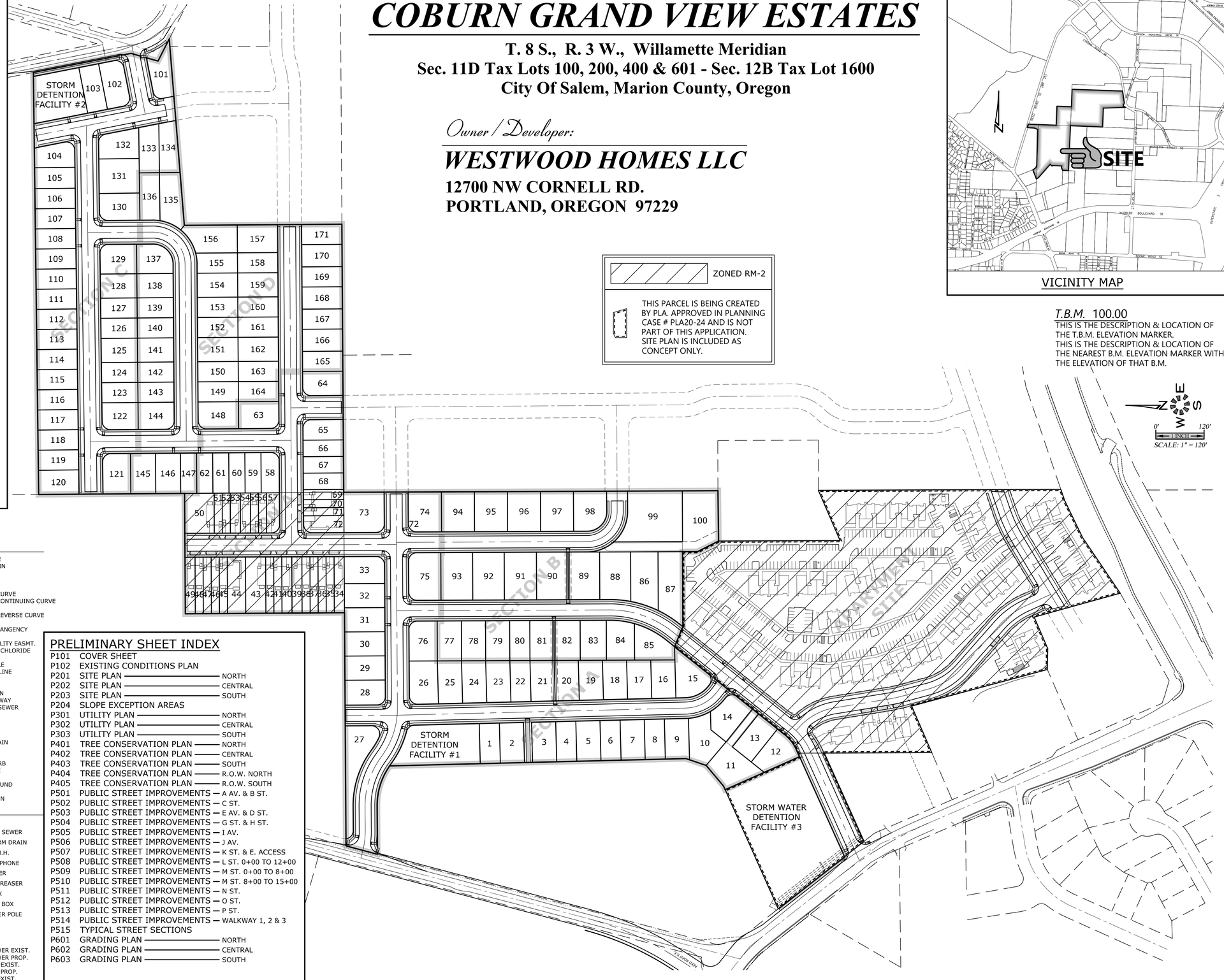
TOTAL PARCEL SIZE:
DEVELOPABLE AREA — 32.545 Ac.
NUMBER OF UNITS — 170
DENSITY — 4.51 UNITS/Ac.
LARGEST LOT — 13,195 S.F.
SMALLEST LOT — 5,500 S.F.
AVERAGE — 6,753 S.F.

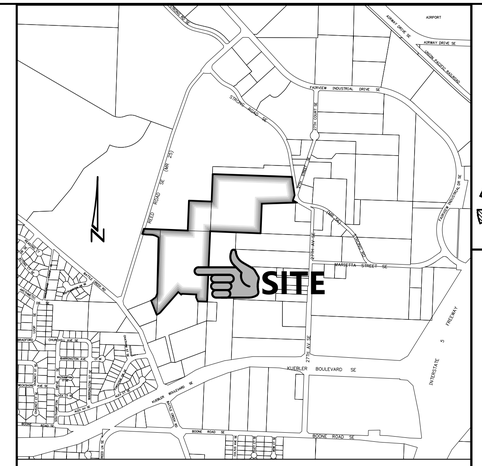
SECTION A:
DEVELOPABLE AREA — 13.492 Ac.
NUMBER OF UNITS — 76
DENSITY — 5.63 UNITS/Ac.
LARGEST LOT — 10,658 S.F.
SMALLEST LOT — 1,982 S.F.
AVERAGE — 5,038 S.F.

SECTION B:
DEVELOPABLE AREA — 6.068 Ac.
NUMBER OF UNITS — 24
DENSITY — 3.96 UNITS/Ac.
LARGEST LOT — 17,940 S.F.
SMALLEST LOT — 4,951 S.F.
AVERAGE — 8,559 S.F.

SECTION C:
DEVELOPABLE AREA — 6.828 Ac.
NUMBER OF UNITS — 34
DENSITY — 4.98 UNITS/Ac.
LARGEST LOT — 10,658 S.F.
SMALLEST LOT — 4,484 S.F.
AVERAGE — 5,499 S.F.

SECTION D:
DEVELOPABLE AREA — 6.155 Ac.
NUMBER OF UNITS — 36
DENSITY — 5.85 UNITS/Ac.
LARGEST LOT — 8,353 S.F.
SMALLEST LOT — 4,001 S.F.
AVERAGE — 5,492 S.F.





ABBREVIATIONS

A.C.	ASPHALTIC CONCRETE	L.P.	LIGHT POLE
ACMP	ALUMINIZED CMP	M	METER, MAIN
ASSY.	ASSEMBLY	M.H.	MANHOLE
B.O.	BLOW OFF	MTL.	METAL
B.F.V.	BUTTERFLY VALVE	O.H.	OVERHEAD
C & G	CURB & GUTTER	PC	POINT OF CURVE
CATV	CABLE TELEVISION	PCC	POINT OF CONTINUING CURVE
C.B.	CATCH BASIN	PED.	PEDESTAL
C.B.C.O.	CATCH BASIN CLEANOUT	PRC	POINT OF REVERSE CURVE
C.B.I.	CATCH BASIN INLET	PROP.	PROPOSED
C.L.	CENTERLINE	PT	POINT OF TANGENCY
CMP	CORRUGATED METAL PIPE	PUB.	PUBLIC
C.O.	CLEANOUT	PUE	PUBLIC UTILITY EASMT.
CONC.	CONCRETE	PVC	POLYVINYL CHLORIDE
CONST.	CONSTRUCT	PVT.	PRIVATE
D.I.	DUCTILE IRON	P.P.	POWER POLE
DIA.	DIAMETER	P.L.	PROPERTY LINE
DWG.	DRAWING	R	RADIUS
EASMT.	EASEMENT	R-	RIM
E.G.	EXIST. GRADE / GROUND	RD	ROOF DRAIN
EOP, E.P.	EDGE OF PAVEMENT	R.O.W.	RIGHT-OF-WAY
ELEC.	ELECTRIC	SAN.S. or S.S.	SANITARY SEWER
ELEV. or EL.	ELEVATION	S	SLOPE
EX. or EXIST.	EXISTING	STA.	STATION
FT.	FEET	STD.	STANDARD
F.F.	FINISH FLOOR	STL.	STEEL
F.G.	FINISH GRADE	STM.DRN. or S.D.	STORM DRAIN
F.H.	FIRE HYDRANT	SVC.	SERVICE
F.M.	FORCE MAIN	SW	SIDEWALK
GUT. or GTR.	GUTTER	T.C.	TOP OF CURB
G.V.	GATE VALVE	TEL.	TELEPHONE
IMP.	IMPROVEMENT	TYP.	TYPICAL
INST.	INSERT	U.G.	UNDERGROUND
INV. or I-	INVERT	VLT.	VAULT
L	LENGTH, LINE	W.M.	WATER MAIN

SYMBOLS

EXIST.	PROP.	
		BLOW OFF ASSY.
		CATCH BASIN
		CATCH BASIN CLEANOUT
		CATCH BASIN INLET
		CATV PED. / BOX
		CLEANOUT
		ELEC. PED. / BOX
		FIRE HYDRANT
		GAS LOCATION MARKER
		GAS VALVE
		MAIL BOX
		MANHOLE SAN. SEWER
		MANHOLE STORM DRAIN
		2' DIA. C.O. / M.H.
		MANHOLE TELEPHONE
		MANHOLE WATER
		REDUCER / INCREASER
		TEL. PED. / BOX
		TRAFFIC PED. / BOX
		UTILITY / POWER POLE
		WATER METER
		WATER VALVE
		CABLE TELEVISION
		CENTERLINE
		DITCH C.L.
		ELECTRICAL LINE
		GAS MAIN
		TELEPHONE LINE
		SANITARY SEWER EXIST.
		SANITARY SEWER PROP.
		STORM DRAIN EXIST.
		STORM DRAIN PROP.
		WATER MAIN EXIST.
		WATER MAIN PROP.

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P102 EXISTING CONDITIONS PLAN
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P202 SITE PLAN — CENTRAL
P203 SITE PLAN — SOUTH
P204 SLOPE EXCEPTION AREAS
P301 UTILITY PLAN — NORTH
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P401 TREE CONSERVATION PLAN — NORTH
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P405 TREE CONSERVATION PLAN — R.O.W. SOUTH
P501 PUBLIC STREET IMPROVEMENTS — A AV. & B ST.
P502 PUBLIC STREET IMPROVEMENTS — C ST.
P503 PUBLIC STREET IMPROVEMENTS — E AV. & D ST.
P504 PUBLIC STREET IMPROVEMENTS — G ST. & H ST.
P505 PUBLIC STREET IMPROVEMENTS — I AV.
P506 PUBLIC STREET IMPROVEMENTS — J AV.
P507 PUBLIC STREET IMPROVEMENTS — K ST. & E. ACCESS
P508 PUBLIC STREET IMPROVEMENTS — L ST. 0+00 TO 12+00
P509 PUBLIC STREET IMPROVEMENTS — M ST. 0+00 TO 8+00
P510 PUBLIC STREET IMPROVEMENTS — M ST. 8+00 TO 15+00
P511 PUBLIC STREET IMPROVEMENTS — N ST.
P512 PUBLIC STREET IMPROVEMENTS — O ST.
P513 PUBLIC STREET IMPROVEMENTS — P ST.
P514 PUBLIC STREET IMPROVEMENTS — WALKWAY 1, 2 & 3
P515 TYPICAL STREET SECTIONS
P601 GRADING PLAN — NORTH
P602 GRADING PLAN — CENTRAL
P603 GRADING PLAN — SOUTH

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PRELIMINARY PLAN
COVER SHEET

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

623x0200 P101CO

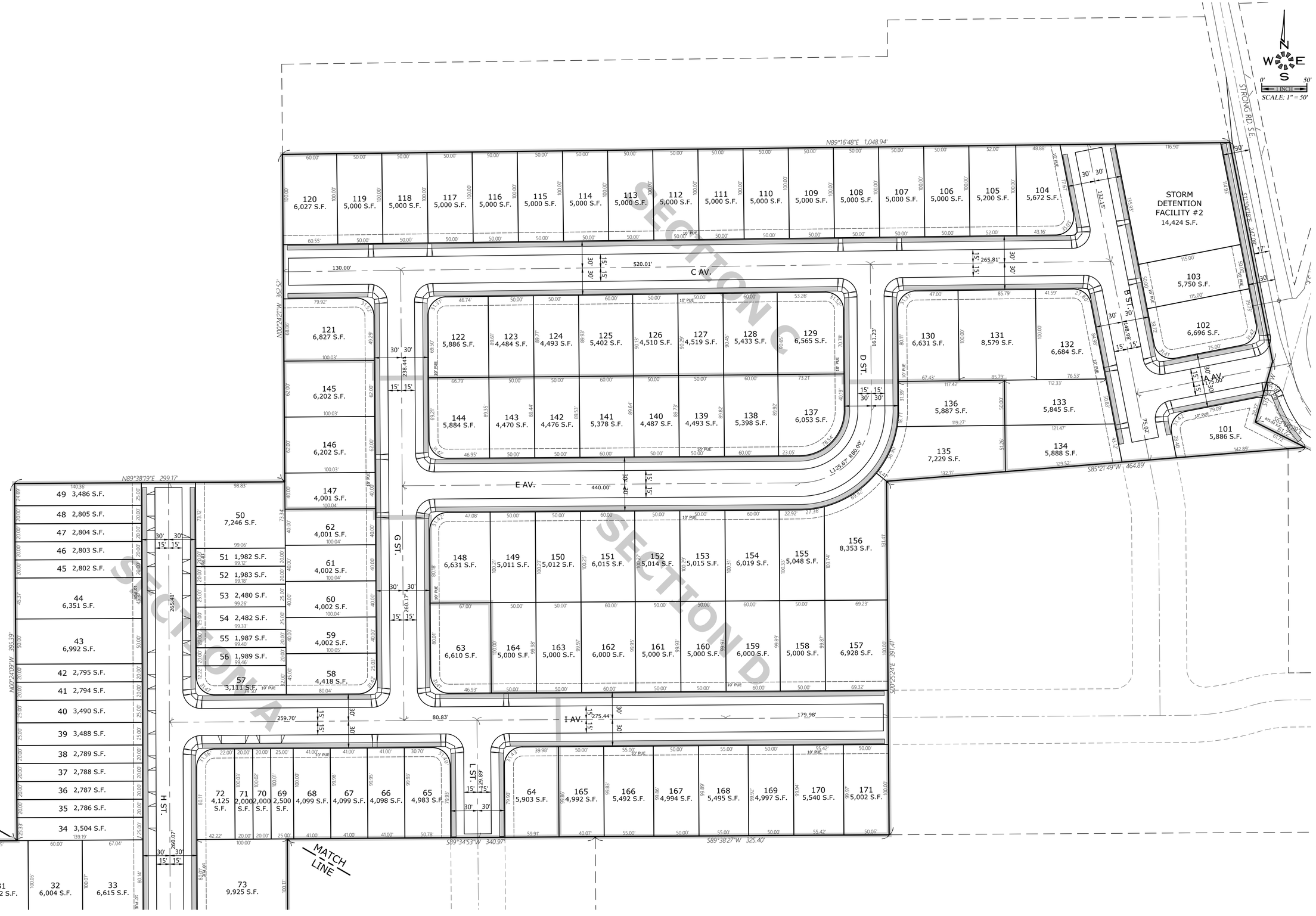
Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JUNE 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

JOB # 6234

P101

J:\Civil\6234-RiverRoad\Dwg s20\6234x2020.dwg, P101CO, 1/21/2021 11:44:54 AM, PSaunders



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SITE PLAN - NORTH -

COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PREFERENCE OVER GRAPHICAL REPRESENTATION.

6234x2x00 P201SP

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

JOB # 6234

P201

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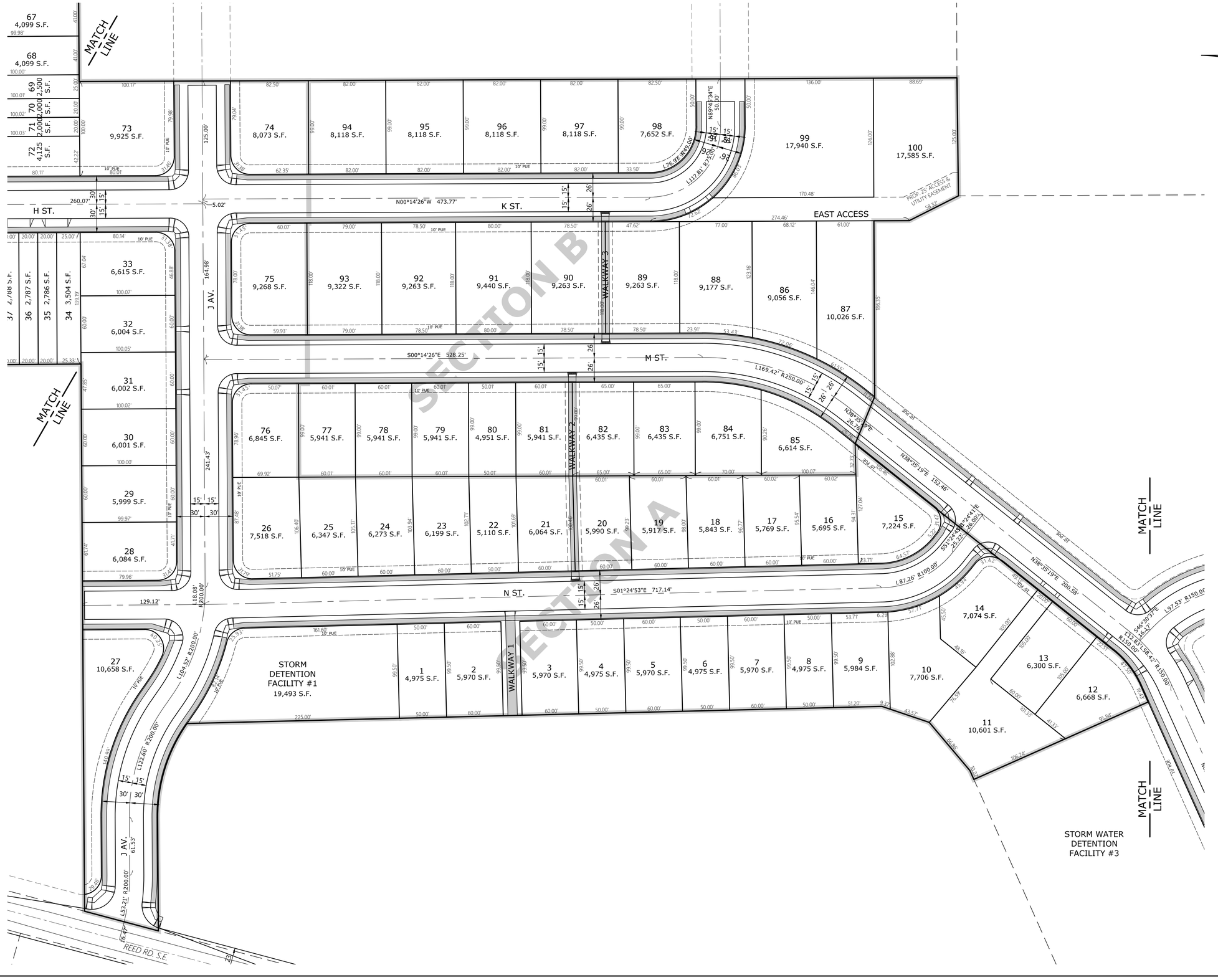

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SITE PLAN - CENTRAL -

COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234x2020 P202SP

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

JOB # 6234

P202

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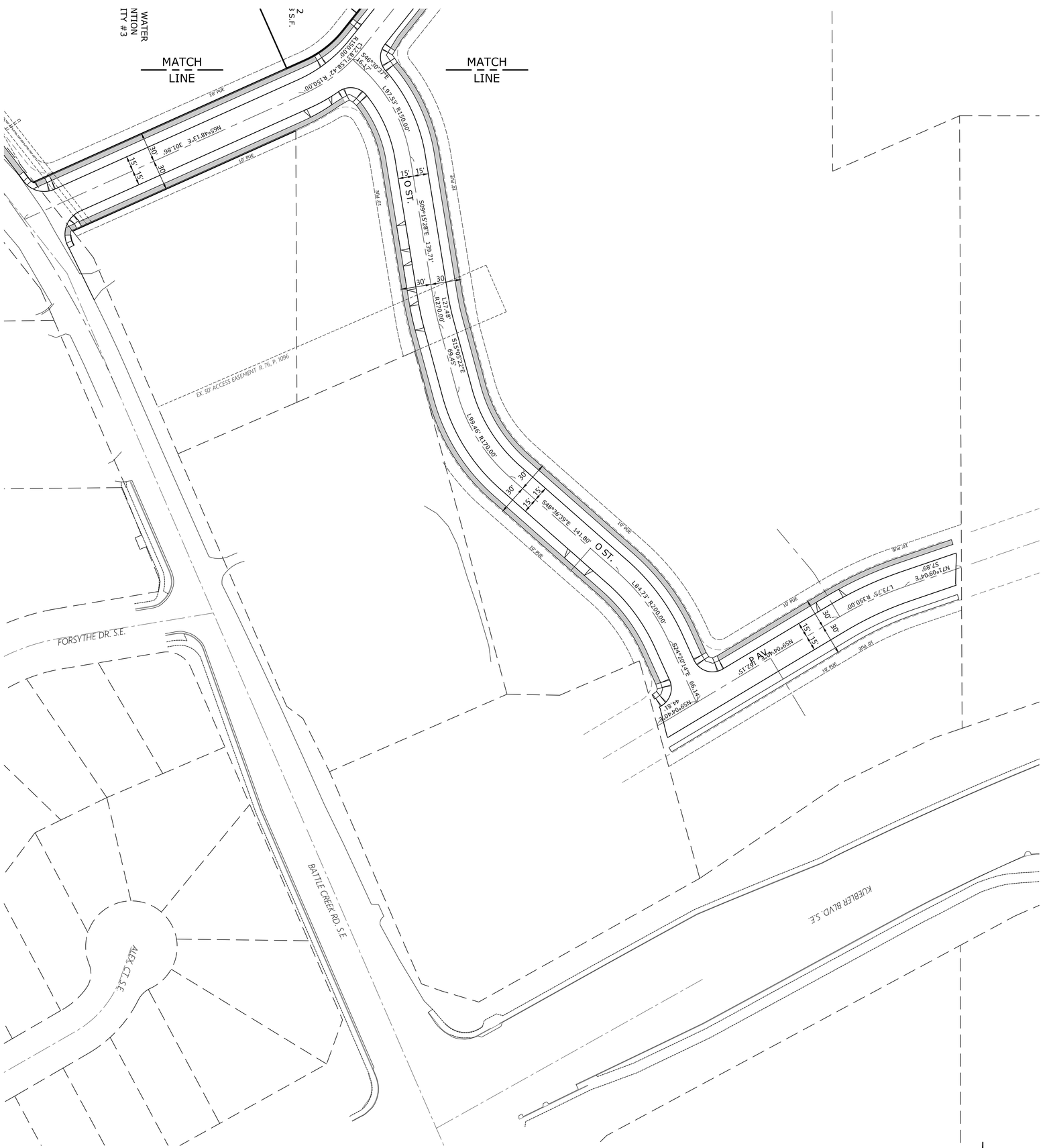

SCALE: 1" = 50'

P203	JOB # 6234	6234p2020 P203SP Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES**	**SITE PLAN - SOUTH -**

OREGON JULY 14, 1978 MARK D. GRENZ 59893 EXPIRES: 06-30-2021

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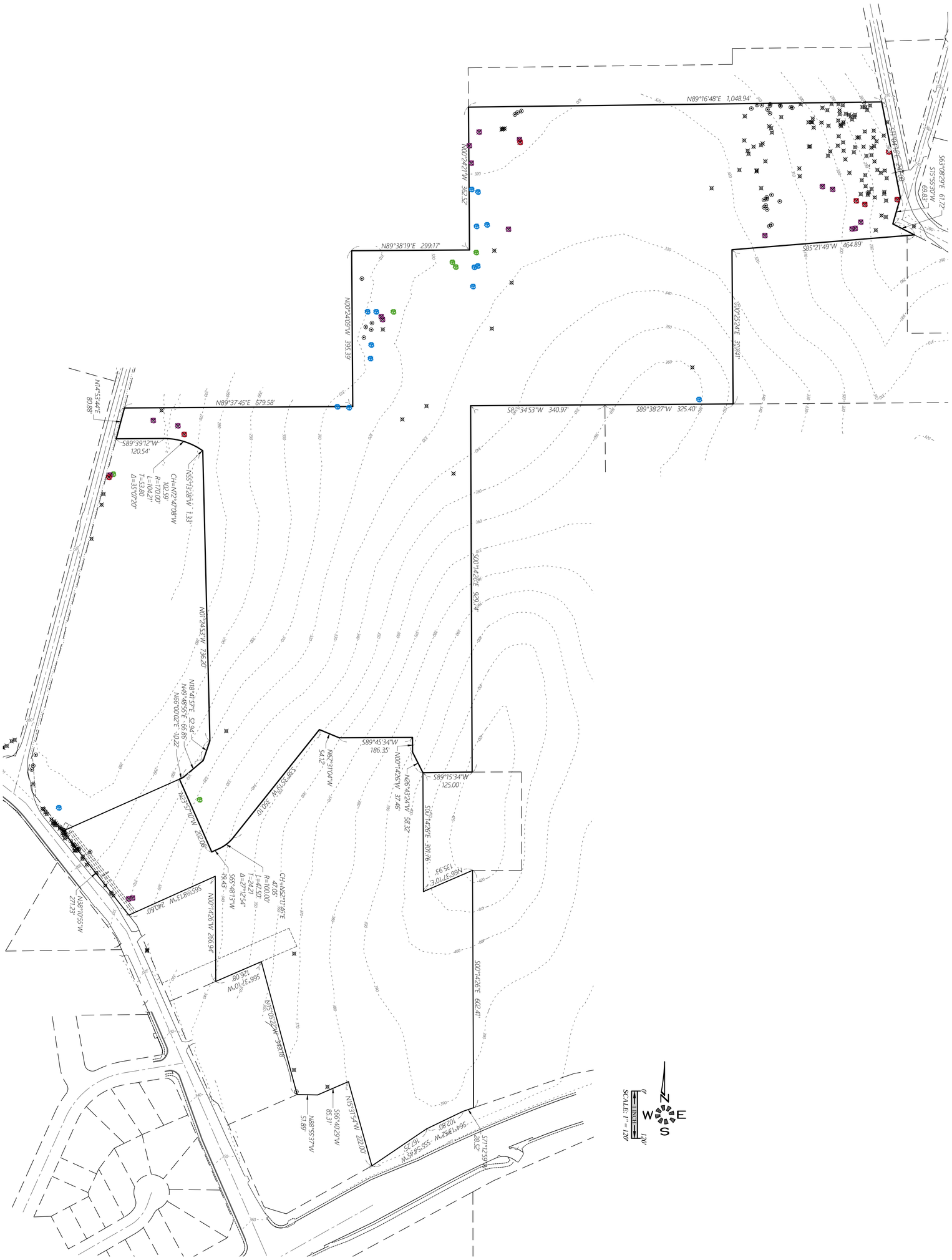

P102

JOB # 6234

EXPIRES: 06-30-2021

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ

6234p2020 P102XC

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

COBURN GRAND VIEW ESTATES

EXISTING CONDITIONS

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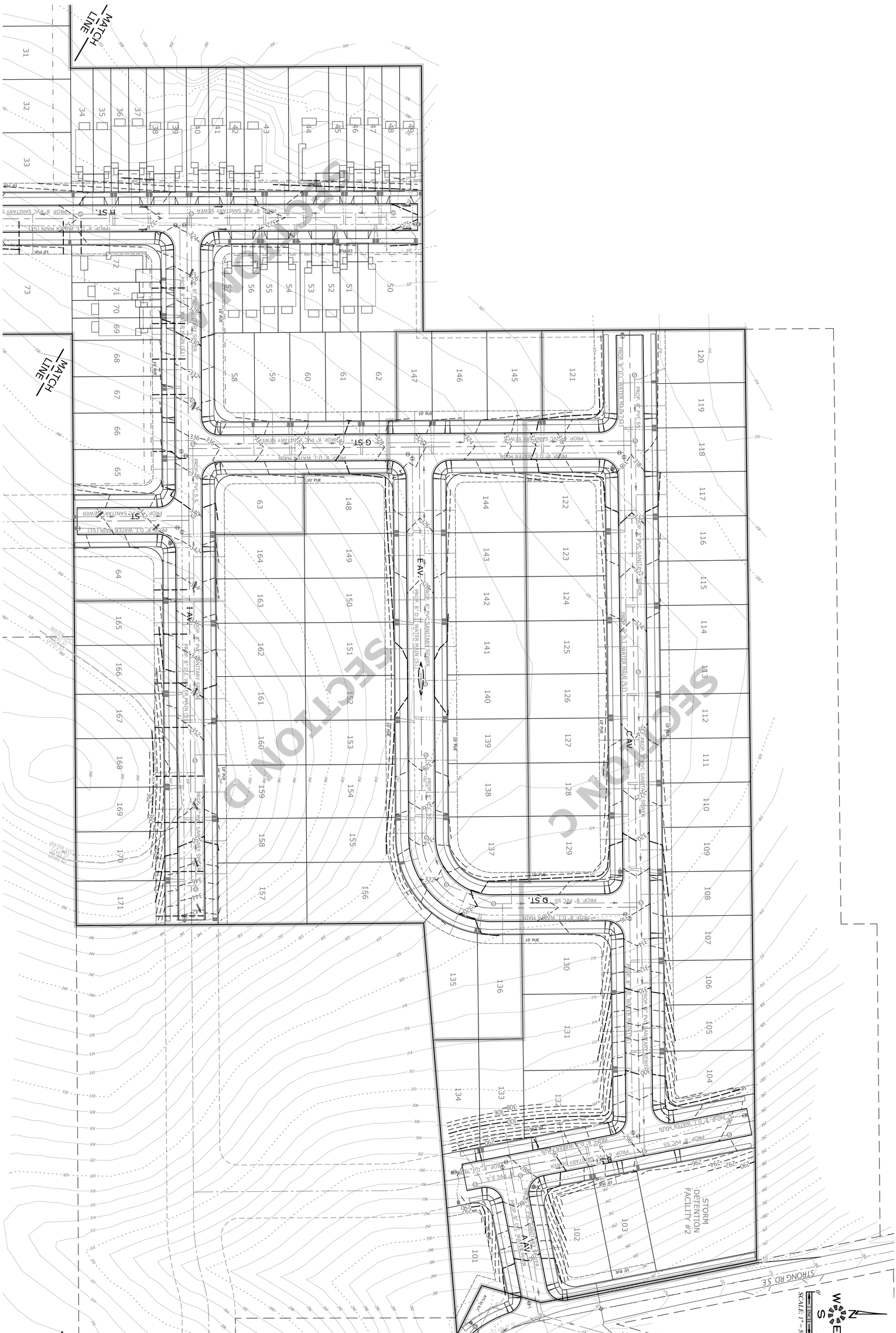

P301

JOB # 6234

DWNRS: 06-30-2021

6234p2020 P301UT

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER — OREGON — MARK D. GRENZ — 14 JANUARY 2005

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

COBURN GRAND VIEW ESTATES

UTILITY PLAN - NORTH -

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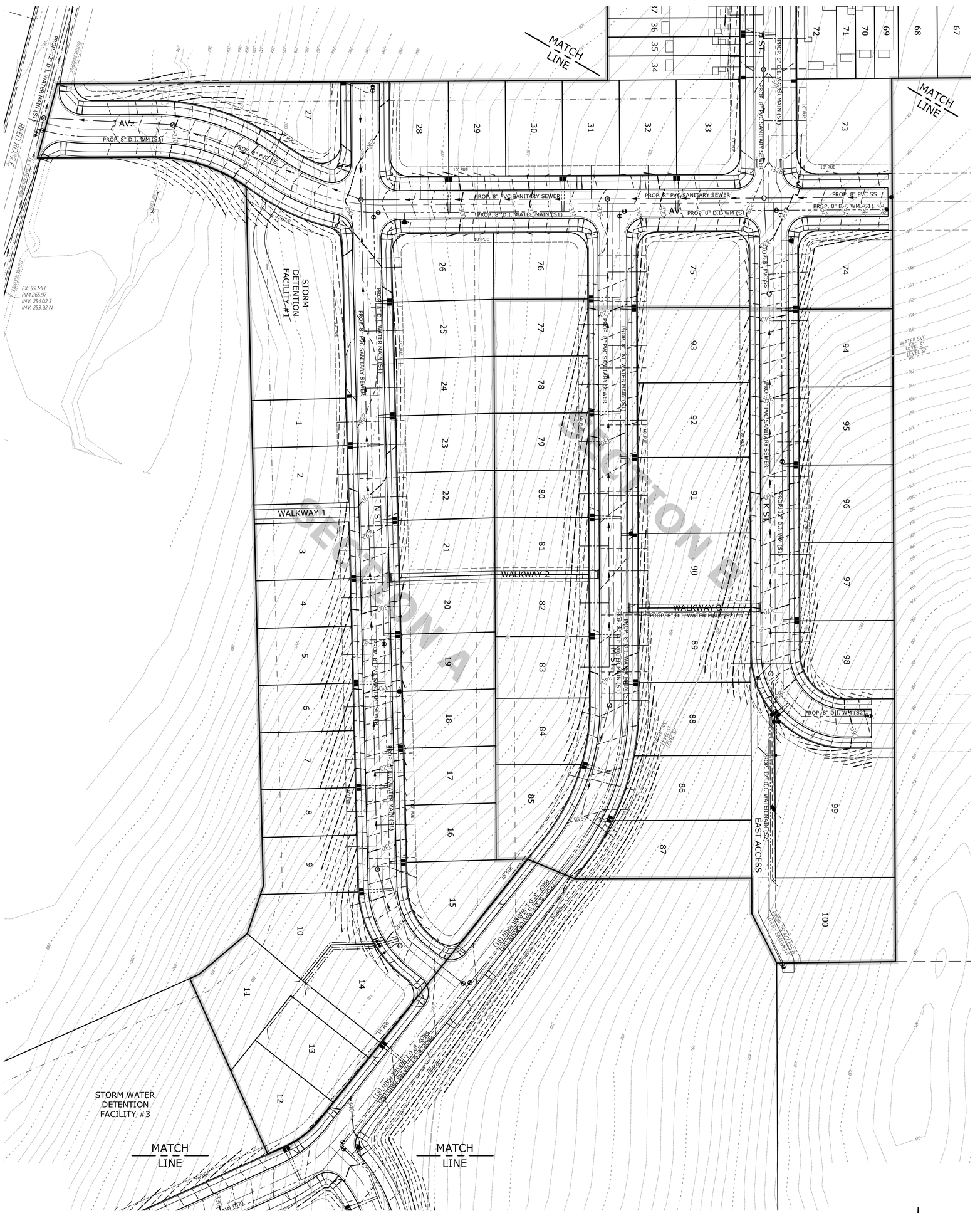
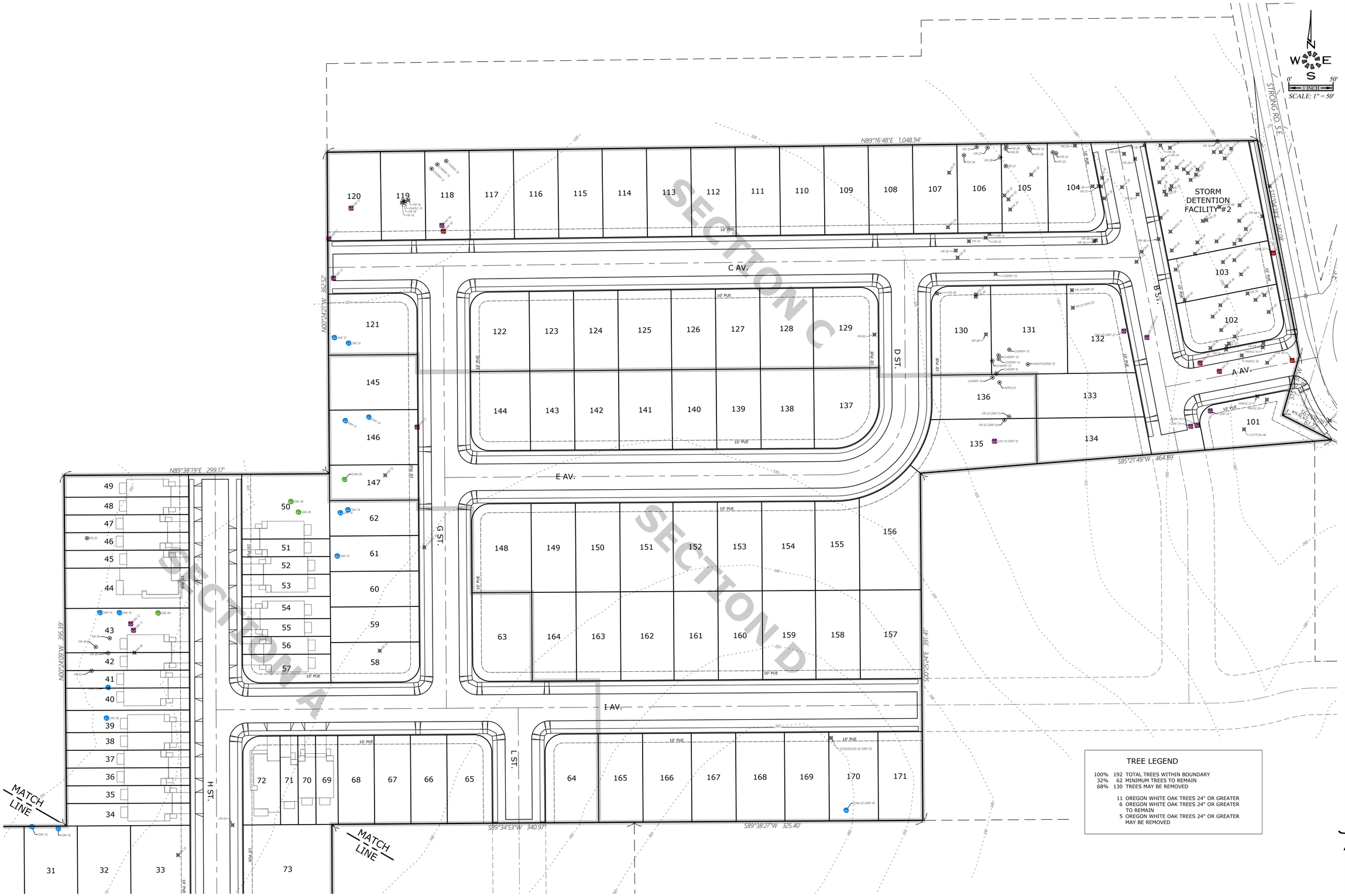
J:\62xx\6234-ReedRoad\Dwg v20\6234p2020.dwg, P302UT, 1/13/2021 2:47:45 PM, PSaunders


MATCH LINE
MATCH LINE
MATCH LINE
MATCH LINE
REED ROAD
AV.
PROP. 8" D.I. WM (S4)
PROP. 12" D.I. WATER MAIN (S1)
PROP. 8" PVC SS
PROP. 8" PVC SANITARY SEWER
PROP. 8" D.I. WATER MAIN (S1)
PROP. 8" D.I. WM (S1)
PROP. 8" D.I. WATER MAIN (S2)
PROP. 8" D.I. WM (S2)
PROP. 12" D.I. WATER MAIN (S2)
EAST ACCESS
10' PUE
10' PUE
EX. SS MH
RIM 265.97
INV. 254.02 S
INV. 253.92 N
STORM DETENTION FACILITY #1
STORM WATER DETENTION FACILITY #3
WALKWAY 1
WALKWAY 2
WALKWAY 3
N S ST.
K ST.
WATER SVC. LEVEL S1
LEVEL S2
PROP. 8" D.I. WATER MAIN (S1)
PROP. 8" PVC SANITARY SEWER
PROP. 8" D.I. WATER MAIN (S1)
PROP. 8" D.I. WATER MAIN (S1)
PROP. 8" D.I. WATER MAIN (S1)

J:\62xx\6234-ReedRoad\Dwg v20\6234p2020.dwg, P303UT, 1/13/2021 2:47:58 PM, PSaunders

DETENTION FACILITY #3
MATCH LINE
MATCH LINE
APARTMENT SITE
PROP. 8" D.I. WATER MAIN (S2)
PROP. 8" D.I. WATER MAIN (S1)
PROP. 8" D.I. WATER MAIN (S1)
PROP. 8" D.I. WATER MAIN (S2)
EX. 50' ACCESS EASEMENT R. 76, P. 1086
EX. 8" D.I. WATER MAIN
EX. 8" D.I. WATER MAIN
EX. 8" D.I. WATER MAIN



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TREE CONSERVATION PLAN - NORTH -

COBURN GRANDVIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER SCALED GRAPHICAL REPRESENTATION.

6234x2020 P401TR

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 19, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

P401

J:\6xx\6234-ReedRoad\Dwg n20\6234dp2020.dwg, P401TR, 1/25/2021 9:18:20 AM, PSaunders

MATCH LINE
MATCH LINE
MATCH LINE
H ST.
K ST.
M ST.
N ST.
J AV.
WALKWAY 3
WALKWAY 2
WALKWAY 1
EAST ACCESS
PROP. 25' ACCESS & UTILITY EASEMENT
10' PUE
SECTION B
SECTION A
STORM DETENTION FACILITY #1
STORM WATER DETENTION FACILITY #3
REED RD. S.E.
67
68
69
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100
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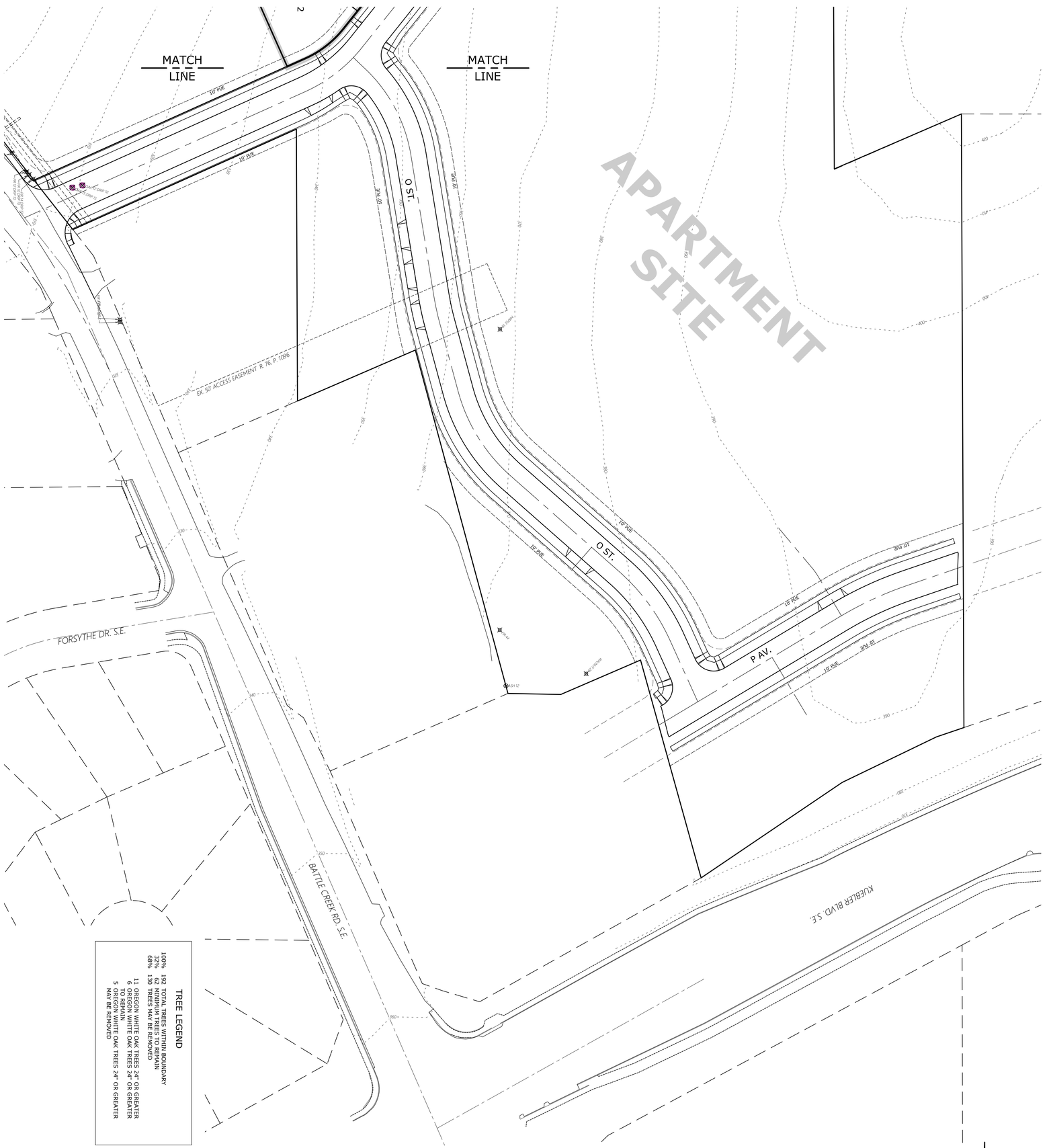
7
8
9
10
11
12
13
14
OAK 16
OAK 16
OAK 48 DRIP 30
CHERRY 14
CHERRY 26 DRIP 30
SERVICEBERRY 30 DRIP 20
OAK 32 DRIP 32
OAK 36 DRIP 32
WALNUT 24
OAK 24
OAK 24
OAK

J:\62xx\6234-ReedRoad\Dwg v20\6234p2020.dwg, P403TR, 1/25/2021 9:19:03 AM, PSaunders



TREE LEGEND

100%	192	TOTAL TREES WITHIN BOUNDARY
32%	62	MINIMUM TREES TO REMAIN
68%	130	TREES MAY BE REMOVED
	11	OREGON WHITE OAK TREES 24" OR GREATER
	6	OREGON WHITE OAK TREES 24" OR GREATER TO REMAIN
	5	OREGON WHITE OAK TREES 24" OR GREATER MAY BE REMOVED

P403

JOB # 6234

EXPIRES: 06-30-2021

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 14, 1978 — MARK D. GRENZ

6234p2020 P403TR

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

COBURN GRAND VIEW ESTATES

TREE CONSERVATION PLAN - SOUTH -

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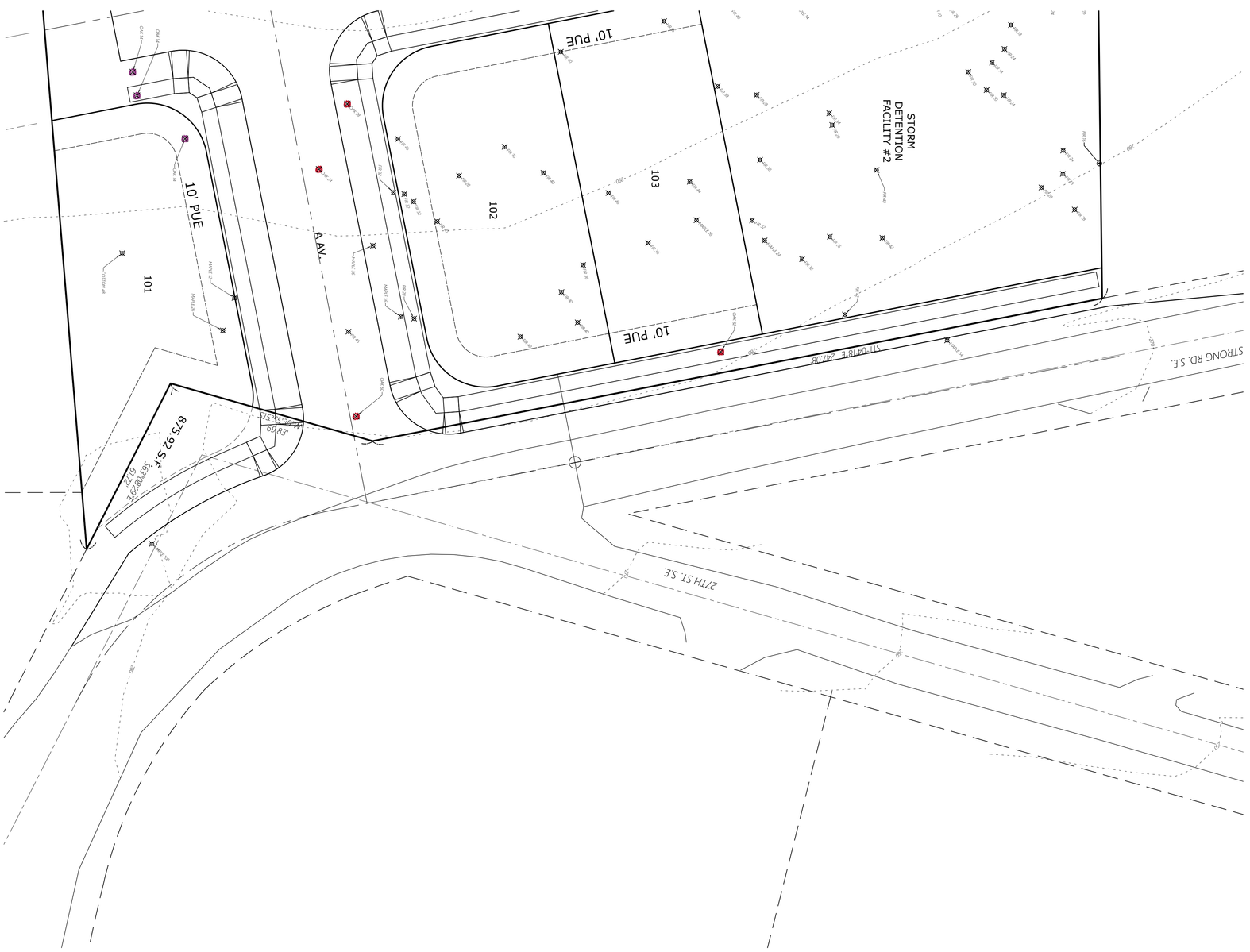
J:\62xx\6234-ReedRoad\Dwg v20\6234p2020.dwg, P404TR, 1/13/2021 2:59:12 PM, PSaunders



SCALE: 1" = 20'

P404	JOB # 6234	09-30-2021	6234p2020 P404TR Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES** **STREET TREE REMOVAL PLAN - NORTH -**

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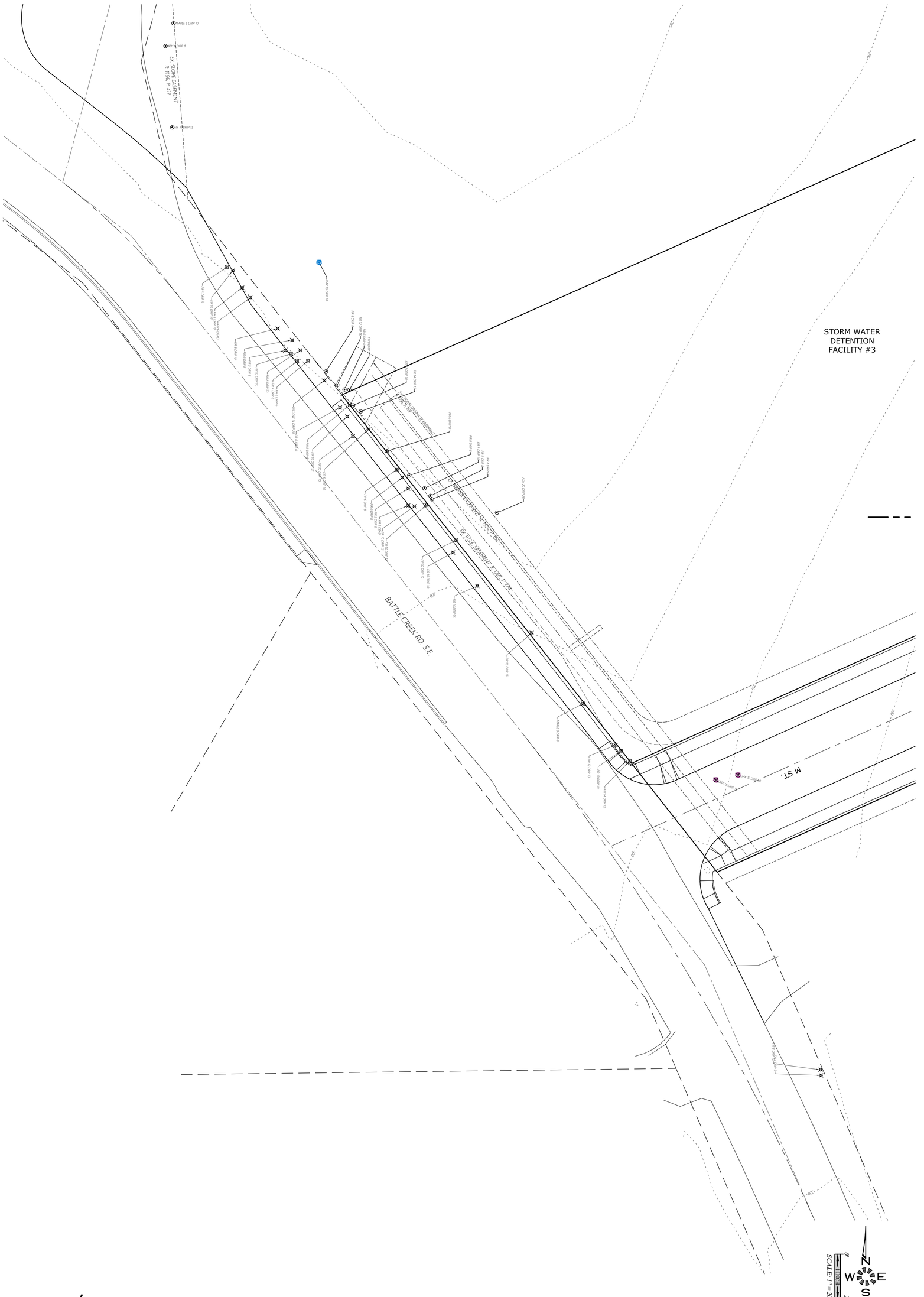
J:\62xx\6234-ReedRoad\Dwg v20\6234p2020.dwg, P405TR, 1/13/2021 2:59:26 PM, PSaunders



P405

JOB # 6234

DATE: 06-30-2021

6234p2020 P405TR

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

COBURN GRAND VIEW ESTATES

STREET TREE REMOVAL PLAN - SOUTH -

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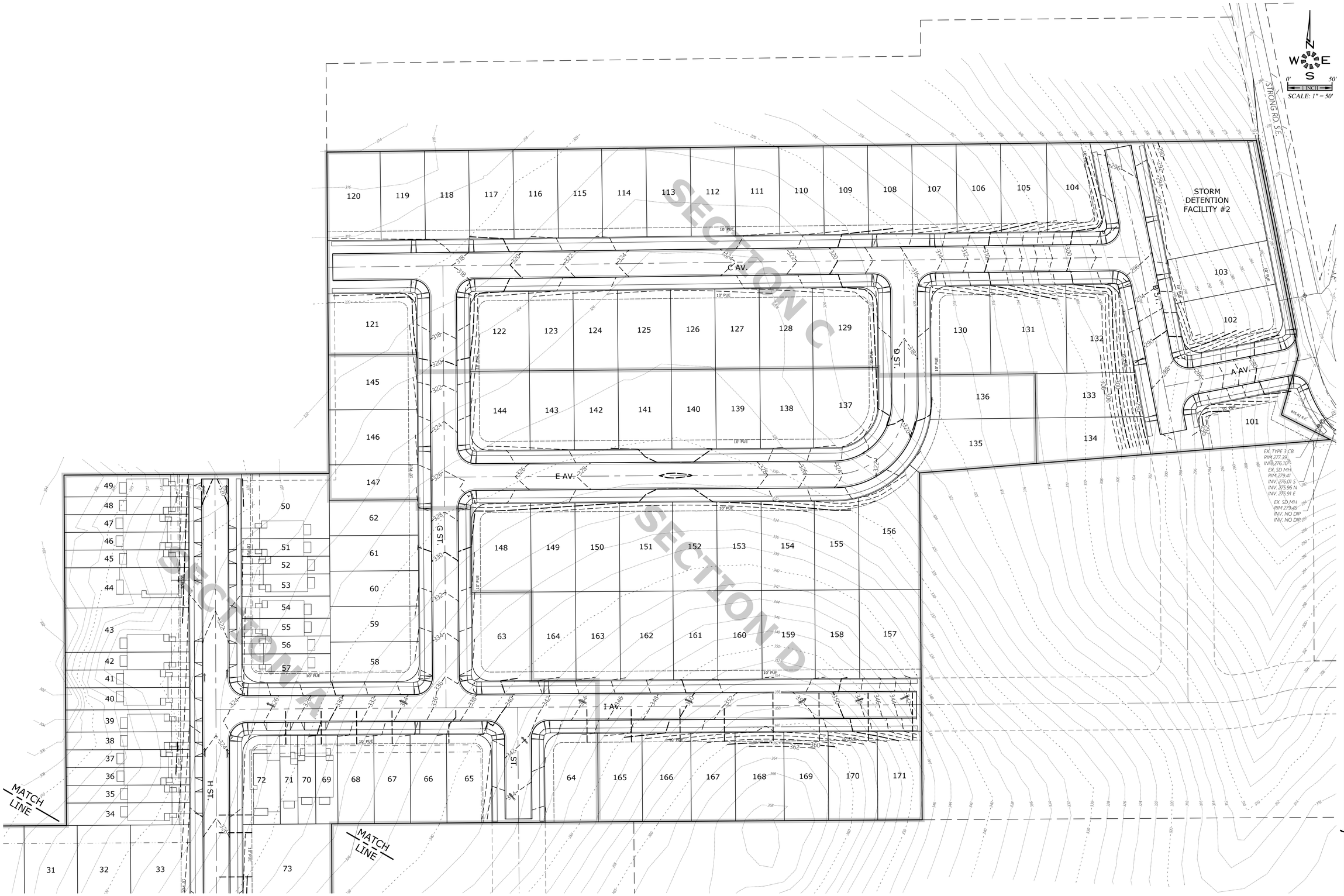

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GRADING PLAN - NORTH -

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234x2020 P601GR

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

JOB # 6234

P601

J:\6234-RoadRoof\Dwg\ 2017\6234x2020.dwg, P601GR, 1/13/2021 3:08:49 PM, PDaunders

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GRADING PLAN - CENTRAL -

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

K:\6xx\x6234-Reedhaus\Dwg 2019\6234p2020.dwg, P602GR, 1/13/2021 3:09:13 PM, PStainbrn

K:\6xx\x6234-Reedhaus\Dwg 2019\6234p2020.dwg, P602GR

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

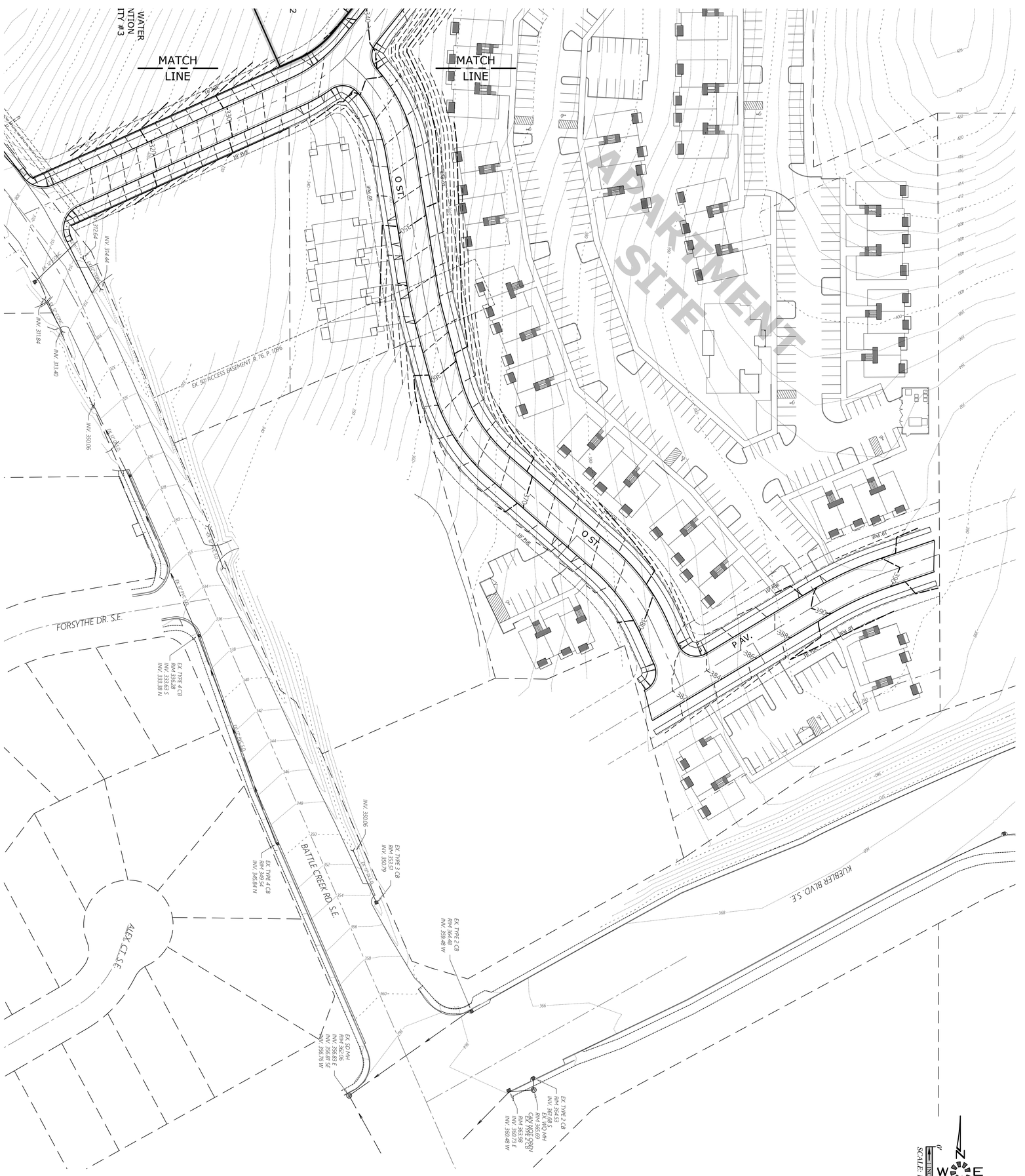
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

P602

J:\62xx\6234-ReedRoad\Dwg v20\6234p2020.dwg, P603GR, 1/13/2021 3:09:58 PM, PSaunders



P603	JOB # 6234	EXPIRES: 06-30-2021	6234p2020 P603GR Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES** **GRADING PLAN - SOUTH -**

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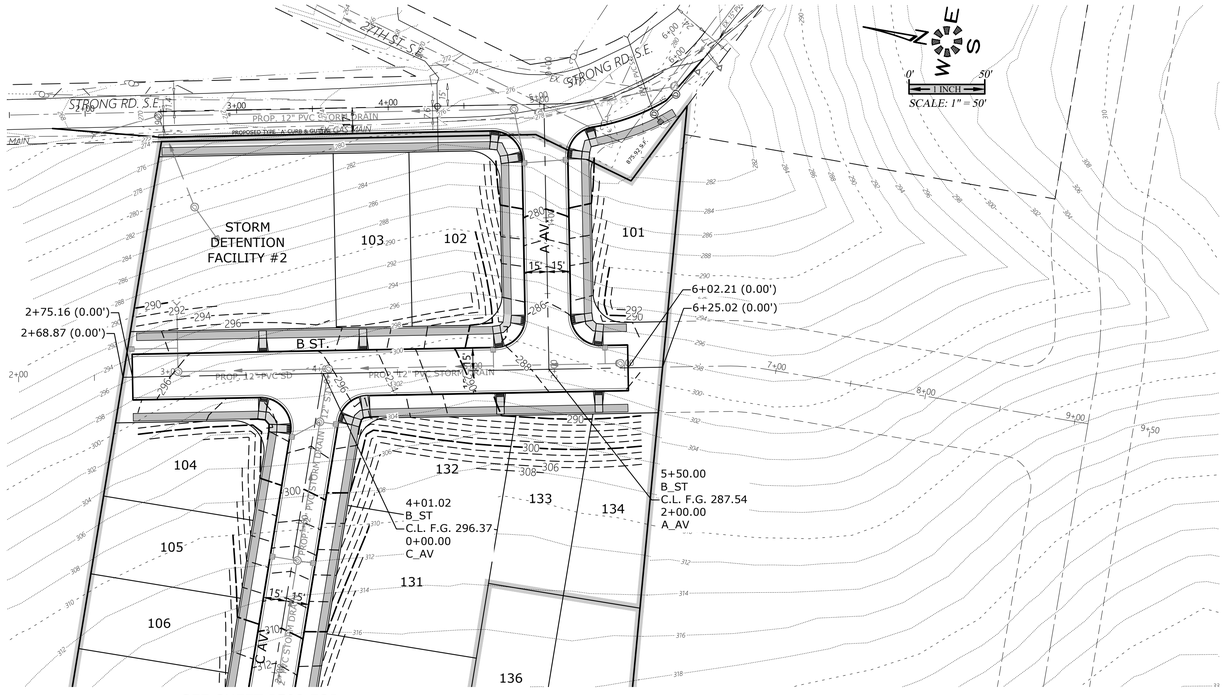
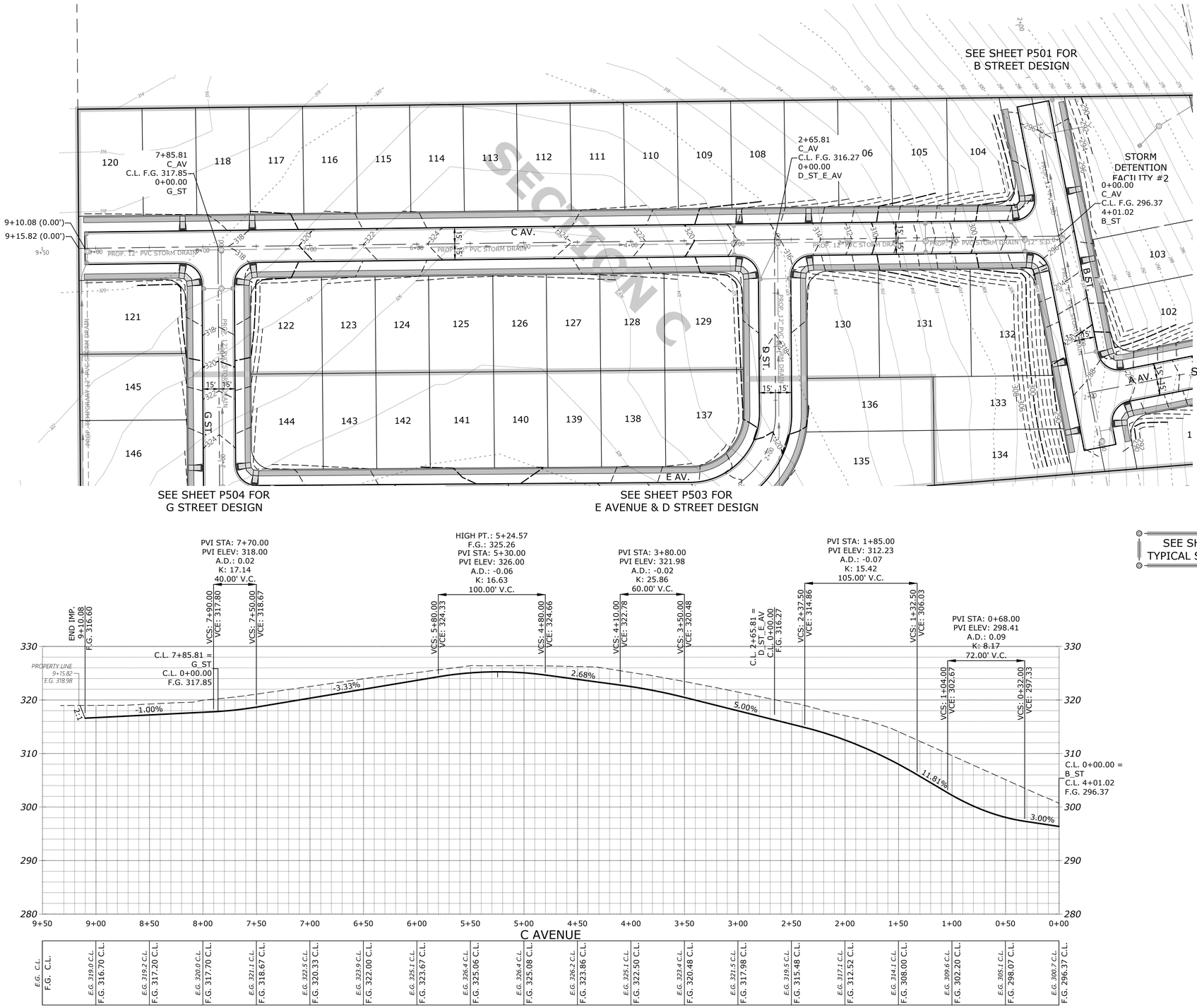
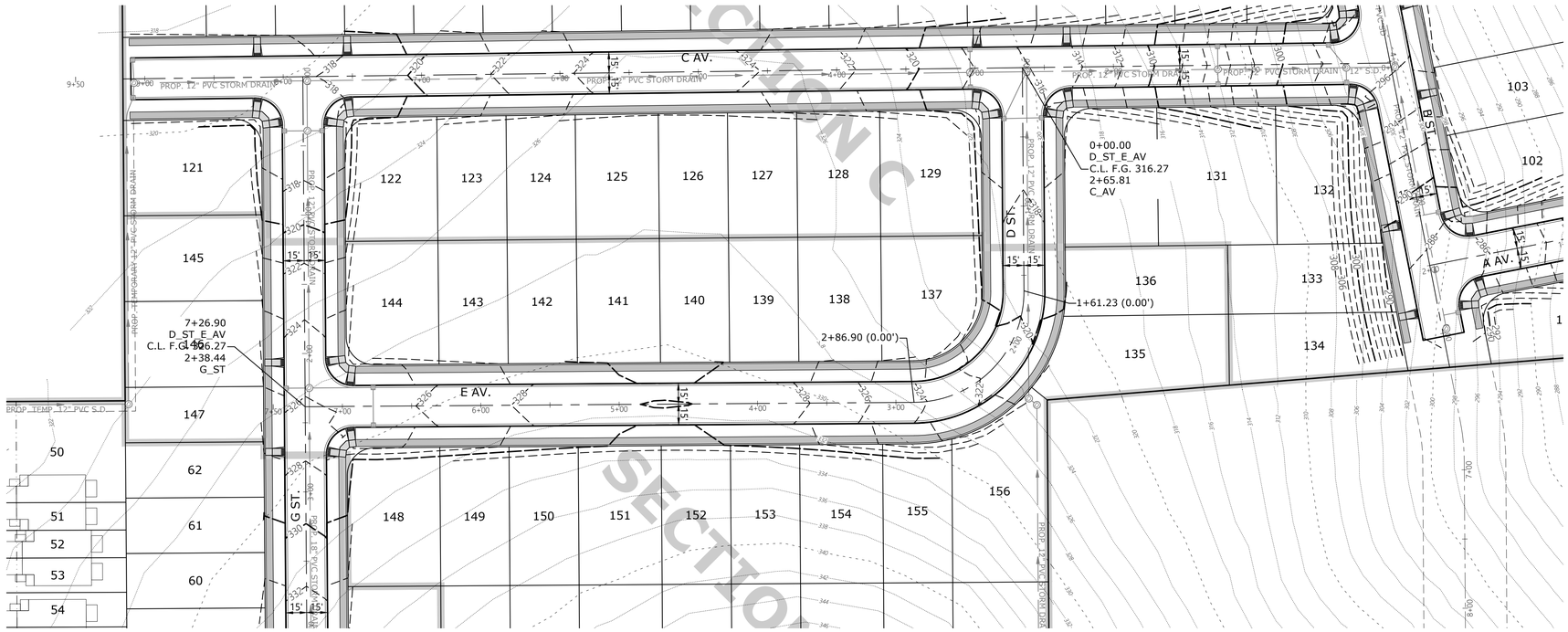

STRONG RD. S.E.
27TH ST. S.E.
PROP. 12" PVC STORM DRAIN
PROPOSED TYP. A CURB & GUTTER CATCH DRAIN
STORM DETENTION FACILITY #2
A AV
B ST.
PROP. 12" PVC SD
PROP. 12" PVC STORM DRAIN
PROP. 12" PVC STORM DRAIN
PROP. 12" PVC STORM DRAIN


SECTION C
SEE SHEET P501 FOR B STREET DESIGN
SEE SHEET P501 FOR A STREET DESIGN
SEE SHEET P504 FOR G STREET DESIGN
SEE SHEET P503 FOR E AVENUE & D STREET DESIGN
C AV.
A AV.
E AV.
G ST.
B ST.
STORM DETENTION FACILITY #2
0+00.00 C_AV C.L. F.G. 296.37 4+01.02 B_ST
7+85.81 C_AV C.L. F.G. 317.85 0+00.00 G_ST
2+65.81 C_AV C.L. F.G. 316.27 0+00.00 D_ST_E_AV
9+10.08 (0.00')
9+15.82 (0.00')
PROP. 12" PVC STORM DRAIN
PROP. 12" TEMPORARY 12" PVC STORM DRAIN
SCALE: 1" = 50'
SEE SHEET P517 FOR TYPICAL STREET SECTIONS
PVI STA: 7+70.00
PVI ELEV: 318.00
A.D.: 0.02
K: 17.14
40.00' V.C.
HIGH PT.: 5+24.57
F.G.: 325.26
PVI STA: 5+30.00
PVI ELEV: 326.00
A.D.: -0.06
K: 16.63
100.00' V.C.
PVI STA: 3+80.00
PVI ELEV: 321.98
A.D.: -0.02
K: 25.86
60.00' V.C.
PVI STA: 1+85.00
PVI ELEV: 312.23
A.D.: -0.07
K: 15.42
105.00' V.C.
PVI STA: 0+68.00
PVI ELEV: 298.41
A.D.: 0.09
K: 8.17
72.00' V.C.
END IMP. 9+10.08 F.G. 316.60
PROPERTY LINE 9+15.82 E.G. 318.98
C.L. 7+85.81 = G_ST C.L. 0+00.00 F.G. 317.85
C.L. 2+65.81 = D_ST_E_AV C.L. 0+00.00 F.G. 316.27
C.L. 0+00.00 = B_ST C.L. 4+01.02 F.G. 296.37
-1.00%
-3.33%
2.68%
5.00%
11.81%
3.00%
C AVENUE

| E.G. C.L. / F.G. C.L. | | |

SEE SHEET P502 FOR
C STREET DESIGN

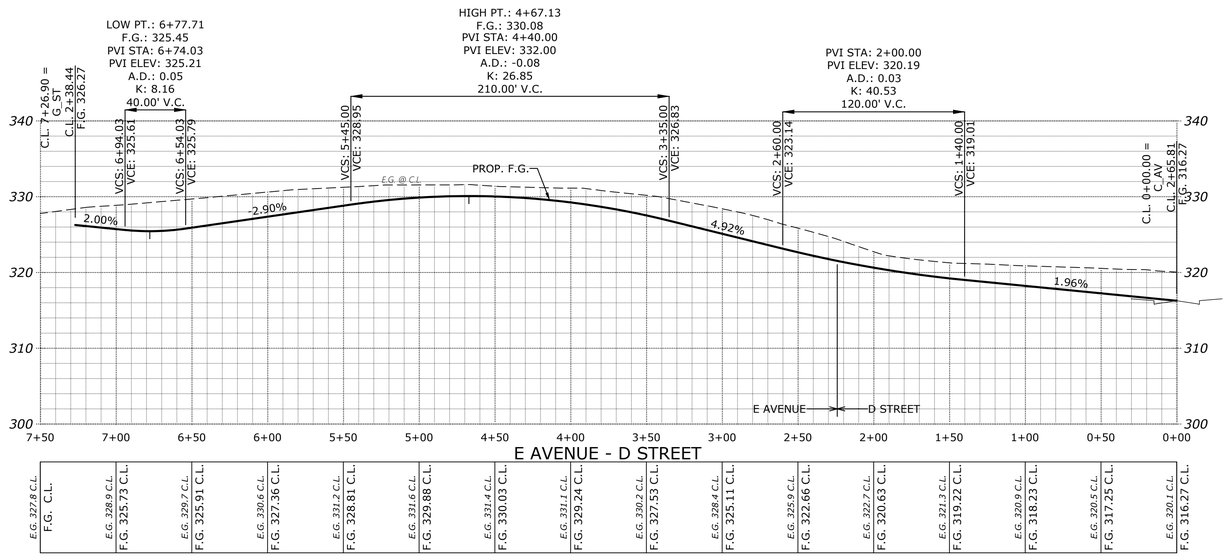
SEE SHEET P501 FOR
B STREET DESIGN



SEE SHEET P504 FOR
G STREET DESIGN

SEE SHEET P51 FOR
A AVENUE DESIGN

SEE SHEET P517 FOR
TYPICAL STREET SECTIONS



SECTION C

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER SCALED GRAPHICAL REPRESENTATION.

6234p2020 P503ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ---- ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
MAY 14, 1976
MARK D. GRENZ

EXPIRES: 06-30-2021

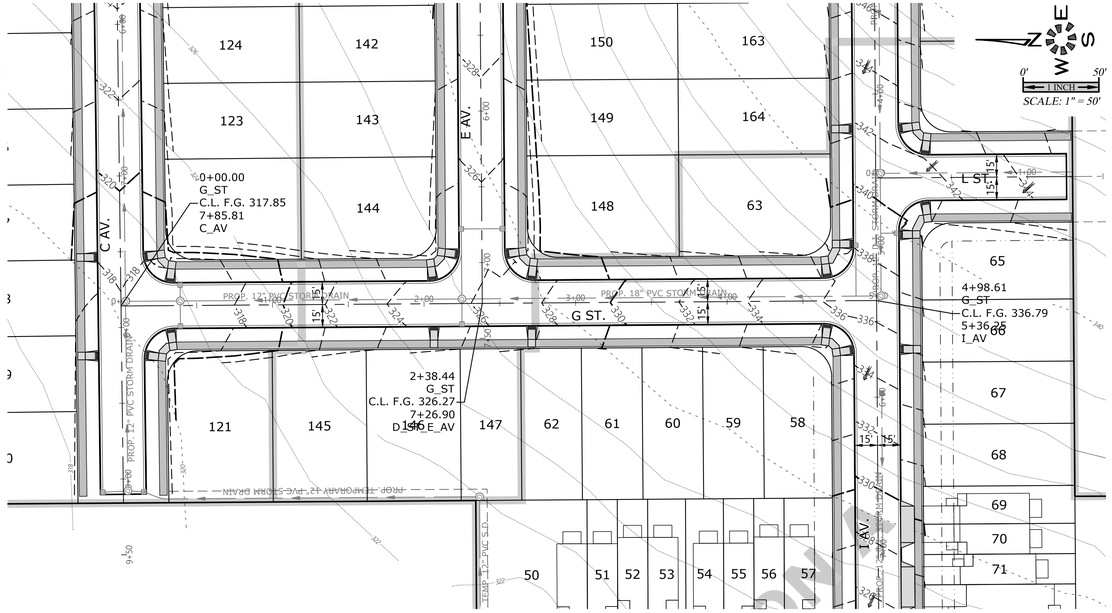
JOB # 6234

P503

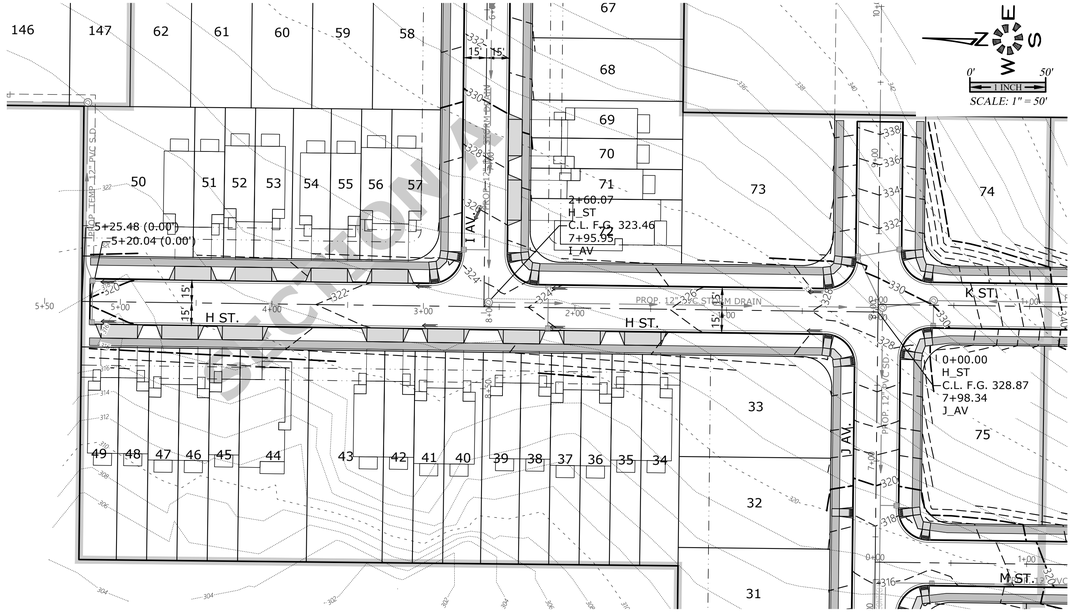
J:\6234-RoadNotes\Dwg - v20\6234p2020.dwg, P503ST, 1/13/2021 3:01:01 PM, PSounders

SEE SHEET P502 FOR
C STREET DESIGN

SEE SHEET P503 FOR
E AVENUE & D STREET DESIGN

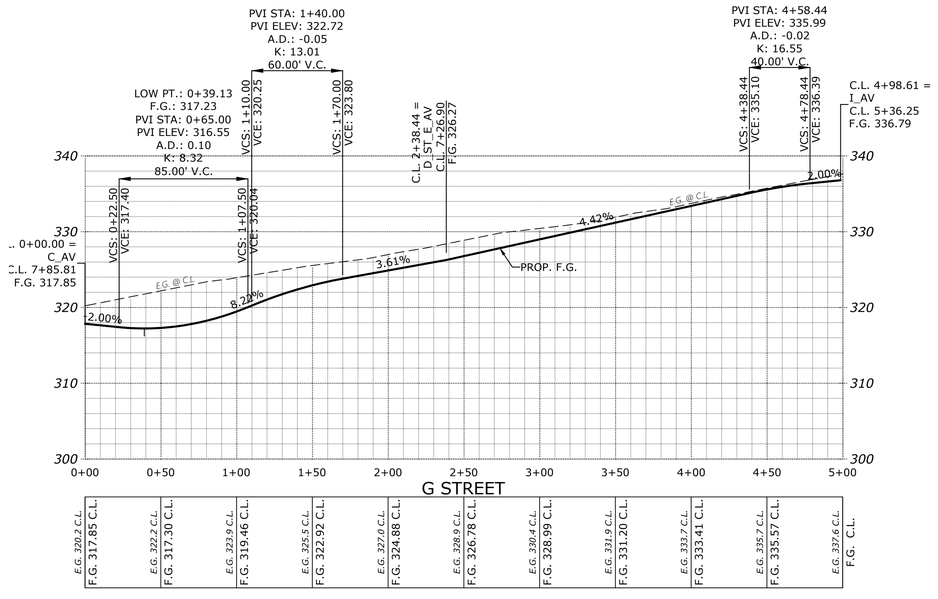


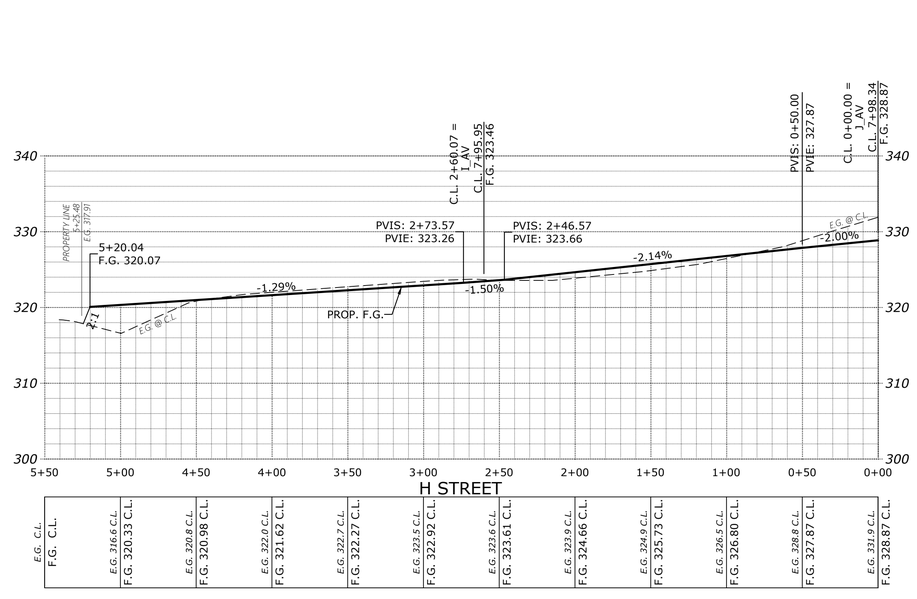
SEE SHEET P505 FOR
I STREET DESIGN



SEE SHEET P506 FOR
J STREET DESIGN

SEE SHEET P517 FOR
TYPICAL STREET SECTIONS





MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234p2020 P504ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

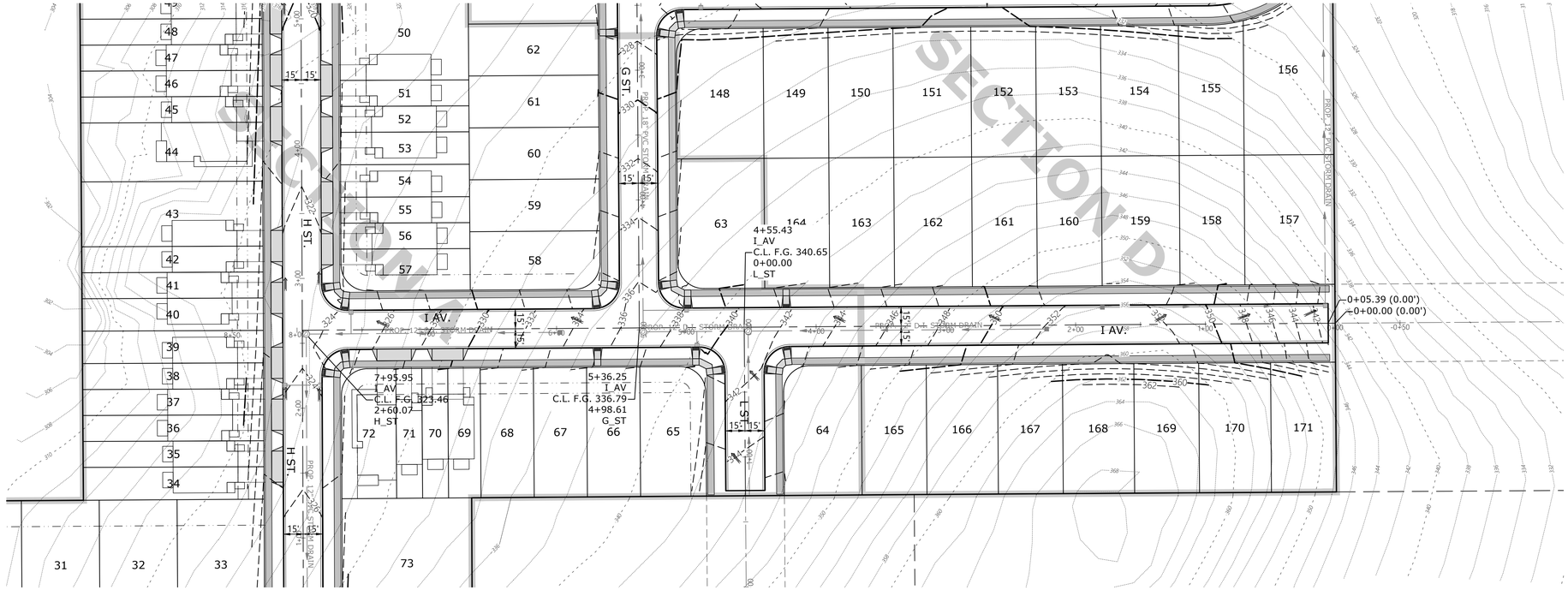
JOB # 6234

P504

J:\6Zxx\6234-RoadRoof\Dwg. v20\6234p2020.dwg, P504ST, 1/13/2021 3:01:31 PM, PSounders

SEE SHEET P504 FOR
G STREET DESIGN

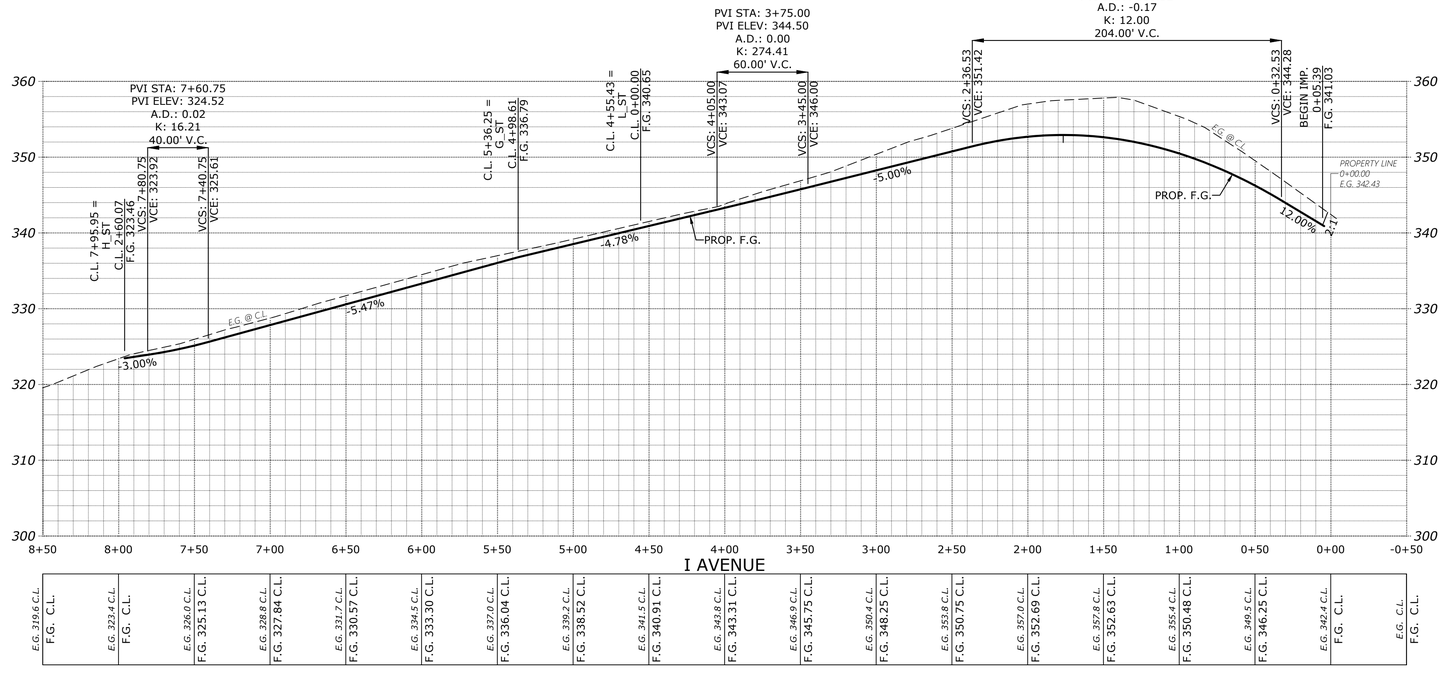
SEE SHEET P503 FOR
E AVENUE & D STREET DESIGN



SEE SHEET P504 FOR
H STREET DESIGN

SEE SHEET P508 FOR
L STREET DESIGN

SEE SHEET P517 FOR
TYPICAL STREET SECTIONS



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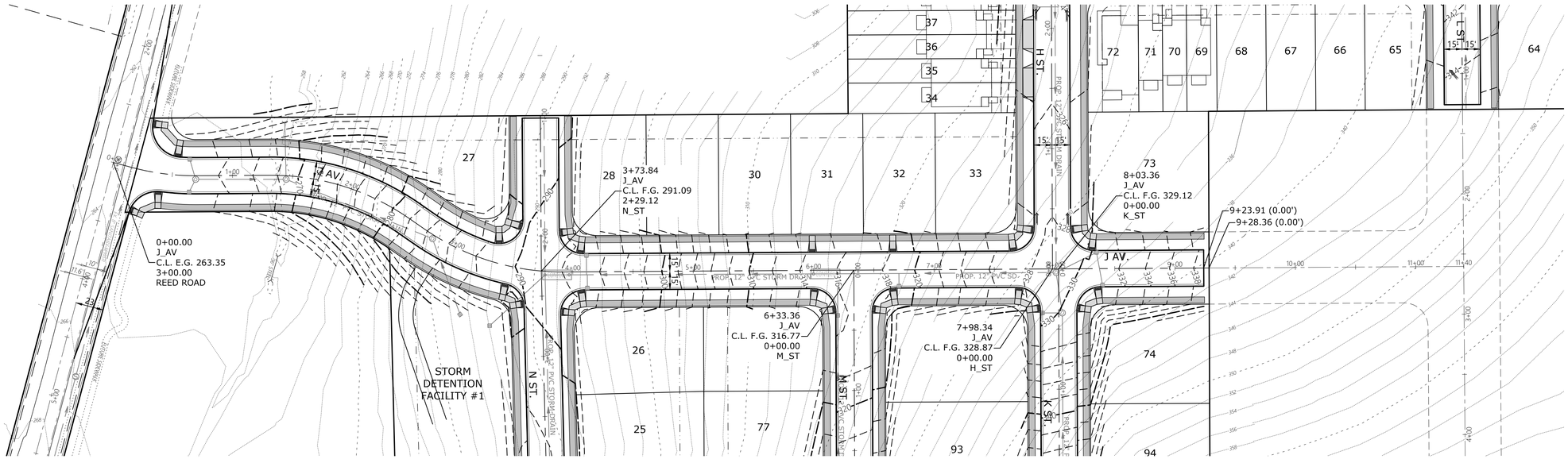
SEE SHEET P504 FOR
H STREET DESIGN

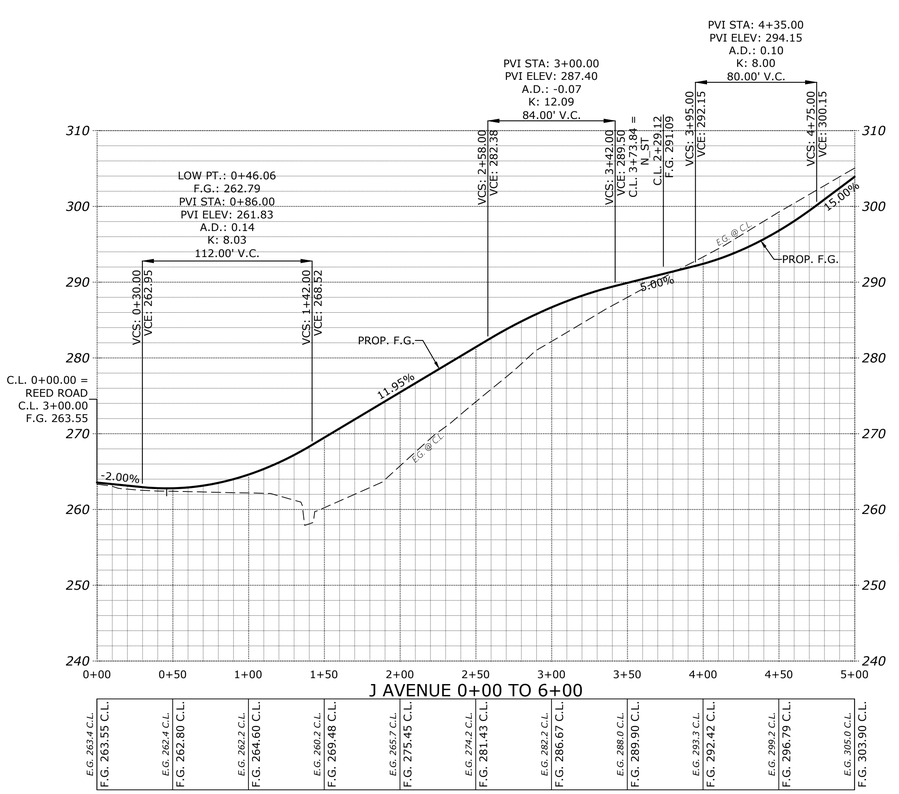


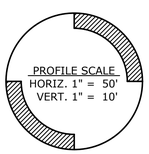
SEE SHEET P511 FOR
N STREET DESIGN

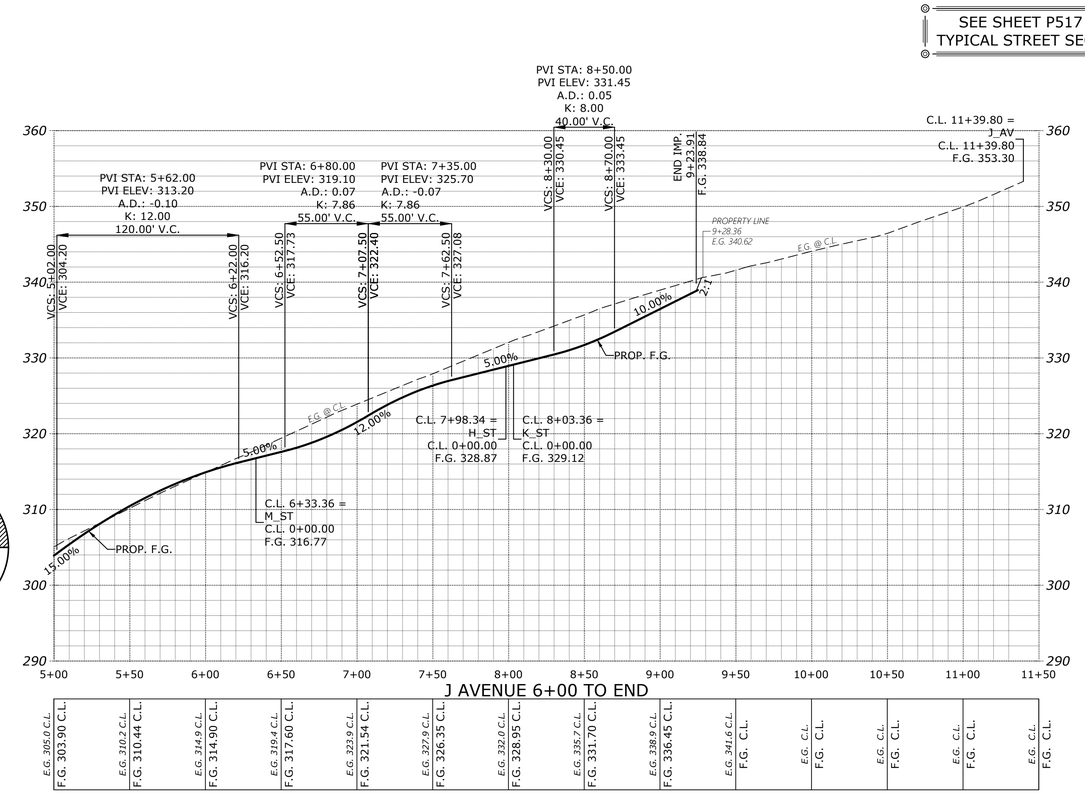
SEE SHEET P509 & P510
FOR M STREET DESIGN

SEE SHEET P507 FOR
K STREET DESIGN

SEE SHEET P517 FOR
TYPICAL STREET SECTIONS







MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
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STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234p2020 P506ST

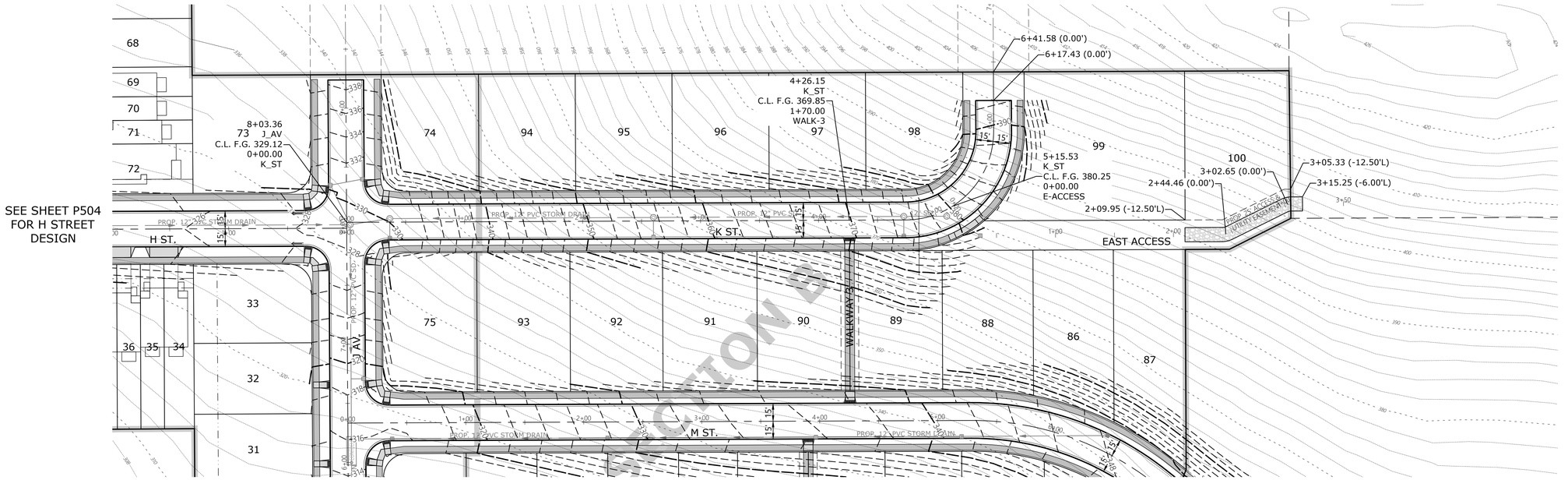
Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ---- ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

JOB # 6234

P506

J:\62xx\6234\Readfiles\Dwg 2D\6234p2020.dwg, P506ST, 1/13/2021 3:02:56 PM, PSounders



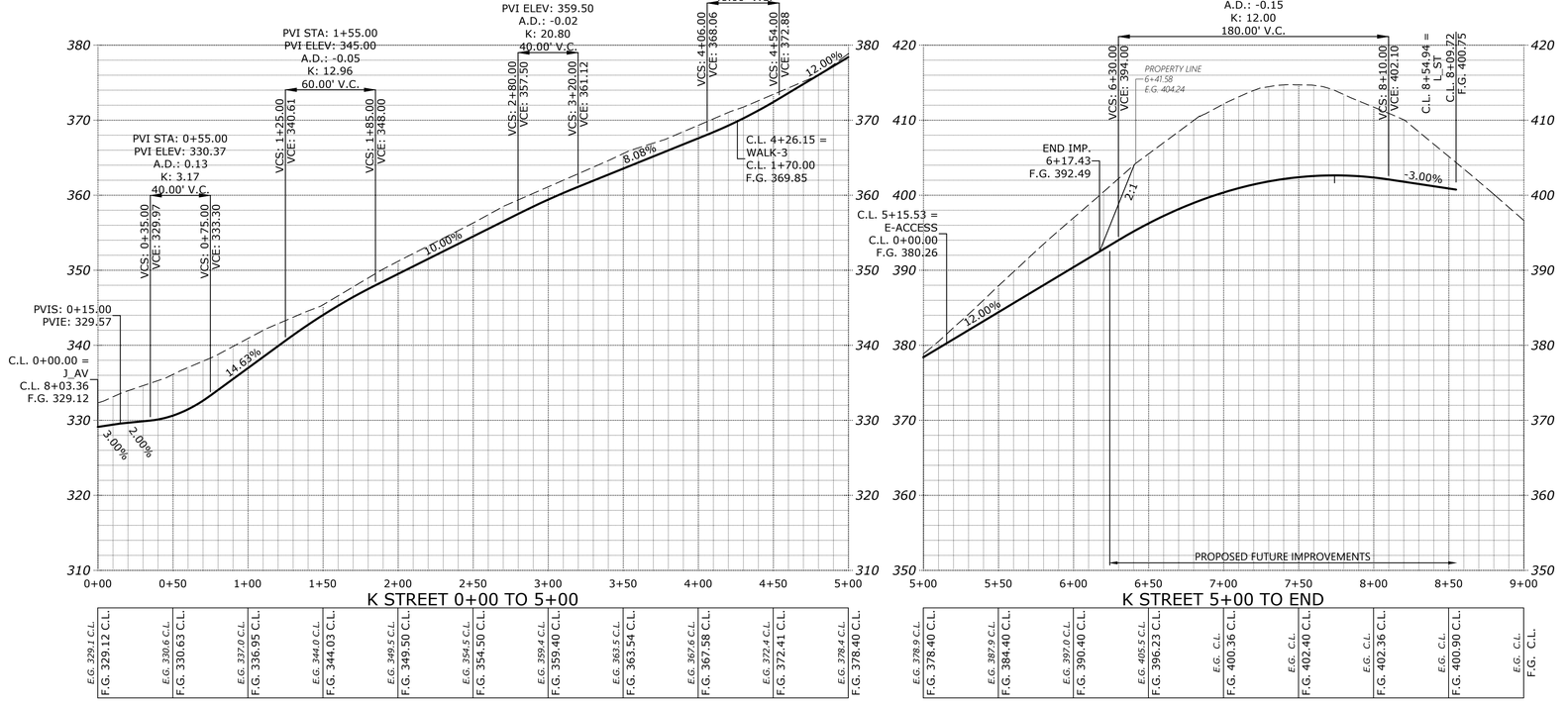
N W E S

0' 50'

1 INCH

SCALE: 1" = 50'

SEE SHEET P517 FOR TYPICAL STREET SECTIONS



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COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

623-Apr2020 P507ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 14, 1978 HAROLD J. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

P507

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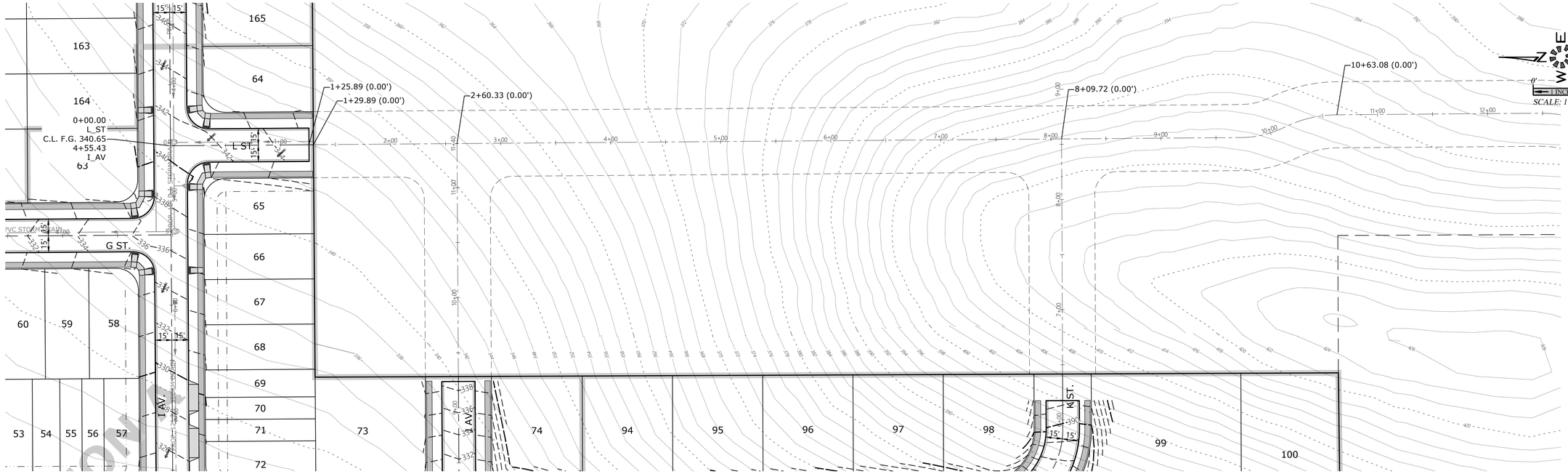
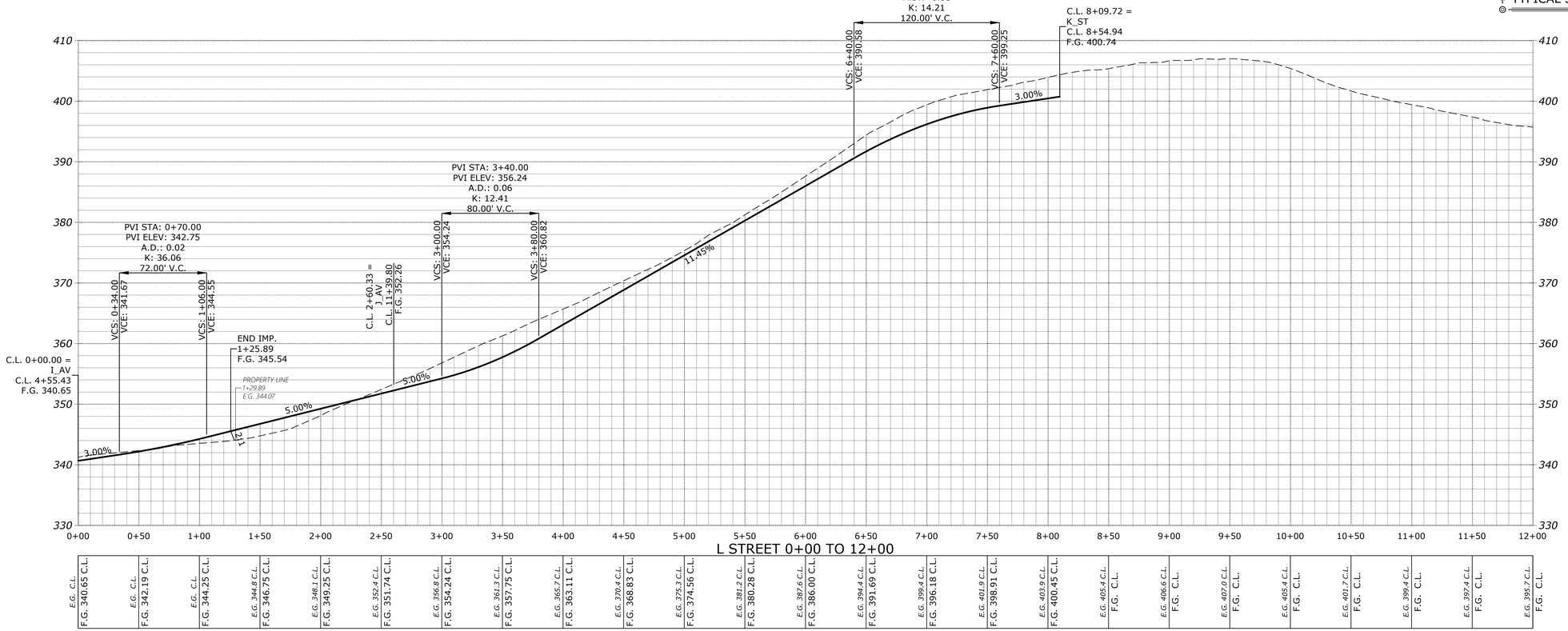


SEE SHEET P505 FOR I AVENUE DESIGN

SEE SHEET P506 FOR J AVENUE DESIGN

SEE SHEET P507 FOR K STREET DESIGN

SEE SHEET P517 FOR TYPICAL STREET SECTIONS



MULTI/TECH
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1155 13th ST. S.E. SALEM, OR. 97302
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STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234x2020 P508ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ---- ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ

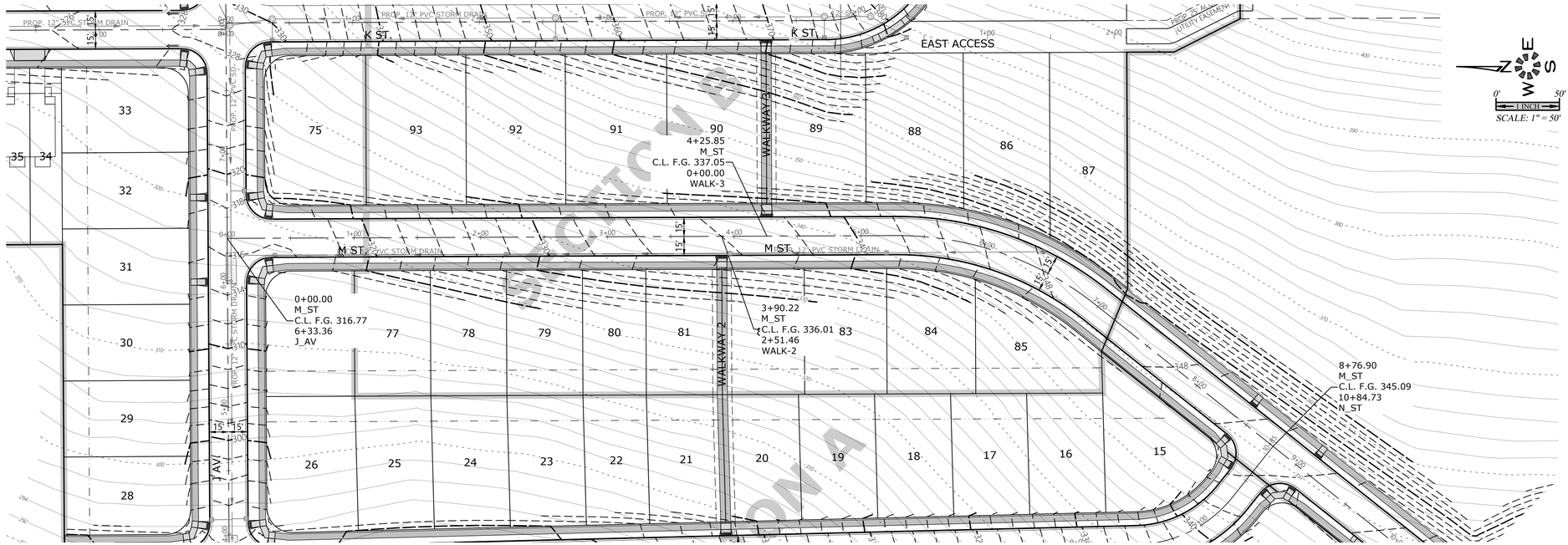
EXPIRES: 06-30-2021

JOB # 6234

P508

J:\62xx\6234-RevRoot\Dwg v2\6234x2020.dwg, P508ST, 1/13/2021 3:04:08 PM, PSounders

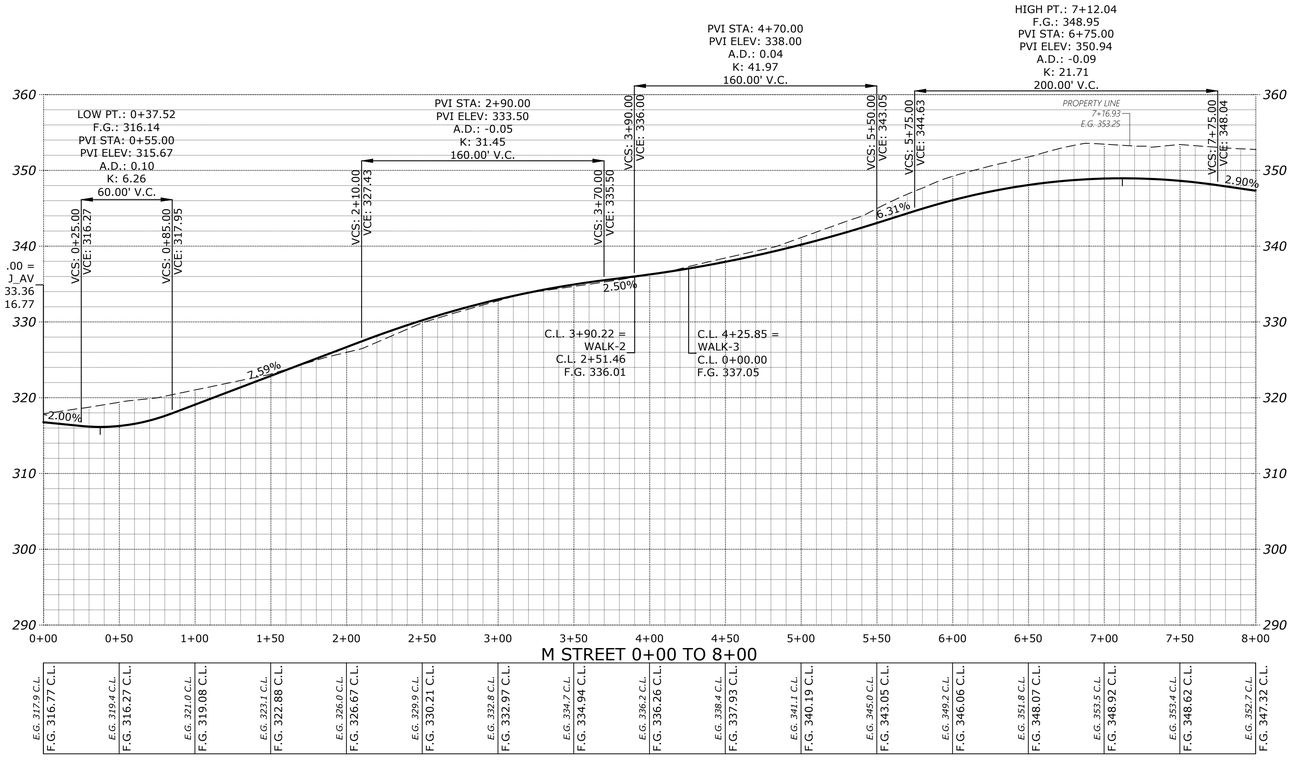
SEE SHEET P507 FOR
K STREET DESIGN



SEE SHEET P506 FOR
J STREET DESIGN

SEE SHEET P511 FOR
N STREET DESIGN

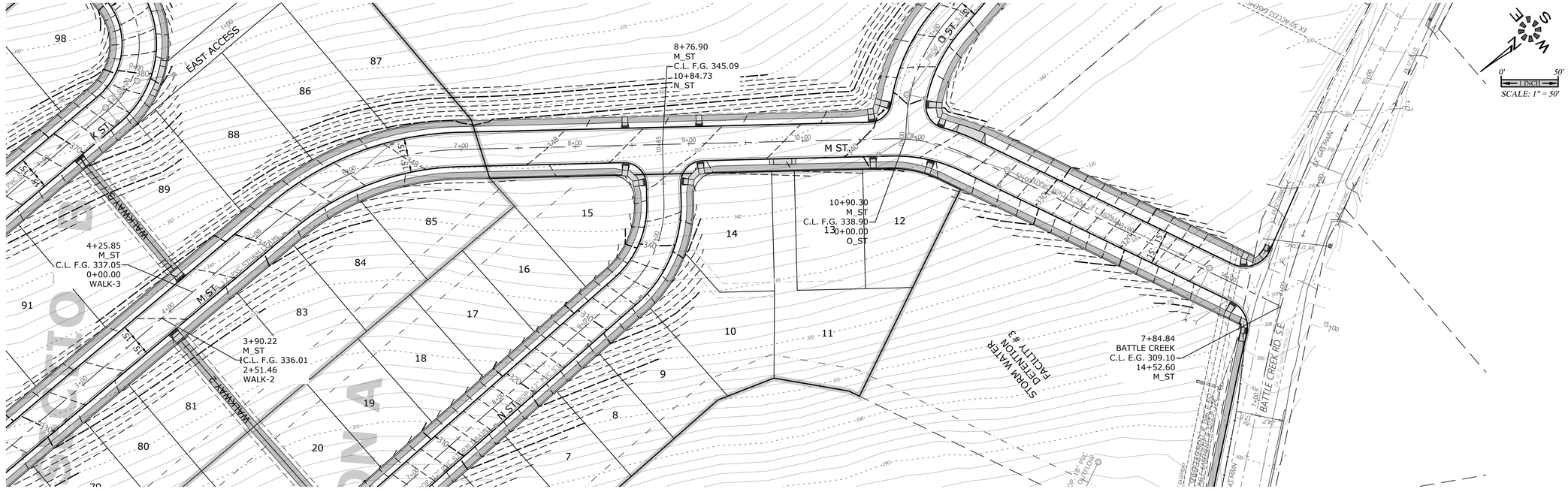
SEE SHEET P510 FOR
M STREET DESIGN
CONTINUATION



| | | |

SEE SHEET P507 FOR
K STREET DESIGN

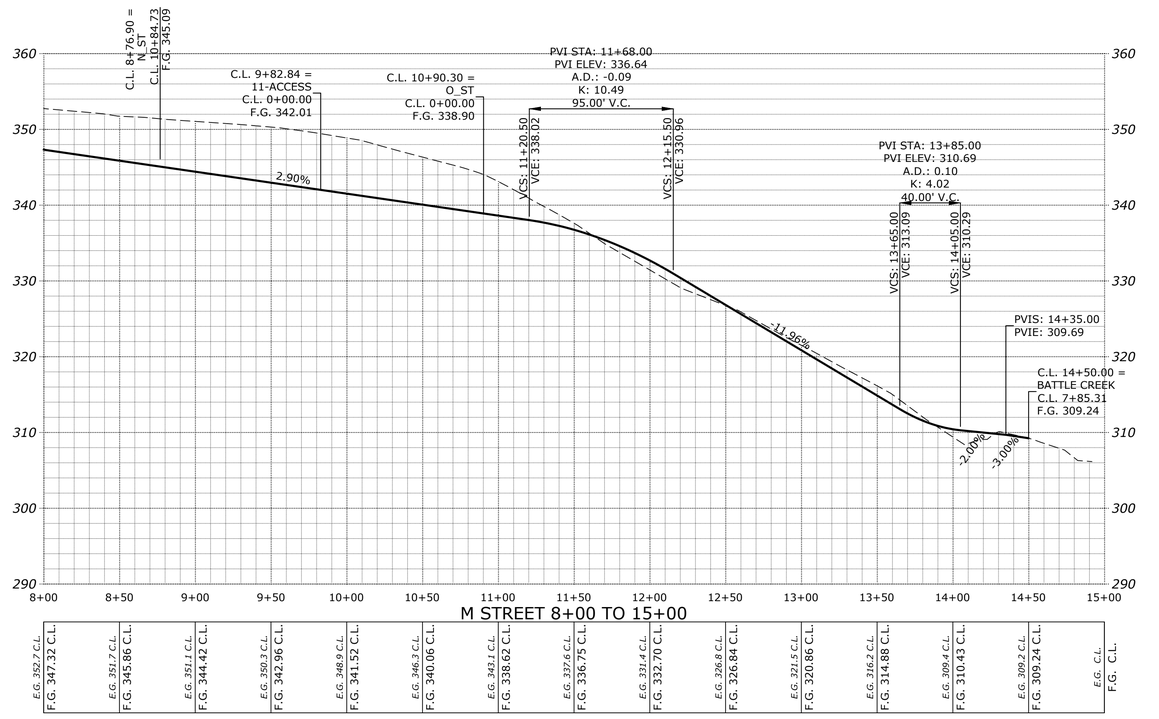
SEE SHEET P512 FOR
O STREET DESIGN



SEE SHEET P509 FOR
M STREET DESIGN
CONTINUATION

SEE SHEET P514 FOR
WALKWAY DESIGNS

SEE SHEET P511 FOR
N STREET DESIGN



SEE SHEET P517 FOR
TYPICAL STREET SECTIONS

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234p2020 P510ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

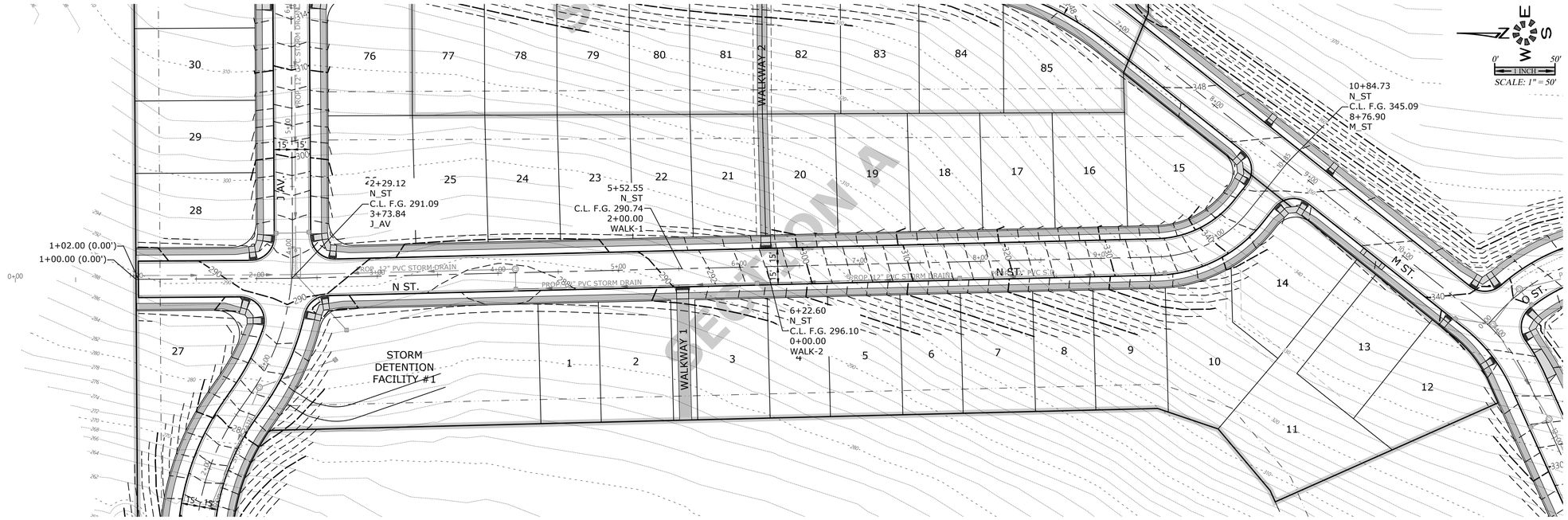
JOB # 6234

P510

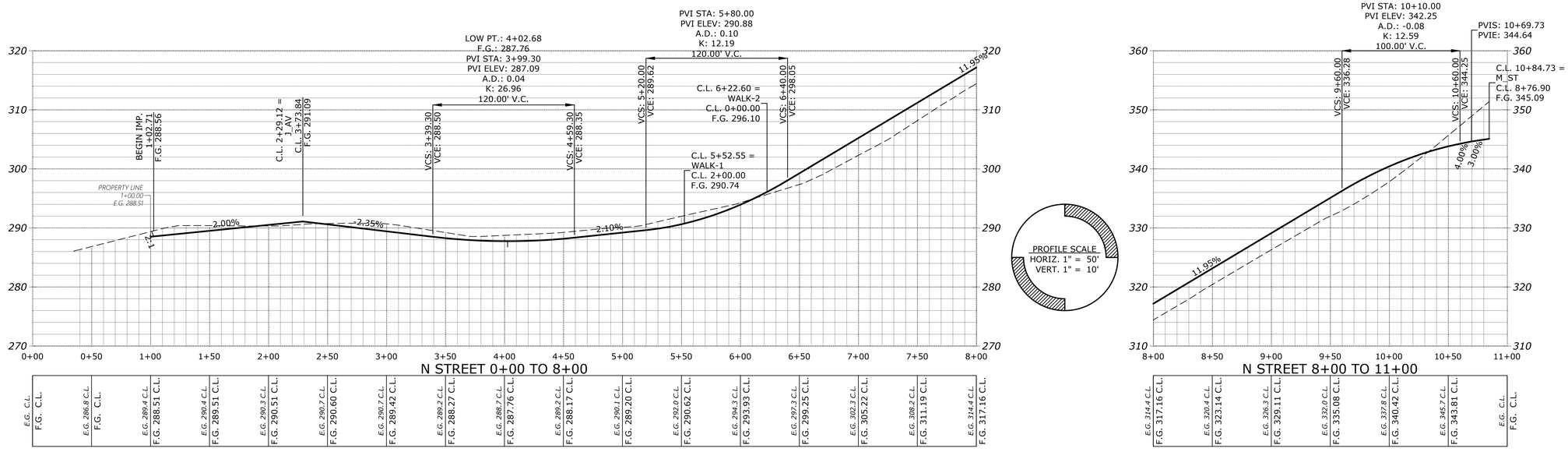
z:\62xx\6234\Revit\Work\Dwg v20\6234p2020.dwg, P510ST, 1/13/2021 3:05:48 PM, PDunstern

SEE SHEET P506 FOR
J AVENUE DESIGN

SEE SHEET P509 & P510
FOR M STREET DESIGN



SEE SHEET P517 FOR
TYPICAL STREET SECTIONS



PROFILE SCALE
HORIZ. 1" = 50'
VERT. 1" = 10'

E.G. C.L. / F.G. C.L.	E.G. 286.8 C.L. / F.G. C.L.	E.G. 289.4 C.L. / F.G. 288.51 C.L.	E.G. 290.4 C.L. / F.G. 289.51 C.L.	E.G. 290.3 C.L. / F.G. 290.51 C.L.	E.G. 290.7 C.L. / F.G. 290.60 C.L.	E.G. 290.7 C.L. / F.G. 289.42 C.L.	E.G. 289.2 C.L. / F.G. 288.27 C.L.	E.G. 288.7 C.L. / F.G. 287.76 C.L.	E.G. 289.2 C.L. / F.G. 288.17 C.L.	E.G. 290.1 C.L. / F.G. 289.20 C.L.	E.G. 292.0 C.L. / F.G. 290.62 C.L.	E.G. 294.3 C.L. / F.G. 293.93 C.L.	E.G. 297.3 C.L. / F.G. 299.25 C.L.	E.G. 302.3 C.L. / F.G. 305.22 C.L.	E.G. 308.2 C.L. / F.G. 311.19 C.L.	E.G. 314.4 C.L. / F.G. 317.16 C.L.

E.G. 314.4 C.L. / F.G. 317.16 C.L.	E.G. 320.4 C.L. / F.G. 323.14 C.L.	E.G. 326.3 C.L. / F.G. 329.11 C.L.	E.G. 332.0 C.L. / F.G. 335.08 C.L.	E.G. 337.8 C.L. / F.G. 340.42 C.L.	E.G. 345.7 C.L. / F.G. 343.81 C.L.	E.G. C.L. / F.G. C.L.

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER SCALED GRAPHICAL REPRESENTATION.

6234p2020 P511ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ---- ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ

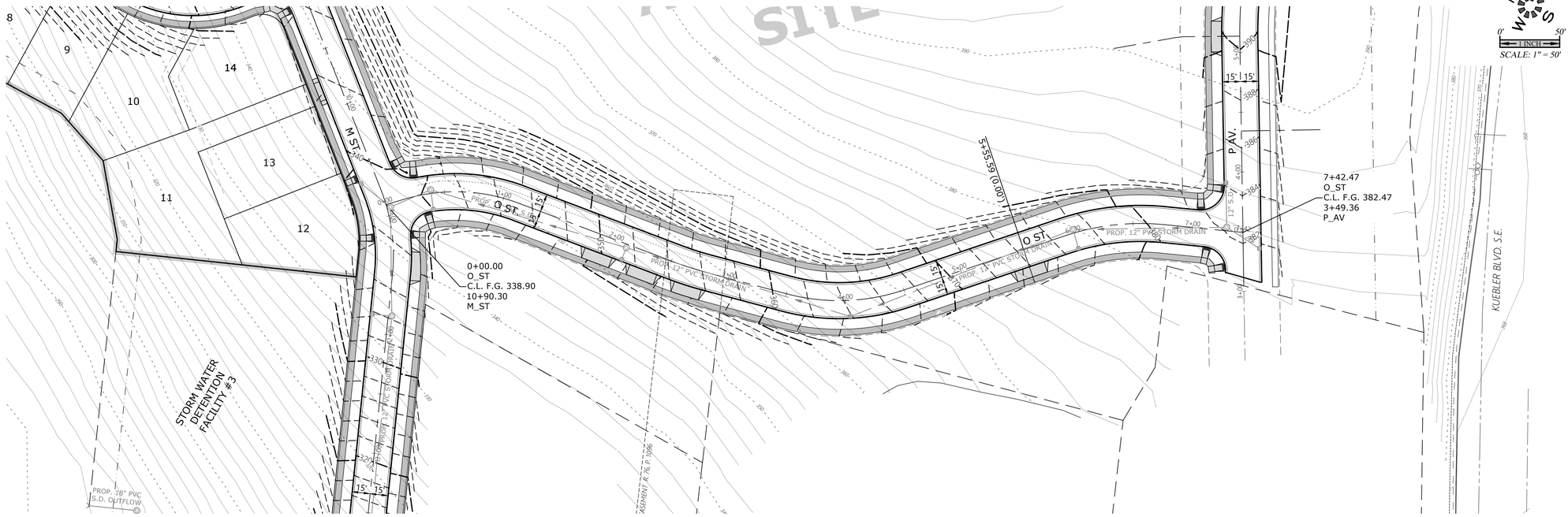
EXPIRES: 06-30-2021

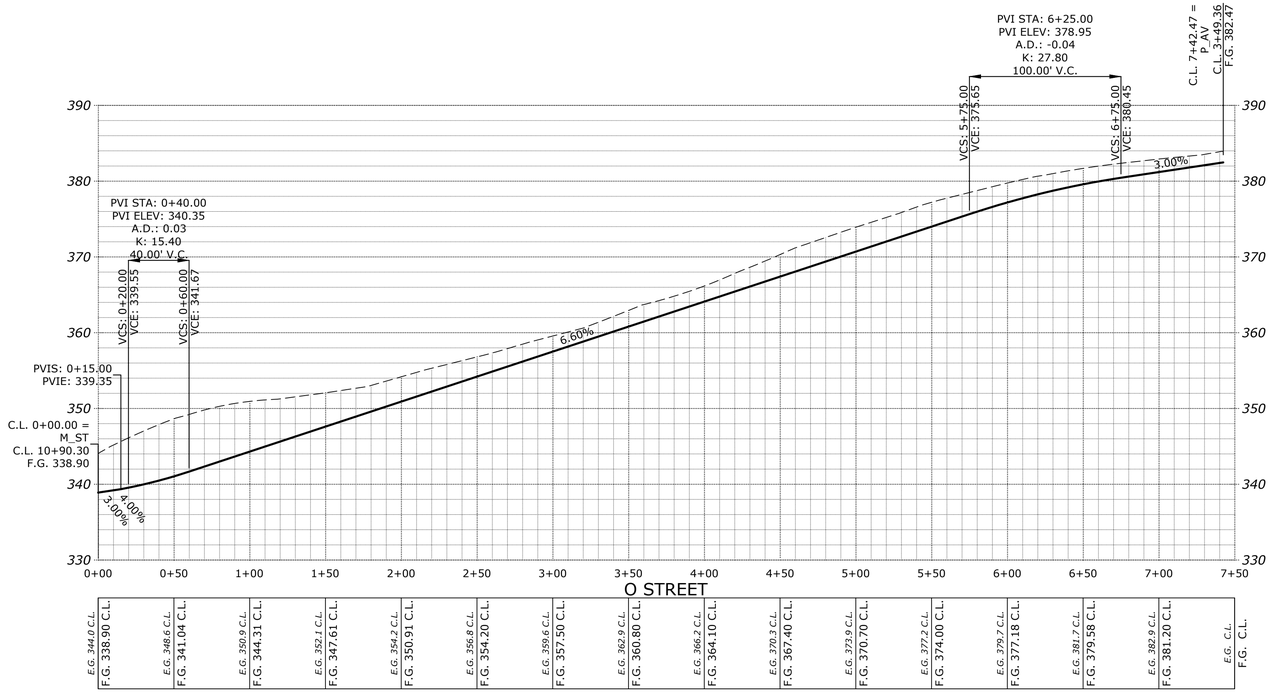
JOB # 6234

P511

J:\6234-Readhour\Dwg. v20\6234p2020.dwg, P511ST, 1/13/2021 3:06:00 PM, PSounders

SEE SHEET P509 & P510
FOR M STREET DESIGN





SEE SHEET P517 FOR
TYPICAL STREET SECTIONS

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234x2020 P512ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

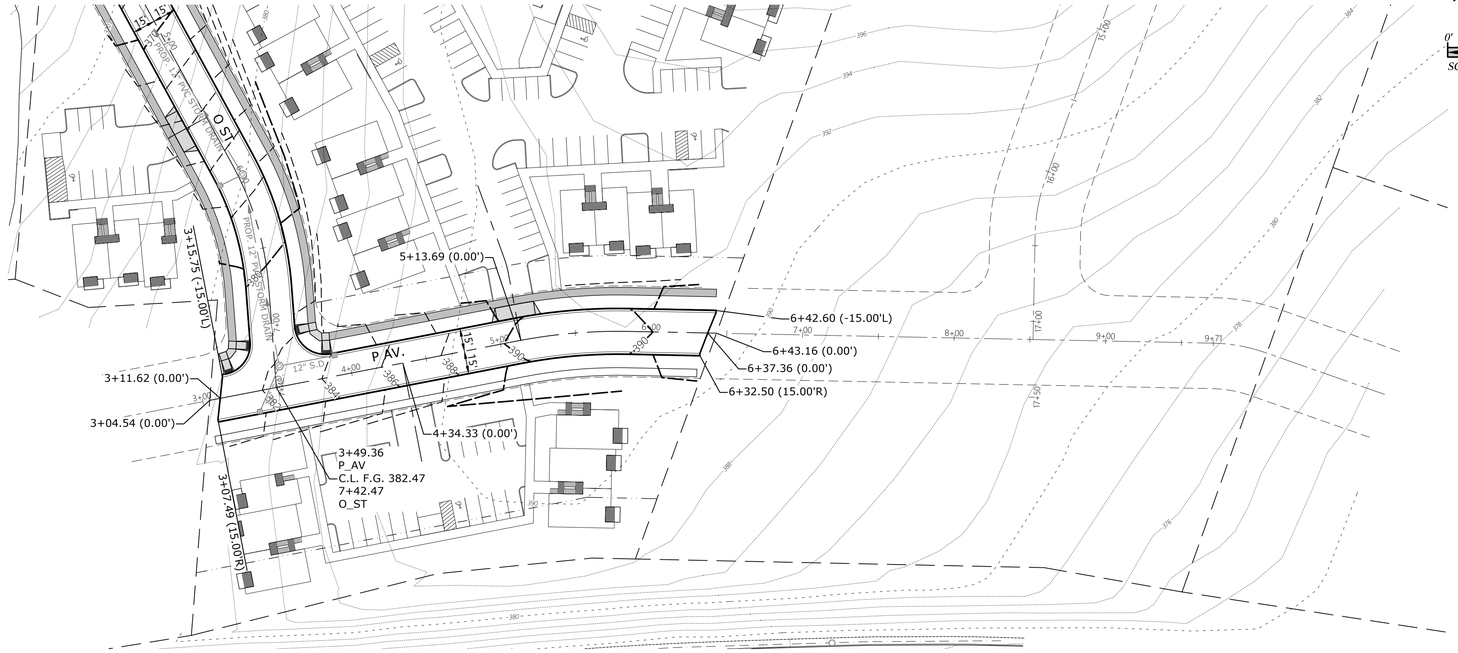
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

JOB # 6234

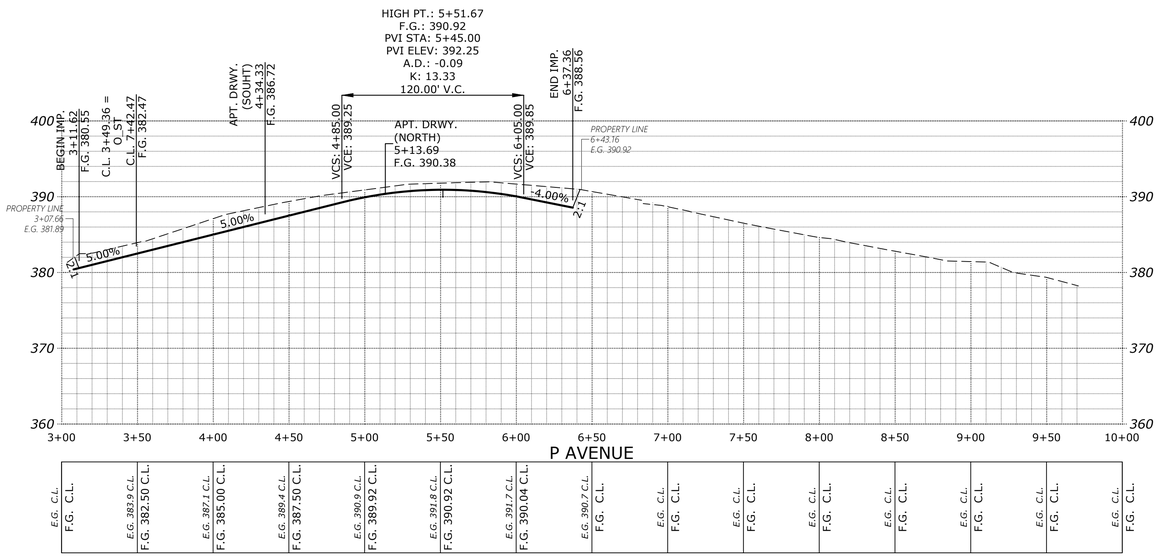
P512

J:\62xx\6234-ReadRod\Dwg. v20\6234p2020.dwg, P5125, 1/13/2021 3:06:20 PM, PSounders

SEE SHEET P512 FOR
O STREET DESIGN



SEE SHEET P517 FOR
TYPICAL STREET SECTIONS



MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER SCALED GRAPHICAL REPRESENTATION.

6234p2020 P513ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1995
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

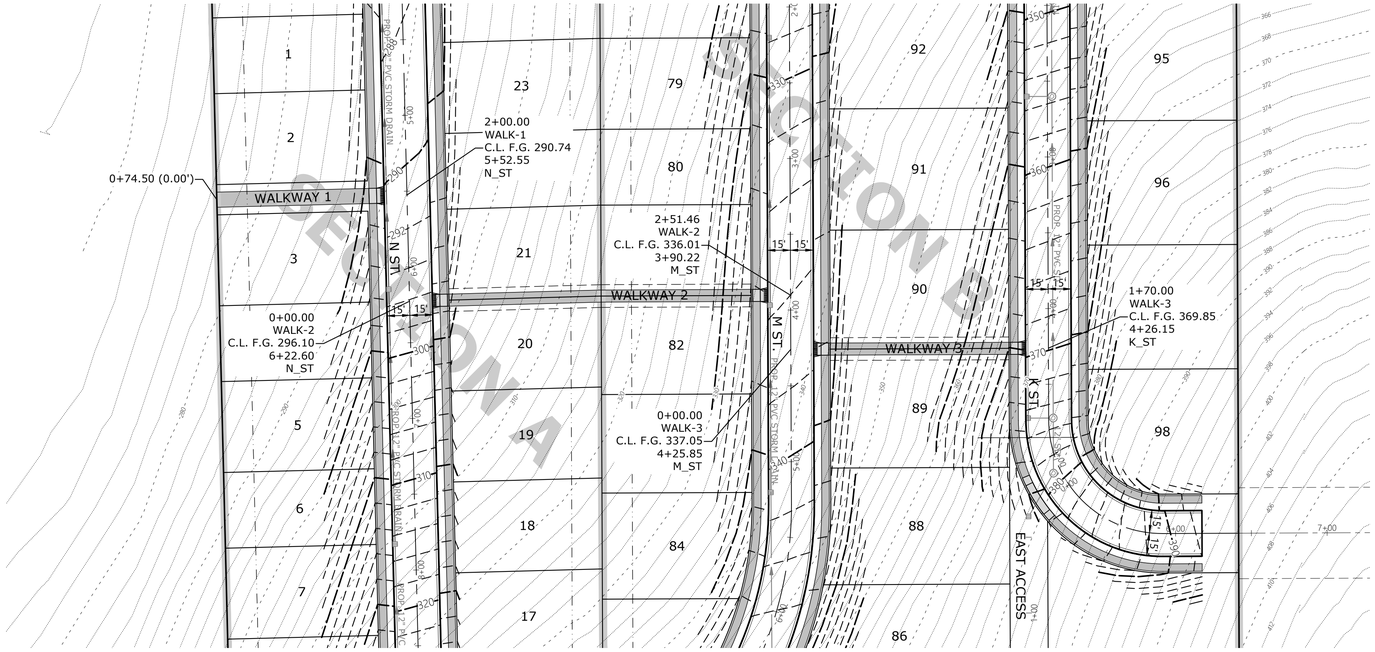
P513

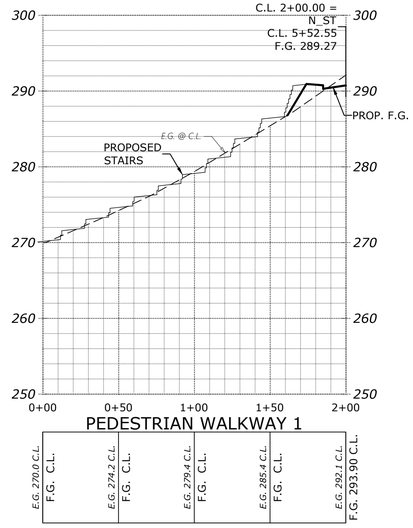
J:\6Zxx\6234-RoadNotes\Dwg. v20\6234p2020.dwg, P513ST, 1/13/2021 3:06:42 PM, PSounders

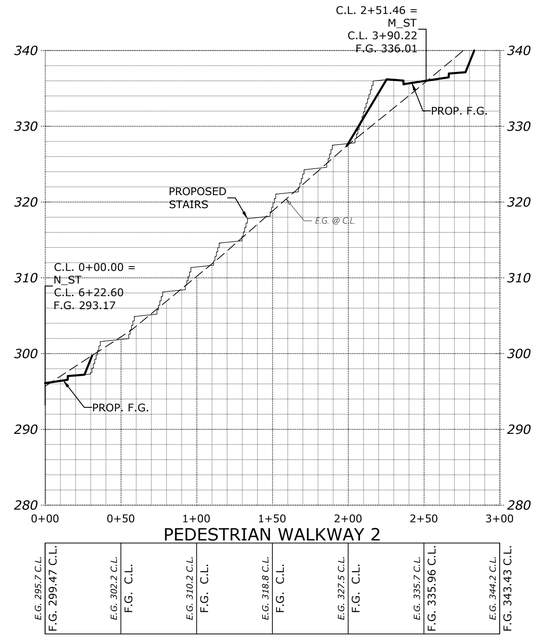
SEE SHEET P511 FOR N STREET DESIGN

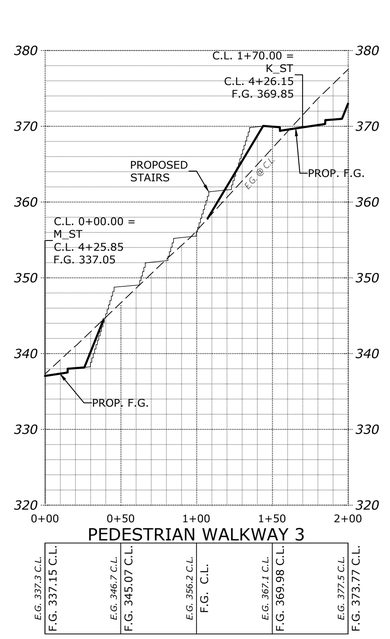
SEE SHEET P509 & P510 FOR M STREET DESIGN

SEE SHEET P507 FOR K STREET DESIGN









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6234p2020 P514ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

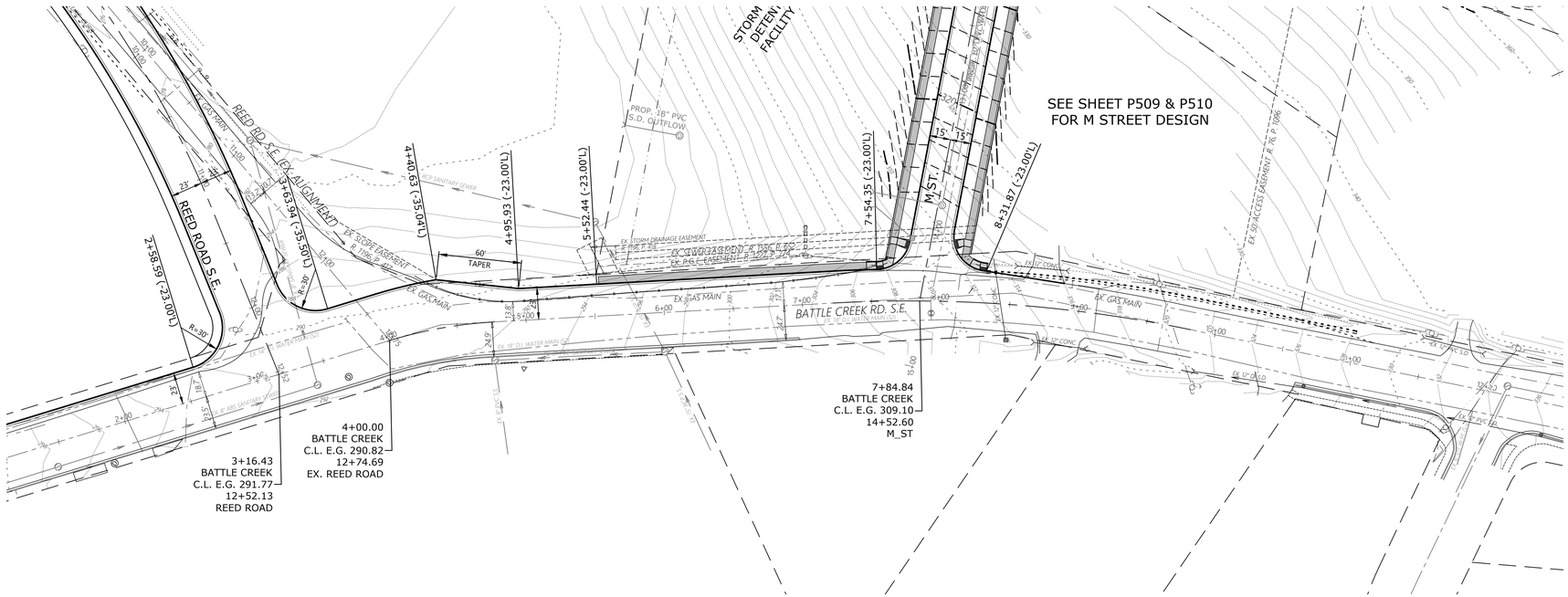
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
HAROLD D. GASKEY

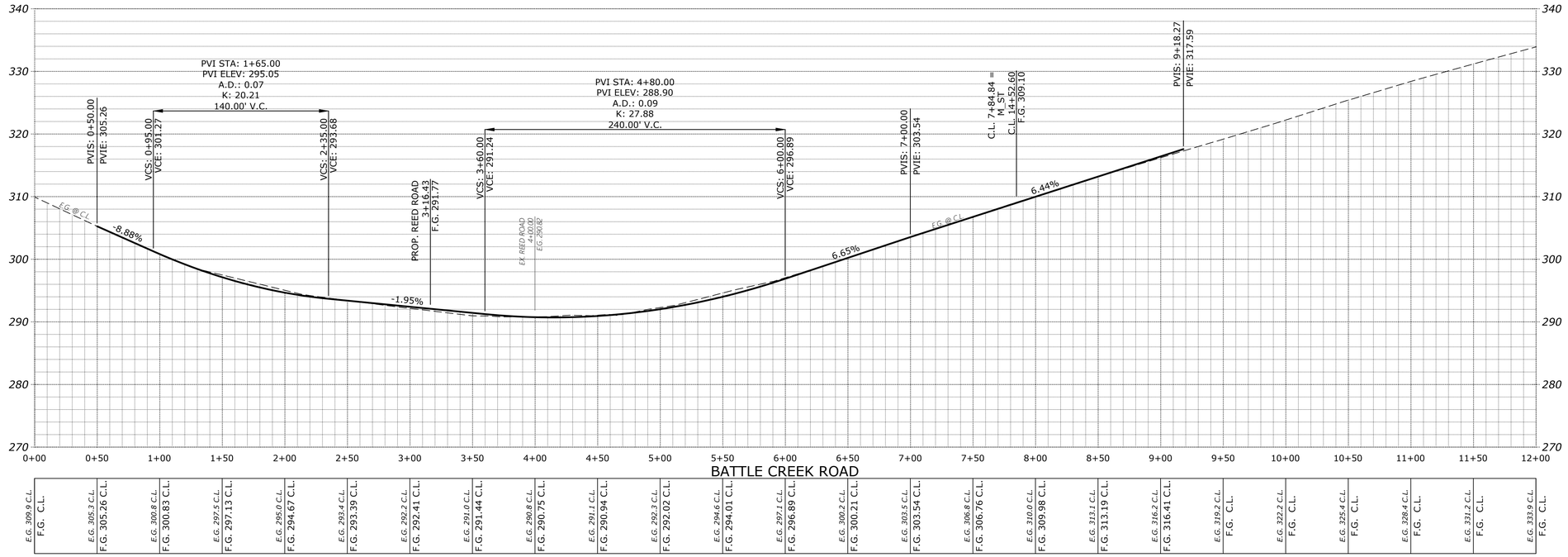
EXPIRES: 06-30-2021

JOB # 6234

P514

J:\A2x-\A234-RoadNord\Dwg - v20\A234p2020.dwg, P514ST, 1/13/2021 3:07:01 PM, PSounders





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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234p2020 P515ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

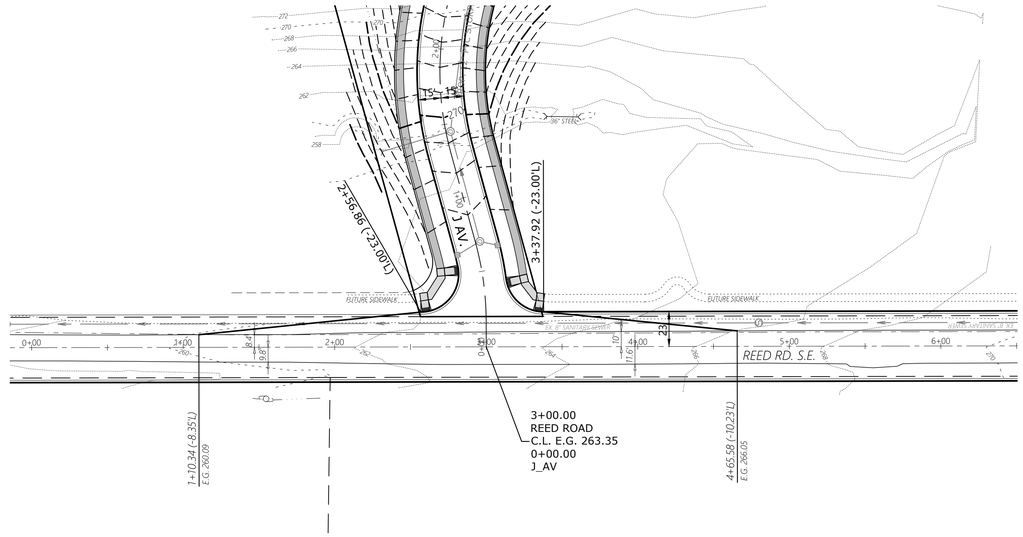
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

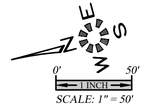
JOB # 6234

P515

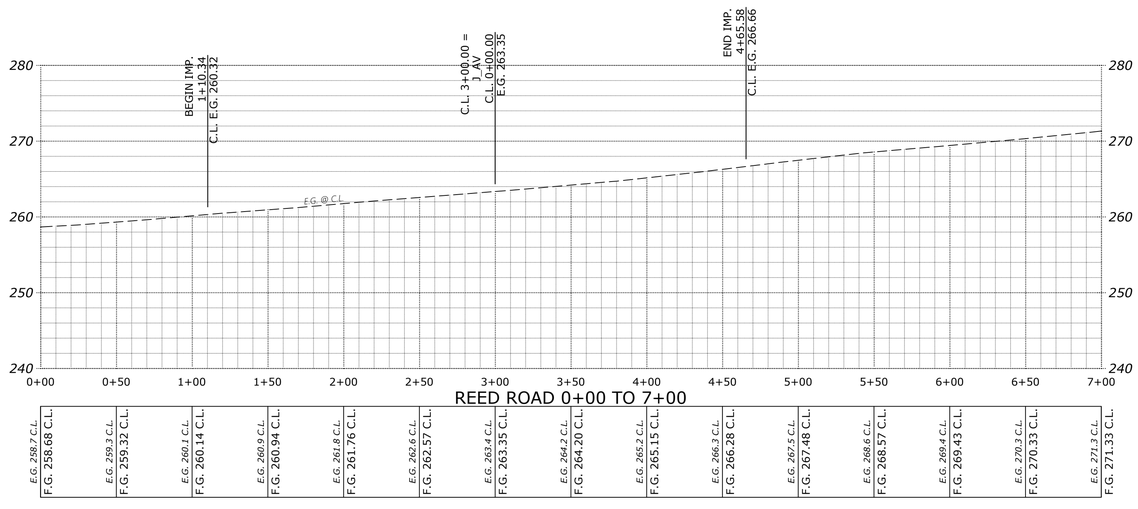
J:\6234-ReedRoad\Dwg. v20\6234p2020.dwg, P515ST, 1/13/2021 3:07:28 PM, PSounders

SEE SHEET P506 FOR
J AVENUE DESIGN



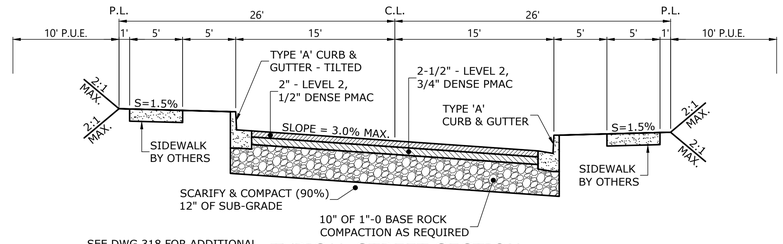


SEE SHEET P517 FOR
TYPICAL STREET SECTIONS



REED ROAD 0+00 TO 7+00

| | | |

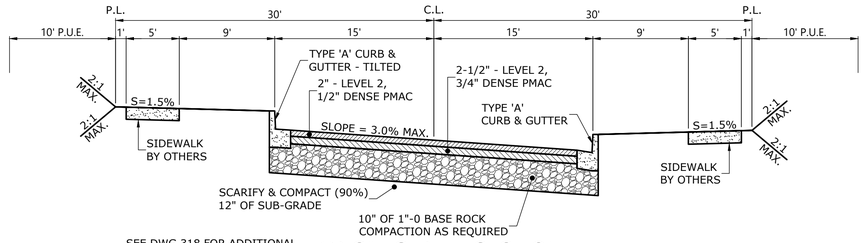


SEE DWG.318 FOR ADDITIONAL CONSTRUCTION INFORMATION.

TYPICAL STREET SECTION

K ST., M ST. 0+00.00 TO 10+90.30 & N ST.

-NTS-

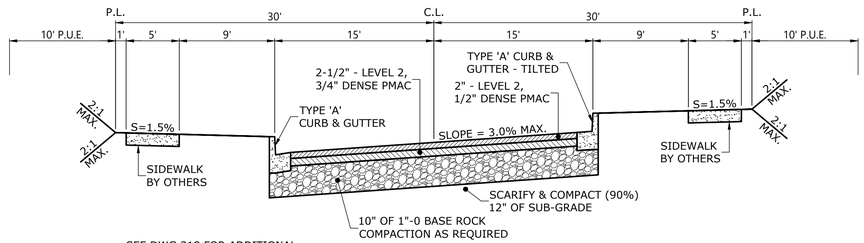


SEE DWG.318 FOR ADDITIONAL CONSTRUCTION INFORMATION.

TYPICAL STREET SECTION

I AV., L ST., M ST. 10+90.30 TO 14+52.60 & O ST.

-NTS-

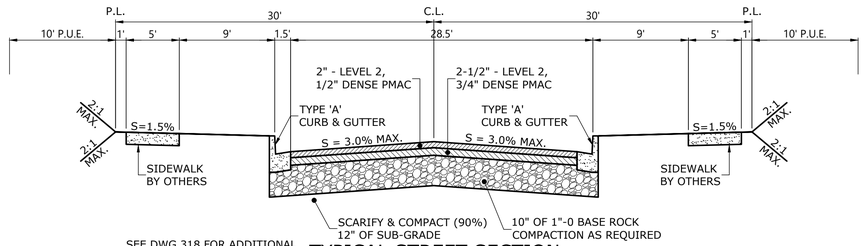


SEE DWG.318 FOR ADDITIONAL CONSTRUCTION INFORMATION.

TYPICAL STREET SECTION

B ST.

-NTS-



SEE DWG.318 FOR ADDITIONAL CONSTRUCTION INFORMATION.

TYPICAL STREET SECTION

A AV., C AV., D ST., E AV., G ST., H ST., J AV. & P AV.

-NTS-

PROVISIONS FOR WET WEATHER CONSTRUCTION

DRY SEASON CONSTRUCTION IS RECOMMENDED; HOWEVER, EXCAVATION TO SUBGRADE CAN PROCEED DURING PERIODS OF LIGHT TO MODERATE RAINFALL PROVIDED THAT THE SUBGRADE REMAINS COVERED WITH AGGREGATE; A TOTAL AGGREGATE THICKNESS OF 8-INCHES MAY BE NECESSARY TO PROTECT THE SUBGRADE FROM HEAVY CONSTRUCTION TRAFFIC. CONSTRUCTION TRAFFIC SHOULD NOT BE ALLOWED DIRECTLY ON THE SUBGRADE ONLY ATOP A SUFFICIENT COMPACTED ROCK THICKNESS TO MITIGATE SUBGRADE "PUMPING". IF THE SUBGRADE BECOMES WET AND "PUMPS" NO CONSTRUCTION TRAFFIC SHALL BE ALLOWED ON THE ROAD ALIGNMENT. POSITIVE SITE DRAINAGE AWAY FROM THE STREET SHALL BE MAINTAINED IF SITE PAVING WILL NOT OCCUR BEFORE THE ON-SET OF THE WET SEASON.

MITIGATION OF WET AND SOFT SUBGRADE, IF ENCOUNTERED

DEPENDING ON THE TIMING FOR THE PROJECT, ANY SOFT SUBGRADE FOUND DURING PROOF-ROLLING OR BY VISUAL OBSERVATION CAN EITHER BE REMOVED AND REPLACED WITH COMPACTED CRUSHED AGGREGATE, REMOVED AND DRIED OR DRIED IN-PLACE AND RECOMPACTED, OR AN AREA OF SUFFICIENT SIZE (GENERALLY AT LEAST 6-FEET BEYOND THE EDGE OF SOFT MATERIAL) MAY BE COVERED WITH A BI-AXIAL GEOGRID AND COVERED WITH COMPACTED CRUSHED AGGREGATE.

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COBURN GRAND VIEW ESTATES

TYPICAL STREET SECTIONS

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6234x2020 P517ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 09, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

P517

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SLOPE EXCEPTION AREAS

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K:\Projects\6234-KeedRoad\Dwg 2019\6234p204.dwg, P204SL, 1/13/2021 2:47:11 PM, PSanders

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ

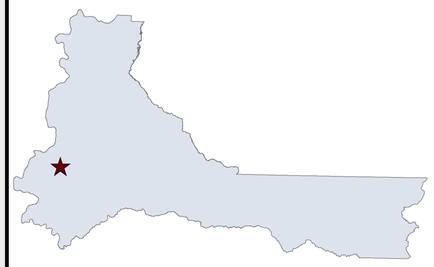
EXPIRES: 06-30-2021

JOB # 6234

P204

08 3W 11

08 3W 11
SALEM



MARION COUNTY, OREGON
SEC 11 T8S R3W W.M.
SCALE 1" = 400'

LEGEND

LINE TYPES
- Taxlot Boundary
- Historical Boundary
- Road Right-of-Way
- Easement
- Railroad Right-of-Way
- Railroad Centerline
- Private Road ROW
- Taxcode Line
- Subdivision/Plat Bndry
- Map Boundary
- Waterline - Taxlot Bndry
- Waterline - Non Bndry

CORNER TYPES
- + 1/16TH Section Cor.
- 1/4 Section Cor.
- DLC Corner
- 16 15 / 21 22 Section Corner

NUMBERS
Tax Code Number

000 00 00 0

Acreage *0.25 AC*

All acres listed are Net Acres, excluding any portions of the taxlot within public ROWs

NOTES
Tick Marks: A tick mark in the road indicates that the labeled dimension extends into the public ROW

200.00
175.00

CANCELLED NUMBERS
100
201
301
401

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Marion County OREGON — Assessors Office Cartography Dept

FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT
www.co.marion.or.us

PLOT DATE: 2/24/2020

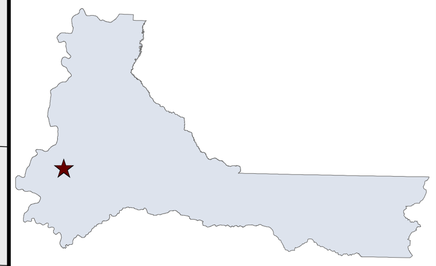
SALEM
08 3W 11

08 3W 11

08 3W 11D

SEE MAP 083W11BD
GLADMAR ST SE
CTR SEC
SEE MAP 083W11
SEE MAP 083W12B
1/4 COR
PILGRIM ST
BATTLE CREEK ROAD SE
COLONY CT
INDEPENDENCE DR
READING CT
RITING CT
SEE MAP 083W11CA
(CO RD 839)
REED ROAD (MR 25)
924 01 00 00
11DB
ARITHMETIC AVENUE
DRIVE SE
SOUTHAMPTON
STEVEN CT
DESIREE CT
CHATHAM ST
CELEEN AVENUE SE
200 7.35 AC
400 26.29 AC
101 0.79 AC
1200 0.73 AC
202 1.01 AC
1100 2.07 AC
FRUIT
1000 0.51 AC
300 1.74 AC
924 01 00 0
601 PAR 1 1.43 AC
P.P. 19-036
500 1.67 AC
602 0.05 AC
ROAD SE
FORSYTHE DRIVE
ALEX CT
11DD
2600 0.92 AC
2500 0.79 AC
2400 0.84 AC
2700 0.87 AC
2900 1.55 AC
2800 2.35 AC
25' ACCESS EASEMENT
KUEBLER GATEWAY
700 2.25 AC
2100 0.60 AC
2200 0.60 AC
KUEBLER BLVD
SEE MAP 083W12C
INDEPENDENCE
CONSTITUTION DRIVE
LOOP
BRADFORD
CHURCHILL AVENUE
BARRINGTON AVENUE
BARRINGTON COURT
WEBSTER DRIVE
SEE MAP 083W11CD
924 01 00 0
11DC
SOUTHAMPTON COURT
WARRINGTON ST
OLIVIA CT
WICKSHIRE AVENUE
WICKSHIRE CT
KINSINGTON STREET
ALBION CT
CHAUNCEY ST
ALEX AVENUE
1/4 COR
BOONE ROAD SE (CR 838)
SEE MAP 083W14BA
SEE MAP 083W14AB
924 01 00 0
KUEBLER BLVD
(MR 92)
SEE MAP 083W14
924 01 00 0
(CR 841)
BOONE ROAD CO. RD. 838
SEE MAP 083W13BB
924 01 00 0
CULTUS AVE
RILEY CT
08 3W 11D

08 3W 11D
SALEM



MARION COUNTY, OREGON

SE1/4 SEC11 T8S R3W W.M.
SCALE 1" = 200'

LEGEND

LINE TYPES

- Taxlot Boundary
- Historical Boundary
- Road Right-of-Way
- Easement
- Railroad Right-of-Way
- Railroad Centerline
- Private Road ROW
- Taxcode Line
- Subdivision/Plat Bndry
- Map Boundary
- Waterline - Taxlot Bndry
- Waterline - Non Bndry

CORNER TYPES

- 1/16TH Section Cor.
- 1/4 Section Cor.
- DLC Corner
- Section Corner (16 15 / 21 22)

NUMBERS

Tax Code Number
000 00 00 0

Acreage
0.25 AC

All acres listed are Net Acres, excluding any portions of the taxlot within public ROWs

NOTES

Tick Marks: A tick mark in the road indicates that the labeled dimension extends into the public ROW

200.00
175.00

CANCELLED NUMBERS

100	1300	2301
201	1400	2302
301	1500	2303
501	1600	
502	1601	
600	1700	
603	1800	
700A1	1801	
701	1900	
702	1901	
703	2000	
800	2001	
801	2002	
900	2101	
901	2102	
902	2201	
1001	2300	

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Marion County OREGON
Assessors Office
Cartography Dept

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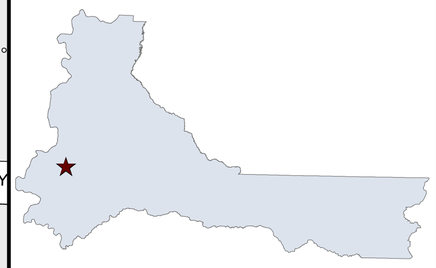
PLOT DATE: 6/26/2020

SALEM
08 3W 11D

08 3W 12B

08 3W 12B
SALEM



MARION COUNTY, OREGON
NW1/4 SEC12 T8S R3W W.M.
SCALE 1" = 200'

LEGEND

LINE TYPES

- Taxlot Boundary
- Historical Boundary
- Road Right-of-Way
- Easement
- Railroad Right-of-Way
- Railroad Centerline
- Private Road ROW
- Taxcode Line
- Subdivision/Plat Bndry
- Map Boundary
- Waterline - Taxlot Bndry
- Waterline - Non Bndry

CORNER TYPES

- + 1/16TH Section Cor.
- 1/4 Section Cor.
- DLC Corner
- 16 15 / 21 22 Section Corner

NUMBERS

Tax Code Number

000 00 00 0

Acreage *0.25 AC*

All acres listed are Net Acres, excluding any portions of the taxlot within public ROWs

NOTES

Tick Marks: A tick mark in the road indicates that the labeled dimension extends into the public ROW

200.00
175.00

CANCELLED NUMBERS

200	1498A1		
201	1498A2		
202	1498A3		
300	1500		
301	1601		
400	2100		
401			
402			
501			
502			
503			
600			
700A1			
701A1			
800			
1494			
1497			

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PLOT DATE: 1/24/2018

SALEM
08 3W 12B

CITY OF Salem
AT YOUR SERVICE

Traffic Engineering Section
Public Works Department
555 Liberty Street SE, Room 325 Telephone: 503-588-6211
Salem, Oregon 97301-3513 TTY: 503-588-6292

Trip Generation Estimate

Street _____

Bin # _____ TGE # _____

Date Received _____

Section 1 (To be completed by applicant.)

Applicant Name: Brandi Dalton Telephone: 503-363-9227

Applicant Mailing Address: 1155 SE 13th St, Salem, OR 97302

Location of New Development: Battle Creek Rd/Reed Lane

(Please provide street address. If unknown, provide approximate address and geographical description/nearest cross streets.)

Description and Size of New Development: Modify SUB-ADJ 19-08 + UGA17-03 MOD1

(e.g., 150 single-family homes, 20,000 sq. ft. office addition, 12-pump gas station, 50-student day care, additional parking, etc.)

Description and Size of Existing/Past Development, if any (note whether to remain or be removed): _____

Planning Action Involved, if any: SUB-MOD + PAR

(e.g., zone change, subdivision, partition, conditional use, PUD, mobile home park, etc.)

Building Permit Involved: Yes ☐ No ☒

Section 2 (To be completed by City staff.)

Proposed Use	**Existing Use**
Development Quantity: _____	Development Quantity: _____
ITE Land Use Code: _____	ITE Land Use Code: _____
Trip Generation Rate/Equation: _____	Trip Generation Rate or Equation: _____
Average Daily Trips: _____	Average Daily Trips: _____
ELNDT Adjustment Factors	**ELNDT Adjustment Factors**
Trip Length: _____ Linked Trip: _____	Trip Length: _____ Linked Trip: _____
TSDC Trips: _____	TSDC Trips: _____

Section 3 (To be completed by City staff.)

Transportation Impact Analysis (TIA)

Net Increase in Average Daily Trips: _____
(Proposed use minus existing use.)

☐ A TIA **will** be required:
- ☐ Arterial/Collector—1000 Trip/day Threshold
- ☐ Local Street/Alley—200 Trip/day Threshold
- ☐ Other: _____

☐ A TIA **will not** be required.

Transportation Systems Development Charge

Net Increase in TSDC Trips: _____
(Proposed use minus existing use.)

☐ A TSDC **will** be required.
(Fee determined by Development Services.)

☐ A TSDC **will not** be required.

(For additional information, refer to the back of this application.)

Section 4 (To be completed by City staff.)

Remarks:

Date: _____

cc: ☐ Chief Development Services Engineer
☐ Community Development
☐ Building Permit Application
☐ _____ By: _____

Traffic Impact Analysis
Strong Rd at 27th St Subdivision

Salem, Oregon

June 20, 2018

completed with
MultiTech Engineering Services, Inc
Salem, Oregon

Prepared by:
Associated Transportation Engineering & Planning, Inc.
Salem, Oregon
June 19, 2018
ATEP 17-392

ASSOCIATED
TRANSPORTATION
ENGINEERING &
PLANNING INC.

A.T.E.P., Inc.
1155 13th St. S.E.
Salem, OR. 97302

Tel.: 503-364-5066
FAX: 503-364-1260
e-mail: kbirky@atepinc.com

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Appendices

Turning Movement Counts

ODOT Crash Data

Computer Analysis

Traffic Impact Analysis
Strong Rd at 27th St Subdivision
Salem, Oregon

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Introduction:

The developer intends to build 225 single family home lots in 3 phases on tax lots 100 and 202 of tax map 08S03W Sec11D and tax lot 1600 of tax map 08S03W Sec12B in Salem, Oregon. The 38 acre site is east of Battle Creek Rd and west of Strong Rd in Salem. The site will be developed with access to both Battle Creek Rd and 27th St.

Figure 1 - Vicinity Map

Residents of the Strong Rd at 27th St Subdivision will use the transportation system and add traffic to the roadways in Salem. This analysis will consider the traffic impacts at the intersections of 1) Battle Creek Rd at Kuebler Blvd, 2) Battle Creek Rd at Reed Rd, 3) Reed Rd at Strong Rd, 4) Reed Rd at Fairview Industrial Dr. 5) Fairview Industrial Dr at Marietta St, 6) 27th St at Strong Rd, 7) 27th at Marietta St, 8) 27th at Keubler Blvd and the site accesses at Battle Creek Rd, Reed Rd and 2th St.

Summary of Findings:

When complete the 225 single family homes in the Strong Rd at 27th St Subdivision will generate an estimated 2124 trips each day. 167 of those trips will be in the AM Peak hour and 223 trips will be in the PM Peak hour. Each of the 3 phases of the project are modeled with 75 homes. The performance metrics at the studied intersections when all 3 phases are occupied are shown in the following table.

Intersection	AM Peak hour		PM Peak hour	
	LOS	v/c	LOS	v/c
Battle Creek at Reed	C	0.145	**F**	0.691
Battle Creek at Site Access	D	0.271	D	0.200
Reed at Strong	C	0.015	C	0.025
Reed at Fairview Industrial	**F**	**1.158**	**F**	0.594
Fairview at Marietta	C	0.456	C	0.040
Site Access at Strong	B	0.009	B	0.006
27th at Marietta	B	NA	B	0.112
27th at Kuebler	C	**0.863**	**E**	**0.875**
Battle Creek at Kuebler	D	**0.911**	**F**	**0.968**
Reed at Site Access	B	0.006	B	0.002

Figure 2 - Performance Metrics when Strong Rd at 27th St Subdivision is developed & occupied

Crash data from ODOT Crash Data Unit shows there were 69 crashes at the 7 intersections for which crash data was reviewed for the past 5 years. None were fatal crashes, 36 were injury crashes and 33 were property damage only crashes. The estimated crash rate per MEV is shown in Figure 3. Battle Creek at Reed has a crash rate (0.335) above the 90%ile for Oregon (0.293) for 3 legged stop controlled intersections. The mean crash rate in Oregon for 4 legged signal controlled intersections is 0.477 and the 90th %ile rate is 0.860. Battle Creek at Kuebler is at the 56th %ile.

Intersection	Fatal Crashes	Injury Crashes	Property Damage Crashes	Crashes/MEV	OR 90%ile
Battle Creek at Reed	**0**	**3**	**4**	**0.335**	**0.293**
Reed at Strong	0	0	1	0.101	0.293
Reed at Fairview Ind.	0	2	0	0.097	0.408
Fairview at Marietta	0	1	1	0.151	0.293
27th at Strong	0	0	0	0.000	0.293
27th at Kuebler	0	9	8	0.244	0.860
Battle Creek at Kuebler	0	21	19	0.496	0.860
Total	0	36	33		

Figure 3 - Crashes per MEV at selected intersections from 2011 through 2015

History and Existing Conditions:

Traffic from the planned homes will travel from the site to access the transportation system. The site is generally open rolling hills in southeast Salem. Battle Creek Rd and Kuebler Blvd are important commuter routes in Salem and carry large volumes of traffic. Battle Creek Rd at Reed Rd is a 3 legged stop controlled intersection with a crash rate above the 90%ile rate in Oregon. Even though traffic signal warrants are met at this intersection, the recommended mitigation is to add a left turn lane on the Reed Rd approach at the intersection Kuebler Blvd at Battle Creek Rd is a major signalized intersection and monitoring its performance in the PM Peak hour traffic period should continue

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.105	19.5	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.009	13.6	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.833	116.4	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.353	17.8	C
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.014	10.8	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.729	19.6	B
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.807	39.0	D

Existing AM Peak Hour Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.661	35.4	E
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.018	14.3	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.366	34.3	D
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.031	14.0	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.079	9.9	A
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	WB Left	0.756	36.3	D
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	SB Thru	0.829	42.5	D

Existing PM Peak Hour Summary

Figure 4 - Existing Traffic Conditions

Traffic Conditions when Strong Rd at 27th St Subdivision are Complete:

Strong Rd at 27th St Subdivision will add 167 trips to the AM Peak hour traffic and 223 trips to the PM Peak hour traffic. This study will assume the subdivision will be built in 3 phases with 75 single family home lots in each phase. This study will assume 10% of the traffic from the site will travel south of the Keubler Blvd at Battle Creek intersection, 30% will travel west and 35% will travel east of the intersection. 7% will travel north on Battle Creek Rd, 6% will travel east on Marietta St and 2% will travel south of the 27th at Kuebler Blvd intersection. The intersection of Reed Rd at Battle Creek should be monitored for capacity and safety issues. Adding a separate left turn lane on the Reed Rd approach will address the capacity issues and help solve the safety issues. The intersection of Battle Creek at Kuebler Blvd is nearing capacity and should be monitored. The intersection of Reed Rd at Fairview Industrial Dr needs to be studied and reconfigured. changing it to AWSC will improve the performance and accommodate the volume of NBLT traffic in the AM Peak hour period.

The study assumed that traffic will continue to grow at 1.6% per year over the next 10 years consistent with growth projects used for Salem east of the Willamette River.

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.117	20.4	C
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.076	19.9	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.010	14.0	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.909	149.8	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.379	18.7	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.003	10.1	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.015	11.2	B
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.831	41.1	D
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.4	B

2020 AM Peak Hour Summary with Phase 1 Complete

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.711	40.7	E
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.053	21.7	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.019	14.9	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.418	38.6	E
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.033	14.5	B
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Thru	0.029	10.4	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.087	10.3	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.784	40.6	D
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	WB Left	0.865	81.5	F
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.000	10.8	B

2020 PM Peak Hour Summary with Phase 1 Complete

Figure 5 – 2020 Traffic Conditions with Phase 1 (75 lots) Complete

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.131	22.0	C
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.170	24.5	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.010	14.7	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	1.025	205.7	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.413	20.2	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.004	10.4	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.017	11.7	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.813	24.1	C
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.871	46.3	D
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.7	B

2023 AM Peak Hour Summary with Phase 2 Complete

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.800	53.0	F
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.123	25.9	D
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.020	15.6	C
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.502	47.8	E
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.038	15.1	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.006	10.7	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.098	10.8	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.829	50.1	D
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	WB Left	0.916	99.7	F
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.0	B

2023 PM Peak Hour Summary with Phase 2 Complete

Figure 6 – 2023 Traffic Conditions with Phase 2 (150 lots) Complete

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.145	23.5	C
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.271	29.0	D
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.015	15.5	C
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	1.158	275.6	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.456	22.3	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.009	10.7	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.022	12.4	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.863	33.1	C
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.911	57.6	E
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.006	11.9	B

2026 AM Peak Hour Summary with Phase 3 Complete

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.891	70.7	F
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.200	30.5	D
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.025	16.5	C
16	Reed Rd at Fairview Industrial Dr	All-way stop	HCM 6th Edition	WB Thru	0.612	14.1	B
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.040	15.8	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.006	11.3	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.112	11.4	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.875	64.5	E
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	WB Left	0.968	118.6	F
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.2	B

2026 PM Peak Hour Summary with Phase 3 Complete

Figure 7 – 2026 Traffic Conditions with Phase 3 (225 lots) Complete

All the studied intersections perform within accepted parameters with expected traffic from the apartments.

Summary:

The development of 75 single family home lots in each of 3 phases (225 total home lots) in the planned Strong Rd at 27th St Subdivision will add traffic to the transportation system. Crash data indicates safety problems at the Reed Rd at Battle Creek Rd. The intersection will also be nearing capactiy with the homes in the Strong Rd at 27th St subdivision. Performance can be mitigated by adding a left turn lane to Reed Rd at the intersection. Safety issues should be monitored on an ongoing basis. The intersection of Battle Creek Rd at Keubler Blvd is a major intersection conveying a large volume of traffic during peak hour traffic periods. The v/c will exceed 0.900 with the second phase of the project and planning for improvements or alternative routes should be started. xxxxxxxx

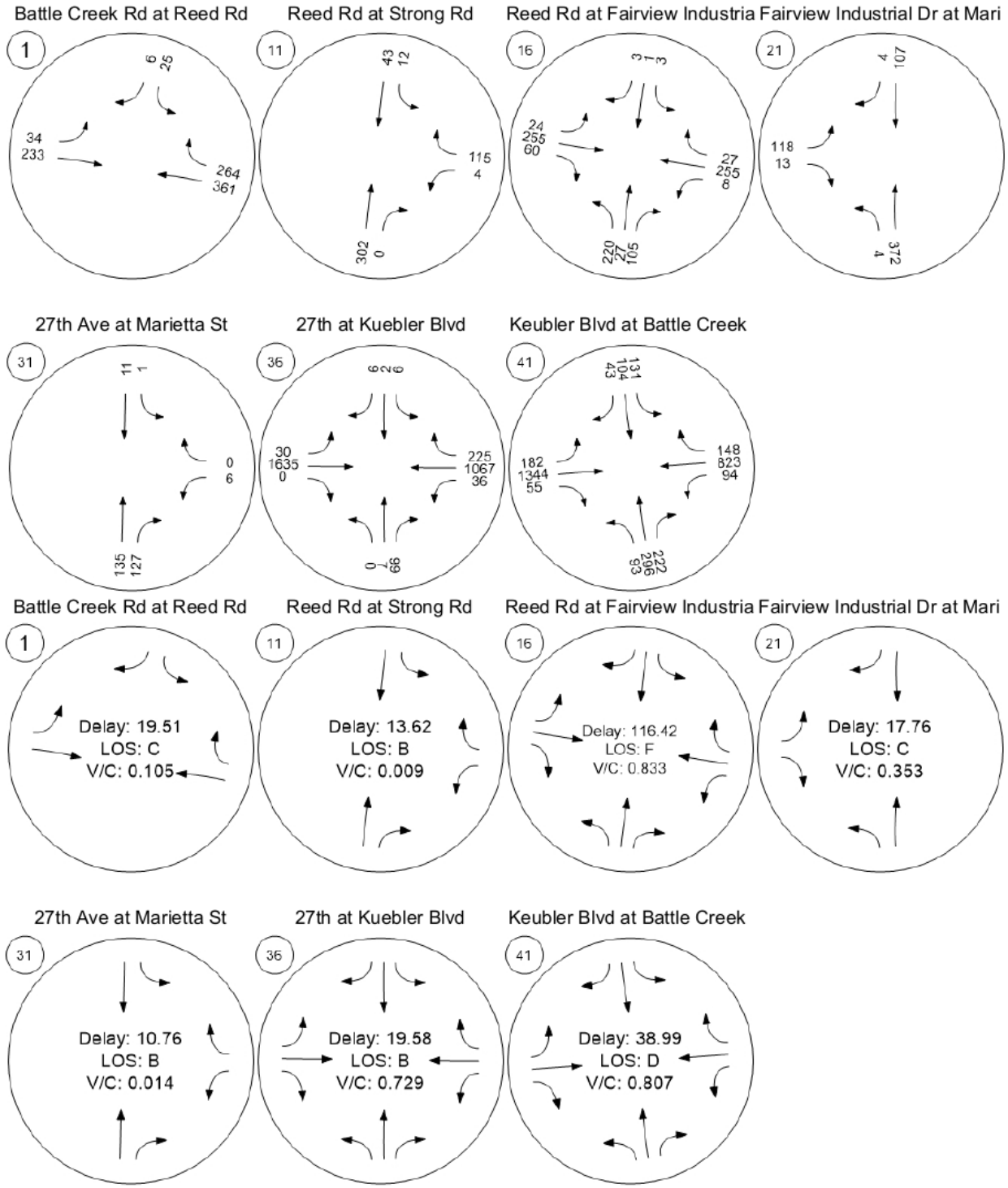


Figure 8 - Existing AM Peak hour Counts & Performance Metrics

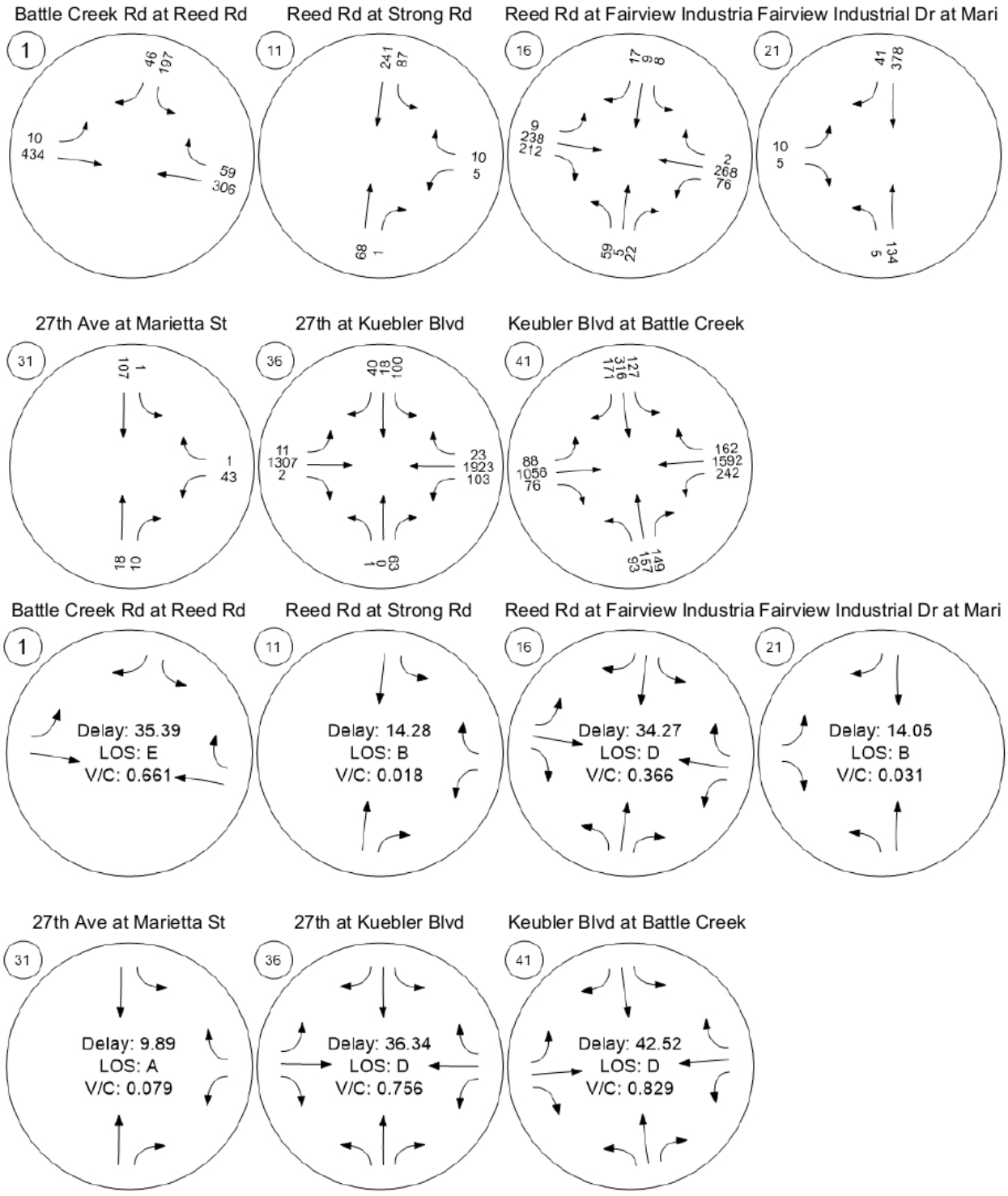
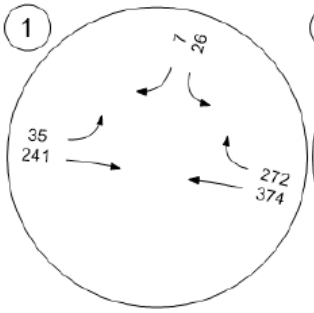
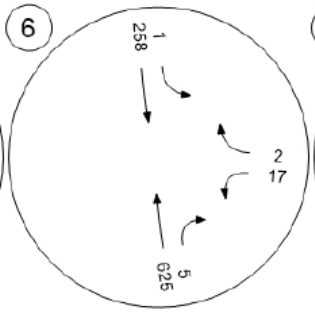


Figure 9 - Existing PM Peak hour Counts & Performance Metrics

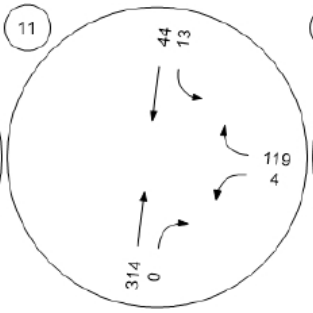
Battle Creek Rd at Reed Rd



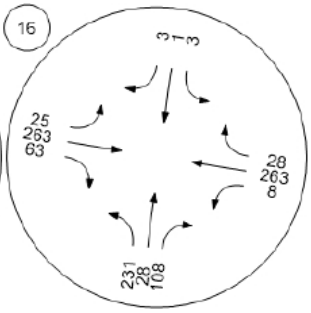
Battle Creek Rd at Site Acces



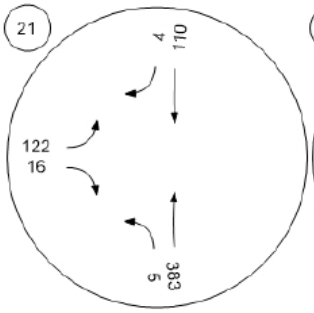
Reed Rd at Strong Rd



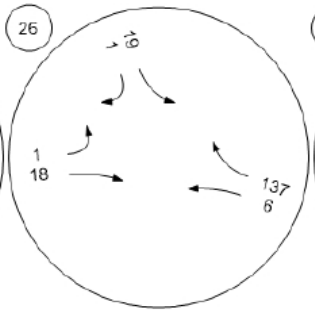
Reed Rd at Fairview Industria



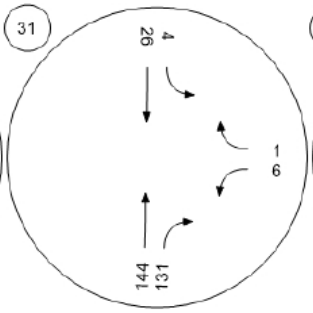
Fairview Industrial Dr at Mari



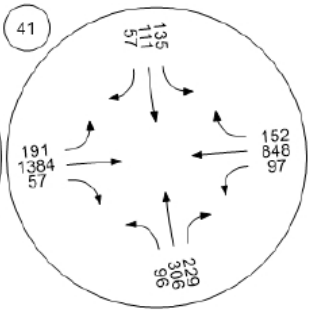
East Access at Strong Rd



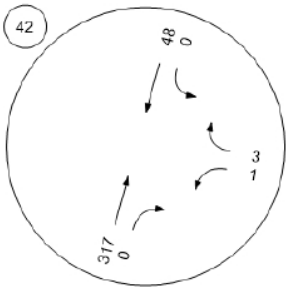
27th Ave at Marietta St



Keubler Blvd at Battle Creek



Reed at Site Access



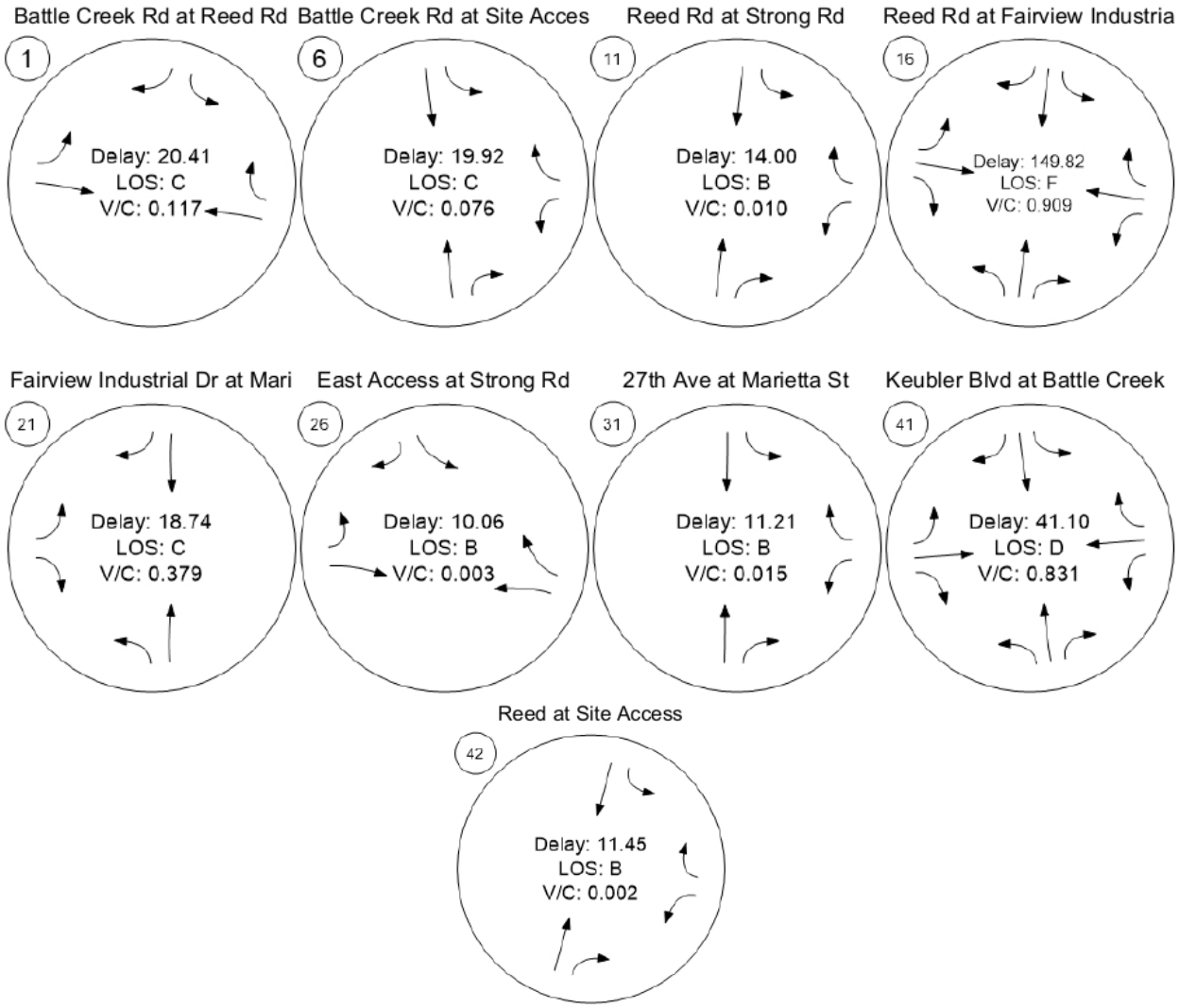
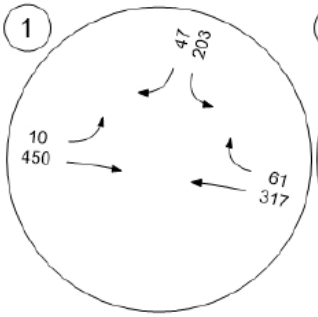
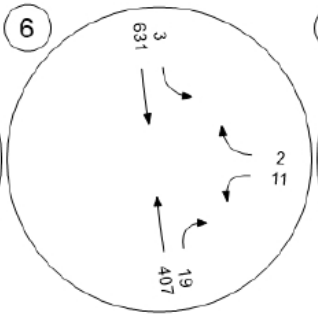


Figure 10 - 2020 AM Peak hour Counts & Performance Metrics with Phase 1 Complete

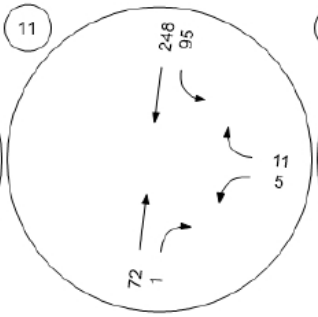
Battle Creek Rd at Reed Rd



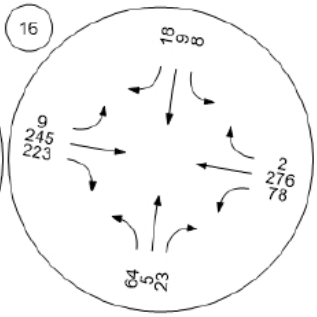
Battle Creek Rd at Site Acces



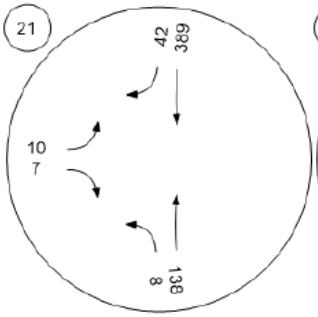
Reed Rd at Strong Rd



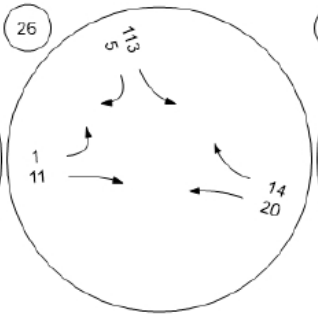
Reed Rd at Fairview Industria



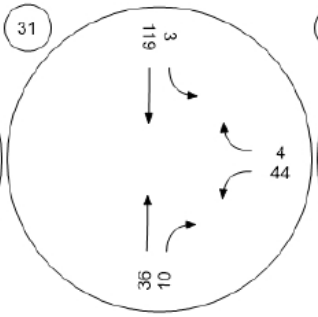
Fairview Industrial Dr at Mari



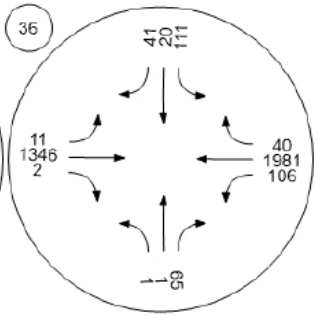
East Access at Strong Rd



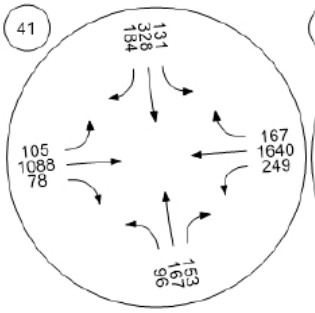
27th Ave at Marietta St



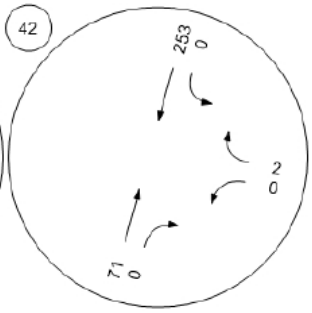
27th at Kuebler Blvd



Keubler Blvd at Battle Creek



Reed at Site Access



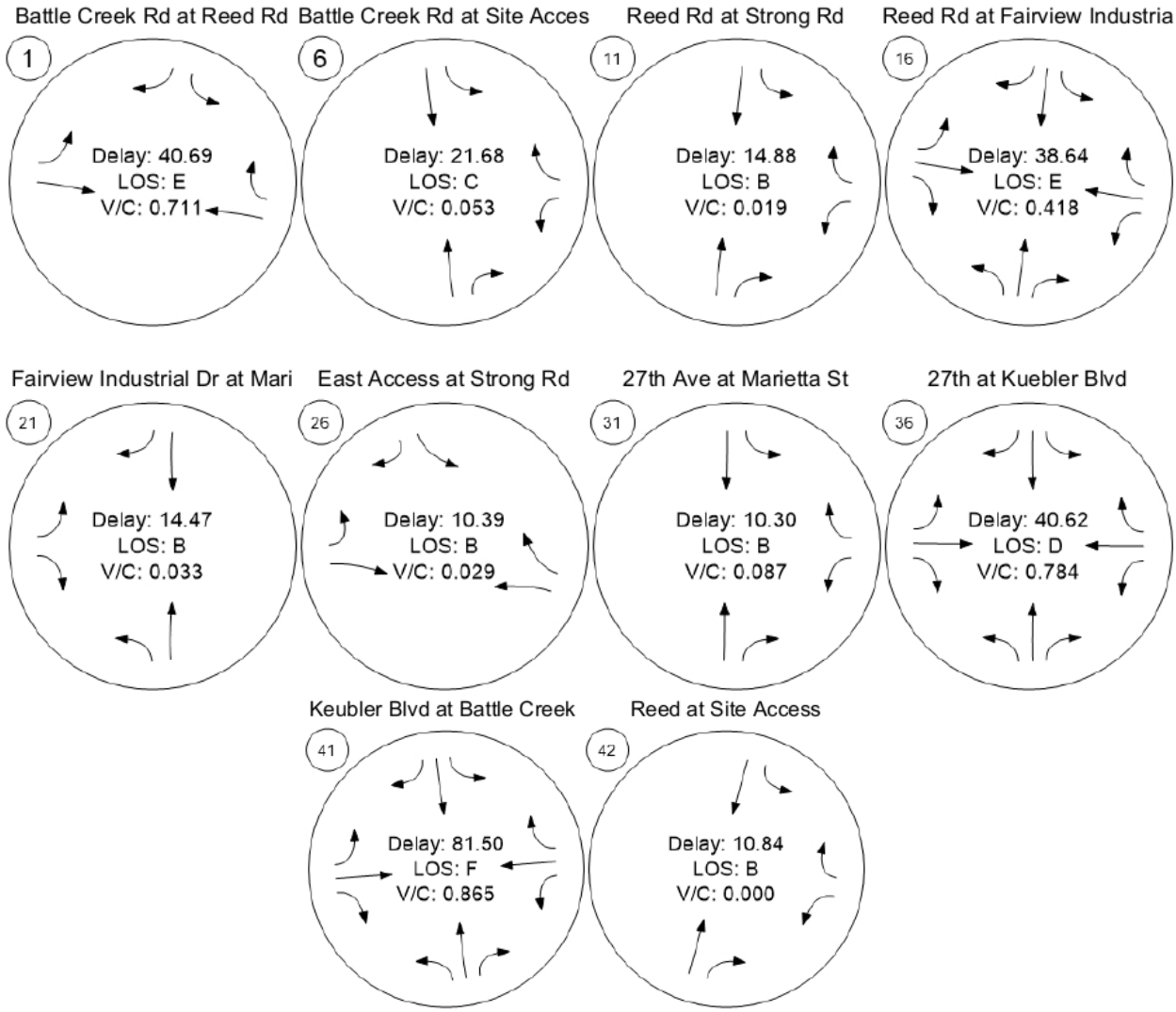
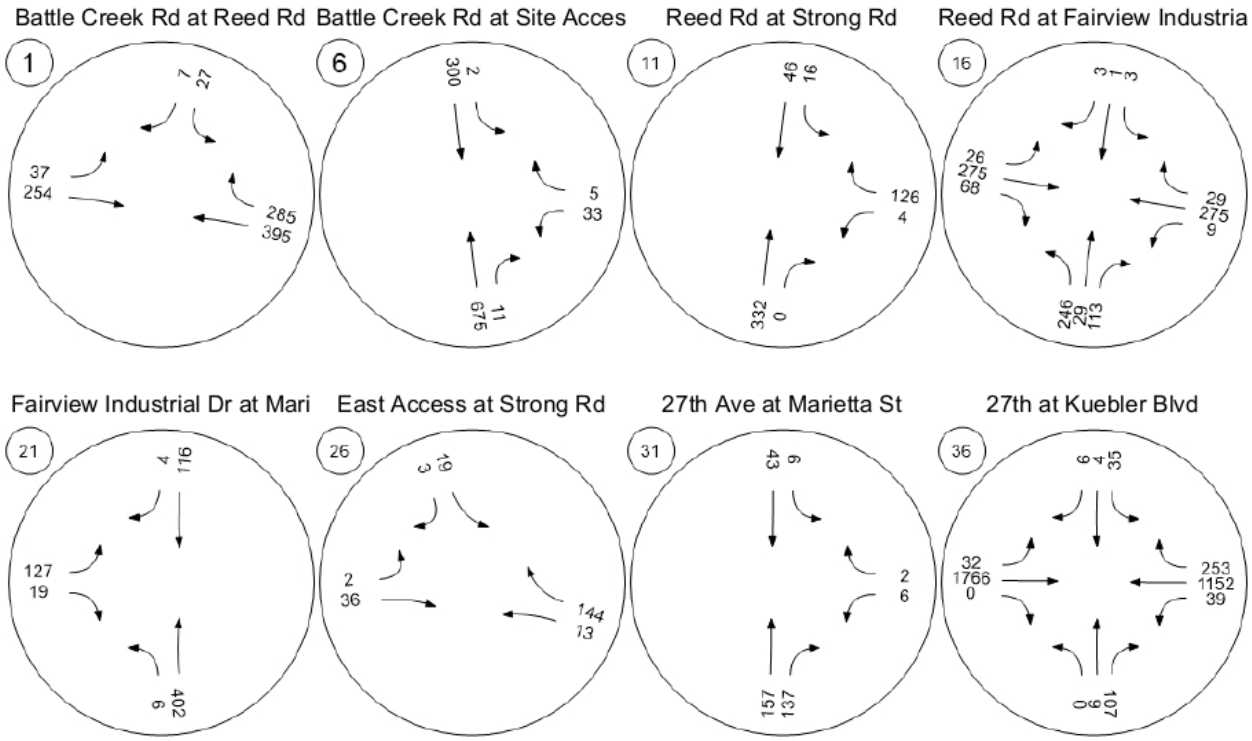


Figure 11 - 2020 PM Peak hour Counts & Performance Metrics with Phase 1 Complete


Battle Creek Rd at Reed Rd
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7
27
37
254
285
395
Battle Creek Rd at Site Acces
6
300
2
5
33
11
675
Reed Rd at Strong Rd
11
46
16
126
4
332
0
Reed Rd at Fairview Industria
16
3
1
3
26
275
68
29
275
9
246
29
113
Fairview Industrial Dr at Mari
21
4
116
127
19
6
402
East Access at Strong Rd
26
19
3
2
36
144
13
27th Ave at Marietta St
31
43
6
2
6
157
137
27th at Kuebler Blvd
36
6
4
35
32
1766
0
253
1152
39
0
107
9

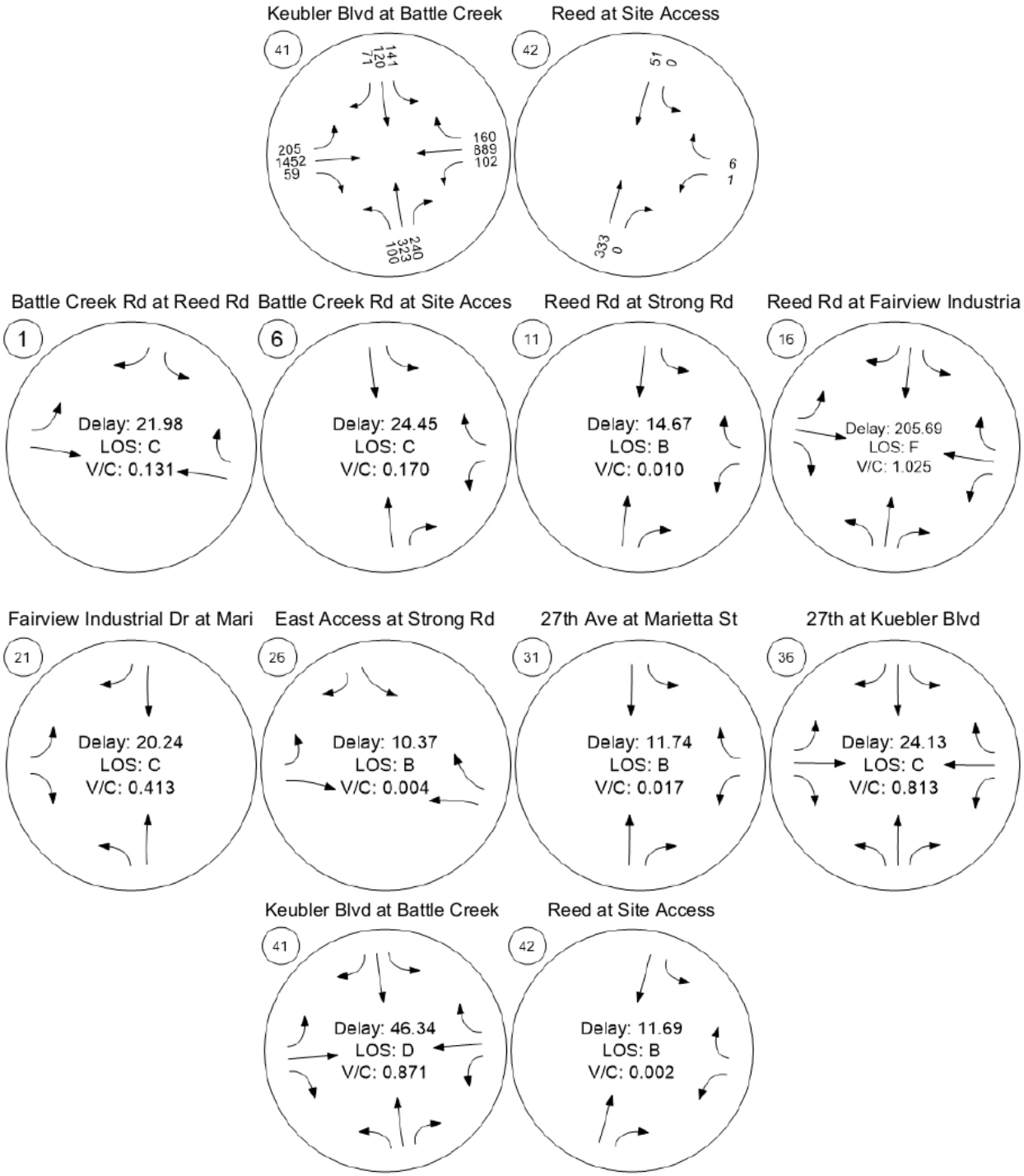
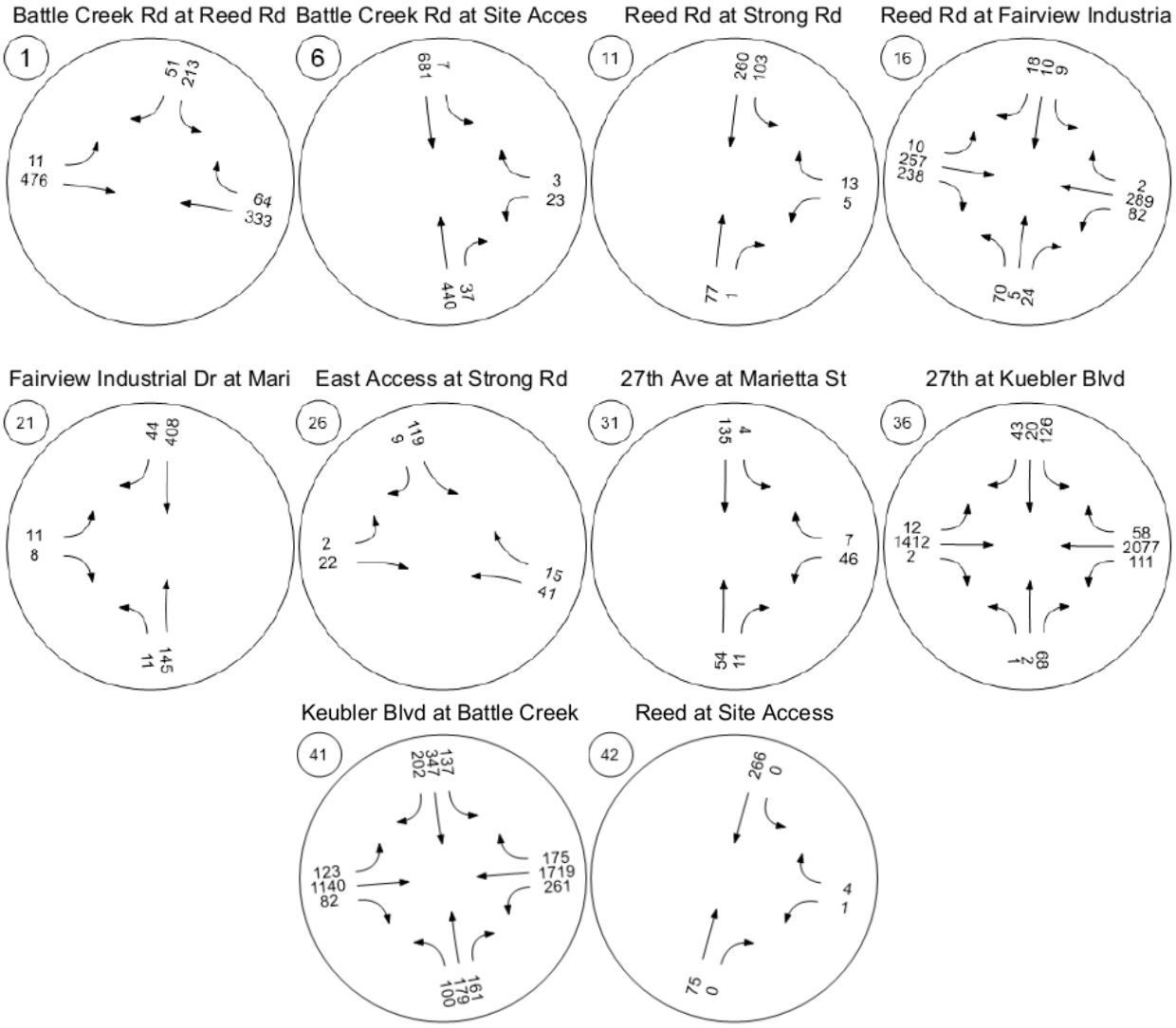


Figure 12 - 2023 AM Peak hour Counts & Performance Metrics with Phase 2 Complete


Battle Creek Rd at Reed Rd
1
51
213
11
476
64
333
Battle Creek Rd at Site Acces
6
7
681
3
23
37
440
Reed Rd at Strong Rd
11
260
103
13
5
77
1
Reed Rd at Fairview Industria
16
18
10
9
10
257
238
2
289
82
70
5
24
Fairview Industrial Dr at Mari
21
44
408
11
8
145
11
East Access at Strong Rd
26
119
9
2
22
15
41
27th Ave at Marietta St
31
135
4
7
46
54
11
27th at Kuebler Blvd
36
43
20
126
12
1412
2
58
2077
111
89
2
Keubler Blvd at Battle Creek
41
137
347
202
123
1140
82
175
1719
261
161
179
100
Reed at Site Access
42
266
0
4
1
75
0

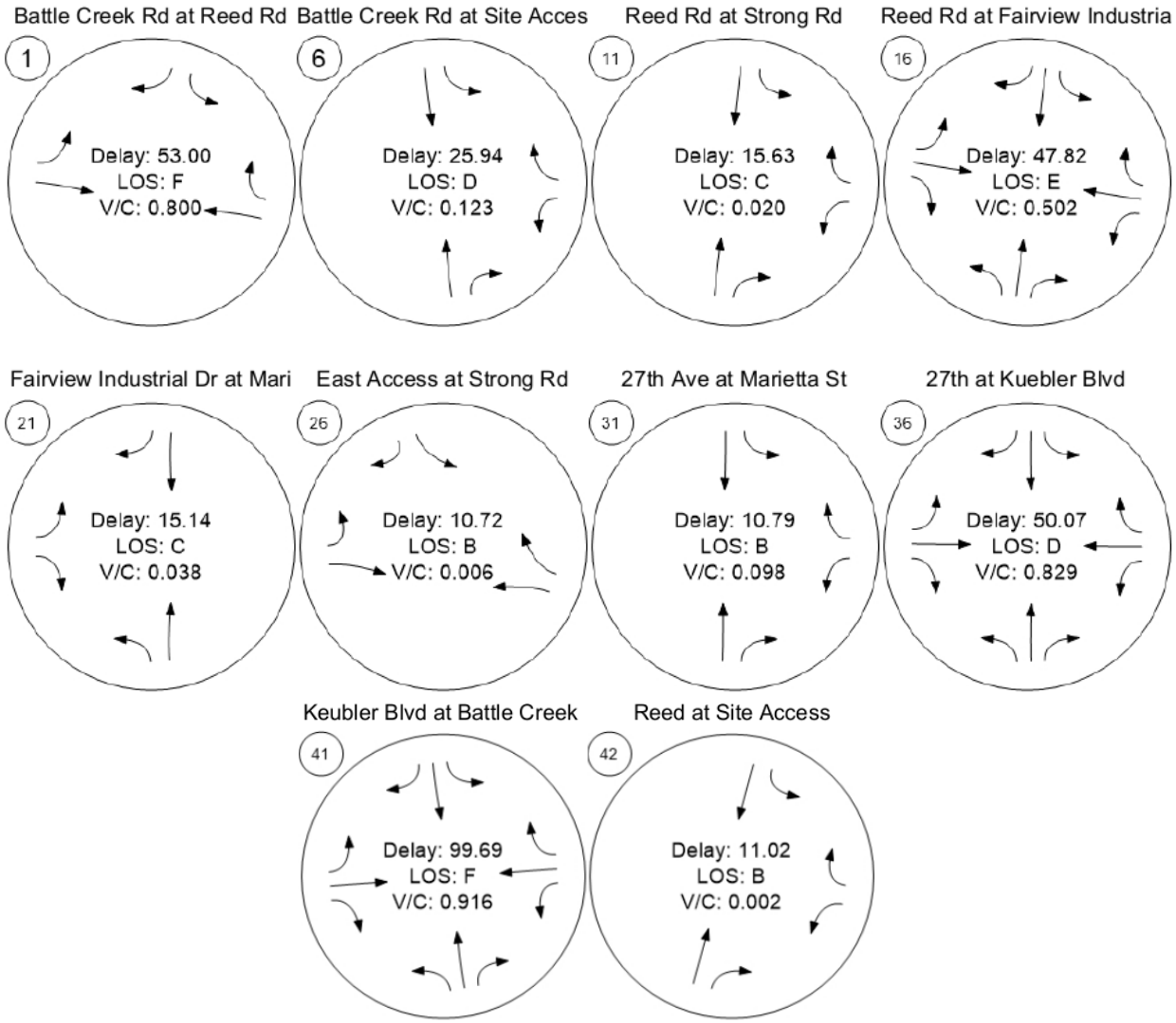
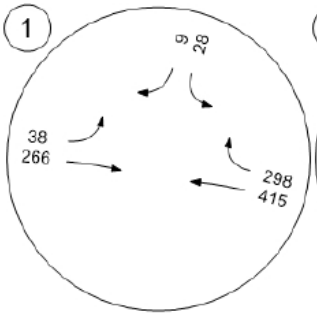
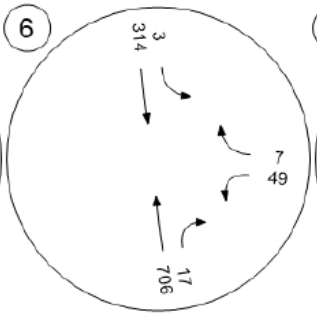


Figure 13 - 2023 PM Peak hour Counts & Performance Metrics with Phase 2 Complete

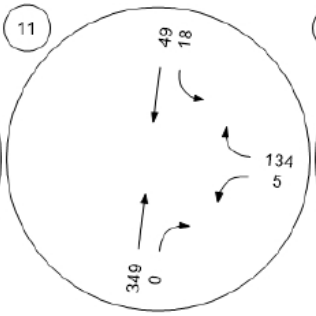
Battle Creek Rd at Reed Rd



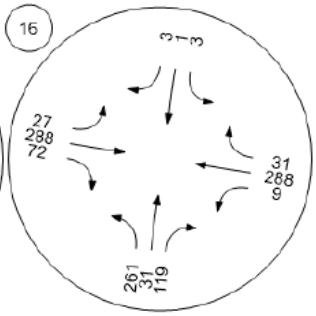
Battle Creek Rd at Site Acces



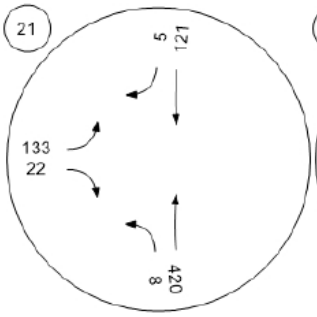
Reed Rd at Strong Rd



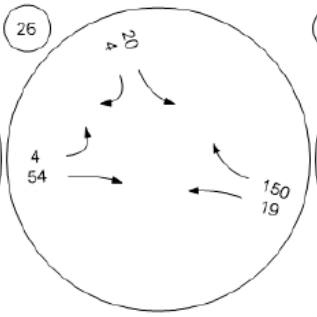
Reed Rd at Fairview Industria



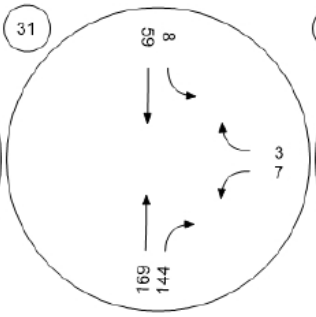
Fairview Industrial Dr at Mari



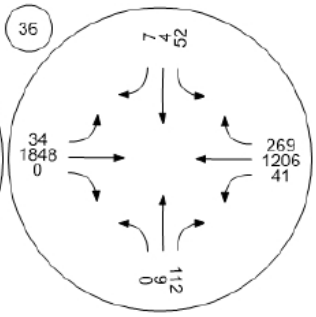
East Access at Strong Rd



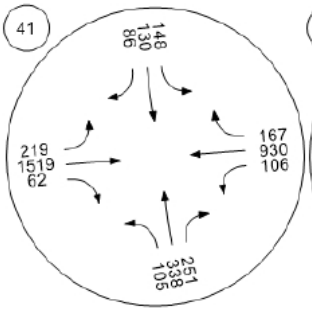
27th Ave at Marietta St



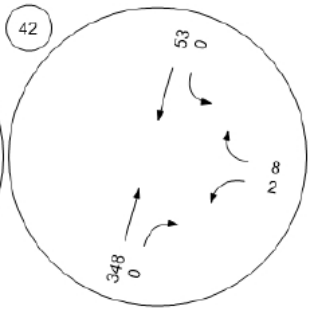
27th at Kuebler Blvd



Keubler Blvd at Battle Creek



Reed at Site Access



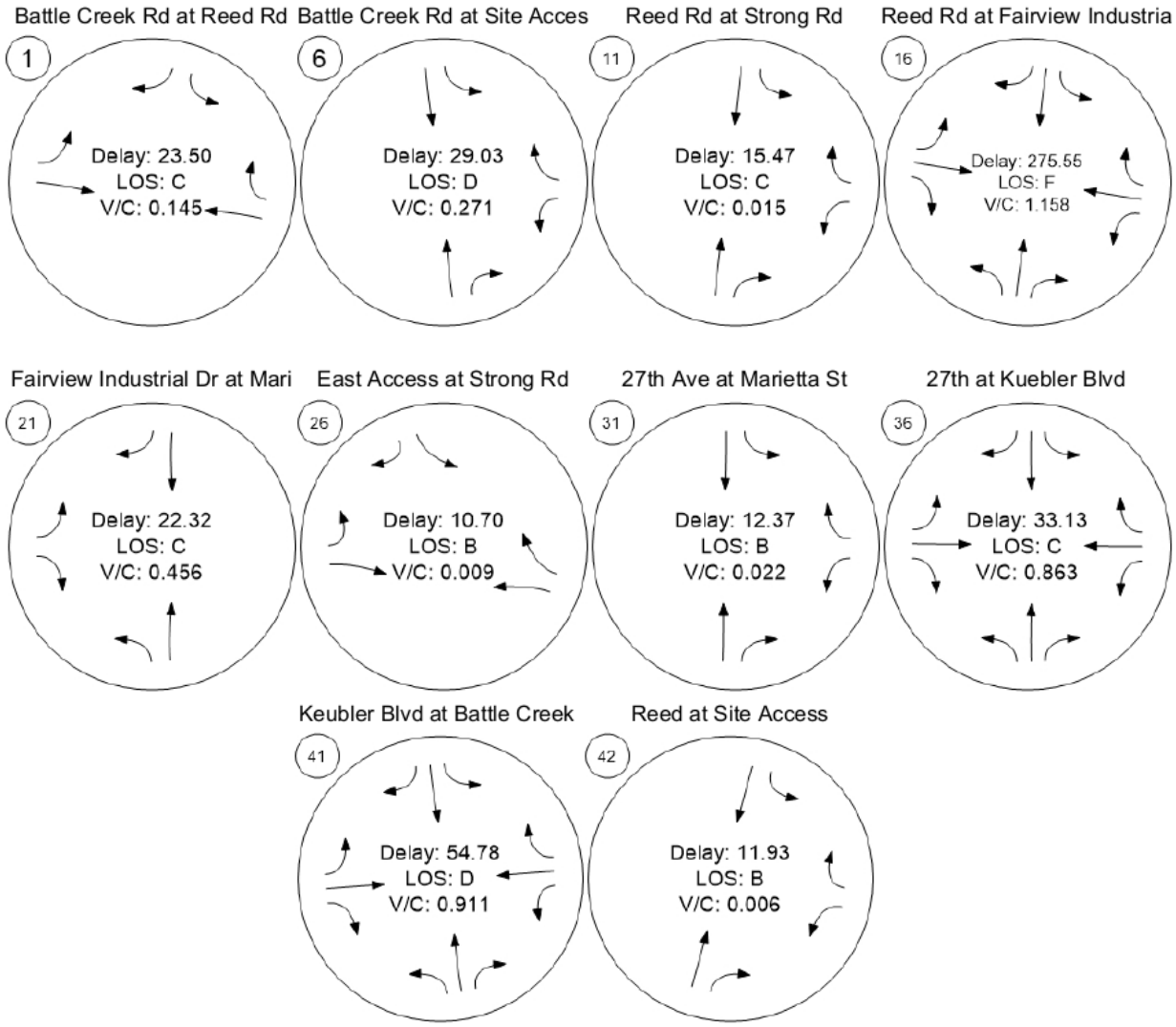
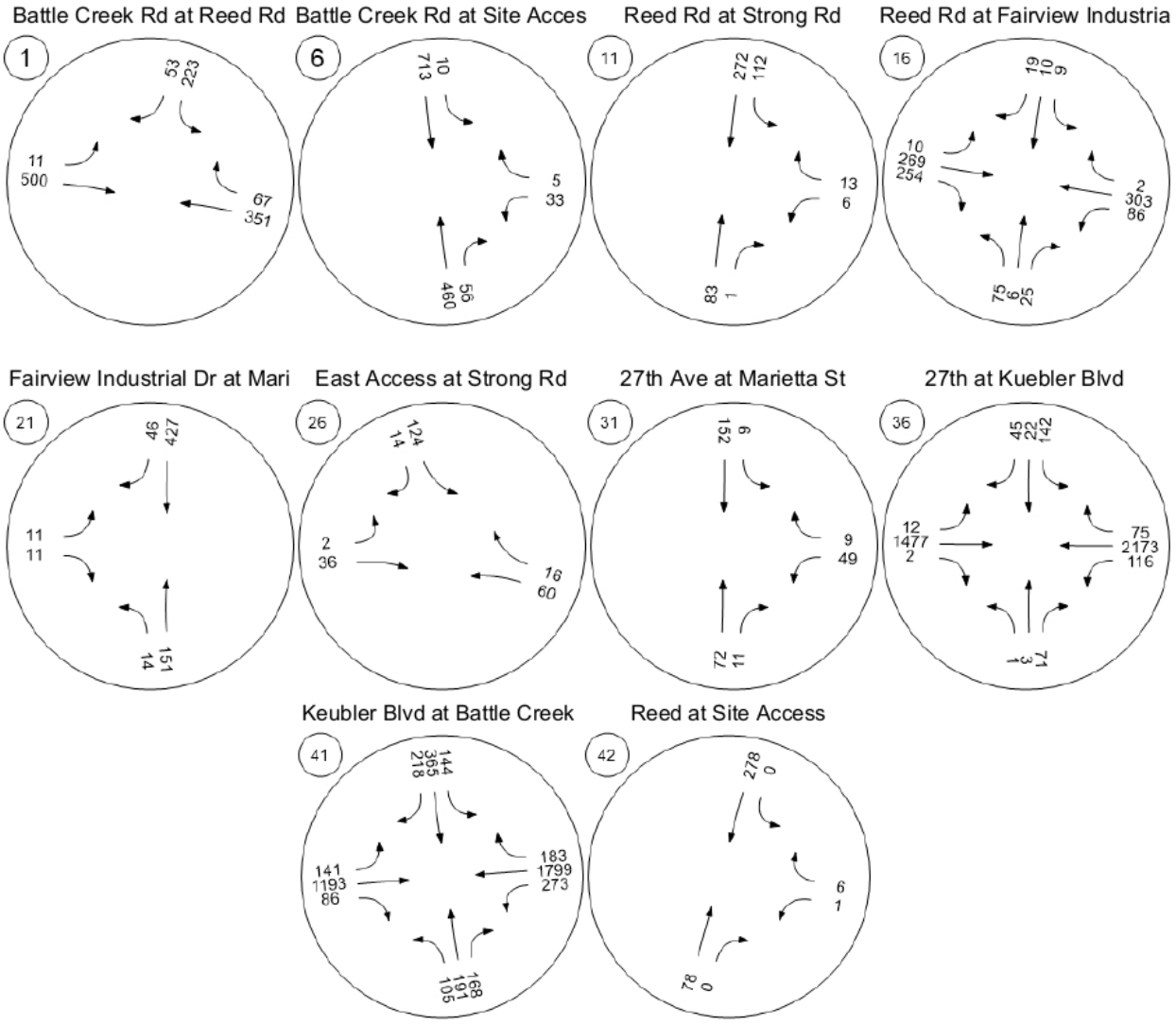


Figure 14 - 2026 AM Peak hour Counts & Performance Metrics with Phase 3 Complete


Battle Creek Rd at Reed Rd
1
53
223
11
500
67
351
Battle Creek Rd at Site Acces
6
10
713
5
33
56
460
Reed Rd at Strong Rd
11
272
112
13
6
83
1
Reed Rd at Fairview Industria
16
19
10
9
10
269
254
2
303
86
75
6
25
Fairview Industrial Dr at Mari
21
46
427
11
11
151
14
East Access at Strong Rd
26
124
14
2
36
16
60
27th Ave at Marietta St
31
152
6
9
49
72
11
27th at Kuebler Blvd
36
45
22
142
12
1477
2
75
2173
116
71
3
1
Keubler Blvd at Battle Creek
41
144
365
218
183
1799
273
141
1193
86
168
191
105
Reed at Site Access
42
278
0
6
1
78
0

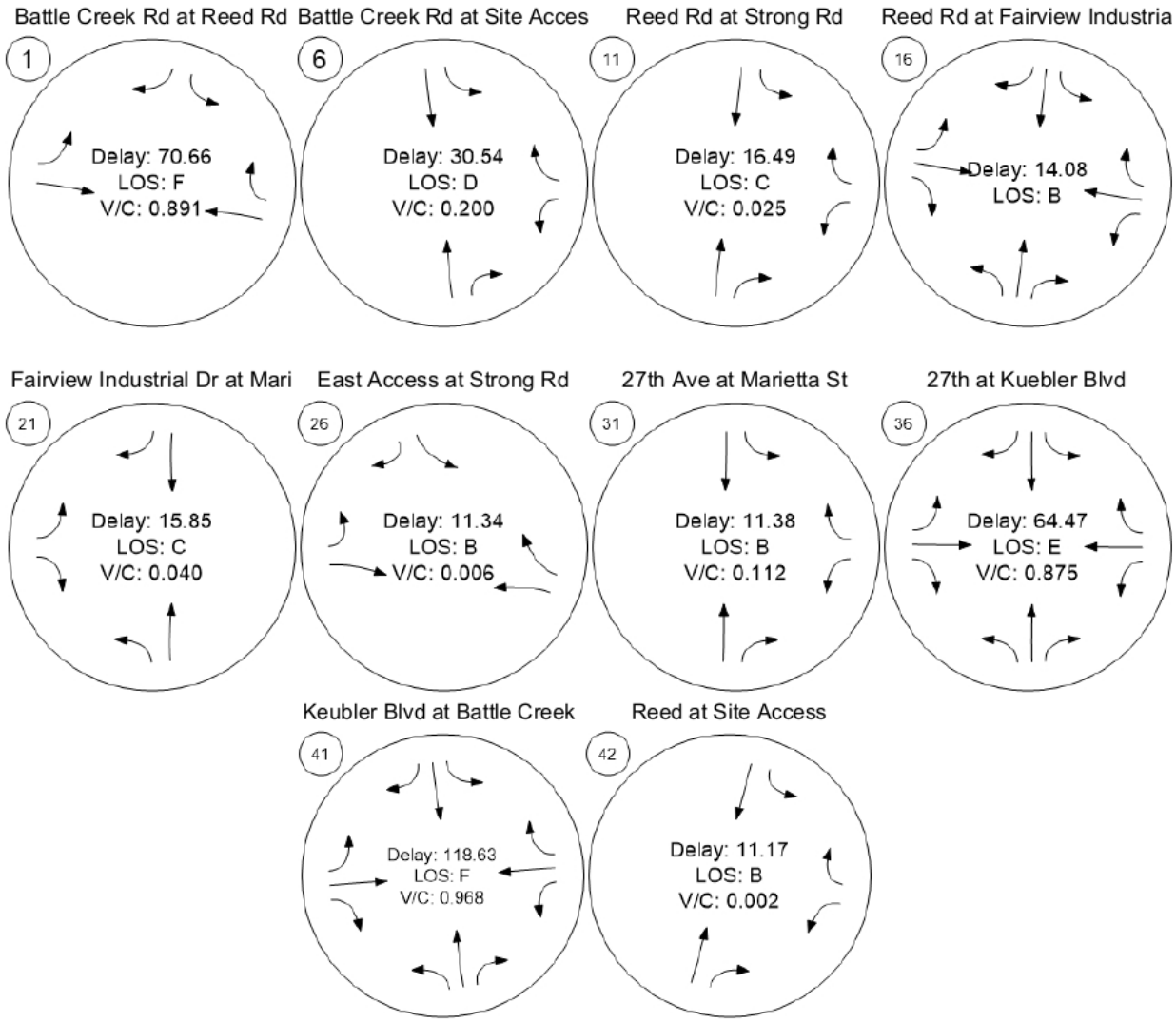


Figure 15 - 2026 PM Peak hour Counts & Performance Metrics with Phase 3 Complete

Type of peak hour being reported: Intersection Peak

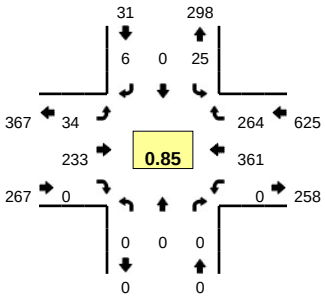
Method for determining peak hour: Total Entering Volume

LOCATION: Reed Rd SE -- Battle Creek Rd SE

CITY/STATE: Salem, OR

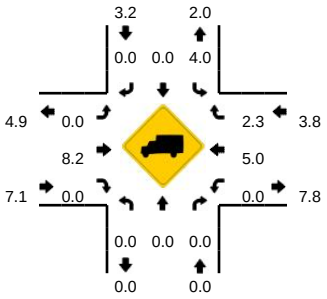
QC JOB #: 14711001

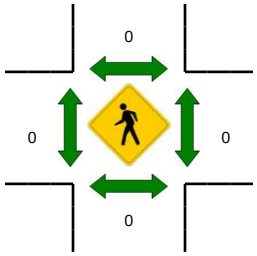
DATE: Wed, May 16 2018

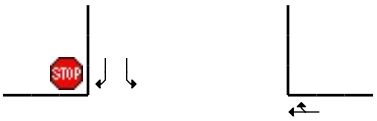


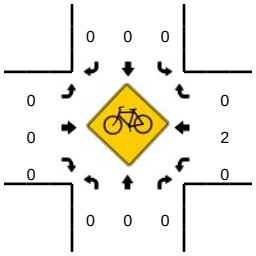
Peak-Hour: 7:10 AM -- 8:10 AM

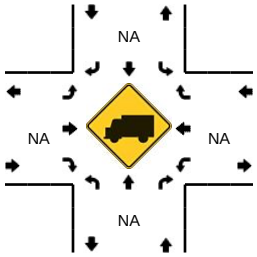
Peak 15-Min: 7:45 AM -- 8:00 AM

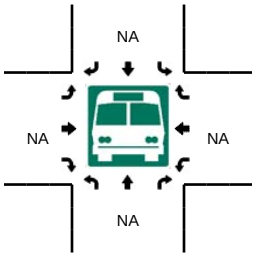












5-Min Count Period Beginning At	Reed Rd SE (Northbound)				Reed Rd SE (Southbound)				Battle Creek Rd SE (Eastbound)				Battle Creek Rd SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	2	0	1	0	1	11	0	0	0	26	12	0	53	
7:05 AM	0	0	0	0	0	0	1	0	1	20	0	0	0	24	5	0	51	
7:10 AM	0	0	0	0	1	0	1	0	1	15	0	0	0	35	18	0	71	
7:15 AM	0	0	0	0	4	0	0	0	1	24	0	0	0	40	17	0	86	
7:20 AM	0	0	0	0	2	0	0	0	3	17	0	0	0	22	14	0	58	
7:25 AM	0	0	0	0	0	0	0	0	2	14	0	0	0	26	22	0	64	
7:30 AM	0	0	0	0	0	0	0	0	2	18	0	0	0	24	14	0	58	
7:35 AM	0	0	0	0	1	0	1	0	2	24	0	0	0	36	22	0	86	
7:40 AM	0	0	0	0	3	0	0	0	2	17	0	0	0	28	29	0	79	
7:45 AM	0	0	0	0	2	0	0	0	2	19	0	0	0	45	20	0	88	
7:50 AM	0	0	0	0	3	0	0	0	4	21	0	0	0	30	32	0	90	
7:55 AM	0	0	0	0	3	0	1	0	4	30	0	0	0	26	30	0	94	878
8:00 AM	0	0	0	0	3	0	2	0	5	12	0	0	0	20	30	0	72	897
8:05 AM	0	0	0	0	3	0	1	0	6	22	0	0	0	29	16	0	77	923
8:10 AM	0	0	0	0	8	0	0	0	4	13	0	0	0	16	14	0	55	907
8:15 AM	0	0	0	0	0	0	4	0	2	12	0	0	0	13	20	0	51	872
8:20 AM	0	0	0	0	5	0	2	0	0	10	0	0	0	20	23	0	60	874
8:25 AM	0	0	0	0	2	0	3	0	3	9	0	0	0	23	13	0	53	863
8:30 AM	0	0	0	0	4	0	2	0	3	15	0	0	0	19	8	0	51	856
8:35 AM	0	0	0	0	2	0	1	0	2	22	0	0	0	22	9	0	58	828
8:40 AM	0	0	0	0	5	0	2	0	1	19	0	0	0	33	17	0	77	826
8:45 AM	0	0	0	0	4	0	1	0	3	21	0	0	0	23	13	0	65	803
8:50 AM	0	0	0	0	3	0	1	0	0	14	0	0	0	25	18	0	61	774
8:55 AM	0	0	0	0	2	0	1	0	4	21	0	0	0	26	18	0	72	752

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	32	0	4	0	40	280	0	0	0	404	328	0	1088
Heavy Trucks	0	0	0		0	0	0		0	16	0		0	28	4		48
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Reed Rd SE -- Strong Rd SE

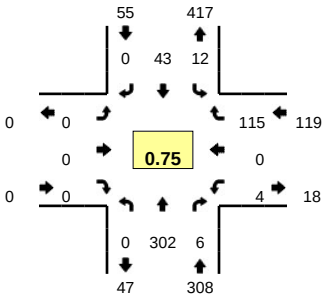
CITY/STATE: Salem, OR

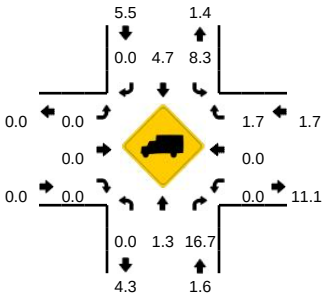
QC JOB #: 14711003

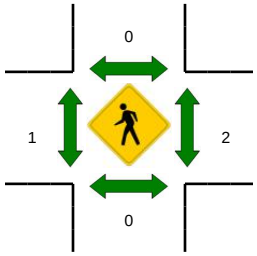
DATE: Wed, May 16 2018

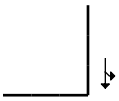
Peak-Hour: 7:25 AM -- 8:25 AM

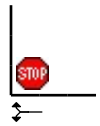
Peak 15-Min: 7:50 AM -- 8:05 AM

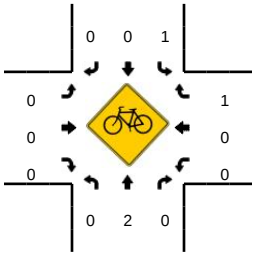


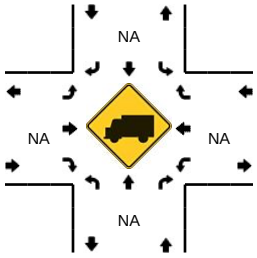


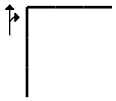


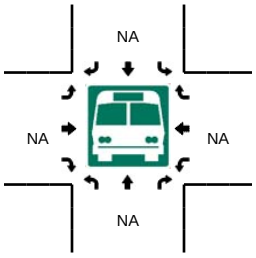












5-Min Count Period Beginning At	Reed Rd SE (Northbound)				Reed Rd SE (Southbound)				Strong Rd SE (Eastbound)				Strong Rd SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	11	0	0	1	3	0	1	0	0	0	0	0	0	3	0	19	
7:05 AM	0	9	0	0	0	1	0	0	0	0	0	0	0	0	7	0	17	
7:10 AM	0	14	0	0	0	2	0	0	0	0	0	0	0	0	7	0	23	
7:15 AM	0	17	0	0	1	3	0	0	0	0	0	0	0	0	6	0	27	
7:20 AM	0	18	0	0	0	2	0	0	0	0	0	0	0	0	5	0	25	
7:25 AM	0	25	0	0	0	1	0	0	0	0	0	0	0	0	10	0	36	
7:30 AM	0	17	0	0	1	0	0	0	0	0	0	0	0	0	9	0	27	
7:35 AM	0	20	0	0	0	2	0	0	0	0	0	0	0	0	9	0	31	
7:40 AM	0	31	1	0	1	4	0	0	0	0	0	0	0	0	6	0	43	
7:45 AM	0	24	0	0	1	2	0	0	0	0	0	0	0	0	14	0	41	
7:50 AM	0	23	1	0	3	2	0	0	0	0	0	0	0	0	15	0	44	
7:55 AM	0	42	0	0	0	5	0	0	0	0	0	0	0	0	16	0	63	396
8:00 AM	0	35	0	0	1	5	0	0	0	0	0	0	0	0	12	0	53	430
8:05 AM	0	21	1	0	1	5	0	0	0	0	0	0	1	0	7	0	36	449
8:10 AM	0	18	1	0	1	6	0	0	0	0	0	0	2	0	5	0	33	459
8:15 AM	0	22	1	0	2	7	0	0	0	0	0	0	0	0	5	0	37	469
8:20 AM	0	24	1	0	1	4	0	0	0	0	0	0	1	0	7	0	38	482
8:25 AM	0	15	0	0	0	4	0	0	0	0	0	0	1	0	7	0	27	473
8:30 AM	0	14	0	0	0	5	0	0	0	0	0	0	0	0	6	0	25	471
8:35 AM	0	8	1	0	1	5	0	0	0	0	0	0	0	0	6	0	21	461
8:40 AM	0	20	0	0	3	3	0	0	0	0	0	0	1	0	4	0	31	449
8:45 AM	0	15	2	0	0	3	0	0	0	0	0	0	0	0	4	0	24	432
8:50 AM	0	17	0	0	0	2	0	0	0	0	0	0	1	0	5	0	25	413
8:55 AM	0	15	1	0	1	5	0	0	0	0	0	0	0	0	7	0	29	379

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	400	4	0	16	48	0	0	0	0	0	0	0	0	172	0	640
Heavy Trucks	0	8	0		0	0	0		0	0	0		0	0	0		8
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

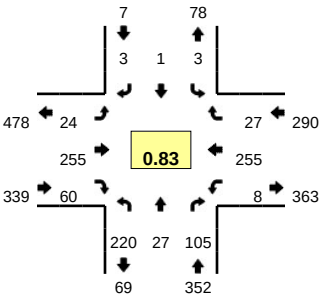
LOCATION: Reed Rd SE -- Fairview Industrial Dr SE

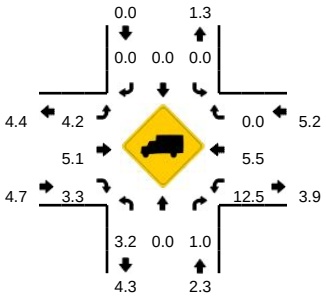
QC JOB #: 14711013

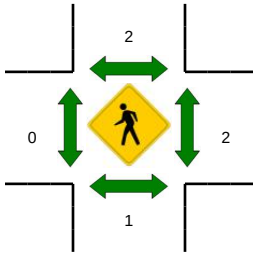
CITY/STATE: Marion, OR

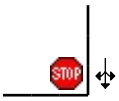
DATE: Wed, May 16 2018

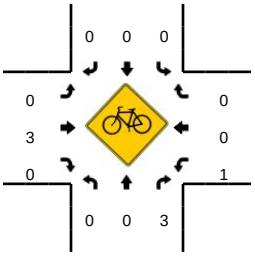
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

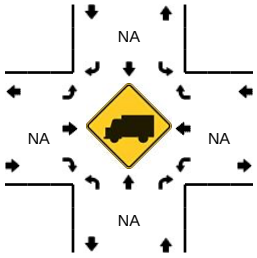


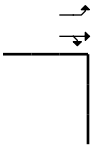


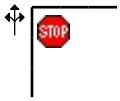


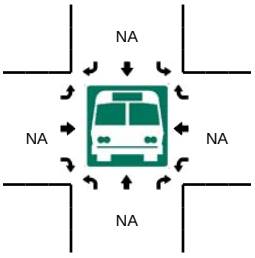












5-Min Count Period Beginning At	Reed Rd SE (Northbound)				Reed Rd SE (Southbound)				Fairview Industrial Dr SE (Eastbound)				Fairview Industrial Dr SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	8	0	2	0	0	0	0	0	0	8	1	0	0	8	0	0	27	
7:05 AM	10	2	1	0	0	0	0	0	1	14	2	0	1	21	0	0	52	
7:10 AM	9	1	5	0	0	0	0	0	0	17	2	0	0	20	0	0	54	
7:15 AM	12	1	6	0	0	0	0	0	0	15	5	0	1	16	1	0	57	
7:20 AM	13	0	11	0	0	0	0	0	0	25	2	0	0	13	2	0	66	
7:25 AM	23	3	7	0	0	0	0	0	0	24	3	0	0	19	0	0	79	
7:30 AM	13	0	10	0	0	0	1	0	1	21	1	0	0	23	3	0	73	
7:35 AM	21	2	5	0	1	0	0	0	0	14	3	0	1	25	1	0	73	
7:40 AM	20	1	6	0	0	0	0	0	4	20	4	0	2	23	2	0	82	
7:45 AM	20	2	13	0	0	0	0	0	7	21	4	0	0	24	4	0	95	
7:50 AM	17	6	10	0	0	0	0	0	4	21	5	0	2	23	5	0	93	
7:55 AM	20	3	18	0	0	0	0	0	1	29	8	0	0	30	2	0	111	862
8:00 AM	22	3	11	0	0	0	1	0	4	18	5	0	1	17	0	0	82	917
8:05 AM	18	4	8	0	0	0	0	0	3	19	5	0	2	16	4	0	79	944
8:10 AM	12	0	5	0	1	1	0	0	0	19	5	0	0	18	3	0	64	954
8:15 AM	10	1	2	0	1	0	1	0	0	27	10	0	0	20	1	0	73	970
8:20 AM	24	2	10	0	0	0	0	0	0	22	7	0	0	17	2	0	84	988
8:25 AM	12	1	5	0	0	1	0	0	0	17	2	0	2	18	0	0	58	967
8:30 AM	10	3	5	0	0	0	2	0	1	14	4	0	2	14	0	0	55	949
8:35 AM	6	1	3	0	0	1	2	0	0	14	6	0	1	18	1	0	53	929
8:40 AM	11	0	9	0	0	1	0	0	1	18	4	0	2	17	1	0	64	911
8:45 AM	5	1	10	0	0	0	1	0	2	18	5	0	0	12	0	0	54	870
8:50 AM	12	3	5	0	1	0	3	0	4	23	2	0	2	13	0	0	68	845
8:55 AM	17	1	9	0	0	0	3	0	0	25	5	0	1	19	0	0	80	814

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	228	44	164	0	0	0	0	0	48	284	68	0	8	308	44	0	1196
Heavy Trucks	4	0	0		0	0	0		0	8	0		0	24	0		36
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	2	0		0	0	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

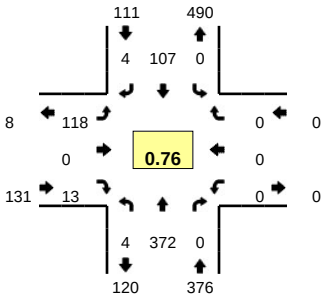
Method for determining peak hour: Total Entering Volume

LOCATION: Fairview Industrial Dr SE -- Marietta St SE

QC JOB #: 14711015

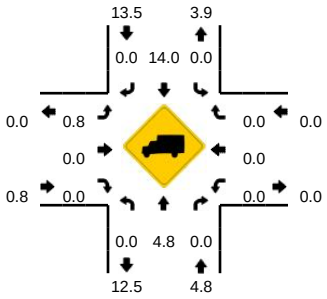
CITY/STATE: Salem, OR

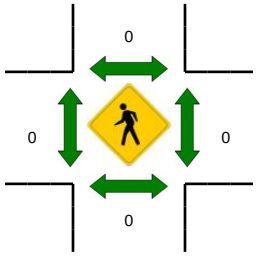
DATE: Wed, May 16 2018

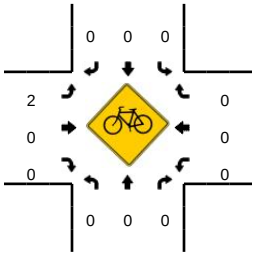


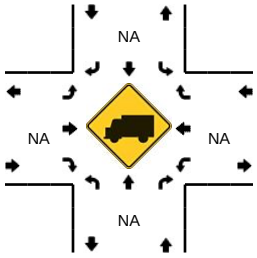
Peak-Hour: 7:20 AM -- 8:20 AM

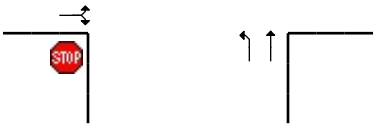
Peak 15-Min: 7:45 AM -- 8:00 AM

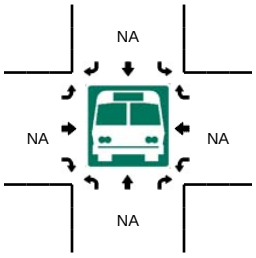












5-Min Count Period Beginning At	Fairview Industrial Dr SE (Northbound)				Fairview Industrial Dr SE (Southbound)				Marietta St SE (Eastbound)				Marietta St SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	20	0	0	0	3	0	0	4	0	0	0	0	0	0	0	27	
7:05 AM	0	24	0	0	0	7	0	0	0	0	0	0	0	0	0	0	31	
7:10 AM	1	20	0	0	0	5	0	0	6	0	0	0	0	0	0	0	32	
7:15 AM	0	24	0	0	0	6	1	0	5	0	0	0	0	0	0	0	36	
7:20 AM	1	24	0	0	0	14	0	0	10	0	1	0	0	0	0	0	50	
7:25 AM	0	23	0	0	0	6	0	0	13	0	1	0	0	0	0	0	43	
7:30 AM	0	29	0	0	0	12	0	0	6	0	0	0	0	0	0	0	47	
7:35 AM	1	34	0	0	0	9	0	0	3	0	2	0	0	0	0	0	49	
7:40 AM	1	34	0	0	0	10	0	0	12	0	3	0	0	0	0	0	60	
7:45 AM	0	40	0	0	0	10	0	0	14	0	0	0	0	0	0	0	64	
7:50 AM	0	45	0	0	0	6	1	0	17	0	2	0	0	0	0	0	71	
7:55 AM	0	38	0	0	0	14	0	0	13	0	2	0	0	0	0	0	67	577
8:00 AM	0	24	0	0	0	5	2	0	9	0	1	0	0	0	0	0	41	591
8:05 AM	0	24	0	0	0	7	1	0	9	0	0	0	0	0	0	0	41	601
8:10 AM	0	25	0	0	0	6	0	0	3	0	1	0	0	0	0	0	35	604
8:15 AM	1	32	0	0	0	8	0	0	9	0	0	0	0	0	0	0	50	618
8:20 AM	1	25	0	0	0	5	1	0	10	0	0	0	0	0	0	0	42	610
8:25 AM	0	22	0	0	0	9	0	0	4	0	0	0	0	0	0	0	35	602
8:30 AM	0	20	0	0	0	5	0	0	5	0	0	0	0	0	0	0	30	585
8:35 AM	0	24	0	0	0	8	1	0	5	0	0	0	0	0	0	0	38	574
8:40 AM	1	17	0	0	0	4	0	0	6	0	0	0	0	0	0	0	28	542
8:45 AM	0	16	0	0	0	12	1	0	5	0	0	0	0	0	0	0	34	512
8:50 AM	1	24	0	0	0	5	0	0	4	0	0	0	0	0	0	0	34	475
8:55 AM	0	19	0	0	0	7	1	0	5	0	0	0	0	0	0	0	32	440

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	492	0	0	0	120	4	0	176	0	16	0	0	0	0	0	808
Heavy Trucks	0	20	0		0	8	0		0	0	0		0	0	0		28
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

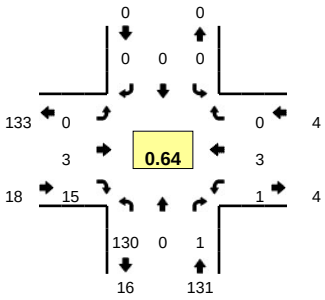
LOCATION: 27th Ave SE -- Strong Rd SE

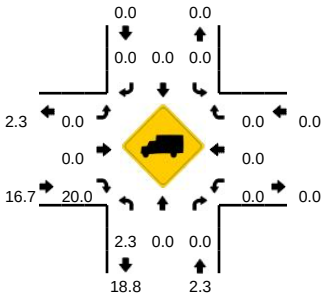
QC JOB #: 14711005

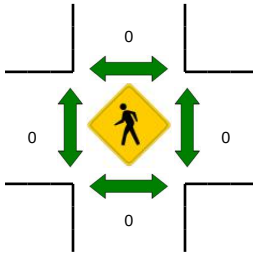
CITY/STATE: Salem, OR

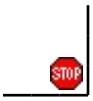
DATE: Wed, May 16 2018

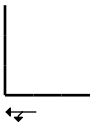
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

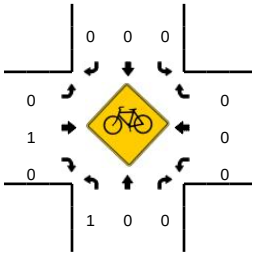


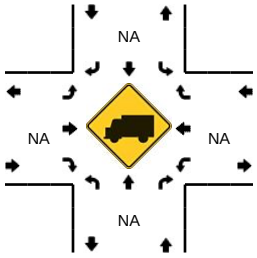


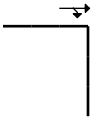


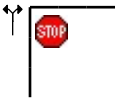


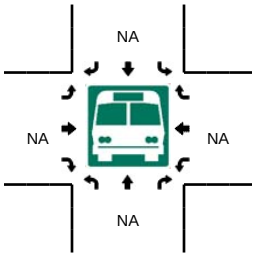












5-Min Count Period Beginning At	27th Ave SE (Northbound)				27th Ave SE (Southbound)				Strong Rd SE (Eastbound)				Strong Rd SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5	
7:05 AM	7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	8	
7:10 AM	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
7:15 AM	8	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	9	
7:20 AM	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
7:25 AM	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	
7:30 AM	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
7:35 AM	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	
7:40 AM	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
7:45 AM	16	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	18	
7:50 AM	20	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	22	
7:55 AM	17	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	20	129
8:00 AM	14	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	15	139
8:05 AM	9	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	11	142
8:10 AM	5	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	7	143
8:15 AM	10	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	14	148
8:20 AM	8	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	9	151
8:25 AM	7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	8	149
8:30 AM	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	151
8:35 AM	9	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	10	149
8:40 AM	5	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	9	153
8:45 AM	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	138
8:50 AM	7	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	9	125
8:55 AM	7	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	8	113

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	212	0	4	0	0	0	0	0	0	4	20	0	0	0	0	0	240
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 27th Ave SE -- Marietta St SE

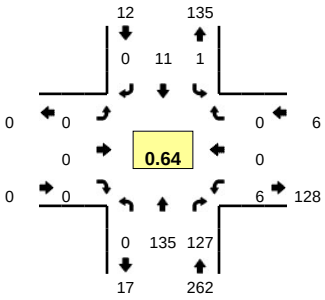
QC JOB #: 14711007

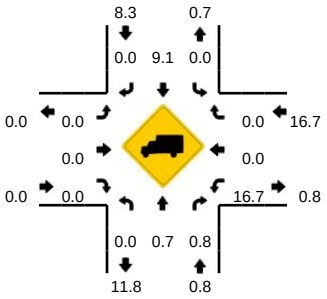
CITY/STATE: Salem, OR

DATE: Wed, May 16 2018

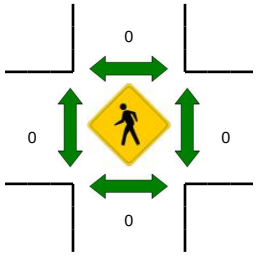
Peak-Hour: 7:20 AM -- 8:20 AM

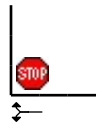
Peak 15-Min: 7:45 AM -- 8:00 AM

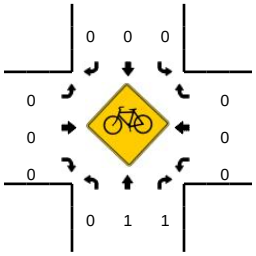


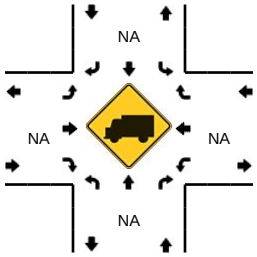


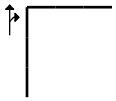
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

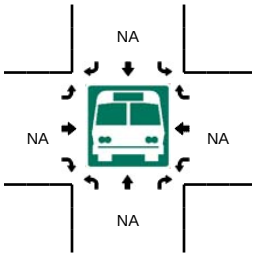












5-Min Count Period Beginning At	27th Ave SE (Northbound)				27th Ave SE (Southbound)				Marietta St SE (Eastbound)				Marietta St SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	4	2	0	0	1	0	0	0	0	0	0	0	0	0	0	7	
7:05 AM	0	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	10	
7:10 AM	0	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0	11	
7:15 AM	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	16	
7:20 AM	0	7	13	0	0	0	0	0	0	0	0	0	1	0	0	0	21	
7:25 AM	0	11	9	0	0	0	0	0	0	0	0	0	0	0	0	0	20	
7:30 AM	0	8	7	0	0	0	0	0	0	0	0	0	0	0	0	0	15	
7:35 AM	0	12	6	0	0	0	0	0	0	0	0	0	1	0	0	0	19	
7:40 AM	0	6	13	0	1	0	0	0	0	0	0	0	1	0	0	0	21	
7:45 AM	0	18	15	0	0	1	0	0	0	0	0	0	1	0	0	0	35	
7:50 AM	0	23	18	0	0	1	0	0	0	0	0	0	1	0	0	0	43	
7:55 AM	0	14	15	0	0	3	0	0	0	0	0	0	0	0	0	0	32	250
8:00 AM	0	12	9	0	0	0	0	0	0	0	0	0	0	0	0	0	21	264
8:05 AM	0	9	7	0	0	2	0	0	0	0	0	0	1	0	0	0	19	273
8:10 AM	0	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	11	273
8:15 AM	0	10	9	0	0	4	0	0	0	0	0	0	0	0	0	0	23	280
8:20 AM	0	8	9	0	0	2	0	0	0	0	0	0	1	0	0	0	20	279
8:25 AM	0	7	4	0	0	0	0	0	0	0	0	0	0	0	0	0	11	270
8:30 AM	0	9	5	0	0	0	0	0	0	0	0	0	0	0	0	0	14	269
8:35 AM	0	10	6	0	0	1	0	0	0	0	0	0	1	0	0	0	18	268
8:40 AM	0	3	6	0	0	3	0	0	0	0	0	0	0	0	0	0	12	259
8:45 AM	0	3	2	0	0	0	0	0	0	0	0	0	2	0	0	0	7	231
8:50 AM	0	8	3	0	0	1	0	0	0	0	0	0	1	0	0	0	13	201
8:55 AM	0	7	7	0	0	1	0	0	0	0	0	0	0	0	0	0	15	184

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	220	192	0	0	20	0	0	0	0	0	0	8	0	0	0	440
Heavy Trucks	0	0	0		0	0	0		0	0	0		4	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

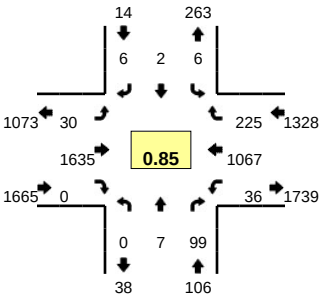
LOCATION: 27th Ave SE -- Kuebler Blvd

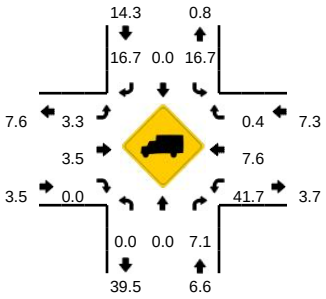
QC JOB #: 14711009

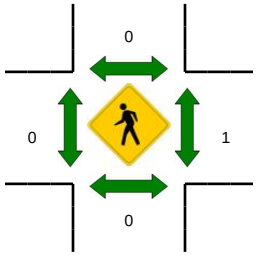
CITY/STATE: Salem, OR

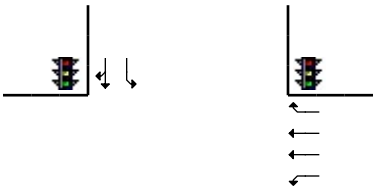
DATE: Wed, May 16 2018

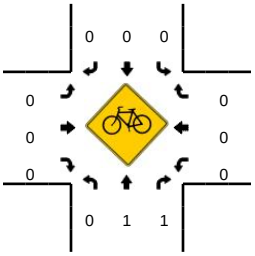
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

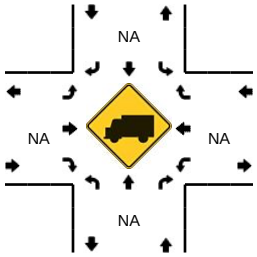


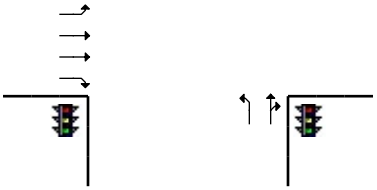


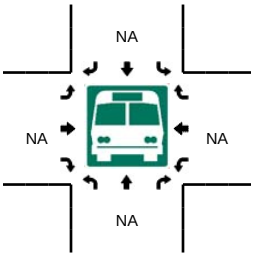












5-Min Count Period Beginning At	27th Ave SE (Northbound)				27th Ave SE (Southbound)				Kuebler Blvd (Eastbound)				Kuebler Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	6	0	1	0	0	0	1	83	0	0	2	66	4	0	163	
7:05 AM	0	0	7	0	0	0	0	0	1	121	0	0	3	63	7	0	202	
7:10 AM	0	0	6	0	0	0	0	0	2	154	0	0	2	68	9	0	241	
7:15 AM	0	0	6	0	0	0	0	0	0	136	0	0	5	96	16	0	259	
7:20 AM	0	1	5	0	0	0	0	0	4	120	0	0	0	71	14	0	215	
7:25 AM	0	0	5	0	0	0	0	0	1	126	0	0	2	80	19	0	233	
7:30 AM	0	0	10	0	0	0	0	0	1	126	0	0	4	80	17	0	238	
7:35 AM	0	0	11	0	0	0	1	0	3	146	0	0	3	70	14	0	248	
7:40 AM	0	1	13	0	0	0	0	1	2	154	0	0	2	101	21	0	295	
7:45 AM	0	0	10	0	0	1	1	0	4	165	0	0	6	110	25	0	322	
7:50 AM	0	2	15	0	1	0	1	0	5	141	0	0	2	97	30	0	294	
7:55 AM	0	1	6	0	2	1	1	0	3	141	0	0	4	102	29	0	290	3000
8:00 AM	0	1	6	0	0	0	1	0	3	122	0	0	1	97	16	0	247	3084
8:05 AM	0	1	6	0	2	0	1	0	2	104	0	0	5	95	15	0	231	3113
8:10 AM	0	0	4	0	0	0	3	0	2	126	1	0	1	91	11	0	239	3111
8:15 AM	0	0	4	0	1	0	0	0	2	117	0	0	3	89	15	0	231	3083
8:20 AM	1	0	8	0	5	0	1	0	1	94	0	0	3	96	15	0	224	3092
8:25 AM	0	0	4	0	0	0	0	0	1	90	0	0	3	73	11	0	182	3041
8:30 AM	0	0	4	0	1	0	0	0	2	84	0	0	3	82	13	0	189	2992
8:35 AM	0	0	5	0	0	0	1	0	1	95	0	0	4	103	15	0	224	2968
8:40 AM	0	0	3	0	2	0	1	0	2	76	0	0	5	93	7	0	189	2862
8:45 AM	0	0	2	0	1	0	1	0	0	110	0	0	1	83	8	0	206	2746
8:50 AM	0	0	7	0	1	1	2	0	2	100	0	0	7	95	9	0	224	2676
8:55 AM	0	0	4	0	0	0	0	0	3	91	1	0	4	90	11	0	204	2590

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	12	152	0	4	4	8	4	44	1840	0	0	40	1232	304	0	3644
Heavy Trucks	0	0	8		0	0	4		0	52	0		12	100	0		176
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

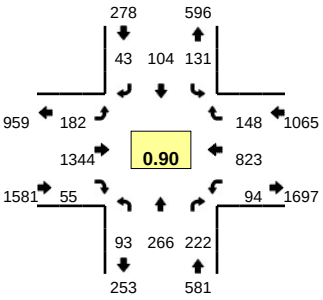
LOCATION: Battle Creek Rd SE -- Kuebler Blvd

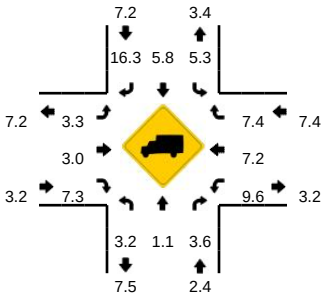
QC JOB #: 14711011

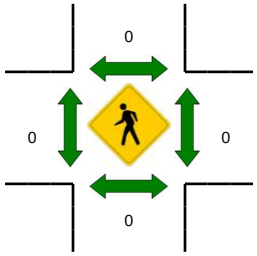
CITY/STATE: Salem, OR

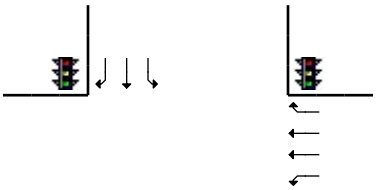
DATE: Wed, May 16 2018

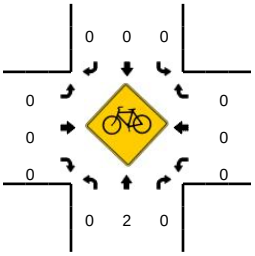
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

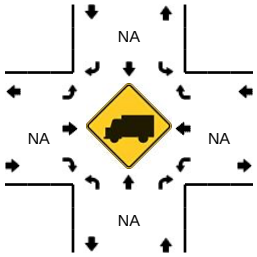


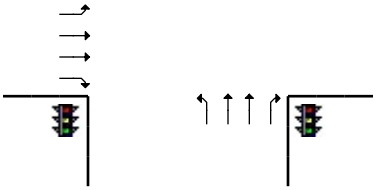


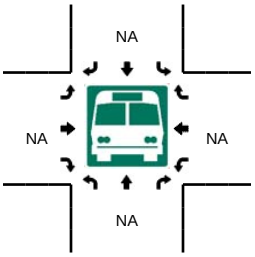












5-Min Count Period Beginning At	Battle Creek Rd SE (Northbound)				Battle Creek Rd SE (Southbound)				Kuebler Blvd (Eastbound)				Kuebler Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	6	14	13	0	7	1	2	0	10	67	2	0	5	50	5	0	182	
7:05 AM	9	17	13	0	12	6	0	0	6	111	8	0	4	49	4	0	239	
7:10 AM	8	34	20	0	14	6	1	0	19	111	4	0	4	61	6	0	288	
7:15 AM	2	26	24	0	12	8	5	0	10	99	3	0	9	68	14	0	280	
7:20 AM	6	22	15	0	11	10	2	0	8	112	5	0	4	66	8	0	269	
7:25 AM	5	16	19	0	13	8	2	0	19	113	4	0	5	52	9	0	265	
7:30 AM	10	24	23	0	6	3	1	0	16	95	5	0	13	56	8	0	260	
7:35 AM	7	23	13	0	12	12	6	0	12	141	4	0	5	66	9	0	310	
7:40 AM	12	27	19	0	13	3	3	0	15	125	5	0	6	68	13	0	309	
7:45 AM	9	24	25	0	6	14	4	0	17	128	3	0	9	73	27	0	339	
7:50 AM	9	16	16	0	13	10	5	0	18	128	2	0	7	80	14	0	318	
7:55 AM	7	19	9	0	9	11	6	0	16	123	7	0	9	87	18	0	321	3380
8:00 AM	13	18	25	0	12	13	4	0	19	80	9	0	11	69	12	0	285	3483
8:05 AM	5	17	14	0	10	6	4	0	13	89	4	0	12	77	10	0	261	3505
8:10 AM	6	12	8	0	10	9	5	0	8	110	4	0	11	85	9	0	277	3494
8:15 AM	6	17	14	0	10	6	3	0	16	76	4	0	7	69	7	0	235	3449
8:20 AM	6	20	22	0	2	5	6	0	16	75	6	0	8	64	7	0	237	3417
8:25 AM	4	15	10	0	7	5	2	0	4	72	5	0	12	72	11	0	219	3371
8:30 AM	2	12	10	0	9	8	4	0	6	59	6	0	13	51	9	0	189	3300
8:35 AM	9	13	15	0	6	11	7	0	6	75	3	0	13	68	12	0	238	3228
8:40 AM	9	18	13	0	8	9	6	0	8	54	3	0	10	81	14	0	233	3152
8:45 AM	9	15	6	0	17	16	6	0	11	82	4	0	11	67	4	0	248	3061
8:50 AM	8	30	18	0	8	13	4	0	9	62	13	0	9	62	12	0	248	2991
8:55 AM	10	15	19	0	11	13	6	0	11	73	5	0	8	87	8	0	266	2936

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	100	236	200	0	112	140	60	0	204	1516	48	0	100	960	236	0	3912
Heavy Trucks	0	8	4		4	8	4		4	44	0		4	60	20		160
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Reed Rd SE -- Battle Creek Rd SE

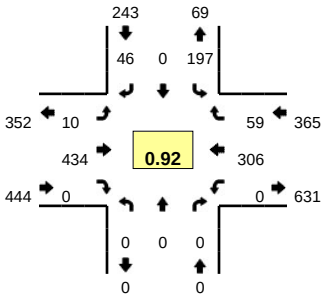
CITY/STATE: Salem, OR

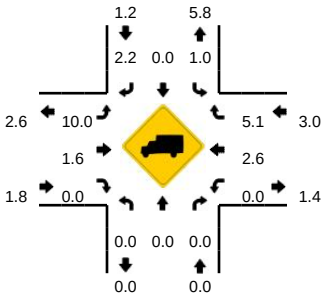
QC JOB #: 14711002

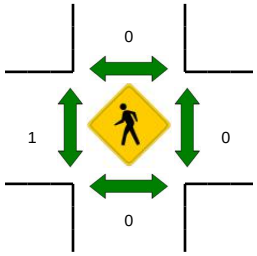
DATE: Wed, May 16 2018

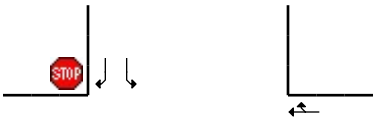
Peak-Hour: 4:30 PM -- 5:30 PM

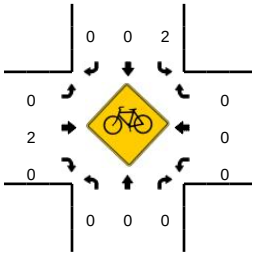
Peak 15-Min: 5:05 PM -- 5:20 PM

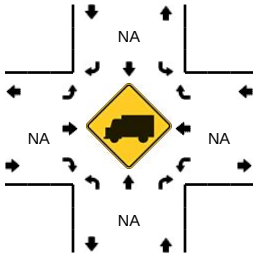


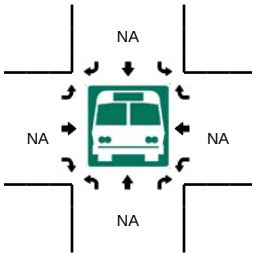












5-Min Count Period Beginning At	Reed Rd SE (Northbound)				Reed Rd SE (Southbound)				Battle Creek Rd SE (Eastbound)				Battle Creek Rd SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	15	0	2	0	0	26	0	0	0	21	3	0	67	
4:05 PM	0	0	0	0	22	0	2	0	1	35	0	0	0	30	2	0	92	
4:10 PM	0	0	0	0	18	0	1	0	0	23	0	0	0	20	6	0	68	
4:15 PM	0	0	0	0	17	0	4	0	0	33	0	0	0	27	8	0	89	
4:20 PM	0	0	0	0	8	0	1	0	0	37	0	0	0	29	5	0	80	
4:25 PM	0	0	0	0	16	0	5	0	0	25	0	0	0	25	5	0	76	
4:30 PM	0	0	0	0	15	0	3	0	2	36	0	0	0	27	2	0	85	
4:35 PM	0	0	0	0	26	0	6	0	2	29	0	0	0	22	7	0	92	
4:40 PM	0	0	0	0	21	0	4	0	0	35	0	0	0	20	6	0	86	
4:45 PM	0	0	0	0	8	0	2	0	0	38	0	0	0	21	5	0	74	
4:50 PM	0	0	0	0	13	0	3	0	2	27	0	0	0	23	8	0	76	
4:55 PM	0	0	0	0	13	0	5	0	0	39	0	0	0	24	6	0	87	972
5:00 PM	0	0	0	0	18	0	6	0	0	43	0	0	0	26	2	0	95	1000
5:05 PM	0	0	0	0	25	0	4	0	1	33	0	0	0	26	4	0	93	1001
5:10 PM	0	0	0	0	18	0	5	0	1	35	0	0	0	25	3	0	87	1020
5:15 PM	0	0	0	0	12	0	3	0	1	53	0	0	0	34	3	0	106	1037
5:20 PM	0	0	0	0	15	0	1	0	1	43	0	0	0	23	7	0	90	1047
5:25 PM	0	0	0	0	13	0	4	0	0	23	0	0	0	35	6	0	81	1052
5:30 PM	0	0	0	0	8	0	6	0	3	26	0	0	0	27	9	0	79	1046
5:35 PM	0	0	0	0	16	0	6	0	1	20	0	0	0	28	7	0	78	1032
5:40 PM	0	0	0	0	12	0	3	0	0	35	0	0	0	28	2	0	80	1026
5:45 PM	0	0	0	0	9	0	1	0	1	35	0	0	0	35	3	0	84	1036
5:50 PM	0	0	0	0	8	0	2	0	4	29	0	0	0	23	3	0	69	1029
5:55 PM	0	0	0	0	9	0	2	0	2	20	0	1	0	17	2	0	53	995

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	220	0	48	0	12	484	0	0	0	340	40	0	1144
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	4	8		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Reed Rd SE -- Strong Rd SE

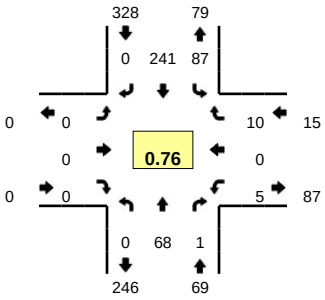
CITY/STATE: Salem, OR

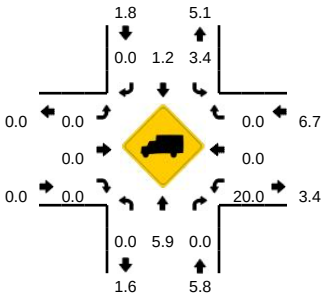
QC JOB #: 14711004

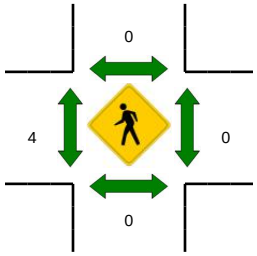
DATE: Wed, May 16 2018

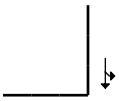
Peak-Hour: 4:25 PM -- 5:25 PM

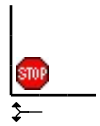
Peak 15-Min: 5:00 PM -- 5:15 PM

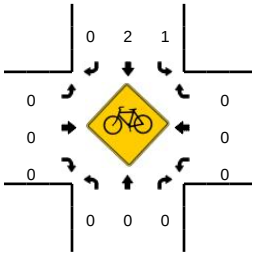


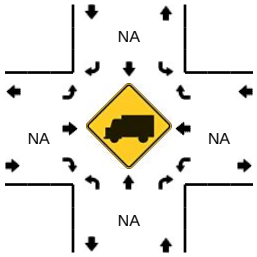


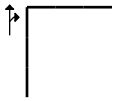


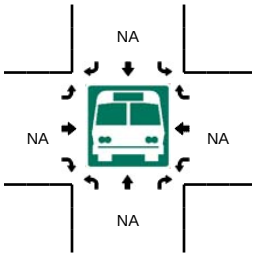












5-Min Count Period Beginning At	Reed Rd SE (Northbound)				Reed Rd SE (Southbound)				Strong Rd SE (Eastbound)				Strong Rd SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	3	0	0	11	21	0	0	0	0	0	0	0	0	0	0	35	
4:05 PM	0	2	0	0	3	24	0	0	0	0	0	0	1	0	2	0	32	
4:10 PM	0	6	0	0	7	15	0	0	0	0	0	0	0	0	3	0	31	
4:15 PM	0	8	0	0	5	19	0	0	0	0	0	0	0	0	2	0	34	
4:20 PM	0	4	0	0	2	12	0	0	0	0	0	0	1	0	4	0	23	
4:25 PM	0	5	0	0	5	16	0	0	0	0	0	0	1	0	0	0	27	
4:30 PM	0	4	0	0	7	29	0	0	0	0	0	0	0	0	2	0	42	
4:35 PM	0	9	0	0	1	25	0	0	0	0	0	0	1	0	0	0	36	
4:40 PM	0	4	0	0	3	21	0	0	0	0	0	0	0	0	1	0	29	
4:45 PM	0	6	0	0	3	12	0	1	0	0	0	0	0	0	2	0	24	
4:50 PM	0	11	1	0	6	20	0	0	0	0	0	0	0	0	2	0	40	
4:55 PM	0	3	0	0	0	15	0	0	0	0	0	0	0	0	2	0	20	373
5:00 PM	0	5	0	0	17	24	0	0	0	0	0	0	1	0	0	0	47	385
5:05 PM	0	4	0	0	16	28	0	0	0	0	0	0	2	0	0	0	50	403
5:10 PM	0	4	0	0	14	20	0	0	0	0	0	0	0	0	1	0	39	411
5:15 PM	0	4	0	0	6	12	0	0	0	0	0	0	0	0	0	0	22	399
5:20 PM	0	9	0	0	8	19	0	0	0	0	0	0	0	0	0	0	36	412
5:25 PM	0	4	1	0	5	12	0	0	0	0	0	0	2	0	1	0	25	410
5:30 PM	0	8	0	0	6	16	0	0	0	0	0	0	2	0	0	0	32	400
5:35 PM	0	12	1	0	4	21	0	0	0	0	0	0	0	0	0	0	38	402
5:40 PM	0	2	0	0	6	13	0	0	0	0	0	0	1	0	2	0	24	397
5:45 PM	0	1	0	0	2	9	0	0	0	0	0	0	1	0	3	0	16	389
5:50 PM	0	8	0	0	2	8	0	0	0	0	0	0	0	0	1	0	19	368
5:55 PM	0	4	2	0	3	11	0	0	0	0	0	0	0	0	1	0	21	369

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	52	0	0	188	288	0	0	0	0	0	0	12	0	4	0	544
Heavy Trucks	0	8	0		0	0	0		0	0	0		4	0	0		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	1	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Reed Rd SE -- Fairview Industrial Dr SE

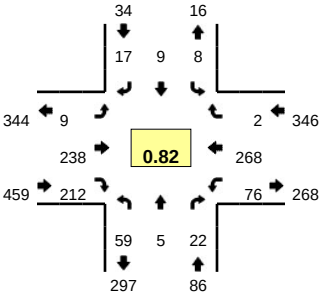
QC JOB #: 14711014

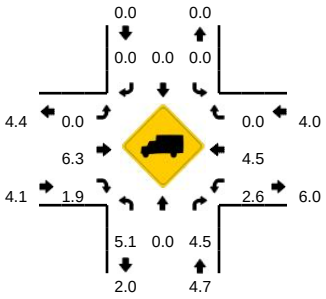
CITY/STATE: Marion, OR

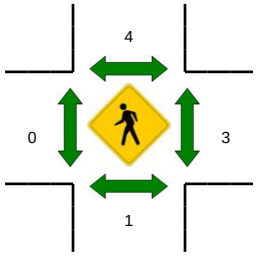
DATE: Wed, May 16 2018

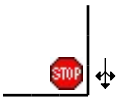
Peak-Hour: 4:15 PM -- 5:15 PM

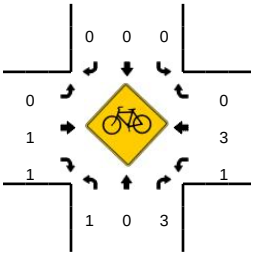
Peak 15-Min: 5:00 PM -- 5:15 PM

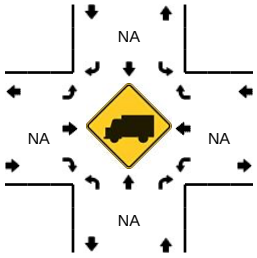


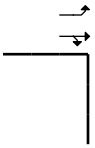


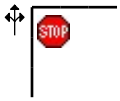


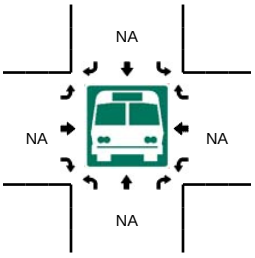












5-Min Count Period Beginning At	Reed Rd SE (Northbound)				Reed Rd SE (Southbound)				Fairview Industrial Dr SE (Eastbound)				Fairview Industrial Dr SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	0	0	0	1	0	2	0	1	15	23	0	5	25	0	0	75	
4:05 PM	3	0	2	0	0	1	2	0	0	34	13	0	11	24	0	0	90	
4:10 PM	5	0	1	0	1	1	2	0	0	21	11	0	7	16	1	0	66	
4:15 PM	5	0	4	0	0	0	1	0	0	19	23	0	2	17	1	0	72	
4:20 PM	7	1	3	0	0	0	0	0	1	20	7	0	4	14	0	0	57	
4:25 PM	2	0	1	0	0	1	1	0	1	18	18	0	5	13	0	0	60	
4:30 PM	6	0	2	0	1	2	2	0	0	19	26	0	10	31	0	0	99	
4:35 PM	8	0	2	0	1	1	1	0	2	18	15	0	5	28	1	0	82	
4:40 PM	4	0	0	0	1	0	0	0	0	16	17	0	4	21	0	0	63	
4:45 PM	6	0	3	0	0	0	3	0	2	17	7	0	9	21	0	0	68	
4:50 PM	7	3	2	0	1	1	2	0	0	21	15	0	7	24	0	0	83	
4:55 PM	4	0	2	0	0	1	2	0	1	16	10	0	5	18	0	0	59	874
5:00 PM	3	1	1	0	1	1	1	0	1	30	24	0	12	28	0	0	103	902
5:05 PM	2	0	0	0	2	2	4	0	0	28	26	0	7	34	0	0	105	917
5:10 PM	5	0	2	0	1	0	0	0	1	16	24	0	6	19	0	0	74	925
5:15 PM	3	0	0	0	1	1	2	0	1	11	12	0	2	16	0	0	49	902
5:20 PM	6	0	2	0	1	0	3	0	2	18	18	0	5	10	0	0	65	910
5:25 PM	4	1	2	0	1	0	0	0	0	15	10	0	3	13	0	0	49	899
5:30 PM	4	0	0	0	1	1	1	0	0	8	18	0	4	30	0	0	67	867
5:35 PM	8	0	4	0	1	1	0	0	0	16	12	0	10	20	0	0	72	857
5:40 PM	3	1	0	0	0	1	0	0	0	5	8	0	6	14	0	0	38	832
5:45 PM	1	1	1	0	0	0	1	0	0	10	9	0	0	9	0	0	32	796
5:50 PM	5	0	0	0	0	0	0	0	1	3	7	0	3	9	0	0	28	741
5:55 PM	4	0	0	0	0	0	0	0	1	11	10	0	2	6	0	0	34	716

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	40	4	12	0	16	12	20	0	8	296	296	0	100	324	0	0	1128
Heavy Trucks	4	0	0		0	0	0		0	20	0		0	16	0		40
Pedestrians		0				0				0				0			0
Bicycles	1	0	3		0	0	0		0	0	0		0	1	0		5
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Fairview Industrial Dr SE -- Marietta St SE

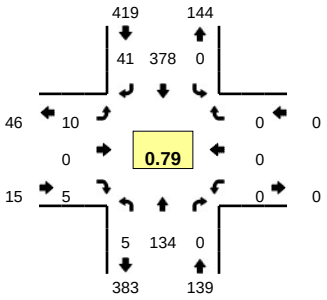
QC JOB #: 14711016

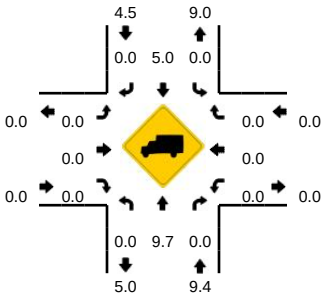
CITY/STATE: Salem, OR

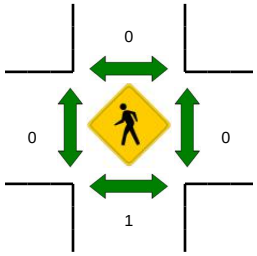
DATE: Wed, May 16 2018

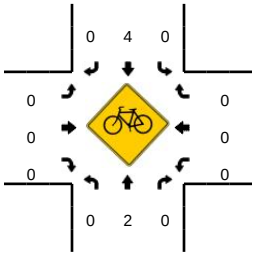
Peak-Hour: 4:10 PM -- 5:10 PM

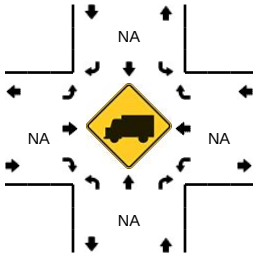
Peak 15-Min: 4:55 PM -- 5:10 PM

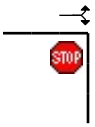


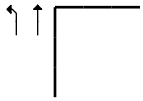


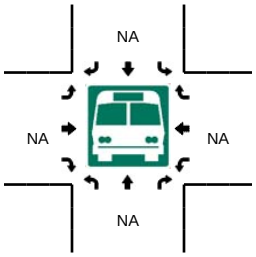












5-Min Count Period Beginning At	Fairview Industrial Dr SE (Northbound)				Fairview Industrial Dr SE (Southbound)				Marietta St SE (Eastbound)				Marietta St SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	7	0	0	0	18	2	0	0	0	0	0	0	0	0	0	28	
4:05 PM	2	9	0	0	0	41	1	0	1	0	2	0	0	0	0	0	56	
4:10 PM	0	8	0	0	0	35	3	0	2	0	0	0	0	0	0	0	48	
4:15 PM	0	9	0	0	0	35	1	0	0	0	0	0	0	0	0	0	45	
4:20 PM	0	5	0	0	0	26	3	0	2	0	0	0	0	0	0	0	36	
4:25 PM	1	9	0	0	0	23	0	0	1	0	0	0	0	0	0	0	34	
4:30 PM	0	12	0	0	0	34	7	0	0	0	1	0	0	0	0	0	54	
4:35 PM	1	9	0	0	0	30	1	0	0	0	2	0	0	0	0	0	43	
4:40 PM	1	13	0	0	0	30	2	0	0	0	0	0	0	0	0	0	46	
4:45 PM	1	17	0	0	0	23	1	0	1	0	1	0	0	0	0	0	44	
4:50 PM	0	11	0	0	0	27	3	0	1	0	0	0	0	0	0	0	42	
4:55 PM	0	14	0	0	0	23	2	0	1	0	1	0	0	0	0	0	41	517
5:00 PM	0	16	0	0	0	50	10	0	0	0	0	0	0	0	0	0	76	565
5:05 PM	1	11	0	0	0	42	8	0	2	0	0	0	0	0	0	0	64	573
5:10 PM	0	7	0	0	0	27	4	0	1	0	1	0	0	0	0	0	40	565
5:15 PM	0	10	0	0	0	25	5	0	0	0	0	0	0	0	0	0	40	560
5:20 PM	0	7	0	0	0	21	3	0	1	0	0	0	0	0	0	0	32	556
5:25 PM	0	2	0	0	0	25	3	0	1	0	0	0	0	0	0	0	31	553
5:30 PM	0	13	0	0	0	19	1	0	0	0	0	0	0	0	0	0	33	532
5:35 PM	0	7	0	0	0	30	0	0	0	0	1	0	0	0	0	0	38	527
5:40 PM	0	6	0	0	0	12	3	0	1	0	0	0	0	0	0	0	22	503
5:45 PM	1	8	0	0	0	13	2	0	0	0	0	0	0	0	0	0	24	483
5:50 PM	0	5	0	0	0	11	1	0	0	0	0	0	0	0	0	0	17	458
5:55 PM	0	5	0	0	0	15	0	0	2	0	0	0	0	0	0	0	22	439

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	164	0	0	0	460	80	0	12	0	4	0	0	0	0	0	724
Heavy Trucks	0	8	0		0	24	0		0	0	0		0	0	0		32
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	3	0		0	0	0		0	0	0		3
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

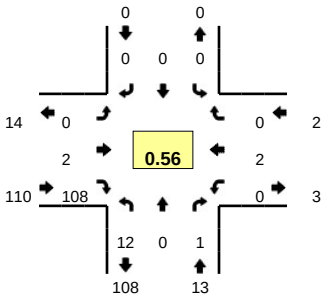
LOCATION: 27th Ave SE -- Strong Rd SE

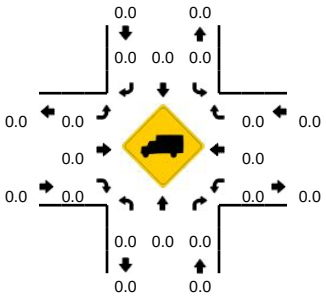
QC JOB #: 14711006

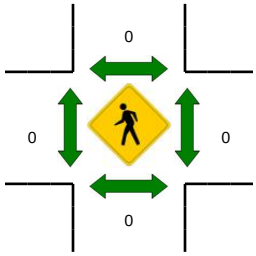
CITY/STATE: Salem, OR

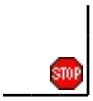
DATE: Wed, May 16 2018

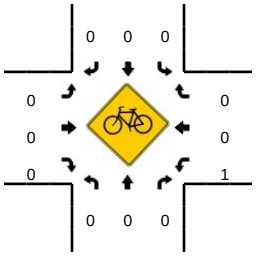
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

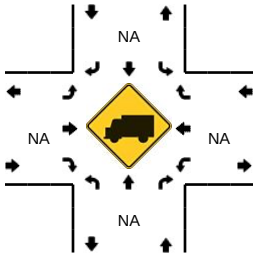


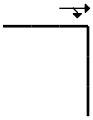


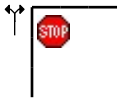


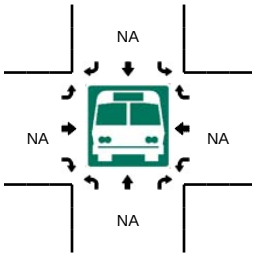












5-Min Count Period Beginning At	27th Ave SE (Northbound)				27th Ave SE (Southbound)				Strong Rd SE (Eastbound)				Strong Rd SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	
4:05 PM	4	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	12	
4:10 PM	2	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	10	
4:15 PM	4	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	9	
4:20 PM	3	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	5	
4:25 PM	1	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	5	
4:30 PM	2	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	11	
4:35 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	
4:40 PM	2	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	5	
4:45 PM	3	0	0	0	0	0	0	0	0	0	5	0	0	1	0	0	9	
4:50 PM	1	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	6	
4:55 PM	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3	86
5:00 PM	0	0	1	0	0	0	0	0	0	0	15	0	0	0	0	0	16	95
5:05 PM	0	0	0	0	0	0	0	0	0	0	24	0	0	1	0	0	25	108
5:10 PM	1	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	15	113
5:15 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	111
5:20 PM	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	9	115
5:25 PM	2	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	8	118
5:30 PM	1	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	9	116
5:35 PM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	8	120
5:40 PM	3	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	10	125
5:45 PM	3	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	5	121
5:50 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	116
5:55 PM	0	0	0	0	0	0	0	0	0	1	7	0	0	0	0	0	8	121

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	4	0	0	0	0	0	0	0	212	0	0	4	0	0	224
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

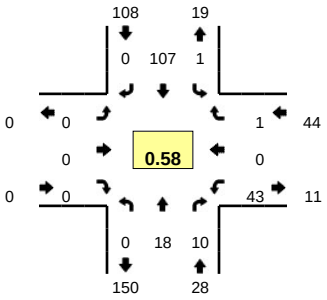
LOCATION: 27th Ave SE -- Marietta St SE

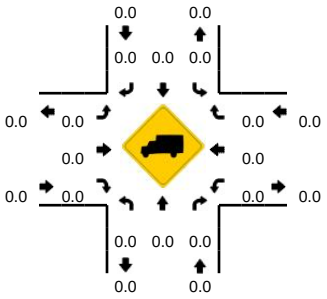
QC JOB #: 14711008

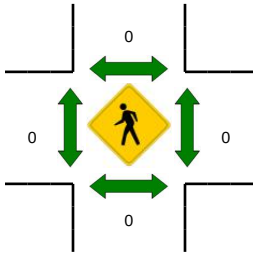
CITY/STATE: Salem, OR

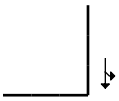
DATE: Wed, May 16 2018

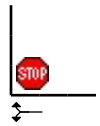
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

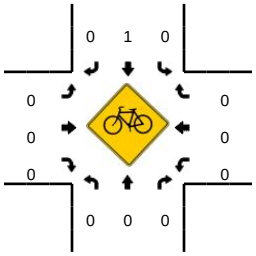


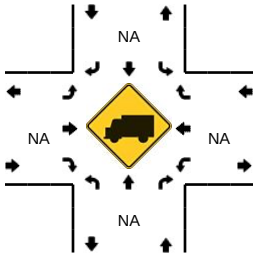


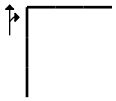


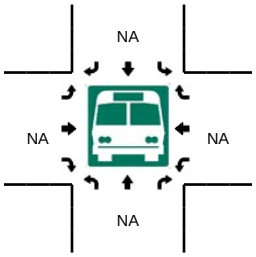












5-Min Count Period Beginning At	27th Ave SE (Northbound)				27th Ave SE (Southbound)				Marietta St SE (Eastbound)				Marietta St SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	7	0	0	0	0	0	0	3	0	0	0	10	
4:05 PM	0	4	4	0	0	5	0	0	0	0	0	0	4	0	0	0	17	
4:10 PM	0	2	0	0	0	9	0	0	0	0	0	0	2	0	0	0	13	
4:15 PM	0	3	0	0	0	6	0	0	0	0	0	0	2	0	0	0	11	
4:20 PM	0	3	3	0	0	2	0	0	0	0	0	0	2	0	0	0	10	
4:25 PM	0	1	2	0	0	2	0	0	0	0	0	0	0	0	0	0	5	
4:30 PM	0	2	0	0	0	7	0	0	0	0	0	0	5	0	0	0	14	
4:35 PM	0	0	2	0	0	5	0	0	0	0	0	0	4	0	0	0	11	
4:40 PM	0	2	0	0	0	2	0	0	0	0	0	0	3	0	0	0	7	
4:45 PM	0	4	1	0	0	6	0	0	0	0	0	0	0	0	0	0	11	
4:50 PM	0	1	1	0	0	4	0	0	0	0	0	0	4	0	0	0	10	
4:55 PM	0	3	1	0	0	2	0	0	0	0	0	0	2	0	0	0	8	127
5:00 PM	0	2	1	0	0	12	0	0	0	0	0	0	4	0	0	0	19	136
5:05 PM	0	1	1	0	0	26	0	0	0	0	0	0	12	0	0	0	40	159
5:10 PM	0	1	0	0	0	12	0	0	0	0	0	0	4	0	1	0	18	164
5:15 PM	0	0	0	0	0	10	0	0	0	0	0	0	5	0	0	0	15	168
5:20 PM	0	0	0	0	0	8	0	0	0	0	0	0	2	0	0	0	10	168
5:25 PM	0	2	2	0	0	5	0	0	0	0	0	0	6	0	0	0	15	178
5:30 PM	0	1	0	0	0	9	0	0	0	0	0	0	1	0	0	0	11	175
5:35 PM	0	0	3	0	1	7	0	0	0	0	0	0	0	0	0	0	11	175
5:40 PM	0	3	0	0	0	6	0	0	0	0	0	0	3	0	0	0	12	180
5:45 PM	0	3	0	0	0	1	0	0	0	0	0	0	2	0	0	0	6	175
5:50 PM	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	3	168
5:55 PM	0	0	1	0	0	7	0	0	0	0	0	0	2	0	0	0	10	170

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	16	8	0	0	200	0	0	0	0	0	0	80	0	4	0	308
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

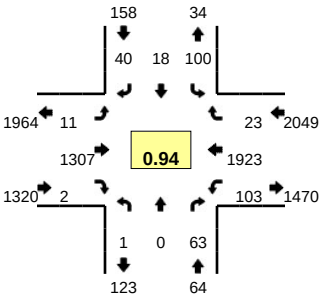
LOCATION: 27th Ave SE -- Kuebler Blvd

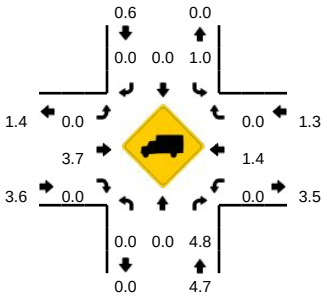
QC JOB #: 14711010

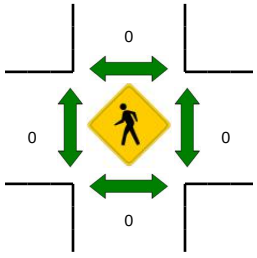
CITY/STATE: Salem, OR

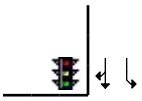
DATE: Wed, May 16 2018

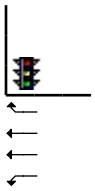
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

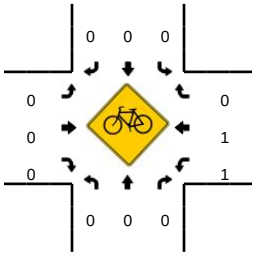


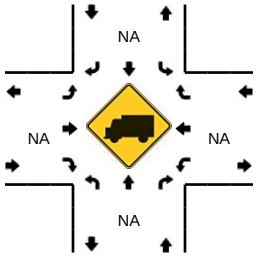


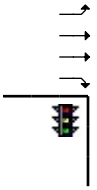


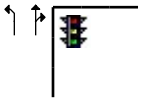


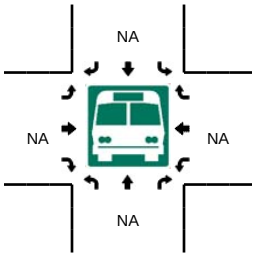












5-Min Count Period Beginning At	27th Ave SE (Northbound)				27th Ave SE (Southbound)				Kuebler Blvd (Eastbound)				Kuebler Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	3	0	5	0	2	0	0	106	0	0	10	128	1	0	255	
4:05 PM	0	0	5	0	5	0	4	0	1	96	0	0	4	157	5	0	277	
4:10 PM	0	0	9	0	8	0	1	0	0	106	1	0	6	155	2	0	288	
4:15 PM	0	0	2	0	10	1	0	0	1	113	0	0	4	138	3	0	272	
4:20 PM	0	0	3	0	2	0	3	0	4	117	0	0	7	166	5	0	307	
4:25 PM	0	0	3	0	2	1	0	0	1	85	0	0	9	151	2	0	254	
4:30 PM	0	0	8	0	8	1	4	0	4	114	1	0	9	120	1	0	270	
4:35 PM	0	1	6	0	10	1	0	0	1	110	0	0	4	155	0	0	288	
4:40 PM	0	0	10	0	1	0	1	0	2	94	0	0	12	158	1	0	279	
4:45 PM	0	0	9	0	5	0	1	0	2	131	0	0	6	152	4	0	310	
4:50 PM	0	0	4	0	6	1	4	0	0	118	0	0	4	145	4	0	286	
4:55 PM	0	0	4	0	3	1	1	0	1	104	0	0	9	168	0	0	291	3377
5:00 PM	0	0	4	0	4	1	3	0	0	115	0	0	9	154	3	0	293	3415
5:05 PM	0	0	8	0	34	3	11	0	1	98	1	0	9	127	3	0	295	3433
5:10 PM	0	0	4	0	11	3	2	0	1	109	0	0	8	187	0	0	325	3470
5:15 PM	0	0	9	0	12	0	3	0	0	105	0	0	14	183	0	0	326	3524
5:20 PM	1	0	3	0	7	4	4	0	0	110	0	0	5	169	1	0	304	3521
5:25 PM	0	0	3	0	3	1	5	0	1	112	0	0	11	158	2	0	296	3563
5:30 PM	0	0	3	0	6	2	3	0	1	94	1	0	8	168	1	0	287	3580
5:35 PM	0	0	2	0	8	2	2	0	2	117	0	0	8	154	4	0	299	3591
5:40 PM	0	1	6	0	4	0	1	0	3	99	0	0	13	136	1	0	264	3576
5:45 PM	0	0	3	0	4	0	2	0	2	87	0	0	3	159	2	0	262	3528
5:50 PM	0	1	3	0	1	0	1	0	1	94	0	0	6	172	0	0	279	3521
5:55 PM	0	0	4	0	4	1	2	0	0	98	0	0	5	130	1	0	245	3475

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	64	0	120	28	36	0	4	1296	0	0	108	2156	4	0	3820
Heavy Trucks	0	0	4		0	0	0		0	40	0		0	32	0		76
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

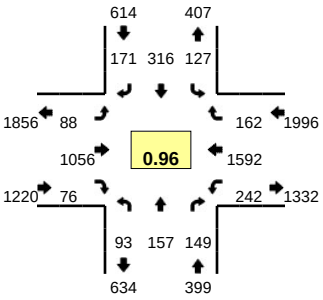
LOCATION: Battle Creek Rd SE -- Kuebler Blvd

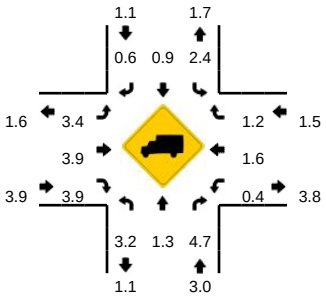
QC JOB #: 14711012

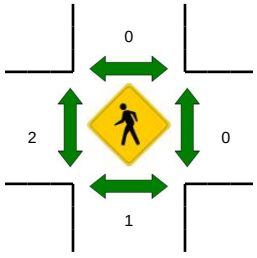
CITY/STATE: Salem, OR

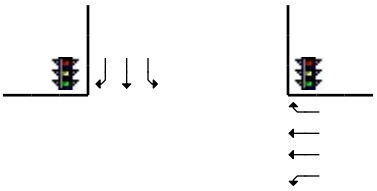
DATE: Wed, May 16 2018

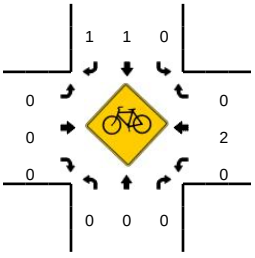
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

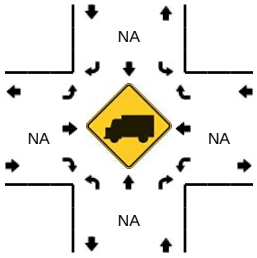


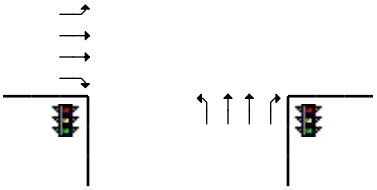


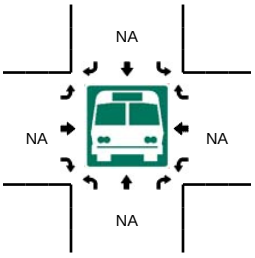












5-Min Count Period Beginning At	Battle Creek Rd SE (Northbound)				Battle Creek Rd SE (Southbound)				Kuebler Blvd (Eastbound)				Kuebler Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	12	19	7	0	12	19	9	0	1	71	7	0	19	103	7	0	286	
4:05 PM	8	9	13	0	4	29	26	0	8	74	4	0	19	107	16	0	317	
4:10 PM	7	8	11	0	13	17	11	0	4	101	6	0	11	157	16	0	362	
4:15 PM	9	12	12	0	11	22	16	0	7	87	3	0	21	103	13	0	316	
4:20 PM	7	13	11	0	10	34	7	0	5	84	7	0	18	125	17	0	338	
4:25 PM	6	6	5	0	6	25	12	0	6	97	4	0	12	127	20	0	326	
4:30 PM	6	8	14	0	14	18	14	0	5	81	7	0	22	95	21	0	305	
4:35 PM	6	9	17	0	9	35	22	0	10	77	5	0	9	105	11	0	315	
4:40 PM	11	10	9	0	9	18	16	0	11	92	7	0	25	128	11	0	347	
4:45 PM	9	10	11	0	14	24	10	0	7	107	4	0	15	144	13	0	368	
4:50 PM	17	15	14	0	20	30	14	0	7	79	5	0	17	111	12	0	341	
4:55 PM	8	6	12	0	9	27	16	0	11	80	11	0	19	133	11	0	343	3964
5:00 PM	2	13	10	0	13	27	9	0	6	100	6	0	14	134	14	0	348	4026
5:05 PM	10	12	14	0	15	35	18	0	4	80	6	0	19	116	18	0	347	4056
5:10 PM	3	14	13	0	9	34	20	0	7	64	4	0	34	118	10	0	330	4024
5:15 PM	7	15	11	0	10	25	19	0	8	105	8	0	22	159	14	0	403	4111
5:20 PM	6	14	13	0	13	28	14	0	6	90	9	0	17	151	11	0	372	4145
5:25 PM	9	20	15	0	3	32	16	0	9	68	4	0	18	99	15	0	308	4127
5:30 PM	1	12	13	0	8	15	8	0	5	94	7	0	21	168	20	0	372	4194
5:35 PM	10	16	14	0	4	21	11	0	7	97	5	0	21	131	13	0	350	4229
5:40 PM	7	17	15	0	9	36	16	0	5	76	5	0	19	93	16	0	314	4196
5:45 PM	6	14	11	0	7	24	12	0	8	68	5	0	22	144	12	0	333	4161
5:50 PM	9	10	11	0	5	17	6	0	2	86	3	0	22	136	18	0	325	4145
5:55 PM	7	10	9	0	11	24	10	0	5	65	8	0	19	98	10	0	276	4078

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	64	172	148	0	128	348	212	0	84	1036	84	0	292	1712	140	0	4420
Heavy Trucks	0	4	4		0	4	0		4	48	4		0	40	0		108
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE Battle Creek Rd & SE Reed Rd

January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2016														
REAR-END	0	0	2	2	0	0	0	1	1	2	0	2	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	0	1	1	0	0
2016 TOTAL	0	1	2	3	0	1	0	2	1	2	1	3	0	0
YEAR: 2015														
REAR-END	0	1	0	1	0	2	0	1	0	1	0	1	0	0
2015 TOTAL	0	1	0	1	0	2	0	1	0	1	0	1	0	0
YEAR: 2014														
FIXED / OTHER OBJECT	0	1	0	1	0	1	0	0	1	0	1	1	0	1
2014 TOTAL	0	1	0	1	0	1	0	0	1	0	1	1	0	1
YEAR: 2012														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	0	0	0	1	1	0	1
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2012 TOTAL	0	0	2	2	0	0	0	1	0	1	1	2	0	1
FINAL TOTAL	0	3	4	7	0	4	0	4	2	4	3	7	0	2

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE Strong Rd & SE Reed Rd

January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2016														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	0	1	0	1	1	0	1
2016 TOTAL	0	0	1	1	0	0	0	0	1	0	1	1	0	1
FINAL TOTAL	0	0	1	1	0	0	0	0	1	0	1	1	0	1

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE Fairview Industrial Rd & SE Reed Rd

January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2016														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2016 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2014														
ANGLE	0	1	0	1	0	1	0	0	1	1	0	1	0	0
2014 TOTAL	0	1	0	1	0	1	0	0	1	1	0	1	0	0
FINAL TOTAL	0	2	0	2	0	2	0	1	1	2	0	2	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE Fairview Industrial Rd & SE Marietta St

January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2015 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2012														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2012 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	1	1	2	0	1	0	2	0	2	0	2	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE Strong Rd & SE 27th Ave
January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE Kuebler Blvd & SE 27th Ave
January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2016														
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	1	0	0
2016 TOTAL	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR: 2015														
REAR-END	0	2	1	3	0	3	0	1	2	3	0	3	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2015 TOTAL	0	3	1	4	0	4	0	2	2	4	0	4	0	0
YEAR: 2014														
REAR-END	0	2	3	5	0	2	0	3	2	5	0	5	0	0
2014 TOTAL	0	2	3	5	0	2	0	3	2	5	0	5	0	0
YEAR: 2013														
REAR-END	0	2	2	4	0	4	1	3	1	3	1	4	0	0
2013 TOTAL	0	2	2	4	0	4	1	3	1	3	1	4	0	0
YEAR: 2012														
REAR-END	0	1	1	2	0	1	0	2	0	1	1	2	0	0
TURNING MOVEMENTS	0	1	0	1	0	2	0	1	0	1	0	1	0	0
2012 TOTAL	0	2	1	3	0	3	0	3	0	2	1	3	0	0
FINAL TOTAL	0	9	8	17	0	13	1	11	6	15	2	17	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE Kuebler Blvd & SE Battle Creek Rd

January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2016														
ANGLE	0	2	0	2	0	2	0	2	0	1	1	2	0	0
REAR-END	0	2	2	4	0	2	1	3	1	4	0	4	0	0
SIDESWIPE - OVERTAKING	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	2	2	0	0	0	2	0	2	0	2	0	0
2016 TOTAL	0	4	5	9	0	4	1	8	1	8	1	9	0	0
YEAR: 2015														
HEAD-ON	0	1	0	1	0	1	0	1	0	0	1	1	0	0
REAR-END	0	3	5	8	0	5	0	5	1	7	1	8	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	0	1	1	0	0
2015 TOTAL	0	5	5	10	0	7	0	6	2	7	3	10	0	0
YEAR: 2014														
REAR-END	0	2	2	4	0	2	0	4	0	4	0	4	0	0
TURNING MOVEMENTS	0	1	2	3	0	1	0	3	0	3	0	3	0	0
2014 TOTAL	0	3	4	7	0	3	0	7	0	7	0	7	0	0
YEAR: 2013														
REAR-END	0	4	2	6	0	5	0	3	3	6	0	6	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	0	2	1	1	2	0	0
2013 TOTAL	0	5	3	8	0	6	0	3	5	7	1	8	0	0
YEAR: 2012														
REAR-END	0	3	2	5	0	10	0	4	1	5	0	5	0	0
TURNING MOVEMENTS	0	1	0	1	0	2	0	1	0	0	1	1	0	0
2012 TOTAL	0	4	2	6	0	12	0	5	1	5	1	6	0	0
FINAL TOTAL	0	21	19	40	0	32	1	29	9	34	6	40	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Existing.pdf

Scenario 1 AM Existing
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.105	19.5	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.009	13.6	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.833	116.4	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.353	17.8	C
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.014	10.8	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.729	19.6	B
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.807	39.0	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	19.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.105

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	25	6	34	233	361	264
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.20	3.20	7.10	7.10	3.80	3.80
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	6	34	233	361	264
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	2	10	69	106	78
Total Analysis Volume [veh/h]	29	7	40	274	425	311
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.01	0.05	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	19.51	12.13	9.46	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.35	0.04	1.72	1.72	0.00	0.00
95th-Percentile Queue Length [ft]	8.67	1.04	43.09	43.09	0.00	0.00
d_A, Approach Delay [s/veh]	18.08		1.21		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.95					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	302	0	12	43	4	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.60	1.60	5.50	5.50	1.70	1.70
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	302	0	12	43	4	115
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	101	0	4	14	1	38
Total Analysis Volume [veh/h]	403	0	16	57	5	153
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.01	0.24
d_M, Delay for Movement [s/veh]	0.00	0.00	8.21	0.00	13.62	12.37
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.21	0.21	0.96	0.96
95th-Percentile Queue Length [ft]	0.00	0.00	5.14	5.14	24.03	24.03
d_A, Approach Delay [s/veh]	0.00		1.80		12.41	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.30					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	Two-way stop	Delay (sec / veh):	116.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.833

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	220	27	105	3	1	3	24	255	60	8	255	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.30	2.30	2.30	0.00	0.00	0.00	4.70	4.70	4.70	5.20	5.20	5.20
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	220	27	105	3	1	3	24	255	60	8	255	27
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	8	32	1	0	1	7	77	18	2	77	8
Total Analysis Volume [veh/h]	265	33	127	4	1	4	29	307	72	10	307	33
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.83	0.10	0.18	0.02	0.00	0.01	0.02	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	116.42	116.22	110.25	21.93	16.62	10.29	8.06	0.00	0.00	8.12	0.00	0.00
Movement LOS	F	F	F	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	15.71	15.71	15.71	0.08	0.08	0.08	0.07	0.00	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft]	392.67	392.67	392.67	2.09	2.09	2.09	1.85	0.00	0.00	0.65	0.00	0.00
d_A, Approach Delay [s/veh]	114.56			16.17			0.57			0.23		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	41.23											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	17.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.353

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	4	372	107	4	118	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.80	4.80	13.50	13.50	0.80	0.80
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	372	107	4	118	13
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	122	35	1	39	4
Total Analysis Volume [veh/h]	5	489	141	5	155	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.35	0.02
d_M, Delay for Movement [s/veh]	7.55	0.00	0.00	0.00	17.76	13.51
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.01	0.00	0.00	0.00	1.70	1.70
95th-Percentile Queue Length [ft]	0.27	0.00	0.00	0.00	42.48	42.48
d_A, Approach Delay [s/veh]	0.08		0.00		17.34	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.72					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.014

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	135	127	1	11	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.80	0.80	8.30	8.30	16.70	16.70
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	127	1	11	6	0
Peak Hour Factor	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	50	0	4	2	0
Total Analysis Volume [veh/h]	211	198	2	17	9	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.23	0.00	10.76	10.25
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.05	0.05	0.04	0.04
95th-Percentile Queue Length [ft]	0.00	0.00	1.30	1.30	1.08	1.08
d_A, Approach Delay [s/veh]	0.00		0.87		10.76	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.26					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 36: 27th at Kuebler Blvd

Control Type:	Signalized	Delay (sec / veh):	19.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.729

Intersection Setup

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	125.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	200.00	350.00	100.00	175.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	0	7	99	6	2	6	30	1635	0	36	1067	225
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.60	6.60	6.60	14.30	14.30	14.30	3.50	3.50	3.50	7.30	7.30	7.30
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	7	99	6	2	6	30	1635	0	36	1067	225
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	29	2	1	2	9	481	0	11	314	66
Total Analysis Volume [veh/h]	0	8	116	7	2	7	35	1924	0	42	1255	265
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	34	83	0	9	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	21	1	22	3	78	78	4	79	79
g / C, Green / Cycle	0.00	0.17	0.01	0.18	0.03	0.65	0.65	0.03	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.00	0.09	0.00	0.01	0.02	0.61	0.00	0.03	0.41	0.19
s, saturation flow rate [veh/h]	1544	1391	1445	1334	1584	3166	1413	1535	3068	1370
c, Capacity [veh/h]	0	239	13	241	46	2067	923	51	2016	900
d1, Uniform Delay [s]	0.00	45.20	59.23	40.59	57.87	18.44	0.00	57.66	11.94	8.75
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	7.85	31.22	0.29	22.68	2.36	0.00	26.53	0.32	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.52	0.54	0.04	0.76	0.93	0.00	0.82	0.62	0.29
d, Delay for Lane Group [s/veh]	0.00	53.05	90.45	40.88	80.54	20.80	0.00	84.19	12.25	8.93
Lane Group LOS	A	D	F	D	F	C	A	F	B	A
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	0.00	3.89	0.32	0.24	1.34	21.95	0.00	1.64	9.15	2.85
50th-Percentile Queue Length [ft]	0.00	97.20	8.10	6.02	33.60	548.84	0.00	41.09	228.67	71.20
95th-Percentile Queue Length [veh]	0.00	7.00	0.58	0.43	2.42	29.64	0.00	2.96	14.11	5.13
95th-Percentile Queue Length [ft]	0.00	174.97	14.57	10.84	60.48	740.94	0.00	73.96	352.68	128.16

Movement, Approach, & Intersection Results

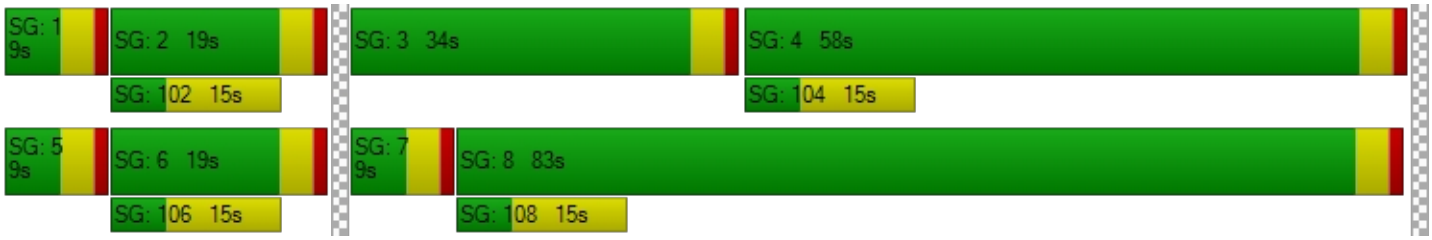
d_M, Delay for Movement [s/veh]	0.00	53.05	53.05	90.45	40.88	40.88	80.54	20.80	0.00	84.19	12.25	8.93
Movement LOS	A	D	D	F	D	D	F	C	A	F	B	A
d_A, Approach Delay [s/veh]	53.05			62.56			21.87			13.62		
Approach LOS	D			E			C			B		
d_I, Intersection Delay [s/veh]	19.58											
Intersection LOS	B											
Intersection V/C	0.729											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.010	2.061	2.992	3.055
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	250	1317	900
d_b, Bicycle Delay [s]	45.94	45.94	7.00	18.15
l_b,int, Bicycle LOS Score for Intersection	1.764	1.586	3.176	2.848
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	39.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.807

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	296	222	131	104	43	182	1344	55	94	823	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	7.20	7.20	7.20	3.20	3.20	3.20	7.40	7.40	7.40
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	93	296	222	131	104	43	182	1344	55	94	823	148
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	82	62	36	29	12	51	373	15	26	229	41
Total Analysis Volume [veh/h]	103	329	247	146	116	48	202	1493	61	104	914	164
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	23	0	15	26	0	35	60	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	21	21	11	24	24	16	54	54	8	46	46
g / C, Green / Cycle	0.07	0.19	0.19	0.10	0.21	0.21	0.15	0.49	0.49	0.07	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.06	0.10	0.17	0.10	0.07	0.04	0.13	0.47	0.04	0.07	0.30	0.12
s, saturation flow rate [veh/h]	1598	3194	1426	1536	1613	1371	1587	3174	1417	1533	3066	1369
c, Capacity [veh/h]	117	600	268	154	347	295	232	1566	699	112	1289	575
d1, Uniform Delay [s]	50.53	40.47	43.91	49.22	36.54	35.14	45.96	26.66	14.75	50.72	26.34	21.00
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	18.48	3.58	38.22	23.11	2.59	1.18	9.65	4.22	0.05	25.18	0.73	0.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.55	0.92	0.95	0.33	0.16	0.87	0.95	0.09	0.93	0.71	0.29
d, Delay for Lane Group [s/veh]	69.02	44.06	82.13	72.33	39.13	36.33	55.61	30.88	14.81	75.89	27.07	21.27
Lane Group LOS	E	D	F	E	D	D	E	C	B	E	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	3.40	4.32	9.40	4.96	2.89	1.15	6.00	18.65	0.81	3.62	9.78	2.80
50th-Percentile Queue Length [ft]	85.04	108.11	235.00	124.01	72.23	28.69	149.89	466.16	20.30	90.58	244.38	70.07
95th-Percentile Queue Length [veh]	6.12	7.73	14.43	8.61	5.20	2.07	10.01	25.73	1.46	6.52	14.90	5.04
95th-Percentile Queue Length [ft]	153.07	193.37	360.71	215.33	130.01	51.64	250.28	643.21	36.54	163.04	372.57	126.12

Movement, Approach, & Intersection Results

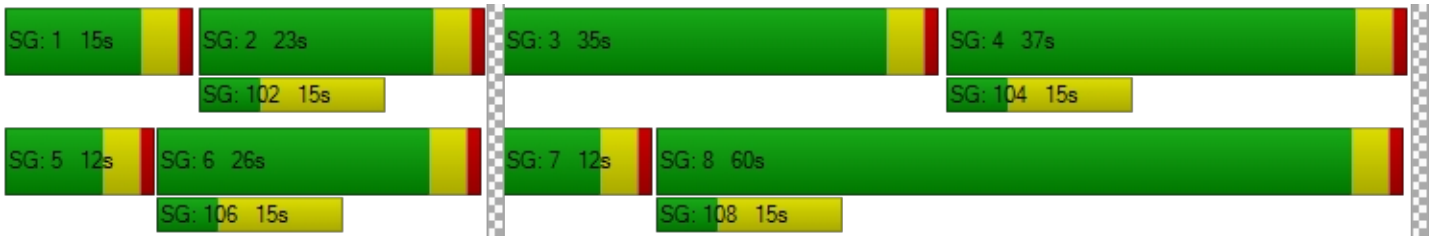
d_M, Delay for Movement [s/veh]	69.02	44.06	82.13	72.33	39.13	36.33	55.61	30.88	14.81	75.89	27.07	21.27
Movement LOS	E	D	F	E	D	D	E	C	B	E	C	C
d_A, Approach Delay [s/veh]	61.69			54.33			33.17			30.56		
Approach LOS	E			D			C			C		
d_I, Intersection Delay [s/veh]	38.99											
Intersection LOS	D											
Intersection V/C	0.807											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.498	2.507	2.922	2.963
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	345	400	1018	600
d_b, Bicycle Delay [s]	37.64	35.20	13.25	26.95
l_b,int, Bicycle LOS Score for Intersection	2.120	2.071	3.008	2.535
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 AM Existing.pdf

Scenario 1 AM Existing
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	25	6	34	233	361	264	923

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	302	0	12	43	4	115	476

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	220	27	105	3	1	3	24	255	60	8	255	27	988

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	4	372	107	4	118	13	618

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	135	127	1	11	6	0	280

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	0	7	99	6	2	6	30	1635	0	36	1067	225	3113

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	93	296	222	131	104	43	182	1344	55	94	823	148	3535

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Existing.pdf

Scenario 1 AM Existing
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	25	6	34	233	361	264	923
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**25**	**6**	**34**	**233**	**361**	**264**	**923**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	302	0	12	43	4	115	476
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**302**	**0**	**12**	**43**	**4**	**115**	**476**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	220	27	105	3	1	3	24	255	60	8	255	27	988
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**220**	**27**	**105**	**3**	**1**	**3**	**24**	**255**	**60**	**8**	**255**	**27**	**988**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	4	372	107	4	118	13	618
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**4**	**372**	**107**	**4**	**118**	**13**	**618**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	135	127	1	11	6	0	280
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**135**	**127**	**1**	**11**	**6**	**0**	**280**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	Final Base	0	7	99	6	2	6	30	1635	0	36	1067	225	3113
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**0**	**7**	**99**	**6**	**2**	**6**	**30**	**1635**	**0**	**36**	**1067**	**225**	**3113**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	296	222	131	104	43	182	1344	55	94	823	148	3535
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**93**	**296**	**222**	**131**	**104**	**43**	**182**	**1344**	**55**	**94**	**823**	**148**	**3535**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	625	267	31
2	600	256	30
3	588	251	29
4	500	214	25
5	475	203	24
6	425	182	21
7	394	168	20
8	375	160	19
9	300	128	15
10	281	120	14
11	281	120	14
12	269	115	13
13	244	104	12
14	225	96	11
15	225	96	11
16	219	93	11
17	125	53	6
18	69	29	3
19	63	27	3
20	25	11	1
21	19	8	1
22	19	8	1
23	13	5	1
24	13	5	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	892	2	31	No	No	No	No	No	No	No	No	No	No
2	2	856	2	30	No	No	No	No	No	No	No	No	No	No
3	2	839	2	29	No	No	No	No	No	No	No	No	No	No
4	2	714	2	25	No	No	No	No	No	No	No	No	No	No
5	2	678	2	24	No	No	No	No	No	No	No	No	No	No
6	2	607	2	21	No	No	No	No	No	No	No	No	No	No
7	2	562	2	20	No	No	No	No	No	No	No	No	No	No
8	2	535	2	19	No	No	No	No	No	No	No	No	No	No
9	2	428	2	15	No	No	No	No	No	No	No	No	No	No
10	2	401	2	14	No	No	No	No	No	No	No	No	No	No
11	2	401	2	14	No	No	No	No	No	No	No	No	No	No
12	2	384	2	13	No	No	No	No	No	No	No	No	No	No
13	2	348	2	12	No	No	No	No	No	No	No	No	No	No
14	2	321	2	11	No	No	No	No	No	No	No	No	No	No
15	2	321	2	11	No	No	No	No	No	No	No	No	No	No
16	2	312	2	11	No	No	No	No	No	No	No	No	No	No
17	2	178	2	6	No	No	No	No	No	No	No	No	No	No
18	2	98	2	3	No	No	No	No	No	No	No	No	No	No
19	2	90	2	3	No	No	No	No	No	No	No	No	No	No
20	2	36	2	1	No	No	No	No	No	No	No	No	No	No
21	2	27	2	1	No	No	No	No	No	No	No	No	No	No
22	2	27	2	1	No	No	No	No	No	No	No	No	No	No
23	2	18	2	1	No	No	No	No	No	No	No	No	No	No
24	2	18	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	18.1
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:09
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	31
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	923
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	55	302	119
2	53	290	114
3	52	284	112
4	44	242	95
5	42	230	90
6	37	205	81
7	35	190	75
8	33	181	71
9	26	145	57
10	25	136	54
11	25	136	54
12	24	130	51
13	21	118	46
14	20	109	43
15	20	109	43
16	19	106	42
17	11	60	24
18	6	33	13
19	6	30	12
20	2	12	5
21	2	9	4
22	2	9	4
23	1	6	2
24	1	6	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	357	1	119	No	No	No	Yes	No	No	No	No	No	No
2	2	343	1	114	No	No	No	Yes	No	No	No	No	No	No
3	2	336	1	112	No	No	No	Yes	No	No	No	No	No	No
4	2	286	1	95	No	No	No	No	No	No	No	No	No	No
5	2	272	1	90	No	No	No	No	No	No	No	No	No	No
6	2	242	1	81	No	No	No	No	No	No	No	No	No	No
7	2	225	1	75	No	No	No	No	No	No	No	No	No	No
8	2	214	1	71	No	No	No	No	No	No	No	No	No	No
9	2	171	1	57	No	No	No	No	No	No	No	No	No	No
10	2	161	1	54	No	No	No	No	No	No	No	No	No	No
11	2	161	1	54	No	No	No	No	No	No	No	No	No	No
12	2	154	1	51	No	No	No	No	No	No	No	No	No	No
13	2	139	1	46	No	No	No	No	No	No	No	No	No	No
14	2	129	1	43	No	No	No	No	No	No	No	No	No	No
15	2	129	1	43	No	No	No	No	No	No	No	No	No	No
16	2	125	1	42	No	No	No	No	No	No	No	No	No	No
17	2	71	1	24	No	No	No	No	No	No	No	No	No	No
18	2	39	1	13	No	No	No	No	No	No	No	No	No	No
19	2	36	1	12	No	No	No	No	No	No	No	No	No	No
20	2	14	1	5	No	No	No	No	No	No	No	No	No	No
21	2	11	1	4	No	No	No	No	No	No	No	No	No	No
22	2	11	1	4	No	No	No	No	No	No	No	No	No	No
23	2	7	1	2	No	No	No	No	No	No	No	No	No	No
24	2	7	1	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	12.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:24
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	119
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	476
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	290	339	7	352
2	278	325	7	338
3	273	319	7	331
4	232	271	6	282
5	220	258	5	268
6	197	231	5	239
7	183	214	4	222
8	174	203	4	211
9	139	163	3	169
10	131	153	3	158
11	131	153	3	158
12	125	146	3	151
13	113	132	3	137
14	104	122	3	127
15	104	122	3	127
16	102	119	2	123
17	58	68	1	70
18	32	37	1	39
19	29	34	1	35
20	12	14	0	14
21	9	10	0	11
22	9	10	0	11
23	6	7	0	7
24	6	7	0	7

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	629	2	359	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	No
2	4	603	2	345	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	No
3	4	592	2	338	No	Yes	Yes	Yes	No	No	No	Yes	Yes	No
4	4	503	2	288	No	Yes	Yes	Yes	No	No	No	No	No	No
5	4	478	2	273	No	No	Yes	Yes	No	No	No	No	No	No
6	4	428	2	244	No	No	Yes	Yes	No	No	No	No	No	No
7	4	397	2	226	No	No	No	Yes	No	No	No	No	No	No
8	4	377	2	215	No	No	No	Yes	No	No	No	No	No	No
9	4	302	2	172	No	No	No	No	No	No	No	No	No	No
10	4	284	2	161	No	No	No	No	No	No	No	No	No	No
11	4	284	2	161	No	No	No	No	No	No	No	No	No	No
12	4	271	2	154	No	No	No	No	No	No	No	No	No	No
13	4	245	2	140	No	No	No	No	No	No	No	No	No	No
14	4	226	2	130	No	No	No	No	No	No	No	No	No	No
15	4	226	2	130	No	No	No	No	No	No	No	No	No	No
16	4	221	2	125	No	No	No	No	No	No	No	No	No	No
17	4	126	2	71	No	No	No	No	No	No	No	No	No	No
18	4	69	2	40	No	No	No	No	No	No	No	No	No	No
19	4	63	2	36	No	No	No	No	No	No	No	No	No	No
20	4	26	2	14	No	No	No	No	No	No	No	No	No	No
21	4	19	2	11	No	No	No	No	No	No	No	No	No	No
22	4	19	2	11	No	No	No	No	No	No	No	No	No	No
23	4	13	2	7	No	No	No	No	No	No	No	No	No	No
24	4	13	2	7	No	No	No	No	No	No	No	No	No	No
Hours Met					2	4	6	8	0	0	0	3	3	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	16.2	114.6
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01	11:12
Delay Condition Met	No	Yes
Volume on Minor Street Approach During Same Hour	7	352
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	988	988
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	Yes
Warrant Met for Intersection	**Yes**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	376	111	131
2	361	107	126
3	353	104	123
4	301	89	105
5	286	84	100
6	256	75	89
7	237	70	83
8	226	67	79
9	180	53	63
10	169	50	59
11	169	50	59
12	162	48	56
13	147	43	51
14	135	40	47
15	135	40	47
16	132	39	46
17	75	22	26
18	41	12	14
19	38	11	13
20	15	4	5
21	11	3	4
22	11	3	4
23	8	2	3
24	8	2	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	487	1	131	No	Yes	Yes	Yes	No	No	No	No	No	No
2	3	468	1	126	No	No	Yes	Yes	No	No	No	No	No	No
3	3	457	1	123	No	No	Yes	Yes	No	No	No	No	No	No
4	3	390	1	105	No	No	No	Yes	No	No	No	No	No	No
5	3	370	1	100	No	No	No	Yes	No	No	No	No	No	No
6	3	331	1	89	No	No	No	No	No	No	No	No	No	No
7	3	307	1	83	No	No	No	No	No	No	No	No	No	No
8	3	293	1	79	No	No	No	No	No	No	No	No	No	No
9	3	233	1	63	No	No	No	No	No	No	No	No	No	No
10	3	219	1	59	No	No	No	No	No	No	No	No	No	No
11	3	219	1	59	No	No	No	No	No	No	No	No	No	No
12	3	210	1	56	No	No	No	No	No	No	No	No	No	No
13	3	190	1	51	No	No	No	No	No	No	No	No	No	No
14	3	175	1	47	No	No	No	No	No	No	No	No	No	No
15	3	175	1	47	No	No	No	No	No	No	No	No	No	No
16	3	171	1	46	No	No	No	No	No	No	No	No	No	No
17	3	97	1	26	No	No	No	No	No	No	No	No	No	No
18	3	53	1	14	No	No	No	No	No	No	No	No	No	No
19	3	49	1	13	No	No	No	No	No	No	No	No	No	No
20	3	19	1	5	No	No	No	No	No	No	No	No	No	No
21	3	14	1	4	No	No	No	No	No	No	No	No	No	No
22	3	14	1	4	No	No	No	No	No	No	No	No	No	No
23	3	10	1	3	No	No	No	No	No	No	No	No	No	No
24	3	10	1	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	1	3	5	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	17.3
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:37
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	131
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	618
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	12	262	6
2	12	252	6
3	11	246	6
4	10	210	5
5	9	199	5
6	8	178	4
7	8	165	4
8	7	157	4
9	6	126	3
10	5	118	3
11	5	118	3
12	5	113	3
13	5	102	2
14	4	94	2
15	4	94	2
16	4	92	2
17	2	52	1
18	1	29	1
19	1	26	1
20	0	10	0
21	0	8	0
22	0	8	0
23	0	5	0
24	0	5	0

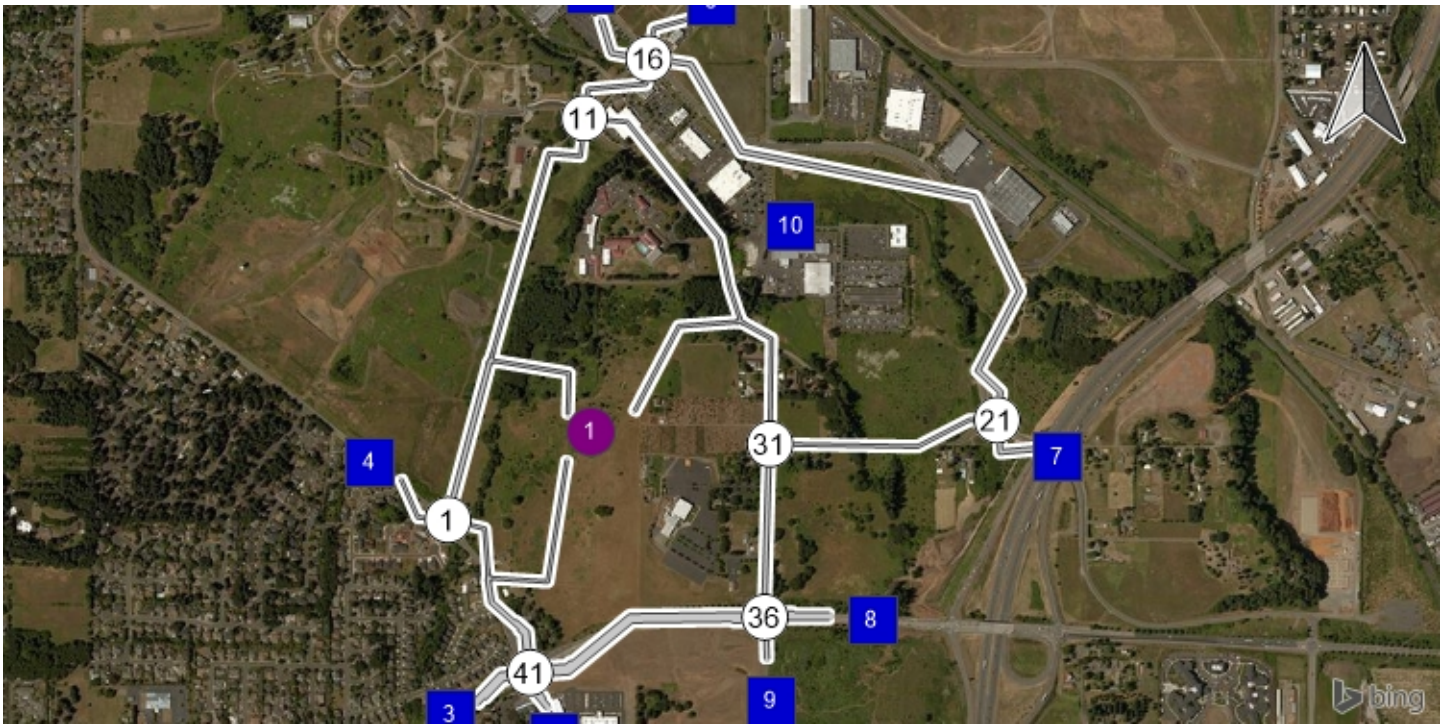
Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	274	1	6	No	No	No	No	No	No	No	No	No	No
2	2	264	1	6	No	No	No	No	No	No	No	No	No	No
3	2	257	1	6	No	No	No	No	No	No	No	No	No	No
4	2	220	1	5	No	No	No	No	No	No	No	No	No	No
5	2	208	1	5	No	No	No	No	No	No	No	No	No	No
6	2	186	1	4	No	No	No	No	No	No	No	No	No	No
7	2	173	1	4	No	No	No	No	No	No	No	No	No	No
8	2	164	1	4	No	No	No	No	No	No	No	No	No	No
9	2	132	1	3	No	No	No	No	No	No	No	No	No	No
10	2	123	1	3	No	No	No	No	No	No	No	No	No	No
11	2	123	1	3	No	No	No	No	No	No	No	No	No	No
12	2	118	1	3	No	No	No	No	No	No	No	No	No	No
13	2	107	1	2	No	No	No	No	No	No	No	No	No	No
14	2	98	1	2	No	No	No	No	No	No	No	No	No	No
15	2	98	1	2	No	No	No	No	No	No	No	No	No	No
16	2	96	1	2	No	No	No	No	No	No	No	No	No	No
17	2	54	1	1	No	No	No	No	No	No	No	No	No	No
18	2	30	1	1	No	No	No	No	No	No	No	No	No	No
19	2	27	1	1	No	No	No	No	No	No	No	No	No	No
20	2	10	1	0	No	No	No	No	No	No	No	No	No	No
21	2	8	1	0	No	No	No	No	No	No	No	No	No	No
22	2	8	1	0	No	No	No	No	No	No	No	No	No	No
23	2	5	1	0	No	No	No	No	No	No	No	No	No	No
24	2	5	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

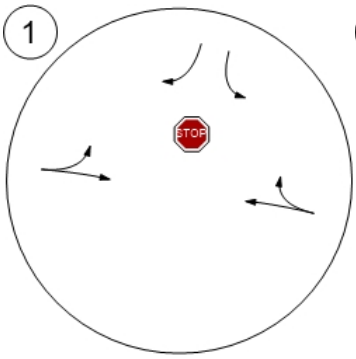
Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	6
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	280
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

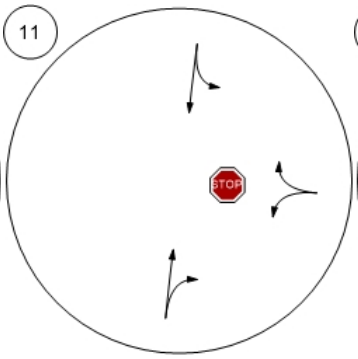
Report Figure 1: Lane Configuration and Traffic Control



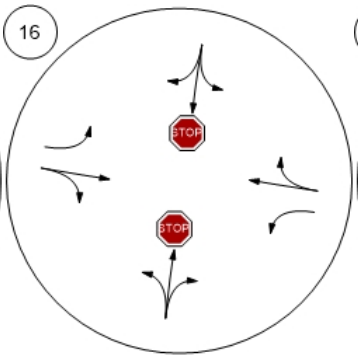
Battle Creek Rd at Reed Rd



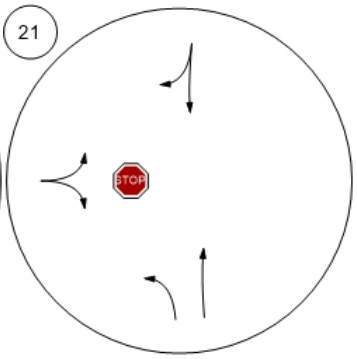
Reed Rd at Strong Rd



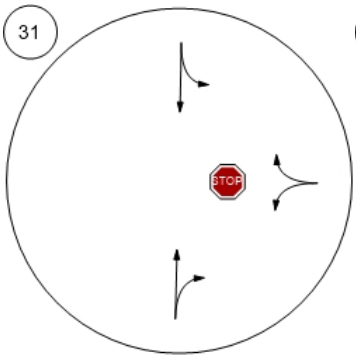
Reed Rd at Fairview Industria



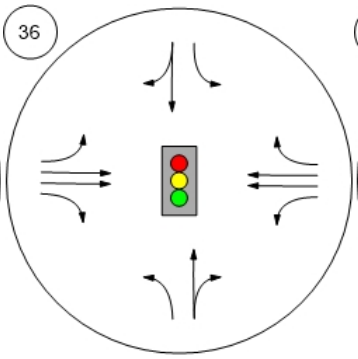
Fairview Industrial Dr at Mari



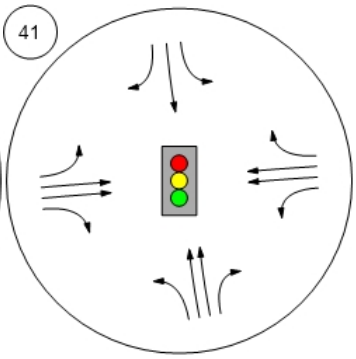
27th Ave at Marietta St



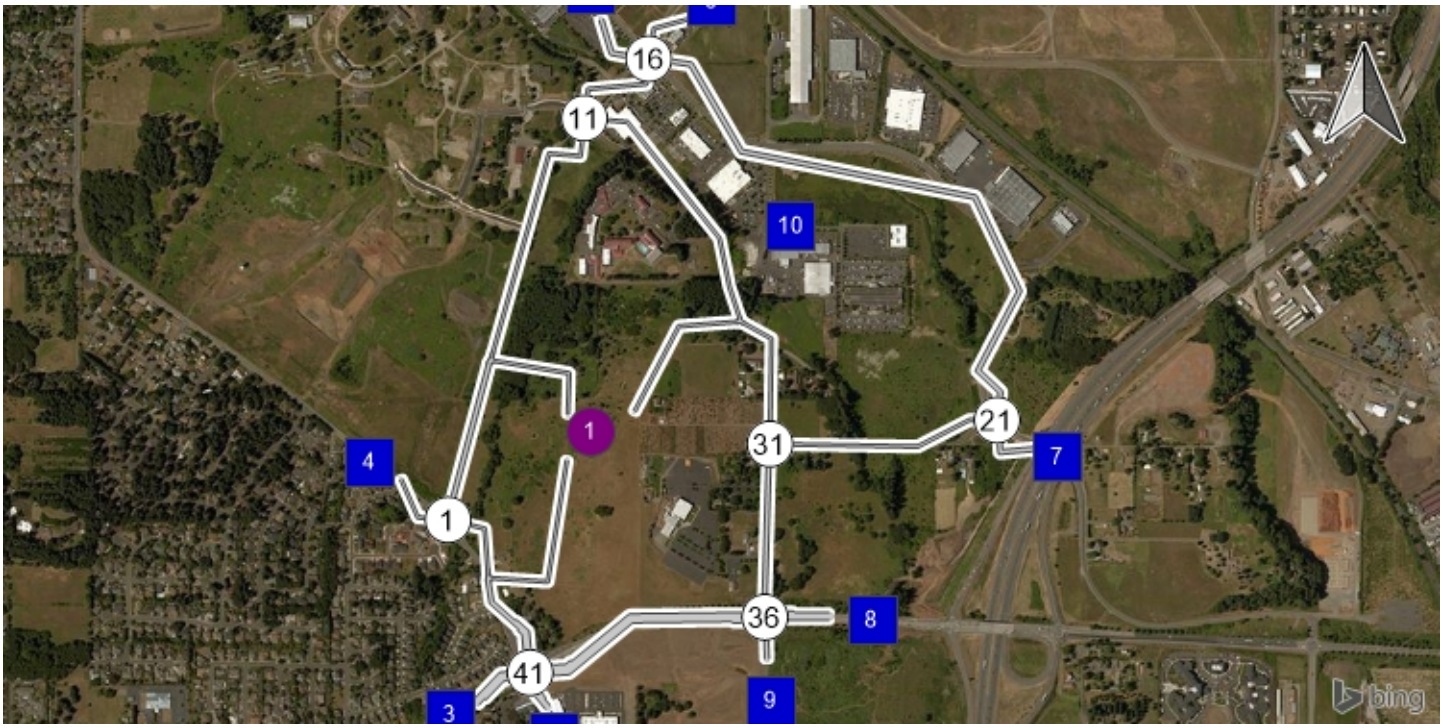
27th at Kuebler Blvd



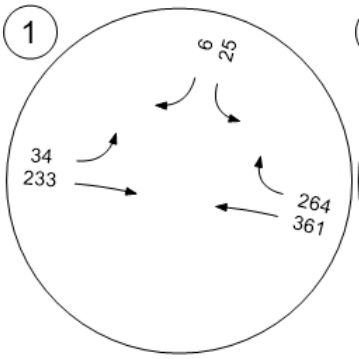
Keubler Blvd at Battle Creek



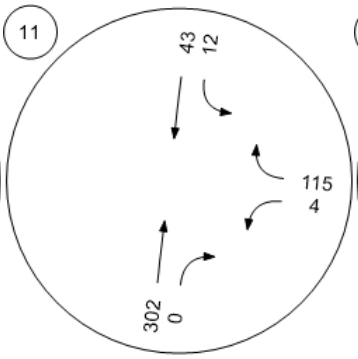
Report Figure 2a: Traffic Volume - Base Volume



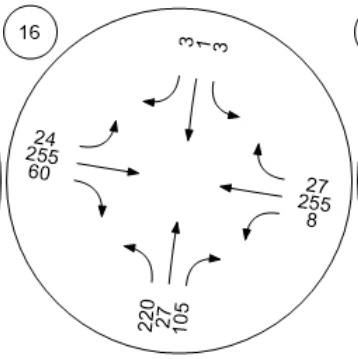
Battle Creek Rd at Reed Rd



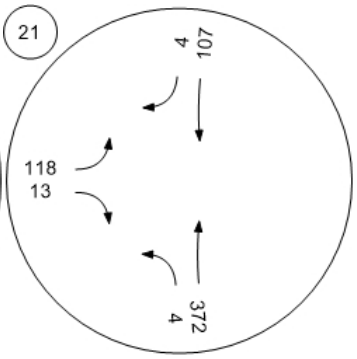
Reed Rd at Strong Rd



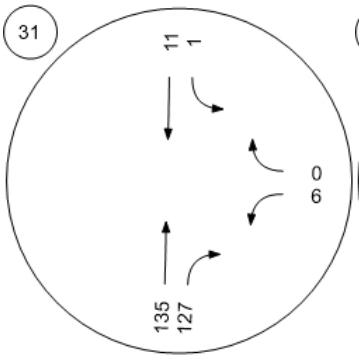
Reed Rd at Fairview Industria



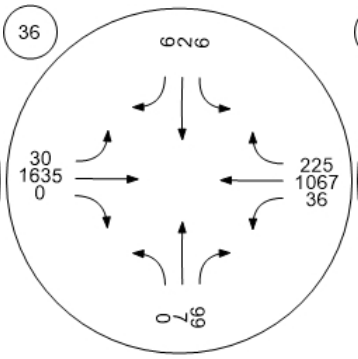
Fairview Industrial Dr at Mari



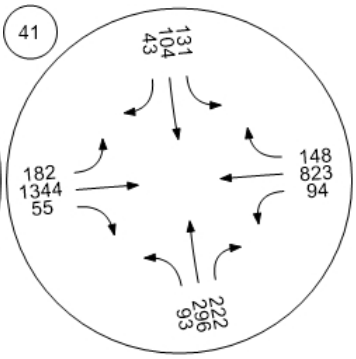
27th Ave at Marietta St



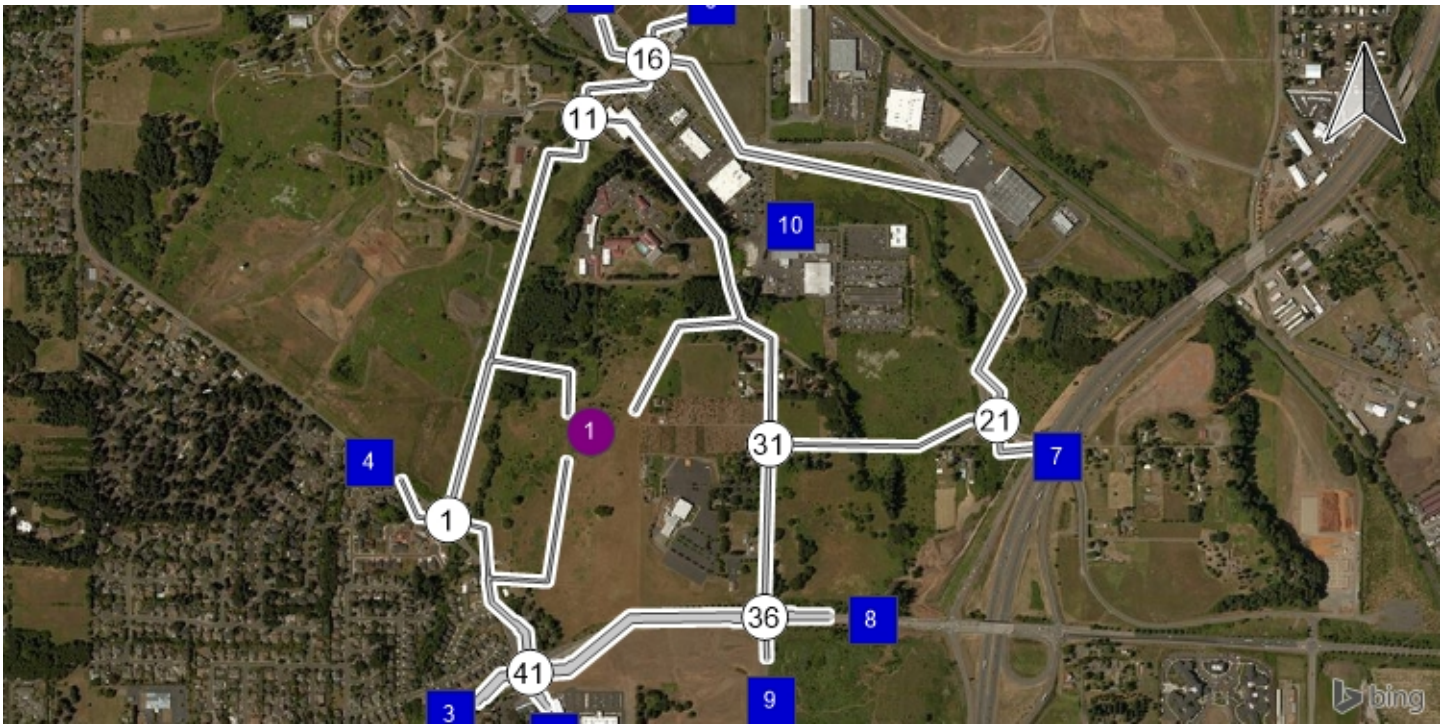
27th at Kuebler Blvd



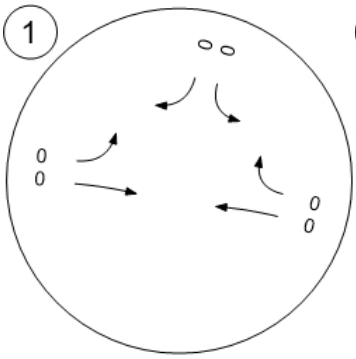
Keubler Blvd at Battle Creek



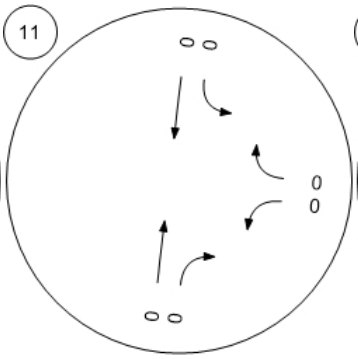
Report Figure 2d: Traffic Volume - Net New Site Trips



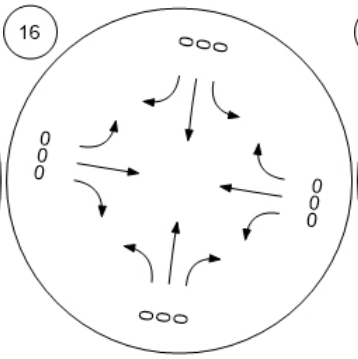
Battle Creek Rd at Reed Rd



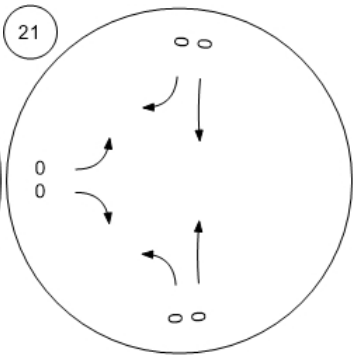
Reed Rd at Strong Rd



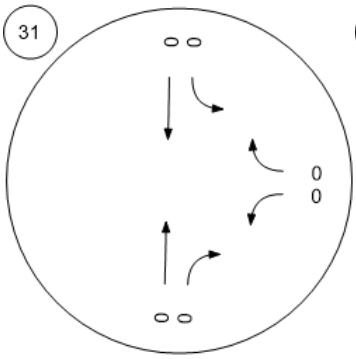
Reed Rd at Fairview Industria



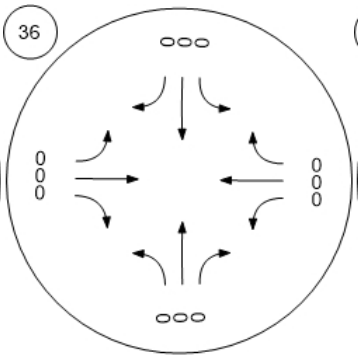
Fairview Industrial Dr at Mari



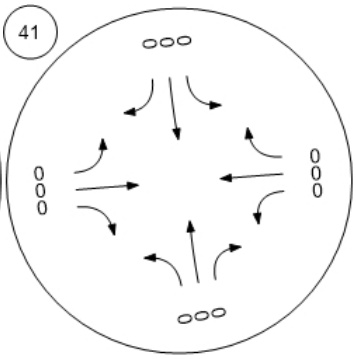
27th Ave at Marietta St



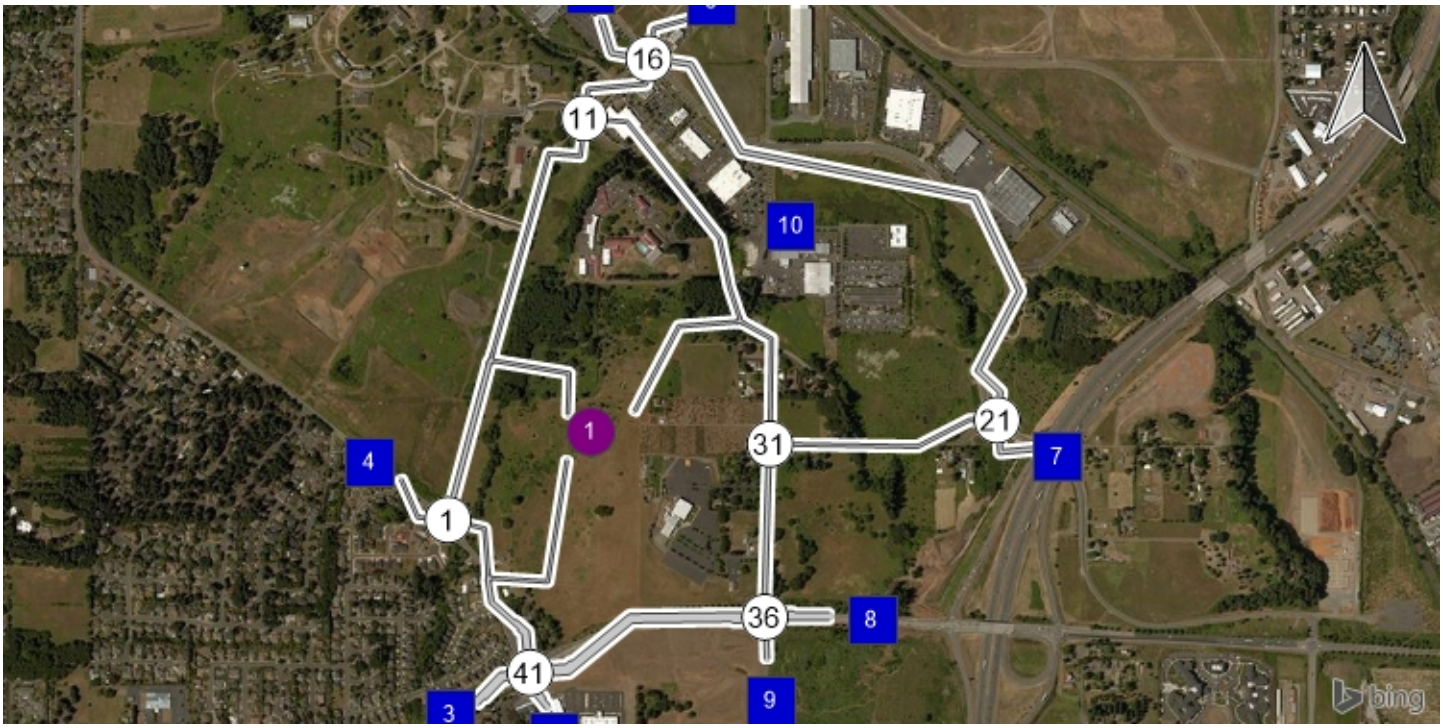
27th at Kuebler Blvd



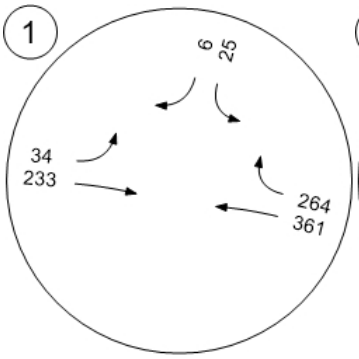
Keubler Blvd at Battle Creek



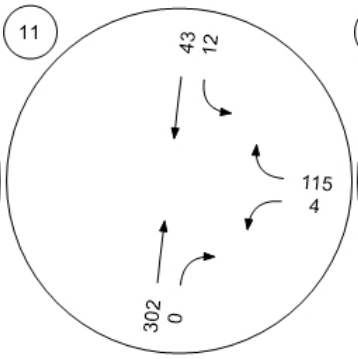
Report Figure 2f: Traffic Volume - Future Total Volume



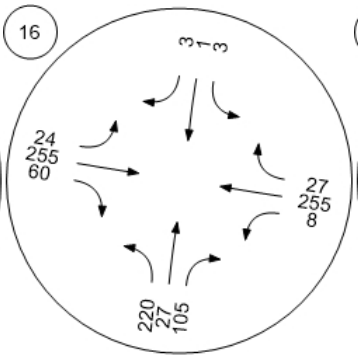
Battle Creek Rd at Reed Rd



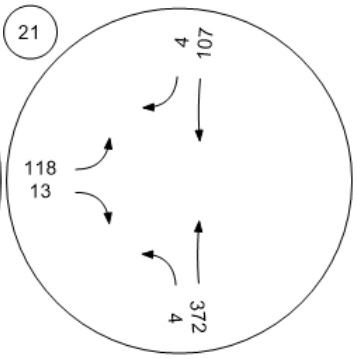
Reed Rd at Strong Rd



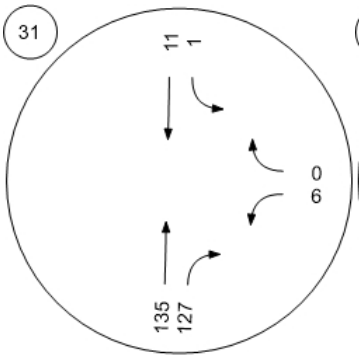
Reed Rd at Fairview Industria



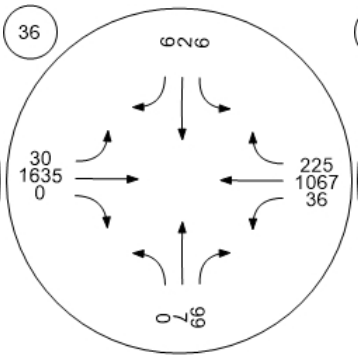
Fairview Industrial Dr at Mari



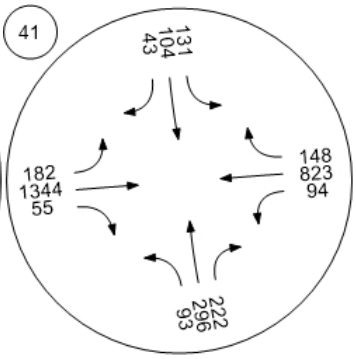
27th Ave at Marietta St



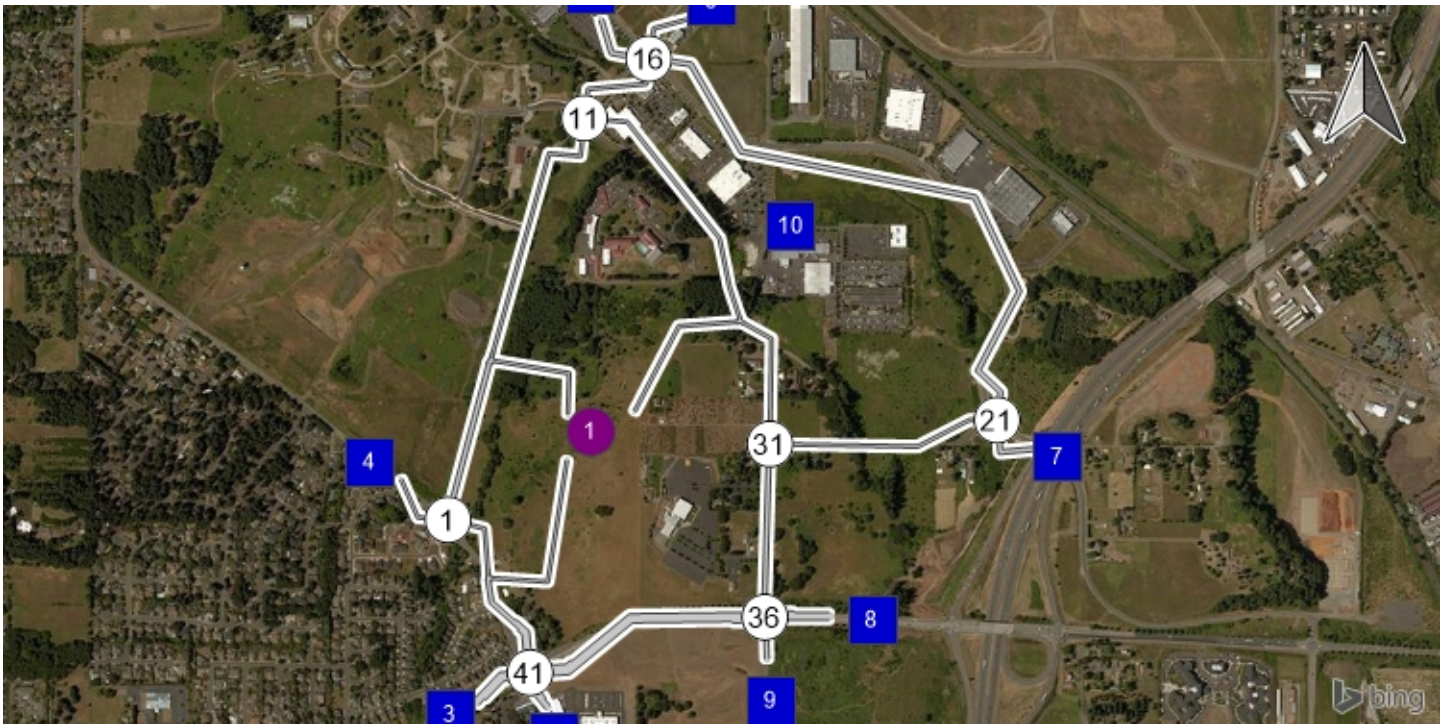
27th at Kuebler Blvd

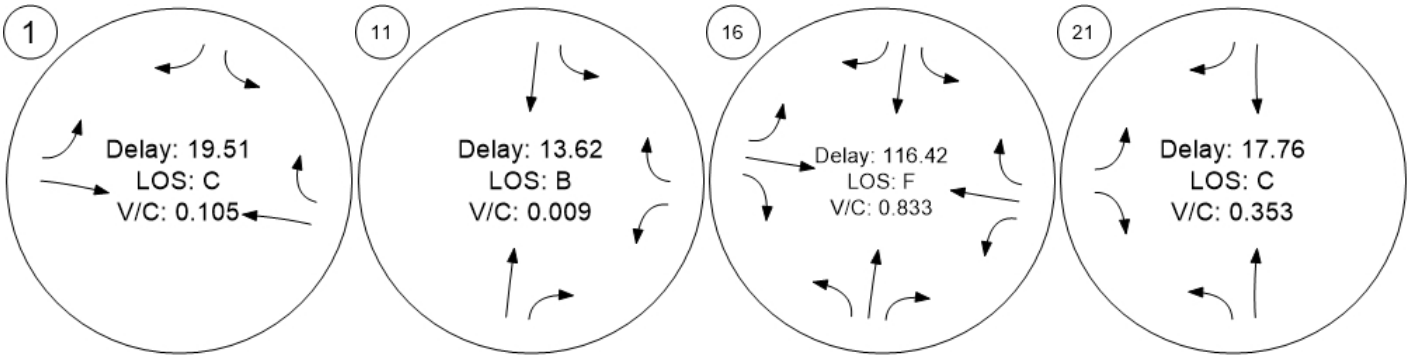


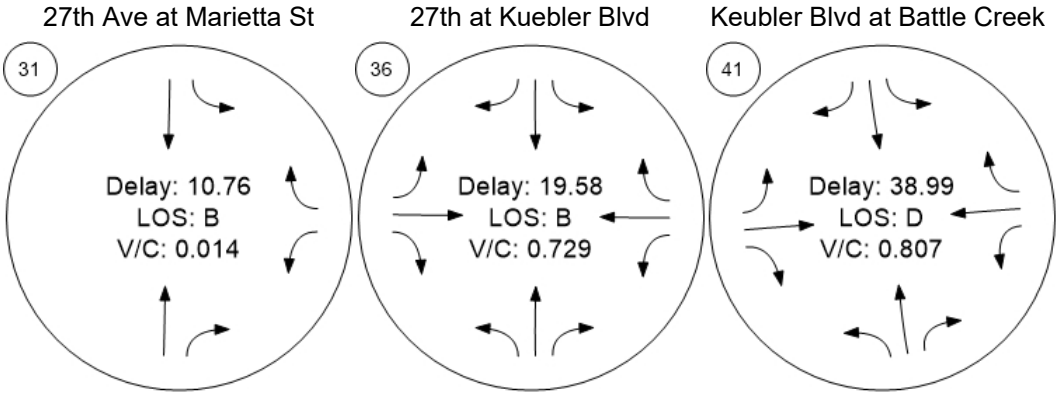
Keubler Blvd at Battle Creek



Report Figure 3: Traffic Conditions







18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Scenario 3 AM Dev 2020 Ph 1
Report File: J:\...\18-392 AM Dev Ph 1.pdf
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.117	20.4	C
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.076	19.9	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.010	14.0	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.909	149.8	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.379	18.7	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.003	10.1	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.015	11.2	B
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.831	41.1	D
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	20.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.117

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	25	6	34	233	361	264
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.20	3.20	7.10	7.10	3.80	3.80
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	1	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	7	35	241	374	272
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	2	10	71	110	80
Total Analysis Volume [veh/h]	31	8	41	284	440	320
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.02	0.05	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	20.41	12.34	9.57	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.39	0.05	1.88	1.88	0.00	0.00
95th-Percentile Queue Length [ft]	9.83	1.22	46.94	46.94	0.00	0.00
d_A, Approach Delay [s/veh]	18.76		1.21		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.00					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Battle Creek Rd at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	19.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.076

Intersection Setup

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Base Volume Input [veh/h]	625	0	0	258	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	1	0	17	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	625	5	1	258	17	2
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	180	1	0	74	5	1
Total Analysis Volume [veh/h]	718	6	1	297	20	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.08	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	9.10	0.00	19.92	14.59
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	1.51	1.51	0.26	0.26
95th-Percentile Queue Length [ft]	0.00	0.00	37.71	37.71	6.56	6.56
d_A, Approach Delay [s/veh]	0.00		0.03		19.43	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.42					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	302	0	12	43	4	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.60	1.60	5.50	5.50	1.70	1.70
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	1	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	314	0	13	44	4	119
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	105	0	4	15	1	40
Total Analysis Volume [veh/h]	419	0	17	59	5	159
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.01	0.25
d_M, Delay for Movement [s/veh]	0.00	0.00	8.26	0.00	14.00	12.67
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.22	0.22	1.04	1.04
95th-Percentile Queue Length [ft]	0.00	0.00	5.44	5.44	25.92	25.92
d_A, Approach Delay [s/veh]	0.00		1.85		12.71	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.38					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	Two-way stop	Delay (sec / veh):	149.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.909

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	220	27	105	3	1	3	24	255	60	8	255	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.30	2.30	2.30	0.00	0.00	0.00	4.70	4.70	4.70	5.20	5.20	5.20
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	0	0	0	1	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	231	28	108	3	1	3	25	263	63	8	263	28
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	8	33	1	0	1	8	79	19	2	79	8
Total Analysis Volume [veh/h]	278	34	130	4	1	4	30	317	76	10	317	34
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.91	0.11	0.19	0.02	0.00	0.01	0.03	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	149.82	149.55	143.27	22.93	17.07	10.39	8.10	0.00	0.00	8.16	0.00	0.00
Movement LOS	F	F	F	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	18.44	18.44	18.44	0.09	0.09	0.09	0.08	0.00	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft]	461.11	461.11	461.11	2.19	2.19	2.19	1.93	0.00	0.00	0.66	0.00	0.00
d_A, Approach Delay [s/veh]	147.87			16.70			0.57			0.23		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	53.31											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	18.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.379

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	4	372	107	4	118	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.80	4.80	13.50	13.50	0.80	0.80
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	383	110	4	122	16
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	126	36	1	40	5
Total Analysis Volume [veh/h]	7	504	145	5	161	21
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.38	0.02
d_M, Delay for Movement [s/veh]	7.56	0.00	0.00	0.00	18.74	14.25
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.01	0.00	0.00	0.00	1.91	1.91
95th-Percentile Queue Length [ft]	0.37	0.00	0.00	0.00	47.81	47.81
d_A, Approach Delay [s/veh]	0.10		0.00		18.22	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	4.00					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 26: East Access at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Strong Rd		East Access		Strong Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Strong Rd		East Access		Strong Rd	
Base Volume Input [veh/h]	18	0	0	0	0	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	1	18	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	1	1	18	6	137
Peak Hour Factor	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	0	0	7	2	54
Total Analysis Volume [veh/h]	30	2	2	28	9	214
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Stop	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance		No	
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.06	9.33	7.29	0.00
Movement LOS	A	A	B	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.11	0.11	0.49	0.49
95th-Percentile Queue Length [ft]	0.00	0.00	2.73	2.73	12.28	12.28
d_A, Approach Delay [s/veh]	0.00		9.38		0.29	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.22					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	11.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	135	127	1	11	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.80	0.80	8.30	8.30	16.70	16.70
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	3	15	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	131	4	26	6	1
Peak Hour Factor	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	51	2	10	2	0
Total Analysis Volume [veh/h]	225	205	6	41	9	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.30	0.00	11.21	10.39
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.13	0.13	0.06	0.06
95th-Percentile Queue Length [ft]	0.00	0.00	3.35	3.35	1.39	1.39
d_A, Approach Delay [s/veh]	0.00		1.06		11.06	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.35					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	41.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.831

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	296	222	131	104	43	182	1344	55	94	823	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	7.20	7.20	7.20	3.20	3.20	3.20	7.40	7.40	7.40
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	0	4	13	4	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	306	229	135	111	57	191	1384	57	97	848	152
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	85	64	38	31	16	53	384	16	27	236	42
Total Analysis Volume [veh/h]	107	340	254	150	123	63	212	1538	63	108	942	169
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	23	0	15	26	0	35	60	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	20	20	11	23	23	17	55	55	8	47	47
g / C, Green / Cycle	0.07	0.18	0.18	0.10	0.21	0.21	0.15	0.50	0.50	0.07	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.07	0.11	0.18	0.10	0.08	0.05	0.13	0.48	0.04	0.07	0.31	0.12
s, saturation flow rate [veh/h]	1598	3194	1426	1536	1613	1371	1587	3174	1417	1533	3066	1369
c, Capacity [veh/h]	116	574	256	154	334	284	242	1593	711	112	1295	578
d1, Uniform Delay [s]	50.68	41.44	45.05	49.37	37.47	36.28	45.61	26.48	14.28	50.87	26.49	20.94
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	23.11	4.46	54.21	28.19	3.12	1.80	9.70	5.14	0.05	32.00	0.80	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.92	0.59	0.99	0.98	0.37	0.22	0.88	0.97	0.09	0.97	0.73	0.29
d, Delay for Lane Group [s/veh]	73.78	45.90	99.26	77.56	40.58	38.08	55.31	31.62	14.34	82.87	27.29	21.21
Lane Group LOS	E	D	F	E	D	D	E	C	B	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	3.67	4.58	10.72	5.30	3.13	1.55	6.28	19.52	0.82	3.95	10.17	2.89
50th-Percentile Queue Length [ft]	91.65	114.46	267.91	132.42	78.34	38.82	157.11	488.01	20.57	98.76	254.31	72.21
95th-Percentile Queue Length [veh]	6.60	8.09	16.08	9.07	5.64	2.80	10.40	26.77	1.48	7.11	15.40	5.20
95th-Percentile Queue Length [ft]	164.98	202.19	402.12	226.78	141.02	69.88	259.89	669.16	37.03	177.77	385.08	129.99

Movement, Approach, & Intersection Results

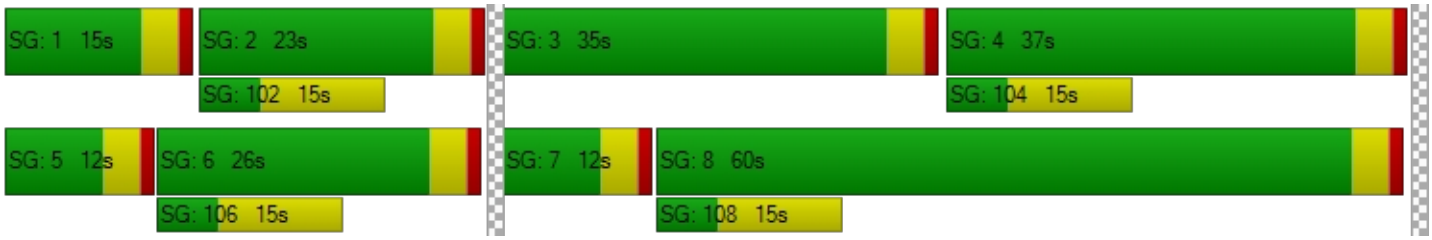
d_M, Delay for Movement [s/veh]	73.78	45.90	99.26	77.56	40.58	38.08	55.31	31.62	14.34	82.87	27.29	21.21
Movement LOS	E	D	F	E	D	D	E	C	B	F	C	C
d_A, Approach Delay [s/veh]	69.49			56.62			33.79			31.37		
Approach LOS	E			E			C			C		
d_I, Intersection Delay [s/veh]	41.10											
Intersection LOS	D											
Intersection V/C	0.831											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.505	2.517	2.939	2.978
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	345	400	1018	600
d_b, Bicycle Delay [s]	37.64	35.20	13.25	26.95
l_b,int, Bicycle LOS Score for Intersection	2.138	2.114	3.055	2.565
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 42: Reed at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Reed Rd		Reed Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Site Access	
Base Volume Input [veh/h]	308	0	0	47	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	1	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	317	0	0	48	1	3
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	0	0	15	0	1
Total Analysis Volume [veh/h]	396	0	0	60	1	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.10	0.00	11.45	10.56
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.60	0.60
d_A, Approach Delay [s/veh]	0.00		0.00		10.73	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.12					
Intersection LOS	B					

18-392 Strong at 27th Subdivision TIA

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Scenario 3 AM Dev 2020 Ph 1
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Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	26	7	35	241	374	272	955

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	625	5	1	258	17	2	908

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	314	0	13	44	4	119	494

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	231	28	108	3	1	3	25	263	63	8	263	28	1024

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	5	383	110	4	122	16	640

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	19	1	1	18	6	137	182

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	144	131	4	26	6	1	312

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	96	306	229	135	111	57	191	1384	57	97	848	152	3663

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	317	0	0	48	1	3	369

18-392 Strong at 27th Subdivision TIA

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Scenario 3 AM Dev 2020 Ph 1
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	25	6	34	233	361	264	923
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	0	1	2	0	4
		Other	0	0	0	0	0	0	0
		Future Total	**26**	**7**	**35**	**241**	**374**	**272**	**955**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	Final Base	625	0	0	258	0	0	883
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	5	1	0	17	2	25
		Other	0	0	0	0	0	0	0
		Future Total	**625**	**5**	**1**	**258**	**17**	**2**	**908**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	302	0	12	43	4	115	476
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	3	0	1	0	0	1	5
		Other	0	0	0	0	0	0	0
		Future Total	**314**	**0**	**13**	**44**	**4**	**119**	**494**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	220	27	105	3	1	3	24	255	60	8	255	27	988
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	0	0	0	0	0	0	0	1	0	0	0	5
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**231**	**28**	**108**	**3**	**1**	**3**	**25**	**263**	**63**	**8**	**263**	**28**	**1024**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	4	372	107	4	118	13	618
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	3	4
		Other	0	0	0	0	0	0	0
		Future Total	**5**	**383**	**110**	**4**	**122**	**16**	**640**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	Final Base	18	0	0	0	0	133	151
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	1	18	6	0	26
		Other	0	0	0	0	0	0	0
		Future Total	**19**	**1**	**1**	**18**	**6**	**137**	**182**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	135	127	1	11	6	0	280
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	5	0	3	15	0	1	24
		Other	0	0	0	0	0	0	0
		Future Total	**144**	**131**	**4**	**26**	**6**	**1**	**312**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	296	222	131	104	43	182	1344	55	94	823	148	3535
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	1	0	0	4	13	4	0	0	0	0	0	22
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**96**	**306**	**229**	**135**	**111**	**57**	**191**	**1384**	**57**	**97**	**848**	**152**	**3663**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	Final Base	308	0	0	47	0	0	355
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	1	3	4
		Other	0	0	0	0	0	0	0
		Future Total	**317**	**0**	**0**	**48**	**1**	**3**	**369**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	646	276	33
2	620	265	32
3	607	259	31
4	517	221	26
5	491	210	25
6	439	188	22
7	407	174	21
8	388	166	20
9	310	132	16
10	291	124	15
11	291	124	15
12	278	119	14
13	252	108	13
14	233	99	12
15	233	99	12
16	226	97	12
17	129	55	7
18	71	30	4
19	65	28	3
20	26	11	1
21	19	8	1
22	19	8	1
23	13	6	1
24	13	6	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	922	2	33	No	No	No	No	No	No	No	No	No	No
2	2	885	2	32	No	No	No	No	No	No	No	No	No	No
3	2	866	2	31	No	No	No	No	No	No	No	No	No	No
4	2	738	2	26	No	No	No	No	No	No	No	No	No	No
5	2	701	2	25	No	No	No	No	No	No	No	No	No	No
6	2	627	2	22	No	No	No	No	No	No	No	No	No	No
7	2	581	2	21	No	No	No	No	No	No	No	No	No	No
8	2	554	2	20	No	No	No	No	No	No	No	No	No	No
9	2	442	2	16	No	No	No	No	No	No	No	No	No	No
10	2	415	2	15	No	No	No	No	No	No	No	No	No	No
11	2	415	2	15	No	No	No	No	No	No	No	No	No	No
12	2	397	2	14	No	No	No	No	No	No	No	No	No	No
13	2	360	2	13	No	No	No	No	No	No	No	No	No	No
14	2	332	2	12	No	No	No	No	No	No	No	No	No	No
15	2	332	2	12	No	No	No	No	No	No	No	No	No	No
16	2	323	2	12	No	No	No	No	No	No	No	No	No	No
17	2	184	2	7	No	No	No	No	No	No	No	No	No	No
18	2	101	2	4	No	No	No	No	No	No	No	No	No	No
19	2	93	2	3	No	No	No	No	No	No	No	No	No	No
20	2	37	2	1	No	No	No	No	No	No	No	No	No	No
21	2	27	2	1	No	No	No	No	No	No	No	No	No	No
22	2	27	2	1	No	No	No	No	No	No	No	No	No	No
23	2	19	2	1	No	No	No	No	No	No	No	No	No	No
24	2	19	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	18.8
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:10
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	33
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	955
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 6: Battle Creek Rd at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	630	259	19
2	605	249	18
3	592	243	18
4	504	207	15
5	479	197	14
6	428	176	13
7	397	163	12
8	378	155	11
9	302	124	9
10	284	117	9
11	284	117	9
12	271	111	8
13	246	101	7
14	227	93	7
15	227	93	7
16	221	91	7
17	126	52	4
18	69	28	2
19	63	26	2
20	25	10	1
21	19	8	1
22	19	8	1
23	13	5	0
24	13	5	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	889	1	19	No	No	No	No	No	No	No	No	No	No
2	2	854	1	18	No	No	No	No	No	No	No	No	No	No
3	2	835	1	18	No	No	No	No	No	No	No	No	No	No
4	2	711	1	15	No	No	No	No	No	No	No	No	No	No
5	2	676	1	14	No	No	No	No	No	No	No	No	No	No
6	2	604	1	13	No	No	No	No	No	No	No	No	No	No
7	2	560	1	12	No	No	No	No	No	No	No	No	No	No
8	2	533	1	11	No	No	No	No	No	No	No	No	No	No
9	2	426	1	9	No	No	No	No	No	No	No	No	No	No
10	2	401	1	9	No	No	No	No	No	No	No	No	No	No
11	2	401	1	9	No	No	No	No	No	No	No	No	No	No
12	2	382	1	8	No	No	No	No	No	No	No	No	No	No
13	2	347	1	7	No	No	No	No	No	No	No	No	No	No
14	2	320	1	7	No	No	No	No	No	No	No	No	No	No
15	2	320	1	7	No	No	No	No	No	No	No	No	No	No
16	2	312	1	7	No	No	No	No	No	No	No	No	No	No
17	2	178	1	4	No	No	No	No	No	No	No	No	No	No
18	2	97	1	2	No	No	No	No	No	No	No	No	No	No
19	2	89	1	2	No	No	No	No	No	No	No	No	No	No
20	2	35	1	1	No	No	No	No	No	No	No	No	No	No
21	2	27	1	1	No	No	No	No	No	No	No	No	No	No
22	2	27	1	1	No	No	No	No	No	No	No	No	No	No
23	2	18	1	0	No	No	No	No	No	No	No	No	No	No
24	2	18	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	19.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:06
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	19
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	908
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	57	314	123
2	55	301	118
3	54	295	116
4	46	251	98
5	43	239	93
6	39	214	84
7	36	198	77
8	34	188	74
9	27	151	59
10	26	141	55
11	26	141	55
12	25	135	53
13	22	122	48
14	21	113	44
15	21	113	44
16	20	110	43
17	11	63	25
18	6	35	14
19	6	31	12
20	2	13	5
21	2	9	4
22	2	9	4
23	1	6	2
24	1	6	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	371	1	123	No	No	No	Yes	No	No	No	No	No	No
2	2	356	1	118	No	No	No	Yes	No	No	No	No	No	No
3	2	349	1	116	No	No	No	Yes	No	No	No	No	No	No
4	2	297	1	98	No	No	No	No	No	No	No	No	No	No
5	2	282	1	93	No	No	No	No	No	No	No	No	No	No
6	2	253	1	84	No	No	No	No	No	No	No	No	No	No
7	2	234	1	77	No	No	No	No	No	No	No	No	No	No
8	2	222	1	74	No	No	No	No	No	No	No	No	No	No
9	2	178	1	59	No	No	No	No	No	No	No	No	No	No
10	2	167	1	55	No	No	No	No	No	No	No	No	No	No
11	2	167	1	55	No	No	No	No	No	No	No	No	No	No
12	2	160	1	53	No	No	No	No	No	No	No	No	No	No
13	2	144	1	48	No	No	No	No	No	No	No	No	No	No
14	2	134	1	44	No	No	No	No	No	No	No	No	No	No
15	2	134	1	44	No	No	No	No	No	No	No	No	No	No
16	2	130	1	43	No	No	No	No	No	No	No	No	No	No
17	2	74	1	25	No	No	No	No	No	No	No	No	No	No
18	2	41	1	14	No	No	No	No	No	No	No	No	No	No
19	2	37	1	12	No	No	No	No	No	No	No	No	No	No
20	2	15	1	5	No	No	No	No	No	No	No	No	No	No
21	2	11	1	4	No	No	No	No	No	No	No	No	No	No
22	2	11	1	4	No	No	No	No	No	No	No	No	No	No
23	2	7	1	2	No	No	No	No	No	No	No	No	No	No
24	2	7	1	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	12.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:26
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	123
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	494
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	299	351	7	367
2	287	337	7	352
3	281	330	7	345
4	239	281	6	294
5	227	267	5	279
6	203	239	5	250
7	188	221	4	231
8	179	211	4	220
9	144	168	3	176
10	135	158	3	165
11	135	158	3	165
12	129	151	3	158
13	117	137	3	143
14	108	126	3	132
15	108	126	3	132
16	105	123	2	128
17	60	70	1	73
18	33	39	1	40
19	30	35	1	37
20	12	14	0	15
21	9	11	0	11
22	9	11	0	11
23	6	7	0	7
24	6	7	0	7

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	650	2	374	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
2	4	624	2	359	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	No
3	4	611	2	352	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	No
4	4	520	2	300	No	Yes	Yes	Yes	No	No	No	Yes	No	No
5	4	494	2	284	No	Yes	Yes	Yes	No	No	No	No	No	No
6	4	442	2	255	No	No	Yes	Yes	No	No	No	No	No	No
7	4	409	2	235	No	No	No	Yes	No	No	No	No	No	No
8	4	390	2	224	No	No	No	Yes	No	No	No	No	No	No
9	4	312	2	179	No	No	No	No	No	No	No	No	No	No
10	4	293	2	168	No	No	No	No	No	No	No	No	No	No
11	4	293	2	168	No	No	No	No	No	No	No	No	No	No
12	4	280	2	161	No	No	No	No	No	No	No	No	No	No
13	4	254	2	146	No	No	No	No	No	No	No	No	No	No
14	4	234	2	135	No	No	No	No	No	No	No	No	No	No
15	4	234	2	135	No	No	No	No	No	No	No	No	No	No
16	4	228	2	130	No	No	No	No	No	No	No	No	No	No
17	4	130	2	74	No	No	No	No	No	No	No	No	No	No
18	4	72	2	41	No	No	No	No	No	No	No	No	No	No
19	4	65	2	38	No	No	No	No	No	No	No	No	No	No
20	4	26	2	15	No	No	No	No	No	No	No	No	No	No
21	4	20	2	11	No	No	No	No	No	No	No	No	No	No
22	4	20	2	11	No	No	No	No	No	No	No	No	No	No
23	4	13	2	7	No	No	No	No	No	No	No	No	No	No
24	4	13	2	7	No	No	No	No	No	No	No	No	No	No
Hours Met					3	5	6	8	0	0	1	4	3	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	16.7	147.9
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01	15:04
Delay Condition Met	No	Yes
Volume on Minor Street Approach During Same Hour	7	367
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	1024	1024
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	Yes
Warrant Met for Intersection	**Yes**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	388	114	138
2	372	109	132
3	365	107	130
4	310	91	110
5	295	87	105
6	264	78	94
7	244	72	87
8	233	68	83
9	186	55	66
10	175	51	62
11	175	51	62
12	167	49	59
13	151	44	54
14	140	41	50
15	140	41	50
16	136	40	48
17	78	23	28
18	43	13	15
19	39	11	14
20	16	5	6
21	12	3	4
22	12	3	4
23	8	2	3
24	8	2	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	502	1	138	No	Yes	Yes	Yes	No	No	No	No	No	No
2	3	481	1	132	No	Yes	Yes	Yes	No	No	No	No	No	No
3	3	472	1	130	No	No	Yes	Yes	No	No	No	No	No	No
4	3	401	1	110	No	No	No	Yes	No	No	No	No	No	No
5	3	382	1	105	No	No	No	Yes	No	No	No	No	No	No
6	3	342	1	94	No	No	No	Yes	No	No	No	No	No	No
7	3	316	1	87	No	No	No	No	No	No	No	No	No	No
8	3	301	1	83	No	No	No	No	No	No	No	No	No	No
9	3	241	1	66	No	No	No	No	No	No	No	No	No	No
10	3	226	1	62	No	No	No	No	No	No	No	No	No	No
11	3	226	1	62	No	No	No	No	No	No	No	No	No	No
12	3	216	1	59	No	No	No	No	No	No	No	No	No	No
13	3	195	1	54	No	No	No	No	No	No	No	No	No	No
14	3	181	1	50	No	No	No	No	No	No	No	No	No	No
15	3	181	1	50	No	No	No	No	No	No	No	No	No	No
16	3	176	1	48	No	No	No	No	No	No	No	No	No	No
17	3	101	1	28	No	No	No	No	No	No	No	No	No	No
18	3	56	1	15	No	No	No	No	No	No	No	No	No	No
19	3	50	1	14	No	No	No	No	No	No	No	No	No	No
20	3	21	1	6	No	No	No	No	No	No	No	No	No	No
21	3	15	1	4	No	No	No	No	No	No	No	No	No	No
22	3	15	1	4	No	No	No	No	No	No	No	No	No	No
23	3	10	1	3	No	No	No	No	No	No	No	No	No	No
24	3	10	1	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	2	3	6	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	18.2
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:41
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	138
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	640
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 26: East Access at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	N	W
1	143	20	19
2	137	19	18
3	134	19	18
4	114	16	15
5	109	15	14
6	97	14	13
7	90	13	12
8	86	12	11
9	69	10	9
10	64	9	9
11	64	9	9
12	61	9	8
13	56	8	7
14	51	7	7
15	51	7	7
16	50	7	7
17	29	4	4
18	16	2	2
19	14	2	2
20	6	1	1
21	4	1	1
22	4	1	1
23	3	0	0
24	3	0	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	163	1	19	No	No	No	No	No	No	No	No	No	No
2	2	156	1	18	No	No	No	No	No	No	No	No	No	No
3	2	153	1	18	No	No	No	No	No	No	No	No	No	No
4	2	130	1	15	No	No	No	No	No	No	No	No	No	No
5	2	124	1	14	No	No	No	No	No	No	No	No	No	No
6	2	111	1	13	No	No	No	No	No	No	No	No	No	No
7	2	103	1	12	No	No	No	No	No	No	No	No	No	No
8	2	98	1	11	No	No	No	No	No	No	No	No	No	No
9	2	79	1	9	No	No	No	No	No	No	No	No	No	No
10	2	73	1	9	No	No	No	No	No	No	No	No	No	No
11	2	73	1	9	No	No	No	No	No	No	No	No	No	No
12	2	70	1	8	No	No	No	No	No	No	No	No	No	No
13	2	64	1	7	No	No	No	No	No	No	No	No	No	No
14	2	58	1	7	No	No	No	No	No	No	No	No	No	No
15	2	58	1	7	No	No	No	No	No	No	No	No	No	No
16	2	57	1	7	No	No	No	No	No	No	No	No	No	No
17	2	33	1	4	No	No	No	No	No	No	No	No	No	No
18	2	18	1	2	No	No	No	No	No	No	No	No	No	No
19	2	16	1	2	No	No	No	No	No	No	No	No	No	No
20	2	7	1	1	No	No	No	No	No	No	No	No	No	No
21	2	5	1	1	No	No	No	No	No	No	No	No	No	No
22	2	5	1	1	No	No	No	No	No	No	No	No	No	No
23	2	3	1	0	No	No	No	No	No	No	No	No	No	No
24	2	3	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	19
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	182
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	30	275	7
2	29	264	7
3	28	259	7
4	24	220	6
5	23	209	5
6	20	187	5
7	19	173	4
8	18	165	4
9	14	132	3
10	14	124	3
11	14	124	3
12	13	118	3
13	12	107	3
14	11	99	3
15	11	99	3
16	11	96	2
17	6	55	1
18	3	30	1
19	3	28	1
20	1	11	0
21	1	8	0
22	1	8	0
23	1	6	0
24	1	6	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	305	1	7	No	No	No	No	No	No	No	No	No	No
2	2	293	1	7	No	No	No	No	No	No	No	No	No	No
3	2	287	1	7	No	No	No	No	No	No	No	No	No	No
4	2	244	1	6	No	No	No	No	No	No	No	No	No	No
5	2	232	1	5	No	No	No	No	No	No	No	No	No	No
6	2	207	1	5	No	No	No	No	No	No	No	No	No	No
7	2	192	1	4	No	No	No	No	No	No	No	No	No	No
8	2	183	1	4	No	No	No	No	No	No	No	No	No	No
9	2	146	1	3	No	No	No	No	No	No	No	No	No	No
10	2	138	1	3	No	No	No	No	No	No	No	No	No	No
11	2	138	1	3	No	No	No	No	No	No	No	No	No	No
12	2	131	1	3	No	No	No	No	No	No	No	No	No	No
13	2	119	1	3	No	No	No	No	No	No	No	No	No	No
14	2	110	1	3	No	No	No	No	No	No	No	No	No	No
15	2	110	1	3	No	No	No	No	No	No	No	No	No	No
16	2	107	1	2	No	No	No	No	No	No	No	No	No	No
17	2	61	1	1	No	No	No	No	No	No	No	No	No	No
18	2	33	1	1	No	No	No	No	No	No	No	No	No	No
19	2	31	1	1	No	No	No	No	No	No	No	No	No	No
20	2	12	1	0	No	No	No	No	No	No	No	No	No	No
21	2	9	1	0	No	No	No	No	No	No	No	No	No	No
22	2	9	1	0	No	No	No	No	No	No	No	No	No	No
23	2	7	1	0	No	No	No	No	No	No	No	No	No	No
24	2	7	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.1
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	7
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	312
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 42: Reed at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	48	317	4
2	46	304	4
3	45	298	4
4	38	254	3
5	36	241	3
6	33	216	3
7	30	200	3
8	29	190	2
9	23	152	2
10	22	143	2
11	22	143	2
12	21	136	2
13	19	124	2
14	17	114	1
15	17	114	1
16	17	111	1
17	10	63	1
18	5	35	0
19	5	32	0
20	2	13	0
21	1	10	0
22	1	10	0
23	1	6	0
24	1	6	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	365	1	4	No	No	No	No	No	No	No	No	No	No
2	2	350	1	4	No	No	No	No	No	No	No	No	No	No
3	2	343	1	4	No	No	No	No	No	No	No	No	No	No
4	2	292	1	3	No	No	No	No	No	No	No	No	No	No
5	2	277	1	3	No	No	No	No	No	No	No	No	No	No
6	2	249	1	3	No	No	No	No	No	No	No	No	No	No
7	2	230	1	3	No	No	No	No	No	No	No	No	No	No
8	2	219	1	2	No	No	No	No	No	No	No	No	No	No
9	2	175	1	2	No	No	No	No	No	No	No	No	No	No
10	2	165	1	2	No	No	No	No	No	No	No	No	No	No
11	2	165	1	2	No	No	No	No	No	No	No	No	No	No
12	2	157	1	2	No	No	No	No	No	No	No	No	No	No
13	2	143	1	2	No	No	No	No	No	No	No	No	No	No
14	2	131	1	1	No	No	No	No	No	No	No	No	No	No
15	2	131	1	1	No	No	No	No	No	No	No	No	No	No
16	2	128	1	1	No	No	No	No	No	No	No	No	No	No
17	2	73	1	1	No	No	No	No	No	No	No	No	No	No
18	2	40	1	0	No	No	No	No	No	No	No	No	No	No
19	2	37	1	0	No	No	No	No	No	No	No	No	No	No
20	2	15	1	0	No	No	No	No	No	No	No	No	No	No
21	2	11	1	0	No	No	No	No	No	No	No	No	No	No
22	2	11	1	0	No	No	No	No	No	No	No	No	No	No
23	2	7	1	0	No	No	No	No	No	No	No	No	No	No
24	2	7	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	4
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	369
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 1.pdf

Scenario 3 AM Dev 2020 Ph 1
6/19/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: 18-392 Reed Rd Sub	Homes	ITE 210	Home	0.740	75.000	25.00	75.00	14	42	56	100.00
					Added Trips Total			**14**	**42**	**56**	**100.00**

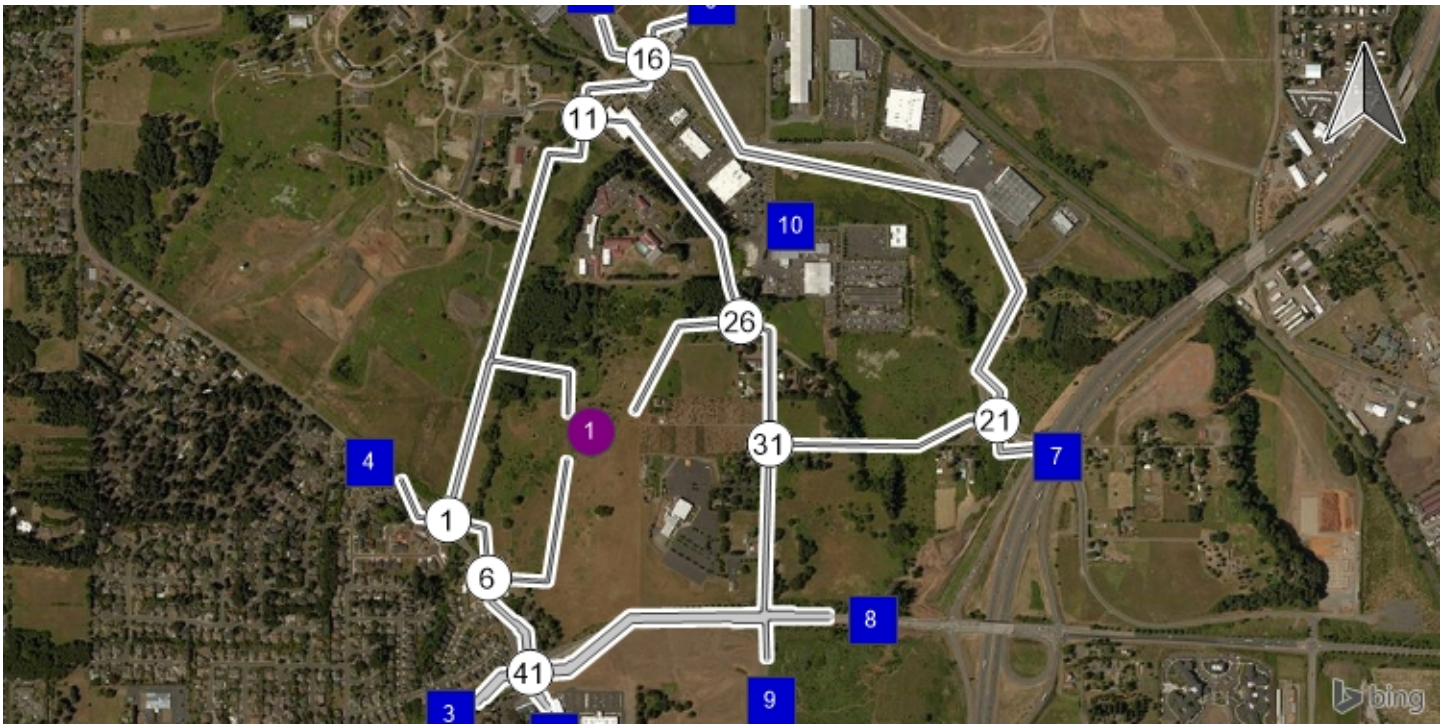
18-392 Strong at 27th Subdivision TIA

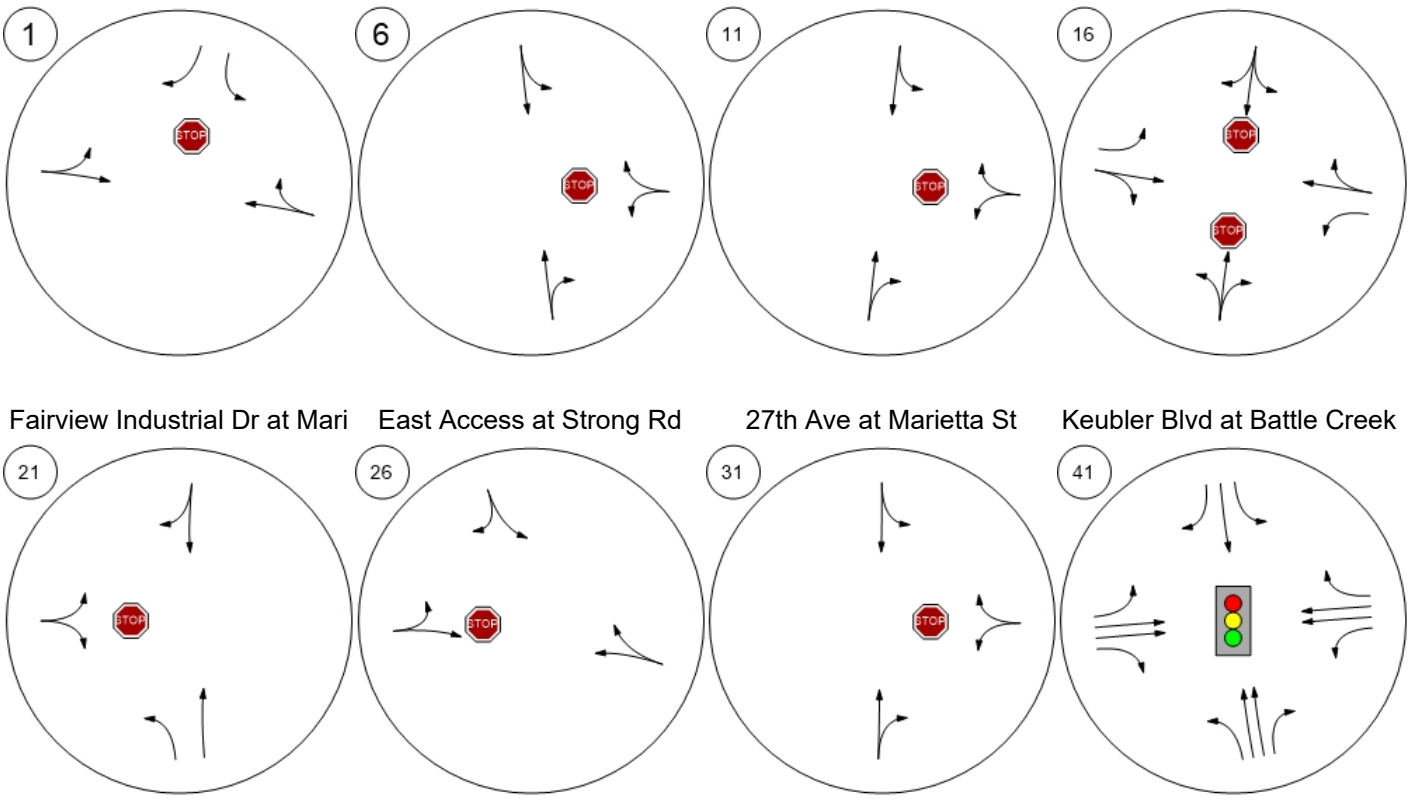
Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Scenario 3 AM Dev 2020 Ph 1
Report File: J:\...\18-392 AM Dev Ph 1.pdf
6/19/2018

Trip Distribution summary

Zone / Gate	Zone 1: 18-392 Reed Rd Sub			
	To 18-392 Reed Rd Sub:		From 18-392 Reed Rd Sub:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	1	10.00	4
3: Gate	30.00	4	30.00	13
4: Gate	7.00	1	7.00	3
5: Gate	10.00	1	10.00	4
6: Gate	0.00	0	0.00	0
7: Gate	6.00	1	6.00	3
8: Gate	35.00	5	35.00	14
9: Gate	2.00	0	2.00	1
10: Gate	0.00	0	0.00	0
Total	**100.00**	**13**	**100.00**	**42**

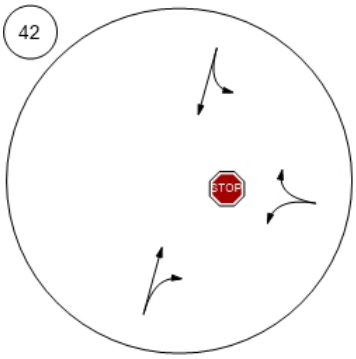
Report Figure 1: Lane Configuration and Traffic Control



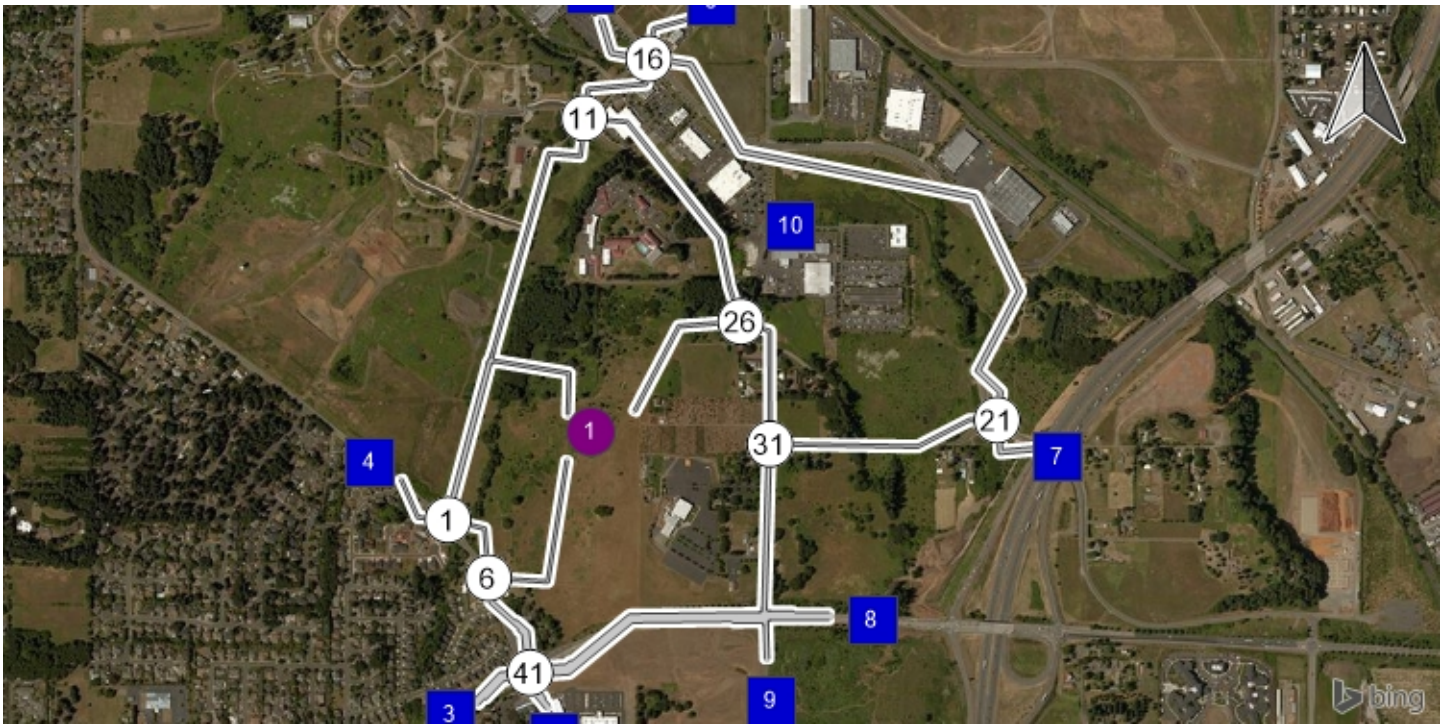


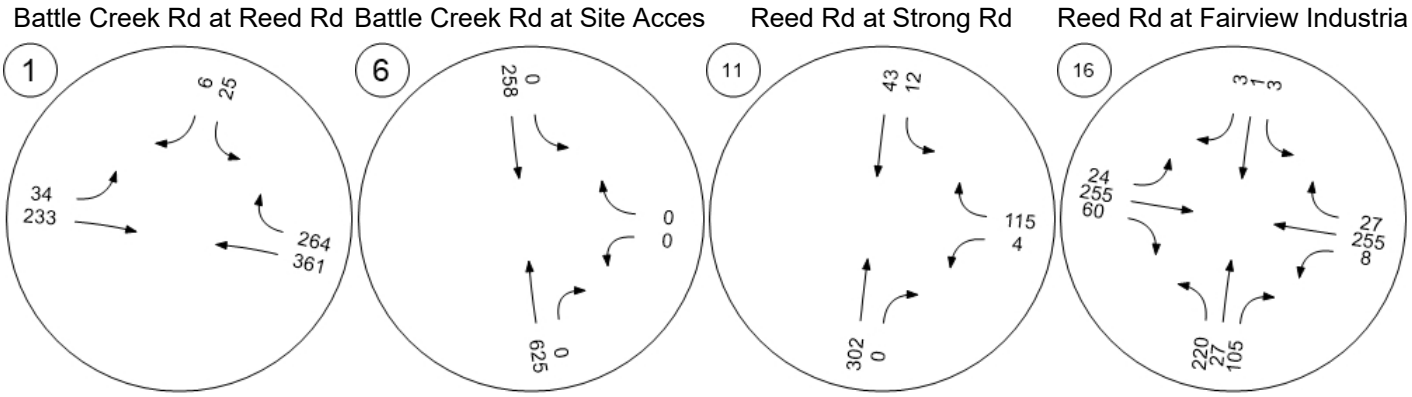
Report Figure 1: Lane Configuration and Traffic Control

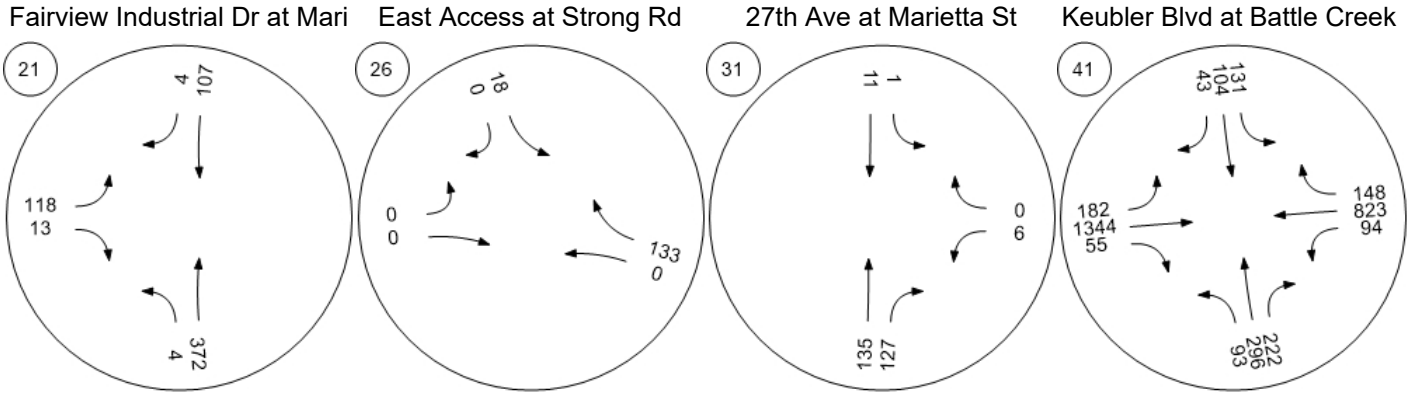
Reed at Site Access



Report Figure 2a: Traffic Volume - Base Volume

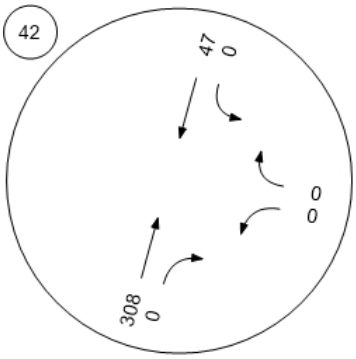




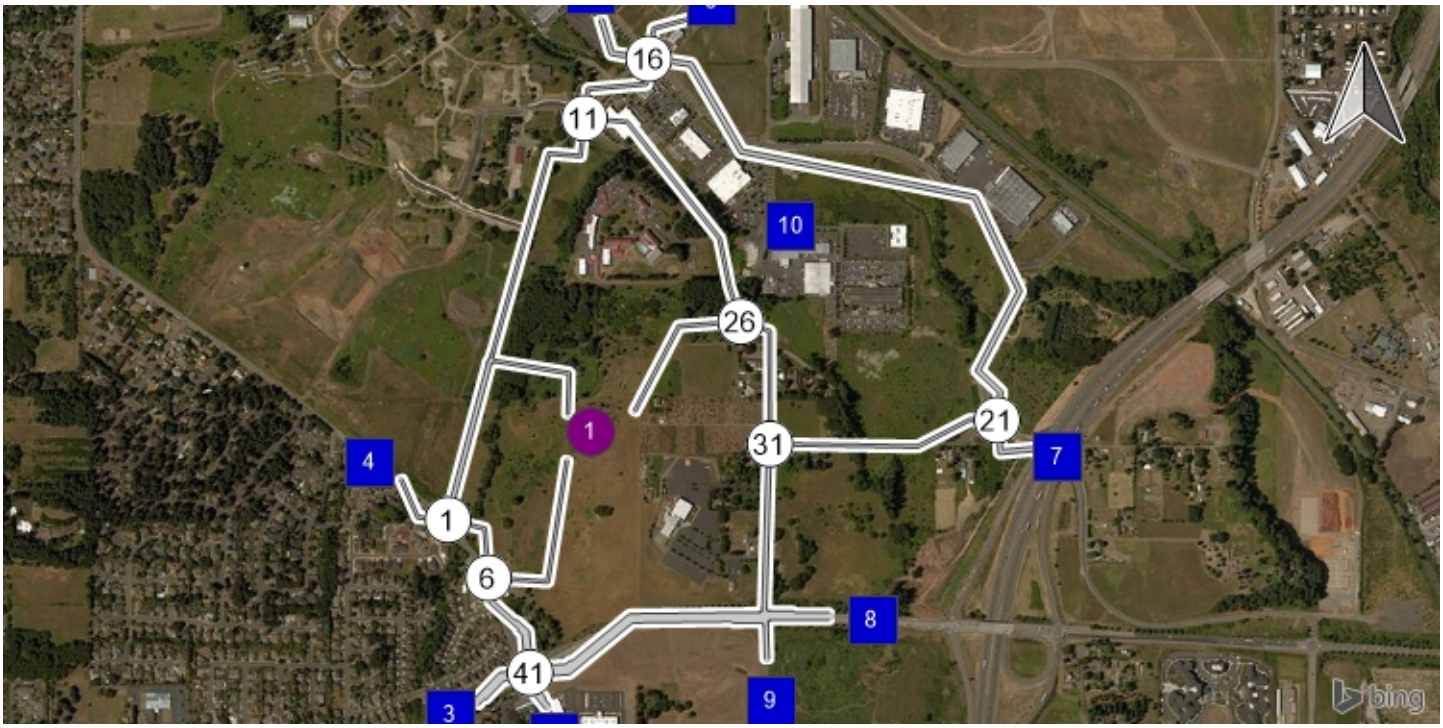


Report Figure 2a: Traffic Volume - Base Volume

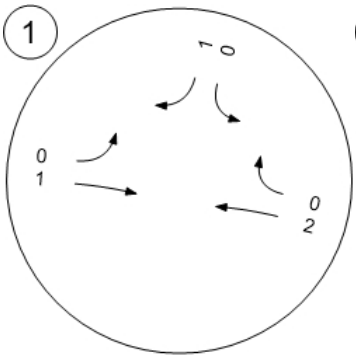
Reed at Site Access



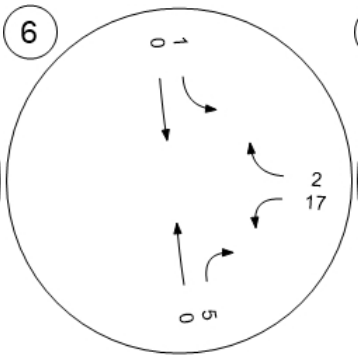
Report Figure 2d: Traffic Volume - Net New Site Trips



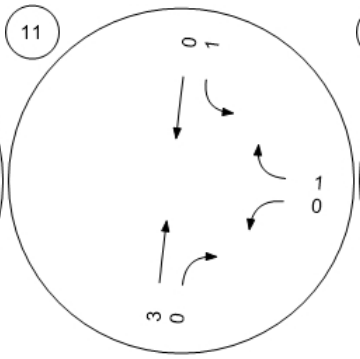
Battle Creek Rd at Reed Rd



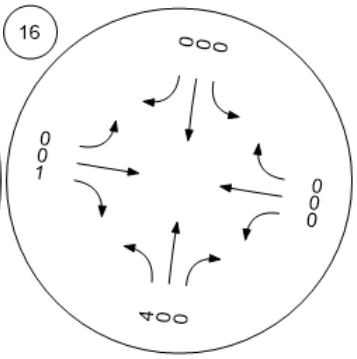
Battle Creek Rd at Site Acces



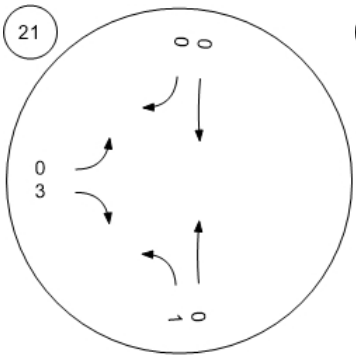
Reed Rd at Strong Rd



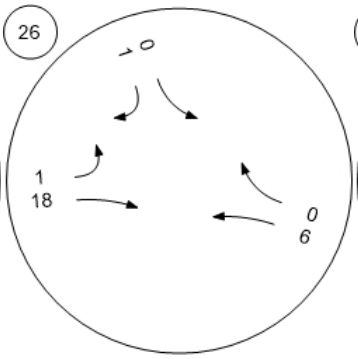
Reed Rd at Fairview Industria



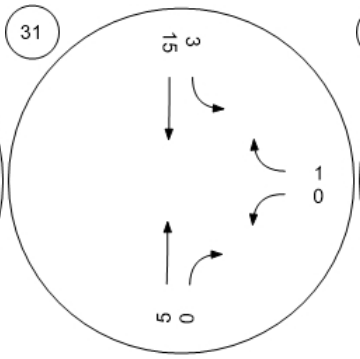
Fairview Industrial Dr at Mari



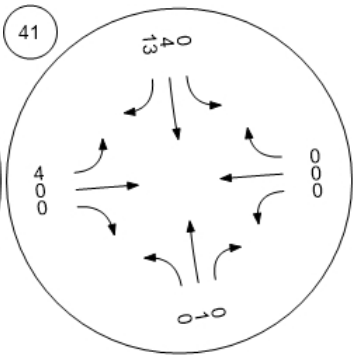
East Access at Strong Rd



27th Ave at Marietta St

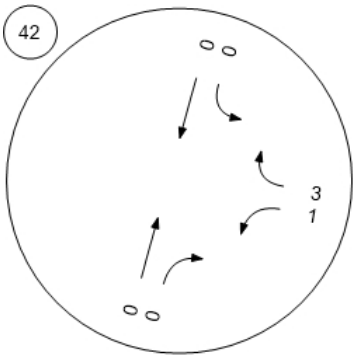


Keubler Blvd at Battle Creek

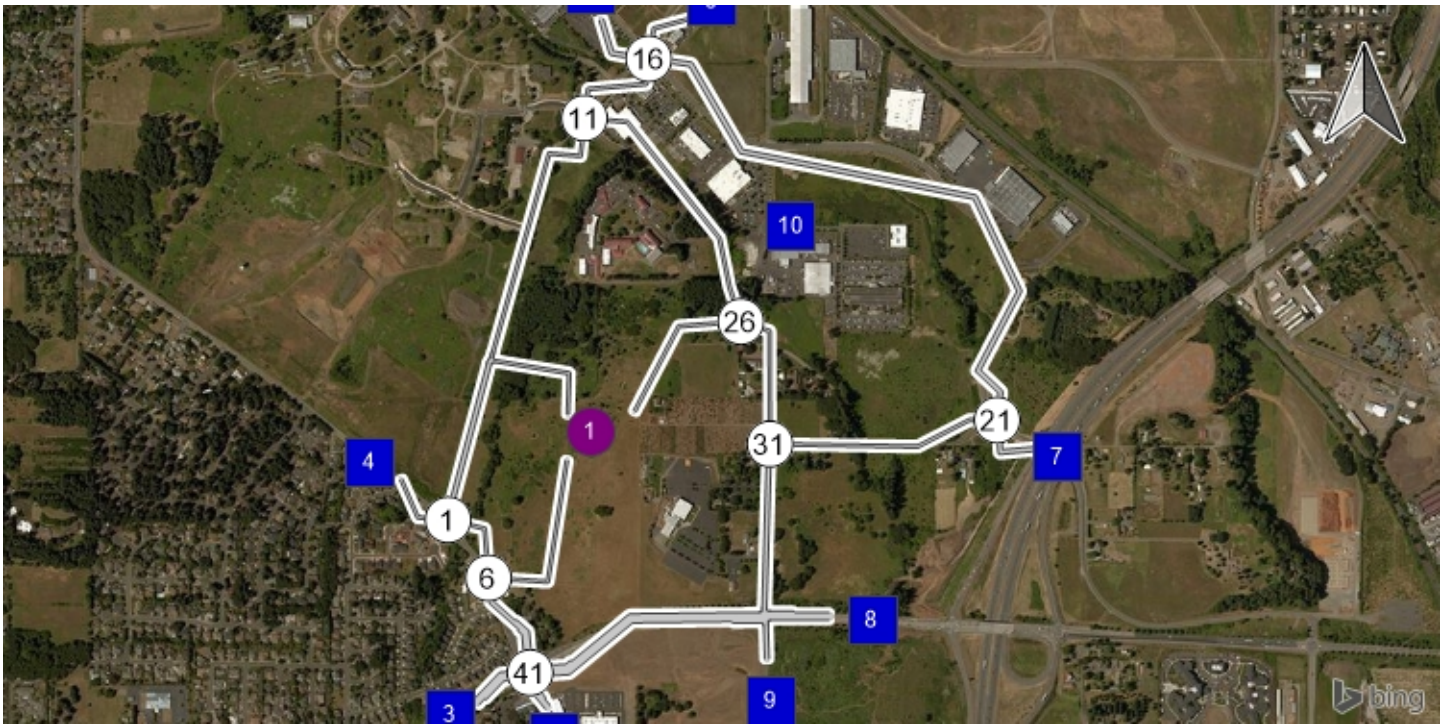


Report Figure 2d: Traffic Volume - Net New Site Trips

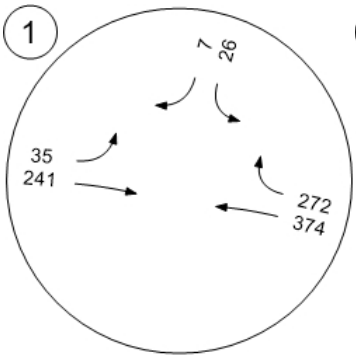
Reed at Site Access



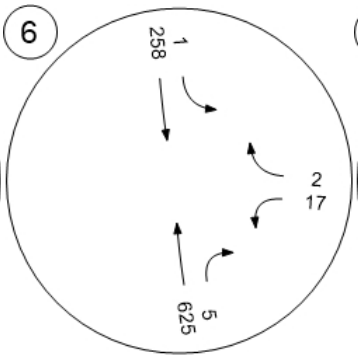
Report Figure 2f: Traffic Volume - Future Total Volume



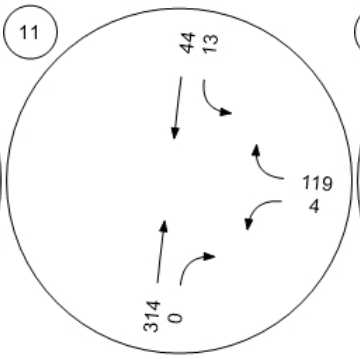
Battle Creek Rd at Reed Rd



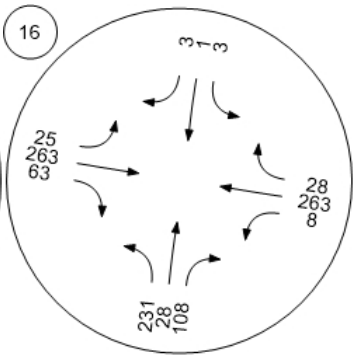
Battle Creek Rd at Site Acces



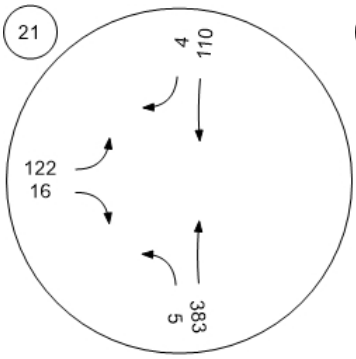
Reed Rd at Strong Rd



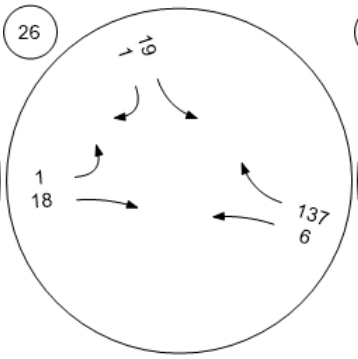
Reed Rd at Fairview Industria



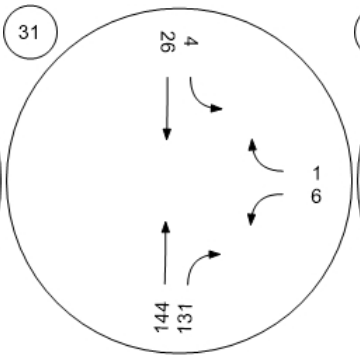
Fairview Industrial Dr at Mari



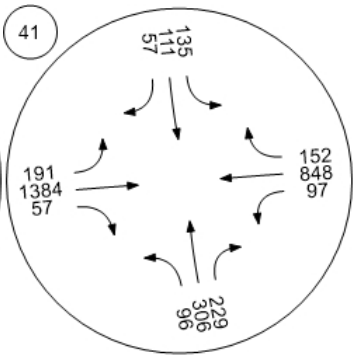
East Access at Strong Rd



27th Ave at Marietta St

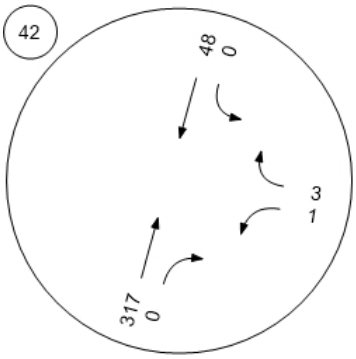


Keubler Blvd at Battle Creek

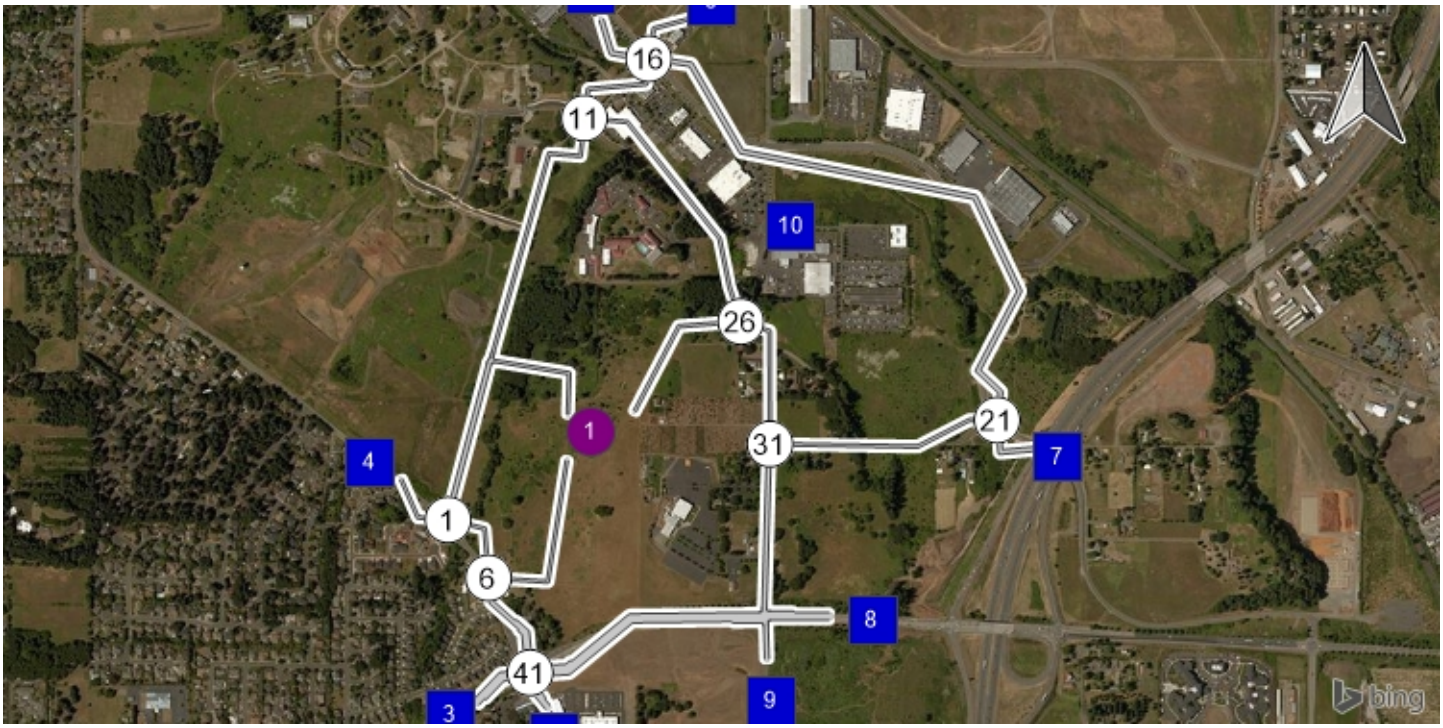


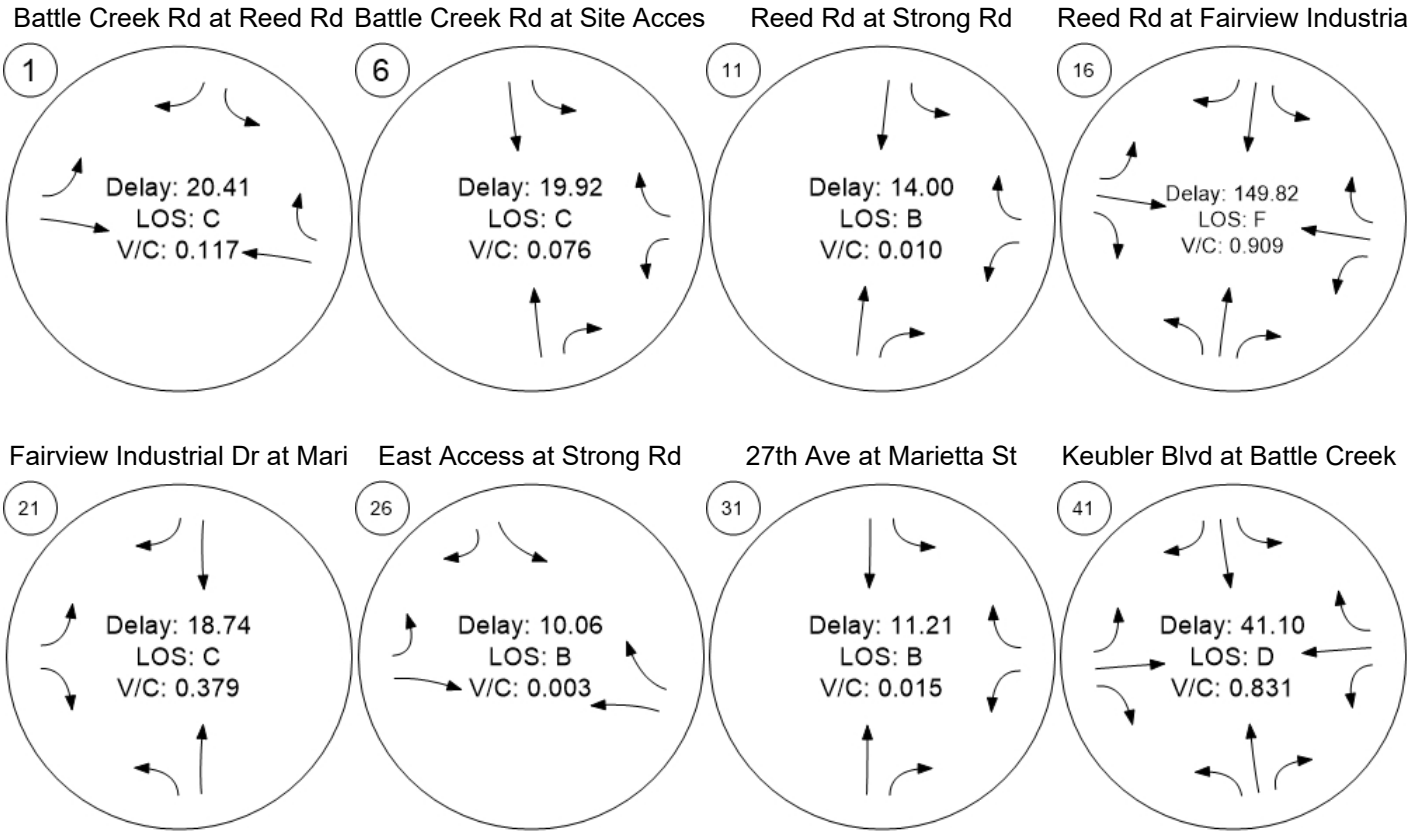
Report Figure 2f: Traffic Volume - Future Total Volume

Reed at Site Access



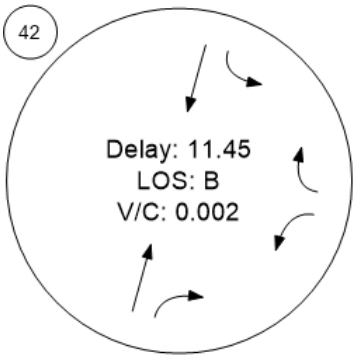
Report Figure 3: Traffic Conditions





Report Figure 3: Traffic Conditions

Reed at Site Access



18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 AM Dev Ph 2.pdf

Scenario 5 AM Dev 2023 Ph 2
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.131	22.0	C
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.170	24.5	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.010	14.7	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	1.025	205.7	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.413	20.2	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.004	10.4	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.017	11.7	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.813	24.1	C
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.871	46.3	D
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.7	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	22.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.131

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	25	6	34	233	361	264
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.20	3.20	7.10	7.10	3.80	3.80
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	2	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	7	37	254	395	285
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	2	11	75	116	84
Total Analysis Volume [veh/h]	32	8	44	299	465	335
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.02	0.05	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	21.98	12.66	9.76	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.45	0.05	2.17	2.17	0.00	0.00
95th-Percentile Queue Length [ft]	11.14	1.28	54.13	54.13	0.00	0.00
d_A, Approach Delay [s/veh]	20.12		1.25		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.04					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Battle Creek Rd at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	24.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.170

Intersection Setup

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Base Volume Input [veh/h]	625	0	0	278	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	11	2	0	33	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	675	11	2	300	33	5
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	194	3	1	86	9	1
Total Analysis Volume [veh/h]	776	13	2	345	38	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.17	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	9.34	0.00	24.45	17.53
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh]	0.00	0.00	2.08	2.08	0.66	0.66
95th-Percentile Queue Length [ft]	0.00	0.00	52.01	52.01	16.54	16.54
d_A, Approach Delay [s/veh]	0.00		0.05		23.51	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.89					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	14.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	302	0	12	43	4	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.60	1.60	5.50	5.50	1.70	1.70
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	3	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	332	0	16	46	4	126
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	111	0	5	15	1	42
Total Analysis Volume [veh/h]	443	0	21	61	5	168
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.01	0.27
d_M, Delay for Movement [s/veh]	0.00	0.00	8.34	0.00	14.67	13.16
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.24	0.24	1.16	1.16
95th-Percentile Queue Length [ft]	0.00	0.00	6.04	6.04	29.02	29.02
d_A, Approach Delay [s/veh]	0.00		2.14		13.21	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.52					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	Two-way stop	Delay (sec / veh):	205.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.025

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	220	27	105	3	1	3	24	255	60	8	255	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.30	2.30	2.30	0.00	0.00	0.00	4.70	4.70	4.70	5.20	5.20	5.20
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	0	0	0	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	246	29	113	3	1	3	26	275	68	9	275	29
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	9	34	1	0	1	8	83	20	3	83	9
Total Analysis Volume [veh/h]	296	35	136	4	1	4	31	331	82	11	331	35
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.02	0.12	0.20	0.02	0.00	0.01	0.03	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	205.69	205.33	198.58	24.56	17.76	10.53	8.14	0.00	0.00	8.22	0.00	0.00
Movement LOS	F	F	F	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	22.67	22.67	22.67	0.09	0.09	0.09	0.08	0.00	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft]	566.85	566.85	566.85	2.35	2.35	2.35	2.03	0.00	0.00	0.74	0.00	0.00
d_A, Approach Delay [s/veh]	203.59			17.57			0.57			0.24		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	73.69											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	20.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.413

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	4	372	107	4	118	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.80	4.80	13.50	13.50	0.80	0.80
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	402	116	4	127	19
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	132	38	1	42	6
Total Analysis Volume [veh/h]	8	529	153	5	167	25
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.41	0.03
d_M, Delay for Movement [s/veh]	7.58	0.00	0.00	0.00	20.24	15.38
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh]	0.02	0.00	0.00	0.00	2.20	2.20
95th-Percentile Queue Length [ft]	0.43	0.00	0.00	0.00	55.09	55.09
d_A, Approach Delay [s/veh]	0.11		0.00		19.61	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	4.31					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 26: East Access at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Strong Rd		East Access		Strong Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Strong Rd		East Access		Strong Rd	
Base Volume Input [veh/h]	18	0	0	0	0	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	2	36	13	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	3	2	36	13	144
Peak Hour Factor	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	1	1	14	5	56
Total Analysis Volume [veh/h]	30	5	3	56	20	225
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Stop	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance		No	
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.07	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.37	9.50	7.31	0.00
Movement LOS	A	A	B	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.22	0.22	0.55	0.55
95th-Percentile Queue Length [ft]	0.00	0.00	5.57	5.57	13.72	13.72
d_A, Approach Delay [s/veh]	0.00		9.54		0.60	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.09					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	135	127	1	11	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.80	0.80	8.30	8.30	16.70	16.70
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	0	5	31	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	137	6	43	6	2
Peak Hour Factor	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	54	2	17	2	1
Total Analysis Volume [veh/h]	245	214	9	67	9	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.39	0.00	11.74	10.59
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.23	0.23	0.06	0.06
95th-Percentile Queue Length [ft]	0.00	0.00	5.73	5.73	1.61	1.61
d_A, Approach Delay [s/veh]	0.00		0.99		11.45	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.39					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 36: 27th at Kuebler Blvd

Control Type:	Signalized	Delay (sec / veh):	24.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.813

Intersection Setup

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	125.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	200.00	350.00	100.00	175.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	0	7	99	6	2	6	30	1635	0	36	1067	225
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.60	6.60	6.60	14.30	14.30	14.30	3.50	3.50	3.50	7.30	7.30	7.30
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	29	2	0	0	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	9	107	35	4	6	32	1766	0	39	1152	253
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	31	10	1	2	9	519	0	11	339	74
Total Analysis Volume [veh/h]	0	11	126	41	5	7	38	2078	0	46	1355	298
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	34	83	0	9	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	16	4	20	4	80	80	4	80	80
g / C, Green / Cycle	0.00	0.13	0.03	0.17	0.03	0.66	0.66	0.04	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.00	0.10	0.03	0.01	0.02	0.66	0.00	0.03	0.44	0.22
s, saturation flow rate [veh/h]	1544	1395	1445	1375	1584	3166	1413	1535	3068	1370
c, Capacity [veh/h]	0	187	48	231	48	2096	936	56	2051	916
d1, Uniform Delay [s]	0.00	49.85	57.68	41.91	57.84	19.93	0.00	57.42	11.80	8.42
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	22.05	30.55	0.43	25.36	7.34	0.00	24.39	0.37	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.73	0.85	0.05	0.80	0.99	0.00	0.82	0.66	0.33
d, Delay for Lane Group [s/veh]	0.00	71.90	88.23	42.34	83.20	27.28	0.00	81.82	12.17	8.63
Lane Group LOS	A	E	F	D	F	C	A	F	B	A
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	0.00	5.10	1.65	0.33	1.48	27.40	0.00	1.77	9.98	3.15
50th-Percentile Queue Length [ft]	0.00	127.41	41.23	8.21	37.04	685.10	0.00	44.15	249.53	78.80
95th-Percentile Queue Length [veh]	0.00	8.80	2.97	0.59	2.67	35.99	0.00	3.18	15.16	5.67
95th-Percentile Queue Length [ft]	0.00	219.97	74.21	14.78	66.68	899.73	0.00	79.47	379.06	141.85

Movement, Approach, & Intersection Results

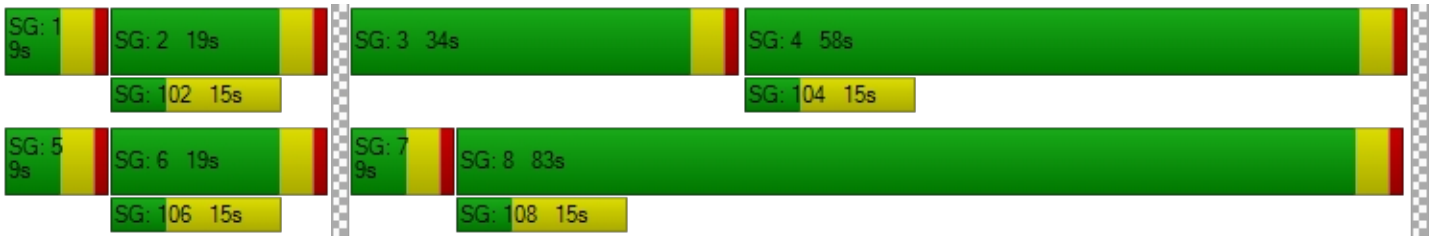
d_M, Delay for Movement [s/veh]	0.00	71.90	71.90	88.23	42.34	42.34	83.20	27.28	0.00	81.82	12.17	8.63
Movement LOS	A	E	E	F	D	D	F	C	A	F	B	A
d_A, Approach Delay [s/veh]	71.90			77.84			28.28			13.43		
Approach LOS	E			E			C			B		
d_I, Intersection Delay [s/veh]	24.13											
Intersection LOS	C											
Intersection V/C	0.813											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.017	2.085	3.033	3.109
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	250	1317	900
d_b, Bicycle Delay [s]	45.94	45.94	7.00	18.15
l_b,int, Bicycle LOS Score for Intersection	1.786	1.647	3.305	2.961
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	46.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.871

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	296	222	131	104	43	182	1344	55	94	823	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	7.20	7.20	7.20	3.20	3.20	3.20	7.40	7.40	7.40
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	8	25	8	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	323	240	141	120	71	205	1452	59	102	889	160
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	90	67	39	33	20	57	403	16	28	247	44
Total Analysis Volume [veh/h]	111	359	267	157	133	79	228	1613	66	113	988	178
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	23	0	15	26	0	35	60	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	19	19	11	22	22	18	56	56	8	46	46
g / C, Green / Cycle	0.07	0.17	0.17	0.10	0.20	0.20	0.16	0.51	0.51	0.07	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.07	0.11	0.19	0.10	0.08	0.06	0.14	0.51	0.05	0.07	0.32	0.13
s, saturation flow rate [veh/h]	1598	3194	1426	1536	1613	1371	1587	3174	1417	1533	3066	1369
c, Capacity [veh/h]	116	556	248	154	325	276	258	1611	719	112	1281	572
d1, Uniform Delay [s]	50.82	42.28	45.43	49.50	38.24	37.24	45.06	27.08	13.99	51.00	27.49	21.42
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	28.94	5.70	78.73	39.26	3.79	2.60	9.71	10.72	0.05	42.63	1.01	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.65	1.08	1.02	0.41	0.29	0.88	1.00	0.09	1.01	0.77	0.31
d, Delay for Lane Group [s/veh]	79.76	47.98	124.16	88.77	42.04	39.83	54.76	37.80	14.04	93.63	28.51	21.72
Lane Group LOS	E	D	F	F	D	D	D	F	B	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	3.97	4.96	12.15	5.88	3.46	2.00	6.74	22.26	0.85	4.39	11.03	3.09
50th-Percentile Queue Length [ft]	99.28	124.11	303.75	147.02	86.61	50.12	168.54	556.47	21.28	109.67	275.66	77.33
95th-Percentile Queue Length [veh]	7.15	8.62	18.51	9.94	6.24	3.61	11.00	30.03	1.53	7.85	16.47	5.57
95th-Percentile Queue Length [ft]	178.70	215.47	462.86	248.40	155.90	90.21	275.00	750.66	38.31	196.29	411.80	139.20

Movement, Approach, & Intersection Results

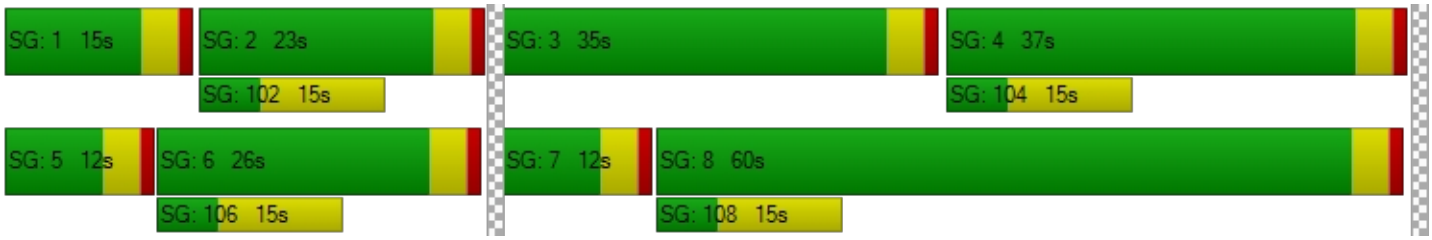
d_M, Delay for Movement [s/veh]	79.76	47.98	124.16	88.77	42.04	39.83	54.76	37.80	14.04	93.63	28.51	21.72
Movement LOS	E	D	F	F	D	D	D	F	B	F	C	C
d_A, Approach Delay [s/veh]	80.36			61.45			39.01			33.32		
Approach LOS	F			E			D			C		
d_I, Intersection Delay [s/veh]	46.34											
Intersection LOS	D											
Intersection V/C	0.871											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.516	2.532	2.965	3.003
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	345	400	1018	600
d_b, Bicycle Delay [s]	37.64	35.20	13.25	26.95
l_b,int, Bicycle LOS Score for Intersection	2.168	2.168	3.133	2.615
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 42: Reed at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Reed Rd		Reed Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Site Access	
Base Volume Input [veh/h]	308	0	0	47	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	1	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	333	0	0	51	1	6
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	104	0	0	16	0	2
Total Analysis Volume [veh/h]	416	0	0	64	1	8
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.15	0.00	11.69	10.74
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.04	0.04
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	1.10	1.10
d_A, Approach Delay [s/veh]	0.00		0.00		10.85	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.20					
Intersection LOS	B					

18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 AM Dev Ph 2.pdf

Scenario 5 AM Dev 2023 Ph 2
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	27	7	37	254	395	285	1005

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	675	11	2	300	33	5	1026

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	332	0	16	46	4	126	524

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	246	29	113	3	1	3	26	275	68	9	275	29	1077

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	6	402	116	4	127	19	674

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	19	3	2	36	13	144	217

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	157	137	6	43	6	2	351

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	0	9	107	35	4	6	32	1766	0	39	1152	253	3403

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	100	323	240	141	120	71	205	1452	59	102	889	160	3862

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	333	0	0	51	1	6	391

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 2.pdf

Scenario 5 AM Dev 2023 Ph 2
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	25	6	34	233	361	264	923
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	0	2	5	0	8
		Other	0	0	0	0	0	0	0
		Future Total	**27**	**7**	**37**	**254**	**395**	**285**	**1005**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	Final Base	625	0	0	278	0	0	903
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	11	2	0	33	5	51
		Other	0	0	0	0	0	0	0
		Future Total	**675**	**11**	**2**	**300**	**33**	**5**	**1026**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	302	0	12	43	4	115	476
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	6	0	3	0	0	2	11
		Other	0	0	0	0	0	0	0
		Future Total	**332**	**0**	**16**	**46**	**4**	**126**	**524**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	220	27	105	3	1	3	24	255	60	8	255	27	988
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	8	0	0	0	0	0	0	0	3	0	0	0	11
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**246**	**29**	**113**	**3**	**1**	**3**	**26**	**275**	**68**	**9**	**275**	**29**	**1077**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	4	372	107	4	118	13	618
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	2	0	0	0	0	5	7
		Other	0	0	0	0	0	0	0
		Future Total	**6**	**402**	**116**	**4**	**127**	**19**	**674**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	Final Base	18	0	0	0	0	133	151
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	3	2	36	13	0	54
		Other	0	0	0	0	0	0	0
		Future Total	**19**	**3**	**2**	**36**	**13**	**144**	**217**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	135	127	1	11	6	0	280
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	11	0	5	31	0	2	49
		Other	0	0	0	0	0	0	0
		Future Total	**157**	**137**	**6**	**43**	**6**	**2**	**351**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	Final Base	0	7	99	6	2	6	30	1635	0	36	1067	225	3113
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	1	0	29	2	0	0	0	0	0	0	10	42
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**0**	**9**	**107**	**35**	**4**	**6**	**32**	**1766**	**0**	**39**	**1152**	**253**	**3403**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	296	222	131	104	43	182	1344	55	94	823	148	3535
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	0	8	25	8	0	0	0	0	0	44
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**100**	**323**	**240**	**141**	**120**	**71**	**205**	**1452**	**59**	**102**	**889**	**160**	**3862**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	Final Base	308	0	0	47	0	0	355
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	1	6	7
		Other	0	0	0	0	0	0	0
		Future Total	**333**	**0**	**0**	**51**	**1**	**6**	**391**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	680	291	34
2	653	279	33
3	639	274	32
4	544	233	27
5	517	221	26
6	462	198	23
7	428	183	21
8	408	175	20
9	326	140	16
10	306	131	15
11	306	131	15
12	292	125	15
13	265	113	13
14	245	105	12
15	245	105	12
16	238	102	12
17	136	58	7
18	75	32	4
19	68	29	3
20	27	12	1
21	20	9	1
22	20	9	1
23	14	6	1
24	14	6	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	971	2	34	No	No	No	No	No	No	No	No	No	No
2	2	932	2	33	No	No	No	No	No	No	No	No	No	No
3	2	913	2	32	No	No	No	No	No	No	No	No	No	No
4	2	777	2	27	No	No	No	No	No	No	No	No	No	No
5	2	738	2	26	No	No	No	No	No	No	No	No	No	No
6	2	660	2	23	No	No	No	No	No	No	No	No	No	No
7	2	611	2	21	No	No	No	No	No	No	No	No	No	No
8	2	583	2	20	No	No	No	No	No	No	No	No	No	No
9	2	466	2	16	No	No	No	No	No	No	No	No	No	No
10	2	437	2	15	No	No	No	No	No	No	No	No	No	No
11	2	437	2	15	No	No	No	No	No	No	No	No	No	No
12	2	417	2	15	No	No	No	No	No	No	No	No	No	No
13	2	378	2	13	No	No	No	No	No	No	No	No	No	No
14	2	350	2	12	No	No	No	No	No	No	No	No	No	No
15	2	350	2	12	No	No	No	No	No	No	No	No	No	No
16	2	340	2	12	No	No	No	No	No	No	No	No	No	No
17	2	194	2	7	No	No	No	No	No	No	No	No	No	No
18	2	107	2	4	No	No	No	No	No	No	No	No	No	No
19	2	97	2	3	No	No	No	No	No	No	No	No	No	No
20	2	39	2	1	No	No	No	No	No	No	No	No	No	No
21	2	29	2	1	No	No	No	No	No	No	No	No	No	No
22	2	29	2	1	No	No	No	No	No	No	No	No	No	No
23	2	20	2	1	No	No	No	No	No	No	No	No	No	No
24	2	20	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	20.1
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:11
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	34
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1005
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 6: Battle Creek Rd at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	686	302	38
2	659	290	36
3	645	284	36
4	549	242	30
5	521	230	29
6	466	205	26
7	432	190	24
8	412	181	23
9	329	145	18
10	309	136	17
11	309	136	17
12	295	130	16
13	268	118	15
14	247	109	14
15	247	109	14
16	240	106	13
17	137	60	8
18	75	33	4
19	69	30	4
20	27	12	2
21	21	9	1
22	21	9	1
23	14	6	1
24	14	6	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	988	1	38	No	No	No	No	No	No	No	No	No	No
2	2	949	1	36	No	No	No	No	No	No	No	No	No	No
3	2	929	1	36	No	No	No	No	No	No	No	No	No	No
4	2	791	1	30	No	No	No	No	No	No	No	No	No	No
5	2	751	1	29	No	No	No	No	No	No	No	No	No	No
6	2	671	1	26	No	No	No	No	No	No	No	No	No	No
7	2	622	1	24	No	No	No	No	No	No	No	No	No	No
8	2	593	1	23	No	No	No	No	No	No	No	No	No	No
9	2	474	1	18	No	No	No	No	No	No	No	No	No	No
10	2	445	1	17	No	No	No	No	No	No	No	No	No	No
11	2	445	1	17	No	No	No	No	No	No	No	No	No	No
12	2	425	1	16	No	No	No	No	No	No	No	No	No	No
13	2	386	1	15	No	No	No	No	No	No	No	No	No	No
14	2	356	1	14	No	No	No	No	No	No	No	No	No	No
15	2	356	1	14	No	No	No	No	No	No	No	No	No	No
16	2	346	1	13	No	No	No	No	No	No	No	No	No	No
17	2	197	1	8	No	No	No	No	No	No	No	No	No	No
18	2	108	1	4	No	No	No	No	No	No	No	No	No	No
19	2	99	1	4	No	No	No	No	No	No	No	No	No	No
20	2	39	1	2	No	No	No	No	No	No	No	No	No	No
21	2	30	1	1	No	No	No	No	No	No	No	No	No	No
22	2	30	1	1	No	No	No	No	No	No	No	No	No	No
23	2	20	1	1	No	No	No	No	No	No	No	No	No	No
24	2	20	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	23.5
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:14
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	38
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1026
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	62	332	130
2	60	319	125
3	58	312	122
4	50	266	104
5	47	252	99
6	42	226	88
7	39	209	82
8	37	199	78
9	30	159	62
10	28	149	59
11	28	149	59
12	27	143	56
13	24	129	51
14	22	120	47
15	22	120	47
16	22	116	46
17	12	66	26
18	7	37	14
19	6	33	13
20	2	13	5
21	2	10	4
22	2	10	4
23	1	7	3
24	1	7	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	394	1	130	No	No	No	Yes	No	No	No	No	No	No
2	2	379	1	125	No	No	No	Yes	No	No	No	No	No	No
3	2	370	1	122	No	No	No	Yes	No	No	No	No	No	No
4	2	316	1	104	No	No	No	No	No	No	No	No	No	No
5	2	299	1	99	No	No	No	No	No	No	No	No	No	No
6	2	268	1	88	No	No	No	No	No	No	No	No	No	No
7	2	248	1	82	No	No	No	No	No	No	No	No	No	No
8	2	236	1	78	No	No	No	No	No	No	No	No	No	No
9	2	189	1	62	No	No	No	No	No	No	No	No	No	No
10	2	177	1	59	No	No	No	No	No	No	No	No	No	No
11	2	177	1	59	No	No	No	No	No	No	No	No	No	No
12	2	170	1	56	No	No	No	No	No	No	No	No	No	No
13	2	153	1	51	No	No	No	No	No	No	No	No	No	No
14	2	142	1	47	No	No	No	No	No	No	No	No	No	No
15	2	142	1	47	No	No	No	No	No	No	No	No	No	No
16	2	138	1	46	No	No	No	No	No	No	No	No	No	No
17	2	78	1	26	No	No	No	No	No	No	No	No	No	No
18	2	44	1	14	No	No	No	No	No	No	No	No	No	No
19	2	39	1	13	No	No	No	No	No	No	No	No	No	No
20	2	15	1	5	No	No	No	No	No	No	No	No	No	No
21	2	12	1	4	No	No	No	No	No	No	No	No	No	No
22	2	12	1	4	No	No	No	No	No	No	No	No	No	No
23	2	8	1	3	No	No	No	No	No	No	No	No	No	No
24	2	8	1	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.2
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:28
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	130
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	524
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	313	369	7	388
2	300	354	7	372
3	294	347	7	365
4	250	295	6	310
5	238	280	5	295
6	213	251	5	264
7	197	232	4	244
8	188	221	4	233
9	150	177	3	186
10	141	166	3	175
11	141	166	3	175
12	135	159	3	167
13	122	144	3	151
14	113	133	3	140
15	113	133	3	140
16	110	129	2	136
17	63	74	1	78
18	34	41	1	43
19	31	37	1	39
20	13	15	0	16
21	9	11	0	12
22	9	11	0	12
23	6	7	0	8
24	6	7	0	8

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	682	2	395	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
2	4	654	2	379	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
3	4	641	2	372	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
4	4	545	2	316	No	Yes	Yes	Yes	No	No	No	Yes	No	No
5	4	518	2	300	No	Yes	Yes	Yes	No	No	No	Yes	No	No
6	4	464	2	269	No	No	Yes	Yes	No	No	No	No	No	No
7	4	429	2	248	No	No	Yes	Yes	No	No	No	No	No	No
8	4	409	2	237	No	No	No	Yes	No	No	No	No	No	No
9	4	327	2	189	No	No	No	No	No	No	No	No	No	No
10	4	307	2	178	No	No	No	No	No	No	No	No	No	No
11	4	307	2	178	No	No	No	No	No	No	No	No	No	No
12	4	294	2	170	No	No	No	No	No	No	No	No	No	No
13	4	266	2	154	No	No	No	No	No	No	No	No	No	No
14	4	246	2	143	No	No	No	No	No	No	No	No	No	No
15	4	246	2	143	No	No	No	No	No	No	No	No	No	No
16	4	239	2	138	No	No	No	No	No	No	No	No	No	No
17	4	137	2	79	No	No	No	No	No	No	No	No	No	No
18	4	75	2	44	No	No	No	No	No	No	No	No	No	No
19	4	68	2	40	No	No	No	No	No	No	No	No	No	No
20	4	28	2	16	No	No	No	No	No	No	No	No	No	No
21	4	20	2	12	No	No	No	No	No	No	No	No	No	No
22	4	20	2	12	No	No	No	No	No	No	No	No	No	No
23	4	13	2	8	No	No	No	No	No	No	No	No	No	No
24	4	13	2	8	No	No	No	No	No	No	No	No	No	No
Hours Met					3	5	7	8	0	0	3	5	3	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	17.6	203.6
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02	21:56
Delay Condition Met	No	Yes
Volume on Minor Street Approach During Same Hour	7	388
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	1077	1077
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	Yes
Warrant Met for Intersection	**Yes**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	408	120	146
2	392	115	140
3	384	113	137
4	326	96	117
5	310	91	111
6	277	82	99
7	257	76	92
8	245	72	88
9	196	58	70
10	184	54	66
11	184	54	66
12	175	52	63
13	159	47	57
14	147	43	53
15	147	43	53
16	143	42	51
17	82	24	29
18	45	13	16
19	41	12	15
20	16	5	6
21	12	4	4
22	12	4	4
23	8	2	3
24	8	2	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	528	1	146	No	Yes	Yes	Yes	No	No	No	Yes	No	No
2	3	507	1	140	No	Yes	Yes	Yes	No	No	No	Yes	No	No
3	3	497	1	137	No	Yes	Yes	Yes	No	No	No	No	No	No
4	3	422	1	117	No	No	Yes	Yes	No	No	No	No	No	No
5	3	401	1	111	No	No	No	Yes	No	No	No	No	No	No
6	3	359	1	99	No	No	No	Yes	No	No	No	No	No	No
7	3	333	1	92	No	No	No	No	No	No	No	No	No	No
8	3	317	1	88	No	No	No	No	No	No	No	No	No	No
9	3	254	1	70	No	No	No	No	No	No	No	No	No	No
10	3	238	1	66	No	No	No	No	No	No	No	No	No	No
11	3	238	1	66	No	No	No	No	No	No	No	No	No	No
12	3	227	1	63	No	No	No	No	No	No	No	No	No	No
13	3	206	1	57	No	No	No	No	No	No	No	No	No	No
14	3	190	1	53	No	No	No	No	No	No	No	No	No	No
15	3	190	1	53	No	No	No	No	No	No	No	No	No	No
16	3	185	1	51	No	No	No	No	No	No	No	No	No	No
17	3	106	1	29	No	No	No	No	No	No	No	No	No	No
18	3	58	1	16	No	No	No	No	No	No	No	No	No	No
19	3	53	1	15	No	No	No	No	No	No	No	No	No	No
20	3	21	1	6	No	No	No	No	No	No	No	No	No	No
21	3	16	1	4	No	No	No	No	No	No	No	No	No	No
22	3	16	1	4	No	No	No	No	No	No	No	No	No	No
23	3	10	1	3	No	No	No	No	No	No	No	No	No	No
24	3	10	1	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	3	4	6	0	0	0	2	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	19.6
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:47
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	146
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	674
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 26: East Access at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	N	W
1	157	22	38
2	151	21	36
3	148	21	36
4	126	18	30
5	119	17	29
6	107	15	26
7	99	14	24
8	94	13	23
9	75	11	18
10	71	10	17
11	71	10	17
12	68	9	16
13	61	9	15
14	57	8	14
15	57	8	14
16	55	8	13
17	31	4	8
18	17	2	4
19	16	2	4
20	6	1	2
21	5	1	1
22	5	1	1
23	3	0	1
24	3	0	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	179	1	38	No	No	No	No	No	No	No	No	No	No
2	2	172	1	36	No	No	No	No	No	No	No	No	No	No
3	2	169	1	36	No	No	No	No	No	No	No	No	No	No
4	2	144	1	30	No	No	No	No	No	No	No	No	No	No
5	2	136	1	29	No	No	No	No	No	No	No	No	No	No
6	2	122	1	26	No	No	No	No	No	No	No	No	No	No
7	2	113	1	24	No	No	No	No	No	No	No	No	No	No
8	2	107	1	23	No	No	No	No	No	No	No	No	No	No
9	2	86	1	18	No	No	No	No	No	No	No	No	No	No
10	2	81	1	17	No	No	No	No	No	No	No	No	No	No
11	2	81	1	17	No	No	No	No	No	No	No	No	No	No
12	2	77	1	16	No	No	No	No	No	No	No	No	No	No
13	2	70	1	15	No	No	No	No	No	No	No	No	No	No
14	2	65	1	14	No	No	No	No	No	No	No	No	No	No
15	2	65	1	14	No	No	No	No	No	No	No	No	No	No
16	2	63	1	13	No	No	No	No	No	No	No	No	No	No
17	2	35	1	8	No	No	No	No	No	No	No	No	No	No
18	2	19	1	4	No	No	No	No	No	No	No	No	No	No
19	2	18	1	4	No	No	No	No	No	No	No	No	No	No
20	2	7	1	2	No	No	No	No	No	No	No	No	No	No
21	2	6	1	1	No	No	No	No	No	No	No	No	No	No
22	2	6	1	1	No	No	No	No	No	No	No	No	No	No
23	2	3	1	1	No	No	No	No	No	No	No	No	No	No
24	2	3	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.5
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:06
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	38
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	217
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	49	294	8
2	47	282	8
3	46	276	8
4	39	235	6
5	37	223	6
6	33	200	5
7	31	185	5
8	29	176	5
9	24	141	4
10	22	132	4
11	22	132	4
12	21	126	3
13	19	115	3
14	18	106	3
15	18	106	3
16	17	103	3
17	10	59	2
18	5	32	1
19	5	29	1
20	2	12	0
21	1	9	0
22	1	9	0
23	1	6	0
24	1	6	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	343	1	8	No	No	No	No	No	No	No	No	No	No
2	2	329	1	8	No	No	No	No	No	No	No	No	No	No
3	2	322	1	8	No	No	No	No	No	No	No	No	No	No
4	2	274	1	6	No	No	No	No	No	No	No	No	No	No
5	2	260	1	6	No	No	No	No	No	No	No	No	No	No
6	2	233	1	5	No	No	No	No	No	No	No	No	No	No
7	2	216	1	5	No	No	No	No	No	No	No	No	No	No
8	2	205	1	5	No	No	No	No	No	No	No	No	No	No
9	2	165	1	4	No	No	No	No	No	No	No	No	No	No
10	2	154	1	4	No	No	No	No	No	No	No	No	No	No
11	2	154	1	4	No	No	No	No	No	No	No	No	No	No
12	2	147	1	3	No	No	No	No	No	No	No	No	No	No
13	2	134	1	3	No	No	No	No	No	No	No	No	No	No
14	2	124	1	3	No	No	No	No	No	No	No	No	No	No
15	2	124	1	3	No	No	No	No	No	No	No	No	No	No
16	2	120	1	3	No	No	No	No	No	No	No	No	No	No
17	2	69	1	2	No	No	No	No	No	No	No	No	No	No
18	2	37	1	1	No	No	No	No	No	No	No	No	No	No
19	2	34	1	1	No	No	No	No	No	No	No	No	No	No
20	2	14	1	0	No	No	No	No	No	No	No	No	No	No
21	2	10	1	0	No	No	No	No	No	No	No	No	No	No
22	2	10	1	0	No	No	No	No	No	No	No	No	No	No
23	2	7	1	0	No	No	No	No	No	No	No	No	No	No
24	2	7	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.5
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	8
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	351
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 42: Reed at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	51	333	7
2	49	320	7
3	48	313	7
4	41	266	6
5	39	253	5
6	35	226	5
7	32	210	4
8	31	200	4
9	24	160	3
10	23	150	3
11	23	150	3
12	22	143	3
13	20	130	3
14	18	120	3
15	18	120	3
16	18	117	2
17	10	67	1
18	6	37	1
19	5	33	1
20	2	13	0
21	2	10	0
22	2	10	0
23	1	7	0
24	1	7	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	384	1	7	No	No	No	No	No	No	No	No	No	No
2	2	369	1	7	No	No	No	No	No	No	No	No	No	No
3	2	361	1	7	No	No	No	No	No	No	No	No	No	No
4	2	307	1	6	No	No	No	No	No	No	No	No	No	No
5	2	292	1	5	No	No	No	No	No	No	No	No	No	No
6	2	261	1	5	No	No	No	No	No	No	No	No	No	No
7	2	242	1	4	No	No	No	No	No	No	No	No	No	No
8	2	231	1	4	No	No	No	No	No	No	No	No	No	No
9	2	184	1	3	No	No	No	No	No	No	No	No	No	No
10	2	173	1	3	No	No	No	No	No	No	No	No	No	No
11	2	173	1	3	No	No	No	No	No	No	No	No	No	No
12	2	165	1	3	No	No	No	No	No	No	No	No	No	No
13	2	150	1	3	No	No	No	No	No	No	No	No	No	No
14	2	138	1	3	No	No	No	No	No	No	No	No	No	No
15	2	138	1	3	No	No	No	No	No	No	No	No	No	No
16	2	135	1	2	No	No	No	No	No	No	No	No	No	No
17	2	77	1	1	No	No	No	No	No	No	No	No	No	No
18	2	43	1	1	No	No	No	No	No	No	No	No	No	No
19	2	38	1	1	No	No	No	No	No	No	No	No	No	No
20	2	15	1	0	No	No	No	No	No	No	No	No	No	No
21	2	12	1	0	No	No	No	No	No	No	No	No	No	No
22	2	12	1	0	No	No	No	No	No	No	No	No	No	No
23	2	8	1	0	No	No	No	No	No	No	No	No	No	No
24	2	8	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	7
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	391
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 2.pdf

Scenario 5 AM Dev 2023 Ph 2
6/19/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: 18-392 Reed Rd Sub	Homes	ITE 210	Home	0.740	150.000	25.00	75.00	28	83	111	100.00
					Added Trips Total			**28**	**83**	**111**	**100.00**

18-392 Strong at 27th Subdivision TIA

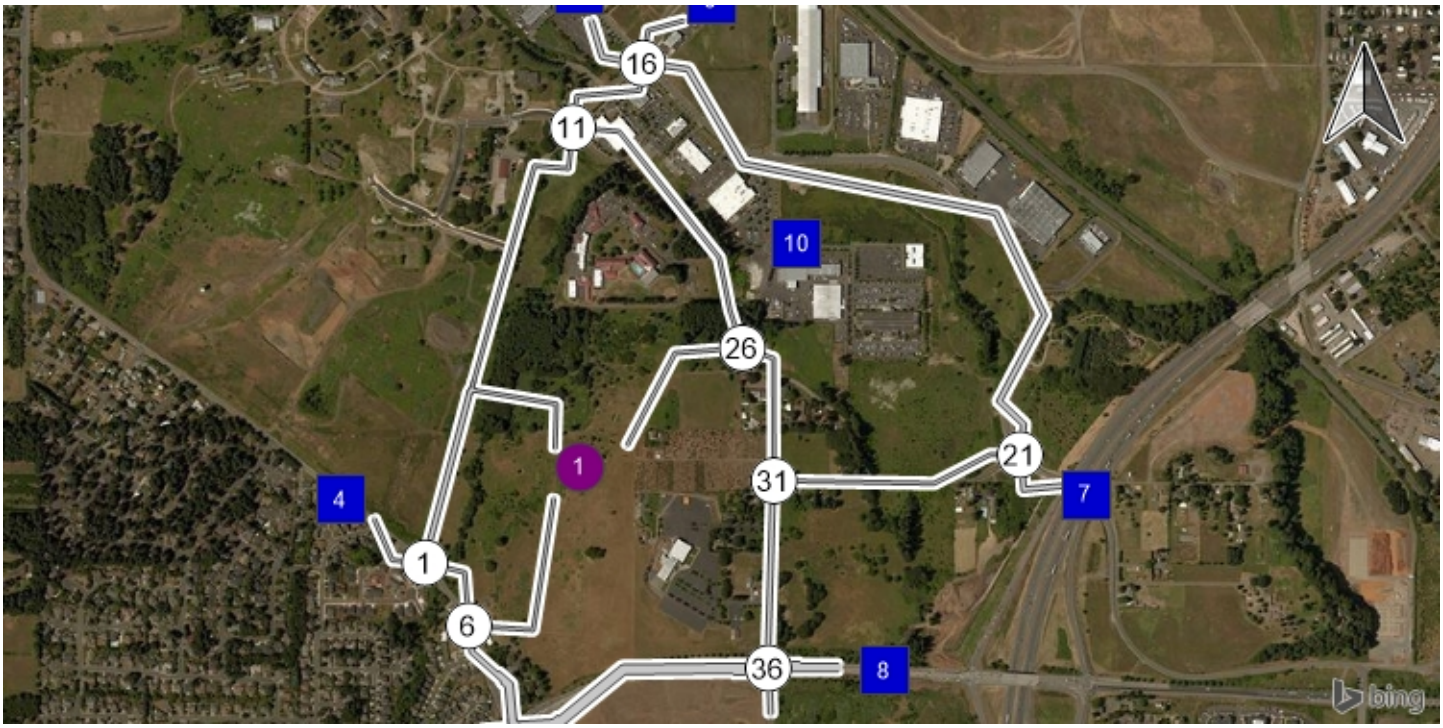
Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 2.pdf

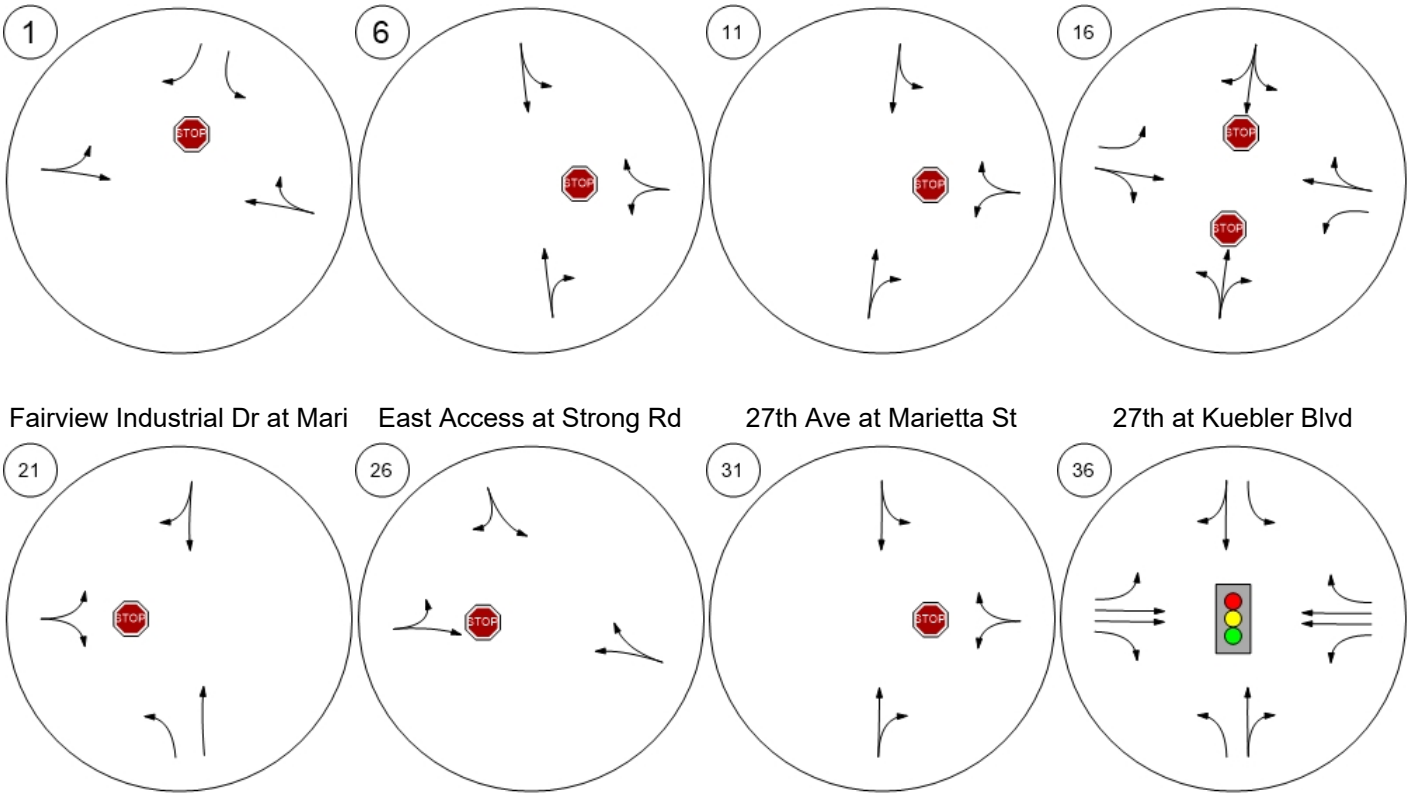
Scenario 5 AM Dev 2023 Ph 2
6/19/2018

Trip Distribution summary

Zone / Gate	Zone 1: 18-392 Reed Rd Sub			
	To 18-392 Reed Rd Sub:		From 18-392 Reed Rd Sub:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	3	10.00	8
3: Gate	30.00	8	30.00	25
4: Gate	7.00	2	7.00	6
5: Gate	10.00	3	10.00	8
6: Gate	0.00	0	0.00	0
7: Gate	6.00	2	6.00	5
8: Gate	35.00	10	35.00	29
9: Gate	2.00	1	2.00	2
10: Gate	0.00	0	0.00	0
Total	**100.00**	**29**	**100.00**	**83**

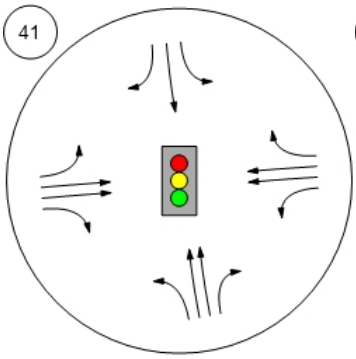
Report Figure 1: Lane Configuration and Traffic Control



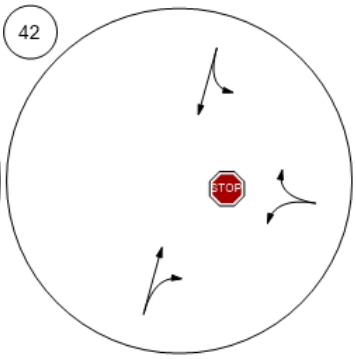


Report Figure 1: Lane Configuration and Traffic Control

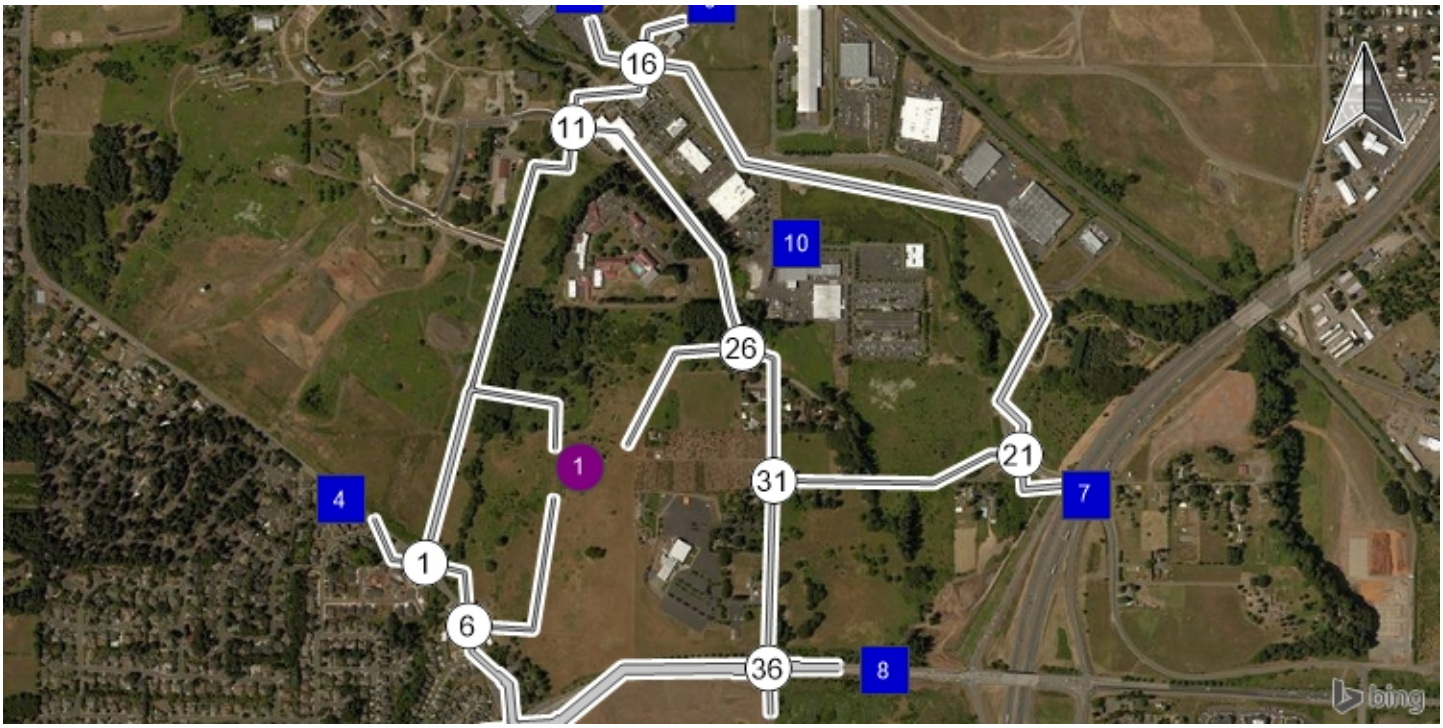
Keubler Blvd at Battle Creek



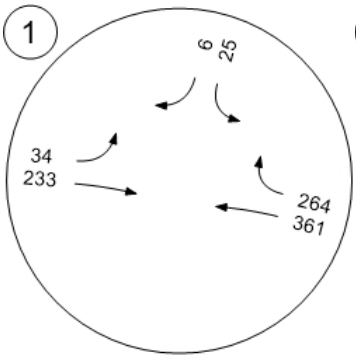
Reed at Site Access



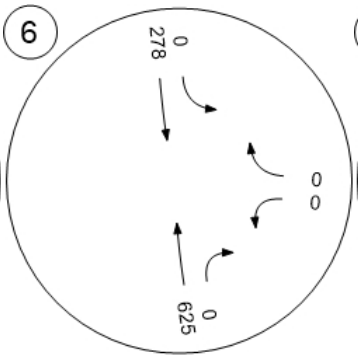
Report Figure 2a: Traffic Volume - Base Volume



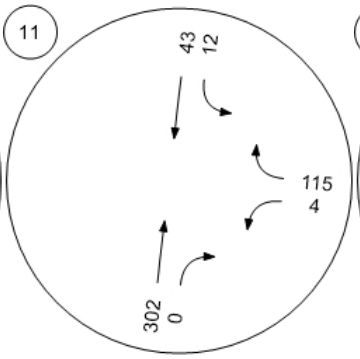
Battle Creek Rd at Reed Rd



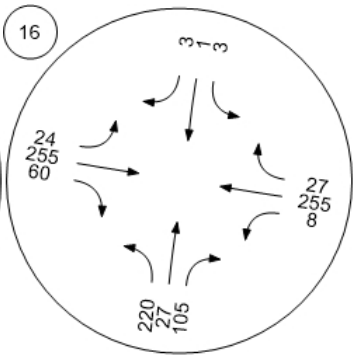
Battle Creek Rd at Site Acces



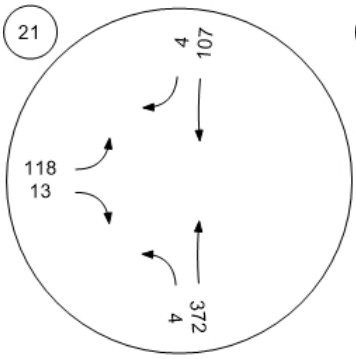
Reed Rd at Strong Rd



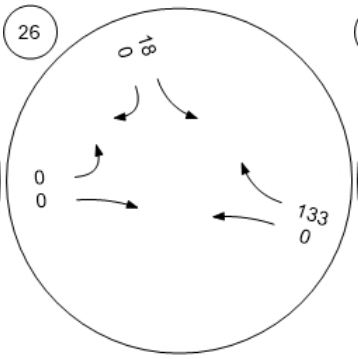
Reed Rd at Fairview Industria



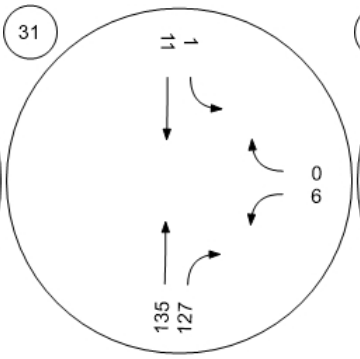
Fairview Industrial Dr at Mari



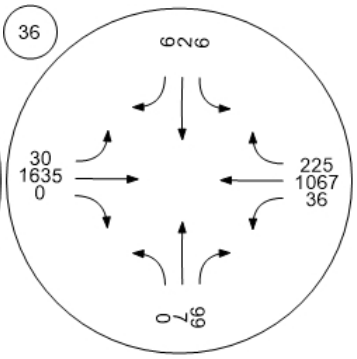
East Access at Strong Rd



27th Ave at Marietta St

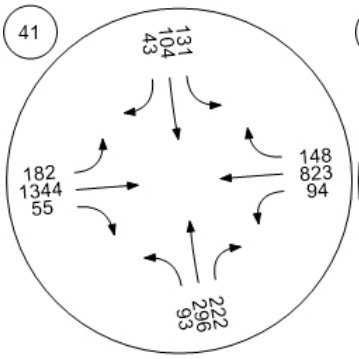


27th at Kuebler Blvd

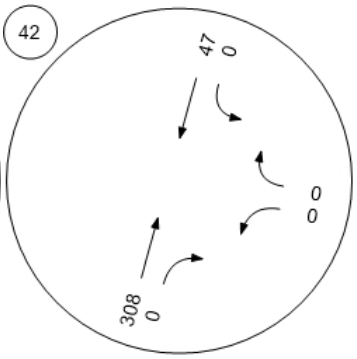


Report Figure 2a: Traffic Volume - Base Volume

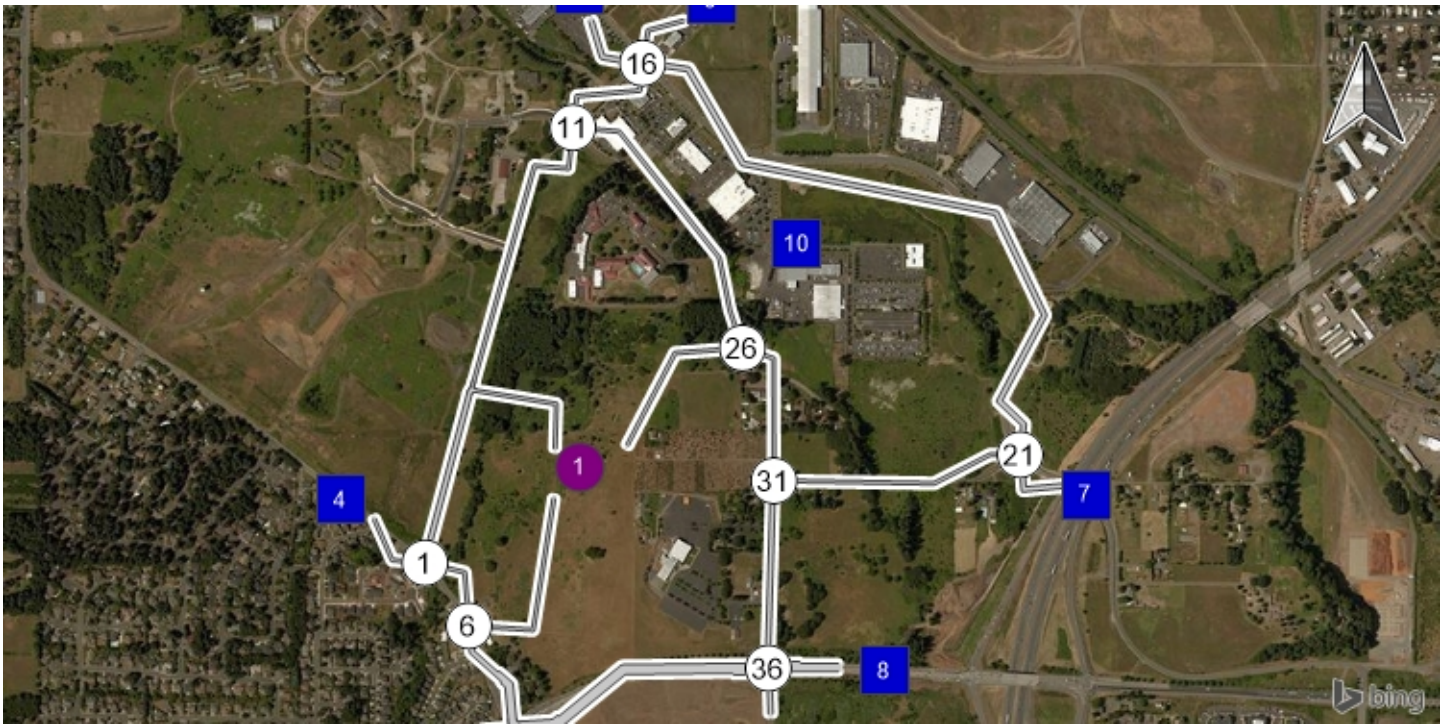
Keubler Blvd at Battle Creek



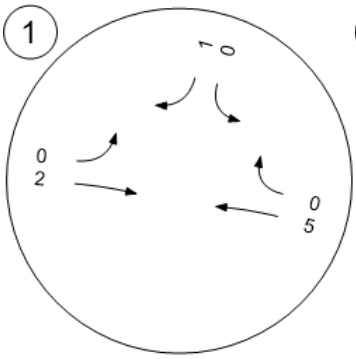
Reed at Site Access



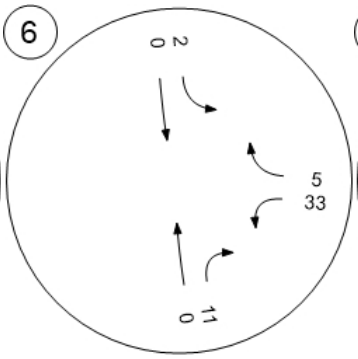
Report Figure 2d: Traffic Volume - Net New Site Trips



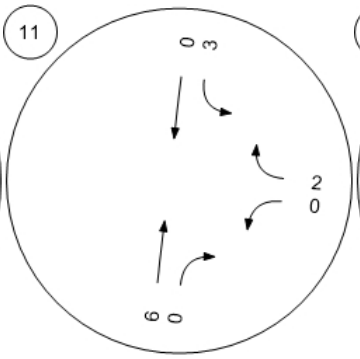
Battle Creek Rd at Reed Rd



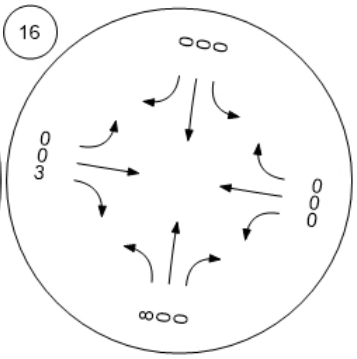
Battle Creek Rd at Site Acces



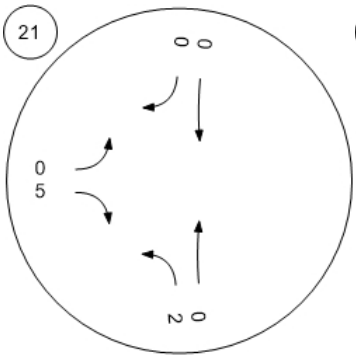
Reed Rd at Strong Rd



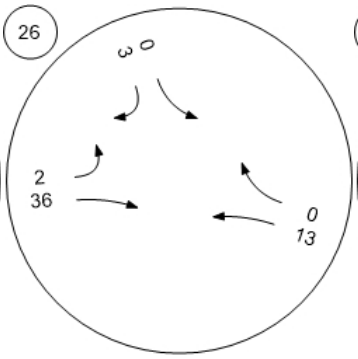
Reed Rd at Fairview Industria



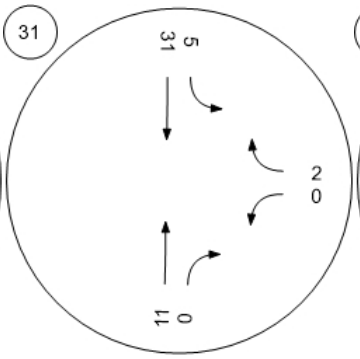
Fairview Industrial Dr at Mari



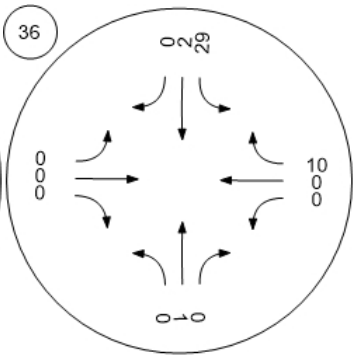
East Access at Strong Rd



27th Ave at Marietta St

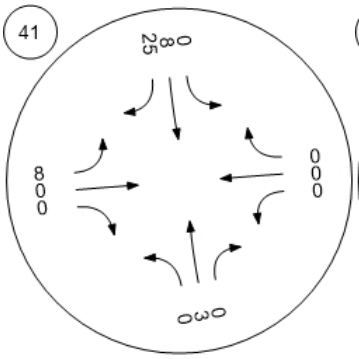


27th at Kuebler Blvd

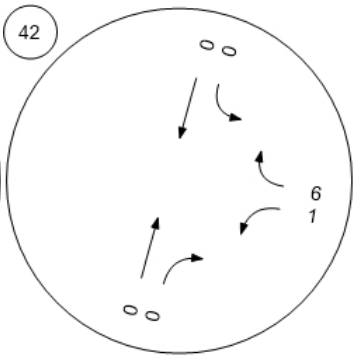


Report Figure 2d: Traffic Volume - Net New Site Trips

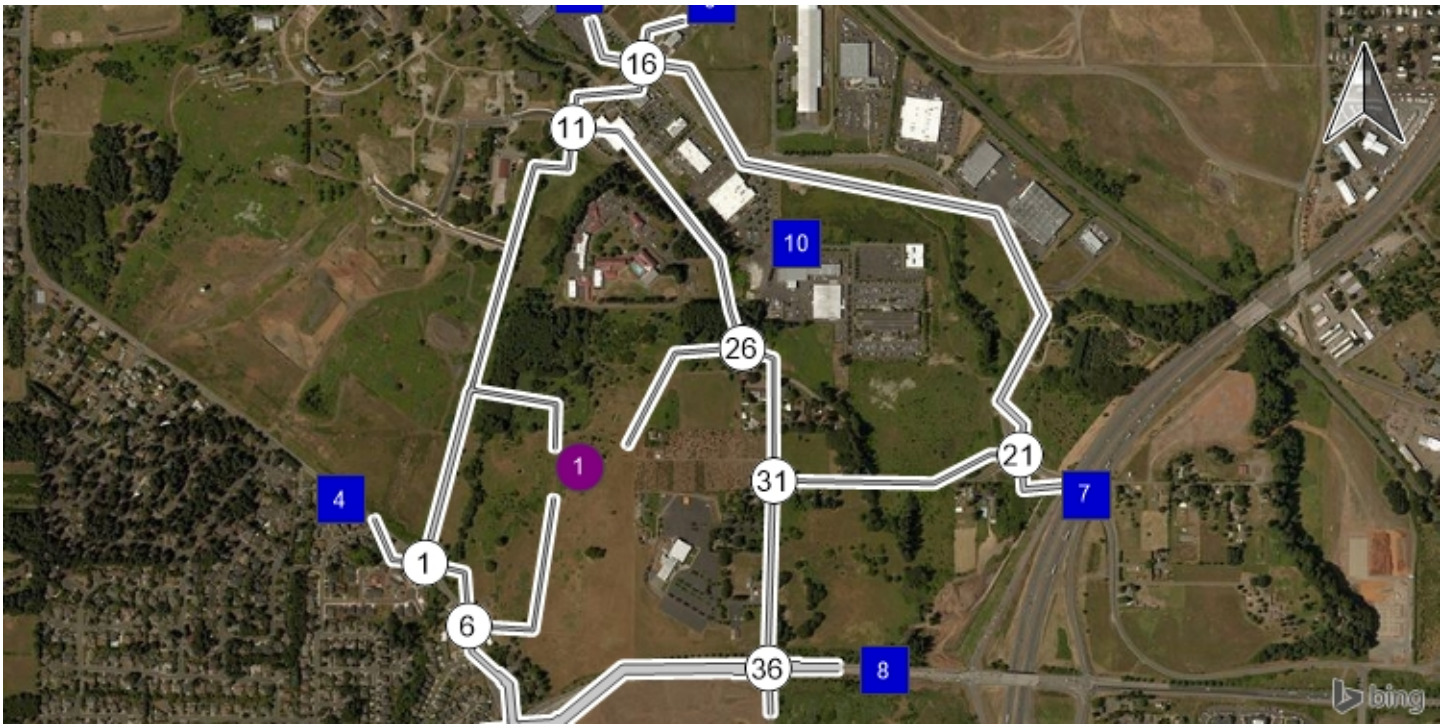
Keubler Blvd at Battle Creek



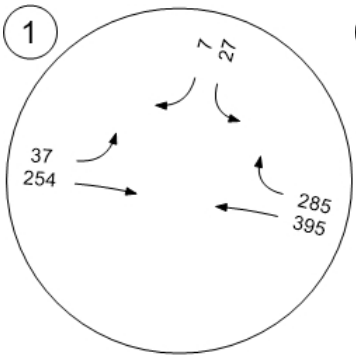
Reed at Site Access



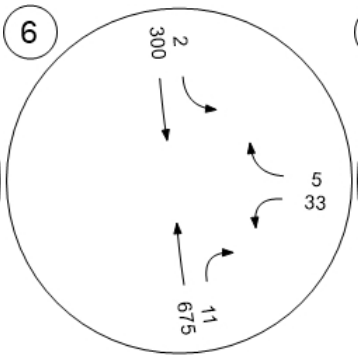
Report Figure 2f: Traffic Volume - Future Total Volume



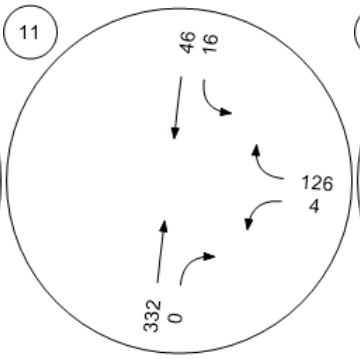
Battle Creek Rd at Reed Rd



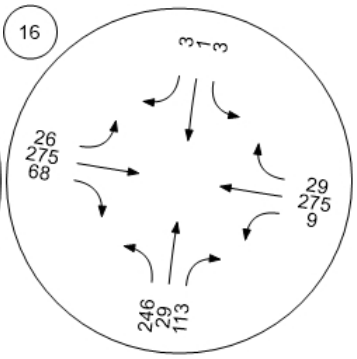
Battle Creek Rd at Site Acces



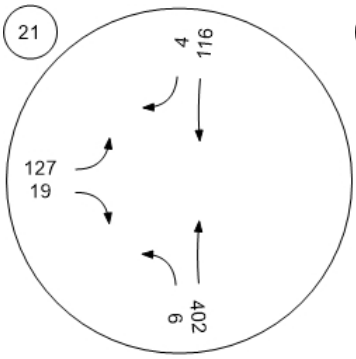
Reed Rd at Strong Rd



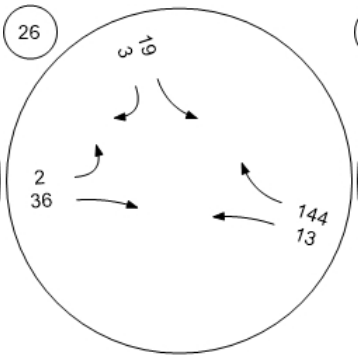
Reed Rd at Fairview Industria



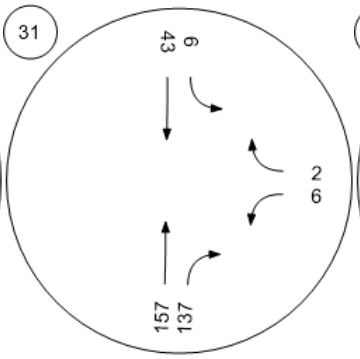
Fairview Industrial Dr at Mari



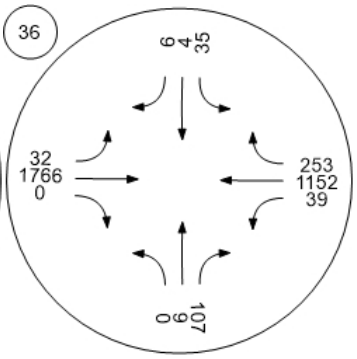
East Access at Strong Rd



27th Ave at Marietta St

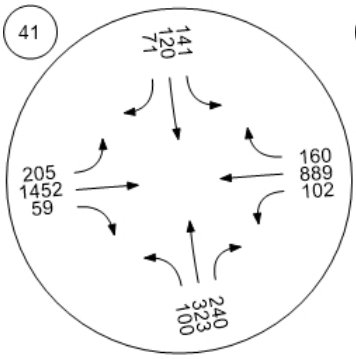


27th at Kuebler Blvd

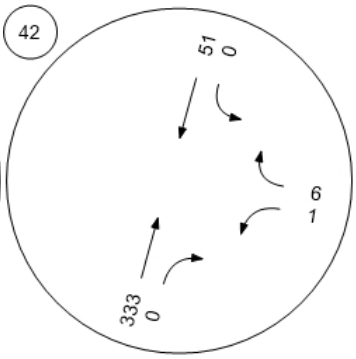


Report Figure 2f: Traffic Volume - Future Total Volume

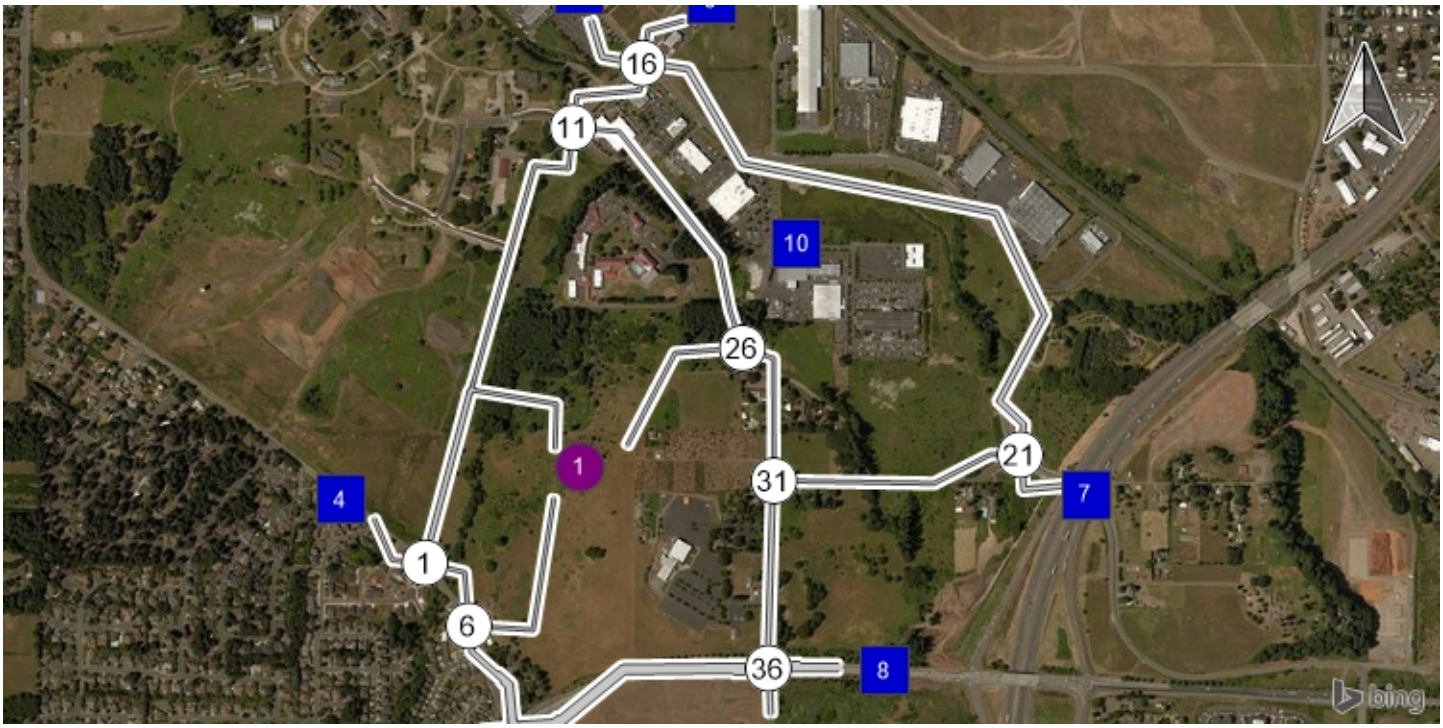
Keubler Blvd at Battle Creek

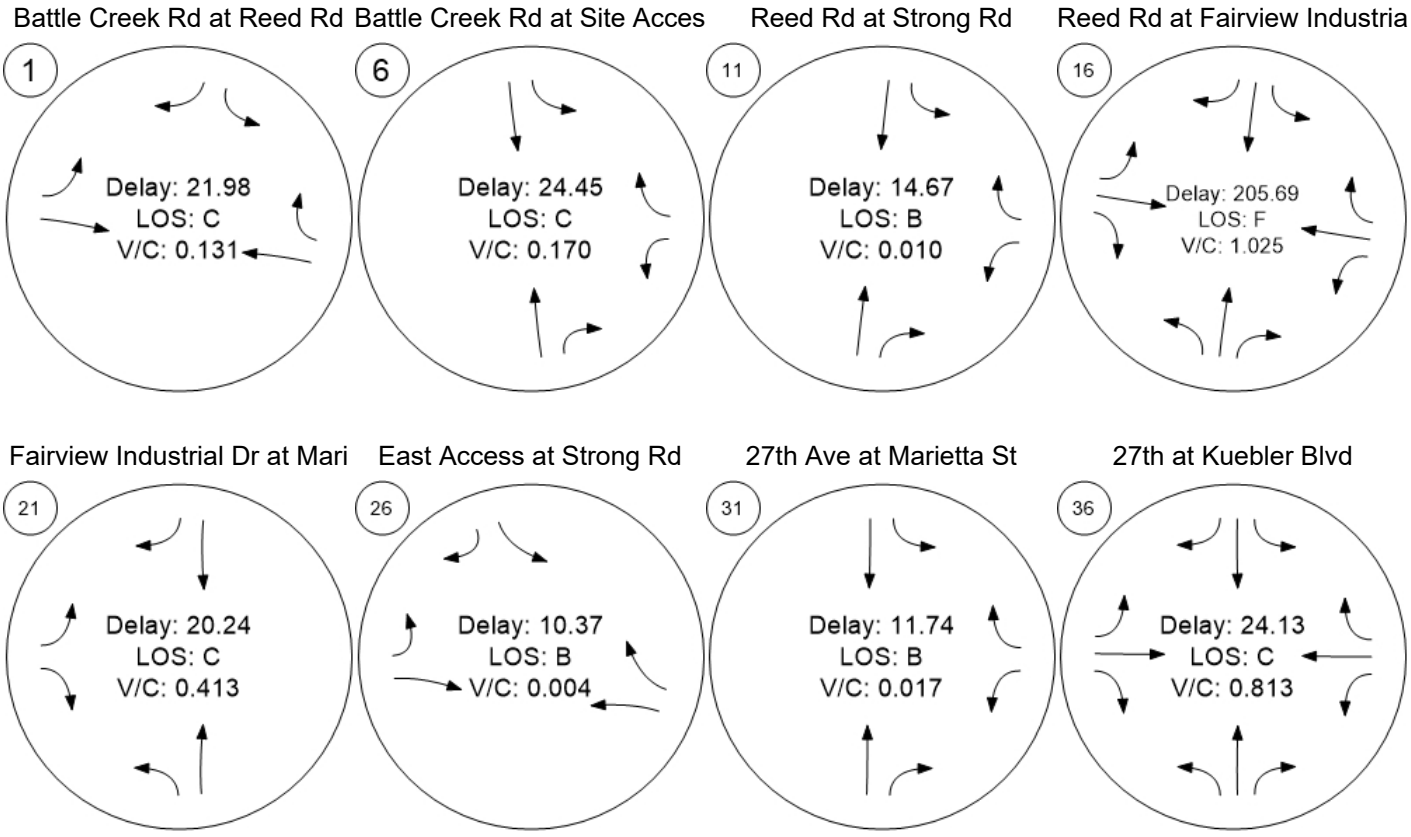


Reed at Site Access



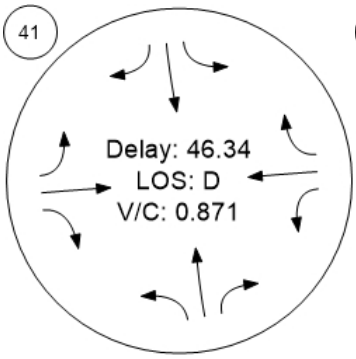
Report Figure 3: Traffic Conditions



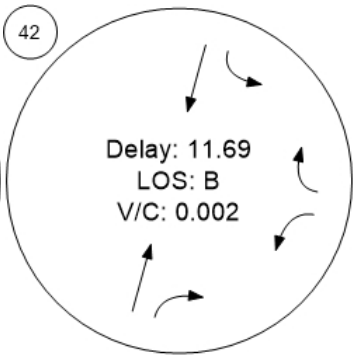


Report Figure 3: Traffic Conditions

Keubler Blvd at Battle Creek



Reed at Site Access



18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 3.pdf

Scenario 7 AM Dev 2026 Ph 3
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.145	23.5	C
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.271	29.0	D
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.015	15.5	C
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	1.158	275.6	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.456	22.3	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.009	10.7	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.022	12.4	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.863	33.1	C
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.911	57.6	E
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.006	11.9	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	23.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.145

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	25	6	34	233	361	264
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.20	3.20	7.10	7.10	3.80	3.80
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	3	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	9	38	266	415	298
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	3	11	78	122	88
Total Analysis Volume [veh/h]	33	11	45	313	488	351
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.02	0.06	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	23.50	13.04	9.94	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.50	0.07	2.46	2.46	0.00	0.00
95th-Percentile Queue Length [ft]	12.47	1.84	61.60	61.60	0.00	0.00
d_A, Approach Delay [s/veh]	20.88		1.25		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.10					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Battle Creek Rd at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	29.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.271

Intersection Setup

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Base Volume Input [veh/h]	625	0	0	278	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	17	3	0	49	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	706	17	3	314	49	7
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	203	5	1	90	14	2
Total Analysis Volume [veh/h]	811	20	3	361	56	8
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.27	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	9.51	0.00	29.03	21.25
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh]	0.00	0.00	2.39	2.39	1.17	1.17
95th-Percentile Queue Length [ft]	0.00	0.00	59.82	59.82	29.17	29.17
d_A, Approach Delay [s/veh]	0.00		0.08		28.06	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	1.45					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	302	0	12	43	4	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.60	1.60	5.50	5.50	1.70	1.70
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	4	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	349	0	18	49	5	134
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	116	0	6	16	2	45
Total Analysis Volume [veh/h]	465	0	24	65	7	179
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.01	0.30
d_M, Delay for Movement [s/veh]	0.00	0.00	8.41	0.00	15.47	13.78
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.27	0.27	1.34	1.34
95th-Percentile Queue Length [ft]	0.00	0.00	6.73	6.73	33.49	33.49
d_A, Approach Delay [s/veh]	0.00		2.27		13.85	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.75					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	Two-way stop	Delay (sec / veh):	275.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.158

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	220	27	105	3	1	3	24	255	60	8	255	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.30	2.30	2.30	0.00	0.00	0.00	4.70	4.70	4.70	5.20	5.20	5.20
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	0	0	0	0	0	0	0	4	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	261	31	119	3	1	3	27	288	72	9	288	31
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	9	36	1	0	1	8	87	22	3	87	9
Total Analysis Volume [veh/h]	314	37	143	4	1	4	33	347	87	11	347	37
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.16	0.13	0.22	0.02	0.00	0.01	0.03	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	275.55	275.08	267.75	26.68	18.58	10.71	8.19	0.00	0.00	8.28	0.00	0.00
Movement LOS	F	F	F	D	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	27.52	27.52	27.52	0.10	0.10	0.10	0.09	0.00	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft]	687.92	687.92	687.92	2.56	2.56	2.56	2.20	0.00	0.00	0.75	0.00	0.00
d_A, Approach Delay [s/veh]	273.26			18.69			0.58			0.23		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	99.28											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	22.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	4	372	107	4	118	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.80	4.80	13.50	13.50	0.80	0.80
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	420	121	5	133	22
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	138	40	2	44	7
Total Analysis Volume [veh/h]	11	553	159	7	175	29
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.46	0.03
d_M, Delay for Movement [s/veh]	7.60	0.00	0.00	0.00	22.32	17.01
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh]	0.02	0.00	0.00	0.00	2.61	2.61
95th-Percentile Queue Length [ft]	0.60	0.00	0.00	0.00	65.21	65.21
d_A, Approach Delay [s/veh]	0.15		0.00		21.57	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	4.80					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 26: East Access at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	Strong Rd		East Access		Strong Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Strong Rd		East Access		Strong Rd	
Base Volume Input [veh/h]	18	0	0	0	0	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	4	54	19	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	4	4	54	19	150
Peak Hour Factor	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	2	2	21	7	59
Total Analysis Volume [veh/h]	31	6	6	84	30	234
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Stop	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance		No	
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.10	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.70	9.70	7.33	0.00
Movement LOS	A	A	B	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.36	0.36	0.60	0.60
95th-Percentile Queue Length [ft]	0.00	0.00	8.91	8.91	15.02	15.02
d_A, Approach Delay [s/veh]	0.00		9.77		0.83	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.81					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	12.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	135	127	1	11	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.80	0.80	8.30	8.30	16.70	16.70
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	0	7	47	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	169	144	8	59	7	3
Peak Hour Factor	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	56	3	23	3	1
Total Analysis Volume [veh/h]	264	225	13	92	11	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.50	0.00	12.37	10.84
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.34	0.34	0.09	0.09
95th-Percentile Queue Length [ft]	0.00	0.00	8.38	8.38	2.30	2.30
d_A, Approach Delay [s/veh]	0.00		1.05		11.90	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.49					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 36: 27th at Kuebler Blvd

Control Type:	Signalized	Delay (sec / veh):	33.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.863

Intersection Setup

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	125.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	200.00	350.00	100.00	175.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	0	7	99	6	2	6	30	1635	0	36	1067	225
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.60	6.60	6.60	14.30	14.30	14.30	3.50	3.50	3.50	7.30	7.30	7.30
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	45	2	0	0	0	0	0	0	15
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	9	112	52	4	7	34	1848	0	41	1206	269
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	33	15	1	2	10	544	0	12	355	79
Total Analysis Volume [veh/h]	0	11	132	61	5	8	40	2174	0	48	1419	316
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	34	83	0	9	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	15	5	20	4	79	79	5	80	80
g / C, Green / Cycle	0.00	0.13	0.04	0.17	0.03	0.66	0.66	0.04	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.00	0.10	0.04	0.01	0.03	0.69	0.00	0.03	0.46	0.23
s, saturation flow rate [veh/h]	1544	1394	1445	1368	1584	3166	1413	1535	3068	1370
c, Capacity [veh/h]	0	176	60	230	49	2091	934	59	2048	914
d1, Uniform Delay [s]	0.00	51.05	57.50	41.95	57.78	20.37	0.00	57.30	12.34	8.62
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	32.19	56.69	0.47	25.70	21.98	0.00	23.34	0.43	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.81	1.01	0.06	0.81	1.04	0.00	0.82	0.69	0.35
d, Delay for Lane Group [s/veh]	0.00	83.24	114.19	42.42	83.48	42.34	0.00	80.64	12.77	8.85
Lane Group LOS	A	F	F	D	F	F	A	F	B	A
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	0.00	5.76	2.78	0.36	1.56	32.29	0.00	1.83	10.92	3.42
50th-Percentile Queue Length [ft]	0.00	143.93	69.50	8.91	38.99	807.16	0.00	45.64	272.91	85.41
95th-Percentile Queue Length [veh]	0.00	9.69	5.00	0.64	2.81	43.06	0.00	3.29	16.33	6.15
95th-Percentile Queue Length [ft]	0.00	242.31	125.09	16.04	70.19	1076.39	0.00	82.16	408.37	153.73

Movement, Approach, & Intersection Results

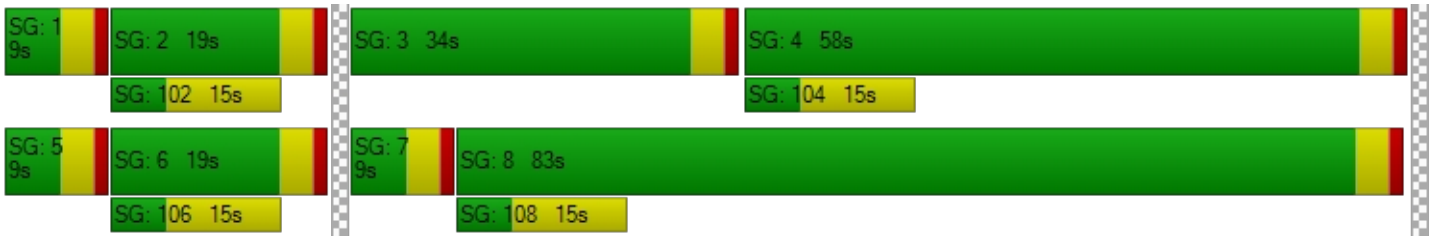
d_M, Delay for Movement [s/veh]	0.00	83.24	83.24	114.19	42.42	42.42	83.48	42.34	0.00	80.64	12.77	8.85
Movement LOS	A	F	F	F	D	D	F	F	A	F	B	A
d_A, Approach Delay [s/veh]	83.24			101.58			43.09			13.90		
Approach LOS	F			F			D			B		
d_I, Intersection Delay [s/veh]	33.13											
Intersection LOS	C											
Intersection V/C	0.863											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.019	2.099	3.060	3.142
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	250	1317	900
d_b, Bicycle Delay [s]	45.94	45.94	7.00	18.15
l_b,int, Bicycle LOS Score for Intersection	1.796	1.682	3.386	3.031
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	57.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.911

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	296	222	131	104	43	182	1344	55	94	823	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	7.20	7.20	7.20	3.20	3.20	3.20	7.40	7.40	7.40
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	12	37	13	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	338	251	148	130	86	219	1519	62	106	930	167
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	94	70	41	36	24	61	422	17	29	258	46
Total Analysis Volume [veh/h]	117	376	279	164	144	96	243	1688	69	118	1033	186
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	26	0	17	19	0	36	64	0	13	41	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	22	22	13	25	25	20	60	60	9	48	48
g / C, Green / Cycle	0.09	0.18	0.18	0.11	0.20	0.20	0.17	0.50	0.50	0.08	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.20	0.11	0.09	0.07	0.15	0.53	0.05	0.08	0.34	0.14
s, saturation flow rate [veh/h]	1598	3194	1426	1536	1613	1371	1587	3174	1417	1533	3066	1369
c, Capacity [veh/h]	141	589	263	166	330	281	270	1583	707	115	1237	552
d1, Uniform Delay [s]	53.84	45.24	48.94	53.40	41.67	40.81	48.78	30.08	15.85	55.50	32.19	24.70
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.14	0.12	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.76	5.22	72.49	28.99	4.15	3.30	12.90	33.76	0.06	45.49	1.56	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.64	1.06	0.99	0.44	0.34	0.90	1.07	0.10	1.02	0.83	0.34
d, Delay for Lane Group [s/veh]	65.59	50.46	121.42	82.39	45.83	44.11	61.68	63.84	15.91	100.99	33.75	25.06
Lane Group LOS	E	D	F	F	D	D	E	F	B	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	3.93	5.61	13.14	6.27	4.12	2.70	8.08	29.22	1.01	4.93	13.49	3.71
50th-Percentile Queue Length [ft]	98.33	140.24	328.42	156.71	102.98	67.45	201.93	730.49	25.32	123.34	337.35	92.74
95th-Percentile Queue Length [veh]	7.08	9.49	19.66	10.37	7.41	4.86	12.74	40.04	1.82	8.65	19.52	6.68
95th-Percentile Queue Length [ft]	177.00	237.34	491.58	259.36	185.36	121.41	318.45	1000.94	45.58	216.13	487.96	166.93

Movement, Approach, & Intersection Results

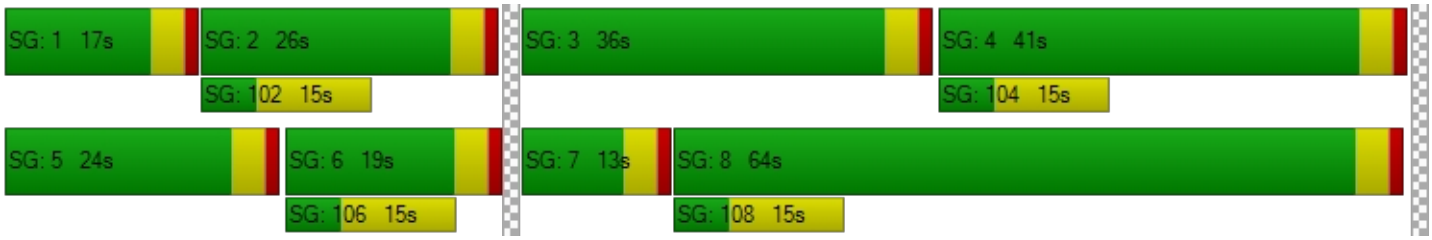
d_M, Delay for Movement [s/veh]	65.59	50.46	121.42	82.39	45.83	44.11	61.68	63.84	15.91	100.99	33.75	25.06
Movement LOS	E	D	F	F	D	D	E	F	B	F	C	C
d_A, Approach Delay [s/veh]	78.40			60.26			61.92			38.47		
Approach LOS	E			E			E			D		
d_I, Intersection Delay [s/veh]	57.64											
Intersection LOS	E											
Intersection V/C	0.911											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.530	2.551	2.996	3.032
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	367	250	1000	617
d_b, Bicycle Delay [s]	40.02	45.94	15.00	28.70
l_b,int, Bicycle LOS Score for Intersection	2.197	2.226	3.210	2.663
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 42: Reed at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Reed Rd		Reed Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Site Access	
Base Volume Input [veh/h]	308	0	0	47	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	2	8
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	348	0	0	53	2	8
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	109	0	0	17	1	3
Total Analysis Volume [veh/h]	435	0	0	66	3	10
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	8.20	0.00	11.93	10.93
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.07	0.07
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	1.67	1.67
d_A, Approach Delay [s/veh]	0.00		0.00		11.16	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.28					
Intersection LOS	B					

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 3.pdf

Scenario 7 AM Dev 2026 Ph 3
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	28	9	38	266	415	298	1054

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	706	17	3	314	49	7	1096

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	349	0	18	49	5	134	555

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	261	31	119	3	1	3	27	288	72	9	288	31	1133

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	8	420	121	5	133	22	709

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	20	4	4	54	19	150	251

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	169	144	8	59	7	3	390

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	0	9	112	52	4	7	34	1848	0	41	1206	269	3582

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	105	338	251	148	130	86	219	1519	62	106	930	167	4061

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	348	0	0	53	2	8	411

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 3.pdf

Scenario 7 AM Dev 2026 Ph 3
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	25	6	34	233	361	264	923
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	2	0	3	7	0	12
		Other	0	0	0	0	0	0	0
		Future Total	**28**	**9**	**38**	**266**	**415**	**298**	**1054**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	Final Base	625	0	0	278	0	0	903
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	17	3	0	49	7	76
		Other	0	0	0	0	0	0	0
		Future Total	**706**	**17**	**3**	**314**	**49**	**7**	**1096**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	302	0	12	43	4	115	476
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	8	0	4	0	0	4	16
		Other	0	0	0	0	0	0	0
		Future Total	**349**	**0**	**18**	**49**	**5**	**134**	**555**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	220	27	105	3	1	3	24	255	60	8	255	27	988
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	12	0	0	0	0	0	0	0	4	0	0	0	16
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**261**	**31**	**119**	**3**	**1**	**3**	**27**	**288**	**72**	**9**	**288**	**31**	**1133**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	4	372	107	4	118	13	618
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	3	0	0	0	0	7	10
		Other	0	0	0	0	0	0	0
		Future Total	**8**	**420**	**121**	**5**	**133**	**22**	**709**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	Final Base	18	0	0	0	0	133	151
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	4	4	54	19	0	81
		Other	0	0	0	0	0	0	0
		Future Total	**20**	**4**	**4**	**54**	**19**	**150**	**251**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	135	127	1	11	6	0	280
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	16	0	7	47	0	3	73
		Other	0	0	0	0	0	0	0
		Future Total	**169**	**144**	**8**	**59**	**7**	**3**	**390**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	Final Base	0	7	99	6	2	6	30	1635	0	36	1067	225	3113
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	1	0	45	2	0	0	0	0	0	0	15	63
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**0**	**9**	**112**	**52**	**4**	**7**	**34**	**1848**	**0**	**41**	**1206**	**269**	**3582**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	296	222	131	104	43	182	1344	55	94	823	148	3535
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	4	0	0	12	37	13	0	0	0	0	0	66
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**105**	**338**	**251**	**148**	**130**	**86**	**219**	**1519**	**62**	**106**	**930**	**167**	**4061**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	Final Base	308	0	0	47	0	0	355
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	2	8	10
		Other	0	0	0	0	0	0	0
		Future Total	**348**	**0**	**0**	**53**	**2**	**8**	**411**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	713	304	37
2	684	292	36
3	670	286	35
4	570	243	30
5	542	231	28
6	485	207	25
7	449	192	23
8	428	182	22
9	342	146	18
10	321	137	17
11	321	137	17
12	307	131	16
13	278	119	14
14	257	109	13
15	257	109	13
16	250	106	13
17	143	61	7
18	78	33	4
19	71	30	4
20	29	12	1
21	21	9	1
22	21	9	1
23	14	6	1
24	14	6	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1017	2	37	No	No	No	No	No	No	No	No	No	No
2	2	976	2	36	No	No	No	No	No	No	No	No	No	No
3	2	956	2	35	No	No	No	No	No	No	No	No	No	No
4	2	813	2	30	No	No	No	No	No	No	No	No	No	No
5	2	773	2	28	No	No	No	No	No	No	No	No	No	No
6	2	692	2	25	No	No	No	No	No	No	No	No	No	No
7	2	641	2	23	No	No	No	No	No	No	No	No	No	No
8	2	610	2	22	No	No	No	No	No	No	No	No	No	No
9	2	488	2	18	No	No	No	No	No	No	No	No	No	No
10	2	458	2	17	No	No	No	No	No	No	No	No	No	No
11	2	458	2	17	No	No	No	No	No	No	No	No	No	No
12	2	438	2	16	No	No	No	No	No	No	No	No	No	No
13	2	397	2	14	No	No	No	No	No	No	No	No	No	No
14	2	366	2	13	No	No	No	No	No	No	No	No	No	No
15	2	366	2	13	No	No	No	No	No	No	No	No	No	No
16	2	356	2	13	No	No	No	No	No	No	No	No	No	No
17	2	204	2	7	No	No	No	No	No	No	No	No	No	No
18	2	111	2	4	No	No	No	No	No	No	No	No	No	No
19	2	101	2	4	No	No	No	No	No	No	No	No	No	No
20	2	41	2	1	No	No	No	No	No	No	No	No	No	No
21	2	30	2	1	No	No	No	No	No	No	No	No	No	No
22	2	30	2	1	No	No	No	No	No	No	No	No	No	No
23	2	20	2	1	No	No	No	No	No	No	No	No	No	No
24	2	20	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	20.9
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:12
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	37
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1054
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 6: Battle Creek Rd at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	723	317	56
2	694	304	54
3	680	298	53
4	578	254	45
5	549	241	43
6	492	216	38
7	455	200	35
8	434	190	34
9	347	152	27
10	325	143	25
11	325	143	25
12	311	136	24
13	282	124	22
14	260	114	20
15	260	114	20
16	253	111	20
17	145	63	11
18	80	35	6
19	72	32	6
20	29	13	2
21	22	10	2
22	22	10	2
23	14	6	1
24	14	6	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1040	1	56	No	No	No	No	No	No	Yes	Yes	No	No
2	2	998	1	54	No	No	No	No	No	No	Yes	Yes	No	No
3	2	978	1	53	No	No	No	No	No	No	Yes	Yes	No	No
4	2	832	1	45	No	No	No	No	No	No	No	Yes	No	No
5	2	790	1	43	No	No	No	No	No	No	No	Yes	No	No
6	2	708	1	38	No	No	No	No	No	No	No	No	No	No
7	2	655	1	35	No	No	No	No	No	No	No	No	No	No
8	2	624	1	34	No	No	No	No	No	No	No	No	No	No
9	2	499	1	27	No	No	No	No	No	No	No	No	No	No
10	2	468	1	25	No	No	No	No	No	No	No	No	No	No
11	2	468	1	25	No	No	No	No	No	No	No	No	No	No
12	2	447	1	24	No	No	No	No	No	No	No	No	No	No
13	2	406	1	22	No	No	No	No	No	No	No	No	No	No
14	2	374	1	20	No	No	No	No	No	No	No	No	No	No
15	2	374	1	20	No	No	No	No	No	No	No	No	No	No
16	2	364	1	20	No	No	No	No	No	No	No	No	No	No
17	2	208	1	11	No	No	No	No	No	No	No	No	No	No
18	2	115	1	6	No	No	No	No	No	No	No	No	No	No
19	2	104	1	6	No	No	No	No	No	No	No	No	No	No
20	2	42	1	2	No	No	No	No	No	No	No	No	No	No
21	2	32	1	2	No	No	No	No	No	No	No	No	No	No
22	2	32	1	2	No	No	No	No	No	No	No	No	No	No
23	2	20	1	1	No	No	No	No	No	No	No	No	No	No
24	2	20	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	3	5	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	28.1
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:26
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	56
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1096
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	67	349	139
2	64	335	133
3	63	328	131
4	54	279	111
5	51	265	106
6	46	237	95
7	42	220	88
8	40	209	83
9	32	168	67
10	30	157	63
11	30	157	63
12	29	150	60
13	26	136	54
14	24	126	50
15	24	126	50
16	23	122	49
17	13	70	28
18	7	38	15
19	7	35	14
20	3	14	6
21	2	10	4
22	2	10	4
23	1	7	3
24	1	7	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	416	1	139	No	No	No	Yes	No	No	No	No	No	No
2	2	399	1	133	No	No	No	Yes	No	No	No	No	No	No
3	2	391	1	131	No	No	No	Yes	No	No	No	No	No	No
4	2	333	1	111	No	No	No	No	No	No	No	No	No	No
5	2	316	1	106	No	No	No	No	No	No	No	No	No	No
6	2	283	1	95	No	No	No	No	No	No	No	No	No	No
7	2	262	1	88	No	No	No	No	No	No	No	No	No	No
8	2	249	1	83	No	No	No	No	No	No	No	No	No	No
9	2	200	1	67	No	No	No	No	No	No	No	No	No	No
10	2	187	1	63	No	No	No	No	No	No	No	No	No	No
11	2	187	1	63	No	No	No	No	No	No	No	No	No	No
12	2	179	1	60	No	No	No	No	No	No	No	No	No	No
13	2	162	1	54	No	No	No	No	No	No	No	No	No	No
14	2	150	1	50	No	No	No	No	No	No	No	No	No	No
15	2	150	1	50	No	No	No	No	No	No	No	No	No	No
16	2	145	1	49	No	No	No	No	No	No	No	No	No	No
17	2	83	1	28	No	No	No	No	No	No	No	No	No	No
18	2	45	1	15	No	No	No	No	No	No	No	No	No	No
19	2	42	1	14	No	No	No	No	No	No	No	No	No	No
20	2	17	1	6	No	No	No	No	No	No	No	No	No	No
21	2	12	1	4	No	No	No	No	No	No	No	No	No	No
22	2	12	1	4	No	No	No	No	No	No	No	No	No	No
23	2	8	1	3	No	No	No	No	No	No	No	No	No	No
24	2	8	1	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:32
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	139
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	555
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	328	387	7	411
2	315	372	7	395
3	308	364	7	386
4	262	310	6	329
5	249	294	5	312
6	223	263	5	279
7	207	244	4	259
8	197	232	4	247
9	157	186	3	197
10	148	174	3	185
11	148	174	3	185
12	141	166	3	177
13	128	151	3	160
14	118	139	3	148
15	118	139	3	148
16	115	135	2	144
17	66	77	1	82
18	36	43	1	45
19	33	39	1	41
20	13	15	0	16
21	10	12	0	12
22	10	12	0	12
23	7	8	0	8
24	7	8	0	8

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	715	2	418	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
2	4	687	2	402	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
3	4	672	2	393	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
4	4	572	2	335	No	Yes	Yes	Yes	No	No	No	Yes	Yes	No
5	4	543	2	317	No	Yes	Yes	Yes	No	No	No	Yes	No	No
6	4	486	2	284	No	Yes	Yes	Yes	No	No	No	No	No	No
7	4	451	2	263	No	No	Yes	Yes	No	No	No	No	No	No
8	4	429	2	251	No	No	Yes	Yes	No	No	No	No	No	No
9	4	343	2	200	No	No	No	Yes	No	No	No	No	No	No
10	4	322	2	188	No	No	No	No	No	No	No	No	No	No
11	4	322	2	188	No	No	No	No	No	No	No	No	No	No
12	4	307	2	180	No	No	No	No	No	No	No	No	No	No
13	4	279	2	163	No	No	No	No	No	No	No	No	No	No
14	4	257	2	151	No	No	No	No	No	No	No	No	No	No
15	4	257	2	151	No	No	No	No	No	No	No	No	No	No
16	4	250	2	146	No	No	No	No	No	No	No	No	No	No
17	4	143	2	83	No	No	No	No	No	No	No	No	No	No
18	4	79	2	46	No	No	No	No	No	No	No	No	No	No
19	4	72	2	42	No	No	No	No	No	No	No	No	No	No
20	4	28	2	16	No	No	No	No	No	No	No	No	No	No
21	4	22	2	12	No	No	No	No	No	No	No	No	No	No
22	4	22	2	12	No	No	No	No	No	No	No	No	No	No
23	4	15	2	8	No	No	No	No	No	No	No	No	No	No
24	4	15	2	8	No	No	No	No	No	No	No	No	No	No
Hours Met					3	6	8	9	0	0	3	5	4	1

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	18.7	273.3
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02	31:11
Delay Condition Met	No	Yes
Volume on Minor Street Approach During Same Hour	7	411
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	1133	1133
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	Yes
Warrant Met for Intersection	**Yes**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	428	126	155
2	411	121	149
3	402	118	146
4	342	101	124
5	325	96	118
6	291	86	105
7	270	79	98
8	257	76	93
9	205	60	74
10	193	57	70
11	193	57	70
12	184	54	67
13	167	49	60
14	154	45	56
15	154	45	56
16	150	44	54
17	86	25	31
18	47	14	17
19	43	13	16
20	17	5	6
21	13	4	5
22	13	4	5
23	9	3	3
24	9	3	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	554	1	155	No	Yes	Yes	Yes	No	No	No	Yes	No	No
2	3	532	1	149	No	Yes	Yes	Yes	No	No	No	Yes	No	No
3	3	520	1	146	No	Yes	Yes	Yes	No	No	No	Yes	No	No
4	3	443	1	124	No	No	Yes	Yes	No	No	No	No	No	No
5	3	421	1	118	No	No	Yes	Yes	No	No	No	No	No	No
6	3	377	1	105	No	No	No	Yes	No	No	No	No	No	No
7	3	349	1	98	No	No	No	Yes	No	No	No	No	No	No
8	3	333	1	93	No	No	No	No	No	No	No	No	No	No
9	3	265	1	74	No	No	No	No	No	No	No	No	No	No
10	3	250	1	70	No	No	No	No	No	No	No	No	No	No
11	3	250	1	70	No	No	No	No	No	No	No	No	No	No
12	3	238	1	67	No	No	No	No	No	No	No	No	No	No
13	3	216	1	60	No	No	No	No	No	No	No	No	No	No
14	3	199	1	56	No	No	No	No	No	No	No	No	No	No
15	3	199	1	56	No	No	No	No	No	No	No	No	No	No
16	3	194	1	54	No	No	No	No	No	No	No	No	No	No
17	3	111	1	31	No	No	No	No	No	No	No	No	No	No
18	3	61	1	17	No	No	No	No	No	No	No	No	No	No
19	3	56	1	16	No	No	No	No	No	No	No	No	No	No
20	3	22	1	6	No	No	No	No	No	No	No	No	No	No
21	3	17	1	5	No	No	No	No	No	No	No	No	No	No
22	3	17	1	5	No	No	No	No	No	No	No	No	No	No
23	3	12	1	3	No	No	No	No	No	No	No	No	No	No
24	3	12	1	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	3	5	7	0	0	0	3	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	21.6
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:55
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	155
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	709
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 26: East Access at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	N	W
1	169	24	58
2	162	23	56
3	159	23	55
4	135	19	46
5	128	18	44
6	115	16	39
7	106	15	37
8	101	14	35
9	81	12	28
10	76	11	26
11	76	11	26
12	73	10	25
13	66	9	23
14	61	9	21
15	61	9	21
16	59	8	20
17	34	5	12
18	19	3	6
19	17	2	6
20	7	1	2
21	5	1	2
22	5	1	2
23	3	0	1
24	3	0	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	193	1	58	No	No	No	No	No	No	No	No	No	No
2	2	185	1	56	No	No	No	No	No	No	No	No	No	No
3	2	182	1	55	No	No	No	No	No	No	No	No	No	No
4	2	154	1	46	No	No	No	No	No	No	No	No	No	No
5	2	146	1	44	No	No	No	No	No	No	No	No	No	No
6	2	131	1	39	No	No	No	No	No	No	No	No	No	No
7	2	121	1	37	No	No	No	No	No	No	No	No	No	No
8	2	115	1	35	No	No	No	No	No	No	No	No	No	No
9	2	93	1	28	No	No	No	No	No	No	No	No	No	No
10	2	87	1	26	No	No	No	No	No	No	No	No	No	No
11	2	87	1	26	No	No	No	No	No	No	No	No	No	No
12	2	83	1	25	No	No	No	No	No	No	No	No	No	No
13	2	75	1	23	No	No	No	No	No	No	No	No	No	No
14	2	70	1	21	No	No	No	No	No	No	No	No	No	No
15	2	70	1	21	No	No	No	No	No	No	No	No	No	No
16	2	67	1	20	No	No	No	No	No	No	No	No	No	No
17	2	39	1	12	No	No	No	No	No	No	No	No	No	No
18	2	22	1	6	No	No	No	No	No	No	No	No	No	No
19	2	19	1	6	No	No	No	No	No	No	No	No	No	No
20	2	8	1	2	No	No	No	No	No	No	No	No	No	No
21	2	6	1	2	No	No	No	No	No	No	No	No	No	No
22	2	6	1	2	No	No	No	No	No	No	No	No	No	No
23	2	3	1	1	No	No	No	No	No	No	No	No	No	No
24	2	3	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:09
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	58
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	251
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	67	313	10
2	64	300	10
3	63	294	9
4	54	250	8
5	51	238	8
6	46	213	7
7	42	197	6
8	40	188	6
9	32	150	5
10	30	141	5
11	30	141	5
12	29	135	4
13	26	122	4
14	24	113	4
15	24	113	4
16	23	110	4
17	13	63	2
18	7	34	1
19	7	31	1
20	3	13	0
21	2	9	0
22	2	9	0
23	1	6	0
24	1	6	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	380	1	10	No	No	No	No	No	No	No	No	No	No
2	2	364	1	10	No	No	No	No	No	No	No	No	No	No
3	2	357	1	9	No	No	No	No	No	No	No	No	No	No
4	2	304	1	8	No	No	No	No	No	No	No	No	No	No
5	2	289	1	8	No	No	No	No	No	No	No	No	No	No
6	2	259	1	7	No	No	No	No	No	No	No	No	No	No
7	2	239	1	6	No	No	No	No	No	No	No	No	No	No
8	2	228	1	6	No	No	No	No	No	No	No	No	No	No
9	2	182	1	5	No	No	No	No	No	No	No	No	No	No
10	2	171	1	5	No	No	No	No	No	No	No	No	No	No
11	2	171	1	5	No	No	No	No	No	No	No	No	No	No
12	2	164	1	4	No	No	No	No	No	No	No	No	No	No
13	2	148	1	4	No	No	No	No	No	No	No	No	No	No
14	2	137	1	4	No	No	No	No	No	No	No	No	No	No
15	2	137	1	4	No	No	No	No	No	No	No	No	No	No
16	2	133	1	4	No	No	No	No	No	No	No	No	No	No
17	2	76	1	2	No	No	No	No	No	No	No	No	No	No
18	2	41	1	1	No	No	No	No	No	No	No	No	No	No
19	2	38	1	1	No	No	No	No	No	No	No	No	No	No
20	2	16	1	0	No	No	No	No	No	No	No	No	No	No
21	2	11	1	0	No	No	No	No	No	No	No	No	No	No
22	2	11	1	0	No	No	No	No	No	No	No	No	No	No
23	2	7	1	0	No	No	No	No	No	No	No	No	No	No
24	2	7	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.9
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	10
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	390
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 42: Reed at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	53	348	10
2	51	334	10
3	50	327	9
4	42	278	8
5	40	264	8
6	36	237	7
7	33	219	6
8	32	209	6
9	25	167	5
10	24	157	5
11	24	157	5
12	23	150	4
13	21	136	4
14	19	125	4
15	19	125	4
16	19	122	4
17	11	70	2
18	6	38	1
19	5	35	1
20	2	14	0
21	2	10	0
22	2	10	0
23	1	7	0
24	1	7	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	401	1	10	No	No	No	No	No	No	No	No	No	No
2	2	385	1	10	No	No	No	No	No	No	No	No	No	No
3	2	377	1	9	No	No	No	No	No	No	No	No	No	No
4	2	320	1	8	No	No	No	No	No	No	No	No	No	No
5	2	304	1	8	No	No	No	No	No	No	No	No	No	No
6	2	273	1	7	No	No	No	No	No	No	No	No	No	No
7	2	252	1	6	No	No	No	No	No	No	No	No	No	No
8	2	241	1	6	No	No	No	No	No	No	No	No	No	No
9	2	192	1	5	No	No	No	No	No	No	No	No	No	No
10	2	181	1	5	No	No	No	No	No	No	No	No	No	No
11	2	181	1	5	No	No	No	No	No	No	No	No	No	No
12	2	173	1	4	No	No	No	No	No	No	No	No	No	No
13	2	157	1	4	No	No	No	No	No	No	No	No	No	No
14	2	144	1	4	No	No	No	No	No	No	No	No	No	No
15	2	144	1	4	No	No	No	No	No	No	No	No	No	No
16	2	141	1	4	No	No	No	No	No	No	No	No	No	No
17	2	81	1	2	No	No	No	No	No	No	No	No	No	No
18	2	44	1	1	No	No	No	No	No	No	No	No	No	No
19	2	40	1	1	No	No	No	No	No	No	No	No	No	No
20	2	16	1	0	No	No	No	No	No	No	No	No	No	No
21	2	12	1	0	No	No	No	No	No	No	No	No	No	No
22	2	12	1	0	No	No	No	No	No	No	No	No	No	No
23	2	8	1	0	No	No	No	No	No	No	No	No	No	No
24	2	8	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.2
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	10
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	411
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 3.pdf

Scenario 7 AM Dev 2026 Ph 3
6/19/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: 18-392 Reed Rd Sub	Homes	ITE 210	Home	0.740	225.000	25.00	75.00	42	124	166	100.00
					Added Trips Total			**42**	**124**	**166**	**100.00**

18-392 Strong at 27th Subdivision TIA

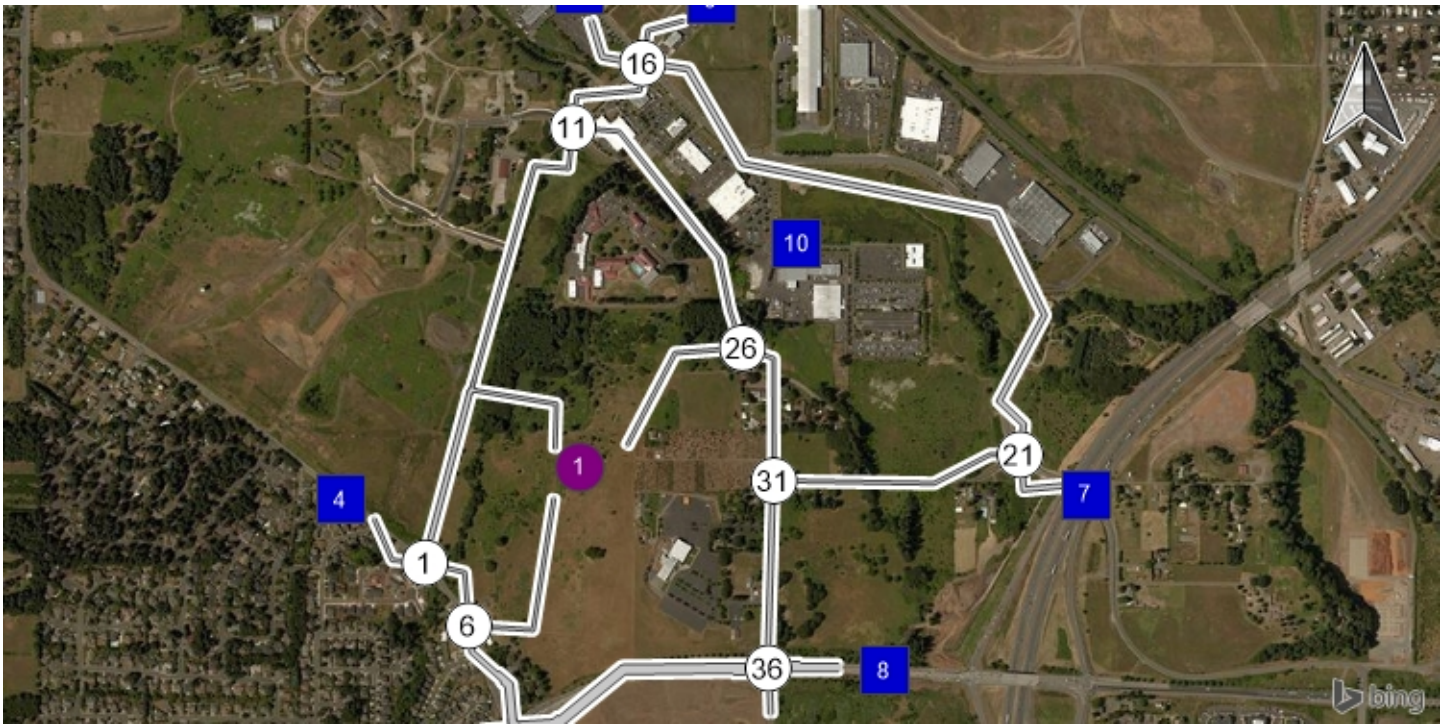
Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 3.pdf

Scenario 7 AM Dev 2026 Ph 3
6/19/2018

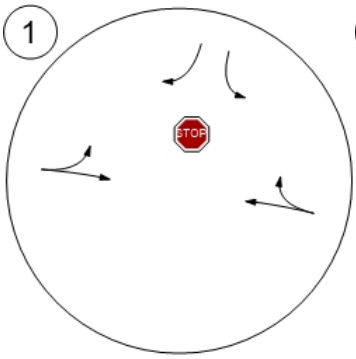
Trip Distribution summary

Zone / Gate	Zone 1: 18-392 Reed Rd Sub			
	To 18-392 Reed Rd Sub:		From 18-392 Reed Rd Sub:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	4	10.00	12
3: Gate	30.00	13	30.00	37
4: Gate	7.00	3	7.00	9
5: Gate	10.00	4	10.00	12
6: Gate	0.00	0	0.00	0
7: Gate	6.00	3	6.00	7
8: Gate	35.00	15	35.00	45
9: Gate	2.00	1	2.00	2
10: Gate	0.00	0	0.00	0
Total	**100.00**	**43**	**100.00**	**124**

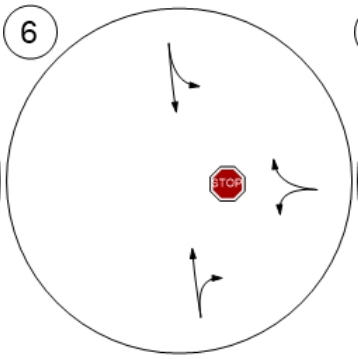
Report Figure 1: Lane Configuration and Traffic Control



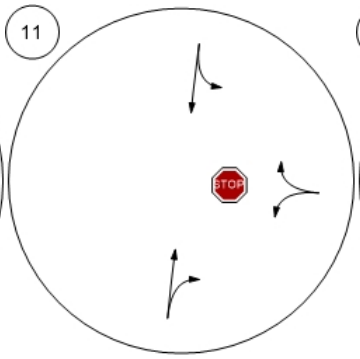
Battle Creek Rd at Reed Rd



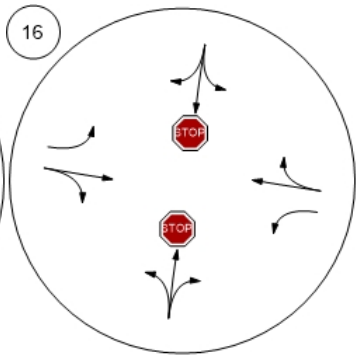
Battle Creek Rd at Site Acces



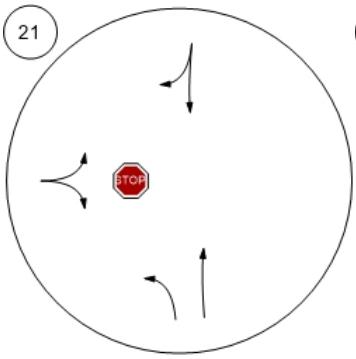
Reed Rd at Strong Rd



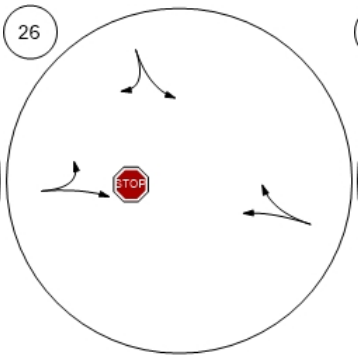
Reed Rd at Fairview Industria



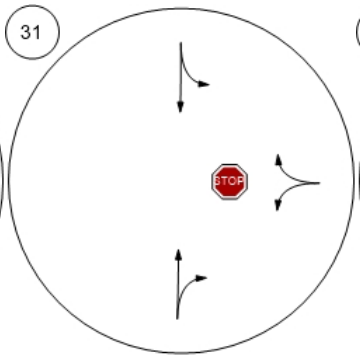
Fairview Industrial Dr at Mari



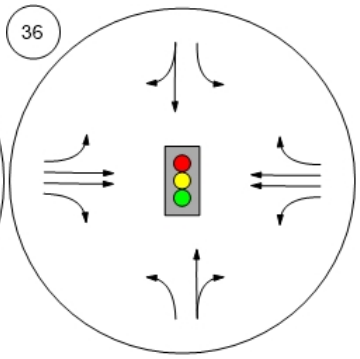
East Access at Strong Rd



27th Ave at Marietta St

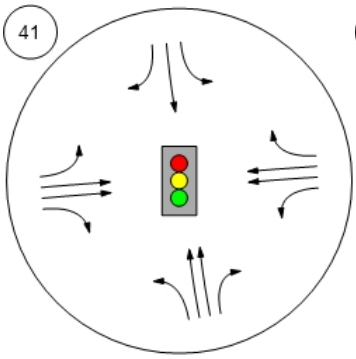


27th at Kuebler Blvd

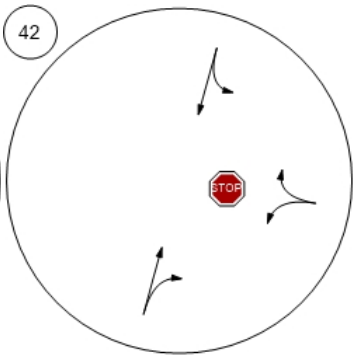


Report Figure 1: Lane Configuration and Traffic Control

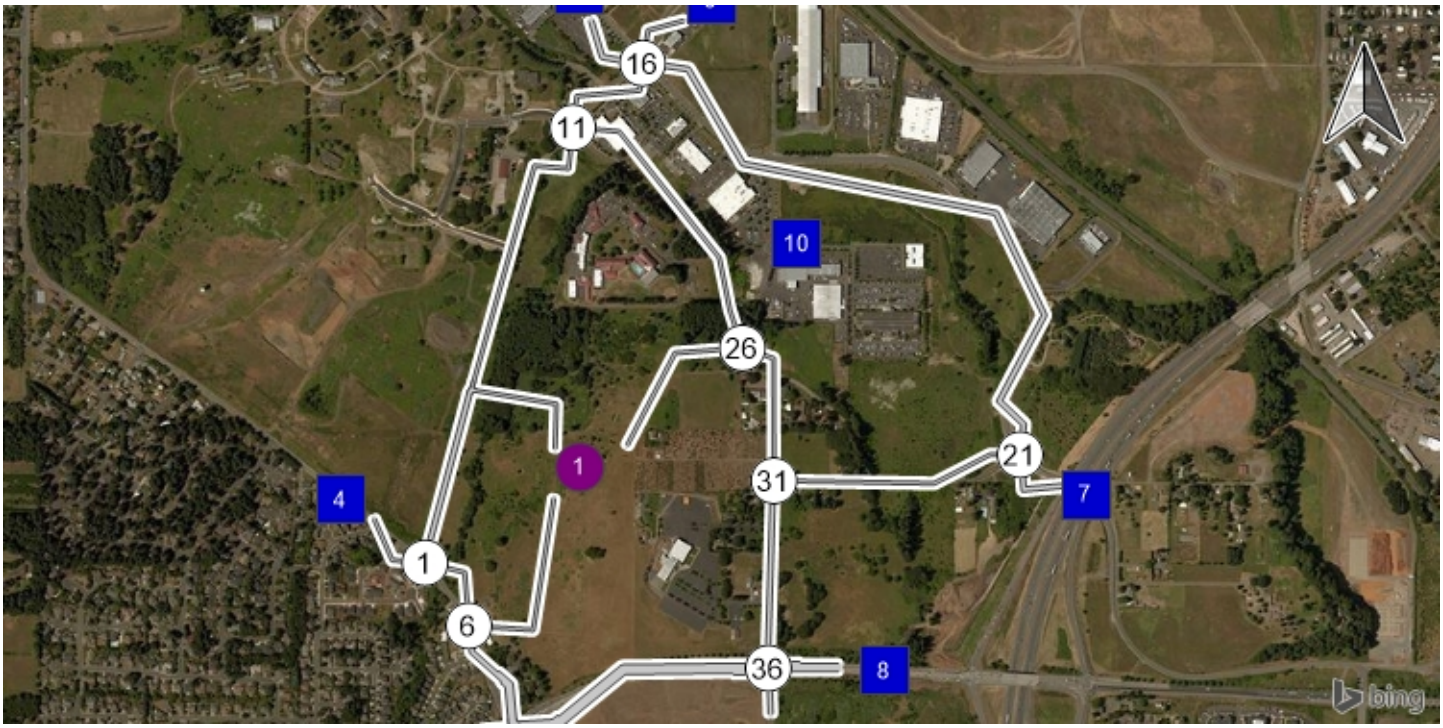
Keubler Blvd at Battle Creek



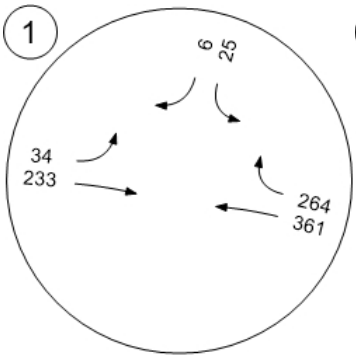
Reed at Site Access



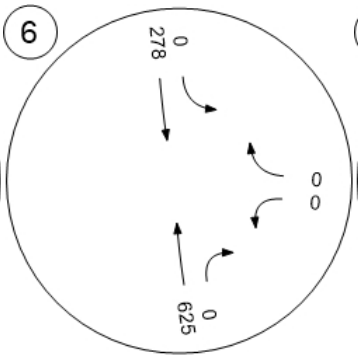
Report Figure 2a: Traffic Volume - Base Volume



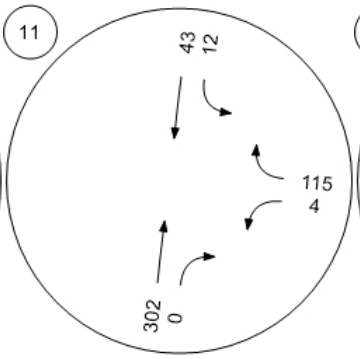
Battle Creek Rd at Reed Rd



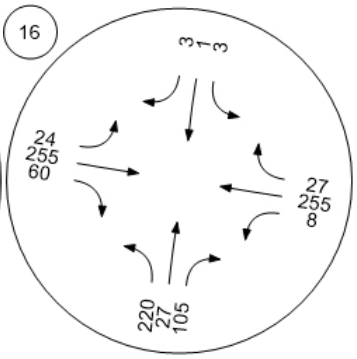
Battle Creek Rd at Site Acces



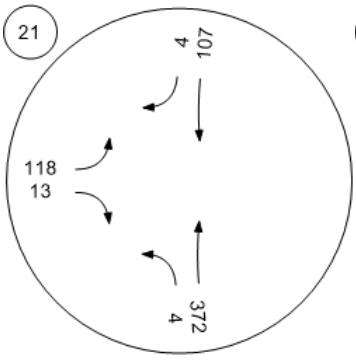
Reed Rd at Strong Rd



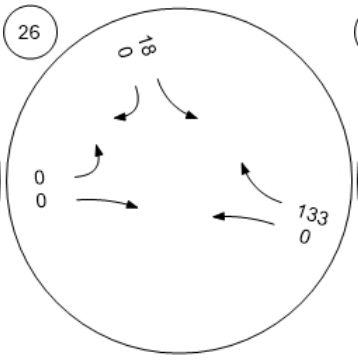
Reed Rd at Fairview Industria



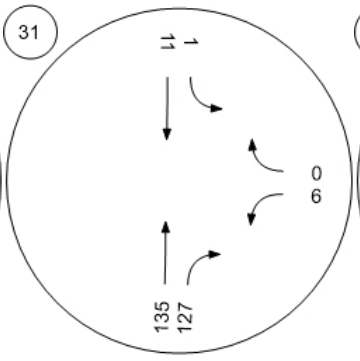
Fairview Industrial Dr at Mari



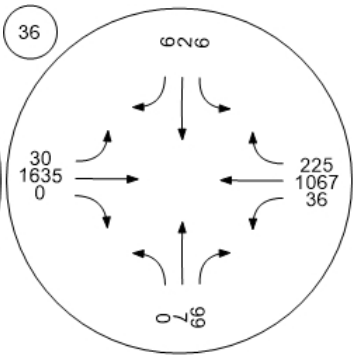
East Access at Strong Rd



27th Ave at Marietta St

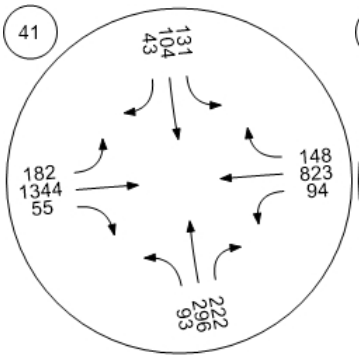


27th at Kuebler Blvd

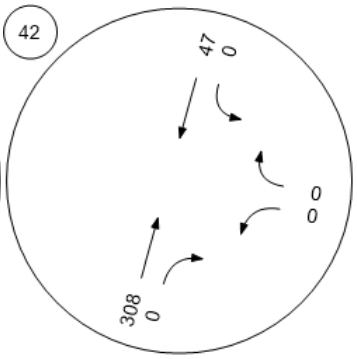


Report Figure 2a: Traffic Volume - Base Volume

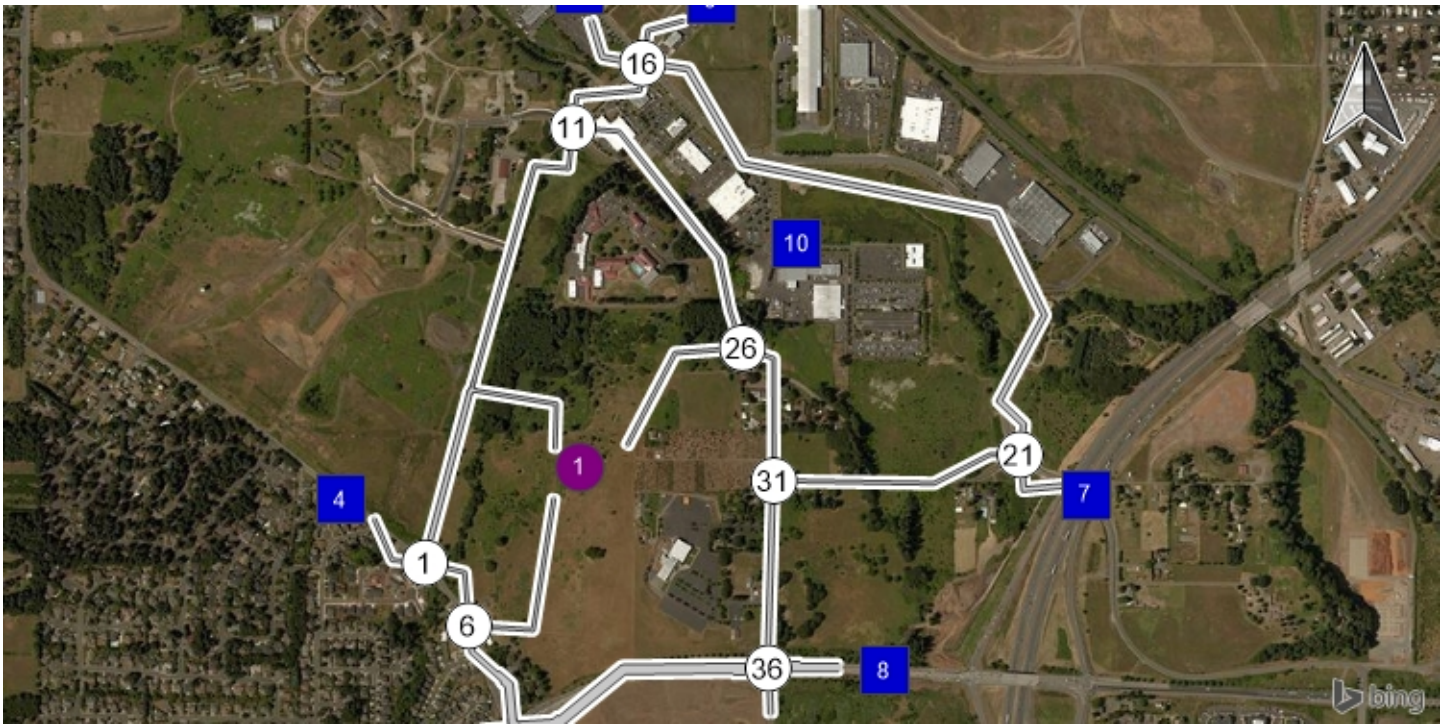
Keubler Blvd at Battle Creek



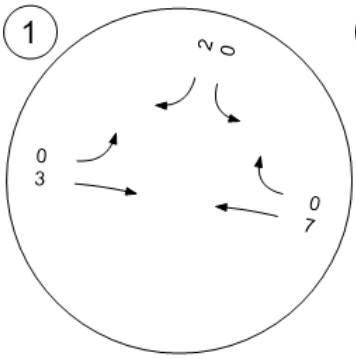
Reed at Site Access



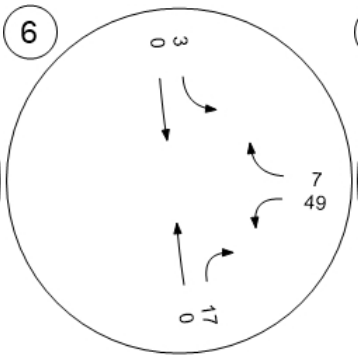
Report Figure 2d: Traffic Volume - Net New Site Trips



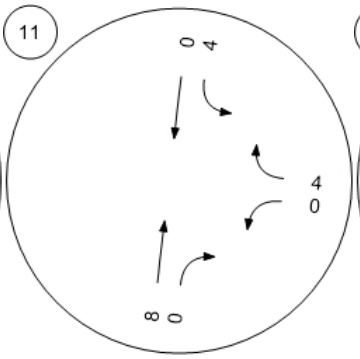
Battle Creek Rd at Reed Rd



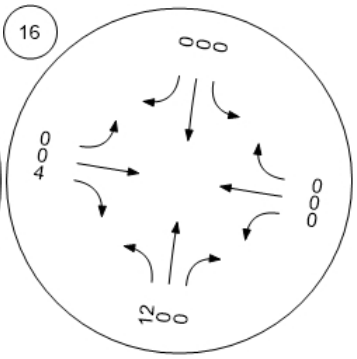
Battle Creek Rd at Site Acces



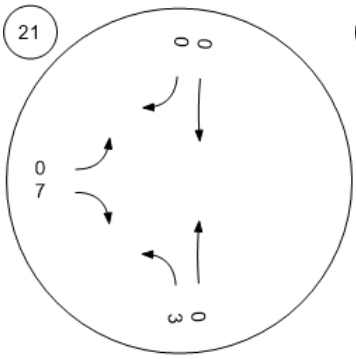
Reed Rd at Strong Rd



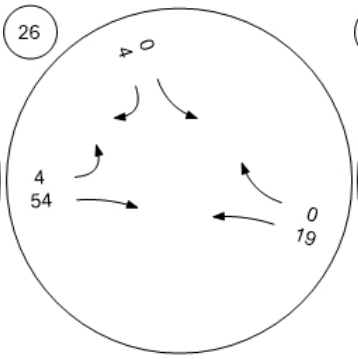
Reed Rd at Fairview Industria



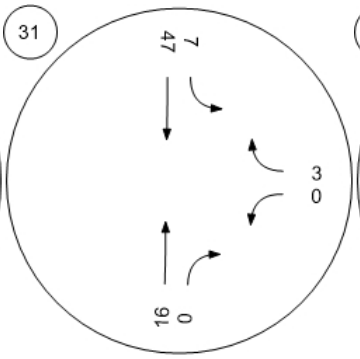
Fairview Industrial Dr at Mari



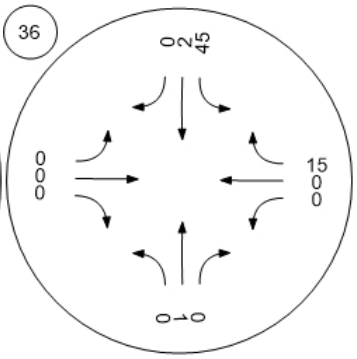
East Access at Strong Rd



27th Ave at Marietta St

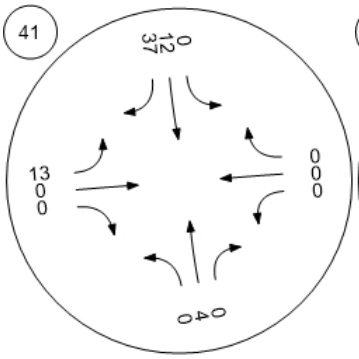


27th at Kuebler Blvd

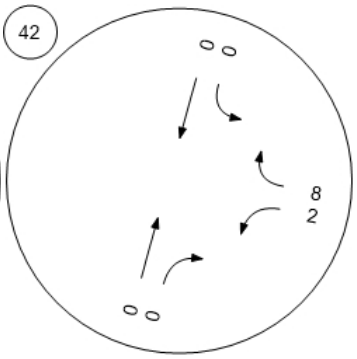


Report Figure 2d: Traffic Volume - Net New Site Trips

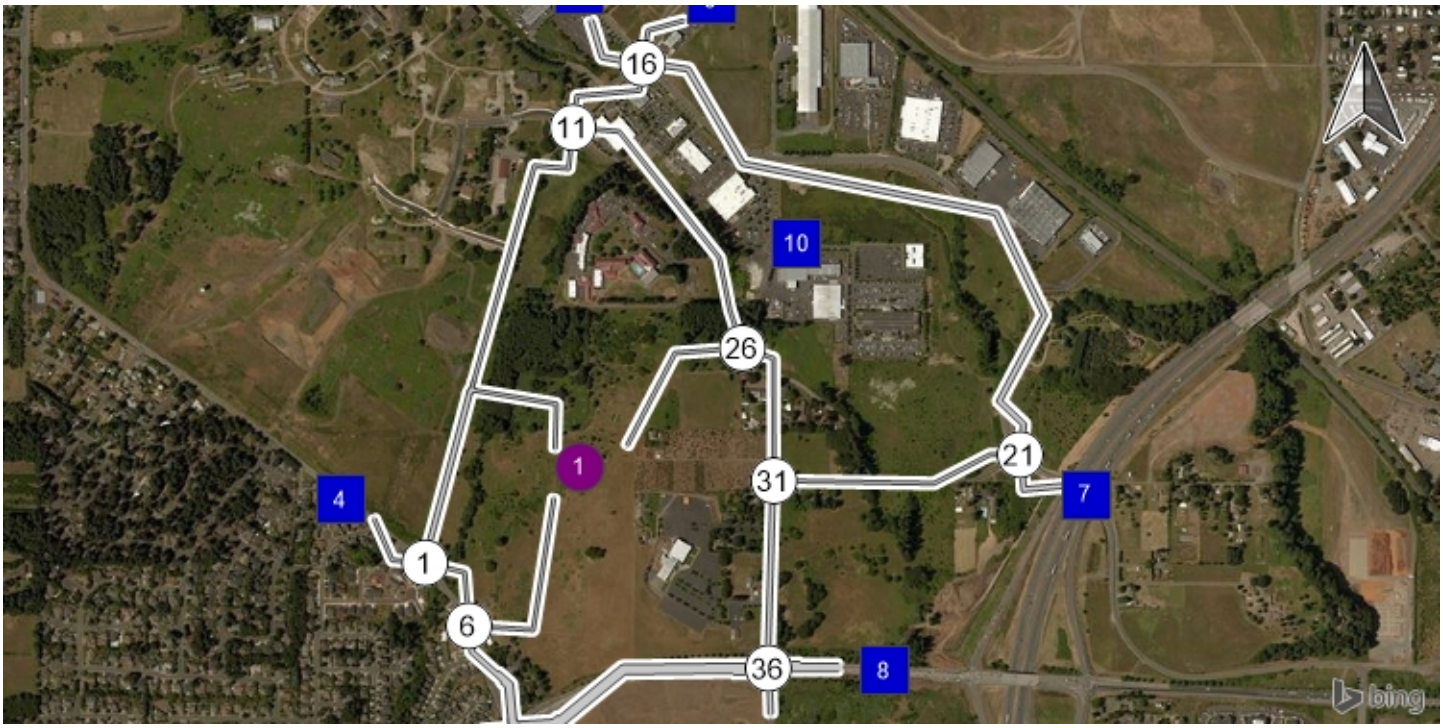
Keubler Blvd at Battle Creek



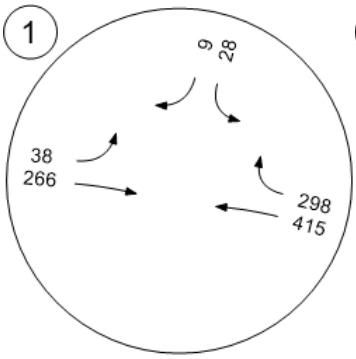
Reed at Site Access



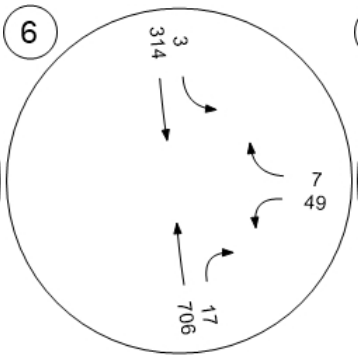
Report Figure 2f: Traffic Volume - Future Total Volume



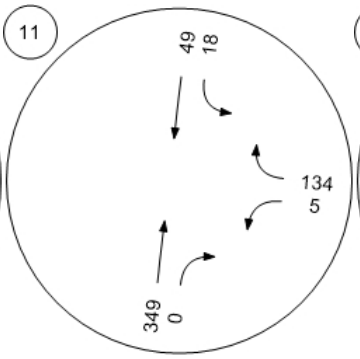
Battle Creek Rd at Reed Rd



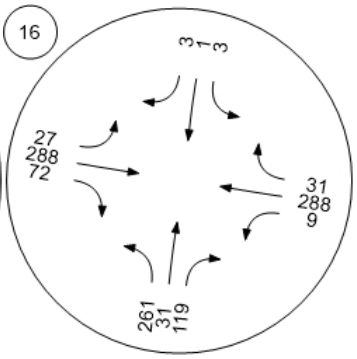
Battle Creek Rd at Site Acces



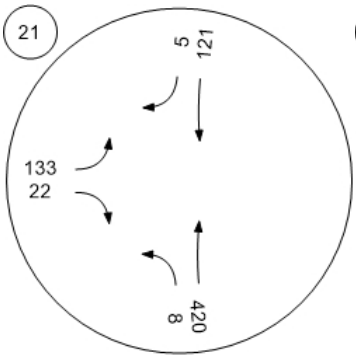
Reed Rd at Strong Rd



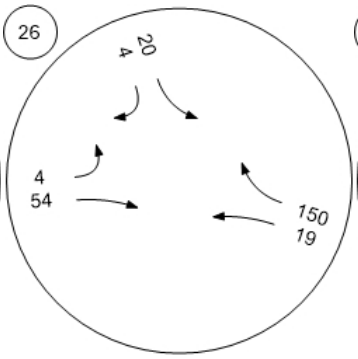
Reed Rd at Fairview Industria



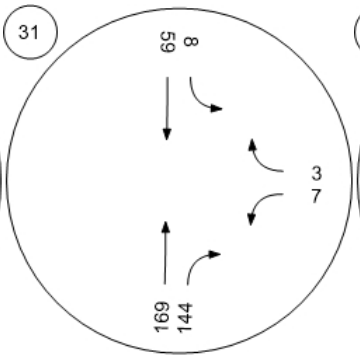
Fairview Industrial Dr at Mari



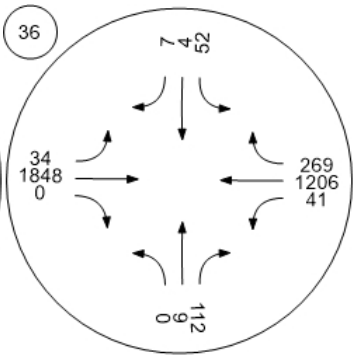
East Access at Strong Rd



27th Ave at Marietta St

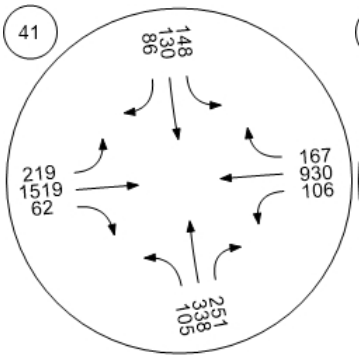


27th at Kuebler Blvd

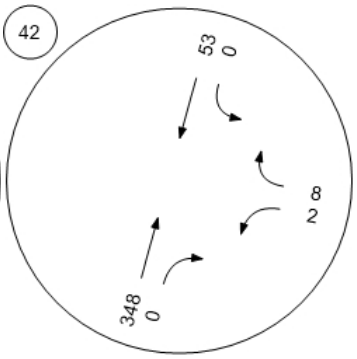


Report Figure 2f: Traffic Volume - Future Total Volume

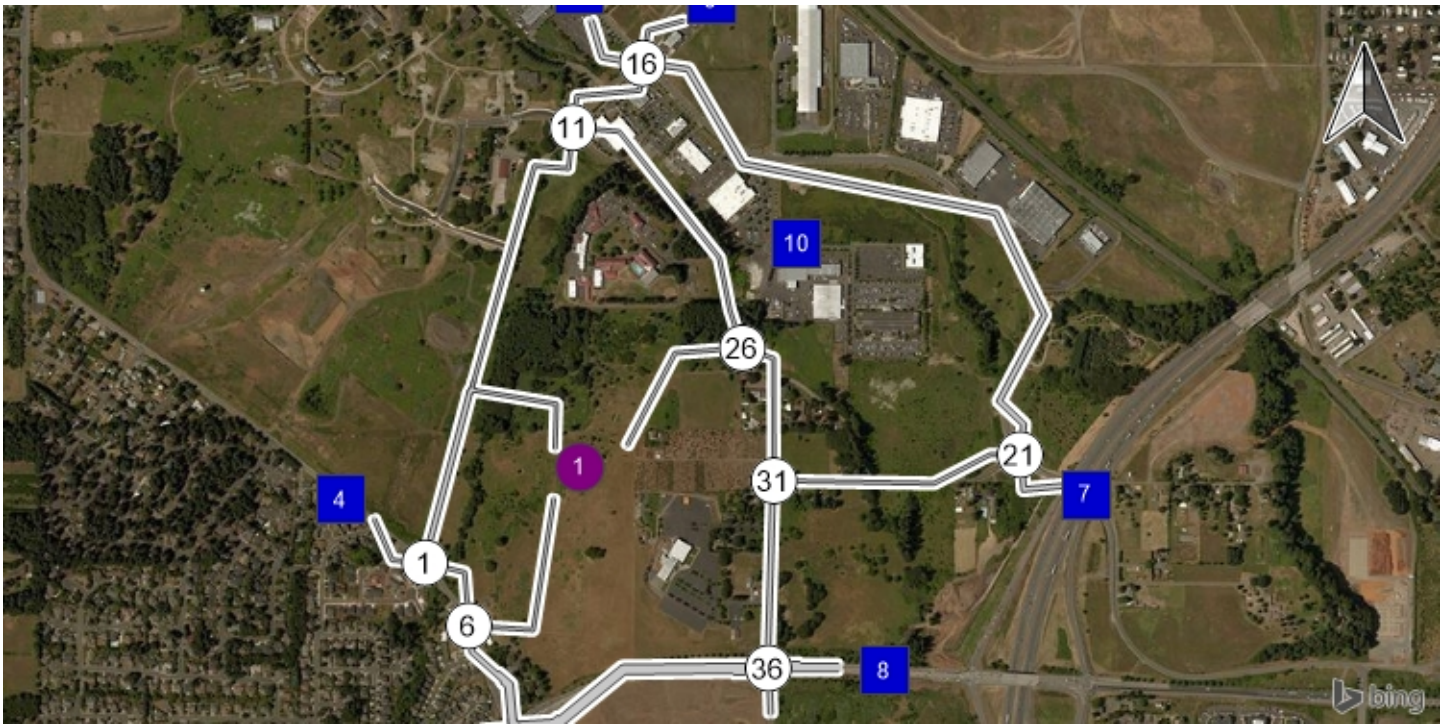
Keubler Blvd at Battle Creek

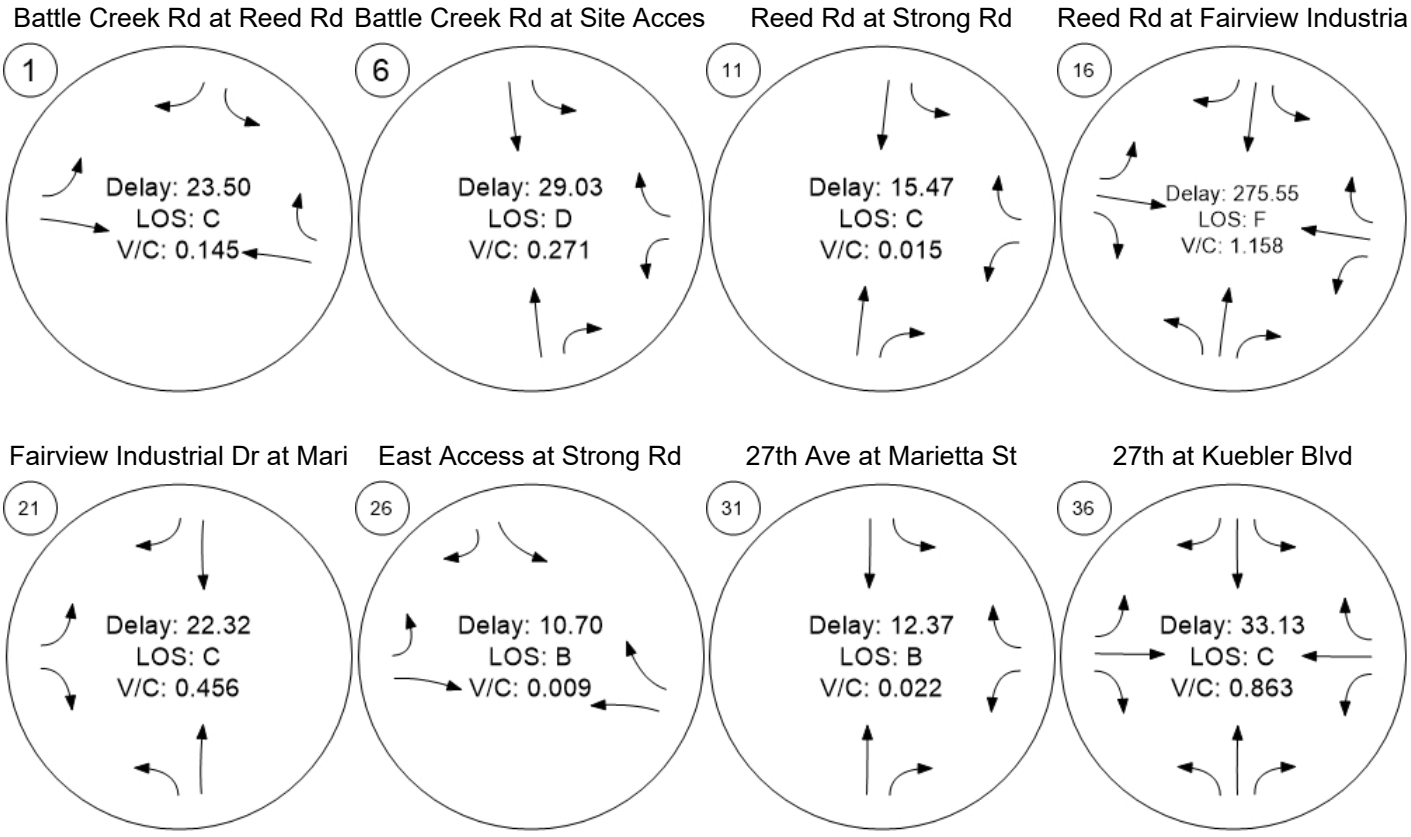


Reed at Site Access



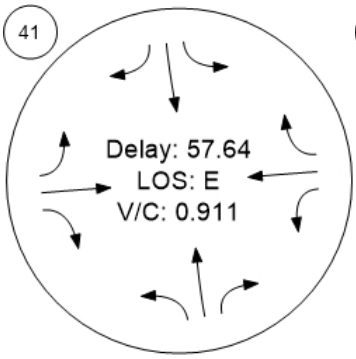
Report Figure 3: Traffic Conditions



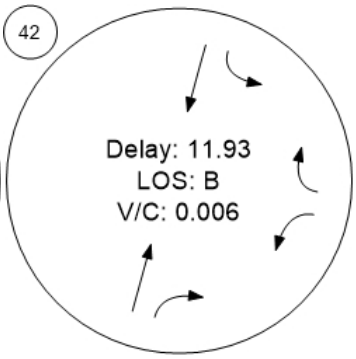


Report Figure 3: Traffic Conditions

Keubler Blvd at Battle Creek



Reed at Site Access



18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Existing.pdf

Scenario 2 PM Existing
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.661	35.4	E
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.018	14.3	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.366	34.3	D
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.031	14.0	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.079	9.9	A
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	WB Left	0.756	36.3	D
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	SB Thru	0.829	42.5	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	35.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.661

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	197	46	10	434	306	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.20	1.20	1.80	1.80	3.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	197	46	10	434	306	59
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	13	3	118	83	16
Total Analysis Volume [veh/h]	214	50	11	472	333	64
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.66	0.07	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	35.39	10.70	8.13	0.00	0.00	0.00
Movement LOS	E	B	A	A	A	A
95th-Percentile Queue Length [veh]	4.43	0.24	2.08	2.08	0.00	0.00
95th-Percentile Queue Length [ft]	110.63	5.92	52.02	52.02	0.00	0.00
d_A, Approach Delay [s/veh]	30.71		0.19		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	7.17					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	14.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	68	1	87	241	5	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.80	5.80	1.80	1.80	6.70	6.70
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	1	87	241	5	10
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	0	29	79	2	3
Total Analysis Volume [veh/h]	89	1	114	317	7	13
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.08	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.59	0.00	14.28	8.95
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	1.19	1.19	0.10	0.10
95th-Percentile Queue Length [ft]	0.00	0.00	29.79	29.79	2.42	2.42
d_A, Approach Delay [s/veh]	0.00		2.01		10.82	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.00					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	Two-way stop	Delay (sec / veh):	34.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.366

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	59	5	22	8	9	17	9	238	212	76	268	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.00	0.00	0.00	4.10	4.10	4.10	4.00	4.00	4.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	5	22	8	9	17	9	238	212	76	268	2
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	2	7	2	3	5	3	73	65	23	82	1
Total Analysis Volume [veh/h]	72	6	27	10	11	21	11	290	259	93	327	2
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.37	0.03	0.04	0.05	0.06	0.03	0.01	0.00	0.00	0.09	0.00	0.00
d_M, Delay for Movement [s/veh]	34.27	31.67	21.72	24.56	25.11	11.80	7.98	0.00	0.00	8.92	0.00	0.00
Movement LOS	D	D	C	C	D	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	2.06	2.06	2.06	0.46	0.46	0.46	0.03	0.00	0.00	0.30	0.00	0.00
95th-Percentile Queue Length [ft]	51.47	51.47	51.47	11.51	11.51	11.51	0.68	0.00	0.00	7.58	0.00	0.00
d_A, Approach Delay [s/veh]	30.89			18.32			0.16			1.97		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	4.37											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.031

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	5	134	378	41	10	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	9.40	9.40	4.50	4.50	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	134	378	41	10	5
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	42	120	13	3	2
Total Analysis Volume [veh/h]	6	170	478	52	13	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.03	0.01
d_M, Delay for Movement [s/veh]	8.62	0.00	0.00	0.00	14.05	11.64
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.02	0.00	0.00	0.00	0.13	0.13
95th-Percentile Queue Length [ft]	0.45	0.00	0.00	0.00	3.27	3.27
d_A, Approach Delay [s/veh]	0.29		0.00		13.29	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.42					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.079

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	18	10	1	107	43	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	10	1	107	43	1
Peak Hour Factor	0.6800	0.6800	0.6800	0.6800	0.6800	0.6800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	4	0	39	16	0
Total Analysis Volume [veh/h]	26	15	1	157	63	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.08	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.28	0.00	9.89	8.83
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.33	0.33	0.26	0.26
95th-Percentile Queue Length [ft]	0.00	0.00	8.31	8.31	6.47	6.47
d_A, Approach Delay [s/veh]	0.00		0.05		9.87	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.43					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 36: 27th at Kuebler Blvd

Control Type:	Signalized	Delay (sec / veh):	36.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.756

Intersection Setup

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	125.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	200.00	350.00	100.00	175.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	1	0	63	100	18	40	11	1307	2	103	1923	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.60	0.60	0.60	3.60	3.60	3.60	1.30	1.30	1.30
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	63	100	18	40	11	1307	2	103	1923	23
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	17	27	5	11	3	348	1	27	511	6
Total Analysis Volume [veh/h]	1	0	67	106	19	43	12	1390	2	110	2046	24
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	34	83	0	9	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	16	5	20	2	78	78	5	82	82
g / C, Green / Cycle	0.00	0.13	0.04	0.17	0.01	0.65	0.65	0.04	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.00	0.05	0.07	0.04	0.01	0.44	0.00	0.07	0.63	0.02
s, saturation flow rate [veh/h]	1568	1400	1621	1516	1582	3163	1412	1612	3222	1439
c, Capacity [veh/h]	2	182	68	258	22	2066	923	67	2195	980
d1, Uniform Delay [s]	59.86	47.72	57.50	43.08	58.80	12.87	7.22	57.50	16.71	6.20
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	92.03	5.67	269.63	2.19	19.56	0.39	0.00	299.48	2.26	0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.37	1.57	0.24	0.55	0.67	0.00	1.63	0.93	0.02
d, Delay for Lane Group [s/veh]	151.89	53.39	327.13	45.28	78.36	13.25	7.22	356.98	18.97	6.21
Lane Group LOS	F	D	F	D	E	B	A	F	B	A
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.09	2.13	7.12	1.76	0.48	10.84	0.02	7.64	22.34	0.19
50th-Percentile Queue Length [ft]	2.25	53.13	178.08	43.99	12.04	271.10	0.44	191.05	558.55	4.78
95th-Percentile Queue Length [veh]	0.16	3.83	12.64	3.17	0.87	16.24	0.03	13.48	30.09	0.34
95th-Percentile Queue Length [ft]	4.05	95.64	316.08	79.19	21.68	406.12	0.79	336.90	752.35	8.61

Movement, Approach, & Intersection Results

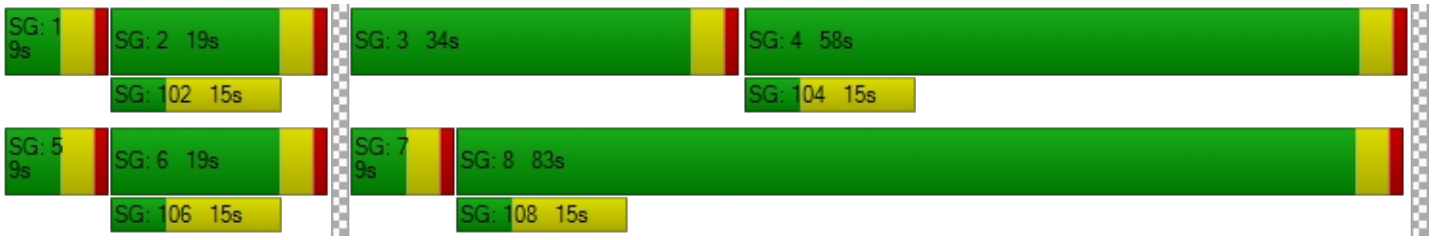
d_M, Delay for Movement [s/veh]	151.89	53.39	53.39	327.13	45.28	45.28	78.36	13.25	7.22	356.98	18.97	6.21
Movement LOS	F	D	D	F	D	D	E	B	A	F	B	A
d_A, Approach Delay [s/veh]	54.83			223.11			13.80			35.88		
Approach LOS	D			F			B			D		
d_I, Intersection Delay [s/veh]	36.34											
Intersection LOS	D											
Intersection V/C	0.756											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.020	2.022	3.036	3.076
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	250	1317	900
d_b, Bicycle Delay [s]	45.94	45.94	7.00	18.15
l_b,int, Bicycle LOS Score for Intersection	1.672	1.837	2.718	3.358
Bicycle LOS	A	A	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	42.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.829

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	157	149	127	316	171	88	1056	76	242	1592	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	1.10	1.10	1.10	3.90	3.90	3.90	1.50	1.50	1.50
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	93	157	149	127	316	171	88	1056	76	242	1592	162
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	41	39	33	82	45	23	275	20	63	415	42
Total Analysis Volume [veh/h]	97	164	155	132	329	178	92	1100	79	252	1658	169
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	19	0	21	28	0	12	46	0	34	68	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	21	21	12	24	24	8	51	51	21	64	64
g / C, Green / Cycle	0.07	0.17	0.17	0.10	0.20	0.20	0.07	0.42	0.42	0.17	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.06	0.05	0.11	0.08	0.19	0.12	0.06	0.35	0.06	0.16	0.52	0.12
s, saturation flow rate [veh/h]	1590	3179	1419	1614	1695	1441	1578	3156	1409	1609	3217	1436
c, Capacity [veh/h]	106	552	246	156	345	294	105	1333	595	279	1703	760
d1, Uniform Delay [s]	55.65	43.20	46.00	53.30	47.20	43.40	55.49	30.72	21.20	48.59	27.44	15.07
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.18	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	23.83	1.37	11.57	11.51	37.75	8.98	18.92	1.35	0.10	15.52	5.71	0.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.30	0.63	0.84	0.95	0.61	0.87	0.83	0.13	0.90	0.97	0.22
d, Delay for Lane Group [s/veh]	79.48	44.57	57.57	64.81	84.95	52.39	74.40	32.08	21.30	64.11	33.15	15.22
Lane Group LOS	E	D	E	E	F	D	E	C	C	E	C	B
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	3.62	2.24	5.09	4.41	13.29	5.54	3.31	14.05	1.38	8.57	23.23	2.48
50th-Percentile Queue Length [ft]	90.48	55.97	127.16	110.34	332.16	138.51	82.80	351.32	34.62	214.35	580.63	62.01
95th-Percentile Queue Length [veh]	6.51	4.03	8.79	7.86	19.26	9.40	5.96	20.20	2.49	13.38	31.13	4.46
95th-Percentile Queue Length [ft]	162.87	100.75	219.63	196.48	481.61	235.02	149.03	505.02	62.31	334.40	778.22	111.61

Movement, Approach, & Intersection Results

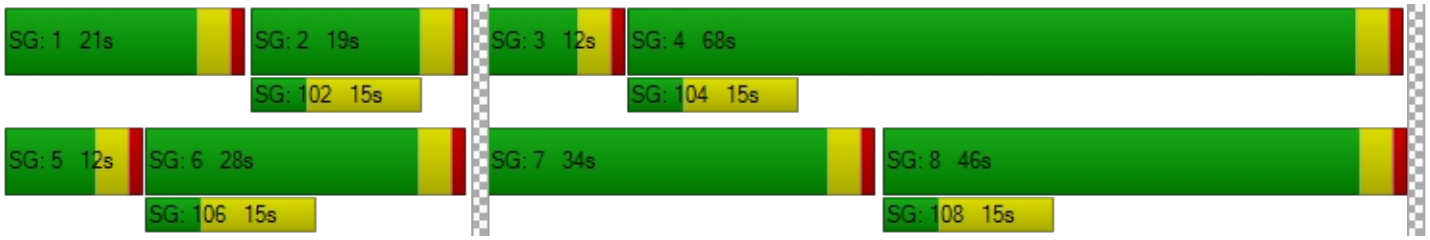
d_M, Delay for Movement [s/veh]	79.48	44.57	57.57	64.81	84.95	52.39	74.40	32.08	21.30	64.11	33.15	15.22
Movement LOS	E	D	E	E	F	D	E	C	C	E	C	B
d_A, Approach Delay [s/veh]	57.56			71.72			34.47			35.45		
Approach LOS	E			E			C			D		
d_I, Intersection Delay [s/veh]	42.52											
Intersection LOS	D											
Intersection V/C	0.829											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.525	2.523	2.989	3.031
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	400	700	1067
d_b, Bicycle Delay [s]	45.94	38.40	25.35	13.07
l_b,int, Bicycle LOS Score for Intersection	1.903	2.614	2.608	3.275
Bicycle LOS	A	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



18-392 Strong at 27th Subdivision TIA

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Scenario 2 PM Existing
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	197	46	10	434	306	59	1052

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	68	1	87	241	5	10	412

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	59	5	22	8	9	17	9	238	212	76	268	2	925

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	5	134	378	41	10	5	573

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	18	10	1	107	43	1	180

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	1	0	63	100	18	40	11	1307	2	103	1923	23	3591

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	93	157	149	127	316	171	88	1056	76	242	1592	162	4229

18-392 Strong at 27th Subdivision TIA

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Scenario 2 PM Existing
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	197	46	10	434	306	59	1052
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**197**	**46**	**10**	**434**	**306**	**59**	**1052**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	68	1	87	241	5	10	412
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**68**	**1**	**87**	**241**	**5**	**10**	**412**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	59	5	22	8	9	17	9	238	212	76	268	2	925
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**59**	**5**	**22**	**8**	**9**	**17**	**9**	**238**	**212**	**76**	**268**	**2**	**925**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	5	134	378	41	10	5	573
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**5**	**134**	**378**	**41**	**10**	**5**	**573**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	18	10	1	107	43	1	180
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**18**	**10**	**1**	**107**	**43**	**1**	**180**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	Final Base	1	0	63	100	18	40	11	1307	2	103	1923	23	3591
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**1**	**0**	**63**	**100**	**18**	**40**	**11**	**1307**	**2**	**103**	**1923**	**23**	**3591**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	157	149	127	316	171	88	1056	76	242	1592	162	4229
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**93**	**157**	**149**	**127**	**316**	**171**	**88**	**1056**	**76**	**242**	**1592**	**162**	**4229**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	365	444	243
2	350	426	233
3	343	417	228
4	292	355	194
5	277	337	185
6	248	302	165
7	230	280	153
8	219	266	146
9	175	213	117
10	164	200	109
11	164	200	109
12	157	191	104
13	142	173	95
14	131	160	87
15	131	160	87
16	128	155	85
17	73	89	49
18	40	49	27
19	37	44	24
20	15	18	10
21	11	13	7
22	11	13	7
23	7	9	5
24	7	9	5

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	809	2	243	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
2	2	776	2	233	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
3	2	760	2	228	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
4	2	647	2	194	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No
5	2	614	2	185	No	Yes	Yes	Yes	No	No	No	Yes	No	No
6	2	550	2	165	No	Yes	Yes	Yes	No	No	No	Yes	No	No
7	2	510	2	153	No	No	Yes	Yes	No	No	No	Yes	No	No
8	2	485	2	146	No	No	Yes	Yes	No	No	No	No	No	No
9	2	388	2	117	No	No	No	Yes	No	No	No	No	No	No
10	2	364	2	109	No	No	No	No	No	No	No	No	No	No
11	2	364	2	109	No	No	No	No	No	No	No	No	No	No
12	2	348	2	104	No	No	No	No	No	No	No	No	No	No
13	2	315	2	95	No	No	No	No	No	No	No	No	No	No
14	2	291	2	87	No	No	No	No	No	No	No	No	No	No
15	2	291	2	87	No	No	No	No	No	No	No	No	No	No
16	2	283	2	85	No	No	No	No	No	No	No	No	No	No
17	2	162	2	49	No	No	No	No	No	No	No	No	No	No
18	2	89	2	27	No	No	No	No	No	No	No	No	No	No
19	2	81	2	24	No	No	No	No	No	No	No	No	No	No
20	2	33	2	10	No	No	No	No	No	No	No	No	No	No
21	2	24	2	7	No	No	No	No	No	No	No	No	No	No
22	2	24	2	7	No	No	No	No	No	No	No	No	No	No
23	2	16	2	5	No	No	No	No	No	No	No	No	No	No
24	2	16	2	5	No	No	No	No	No	No	No	No	No	No
Hours Met					3	6	8	9	0	3	4	7	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	30.7
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	2:04
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	243
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1052
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	328	69	15
2	315	66	14
3	308	65	14
4	262	55	12
5	249	52	11
6	223	47	10
7	207	43	9
8	197	41	9
9	157	33	7
10	148	31	7
11	148	31	7
12	141	30	6
13	128	27	6
14	118	25	5
15	118	25	5
16	115	24	5
17	66	14	3
18	36	8	2
19	33	7	2
20	13	3	1
21	10	2	0
22	10	2	0
23	7	1	0
24	7	1	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	397	1	15	No	No	No	No	No	No	No	No	No	No
2	2	381	1	14	No	No	No	No	No	No	No	No	No	No
3	2	373	1	14	No	No	No	No	No	No	No	No	No	No
4	2	317	1	12	No	No	No	No	No	No	No	No	No	No
5	2	301	1	11	No	No	No	No	No	No	No	No	No	No
6	2	270	1	10	No	No	No	No	No	No	No	No	No	No
7	2	250	1	9	No	No	No	No	No	No	No	No	No	No
8	2	238	1	9	No	No	No	No	No	No	No	No	No	No
9	2	190	1	7	No	No	No	No	No	No	No	No	No	No
10	2	179	1	7	No	No	No	No	No	No	No	No	No	No
11	2	179	1	7	No	No	No	No	No	No	No	No	No	No
12	2	171	1	6	No	No	No	No	No	No	No	No	No	No
13	2	155	1	6	No	No	No	No	No	No	No	No	No	No
14	2	143	1	5	No	No	No	No	No	No	No	No	No	No
15	2	143	1	5	No	No	No	No	No	No	No	No	No	No
16	2	139	1	5	No	No	No	No	No	No	No	No	No	No
17	2	80	1	3	No	No	No	No	No	No	No	No	No	No
18	2	44	1	2	No	No	No	No	No	No	No	No	No	No
19	2	40	1	2	No	No	No	No	No	No	No	No	No	No
20	2	16	1	1	No	No	No	No	No	No	No	No	No	No
21	2	12	1	0	No	No	No	No	No	No	No	No	No	No
22	2	12	1	0	No	No	No	No	No	No	No	No	No	No
23	2	8	1	0	No	No	No	No	No	No	No	No	No	No
24	2	8	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	15
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	412
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	346	459	34	86
2	332	441	33	83
3	325	431	32	81
4	277	367	27	69
5	263	349	26	65
6	235	312	23	58
7	218	289	21	54
8	208	275	20	52
9	166	220	16	41
10	156	207	15	39
11	156	207	15	39
12	149	197	15	37
13	135	179	13	34
14	125	165	12	31
15	125	165	12	31
16	121	161	12	30
17	69	92	7	17
18	38	50	4	9
19	35	46	3	9
20	14	18	1	3
21	10	14	1	3
22	10	14	1	3
23	7	9	1	2
24	7	9	1	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	805	2	120	No	No	No	Yes	No	Yes	Yes	Yes	No	No
2	4	773	2	116	No	No	No	No	No	Yes	Yes	Yes	No	No
3	4	756	2	113	No	No	No	No	No	Yes	Yes	Yes	No	No
4	4	644	2	96	No	No	No	No	No	No	Yes	Yes	No	No
5	4	612	2	91	No	No	No	No	No	No	No	Yes	No	No
6	4	547	2	81	No	No	No	No	No	No	No	Yes	No	No
7	4	507	2	75	No	No	No	No	No	No	No	Yes	No	No
8	4	483	2	72	No	No	No	No	No	No	No	No	No	No
9	4	386	2	57	No	No	No	No	No	No	No	No	No	No
10	4	363	2	54	No	No	No	No	No	No	No	No	No	No
11	4	363	2	54	No	No	No	No	No	No	No	No	No	No
12	4	346	2	52	No	No	No	No	No	No	No	No	No	No
13	4	314	2	47	No	No	No	No	No	No	No	No	No	No
14	4	290	2	43	No	No	No	No	No	No	No	No	No	No
15	4	290	2	43	No	No	No	No	No	No	No	No	No	No
16	4	282	2	42	No	No	No	No	No	No	No	No	No	No
17	4	161	2	24	No	No	No	No	No	No	No	No	No	No
18	4	88	2	13	No	No	No	No	No	No	No	No	No	No
19	4	81	2	12	No	No	No	No	No	No	No	No	No	No
20	4	32	2	4	No	No	No	No	No	No	No	No	No	No
21	4	24	2	4	No	No	No	No	No	No	No	No	No	No
22	4	24	2	4	No	No	No	No	No	No	No	No	No	No
23	4	16	2	3	No	No	No	No	No	No	No	No	No	No
24	4	16	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	1	0	3	4	7	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	18.3	30.9
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:10	0:44
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	34	86
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	925	925
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	139	419	15
2	133	402	14
3	131	394	14
4	111	335	12
5	106	318	11
6	95	285	10
7	88	264	9
8	83	251	9
9	67	201	7
10	63	189	7
11	63	189	7
12	60	180	6
13	54	163	6
14	50	151	5
15	50	151	5
16	49	147	5
17	28	84	3
18	15	46	2
19	14	42	2
20	6	17	1
21	4	13	0
22	4	13	0
23	3	8	0
24	3	8	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	558	1	15	No	No	No	No	No	No	No	No	No	No
2	3	535	1	14	No	No	No	No	No	No	No	No	No	No
3	3	525	1	14	No	No	No	No	No	No	No	No	No	No
4	3	446	1	12	No	No	No	No	No	No	No	No	No	No
5	3	424	1	11	No	No	No	No	No	No	No	No	No	No
6	3	380	1	10	No	No	No	No	No	No	No	No	No	No
7	3	352	1	9	No	No	No	No	No	No	No	No	No	No
8	3	334	1	9	No	No	No	No	No	No	No	No	No	No
9	3	268	1	7	No	No	No	No	No	No	No	No	No	No
10	3	252	1	7	No	No	No	No	No	No	No	No	No	No
11	3	252	1	7	No	No	No	No	No	No	No	No	No	No
12	3	240	1	6	No	No	No	No	No	No	No	No	No	No
13	3	217	1	6	No	No	No	No	No	No	No	No	No	No
14	3	201	1	5	No	No	No	No	No	No	No	No	No	No
15	3	201	1	5	No	No	No	No	No	No	No	No	No	No
16	3	196	1	5	No	No	No	No	No	No	No	No	No	No
17	3	112	1	3	No	No	No	No	No	No	No	No	No	No
18	3	61	1	2	No	No	No	No	No	No	No	No	No	No
19	3	56	1	2	No	No	No	No	No	No	No	No	No	No
20	3	23	1	1	No	No	No	No	No	No	No	No	No	No
21	3	17	1	0	No	No	No	No	No	No	No	No	No	No
22	3	17	1	0	No	No	No	No	No	No	No	No	No	No
23	3	11	1	0	No	No	No	No	No	No	No	No	No	No
24	3	11	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.3
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:03
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	15
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	573
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	108	28	44
2	104	27	42
3	102	26	41
4	86	22	35
5	82	21	33
6	73	19	30
7	68	18	28
8	65	17	26
9	52	13	21
10	49	13	20
11	49	13	20
12	46	12	19
13	42	11	17
14	39	10	16
15	39	10	16
16	38	10	15
17	22	6	9
18	12	3	5
19	11	3	4
20	4	1	2
21	3	1	1
22	3	1	1
23	2	1	1
24	2	1	1

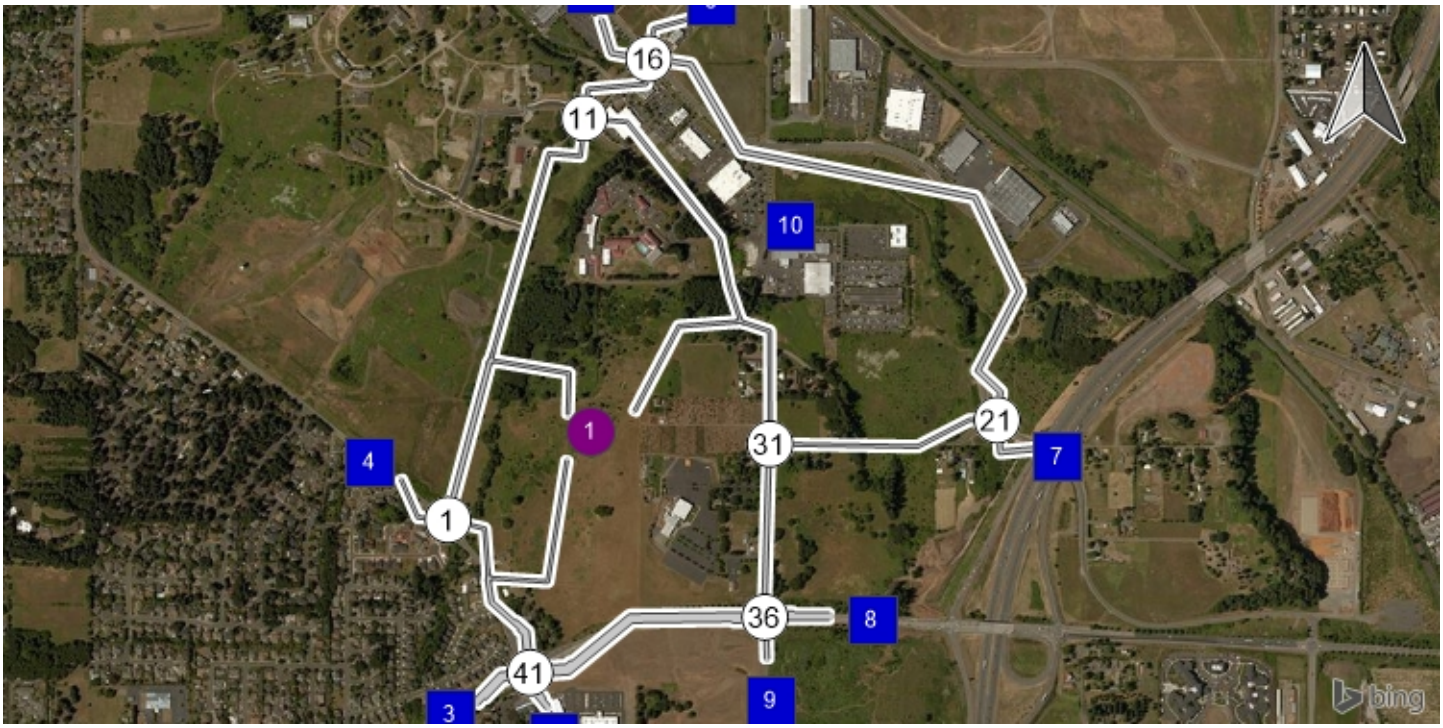
Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	136	1	44	No	No	No	No	No	No	No	No	No	No
2	2	131	1	42	No	No	No	No	No	No	No	No	No	No
3	2	128	1	41	No	No	No	No	No	No	No	No	No	No
4	2	108	1	35	No	No	No	No	No	No	No	No	No	No
5	2	103	1	33	No	No	No	No	No	No	No	No	No	No
6	2	92	1	30	No	No	No	No	No	No	No	No	No	No
7	2	86	1	28	No	No	No	No	No	No	No	No	No	No
8	2	82	1	26	No	No	No	No	No	No	No	No	No	No
9	2	65	1	21	No	No	No	No	No	No	No	No	No	No
10	2	62	1	20	No	No	No	No	No	No	No	No	No	No
11	2	62	1	20	No	No	No	No	No	No	No	No	No	No
12	2	58	1	19	No	No	No	No	No	No	No	No	No	No
13	2	53	1	17	No	No	No	No	No	No	No	No	No	No
14	2	49	1	16	No	No	No	No	No	No	No	No	No	No
15	2	49	1	16	No	No	No	No	No	No	No	No	No	No
16	2	48	1	15	No	No	No	No	No	No	No	No	No	No
17	2	28	1	9	No	No	No	No	No	No	No	No	No	No
18	2	15	1	5	No	No	No	No	No	No	No	No	No	No
19	2	14	1	4	No	No	No	No	No	No	No	No	No	No
20	2	5	1	2	No	No	No	No	No	No	No	No	No	No
21	2	4	1	1	No	No	No	No	No	No	No	No	No	No
22	2	4	1	1	No	No	No	No	No	No	No	No	No	No
23	2	3	1	1	No	No	No	No	No	No	No	No	No	No
24	2	3	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

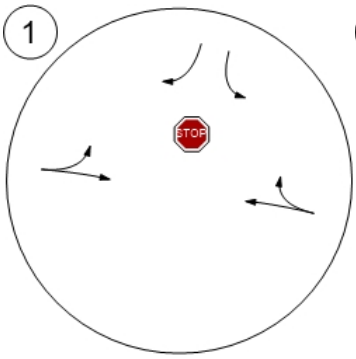
Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.9
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:07
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	44
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	180
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

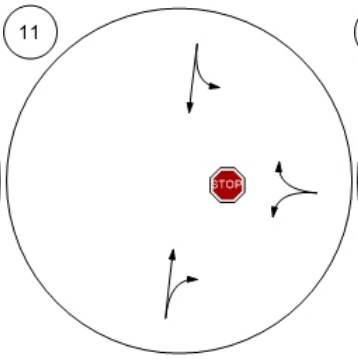
Report Figure 1: Lane Configuration and Traffic Control



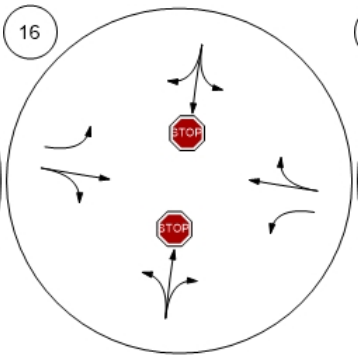
Battle Creek Rd at Reed Rd



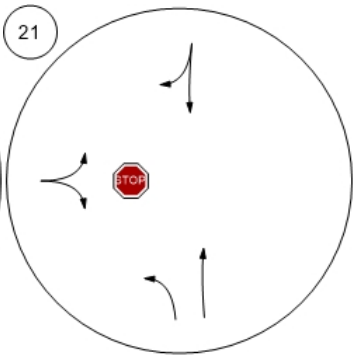
Reed Rd at Strong Rd



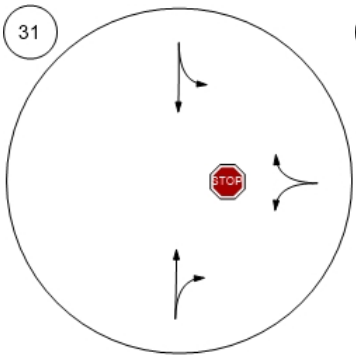
Reed Rd at Fairview Industria



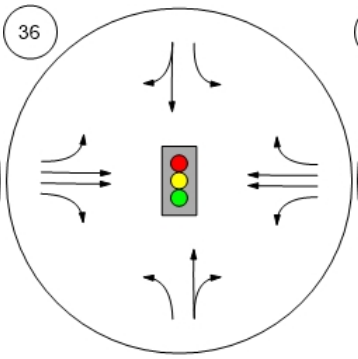
Fairview Industrial Dr at Mari



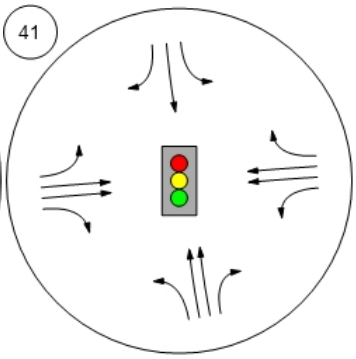
27th Ave at Marietta St



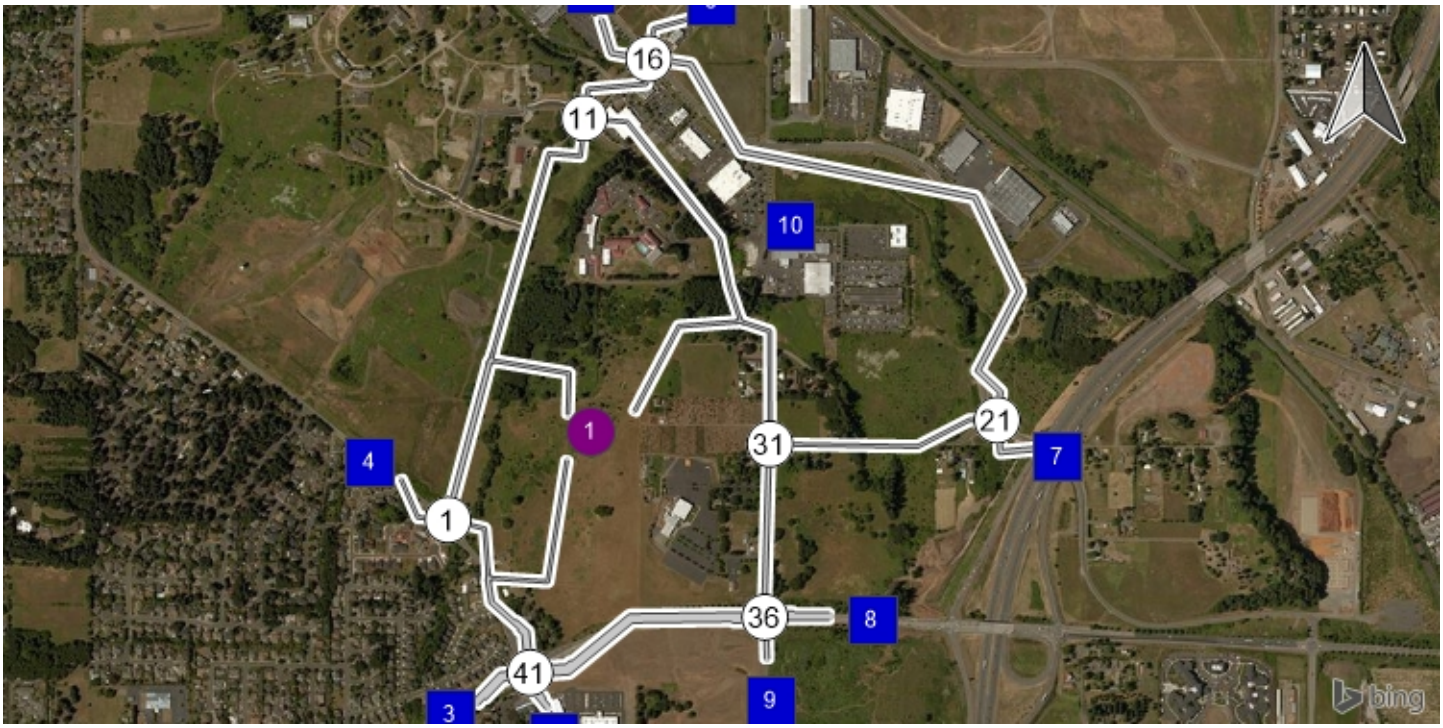
27th at Kuebler Blvd



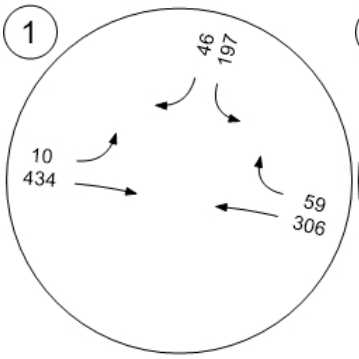
Keubler Blvd at Battle Creek



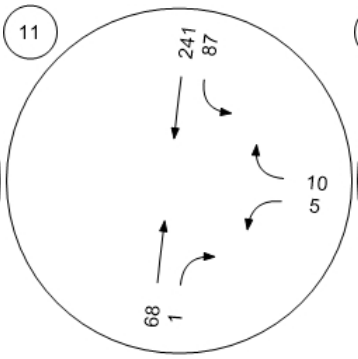
Report Figure 2a: Traffic Volume - Base Volume



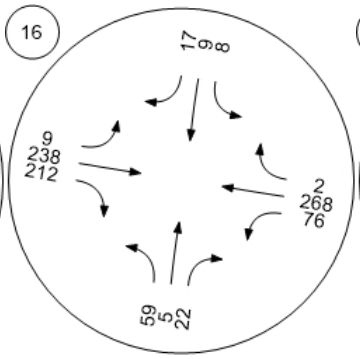
Battle Creek Rd at Reed Rd



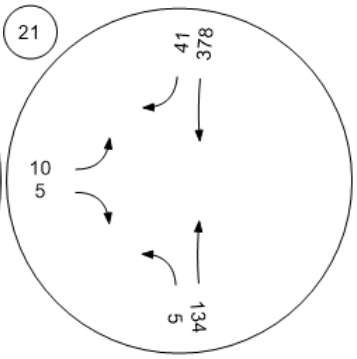
Reed Rd at Strong Rd



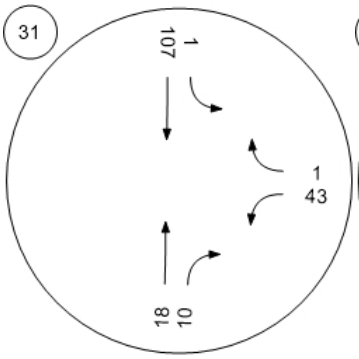
Reed Rd at Fairview Industria



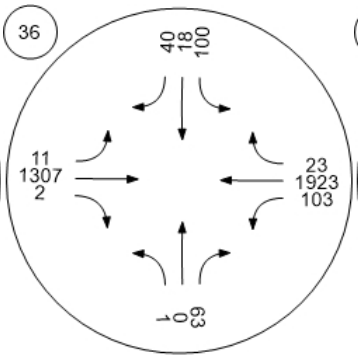
Fairview Industrial Dr at Mari



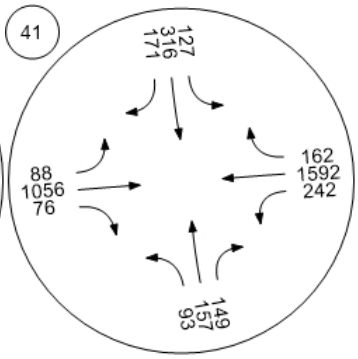
27th Ave at Marietta St



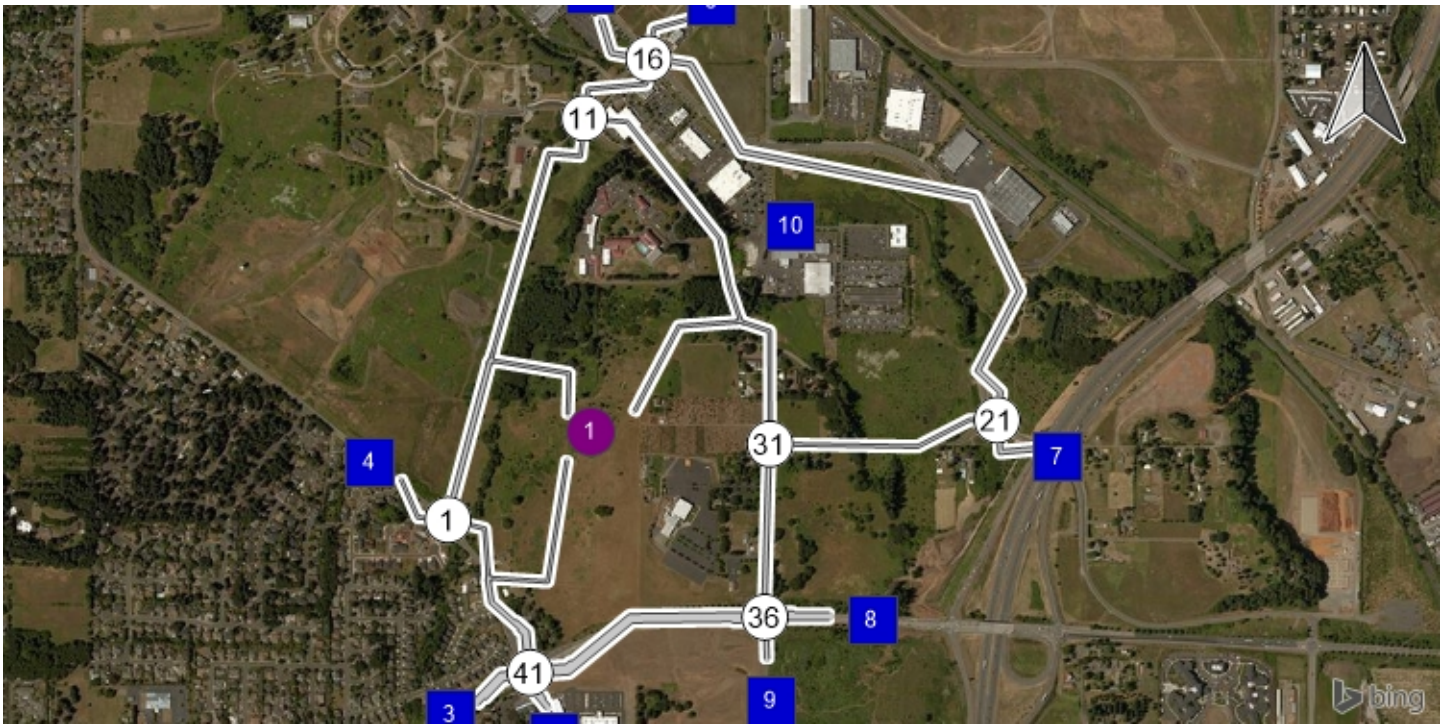
27th at Kuebler Blvd



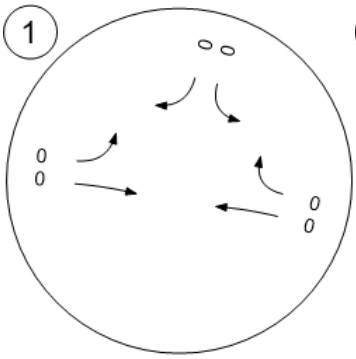
Keubler Blvd at Battle Creek



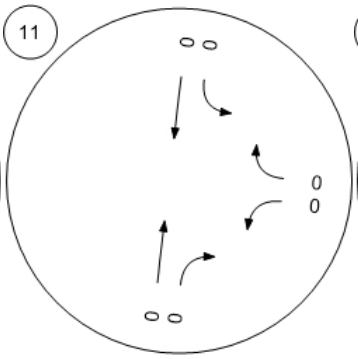
Report Figure 2d: Traffic Volume - Net New Site Trips



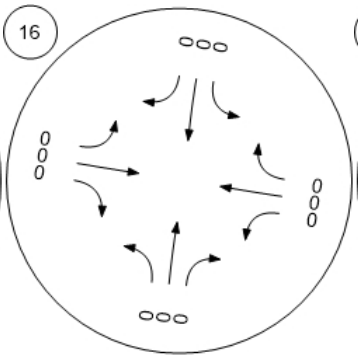
Battle Creek Rd at Reed Rd



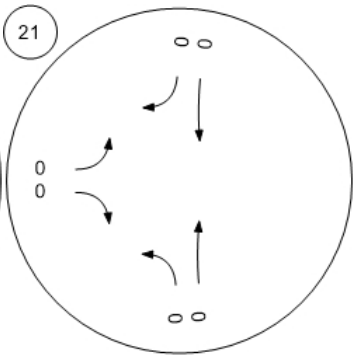
Reed Rd at Strong Rd



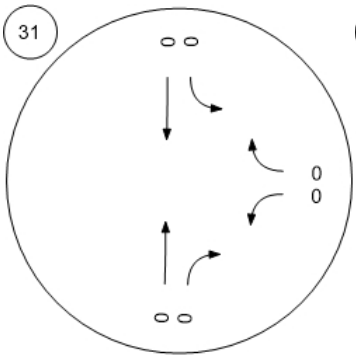
Reed Rd at Fairview Industria



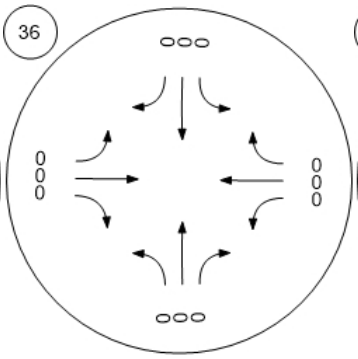
Fairview Industrial Dr at Mari



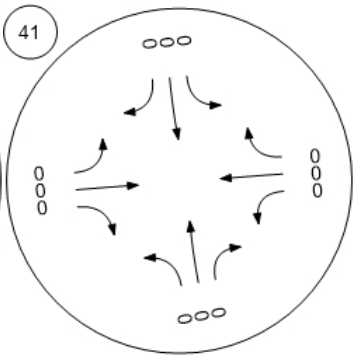
27th Ave at Marietta St



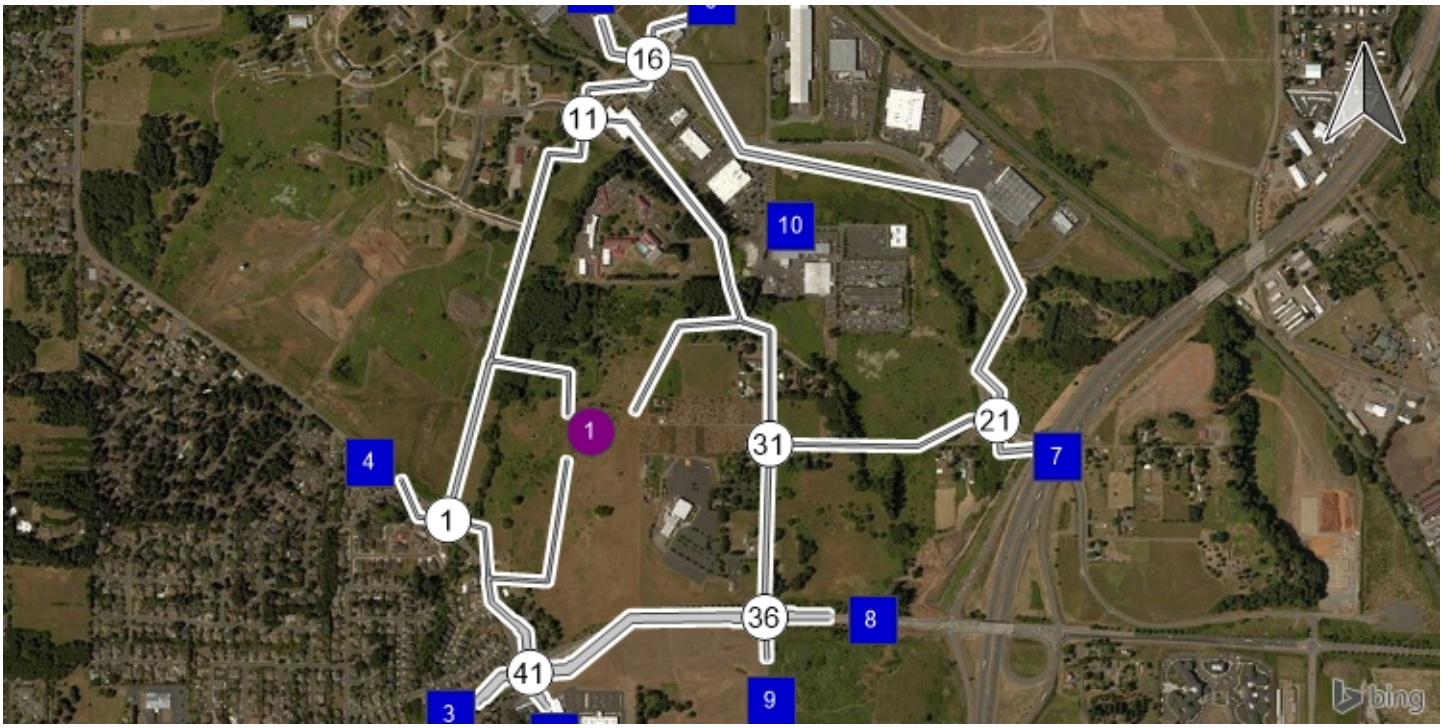
27th at Kuebler Blvd



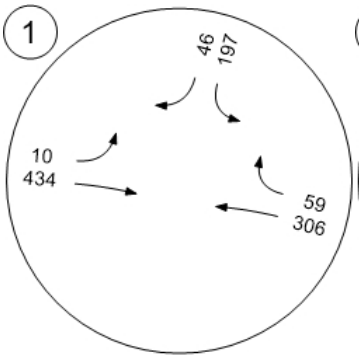
Keubler Blvd at Battle Creek



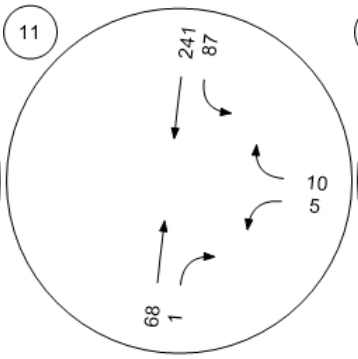
Report Figure 2f: Traffic Volume - Future Total Volume



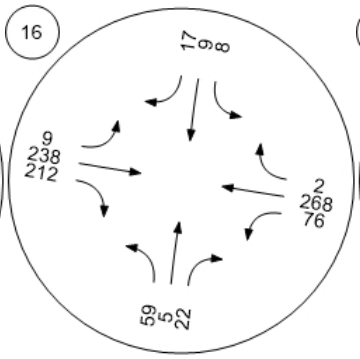
Battle Creek Rd at Reed Rd



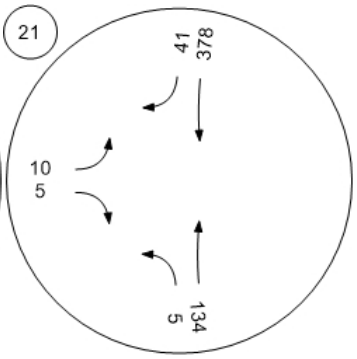
Reed Rd at Strong Rd



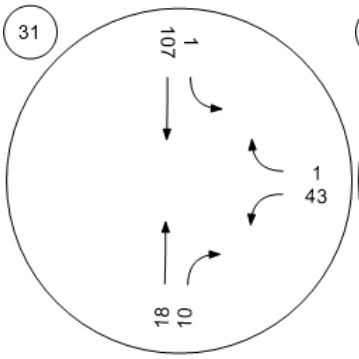
Reed Rd at Fairview Industria



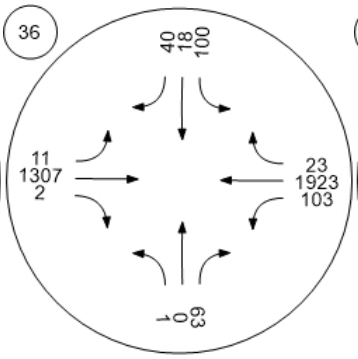
Fairview Industrial Dr at Mari



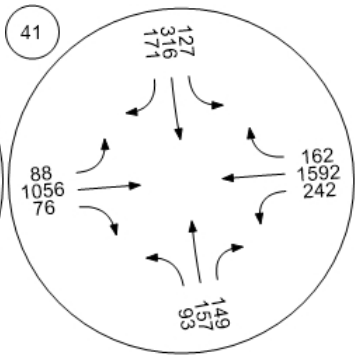
27th Ave at Marietta St



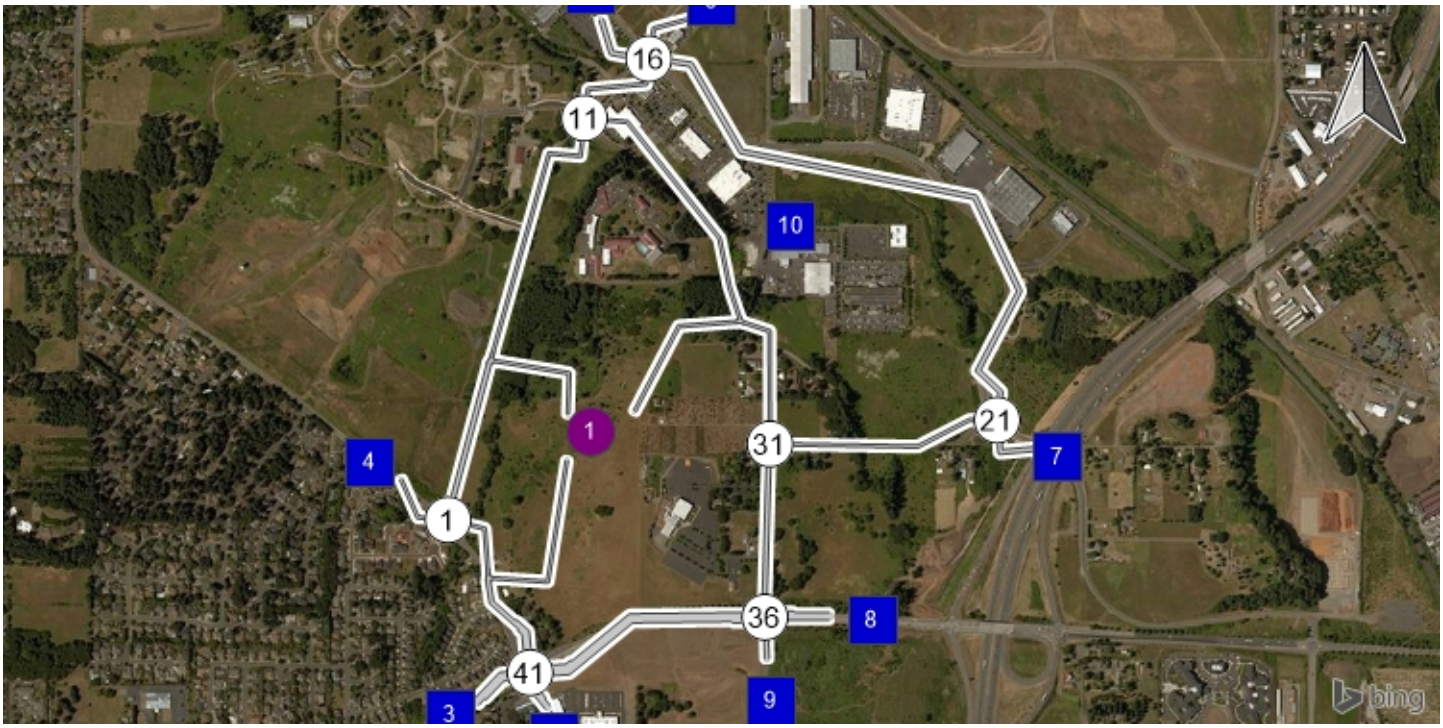
27th at Kuebler Blvd



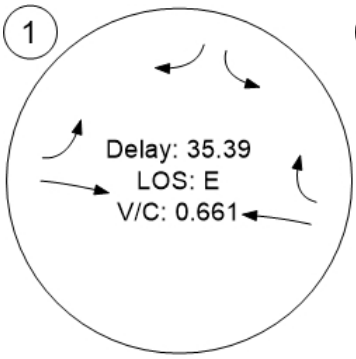
Keubler Blvd at Battle Creek



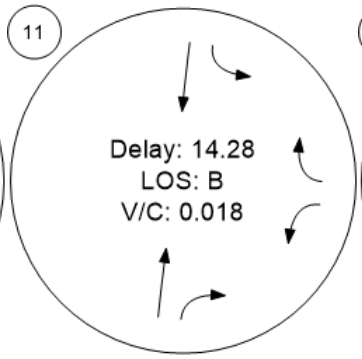
Report Figure 3: Traffic Conditions



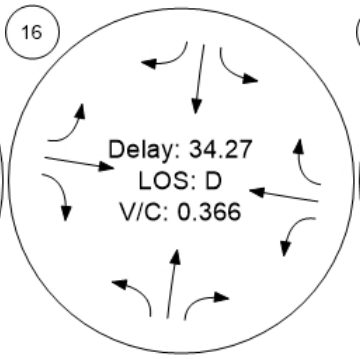
Battle Creek Rd at Reed Rd



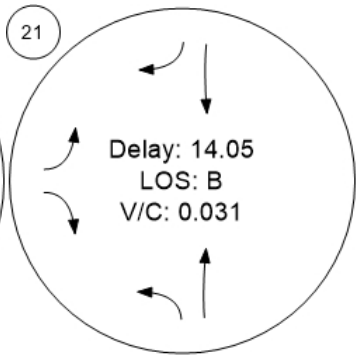
Reed Rd at Strong Rd



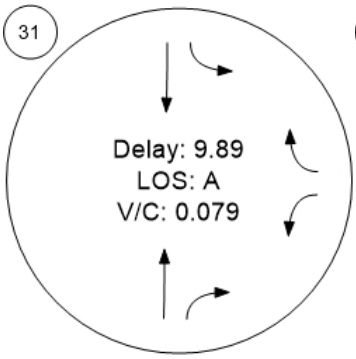
Reed Rd at Fairview Industria



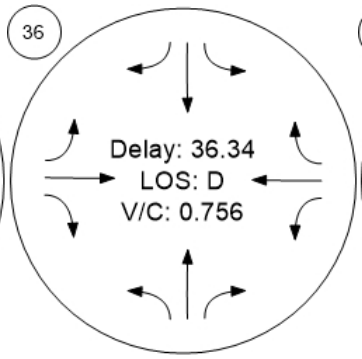
Fairview Industrial Dr at Mari



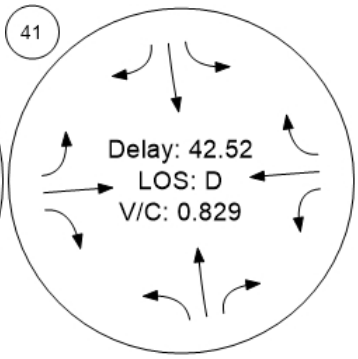
27th Ave at Marietta St



27th at Kuebler Blvd



Keubler Blvd at Battle Creek



18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 PM Dev Ph 1.pdf

Scenario 4 PM Dev 2020 Ph 1
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.711	40.7	E
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.053	21.7	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.019	14.9	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.418	38.6	E
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.033	14.5	B
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Thru	0.029	10.4	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.087	10.3	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.784	40.6	D
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	WB Left	0.865	81.5	F
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.000	10.8	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	40.7
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	197	46	10	434	306	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.20	1.20	1.80	1.80	3.00	3.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	3	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	203	47	10	450	317	61
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	13	3	122	86	17
Total Analysis Volume [veh/h]	221	51	11	489	345	66
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.71	0.08	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	40.69	10.81	8.16	0.00	0.00	0.00
Movement LOS	E	B	A	A	A	A
95th-Percentile Queue Length [veh]	5.09	0.25	2.25	2.25	0.00	0.00
95th-Percentile Queue Length [ft]	127.19	6.15	56.23	56.23	0.00	0.00
d_A, Approach Delay [s/veh]	35.09		0.18		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	8.14					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 6: Battle Creek Rd at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	21.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.053

Intersection Setup

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Base Volume Input [veh/h]	407	0	0	631	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	19	3	0	11	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	407	19	3	631	11	2
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	108	5	1	168	3	1
Total Analysis Volume [veh/h]	433	20	3	671	12	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.26	0.00	21.68	11.71
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	4.32	4.32	0.18	0.18
95th-Percentile Queue Length [ft]	0.00	0.00	107.98	107.98	4.42	4.42
d_A, Approach Delay [s/veh]	0.00		0.04		20.26	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.27					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	68	1	87	241	5	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.80	5.80	1.80	1.80	6.70	6.70
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	5	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	72	1	95	248	5	11
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	0	31	82	2	4
Total Analysis Volume [veh/h]	95	1	125	326	7	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.08	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.62	0.00	14.88	9.00
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	1.28	1.28	0.10	0.10
95th-Percentile Queue Length [ft]	0.00	0.00	31.97	31.97	2.60	2.60
d_A, Approach Delay [s/veh]	0.00		2.11		10.96	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.08					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	Two-way stop	Delay (sec / veh):	38.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.418

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	59	5	22	8	9	17	9	238	212	76	268	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.00	0.00	0.00	4.10	4.10	4.10	4.00	4.00	4.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	0	0	0	5	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	5	23	8	9	18	9	245	223	78	276	2
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	2	7	2	3	5	3	75	68	24	84	1
Total Analysis Volume [veh/h]	78	6	28	10	11	22	11	299	272	95	337	2
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.42	0.03	0.05	0.05	0.06	0.03	0.01	0.00	0.00	0.10	0.00	0.00
d_M, Delay for Movement [s/veh]	38.64	35.73	25.18	25.72	26.28	12.04	8.01	0.00	0.00	9.01	0.00	0.00
Movement LOS	E	E	D	D	D	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	2.47	2.47	2.47	0.49	0.49	0.49	0.03	0.00	0.00	0.32	0.00	0.00
95th-Percentile Queue Length [ft]	61.83	61.83	61.83	12.24	12.24	12.24	0.69	0.00	0.00	7.92	0.00	0.00
d_A, Approach Delay [s/veh]	35.12			18.86			0.15			1.97		
Approach LOS	E			C			A			A		
d_I, Intersection Delay [s/veh]	4.86											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.033

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	5	134	378	41	10	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	9.40	9.40	4.50	4.50	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	138	389	42	10	7
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	44	123	13	3	2
Total Analysis Volume [veh/h]	10	175	492	53	13	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.03	0.02
d_M, Delay for Movement [s/veh]	8.68	0.00	0.00	0.00	14.47	11.82
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.03	0.00	0.00	0.00	0.15	0.15
95th-Percentile Queue Length [ft]	0.77	0.00	0.00	0.00	3.83	3.83
d_A, Approach Delay [s/veh]	0.47		0.00		13.39	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.51					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 26: East Access at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

Intersection Setup

Name	Strong Rd		East Access		Strong Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Strong Rd		East Access		Strong Rd	
Base Volume Input [veh/h]	110	0	0	0	0	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	1	11	20	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	5	1	11	20	14
Peak Hour Factor	0.5600	0.5600	0.5600	0.5600	0.5600	0.5600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	2	0	5	9	6
Total Analysis Volume [veh/h]	202	9	2	20	36	25
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Stop	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance		No	
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.03	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.17	10.39	7.71	0.00
Movement LOS	A	A	B	B	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.10	0.10	0.14	0.14
95th-Percentile Queue Length [ft]	0.00	0.00	2.46	2.46	3.51	3.51
d_A, Approach Delay [s/veh]	0.00		10.37		4.55	
Approach LOS	A		B		A	
d_I, Intersection Delay [s/veh]	1.72					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.087

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	18	10	1	107	43	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	0	2	9	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	10	3	119	44	4
Peak Hour Factor	0.6800	0.6800	0.6800	0.6800	0.6800	0.6800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	4	1	44	16	1
Total Analysis Volume [veh/h]	53	15	4	175	65	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.09	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.33	0.00	10.30	9.04
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.39	0.39	0.31	0.31
95th-Percentile Queue Length [ft]	0.00	0.00	9.80	9.80	7.66	7.66
d_A, Approach Delay [s/veh]	0.00		0.16		10.19	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.37					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 36: 27th at Kuebler Blvd

Control Type:	Signalized	Delay (sec / veh):	40.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.784

Intersection Setup

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	125.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	200.00	350.00	100.00	175.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	1	0	63	100	18	40	11	1307	2	103	1923	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.60	0.60	0.60	3.60	3.60	3.60	1.30	1.30	1.30
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	8	1	0	0	0	0	0	0	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	1	65	111	20	41	11	1346	2	106	1981	40
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	17	30	5	11	3	358	1	28	527	11
Total Analysis Volume [veh/h]	1	1	69	118	21	44	12	1432	2	113	2107	43
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	34	83	0	9	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	15	5	20	2	79	79	5	82	82
g / C, Green / Cycle	0.00	0.13	0.04	0.17	0.01	0.66	0.66	0.04	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.00	0.05	0.07	0.04	0.01	0.45	0.00	0.07	0.65	0.03
s, saturation flow rate [veh/h]	1568	1403	1621	1520	1582	3163	1412	1612	3222	1439
c, Capacity [veh/h]	2	178	68	254	22	2076	927	67	2205	984
d1, Uniform Delay [s]	59.86	48.15	57.50	43.48	58.80	12.95	7.10	57.50	17.29	6.17
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	92.03	6.41	347.36	2.42	19.56	0.42	0.00	319.03	3.27	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.39	1.74	0.26	0.55	0.69	0.00	1.68	0.96	0.04
d, Delay for Lane Group [s/veh]	151.89	54.55	404.86	45.90	78.36	13.37	7.10	376.53	20.56	6.19
Lane Group LOS	F	D	F	D	E	B	A	F	C	A
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.09	2.25	8.58	1.86	0.48	11.31	0.02	8.01	24.20	0.34
50th-Percentile Queue Length [ft]	2.25	56.25	214.62	46.53	12.04	282.71	0.43	200.18	604.97	8.57
95th-Percentile Queue Length [veh]	0.16	4.05	14.96	3.35	0.87	16.82	0.03	14.06	32.27	0.62
95th-Percentile Queue Length [ft]	4.05	101.25	374.08	83.75	21.68	420.59	0.78	351.41	806.66	15.42

Movement, Approach, & Intersection Results

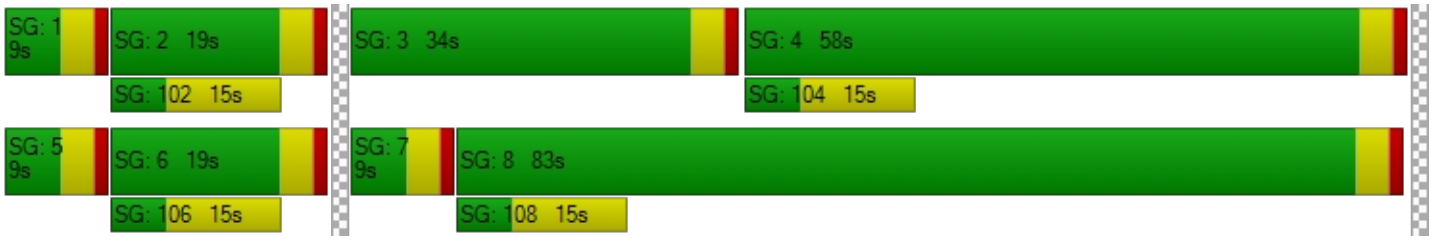
d_M, Delay for Movement [s/veh]	151.89	54.55	54.55	404.86	45.90	45.90	78.36	13.37	7.10	376.53	20.56	6.19
Movement LOS	F	D	D	F	D	D	E	B	A	F	C	A
d_A, Approach Delay [s/veh]	55.92			277.36			13.90			38.06		
Approach LOS	E			F			B			D		
d_I, Intersection Delay [s/veh]	40.62											
Intersection LOS	D											
Intersection V/C	0.784											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.023	2.033	3.053	3.099
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	250	1317	900
d_b, Bicycle Delay [s]	45.94	45.94	7.00	18.15
l_b,int, Bicycle LOS Score for Intersection	1.677	1.862	2.753	3.427
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	81.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.865

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	157	149	127	316	171	88	1056	76	242	1592	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	1.10	1.10	1.10	3.90	3.90	3.90	1.50	1.50	1.50
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	0	3	8	14	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	167	153	131	328	184	105	1088	78	249	1640	167
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	43	40	34	85	48	27	283	20	65	427	43
Total Analysis Volume [veh/h]	100	174	159	136	342	192	109	1133	81	259	1708	174
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	23	0	15	26	0	35	60	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	19	19	11	22	22	9	56	56	8	55	55
g / C, Green / Cycle	0.07	0.17	0.17	0.10	0.20	0.20	0.08	0.51	0.51	0.07	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.06	0.05	0.11	0.08	0.20	0.13	0.07	0.36	0.06	0.16	0.53	0.12
s, saturation flow rate [veh/h]	1590	3179	1419	1614	1695	1441	1578	3156	1409	1609	3217	1436
c, Capacity [veh/h]	116	555	248	161	341	290	134	1602	715	117	1594	712
d1, Uniform Delay [s]	50.46	39.64	42.20	48.70	43.93	40.48	49.48	20.81	14.15	51.00	27.75	15.93
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.15	0.12	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.73	1.47	12.09	11.44	49.18	11.30	11.20	0.58	0.07	552.89	35.78	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.31	0.64	0.85	1.00	0.66	0.81	0.71	0.11	2.21	1.07	0.24
d, Delay for Lane Group [s/veh]	67.19	41.11	54.29	60.14	93.11	51.77	60.68	21.40	14.22	603.89	63.53	16.11
Lane Group LOS	E	D	D	E	F	D	E	C	B	F	F	B
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	3.25	2.17	4.84	4.17	13.87	5.68	3.35	10.86	1.06	21.21	27.69	2.51
50th-Percentile Queue Length [ft]	81.34	54.28	120.88	104.22	346.74	142.04	83.83	271.54	26.43	530.33	692.18	62.79
95th-Percentile Queue Length [veh]	5.86	3.91	8.44	7.50	20.00	9.59	6.04	16.27	1.90	34.27	38.29	4.52
95th-Percentile Queue Length [ft]	146.42	97.70	211.04	187.60	499.95	239.77	150.90	406.66	47.58	856.66	957.30	113.02

Movement, Approach, & Intersection Results

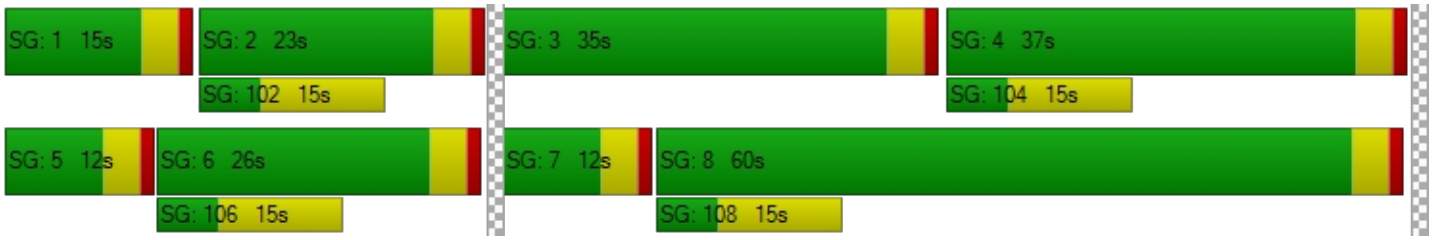
d_M, Delay for Movement [s/veh]	67.19	41.11	54.29	60.14	93.11	51.77	60.68	21.40	14.22	603.89	63.53	16.11
Movement LOS	E	D	D	E	F	D	E	C	B	F	F	B
d_A, Approach Delay [s/veh]	51.97			74.57			24.19			125.04		
Approach LOS	D			E			C			F		
d_I, Intersection Delay [s/veh]	81.50											
Intersection LOS	F											
Intersection V/C	0.865											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.528	2.531	3.004	3.044
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	345	400	1018	600
d_b, Bicycle Delay [s]	37.64	35.20	13.25	26.95
l_b,int, Bicycle LOS Score for Intersection	1.917	2.665	2.651	3.326
Bicycle LOS	A	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 42: Reed at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Reed Rd		Reed Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Site Access	
Base Volume Input [veh/h]	69	0	0	246	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	0	0	253	0	2
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	0	0	75	0	1
Total Analysis Volume [veh/h]	85	0	0	301	0	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.38	0.00	10.84	8.70
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.15	0.15
d_A, Approach Delay [s/veh]	0.00		0.00		8.70	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.04					
Intersection LOS	B					

18-392 Strong at 27th Subdivision TIA

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Scenario 4 PM Dev 2020 Ph 1
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	203	47	10	450	317	61	1088

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	407	19	3	631	11	2	1073

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	72	1	95	248	5	11	432

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	64	5	23	8	9	18	9	245	223	78	276	2	960

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	8	138	389	42	10	7	594

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	113	5	1	11	20	14	164

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	36	10	3	119	44	4	216

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	1	1	65	111	20	41	11	1346	2	106	1981	40	3725

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	96	167	153	131	328	184	105	1088	78	249	1640	167	4386

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	71	0	0	253	0	2	326

18-392 Strong at 27th Subdivision TIA

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Scenario 4 PM Dev 2020 Ph 1
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	197	46	10	434	306	59	1052
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	3	2	0	5
		Other	0	0	0	0	0	0	0
		Future Total	**203**	**47**	**10**	**450**	**317**	**61**	**1088**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	Final Base	407	0	0	631	0	0	1038
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	19	3	0	11	2	35
		Other	0	0	0	0	0	0	0
		Future Total	**407**	**19**	**3**	**631**	**11**	**2**	**1073**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	68	1	87	241	5	10	412
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	2	0	5	0	0	1	8
		Other	0	0	0	0	0	0	0
		Future Total	**72**	**1**	**95**	**248**	**5**	**11**	**432**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	59	5	22	8	9	17	9	238	212	76	268	2	925
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	3	0	0	0	0	0	0	0	5	0	0	0	8
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**64**	**5**	**23**	**8**	**9**	**18**	**9**	**245**	**223**	**78**	**276**	**2**	**960**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	5	134	378	41	10	5	573
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	3	0	0	0	0	2	5
		Other	0	0	0	0	0	0	0
		Future Total	**8**	**138**	**389**	**42**	**10**	**7**	**594**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	Final Base	110	0	0	0	0	14	124
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	5	1	11	20	0	37
		Other	0	0	0	0	0	0	0
		Future Total	**113**	**5**	**1**	**11**	**20**	**14**	**164**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	18	10	1	107	43	1	180
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	17	0	2	9	0	3	31
		Other	0	0	0	0	0	0	0
		Future Total	**36**	**10**	**3**	**119**	**44**	**4**	**216**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	Final Base	1	0	63	100	18	40	11	1307	2	103	1923	23	3591
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	1	0	8	1	0	0	0	0	0	0	16	26
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**1**	**1**	**65**	**111**	**20**	**41**	**11**	**1346**	**2**	**106**	**1981**	**40**	**3725**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	157	149	127	316	171	88	1056	76	242	1592	162	4229
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	5	0	0	3	8	14	0	0	0	0	0	30
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**96**	**167**	**153**	**131**	**328**	**184**	**105**	**1088**	**78**	**249**	**1640**	**167**	**4386**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	Final Base	69	0	0	246	0	0	315
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	2	2
		Other	0	0	0	0	0	0	0
		Future Total	**71**	**0**	**0**	**253**	**0**	**2**	**326**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	378	460	250
2	363	442	240
3	355	432	235
4	302	368	200
5	287	350	190
6	257	313	170
7	238	290	158
8	227	276	150
9	181	221	120
10	170	207	113
11	170	207	113
12	163	198	108
13	147	179	98
14	136	166	90
15	136	166	90
16	132	161	88
17	76	92	50
18	42	51	28
19	38	46	25
20	15	18	10
21	11	14	8
22	11	14	8
23	8	9	5
24	8	9	5

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	838	2	250	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
2	2	805	2	240	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
3	2	787	2	235	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
4	2	670	2	200	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No
5	2	637	2	190	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No
6	2	570	2	170	No	Yes	Yes	Yes	No	No	No	Yes	No	No
7	2	528	2	158	No	No	Yes	Yes	No	No	No	Yes	No	No
8	2	503	2	150	No	No	Yes	Yes	No	No	No	No	No	No
9	2	402	2	120	No	No	No	Yes	No	No	No	No	No	No
10	2	377	2	113	No	No	No	Yes	No	No	No	No	No	No
11	2	377	2	113	No	No	No	Yes	No	No	No	No	No	No
12	2	361	2	108	No	No	No	No	No	No	No	No	No	No
13	2	326	2	98	No	No	No	No	No	No	No	No	No	No
14	2	302	2	90	No	No	No	No	No	No	No	No	No	No
15	2	302	2	90	No	No	No	No	No	No	No	No	No	No
16	2	293	2	88	No	No	No	No	No	No	No	No	No	No
17	2	168	2	50	No	No	No	No	No	No	No	No	No	No
18	2	93	2	28	No	No	No	No	No	No	No	No	No	No
19	2	84	2	25	No	No	No	No	No	No	No	No	No	No
20	2	33	2	10	No	No	No	No	No	No	No	No	No	No
21	2	25	2	8	No	No	No	No	No	No	No	No	No	No
22	2	25	2	8	No	No	No	No	No	No	No	No	No	No
23	2	17	2	5	No	No	No	No	No	No	No	No	No	No
24	2	17	2	5	No	No	No	No	No	No	No	No	No	No
Hours Met					4	6	8	11	0	3	5	7	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	35.1
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	2:26
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	250
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1088
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 6: Battle Creek Rd at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	426	634	13
2	409	609	12
3	400	596	12
4	341	507	10
5	324	482	10
6	290	431	9
7	268	399	8
8	256	380	8
9	204	304	6
10	192	285	6
11	192	285	6
12	183	273	6
13	166	247	5
14	153	228	5
15	153	228	5
16	149	222	5
17	85	127	3
18	47	70	1
19	43	63	1
20	17	25	1
21	13	19	0
22	13	19	0
23	9	13	0
24	9	13	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1060	1	13	No	No	No	No	No	No	No	No	No	No
2	2	1018	1	12	No	No	No	No	No	No	No	No	No	No
3	2	996	1	12	No	No	No	No	No	No	No	No	No	No
4	2	848	1	10	No	No	No	No	No	No	No	No	No	No
5	2	806	1	10	No	No	No	No	No	No	No	No	No	No
6	2	721	1	9	No	No	No	No	No	No	No	No	No	No
7	2	667	1	8	No	No	No	No	No	No	No	No	No	No
8	2	636	1	8	No	No	No	No	No	No	No	No	No	No
9	2	508	1	6	No	No	No	No	No	No	No	No	No	No
10	2	477	1	6	No	No	No	No	No	No	No	No	No	No
11	2	477	1	6	No	No	No	No	No	No	No	No	No	No
12	2	456	1	6	No	No	No	No	No	No	No	No	No	No
13	2	413	1	5	No	No	No	No	No	No	No	No	No	No
14	2	381	1	5	No	No	No	No	No	No	No	No	No	No
15	2	381	1	5	No	No	No	No	No	No	No	No	No	No
16	2	371	1	5	No	No	No	No	No	No	No	No	No	No
17	2	212	1	3	No	No	No	No	No	No	No	No	No	No
18	2	117	1	1	No	No	No	No	No	No	No	No	No	No
19	2	106	1	1	No	No	No	No	No	No	No	No	No	No
20	2	42	1	1	No	No	No	No	No	No	No	No	No	No
21	2	32	1	0	No	No	No	No	No	No	No	No	No	No
22	2	32	1	0	No	No	No	No	No	No	No	No	No	No
23	2	22	1	0	No	No	No	No	No	No	No	No	No	No
24	2	22	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	20.3
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:04
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	13
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1073
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	343	73	16
2	329	70	15
3	322	69	15
4	274	58	13
5	261	55	12
6	233	50	11
7	216	46	10
8	206	44	10
9	165	35	8
10	154	33	7
11	154	33	7
12	147	31	7
13	134	28	6
14	123	26	6
15	123	26	6
16	120	26	6
17	69	15	3
18	38	8	2
19	34	7	2
20	14	3	1
21	10	2	0
22	10	2	0
23	7	1	0
24	7	1	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	416	1	16	No	No	No	No	No	No	No	No	No	No
2	2	399	1	15	No	No	No	No	No	No	No	No	No	No
3	2	391	1	15	No	No	No	No	No	No	No	No	No	No
4	2	332	1	13	No	No	No	No	No	No	No	No	No	No
5	2	316	1	12	No	No	No	No	No	No	No	No	No	No
6	2	283	1	11	No	No	No	No	No	No	No	No	No	No
7	2	262	1	10	No	No	No	No	No	No	No	No	No	No
8	2	250	1	10	No	No	No	No	No	No	No	No	No	No
9	2	200	1	8	No	No	No	No	No	No	No	No	No	No
10	2	187	1	7	No	No	No	No	No	No	No	No	No	No
11	2	187	1	7	No	No	No	No	No	No	No	No	No	No
12	2	178	1	7	No	No	No	No	No	No	No	No	No	No
13	2	162	1	6	No	No	No	No	No	No	No	No	No	No
14	2	149	1	6	No	No	No	No	No	No	No	No	No	No
15	2	149	1	6	No	No	No	No	No	No	No	No	No	No
16	2	146	1	6	No	No	No	No	No	No	No	No	No	No
17	2	84	1	3	No	No	No	No	No	No	No	No	No	No
18	2	46	1	2	No	No	No	No	No	No	No	No	No	No
19	2	41	1	2	No	No	No	No	No	No	No	No	No	No
20	2	17	1	1	No	No	No	No	No	No	No	No	No	No
21	2	12	1	0	No	No	No	No	No	No	No	No	No	No
22	2	12	1	0	No	No	No	No	No	No	No	No	No	No
23	2	8	1	0	No	No	No	No	No	No	No	No	No	No
24	2	8	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	16
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	432
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	356	477	35	92
2	342	458	34	88
3	335	448	33	86
4	285	382	28	74
5	271	363	27	70
6	242	324	24	63
7	224	301	22	58
8	214	286	21	55
9	171	229	17	44
10	160	215	16	41
11	160	215	16	41
12	153	205	15	40
13	139	186	14	36
14	128	172	13	33
15	128	172	13	33
16	125	167	12	32
17	71	95	7	18
18	39	52	4	10
19	36	48	4	9
20	14	19	1	4
21	11	14	1	3
22	11	14	1	3
23	7	10	1	2
24	7	10	1	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	833	2	127	No	No	No	Yes	No	Yes	Yes	Yes	No	No
2	4	800	2	122	No	No	No	Yes	No	Yes	Yes	Yes	No	No
3	4	783	2	119	No	No	No	Yes	No	Yes	Yes	Yes	No	No
4	4	667	2	102	No	No	No	No	No	No	Yes	Yes	No	No
5	4	634	2	97	No	No	No	No	No	No	Yes	Yes	No	No
6	4	566	2	87	No	No	No	No	No	No	No	Yes	No	No
7	4	525	2	80	No	No	No	No	No	No	No	Yes	No	No
8	4	500	2	76	No	No	No	No	No	No	No	No	No	No
9	4	400	2	61	No	No	No	No	No	No	No	No	No	No
10	4	375	2	57	No	No	No	No	No	No	No	No	No	No
11	4	375	2	57	No	No	No	No	No	No	No	No	No	No
12	4	358	2	55	No	No	No	No	No	No	No	No	No	No
13	4	325	2	50	No	No	No	No	No	No	No	No	No	No
14	4	300	2	46	No	No	No	No	No	No	No	No	No	No
15	4	300	2	46	No	No	No	No	No	No	No	No	No	No
16	4	292	2	44	No	No	No	No	No	No	No	No	No	No
17	4	166	2	25	No	No	No	No	No	No	No	No	No	No
18	4	91	2	14	No	No	No	No	No	No	No	No	No	No
19	4	84	2	13	No	No	No	No	No	No	No	No	No	No
20	4	33	2	5	No	No	No	No	No	No	No	No	No	No
21	4	25	2	4	No	No	No	No	No	No	No	No	No	No
22	4	25	2	4	No	No	No	No	No	No	No	No	No	No
23	4	17	2	3	No	No	No	No	No	No	No	No	No	No
24	4	17	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	3	5	7	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	18.9	35.1
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:11	0:53
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	35	92
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	960	960
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	146	431	17
2	140	414	16
3	137	405	16
4	117	345	14
5	111	328	13
6	99	293	12
7	92	272	11
8	88	259	10
9	70	207	8
10	66	194	8
11	66	194	8
12	63	185	7
13	57	168	7
14	53	155	6
15	53	155	6
16	51	151	6
17	29	86	3
18	16	47	2
19	15	43	2
20	6	17	1
21	4	13	1
22	4	13	1
23	3	9	0
24	3	9	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	577	1	17	No	No	No	No	No	No	No	No	No	No
2	3	554	1	16	No	No	No	No	No	No	No	No	No	No
3	3	542	1	16	No	No	No	No	No	No	No	No	No	No
4	3	462	1	14	No	No	No	No	No	No	No	No	No	No
5	3	439	1	13	No	No	No	No	No	No	No	No	No	No
6	3	392	1	12	No	No	No	No	No	No	No	No	No	No
7	3	364	1	11	No	No	No	No	No	No	No	No	No	No
8	3	347	1	10	No	No	No	No	No	No	No	No	No	No
9	3	277	1	8	No	No	No	No	No	No	No	No	No	No
10	3	260	1	8	No	No	No	No	No	No	No	No	No	No
11	3	260	1	8	No	No	No	No	No	No	No	No	No	No
12	3	248	1	7	No	No	No	No	No	No	No	No	No	No
13	3	225	1	7	No	No	No	No	No	No	No	No	No	No
14	3	208	1	6	No	No	No	No	No	No	No	No	No	No
15	3	208	1	6	No	No	No	No	No	No	No	No	No	No
16	3	202	1	6	No	No	No	No	No	No	No	No	No	No
17	3	115	1	3	No	No	No	No	No	No	No	No	No	No
18	3	63	1	2	No	No	No	No	No	No	No	No	No	No
19	3	58	1	2	No	No	No	No	No	No	No	No	No	No
20	3	23	1	1	No	No	No	No	No	No	No	No	No	No
21	3	17	1	1	No	No	No	No	No	No	No	No	No	No
22	3	17	1	1	No	No	No	No	No	No	No	No	No	No
23	3	12	1	0	No	No	No	No	No	No	No	No	No	No
24	3	12	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:03
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	17
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	594
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 26: East Access at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	N	W
1	34	118	12
2	33	113	12
3	32	111	11
4	27	94	10
5	26	90	9
6	23	80	8
7	21	74	8
8	20	71	7
9	16	57	6
10	15	53	5
11	15	53	5
12	15	51	5
13	13	46	5
14	12	42	4
15	12	42	4
16	12	41	4
17	7	24	2
18	4	13	1
19	3	12	1
20	1	5	0
21	1	4	0
22	1	4	0
23	1	2	0
24	1	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	152	1	12	No	No	No	No	No	No	No	No	No	No
2	2	146	1	12	No	No	No	No	No	No	No	No	No	No
3	2	143	1	11	No	No	No	No	No	No	No	No	No	No
4	2	121	1	10	No	No	No	No	No	No	No	No	No	No
5	2	116	1	9	No	No	No	No	No	No	No	No	No	No
6	2	103	1	8	No	No	No	No	No	No	No	No	No	No
7	2	95	1	8	No	No	No	No	No	No	No	No	No	No
8	2	91	1	7	No	No	No	No	No	No	No	No	No	No
9	2	73	1	6	No	No	No	No	No	No	No	No	No	No
10	2	68	1	5	No	No	No	No	No	No	No	No	No	No
11	2	68	1	5	No	No	No	No	No	No	No	No	No	No
12	2	66	1	5	No	No	No	No	No	No	No	No	No	No
13	2	59	1	5	No	No	No	No	No	No	No	No	No	No
14	2	54	1	4	No	No	No	No	No	No	No	No	No	No
15	2	54	1	4	No	No	No	No	No	No	No	No	No	No
16	2	53	1	4	No	No	No	No	No	No	No	No	No	No
17	2	31	1	2	No	No	No	No	No	No	No	No	No	No
18	2	17	1	1	No	No	No	No	No	No	No	No	No	No
19	2	15	1	1	No	No	No	No	No	No	No	No	No	No
20	2	6	1	0	No	No	No	No	No	No	No	No	No	No
21	2	5	1	0	No	No	No	No	No	No	No	No	No	No
22	2	5	1	0	No	No	No	No	No	No	No	No	No	No
23	2	3	1	0	No	No	No	No	No	No	No	No	No	No
24	2	3	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	12
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	164
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	122	46	48
2	117	44	46
3	115	43	45
4	98	37	38
5	93	35	36
6	83	31	33
7	77	29	30
8	73	28	29
9	59	22	23
10	55	21	22
11	55	21	22
12	52	20	21
13	48	18	19
14	44	17	17
15	44	17	17
16	43	16	17
17	24	9	10
18	13	5	5
19	12	5	5
20	5	2	2
21	4	1	1
22	4	1	1
23	2	1	1
24	2	1	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	168	1	48	No	No	No	No	No	No	No	No	No	No
2	2	161	1	46	No	No	No	No	No	No	No	No	No	No
3	2	158	1	45	No	No	No	No	No	No	No	No	No	No
4	2	135	1	38	No	No	No	No	No	No	No	No	No	No
5	2	128	1	36	No	No	No	No	No	No	No	No	No	No
6	2	114	1	33	No	No	No	No	No	No	No	No	No	No
7	2	106	1	30	No	No	No	No	No	No	No	No	No	No
8	2	101	1	29	No	No	No	No	No	No	No	No	No	No
9	2	81	1	23	No	No	No	No	No	No	No	No	No	No
10	2	76	1	22	No	No	No	No	No	No	No	No	No	No
11	2	76	1	22	No	No	No	No	No	No	No	No	No	No
12	2	72	1	21	No	No	No	No	No	No	No	No	No	No
13	2	66	1	19	No	No	No	No	No	No	No	No	No	No
14	2	61	1	17	No	No	No	No	No	No	No	No	No	No
15	2	61	1	17	No	No	No	No	No	No	No	No	No	No
16	2	59	1	17	No	No	No	No	No	No	No	No	No	No
17	2	33	1	10	No	No	No	No	No	No	No	No	No	No
18	2	18	1	5	No	No	No	No	No	No	No	No	No	No
19	2	17	1	5	No	No	No	No	No	No	No	No	No	No
20	2	7	1	2	No	No	No	No	No	No	No	No	No	No
21	2	5	1	1	No	No	No	No	No	No	No	No	No	No
22	2	5	1	1	No	No	No	No	No	No	No	No	No	No
23	2	3	1	1	No	No	No	No	No	No	No	No	No	No
24	2	3	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.2
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:08
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	48
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	216
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 42: Reed at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	253	71	2
2	243	68	2
3	238	67	2
4	202	57	2
5	192	54	2
6	172	48	1
7	159	45	1
8	152	43	1
9	121	34	1
10	114	32	1
11	114	32	1
12	109	31	1
13	99	28	1
14	91	26	1
15	91	26	1
16	89	25	1
17	51	14	0
18	28	8	0
19	25	7	0
20	10	3	0
21	8	2	0
22	8	2	0
23	5	1	0
24	5	1	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	324	1	2	No	No	No	No	No	No	No	No	No	No
2	2	311	1	2	No	No	No	No	No	No	No	No	No	No
3	2	305	1	2	No	No	No	No	No	No	No	No	No	No
4	2	259	1	2	No	No	No	No	No	No	No	No	No	No
5	2	246	1	2	No	No	No	No	No	No	No	No	No	No
6	2	220	1	1	No	No	No	No	No	No	No	No	No	No
7	2	204	1	1	No	No	No	No	No	No	No	No	No	No
8	2	195	1	1	No	No	No	No	No	No	No	No	No	No
9	2	155	1	1	No	No	No	No	No	No	No	No	No	No
10	2	146	1	1	No	No	No	No	No	No	No	No	No	No
11	2	146	1	1	No	No	No	No	No	No	No	No	No	No
12	2	140	1	1	No	No	No	No	No	No	No	No	No	No
13	2	127	1	1	No	No	No	No	No	No	No	No	No	No
14	2	117	1	1	No	No	No	No	No	No	No	No	No	No
15	2	117	1	1	No	No	No	No	No	No	No	No	No	No
16	2	114	1	1	No	No	No	No	No	No	No	No	No	No
17	2	65	1	0	No	No	No	No	No	No	No	No	No	No
18	2	36	1	0	No	No	No	No	No	No	No	No	No	No
19	2	32	1	0	No	No	No	No	No	No	No	No	No	No
20	2	13	1	0	No	No	No	No	No	No	No	No	No	No
21	2	10	1	0	No	No	No	No	No	No	No	No	No	No
22	2	10	1	0	No	No	No	No	No	No	No	No	No	No
23	2	6	1	0	No	No	No	No	No	No	No	No	No	No
24	2	6	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	2
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	326
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 1.pdf

Scenario 4 PM Dev 2020 Ph 1
6/19/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: 18-392 Reed Rd Sub	Homes	ITE 210	Home	0.990	75.000	63.00	37.00	47	27	74	100.00
					Added Trips Total			**47**	**27**	**74**	**100.00**

18-392 Strong at 27th Subdivision TIA

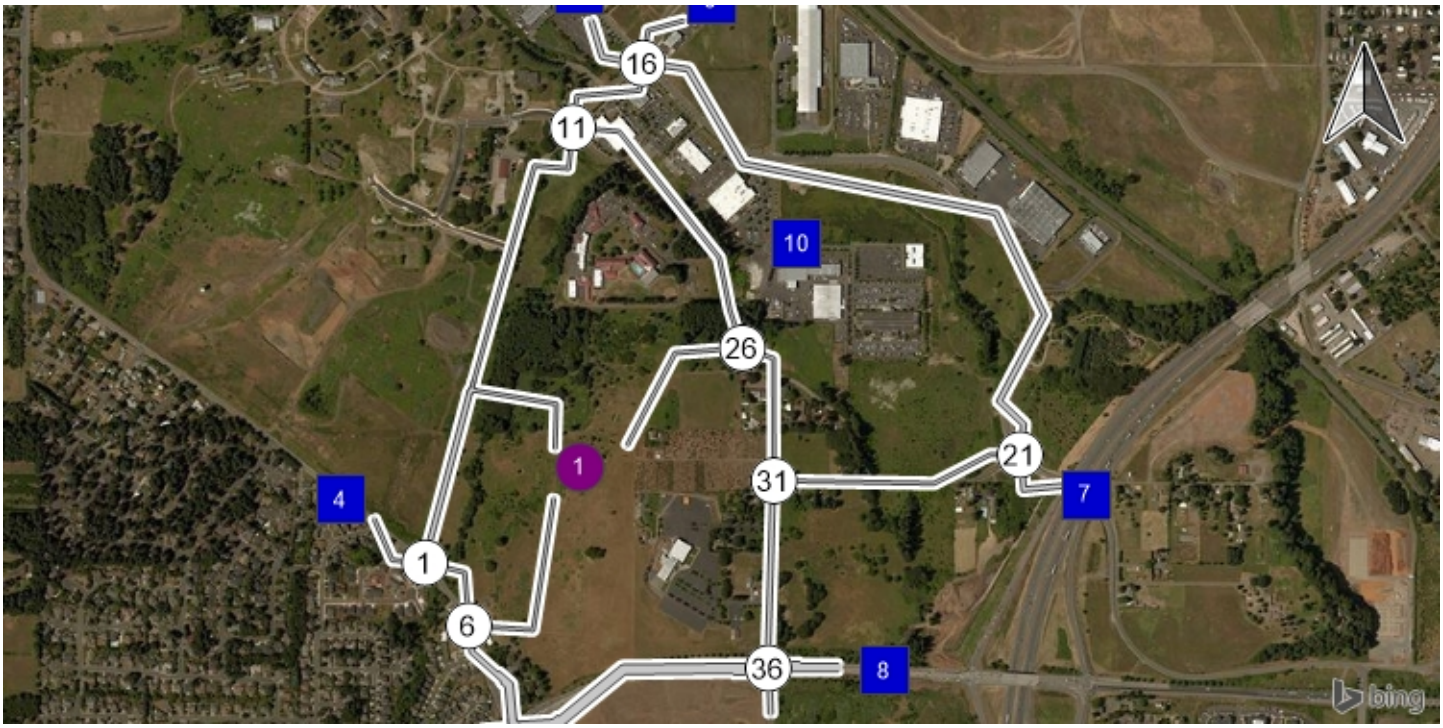
Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 1.pdf

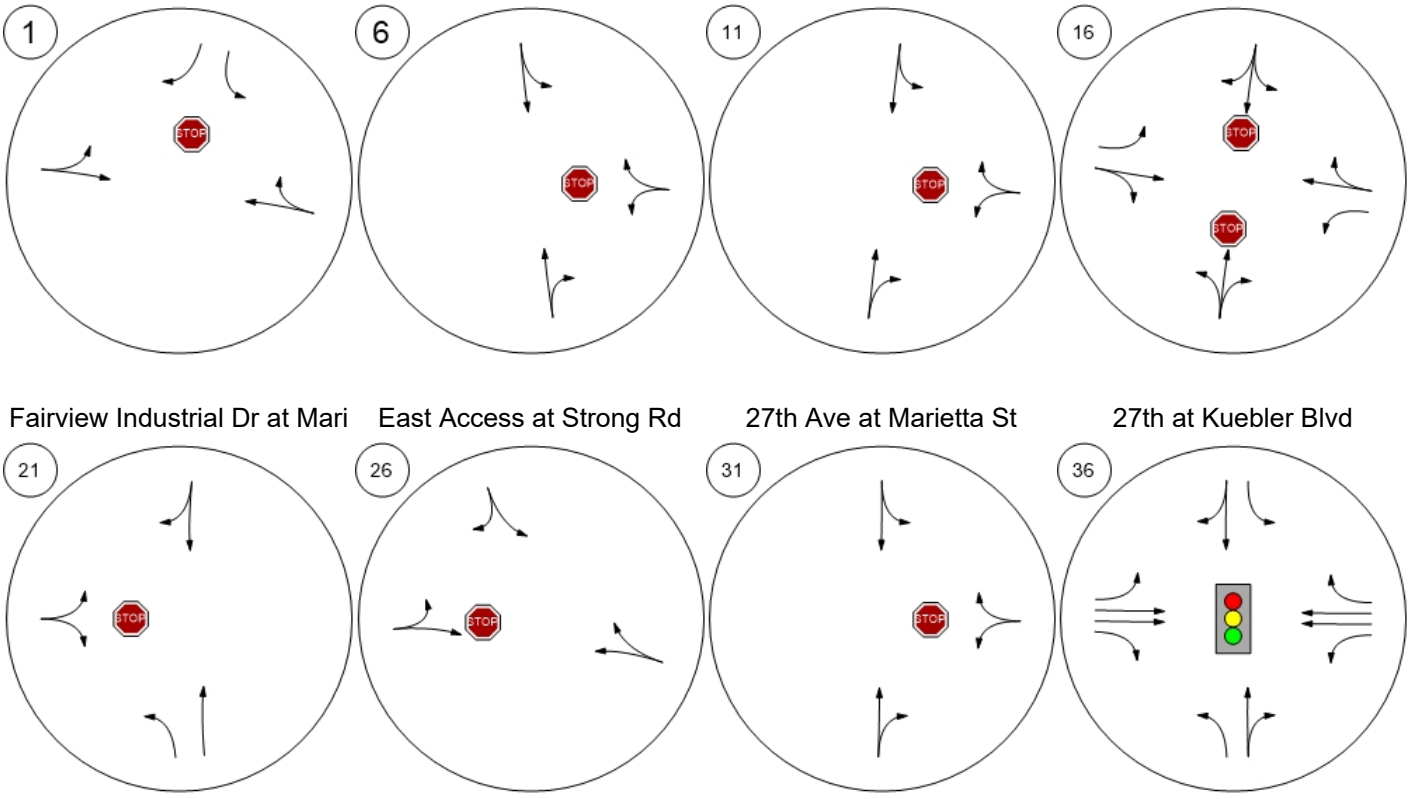
Scenario 4 PM Dev 2020 Ph 1
6/19/2018

Trip Distribution summary

Zone / Gate	Zone 1: 18-392 Reed Rd Sub			
	To 18-392 Reed Rd Sub:		From 18-392 Reed Rd Sub:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	5	10.00	3
3: Gate	30.00	14	30.00	8
4: Gate	7.00	3	7.00	2
5: Gate	10.00	5	10.00	3
6: Gate	0.00	0	0.00	0
7: Gate	6.00	3	6.00	2
8: Gate	35.00	16	35.00	8
9: Gate	2.00	1	2.00	1
10: Gate	0.00	0	0.00	0
Total	**100.00**	**47**	**100.00**	**27**

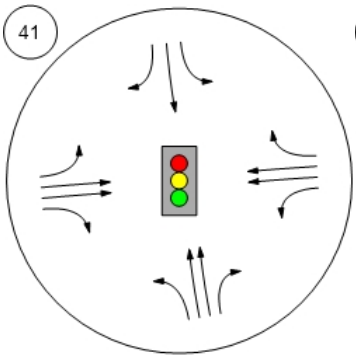
Report Figure 1: Lane Configuration and Traffic Control



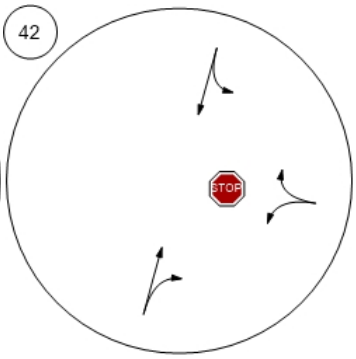


Report Figure 1: Lane Configuration and Traffic Control

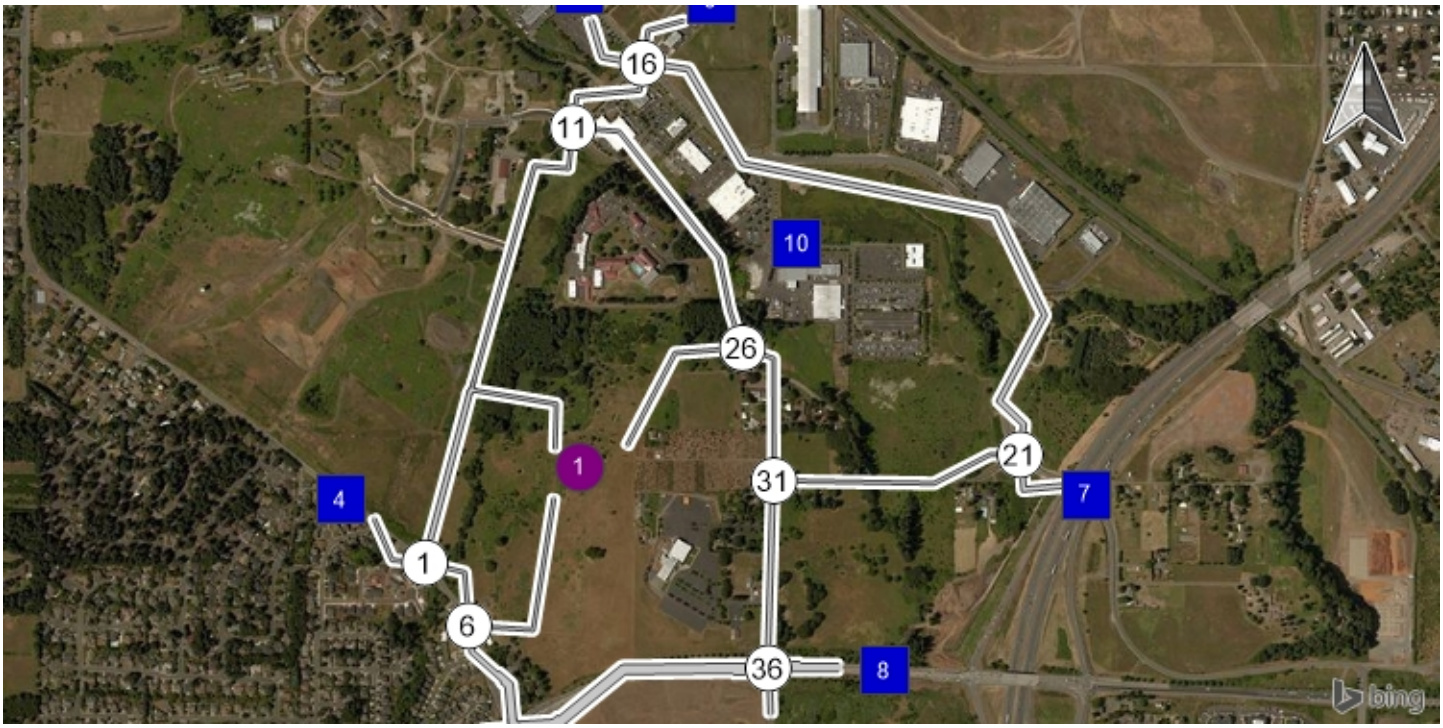
Keubler Blvd at Battle Creek



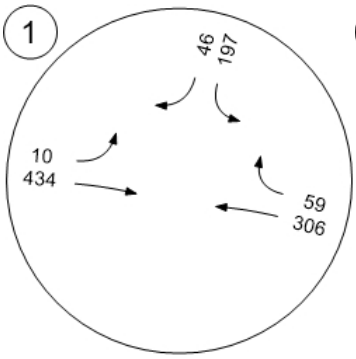
Reed at Site Access



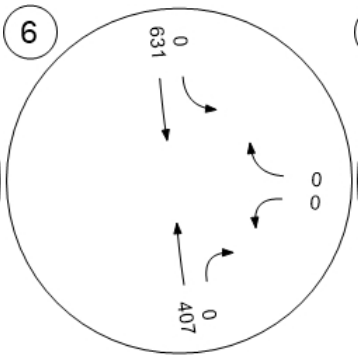
Report Figure 2a: Traffic Volume - Base Volume



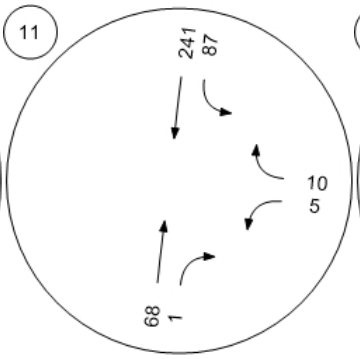
Battle Creek Rd at Reed Rd



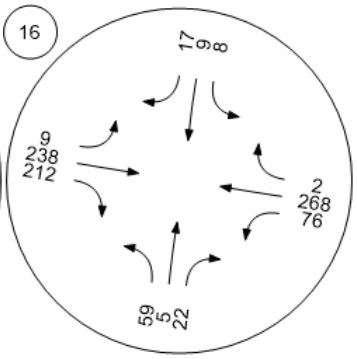
Battle Creek Rd at Site Acces



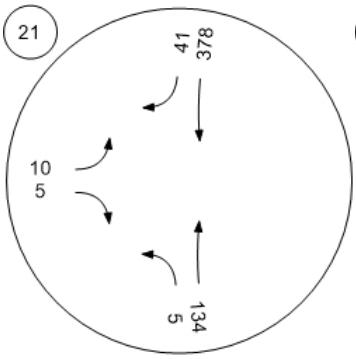
Reed Rd at Strong Rd



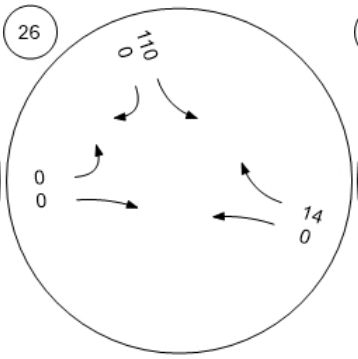
Reed Rd at Fairview Industria



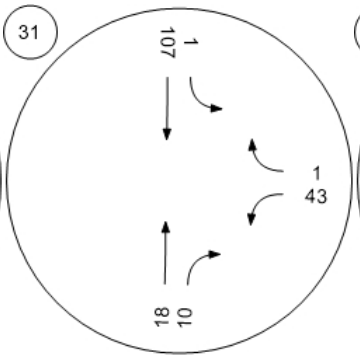
Fairview Industrial Dr at Mari



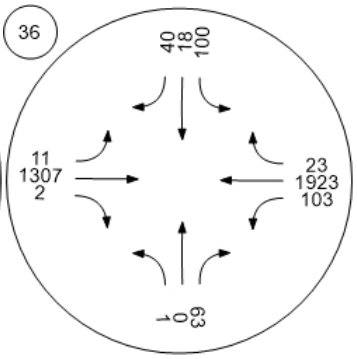
East Access at Strong Rd



27th Ave at Marietta St

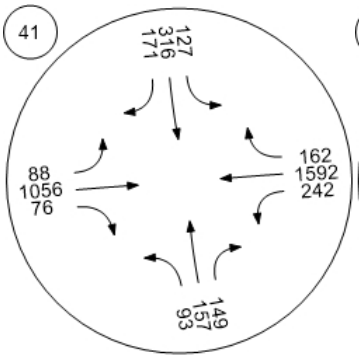


27th at Kuebler Blvd

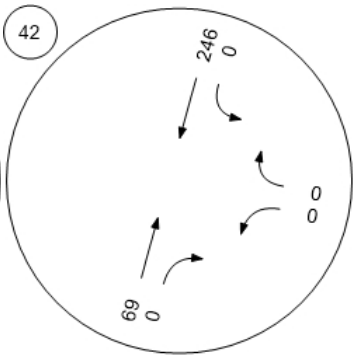


Report Figure 2a: Traffic Volume - Base Volume

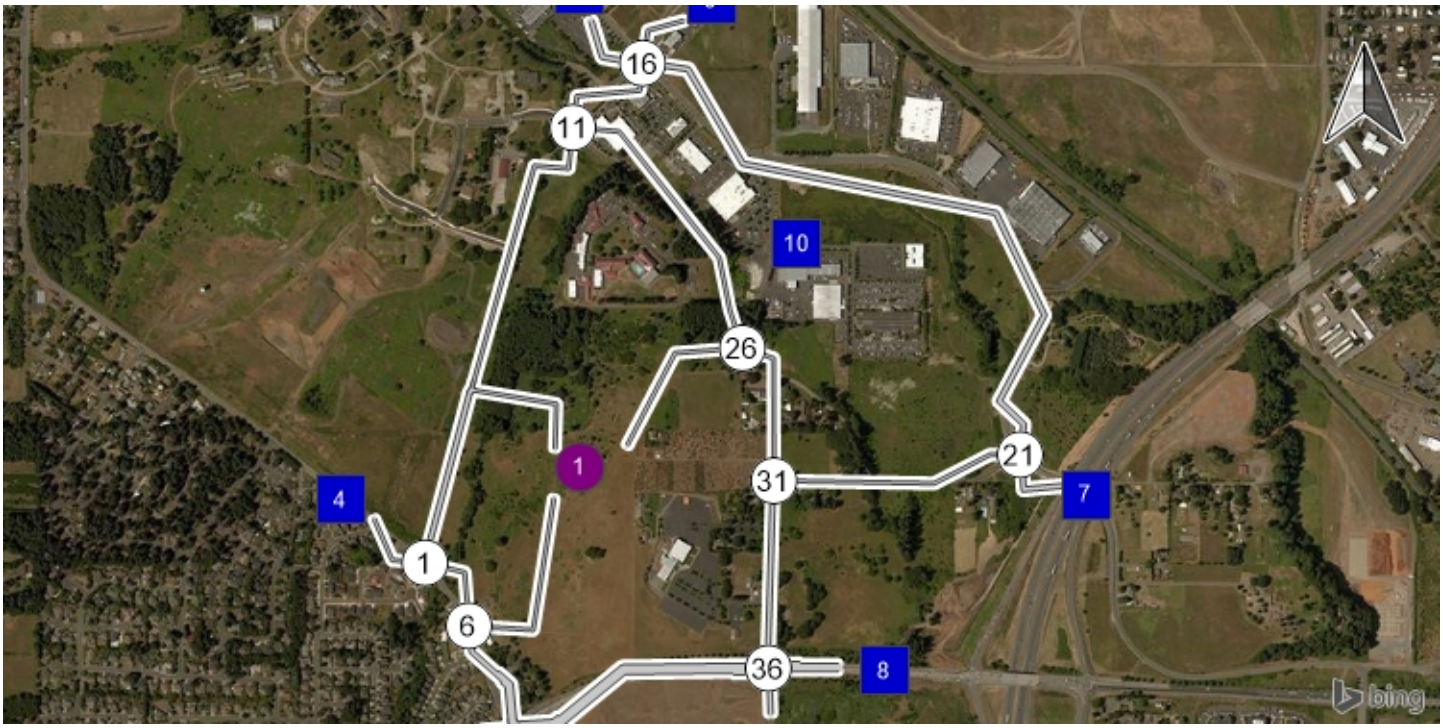
Keubler Blvd at Battle Creek

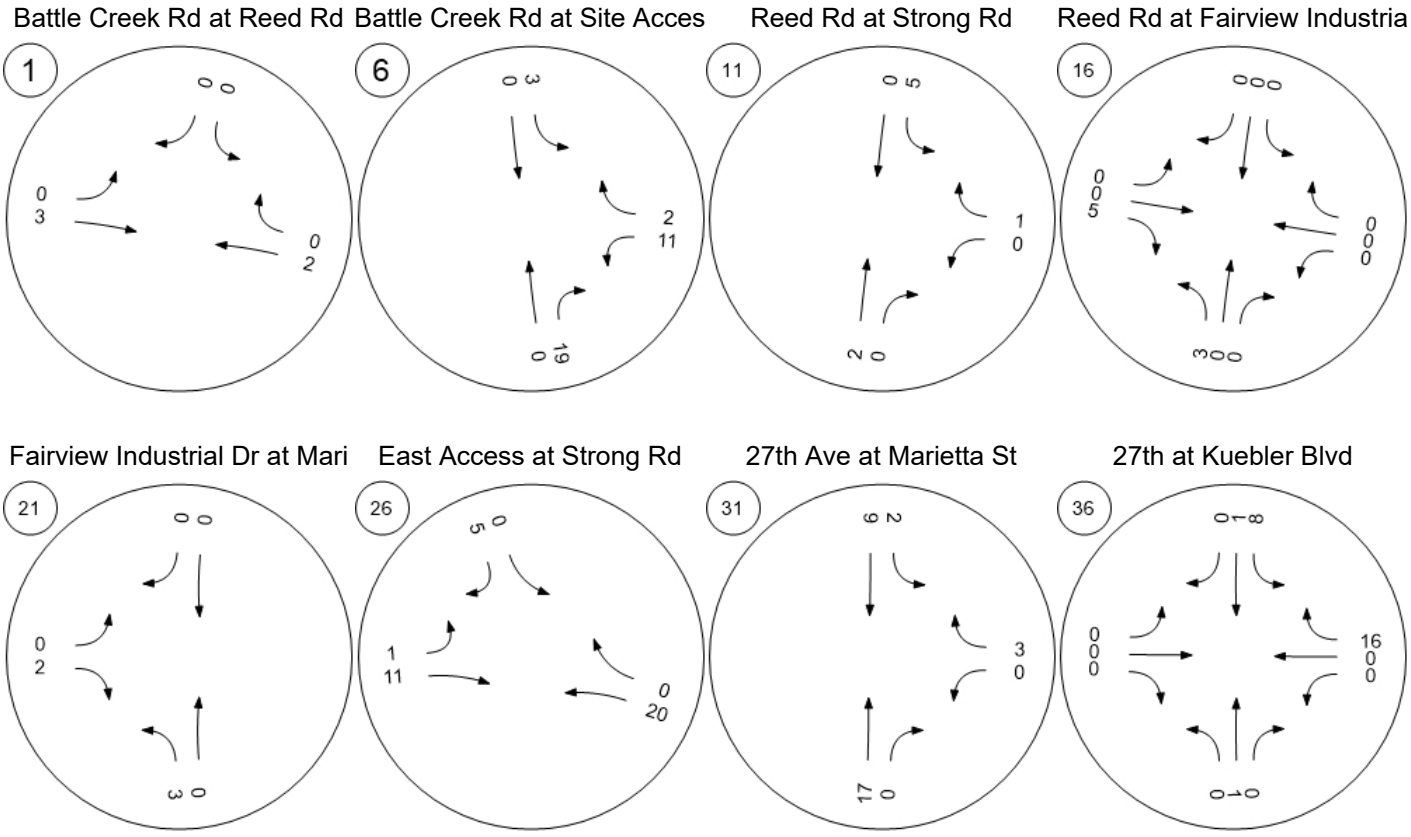


Reed at Site Access



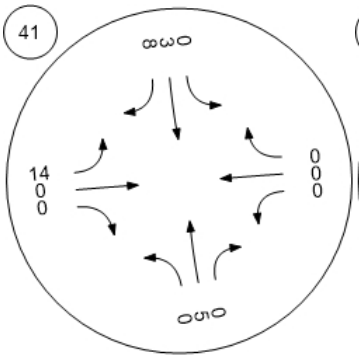
Report Figure 2d: Traffic Volume - Net New Site Trips



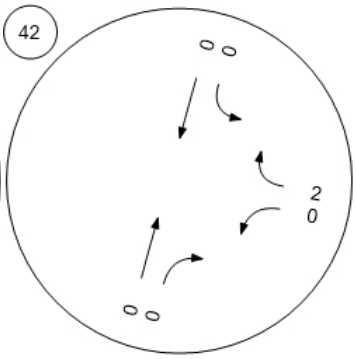


Report Figure 2d: Traffic Volume - Net New Site Trips

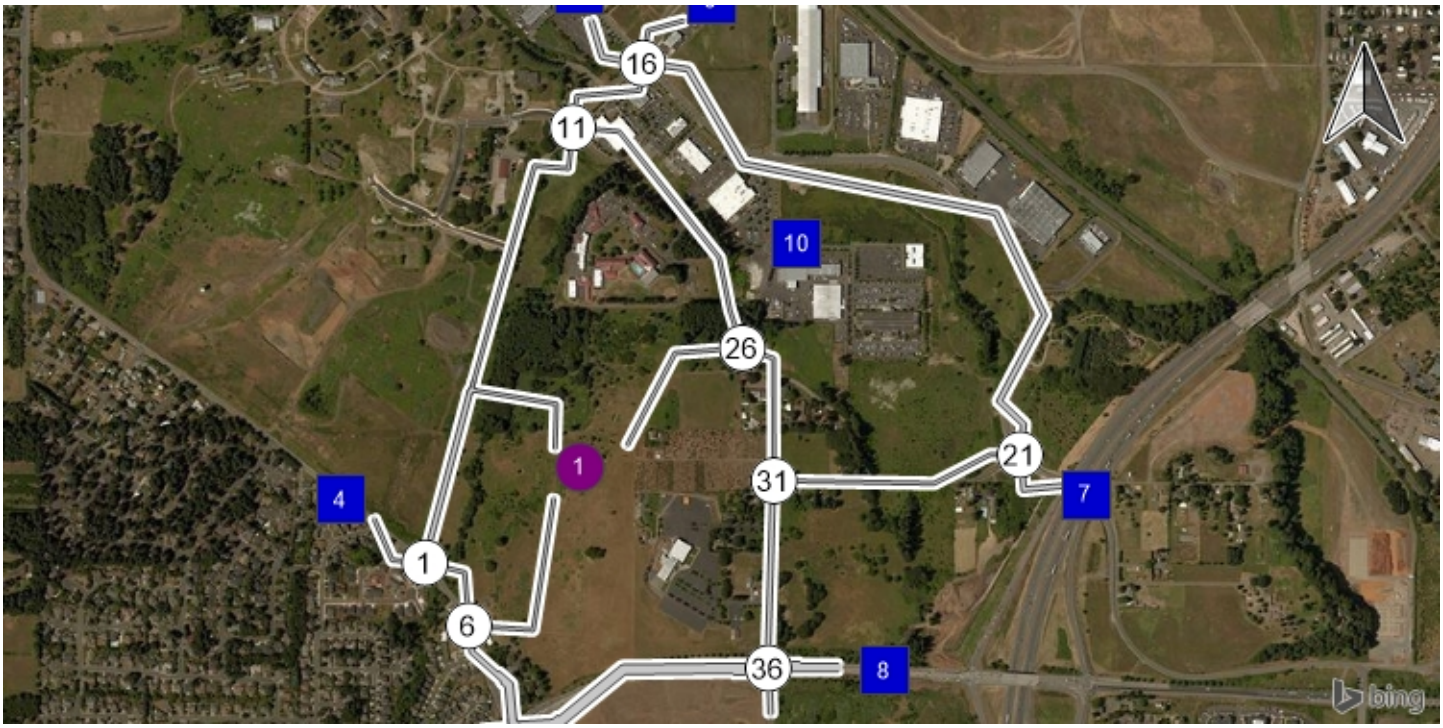
Keubler Blvd at Battle Creek

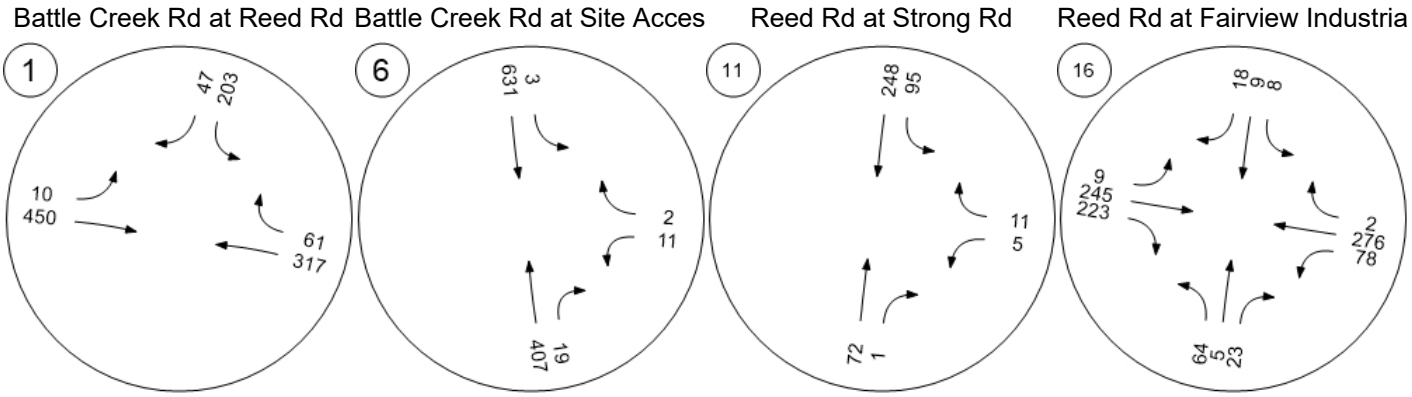


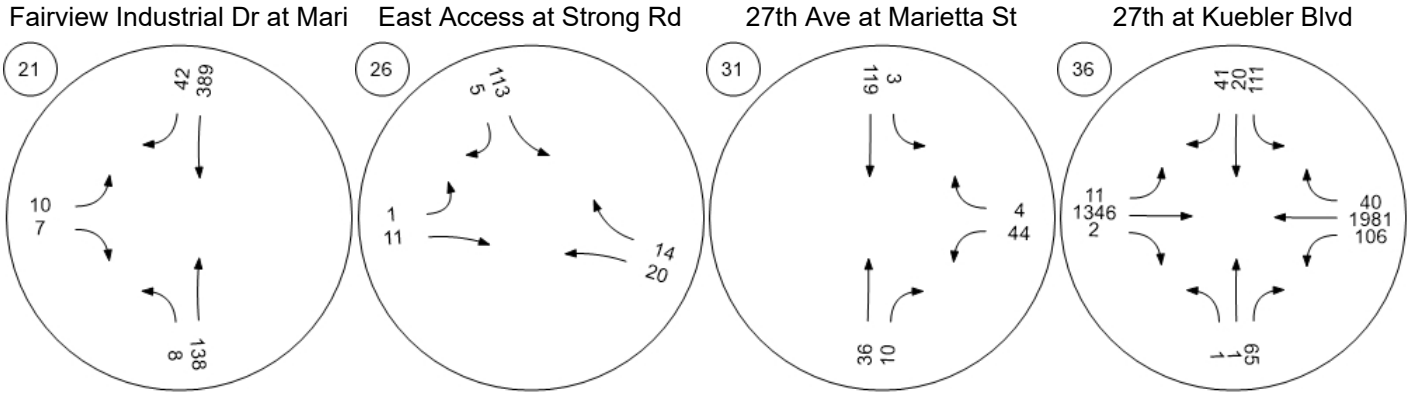
Reed at Site Access



Report Figure 2f: Traffic Volume - Future Total Volume

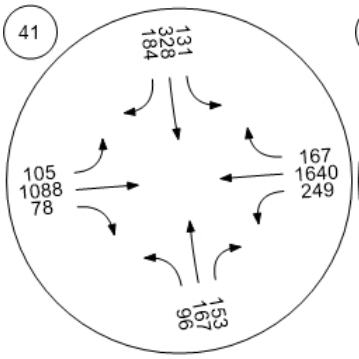




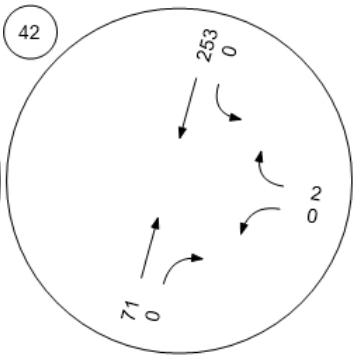


Report Figure 2f: Traffic Volume - Future Total Volume

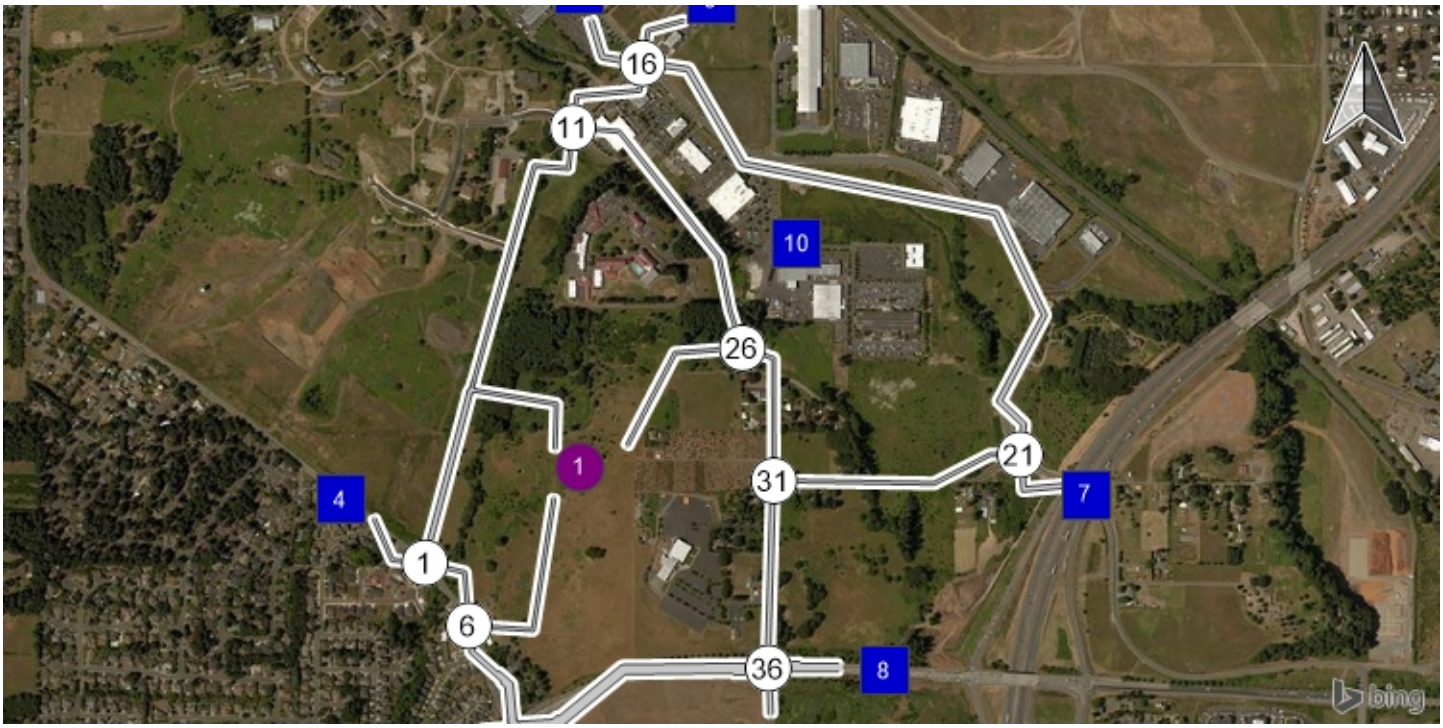
Keubler Blvd at Battle Creek

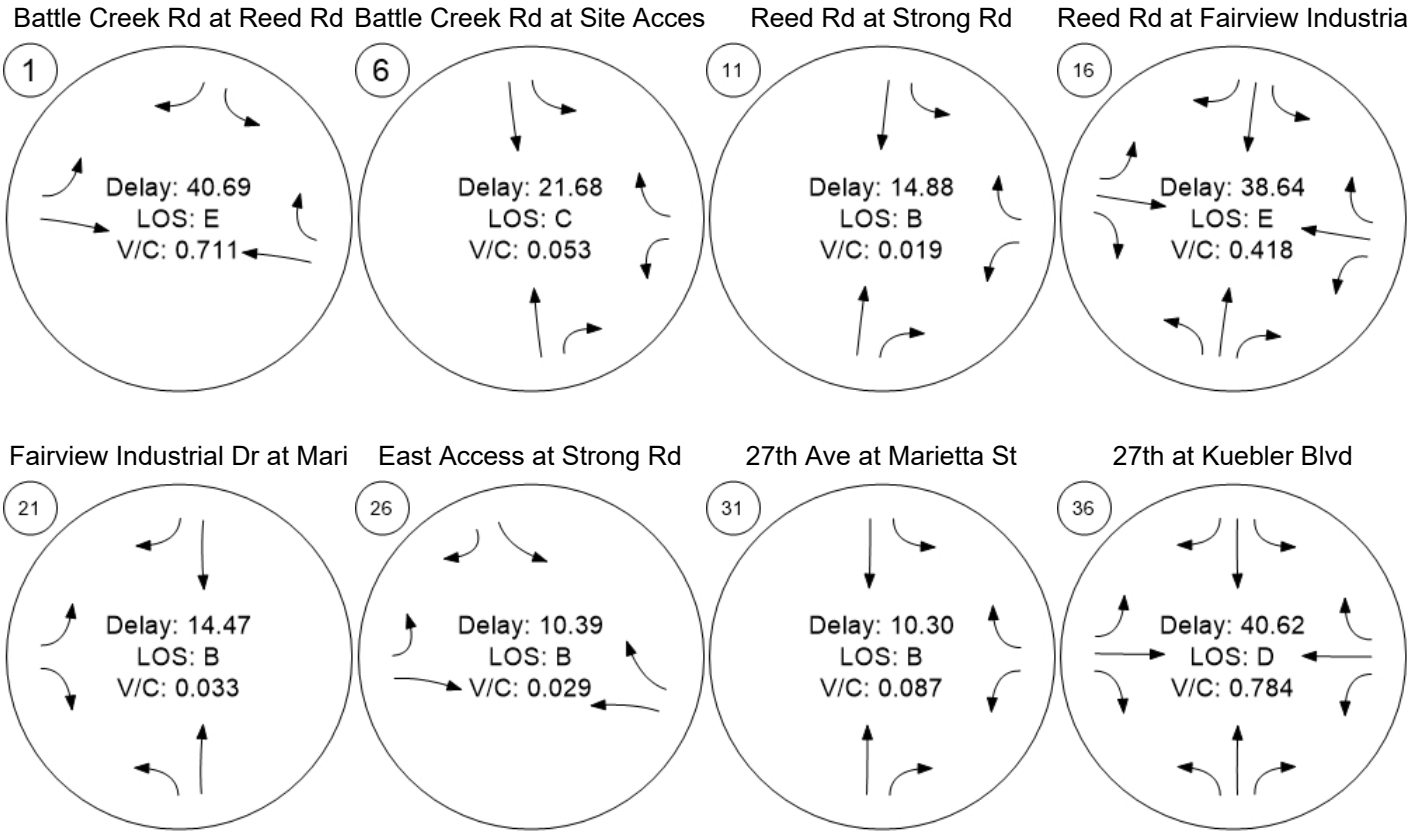


Reed at Site Access



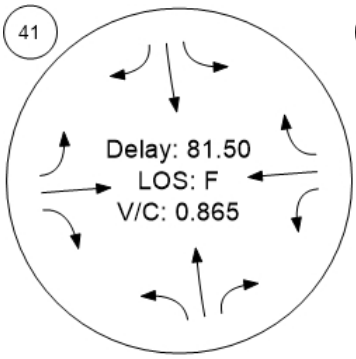
Report Figure 3: Traffic Conditions



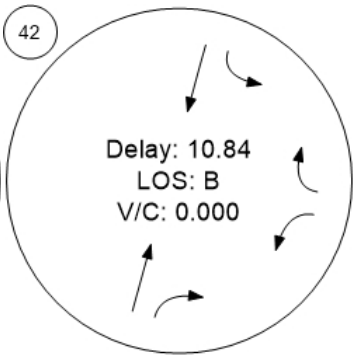


Report Figure 3: Traffic Conditions

Keubler Blvd at Battle Creek



Reed at Site Access



18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 2.pdf

Scenario 6 PM Dev 2023 Ph 2
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.800	53.0	F
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.123	25.9	D
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.020	15.6	C
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.502	47.8	E
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.038	15.1	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.006	10.7	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.098	10.8	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.829	50.1	D
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	WB Left	0.916	99.7	F
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	53.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.800

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	197	46	10	434	306	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.20	1.20	1.80	1.80	3.00	3.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	7	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	213	51	11	476	333	64
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	14	3	129	90	17
Total Analysis Volume [veh/h]	232	55	12	517	362	70
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.80	0.08	0.01	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	53.00	11.01	8.22	0.00	0.00	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh]	6.38	0.27	2.56	2.56	0.00	0.00
95th-Percentile Queue Length [ft]	159.55	6.86	63.98	63.98	0.00	0.00
d_A, Approach Delay [s/veh]	44.95		0.19		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	10.42					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 6: Battle Creek Rd at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	25.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.123

Intersection Setup

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Base Volume Input [veh/h]	407	0	0	631	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	37	7	0	23	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	440	37	7	681	23	3
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	117	10	2	181	6	1
Total Analysis Volume [veh/h]	468	39	7	724	24	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.01	0.12	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.43	0.00	25.94	13.70
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	5.87	5.87	0.43	0.43
95th-Percentile Queue Length [ft]	0.00	0.00	146.68	146.68	10.82	10.82
d_A, Approach Delay [s/veh]	0.00		0.08		24.58	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.57					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	15.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	68	1	87	241	5	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.80	5.80	1.80	1.80	6.70	6.70
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	9	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	77	1	103	260	5	13
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	0	34	86	2	4
Total Analysis Volume [veh/h]	101	1	136	342	7	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.09	0.00	0.02	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.66	0.00	15.63	9.05
Movement LOS	A	A	A	A	C	A
95th-Percentile Queue Length [veh]	0.00	0.00	1.40	1.40	0.12	0.12
95th-Percentile Queue Length [ft]	0.00	0.00	34.99	34.99	2.98	2.98
d_A, Approach Delay [s/veh]	0.00		2.18		10.97	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.16					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	Two-way stop	Delay (sec / veh):	47.8
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.502

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	59	5	22	8	9	17	9	238	212	76	268	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.00	0.00	0.00	4.10	4.10	4.10	4.00	4.00	4.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	0	0	0	0	0	9	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	5	24	9	10	18	10	257	238	82	289	2
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	2	7	3	3	5	3	78	73	25	88	1
Total Analysis Volume [veh/h]	85	6	29	11	12	22	12	313	290	100	352	2
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.50	0.03	0.05	0.06	0.07	0.03	0.01	0.00	0.00	0.10	0.00	0.00
d_M, Delay for Movement [s/veh]	47.82	44.28	32.59	28.13	28.73	12.77	8.05	0.00	0.00	9.16	0.00	0.00
Movement LOS	E	E	D	D	D	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	3.20	3.20	3.20	0.58	0.58	0.58	0.03	0.00	0.00	0.35	0.00	0.00
95th-Percentile Queue Length [ft]	80.00	80.00	80.00	14.51	14.51	14.51	0.76	0.00	0.00	8.64	0.00	0.00
d_A, Approach Delay [s/veh]	43.97			20.78			0.16			2.02		
Approach LOS	E			C			A			A		
d_I, Intersection Delay [s/veh]	5.85											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.038

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	5	134	378	41	10	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	9.40	9.40	4.50	4.50	0.00	0.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	145	408	44	11	8
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	46	129	14	3	3
Total Analysis Volume [veh/h]	14	184	516	56	14	10
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.04	0.02
d_M, Delay for Movement [s/veh]	8.79	0.00	0.00	0.00	15.14	12.13
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.04	0.00	0.00	0.00	0.18	0.18
95th-Percentile Queue Length [ft]	1.10	0.00	0.00	0.00	4.43	4.43
d_A, Approach Delay [s/veh]	0.62		0.00		13.88	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.57					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 26: East Access at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Strong Rd		East Access		Strong Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Strong Rd		East Access		Strong Rd	
Base Volume Input [veh/h]	110	0	0	0	0	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	9	2	22	41	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	119	9	2	22	41	15
Peak Hour Factor	0.5600	0.5600	0.5600	0.5600	0.5600	0.5600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	4	1	10	18	7
Total Analysis Volume [veh/h]	212	16	4	39	73	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Stop	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance		No	
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.06	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.72	10.67	7.82	0.00
Movement LOS	A	A	B	B	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.20	0.20	0.24	0.24
95th-Percentile Queue Length [ft]	0.00	0.00	5.07	5.07	5.99	5.99
d_A, Approach Delay [s/veh]	0.00		10.67		5.71	
Approach LOS	A		B		A	
d_I, Intersection Delay [s/veh]	2.78					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.098

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	18	10	1	107	43	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	35	0	3	19	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	11	4	135	46	7
Peak Hour Factor	0.6800	0.6800	0.6800	0.6800	0.6800	0.6800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	4	1	50	17	3
Total Analysis Volume [veh/h]	79	16	6	199	68	10
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.10	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.39	0.00	10.79	9.29
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.47	0.47	0.36	0.36
95th-Percentile Queue Length [ft]	0.00	0.00	11.73	11.73	9.06	9.06
d_A, Approach Delay [s/veh]	0.00		0.22		10.60	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.30					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 36: 27th at Kuebler Blvd

Control Type:	Signalized	Delay (sec / veh):	50.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.829

Intersection Setup

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	125.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	200.00	350.00	100.00	175.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	1	0	63	100	18	40	11	1307	2	103	1923	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.60	0.60	0.60	3.60	3.60	3.60	1.30	1.30	1.30
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	18	1	0	0	0	0	0	0	33
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	2	68	126	20	43	12	1412	2	111	2077	58
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	18	34	5	11	3	376	1	30	552	15
Total Analysis Volume [veh/h]	1	2	72	134	21	46	13	1502	2	118	2210	62
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	34	83	0	9	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	15	5	20	2	79	79	5	82	82
g / C, Green / Cycle	0.00	0.13	0.04	0.17	0.01	0.66	0.66	0.04	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.00	0.05	0.08	0.04	0.01	0.47	0.00	0.07	0.69	0.04
s, saturation flow rate [veh/h]	1568	1405	1621	1518	1582	3163	1412	1612	3222	1439
c, Capacity [veh/h]	2	178	68	253	23	2078	928	67	2203	984
d1, Uniform Delay [s]	59.86	48.35	57.50	43.60	58.73	13.46	7.08	57.50	18.97	6.27
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	92.03	7.06	452.07	2.54	19.03	0.49	0.00	351.73	9.62	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.42	1.98	0.26	0.56	0.72	0.00	1.75	1.00	0.06
d, Delay for Lane Group [s/veh]	151.89	55.40	509.56	46.14	77.76	13.94	7.08	409.23	28.59	6.30
Lane Group LOS	F	E	F	D	E	B	A	F	F	A
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.09	2.40	10.55	1.93	0.52	12.34	0.02	8.62	29.54	0.50
50th-Percentile Queue Length [ft]	2.25	59.98	263.85	48.13	12.91	308.55	0.43	215.47	738.42	12.54
95th-Percentile Queue Length [veh]	0.16	4.32	18.03	3.47	0.93	18.10	0.03	15.02	38.55	0.90
95th-Percentile Queue Length [ft]	4.05	107.96	450.71	86.64	23.23	452.59	0.78	375.54	963.86	22.58

Movement, Approach, & Intersection Results

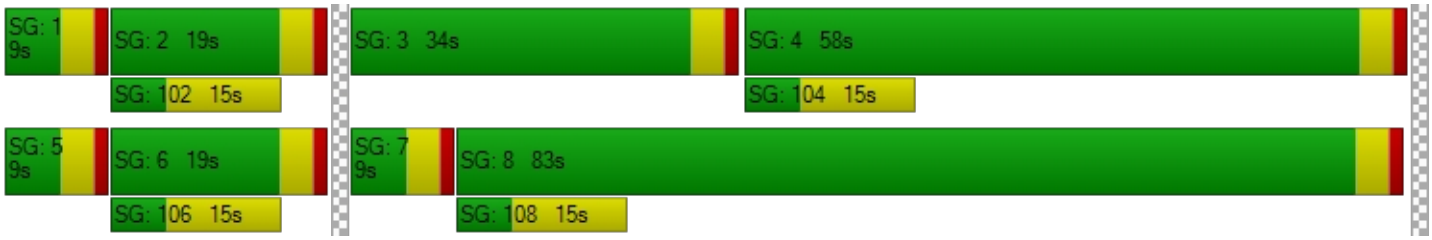
d_M, Delay for Movement [s/veh]	151.89	55.40	55.40	509.56	46.14	46.14	77.76	13.94	7.08	409.23	28.59	6.30
Movement LOS	F	E	E	F	D	D	E	B	A	F	F	A
d_A, Approach Delay [s/veh]	56.69			355.09			14.48			46.81		
Approach LOS	E			F			B			D		
d_I, Intersection Delay [s/veh]	50.07											
Intersection LOS	D											
Intersection V/C	0.829											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.026	2.046	3.081	3.134
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	250	1317	900
d_b, Bicycle Delay [s]	45.94	45.94	7.00	18.15
l_b,int, Bicycle LOS Score for Intersection	1.683	1.891	2.811	3.531
Bicycle LOS	A	A	C	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	99.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.916

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	157	149	127	316	171	88	1056	76	242	1592	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	1.10	1.10	1.10	3.90	3.90	3.90	1.50	1.50	1.50
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	9	0	0	6	17	28	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	179	161	137	347	202	123	1140	82	261	1719	175
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	47	42	36	90	53	32	297	21	68	448	46
Total Analysis Volume [veh/h]	104	186	168	143	361	210	128	1188	85	272	1791	182
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	23	0	15	26	0	35	60	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	19	19	11	22	22	11	56	56	8	53	53
g / C, Green / Cycle	0.07	0.17	0.17	0.10	0.20	0.20	0.10	0.51	0.51	0.07	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.07	0.06	0.12	0.09	0.21	0.15	0.08	0.38	0.06	0.17	0.56	0.13
s, saturation flow rate [veh/h]	1590	3179	1419	1614	1695	1441	1578	3156	1409	1609	3217	1436
c, Capacity [veh/h]	116	553	247	162	341	290	155	1602	715	117	1552	693
d1, Uniform Delay [s]	50.60	39.87	42.58	48.88	43.94	41.09	48.70	21.37	14.18	51.00	28.46	16.87
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.17	0.15	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	20.49	1.64	14.16	14.49	65.06	14.61	10.57	0.69	0.07	603.65	71.69	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.34	0.68	0.89	1.06	0.72	0.83	0.74	0.12	2.32	1.15	0.26
d, Delay for Lane Group [s/veh]	71.09	41.51	56.74	63.36	109.00	55.70	59.27	22.07	14.26	654.65	100.16	17.07
Lane Group LOS	E	D	E	E	F	E	E	C	B	F	F	B
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	3.49	2.34	5.23	4.51	15.36	6.47	3.89	11.72	1.11	22.87	34.82	2.73
50th-Percentile Queue Length [ft]	87.27	58.41	130.86	112.81	383.95	161.80	97.31	292.94	27.81	571.64	870.57	68.22
95th-Percentile Queue Length [veh]	6.28	4.21	8.99	8.00	22.46	10.64	7.01	17.33	2.00	36.75	49.40	4.91
95th-Percentile Queue Length [ft]	157.09	105.14	224.67	199.90	561.53	266.11	175.15	433.29	50.07	918.78	1234.94	122.80

Movement, Approach, & Intersection Results

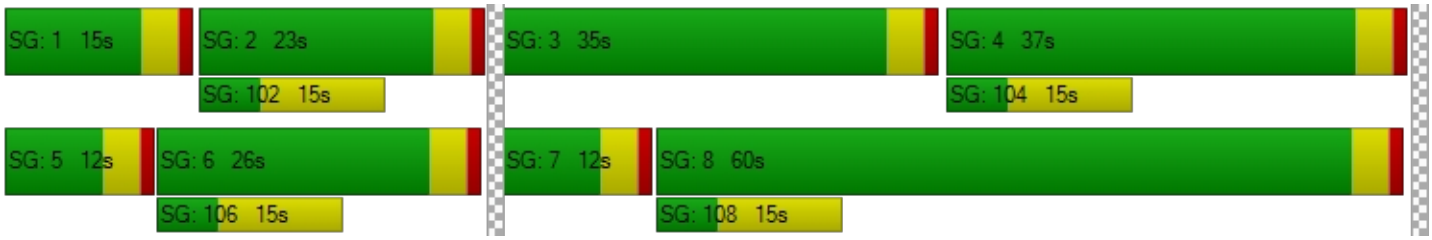
d_M, Delay for Movement [s/veh]	71.09	41.51	56.74	63.36	109.00	55.70	59.27	22.07	14.26	654.65	100.16	17.07
Movement LOS	E	D	E	E	F	E	E	C	B	F	F	B
d_A, Approach Delay [s/veh]	53.81			84.19			24.99			160.60		
Approach LOS	D			F			C			F		
d_I, Intersection Delay [s/veh]	99.69											
Intersection LOS	F											
Intersection V/C	0.916											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.540	2.547	3.034	3.072
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	345	400	1018	600
d_b, Bicycle Delay [s]	37.64	35.20	13.25	26.95
l_b,int, Bicycle LOS Score for Intersection	1.937	2.738	2.715	3.412
Bicycle LOS	A	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 42: Reed at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Reed Rd		Reed Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Site Access	
Base Volume Input [veh/h]	69	0	0	246	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	1	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	0	0	266	1	4
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	0	0	79	0	1
Total Analysis Volume [veh/h]	89	0	0	317	1	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.39	0.00	11.02	8.74
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.52	0.52
d_A, Approach Delay [s/veh]	0.00		0.00		9.12	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.13					
Intersection LOS	B					

18-392 Strong at 27th Subdivision TIA

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Scenario 6 PM Dev 2023 Ph 2
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	213	51	11	476	333	64	1148

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	440	37	7	681	23	3	1191

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	77	1	103	260	5	13	459

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	70	5	24	9	10	18	10	257	238	82	289	2	1014

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	11	145	408	44	11	8	627

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	119	9	2	22	41	15	208

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	54	11	4	135	46	7	257

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	1	2	68	126	20	43	12	1412	2	111	2077	58	3932

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	100	179	161	137	347	202	123	1140	82	261	1719	175	4626

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	75	0	0	266	1	4	346

18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 PM Dev Ph 2.pdf

Scenario 6 PM Dev 2023 Ph 2
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	197	46	10	434	306	59	1052
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	0	7	3	0	11
		Other	0	0	0	0	0	0	0
		Future Total	**213**	**51**	**11**	**476**	**333**	**64**	**1148**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	Final Base	407	0	0	631	0	0	1038
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	37	7	0	23	3	70
		Other	0	0	0	0	0	0	0
		Future Total	**440**	**37**	**7**	**681**	**23**	**3**	**1191**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	68	1	87	241	5	10	412
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	4	0	9	0	0	2	15
		Other	0	0	0	0	0	0	0
		Future Total	**77**	**1**	**103**	**260**	**5**	**13**	**459**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	59	5	22	8	9	17	9	238	212	76	268	2	925
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	6	0	0	0	0	0	0	0	9	0	0	0	15
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**70**	**5**	**24**	**9**	**10**	**18**	**10**	**257**	**238**	**82**	**289**	**2**	**1014**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	5	134	378	41	10	5	573
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	6	0	0	0	0	3	9
		Other	0	0	0	0	0	0	0
		Future Total	**11**	**145**	**408**	**44**	**11**	**8**	**627**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	Final Base	110	0	0	0	0	14	124
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	9	2	22	41	0	74
		Other	0	0	0	0	0	0	0
		Future Total	**119**	**9**	**2**	**22**	**41**	**15**	**208**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	18	10	1	107	43	1	180
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	35	0	3	19	0	6	63
		Other	0	0	0	0	0	0	0
		Future Total	**54**	**11**	**4**	**135**	**46**	**7**	**257**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	Final Base	1	0	63	100	18	40	11	1307	2	103	1923	23	3591
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	2	0	18	1	0	0	0	0	0	0	33	54
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**1**	**2**	**68**	**126**	**20**	**43**	**12**	**1412**	**2**	**111**	**2077**	**58**	**3932**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	157	149	127	316	171	88	1056	76	242	1592	162	4229
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	9	0	0	6	17	28	0	0	0	0	0	60
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**100**	**179**	**161**	**137**	**347**	**202**	**123**	**1140**	**82**	**261**	**1719**	**175**	**4626**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	Final Base	69	0	0	246	0	0	315
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	1	4	5
		Other	0	0	0	0	0	0	0
		Future Total	**75**	**0**	**0**	**266**	**1**	**4**	**346**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	397	487	264
2	381	468	253
3	373	458	248
4	318	390	211
5	302	370	201
6	270	331	180
7	250	307	166
8	238	292	158
9	191	234	127
10	179	219	119
11	179	219	119
12	171	209	114
13	155	190	103
14	143	175	95
15	143	175	95
16	139	170	92
17	79	97	53
18	44	54	29
19	40	49	26
20	16	19	11
21	12	15	8
22	12	15	8
23	8	10	5
24	8	10	5

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	884	2	264	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
2	2	849	2	253	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
3	2	831	2	248	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
4	2	708	2	211	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No
5	2	672	2	201	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No
6	2	601	2	180	No	Yes	Yes	Yes	No	No	No	Yes	No	No
7	2	557	2	166	No	Yes	Yes	Yes	No	No	No	Yes	No	No
8	2	530	2	158	No	No	Yes	Yes	No	No	No	Yes	No	No
9	2	425	2	127	No	No	No	Yes	No	No	No	No	No	No
10	2	398	2	119	No	No	No	Yes	No	No	No	No	No	No
11	2	398	2	119	No	No	No	Yes	No	No	No	No	No	No
12	2	380	2	114	No	No	No	Yes	No	No	No	No	No	No
13	2	345	2	103	No	No	No	No	No	No	No	No	No	No
14	2	318	2	95	No	No	No	No	No	No	No	No	No	No
15	2	318	2	95	No	No	No	No	No	No	No	No	No	No
16	2	309	2	92	No	No	No	No	No	No	No	No	No	No
17	2	176	2	53	No	No	No	No	No	No	No	No	No	No
18	2	98	2	29	No	No	No	No	No	No	No	No	No	No
19	2	89	2	26	No	No	No	No	No	No	No	No	No	No
20	2	35	2	11	No	No	No	No	No	No	No	No	No	No
21	2	27	2	8	No	No	No	No	No	No	No	No	No	No
22	2	27	2	8	No	No	No	No	No	No	No	No	No	No
23	2	18	2	5	No	No	No	No	No	No	No	No	No	No
24	2	18	2	5	No	No	No	No	No	No	No	No	No	No
Hours Met					5	7	8	12	0	3	5	8	1	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	45
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	3:17
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	264
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1148
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 6: Battle Creek Rd at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	477	688	26
2	458	660	25
3	448	647	24
4	382	550	21
5	363	523	20
6	324	468	18
7	301	433	16
8	286	413	16
9	229	330	12
10	215	310	12
11	215	310	12
12	205	296	11
13	186	268	10
14	172	248	9
15	172	248	9
16	167	241	9
17	95	138	5
18	52	76	3
19	48	69	3
20	19	28	1
21	14	21	1
22	14	21	1
23	10	14	1
24	10	14	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1165	1	26	No	No	No	No	No	No	No	No	No	No
2	2	1118	1	25	No	No	No	No	No	No	No	No	No	No
3	2	1095	1	24	No	No	No	No	No	No	No	No	No	No
4	2	932	1	21	No	No	No	No	No	No	No	No	No	No
5	2	886	1	20	No	No	No	No	No	No	No	No	No	No
6	2	792	1	18	No	No	No	No	No	No	No	No	No	No
7	2	734	1	16	No	No	No	No	No	No	No	No	No	No
8	2	699	1	16	No	No	No	No	No	No	No	No	No	No
9	2	559	1	12	No	No	No	No	No	No	No	No	No	No
10	2	525	1	12	No	No	No	No	No	No	No	No	No	No
11	2	525	1	12	No	No	No	No	No	No	No	No	No	No
12	2	501	1	11	No	No	No	No	No	No	No	No	No	No
13	2	454	1	10	No	No	No	No	No	No	No	No	No	No
14	2	420	1	9	No	No	No	No	No	No	No	No	No	No
15	2	420	1	9	No	No	No	No	No	No	No	No	No	No
16	2	408	1	9	No	No	No	No	No	No	No	No	No	No
17	2	233	1	5	No	No	No	No	No	No	No	No	No	No
18	2	128	1	3	No	No	No	No	No	No	No	No	No	No
19	2	117	1	3	No	No	No	No	No	No	No	No	No	No
20	2	47	1	1	No	No	No	No	No	No	No	No	No	No
21	2	35	1	1	No	No	No	No	No	No	No	No	No	No
22	2	35	1	1	No	No	No	No	No	No	No	No	No	No
23	2	24	1	1	No	No	No	No	No	No	No	No	No	No
24	2	24	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	24.6
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:10
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	26
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1191
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	363	78	18
2	348	75	17
3	341	73	17
4	290	62	14
5	276	59	14
6	247	53	12
7	229	49	11
8	218	47	11
9	174	37	9
10	163	35	8
11	163	35	8
12	156	34	8
13	142	30	7
14	131	28	6
15	131	28	6
16	127	27	6
17	73	16	4
18	40	9	2
19	36	8	2
20	15	3	1
21	11	2	1
22	11	2	1
23	7	2	0
24	7	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	441	1	18	No	No	No	No	No	No	No	No	No	No
2	2	423	1	17	No	No	No	No	No	No	No	No	No	No
3	2	414	1	17	No	No	No	No	No	No	No	No	No	No
4	2	352	1	14	No	No	No	No	No	No	No	No	No	No
5	2	335	1	14	No	No	No	No	No	No	No	No	No	No
6	2	300	1	12	No	No	No	No	No	No	No	No	No	No
7	2	278	1	11	No	No	No	No	No	No	No	No	No	No
8	2	265	1	11	No	No	No	No	No	No	No	No	No	No
9	2	211	1	9	No	No	No	No	No	No	No	No	No	No
10	2	198	1	8	No	No	No	No	No	No	No	No	No	No
11	2	198	1	8	No	No	No	No	No	No	No	No	No	No
12	2	190	1	8	No	No	No	No	No	No	No	No	No	No
13	2	172	1	7	No	No	No	No	No	No	No	No	No	No
14	2	159	1	6	No	No	No	No	No	No	No	No	No	No
15	2	159	1	6	No	No	No	No	No	No	No	No	No	No
16	2	154	1	6	No	No	No	No	No	No	No	No	No	No
17	2	89	1	4	No	No	No	No	No	No	No	No	No	No
18	2	49	1	2	No	No	No	No	No	No	No	No	No	No
19	2	44	1	2	No	No	No	No	No	No	No	No	No	No
20	2	18	1	1	No	No	No	No	No	No	No	No	No	No
21	2	13	1	1	No	No	No	No	No	No	No	No	No	No
22	2	13	1	1	No	No	No	No	No	No	No	No	No	No
23	2	9	1	0	No	No	No	No	No	No	No	No	No	No
24	2	9	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:03
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	18
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	459
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	373	505	37	99
2	358	485	36	95
3	351	475	35	93
4	298	404	30	79
5	283	384	28	75
6	254	343	25	67
7	235	318	23	62
8	224	303	22	59
9	179	242	18	48
10	168	227	17	45
11	168	227	17	45
12	160	217	16	43
13	145	197	14	39
14	134	182	13	36
15	134	182	13	36
16	131	177	13	35
17	75	101	7	20
18	41	56	4	11
19	37	51	4	10
20	15	20	1	4
21	11	15	1	3
22	11	15	1	3
23	7	10	1	2
24	7	10	1	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	878	2	136	No	No	No	Yes	No	Yes	Yes	Yes	No	No
2	4	843	2	131	No	No	No	Yes	No	Yes	Yes	Yes	No	No
3	4	826	2	128	No	No	No	Yes	No	Yes	Yes	Yes	No	No
4	4	702	2	109	No	No	No	No	No	No	Yes	Yes	No	No
5	4	667	2	103	No	No	No	No	No	No	Yes	Yes	No	No
6	4	597	2	92	No	No	No	No	No	No	No	Yes	No	No
7	4	553	2	85	No	No	No	No	No	No	No	Yes	No	No
8	4	527	2	81	No	No	No	No	No	No	No	Yes	No	No
9	4	421	2	66	No	No	No	No	No	No	No	No	No	No
10	4	395	2	62	No	No	No	No	No	No	No	No	No	No
11	4	395	2	62	No	No	No	No	No	No	No	No	No	No
12	4	377	2	59	No	No	No	No	No	No	No	No	No	No
13	4	342	2	53	No	No	No	No	No	No	No	No	No	No
14	4	316	2	49	No	No	No	No	No	No	No	No	No	No
15	4	316	2	49	No	No	No	No	No	No	No	No	No	No
16	4	308	2	48	No	No	No	No	No	No	No	No	No	No
17	4	176	2	27	No	No	No	No	No	No	No	No	No	No
18	4	97	2	15	No	No	No	No	No	No	No	No	No	No
19	4	88	2	14	No	No	No	No	No	No	No	No	No	No
20	4	35	2	5	No	No	No	No	No	No	No	No	No	No
21	4	26	2	4	No	No	No	No	No	No	No	No	No	No
22	4	26	2	4	No	No	No	No	No	No	No	No	No	No
23	4	17	2	3	No	No	No	No	No	No	No	No	No	No
24	4	17	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	3	5	8	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	20.8	44
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:12	1:12
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	37	99
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	1014	1014
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	156	452	19
2	150	434	18
3	147	425	18
4	125	362	15
5	119	344	14
6	106	307	13
7	98	285	12
8	94	271	11
9	75	217	9
10	70	203	9
11	70	203	9
12	67	194	8
13	61	176	7
14	56	163	7
15	56	163	7
16	55	158	7
17	31	90	4
18	17	50	2
19	16	45	2
20	6	18	1
21	5	14	1
22	5	14	1
23	3	9	0
24	3	9	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	608	1	19	No	No	No	No	No	No	No	No	No	No
2	3	584	1	18	No	No	No	No	No	No	No	No	No	No
3	3	572	1	18	No	No	No	No	No	No	No	No	No	No
4	3	487	1	15	No	No	No	No	No	No	No	No	No	No
5	3	463	1	14	No	No	No	No	No	No	No	No	No	No
6	3	413	1	13	No	No	No	No	No	No	No	No	No	No
7	3	383	1	12	No	No	No	No	No	No	No	No	No	No
8	3	365	1	11	No	No	No	No	No	No	No	No	No	No
9	3	292	1	9	No	No	No	No	No	No	No	No	No	No
10	3	273	1	9	No	No	No	No	No	No	No	No	No	No
11	3	273	1	9	No	No	No	No	No	No	No	No	No	No
12	3	261	1	8	No	No	No	No	No	No	No	No	No	No
13	3	237	1	7	No	No	No	No	No	No	No	No	No	No
14	3	219	1	7	No	No	No	No	No	No	No	No	No	No
15	3	219	1	7	No	No	No	No	No	No	No	No	No	No
16	3	213	1	7	No	No	No	No	No	No	No	No	No	No
17	3	121	1	4	No	No	No	No	No	No	No	No	No	No
18	3	67	1	2	No	No	No	No	No	No	No	No	No	No
19	3	61	1	2	No	No	No	No	No	No	No	No	No	No
20	3	24	1	1	No	No	No	No	No	No	No	No	No	No
21	3	19	1	1	No	No	No	No	No	No	No	No	No	No
22	3	19	1	1	No	No	No	No	No	No	No	No	No	No
23	3	12	1	0	No	No	No	No	No	No	No	No	No	No
24	3	12	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.9
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:04
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	19
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	627
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 26: East Access at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	N	W
1	56	128	24
2	54	123	23
3	53	120	23
4	45	102	19
5	43	97	18
6	38	87	16
7	35	81	15
8	34	77	14
9	27	61	12
10	25	58	11
11	25	58	11
12	24	55	10
13	22	50	9
14	20	46	9
15	20	46	9
16	20	45	8
17	11	26	5
18	6	14	3
19	6	13	2
20	2	5	1
21	2	4	1
22	2	4	1
23	1	3	0
24	1	3	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	184	1	24	No	No	No	No	No	No	No	No	No	No
2	2	177	1	23	No	No	No	No	No	No	No	No	No	No
3	2	173	1	23	No	No	No	No	No	No	No	No	No	No
4	2	147	1	19	No	No	No	No	No	No	No	No	No	No
5	2	140	1	18	No	No	No	No	No	No	No	No	No	No
6	2	125	1	16	No	No	No	No	No	No	No	No	No	No
7	2	116	1	15	No	No	No	No	No	No	No	No	No	No
8	2	111	1	14	No	No	No	No	No	No	No	No	No	No
9	2	88	1	12	No	No	No	No	No	No	No	No	No	No
10	2	83	1	11	No	No	No	No	No	No	No	No	No	No
11	2	83	1	11	No	No	No	No	No	No	No	No	No	No
12	2	79	1	10	No	No	No	No	No	No	No	No	No	No
13	2	72	1	9	No	No	No	No	No	No	No	No	No	No
14	2	66	1	9	No	No	No	No	No	No	No	No	No	No
15	2	66	1	9	No	No	No	No	No	No	No	No	No	No
16	2	65	1	8	No	No	No	No	No	No	No	No	No	No
17	2	37	1	5	No	No	No	No	No	No	No	No	No	No
18	2	20	1	3	No	No	No	No	No	No	No	No	No	No
19	2	19	1	2	No	No	No	No	No	No	No	No	No	No
20	2	7	1	1	No	No	No	No	No	No	No	No	No	No
21	2	6	1	1	No	No	No	No	No	No	No	No	No	No
22	2	6	1	1	No	No	No	No	No	No	No	No	No	No
23	2	4	1	0	No	No	No	No	No	No	No	No	No	No
24	2	4	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:04
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	24
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	208
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	139	65	53
2	133	62	51
3	131	61	50
4	111	52	42
5	106	49	40
6	95	44	36
7	88	41	33
8	83	39	32
9	67	31	25
10	63	29	24
11	63	29	24
12	60	28	23
13	54	25	21
14	50	23	19
15	50	23	19
16	49	23	19
17	28	13	11
18	15	7	6
19	14	7	5
20	6	3	2
21	4	2	2
22	4	2	2
23	3	1	1
24	3	1	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	204	1	53	No	No	No	No	No	No	No	No	No	No
2	2	195	1	51	No	No	No	No	No	No	No	No	No	No
3	2	192	1	50	No	No	No	No	No	No	No	No	No	No
4	2	163	1	42	No	No	No	No	No	No	No	No	No	No
5	2	155	1	40	No	No	No	No	No	No	No	No	No	No
6	2	139	1	36	No	No	No	No	No	No	No	No	No	No
7	2	129	1	33	No	No	No	No	No	No	No	No	No	No
8	2	122	1	32	No	No	No	No	No	No	No	No	No	No
9	2	98	1	25	No	No	No	No	No	No	No	No	No	No
10	2	92	1	24	No	No	No	No	No	No	No	No	No	No
11	2	92	1	24	No	No	No	No	No	No	No	No	No	No
12	2	88	1	23	No	No	No	No	No	No	No	No	No	No
13	2	79	1	21	No	No	No	No	No	No	No	No	No	No
14	2	73	1	19	No	No	No	No	No	No	No	No	No	No
15	2	73	1	19	No	No	No	No	No	No	No	No	No	No
16	2	72	1	19	No	No	No	No	No	No	No	No	No	No
17	2	41	1	11	No	No	No	No	No	No	No	No	No	No
18	2	22	1	6	No	No	No	No	No	No	No	No	No	No
19	2	21	1	5	No	No	No	No	No	No	No	No	No	No
20	2	9	1	2	No	No	No	No	No	No	No	No	No	No
21	2	6	1	2	No	No	No	No	No	No	No	No	No	No
22	2	6	1	2	No	No	No	No	No	No	No	No	No	No
23	2	4	1	1	No	No	No	No	No	No	No	No	No	No
24	2	4	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.6
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:09
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	53
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	257
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 42: Reed at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	266	75	5
2	255	72	5
3	250	71	5
4	213	60	4
5	202	57	4
6	181	51	3
7	168	47	3
8	160	45	3
9	128	36	2
10	120	34	2
11	120	34	2
12	114	32	2
13	104	29	2
14	96	27	2
15	96	27	2
16	93	26	2
17	53	15	1
18	29	8	1
19	27	8	1
20	11	3	0
21	8	2	0
22	8	2	0
23	5	2	0
24	5	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	341	1	5	No	No	No	No	No	No	No	No	No	No
2	2	327	1	5	No	No	No	No	No	No	No	No	No	No
3	2	321	1	5	No	No	No	No	No	No	No	No	No	No
4	2	273	1	4	No	No	No	No	No	No	No	No	No	No
5	2	259	1	4	No	No	No	No	No	No	No	No	No	No
6	2	232	1	3	No	No	No	No	No	No	No	No	No	No
7	2	215	1	3	No	No	No	No	No	No	No	No	No	No
8	2	205	1	3	No	No	No	No	No	No	No	No	No	No
9	2	164	1	2	No	No	No	No	No	No	No	No	No	No
10	2	154	1	2	No	No	No	No	No	No	No	No	No	No
11	2	154	1	2	No	No	No	No	No	No	No	No	No	No
12	2	146	1	2	No	No	No	No	No	No	No	No	No	No
13	2	133	1	2	No	No	No	No	No	No	No	No	No	No
14	2	123	1	2	No	No	No	No	No	No	No	No	No	No
15	2	123	1	2	No	No	No	No	No	No	No	No	No	No
16	2	119	1	2	No	No	No	No	No	No	No	No	No	No
17	2	68	1	1	No	No	No	No	No	No	No	No	No	No
18	2	37	1	1	No	No	No	No	No	No	No	No	No	No
19	2	35	1	1	No	No	No	No	No	No	No	No	No	No
20	2	14	1	0	No	No	No	No	No	No	No	No	No	No
21	2	10	1	0	No	No	No	No	No	No	No	No	No	No
22	2	10	1	0	No	No	No	No	No	No	No	No	No	No
23	2	7	1	0	No	No	No	No	No	No	No	No	No	No
24	2	7	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.1
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	5
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	346
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 2.pdf

Scenario 6 PM Dev 2023 Ph 2
6/19/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: 18-392 Reed Rd Sub	Homes	ITE 210	Home	0.990	150.000	63.00	37.00	93	55	148	100.00
					Added Trips Total			**93**	**55**	**148**	**100.00**

18-392 Strong at 27th Subdivision TIA

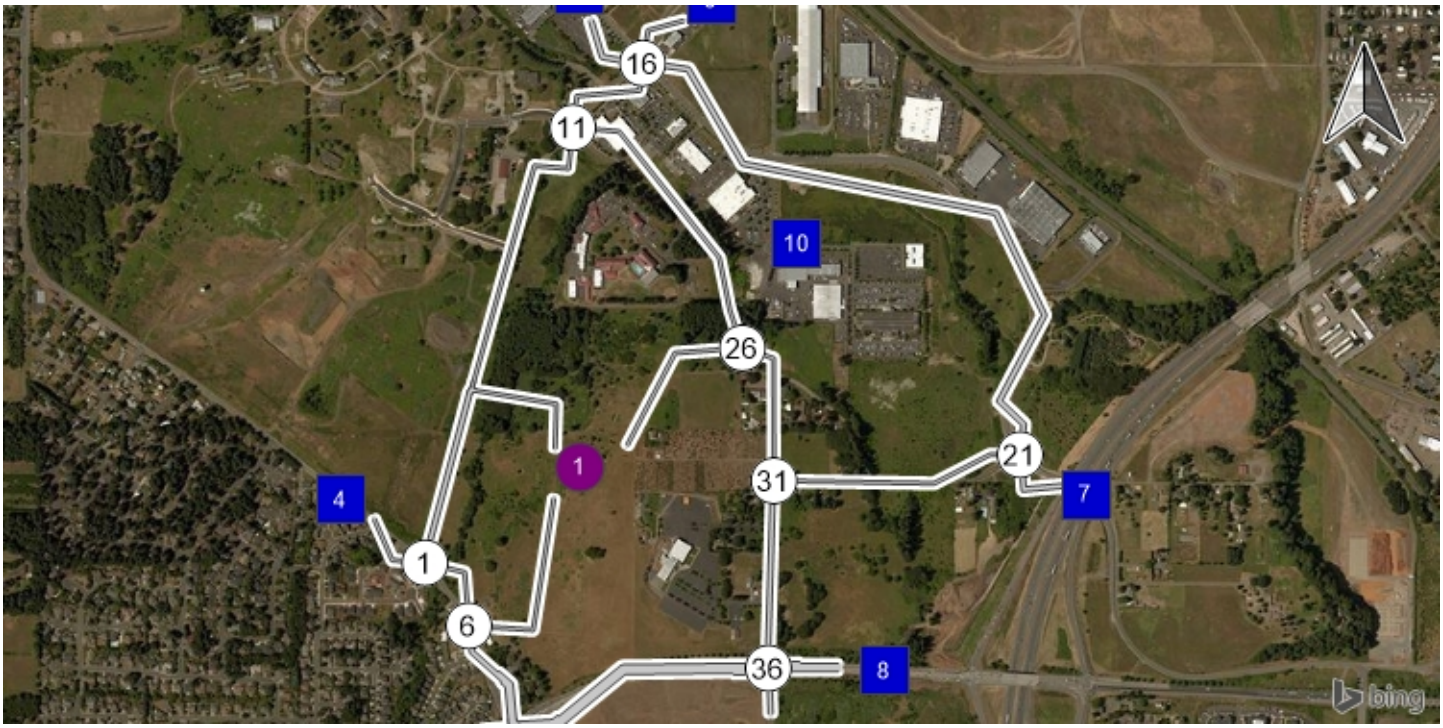
Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 2.pdf

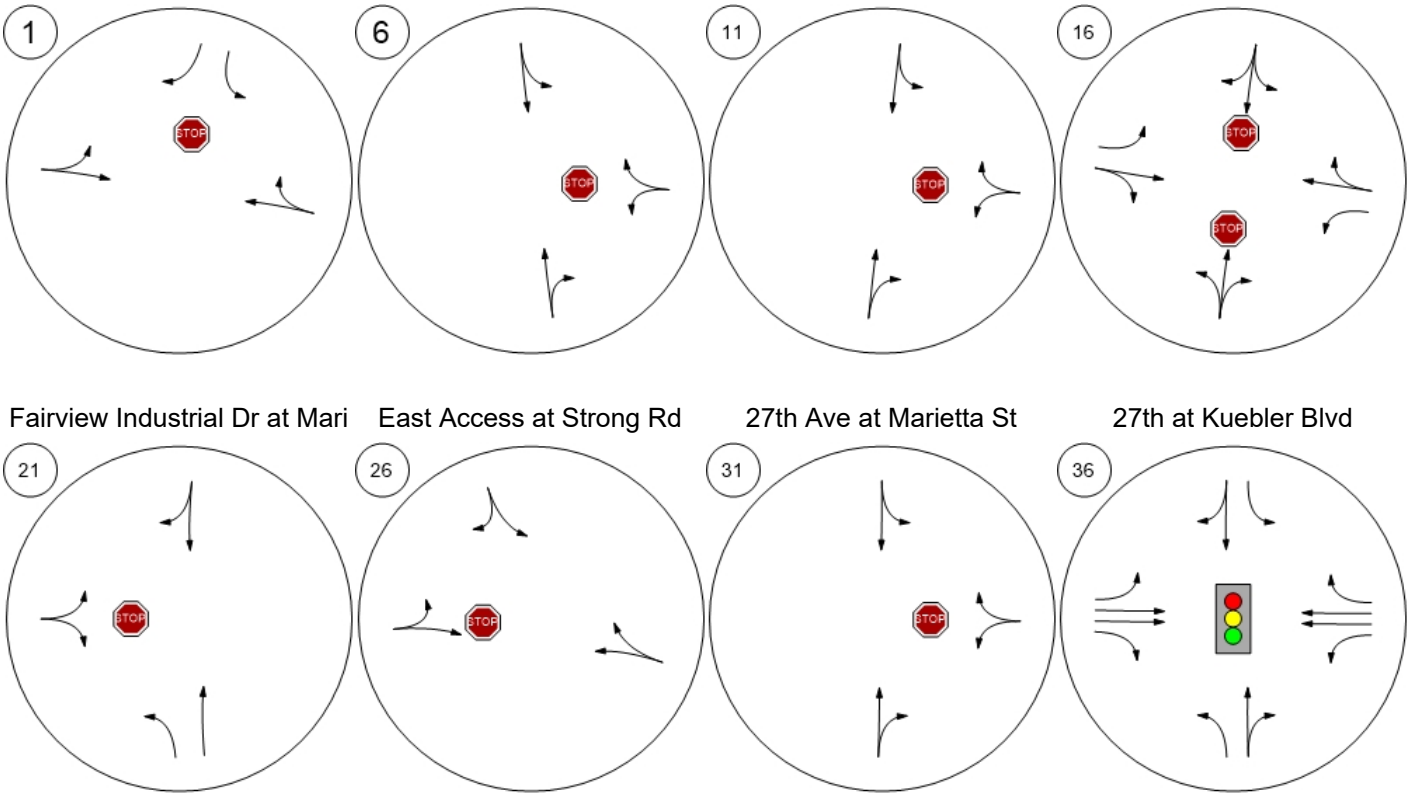
Scenario 6 PM Dev 2023 Ph 2
6/19/2018

Trip Distribution summary

Zone / Gate	Zone 1: 18-392 Reed Rd Sub			
	To 18-392 Reed Rd Sub:		From 18-392 Reed Rd Sub:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	9	10.00	6
3: Gate	30.00	28	30.00	17
4: Gate	7.00	7	7.00	4
5: Gate	10.00	9	10.00	6
6: Gate	0.00	0	0.00	0
7: Gate	6.00	6	6.00	3
8: Gate	35.00	33	35.00	18
9: Gate	2.00	2	2.00	1
10: Gate	0.00	0	0.00	0
Total	**100.00**	**94**	**100.00**	**55**

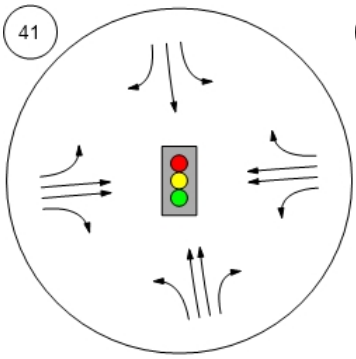
Report Figure 1: Lane Configuration and Traffic Control



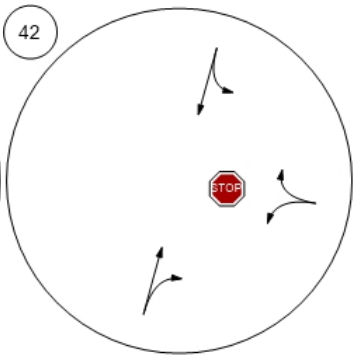


Report Figure 1: Lane Configuration and Traffic Control

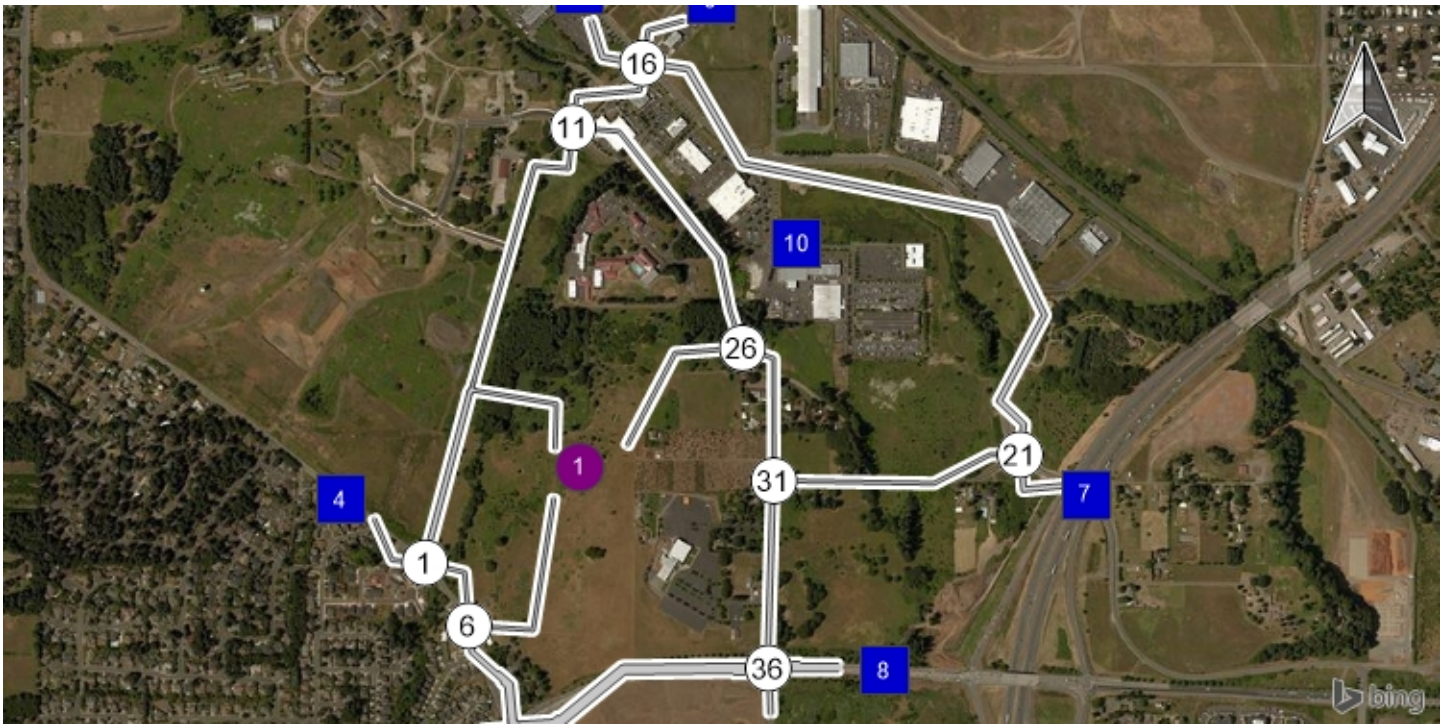
Keubler Blvd at Battle Creek



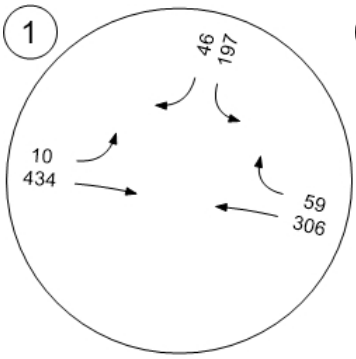
Reed at Site Access



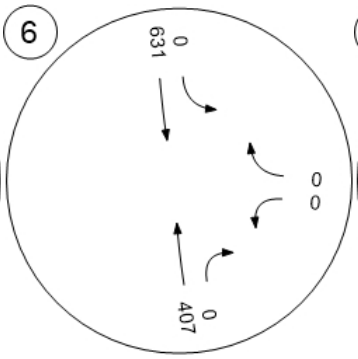
Report Figure 2a: Traffic Volume - Base Volume



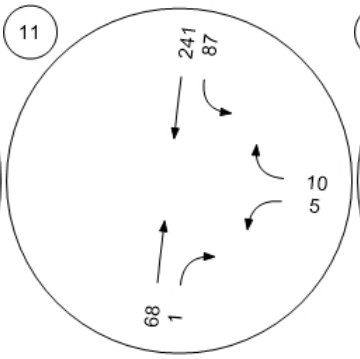
Battle Creek Rd at Reed Rd



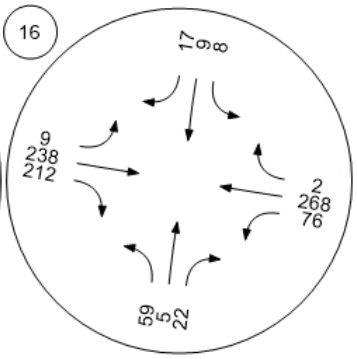
Battle Creek Rd at Site Acces



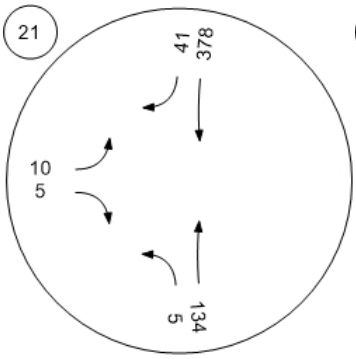
Reed Rd at Strong Rd



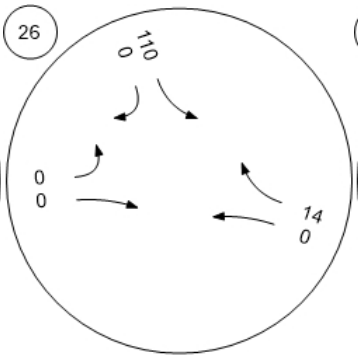
Reed Rd at Fairview Industria



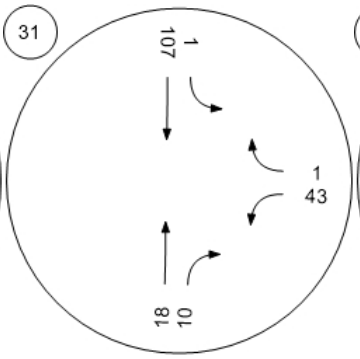
Fairview Industrial Dr at Mari



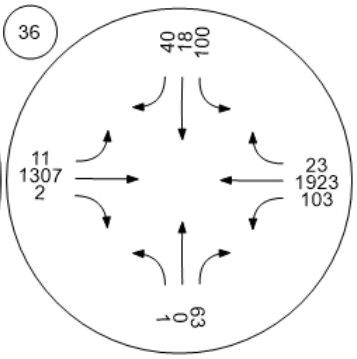
East Access at Strong Rd



27th Ave at Marietta St

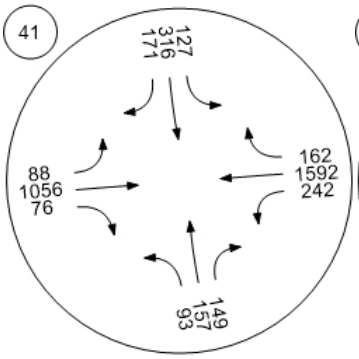


27th at Kuebler Blvd

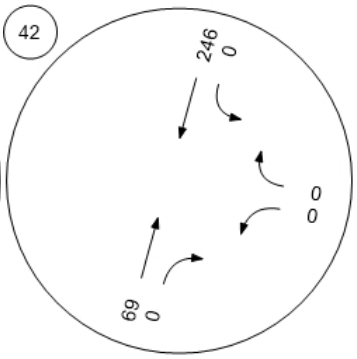


Report Figure 2a: Traffic Volume - Base Volume

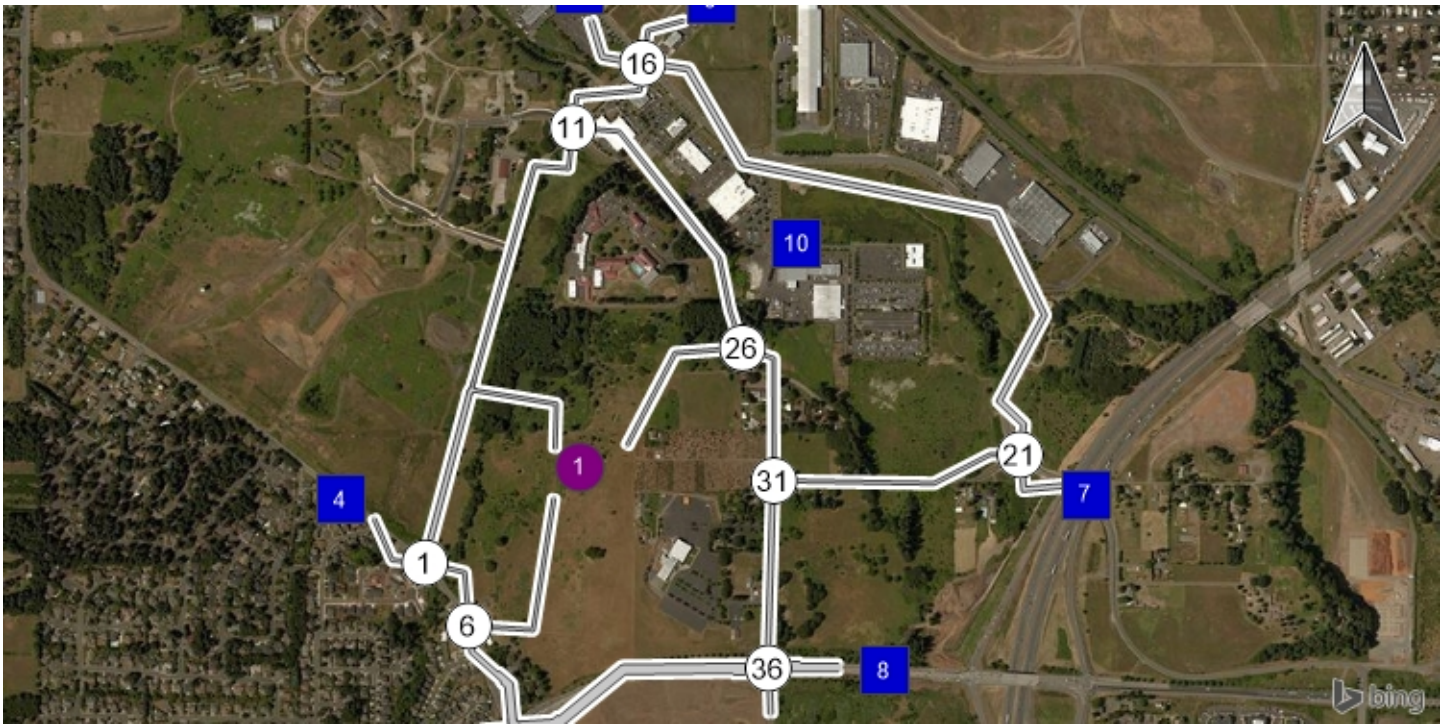
Keubler Blvd at Battle Creek



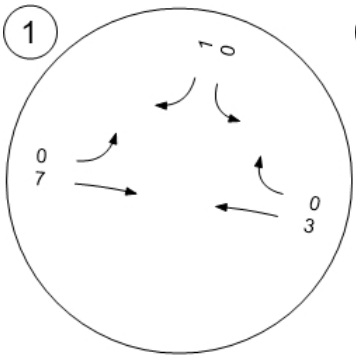
Reed at Site Access



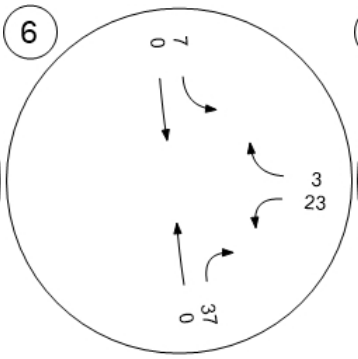
Report Figure 2d: Traffic Volume - Net New Site Trips



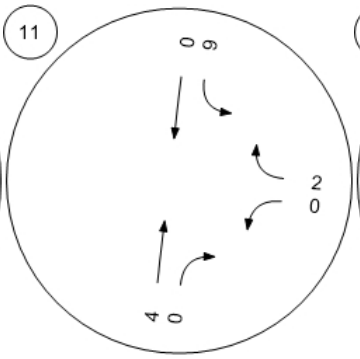
Battle Creek Rd at Reed Rd



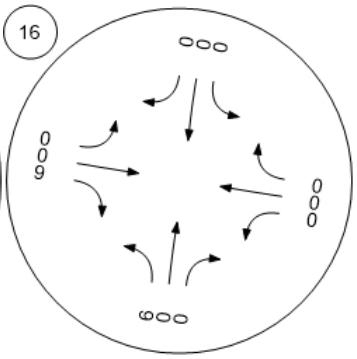
Battle Creek Rd at Site Acces



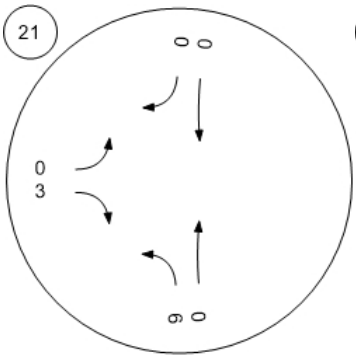
Reed Rd at Strong Rd



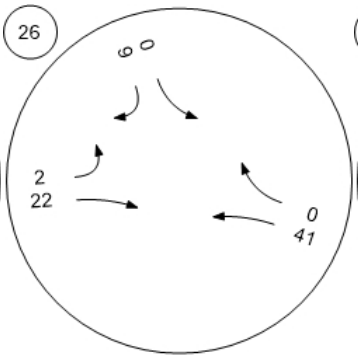
Reed Rd at Fairview Industria



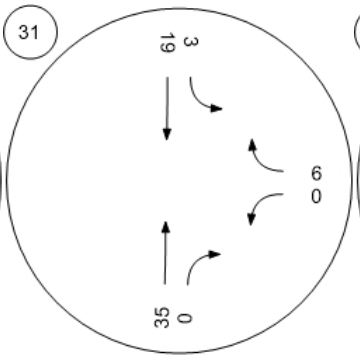
Fairview Industrial Dr at Mari



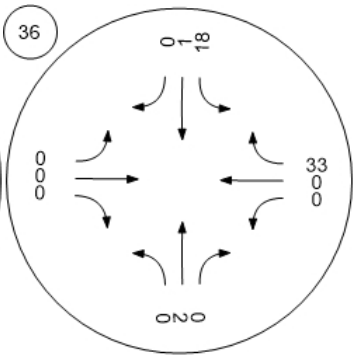
East Access at Strong Rd



27th Ave at Marietta St

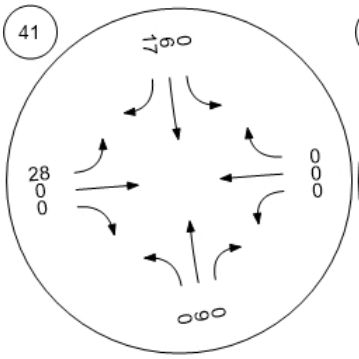


27th at Kuebler Blvd

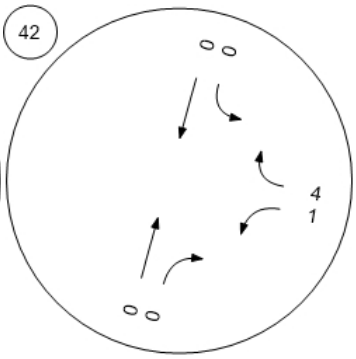


Report Figure 2d: Traffic Volume - Net New Site Trips

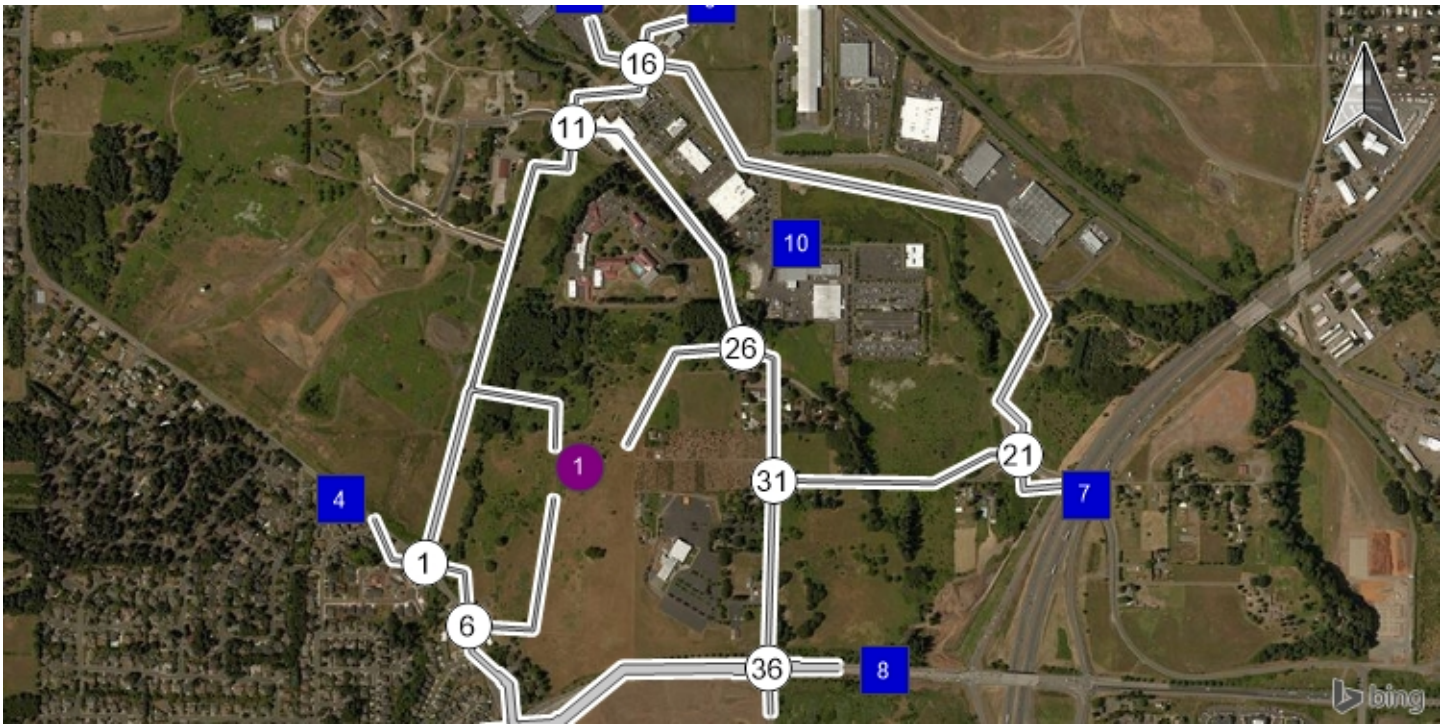
Keubler Blvd at Battle Creek

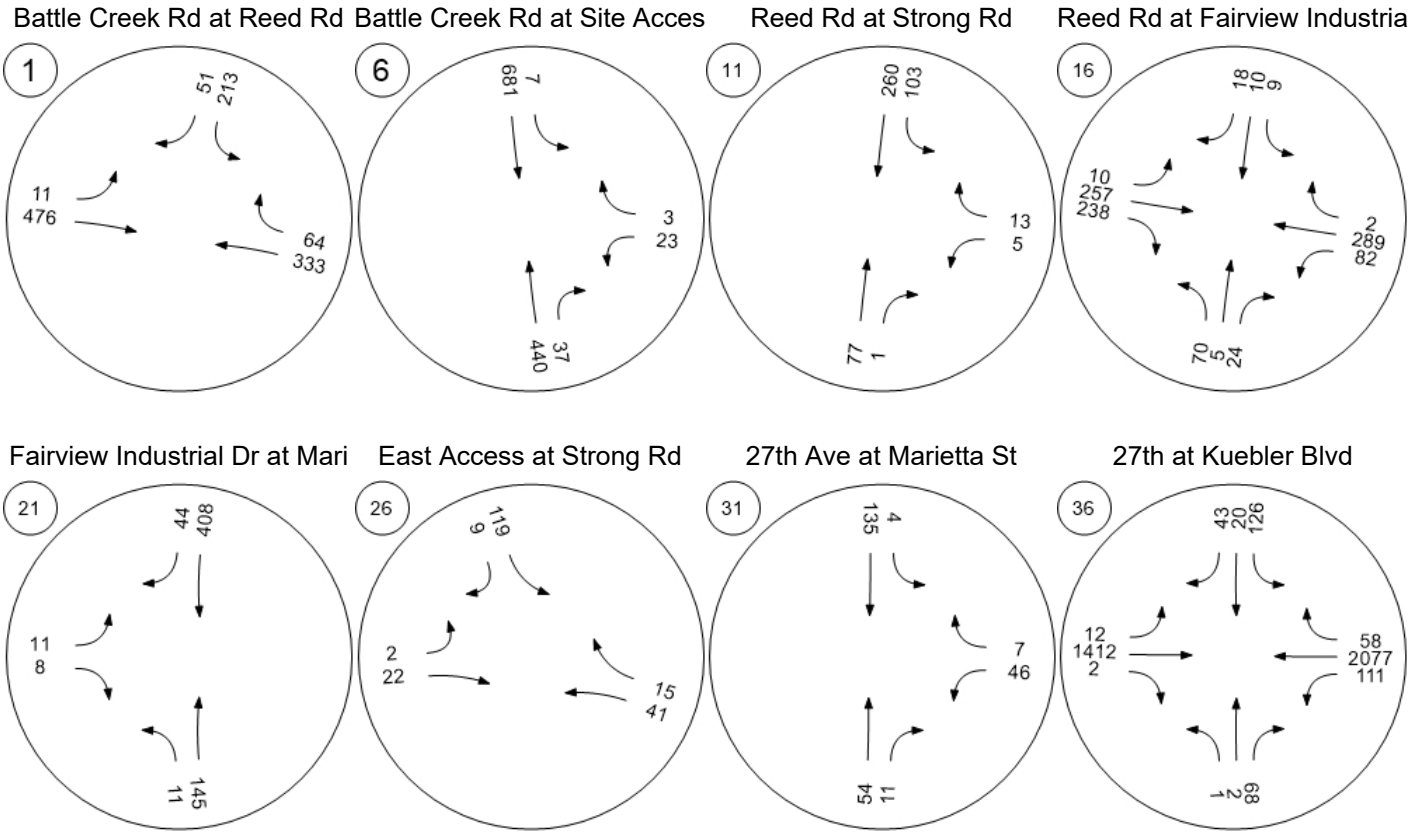


Reed at Site Access



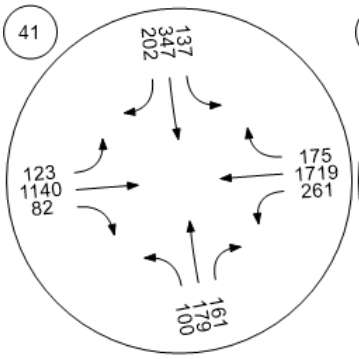
Report Figure 2f: Traffic Volume - Future Total Volume



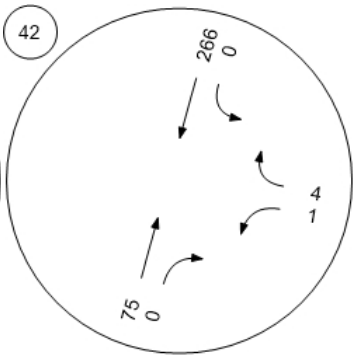


Report Figure 2f: Traffic Volume - Future Total Volume

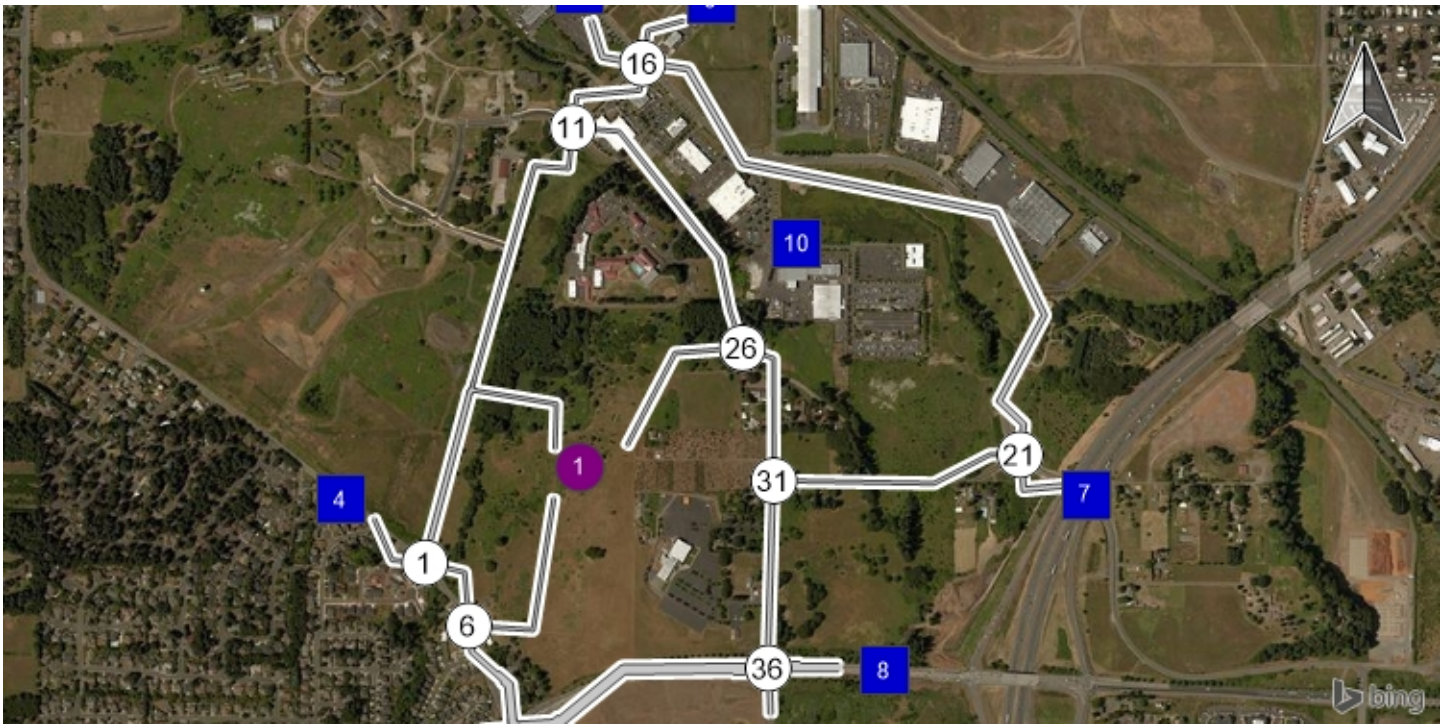
Keubler Blvd at Battle Creek

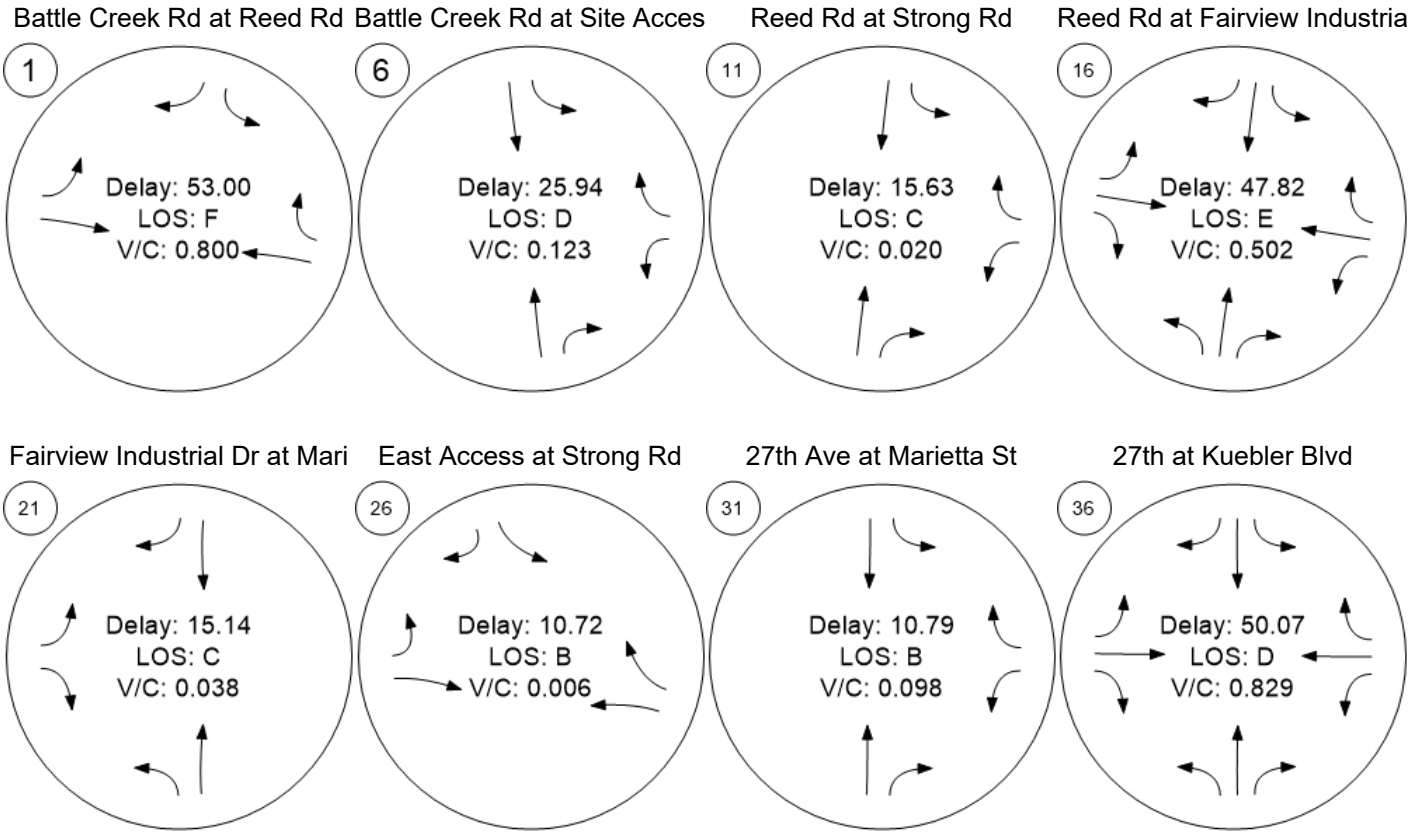


Reed at Site Access



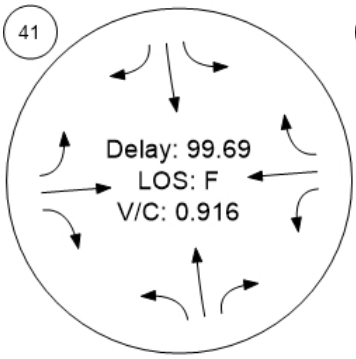
Report Figure 3: Traffic Conditions



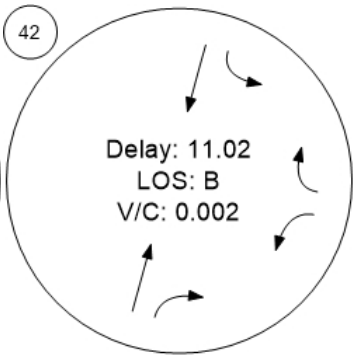


Report Figure 3: Traffic Conditions

Keubler Blvd at Battle Creek



Reed at Site Access



18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 3.pdf

Scenario 8 PM Dev 2026 Ph 3
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.891	70.7	F
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.200	30.5	D
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.025	16.5	C
16	Reed Rd at Fairview Industrial Dr	All-way stop	HCM 6th Edition	WB Thru	0.612	14.1	B
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.040	15.8	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.006	11.3	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.112	11.4	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.875	64.5	E
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	WB Left	0.968	118.6	F
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.2	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	70.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.891

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	197	46	10	434	306	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.20	1.20	1.80	1.80	3.00	3.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	10	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	223	53	11	500	351	67
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	14	3	136	95	18
Total Analysis Volume [veh/h]	242	58	12	543	382	73
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.89	0.09	0.01	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	70.66	11.22	8.29	0.00	0.00	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh]	7.86	0.30	2.90	2.90	0.00	0.00
95th-Percentile Queue Length [ft]	196.38	7.49	72.40	72.40	0.00	0.00
d_A, Approach Delay [s/veh]	59.17		0.18		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	13.63					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 6: Battle Creek Rd at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	30.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.200

Intersection Setup

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Base Volume Input [veh/h]	407	0	0	631	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	56	10	0	33	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	460	56	10	713	33	5
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	122	15	3	190	9	1
Total Analysis Volume [veh/h]	489	60	11	759	35	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.01	0.20	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.57	0.00	30.54	16.39
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh]	0.00	0.00	7.45	7.45	0.76	0.76
95th-Percentile Queue Length [ft]	0.00	0.00	186.18	186.18	19.10	19.10
d_A, Approach Delay [s/veh]	0.00		0.12		28.78	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.92					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	68	1	87	241	5	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.80	5.80	1.80	1.80	6.70	6.70
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	14	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	1	112	272	6	13
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	0	37	89	2	4
Total Analysis Volume [veh/h]	109	1	147	358	8	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.10	0.00	0.02	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.70	0.00	16.49	9.15
Movement LOS	A	A	A	A	C	A
95th-Percentile Queue Length [veh]	0.00	0.00	1.53	1.53	0.14	0.14
95th-Percentile Queue Length [ft]	0.00	0.00	38.31	38.31	3.38	3.38
d_A, Approach Delay [s/veh]	0.00		2.24		11.50	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.22					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	All-way stop	Delay (sec / veh):	14.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.612

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	59	5	22	8	9	17	9	238	212	76	268	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.00	0.00	0.00	4.10	4.10	4.10	4.00	4.00	4.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	0	0	0	0	14	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	6	25	9	10	19	10	269	254	86	303	2
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	2	8	3	3	6	3	82	77	26	92	1
Total Analysis Volume [veh/h]	91	7	30	11	12	23	12	328	310	105	370	2
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	559	564	622	711	560	609
Degree of Utilization, x	0.23	0.08	0.55	0.44	0.19	0.61

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.88	0.27	3.31	2.22	0.68	4.14
95th-Percentile Queue Length [ft]	21.92	6.64	82.66	55.51	17.10	103.58
Approach Delay [s/veh]	11.34	9.95	13.51		15.98	
Approach LOS	B	A	B		C	
Intersection Delay [s/veh]	14.08					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.040

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	5	134	378	41	10	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	9.40	9.40	4.50	4.50	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	151	427	46	11	11
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	48	135	15	3	3
Total Analysis Volume [veh/h]	18	191	541	58	14	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.01	0.00	0.04	0.03
d_M, Delay for Movement [s/veh]	8.89	0.00	0.00	0.00	15.85	12.47
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.06	0.00	0.00	0.00	0.21	0.21
95th-Percentile Queue Length [ft]	1.46	0.00	0.00	0.00	5.32	5.32
d_A, Approach Delay [s/veh]	0.77		0.00		14.16	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.67					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 26: East Access at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	11.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Strong Rd		East Access		Strong Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Strong Rd		East Access		Strong Rd	
Base Volume Input [veh/h]	110	0	0	0	0	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	14	2	36	60	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	124	14	2	36	60	16
Peak Hour Factor	0.5600	0.5600	0.5600	0.5600	0.5600	0.5600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	6	1	16	27	7
Total Analysis Volume [veh/h]	221	25	4	64	107	29
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Stop	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance		No	
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.10	0.08	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	11.34	11.02	7.93	0.00
Movement LOS	A	A	B	B	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.34	0.34	0.34	0.34
95th-Percentile Queue Length [ft]	0.00	0.00	8.51	8.51	8.50	8.50
d_A, Approach Delay [s/veh]	0.00		11.03		6.24	
Approach LOS	A		B		A	
d_I, Intersection Delay [s/veh]	3.55					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.112

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	18	10	1	107	43	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	52	0	5	31	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	72	11	6	152	49	9
Peak Hour Factor	0.6800	0.6800	0.6800	0.6800	0.6800	0.6800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	4	2	56	18	3
Total Analysis Volume [veh/h]	106	16	9	224	72	13
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.11	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.45	0.00	11.38	9.58
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.56	0.56	0.43	0.43
95th-Percentile Queue Length [ft]	0.00	0.00	13.99	13.99	10.75	10.75
d_A, Approach Delay [s/veh]	0.00		0.29		11.10	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.30					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 36: 27th at Kuebler Blvd

Control Type:	Signalized	Delay (sec / veh):	64.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.875

Intersection Setup

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	125.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	200.00	350.00	100.00	175.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	1	0	63	100	18	40	11	1307	2	103	1923	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.60	0.60	0.60	3.60	3.60	3.60	1.30	1.30	1.30
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	29	2	0	0	0	0	0	0	49
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	3	71	142	22	45	12	1477	2	116	2173	75
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	19	38	6	12	3	393	1	31	578	20
Total Analysis Volume [veh/h]	1	3	76	151	23	48	13	1571	2	123	2312	80
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	34	83	0	9	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	15	5	20	2	79	79	5	82	82
g / C, Green / Cycle	0.00	0.13	0.04	0.17	0.01	0.66	0.66	0.04	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.00	0.06	0.09	0.05	0.01	0.50	0.00	0.08	0.72	0.06
s, saturation flow rate [veh/h]	1568	1408	1621	1520	1582	3163	1412	1612	3222	1439
c, Capacity [veh/h]	2	178	68	253	23	2078	928	67	2203	984
d1, Uniform Delay [s]	59.86	48.52	57.50	43.72	58.73	14.04	7.08	57.50	18.97	6.35
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.12	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	92.03	7.84	563.98	2.74	19.03	0.58	0.00	384.55	25.68	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.44	2.23	0.28	0.56	0.76	0.00	1.83	1.05	0.08
d, Delay for Lane Group [s/veh]	151.89	56.37	621.47	46.46	77.76	14.62	7.08	442.04	44.65	6.39
Lane Group LOS	F	E	F	D	E	B	A	F	F	A
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.09	2.59	12.66	2.05	0.52	13.48	0.02	9.23	34.45	0.66
50th-Percentile Queue Length [ft]	2.25	64.63	316.46	51.22	12.91	337.05	0.43	230.81	861.29	16.40
95th-Percentile Queue Length [veh]	0.16	4.65	21.23	3.69	0.93	19.50	0.03	15.98	46.00	1.18
95th-Percentile Queue Length [ft]	4.05	116.34	530.87	92.19	23.23	487.59	0.78	399.60	1150.11	29.53

Movement, Approach, & Intersection Results

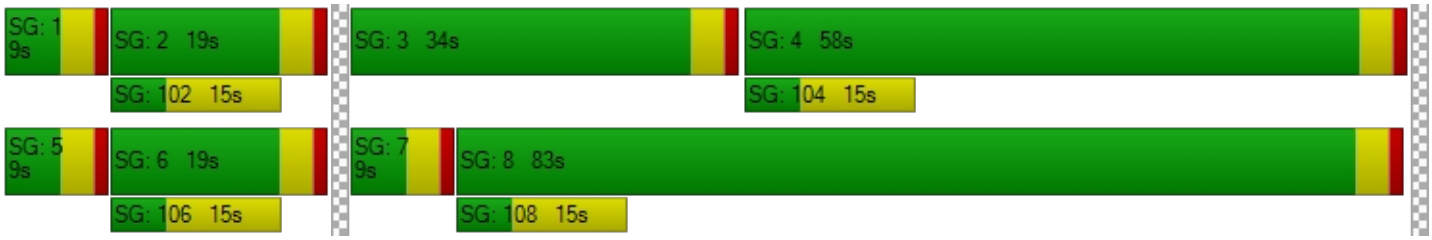
d_M, Delay for Movement [s/veh]	151.89	56.37	56.37	621.47	46.46	46.46	77.76	14.62	7.08	442.04	44.65	6.39
Movement LOS	F	E	E	F	D	D	E	B	A	F	F	A
d_A, Approach Delay [s/veh]	57.56			437.57			15.13			62.87		
Approach LOS	E			F			B			E		
d_I, Intersection Delay [s/veh]	64.47											
Intersection LOS	E											
Intersection V/C	0.875											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.030	2.059	3.109	3.169
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	250	1317	900
d_b, Bicycle Delay [s]	45.94	45.94	7.00	18.15
l_b,int, Bicycle LOS Score for Intersection	1.692	1.926	2.868	3.634
Bicycle LOS	A	A	C	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	118.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.968

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	157	149	127	316	171	88	1056	76	242	1592	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	1.10	1.10	1.10	3.90	3.90	3.90	1.50	1.50	1.50
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	14	0	0	8	25	42	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	191	168	144	365	218	141	1193	86	273	1799	183
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	50	44	38	95	57	37	311	22	71	468	48
Total Analysis Volume [veh/h]	109	199	175	150	380	227	147	1243	90	284	1874	191
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	23	0	15	26	0	35	60	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	19	19	11	22	22	12	56	56	8	52	52
g / C, Green / Cycle	0.07	0.17	0.17	0.10	0.20	0.20	0.11	0.51	0.51	0.07	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.07	0.06	0.12	0.09	0.22	0.16	0.09	0.39	0.06	0.18	0.58	0.13
s, saturation flow rate [veh/h]	1590	3179	1419	1614	1695	1441	1578	3156	1409	1609	3217	1436
c, Capacity [veh/h]	116	552	247	162	341	290	175	1603	715	117	1512	675
d1, Uniform Delay [s]	50.77	40.06	42.83	49.11	43.95	41.68	47.95	21.98	14.23	51.00	29.16	17.83
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.19	0.18	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	26.79	1.82	15.91	19.47	83.55	18.86	10.22	0.83	0.08	650.49	110.08	0.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.36	0.71	0.93	1.12	0.78	0.84	0.78	0.13	2.42	1.24	0.28
d, Delay for Lane Group [s/veh]	77.56	41.88	58.74	68.58	127.50	60.54	58.17	22.81	14.31	701.49	139.24	18.06
Lane Group LOS	E	D	E	E	F	E	E	C	B	F	F	B
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	3.84	2.52	5.56	4.94	17.10	7.32	4.43	12.63	1.18	24.39	42.07	2.97
50th-Percentile Queue Length [ft]	95.99	62.88	138.92	123.61	427.42	183.07	110.84	315.75	29.56	609.75	1051.77	74.31
95th-Percentile Queue Length [veh]	6.91	4.53	9.42	8.59	25.28	11.76	7.89	18.46	2.13	39.03	61.15	5.35
95th-Percentile Queue Length [ft]	172.78	113.18	235.56	214.77	631.91	294.02	197.17	461.46	53.21	975.68	1528.72	133.76

Movement, Approach, & Intersection Results

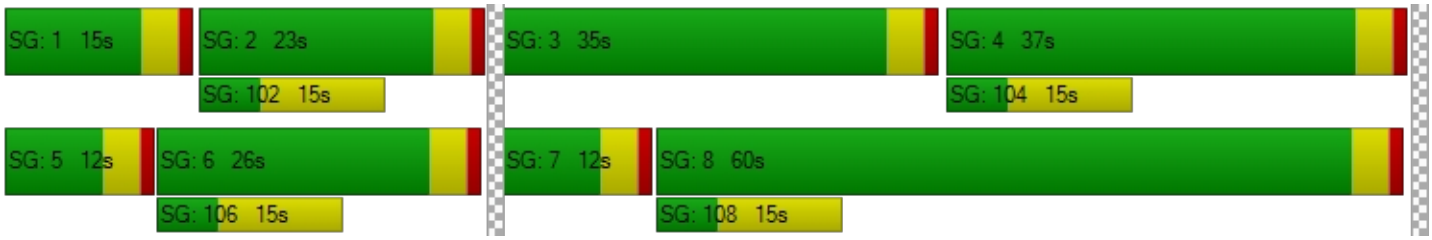
d_M, Delay for Movement [s/veh]	77.56	41.88	58.74	68.58	127.50	60.54	58.17	22.81	14.31	701.49	139.24	18.06
Movement LOS	E	D	E	E	F	E	E	C	B	F	F	B
d_A, Approach Delay [s/veh]	56.04			95.74			25.80			197.36		
Approach LOS	E			F			C			F		
d_I, Intersection Delay [s/veh]	118.63											
Intersection LOS	F											
Intersection V/C	0.968											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.552	2.563	3.064	3.101
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	345	400	1018	600
d_b, Bicycle Delay [s]	37.64	35.20	13.25	26.95
l_b,int, Bicycle LOS Score for Intersection	1.958	2.809	2.781	3.498
Bicycle LOS	A	C	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 42: Reed at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Reed Rd		Reed Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Site Access	
Base Volume Input [veh/h]	69	0	0	246	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	1	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	0	0	278	1	6
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	0	0	83	0	2
Total Analysis Volume [veh/h]	93	0	0	331	1	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.40	0.00	11.17	8.77
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.68	0.68
d_A, Approach Delay [s/veh]	0.00		0.00		9.07	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.17					
Intersection LOS	B					

18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 PM Dev Ph 3.pdf

Scenario 8 PM Dev 2026 Ph 3
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	223	53	11	500	351	67	1205

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	460	56	10	713	33	5	1277

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	83	1	112	272	6	13	487

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	75	6	25	9	10	19	10	269	254	86	303	2	1068

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	14	151	427	46	11	11	660

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	124	14	2	36	60	16	252

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	72	11	6	152	49	9	299

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	1	3	71	142	22	45	12	1477	2	116	2173	75	4139

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	105	191	168	144	365	218	141	1193	86	273	1799	183	4866

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	78	0	0	278	1	6	363

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 3.pdf

Scenario 8 PM Dev 2026 Ph 3
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	197	46	10	434	306	59	1052
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	0	10	5	0	16
		Other	0	0	0	0	0	0	0
		Future Total	**223**	**53**	**11**	**500**	**351**	**67**	**1205**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	Final Base	407	0	0	631	0	0	1038
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	56	10	0	33	5	104
		Other	0	0	0	0	0	0	0
		Future Total	**460**	**56**	**10**	**713**	**33**	**5**	**1277**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	68	1	87	241	5	10	412
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	6	0	14	0	0	2	22
		Other	0	0	0	0	0	0	0
		Future Total	**83**	**1**	**112**	**272**	**6**	**13**	**487**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	59	5	22	8	9	17	9	238	212	76	268	2	925
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	8	0	0	0	0	0	0	0	14	0	0	0	22
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**75**	**6**	**25**	**9**	**10**	**19**	**10**	**269**	**254**	**86**	**303**	**2**	**1068**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	5	134	378	41	10	5	573
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	8	0	0	0	0	5	13
		Other	0	0	0	0	0	0	0
		Future Total	**14**	**151**	**427**	**46**	**11**	**11**	**660**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	Final Base	110	0	0	0	0	14	124
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	14	2	36	60	0	112
		Other	0	0	0	0	0	0	0
		Future Total	**124**	**14**	**2**	**36**	**60**	**16**	**252**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	18	10	1	107	43	1	180
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	52	0	5	31	0	8	96
		Other	0	0	0	0	0	0	0
		Future Total	**72**	**11**	**6**	**152**	**49**	**9**	**299**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	Final Base	1	0	63	100	18	40	11	1307	2	103	1923	23	3591
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	29	2	0	0	0	0	0	0	49	83
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**1**	**3**	**71**	**142**	**22**	**45**	**12**	**1477**	**2**	**116**	**2173**	**75**	**4139**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	157	149	127	316	171	88	1056	76	242	1592	162	4229
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	14	0	0	8	25	42	0	0	0	0	0	89
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**105**	**191**	**168**	**144**	**365**	**218**	**141**	**1193**	**86**	**273**	**1799**	**183**	**4866**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	Final Base	69	0	0	246	0	0	315
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	1	6	7
		Other	0	0	0	0	0	0	0
		Future Total	**78**	**0**	**0**	**278**	**1**	**6**	**363**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	418	511	276
2	401	491	265
3	393	480	259
4	334	409	221
5	318	388	210
6	284	347	188
7	263	322	174
8	251	307	166
9	201	245	132
10	188	230	124
11	188	230	124
12	180	220	119
13	163	199	108
14	150	184	99
15	150	184	99
16	146	179	97
17	84	102	55
18	46	56	30
19	42	51	28
20	17	20	11
21	13	15	8
22	13	15	8
23	8	10	6
24	8	10	6

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	929	2	276	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
2	2	892	2	265	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
3	2	873	2	259	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
4	2	743	2	221	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
5	2	706	2	210	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No
6	2	631	2	188	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No
7	2	585	2	174	No	Yes	Yes	Yes	No	No	No	Yes	No	No
8	2	558	2	166	No	Yes	Yes	Yes	No	No	No	Yes	No	No
9	2	446	2	132	No	No	No	Yes	No	No	No	No	No	No
10	2	418	2	124	No	No	No	Yes	No	No	No	No	No	No
11	2	418	2	124	No	No	No	Yes	No	No	No	No	No	No
12	2	400	2	119	No	No	No	Yes	No	No	No	No	No	No
13	2	362	2	108	No	No	No	No	No	No	No	No	No	No
14	2	334	2	99	No	No	No	No	No	No	No	No	No	No
15	2	334	2	99	No	No	No	No	No	No	No	No	No	No
16	2	325	2	97	No	No	No	No	No	No	No	No	No	No
17	2	186	2	55	No	No	No	No	No	No	No	No	No	No
18	2	102	2	30	No	No	No	No	No	No	No	No	No	No
19	2	93	2	28	No	No	No	No	No	No	No	No	No	No
20	2	37	2	11	No	No	No	No	No	No	No	No	No	No
21	2	28	2	8	No	No	No	No	No	No	No	No	No	No
22	2	28	2	8	No	No	No	No	No	No	No	No	No	No
23	2	18	2	6	No	No	No	No	No	No	No	No	No	No
24	2	18	2	6	No	No	No	No	No	No	No	No	No	No
Hours Met					5	8	8	12	1	4	6	8	3	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	59.2
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	4:32
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	276
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1205
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 6: Battle Creek Rd at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	516	723	38
2	495	694	36
3	485	680	36
4	413	578	30
5	392	549	29
6	351	492	26
7	325	455	24
8	310	434	23
9	248	347	18
10	232	325	17
11	232	325	17
12	222	311	16
13	201	282	15
14	186	260	14
15	186	260	14
16	181	253	13
17	103	145	8
18	57	80	4
19	52	72	4
20	21	29	2
21	15	22	1
22	15	22	1
23	10	14	1
24	10	14	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1239	1	38	No	No	No	No	No	No	No	No	No	No
2	2	1189	1	36	No	No	No	No	No	No	No	No	No	No
3	2	1165	1	36	No	No	No	No	No	No	No	No	No	No
4	2	991	1	30	No	No	No	No	No	No	No	No	No	No
5	2	941	1	29	No	No	No	No	No	No	No	No	No	No
6	2	843	1	26	No	No	No	No	No	No	No	No	No	No
7	2	780	1	24	No	No	No	No	No	No	No	No	No	No
8	2	744	1	23	No	No	No	No	No	No	No	No	No	No
9	2	595	1	18	No	No	No	No	No	No	No	No	No	No
10	2	557	1	17	No	No	No	No	No	No	No	No	No	No
11	2	557	1	17	No	No	No	No	No	No	No	No	No	No
12	2	533	1	16	No	No	No	No	No	No	No	No	No	No
13	2	483	1	15	No	No	No	No	No	No	No	No	No	No
14	2	446	1	14	No	No	No	No	No	No	No	No	No	No
15	2	446	1	14	No	No	No	No	No	No	No	No	No	No
16	2	434	1	13	No	No	No	No	No	No	No	No	No	No
17	2	248	1	8	No	No	No	No	No	No	No	No	No	No
18	2	137	1	4	No	No	No	No	No	No	No	No	No	No
19	2	124	1	4	No	No	No	No	No	No	No	No	No	No
20	2	50	1	2	No	No	No	No	No	No	No	No	No	No
21	2	37	1	1	No	No	No	No	No	No	No	No	No	No
22	2	37	1	1	No	No	No	No	No	No	No	No	No	No
23	2	24	1	1	No	No	No	No	No	No	No	No	No	No
24	2	24	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	28.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:18
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	38
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1277
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	384	84	19
2	369	81	18
3	361	79	18
4	307	67	15
5	292	64	14
6	261	57	13
7	242	53	12
8	230	50	11
9	184	40	9
10	173	38	9
11	173	38	9
12	165	36	8
13	150	33	7
14	138	30	7
15	138	30	7
16	134	29	7
17	77	17	4
18	42	9	2
19	38	8	2
20	15	3	1
21	12	3	1
22	12	3	1
23	8	2	0
24	8	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	468	1	19	No	No	No	No	No	No	No	No	No	No
2	2	450	1	18	No	No	No	No	No	No	No	No	No	No
3	2	440	1	18	No	No	No	No	No	No	No	No	No	No
4	2	374	1	15	No	No	No	No	No	No	No	No	No	No
5	2	356	1	14	No	No	No	No	No	No	No	No	No	No
6	2	318	1	13	No	No	No	No	No	No	No	No	No	No
7	2	295	1	12	No	No	No	No	No	No	No	No	No	No
8	2	280	1	11	No	No	No	No	No	No	No	No	No	No
9	2	224	1	9	No	No	No	No	No	No	No	No	No	No
10	2	211	1	9	No	No	No	No	No	No	No	No	No	No
11	2	211	1	9	No	No	No	No	No	No	No	No	No	No
12	2	201	1	8	No	No	No	No	No	No	No	No	No	No
13	2	183	1	7	No	No	No	No	No	No	No	No	No	No
14	2	168	1	7	No	No	No	No	No	No	No	No	No	No
15	2	168	1	7	No	No	No	No	No	No	No	No	No	No
16	2	163	1	7	No	No	No	No	No	No	No	No	No	No
17	2	94	1	4	No	No	No	No	No	No	No	No	No	No
18	2	51	1	2	No	No	No	No	No	No	No	No	No	No
19	2	46	1	2	No	No	No	No	No	No	No	No	No	No
20	2	18	1	1	No	No	No	No	No	No	No	No	No	No
21	2	15	1	1	No	No	No	No	No	No	No	No	No	No
22	2	15	1	1	No	No	No	No	No	No	No	No	No	No
23	2	10	1	0	No	No	No	No	No	No	No	No	No	No
24	2	10	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.5
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:03
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	19
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	487
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	391	533	38	106
2	375	512	36	102
3	368	501	36	100
4	313	426	30	85
5	297	405	29	81
6	266	362	26	72
7	246	336	24	67
8	235	320	23	64
9	188	256	18	51
10	176	240	17	48
11	176	240	17	48
12	168	229	16	46
13	152	208	15	41
14	141	192	14	38
15	141	192	14	38
16	137	187	13	37
17	78	107	8	21
18	43	59	4	12
19	39	53	4	11
20	16	21	2	4
21	12	16	1	3
22	12	16	1	3
23	8	11	1	2
24	8	11	1	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	924	2	144	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
2	4	887	2	138	No	No	No	Yes	No	Yes	Yes	Yes	No	No
3	4	869	2	136	No	No	No	Yes	No	Yes	Yes	Yes	No	No
4	4	739	2	115	No	No	No	Yes	No	Yes	Yes	Yes	No	No
5	4	702	2	110	No	No	No	No	No	No	Yes	Yes	No	No
6	4	628	2	98	No	No	No	No	No	No	No	Yes	No	No
7	4	582	2	91	No	No	No	No	No	No	No	Yes	No	No
8	4	555	2	87	No	No	No	No	No	No	No	Yes	No	No
9	4	444	2	69	No	No	No	No	No	No	No	No	No	No
10	4	416	2	65	No	No	No	No	No	No	No	No	No	No
11	4	416	2	65	No	No	No	No	No	No	No	No	No	No
12	4	397	2	62	No	No	No	No	No	No	No	No	No	No
13	4	360	2	56	No	No	No	No	No	No	No	No	No	No
14	4	333	2	52	No	No	No	No	No	No	No	No	No	No
15	4	333	2	52	No	No	No	No	No	No	No	No	No	No
16	4	324	2	50	No	No	No	No	No	No	No	No	No	No
17	4	185	2	29	No	No	No	No	No	No	No	No	No	No
18	4	102	2	16	No	No	No	No	No	No	No	No	No	No
19	4	92	2	15	No	No	No	No	No	No	No	No	No	No
20	4	37	2	6	No	No	No	No	No	No	No	No	No	No
21	4	28	2	4	No	No	No	No	No	No	No	No	No	No
22	4	28	2	4	No	No	No	No	No	No	No	No	No	No
23	4	19	2	3	No	No	No	No	No	No	No	No	No	No
24	4	19	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	1	4	1	4	5	8	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	10	11.3
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:06	0:20
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	38	106
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	1068	1068
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	165	473	22
2	158	454	21
3	155	445	21
4	132	378	18
5	125	359	17
6	112	322	15
7	104	298	14
8	99	284	13
9	79	227	11
10	74	213	10
11	74	213	10
12	71	203	9
13	64	184	9
14	59	170	8
15	59	170	8
16	58	166	8
17	33	95	4
18	18	52	2
19	17	47	2
20	7	19	1
21	5	14	1
22	5	14	1
23	3	9	0
24	3	9	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	638	1	22	No	No	No	No	No	No	No	No	No	No
2	3	612	1	21	No	No	No	No	No	No	No	No	No	No
3	3	600	1	21	No	No	No	No	No	No	No	No	No	No
4	3	510	1	18	No	No	No	No	No	No	No	No	No	No
5	3	484	1	17	No	No	No	No	No	No	No	No	No	No
6	3	434	1	15	No	No	No	No	No	No	No	No	No	No
7	3	402	1	14	No	No	No	No	No	No	No	No	No	No
8	3	383	1	13	No	No	No	No	No	No	No	No	No	No
9	3	306	1	11	No	No	No	No	No	No	No	No	No	No
10	3	287	1	10	No	No	No	No	No	No	No	No	No	No
11	3	287	1	10	No	No	No	No	No	No	No	No	No	No
12	3	274	1	9	No	No	No	No	No	No	No	No	No	No
13	3	248	1	9	No	No	No	No	No	No	No	No	No	No
14	3	229	1	8	No	No	No	No	No	No	No	No	No	No
15	3	229	1	8	No	No	No	No	No	No	No	No	No	No
16	3	224	1	8	No	No	No	No	No	No	No	No	No	No
17	3	128	1	4	No	No	No	No	No	No	No	No	No	No
18	3	70	1	2	No	No	No	No	No	No	No	No	No	No
19	3	64	1	2	No	No	No	No	No	No	No	No	No	No
20	3	26	1	1	No	No	No	No	No	No	No	No	No	No
21	3	19	1	1	No	No	No	No	No	No	No	No	No	No
22	3	19	1	1	No	No	No	No	No	No	No	No	No	No
23	3	12	1	0	No	No	No	No	No	No	No	No	No	No
24	3	12	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	14.2
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:05
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	22
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	660
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 26: East Access at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	N	W
1	76	138	38
2	73	132	36
3	71	130	36
4	61	110	30
5	58	105	29
6	52	94	26
7	48	87	24
8	46	83	23
9	36	66	18
10	34	62	17
11	34	62	17
12	33	59	16
13	30	54	15
14	27	50	14
15	27	50	14
16	27	48	13
17	15	28	8
18	8	15	4
19	8	14	4
20	3	6	2
21	2	4	1
22	2	4	1
23	2	3	1
24	2	3	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	214	1	38	No	No	No	No	No	No	No	No	No	No
2	2	205	1	36	No	No	No	No	No	No	No	No	No	No
3	2	201	1	36	No	No	No	No	No	No	No	No	No	No
4	2	171	1	30	No	No	No	No	No	No	No	No	No	No
5	2	163	1	29	No	No	No	No	No	No	No	No	No	No
6	2	146	1	26	No	No	No	No	No	No	No	No	No	No
7	2	135	1	24	No	No	No	No	No	No	No	No	No	No
8	2	129	1	23	No	No	No	No	No	No	No	No	No	No
9	2	102	1	18	No	No	No	No	No	No	No	No	No	No
10	2	96	1	17	No	No	No	No	No	No	No	No	No	No
11	2	96	1	17	No	No	No	No	No	No	No	No	No	No
12	2	92	1	16	No	No	No	No	No	No	No	No	No	No
13	2	84	1	15	No	No	No	No	No	No	No	No	No	No
14	2	77	1	14	No	No	No	No	No	No	No	No	No	No
15	2	77	1	14	No	No	No	No	No	No	No	No	No	No
16	2	75	1	13	No	No	No	No	No	No	No	No	No	No
17	2	43	1	8	No	No	No	No	No	No	No	No	No	No
18	2	23	1	4	No	No	No	No	No	No	No	No	No	No
19	2	22	1	4	No	No	No	No	No	No	No	No	No	No
20	2	9	1	2	No	No	No	No	No	No	No	No	No	No
21	2	6	1	1	No	No	No	No	No	No	No	No	No	No
22	2	6	1	1	No	No	No	No	No	No	No	No	No	No
23	2	5	1	1	No	No	No	No	No	No	No	No	No	No
24	2	5	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	11
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:06
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	38
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	252
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	158	83	58
2	152	80	56
3	149	78	55
4	126	66	46
5	120	63	44
6	107	56	39
7	100	52	37
8	95	50	35
9	76	40	28
10	71	37	26
11	71	37	26
12	68	36	25
13	62	32	23
14	57	30	21
15	57	30	21
16	55	29	20
17	32	17	12
18	17	9	6
19	16	8	6
20	6	3	2
21	5	2	2
22	5	2	2
23	3	2	1
24	3	2	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	241	1	58	No	No	No	No	No	No	No	No	No	No
2	2	232	1	56	No	No	No	No	No	No	No	No	No	No
3	2	227	1	55	No	No	No	No	No	No	No	No	No	No
4	2	192	1	46	No	No	No	No	No	No	No	No	No	No
5	2	183	1	44	No	No	No	No	No	No	No	No	No	No
6	2	163	1	39	No	No	No	No	No	No	No	No	No	No
7	2	152	1	37	No	No	No	No	No	No	No	No	No	No
8	2	145	1	35	No	No	No	No	No	No	No	No	No	No
9	2	116	1	28	No	No	No	No	No	No	No	No	No	No
10	2	108	1	26	No	No	No	No	No	No	No	No	No	No
11	2	108	1	26	No	No	No	No	No	No	No	No	No	No
12	2	104	1	25	No	No	No	No	No	No	No	No	No	No
13	2	94	1	23	No	No	No	No	No	No	No	No	No	No
14	2	87	1	21	No	No	No	No	No	No	No	No	No	No
15	2	87	1	21	No	No	No	No	No	No	No	No	No	No
16	2	84	1	20	No	No	No	No	No	No	No	No	No	No
17	2	49	1	12	No	No	No	No	No	No	No	No	No	No
18	2	26	1	6	No	No	No	No	No	No	No	No	No	No
19	2	24	1	6	No	No	No	No	No	No	No	No	No	No
20	2	9	1	2	No	No	No	No	No	No	No	No	No	No
21	2	7	1	2	No	No	No	No	No	No	No	No	No	No
22	2	7	1	2	No	No	No	No	No	No	No	No	No	No
23	2	5	1	1	No	No	No	No	No	No	No	No	No	No
24	2	5	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.1
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:10
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	58
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	299
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 42: Reed at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	278	78	7
2	267	75	7
3	261	73	7
4	222	62	6
5	211	59	5
6	189	53	5
7	175	49	4
8	167	47	4
9	133	37	3
10	125	35	3
11	125	35	3
12	120	34	3
13	108	30	3
14	100	28	3
15	100	28	3
16	97	27	2
17	56	16	1
18	31	9	1
19	28	8	1
20	11	3	0
21	8	2	0
22	8	2	0
23	6	2	0
24	6	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	356	1	7	No	No	No	No	No	No	No	No	No	No
2	2	342	1	7	No	No	No	No	No	No	No	No	No	No
3	2	334	1	7	No	No	No	No	No	No	No	No	No	No
4	2	284	1	6	No	No	No	No	No	No	No	No	No	No
5	2	270	1	5	No	No	No	No	No	No	No	No	No	No
6	2	242	1	5	No	No	No	No	No	No	No	No	No	No
7	2	224	1	4	No	No	No	No	No	No	No	No	No	No
8	2	214	1	4	No	No	No	No	No	No	No	No	No	No
9	2	170	1	3	No	No	No	No	No	No	No	No	No	No
10	2	160	1	3	No	No	No	No	No	No	No	No	No	No
11	2	160	1	3	No	No	No	No	No	No	No	No	No	No
12	2	154	1	3	No	No	No	No	No	No	No	No	No	No
13	2	138	1	3	No	No	No	No	No	No	No	No	No	No
14	2	128	1	3	No	No	No	No	No	No	No	No	No	No
15	2	128	1	3	No	No	No	No	No	No	No	No	No	No
16	2	124	1	2	No	No	No	No	No	No	No	No	No	No
17	2	72	1	1	No	No	No	No	No	No	No	No	No	No
18	2	40	1	1	No	No	No	No	No	No	No	No	No	No
19	2	36	1	1	No	No	No	No	No	No	No	No	No	No
20	2	14	1	0	No	No	No	No	No	No	No	No	No	No
21	2	10	1	0	No	No	No	No	No	No	No	No	No	No
22	2	10	1	0	No	No	No	No	No	No	No	No	No	No
23	2	8	1	0	No	No	No	No	No	No	No	No	No	No
24	2	8	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.1
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	7
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	363
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 3.pdf

Scenario 8 PM Dev 2026 Ph 3
6/19/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: 18-392 Reed Rd Sub	Homes	ITE 210	Home	0.990	225.000	63.00	37.00	140	83	223	100.00
					Added Trips Total			**140**	**83**	**223**	**100.00**

18-392 Strong at 27th Subdivision TIA

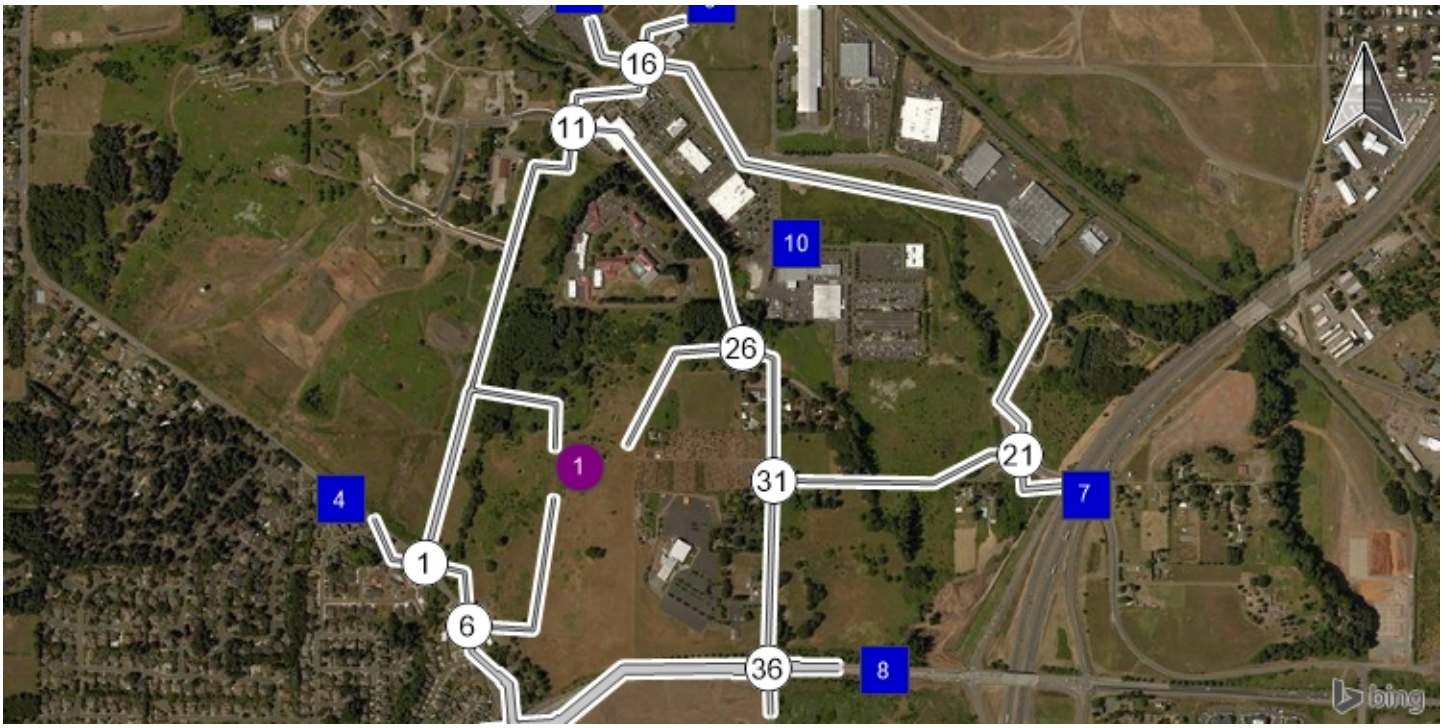
Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 3.pdf

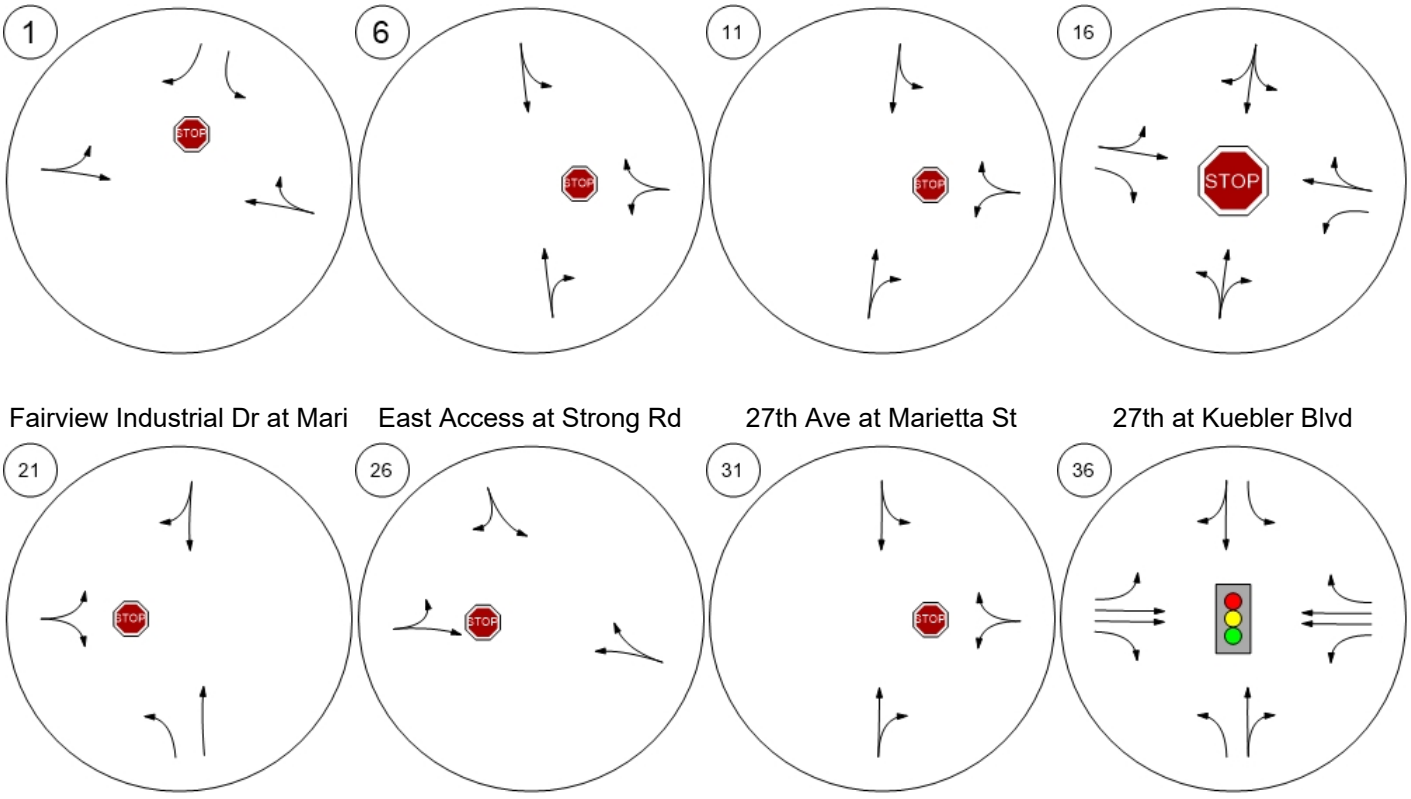
Scenario 8 PM Dev 2026 Ph 3
6/19/2018

Trip Distribution summary

Zone / Gate	Zone 1: 18-392 Reed Rd Sub			
	To 18-392 Reed Rd Sub:		From 18-392 Reed Rd Sub:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	14	10.00	8
3: Gate	30.00	42	30.00	25
4: Gate	7.00	10	7.00	6
5: Gate	10.00	14	10.00	8
6: Gate	0.00	0	0.00	0
7: Gate	6.00	8	6.00	5
8: Gate	35.00	49	35.00	29
9: Gate	2.00	3	2.00	2
10: Gate	0.00	0	0.00	0
Total	**100.00**	**140**	**100.00**	**83**

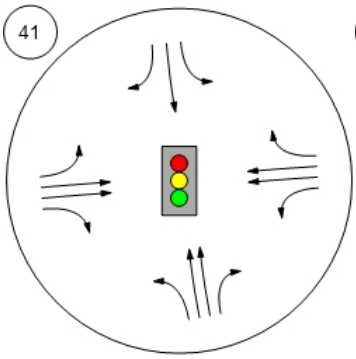
Report Figure 1: Lane Configuration and Traffic Control



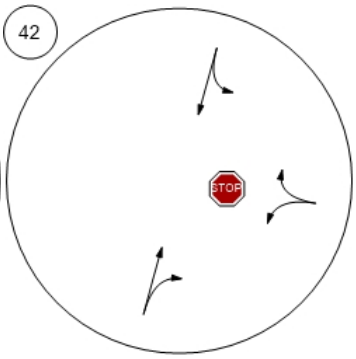


Report Figure 1: Lane Configuration and Traffic Control

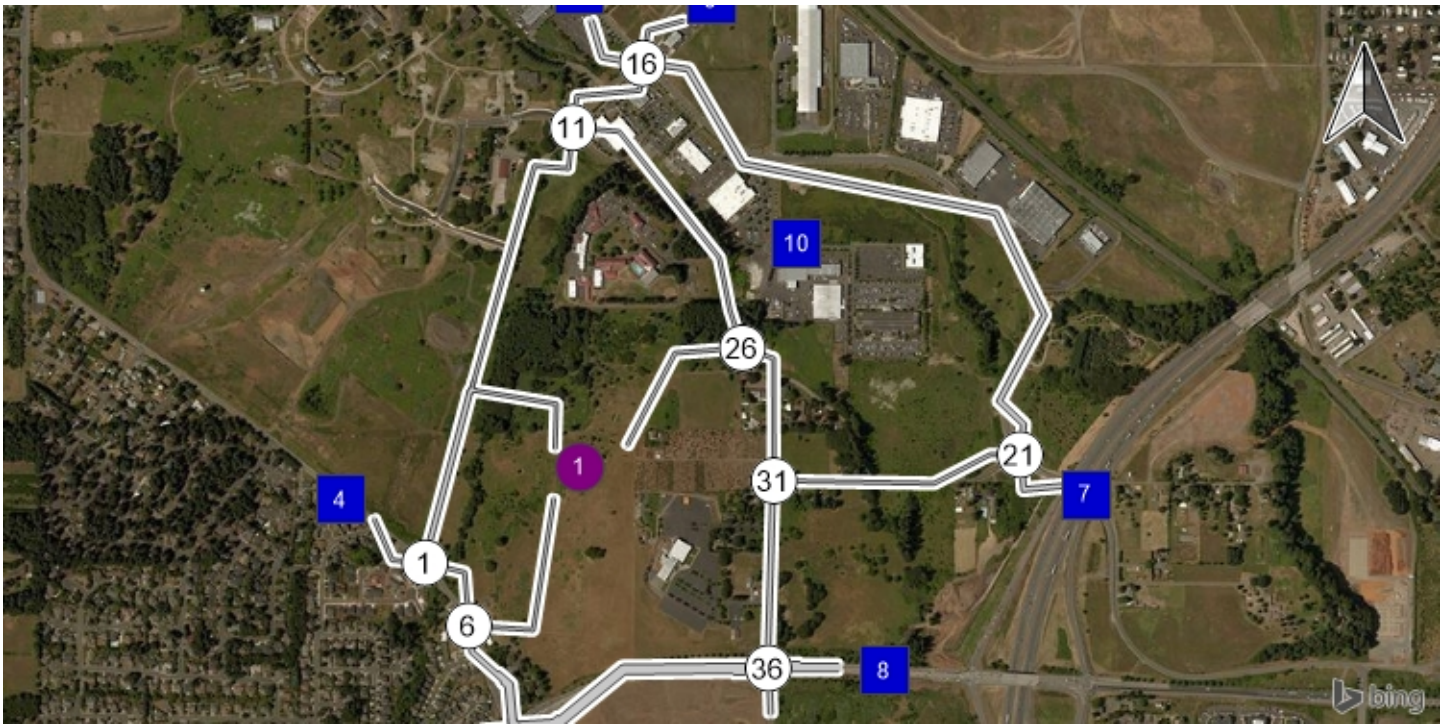
Keubler Blvd at Battle Creek



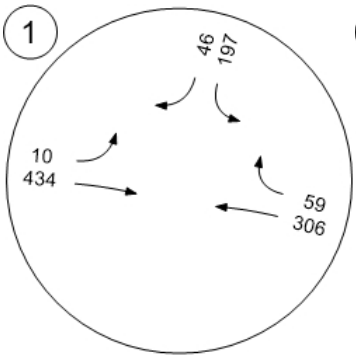
Reed at Site Access



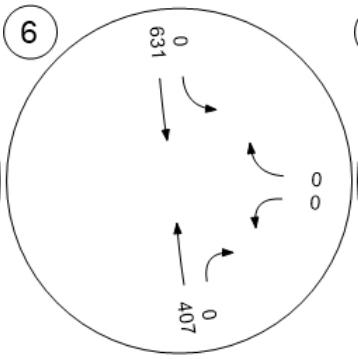
Report Figure 2a: Traffic Volume - Base Volume



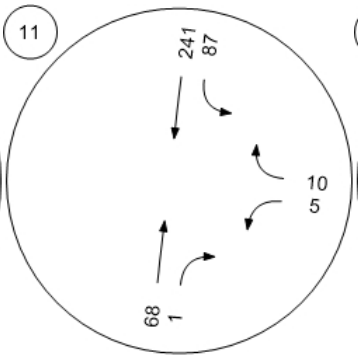
Battle Creek Rd at Reed Rd



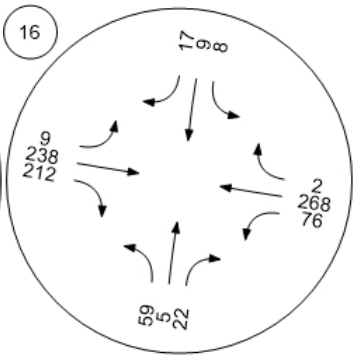
Battle Creek Rd at Site Acces



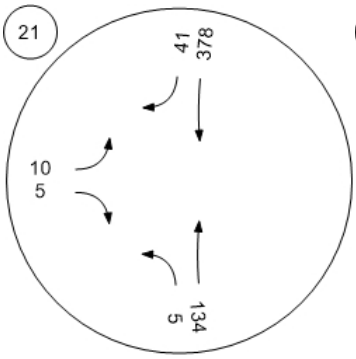
Reed Rd at Strong Rd



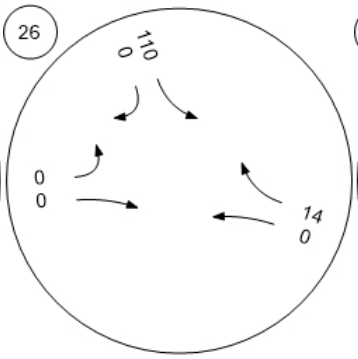
Reed Rd at Fairview Industria



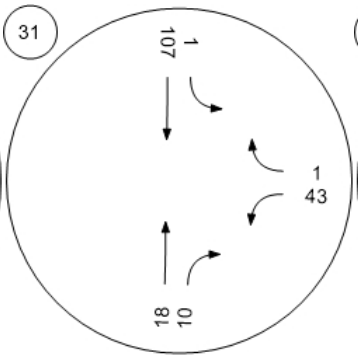
Fairview Industrial Dr at Mari



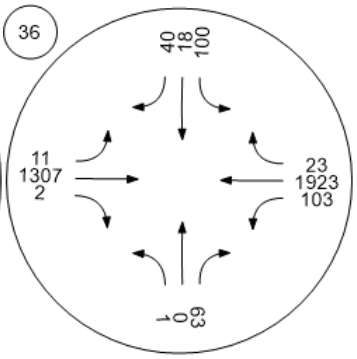
East Access at Strong Rd



27th Ave at Marietta St

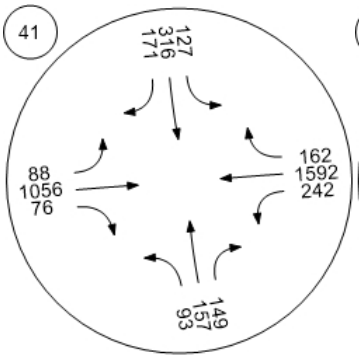


27th at Kuebler Blvd

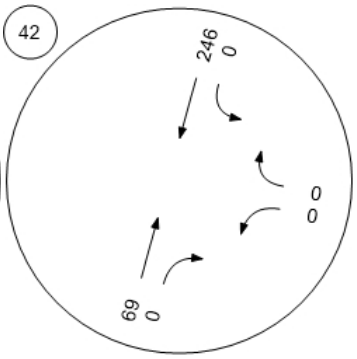


Report Figure 2a: Traffic Volume - Base Volume

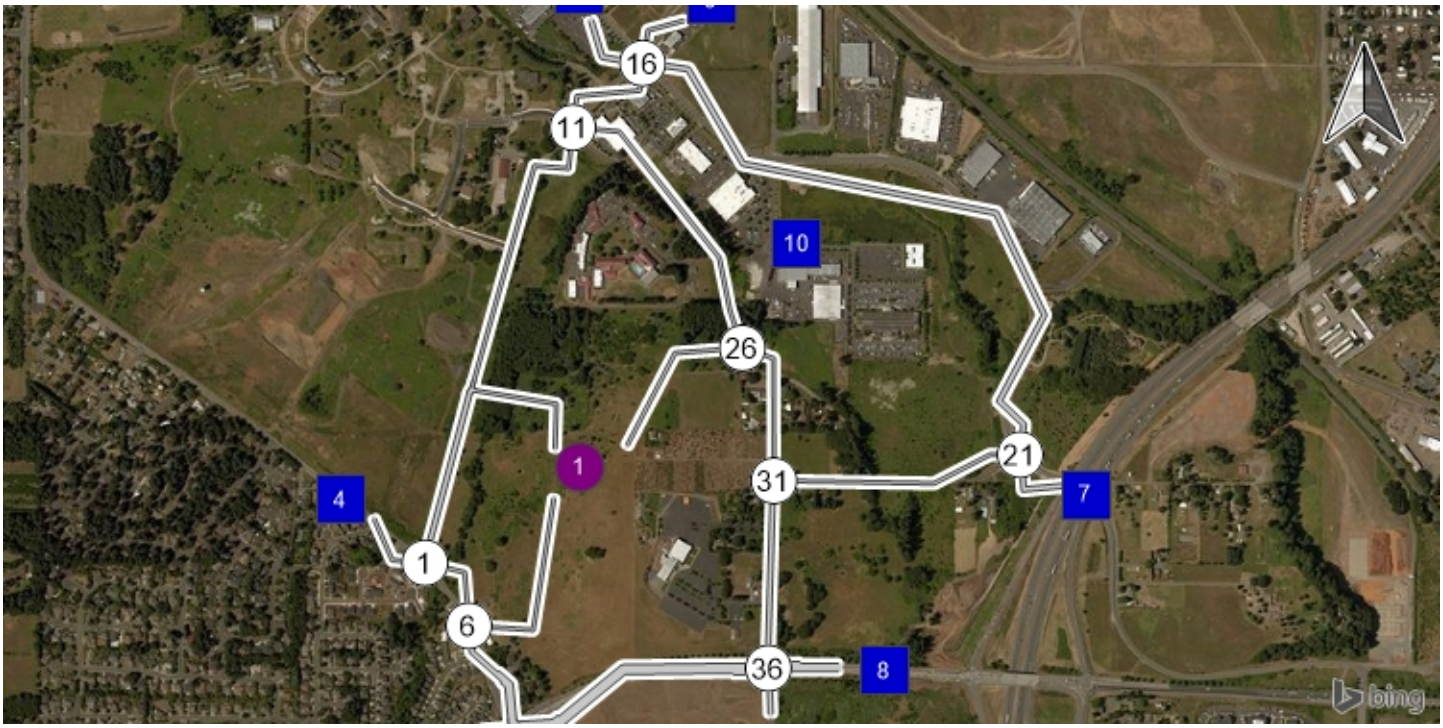
Keubler Blvd at Battle Creek



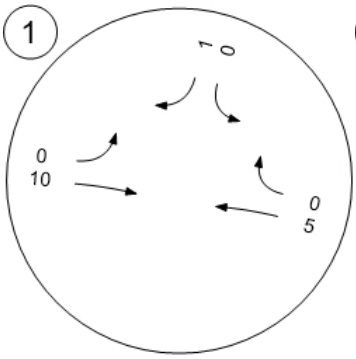
Reed at Site Access



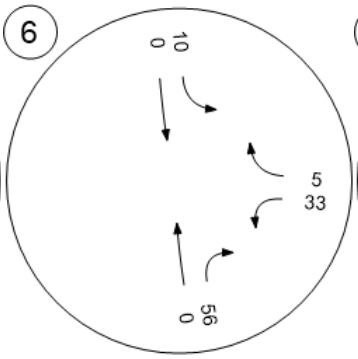
Report Figure 2d: Traffic Volume - Net New Site Trips



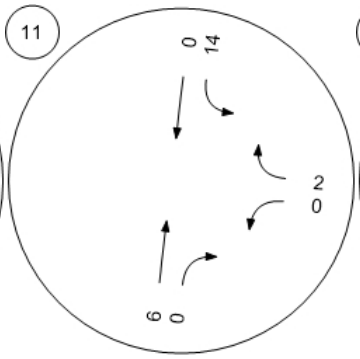
Battle Creek Rd at Reed Rd



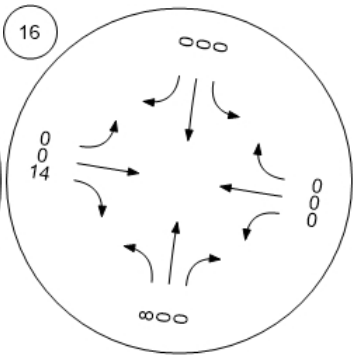
Battle Creek Rd at Site Acces



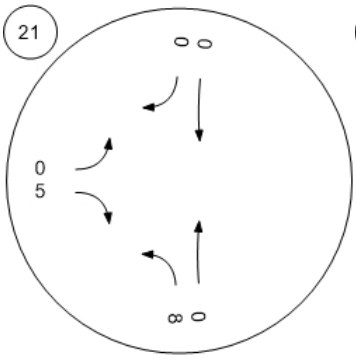
Reed Rd at Strong Rd



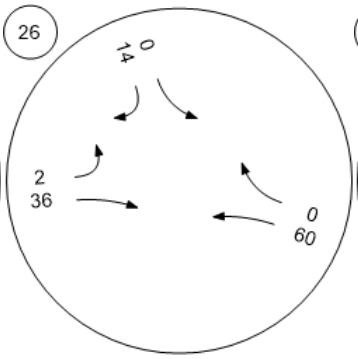
Reed Rd at Fairview Industria



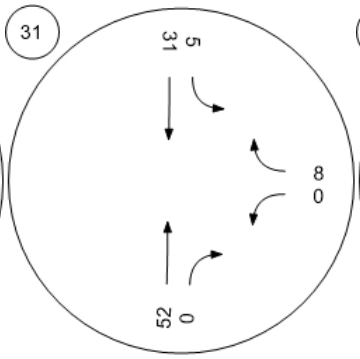
Fairview Industrial Dr at Mari



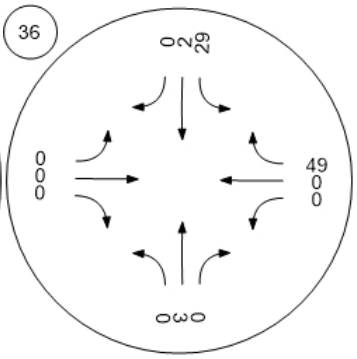
East Access at Strong Rd



27th Ave at Marietta St

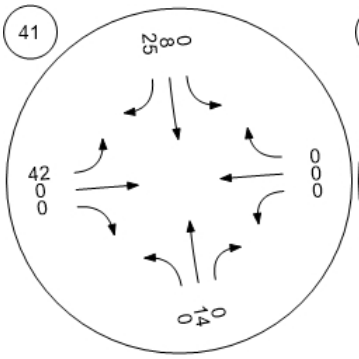


27th at Kuebler Blvd

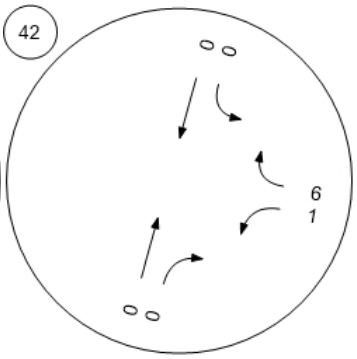


Report Figure 2d: Traffic Volume - Net New Site Trips

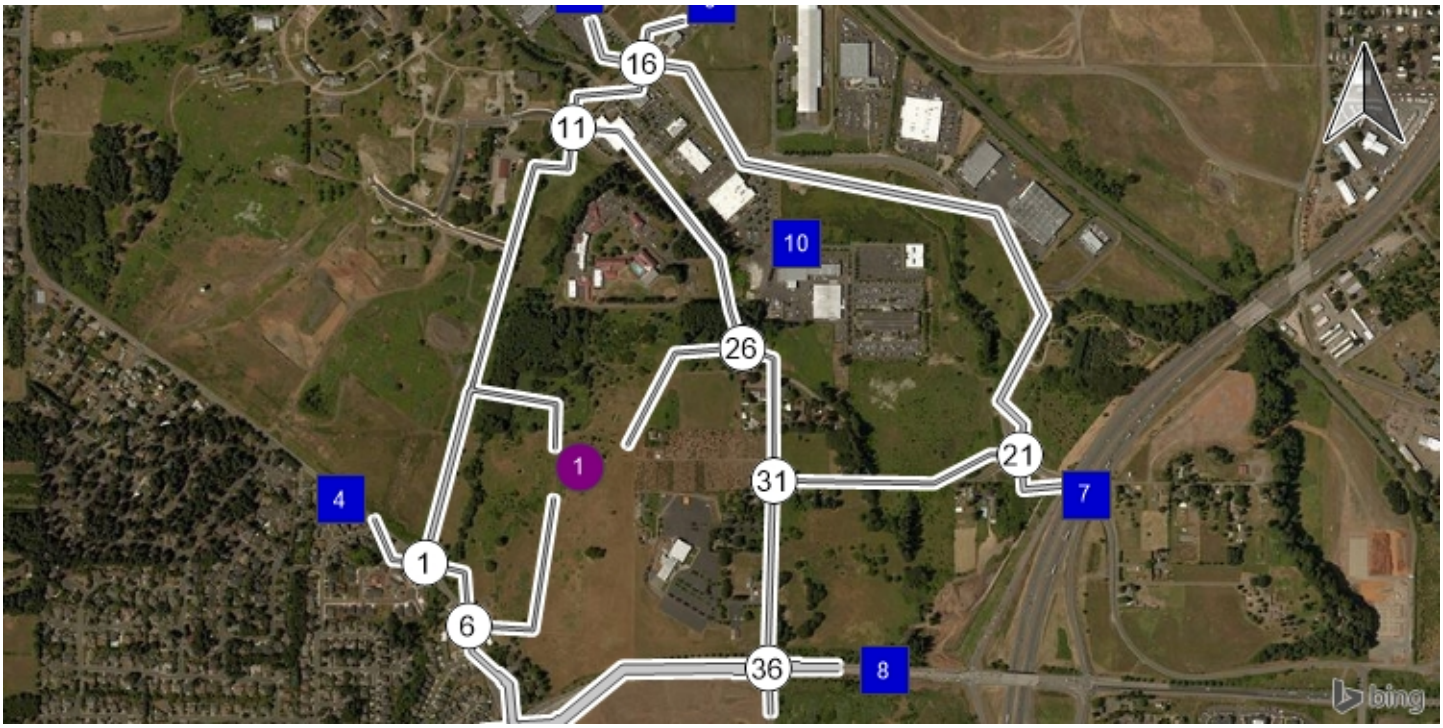
Keubler Blvd at Battle Creek

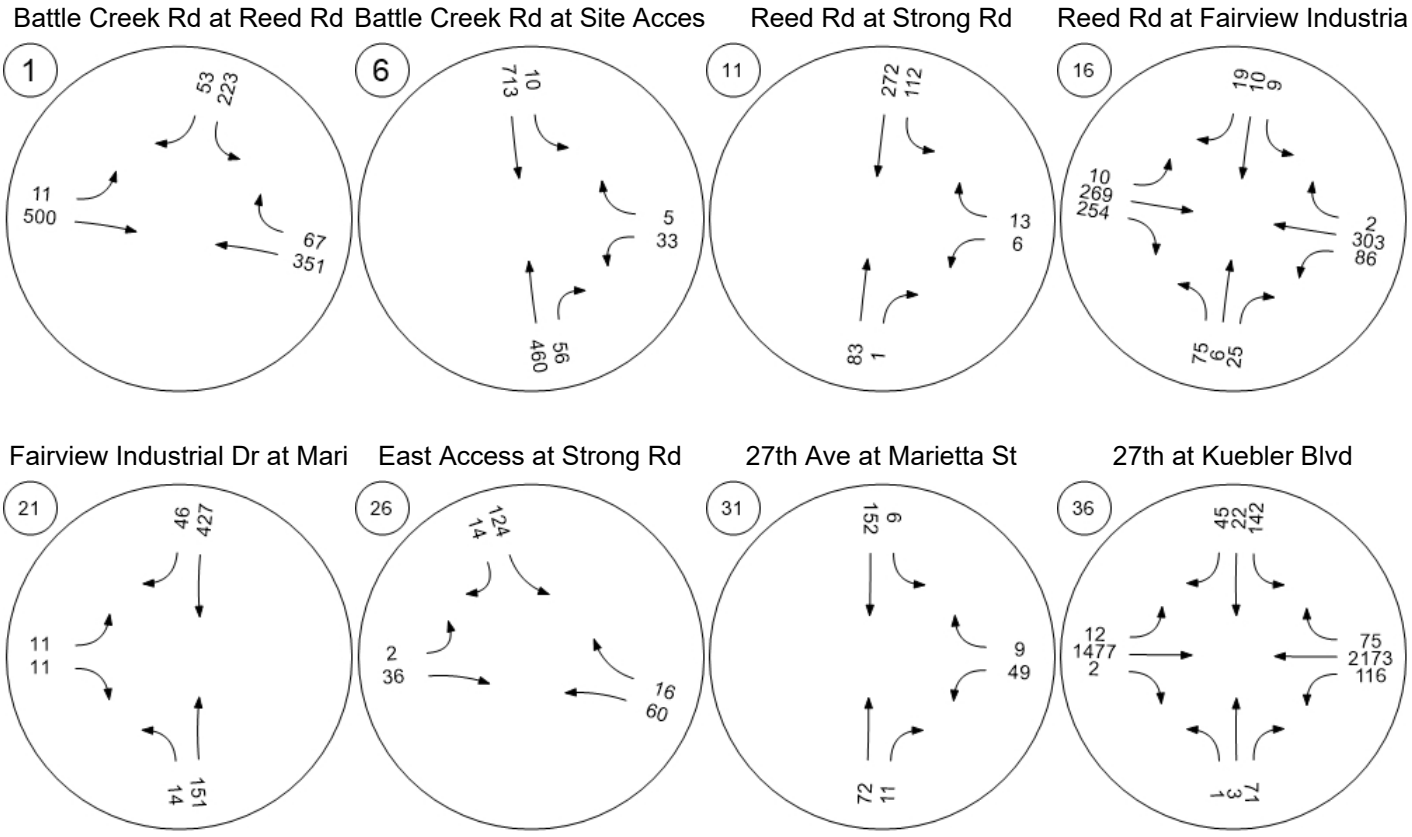


Reed at Site Access



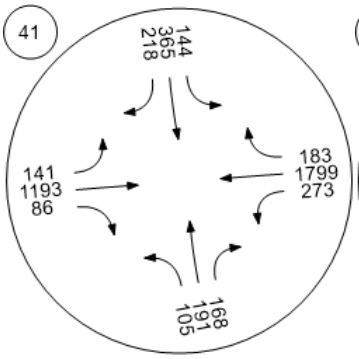
Report Figure 2f: Traffic Volume - Future Total Volume



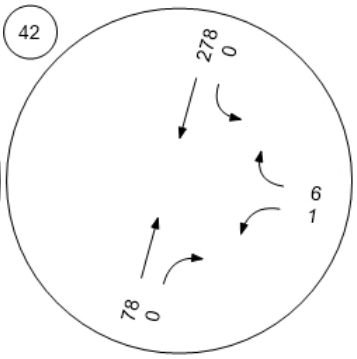


Report Figure 2f: Traffic Volume - Future Total Volume

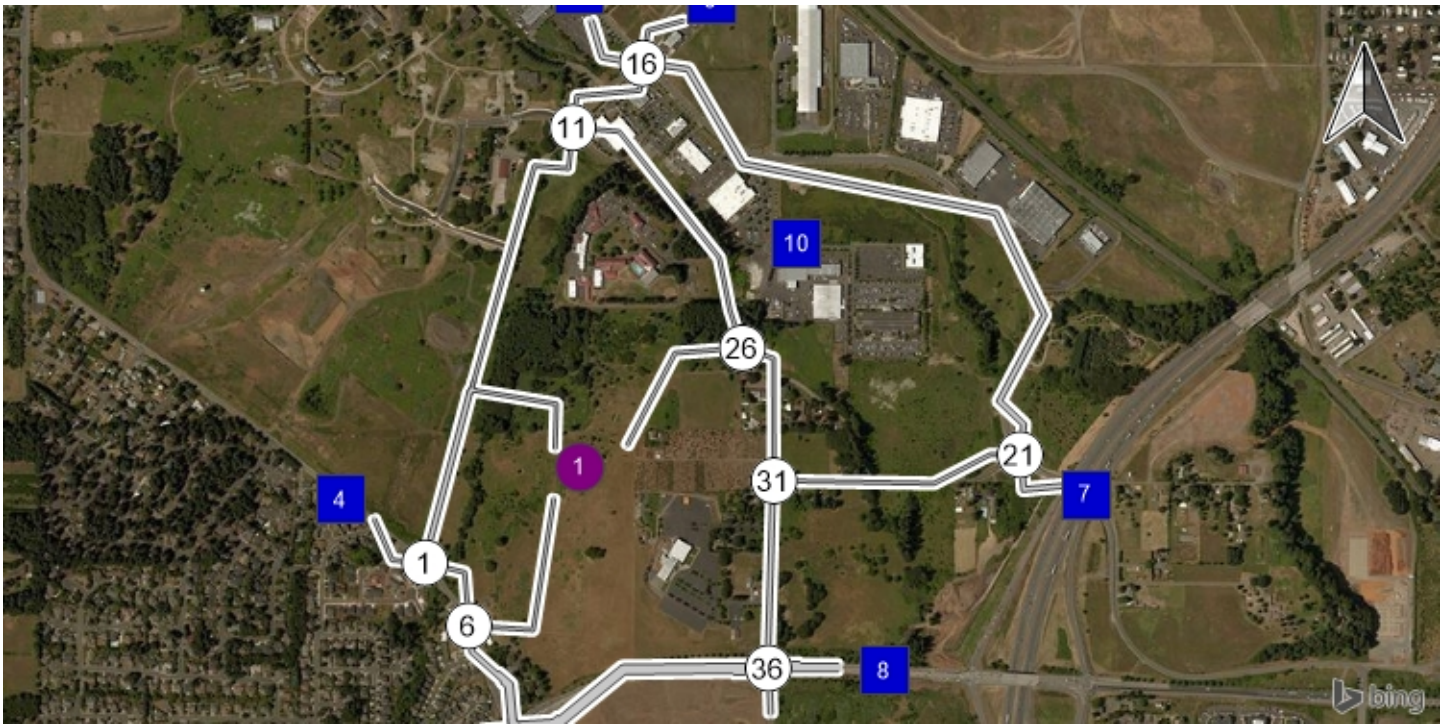
Keubler Blvd at Battle Creek

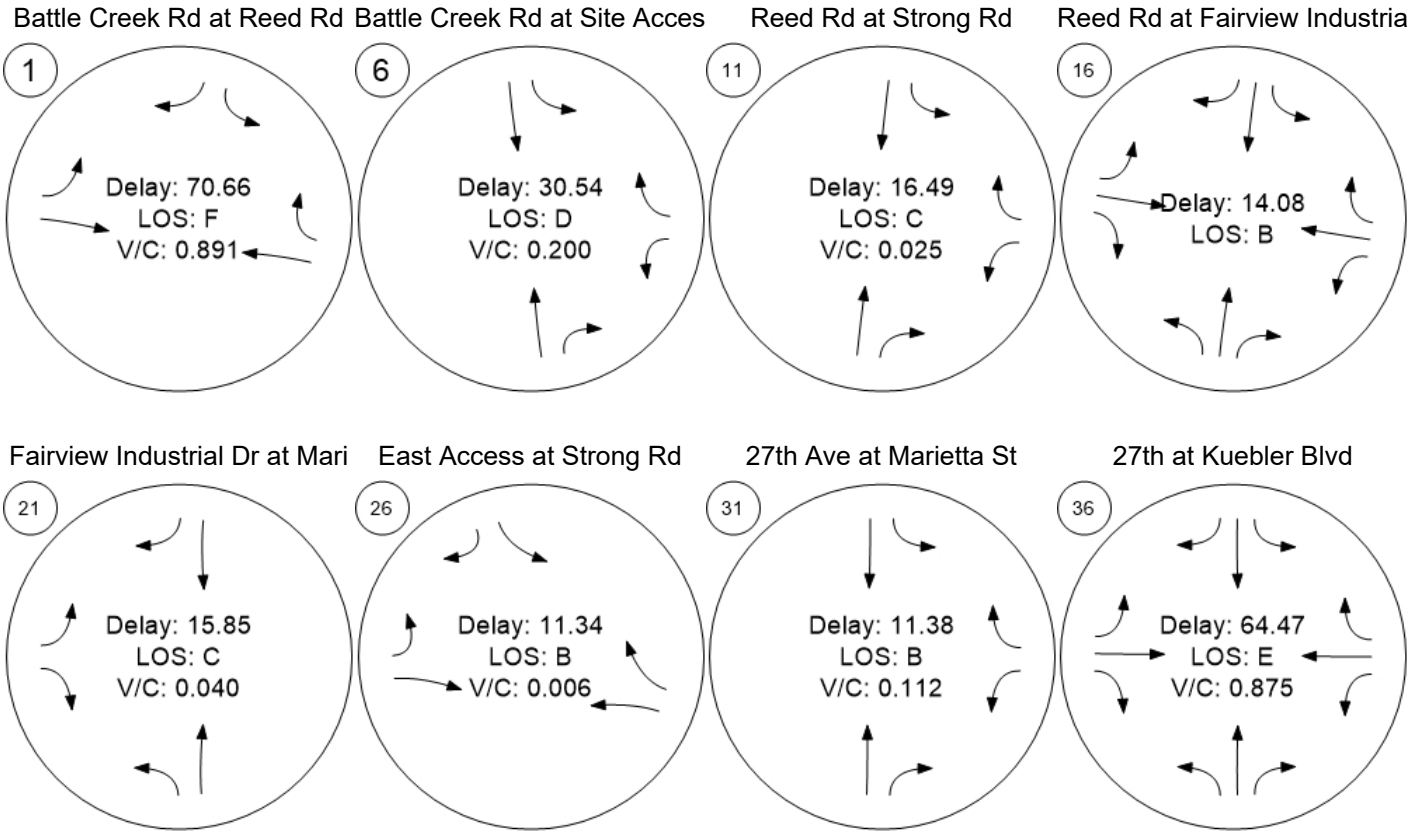


Reed at Site Access



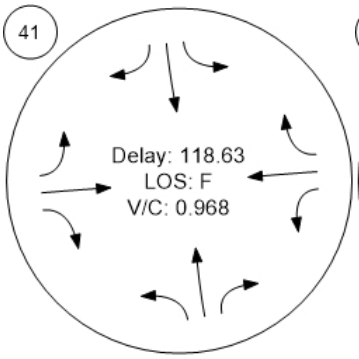
Report Figure 3: Traffic Conditions



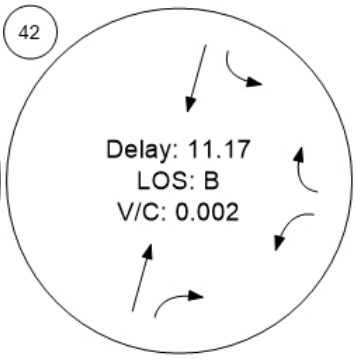


Report Figure 3: Traffic Conditions

Keubler Blvd at Battle Creek



Reed at Site Access



6234

PRELIMINARY DRAINAGE REPORT
FOR

Coburn Grand View Estates
Salem, Oregon

Prepared For:
Westwood Homes, LLC
12700 NW Cornell Road
Portland, Oregon 97229

February 3, 2021

MULTI/TECH
ENGINEERING SERVICES, INC.

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Salem OR 97302

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EMAIL: mhendrick@mtengineering.net

Contents

Introduction 1
Existing Conditions 2
Soils 2
Infiltration 2
Water Quality Methodology 2
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Water Quality Design 2
Stormwater Quantity Analysis – Basins 2 & 3 3
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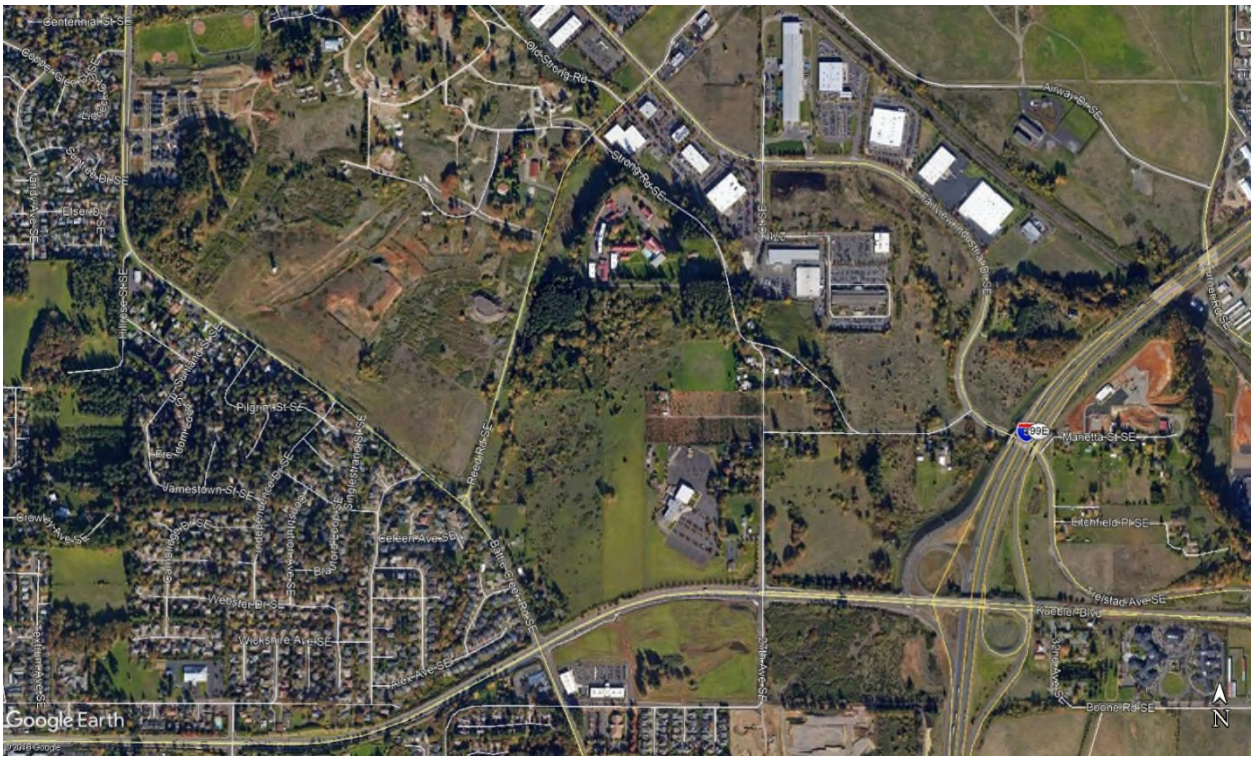
Stormwater Quality Analysis 6
Conclusion 7

Appendix A	Maps
Appendix B	Soils Report
Appendix C	Time of Concentration
Appendix D	Stormwater Quantity Analysis
Appendix E	Stormwater Quality Analysis

INTRODUCTION

The Coburn Grand View Estates development is a 212-lot subdivision approved under the City of Salem Planning Case No. SUB-ADJ19-08. A Subdivision Modification has been submitted for a portion of the site, Basin #1, to allow for a multi-family development. The site is located north of Kuebler Blvd and east of Reed Road SE & Battle Creek Road SE. The parcel of land to be developed is Tax Lots 100, 200, 400 & 601 of Marion County Assessor's Map 08 3W 11D and Tax Lots 1600 & 1700 of Marion County Assessor's Map 08 3W 12B. A vicinity map and supporting maps are in Appendix A of this report.



Project Site

Green Stormwater Infrastructure (GSI) to the Maximum Extent Feasible (MEF) is being used D per City of Salem Administrative Rules, Chapter 109, Division 004, Stormwater System, Appendix 4E (Standards). If the Subdivision Modification is approved, Basin #1 will also conform to the drainage requirements of Ordinance No. 8-20. All facilities will be constructed to meet the appropriate City of Salem standards.

Existing Conditions

The 45.4-acre site is irregular in the shape. Surface conditions consists of grass, brush and minimal trees. There are no identified wetlands or sensitive areas located on the property. The West Middle Fork of Pringle Creek runs through the western portion of Tax Lot 200. A topographical high point ridge is located on the easterly side of the site. Drainage from this high point flows northerly and westerly. The maximum relief is approximately 132-feet with a high point elevation of 418. The abutting properties are zoned single family residential, residential agriculture, commercial retail, public health and mixed use with public improvements that include storm water conveyance systems. Appendix A contains multiple maps of the site.

Soils

The Natural Resources Conservation Service (NRCS) Soil Resource Report for Marion County was used to determine a Hydrological Soil Group classification for runoff calculations. The report identifies the site soils to be McAlpin, Nekia and Silverton soils. All the soils are in the hydrologic soil group C. The report is in Appendix B.

Infiltration

An infiltration test was performed at the site to determine percolation rate of the soil. Test results indicate rates below 0.5 inches. Appendix B contains an excerpt from the geotechnical report with recommended infiltration rates.

Water Quality Methodology

Because of the poor percolation rates of the soils and natural steep slopes that dominate the site, green stormwater facilities are designed as volume control facilities with filtration rain garden planters for all sections.

Water Quality Analysis

Water quality flow rates will be calculated with HydroCAD 10.00. The SCS TR-20 Unit Hydrograph method will be used to generate the hydrographs. A Type 1A storm and a 24-hour rainfall depth of 1.38 inches per hour will be used to determine the water quality flow rate.

Water Quality Design

The proposed raingarden filtration planters will provide water quality treatment by allowing for the removal of pollutants through sedimentation, adsorption onto surrounding vegetation, filtration and biological uptake. The planters will be designed per the City of Salem designed standards.

STORMWATER QUANTITY ANALYSIS – BASINS 2 & 3

Stormwater quantity (Flow Control) is proposed to be handled by on-site detention. Runoff from the developed basins will be routed to the facilities that ultimately controls runoff to pre-developed flow rates. It should be noted that the site currently has two independent drainage basins but were analyzed as a single basin because the ultimate outlet is the nearby West Middle Fork of Pringle Creek.

Per Subsection 4.2(p)(3)(A) of the standards, one-half of the post development peak runoff rate of the two-year storm must be equal to or less than one-half of the peak runoff rate of the pre-developed two-year, 24-hour storm. This also applies to the 10-year, 24-hour storm event.

The pre-developed flow rates were calculated using HydroCAD 10.00. Table 1 below lists the 24-hour rainfall depths used for the analysis of each storm event. Please note that the 2-year event was halved and then analyzed.

Table 1

Storm Event	24-hour Rainfall Depth (in)
2	2.2
10	3.2

For the pre-developed conditions, a time of concentration of 17.4 minutes was calculated for the Basin. The time of concentration data is in Appendix C. The calculations are incorporated in the HydroCAD output located in Appendix D. The entire area was classified as "City of Salem Pre-Development, HSG C" with a Curve Number (CN) of 72. A pre-developed basin map is in Appendix A.

The SCS TR-20 Unit Hydrograph method was used to generate the hydrographs. A Type 1A rainfall distribution was used with the above rainfall depths. Table 2 below identifies the allowable pre-developed release rate for each storm event.

Table 2

Storm Event	Basin #2 Allowable Release Rate (cfs)	Basin #3 Allowable Release Rate (cfs
1/2 of 2-year	0.05	0.04
10-year	2.58	2.12

The post-developed flow rates were calculated using HydroCAD 10.00. A time of concentration of 10 minutes was assumed for all basins. The calculations are incorporated in the HydroCAD output located in Appendix D. Each basin was classified as 60 percent "Impervious, HSG C" with a CN of 98 and 40 percent “> 75% Grass cover, HSG C” with a CN of 74. This was based on code setback requirements and City street section standards. Table 3 below lists the CN values for the developed areas that will contribute storm water runoff to the detention systems. A developed basin map is in Appendix A.

Table 3

Basin	Impervious Area (Ac) CN = 98	Landscape Area (Ac) CN = 74	TOTAL Area (Ac)	Composite CN
Basin B2	10.49	6.99	17.48	88
Basin B3	8.63	5.75	14.38	88

Table 4 below identifies the calculated detention volume requirements for each storm event. The required detention was determined by using HydroCAD.

Table 4

Storm Event	Basin B2 Detention Volume (cf)	Basin B3 Detention Volume (cf)
1/2 of 2-year	17,100	14,150
10-year	34,600	28,450

The proposed detention systems will be detention pond facilities located near the lowest point in each basin to maximize the capture of runoff. A basin map has been provided in Appendix A showing the locations of the detention ponds.

STORMWATER QUANTITY ANALYSIS – BASIN 1

Stormwater quantity (Flow Control) is proposed to be handled by on-site detention. Runoff from the developed basins will be routed to the facilities that ultimately controls runoff to pre-developed flow rates.

Per Subsection 4.2(p)(3)(A) of the standards and Ordinance No. 8-20, one-half of the post development peak runoff rate of the two-year storm must be equal to or less than one-half of the peak runoff rate of the pre-developed two-year, 24-hour storm. This also applies to the 10, 25 and 100-year, 24-hour storm events.

The pre-developed flow rates were calculated using HydroCAD 10.00. Table 5 below lists the 24-hour rainfall depths used for the analysis of each storm event. Please note that the 2-year event was halved and then analyzed.

Table 5

Storm Event	24-hour Rainfall Depth (in)
2	2.2
10	3.2
25	3.6
100	4.4

For the pre-developed conditions, a time of concentration of 17.4 minutes was calculated for the Basin. The time of concentration data is in Appendix C. The calculations are incorporated in the HydroCAD output located in Appendix D. The entire area was classified as "City of Salem Pre-Development, HSG C" with a Curve Number (CN) of 72. A pre-developed basin map is in Appendix A.

The SCS TR-20 Unit Hydrograph method was used to generate the hydrographs. A Type 1A rainfall distribution was used with the above rainfall depths. Table 6 below identifies the allowable pre-developed release rate for each storm event.

Table 6

Storm Event	Basin #1 Allowable Release Rate (cfs)
1/2 of 2-year	0.04
10-year	2.00
25-year	2.84
100-year	4.73

The post-developed flow rates were calculated using HydroCAD 10.00. A time of concentration of 15 minutes was assumed for all basins. The calculations are incorporated in the HydroCAD output located in Appendix D. Each basin was classified as 60 percent "Impervious, HSG C" with a CN of 98 and 40 percent "> 75% Grass cover, HSG C" with a CN of 74. This was based on code setback requirements and City street section standards. Table 7 below lists the CN values for the developed areas that will contribute storm water runoff to the detention systems. A developed basin map is in Appendix A.

Table 7

Basin	Impervious Area (Ac) CN = 98	Landscape Area (Ac) CN = 74	TOTAL Area (Ac)	Composite CN
Basin B1	8.15	5.43	13.58	88

Table 8 below identifies the calculated detention volume requirements for each storm event. The required detention was determined by using HydroCAD.

Table 8

Storm Event	Basin B2 Detention Volume (cf)
1/2 of 2-year	13,400
10-year	27,500
25-year	31,750
100-year	38,350

The proposed detention systems will be detention pond facilities located near the lowest point in each basin to maximize the capture of runoff. A basin map has been provided in Appendix A showing the locations of the detention ponds.

STORMWATER QUALITY ANALYSIS

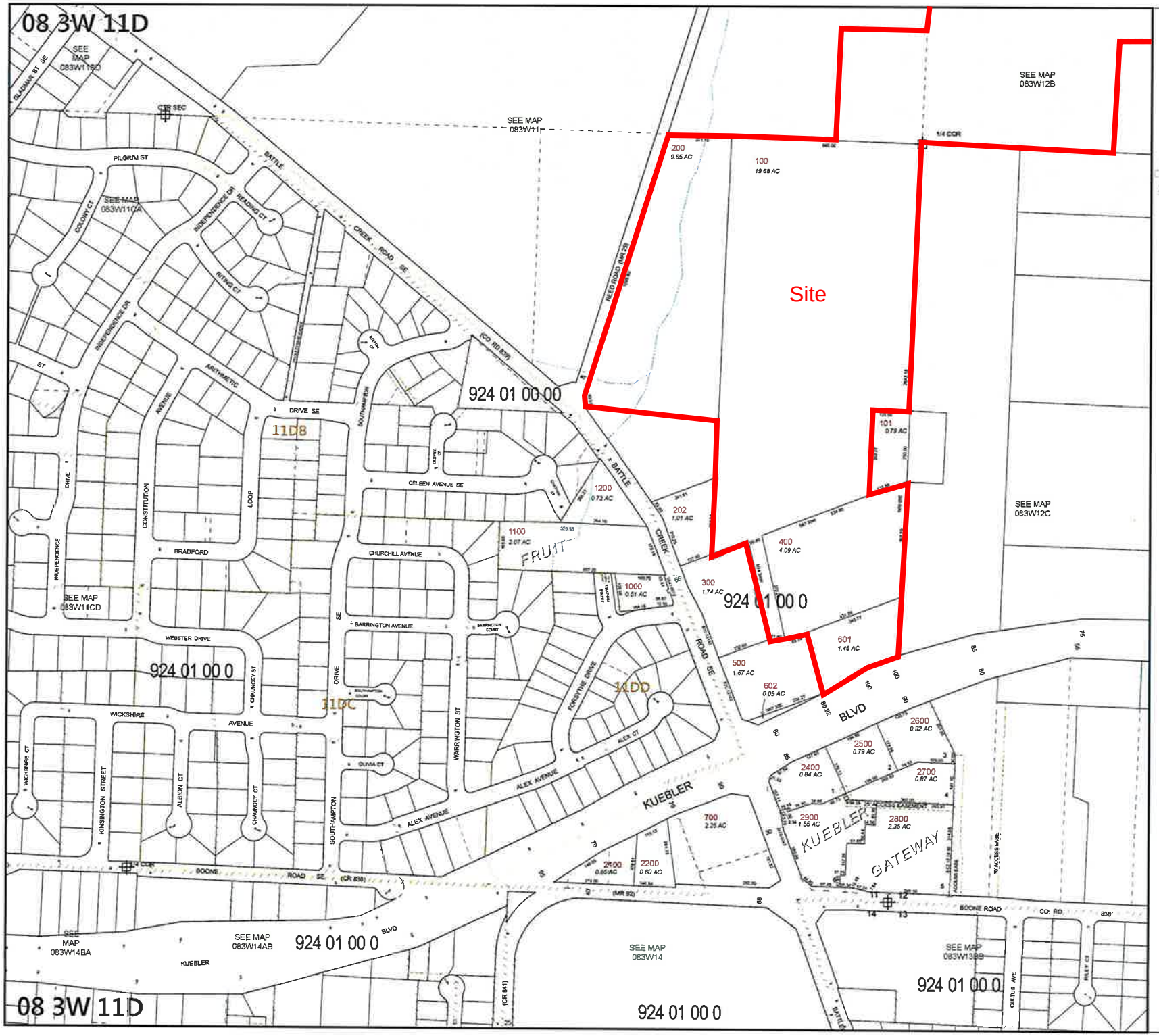
Water quality flow rates were calculated using HydroCAD 10.00. The SCS TR-20 Unit Hydrograph method was used to generate the hydrographs. A Type 1A rainfall distribution was used with a 1.38 rainfall depth. Appendix E contains the analysis.

All detention facilities will incorporate filtration sections and will be constructed per City of Salem standards.

CONCLUSION

Based on the presented information, the proposed design will meet the water quality and quantity standards. If there are any questions regarding this analysis or the design, please contact Matthew Hendrick at Multi/Tech Engineering by phone at (503) 363-9227 or via e-mail at mhendrick@mtengineering.net.

Appendix A



08 3W 11D
SALEM

MARION COUNTY, OREGON
SE1/4 SEC11 T8S R3W W.M.
SCALE 1" = 200'

LEGEND

LINE TYPES

- Taxlot Boundary
- Historical Boundary
- Road Right-of-Way
- Easement
- Railroad Right-of-Way
- Railroad Centerline
- Private Road ROW
- Taxcode Line
- Subdivision/Plat Bndry
- Map Boundary
- Waterline - Taxlot Bndry
- Waterline - Non Bndry

CORNER TYPES

- 1/16TH Section Cor.
- 1/4 Section Cor.
- DLC Corner
- Section Corner (16, 15, 21, 22)

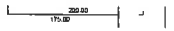
NUMBERS

Tax Code Number
000 00 00 0

Acreage 0.25 AC — All acres listed are Net Acres, excluding any portions of the taxlot within public ROWs

NOTES

Tick Marks: A tick mark in the road indicates that the labeled dimension extends into the public ROW



CANCELLED NUMBERS

201	1400	2302
301	1500	2303
501	1600	
502	1601	
600	1700	
603	1800	
700A1	1801	
701	1900	
702	1901	
703	2000	
800	2001	
801	2002	
900	2101	
901	2102	
902	2201	
1001	2300	
1300	2301	

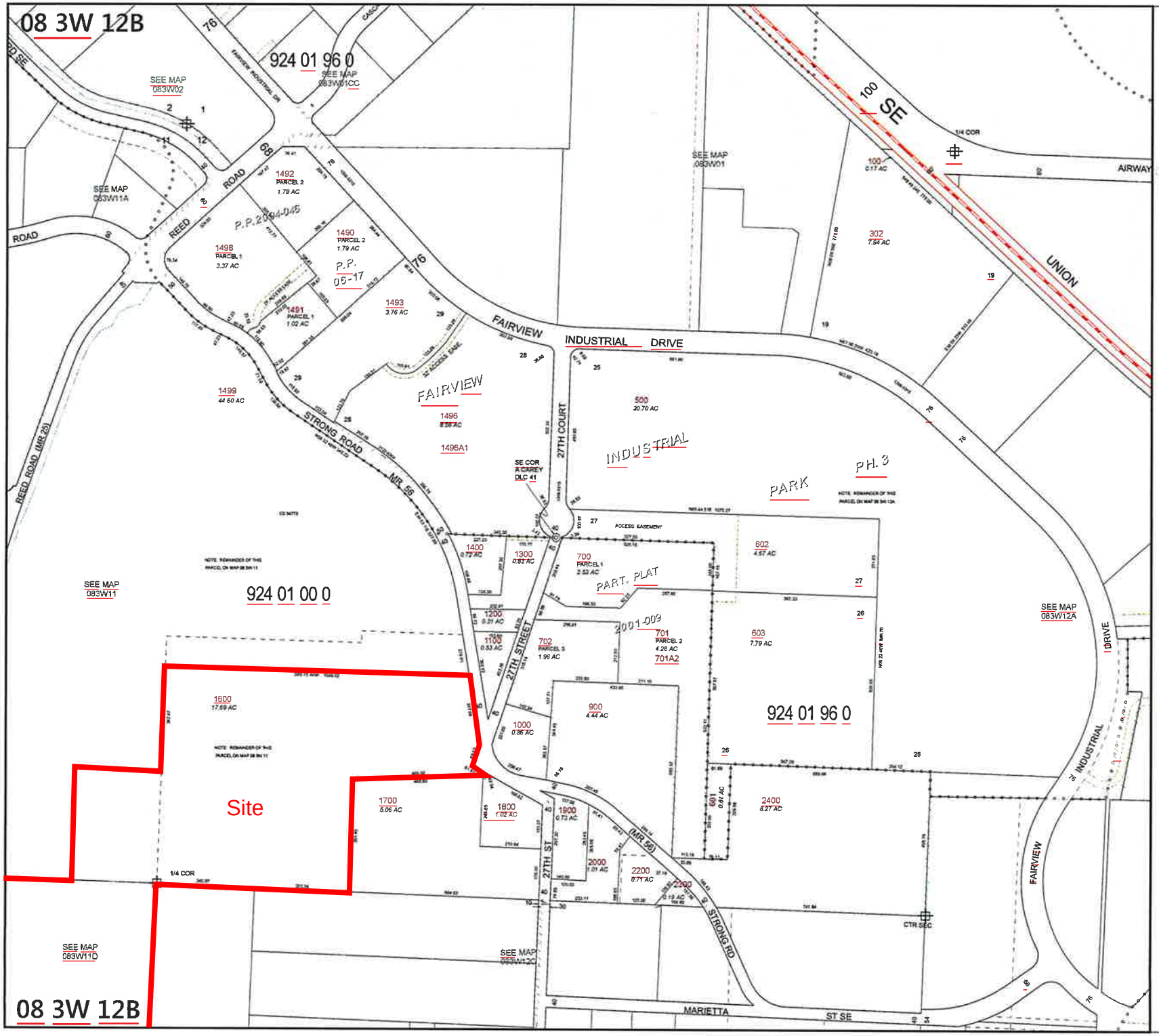
DISCLAIMER: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY

Assessors Office Cartography Dept

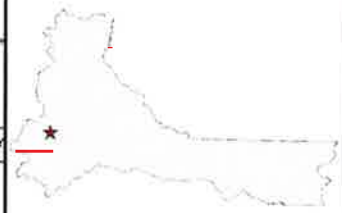
FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT www.co.marion.or.us

PLOT DATE: 1/24/2018

SALEM
08 3W 11D



08 3W 12B
SALEM



MARION COUNTY, OREGON
NW1/4 SEC12 T8S R3W W.M.
SCALE 1" = 200'

LEGEND

LINE TYPES

Taxlot Boundary	Historical Boundary
Road Right-of-Way	Easement
Railroad Right-of-Way	Railroad Centerline
Private Road ROW	Taxcode Line
Subdivision/Plat Bndry	Map Boundary
Waterline - Taxlot Bndry	Waterline - Non Bndry

CORNER TYPES

- 1/16TH Section Cor.
- 1/4 Section Cor.
- DLC Corner
- Section Corner (16, 15, 21, 22)

NUMBERS

Tax Code Number
000 00 00 0

Acreage
0.25 AC

All acres listed are Net Acres, excluding any portions of the taxlot within public ROWs

NOTES

Tick Marks: A tick mark in the road indicates that the labeled dimension extends into the public ROW

CANCELLED NUMBERS

200	1498A1
201	1498A2
202	1498A3
300	1500
301	1601
400	2100
401	
402	
501	
502	
503	
600	
700A1	
701A1	
800	
1494	
1497	

DISCLAIMER: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY

Assessors Office Cartography Dept

FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT www.co.marion.or.us

PLOT DATE: 1/24/2018

SALEM
08 3W 12B

COBURN GRAND VIEW ESTATES

T. 8 S., R. 3 W., Willamette Meridian
Sec. 11D Tax Lots 100, 200, 400 & 601 - Sec. 12B Tax Lot 1600
City Of Salem, Marion County, Oregon

Owner / Developer:

WESTWOOD HOMES LLC

12700 NW CORNELL RD.
PORTLAND, OREGON 97229

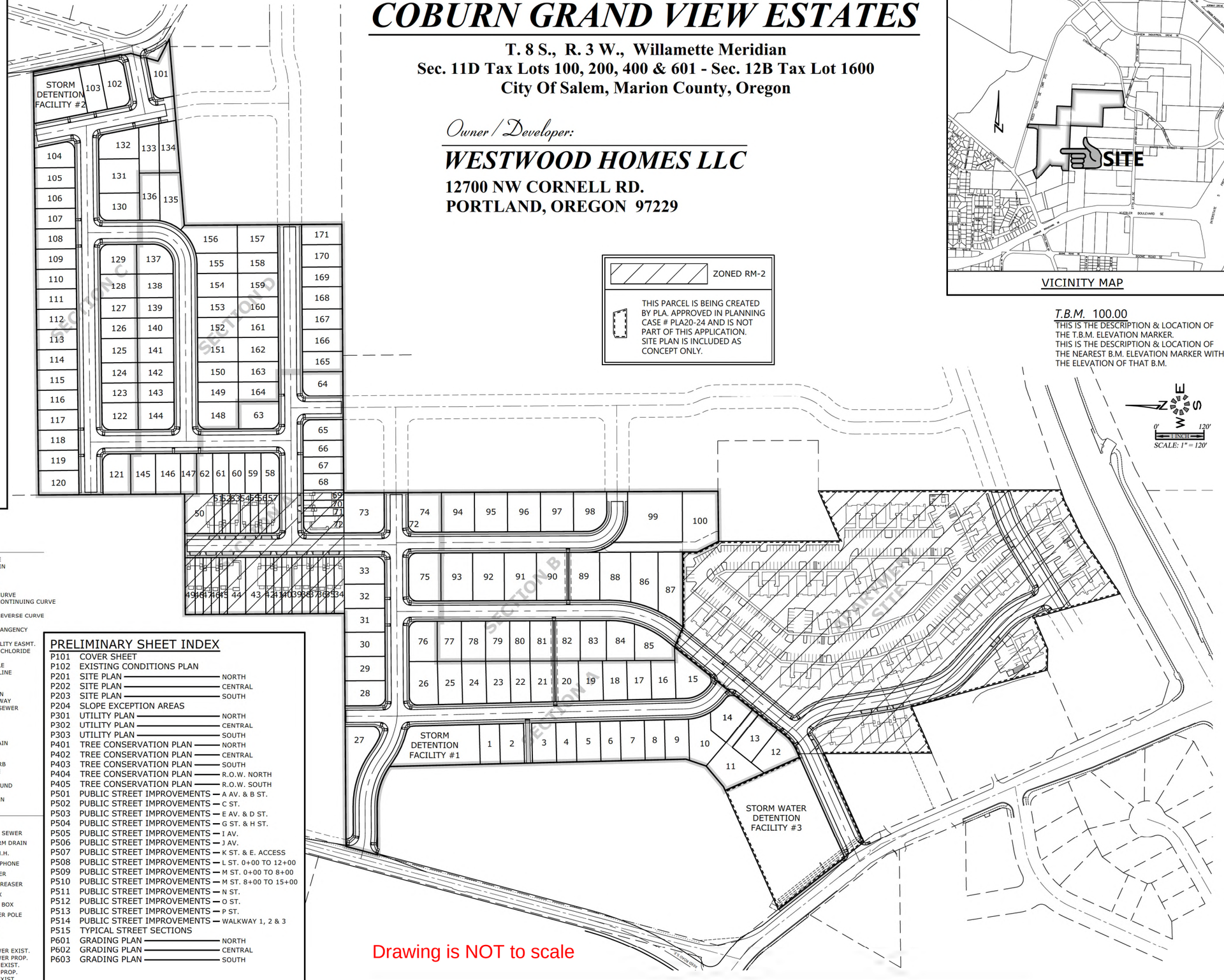
TOTAL PARCEL SIZE:
DEVELOPABLE AREA — 32.545 Ac.
NUMBER OF UNITS — 170
DENSITY — 4.51 UNITS/Ac.
LARGEST LOT — 13,195 S.F.
SMALLEST LOT — 5,500 S.F.
AVERAGE — 6,753 S.F.

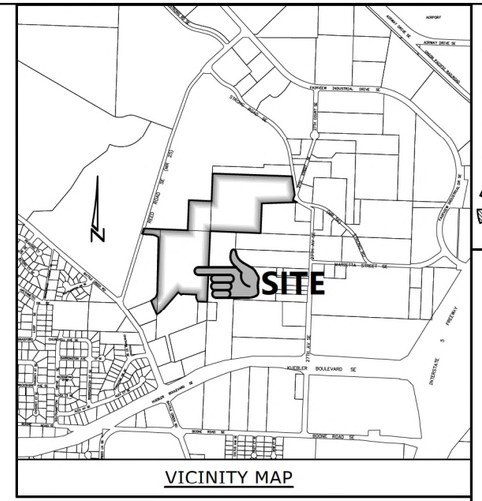
SECTION A:
DEVELOPABLE AREA — 13.492 Ac.
NUMBER OF UNITS — 76
DENSITY — 5.63 UNITS/Ac.
LARGEST LOT — 10,658 S.F.
SMALLEST LOT — 1,982 S.F.
AVERAGE — 5,038 S.F.

SECTION B:
DEVELOPABLE AREA — 6.068 Ac.
NUMBER OF UNITS — 24
DENSITY — 3.96 UNITS/Ac.
LARGEST LOT — 17,940 S.F.
SMALLEST LOT — 4,951 S.F.
AVERAGE — 8,559 S.F.

SECTION C:
DEVELOPABLE AREA — 6.828 Ac.
NUMBER OF UNITS — 34
DENSITY — 4.98 UNITS/Ac.
LARGEST LOT — 10,658 S.F.
SMALLEST LOT — 4,484 S.F.
AVERAGE — 5,499 S.F.

SECTION D:
DEVELOPABLE AREA — 6.155 Ac.
NUMBER OF UNITS — 36
DENSITY — 5.85 UNITS/Ac.
LARGEST LOT — 8,353 S.F.
SMALLEST LOT — 4,001 S.F.
AVERAGE — 5,492 S.F.





T.B.M. 100.00
THIS IS THE DESCRIPTION & LOCATION OF THE T.B.M. ELEVATION MARKER.
THIS IS THE DESCRIPTION & LOCATION OF THE NEAREST B.M. ELEVATION MARKER WITH THE ELEVATION OF THAT B.M.

N
W E
S
0' 120'
1 INCH
SCALE: 1" = 120'

ABBREVIATIONS

A.C.	ASPHALTIC CONCRETE	L.P.	LIGHT POLE
ACMP	ALUMINIZED CMP	M	METER, MAIN
ASSY.	ASSEMBLY	M.H.	MANHOLE
B.O.	BLOW OFF	MTL.	METAL
B.F.V.	BUTTERFLY VALVE	O.H.	OVERHEAD
C & G	CURB & GUTTER	PC	POINT OF CURVE
CATV	CABLE TELEVISION	PCC	POINT OF CONTINUING CURVE
C.B.	CATCH BASIN	PED.	PEDESTAL
C.B.C.O.	CATCH BASIN CLEANOUT	PRC	POINT OF REVERSE CURVE
C.B.I.	CATCH BASIN INLET	PROP.	PROPOSED
C.L.	CENTERLINE	PT	POINT OF TANGENCY
CMP	CORRUGATED METAL PIPE	PUB.	PUBLIC
C.O.	CLEANOUT	PUE	PUBLIC UTILITY EASMT.
CONC.	CONCRETE	PVC	POLYVINYL CHLORIDE
CONST.	CONSTRUCT	PVT.	PRIVATE
D.I.	DUCTILE IRON	P.P.	POWER POLE
DIA.	DIAMETER	P.L.	PROPERTY LINE
DWG.	DRAWING	R	RADIUS
EASMT.	EASEMENT	R-	RIM
E.G.	EXIST. GRADE / GROUND	RD	ROOF DRAIN
EOP, E.P.	EDGE OF PAVEMENT	R.O.W.	RIGHT-OF-WAY
ELEC.	ELECTRIC	SAN.S. or S.S.	SANITARY SEWER
ELEV. or EL.	ELEVATION	S	SLOPE
EX. or EXIST.	EXISTING	STA.	STATION
FT.	FEET	STD.	STANDARD
F.F.	FINISH FLOOR	STL.	STEEL
F.G.	FINISH GRADE	STM.DRN. or S.D.	STORM DRAIN
F.H.	FIRE HYDRANT	SVC.	SERVICE
F.M.	FORCE MAIN	SW	SIDEWALK
GUT. or GTR.	GUTTER	T.C.	TOP OF CURB
G.V.	GATE VALVE	TEL.	TELEPHONE
IMP.	IMPROVEMENT	TYP.	TYPICAL
INST.	INSERT	U.G.	UNDERGROUND
INV. or I-	INVERT	VLT.	VAULT
L	LENGTH, LINE	W.M.	WATER MAIN

SYMBOLS

EXIST.	PROP.		EXIST.	PROP.	
⊖	◓	BLOW OFF ASSY.	Ⓢ	Ⓢ	MANHOLE SAN. SEWER
▥	▥	CATCH BASIN	Ⓓ	Ⓓ	MANHOLE STORM DRAIN
▣	■	CATCH BASIN CLEANOUT	Ⓒ	Ⓒ	2' DIA. C.O. / M.H.
▣	▣	CATCH BASIN INLET	Ⓣ	Ⓣ	MANHOLE TELEPHONE
△	▲	CATV PED. / BOX	Ⓦ	Ⓦ	MANHOLE WATER
○	●	CLEANOUT	▷	▶	REDUCER / INCREASER
◪	◪	ELEC. PED. / BOX	▣	▣	TEL. PED. / BOX
⊖	◓	FIRE HYDRANT	▭	▭	TRAFFIC PED. / BOX
⊛	◉	GAS LOCATION MARKER	⊙	⊙	UTILITY / POWER POLE
⋈	⋈	GAS VALVE	□	■	WATER METER
▭	◧	MAIL BOX	⊗	◓	WATER VALVE

CABLE TELEVISION
CENTERLINE
DITCH C.L.
ELECTRICAL LINE
GAS MAIN
TELEPHONE LINE
SANITARY SEWER EXIST.
SANITARY SEWER PROP.
STORM DRAIN EXIST.
STORM DRAIN PROP.
WATER MAIN EXIST.
WATER MAIN PROP.

PRELIMINARY SHEET INDEX

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P203 SITE PLAN — SOUTH
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P302 UTILITY PLAN — CENTRAL
P303 UTILITY PLAN — SOUTH
P401 TREE CONSERVATION PLAN — NORTH
P402 TREE CONSERVATION PLAN — CENTRAL
P403 TREE CONSERVATION PLAN — SOUTH
P404 TREE CONSERVATION PLAN — R.O.W. NORTH
P405 TREE CONSERVATION PLAN — R.O.W. SOUTH
P501 PUBLIC STREET IMPROVEMENTS — A AV. & B ST.
P502 PUBLIC STREET IMPROVEMENTS — C ST.
P503 PUBLIC STREET IMPROVEMENTS — E AV. & D ST.
P504 PUBLIC STREET IMPROVEMENTS — G ST. & H ST.
P505 PUBLIC STREET IMPROVEMENTS — I AV.
P506 PUBLIC STREET IMPROVEMENTS — J AV.
P507 PUBLIC STREET IMPROVEMENTS — K ST. & E. ACCESS
P508 PUBLIC STREET IMPROVEMENTS — L ST. 0+00 TO 12+00
P509 PUBLIC STREET IMPROVEMENTS — M ST. 0+00 TO 8+00
P510 PUBLIC STREET IMPROVEMENTS — M ST. 8+00 TO 15+00
P511 PUBLIC STREET IMPROVEMENTS — N ST.
P512 PUBLIC STREET IMPROVEMENTS — O ST.
P513 PUBLIC STREET IMPROVEMENTS — P ST.
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P601 GRADING PLAN — NORTH
P602 GRADING PLAN — CENTRAL
P603 GRADING PLAN — SOUTH

MULTI/TECH
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1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

PRELIMINARY PLAN
COVER SHEET

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER SCALED GRAPHICAL REPRESENTATION.

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ---

REGISTERED PROFESSIONAL ENGINEER
OREGON
JUNE 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

JOB # 6234

P101

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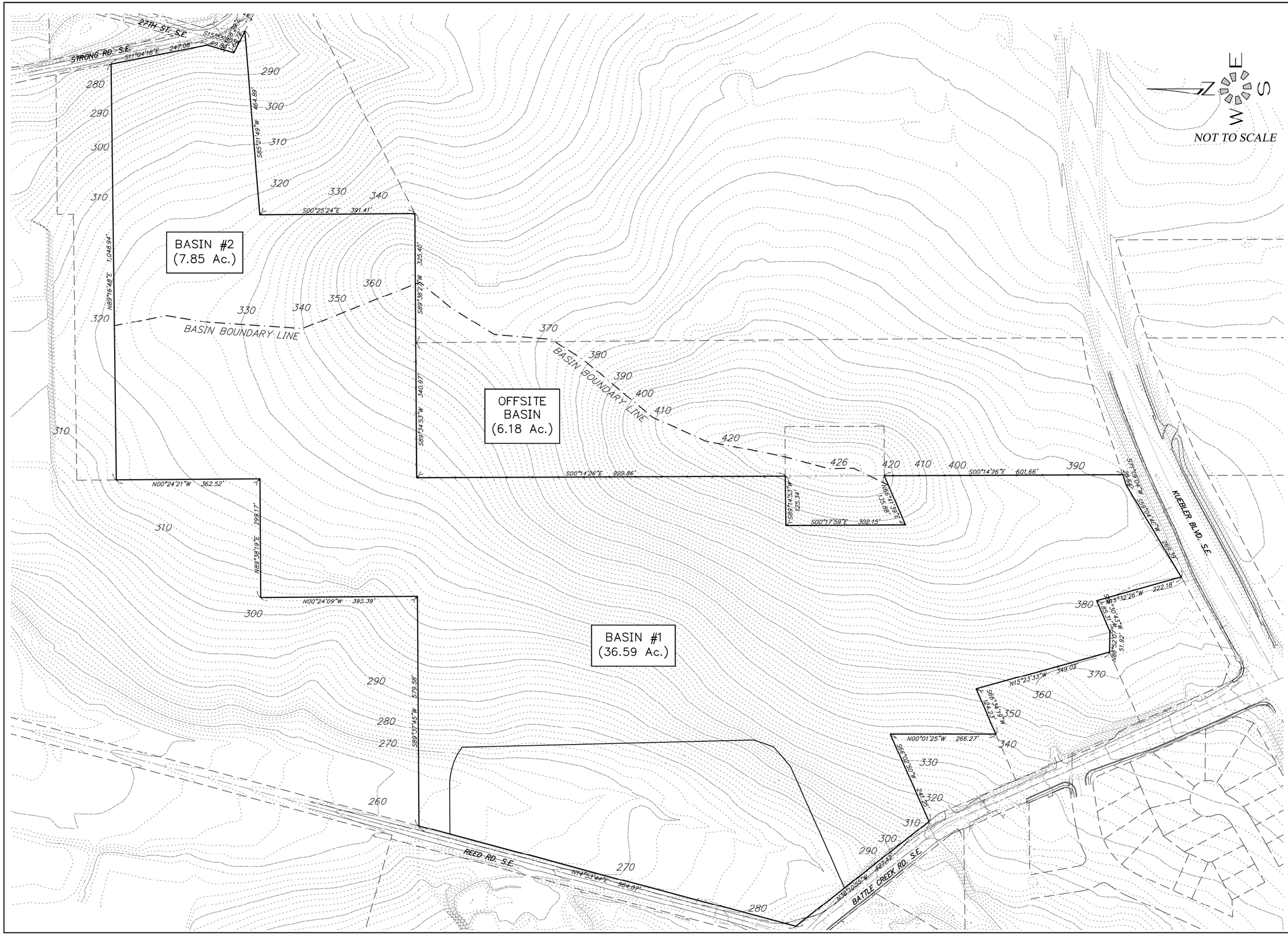

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EXISTING CONDITIONS BASIN MAP

COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234 BASIN

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN

JOB # 6234

1 of 1

J:\6200-6299\6234-HeadRoad\Dwg s\R\6234dwg, BASIN, 12/3/2018 9:36:29 PM, PSplunders

SITE AREA: 45.44 Ac.
✱CITY OF SALEM PRE-DEVELOPED, HSG C, CN=79

27TH ST. S.E.

STRONG RD. S.E.

KUEBLER BLVD. S.E.

BATTLE CREEK RD. S.E.

REED RD. S.E.

PRE DEVELOPED PLAN

6234p.dwg-01ExhPre

MULTI/TECH

ENGINEERING SERVICES, INC.

1155 13th ST. S.E. SALEM, OR. 97302

PH. (503) 363 - 9227 FAX (503) 364-1260

www.mtengineering.net office@mtengineering.net

J:\6200-6299\6234-ReedRoad\Dwg v18\6234p.dwg, 01ExhPre, 6/7/2019 9:58:35 AM, PSaunders

DRAINAGE BASIN AREAS	
B1	13.58 Ac.
B2	17.48 Ac.
B3	14.38 Ac.

SITE AREA: 45.44 Ac.		
✱ 60% IMPERVIOUS,	HSG C,	CN=98
✱ 40% LANDSCAPE,	HSG C,	CN=74
COMPOSITE,	HSC C,	CN=88

27TH ST. S.E.

STRONG RD. S.E.

N W E S

BASIN 3

BASIN 2

BASIN 1

KUEBLER BLVD. S.E.

BATTLE CREEK RD. S.E.

REED RD. S.E.

6234p2020.dwg-Exh02

POST DEVELOPED PLAN

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363 - 9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

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DRAINAGE BASIN AREAS	
B1	13.58 Ac.
B2	17.48 Ac.
B3	14.38 Ac.

DETENTION FACILITY VOLUMES	
No. 1	61,700 C.F.
No. 2	59,400 C.F.
No. 3	52,000 C.F.

27TH ST. S.E.

STRONG RD. S.E.

FACILTY No. 3

N E W S

BASIN 3

BASIN 2

BASIN 1

KUEBLER BLVD. S.E.

BATTLE CREEK RD. S.E.

FACILTY No. 2

FACILTY No. 1

REED RD. S.E.

WATER QUALITY AND DETENTION FACILITY PLAN

6234p2020.dwg-EXH03

MULTI/TECH
ENGINEERING SERVICES, INC.
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Appendix B

United States Department of Agriculture

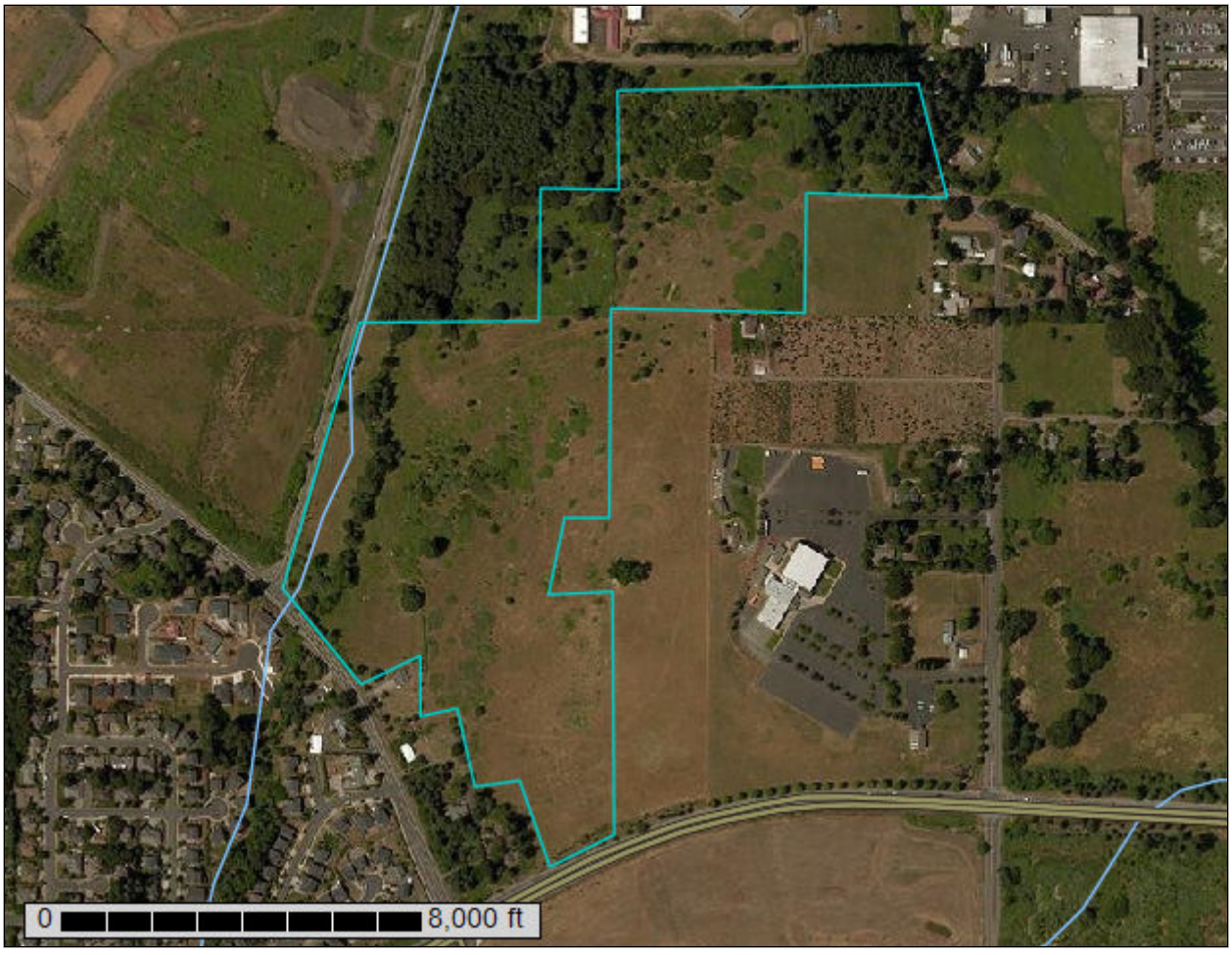
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

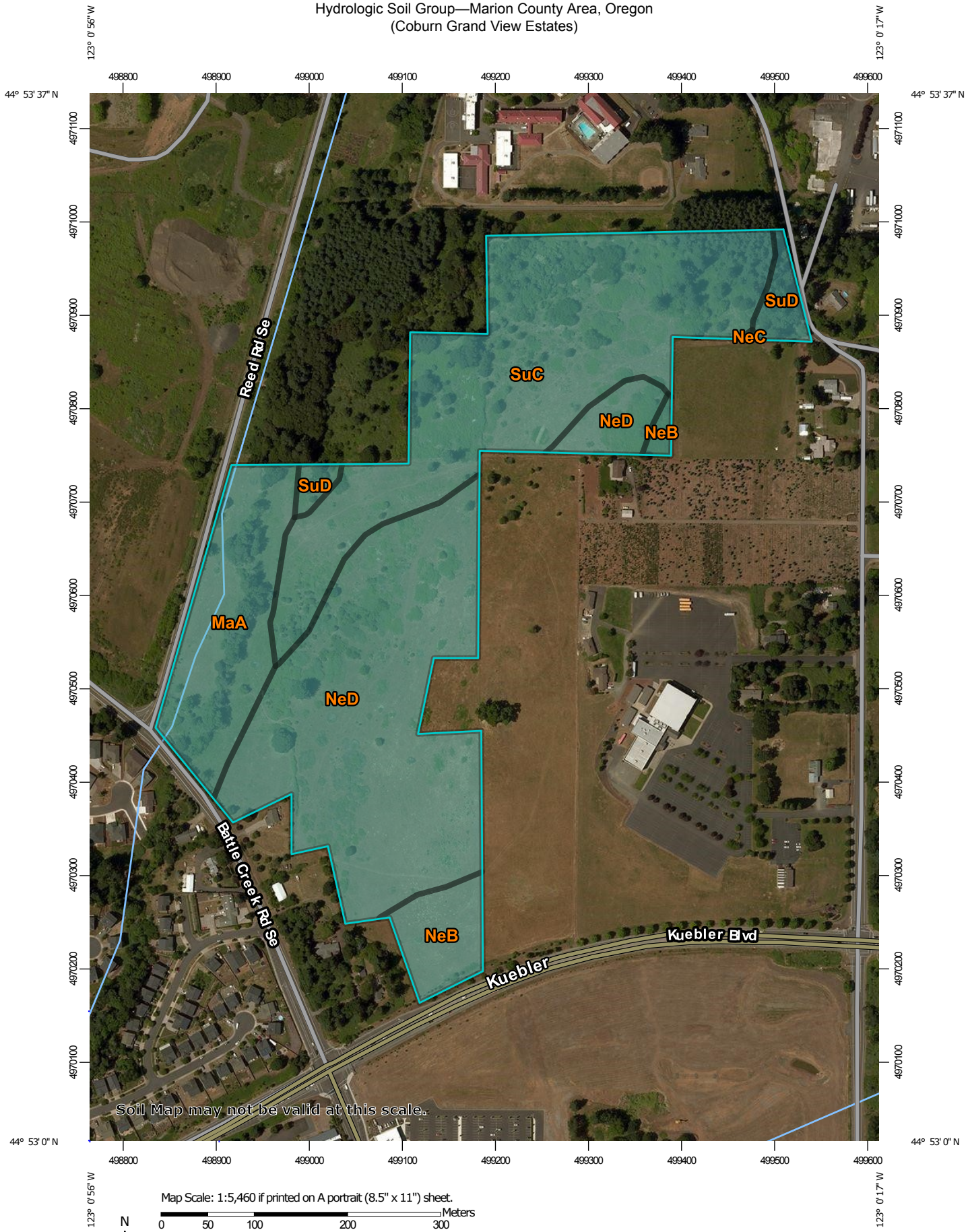
Custom Soil Resource Report for Marion County Area, Oregon

Coburn Grand View Estates



October 1, 2018

Hydrologic Soil Group—Marion County Area, Oregon
(Coburn Grand View Estates)



Map Scale: 1:5,460 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Marion County Area, Oregon
Survey Area Data: Version 15, Sep 18, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 15, 2015—Jun 23, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
MaA	McAlpin silty clay loam, 0 to 3 percent slopes	C	7.2	13.8%
NeB	Nekia silty clay loam, 2 to 7 percent slopes	C	2.7	5.1%
NeC	Nekia silty clay loam, 7 to 12 percent slopes	C	0.0	0.1%
NeD	Nekia silty clay loam, 12 to 20 percent slopes	C	21.3	40.8%
SuC	Silverton silt loam, 2 to 12 percent slopes	C	19.6	37.4%
SuD	Silverton silt loam, 12 to 20 percent slopes	C	1.5	2.8%
Totals for Area of Interest			**52.2**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Surface Drainage/Groundwater

We recommend that positive measures be taken to properly finish grade the site so that drainage waters from the residential structures and landscaping areas as well as adjacent properties or buildings are directed away from the new residential structures foundations and/or floor slabs. All roof drainage should be directed into conduits that carry runoff water away from the residential structures to a suitable outfall. Roof downspouts should not be connected to foundation drains. A minimum ground slope of about 2 percent is generally recommended in unpaved areas around the proposed new residential structures.

Groundwater was not encountered at the site in any of the exploratory test pits (TH-#1 through TH-#11) at the time of excavation to depths of at least 7 feet beneath existing site grades. However, the northwesterly and/or westerly portion(s) of the site contains an existing seasonal drainage basin feature. Additionally, groundwater elevations in the area and/or across the subject property may fluctuate seasonally and may temporarily pond/perch near the ground surface during periods of prolonged rainfall.

As such, based on our current understand of the possible site grading required to bring the subject site and/or residential lots to finish design grade(s), we are of the opinion that an underslab drainage system is not required for the proposed single-family residential structures. However, a perimeter foundation drain is recommended for any perimeter footings and/or below grade retaining walls. A typical recommended perimeter footing/retaining wall drain detail is shown on Figure No. 4. Further, due to our understanding that various surface infiltration ditches and/or swales may be utilized for the project as well as the relatively low infiltration rates of the near surface clayey, sandy silt and/or silty sand subgrade soils anticipated within and/or near to the foundation bearing level of the proposed residential structures, we are generally of the opinion that storm water detention and/or disposal systems should not be utilized within the residential lots and/or around the proposed residential structures unless approved by the Geotechnical Engineer.

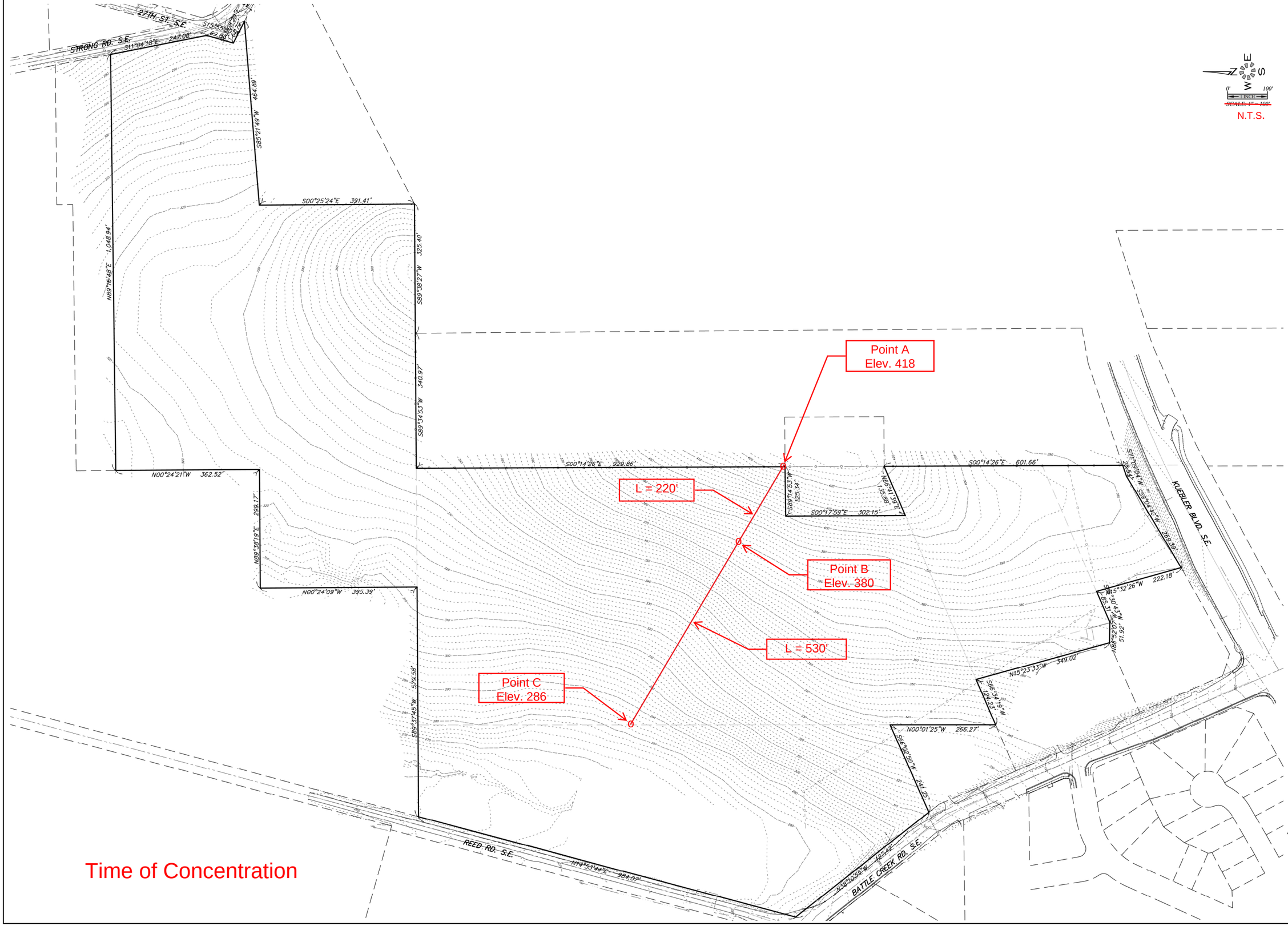
Design Infiltration Rates

Based on the results of our field infiltration testing, we recommend using the following infiltration rate(s) to design any on-site near surface storm water infiltration systems for the project:

Subgrade Soil Type	Recommended Infiltration Rate
sandy, clayey SILT (ML)	0.1 to 0.3 inches per hour (in/hr)

Note: A safety factor of two (2) was used to calculate the above recommended design infiltration rate. Additionally, given the gradational variability of the on-site sandy, clayey sit subgrade soils beneath the site as well as the anticipation of some site grading for the project, it is generally recommended that field testing be performed during and/or following construction of any on-site storm water infiltration system(s) in order to confirm that the above recommended design infiltration rates are appropriate.

Appendix C



Time of Concentration

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EXISTING CONDITIONS PLAN

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2016
Scale: AS SHOWN

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2019

JOB # 6234

P102

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Worksheet 3: Time of Concentration (T_c) or travel time (T_t)

Project	By	Date
Coburn Grand View Estates	M. Hendrick	10/2018
Location	**Checked**	**Date**
Salem, Oregon		

Check one: ☑ Present ☐ Developed

Check one: ☑ T_c ☑ T_t through subarea

Notes: Space for as many as two segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to Tc only)

	Segment ID	A-B	
1.	Surface description (Table 4D-4)	Meadow/Pasture/Farm	
2.	Manning's roughness coefficient, n (Table 4D-4)	0.15	
3.	Flow length, L (total L † 300 ft) ft	220	
4.	Two-year 24-hour rainfall, P_2 in	2.2	
5.	Land slope, s ft/ft	0.173	
6.	$T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ s^{0.4}}$ Compute T_t hr	0.156 +	= 0.156

Shallow concentrated flow

	Segment ID	B-C	
7.	Surface description (paved or unpaved)	Forest & Meadow	
8.	Flow length, L ft	530	
9.	Watercourse slope, s ft/ft	0.177	
10.	Average velocity, V (figure 3-1) ft/s	1.1	
11.	$T_t = \frac{L}{3600\ V}$ Compute T_t hr	0.134 +	= 0.134

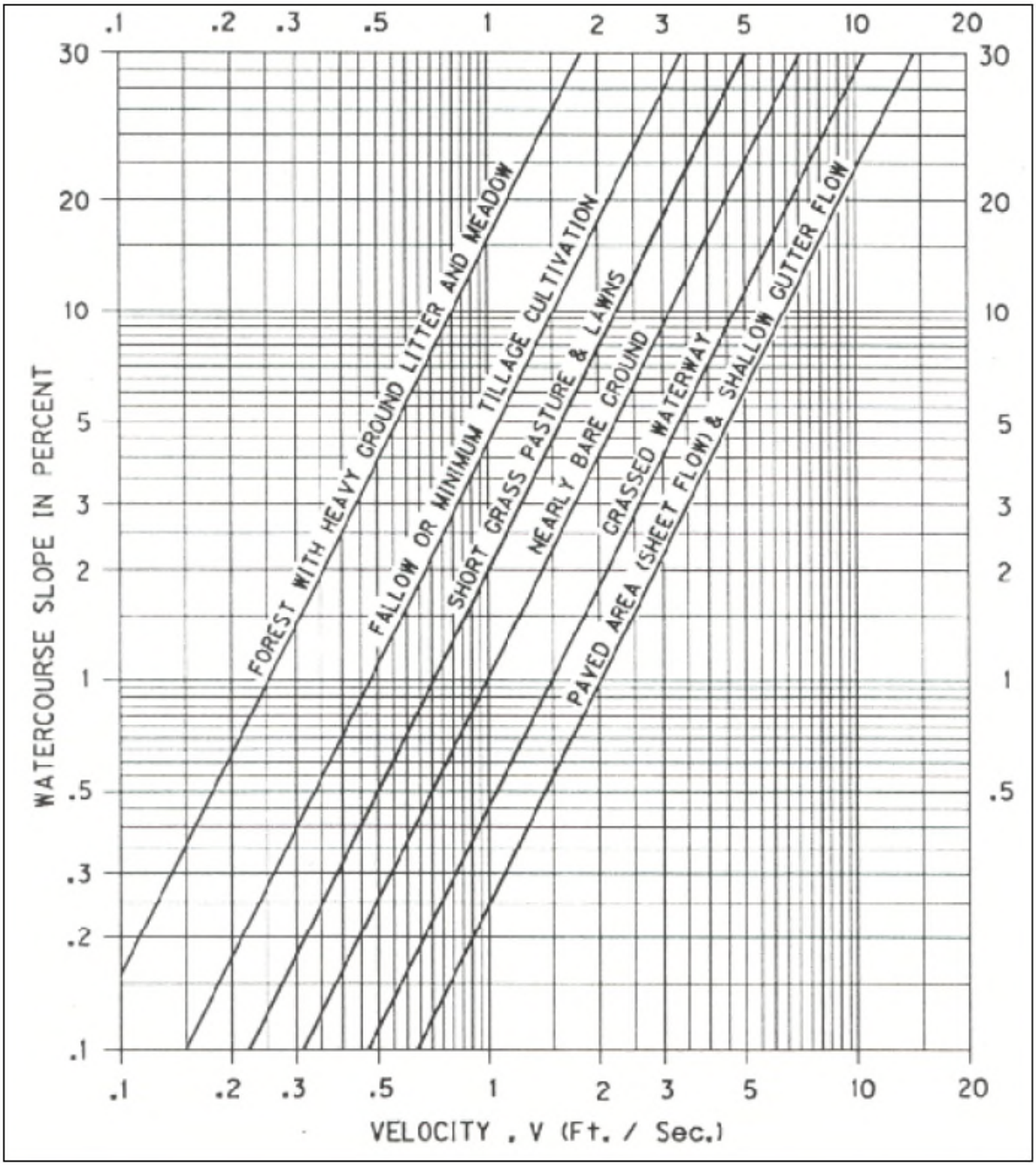
Channel flow

	Segment ID		
12.	Cross sectional flow area, a ft^2		
13.	Wetted perimeter, p_w ft		
14.	Hydraulic radius, $r = \frac{a}{p_w}$ Compute r ft		
15	Channel slope, s ft/ft		
16.	Manning's roughness coefficient, n		
17.	$V = \frac{1.49\ r^{2/3}\ s^{1/2}}{n}$ Compute V ft/s		
18.	~~Flow~~ length, L ft		
19.	$T_t = \frac{L}{3600\ V}$ Compute T_t hr	+	=
20.	Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) Hr		0.29

0.29 Hrs = 17.4 Minutes

Manning's Roughness Coefficients for Overland Sheet Flow	
Surface Types:	**n**
Impervious Areas	0.014
Gravel Pavement	0.02
Developed: Landscape Areas (Except Lawns)	0.08
Undeveloped: Meadow, Pasture, or Farm	0.15
Developed: Lawns	0.24
Pre-developed: Mixed	0.30
Pre-developed: Woodland and Forest	0.40
Development Types:	**n**
Commercial Development	0.015
Industrial Development, Heavy	0.04
Industrial Development, Light	0.05
Dense Residential (over 6 units/acre)	0.08
Normal Residential (3 to 6 units/acre)	0.20
Light Residential (1 to 3 units/acre)	0.30
Parks	0.40

Table 4D-4. Manning's Roughness Coefficients for Overland Sheet Flow


.1
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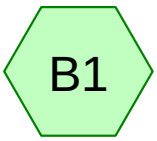
.3
.2
.1
WATERCOURSE SLOPE IN PERCENT
FOREST WITH HEAVY GROUND LITTER AND MEADOW
FALLOW OR MINIMUM TILLAGE CULTIVATION
SHORT GRASS PASTURE & LAWNS
NEARLY BARE GROUND
GRASSED WATERWAY
PAVED AREA (SHEET FLOW) & SHALLOW GUTTER FLOW
VELOCITY , V (Ft. / Sec.)

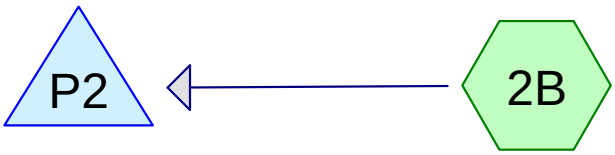
Appendix D

Control MH #1

Developed Conditions

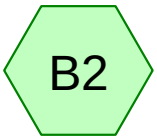


Existing Conditions (Basin #1)

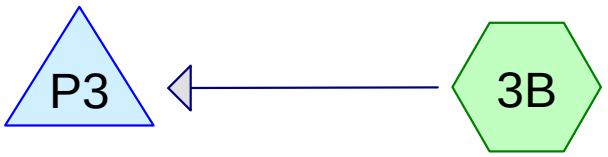


Control MH #2

Developed Conditions

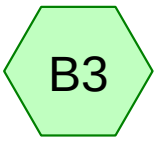


Existing Conditions (Basin #2)

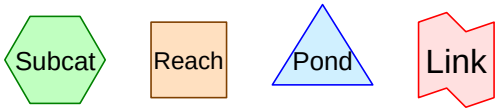


Control MH #3

Developed Conditions



Existing Conditions (Basin #3)



Summary for Subcatchment B1: Existing Conditions (Basin #1)

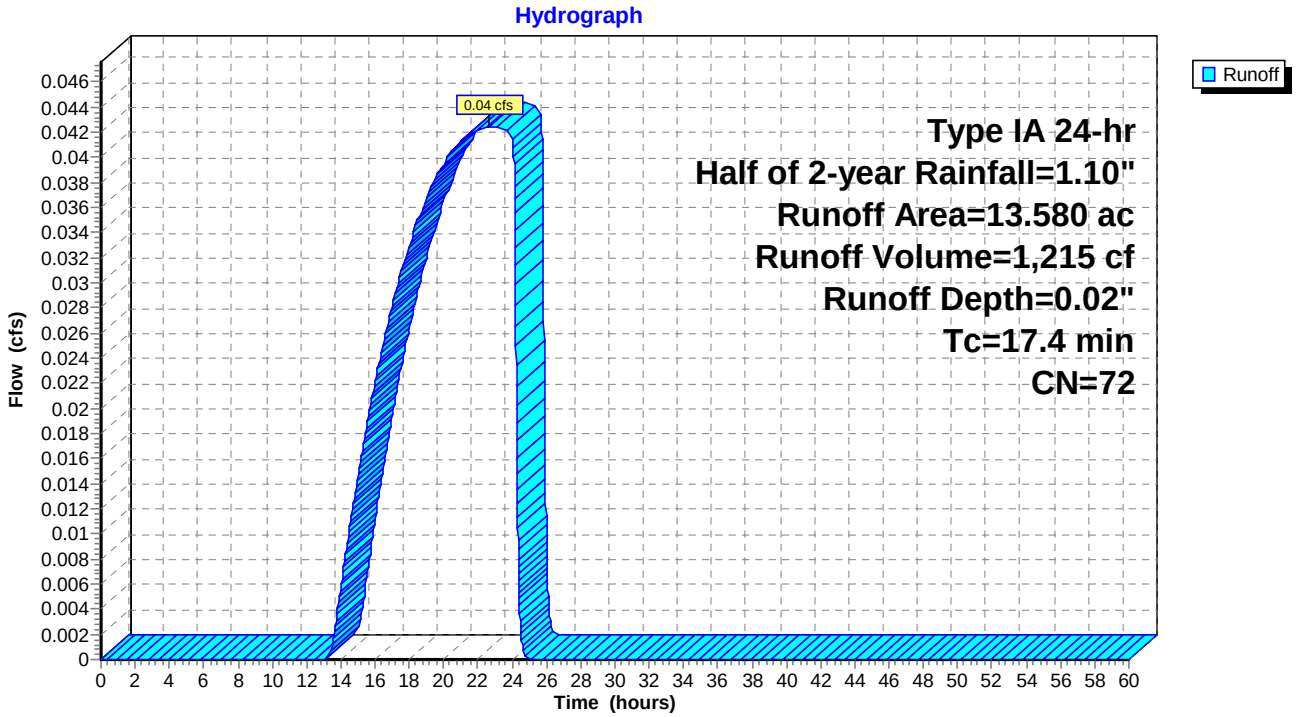
Runoff = 0.04 cfs @ 22.68 hrs, Volume= 1,215 cf, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr Half of 2-year Rainfall=1.10"

	Area (ac)	CN	Description
*	13.580	72	City of Salem Pre-developed, HSG C
	13.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B1: Existing Conditions (Basin #1)



Summary for Subcatchment 1B: Developed Conditions

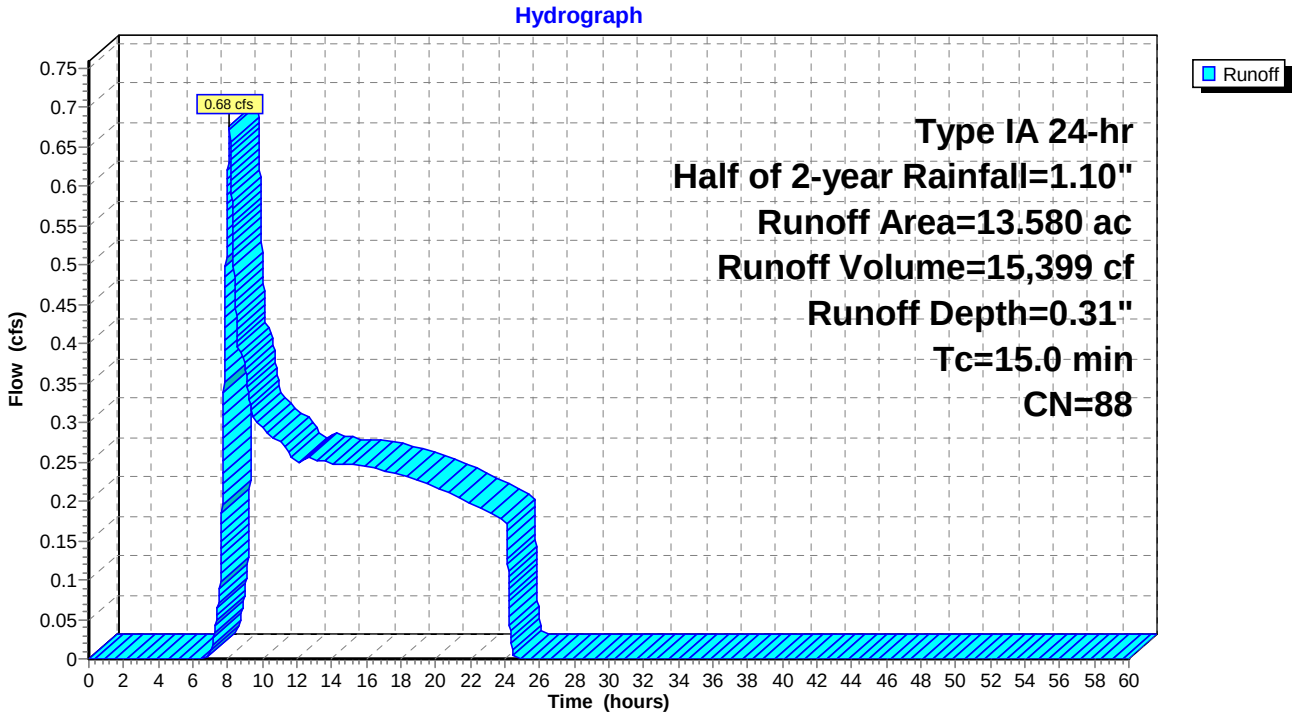
Runoff = 0.68 cfs @ 8.11 hrs, Volume= 15,399 cf, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr Half of 2-year Rainfall=1.10"

	Area (ac)	CN	Description
	5.430	74	>75% Grass cover, Good, HSG C
*	8.150	98	Impervious surface, HSG C
	13.580	88	Weighted Average
	5.430		39.99% Pervious Area
	8.150		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Direct Entry**

Subcatchment 1B: Developed Conditions



Summary for Pond P1: Control MH #1

Inflow Area = 591,545 sf, 60.01% Impervious, Inflow Depth = 0.31" for Half of 2-year event
Inflow = 0.68 cfs @ 8.11 hrs, Volume= 15,399 cf
Outflow = 0.04 cfs @ 24.29 hrs, Volume= 7,139 cf, Atten= 94%, Lag= 970.7 min
Primary = 0.04 cfs @ 24.29 hrs, Volume= 7,139 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 293.83' @ 24.29 hrs Surf.Area= 9,350 sf Storage= 13,371 cf
Flood Elev= 299.00' Surf.Area= 9,350 sf Storage= 61,719 cf

Plug-Flow detention time= 1,478.2 min calculated for 7,139 cf (46% of inflow)
Center-of-Mass det. time= 1,206.6 min (2,096.1 - 889.6)

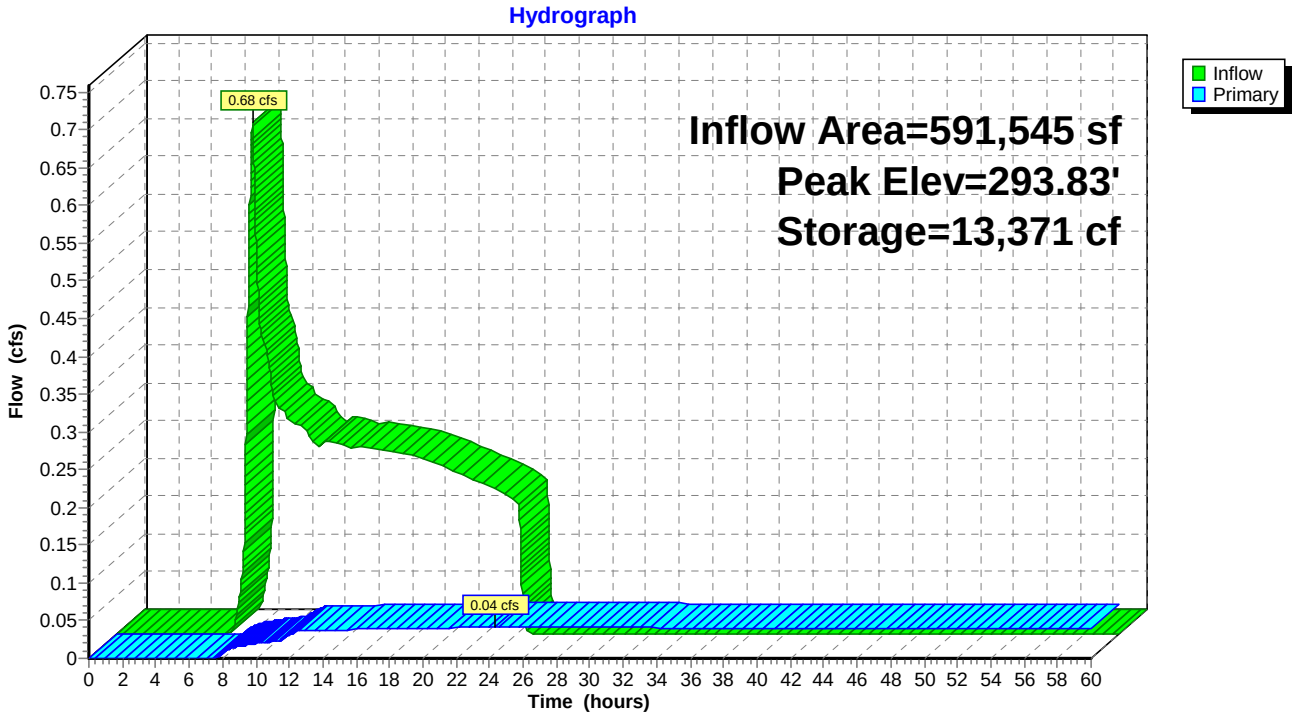
Volume	Invert	Avail.Storage	Storage Description
#1	289.99'	71,069 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
289.99	9,350	0.0	0	0
290.00	9,350	40.0	37	37
291.25	9,350	40.0	4,675	4,712
291.26	9,350	5.0	5	4,717
292.99	9,350	5.0	809	5,526
293.00	9,350	100.0	93	5,619
294.00	9,350	100.0	9,350	14,969
295.00	9,350	100.0	9,350	24,319
296.00	9,350	100.0	9,350	33,669
297.00	9,350	100.0	9,350	43,019
298.00	9,350	100.0	9,350	52,369
299.00	9,350	100.0	9,350	61,719
300.00	9,350	100.0	9,350	71,069

Device	Routing	Invert	Outlet Devices
#1	Primary	290.00'	**15.0" Round 15" Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 290.00' / 289.70' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	290.00'	**0.9" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	294.00'	**8.5" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	295.50'	**8.5" Vert. Orifice #3** C= 0.600 Limited to weir flow at low heads
#5	Device 1	299.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 24.29 hrs HW=293.83' (Free Discharge)
└**1=15" Culvert** (Passes 0.04 cfs of 9.02 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.04 cfs @ 9.38 fps)
  ├**3=Orifice #2** (Controls 0.00 cfs)
  ├**4=Orifice #3** (Controls 0.00 cfs)
  └**5=Overflow** (Controls 0.00 cfs)

Pond P1: Control MH #1



Summary for Subcatchment B2: Existing Conditions (Basin #2)

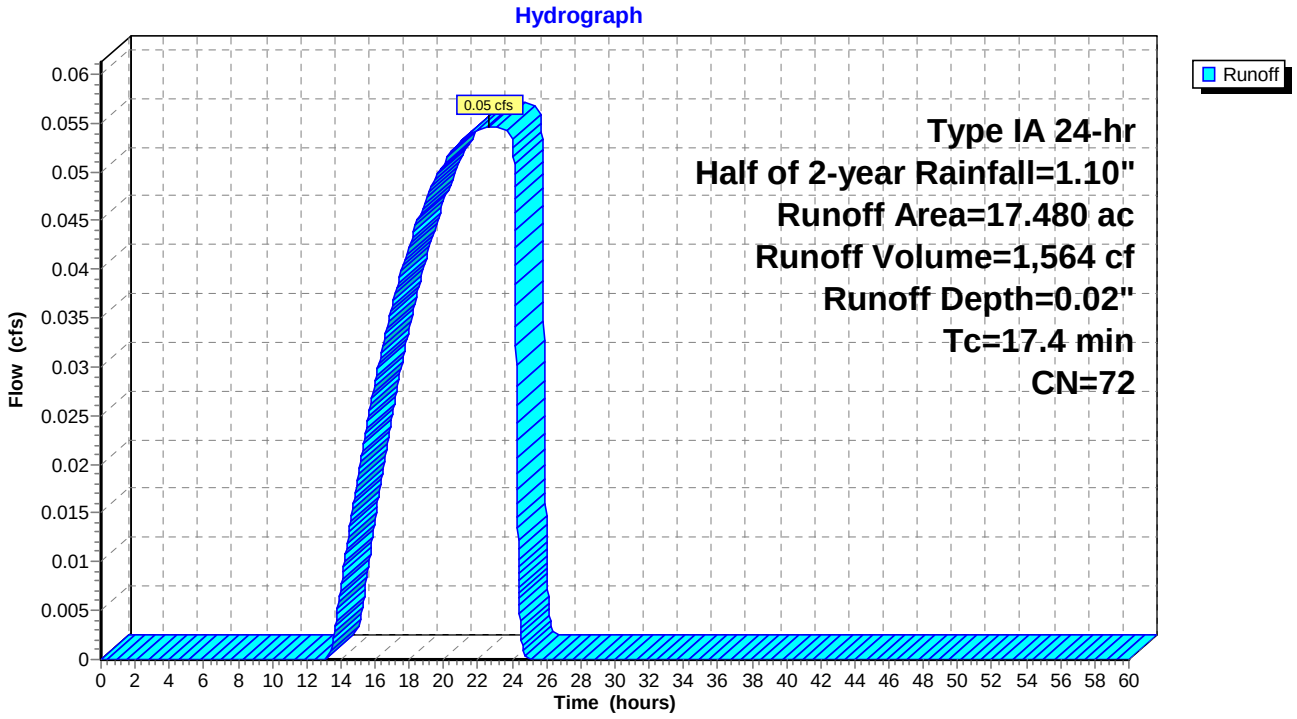
Runoff = 0.05 cfs @ 22.68 hrs, Volume= 1,564 cf, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr Half of 2-year Rainfall=1.10"

	Area (ac)	CN	Description
*	17.480	72	City of Salem Pre-developed, HSG C
	17.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B2: Existing Conditions (Basin #2)



Summary for Subcatchment 2B: Developed Conditions

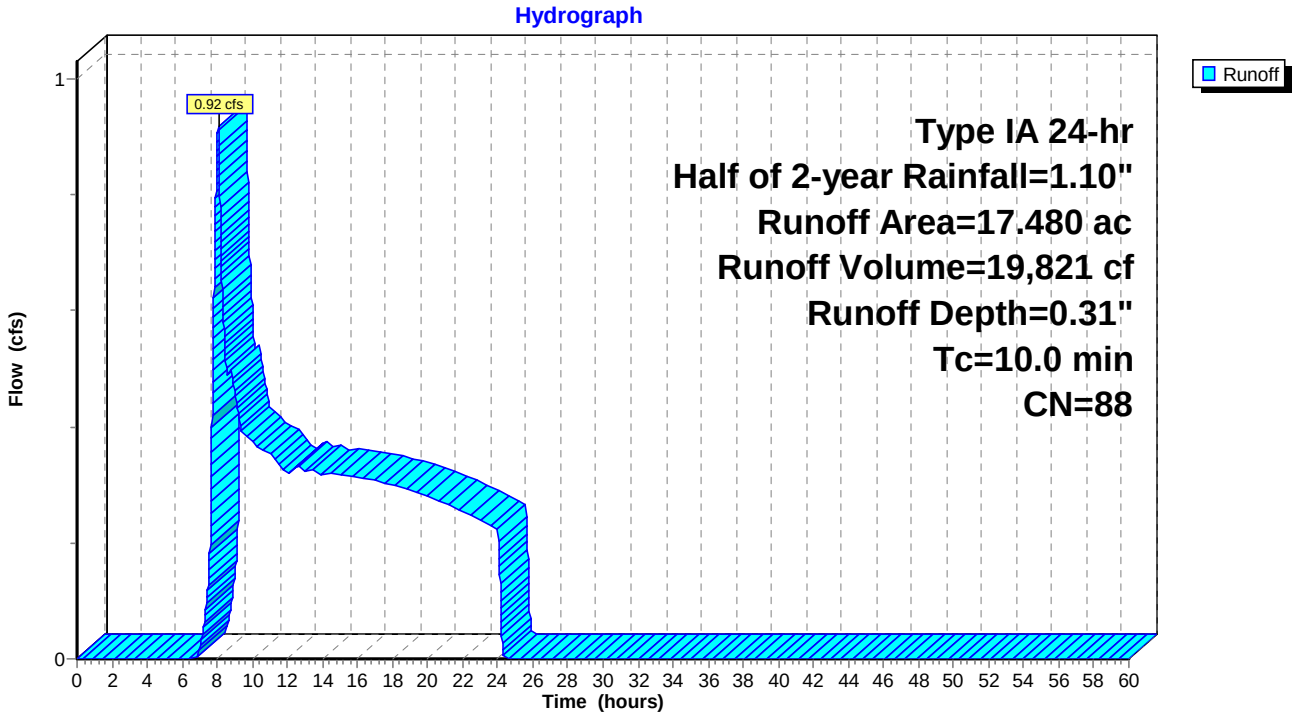
Runoff = 0.92 cfs @ 8.06 hrs, Volume= 19,821 cf, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr Half of 2-year Rainfall=1.10"

	Area (ac)	CN	Description
	6.990	74	>75% Grass cover, Good, HSG C
*	10.490	98	Impervious surface, HSG C
	17.480	88	Weighted Average
	6.990		39.99% Pervious Area
	10.490		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 2B: Developed Conditions



Summary for Pond P2: Control MH #2

Inflow Area = 761,429 sf, 60.01% Impervious, Inflow Depth = 0.31" for Half of 2-year event
Inflow = 0.92 cfs @ 8.06 hrs, Volume= 19,821 cf
Outflow = 0.05 cfs @ 24.19 hrs, Volume= 9,377 cf, Atten= 94%, Lag= 968.1 min
Primary = 0.05 cfs @ 24.19 hrs, Volume= 9,377 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 272.30' @ 24.19 hrs Surf.Area= 9,000 sf Storage= 17,103 cf
Flood Elev= 277.00' Surf.Area= 9,000 sf Storage= 59,377 cf

Plug-Flow detention time= 1,459.0 min calculated for 9,377 cf (47% of inflow)
Center-of-Mass det. time= 1,191.7 min (2,076.6 - 884.9)

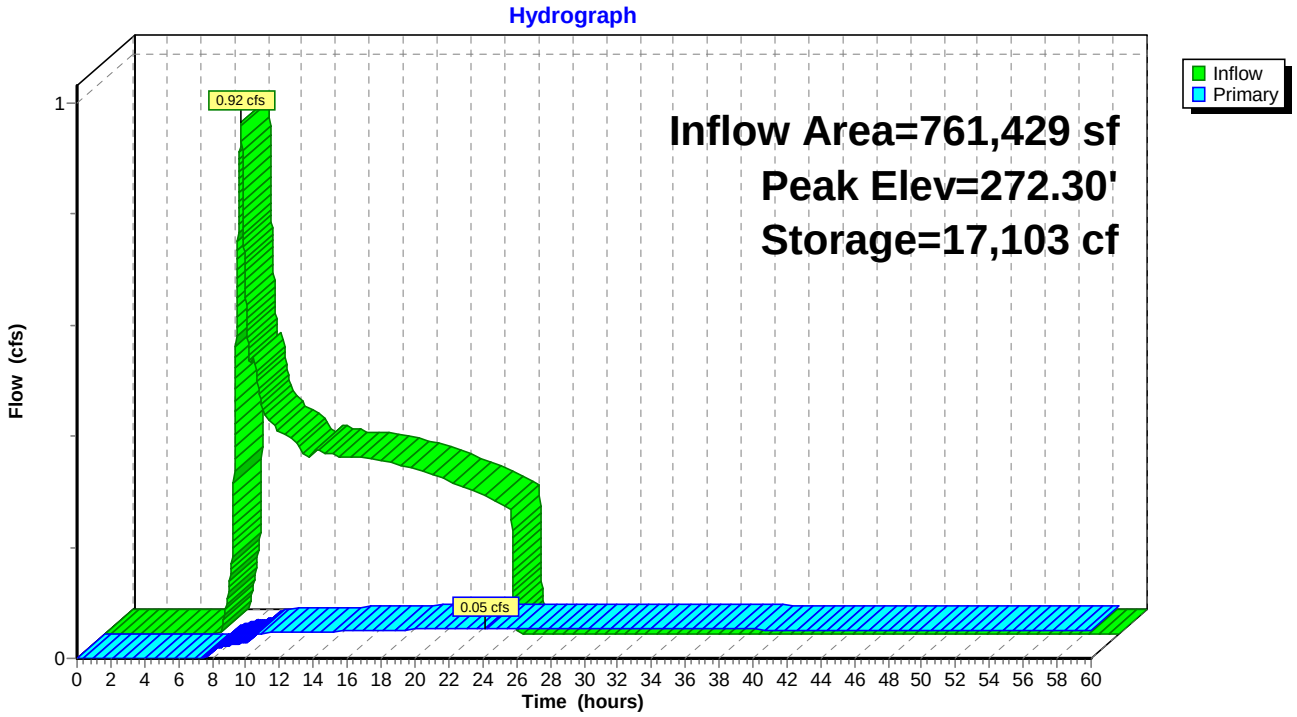
Volume	Invert	Avail.Storage	Storage Description
#1	267.99'	68,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
267.99	9,000	0.0	0	0
268.00	9,000	40.0	36	36
269.24	9,000	40.0	4,464	4,500
269.25	9,000	5.0	4	4,504
270.99	9,000	5.0	783	5,288
271.00	9,000	100.0	90	5,377
272.00	9,000	100.0	9,000	14,377
273.00	9,000	100.0	9,000	23,377
274.00	9,000	100.0	9,000	32,377
275.00	9,000	100.0	9,000	41,377
276.00	9,000	100.0	9,000	50,377
277.00	9,000	100.0	9,000	59,377
278.00	9,000	100.0	9,000	68,377

Device	Routing	Invert	Outlet Devices
#1	Primary	268.00'	**15.0" Round 15" Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 268.00' / 267.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	268.00'	**1.0" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	272.50'	**9.0" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	277.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.05 cfs @ 24.19 hrs HW=272.30' (Free Discharge)
└**1=15" Culvert** (Passes 0.05 cfs of 10.02 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.05 cfs @ 9.94 fps)
  ├**3=Orifice #2** (Controls 0.00 cfs)
  └**4=Overflow** (Controls 0.00 cfs)

Pond P2: Control MH #2



Summary for Subcatchment B3: Existing Conditions (Basin #3)

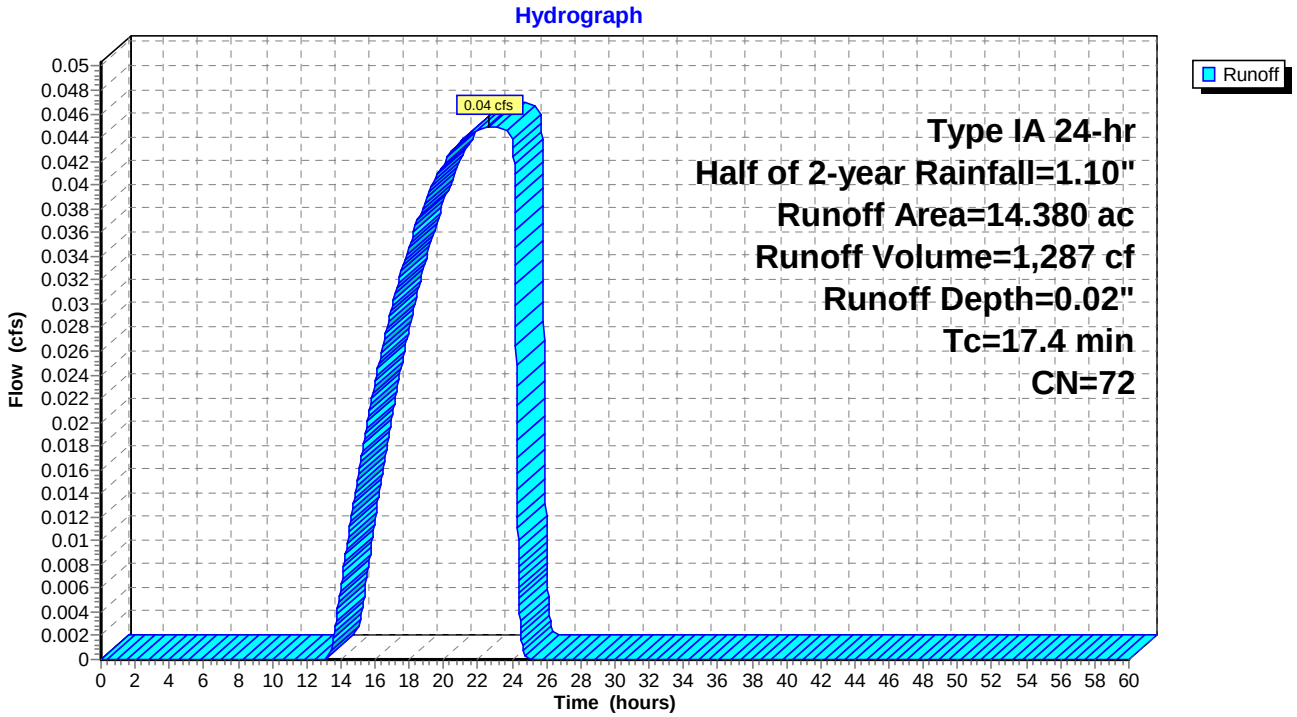
Runoff = 0.04 cfs @ 22.68 hrs, Volume= 1,287 cf, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr Half of 2-year Rainfall=1.10"

	Area (ac)	CN	Description
*	14.380	72	City of Salem Pre-developed, HSG C
	14.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B3: Existing Conditions (Basin #3)



Summary for Subcatchment 3B: Developed Conditions

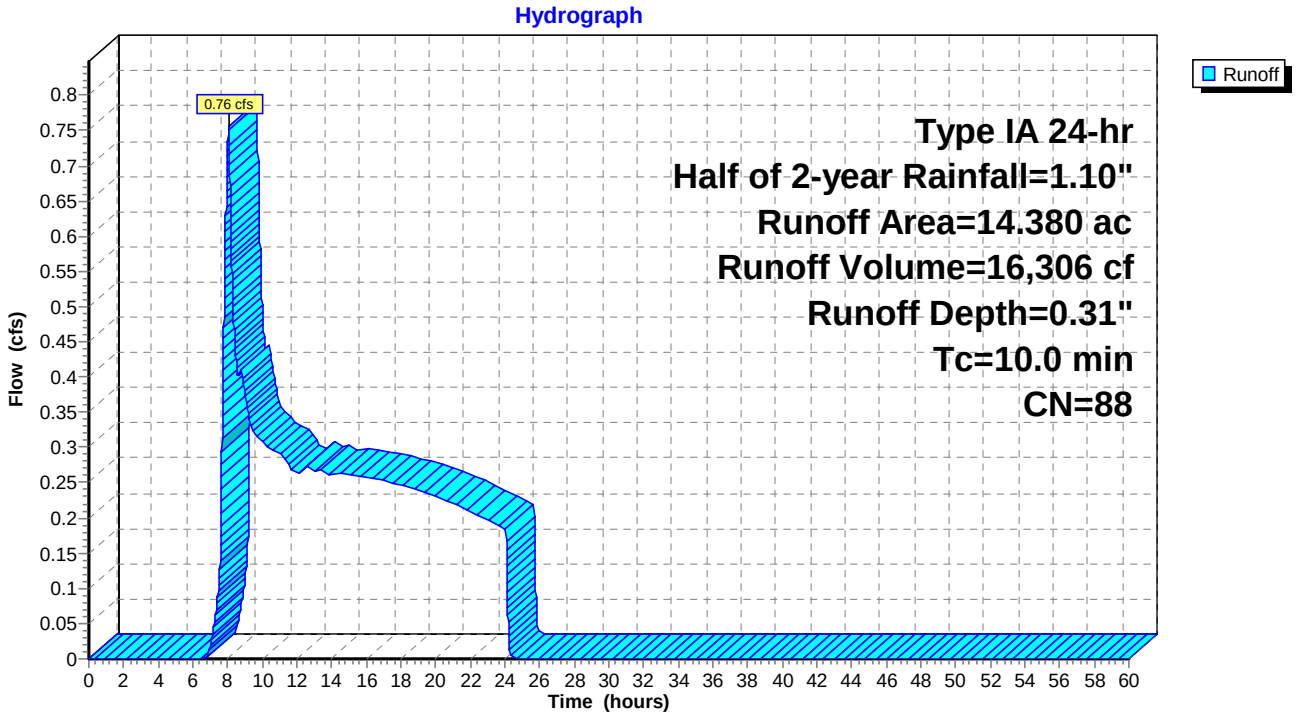
Runoff = 0.76 cfs @ 8.06 hrs, Volume= 16,306 cf, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr Half of 2-year Rainfall=1.10"

	Area (ac)	CN	Description
	5.750	74	>75% Grass cover, Good, HSG C
*	8.630	98	Impervious surface, HSG C
	14.380	88	Weighted Average
	5.750		39.99% Pervious Area
	8.630		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 3B: Developed Conditions



Summary for Pond P3: Control MH #3

Inflow Area = 626,393 sf, 60.01% Impervious, Inflow Depth = 0.31" for Half of 2-year event
Inflow = 0.76 cfs @ 8.06 hrs, Volume= 16,306 cf
Outflow = 0.04 cfs @ 24.19 hrs, Volume= 7,512 cf, Atten= 94%, Lag= 968.2 min
Primary = 0.04 cfs @ 24.19 hrs, Volume= 7,512 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 272.20' @ 24.19 hrs Surf.Area= 7,875 sf Storage= 14,139 cf
Flood Elev= 278.00' Surf.Area= 7,875 sf Storage= 59,830 cf

Plug-Flow detention time= 1,468.3 min calculated for 7,512 cf (46% of inflow)
Center-of-Mass det. time= 1,195.3 min (2,080.2 - 884.9)

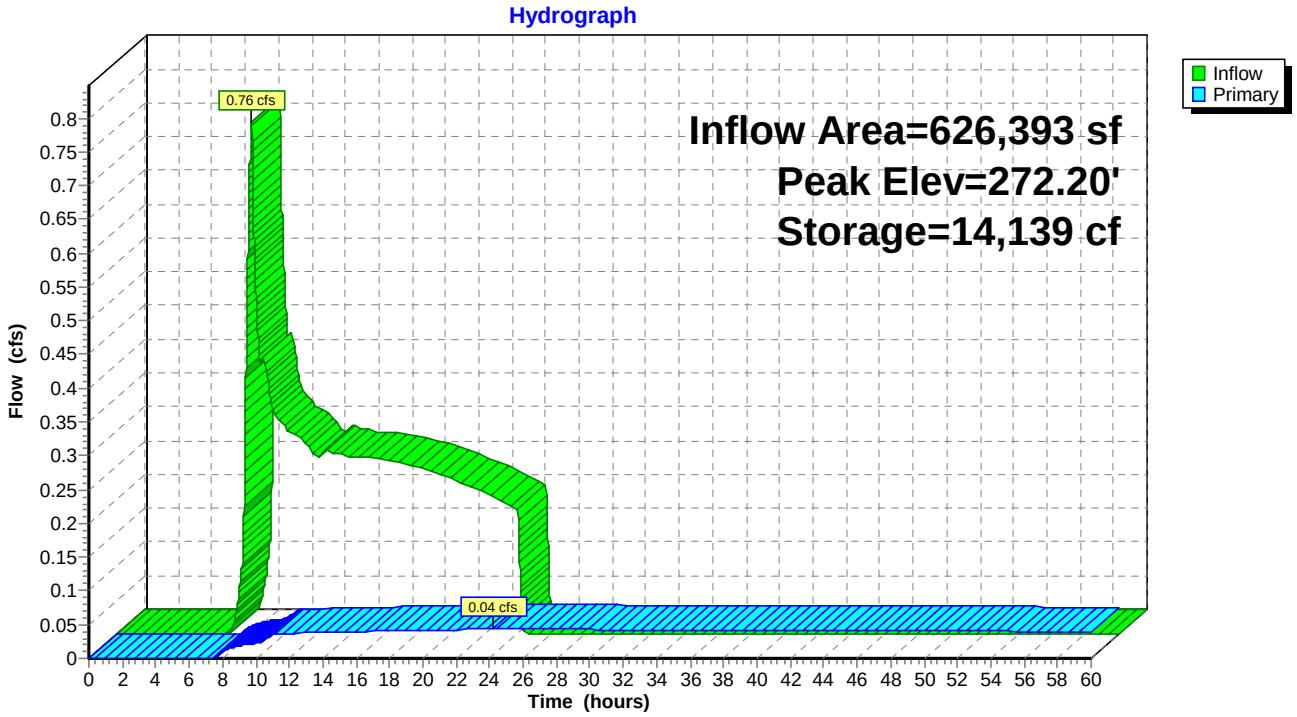
Volume	Invert	Avail.Storage	Storage Description
#1	267.99'	59,830 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
267.99	7,875	0.0	0	0
268.00	7,875	40.0	31	31
269.24	7,875	40.0	3,906	3,938
269.25	7,875	5.0	4	3,941
270.99	7,875	5.0	685	4,627
271.00	7,875	100.0	79	4,705
272.00	7,875	100.0	7,875	12,580
273.00	7,875	100.0	7,875	20,455
274.00	7,875	100.0	7,875	28,330
275.00	7,875	100.0	7,875	36,205
276.00	7,875	100.0	7,875	44,080
277.00	7,875	100.0	7,875	51,955
278.00	7,875	100.0	7,875	59,830

Device	Routing	Invert	Outlet Devices
#1	Primary	268.00'	**15.0" Round 15" Culvert** L= 50.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 268.00' / 267.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	268.00'	**0.9" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	272.25'	**8.0" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	277.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 24.19 hrs HW=272.20' (Free Discharge)
└**1=15" Culvert** (Passes 0.04 cfs of 12.15 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.04 cfs @ 9.82 fps)
  ├**3=Orifice #2** (Controls 0.00 cfs)
  └**4=Overflow** (Controls 0.00 cfs)

Pond P3: Control MH #3



Summary for Subcatchment B1: Existing Conditions (Basin #1)

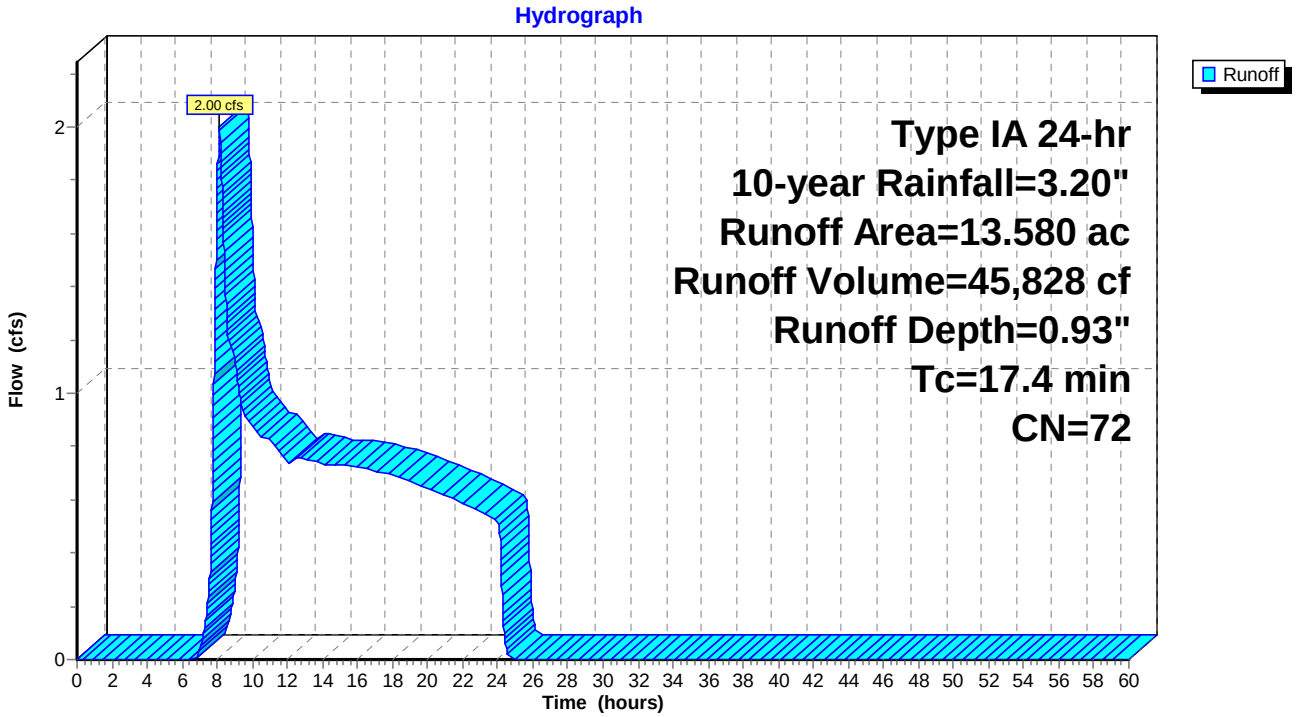
Runoff = 2.00 cfs @ 8.14 hrs, Volume= 45,828 cf, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-year Rainfall=3.20"

	Area (ac)	CN	Description
*	13.580	72	City of Salem Pre-developed, HSG C
	13.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B1: Existing Conditions (Basin #1)



Summary for Subcatchment 1B: Developed Conditions

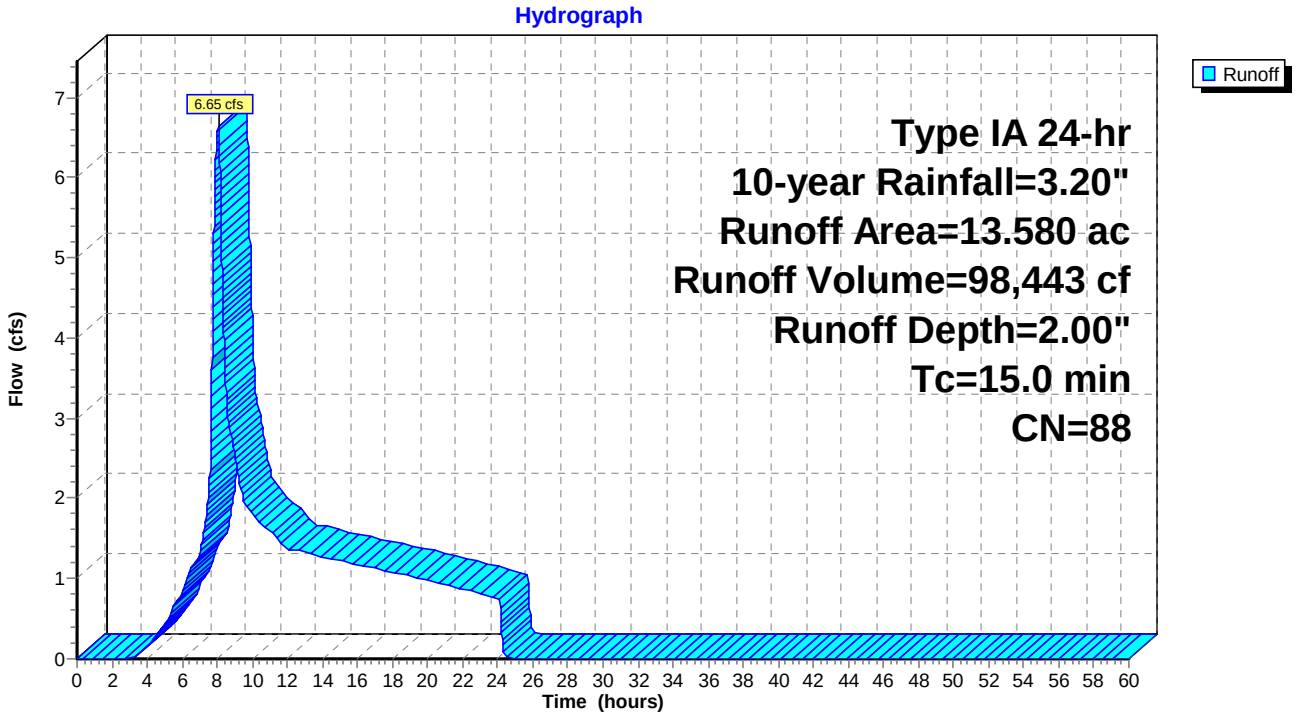
Runoff = 6.65 cfs @ 8.05 hrs, Volume= 98,443 cf, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-year Rainfall=3.20"

	Area (ac)	CN	Description
	5.430	74	>75% Grass cover, Good, HSG C
*	8.150	98	Impervious surface, HSG C
	13.580	88	Weighted Average
	5.430		39.99% Pervious Area
	8.150		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Direct Entry**

Subcatchment 1B: Developed Conditions



Summary for Pond P1: Control MH #1

Inflow Area = 591,545 sf, 60.01% Impervious, Inflow Depth = 2.00" for 10-year event
Inflow = 6.65 cfs @ 8.05 hrs, Volume= 98,443 cf
Outflow = 1.93 cfs @ 9.59 hrs, Volume= 87,491 cf, Atten= 71%, Lag= 92.2 min
Primary = 1.93 cfs @ 9.59 hrs, Volume= 87,491 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 295.34' @ 9.59 hrs Surf.Area= 9,350 sf Storage= 27,468 cf
Flood Elev= 299.00' Surf.Area= 9,350 sf Storage= 61,719 cf

Plug-Flow detention time= 322.7 min calculated for 87,491 cf (89% of inflow)
Center-of-Mass det. time= 251.4 min (1,022.9 - 771.6)

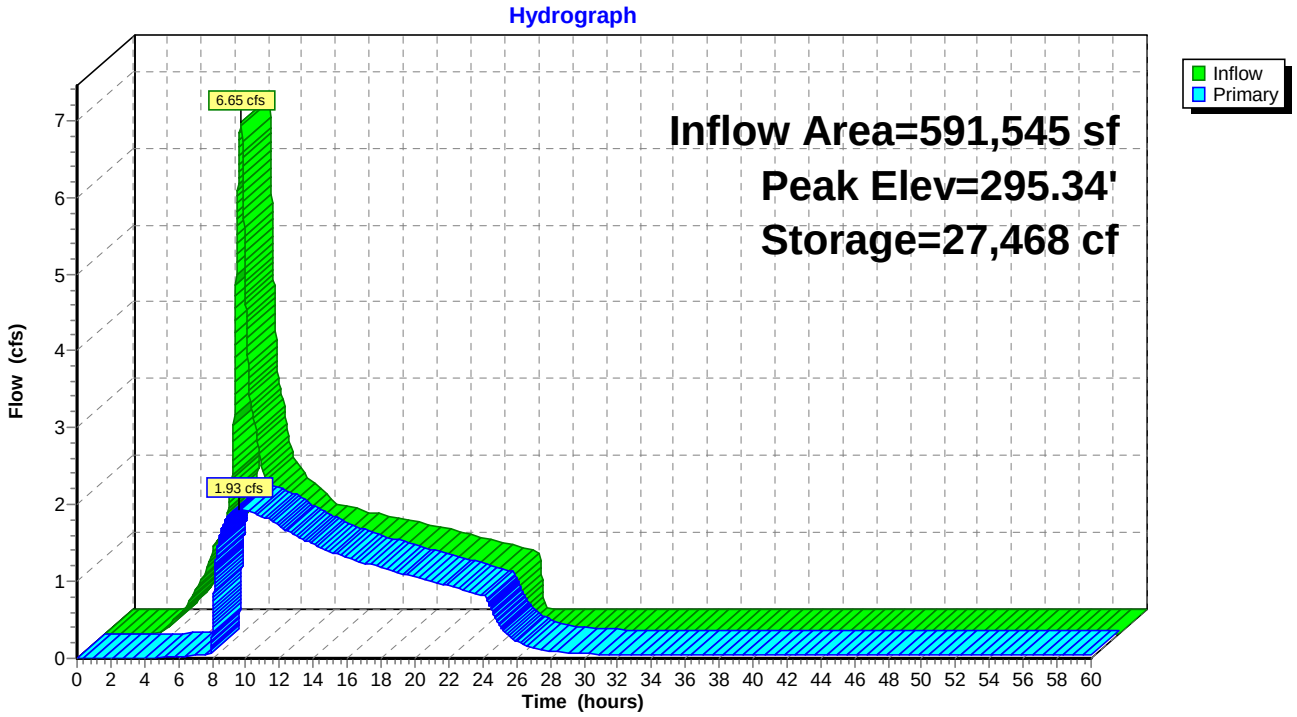
Volume	Invert	Avail.Storage	Storage Description
#1	289.99'	71,069 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
289.99	9,350	0.0	0	0
290.00	9,350	40.0	37	37
291.25	9,350	40.0	4,675	4,712
291.26	9,350	5.0	5	4,717
292.99	9,350	5.0	809	5,526
293.00	9,350	100.0	93	5,619
294.00	9,350	100.0	9,350	14,969
295.00	9,350	100.0	9,350	24,319
296.00	9,350	100.0	9,350	33,669
297.00	9,350	100.0	9,350	43,019
298.00	9,350	100.0	9,350	52,369
299.00	9,350	100.0	9,350	61,719
300.00	9,350	100.0	9,350	71,069

Device	Routing	Invert	Outlet Devices
#1	Primary	290.00'	**15.0" Round 15" Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 290.00' / 289.70' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	290.00'	**0.9" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	294.00'	**8.5" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	295.50'	**8.5" Vert. Orifice #3** C= 0.600 Limited to weir flow at low heads
#5	Device 1	299.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.93 cfs @ 9.59 hrs HW=295.34' (Free Discharge)
└**1=15" Culvert** (Passes 1.93 cfs of 11.13 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.05 cfs @ 11.08 fps)
  ├**3=Orifice #2** (Orifice Controls 1.88 cfs @ 4.77 fps)
  ├**4=Orifice #3** (Controls 0.00 cfs)
  └**5=Overflow** (Controls 0.00 cfs)

Pond P1: Control MH #1



Summary for Subcatchment B2: Existing Conditions (Basin #2)

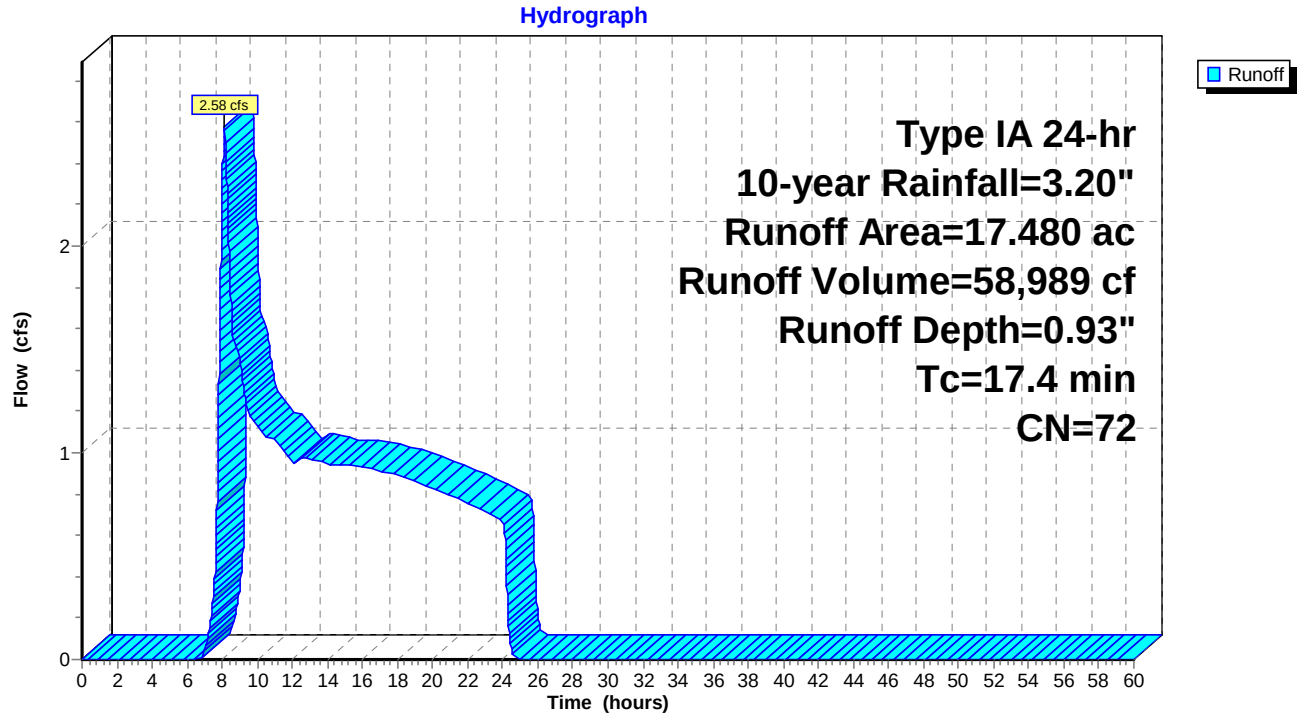
Runoff = 2.58 cfs @ 8.14 hrs, Volume= 58,989 cf, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-year Rainfall=3.20"

	Area (ac)	CN	Description
*	17.480	72	City of Salem Pre-developed, HSG C
	17.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B2: Existing Conditions (Basin #2)



Summary for Subcatchment 2B: Developed Conditions

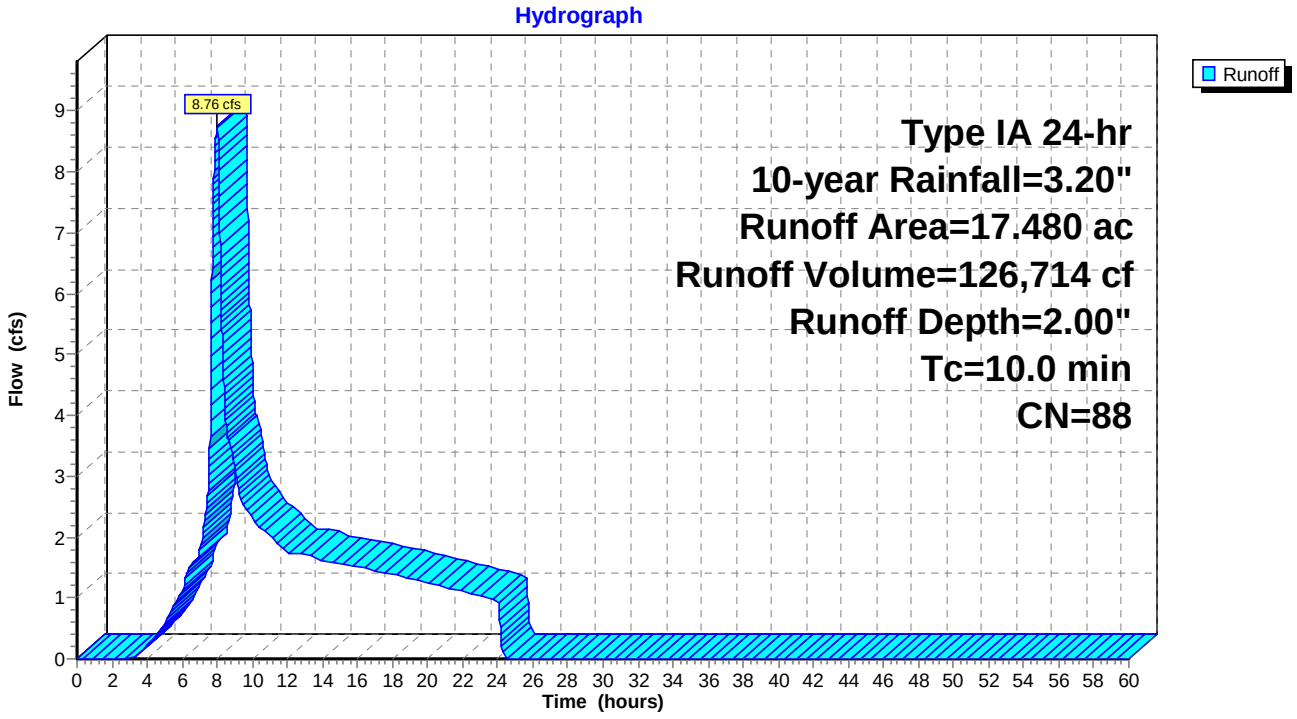
Runoff = 8.76 cfs @ 8.01 hrs, Volume= 126,714 cf, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-year Rainfall=3.20"

	Area (ac)	CN	Description
	6.990	74	>75% Grass cover, Good, HSG C
*	10.490	98	Impervious surface, HSG C
	17.480	88	Weighted Average
	6.990		39.99% Pervious Area
	10.490		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 2B: Developed Conditions



Summary for Pond P2: Control MH #2

Inflow Area = 761,429 sf, 60.01% Impervious, Inflow Depth = 2.00" for 10-year event
Inflow = 8.76 cfs @ 8.01 hrs, Volume= 126,714 cf
Outflow = 2.56 cfs @ 9.41 hrs, Volume= 113,333 cf, Atten= 71%, Lag= 84.3 min
Primary = 2.56 cfs @ 9.41 hrs, Volume= 113,333 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 274.25' @ 9.41 hrs Surf.Area= 9,000 sf Storage= 34,601 cf
Flood Elev= 277.00' Surf.Area= 9,000 sf Storage= 59,377 cf

Plug-Flow detention time= 310.9 min calculated for 113,314 cf (89% of inflow)
Center-of-Mass det. time= 243.3 min (1,010.3 - 766.9)

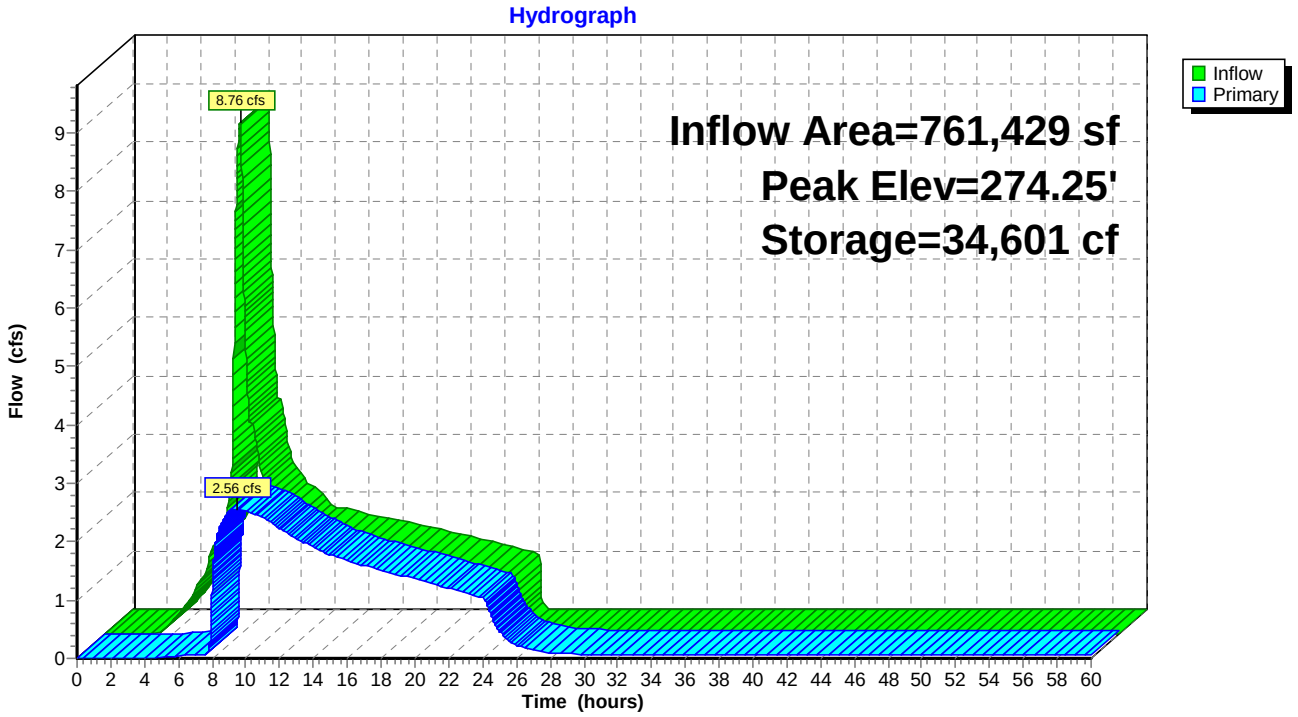
Volume	Invert	Avail.Storage	Storage Description
#1	267.99'	68,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
267.99	9,000	0.0	0	0
268.00	9,000	40.0	36	36
269.24	9,000	40.0	4,464	4,500
269.25	9,000	5.0	4	4,504
270.99	9,000	5.0	783	5,288
271.00	9,000	100.0	90	5,377
272.00	9,000	100.0	9,000	14,377
273.00	9,000	100.0	9,000	23,377
274.00	9,000	100.0	9,000	32,377
275.00	9,000	100.0	9,000	41,377
276.00	9,000	100.0	9,000	50,377
277.00	9,000	100.0	9,000	59,377
278.00	9,000	100.0	9,000	68,377

Device	Routing	Invert	Outlet Devices
#1	Primary	268.00'	**15.0" Round 15" Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 268.00' / 267.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	268.00'	**1.0" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	272.50'	**9.0" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	277.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.56 cfs @ 9.41 hrs HW=274.25' (Free Discharge)
↑**1=15" Culvert** (Passes 2.56 cfs of 12.46 cfs potential flow)
↑**2=Orifice #1** (Orifice Controls 0.07 cfs @ 11.99 fps)
3=Orifice #2 (Orifice Controls 2.49 cfs @ 5.64 fps)
4=Overflow (Controls 0.00 cfs)

Pond P2: Control MH #2



Summary for Subcatchment B3: Existing Conditions (Basin #3)

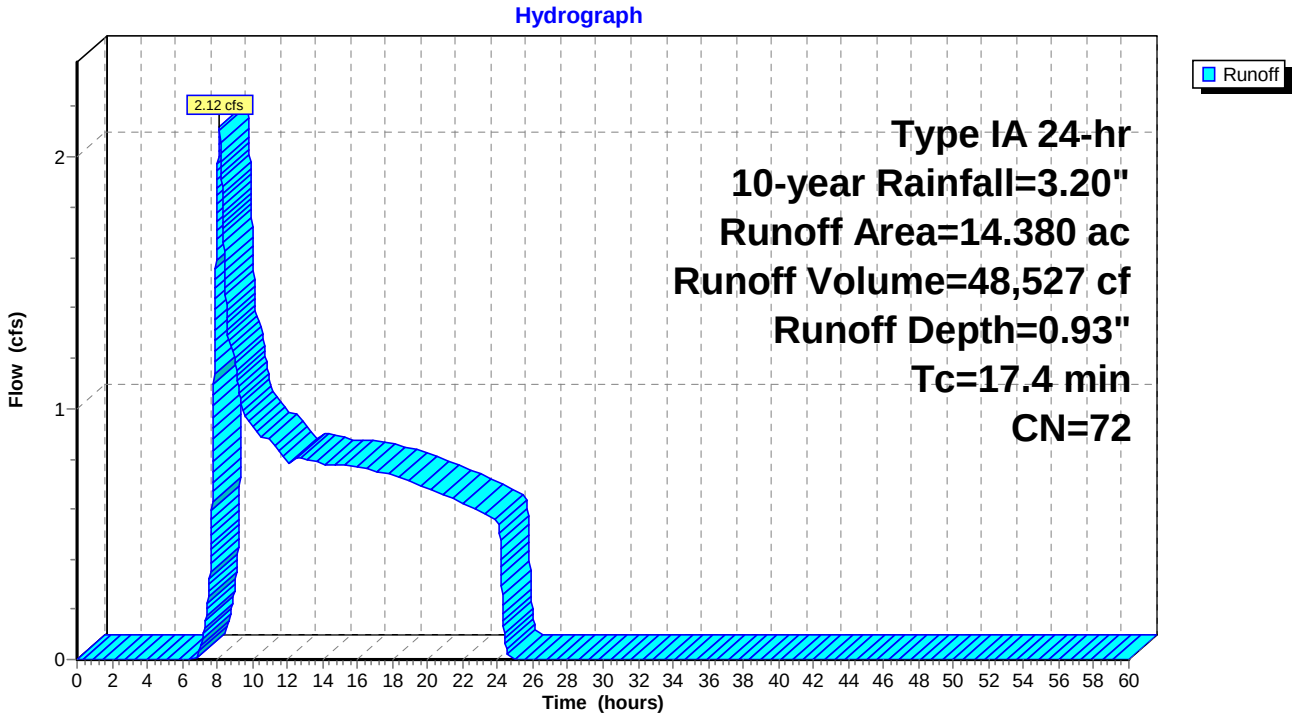
Runoff = 2.12 cfs @ 8.14 hrs, Volume= 48,527 cf, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-year Rainfall=3.20"

	Area (ac)	CN	Description
*	14.380	72	City of Salem Pre-developed, HSG C
	14.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B3: Existing Conditions (Basin #3)



Summary for Subcatchment 3B: Developed Conditions

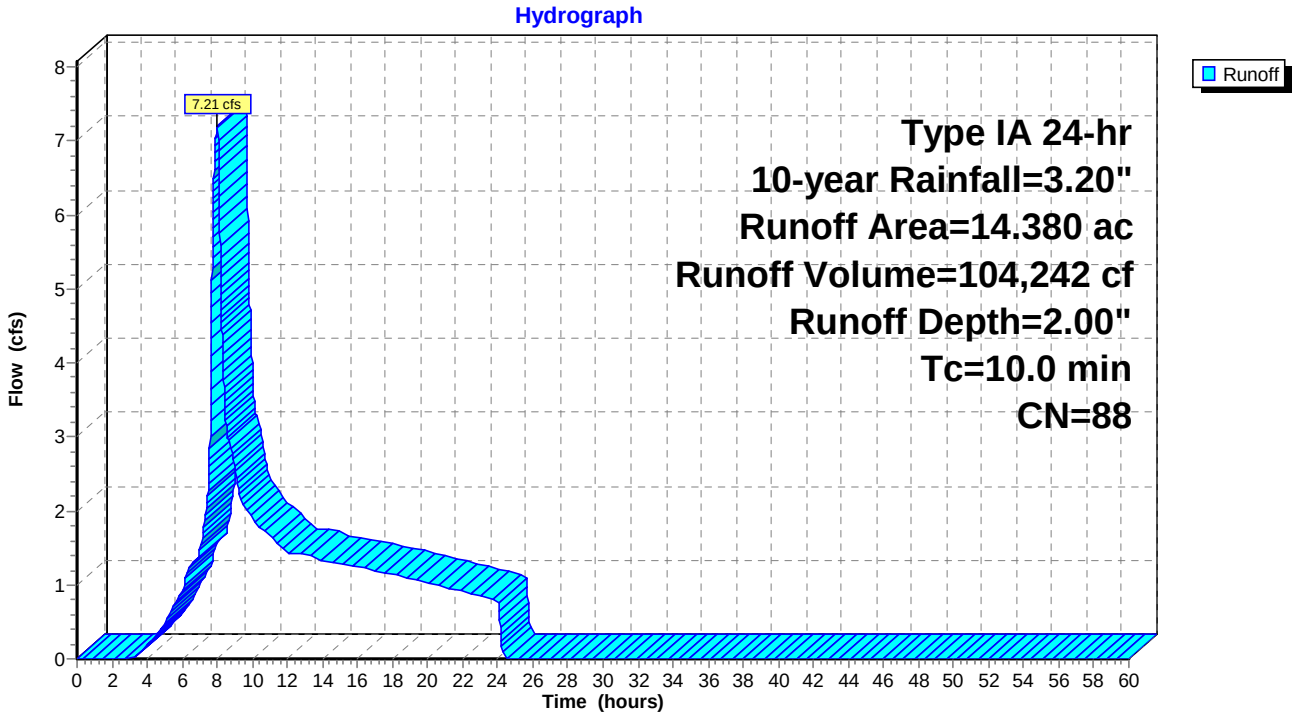
Runoff = 7.21 cfs @ 8.01 hrs, Volume= 104,242 cf, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-year Rainfall=3.20"

	Area (ac)	CN	Description
	5.750	74	>75% Grass cover, Good, HSG C
*	8.630	98	Impervious surface, HSG C
	14.380	88	Weighted Average
	5.750		39.99% Pervious Area
	8.630		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 3B: Developed Conditions



Summary for Pond P3: Control MH #3

Inflow Area = 626,393 sf, 60.01% Impervious, Inflow Depth = 2.00" for 10-year event
Inflow = 7.21 cfs @ 8.01 hrs, Volume= 104,242 cf
Outflow = 2.06 cfs @ 9.47 hrs, Volume= 93,983 cf, Atten= 71%, Lag= 87.4 min
Primary = 2.06 cfs @ 9.47 hrs, Volume= 93,983 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 274.02' @ 9.47 hrs Surf.Area= 7,875 sf Storage= 28,452 cf
Flood Elev= 278.00' Surf.Area= 7,875 sf Storage= 59,830 cf

Plug-Flow detention time= 304.8 min calculated for 93,983 cf (90% of inflow)
Center-of-Mass det. time= 241.3 min (1,008.3 - 766.9)

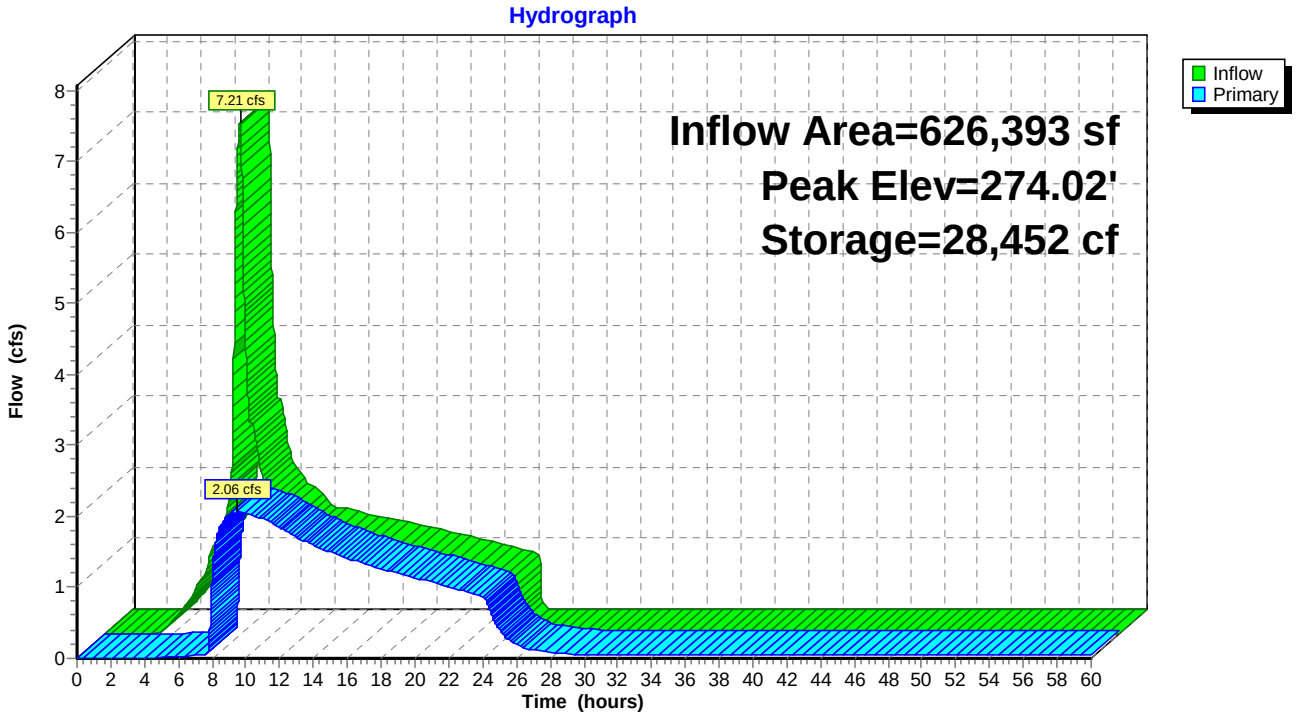
Volume	Invert	Avail.Storage	Storage Description
#1	267.99'	59,830 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
267.99	7,875	0.0	0	0
268.00	7,875	40.0	31	31
269.24	7,875	40.0	3,906	3,938
269.25	7,875	5.0	4	3,941
270.99	7,875	5.0	685	4,627
271.00	7,875	100.0	79	4,705
272.00	7,875	100.0	7,875	12,580
273.00	7,875	100.0	7,875	20,455
274.00	7,875	100.0	7,875	28,330
275.00	7,875	100.0	7,875	36,205
276.00	7,875	100.0	7,875	44,080
277.00	7,875	100.0	7,875	51,955
278.00	7,875	100.0	7,875	59,830

Device	Routing	Invert	Outlet Devices
#1	Primary	268.00'	**15.0" Round 15" Culvert** L= 50.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 268.00' / 267.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	268.00'	**0.9" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	272.25'	**8.0" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	277.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.06 cfs @ 9.47 hrs HW=274.02' (Free Discharge)
└**1=15" Culvert** (Passes 2.06 cfs of 15.01 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.05 cfs @ 11.77 fps)
  ├**3=Orifice #2** (Orifice Controls 2.01 cfs @ 5.76 fps)
  └**4=Overflow** (Controls 0.00 cfs)

Pond P3: Control MH #3



Summary for Subcatchment B1: Existing Conditions (Basin #1)

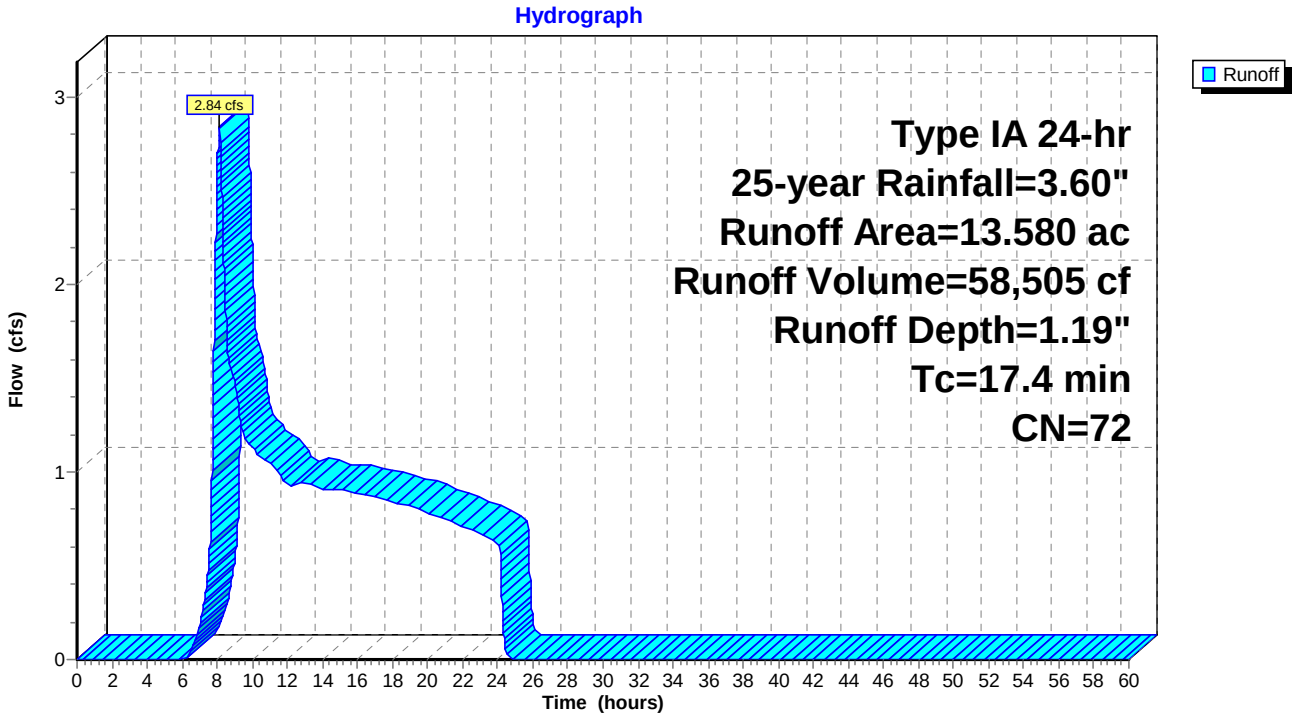
Runoff = 2.84 cfs @ 8.12 hrs, Volume= 58,505 cf, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=3.60"

	Area (ac)	CN	Description
*	13.580	72	City of Salem Pre-developed, HSG C
	13.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B1: Existing Conditions (Basin #1)



Summary for Subcatchment 1B: Developed Conditions

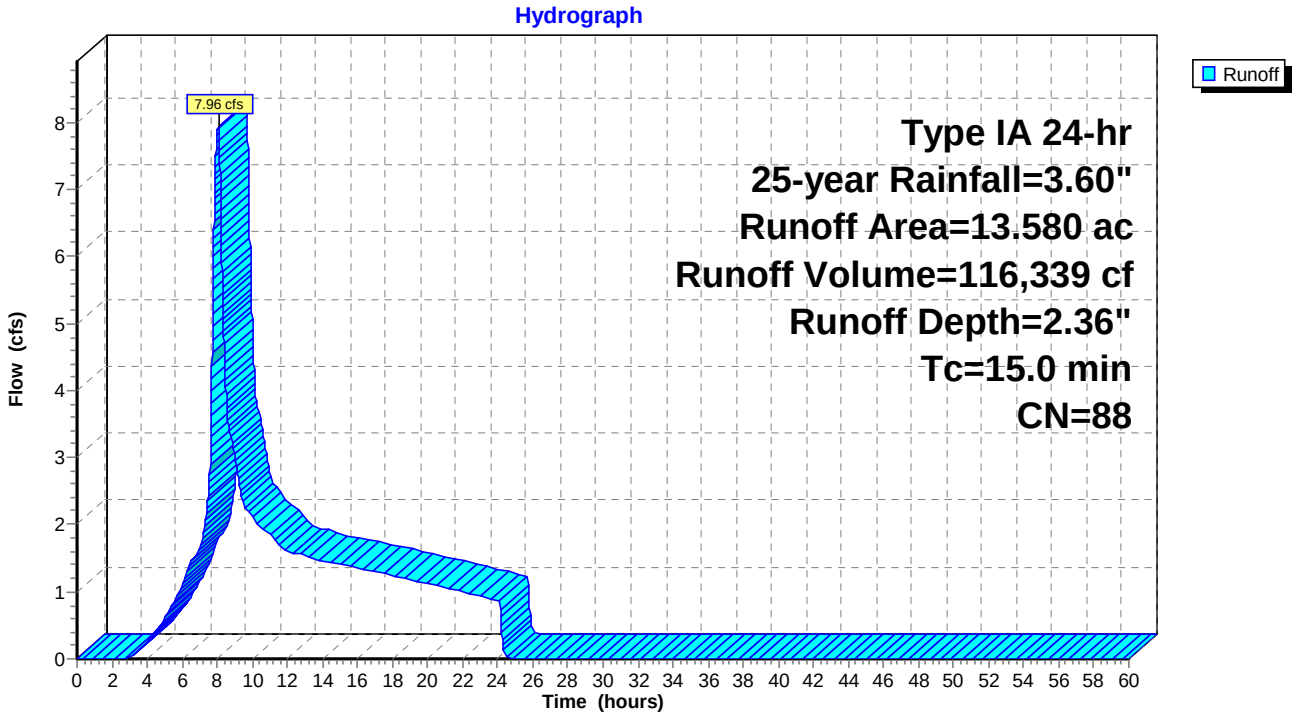
Runoff = 7.96 cfs @ 8.05 hrs, Volume= 116,339 cf, Depth= 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=3.60"

	Area (ac)	CN	Description
	5.430	74	>75% Grass cover, Good, HSG C
*	8.150	98	Impervious surface, HSG C
	13.580	88	Weighted Average
	5.430		39.99% Pervious Area
	8.150		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Direct Entry**

Subcatchment 1B: Developed Conditions



Summary for Pond P1: Control MH #1

Inflow Area = 591,545 sf, 60.01% Impervious, Inflow Depth = 2.36" for 25-year event
Inflow = 7.96 cfs @ 8.05 hrs, Volume= 116,339 cf
Outflow = 2.61 cfs @ 9.25 hrs, Volume= 105,363 cf, Atten= 67%, Lag= 72.3 min
Primary = 2.61 cfs @ 9.25 hrs, Volume= 105,363 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 295.79' @ 9.25 hrs Surf.Area= 9,350 sf Storage= 31,749 cf
Flood Elev= 299.00' Surf.Area= 9,350 sf Storage= 61,719 cf

Plug-Flow detention time= 292.3 min calculated for 105,346 cf (91% of inflow)
Center-of-Mass det. time= 230.9 min (993.1 - 762.2)

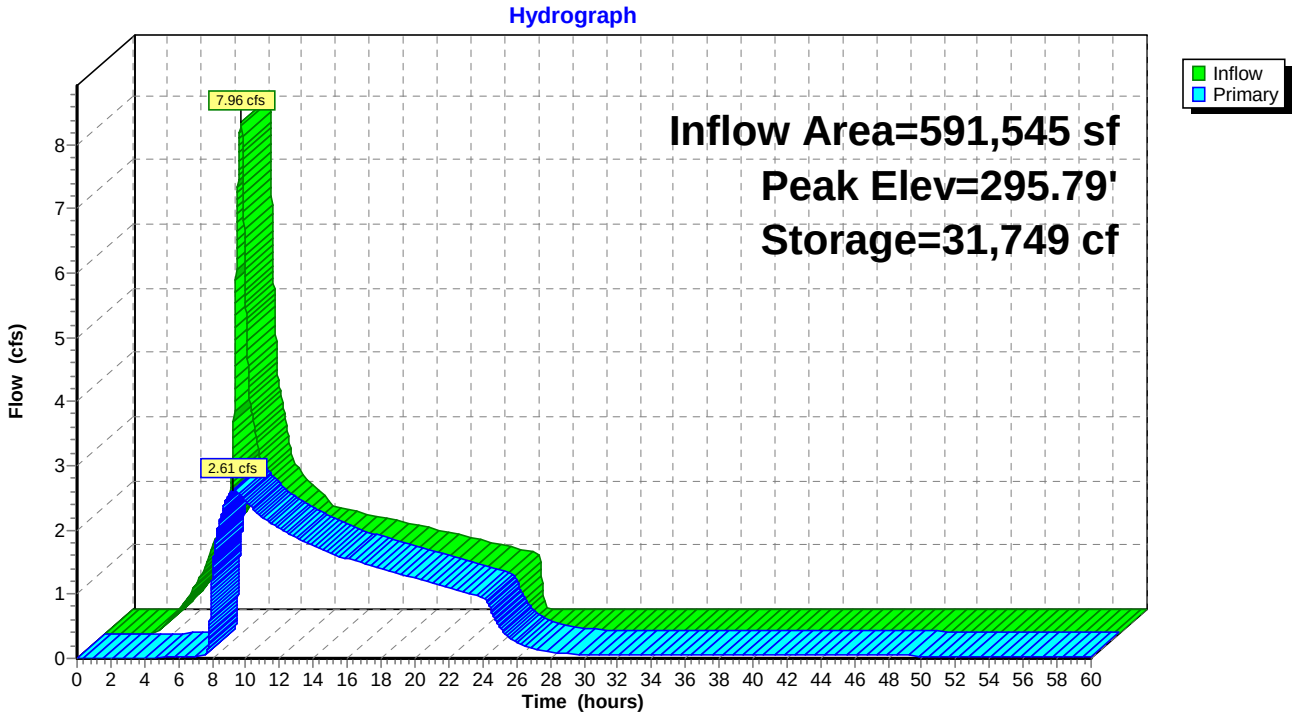
Volume	Invert	Avail.Storage	Storage Description
#1	289.99'	71,069 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
289.99	9,350	0.0	0	0
290.00	9,350	40.0	37	37
291.25	9,350	40.0	4,675	4,712
291.26	9,350	5.0	5	4,717
292.99	9,350	5.0	809	5,526
293.00	9,350	100.0	93	5,619
294.00	9,350	100.0	9,350	14,969
295.00	9,350	100.0	9,350	24,319
296.00	9,350	100.0	9,350	33,669
297.00	9,350	100.0	9,350	43,019
298.00	9,350	100.0	9,350	52,369
299.00	9,350	100.0	9,350	61,719
300.00	9,350	100.0	9,350	71,069

Device	Routing	Invert	Outlet Devices
#1	Primary	290.00'	**15.0" Round 15" Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 290.00' / 289.70' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	290.00'	**0.9" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	294.00'	**8.5" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	295.50'	**8.5" Vert. Orifice #3** C= 0.600 Limited to weir flow at low heads
#5	Device 1	299.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.61 cfs @ 9.25 hrs HW=295.79' (Free Discharge)
└**1=15" Culvert** (Passes 2.61 cfs of 11.70 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.05 cfs @ 11.55 fps)
  ├**3=Orifice #2** (Orifice Controls 2.28 cfs @ 5.78 fps)
  ├**4=Orifice #3** (Orifice Controls 0.29 cfs @ 1.85 fps)
  └**5=Overflow** (Controls 0.00 cfs)

Pond P1: Control MH #1



Summary for Subcatchment 1B: Developed Conditions

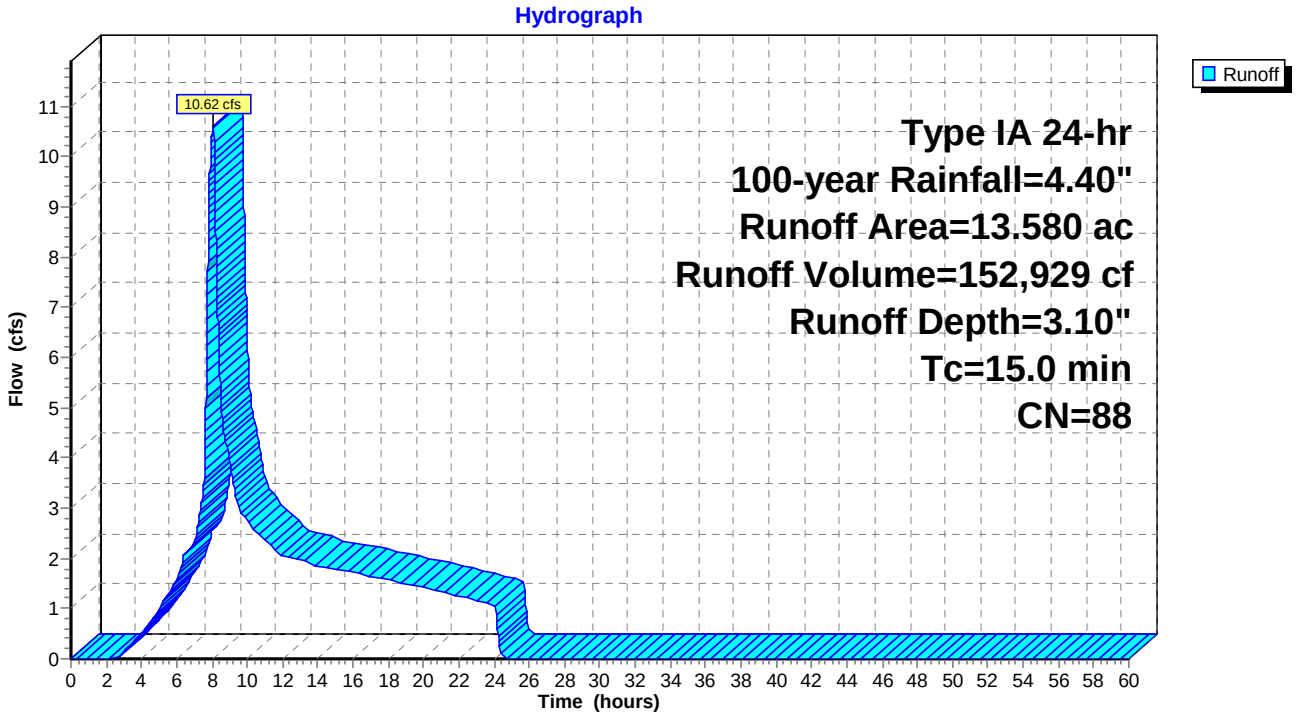
Runoff = 10.62 cfs @ 8.05 hrs, Volume= 152,929 cf, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-year Rainfall=4.40"

	Area (ac)	CN	Description
	5.430	74	>75% Grass cover, Good, HSG C
*	8.150	98	Impervious surface, HSG C
	13.580	88	Weighted Average
	5.430		39.99% Pervious Area
	8.150		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Direct Entry**

Subcatchment 1B: Developed Conditions



Summary for Subcatchment B1: Existing Conditions (Basin #1)

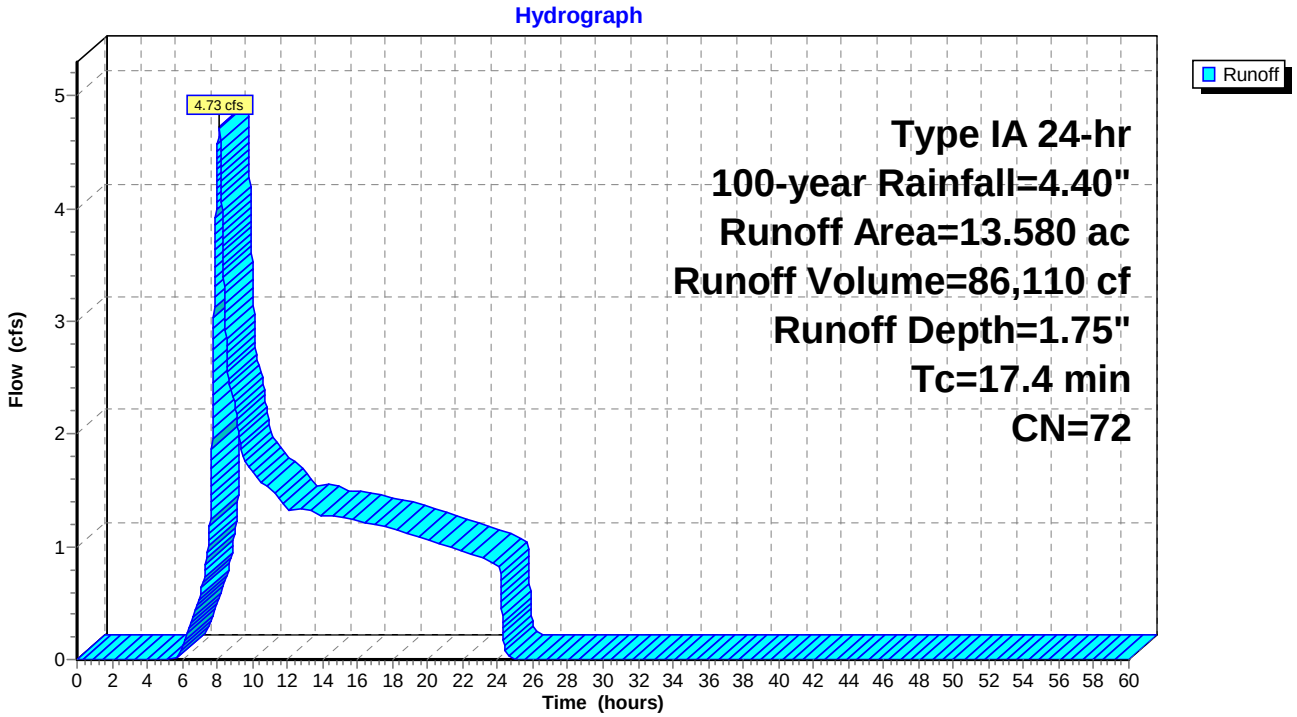
Runoff = 4.73 cfs @ 8.10 hrs, Volume= 86,110 cf, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-year Rainfall=4.40"

	Area (ac)	CN	Description
*	13.580	72	City of Salem Pre-developed, HSG C
	13.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B1: Existing Conditions (Basin #1)



Summary for Pond P1: Control MH #1

Inflow Area = 591,545 sf, 60.01% Impervious, Inflow Depth = 3.10" for 100-year event
Inflow = 10.62 cfs @ 8.05 hrs, Volume= 152,929 cf
Outflow = 4.36 cfs @ 8.78 hrs, Volume= 141,898 cf, Atten= 59%, Lag= 43.9 min
Primary = 4.36 cfs @ 8.78 hrs, Volume= 141,898 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 296.50' @ 8.78 hrs Surf.Area= 9,350 sf Storage= 38,338 cf
Flood Elev= 299.00' Surf.Area= 9,350 sf Storage= 61,719 cf

Plug-Flow detention time= 247.6 min calculated for 141,874 cf (93% of inflow)
Center-of-Mass det. time= 199.4 min (946.9 - 747.5)

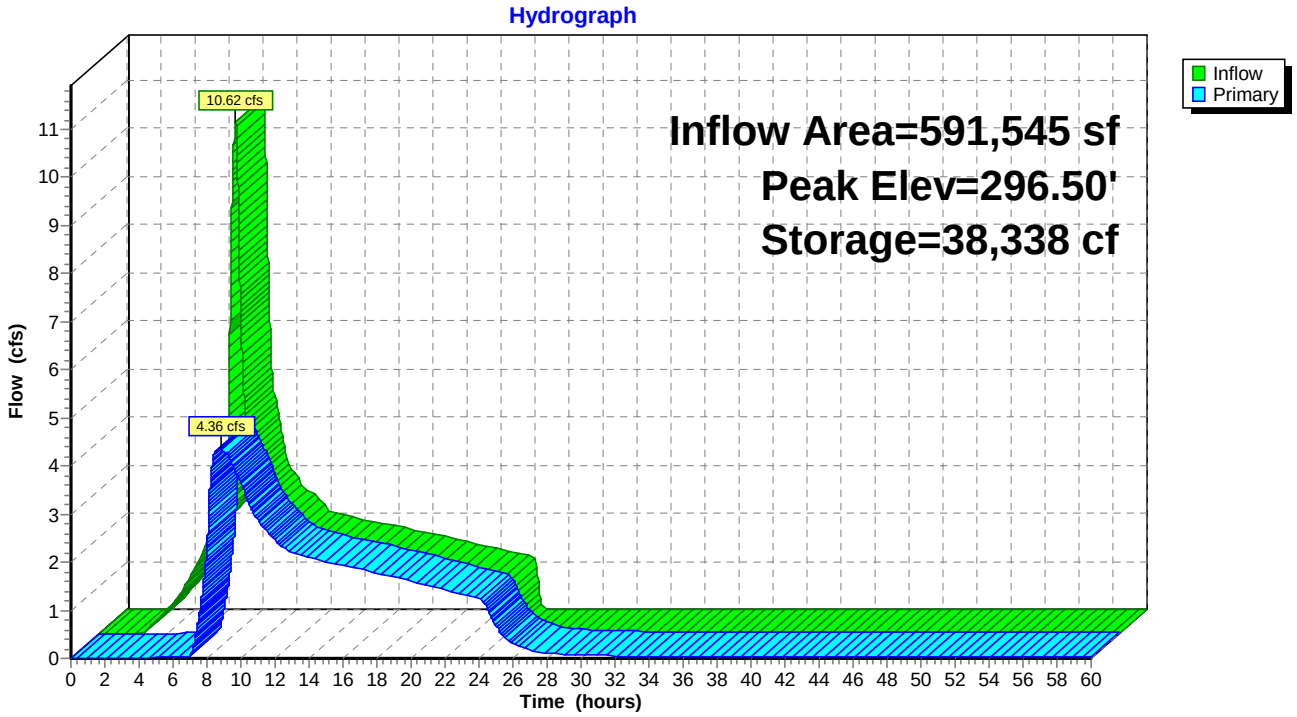
Volume	Invert	Avail.Storage	Storage Description
#1	289.99'	71,069 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
289.99	9,350	0.0	0	0
290.00	9,350	40.0	37	37
291.25	9,350	40.0	4,675	4,712
291.26	9,350	5.0	5	4,717
292.99	9,350	5.0	809	5,526
293.00	9,350	100.0	93	5,619
294.00	9,350	100.0	9,350	14,969
295.00	9,350	100.0	9,350	24,319
296.00	9,350	100.0	9,350	33,669
297.00	9,350	100.0	9,350	43,019
298.00	9,350	100.0	9,350	52,369
299.00	9,350	100.0	9,350	61,719
300.00	9,350	100.0	9,350	71,069

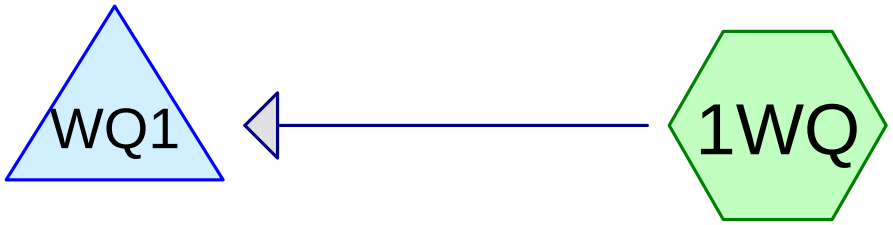
Device	Routing	Invert	Outlet Devices
#1	Primary	290.00'	**15.0" Round 15" Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 290.00' / 289.70' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	290.00'	**0.9" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	294.00'	**8.5" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	295.50'	**8.5" Vert. Orifice #3** C= 0.600 Limited to weir flow at low heads
#5	Device 1	299.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.36 cfs @ 8.78 hrs HW=296.50' (Free Discharge)
└**1=15" Culvert** (Passes 4.36 cfs of 12.52 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.05 cfs @ 12.24 fps)
  ├**3=Orifice #2** (Orifice Controls 2.78 cfs @ 7.05 fps)
  ├**4=Orifice #3** (Orifice Controls 1.52 cfs @ 3.87 fps)
  └**5=Overflow** (Controls 0.00 cfs)

Pond P1: Control MH #1



Appendix E



Water Quality Media

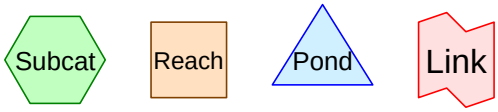
Developed Conditions
(Basin #1)

Water Quality Media

Developed Conditions
(Basin #2)

Water Quality Media

Developed Conditions
(Basin #3)



Routing Diagram for 20210202 WQ
Prepared by Multitech Engineering Services, Inc., Printed 2/3/2021
HydroCAD® 10.10-4a s/n 09412 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 1WQ: Developed Conditions (Basin #1)

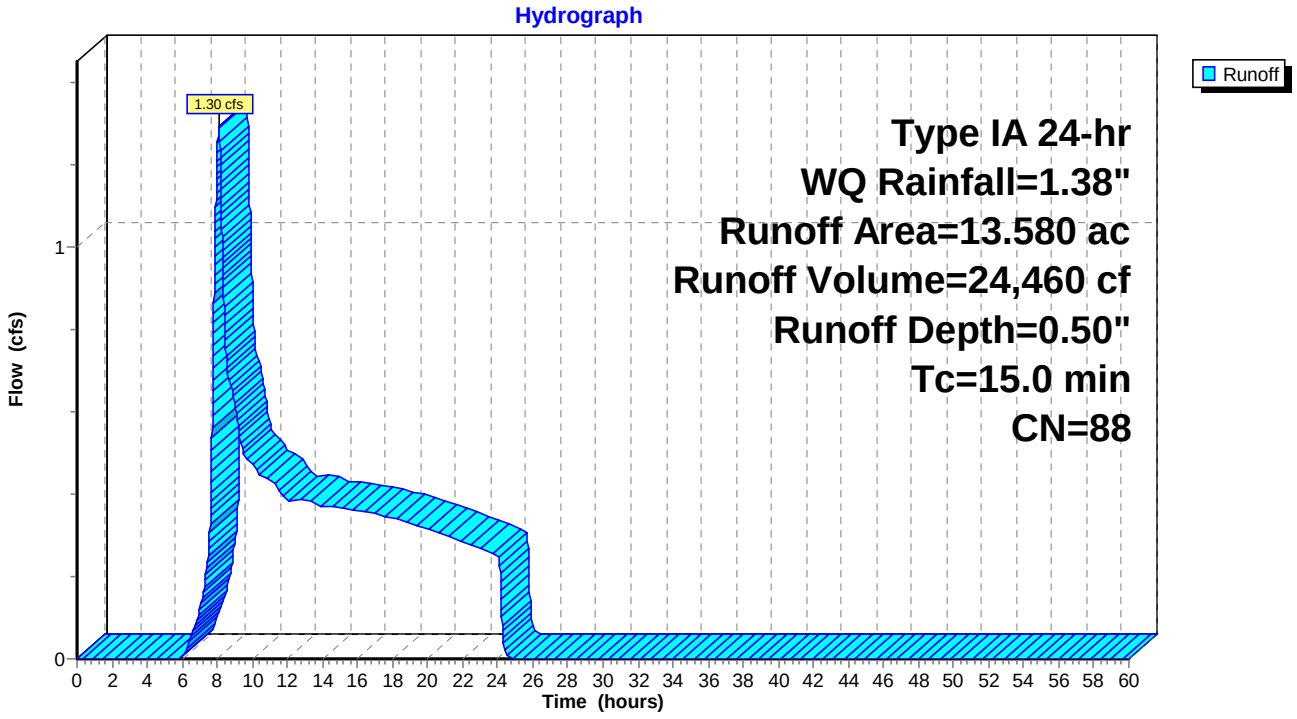
Runoff = 1.30 cfs @ 8.09 hrs, Volume= 24,460 cf, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.38"

	Area (ac)	CN	Description
	5.430	74	>75% Grass cover, Good, HSG C
*	8.150	98	Impervious surface, HSG C
	13.580	88	Weighted Average
	5.430		39.99% Pervious Area
	8.150		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Direct Entry**

Subcatchment 1WQ: Developed Conditions (Basin #1)



Summary for Pond WQ1: Water Quality Media

Inflow Area = 591,545 sf, 60.01% Impervious, Inflow Depth = 0.50" for WQ event
Inflow = 1.30 cfs @ 8.09 hrs, Volume= 24,460 cf
Outflow = 0.43 cfs @ 7.71 hrs, Volume= 24,460 cf, Atten= 67%, Lag= 0.0 min
Primary = 0.43 cfs @ 7.71 hrs, Volume= 24,460 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 293.26' @ 11.09 hrs Surf.Area= 9,350 sf Storage= 2,544 cf
Flood Elev= 299.00' Surf.Area= 9,350 sf Storage= 56,193 cf

Plug-Flow detention time= 53.7 min calculated for 24,456 cf (100% of inflow)
Center-of-Mass det. time= 53.7 min (911.3 - 857.6)

Volume	Invert	Avail.Storage	Storage Description
#1	292.99'	65,543 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

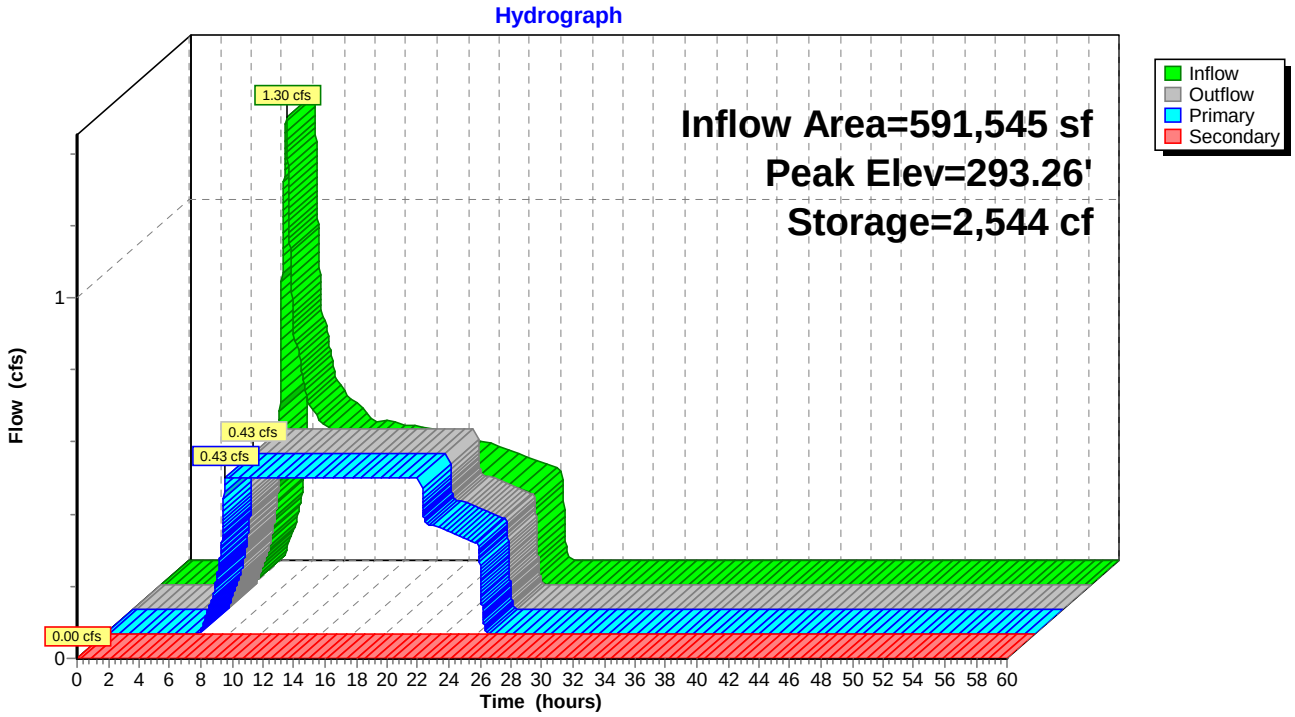
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
292.99	9,350	0.0	0	0
293.00	9,350	100.0	93	93
294.00	9,350	100.0	9,350	9,443
295.00	9,350	100.0	9,350	18,793
296.00	9,350	100.0	9,350	28,143
297.00	9,350	100.0	9,350	37,493
298.00	9,350	100.0	9,350	46,843
299.00	9,350	100.0	9,350	56,193
300.00	9,350	100.0	9,350	65,543

Device	Routing	Invert	Outlet Devices
#1	Primary	292.99'	**2.000 in/hr Exfiltration over Surface area**
#2	Secondary	293.50'	**24.0" Horiz. Beehive Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.43 cfs @ 7.71 hrs HW=293.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.43 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=292.99' (Free Discharge)
↑—**2=Beehive Overflow** (Controls 0.00 cfs)

Pond WQ1: Water Quality Media



Summary for Subcatchment 2WQ: Developed Conditions (Basin #2)

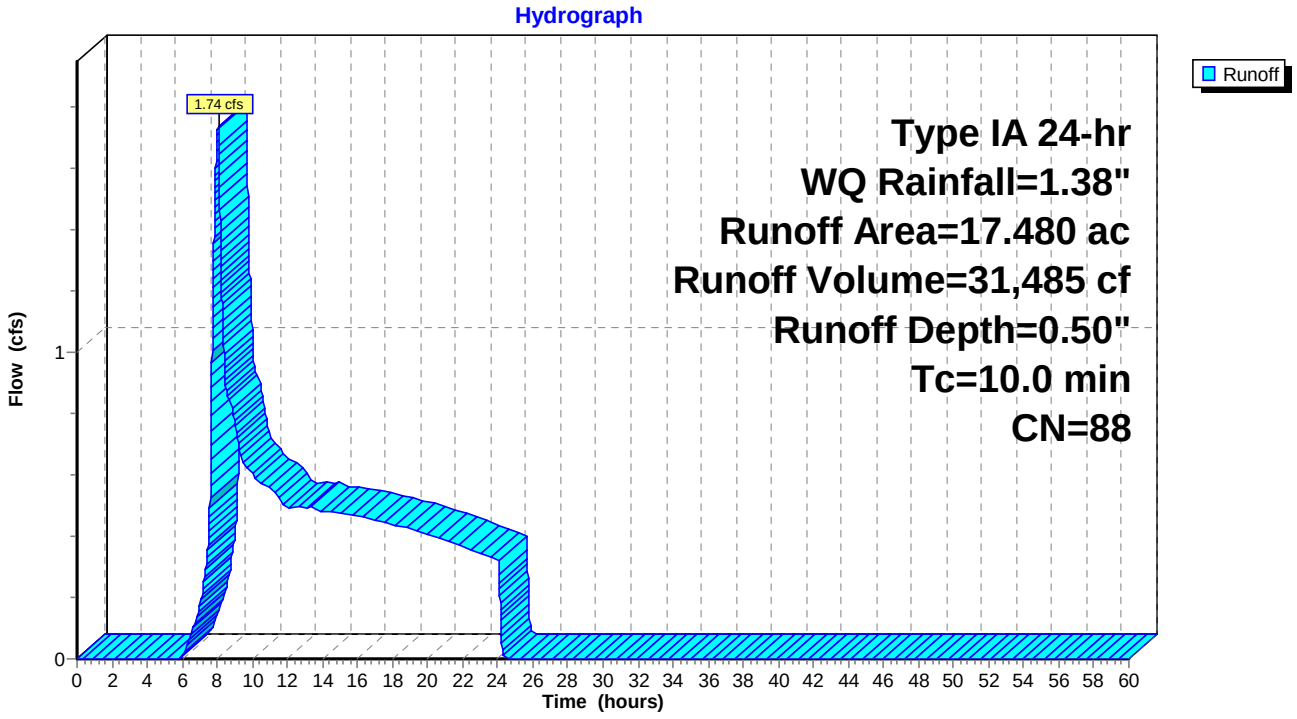
Runoff = 1.74 cfs @ 8.04 hrs, Volume= 31,485 cf, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.38"

	Area (ac)	CN	Description
	6.990	74	>75% Grass cover, Good, HSG C
*	10.490	98	Impervious surface, HSG C
	17.480	88	Weighted Average
	6.990		39.99% Pervious Area
	10.490		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 2WQ: Developed Conditions (Basin #2)



Summary for Pond WQ2: Water Quality Media

Inflow Area = 761,429 sf, 60.01% Impervious, Inflow Depth = 0.50" for WQ event
Inflow = 1.74 cfs @ 8.04 hrs, Volume= 31,485 cf
Outflow = 0.42 cfs @ 7.59 hrs, Volume= 31,485 cf, Atten= 76%, Lag= 0.0 min
Primary = 0.42 cfs @ 7.59 hrs, Volume= 31,485 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 271.73' @ 19.31 hrs Surf.Area= 9,000 sf Storage= 6,640 cf
Flood Elev= 290.00' Surf.Area= 9,000 sf Storage= 54,090 cf

Plug-Flow detention time= 199.0 min calculated for 31,480 cf (100% of inflow)
Center-of-Mass det. time= 199.0 min (1,052.0 - 853.0)

Volume	Invert	Avail.Storage	Storage Description
#1	270.99'	54,090 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

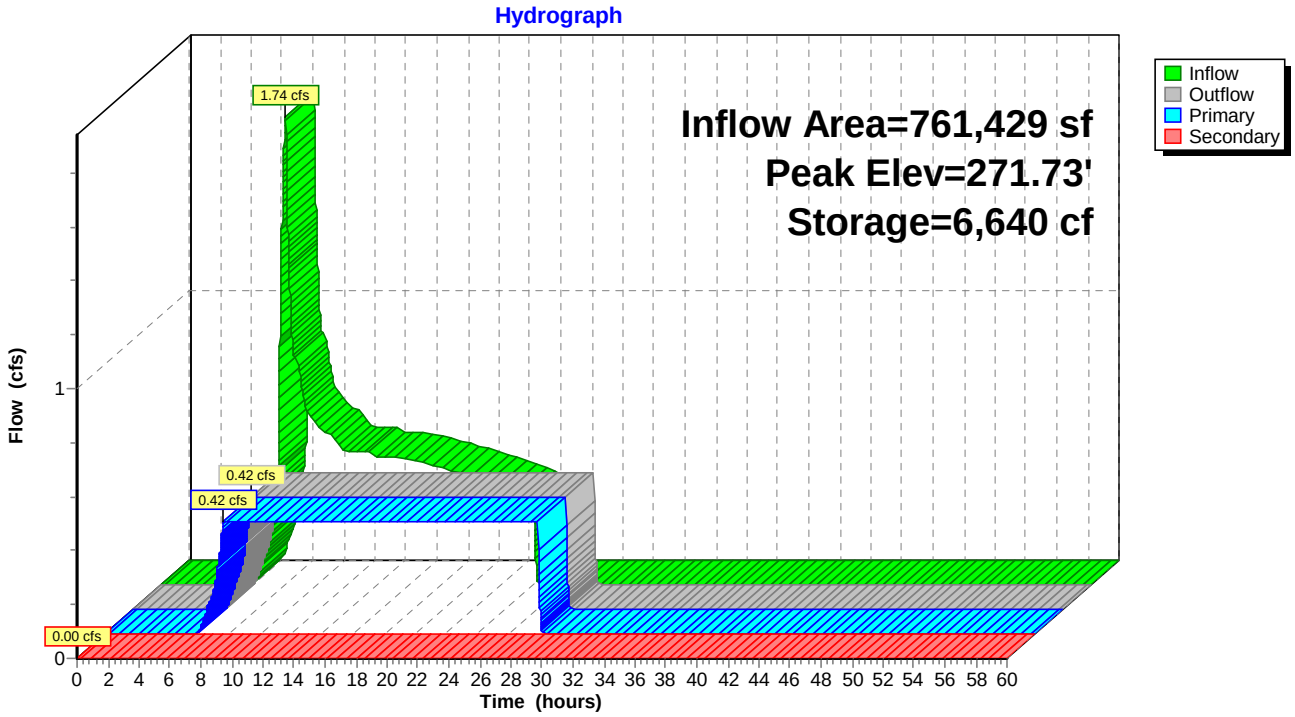
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
270.99	9,000	0.0	0	0
271.00	9,000	100.0	90	90
272.00	9,000	100.0	9,000	9,090
273.00	9,000	100.0	9,000	18,090
274.00	9,000	100.0	9,000	27,090
275.00	9,000	100.0	9,000	36,090
276.00	9,000	100.0	9,000	45,090
277.00	9,000	100.0	9,000	54,090

Device	Routing	Invert	Outlet Devices
#1	Primary	270.99'	**2.000 in/hr Exfiltration over Surface area**
#2	Secondary	272.00'	**24.0" Horiz. Beehive Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.42 cfs @ 7.59 hrs HW=271.00' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.42 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=270.99' (Free Discharge)
└**2=Beehive Overflow** (Controls 0.00 cfs)

Pond WQ2: Water Quality Media



Summary for Subcatchment 3WQ: Developed Conditions (Basin #3)

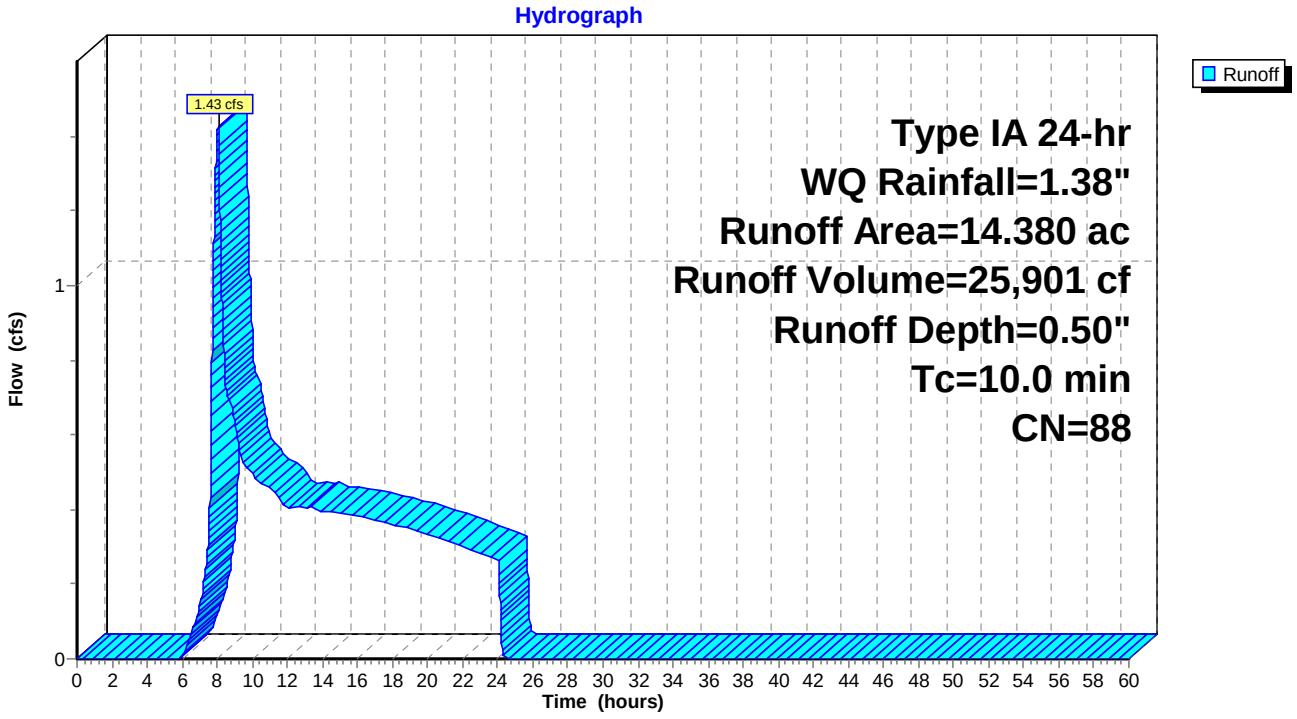
Runoff = 1.43 cfs @ 8.04 hrs, Volume= 25,901 cf, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.38"

	Area (ac)	CN	Description
	5.750	74	>75% Grass cover, Good, HSG C
*	8.630	98	Impervious surface, HSG C
	14.380	88	Weighted Average
	5.750		39.99% Pervious Area
	8.630		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 3WQ: Developed Conditions (Basin #3)



Summary for Pond WQ3: Water Quality Media

Inflow Area = 626,393 sf, 60.01% Impervious, Inflow Depth = 0.50" for WQ event
Inflow = 1.43 cfs @ 8.04 hrs, Volume= 25,901 cf
Outflow = 0.36 cfs @ 7.61 hrs, Volume= 25,901 cf, Atten= 74%, Lag= 0.0 min
Primary = 0.36 cfs @ 7.61 hrs, Volume= 25,901 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 271.57' @ 17.66 hrs Surf.Area= 7,875 sf Storage= 4,605 cf
Flood Elev= 278.00' Surf.Area= 7,875 sf Storage= 55,204 cf

Plug-Flow detention time= 163.3 min calculated for 25,897 cf (100% of inflow)
Center-of-Mass det. time= 163.3 min (1,016.3 - 853.0)

Volume	Invert	Avail.Storage	Storage Description
#1	270.99'	55,204 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

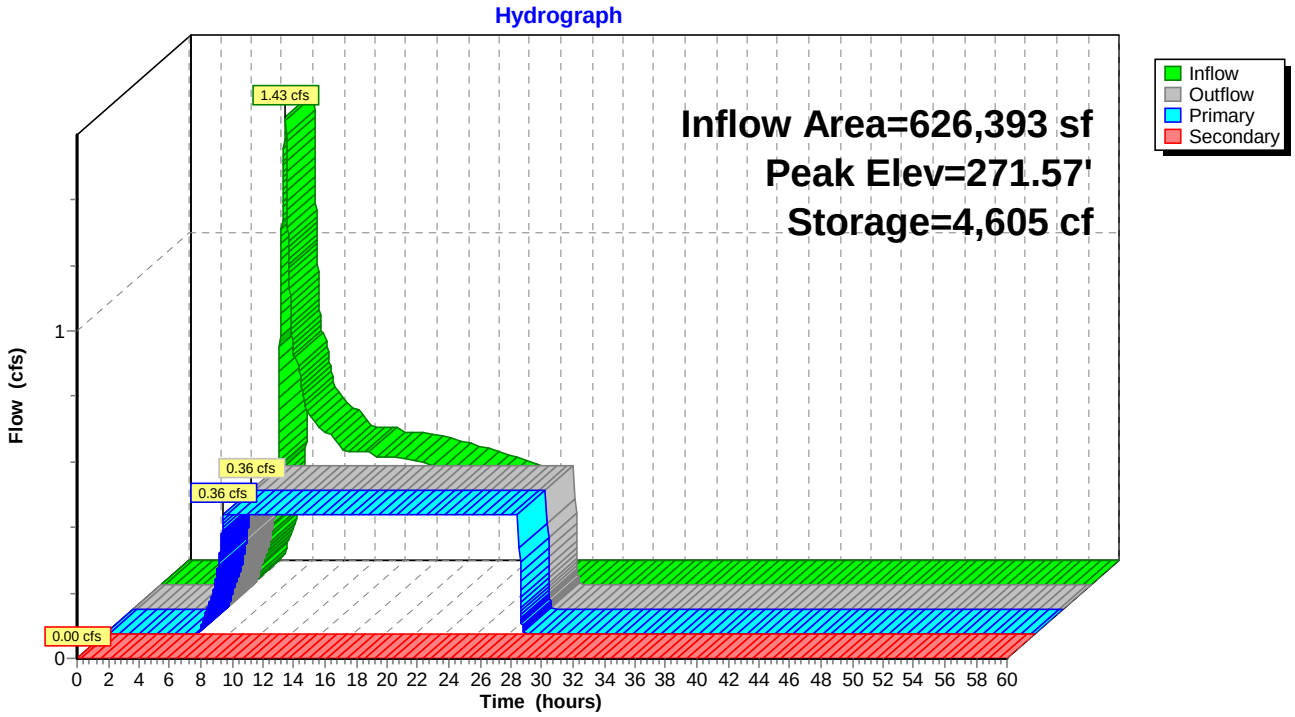
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
270.99	7,875	0.0	0	0
271.00	7,875	100.0	79	79
272.00	7,875	100.0	7,875	7,954
273.00	7,875	100.0	7,875	15,829
274.00	7,875	100.0	7,875	23,704
275.00	7,875	100.0	7,875	31,579
276.00	7,875	100.0	7,875	39,454
277.00	7,875	100.0	7,875	47,329
278.00	7,875	100.0	7,875	55,204

Device	Routing	Invert	Outlet Devices
#1	Primary	270.99'	**2.000 in/hr Exfiltration over Surface area**
#2	Secondary	271.75'	**24.0" Horiz. Beehive Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.36 cfs @ 7.61 hrs HW=271.00' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.36 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=270.99' (Free Discharge)
2=Beehive Overflow (Controls 0.00 cfs)

Pond WQ3: Water Quality Media



REDMOND GEOTECHNICAL SERVICES

Geotechnical Investigation and Geologic Hazard Assessment

Proposed Reed Road Residential Subdivision Site

Tax Lot No's. 100, 200, 400, 601, 1600 and 1700

Reed Road SE and Battle Creek Road SE

Salem (Marion County), Oregon

for

Multi/Tech Engineering Services, Inc.

Project No. 1001.058.G
July 20, 2018

REDMOND GEOTECHNICAL SERVICES

July 20, 2018

Mr. Jeremy Grenz
Multi/Tech Engineering Services, Inc.
1155 13th Street SE
Salem, Oregon 97302

Dear Mr. Grenz:

Re: Geotechnical Investigation and Geologic Hazard Assessment, Proposed Reed Road Residential Subdivision Site, Tax Lot No's. 100, 200, 400, 601, 1600 and 1700, Reed Road SE and Battle Creek Road SE, Salem (Marion County), Oregon

Submitted herewith is our report entitled "Geotechnical Investigation and Geologic Hazard Assessment, Proposed Reed Road Residential Subdivision Site, Tax Lot No's. 100, 200, 400, 601, 1600 and 1700, Reed Road SE and Battle Creek Road SE, Salem (Marion County), Oregon". The scope of our services was outlined in our formal proposal to Mr. Jeremy Grenz of Multi/Tech Engineering Services, Inc. dated February 12, 2018. Written authorization of our services was provided by Mr. Mark Grenz through a formal purchase order #6234 on April 30, 2018.

During the course of our investigation, we have kept you and/or others advised of our schedule and preliminary findings. We appreciate the opportunity to assist you with this phase of the project. Should you have any questions regarding this report, please do not hesitate to call.

Sincerely,

Daniel M. Redmond, P.E., G.E.
President/Principal Engineer

PO BOX 20547 • PORTLAND, OREGON 97294 • FAX 503/286-7176 • PHONE 503/285-0598

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GEOTECHNICAL INVESTIGATION AND GEOLOGIC HAZARD ASSESSMENT
PROPOSED REED ROAD RESIDENTIAL DEVELOPMENT SITE
TAX LOT NO'S. 100, 200, 400, 601, 1600 AND 1700
REED ROAD SE AND BATTLE CREEK ROAD SE
SALEM (MARION COUNTY) OREGON

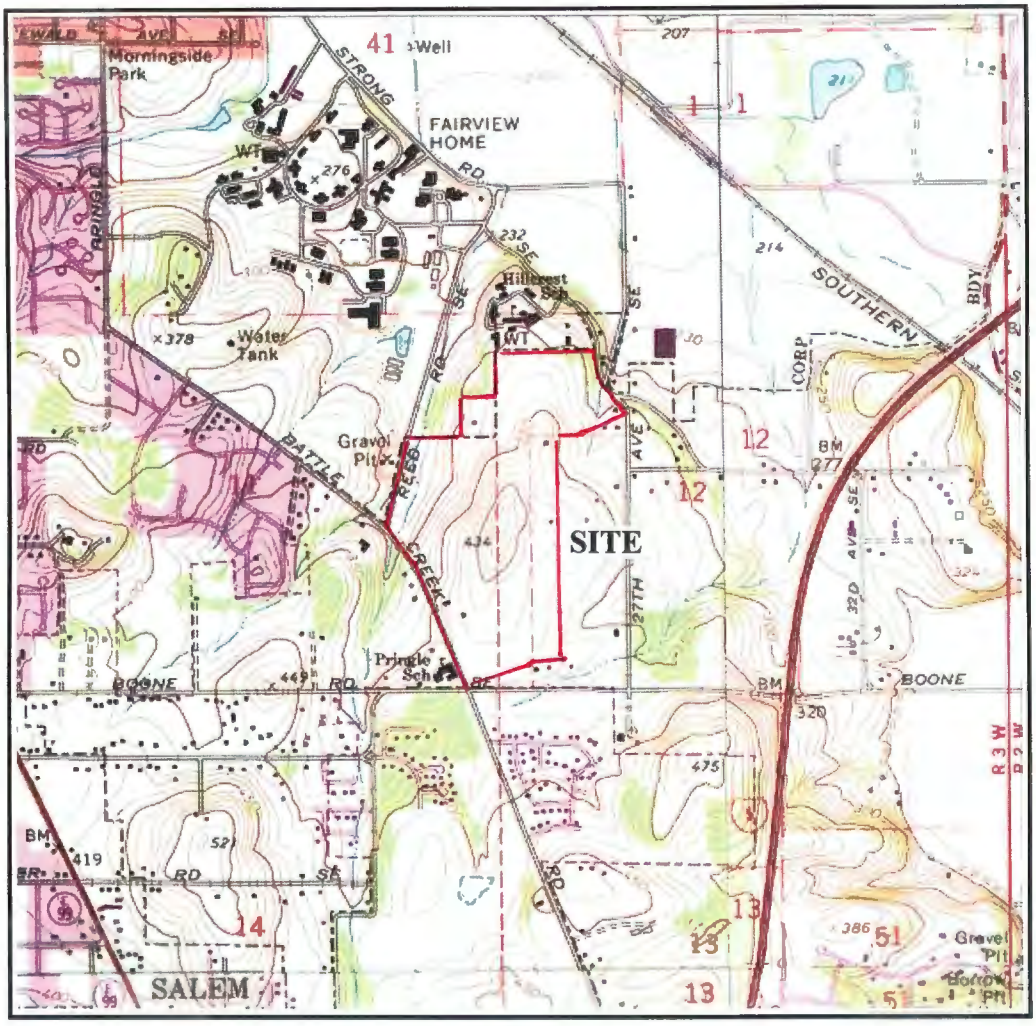
INTRODUCTION

Redmond Geotechnical Services, LLC is please to submit to you the results of our Geotechnical Investigation and Geologic Hazard Assessment at the site of the proposed new residential development located to the east of the intersection of Reed Road SE and Battle Creek Road SE in Salem (Marion County), Oregon. The general location of the subject site is shown on the Site Vicinity Map, Figure No. 1. The purpose of our geotechnical investigation and geologic hazard study services at this time was to explore the existing subsurface soils and/or groundwater conditions across the subject site and to evaluate any potential concerns with regard to potential slope failure at the site as well as to develop and/or provide appropriate geotechnical design and construction recommendations for the proposed new residential development project.

PROJECT DESCRIPTION

We understand that present plans are to develop the subject property into new single-family residential lots. Based on a review of a proposed site development plan prepared by Multi/Tech Engineering Services, Inc., we understand that the proposed new residential development will consist of the construction of approximately two hundred and twenty (220) new single-family residential lots ranging in size from about 5,000 to 10,000 square feet (see Site Exploration Plan, Figure No. 2). The new residential homes are anticipated to be of one- and/or three-story structures constructed with wood framing. Support of the new residential structures is anticipated to consist primarily of conventional shallow strip (continuous) footings although some individual (column) footings may also be required. Structural loading information, although unavailable at this time, is anticipated to be fairly typical and light for this type of wood-frame single-family residential structure and is expected to result in maximum dead plus live continuous (strip) and individual (column) footing loads on the order of about 1.5 to 3.0 kips per lineal foot (klf) and 10 to 30 kips, respectively.

Although a site grading plan is not available at this time, we understand that both cuts and fills are presently planned for the residential project. In general, both cuts and/or fills of between five (5) to ten (10) feet are generally anticipated across the proposed residential lots and will generally be located along the lot perimeters and/or site boundaries. In this regard, due to the existing and/or finish grade sloping site conditions, some of the proposed new single-family residential structures and/or lots may also include the construction of a partial below grade floor(s) and/or retaining walls.



SALEM WEST QUADRANGLE
OREGON
7.5 MINUTE SERIES (TOPOGRAPHIC)

SCALE 1:24 000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

DOTTED LINES CROSSING RIVER REPRESENT 5 FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

SITE VICINITY MAP

Project No. 1011.058.G	**REED ROAD SUBDIVISION**	Figure No. 1

Other associated site improvements for the project will include construction of new public and/or local residential streets. Additionally, the project will include the construction of new underground utility services as well as new concrete curbs and sidewalks. Further, we understand that storm water from hard and/or impervious surfaces (i.e., roofs and pavements) will be collected for on-site treatment and possible disposal.

SCOPE OF WORK

The purpose of our geotechnical and/or geologic studies was to evaluate the overall subsurface soil and/or groundwater conditions underlying the subject site with regard to the proposed new residential development and construction at the site and any associated impacts or concerns with respect to potential slope failure at the site as well as provide appropriate geotechnical design and construction recommendations for the project. Specifically, our geotechnical investigation and landslide hazard study performed as a collaboration with Northwest Geological Services, Inc. (NWGS, Inc.) included the following scope of work items:

1. Review of available and relevant geologic and/or geotechnical investigation reports for the subject site and/or area.

2. A detailed field reconnaissance and subsurface exploration program of the soil and ground water conditions underlying the site by means of eleven (11) exploratory test pit excavations. The exploratory test pits were excavated to depths ranging from about four (4) to eight (8) feet beneath existing site grades at the approximate locations as shown on the Site Exploration Plan, Figure No. 2. Additionally, field infiltration testing was also performed within various test pits excavated across the subject site.

3. Laboratory testing to evaluate and identify pertinent physical and engineering properties of the subsurface soils encountered relative to the planned site development and construction at the site. The laboratory testing program included tests to help evaluate the natural (field) moisture content and dry density, maximum dry density and optimum moisture content, gradational characteristics, Atterberg Limits and (remolded) consolidation and direct shear strength tests as well as "R"-value tests.

4. A literature review and engineering evaluation and assessment of the regional seismicity to evaluate the potential ground motion hazard(s) at the subject site. The evaluation and assessment included a review of the regional earthquake history and sources such as potential seismic sources, maximum credible earthquakes, and reoccurrence intervals as well as a discussion of the possible ground response to the selected design earthquake(s), fault rupture, landsliding, liquefaction, and tsunami and seiche flooding.

5. Engineering analyses utilizing the field and laboratory data as a basis for furnishing recommendations for foundation support of the proposed new residential structures. Recommendations include maximum design allowable contact bearing pressure(s), depth of footing embedment, estimates of foundation settlement, lateral soil resistance, and foundation subgrade preparation. Additionally, construction and/or permanent subsurface water drainage considerations have also been prepared. Further, our report includes recommendations regarding site preparation, placement and compaction of structural fill materials, suitability of the on-site soils for use as structural fill, criteria for import fill materials, and preparation of foundation, pavement and/or floor slab subgrades.

6. Flexible pavement design and construction recommendations for the proposed new public street improvements.

SITE CONDITIONS

Site Geology

The subject site and/or area is underlain by highly weathered Basalt bedrock deposits and/or residual soils of the Columbia River Basalt formation. A more detailed description of the site geology across and/or beneath the site is presented in the Geologic Hazard Study in Appendix B.

Surface Conditions

The subject proposed new residential development property consists of six (6) rectangular to irregular shaped tax lots (TL's 100, 200, 400, 601, 1600 and 1700) which encompass a total plan area of approximately 57 acres. The proposed residential development property is roughly located to the east of the intersection with Reed Road SE and Battle Creek Road SE, to the south by Kuebler Boulevard SE and to the northeast by Strong Road SE. The subject proposed residential development site is generally unimproved and consists of existing open farm land. Surface vegetation across the site generally consists of a light to moderate growth of grass, weeds and brush as well as some small to large sized trees along the northerly and westerly site boundaries. Additionally, the westerly portion of the subject property is generally low lying and contains an existing seasonal drainage basin.

Topographically, the site is characterized as gently to moderately sloping terrain (10 to 25 percent) descending downward towards the west and north with overall topographic relief estimated at about one hundred and sixty(160) feet and ranges from a low about Elevation 260 feet near Reed Road SE to a high of about Elevation 420 near the southeasterly portion of the site.

Subsurface Soil Conditions

Our understanding of the subsurface soil conditions underlying the site was developed by means of eleven (11) exploratory test pits excavated to depths ranging from about four (4) to eight (8) feet beneath existing site grades on June 1, 2018 with a John Deere 200C track-mounted excavator. The location of the exploratory test pits were located in the field by marking off distances from existing and/or known site features and are shown in relation to the proposed new residential structures and/or site improvements on the Site Exploration Plan, Figure No. 2. Detailed logs of the test pit explorations, presenting conditions encountered at each location explored, are presented in the Appendix, Figure No's. A-5 through A-10.

The exploratory test pit excavations were observed by staff from Redmond Geotechnical Services, LLC who logged each of the test pit explorations and obtained representative samples of the subsurface soils encountered across the site. Additionally, the elevation of the exploratory test pit excavations were referenced from the proposed Site Development Plan prepared by Multi/Tech Engineering Services, Inc. and should be considered as approximate. All subsurface soils encountered at the site and/or within the exploratory test pit excavations were logged and classified in general conformance with the Unified Soil Classification System (USCS) which is outlined on Figure No. A-4.

The test pit explorations revealed that the subject site is underlain by native soil deposits comprised of highly weathered bedrock and/or residual soils composed of a surficial layer of dark brown, moist to very moist, soft, organic, sandy, clayey silt topsoil materials to depths of about 6 to 12 inches. These surficial topsoil materials were inturn underlain by medium to reddish-brown, moist to very moist, medium stiff, clayey, sandy silt to sandy, clayey silt to a depth of about two (2) to seven (7) feet beneath the existing site and/or surface grades. These upper clayey, sandy silt to sandy, clayey silt subgrade soils are best characterized by relatively low to moderate strength and moderate compressibility. These upper clayey, sandy silt to sandy, clayey silt subgrade soils were inturn underlain by gray-brown, damp, dense to very dense, slightly to highly weathered and fractured bedrock deposits the maximum depth explored of about eight (8) feet beneath the existing site and/or surface grades. These slightly to highly weathered and fractured bedrock deposits are best characterized by relatively moderate to high strength and low compressibility.

Groundwater

Groundwater was generally not encountered within any of the exploratory test pit explorations (TH-#1 through TH-#11) at the time of excavation to depths of at least eight (8) feet beneath existing surface grades except. However, the westerly portion of the subject property is bounded by and/or contain an existing seasonal drainage basin and/or surface feature. In this regard, although groundwater elevations at the site may fluctuate seasonally in accordance with rainfall conditions and/or associated with runoff of the easterly and/or southerly drainage basins as well as changes in site utilization, we are generally of the opinion that the static water levels and/or surface water ponding not observed during our recent field exploration work generally reflect a high seasonal groundwater level(s) at and/or beneath the site.

Project No. 1001.058.G

REED ROAD SUBDIVISION

SITE EXPLORATION PLAN

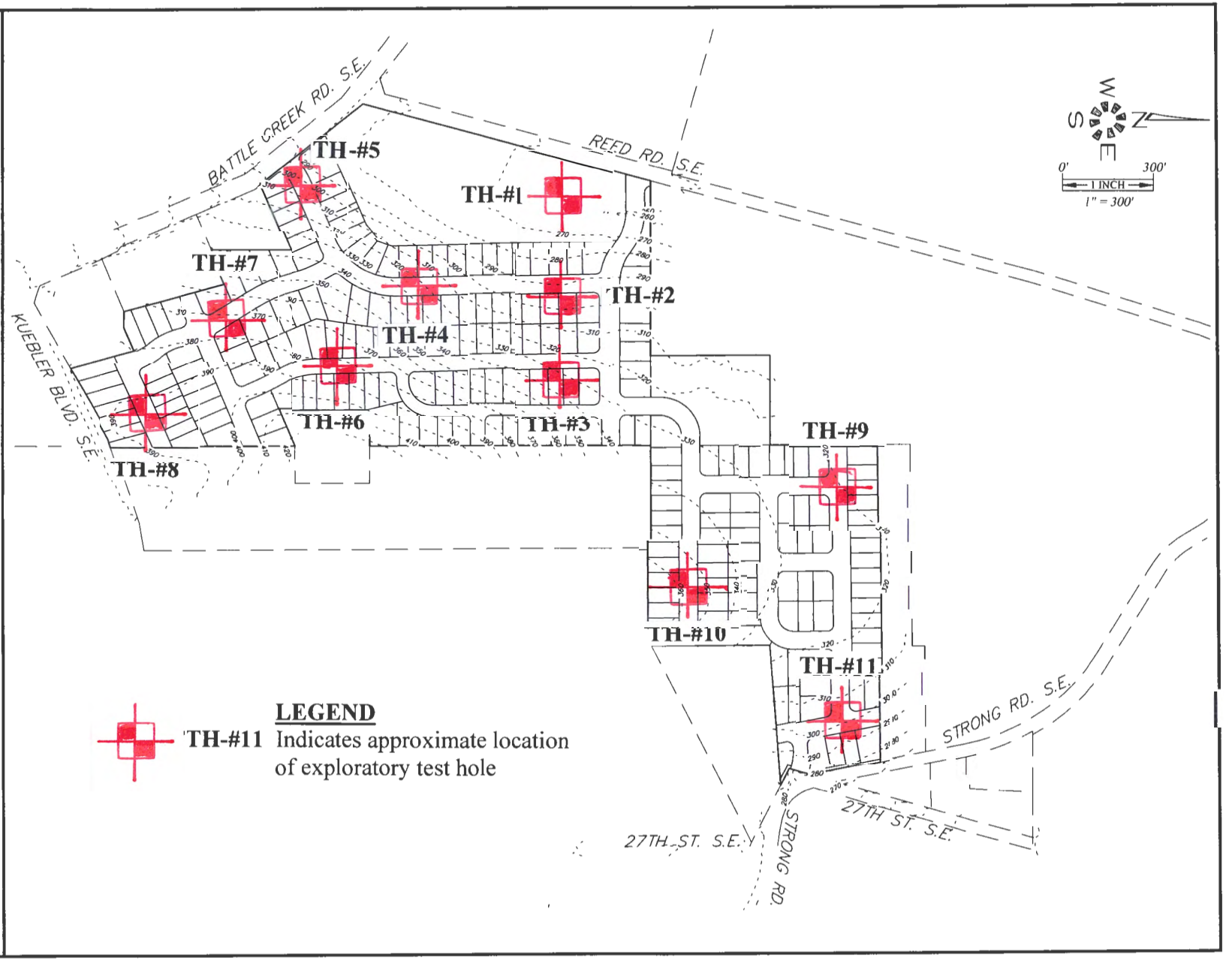


Figure No. 2

INFILTRATION TESTING

We performed four (4) field infiltration tests at the site on June 1, 2018. The infiltration tests were performed in test holes TH-#1 , TH-#5, TH-#9 and TH-#11 at depths of between two (2) to four (4) feet beneath the existing site and/or surface grades. The subgrade soils encountered in the infiltration test hole consisted of clayey, sandy silt and/or sandy, clayey silt. The infiltration testing was performed in general conformance with current EPA and/or the City of Salem Encased Falling Head test method which consisted of advancing a 6-inch diameter PVC pipe approximately 6 inches into the exposed soil horizon at each test location. Using a steady water flow, water was discharged into the pipe and allowed to penetrate and saturate the subgrade soils. The water level was adjusted over a two (2) hour period and allowed to achieve a saturated subgrade soil condition consistent with the bottom elevation of the surrounding test pit excavation. Following the required saturating period, water was again added into the PVC pipe and the time and/or rate at which the water level dropped was monitored and recorded. Each measurable drop in the water level was recorded until a consistent infiltration rate was observed and/or repeated.

Based on the results of the field infiltration testing at the site, we have found that the native sandy, clayey silt subgrade soil deposits posses an ultimate infiltration rate on the order of about 0.2 to 0.6 inches per hour (in/hr).

LABORATORY TESTING

Representative samples of the on-site subsurface soils were collected at selected depths and intervals from various test pit excavations and returned to our laboratory for further examination and testing and/or to aid in the classification of the subsurface soils as well as to help evaluate and identify their engineering strength and compressibility characteristics. The laboratory testing consisted of visual and textural sample inspection, moisture content and dry density determinations, maximum dry density and optimum moisture content, gradation analyses and Atterberg Limits as well as remolded consolidation, direct shear strength and "R"-value tests. Results of the various laboratory tests are presented in the Appendix, Figure No's. A-11 through A-17.

SEISMICITY AND EARTHQUAKE SOURCES

The seismicity of the southwest Washington and northwest Oregon area, and hence the potential for ground shaking, is controlled by three separate fault mechanisms. These include the Cascadia Subduction Zone (CSZ), the mid-depth intraplate zone, and the relatively shallow crustal zone. Descriptions of these potential earthquake sources are presented below.

The CSZ is located offshore and extends from northern California to British Columbia. Within this zone, the oceanic Juan de Fuca Plate is being subducted beneath the continental North American Plate to the east. The interface between these two plates is located at a depth of approximately 15 to 20 kilometers (km). The seismicity of the CSZ is subject to several uncertainties, including the maximum earthquake magnitude and the recurrence intervals associated with various magnitude earthquakes.

Anecdotal evidence of previous CSZ earthquakes has been observed within coastal marshes along the Washington and Oregon coastlines. Sequences of interlayered peat and sands have been interpreted to be the result of large Subduction zone earthquakes occurring at intervals on the order of 300 to 500 years, with the most recent event taking place approximately 300 years ago. A study by Geomatrix (1995) and/or USGS (2008) suggests that the maximum earthquake associated with the CSZ is moment magnitude (Mw) 8 to 9. This is based on an empirical expression relating moment magnitude to the area of fault rupture derived from earthquakes that have occurred within Subduction zones in other parts of the world. An Mw 9 earthquake would involve a rupture of the entire CSZ. As discussed by Geomatrix (1995) this has not occurred in other subduction zones that have exhibited much higher levels of historical seismicity than the CSZ. However, the 2008 USGS report has assigned a probability of 0.67 for a Mw 9 earthquake and a probability of 0.33 for a Mw 8.3 earthquake. For the purpose of this study an earthquake of Mw 9.0 was assumed to occur within the CSZ.

The intraplate zone encompasses the portion of the subducting Juan de Fuca Plate located at a depth of approximately 30 to 50 km below western Washington and western Oregon. Very low levels of seismicity have been observed within the intraplate zone in western Oregon and western Washington. However, much higher levels of seismicity within this zone have been recorded in Washington and California. Several reasons for this seismic quiescence were suggested in the Geomatrix (1995) study and include changes in the direction of Subduction between Oregon, Washington, and British Columbia as well as the effects of volcanic activity along the Cascade Range. Historical activity associated with the intraplate zone includes the 1949 Olympia magnitude 7.1 and the 1965 Puget Sound magnitude 6.5 earthquakes. Based on the data presented within the Geomatrix (1995) report, an earthquake of magnitude 7.25 has been chosen to represent the seismic potential of the intraplate zone.

The third source of seismicity that can result in ground shaking within the Vancouver and southwest Washington area is near-surface crustal earthquakes occurring within the North American Plate. The historical seismicity of crustal earthquakes in this area is higher than the seismicity associated with the CSZ and the intraplate zone. The 1993 Scotts Mills (magnitude 5.6) and Klamath Falls (magnitude 6.0), Oregon earthquakes were crustal earthquakes.

Liquefaction

Seismic induced soil liquefaction is a phenomenon in which lose, granular soils and some silty soils, located below the water table, develop high pore water pressures and lose strength due to ground vibrations induced by earthquakes. Soil liquefaction can result in lateral flow of material into river channels, ground settlements and increased lateral and uplift pressures on underground structures. Buildings supported on soils that have liquefied often settle and tilt and may displace laterally. Soils located above the ground water table cannot liquefy, but granular soils located above the water table may settle during the earthquake shaking.

Our review of the subsurface soil test pit logs from our exploratory field explorations (TH-#1 through TH-#11) and laboratory test results indicate that the site is generally underlain by medium stiff, sandy, clayey silt soils and/or dense to very dense, slightly to highly weathered bedrock deposits to depths of at least 8.0 feet beneath existing site grades. Additionally, groundwater was generally not encountered within any of the exploratory test pit excavations (TH-#1 through TH-#11) at the site during our field exploration work to depths of at least 8.0 feet. As such, due to the medium stiff and/or cohesive nature of the sandy, clayey silt subgrade soils as well as the dense to very dense nature of the underlying slightly to highly weathered bedrock deposits beneath the site, it is our opinion that the native sandy, clayey silt subgrade soil and/or slightly to highly weathered bedrock deposits located beneath the subject site have a very low potential for liquefaction during the design earthquake motions previously described.

Landslides

No ancient and/or active landslides were observed or are known to be present on the subject site. Additionally, development of the subject site into the planned residential homes sites does not appear to present a potential geologic and/or landslide hazard provided that the site grading and development activities conform with the recommendations presented within this report. A more detailed assessment of the potential landslide hazard of the subject site is presented in the Geologic Hazard Study in Appendix B.

Surface Rupture

Although the site is generally located within a region of the country known for seismic activity, no known faults exist on and/or immediately adjacent to the subject site. As such, the risk of surface rupture due to faulting is considered negligible.

Tsunami and Seiche

A tsunami, or seismic sea wave, is produced when a major fault under the ocean floor moves vertically and shifts the water column above it. A seiche is a periodic oscillation of a body of water resulting in changing water levels, sometimes caused by an earthquake. Tsunami and seiche are not considered a potential hazard at this site because the site is not near to the coast and/or there are no adjacent significant bodies of water.

Flooding and Erosion

Stream flooding is a potential hazard that should be considered in lowland areas of Marion County and Salem. The FEMA (Federal Emergency Management Agency) flood maps should be reviewed as part of the design for the proposed new residential structures and site improvements. Elevations of structures on the site should be designed based upon consultants reports, FEMA (Federal Emergency Management Agency), and Marion County requirements for the 100-year flood levels of any nearby creeks, streams and/or drainage basins.

CONCLUSIONS AND RECOMMENDATIONS

General

Based on the results of our field explorations, laboratory testing, and engineering analyses, it is our opinion that the site is presently stable and suitable for the proposed new single-family residential development and its associated site improvements provided that the recommendations contained within this report are properly incorporated into the design and construction of the project.

The primary features of concern at the site are 1) the presence of highly moisture sensitive clayey and silty subgrade soils across the site, 2) the presence of gently to moderately sloping site conditions across the proposed new residential lots and/or home sites, and 3) the relatively low infiltration rates anticipated within the near surface clayey and silty subgrade soils.

With regard to the moisture sensitive clayey and silty subgrade soils, we are generally of the opinion that all site grading and earthwork activities be scheduled for the drier summer months which is typically June through September. In regards to the gently to moderately sloping site conditions across the proposed new residential home sites and/or lots, we are of the opinion that site grading and/or structural fill placement should be minimized where possible and should generally limit cuts and/or fills of less than ten (10) feet. Additionally, where existing site slopes and/or surface grades exceed about 20 percent (1V:5H) and in order to construct the proposed new residential lots and/or improvements to the new local residential streets, benching and keying of all fills into the natural site slopes may be required. With regard to the relatively low infiltration rates anticipated within the clayey and silty subgrade soils beneath the site, we generally do not recommend any storm water infiltration within structural and/or embankment fills. However, some limited storm water infiltration may be feasible within the residential lots and/or areas of the site where the existing and/or finish slope gradients are no steeper than about 20 percent (1V:5H). In this regard, we recommend that all proposed storm water detention and/or infiltration systems for the project be reviewed and approved by Redmond Geotechnical Services, LLC.

The following sections of this report provide specific recommendations regarding subgrade preparation and grading as well as foundation and floor slab design and construction for the new Reed Road residential development project.

Site Preparation

As an initial step in site preparation, we recommend that the proposed new residential building sites and/or lots as well as their associated structural and/or site improvement area(s) be stripped and cleared of all existing improvements, any existing unsuitable fill materials, surface debris, existing vegetation, topsoil materials, and/or any other deleterious materials present at the time of construction. In general, we envision that the site stripping to remove existing vegetation and topsoil materials will generally be about 6 to 12 inches.

However, localized areas requiring deeper removals, such as any existing undocumented and/or unsuitable fill materials as well as old foundation remnants, may be encountered and should be evaluated at the time of construction by the Geotechnical Engineer. The stripped and cleared materials should be properly disposed of as they are generally considered unsuitable for use/reuse as fill materials.

Following the completion of the site stripping and clearing work and prior to the placement of any required structural fill materials and/or structural improvements, the exposed subgrade soils within the planned structural improvement area(s) should be inspected and approved by the Geotechnical Engineer and possibly proof-rolled with a half and/or fully loaded dump truck. Areas found to be soft or otherwise unsuitable should be over-excavated and removed or scarified and recompacted as structural fill. During wet and/or inclement weather conditions, proof rolling and/or scarification and recompaction as noted above may not be appropriate.

The on-site native sandy, clayey silt subgrade soil materials are generally considered suitable for use/reuse as structural fill materials provided that they are free of organic materials, debris, and rock fragments in excess of about 6 inches in dimension. However, if site grading is performed during wet or inclement weather conditions, the use of some of the on-site native soil materials which contain significant silt and clay sized particles will be difficult at best. In this regard, during wet or inclement weather conditions, we recommend that an import structural fill material be utilized which should consist of a free-draining (clean) granular fill (sand & gravel) containing no more than about 5 percent fines. Representative samples of the materials which are to be used as structural fill materials should be submitted to the Geotechnical Engineer and/or laboratory for approval and determination of the maximum dry density and optimum moisture content for compaction.

In general, all site earthwork and grading activities should be scheduled for the drier summer months (late June through September) if possible. However, if wet weather site preparation and grading is required, it is generally recommended that the stripping of topsoil materials be accomplished with a tracked excavator utilizing a large smooth-toothed bucket working from areas yet to be excavated. Additionally, the loading of strippings into trucks and/or protection of moisture sensitive subgrade soils will also be required during wet weather grading and construction. In this regard, we recommend that areas in which construction equipment will be traveling be protected by covering the exposed subgrade soils with a woven geotextile fabric such as Mirafi FW404 followed by at least 12 inches or more of crushed aggregate base rock. Further, the geotextile fabric should have a minimum Mullen burst strength of at least 250 pounds per square inch for puncture resistance and an apparent opening size (AOS) between the U.S. Standard No. 70 and No. 100 sieves.

All structural fill materials placed within the new building and/or pavement areas should be moistened or dried as necessary to near (within 3 percent) optimum moisture conditions and compacted by mechanical means to a minimum of 92 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. Structural fill materials should be placed in lifts (layers) such that when compacted do not exceed about 8 inches.

Additionally, all fill materials placed within five (5) lineal feet of the perimeter (limits) of the proposed residential structures and/or pavements should be considered structural fill. Additionally, due to the sloping site conditions, we recommend that all structural fill materials planned in areas where existing surface and/or slope gradients exceed about 20 percent (1V:5H) be properly benched and/or keyed into the native (natural) slope subgrade soils. In general, a bench width of at least eight (8) feet and a keyway depth of at least one (1) foot is recommended. However, the actual bench width and keyway depth should be determined at the time of construction by the Geotechnical Engineer. Further, all fill slopes should be constructed with a finish slope surface gradient no steeper than about 2H:1V.

As such, settlement sensitive site and/or surface improvements (i.e., concrete curbs and sidewalks) should not be constructed until after primary consolidation and/or settlement has been completed. All aspects of the site grading, including a review of the proposed site grading plan(s), should be approved and/or monitored by a representative of Redmond Geotechnical Services, LLC.

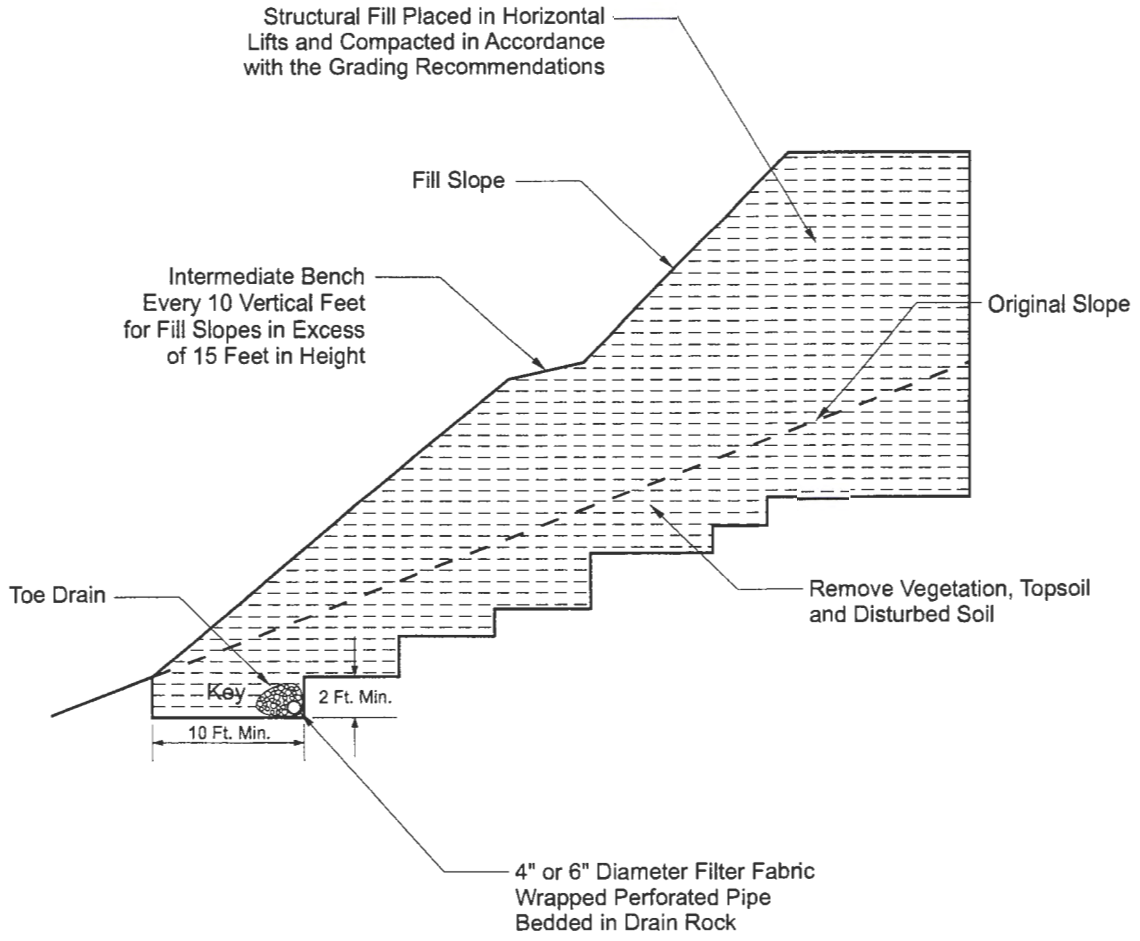
Foundation Support

Based on the results of our investigation, it is our opinion that the site of the proposed new Reed Road residential development is suitable for support of the one- and/or two-story wood-frame structures provided that the following foundation design recommendations are followed. The following sections of this report present specific foundation design and construction recommendations for the planned new residential structures.

Shallow Foundations

In general, conventional shallow continuous (strip) footings and individual (spread) column footings may be supported by approved native (untreated) subgrade soil materials and/or silty sand structural fill soils based on an allowable contact bearing pressure of about 2,000 pounds per square foot (psf). This recommended allowable contact bearing pressure is intended for dead loads and sustained live loads and may be increased by one-third for the total of all loads including short-term wind or seismic loads. In general, continuous strip footings should have a minimum width of at least 16 inches and be embedded at least 18 inches below the lowest adjacent finish grade (includes frost protection). Individual column footings (where required) should be embedded at least 18 inches below grade and have a minimum width of at least 24 inches. Additionally, if foundation excavation and construction work is planned to be performed during wet and/or inclement weather conditions, we recommend that a 3 to 4 inch layer of compacted crushed rock be used to help protect the exposed foundation bearing surfaces until the placement of concrete.

Total and differential settlements of foundations constructed as recommended above and supported by approved native subgrade soils or by properly compacted structural fill materials are expected to be well within the tolerable limits for this type of lightly loaded wood-frame structure and should generally be less than about 1-inch and 1/2-inch, respectively.



TYPICAL FILL SLOPE DETAIL

Project No. 1001.058.G	REED ROAD SUBDIVISION	Figure No. 3

Allowable lateral frictional resistance between the base of the footing element and the supporting subgrade bearing soil can be expressed as the applied vertical load multiplied by a coefficient of friction of 0.30 and 0.45 for native silty subgrade soils and/or import gravel fill materials, respectively. In addition, lateral loads may be resisted by passive earth pressures on footings poured "neat" against in-situ (native) subgrade soils or properly backfilled with structural fill materials based on an equivalent fluid density of 300 pounds per cubic foot (pcf). This recommended value includes a factor of safety of approximately 1.5 which is appropriate due to the amount of movement required to develop full passive resistance.

Floor Slab Support

In order to provide uniform subgrade reaction beneath concrete slab-on-grade floors, we recommend that the floor slab area be underlain by a minimum of 6 inches of free-draining (less than 5 percent passing the No. 200 sieve), well-graded, crushed rock. The crushed rock should help provide a capillary break to prevent migration of moisture through the slab. However, additional moisture protection can be provided by using a 10-mil polyolefin geo-membrane sheet such as StegoWrap.

The base course materials should be compacted to at least 95 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. Where floor slab subgrade materials are undisturbed, firm and stable and where the underslab aggregate base rock section has been prepared and compacted as recommended above, we recommend that a modulus of subgrade reaction of 150 pci be used for design.

Retaining/Below Grade Walls

Retaining and/or below grade walls should be designed to resist lateral earth pressures imposed by native soils or granular backfill materials as well as any adjacent surcharge loads. For walls which are unrestrained at the top and free to rotate about their base, we recommend that active earth pressures be computed on the basis of the following equivalent fluid densities:

Non-Restrained Retaining Wall Pressure Design Recommendations

Slope Backfill (Horizontal/Vertical)	Equivalent Fluid Density/Silt (pcf)	Equivalent Fluid Density/Gravel (pcf)
Level	35	30
3H:1V	60	50
2H:1V	90	80

For walls which are fully restrained at the top and prevented from rotation about their base, we recommend that at-rest earth pressures be computed on the basis of the following equivalent fluid densities:

Restrained Retaining Wall Pressure Design Recommendations

Slope Backfill (Horizontal/Vertical)	Equivalent Fluid Density/Silt (pcf)	Equivalent Fluid Density/Gravel (pcf)
Level	45	35
3H:1V	65	60
2H:1V	95	90

The above recommended values assume that the walls will be adequately drained to prevent the buildup of hydrostatic pressures. Where wall drainage will not be present and/or if adjacent surcharge loading is present, the above recommended values will be significantly higher.

Backfill materials behind walls should be compacted to 90 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. Special care should be taken to avoid over-compaction near the walls which could result in higher lateral earth pressures than those indicated herein. In areas within three (3) to five (5) feet behind walls, we recommend the use of hand-operated compaction equipment.

Pavements

Flexible pavement design for the proposed new street improvements for the residential development project was determined in accordance with the City of Salem Department of Public Works Administrative Rules Chapter 109-006 (Street Design Standards) Section 6 dated January 1, 2014.

Specifically, on June 1, 2018, samples of the subgrade soils from the proposed public streets were collected by means of test hole excavations. The subgrade soils encountered in the test holes located across the proposed residential subdivision site generally consisted of native and/or residual soils comprised of medium to reddish-brown, medium stiff, clayey, sandy silt to sandy, clayey SILT (ML).

The subgrade soil samples collected at the site were tested in the laboratory in accordance with the ASTM Vol. 4.08 Part D-2844-69 (AASHTO T-190-93) test method for the determination of the subgrade soil "R"-value and expansion pressure. The results of the "R"-value testing was then converted to an equivalent Resilient Modulus (M_{RSG}) in accordance with current AASHTO methodology. The results of the laboratory "R"-value tests revealed that the subgrade soils have an apparent "R"-value of between 24 and 28 with an average "R"-value of 26 (see Figure No's. A-16 and A-17). Using the current AASHTO methodology for converting "R"-value to Resilient Modulus (M_{RSG}), the subgrade soils have a Resilient Modulus (M_{RSG}) of about 5,291 psi which is classified a "Fair" (M_{RSG} = 5,000 psi to 10,000 psi).

In addition to the above, Dynamic Cone Penetration (DCP) tests were performed along the proposed new interior public street alignment at approximate 200-feet intervals. The results of the DCP tests found that the underlying native sandy, clayey silt subgrade soils have a DCP value of between 2 to 3 blows per 2-inches which correlates to a California Bearing Ratio (CBR) of between 5 and 12. Using current AASHTO methodology for converting CBR to Resilient Modulus (MRSG), the subgrade soils have a Resilient Modulus (MRSG) of between 5,842 and 10,637 psi with an average MRSG of 7,150 psi which is classified as "Fair" (MRSG = 5,000 psi to 10,000 psi).

Local Residential Streets

The following documents and/or design input parameters were used to help determine the flexible pavement section design for new local residential streets:

- **Street Classification:** Local Residential Street
- **Design Life:** 25 years
- **Serviceability:** 4.2 initial, 2.5 terminal
- **Traffic Loading Data:** 100,000 18-kip EAL's
- **Reliability Level:** 90%
- **Drainage Coefficient:** 1.0 (asphalt), 0.8 (aggregate)
- **Asphalt Structural Coefficient:** 0.41
- **Aggregate Structural Coefficient:** 0.10

Based on the above design input parameters and using the design procedures contained within the AASHTO 1993 Design of Pavement Structures Manual, a Structural Number (SN) of 2.6 was determined.

In this regard, we recommend the following flexible pavement section for the construction of new Local Residential Streets:

Material Type	Pavement Section (inches)
Asphaltic Concrete	4.0
Aggregate Base Rock	10.0

Wet Weather Grading and Soft Spot Mitigation

Construction of the proposed new public street improvements is generally recommended during dry weather. However, during wet weather grading and construction, excavation to subgrade can proceed during periods of light to moderate rainfall provided that the subgrade remains covered with aggregate. A total aggregate thickness of 8-inches may be necessary to protect the subgrade soils from heavy construction traffic.

Construction traffic should not be allowed directly on the exposed subgrade but only atop a sufficient compacted base rock thickness to help mitigate subgrade pumping. If the subgrade becomes wet and pumps, no construction traffic shall be allowed on the road alignment. Positive site drainage away from the street shall be maintained if site paving will not occur before the on-set of the wet season.

Depending on the timing for the project, any soft subgrade found during proof-rolling or by visual observations can either be removed and replaced with properly dried and compacted fill soils or removed and replaced with compacted crushed aggregate. However, and where approved by the Geotechnical Engineer, the soft area may be covered with a bi-axial geogrid and covered with compacted crushed aggregate.

Soil Shrink-Swell and Frost Heave

The results of the laboratory "R"-value tests indicate that the native subgrade soils possess a low to moderate expansion potential. As such, the exposed subgrade soils should not be allowed to completely dry and should be moistened to near optimum moisture content (plus or minus 3 percent) at the time of the placement of the crushed aggregate base rock materials. Additionally, exposure of the subgrade soils to freezing weather may result in frost heave and softening of the subgrade. As such, all subgrade soils exposed to freezing weather should be evaluated and approved by the Geotechnical Engineer prior to the placement of the crushed aggregate base rock materials.

Excavation/Slopes

Temporary excavations of up to about four (4) feet in depth may be constructed with near vertical inclinations. Temporary excavations greater than about four (4) feet but less than eight (8) feet should be excavated with inclinations of at least 1 to 1 (horizontal to vertical) or properly braced/shored. Where excavations are planned to exceed about eight (8) feet, this office should be consulted. All shoring systems and/or temporary excavation bracing for the project should be the responsibility of the excavation contractor. Permanent slopes should be constructed no steeper than about 2H to 1V unless approved by the Geotechnical Engineer.

Depending on the time of year in which trench excavations occur, trench dewatering may be required in order to maintain dry working conditions if the invert elevations of the proposed utilities are located at and/or below the groundwater level. If groundwater is encountered during utility excavation work, we recommend placing trench stabilization materials along the base of the excavation.

Trench stabilization materials should consist of 1-foot of well-graded gravel, crushed gravel, or crushed rock with a maximum particle size of 4 inches and less than 5 percent fines passing the No. 200 sieve. The material should be free of organic matter and other deleterious material and placed in a single lift and compacted until well keyed.

Surface Drainage/Groundwater

We recommend that positive measures be taken to properly finish grade the site so that drainage waters from the residential structures and landscaping areas as well as adjacent properties or buildings are directed away from the new residential structures foundations and/or floor slabs. All roof drainage should be directed into conduits that carry runoff water away from the residential structures to a suitable outfall. Roof downspouts should not be connected to foundation drains. A minimum ground slope of about 2 percent is generally recommended in unpaved areas around the proposed new residential structures.

Groundwater was not encountered at the site in any of the exploratory test pits (TH-#1 through TH-#11) at the time of excavation to depths of at least 7 feet beneath existing site grades. However, the northwesterly and/or westerly portion(s) of the site contains an existing seasonal drainage basin feature. Additionally, groundwater elevations in the area and/or across the subject property may fluctuate seasonally and may temporarily pond/perch near the ground surface during periods of prolonged rainfall.

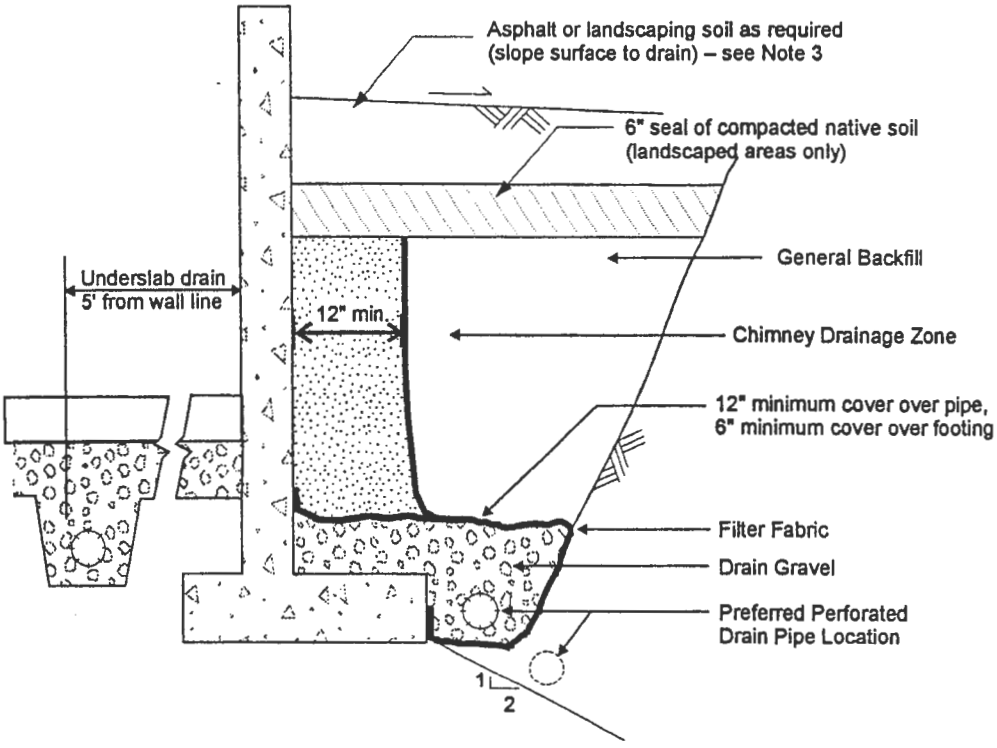
As such, based on our current understand of the possible site grading required to bring the subject site and/or residential lots to finish design grade(s), we are of the opinion that an underslab drainage system is not required for the proposed single-family residential structures. However, a perimeter foundation drain is recommended for any perimeter footings and/or below grade retaining walls. A typical recommended perimeter footing/retaining wall drain detail is shown on Figure No. 4. Further, due to our understanding that various surface infiltration ditches and/or swales may be utilized for the project as well as the relatively low infiltration rates of the near surface clayey, sandy silt and/or silty sand subgrade soils anticipated within and/or near to the foundation bearing level of the proposed residential structures, we are generally of the opinion that storm water detention and/or disposal systems should not be utilized within the residential lots and/or around the proposed residential structures unless approved by the Geotechnical Engineer.

Design Infiltration Rates

Based on the results of our field infiltration testing, we recommend using the following infiltration rate(s) to design any on-site near surface storm water infiltration systems for the project:

Subgrade Soil Type	Recommended Infiltration Rate
sandy, clayey SILT (ML)	0.1 to 0.3 inches per hour (in/hr)

Note: A safety factor of two (2) was used to calculate the above recommended design infiltration rate. Additionally, given the gradational variability of the on-site sandy, clayey sit subgrade soils beneath the site as well as the anticipation of some site grading for the project, it is generally recommended that field testing be performed during and/or following construction of any on-site storm water infiltration system(s) in order to confirm that the above recommended design infiltration rates are appropriate.



SCHEMATIC - NOT TO SCALE

NOTES:

1. Filter Fabric to be non-woven geotextile (Amoco 4545, Mirafi 140N, or equivalent)
2. Lay perforated drain pipe on minimum 0.5% gradient, widening excavation as required. Maintain pipe above 2:1 slope, as shown.
3. All-granular backfill is recommended for support of slabs, pavements, etc. (see text for structural fill).
4. Drain gravel to be clean, washed ¾" to 1½" gravel.
5. General backfill to be on-site gravels, or ¾""-0 or 1½"-0 crushed rock compacted to 92% Modified Proctor (AASHTO T-180).
6. Chimney drainage zone to be 12" wide (minimum) zone of clean washed, medium to coarse sand or drain gravel if protected with filter fabric. Alternatively, prefabricated drainage structures (Miradrain 6000 or similar) may be used.

PERIMETER FOOTING/RETAINING WALL DRAIN DETAIL

Project No. 1001.058.G	REED ROAD SUBDIVISION	Figure No. 4

Seismic Design Considerations

Structures at the site should be designed to resist earthquake loading in accordance with the methodology described in the 2014 and/or latest edition of the State of Oregon Structural Specialty Code (OSSC) and/or Amendments to the 2015 International Building Code (IBC). The maximum considered earthquake ground motion for short period and 1.0 period spectral response may be determined from the Oregon Structural Specialty Code and/or from the National Earthquake Hazard Reduction Program (NEHRP) "Recommended Provisions for Seismic Regulations for New Buildings and Other Structures" published by the Building Seismic Safety Council. We recommend Site Class "C" be used for design. Using this information, the structural engineer can select the appropriate site coefficient values (F_a and F_v) from the 2012 IBC to determine the maximum considered earthquake spectral response acceleration for the project. However, we have assumed the following response spectrum for the project:

Table 1. Recommended Seismic Design Parameters

Site Class	S_S	S_1	Fa	Fv	S_{MS}	S_{M1}	S_{DS}	S_{D1}
C	0.911	0.430	1.036	1.370	0.944	0.589	0.629	0.393

Notes: 1. S_S and S_1 were established based on the USGS 2015 mapped maximum considered earthquake spectral acceleration maps for 2% probability of exceedence in 50 years.

2. Fa and Fv were established based on IBC 2015 tables using the selected S_S and S_1 values.

CONSTRUCTION MONITORING AND TESTING

We recommend that **Redmond Geotechnical Services, LLC** be retained to provide construction monitoring and testing services during all earthwork operations for the proposed new residential development. The purpose of our monitoring services would be to confirm that the site conditions reported herein are as anticipated, provide field recommendations as required based on the actual conditions encountered, document the activities of the grading contractor and assess his/her compliance with the project specifications and recommendations. It is important that our representative meet with the contractor prior to any site grading to help establish a plan that will minimize costly over-excavation and site preparation work. Of primary importance will be observations made during site preparation and stripping, structural fill placement, footing excavations and construction as well as retaining wall backfill.

CLOSURE AND LIMITATIONS

This report is intended for the exclusive use of the addressee and/or their representative(s) to use to design and construct the proposed new single-family residential structures and their associated site improvements described herein as well as to prepare any related construction documents. The conclusions and recommendations contained in this report are based on site conditions as they presently exist and assume that the explorations are representative of the subsurface conditions between the explorations and/or at other locations across the study area. The data, analyses, and recommendations herein may not be appropriate for other structures and/or purposes. We recommend that parties contemplating other structures and/or purposes contact our office. In the absence of our written approval, we make no representation and assume no responsibility to other parties regarding this report. Additionally, the above recommendations are contingent on Redmond Geotechnical Services, LLC being retained to provide all site inspections and constriction monitoring services for this project. Redmond Geotechnical Services, LLC will not assume any responsibility and/or liability for any engineering judgment, inspection and/or testing services performed by others.

It is the owners/developers responsibility for insuring that the project designers and/or contractors involved with this project implement our recommendations into the final design plans, specifications and/or construction activities for the project. Further, in order to avoid delays during construction, we recommend that the final design plans and specifications for the project be reviewed by our office to evaluate as to whether our recommendations have been properly interpreted and incorporated into the project.

If during any future site grading and construction, subsurface conditions different from those encountered in the explorations are observed or appear to be present beneath excavations, we should be advised immediately so that we may review these conditions and evaluate whether modifications of the design criteria are required. We also should be advised if significant modifications of the proposed site development are anticipated so that we may review our conclusions and recommendations.

LEVEL OF CARE

The services performed by the Geotechnical Engineer for this project have been conducted with that level of care and skill ordinarily exercised by members of the profession currently practicing in the area under similar budget and time restraints. No warranty or other conditions, either expressed or implied, is made.

REFERENCES

Adams, John, 1984, Active Deformation of the Pacific Northwest Continental Margin: Tectonics, v.3, no. 4, p. 449-472.

Applied Technology Council, ATC-13, 1985, Earthquake Damage Evaluation Data for California.

Atwater, B.F., 1992, Geologic evidence for earthquakes during the past 2000 years along the Copalis River, southern coastal Washington: Journal of Geophysical Research, v. 97, p. 1901-1919.

Atwater, B.F., 1987a, A periodic Holocene recurrence of widespread, probably coseismic Subsidence in southwestern Washington: EOS, v. 68, no. 44.

Atwater, B.F., 1987b, Evidence for great Holocene earthquakes along the outer coast of Washington State: Science, v. 236, no. 4804, pp. 942-944.

Campbell, K.W., 1990, Empirical prediction of near-surface soil and soft-rock ground motion for the Diablo Canyon Power Plant site, San Luis Obispo County, California: Dames & Moore report to Lawrence Livermore National Laboratory.

Carver, G.A., and Burke, R.M., 1987, Late Holocene paleoseismicity of the southern end of the Cascadia Subduction zone [abs.]: EOS, v. 68, no. 44, p. 1240.

Chase, R.L., Tiffin, D.L., Murray, J.W., 1975, The western Canadian continental margin: In Yorath, C.J., Parker, E.R., Glass, D.J., editors, Canada's continental margins and offshore petroleum exploration: Canadian Society of Petroleum Geologists Memoir 4, p. 701-721.

Crouse, C.B., 1991a, Ground motion attenuation equations for earthquakes on the Cascadia Subduction Zone: Earthquake Spectra, v. 7, no. 2, pp. 201-236.

Crouse, C.B., 1991b, Errata to Crouse (1991a), Earthquake Spectra, v. 7, no. 3, p. 506.

Darienzo, M.E., and Peterson, C.D., 1987, Episodic tectonic subsidence recorded in late Holocene salt marshes, northern Oregon central Cascadia margin: Tectonics, v. 9, p. 1-22.

Darienzo, M.E., and Peterson, C.D., 1987, Episodic tectonic subsidence recorded in late Holocene salt marshes northwest Oregon [abs]: EOS, v. 68, no. 44, p. 1469.

EERI (Earthquake Engineering Research Institute), 1993, The March 25, 1993, Scotts Mill Earthquake, Western Oregon's Wake-Up Call: EERI Newsletter, Vol. 27, No. 5, May.

Geomatrix, 1995 Seismic Design Mapping, State of Oregon: Final Report to Oregon Department of Transportation, January.

Geologic Map Series (GMS-49), Map of Oregon Seismicity, 1841-1986 dated 1986.

Geologic Map Series (GMS-97), Geologic Map of the Salem West Quadrangle, Marion County, Oregon dated 1995.

Grant, W.C., and McLaren, D.D., 1987, Evidence for Holocene Subduction earthquakes along the northern Oregon coast [abs]: EOS v. 68, no. 44, p. 1239.

Grant, W.C., Atwater, B.F., Carver, G.A., Darienzo, M.E., Nelson, A.R., Peterson, C.D., and Vick, G.S., 1989, Radiocarbon dating of late Holocene coastal subsidence above the Cascadia Subduction zone-compilation for Washington, Oregon, and northern California, [abs]: EOS Transactions of the American Geophysical Union, v. 70, p. 1331.

International Conference of Building Officials (ICBO), 1994, Uniform Building Code: 1994 Edition, Whittier, CA. 1994.

Joyner, W.B., and Boore, D.M., 1998, Measurement, characterization and prediction of strong ground motion: Earthquake Engineering and Soil Dynamics II – Recent Advances in Ground Motion Evaluation, ASCE Geotech. Special Publ. No. 20, p. 43-102.

Riddihough, R.P., 1984, Recent movements of the Juan de Fuca plate system: Journal of Geophysical Research, v. 89, no. B8, p. 6980-6994.

Youngs, R.R., Day, S.M., and Stevens, J.L., 1998, Near field ground motions on rock for large Subduction earthquakes: Earthquake Engineering and Soil Dynamics II – Recent Advances in Ground Motion Evaluation, ASCE Geotech. Special Publ. No. 20, p. 445-462.

Appendix "A"

Test Pit Logs and Laboratory Test Data

APPENDIX

FIELD EXPLORATIONS AND LABORATORY TESTING

FIELD EXPLORATION

Subsurface conditions at the site were explored by excavating eleven (11) exploratory test pits (TH-#1 through TH-#11) on June 1, 2018. The approximate location of the test pit explorations are shown in relation to the proposed new residential lots and the associated site improvements on the Site Exploration Plan, Figure No. 2.

The test pits were excavated using track-mounted excavating equipment in general conformance with ASTM Methods in Vol. 4.08, D-1586-94 and D-1587-83. The test pits were excavated to depths ranging from about 4.0 to 8.0 feet beneath existing site grades. Detailed logs of the test pits are presented on the Log of Test Pits, Figure No's. A-5 through A-10. The soils were classified in accordance with the Unified Soil Classification System (USCS), which is outlined on Figure No. A-4.

The exploration program was coordinated by a field engineer who monitored the excavating and exploration activity, obtained representative samples of the subsurface soils encountered, classified the soils by visual and textural examination, and maintained continuous logs of the subsurface conditions. Disturbed and/or undisturbed samples of the subsurface soils were obtained at appropriate depths and/or intervals and placed in plastic bags and/or with a thin walled ring sample.

Groundwater was not encountered in any of the exploratory test pits (TH-#1 through TH-#11) at the time of excavating to depths of at least 8.0 feet beneath existing surface grades.

LABORATORY TESTING

Pertinent physical and engineering characteristics of the soils encountered during our subsurface investigation were evaluated by a laboratory testing program to be used as a basis for selection of soil design parameters and for correlation purposes. Selected tests were conducted on representative soil samples. The program consisted of tests to evaluate the existing (in-situ) moisture-density, maximum dry density and optimum moisture content, gradational characteristics, and Atterberg Limits as well as consolidation, direct shear strength and "R"-value tests.

Dry Density and Moisture Content Determinations

Density and moisture content determinations were performed on both disturbed and relatively undisturbed samples from the test pit explorations in general conformance with ASTM Vol. 4.08 Part D-216. The results of these tests were used to calculate existing overburden pressures and to correlate strength and compressibility characteristics of the soils. Test results are shown on the test pit logs at the appropriate sample depths.

Maximum Dry Density

Two (2) Maximum Dry Density and Optimum Moisture Content tests were performed on representative samples of the on-site clayey, sandy silt and sandy, clayey silt subgrade soils in accordance with ASTM Vol. 4.08 Part D-1557. This test was conducted to help establish various engineering properties for use as structural fill. The test results are presented on Figure No. A-11.

Atterberg Limits

Two (2) Liquid Limit (LL) and Plastic Limit (PL) tests were performed on representative samples of the clayey, sandy silt and sandy, clayey silt subgrade soils in accordance with ASTM Vol. 4.08 Part D-4318-85. These tests were conducted to facilitate classification of the soils and for correlation purposes. The test results appear on Figure No. A-12.

Gradation Analysis

Two (2) Gradation analyses were performed on representative samples of the clayey, sandy silt and sandy, clayey silt subsurface soils in accordance with ASTM Vol. 4.08 Part D-422. The test results were used to classify the soil in accordance with the Unified Soil Classification System (USCS). The test results are shown graphically on Figure No. A-13.

Consolidation Test

One (1) Consolidation test was performed on a remolded sample of the sandy, clayey silt subgrade soil to assess the compressibility characteristics of the underlying subgrade soils in accordance with ASTM Vol. 4.08 Part D-2435-80.

Conventional loading increments of 100, 200, 400, ... 12,800 psf were applied after the 100 percent time of primary consolidation was identified for each loading increment. The samples were unloaded and allowed to rebound after the completion of the loading sequence. Deflection versus time readings were recorded for all load increments from 100 through 12,800 psf. The deflection corresponding to 100 percent primary consolidation was plotted on the consolidation strain versus consolidation pressure curve, which is presented on Figure No. A-14.

Direct Shear Strength Test

One (1) Direct Shear Strength test was performed on a undisturbed and/or remolded sample of the sandy, clayey silt subgrade soil at a continuous rate of shearing deflection (0.02 inches per minute) in accordance with ASTM Vol. 4.08 Part D-3080-79. The test results were used to determine engineering strength properties and are shown graphically on Figure No. A-15.

"R"-Value Tests

Three (3) "R"-value tests were performed on a remolded subgrade soil sample in accordance with ASTM Vol. 4.08 Part D-2844. The test results were used to help evaluate the subgrade soils supporting and performance capabilities when subjected to traffic loading. The test results are shown on Figure No's. A-16 and A-17.

The following figures are attached and complete the Appendix:

Figure No. A-4	Key To Exploratory Test Pit Logs
Figure No's. A-5 through A-10	Log of Test Pits/Dynamic Cone
Figure No. A-11	Maximum Dry Density
Figure No. A-12	Atterberg Limits Test Results
Figure No. A-13	Gradation Test Results
Figure No. A-14	Consolidation Test Results
Figure No. A-15	Direct Shear Strength Test Results
Figure No's. A-16 and A-17	Results of "R"-Value Tests
Figure No's. A-18 through A-21	Field Infiltration Test Results

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS — MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS — MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS — MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS — MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS — LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS — LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.

DEFINITION OF TERMS

U.S. STANDARD SERIES SIEVE				CLEAR SQUARE SIEVE OPENINGS			
200	40	10	4	3/4"	3"	12"	
SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

GRAIN SIZES

SANDS, GRAVELS AND NON-PLASTIC SILTS	BLOWS/FOOT†
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

RELATIVE DENSITY

CLAYS AND PLASTIC SILTS	STRENGTH‡	BLOWS/FOOT†
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

CONSISTENCY

†Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) split spoon (ASTM D-1586).

‡Unconfined compressive strength in tons/sq. ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.

REDMOND GEOTECHNICAL SERVICES
PO Box 20547 • Portland, Oregon 97294

KEY TO EXPLORATORY TEST PIT LOGS
Unified Soil Classification System (ASTM D-2487)

REED ROAD SUBDIVISION
Salem, Oregon

PROJECT NO.	DATE	Figure A-4
1001.058.G	7/20/18	

BACKHOE COMPANY: Gene S. McMurrin BUCKET SIZE: 24 inches DATE: 6/01/18

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO. TH-#1 ELEVATION 265'±
0					ML	Dark brown, very moist, soft, organic, clayey, sandy SILT (Topsoil)
	X			20.6	ML	Medium brown, very moist, medium stiff, clayey, sandy SILT
5	X			28.9		Becomes wet at 6 feet
						Total Depth = 7.0 feet No groundwater encountered at time of exploration
10						
15						
						TEST PIT NO. TH-#2 ELEVATION 295'±
0	X			17.7	ML	Dark brown, moist, soft, organic, clayey, sandy SILT (Topsoil)
					ML	Medium brown, moist to very moist, medium stiff, clayey, sandy SILT
5					RK	Gray-brown, damp, dense to very dense, slightly to moderately weathered and fractured BEDROCK
						Total Depth = 4.0 feet No groundwater encountered at time of exploration
10						
15						

LOG OF TEST PITS

PROJECT NO. 1001.058.G | REED ROAD SUBDIVISION | FIGURE NO. A-5

BACKHOE COMPANY: Gene S. McMurrin BUCKET SIZE: 24 inches DATE: 6/01/18

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO. TH-#3 ELEVATION 335'±
0					ML	Dark brown, moist to very moist, soft, organic, sandy, clayey SILT (Topsoil)
	X			28.6	ML/MH	Medium to reddish-brown, very moist, medium stiff, sandy, clayey SILT
5	X			32.2		
					ML/RK	Gray-brown, moist, dense, highly weathered and fractured BEDROCK
10						Total Depth = 8.0 feet No groundwater encountered at time of exploration
15						
						TEST PIT NO. TH-#4 ELEVATION 330'±
0					ML	Dark brown, moist, soft, organic, clayey, sandy SILT (Topsoil)
					ML	Medium brown, moist to very moist, medium stiff, clayey, sandy SILT
5					RK	Gray-brown, damp, dense to very dense, slightly to moderately weathered and fractured BEDROCK
10						Total Depth = 5.0 feet No groundwater encountered at time of exploration
15						

LOG OF TEST PITS

PROJECT NO. 1001.058.G REED ROAD SUBDIVISION FIGURE NO. A-6

BACKHOE COMPANY: Gene S. McMurrin BUCKET SIZE: 24 inches DATE: 6/01/18

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO. TH-#5 ELEVATION 300'±
0					ML	Dark brown, moist to very moist, soft, organic, clayey, sandy SILT (Topsoil)
	X			29.1	ML	Medium brown, moist to very moist, medium stiff, clayey, sandy SILT
5					RK	Gray-brown, damp, dense to very dense, slightly to moderately weathered and fractured BEDROCK
						Total Depth = 6.0 feet No groundwater encountered at time of exploration
10						
15						
						TEST PIT NO. TH-#6 ELEVATION 380'±
0					ML	Dark brown, moist to very moist, soft, organic, sandy, clayey SILT (Topsoil)
	X			27.7	ML/MH	Medium to reddish-brown, very moist, medium stiff, sandy, clayey SILT
5	X			29.5		
					ML/RK	Gray-brown, moist, dense, highly weathered and fractured BEDROVK
						Total Depth = 8.0 feet No groundwater encountered at time of exploration
10						
15						

LOG OF TEST PITS

PROJECT NO. 1001.058.G | REED ROAD SUBDIVISION | FIGURE NO. A-7

BACKHOE COMPANY: Gene S. McMurrin BUCKET SIZE: 24 icnhes DATE: 6/01/18

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO. TH-#7 ELEVATION 370'±
0					ML	Dark brown, moist to very moist, soft, organic, clayey, sandy SILT (Topsoil)
					ML/MH	Medium to reddish-brown, moist to very, medium stiff, sandy, clayey SILT
5						
					ML/RK	Gray-brown, moist, dense, highly weathered and fractured BEDROCK
						Total Depth = 7.0 feet No groundwater encountered at time of exploration
10						
15						
						TEST PIT NO. TH-#8 ELEVATION 395'±
0					ML	Dark brown, moist to very moist, soft, organic, sandy, clayey SILT (Topsoil)
	X			28.2	ML/MH	Medium to reddish-brown, moist to very moist, medium stiff, sandy, clayey SILT
5						
						Total Depth = 7.0 feet No groundwater encountered at time of exploration
10						
15						

LOG OF TEST PITS

PROJECT NO. 1001.058.G | REED ROAD SUBDIVISION | FIGURE NO. A-8

BACKHOE COMPANY: Gene S. McMurrin BUCKET SIZE: 24 inches DATE: 6/01/18

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO. TH-#9 ELEVATION 320'±
0					ML	Dark brown, moist to very moist, soft, organic, clayey, sandy SILT (Topsoil)
	X			23.3	ML	Medium brown, moist to very moist, medium stiff, clayey, sandy SILT
5					RK	Gray-brown, damp, dense to very dense, slightly weathered and fractured BEDROCK
						Total Depth = 6.0 feet No groundwater encountered at time of exploration
10						
15						
						TEST PIT NO. TH-#10 ELEVATION 355'±
0					ML	Dark brown, moist to very moist, soft, organic, clayey, sandy SILT (Topsoil)
					ML/MH	Medium to reddish-brown, moist to very moist medium stiff, sandy, clayey SILT
5					ML/RK	Gray-brown, moist, dense, highly weathered and fractured BEDROCK
						Total Depth = 7.0 feet No groundwater encountered at time of exploration
10						
15						

LOG OF TEST PITS

PROJECT NO. 1001.058.G | REED ROAD SUBDIVISION | FIGURE NO. A-9

BACKHOE COMPANY: Gene S. McMurrin BUCKET SIZE: 24 inches DATE: 6/01/18

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO. TH-#11 ELEVATION 300'±
0					ML	Dark brown, moist to very moist, soft, organic, sandy, clayey SILT (Topsoil)
	X			26.1	ML	Medium brown, moist to very moist, medium stiff, clayey, sandy SILT
5					RK	Gray-brown, damp, dense to very dense, slightly to moderately weathered and fractured BEDROCK
						Total Depth = 6.0 feet No groundwater encountered at time of exploration
10						
15						

TEST PIT NO. ELEVATION

0
5
10
15

LOG OF TEST PITS

PROJECT NO. 1001.058.G | REED ROAD SUBDIVISION | FIGURE NO. A-10

MAXIMUM DENSITY TEST RESULTS

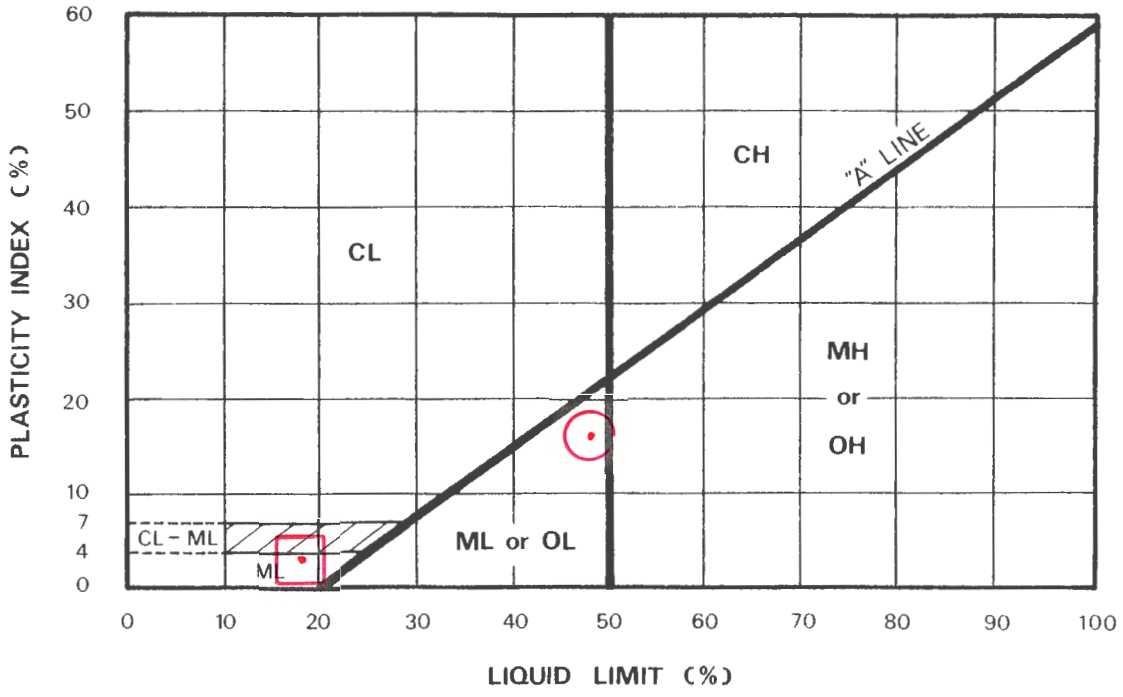
SAMPLE LOCATION	SOIL DESCRIPTION	MAXIMUM DRY DENSITY (pcf)	OPTIMUM MOISTURE CONTENT (%)
TH-#1 @ 2.0'	Medium brown, clayey, sandy SILT(ML)	110.0	17.0
TH-#3 @ 2.0'	Medium to reddish-brown, sandy, clayey SILT (ML/MH)	104.0	24.0

EXPANSION INDEX TEST RESULTS

SAMPLE LOCATION	INITIAL MOISTURE (%)	COMPACTED DRY DENSITY (pcf)	FINAL MOISTURE (%)	VOLUMETRIC SWELL (%)	EXPANSION INDEX	EXPANSIVE CLASS.

MAXIMUM DENSITY & EXPANSION INDEX TEST RESULTS

PROJECT NO.: 1001.058.G	REED ROAD SUBDIVISION	FIGURE NO.: A-11



KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	NATURAL WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %	PASSING NO. 200 SIEVE %	LIQUIDITY INDEX	UNIFIED SOIL CLASSIFICATION SYMBOL
⊡	TH-#1	2.0	20.6	18.8	3.8	78.1		ML
⊙	TH-#3	2.0	28.6	48.3	16.4	81.7		ML

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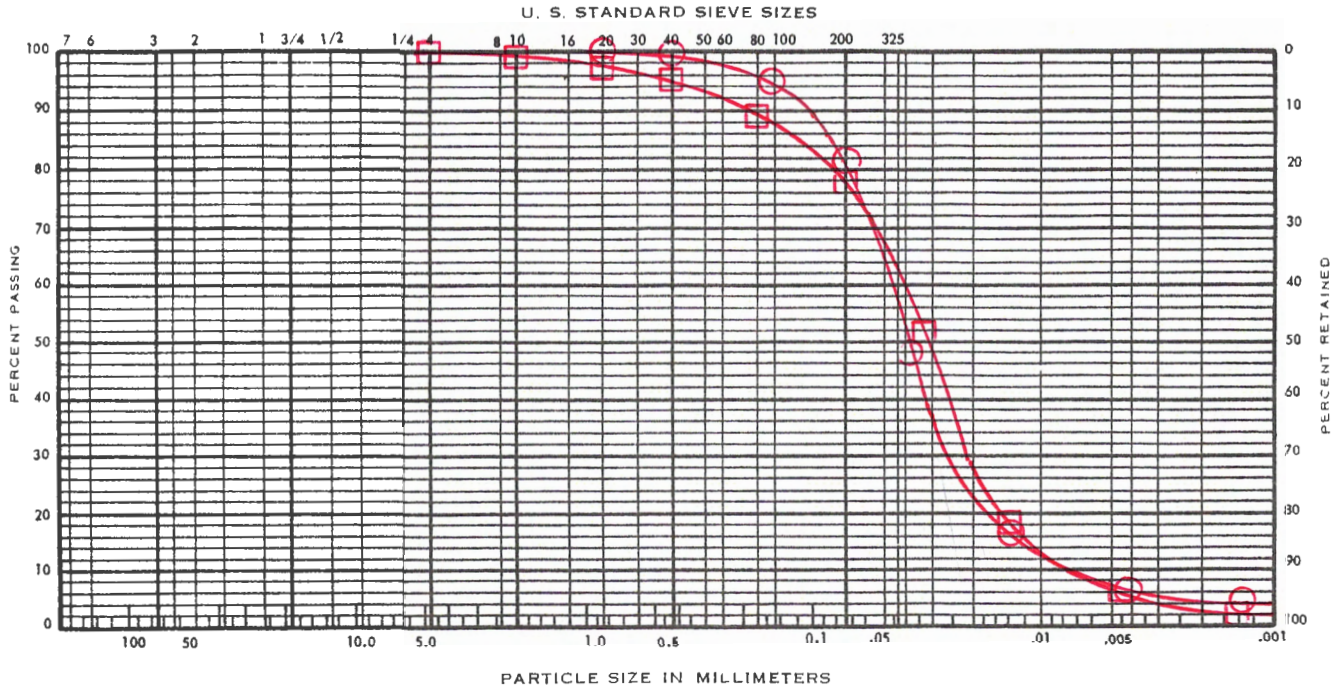
PLASTICITY CHART AND DATA

REED ROAD SUBDIVISION
Salem, Oregon

PROJECT NO.	DATE	
1001.058.G	7/20/18	Figure A-12

UNIFIED SOIL CLASSIFICATION SYSTEM

(ASTM D 422-72)



COBBLES	GRAVEL		SAND			SILT AND CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	ELEV. (feet)	UNIFIED SOIL CLASSIFICATION SYMBOL	SAMPLE DESCRIPTION
⊟	TH-#1	2.0		ML	Medium brown, clayey, sandy SILT
⊖	TH-#3	2.0		ML	Medium to reddish-brown, sandy, clayey SILT

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GRADATION TEST DATA

REED ROAD SUBDIVISION

Salem, Oregon

PROJECT NO.	DATE	FIGURE
1001.058.G	7/20/18	A-13

BORING	: TH-#3	DESCRIPTION	: sandy, clayey SILT (M
DEPTH (ft)	: 2.0	LIQUID LIMIT	: 48.3
SPEC. GRAVITY	: 2.5 (assumed)	PLASTIC LIMIT	: 31.9

	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL	24.0	94.0	86.5	
FINAL	14.2	103.3	95.6	

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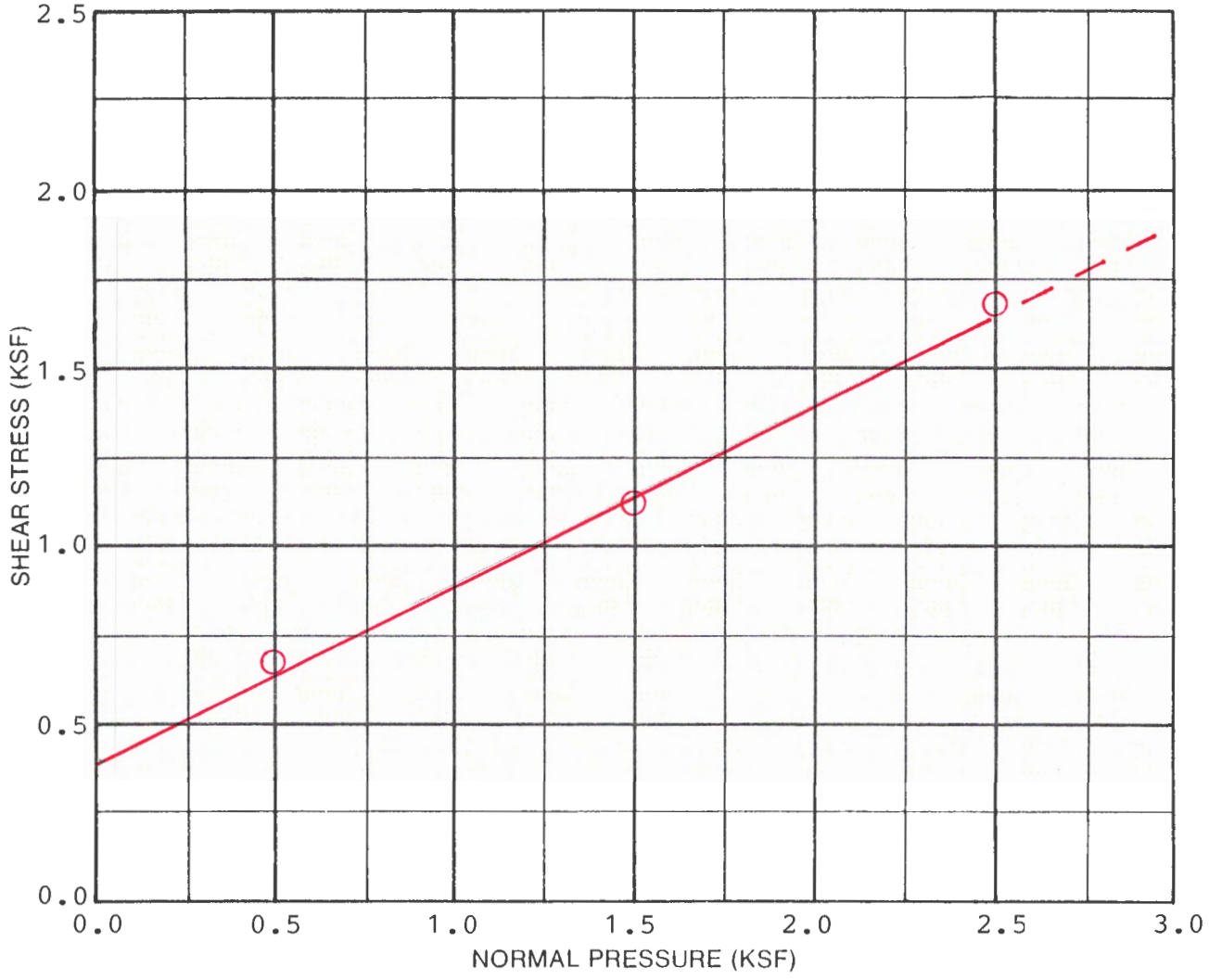
CONSOLIDATION TEST DATA

REED ROAD SUBDIVISION
Salem, Oregon

PROJECT NO.	DATE	
1001.058.G	7/20/18	Figure A-14



SAMPLE DATA	
DESCRIPTION: Medium to reddish-brown, sandy, clayey SILT (ML)	
BORING NO.: TH-#3	
DEPTH (ft.): 2.0	ELEVATION (ft):
TEST RESULTS	
APPARENT COHESION (C): 400 psf	
APPARENT ANGLE OF INTERNAL FRICTION (ϕ): 26°	

TEST DATA				
TEST NUMBER	1	2	3	4
NORMAL PRESSURE (KSF)	0.5	1.5	2.5	
SHEAR STRENGTH (KSF)	0.7	1.1	1.7	
INITIAL H_2O CONTENT (%)	24.0	24.0	24.0	
FINAL H_2O CONTENT (%)	24.7	20.1	15.6	
INITIAL DRY DENSITY (PCF)	94.0	94.0	94.0	
FINAL DRY DENSITY (PCF)	04.8	98.1	103.3	
STRAIN RATE: 0.02 inches per minute				

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DIRECT SHEAR TEST DATA

REED ROAD SUBDIVISION
Slem, Oregon

PROJECT NO.	DATE	
1001.058.G	7/20/18	Figure A-15

RESULTS OF R (RESISTANCE) VALUE TESTS

SAMPLE LOCATION: TH-#1

SAMPLE DEPTH: 2.0 feet bgs

Specimen	A	B	C
Exudation Pressure (psi)	219	329	431
Expansion Dial (o.ooo1")	0	0	1
Expansion Pressure (psf)	0	0	3
Moisture Content (%)	18.6	15.4	12.1
Dry Density (pcf)	99.4	104.2	109.6
Resistance Value, "R"	17	29	41
"R"-Value at 300 psi Exudation Pressure = 28			

SAMPLE LOCATION: TH-#7

SAMPLE DEPTH: 2.0 feet bgs

Specimen	A	B	C
Exudation Pressure (psi)	208	326	439
Expansion Dial (0.0001")	0	1	2
Expansion Pressure (psf)	0	3	8
Moisture Content (%)	27.3	22.1	16.7
Dry Density (pcf)	94.9	99.1	105.7
Resistance Value "R"	13	25	36
"R"-Value at 300 psi Exudation Pressure = 24			

RESULTS OF R (RESISTANCE) VALUE TESTS

SAMPLE LOCATION: TH-#9

SAMPLE DEPTH: 2.0 feet bgs

Specimen	A	B	C
Exudation Pressure (psi)	210	322	426
Expansion Dial (o.ooo1")	0	1	2
Expansion Pressure (psf)	0	3	8
Moisture Content (%)	26.1	21.8	16.2
Dry Density (pcf)	95.4	100.7	106.1
Resistance Value, "R"	15	27	38
"R"-Value at 300 psi Exudation Pressure = 26			

SAMPLE LOCATION:

SAMPLE DEPTH:

Specimen	A	B	C
Exudation Pressure (psi)			
Expansion Dial (0.0001")			
Expansion Pressure (psf)			
Moisture Content (%)			
Dry Density (pcf)			
Resistance Value "R"			
"R"-Value at 300 psi Exudation Pressure =			

Division 004 Appendix C - Infiltration Testing

Location: Reed Road Subdivision	**Date:** June 1, 2018	**Test Hole:** TH-#1
Depth to Bottom of Hole: 4.0 feet	**Hole Diameter:** 6 inches	**Test Method:** Encased Falling Head
Tester's Name: Daniel M. Redmond, P.E., G.E. **Tester's Company:** Redmond Geotechnical Services, LLC		**Tester's Contact Number:** 503-285-0598

Depth (feet)	Soil Characteristics
0-1.0	Dark brown Topsoil
1.0-4.0	Medium brown, clayey, sandy SILT (ML)

Time	Time Interval (Minutes)	Measurement (inches)	Drop in Water (inches)	Infiltration Rate (inches/hour)	Remarks
9:00	0	36.00	----		Filled w/12" water
9:20	20	36.50	0.50	1.50	
9:40	20	36.90	0.40	1.20	
10:00	20	37.23	0.33	0.99	
10:20	20	37.49	0.26	0.78	
10:40	20	37.72	0.23	0.69	
11:00	20	37.93	0.21	0.63	
11:20	20	38.13	0.20	0.60	
11:40	20	38.33	0.20	0.60	

Infiltration Test Data Table

Division 004 Appendix C - Infiltration Testing

Location: Reed Road Subdivision	**Date:** June 1, 2018	**Test Hole:** TH-#5
Depth to Bottom of Hole: 3.0 feet	**Hole Diameter:** 6 inches	**Test Method:** Encased Falling Head
Tester's Name: Daniel M. Redmond, P.E., G.E. **Tester's Company:** Redmond Geotechnical Services, LLC		**Tester's Contact Number:** 503-285-0598

Depth (feet)	Soil Characteristics
0-0.5	Dark brown Topsoil
0.5-3.0	Medium brown, clayey, sandy SILT (ML)

Time	Time Interval (Minutes)	Measurement (inches)	Drop in Water (inches)	Infiltration Rate (inches/hour)	Remarks
9:30	0	24.00	----		Filled w/12" water
9:50	20	24.45	0.45	1.35	
10:10	20	24.79	0.34	1.02	
10:30	20	25.05	0.26	0.78	
10:50	20	25.25	0.20	0.60	
11:10	20	25.41	0.16	0.48	
11:30	20	25.55	0.14	0.42	
11:50	20	25.68	0.13	0.39	
12:10	20	25.81	0.13	0.39	

Infiltration Test Data Table

Division 004 Appendix C - Infiltration Testing

Location: Reed Road Subdivision	**Date:** June 1, 2018	**Test Hole:** TH-#9
Depth to Bottom of Hole: 3.0 feet	**Hole Diameter:** 6 inches	**Test Method:** Encased Falling Head
Tester's Name: Daniel M. Redmond, P.E., G.E. **Tester's Company:** Redmond Geotechnical Services, LLC		**Tester's Contact Number:** 503-285-0598

Depth (feet)	Soil Characteristics
0-0.5	Dark brown Topsoil
0.5-3.0	Medium brown, clayey, sandy SILT (ML)

Time	Time Interval (Minutes)	Measurement (inches)	Drop in Water (inches)	Infiltration Rate (inches/hour)	Remarks
9:50	0	24.00	----		Filled w/12" water
10:10	20	24.40	0.40	1.20	
10:30	20	24.72	0.32	0.96	
10:50	20	24.96	0.24	0.72	
11:10	20	25.15	0.19	0.57	
11:30	20	25.29	0.14	0.42	
11:50	20	25.41	0.12	0.36	
12:10	20	25.52	0.11	0.33	
12:30	20	25.62	0.10	0.30	

Infiltration Test Data Table

Figure No. A-20

Division 004 Appendix C - Infiltration Testing

Location: Reed Road Subdivision	**Date:** June 1, 2018	**Test Hole:** TH-#11
Depth to Bottom of Hole: 2.0 feet	**Hole Diameter:** 6 inches	**Test Method:** Encased Falling Head
Tester's Name: Daniel M. Redmond, P.E., G.E. **Tester's Company:** Redmond Geotechnical Services, LLC		**Tester's Contact Number:** 503-285-0598

Depth (feet)	Soil Characteristics
0-0.5	Dark brown Topsoil
0.5-2.0	Medium brown, clayey, sandy SILT (ML)

Time	Time Interval (Minutes)	Measurement (inches)	Drop in Water (inches)	Infiltration Rate (inches/hour)	Remarks
10:10	0	12.00	----		Filled w/12" water
10:30	20	12.30	0.30	0.90	
10:50	20	12.53	0.23	0.69	
11:10	20	12.70	0.17	0.51	
11:30	20	12.83	0.13	0.39	
11:50	20	12.93	0.10	0.30	
12:10	20	13.01	0.08	0.24	
12:30	20	13.08	0.07	0.21	
12:50	20	13.15	0.07	0.21	

Infiltration Test Data Table

Appendix "B"

Geologic Hazard Assessment

NORTHWEST GEOLOGICAL SERVICES, INC.
Consulting Geologists and Hydrogeologists
2505 N.E. 42nd Avenue, Portland, Oregon 97213-1201
503-249-1093 nwgeological@gmail.com

Redmond Geotechnical Services **20 June 2018**
P. O. Box 20547
Portland, Or 97294

Attention: Dan Redmond

Geologic Hazard Assessment
Reed Rd SE Site
8S/3W– 11D TLs 100, 101, 200, 400 & 601
8S/3W - 12B TL 1600
Salem, Oregon

Dear Dan:

The purpose of this letter is to present Northwest Geological Services, Inc. (NGS) Geologic Hazard Assessment for the above referenced properties as per your verbal authorization of 2 February 2018. We understand that our services are in support of your client's effort to subdivide and develop the site.

1. Purpose and Scope of Study

The City slope hazard database indicates that the site has a hazard score of from 2 to 3 points. City of Salem Planning rules indicate that site requires a geologic hazard assessment. The purpose of this letter is to meet that requirement.

For the study we conducted the following tasks:

- Reviewed DOGAMI hazard studies and maps of the area;
- Obtained GIS survey and Hazard maps from City of Salem Public Works;
- Reviewed geologic and topographic maps for the site area;
- Reviewed aerial imagery (1944-2017);
- Observed samples from three test pits and conducted a brief site reconnaissance; and
- Prepared this letter.

2. Site Setting and Slopes

The subject property consists of six Tax lots totaling 46.28 acres located north of Kuebler Blvd and east of Battle Creek and Reed Roads SE in Salem, Oregon (Figures 1 and 2).

The highest elevations are on the NNE-SSW ridge extending across the site. Elevations range from about 426 at the east edge of TL 101 down to 260 along the creek at the north end of TL 200 and 270 at the NE corner of TL 1600 (Figure 2). The steepest natural slopes are ~12 acers of 17% – 20% in the center of TL 100 with two small (1/3 acre) patches of slope up to 24%. The steepest slopes are man-made and up to 50% for Kuebler Blvd SE and Battle Creek Rd SE. The gentlest slopes are on the alluvial terrace above the creek in TL 200 and in TL 1600 and in the summit area in TL 101.

Figure 3 shows 1967 and 2017 aerial photos of the site and adjacent area. Our review of aerial photos[1] and reconnaissance indicates that the cuts for Battle Creek Rd were made before 1944 and

[1] We reviewed photos and images from 1944 through 2014, see Section 7, References.

widened in the 1980s. The aerial photo shows the large cut for Kuebler immediately south of the site was built between 1984 and 1994. All natural and man-made cuts appear stable.

The aerial photos also indicate that the site has been fallow scrubland, pasture and/or used to grow grasses or grains since the mid 1940s. Presently the site is covered by grasses and scrub with scattered wooded areas.

3. Site Engineering Geology

According to published mapping (Foxworthy, 1970; Bella, 1981; Beeson & Tolan, 2001) and our geologic mapping for Marion County (NGS, 1997), most of the site is underlain by the Sentinel Bluffs flows of the Columbia River Basalt (Figure 4). The summit area, above about 350 ft, is underlain by the Silver Falls flow. The lowest area along Reed Rd SE is underlain by the Winter Water flows. Slopes below 400 ft were scoured by the Missoula Floods 13,000 to ~ 50,000 years ago (Waitt, 1985). Flood scour removed much of the soil below about 400 leaving generally thinner soils and/or weathered basalt.

The basalt flows are mantled by a few feet of red-brown clayey SILT and weathered to severely weathered. The severely weathered to decomposed basalt is weathered to a hard to very hard clayey silt (laterite). The Silver Falls flows are more open-textured than the older flows and thus more susceptible to weathering. Consequently, the residual soils from weathering of those flow are deeper than those at lower elevations.

Three test pits were excavated at the site to confirm the depth to basalt and the nature of the overlying soils for the geologic hazards study. Figure 5 shows the locations of the test pits. Hard decomposed basalt was found at shallow depths in test pits TP-2 and -3 (Table 1, below). Additionally, alluvial silt fills the low area along the stream paralleling Reed Rd SE[2].

Table 1 - Test Pit Data

Geologic Unit	TP-1	TP-2	TP-3
Topsoil	0 - 0.7 ft	0 - 0.7 ft	0 - 0.7 ft
Brown clayey, sandy SILT	0.7 - 8 ft		
Red brown clayey SILT		0.7 - 2 ft	0.7 - 6 ft
Weathered Basalt		2 - 6 ft	6 ft
Total Depth		6 ft	6 ft

The residual soils in TP-2 was stiff and bedrock was present below 2 ft. The silt in TP-3 was medium stiff and graded down to highly weathered basalt by 6 ft. TP-2 was dug near the bottom of the Sentinel Bluffs basalt where the basalt is generally comprised of large blocks or columns and is generally only slightly weathered. TP-3 was located within the flow top zone where the basalt is usually vesicular and moderately to severely weathered. However, even the undisturbed weathered - or even decomposed - basalt is very competent.

[2] Additional test pits were excavated for the geotechnical investigation.

4. Geologic Hazards

The available geologic mapping indicates a lack of potential geologic hazards at the site or to the proposed subdivision development (Figure 4). Our mapping and the test pits show the site is underlain by a few feet of stiff to hard soils with weathered basalt at shallow depths. However, several years ago DOGAMI estimated a “low to intermediate” relative earthquake risk for the site area (Wang & Leonard, 1996).[3] Additionally DOGAMI recently added potential landslide susceptibility ranking to its SLIDO web site. That ranking shows the site with a moderate to high susceptibility to landslides. Finally, the City of Salem shows some slopes steep enough to present a level 2 to 3 risk (on a scale of 0 to 6).

4.1 GMS-105 Estimated Earthquake Hazards

GMS-105 (Wang & Leonard, 1996) show the following relative earthquake hazard risks:

- Liquefaction susceptibility: 0 on a scale of 0 (none) to 5 (high) based on an estimated lack of potentially liquefiable soil in the subsurface.
- Amplification susceptibility: 1 to 5 depending on location across the site on a scale of 0 (low) to 5 (high). This ranking is supposedly based on an estimated presence of unconsolidated or soft soils in the subsurface.
- Landslide susceptibility: 1 to 2 on scale of 0 (low) to 5 (high) based on slopes of less than 6% up to 15%.
- Overall Relative Earthquake Hazard: Zone C (low to intermediate) for the development area on scale of D (low) to A (highest) based on combination of the above hazards. However the thicker and softer alluvial soil along the creek in TL 200 is Zone B (intermediate to high).

Our reconnaissance of the site indicates that areas shown "moderate" or “high” hazard by GMS-105 are, in fact, the man made slopes and very localized features of a few feet in amplitude. Additionally, the test pits and nearby cut slopes demonstrate a lack of soil or rock susceptible to slope failure on slopes as low as those at the site. Thus on-the-ground geologic reconnaissance indicates that there are no geologic or topographic features that create seismic induced slope failure risk beyond that of adjacent areas shown as "no risk" areas by GMS-105.

4.2 DOGAMI Landslide Susceptibility

The landslide susceptibility maps are derived from generalized digital geologic maps, evaluation of LIDAR imagery and comparison with information for existing nearby landslides (Burns and others, 2012). They are not maps of landslides. Rather, they denote areas that should be evaluated by a qualified professional Engineering Geologist. They are similar to – but more advanced – than the City of Salem risk maps that are based mainly on slope and the presence of nearby landslides.

4.3 Actual Potential for Earthquake or Water Induced Geologic Hazards

The site has gentle to moderate slopes. There are no natural slopes at the site steep enough to fail during an earthquake. Site soils below 3 to 3.5 ft depth are stiff to hard, thus limiting the potential for lateral spreading. Possibly, GMS-105 overestimated this risk because the GIS indicated a “steep slope” somewhere in an estimation cell that included the site. The City GIS map we obtained shows no steep slopes present other than the small areas associated with the man made cuts and the 2 small patches of slope >20%. However, the lack of elevated risk for seismic induced slope failure does not imply a lack of seismic risk. The site is subject to the same strong ground motions from local or

[3] The newer DOGAMI earthquake risk map (IMS-17 by Hofmeister & others, 2000) does not extend to the site.

distant earthquakes as are similar shallow bedrock sites throughout the area. The existing natural slopes appear stable with respect to saturation. However, steep cuts into them or fills place on them may be less stable than the natural slope.

5. Conclusions and Recommendations

The site is gently to moderately sloped and has a very low susceptibility to landsliding under any natural geologic circumstance, in our opinion. In our experience, the weathered basalt is not susceptible to slope spreading or liquefaction during strong ground motions from earthquakes. The basalt bedrock is at shallow depth and is not susceptible to failure during earthquakes beneath the existing site slopes. Thus, the site does not appear to be at significant risk from the forms of slope instability evaluated by GMS-105 or the DOGAMI landslide susceptibility maps. In our opinion, development of this site should not create new or exacerbate existing geologic hazards. However, we caution that any fills at the site may be subject to failure or settlement during strong ground motions. As noted above, cuts into the natural slopes may be less stable than the existing slope. Consequently, we recommend that foundations, cuts and fills should be designed by a qualified professional using recommendations from your geotechnical investigation.

In our experience, the decomposed and weathered basalt have relatively low permeability. Consequently, the thin soil overlying the basalt may become fully saturated during intense precipitation or after prolonged intervals of moderate precipitation. We recommend provision be made for on site storm water retention and off site disposal. The system should be designed by a qualified professional.

6. LIMITATIONS AND LIABILITY

We call your attention to the paragraphs on Warranty and Liability in the General Conditions (dated 1/2018) that you previously approved. Interpretations and recommendations presented herein are based on limited data and observations. Actual subsurface conditions may vary from those inferred from the limited information available to us. If site excavations for development find conditions to differ significantly from those inferred herein, you should contact us and provide an opportunity for us to review our recommendations for the site.

We thank you for the opportunity to assist you with your project. Please contact me if you have questions about the report.

Yours very truly,
Northwest Geological Services, Inc.
Clive F. (Rick) Kienle, Jr.
Principal Engineering Geologist
and Vice President

NGS Reference 235.104-1

7. References

Aerial Photographs & Imagery: US Geological Survey – 1944, 10 August 1954, 16 October 1967, 3 July 1973, 18 June 1994, 23 July 2000, 29 February 2008; USDA Farm Service Agency – 17 August 2003; WAC Corp – 28 March 1990; State of Oregon – 28 June 2005, 8 July 2010; Google, Inc. – 6 October 2017.

Bela, James L., 1981, Geologic Map of the Rickreall and Salem West Quadrangles, Oregon, Oregon Dept. Geology & Mineral Industries, Geologic Map Series, GMS-18.

Beeson, M.H. and T.L. Tolan, 2001, Geologic Map of the Salem West, Oregon 7 ½ Minute Quadrangle, unpublished geologic mapping for the US Geological Survey Urban Corridors Hazards program.

Burns, W.J., Madin, I.P., and K. A. Mickelson, 2012, Protocol for shallow-landslide susceptibility mapping, Dept. Geology & Mineral Industries Special Paper 45.

Foxworthy, B. L., 1970, Hydrologic Conditions and Artificial Recharge Through a Well in the Salem heights Area of Salem, Oregon, U. S. Geological Survey Water-Supply Paper 1594F.

Harvey, A. F. and G. L. Peterson, 1998, Water-induced landslide hazards, Western Portion of the Salem Hills, Marion County, Oregon, Oregon Dept. Geology & Mineral Industries, IMS-6.

Hofmeister, R. J. Wang, Y. and D. K. Keefer, 2000, Earthquake-Induced Slope Instability: Relative Hazard map Western portion of the Salem Hills, Marion County, Oregon, Oregon Dept. Geology & Mineral Industries, IMS-17.

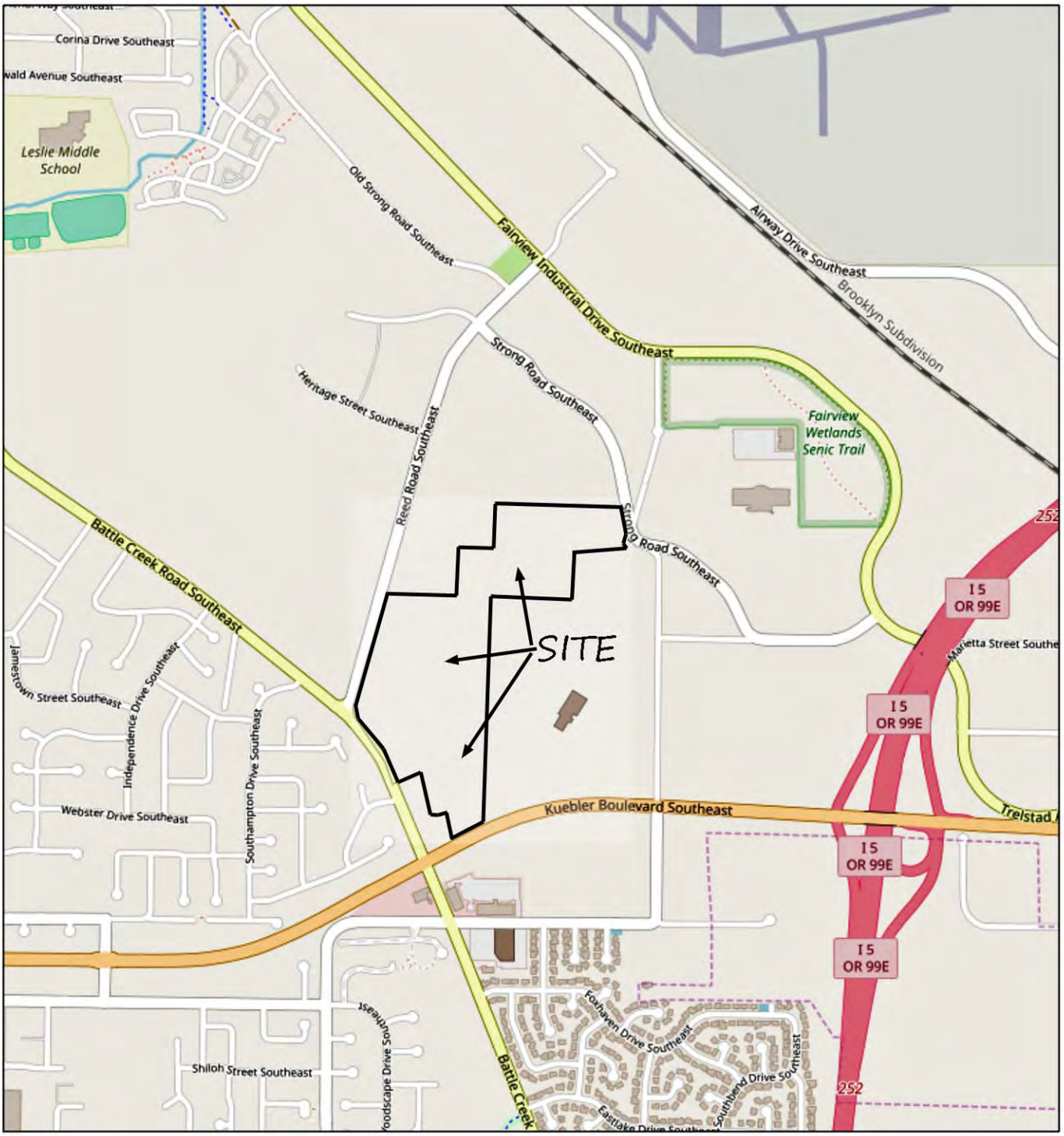
NGS, 1997, Geologic and Hydrogeologic Study of the Residential Acreage-Zoned Areas of Marion County Underlain By Columbia River basalt and Older Rocks; Northwest Geological Services, Inc. Report dated May 1997 to Marion County.

Salem, City of, undated, Slope Hazard Report Requirements.

Salem, City of Planning, Hazards Map dated August 2016.

Waitt, R. B., Jr., 1985, Case for periodic, colossal jökulhlaups from Pleistocene Lake Missoula, Geol. Soc. Amer. Bull. V 96, no. 10, pp. 1271-1286.

Wang, Y. and W.J. Leonard, 1996, Relative earthquake hazard maps of the Salem E. and Salem W. Quadrangles, Marion and Polk Counties, Oregon, Oregon Dept. Geology & Mineral Industries, Geologic Map Series, GMS-105.



1:19,200

0 0.1 0.2 0.4 mi

0 0.17 0.35 0.7 km

N

Reed Rd SE Site		
8S/3W-11D-100, 101, 200, 400 & 601; 12B-1600		
Geologic Assessment Site Location Map		
NGS, Inc.	June 2018	**Figure 1**

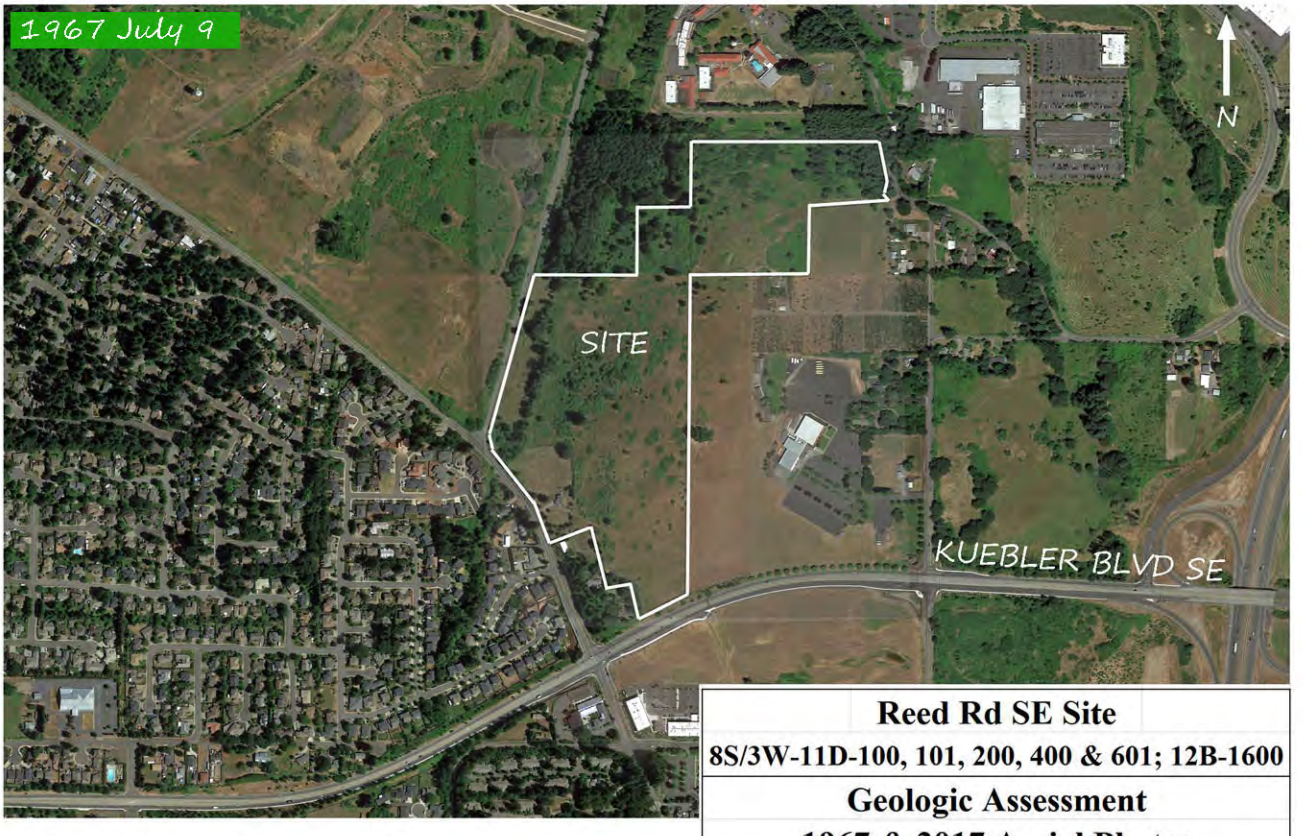
Legend

+ Spot elevation	**Contours**
Taxlot boundary	2 ft
Creek	10 ft
Building footprint	

Map provided by City of Salem Public Works Dept.

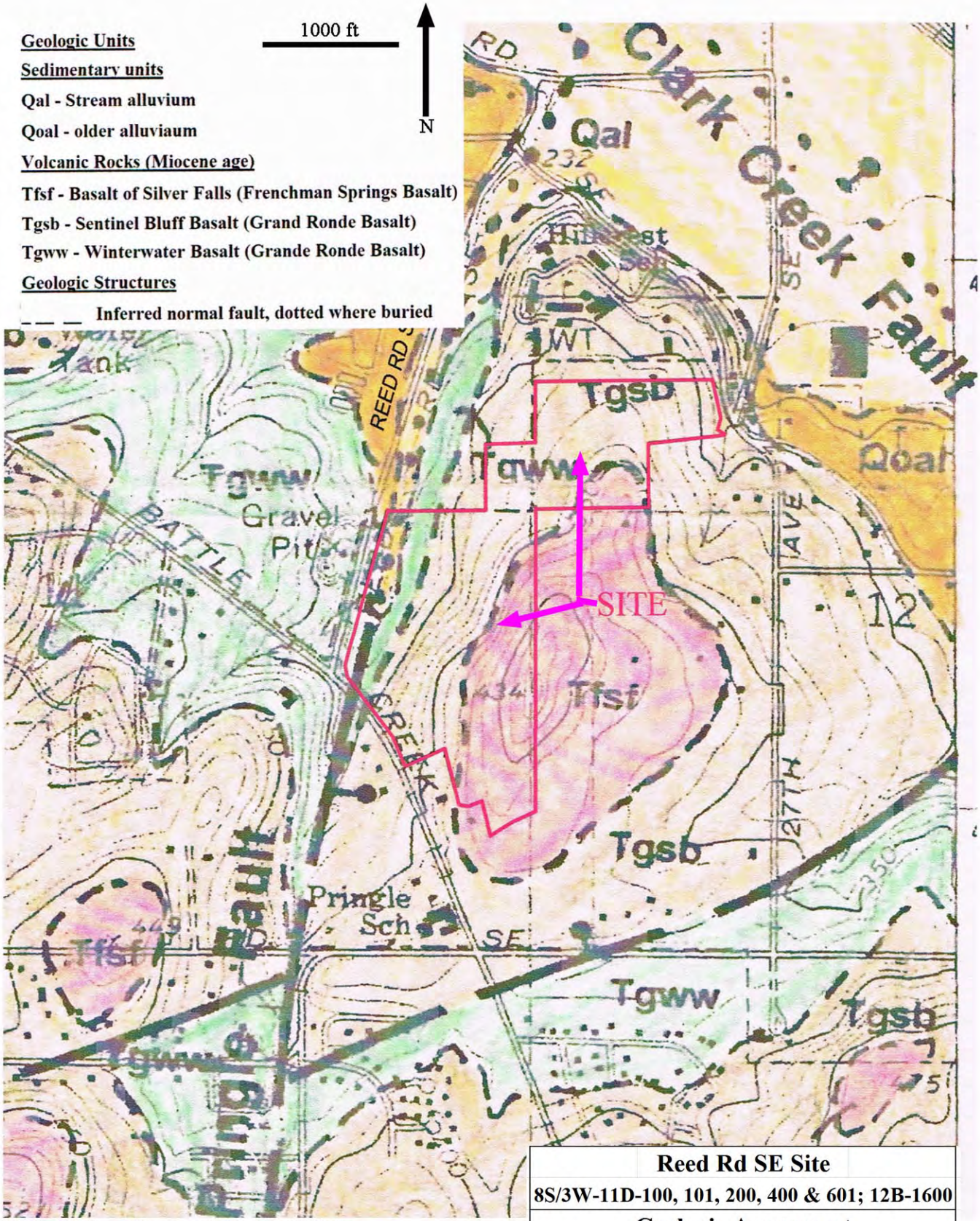
24% Areas with natural slope > 20%

Reed Rd SE Site		
8S/3W-11D-100, 101, 200, 400 & 601; 12B-1600		
Geologic Assessment		
Site LIDAR Topography Map		
NGS, Inc.	June 2018	**Figure 2**



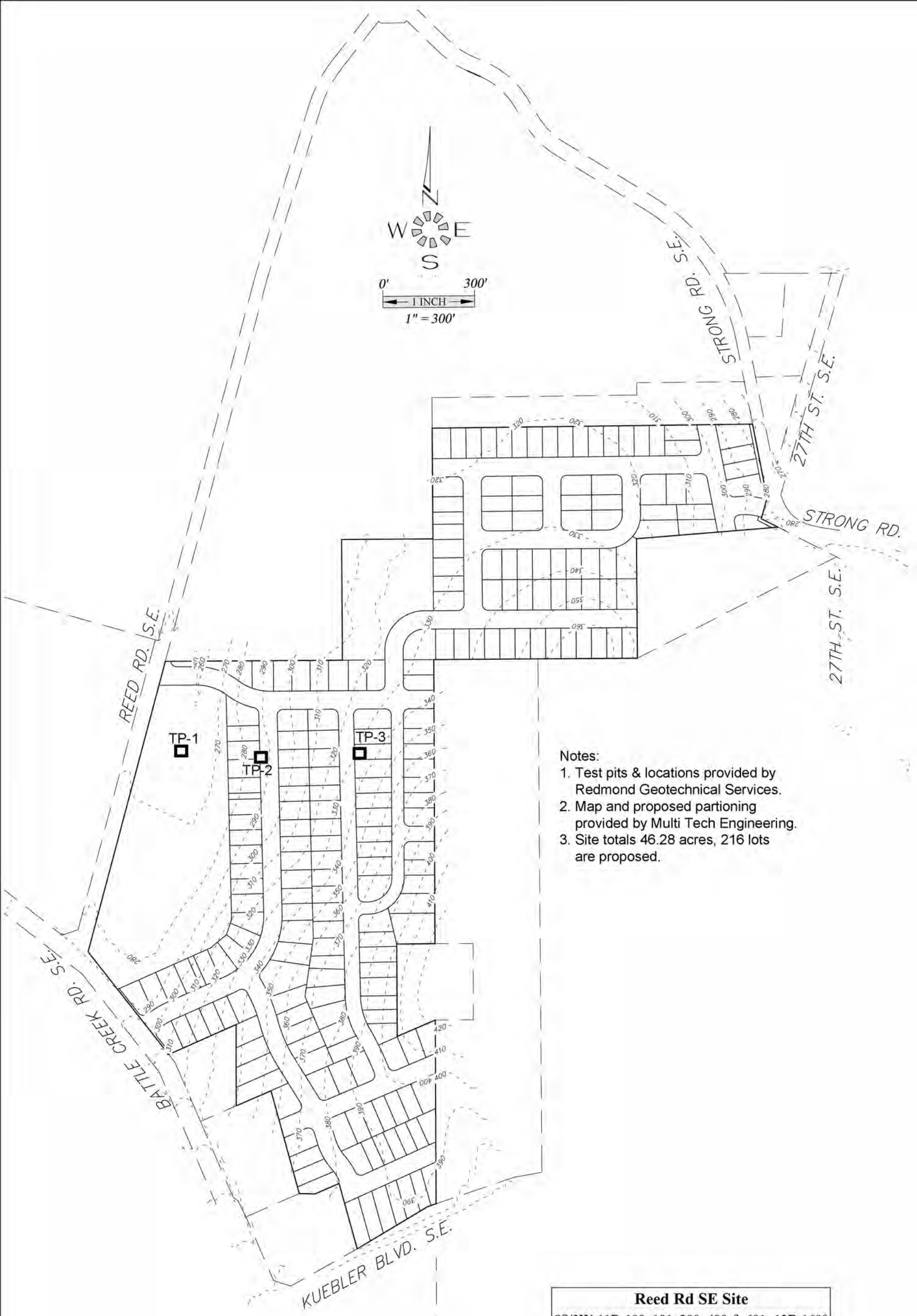
1967 photo from US Geological Survey
2017 from Digital Globe

Reed Rd SE Site		
8S/3W-11D-100, 101, 200, 400 & 601; 12B-1600		
Geologic Assessment		
1967 & 2017 Aerial Photos		
NGS, Inc.	June 2018	**Figure 3**



Geology from Beeson & Tolan (2001)

Reed Rd SE Site		
8S/3W-11D-100, 101, 200, 400 & 601; 12B-1600		
Geologic Assessment		
Site Area Geology		
NGS, Inc.	June 2018	**Figure 4**



Notes:

1. Test pits & locations provided by Redmond Geotechnical Services.
2. Map and proposed partioning provided by Multi Tech Engineering.
3. Site totals 46.28 acres, 216 lots are proposed.

Reed Rd SE Site		
8S/3W-11D-100, 101, 200, 400 & 601; 12B-1600		
Geologic Assessment Proposed Partitioning and Development		
NGS, Inc.	June 2018	**Figure 5**

NOTICE OF DECISION

PLANNING DIVISION
555 LIBERTY ST. SE, RM 305
SALEM, OREGON 97301
PHONE: 503-588-6173
FAX: 503-588-6005

CITY OF Salem AT YOUR SERVICE

Si necesita ayuda para comprender esta informacion, por favor llame 503-588-6173

DECISION OF THE SALEM PLANNING COMMISSION

MINOR COMPREHENSIVE PLAN MAP AMENDMENT / NEIGHBORHOOD PLAN CHANGE / ZONE CHANGE CASE NO.: CPC-NPC-ZC20-07

APPLICATION NO.: 20-106290-ZO / 20-115347-ZO / 20-106298-ZO

NOTICE OF DECISION DATE: October 22, 2020

REQUEST: A consolidated application to change the Comprehensive Plan Map Designation, Neighborhood Plan Change and Zone change of an approximately ten acres land area from Developing Residential with RS (Single Family Residential) zoning to Multiple Family with RM-II (Multiple Family Residential) zoning. The subject site is an approximately 27.72 acres in size, zoned RA (Residential Agriculture), and located at 4800 Block of Battle Creek Road SE (Marion County Assessor map and tax lot numbers: 083W11D / 400 and 601).

APPLICANT: Brandie Dalton, Multi-Tech Engineering Services Inc., on behalf of Westwood Homes LLC (Todd Richard Boyce and Bill Wagoner)

LOCATION: 4800 Block of Battle Creek Road SE

CRITERIA: Salem Revised Code (SRC) Chapters 64.025(e)(2) – Comprehensive Plan Map Amendments and 265.005(e)(1) – Zone Changes

FINDINGS: The findings are in the attached Decision dated October 22, 2020.

DECISION: The **Planning Commission APPROVED** Minor Comprehensive Plan Map Amendment, Neighborhood Plan Change, and Zone Change CPC-NPC-ZC20-07 subject to the following conditions of approval:

Condition 1: Any development shall provide internal connection to Marion County Tax Lots Number 083W11D / 202 083W11D / 300 and 083W11D / 500 & 602 on local streets.

Condition 2: Any development shall provide access through future local streets to the undeveloped property to the east (083W12C / 700).

VOTE:

Yes 7 **No 2 (Heller, Slater)** **Absent 0**

Chane Griggs, President
Salem Planning Commission

Application Deemed Complete:	September 23, 2020
Public Hearing Date:	October 20, 2020
Notice of Decision Mailing Date:	October 22, 2020
Decision Effective Date:	November 7, 2020
State Mandate Date:	January 21, 2021

Case Manager: Olivia Dias, odias@cityofsalem.net, 503-540-2343

This decision is final unless written appeal and associated fee (if applicable) from an aggrieved party is filed with the City of Salem Planning Division, Room 320, 555 Liberty Street SE, Salem OR 97301, or by email at planning@cityofsalem.net, no later than 5:00 p.m., Friday, November 6, 2020. Any person who presented evidence or testimony at the hearing may appeal the decision. The notice of appeal must contain the information required by SRC 300.1020 and must state where the decision failed to conform to the provisions of the applicable code section, SRC Chapter(s) 64 and 265. The appeal fee must be paid at the time of filing. If the appeal is untimely and/or lacks the proper fee, the appeal will be rejected. The Salem City Council will review the appeal at a public hearing. After the hearing, the Salem City Council may amend, rescind, or affirm the action, or refer the matter to staff for additional information.

The complete case file, including findings, conclusions and conditions of approval, if any, is available for review by contacting the case manager, or at the Planning Desk in the Permit Application Center, Room 305, City Hall, 555 Liberty Street SE, during regular business hours.

http://www.cityofsalem.net/planning

FACTS & FINDINGS

COMPREHENSIVE PLAN CHANGE / NEIGHBORHOOD PLAN CHANGE / ZONE CHANGE CASE NO. CPC-NPC-ZC20-07

OCTOBER 22, 2020

PROCEDURAL FINDINGS

1. On September 2, 2020, an application was filed for a Comprehensive Plan Map Amendment, Neighborhood Plan Map Amendment and Quasi-Judicial Zone Change by Brandie Dalton of Multi Tech Engineering to change ten acre portion of two properties totaling approximately 27.72-acre subject property from "Residential Agriculture" to "Multiple Family Residential" and to change the zoning of that portion from RA (Residential Agriculture) to RM-II (Multi-Family Residential).

2. The consolidated application was deemed complete for processing on September 23, 2020, and a public hearing to consider the application was scheduled for October 20, 2020.

3. On August 12, 2020, the applicant and their representatives attended the Neighborhood Association Meeting and presented their proposal, meeting the open house requirements of SRC 300.320.

4. Notice of the consolidated application was provided to surrounding property owners and tenants, pursuant to Salem Revised Code (SRC) requirements, on September 30, 2020. The property was posted in accordance with the posting provision outlined in SRC 300.620.

5. DLCD Notice. State law (ORS 197.610) and SRC 300.620(b)(1) require the City to provide the Oregon Department of Land Conservation and Development (DLCD) a minimum 35-day notice when an applicant or the City proposes an amendment to an acknowledged Comprehensive Plan or land use regulation or to adopt a new land use regulation. The City sent notice of the proposed Comprehensive Plan Change and Zone Change application to DLCD on September 15, 2020.

6. On October 20, 2020, the Planning Commission held a public hearing for the consolidated applications. The Planning Commission received testimony both for and against the application. The public hearing was closed and voted to grant the Comprehensive Plan Change, Neighborhood Plan Change, Zone Change applications.

7. 120-Day Rule. Pursuant to Oregon Revised Statutes (ORS) 227.128, amendments to an acknowledged Comprehensive Plan are not subject to the 120-day rule. In addition, the requested Quasi-Judicial Zone Change included with the application is similarly not subject to the 120-day rule because, pursuant to ORS 227.178(10), the zone change has been filed concurrently, and is being considered jointly, with the proposed comprehensive plan amendment.

BACKGROUND / PROPOSAL

The applicant is requesting a comprehensive plan change, neighborhood plan change from "Developing Residential" to "Multiple Family" and to change the zoning of that portion from RA (Residential Agriculture) to RM-II (Multiple Family Residential).

APPLICANT'S STATEMENT

Land use applications must include a statement addressing the applicable approval criteria and be supported by proof they conform to all applicable standards and criteria of the Salem Revised Code. The written statement provided by the applicant summarizing the request and addressing compliance with the applicable approval criteria, as well as the existing conditions plan illustrating the existing development on the property, are attached to this report as follows:

- Applicant's Written Statement: **Attachment C**

Planning Commission utilized the information included in the applicant's statement to evaluate the proposal and to establish the facts and findings.

SUMMARY OF RECORD

The following items are submitted to the record and are available upon request: All materials submitted by the applicant, including any applicable professional studies such as traffic impact analysis, geologic assessments, stormwater reports, any materials and comments from public agencies, City Departments, neighborhood associations, and the public; and all documents referenced in this report.

FACTS AND FINDINGS

1. Salem Area Comprehensive Plan (SACP)

The Salem Area Comprehensive Plan (SACP) map designates the subject property as "Developing Residential." The SACP describes the intent of the "Developing Residential" designation as "to hold the properties needed to accommodate future urban development during the next 20 years."

The Comprehensive Plan designations of surrounding properties include:

North: "Developing Residential"

South: (Across Kuebler Blvd SE) "Commercial"

East: "Developing Residential"

West: "Developing Residential"

Components of the Comprehensive Plan

The Salem Area Comprehensive Plan is the long-range plan for guiding development in the Salem urban area. The overall goal of the plan is to accommodate development in a timely, orderly, and efficient arrangement of land uses and public facilities and services that meets the needs of present and future residents of the Salem urban area. Many different documents and maps, when taken together, comprise the Salem Area Comprehensive Plan.

Salem Transportation System Plan (TSP): The TSP uses a Street Classification System to determine the functional classification of each street within the City's street system. Kuebler Blvd, designated as a parkway street in the TSP, which abuts the southern boundary of the subject property, Reed Road SE, designated a Minor Arterial street in the TSP abuts the northern boundary of the property and Battle Creek Road, designated as a Major Arterial street in the TSP abuts the western boundary of the property.

Relationship to the Urban Service Area

The subject property is located outside of the Urban Service Area. A UGA permit is not required for the Comprehensive Map Change or Zone Change applications. The applicant has an approved UGA Permit (UGA17-03MOD1). Prior to plat of SUB-ADJ19-08 or future development of multi-family, a modification to the previous UGA permit will be required.

Infrastructure

Water:	The *Salem Water System Master Plan* identifies the subject property to be within the S-1 and S-2 water service levels. A 12-inch public water line in the S-2 service level located in Kuebler Boulevard SE. Mains of this size generally convey flows of 2,100 to 4,900 gallons per minute.
Sewer:	A 15-inch sewer line is located in Battle Creek Road SE.
Storm Drainage:	Drainage patterns in this area are generally conveyed into Pringle Creek. A portion of the property appears to drain southeast toward Kuebler Boulevard SE.
Streets:	Kuebler Boulevard SE has an approximate 70 to 80-foot improvement within a 120 to 150-foot-wide right-of-way abutting the subject property. This street is designated as a Parkway street in the Salem TSP. This section of the parkway was previously approved for an alternative street standard to allow a 70-foot improvement within a 120-foot-wide right-of-way. Battle Creek Road SE has an approximate 20 to 46-foot improvement within a 60 to 72-foot-wide right-of-way

abutting the subject property. This street is designated as a Minor Arterial street in the Salem TSP. The standard for this street classification is a 46-foot-wide improvement within a 72-foot-wide right-of-way.

Reed Road SE has an approximate 20 improvement within a 40-foot-wide right-of-way abutting the subject property. This street is designated as a Minor Arterial street in the Salem TSP. The standard for this street classification is a 46-foot-wide improvement within a 72-foot-wide right-of-way.

Transportation Planning Rule: A Transportation Planning Rule (TPR) Analysis in consideration of the requirements of the TPR (OAR 660-012-0060) is needed to demonstrate that the proposed Comprehensive Plan Change/Zone Change (CPC/ZC) will not have a significant effect on the transportation system as defined by OAR 660-012-0060. Findings addressing the Transportation Planning Rule can be found below.

2. Zoning

The subject property is zoned RA (Residential Agriculture) and is currently vacant. Surrounding properties are zoned and used as follows:

North: RA (Residential Agriculture); Vacant with approved single-family subdivision.

South: (Across Kuebler Blvd SE) CR (Retail Commercial); vacant.

East: RA (Residential Agriculture); Vacant

West: RA (Residential Agriculture); single family homes.

3. Existing Conditions

The subject property is approximately 27.72 acres in size and is currently vacant. The property was previously approved for a phased subdivision (SUB-ADJ19-08). The subdivision was approved for a total of 209-lots on a total of 52.80 acres. The subdivision has not yet been platted or constructed.

4. City Department Comments

Salem Public Works Department – The Public Works Department, Development Services Section, reviewed the proposal and submitted comments **(Attachment F)**.

Salem Fire Department – The Salem Fire Department submitted comments indicating no concerns with the proposed Comprehensive Plan and zone change, and that Fire Code issues would be addressed at the time of building permit application.

Salem Community Development Department, Building and Safety Division – The Building and Safety Division submitted comments indicating no concerns with the proposal.

5. Public Agency & Private Service Provider Comments

Salem-Keizer Public Schools – Salem-Keizer Public Schools reviewed the proposal and submitted comments detailing school capacity.

Oregon Department of Land Conservation and Development (DLCD) – No comments received.

6. Neighborhood Association and Public Comments

The subject property is located within the boundaries of the Morningside Neighborhood Association (Morningside) and adjacent to South Gateway Neighborhood Association (SGNA).

Required Open House/Neighborhood Meeting. Prior to application submittal, SRC 300.320 requires the applicant for a proposed minor amendment to the City's comprehensive plan map to either arrange and conduct an open house or present their proposal at a regularly scheduled meeting of the neighborhood association the property is located within. On August 12, 2020, the applicant and their representatives attended Morningside Neighborhood Association meeting to present their proposal. A summary of the comments provided at the neighborhood association meeting prepared by the applicant's representative are included in the record**.**

Notification was sent to the Morningside, SGNA, surrounding property owners and tenants on September 23, 2020. One comment from Oregon Fair Housing Council was submitted in support of the application.

Morningside Neighborhood Association and one surrounding property owner submitted comments in opposition and raised the following issues:

Traffic Impacts to Reed Road

The Morningside Neighborhood Association is opposed to the zone change due to the increase in traffic on Reed Road SE. Several projects in the area will bring additional vehicle traffic volumes to the existing street, which is already unsafe and dangerous. Reed Road SE is narrow, has no shoulder. Reed Road SE is in need of widening and improvements to the intersection of Battle Creek Road SE and Reed Road should be completed prior to approval of any zone changes that result in increased traffic until those improvements have been made.

Findings:

Transportation Planning Rule (TPR)

The determination of significant impact on a transportation facility is based upon a

comparison of potential trip generation from uses allowed under the current designations and uses allowed under the proposed designations; it is not based upon a comparison of trips generated from the current use -- undeveloped land – to trips generated from potential uses under the proposed designations. The applicant is not required to identify proposed land uses or provide a development plan for this application for land use designations, and the City is not required to impose conditions that will mitigate any potential effect development may have on transportation facilities. The finding in the original staff report discusses the requirement and staff analysis:

"The applicant submitted a Transportation Planning Rule (TPR) Analysis in consideration of the requirements of the Transportation Planning Rule (OAR 660-012-0060). The TPR analysis demonstrates that the proposed Comprehensive Plan Change and Zone Change will not have a significant effect on the transportation system. The TPR analysis takes into consideration the existing zoning in the vicinity, including the previously approved residential and commercial property across Kuebler Blvd (Costco). The Assistant City Traffic Engineer has reviewed the TPR analysis and concurs with the finding of no significant effect."

The requested comprehensive plan change, neighborhood plan change, and zone change will not have a significant effect on the existing transportation system beyond what the current land use designations would allow. The previously approved UGA17-03MOD1, conditions of approval require right-of-way dedication and improvements on Reed Road and the intersection of Reed Road SE and Battle Creek Road SE, which will include a bike lane and sidewalk along the frontage of the property.

Development funded improvements:

The subject property was granted previous approval for a single-family subdivision and Urban Growth Preliminary Declaration permit (UGA17-03MOD1), which requires the widening and construction of Reed Road, along the properties' frontage to include sidewalks and on-street parking abutting the future park. In addition to frontage improvements to Reed Road, the existing subdivision approval requires that prior to any development, or lots being created, the applicant construct a realigned intersection of Battle Creek Road SE and Reed Road SE to minor arterial standards. The intersection will include the following:

- A westbound to southbound left turn lane on Reed Road SE;
- A southbound to eastbound left turn lane on Battle Creek Road SE;
- A northbound to eastbound right turn lane on Battle Creek Road SE; and
- A pedestrian island on Battle Creek Road SE along the south side of the intersection. (UGA17-03;1)

Future developments along the westside of Reed Road frontage will be required to construct a three-quarter street improvement (including travel lanes, sidewalks, and bike lanes on the east side). There have been inquiries regarding development in Fairview on parcels that have frontage along Reed Road. Any development on these parcels would be required to widen Reed Road from Fairview Industrial Road SE to Lindburg Road SE and make improvements, including: 46-foot wide (two lane) travel width, sidewalks and street

trees along the property's frontage. In addition, potential redevelopment of the Hillcrest Youth Correctional Facility property, which is on east side of Reed Road between the subject property and Strong Road, would be responsible for frontage improvements on their side of Reed Road, minimizing the gap between improvements.

Development within the former Fairview Training Center and subject to the Fairview Plan is required to contribute over 20 million dollars in Development District Fees (DDFs) for public improvements identified in the area. Reed Road is an identified street eligible for improvements with DDFs. Since development is required to partially improve the property frontages with development, the funds are typically used to fund additional improvements, such as increased travel width, and improvements on the opposite side of the street. Funds are intended to be used by developers to add to the required improvements that they are constructing.

The proposal will increase crime.

Findings: Theft or other illegal activity is a police matter and should be addressed by the Salem Police Department, which has law enforcement jurisdiction over the subject property and vicinity. Approval criteria for land use applications do not address anticipated changes in crime levels, and no evidence has been provided to support the speculation that any crime perpetrated by future residents of the proposed development would exceed what would otherwise occur from any other legal development of property within the City.

The zone change will increase traffic with the addition of Costco.

Findings: The applicant for a comprehensive plan change is required to submit a Transportation Planning Rule (TPR) analysis to demonstrate that their request will not have a "significant effect" on the surrounding transportation system, as defined above or to propose mitigation of their impact.

The applicant submitted a Transportation Planning Rule (TPR) Analysis in consideration of the requirements of the Transportation Planning Rule (OAR 660-012-0060). The TPR analysis demonstrates that the proposed Comprehensive Plan Change and Zone Change will not have a significant effect on the transportation system. The TPR takes into consideration the existing zoning in the vicinity, including the proposed commercial property across Kuebler Blvd (Costco). The Assistant City Traffic Engineer has reviewed the TPR analysis and concurs with the finding of no significant effect.

Areas of single-family homes should be left just as they are without imposing the multi-family dwelling developments on those of us who have worked so hard to be able to live in a quiet safe area.

Findings: The 2015 Housing Needs Analysis (HNA) identifies a deficit of approximately 207 acres of land designated for multifamily residential development. Although not adopted at this time, the HNA has been accepted by City Council and serves as the basis for a three-phase work plan adopted by the City to address the identified deficit of land for multifamily housing. The proposal to designate ten acres from "Developing Residential" to "Multifamily Residential" addresses a housing need identified in the HNA and supported by recent studies showing the multifamily vacancy rate as less than 2.5 percent. The

proposal is consistent with the range of existing and planned housing unit types in the immediate vicinity, which includes a mix of Single Family Residential and Multifamily Residential designations. The access to existing arterial street supports the applicant's contention that the site is equally or better suited for multifamily residential development than most other vacant properties in the vicinity.

7. MINOR COMPREHENSIVE PLAN MAP AMENDMENT APPROVAL CRITERIA

Salem Revised Code (SRC) 64.025(e)(2) establishes the approval criteria for Comprehensive Plan Map amendments. In order to approve a quasi-judicial Plan Map amendment request, the decision-making authority shall make findings of fact based on evidence provided by the applicant that demonstrates satisfaction of all of the applicable criteria. The applicable criteria are shown below in **bold** print. Following each criterion is a finding relative to the amendment requested.

SRC 64.025(e)(2)(A): The Minor Plan Map Amendment is justified based on the existence of one of the following:

(i) ***Alteration in Circumstances.*** **Social, economic, or demographic patterns of the nearby vicinity have so altered that the current designations are no longer appropriate.**

(ii) ***Equally or Better Suited Designation.*** **A demonstration that the proposed designation is equally or better suited for the property than the existing designation.**

(iii) ***Conflict Between Comprehensive Plan Map Designation and Zone Designation.*** **A Minor Plan Map Amendment may be granted where there is conflict between the Comprehensive Plan Map designation and the zoning of the property, and the zoning designation is a more appropriate designation for the property than the Comprehensive Plan Map designation. In determining whether the zoning designation is the more appropriate designation, the following factors shall be considered:**

(aa) Whether there was a mistake in the application of a land use designation to the property;

(bb) Whether the physical characteristics of the property are better suited to the uses in the zone as opposed to the uses permitted by the Comprehensive Plan Map designation;

(cc) Whether the property has been developed for uses that are incompatible with the Comprehensive Plan Map designation; and

(dd) Whether the Comprehensive Plan Map designation is compatible with the surrounding Comprehensive Plan Map designations.

Finding: The applicant has provided findings which can be found in **Attachment C**. There is no conflict between the existing "Developing Residential" designation and RA (Residential Agriculture) zoning. The applicant does not assert that a mistake has been made in the application of the Developing Residential designation to the subject property. Staff concurs that the proposal is justified based on (ii); the proposed designation is equally or better suited for the property.

Definitions and intent statements for the "Developing Residential" designation within the Salem Area Comprehensive Plan describe the future use for lands under this designation as "primarily for single and multifamily residential with schools, parks, and churches." Policy A.3.a.4 describes the process for "Conversion of Developing Residential or Urbanizable Areas to Urban Development," including annexation, construction of public capital developments, and filing and approval of a subdivision or zone change. The policy cites orderly and economic extension of public facilities and services, providing adequate land for a variety of housing types, and maintaining an adequate land supply for a variety of uses as some of the reasons for converting urbanizable land into urban land.

The City has accepted, but not adopted, a Housing Needs Analysis (HNA) prepared in 2015 which includes a Buildable Land Inventory identifying a surplus of approximately 1,975 acres for single family residential development and a deficit of land available for multifamily residential development. The proposal would convert approximately ten acres of land away from a single-family designation, where the accepted HNA identifies a surplus, to a multiple family residential designation, where the HNA identifies a deficit.

According to the Housing Needs Analysis (HNA), "Salem has a deficit of capacity in the MF designation, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of residential land." With a Multiple Family Residential designation, the subject property could be developed as multi-family dwellings; the rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary. The proposed 10.32 acres could provide between a 124 and 289 of unit based on the minimum and maximum density of the RM-II zone. The increase in density will reduce the deficit of identified in the HNA.

The proposed change in designation would allow for redevelopment for multi-family which will help to meet the changing needs of the Salem urban area. The Multiple Family Residential designation would be equally or better than the Single-Family Residential designation for the two properties due to their location on a Parkway, on the edge of a future residential neighborhood, their location which provides an ability to buffer higher intensity uses from single family uses, and their contribution to the identified deficit of land designated multi-family.

The Planning Commission finds the application meets this criterion.

SRC 64.025(e)(2)(B): The property is currently served, or is capable of being served, with public facilities and services necessary to support the uses allowed by the proposed plan map designation.

Finding: The subject property is located outside of the Urban Service Area. The water, sewer, and storm infrastructure area available within surrounding streets/areas and appear to be adequate to serve the proposed development, as conditioned in UGA17-03MOD1. Site-specific infrastructure requirements will be addressed in the Site Plan Review process in SRC Chapter 220. As conditioned below, the applicant will be required to modify the previously approved phased subdivision and urban growth preliminary declaration permit ensuring public facilities are adequate to serve the development. The proposal meets this criterion.

SRC 64.025(e)(2)(C): The proposed plan map designation provides for the logical urbanization of land.

Finding: The proposed Multi-Family Residential designation is logical near a Parkway Street and Minor Arterial Street. The property abuts Kuebler Boulevard, a Parkway to the south and a new internal street. As the South Salem neighborhood expands over time, a distinct land use pattern has developed in the vicinity that includes a multi-family or higher density uses near the intersection of Reed Road and Kuebler Boulevard, and then transitioning into single family residential neighborhoods north. This pattern is reflected in the Salem Area Comprehensive Plan Map. The subject property's location makes the proposed multi-family designation a logical choice for the site, given its location near Kuebler Boulevard and the Interstate.

The proposal meets this criterion.

SRC 64.025(e)(2)(D): The proposed land use designation is consistent with the Salem Area Comprehensive Plan and applicable Statewide planning goals and administrative rules adopted by the Department of Land Conservation and Development.

Finding: The applicable Goals and Policies of the Comprehensive Plan are addressed as follows:

<u>Salem Urban Area Goals and Policies, Residential Development Goal (Page 30, Salem Comprehensive Policies Plan):</u>

Policy E.1. The location and density of residential uses shall be determined after consideration of the following factors;

a. The type and distribution of housing units required to meet expected population growth within the Salem urban growth boundary.

Finding: The City has accepted, but not adopted, a Housing Needs Analysis (HNA) prepared in 2015 which includes a Buildable Land Inventory identifying a surplus of approximately 1,975 acres for single family residential development and a deficit of land available for multifamily residential development. The proposal would convert approximately ten acres of land away from a single-family designation, where the accepted HNA identifies a surplus, to a Multiple Family Residential designation, where the HNA identifies a deficit.

b. The capacity of land resources given slope, elevation, wetlands, flood plains, geologic hazards and soil characteristics.

Finding: The land proposed for the Comprehensive Plan Map and zone change appears to have capacity for Multiple Family Residential development. The relative environmental suitability of the property is even greater when compared to the steeper residential properties in the southern portions of the City. There are no known natural hazards or geographical constraints which would prevent development of higher-density housing on the site.

c. The capacity of public facilities, utilities, and services. Public facilities, utilities, and services include, but are not limited to municipal services such as water, sanitary and storm sewer, fire, police protection and transportation facilities.

Finding: The subject property is located outside of the Urban Service Area. A UGA permit is not required for the Comprehensive Map Change or Zone Change applications. The applicant has an approved UGA Permit (UGA17-03MOD1), Prior to plat of SUB-ADJ19-08 or development, a modification to the previous UGA permit will be required.

d. Proximity to services. Such services include, but are not limited to, shopping, employment and entertainment opportunities, parks, religious institutions, schools and municipal services.

Finding: The property is located in an urbanized area of the city where services exist in the vicinity of the site, including a shopping, employment, entertainment, parks, elementary, middle and high schools. The Commercial Street corridor is located west of the property which has commercial nodes providing a wide range of shopping, employment, and entertainment opportunities. There are several churches and undeveloped commercial properties within the immediate vicinity. The Fairview Industrial area is located north of the subject property providing for multiple opportunities for employment.

e. The character of the existing neighborhoods based on height, bulk and scale of existing and proposed development in the neighborhood.

Finding: As described in findings above, residential properties in the vicinity of the site are developed, or planned for development, at a range of densities. The proposed Multiple Family Residential designation matches property to the south near Boone Road. Where the site abuts lower density residential properties to the north, Multiple Family Design Guidelines and Standards established in SRC Chapter 702 require multifamily design guidelines requires increased setbacks and screening to ensure a transition to the smaller bulk and scale of single-family residences.

f. Policies contained in facility plans, urban renewal plans, residential infill studies and neighborhood and specific development plans.

Finding: The subject property is located outside of the Urban Service Area and adequate utilities are available to serve the property. A UGA permit is not required for the Comprehensive Map Change or Zone Change applications. The applicant has an approved UGA Permit (UGA17-03MOD1). Prior to plat of SUB-ADJ19-08 or future multi-family development, a modification to the previous UGA permit will be required.

g. The density goal of General Development Policy 7.

Finding: General Development Policy 7 provides in part that "the cumulative effect of all new residential development in the Salem urban area should average 6.5 dwelling units per gross acre of residential development." When applied to the subject property, the range of densities allowed in zones implementing the Multiple Family Residential designation provides for more dwelling units than the 6.5 dwelling units per acre, which is consistent with the Housing Needs Analysis (HNA) prepared in 2015.

Policy E.2 Residential uses and neighborhood facilities and services shall be located to:

a. Accommodate pedestrian, bicycle and vehicle access;
b. Accommodate population growth;
c. Avoid unnecessary duplication of utilities, facilities, and services; and
d. Avoid existing nuisances and hazards to residents.

Finding: As described in findings above, the subject property is located outside of the Urban Service Area. The water, sewer, and storm infrastructure area available within surrounding streets/areas and appear to be adequate to serve the proposed development, as conditioned by UGA17-03MOD1. The development standards established in the UDC will ensure the commercial or multifamily residential uses developed on the site are adequately served.

Policy E.6 Multi-family housing shall be located in areas proximate to existing or planned transportation corridors, public facilities and services:

a. To encourage the efficient use of residential land and public facilities, development regulations shall require minimum densities for multiple family residential zones;
b. Development regulations shall promote a range of densities that encourage a variety of housing types;
c. Multiple family developments should be located in areas that provide walking, auto, or transit connections to:

(1) Employment centers;
(2) Shopping areas;
(3) Transit service;
(4) Parks;
(5) Public buildings.

Finding: The RM-2 (Multiple Family Residential) zone proposed by the applicant includes a minimum density of 12 units per gross acre, encouraging efficient use of

residential land and public facilities. As described in findings above, the immediate vicinity includes a range of densities within existing developments and zoning district standards for undeveloped properties. The nearest transit service available to the subject property near the corner of Boone Road and Battle Creek Road, by way of Salem Keizer Transit's Route 6 bus line. The existing transit stop would require pedestrian and bicycles to cross Kuebler Blvd, a Parkway, which is over a half mile from the subject property. The need for public transportation to serve the additional density may be needed. To ensure public transportation can be provided to the proposed development will need to coordinate with Salem-Keizer Cherriots prior to any development proposal. The Comprehensive Parks System Master Plan shows that a Neighborhood Park (NP 32) and Urban Park (UP 3) are planned on or near the subject property. The previous subdivision is conditioned to reserve property for dedication of neighborhood park facility NP-32 based on sizing criteria established in SRC 200.075(b) and as proposed in the application.

The City in in contract to purchase a 7.35-acre abutting property for a future park.

Policy E.7 Residential neighborhoods shall be served by a transportation system that provides access for pedestrian, bicycles, and vehicles while recognizing the neighborhoods physical constraints and transportation service needs:

a. The transportation system shall promote all modes of transportation and dispersal rather than concentration of through traffic;
b. Through traffic shall be addressed by siting street improvements and road networks that serve new development so that short trips can be made without driving;
c. The transportation system shall provide for a network of streets fitted to the terrain with due consideration for safety, drainage, views, and vegetation.

Finding: The planned street transportation system in the vicinity of the subject property establishes a framework of parkway and a arterials that provide both east/west and north/south access across the area which allows for short trips within the neighborhood to be made by a variety of routes, with or without driving.

Policy E.10 Requests for rezonings to higher density residential uses to meet identified housing needs will be deemed appropriate provided:

a. The site is so designated on the comprehensive plan map;
b. Adequate public services are planned to serve the site;
c. The site's physical characteristics support higher density development; and
d. Residential Development Policy 7 is met.

Finding: The applicant's proposal includes a request for a quasi-judicial zone change from RA (Residential Agriculture) to the higher density RM-II (Multiple Family Residential) zone. The RM-II zone implements the "Multi-Family Residential" Comprehensive Plan

Map designation proposed as part of the consolidated application. As described in findings above, the subject property is located outside the Urban Service Area but served by utilities (UGA17-03MOD1). The water, sewer, and storm infrastructure area available within surrounding streets/areas and appear to be adequate to serve the proposed development. The property is unencumbered by sensitive areas such as wetlands or riparian areas. The existing street network on properties in the vicinity meet the circulation requirements of Residential Development Policy 7.

Staff finds that the proposal is consistent with the applicable Goals and Policies of the Comprehensive Plan.

Finding: The applicable Statewide Planning Goals are addressed as follows:

Statewide Planning Goal 1 – Citizen Involvement: *To develop a citizen involvement program that ensures the opportunity for citizens to be involved in all phases of the planning process.*

Finding: Required Open House/Neighborhood Meeting. Prior to application submittal, SRC 300.320 requires the applicant for a proposed minor amendment to the City's comprehensive plan map to either arrange and attend an open house or present their proposal at a regularly scheduled meeting of the neighborhood association the property is located within. On August 12, 2020, the applicant and their representatives attended the Morningside Neighborhood Association meeting to present their proposal. A summary of the comments provided at the neighborhood association meeting prepared by the applicant's representative is included in the record**.** The applicant did not identify a homeowner's association for the subject property; therefore, no notice is required. A public hearing notice was mailed to the affected property owners, all property owners and tenants within 250 feet of the subject property and to the Morningside Neighborhood Association and South Gateway Neighborhood Association. This satisfies Citizen Involvement described in Goal 1.

Statewide Planning Goal 2 – Land Use Planning: *To establish a land use planning process and policy framework as a basis for all decision and actions related to use of land and to assure an adequate factual base for such decisions and actions.*

Finding: The City has complied with the Goal requirements for establishing and maintaining a land use planning process. The Oregon Land Conservation and Development Commission have acknowledged the Salem Area Comprehensive Plan to be in compliance with the Statewide Planning Goals.

Statewide Planning Goal 5 – Open Spaces, Scenic and Historic Areas, and Natural Resources: *To protect natural resources and conserve scenic and historic areas and open spaces.*

Finding: The subject property does not contain any protected natural resources or scenic and historic areas; this Statewide Planning Goal is not applicable.

Statewide Planning Goal 6– Air, Water, and Land Resources Quality: *To maintain and improve the quality of the air, water and land resources of the state.*

Finding: Land located within the Urban Growth Boundary is considered urbanizable and is intended to be developed to meet the needs of the City, and the effects of urban development on air, water and land resources are anticipated. Development of the property is subject to tree preservation, stormwater and wastewater requirements of the UDC which are intended to minimize the impact of development on the state's natural resources. The proposal is consistent with Goal 6.

Statewide Planning Goal 7 – Areas Subject to Natural Hazards: *To protect people and property from natural hazards.*

Finding: The subject property is not located within a floodplain or floodway. Mapped landslide hazards are identified on subject property, prior to development a geotechnical assessment will be required. The proposal is consistent with Goal 7.

Statewide Planning Goal 8 – Recreational Needs: *To satisfy the recreational needs of the citizens of the state and visitors and, where appropriate, to provide for the siting of necessary recreational facilities including destination resorts.*

Finding: The subject property is not within an identified open space, natural or recreation area, and no destination resort is planned for this property, therefore, Goal 8 is not applicable to this proposal.

Statewide Planning Goal 9 – Economic Development: *To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens.*

Finding: In 2014, the City conducted a study called the Salem Economic Opportunities Analysis (EOA). The EOA examined Salem's needs for industrial and commercial land through 2035 and concluded that Salem has a projected commercial land shortage of 271 acres and a surplus of approximately 907 acres of industrial land. The EOA provides strategies to meet the projected employment land needs in the Salem area. In 2015, the City Council adopted the EOA and updated the Comprehensive Plan accordingly; the City now uses the EOA and its findings to inform policy decisions, including how to respond to request for rezoning land.

Statewide Planning Goal 10 – Housing: *To provide for the housing needs of the citizens of the state.*

Finding: In 2014, the City conducted a Housing Needs Analysis (HNA) to develop strategies for the community to meet housing needs through 2035 and to inform policy decisions related to residential land. According to the Housing Needs Analysis (HNA), "Salem has a deficit of capacity in the MF designation, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of residential land." With a Multiple Family Residential designation, the subject property could be developed as multi-family

dwellings; the rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary. The proposed 10.32 acres could provide between a 124 and 289 of unit based on the minimum and maximum density of the RM-II zone. The increase in density will reduce the deficit of identified in the HNA.

The proposed comprehensive plan map amendment would change the current "Single Family Residential" designation to "Multiple Family Residential", and the zoning from RA (Residential Agriculture) to RM-II (Multiple Family Residential).

The City has a surplus of RA zoned land available to meet future needs. The RA zoning allows the property to be developed with single family uses, or in limited situations, two family uses, when the property is located on a corner lot or abutting a commercially zoned property. The proposed RM-II zoning designation allows for a greater variety of residential uses than the current zoning does, including single family, two family, and multiple family residential. The proposed change in designation is in compliance with Goal 10 by providing a designation that allows more diverse housing options than the current zoning to contribute towards the future housing needs of the City.

Statewide Planning Goal 11 – Public Facilities and Services: *To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.*

Finding: The subject property is located outside of the Urban Service Area. The water, sewer, and storm infrastructure area available within surrounding streets/areas and appear to be adequate to serve the proposed development. Site-specific infrastructure requirements will be addressed in the Site Plan Review process in SRC Chapter 220. As conditioned below, the applicant will be required to modify the previously approved phased subdivision and urban growth preliminary declaration permit ensuring public facilities are adequate to serve the development.

Statewide Planning Goal 12 – Transportation: *To provide and encourage a safe, convenient and economic transportation system.*

Goal 12 is implemented by the Transportation Planning Rule (TPR). In summary, the TPR requires local governments to adopt Transportation System Plans (TSPs) and requires local governments to consider transportation impacts resulting from land use decisions and development. The key provision of the TPR related to local land use decisions is Oregon Administrative Rule (OAR) 660-012-0060. This provision is triggered by amendments to comprehensive plans and land use regulations that "significantly affect" a surrounding transportation facility (road, intersection, etc.). Where there is a "significant effect" on a facility, the local government must ensure that any new allowed land uses are consistent with the capacity of the facility. In the context of a site-specific comprehensive plan change request, such as this proposal, a "significant effect" is defined under Oregon Administrative Rule (OAR) 660-012-0060(1) as either an amendment that "allows types or levels of land uses which would result in levels of travel or access which are inconsistent with the functional classification of a transportation facility," or an amendment that would "reduce the performance standards of an existing or planned facility below the minimum acceptable level identified in the TSP."

The applicant for a comprehensive plan change is required to submit a Transportation Planning Rule (TPR) analysis to demonstrate that their request will not have a "significant effect" on the surrounding transportation system, as defined above or to propose mitigation of their impact.

The applicant submitted a Transportation Planning Rule (TPR) Analysis in consideration of the requirements of the Transportation Planning Rule (OAR 660-012-0060). The TPR analysis demonstrates that the proposed Comprehensive Plan Change and Zone Change will not have a significant effect on the transportation system. The Assistant City Traffic Engineer has reviewed the TPR analysis and concurs with the finding of no significant effect.

Pursuant to 803.035(a), the proposed development is required to provide connectivity to underdeveloped adjacent properties. At the time of future development, the applicant shall provide access to the subject property from the existing street system through future local street(s).

The proposal complies with Goal 12.

Statewide Planning Goal 14 – Urbanization*: To provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities.*

Finding: The subject property is located within the Urban Growth Boundary (UGB), and public facilities required to serve future development of the property are in close proximity. The proposed comprehensive plan map amendment will allow the efficient use of vacant land within the UGB in compliance with Goal 14.

SRC 64.025(e)(2)(E): The amendment is in the public interest and would be of general benefit.

Finding: The proposed Comprehensive Plan Map amendment from Single Family Residential to Multifamily Residential is in the public interest and would be of general benefit because it would increase the number of housing units that can be provided on the subject property, consistent with the planned capacity of infrastructure serving future development. The proposed change in land use designation is consistent with the location and character of the property, with adjacent land use designations, and with the planned transportation facilities available to serve the property.

The proposal satisfies this criterion.

MORNINGSIDE NEIGHBORHOOD PLAN

Finding: The property is located within the boundaries of the Morningside Neighborhood Association. The Morningside Neighborhood Plan was adopted in 2014 and is in effect pursuant to SRC Chapter 64.

Residential

Goal 2: Maintain and reinforce the residential areas of the neighborhood as safe, pleasant and engaging places to live.

POLICIES:
Policy 2.5 - New multi-family buildings should be designed to engage the streetscape, with entrances and windows facing the public right-of-way.

Policy 2.6 - New residential developments of 15-dwelling units or more are encouraged to incorporate amenities such as community plazas, playgrounds, community gardens, open space tracts or pocket parks.

Policy 2.7 - The height, bulk and massing of new developments proposed adjacent to existing single-family dwellings should be designed in a context-sensitive manner to create a cohesive visual urban form and protect the single-family residential character of the neighborhood.

Finding: Multifamily development on the site would be subject to development standards adopted in the RM-2 Zone (SRC Chapter 514), as well as Multiple Family Design Review Guidelines and Standards (SRC Chapter 702). Future development will be reviewed for design, setbacks, open space, height and architectural detail, which would be consistent with the policies above.

Goal 3: Promote architectural variety and a mix of housing unit types to accommodate changing demographics and economic conditions, and to provide appropriate affordable housing and age-in-place options throughout the neighborhood.

POLICIES:
Policy 3.1 - Multifamily housing developments are encouraged in locations with access to arterial or collector streets with existing or planned transit service.

Policy 3.3 - New residential developments are encouraged to incorporate a diversity of housing types to attract residents of varying income levels, lifestyles and housing preferences.

Finding: The proposed zone change would locate Multi-family housing near an arterial street with future planned transit in the area. The proposed multifamily uses will be located near and in conjunction with a single-family residential subdivision providing a diversity of housing types.

Transportation

Goal 10: Foster a local transportation system that achieves the following:

- *Promotes improved efficient travel movement and a high level of connectivity for all modes of transportation.*

- *Encourages the development of safe walkable places with a high degree of pedestrian connectivity.*
- *Increases the availability and viability of transit and alternative transportation for neighborhood residents.*
- *Places a high priority on Level of Service (LOS) analysis that reflects design impacts for all transportation modes.*

POLICIES:
Policy 10.2 - New subdivisions should provide multiple external street connections to foster vehicle flow through a distributed or grid-type system and multiple access points to the arterial and collector street network.

Finding: The subject property is located along an arterial street and boulevard, which is intended to distribute traffic regionally and provide routes through the city. The previously approved subdivision provides for the single connection to Battle Creek Road and limits multiple access points to the arterial system. As conditioned, the proposed zone change will require internal street access to tax lots 083W11D / 202 083W11D / 300 and 083W11D / 500 & 602, in order to limit access points to Battle Creek Road.

The criteria for approval of a Neighborhood Plan Change are the same as the Minor Comprehensive Plan Map amendment, the findings above adequately address the proposed Neighborhood Plan change.

8. QUASI-JUDICIAL ZONE CHANGE APPROVAL CRITERIA

The following analysis addresses the proposed zone change for the subject property from RA (Residential Agriculture) to RM-II (Multiple Family Residential).

SRC Chapter 265.005 provides the criteria for approval for Quasi-Judicial Zone Changes. In order to approve a Quasi-Judicial Zone Map amendment request, the review authority shall make findings based on evidence provided by the applicant demonstrating that all the following criteria and factors are satisfied. The extent of the consideration given to the various factors set forth below will depend on the degree of impact of the proposed change, and the greater the impact of a proposal on the area, the greater is the burden on the applicant to demonstrate that, in weighing all the factors, the zone change is appropriate.

The applicable criteria and factors are stated below in **bold** print. Following each criterion is a response and/or finding relative to the amendment requested.

SRC 265.005(e)(1)(A): The zone change is justified based on one or more of the following:

(i) A mistake in the application of a land use designation to the property;

(ii) A demonstration that there has been a change in the economic, demographic, or physical character of the vicinity such that the proposed zone would be compatible with the vicinity's development pattern; or

(iii) A demonstration that the proposed zone change is equally or better suited for the property than the existing zone. A proposed zone is equally or better suited than an existing zone if the physical characteristics of the property are appropriate for the proposed zone and the uses allowed by the proposed zone are logical with the surrounding land uses.

Finding: The proposed ten acres satisfies (iii); the proposed zone change is equally or better suited for the property than the existing zone. The physical characteristics of the property, including its relationship to a parkway and arterial street, its location within an area that is approved to and has a wide range of housing types.

According to the Housing Needs Analysis, "Salem has a deficit of capacity in the MF designation, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of residential land" while conversely finding that the City has a surplus of available single family residential lands. The proposed change in designation would allow for a redevelopment that will allow multi-family development which will help to meet the changing needs of the Salem urban area. With the RM-II zone, the subject property could be developed as multi-family dwellings; the rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary.

In implementing the "Multifamily Residential" Comprehensive Plan Map designation, the RM-2 zone primarily allows apartments and related multifamily uses, as well as compatible services such as libraries, small scale day care facilities, and churches. Multifamily development on the site would be subject to development standards adopted in the RM-2 zone (SRC Chapter 514), as well as Multiple Family Design Review Guidelines and Standards (SRC Chapter 702).

The property abuts three smaller properties which should have limited access to Battle Creek Road, a minor arterial. Connection to these properties shall be made from the subject property. The three small land areas near the corner of Kuebler Blvd and Battle Creek Road and abutting the south west portion of the subject property should be included in the local street system of the development. This would provide for less connections to Battle Creek Road and for the future development of Marion County Tax Lots Number 083W11D / 202 083W11D / 300 and 083W11D / 500 & 602 on local streets.

Pursuant to 803.035(a), the proposed development is required to provide connectivity to underdeveloped adjacent properties. At the time of future development, the applicant shall provide access to the subject property from the existing street system through future local street(s), including the abutting property to the east. The previous subdivision had multiple connections to serve Marion County Tax Lot Number 083W12C / 700. The property to the east is approximately 1,000 feet north to south and shares that property line with the subject property. Pursuant to SRC 803, connections and block length would require approximately three connections to the east. The applicant has provided a site plan indicating the future local street system, which would be consistent with the standards and previously approved subdivision.

The following conditions ensure that connections and connectively are consistency with the Salem Revised Code.

Condition 1: Any development shall provide internal connection to Marion County Tax Lots Number 083W11D / 202 083W11D / 300 and 083W11D / 500 & 602 on local streets.

Condition 2: Any development shall provide access through future local streets to the undeveloped property to the east (083W12C / 700).

This criterion is satisfied.

SRC 265.005(e)(1)(B): If the zone change is City-initiated, and the change is for other than City-owned property, the zone change is in the public interest and would be of general benefit.

Finding: The proposal is not a City-initiated zone change. Therefore, this criterion does not apply.

SRC 265.005(e)(1)(C): The zone change complies with the applicable provisions of the Salem Area Comprehensive Plan.

Finding: Findings addressing the Comprehensive Plan Change criterion SRC 64.025(e)(2)(D), included earlier in this report, address the applicable provisions of the Salem Area Comprehensive Plan for this collective application.

SRC 265.005(e)(1)(D): The zone change complies with applicable Statewide Planning Goals and applicable administrative rules adopted by the Department of Land Conservation and Development.

Finding: Findings addressing the Comprehensive Plan Change criterion SRC 64.025(e)(2)(D), included earlier in this report, address applicable Statewide Planning Goals and Oregon Administrative Rules for this collective application. The proposal satisfies this criterion.

SRC 265.005(e)(1)(E): If the zone change requires a comprehensive plan change from an industrial designation to a non-industrial designation, or from a commercial or employment designation to any other use designation, a demonstration that the proposed zone change is consistent with the most recent economic opportunities analysis and the parts of the Comprehensive Plan which address the provision of land for economic development and employment growth; or be accompanied by an amendment to the Comprehensive Plan to address the proposed zone change; or include both the demonstration and an amendment to the Comprehensive Plan.

Finding: The subject property is not currently designated for industrial, commercial, or employment use. Therefore, this criterion does not apply to the proposal.

SRC 265.005(e)(1)(F): The zone change does not significantly affect a transportation facility, or, if the zone change would significantly affect a transportation facility, the significant effects can be adequately addressed through the measures associated with, or conditions imposed on, the zone change.

Finding: The applicant submitted a Transportation Planning Rule (TPR) Analysis in consideration of the requirements of the Transportation Planning Rule (OAR 660-012-0060). The TPR analysis is required to demonstrate that the proposed Comprehensive Plan Change and Zone Change will not have a significant effect on the transportation system as defined by OAR 660-012-0060.

The three small land areas near the corner of Kuebler Blvd and Battle Creek Road and abutting the south west portion of the subject property should be included in the local street system of the development. This would provide for less connections to Battle Creek Road and for the future development of Marion County Tax Lots Number 083W11D / 202 083W11D / 300 and 083W11D / 500 & 602 on local streets. The proposed conditions ensure that connections and connectively are consistency with the Salem Revised Code.

The proposal meets this criterion.

SRC 265.005(e)(1)(G): The property is currently served, or is capable of being served, with public facilities and services necessary to support the uses allowed by the proposed zone.

Finding: Findings addressing the Comprehensive Plan Change criterion SRC 64.025(e)(2)(B), included earlier in this report, address the public facilities and services available to support the uses allowed on the subject property. The proposal satisfies this criterion.

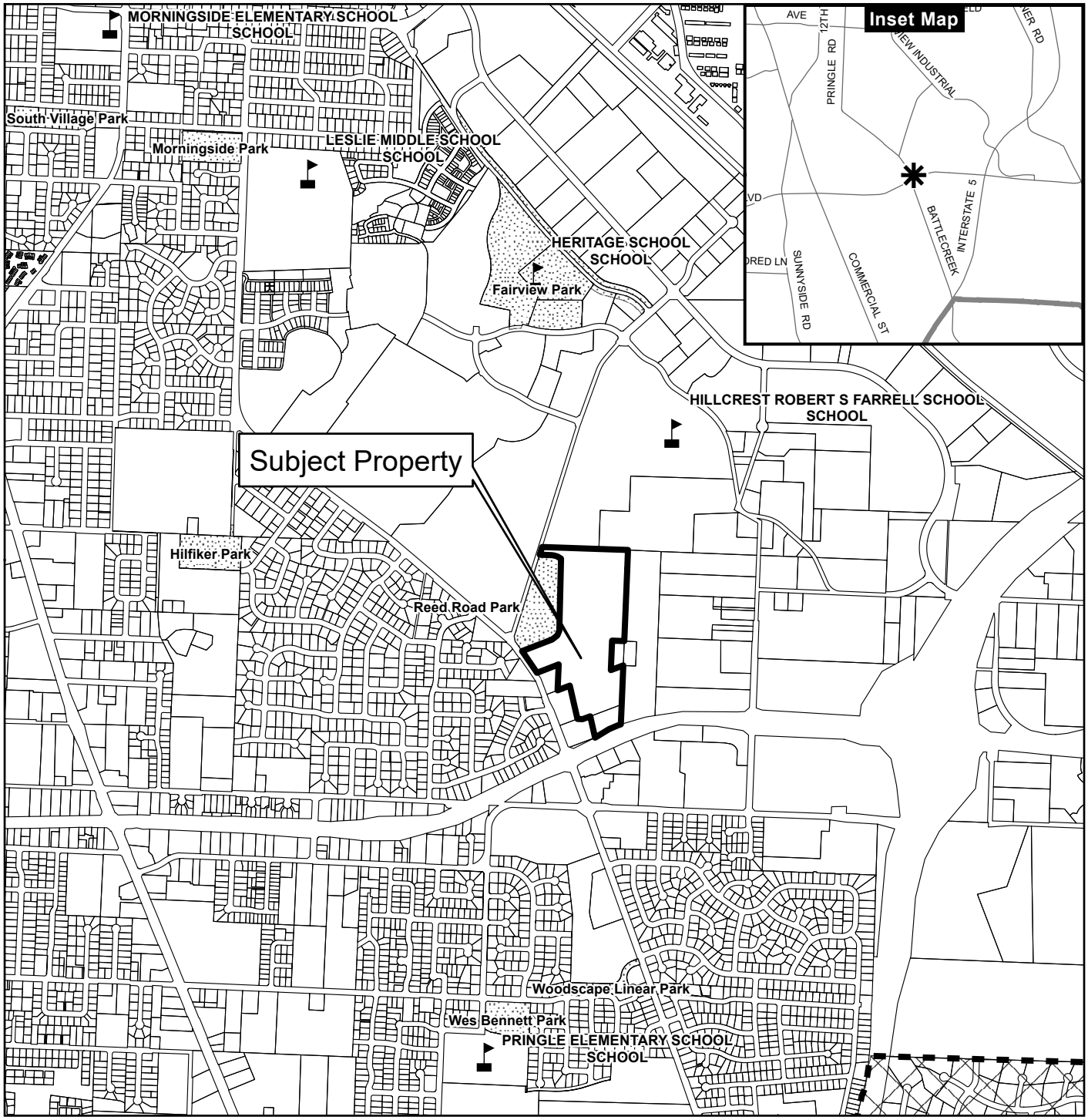
CONCLUSION

Based on the facts and findings presented herein, the proposed Minor Comprehensive Plan Map Amendment, Minor Neighborhood Plan Map Amendment, and Quasi-Judicial Zone Change, as conditioned, satisfy the applicable criteria contained under SRC 64.025(e)(2) and 265.005(e)(1) for approval.

Attachments:
A. Vicinity Map, Comprehensive Plan Map and Zoning
B. Site Plan
C. Applicant's Written Statement
D. Traffic Planning Rule Analysis
E. Cherriots Routes
F. Public Works Department Memo

Prepared by Olivia Dias, Current Planning Manager

Vicinity Map
4800 Block Battle Creek Road



Legend

- Taxlots
- Urban Growth Boundary
- City Limits
- Outside Salem City Limits
- Historic District
- Schools
- Parks

0 100 200 400 Feet

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Community Development Dept.

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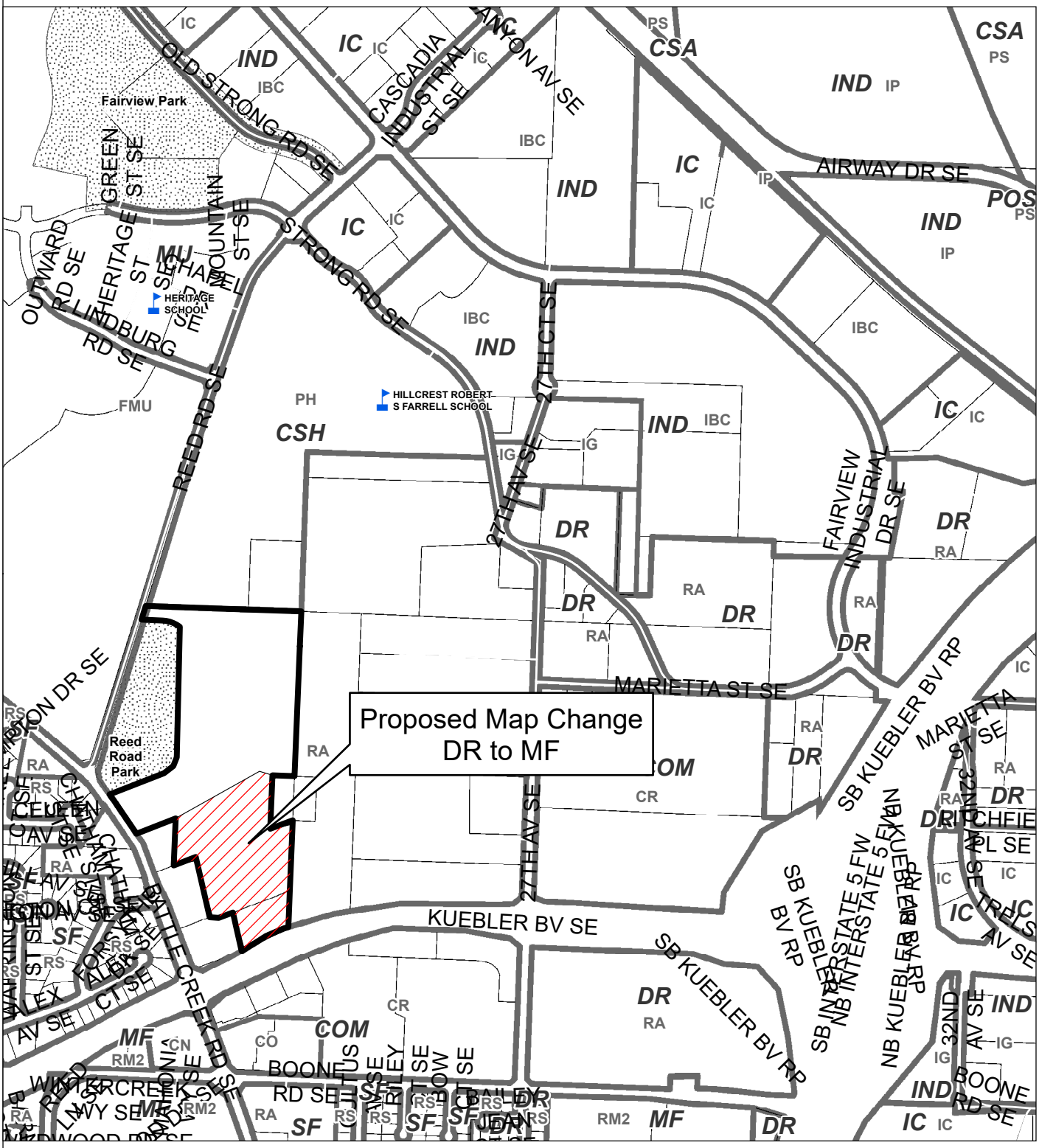
Comprehensive Plan Map - 4800 Blk Battle Creek Road



Legend

- SF — Comprehensive Plan
- Urban Growth Boundary
- Outside Salem City Limits
- Taxlots
- Parks
- Schools

0 500 200 Feet

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Community Development Dept.

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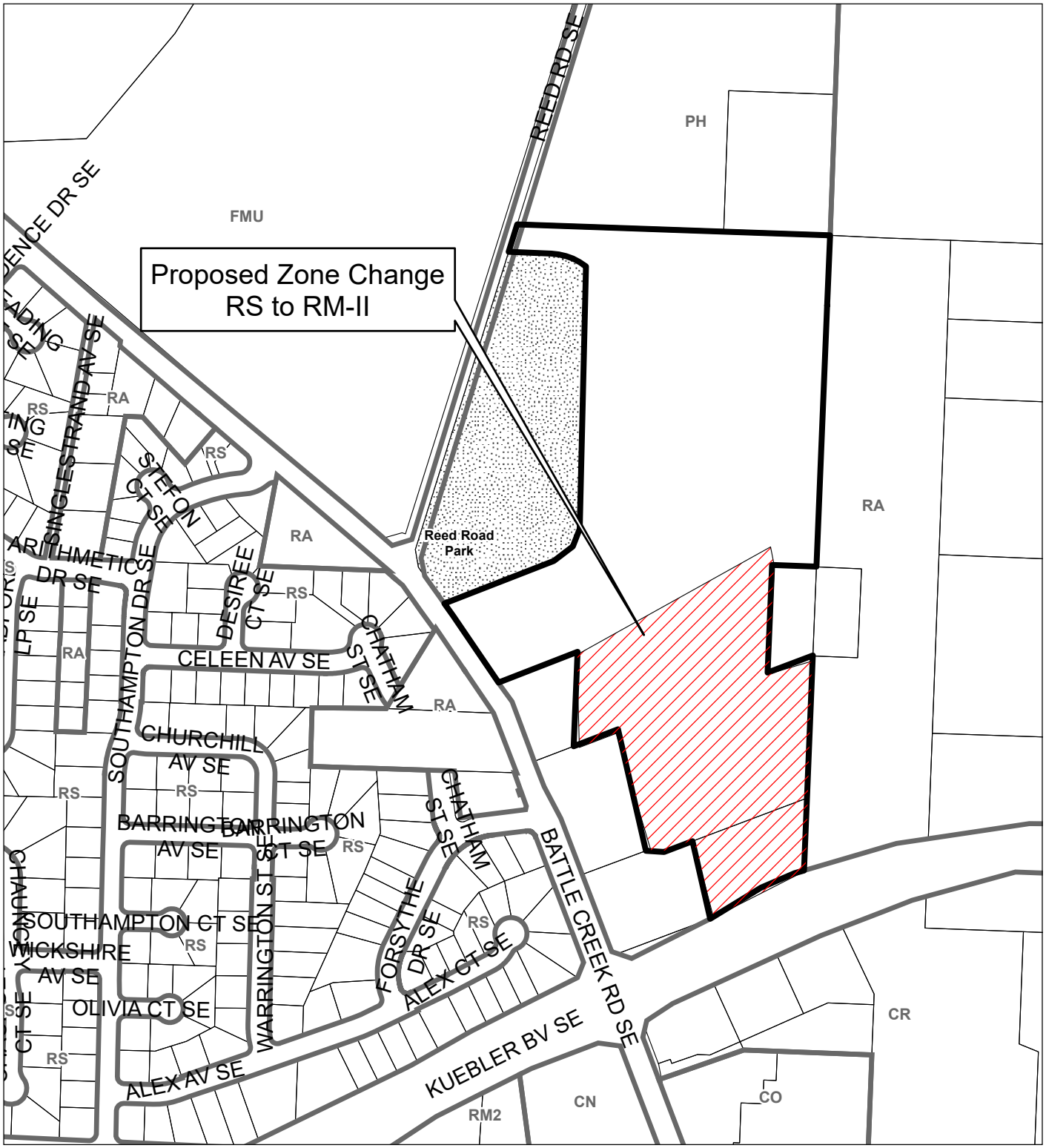
Vicinity Zoning - 4800 Blk Battle Creek Road



Legend

- RS — Base Zoning
- Urban Growth Boundary
- Outside Salem City Limits
- Taxlots
- Parks
- Schools

0 50 100 200 Feet

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Attachment B

27TH ST. S.E.

STRONG RD. S.E.

PROPOSED ZONE:
RM-2
112,796 S.F.
(2.589 Ac.)

PROPOSED ZONE:
RM-2
449,580 S.F.
(10.321 Ac.)

KUEBLER BLVD. S.E.

REED RD. S.E.

BATTLE CREEK RD. S.E.

FORSYTHE DR. S.E.

N W E S

0' 100'
1 INCH
SCALE: 1" = 100'

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

PROPOSED RIGHT OF WAY MAP

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234Zone 2of3 ROW

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN

JOB # 6234

J:\6200-6249\6234-ReedRoad\Dwg z01\6234Zone.dwg, 2of3 ROW, 9/2/2020 2:14:17 PM, CSchreiner

Comprehensive Plan/Zone Change

September 2, 2020

BACKGROUND/PROPOSAL

The subject property is approximately 10.32 acres in size and located at the northeast intersection of Kuebler Boulevard SE and Battle Creek Road SE (083W11D-Tax Lots 400 and 601). The subject properties are zoned RA (Residential Agriculture) and are designated as "Developing Residential" on the Salem Area Comprehensive Plan (SACP) Map. The subject properties are part of the approved SUB-ADJ19-08 and UGA17-03MOD1.

On November 21, 2019, SUB-ADJ19-08 and UGA17-03MOD1 were approved and included the subject properties

On March 5, 2020, a pre-application conference (PRE-AP20-24) was held with City of Salem staff to discuss development of the subject property.

Proposal: The applicant is proposing to rezone 083W11DD/Tax Lot 601 and the southern portion of 083W11DD/Tax Lot 400 from RA to RM2 and change the comprehensive plan designation from "Developing Residential" to "Multi-Family Residential".

083W11DD-Tax Lot 601 and 083W11DD-Tax Lot 400 (southern portion):
10.32 acres
Rezone from RA to RM2

EXISTING SITE CONDITIONS

The subject properties is approximately 10.32 acres in size and located at the northeast intersection of Kuebler Boulevard SE and Battle Creek Road SE (083W11D-Tax Lots 400 and 601). The subject properties are zoned RA (Residential Agriculture) and are designated as "Public" and "Developing Residential" on the Salem Area Comprehensive Plan (SACP) Map.

The subject properties are part of the approved SUB-ADJ19-08 and UGA17-03MOD1.

Vicinity Information:

<u>The subject properties located outside the Urban Service Area (USA). On November 21, 2019, UGA17-03MOD1 was approved for the subject properties.</u> The surrounding land uses within the vicinity are zoned and used as follows and as shown.

North: PH (Public Health); vacant land and existing single-family dwellings
East: RA (Residential Agriculture); vacant land and existing single-family dwellings
South: RA (Residential Agriculture); vacant land and existing single-family dwellings
West: Across Reed Road, FMU (Fairview Mixed-Use); vacant land and existing single-family dwelling

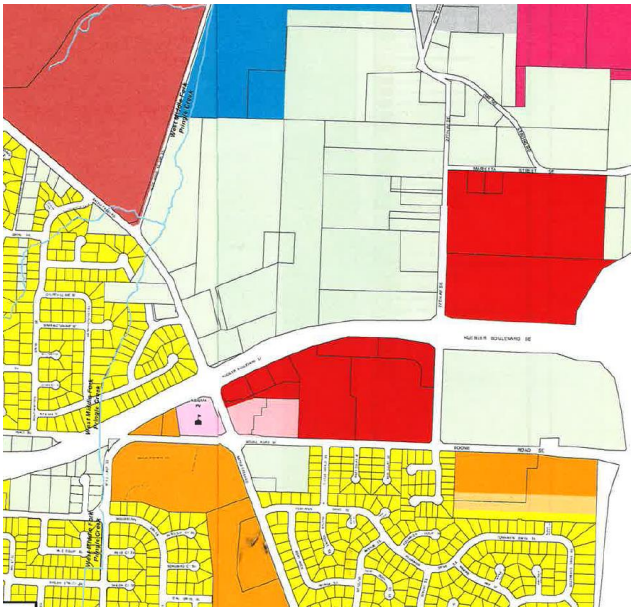
APPLICANT'S REASONS ADDRESSING THE COMPREHENSIVE PLAN CHANGE CRITERIA

SRC 64.020(f)(2) minor plan change criteria:

This is a minor plan change in that it only involves the land that the applicant owns. The minor plan change is consistent with the overall objectives of the SACP. No substantive changes are needed to SACP policies or text amendments to accomplish the change in designation. The applicant has outlined below how the proposed meets the criteria under 64.025(e)(2):

64.025(e)(2)(A)(ii): Equally or Better Suited Designation

There is a lack of appropriately designated vacant RMII sites within this vicinity. There is RM zoned property located to the south along Boone Road that is fully developed and along Battlecreek Road that has hazards that make development difficult. This site gives the applicant the ability to provide multi-family housing within this area and help Salem meet their housing needs.



As shown on the City land zone map there is no property contiguous to the existing site that is vacant RMII land, and there is none in the necessary proximity. The only appropriately designated property within the necessary proximity to the existing site is currently developed or difficult to developed.

According to the Housing Needs Analysis, “Salem has a deficit of capacity in the MF designation, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of residential land. With a multi-family designation, the subject property can be developed with multi-family dwellings; the rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary.

The subject property will not only be a site that will contribute to the multi-family housing needs, but it is also a site that can help improve the transportation circulation in the area. The subject property when developed has the potential to provide street connections to the properties to the north, east, and west for proposed and existing development.

The property totals 10.32 acres and could be developed with a minimum of 124 units to a maximum of 289 units on the site. This could include multi-family units and attached single family dwellings. Therefore, the rezone would allow 124 to 289 housing units within the City of Salem and within an area where higher density housing is needed.

In conclusion, there are no vacant sites for the proposed use located along Reed Road, Boone Road, Battlecreek Road, and Keubler Boulevard, that provide the necessary access to the major street system and adjacent properties, an area large enough, or which are appropriately designated. There are no appropriately designated alternative sites within the vicinity for the proposed use that are currently vacant. The rezone will allow the properties to be fully developed with a needed housing type in the area. Therefore, this zone is better suited for the site because of allowed density, the location and the minimal visual impacts on the area, along with helping to provide additional housing in the City of Salem.

Therefore, the proposal satisfies this criterion has been met.

64.025(e)(2)(B): Services

The City provided information at the pre-application conference (PRE-AP20-24) and within the approved UGA17-02MOD1 that water and sewer lines are available for extension into the site. Natural gas, telephone and electrical services are located within the public right-of-way.

Applicable state or federal permits are required to be obtained for issuance of building or construction permits from the City.

Private utilities will be provided with under grounding of electrical, gas, telephone and cable lines into the site.

The needed services are available for the development of the site.

64.025(e)(2)(C): Urbanization

The City's adopted Comprehensive Plan Goal and Policies implements Urbanization through its Statewide Planning Goals. The subject property is within the City of Salem and located within the UGB.

The subject property is within a developing area of the City and does not convert the urban areas beyond the City limits. Specific development triggers specific facilities that are required to be connected to existing systems for looped service. Police, fire and applicable government services can be provided via the increase in property taxes as a result of new development. The proposal permits efficient, compact development to contain sprawl and preserves the land by developing under the requirements of the Code.

64.025(e)(2)(D): Comprehensive Plan/Applicable Goals

The following Statewide Planning Goals apply to this proposal:

The request is in conformance with State Wide Planning Goals and all applicable land use standards imposed by state law and administrative regulation, which permit applications to be filed. Development of the subject property can meet the minimum standards of the zone code and the STSP. The proposal complies with the applicable intent statements of the SACP as addressed in this report. The applicant has presented evidence sufficient to prove compliance with these standards.

Goal 1 – Citizen Involvement:

The City's adopted Comprehensive Plan General Development Goal and Policies, and its adopted zone code, implement the Statewide Citizen Involvement Goal. This application will be reviewed according to the public review process established by the City of Salem. The City's Plan is acknowledged to be in compliance with this Goal. Notice of the proposal will be provided to property owners and public agencies, and posted on the property. The published notice will identify the applicable criteria. A public hearing to consider the request will be held by the Planning Commission. Through the notification and public hearing process all interested parties are afforded the opportunity to review the application, comment on the proposal, attend the public hearing, and participate in the decision. These procedures meet the requirements of this Goal for citizen involvement in the land use planning process.

Goal 2 – Land Use Planning:

The City's adopted Comprehensive Plan implements the Statewide Land Use Planning Goal. The Salem Area Comprehensive Plan (SACP) is acknowledged to be in compliance with the Statewide Planning Goals. This proposal is made under the goals, policies and procedures of the SACP and its implementing ordinance. A description of the proposal in relation to the intent of the Plan, its applicable goals and policies, the comprehensive plan change/zone change criteria is part of this review. Facts and evidence have been provided that support and justify the proposed comprehensive plan/zone change, along with findings and evidence to support the zone change application. For these reasons, the proposal conforms to the land use planning process established by this Goal.

Goal 5 – Natural Resources, Scenic and Historic Areas, and Open Spaces:

The City's adopted General Development, Scenic and Historic Areas, Natural Resources and Hazards Goals and Policies address the Statewide Goal. According to City map there are no mapped wetlands or waterways on the subject property. In the event that a resource is identified, the City's applicable riparian, tree protection and wetland development standards will apply at the time of development and will ensure compliance with Goal 5.

There are trees located throughout the site. Prior to development of the site, the applicant will be required to get Site Plan Review approval. At the time of Site Plan Review, the layout of the site will take into consideration the location of the trees. All significant trees will be identified on the site plan.

A Geological Assessment dated June 20, 2018 was done for the entire site and approved.

There are no significant historic buildings on the subject property. The applicant has taken the opportunity to consider existing conditions and influences that enables them to explore potential development. The City has standards in place to address access, internal circulation, topography, drainage, public facilities, overall site design and layout.

Goal 6 – Air, Water and Land Resources Quality:

The City's adopted Comprehensive Plan Growth Management, Scenic and Historic Areas, Natural Resources and Hazards, Commercial, Industrial and Transportation Goals and Policies along with adopted facilities plans implement this Goal.

Development is required to meet applicable State and Federal requirements for air and water quality. The proposal to redevelop is reviewed by the City and any applicable outside agencies for impacts on environment and compliance to applicable standards and regulations. Development is required to meet applicable water, sewer, and storm drainage system master plan requirements. Upon development, the City is responsible for assuring that wastewater discharges are treated to meet the applicable standards for environmental quality.

The City has identified the process through which water; sewer and storm drainage will be supplied to the site. Storm water runoff will be collected and removed by the City storm drainage system, in a manner determined by the City to be appropriate prior to development.

The proposed site is outside the noise contours of the air traffic, and that the facility will nevertheless utilize building materials that mitigate such noise, if any.

The major impact to air quality in the vicinity is vehicle traffic along the boundary streets, Reed Road, Battle Creek Road, and Keubler Boulevard. Reed Road (west) is designated as a minor

arterial in the Salem Transportation System Plan (STSP). Battle Creek Road (southwest) is designated as a minor collector in the Salem Transportation System Plan (STSP). Kuebler Boulevard (south) is designated as a parkway in the Salem Transportation System Plan (STSP). The traffic generated from the site will be minor compared to the total volume of traffic in this area (on Kuebler Boulevard) and will not create a significant additional air quality impact. The TIA dated June 20, 2018, identifies the traffic needs for the site and mitigation measures.

The site is vacant. Development of vacant urban land is expected. The proposed change will have no significant impact on the quality of the land. Considering the location of the site within the city, the availability of public facilities to provide water, sewage disposal and storm drainage services, and the surrounding transportation system, the proposal will have no significant impacts to the quality of the air, water or land. The City's adopted facility plans implement Goal 6.

Goal 8 – Recreational Needs:

The City's adopted Comprehensive Plan Open Space, Parks and Recreation Goal and Policies implements the Statewide Recreation Needs Goal by encouraging conservation and identification of existing and needed park resources and funding mechanisms. Salem identifies programs, activities and policies relating to parks and recreational activities in the community. The City's needs for leisure areas and open space areas have been identified in its adopted plans. At the time of development, the proposal provides improved public pedestrian connections via hard-surfaced sidewalks. As part of SUB-ADJ19-08 and UGA17-03MOD1, the applicant provided 7 acres of land to the City of Salem for park land. This park site will provide adequate parks and recreation within the area. Therefore, the proposal complies with this Goal.

Goal 9-Economic Development:

The proposed zone change will have a positive impact on the economy of the City of Salem. The rezone will allow the property to be developed, which will create employment along with a housing type that is a less expensive option for families.

Goal 10 – Housing:

The applicant is proposing to rezone 083W11DD/Tax Lot 601 and the southern portion of 083W11DD/Tax Lot 400 from RA to RM2 and change the comprehensive plan designation from "Developing Residential" to "Multi-Family Residential".

083W11DD-Tax Lot 601 and 083W11DD-Tax Lot 400 (southern portion):
10.32 acres
Rezone from RA to RM2

According to the 2014 Housing Needs Analysis, "Salem has a deficit of land for nearly 2,900 dwelling units (2,897) in the Multi-Family Residential designation. …Salem has a deficit of about 207 gross acres of land in the Multi-Family Residential." The rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary.

As stated in the Salem's Housing Needs Analysis dated December 2014:

"Re-designate or rezone land to Multi-Family. Salem's biggest opportunity to address the deficit of Multi-Family land will be through re-designating land from SF (or possibly DR) to MF. There may be opportunities to up-zone existing residential land to increase capacity, such as from RM1 to RM2. "

The applicant's proposal helps the City re-designate land while helping meet the housing needs.

The property totals 10.32 acres and could be developed with a minimum of 124 units to a maximum of 289 units on the site. This could include multi-family units and attached single family dwellings. Therefore, the rezone would allow 124 to 289 housing units within the City of Salem and within an area where higher density housing is needed.

The development will also be located in an area in close proximity to existing and proposed services. Lee Middle School is located about ½ a mile to the north of the site. As part of SUB-ADJ19-08 and UGA17-03MOD1, the applicant provided 7 acres of land to the City of Salem for park land. This park site will provide adequate parks and recreation within the area. Commercial Services are currently available to the west along Commercial Street.

The existing neighborhood consists of single-family housing and some multi-family housing on Boone Road. In order to maintain the character of the neighborhood, the site will be developed in compliance with required Design Standards and provide bufferyards along property lines.

The City's adopted Comprehensive Plan Growth Management, Residential, Transportation Goals and Policies and applicable adopted facilities plans implement the Statewide Housing Goal.

Goal 11 - Public Facilities and Services:

The City's adopted Comprehensive Plan Growth Management, residential, and Transportation Goal and Polices and adopted Stormwater and Water Master Plans implement the Statewide Public Facilities and Services Goal by requiring development to be served by public services. The proposal is for revitalized urban development in an area where future extensions of those services can be provided in the most feasible, efficient and economical manner. The City's capital improvement program and its minimum code standards for public facilities provide a means for improving and updating public facilities systems (water and sewer). All necessary and appropriate public services and facilities essential for development will be provided to this property at levels that are adequate to serve the proposed use.

The City maintains an infrastructure of public services that includes sewer, water, and storm drainage facilities. The City will specify any needed changes to the existing service levels at the time building permits are requested.

Sidewalks are or will be provided (at the time of development) throughout the site to connect to the public sidewalk system. The location along a major transportation corridor facilitates access to a transit route, bicycle and pedestrian access, provides significant opportunity to reduce vehicle miles traveled. The vehicle, transit, bicycle, and pedestrian circulation systems will be designed to connect major population and employment centers in the Salem urban area, as well as provide access to local neighborhood residential, shopping, schools, and other activity centers.

The Salem-Keizer School District provides public education facilities. The education district's master plan provides for growth in the district and has options to meet the demand. The education district reviews the population factors to determine planning, funding and locating new schools or providing additional facilities on the sites of existing schools.

Other private service providers supply garbage, telephone, television, postal and internet services as needed by the development. The required public services and facilities to serve new development will be determined by the City at the time development permits are requested. By providing adequate public facilities and services for the proposed use, the requirements of this Goal are met.

Goal 12 – Transportation:

The City's adopted Comprehensive Plan Transportation Goal and Policies and the adopted Salem Transportation System Plan (STSP) implements the Statewide Transportation Goal by encouraging a safe, convenient and economic transportation system. The subject property is bordered be Reed Road, Battle Creek Road, and Keubler Boulevard. Reed Road (west) is designated as a minor arterial in the Salem Transportation System Plan (STSP). Battle Creek Road (southwest) is designated as a minor collector in the Salem Transportation System Plan (STSP). Kuebler Boulevard (south) is designated as a parkway in the Salem Transportation System Plan (STSP). The TIA dated June 20, 2018, identifies the traffic needs for the site and mitigation measures.

64.025(e)(2)(E): Public Interest

The public is benefitted by creating a well-located parcel of multi-family land; it will increase the City and State tax base; will be an attractive and efficient development; will identify and mitigate any hazard areas in a reasonable and a responsible manner.

The rezoning addresses planning issues such as use, access, circulation, public facilities, topography, and drainage. Site constraints such as configuration, frontage and topography are always taken into consideration for lot layout and access. Enhanced vehicular circulation is critical to City as well as the applicant.

In summary, by establishing a use that is consistent with the future economic and multi-family needs, and by providing a compatible use, the proposed change benefits the public.

ZONE CHANGE CRITERIA SRC CHAPTER 265

The intent and purpose of a zone change is described in SRC 265. In this section, it is recognized that due to a variety of factors including normal and anticipated growth, changing development patterns and concepts, and other factors which cannot be specifically anticipated, the zoning pattern cannot remain static. The zone change review process is established as a means of reviewing proposals and determining when they are appropriate.

This zone change is requested in order to allow a higher density use on the site. The proposed RMII zone will implement the requested "Multi-Family Residential" SACP map designation.

ZONE CHANGE CRITIERIA SRC 265.005(e)(1)(A)(ii)-(iii) and (C)-(G):

(1) *A quasi-judicial zone change shall be granted if all of the following criteria are met:*

> ***(A)*** *The zone change is justified based on the existence of one or more of the following:*
> ***(i)*** *A mistake in the application of a land use designation to the property;*
> ***(ii)*** *A demonstration that there has been a change in the economic, demographic, or physical character of the vicinity such that the proposed zone would be compatible with the vicinity's development pattern; or*
> ***(iii)*** *A demonstration that the proposed zone is equally or better suited for the property than the existing zone. A proposed zone is equally or better suited for the property than an existing zone if the physical characteristics of the property are appropriate for the proposed zone and the uses allowed by the proposed zone are logical with the surrounding land uses.*

Applicant Response to (A)(iii): The proposed zone change fits the development pattern of the vicinity. The surrounding properties are developed as multi-family residential and single-family residential. The proposed apartments will be compatible with the existing uses.

As shown on the City land zone map there is no property contiguous to the existing site that is vacant RM2 land, and there is none in the necessary proximity. The only appropriately designated property within the necessary proximity to the existing site is currently developed or being developed.

According to the Housing Needs Analysis, "Salem has a deficit of capacity in the MF designation, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of residential land. With a multi-family designation, the subject property can be developed with multi-family dwellings; the rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary.

The applicant is proposing to rezone 083W11DD/Tax Lot 601 and the southern portion of 083W11DD/Tax Lot 400 from RA to RM2 and change the comprehensive plan designation from "Developing Residential" to "Multi-Family Residential".

083W11DD-Tax Lot 601 and 083W11DD-Tax Lot 400 (southern portion):
10.32 acres
Rezone from RA to RM2

The applicant's proposal helps the City re-designate land while helping meet the housing needs.

The property totals 10.32 acres and could be developed with a minimum of 124 units to a maximum of 289 units on the site. This could include multi-family units and attached single family dwellings. Therefore, the rezone would allow 124 to 289 housing units within the City of Salem and within an area where higher density housing is needed.

The subject property will not only be a site that will contribute to the multi-family housing needs, but it is also a site that can help improve the transportation circulation in the area. The subject property when developed has the potential to provide street connections to adjacent properties for existing and proposed development.

The proposed RM2 zone is equally or better suited for the site because; 1) the site is located within an area of Salem with available public facilities and services; 2) per the TIA dated June 20, 2018, traffic impacts area minimal and will be mitigated as required; 3) the RM2 zone will allow the site to be developed with uses that are compatible with the surrounding existing single-family and multi-family uses; and, 4) the development of the site will provide additional housing in order to help meet housing needs within the City of Salem.

Therefore, the proposed RM2 zone will be equally or better suited for the site then the existing RA and PH zones.

This criteria has been met.

> ***(B)*** *City-initiated zone change.*

Applicant Response to (B): The proposed zone change is not City-initiated. Therefore, this criterion is not applicable.

> **(C)** *The zone change complies with the applicable provisions of the Salem Area Comprehensive Plan.*

Applicant Response to (C): The applicant is requesting a change to the Comprehensive Plan Designation from "Developing Residential" to 'Multi-Family Residential'.

The proposal complies with the "Residential" Goals and provisions of the SACP by creating an area that promotes multi-family uses.

Residential Development Goal

The SACP states that one of the intents of the Residential Development goals is, "To promote a variety of housing and opportunities for all income levels and an adequate supply of development land to support such housing."

The zone change will allow the property to be developed at a higher density, therefore, meeting or exceeding the dwelling average.

Residential Development Policies

Establishing Residential Uses: The applicant's proposal is to rezone 10.32 acres of property to RM2 to allow a higher density to be built on the site. As stated above, according to the Housing Needs Analysis, Salem has a deficit of MF designated land, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of multi-family land. The rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary. Therefore, establishing a mixture of residential uses within the area.

The property totals 10.32 acres and could be developed with a minimum of 124 units to a maximum of 289 units on the site. This could include multi-family units and attached single family dwellings. Therefore, the rezone would allow 124 to 289 housing units.

Facilities and Services Location: The City's adopted Comprehensive Plan Transportation Goal and Policies and the adopted Salem Transportation System Plan (STSP) implements the Statewide Transportation Goal by encouraging a safe, convenient and economic transportation system. The subject

property is located east of Reed Road, northeast of Battle Creek Road and north of Kuebler Boulevard. The major streets are in place due to previous development. Street extensions to properties will be provided where feasible for existing and future development.

The City's adopted Comprehensive Plan Growth Management, residential, and Transportation Goal and Polices and adopted Stormwater and Water Master Plans implement the Statewide Public Facilities and Services Goal by requiring development to be served by public services. The proposal is for revitalized urban development in an area where future extensions of those services can be provided in the most feasible, efficient and economical manner. The City's capital improvement program and its minimum code standards for public facilities provide a means for improving and updating public facilities systems (water and sewer). All necessary and appropriate public services and facilities essential for development will be provided to this property at levels that are adequate to serve the proposed use.

The subject property is located within the Salem Urban Growth Boundary and in the corporate city limits. The subject property is located outside the Urban Service Area. The subject property received UGA approval through UGA preliminary declaration Case No. 17-03MOD1.

The City maintains an infrastructure of public services that includes sewer, water, and storm drainage facilities. The City will specify any needed changes to the existing service levels at the time building permits are requested.

Infill Development: The subject property is currently vacant. In order to provide a mixture of housing in the area, the applicant is requesting a zone change. The comprehensive plan encourages a mixture of housing types with in a neighborhood.

The comprehensive plan designation for the sites are "Developing Residential" and "Public". The rezoning of the site to RM2 will be consistent with State Wide Planning Goal 10, and current housing needs in the in area.

The comprehensive plan change/zone change will promote infill development with the development of a property that is already served by City Services and all transportation to be developed with a higher density of housing that is needed in this area.

Multi-Family Housing: The development will also be located in an area in close proximity to existing and proposed services. Lee Middle School is located about ½ a mile to the north of the site. As part of SUB-ADJ19-08 and UGA17-03MOD1, the applicant provided 7 acres of land to the City of Salem for park land. This park site will provide adequate parks and recreation within the area. Commercial Services are currently available to the west along Commercial Street.

The existing neighborhood consists of single-family housing and some multi-family dwellings on Boone Road. In order to maintain the character of the neighborhood, the site will be developed in compliance with required Design Standards.

Circulation System and Through Traffic: The subject property is located east of Reed Road, northeast of Battle Creek Road and north of Kuebler Boulevard. The major streets are in place due to previous development. Street extensions to properties will be provided where feasible for existing and future development.

Alternative Housing Patterns: The surrounding properties are zoned for single family development. In order to provide a residential housing pattern while being consistent with the neighborhood, the proposed development will provide a higher density of needed housing in Salem.

Requests for Rezoning*:* The subject properties are currently designated for Residential and Public development. All public facilities and services are available to the site. The proposed development will meet Statewide Planning Goals and Policies pertaining to residential development. The development of the sites will not impact adjacent properties.

Urban Design: The City has adopted Design Standards and has a process in place to help implement multi-family design standards. At the time of development, the applicant's development will be in compliance with the Multi-Family Design Standards as outlined in 702. As required by code, prior to development of the site, the applicant will submit a Design Review and Site Plan Review application.

The rezoning of the site will help to maximize the densities in the area while providing a mixture of housing in the area. The rezoning of the property will provide 124 to 289 needed multi-family units within the area. This development will be in a location with accessibility to the commercial developments on Commercial Street to the west. Therefore, meeting the guidelines of providing housing within in areas with services. The development of the site will encourage a mixture of housing types and higher densities within an infill lot.

Salem-Keizer Housing Needs Analysis:

According to the Housing Needs Analysis, "Salem has a deficit of capacity in the MF designation, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of residential land. The rezone helps maximize the density while helping to meet housing needs.

The property totals 10.32 acres and could be developed with a minimum of 124 units to a maximum of 289 units on the site. This could include multi-family units and attached single family dwellings. Therefore, the rezone would allow 124 to 289 housing units within the City of Salem and within an area where higher density housing is needed.

Therefore, this criteria has been met.

> ***(D)*** *The zone change complies with applicable Statewide Planning Goals and applicable administrative rules adopted by the Department of Land Conservation and Development.*

Applicant Response to (D): All Planning Goals have been addressed above. See findings under ***64.025(e)(2)(D).***

> ***(E)*** *If the zone change requires a comprehensive plan change from an industrial designation to a non-industrial designation, or a comprehensive plan change from a commercial or employment designation to any other designation, a demonstration that the proposed zone change is consistent with the most recent economic opportunities analysis and the parts of the Comprehensive Plan which address the provision of land for economic development and employment growth; or be accompanied by an amendment to the Comprehensive Plan to address the proposed zone change; or include both the demonstration and an amendment to the Comprehensive Plan.*

Applicant Response to (E): The applicant is proposing to change the zoning from RA to RM2.

083W11DD-Tax Lot 601 and 083W11DD-Tax Lot 400 (southern portion):
10.32 acres
Rezone from RA to RM2

Therefore, this criteria is not applicable.

> ***(F)*** *The zone change does not significantly affect a transportation facility, or, if the zone change would significantly affect a transportation facility, the significant effects can be Adequately addressed through the measures associated with, or conditions imposed on, the zone change.*

Applicant Response to (F): The current zoning of the properties is RA and PH. The applicant is proposing to change the zone to RM2, so the sites can be developed at a higher density.

A TIA dated June 20, 2018, has been submitted with the application. The subject property is bordered be Reed Road, Battle Creek Road, and Keubler Boulevard. Reed Road (west) is designated as a minor arterial in the Salem Transportation System Plan (STSP). Battle Creek Road (southwest) is designated as a minor collector in the Salem Transportation System Plan (STSP). Kuebler Boulevard (south) is designated as a parkway in the Salem Transportation System Plan (STSP). The TIA identifies the traffic needs for the site and mitigation measures.

A TRP memo Dated august 31, 2020, has been provided as part of this application.

This criterion has been met.

> **(G)** The property is currently served, or is capable of being served, with public facilities and services necessary to support the uses allowed by the proposed zone.

Applicant Response to (G): The subject property is currently served, or is capable of being served, with public facilities and services necessary to support the uses allowed in the RM2 zone.

Therefore, this criteria has been met.

Neighborhood Plan

The subject property is located within the Morningside Neighborhood Association. The Morningside Neighborhood Plan was established on July 10, 2013. The subject properties are identified as RA (Residential Agriculture) within the Morningside NA Plan.

Goal 1 of the Morningside Plan is (Page 15 of the Morningside Plan):

> ***"Provide for the future development of the Morningside Neighborhood through a compatible balance and appropriate mix of residential, commercial, industrial, public, mixed-use and open space uses facilitated through the implementation of effective and innovative development codes."***

Applicant Response: As stated above, the applicant is proposing to rezone 083W11DD/Tax Lot 601 and the southern portion of 083W11DD/Tax Lot 400 from RA to RM2 and change the comprehensive plan designation from "Developing Residential" to "Multi-Family Residential".

083W11DD-Tax Lot 601 and 083W11DD-Tax Lot 400 (southern portion):
10.32 acres
Rezone from RA to RM2

According to the 2014 Housing Needs Analysis, "Salem has a deficit of land for nearly 2,900 dwelling units (2,897) in the Multi-Family Residential designation. …Salem has a deficit of about 207 gross acres of land in the Multi-Family Residential." The rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary.

The applicant's proposal helps the City re-designate land while helping meet the housing needs.

The property totals 10.32 acres and could be developed with a minimum of 124 units to a maximum of 289 units on the site. This could include multi-family units and attached single family dwellings. The rezone allows the property to be developed with a needed housing type that will be required to provide open space, pedestrian circulation, and go through the Design Review process. Therefore, meeting Goal 1.

Goal 2 of the Morningside Plan is (Page 16-17 of the Morningside Plan):

> ***"Maintain and reinforce the residential areas of the neighborhood as safe, pleasant, and engaging places to live."***

Applicant Response: As stated above, the applicant is proposing to rezone the property from RA to RM2 and change the comprehensive plan designation from "Developing Residential" to "Multi-Family Residential.

Uses allowed within the RMII zone have to meet Design Review Standards, like greater setbacks adjacent residential uses, open space areas, adequate parking, and pedestrian circulation. All these things help maintain and reinforce the existing and proposed residential uses in the neighborhood by providing a safe and visual engaging place to live.

Further more, the development will also be located in an area in close proximity to existing and proposed services. Lee Middle School is located about ½ a mile to the north of the site. As part of SUB-ADJ19-08 and UGA17-03MOD1, the applicant provided 7 acres of land to the City of Salem for park land. This park site will provide adequate parks and recreation within the area. Commercial Services are currently available to the west along Commercial Street.

The existing neighborhood consists of single-family housing and some multi-family housing on Boone Road. In order to maintain the character of the neighborhood, the site will be developed in compliance with required Design Standards and provide bufferyards along property lines.

Therefore, meeting Goal 2.

Goal 3 of the Morningside Plan is (Page 18 of the Morningside Plan):

> ***"Promote architectural variety and a mix of housing unit types to accommodate changing demographics and economic conditions, and to provide appropriate affordable housing and age-in-place options throughout the neighborhood."***

Applicant Response: Prior to development of the site, the applicant will be required to show compliance with the Design Review Standards. These standards are intended to promote building and site design that contributes positively to a sense of neighborhood and to the overall streetscape by carefully relating building mass, entries and yards to public streets.

The subject property will not only be a site that will provide a needed and affordable housing type in this area, but it is also a site that can help improve the transportation circulation in the area. The subject property when developed has the potential to provide street connections to the properties to the north, east, and west for proposed and existing development.

Therefore, meeting Goal 3.

CONCLUSION

We believe that requested Comprehensive Land Plan Change/Zone Change application is appropriate for the subject property for the reasons describe herein. The proposal is consistent and in compliance with the applicable goals and policies of the Comprehensive Plan and the Statewide Planning Goals, and satisfies all applicable criteria. As demonstrated herein, the "Multi-Family Residential" land use designations and corresponding RM2 (Multi-Family Residential) zoning designation are appropriate for the subject property.

We believe that the materials submitted address all the relevant City criteria for a Comprehensive Plan Change/Zone Change. Obviously, there are other approval processes needed for the development of the property at the time proceeding actual development. For these reasons, we believe that the proposal is warranted and that the Planning Commission has sufficient findings to grant the proposal as requested.

Attachment D

ARD ENGINEERING
21370 SW Langer Farms Pkwy
Suite 142, Sherwood, OR 97140

Technical Memorandum

To: Todd Boyce - Westwood Homes, LLC

From: Michael Ard, PE

Date: August 31, 2020

Re: Coburn Grand View Zone Change - Salem, OR

This memorandum is written to provide information related to two proposed zone change applications related to the planned Coburn Grand View Estates residential development located on the east side of Battle Creek Road north of Kuebler Boulevard in Salem, Oregon. The proposed zone changes consist of a conversion of 2.589 acres of property from PH (Public and Private Health Services) to RM-2 (Multiple Family Residential) and a conversion of 10.321 acres of property from RA (Residential Agriculture) to RM-2 (Multiple Family Residential).

The following analysis addresses the potential transportation impacts that can be anticipated following each of the two proposed zone changes, as well as the cumulative impacts of both zone changes. The analysis also includes a detailed examination of the requirements of Oregon's Transportation Planning Rule.

TRIP GENERATION

In order to quantify the potential change in site traffic volumes associated with each of the two proposed zone changes, estimates of trip generation for the "reasonable worst-case development scenarios" were developed for the existing and proposed zoning. The comparison between the existing and proposed zoning traffic levels thereby shows the maximum potential change in traffic that could result from each proposed zone change.

PH to RM-2 Zone Change (2.589 acres)

Under existing conditions, the City of Salem's PH zoning allows for development of the 2.589-acre (112,796 sf) property with a medical/dental office building. Assuming that the maximum reasonable gross floor area of the building will be 25 percent of the gross area of the property, the maximum reasonable building size for the medical/dental office would be 28,200 square feet.

Following approval of the proposed change to RM-2 zoning, the 2.589-acre property could be developed with multi-family residential uses, with up to 28 dwelling units per net acre. Assuming that 25 percent of the gross land area is used for roads and necessary infrastructure to support residential development, a maximum of 54 mid-rise apartments could be constructed on the subject property.

Trip generation estimates for the existing and proposed zoning were prepared using data from the *Trip Generation Manual, 10th Edition,* published by the Institute of Transportation Engineers. Trip generation was calculated for the existing PH zoning using the published trip rates for ITE land use code 720, *Medical-Dental Office Building*. The calculations are based on the gross floor area of the building. For the proposed RM-2 zoning, the trip estimate was calculated using data for land use code 221, *Multi-Family Housing (Mid-Rise)*. The calculations are based on the number of dwelling units.

Based on the analysis, the first proposed zone change would be projected to result in a net decrease in site trips as compared to the development potential under the existing zoning. A summary of the trip generation calculations is provided in the table below. Detailed trip estimate worksheets for the existing and proposed zoning scenarios are provided in the attached technical appendix.

Coburn Grand View Zone Change #1 - Trip Generation Summary

	Morning Peak Hour			Evening Peak Hour			Daily
	In	**Out**	**Total**	**In**	**Out**	**Total**	**Total**
Proposed RM-2 Zoning (54 Units)	5	14	19	15	9	24	294
-Ex PH Zoning (28,200 sf medical office)	-61	-17	-78	-27	-71	-98	-982
Net Change in Site Trips	**-56**	**-3**	**-59**	**-12**	**-62**	**-74**	**-688**

RA to RM-2 Zone Change (10.321 Acres)

Under existing conditions, the City of Salem's RA zoning allows for development of the 10.321-acre (449,580 sf) property with single-family homes with a minimum lot area of 4,000 square feet. Again, assuming that 25 percent of the gross land area is used for roads and necessary infrastructure to support residential development, a maximum of 84 single-family homes could be constructed on the subject property.

Following approval of the proposed change to RM-2 zoning, the 10.321-acre property could be developed with multi-family residential uses, with up to 28 dwelling units per acre. Assuming that 25 percent of the gross land area is used for roads and necessary infrastructure to support residential development, a maximum of 217 mid-rise apartment units could be constructed on the subject property.

Again, trip generation estimates for the existing and proposed zoning were prepared using data from the *Trip Generation Manual, 10th Edition,* published by the Institute of Transportation Engineers. Trip generation was calculated for the existing RA zoning using the published trip rates for ITE land use code 210, *Single-Family Detached Housing*. The calculations are based on the number of dwelling units. For the

proposed RM-2 zoning, the trip estimate was calculated using data for land use code 221, *Multi-Family Housing (Mid-Rise)*. The calculations are based on the number of dwelling units.

Based on the analysis, the second proposed zone change could result would be projected to result in a net increase of 16 trips during the morning peak hour, 12 trips during the evening peak hour, and 388 daily trips under the reasonable worst-case development scenarios. A summary of the trip generation calculations is provided in the table below. Detailed trip estimate worksheets for the existing and proposed zoning scenarios are provided in the attached technical appendix.

Coburn Grand View Zone Change #2 - Trip Generation Summary

	Morning Peak Hour			Evening Peak Hour			Daily
	In	**Out**	**Total**	**In**	**Out**	**Total**	**Total**
Proposed RM-2 Zoning (217 Units)	20	58	78	58	37	95	1180
-Ex RA Zoning (84 Homes)	-16	-46	-62	-52	-31	-83	-792
Net Change in Site Trips	**4**	**12**	**16**	**6**	**6**	**12**	**388**

The trip generation analysis demonstrates that neither of the proposed zone changes will result in any significant increase in peak hour traffic. Although a slight increase in traffic is projected in association with the second zone change (RA to RM-2), 16 or fewer additional trips are projected during each of the peak hours. Additionally, the two zone changes cumulatively are projected to result in a net decrease of 43 trips during the morning peak hour, 62 fewer trips during the evening peak hour, and 300 fewer daily site trips.

Based on the analysis, neither of the proposed zone changes are projected to result in traffic added traffic volumes significant enough to require detailed operational analysis of impacts at the 20-year planning horizon, and when the two proposed zone changes are considered together, site traffic for the Coburn Grand View Estates site is decreased under the reasonable worst-case development scenario.

TRANSPORTATION PLANNING RULE ANALYSIS

In order to allow the proposed zone change, the City of Salem must find that the requirements of Oregon's Transportation Planning Rule (OAR 660-012-0060) are met. This rule provides guidance regarding whether and how the potential transportation impacts of a plan amendment must be mitigated. The relevant portions of the Transportation Planning Rule are quoted, along with responses specific to the proposed zone change.

660-012-0060
Plan and Land Use Regulation Amendments

(1) If an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) would significantly affect an existing or planned transportation facility, then the local government must put in place measures as provided in section (2) of this rule, unless the amendment is allowed under section (3), (9) or (10) of this rule. A plan or land use regulation amendment significantly affects a transportation facility if it would:

(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

No changes are proposed to the functional classification of existing or planned transportation facilities.

(b) Change standards implementing a functional classification system; or

No changes are proposed to the standards implementing the functional classification system.

(c) Result in any of the effects listed in paragraphs (A) through (C) of this subsection based on projected conditions measured at the end of the planning period identified in the adopted TSP. As part of evaluating projected conditions, the amount of traffic projected to be generated within the area of the amendment may be reduced if the amendment includes an enforceable, ongoing requirement that would demonstrably limit traffic generation, including, but not limited to, transportation demand management. This reduction may diminish or completely eliminate the significant effect of the amendment.

(A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

(B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or

(C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan.

The proposed residential zonings would generate traffic types and volumes consistent with the functional classifications of all existing and planned transportation facilities. The first zone change will result in a net decrease in traffic as measured at the planning horizon and the second zone change will result in a minimal increase in traffic. Neither zone change would be projected to degrade the performance of any existing or planned transportation facilities, and cumulatively approval of the two zone changes is projected to result in a reduction in traffic.

CONCLUSIONS

Based on the analysis, the proposed zone changes from City of Salem "PH" zoning to "RM-2" zoning and from "RA zoning to "RM-2" zoning will not result in a significant effect as defined under Oregon's Transportation Planning Rule, and will not result in increases in traffic which would reasonably require detailed operational analysis of impacts at the long-range planning horizon. Accordingly, no mitigation is necessary or recommended in conjunction with either zone change individually or with the two zone changes cumulatively.

If you have any questions regarding this analysis, please feel free to contact me via email at mike.ard@gmail.com or via phone at 503-537-8511.

Appendix

Trip Generation Calculation Worksheet

Land Use Description: Medical-Dental Office Building
ITE Land Use Code: 720
Independent Variable: Gross Floor Area
Quantity: 28.2 Thousand Square Feet

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic
Trip Rate: 2.78 trips per ksf
Directional Distribution: 78% Entering 22% Exiting

PM Peak Hour of Adjacent Street Traffic
Trip Rate: 3.46 trips per ksf
Directional Distribution: 28% Entering 72% Exiting

Total Weekday Traffic
Trip Rate: 34.80 trips per ksf
Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

28.2 ksf Medical-Dental Office Building

	Entering	Exiting	Total
AM Peak Hour	61	17	78
PM Peak Hour	27	71	98
Weekday	491	491	982

Data Source: *Trip Generation Manual, 10th Edition* , Institute of Transportation Engineers, 2017

Trip Generation Calculation Worksheet

Land Use Description: Multi-Family Housing (Mid-Rise)
ITE Land Use Code: 221
Independent Variable: Dwelling Units
Quantity: 54 Dwelling Units

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.36 trips per dwelling unit
Directional Distribution: 26% Entering 74% Exiting

PM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.44 trips per dwelling unit
Directional Distribution: 61% Entering 39% Exiting

Total Weekday Traffic
Trip Rate: 5.44 trips per dwelling unit
Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

54 Dwelling Units

	Entering	Exiting	Total
AM Peak Hour	5	14	19
PM Peak Hour	15	9	24
Weekday	147	147	294

Data Source: *Trip Generation Manual, 10th Edition* , Institute of Transportation Engineers, 2017

Trip Generation Calculation Worksheet

Land Use Description: Single-Family Detached Housing
ITE Land Use Code: 210
Independent Variable: Dwelling Units
Quantity: 84 Dwelling Units

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.74 trips per dwelling unit
Directional Distribution: 25% Entering 75% Exiting

PM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.99 trips per dwelling unit
Directional Distribution: 63% Entering 37% Exiting

Total Weekday Traffic
Trip Rate: 9.44 trips per dwelling unit
Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

84 Dwelling Units

	Entering	Exiting	Total
AM Peak Hour	16	46	62
PM Peak Hour	52	31	83
Weekday	396	396	792

Data Source: *Trip Generation Manual, 10th Edition* , Institute of Transportation Engineers, 2017

Trip Generation Calculation Worksheet

Land Use Description: Multi-Family Housing (Mid-Rise)
ITE Land Use Code: 221
Independent Variable: Dwelling Units
Quantity: 217 Dwelling Units

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.36 trips per dwelling unit
Directional Distribution: 26% Entering 74% Exiting

PM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.44 trips per dwelling unit
Directional Distribution: 61% Entering 39% Exiting

Total Weekday Traffic
Trip Rate: 5.44 trips per dwelling unit
Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

217 Dwelling Units

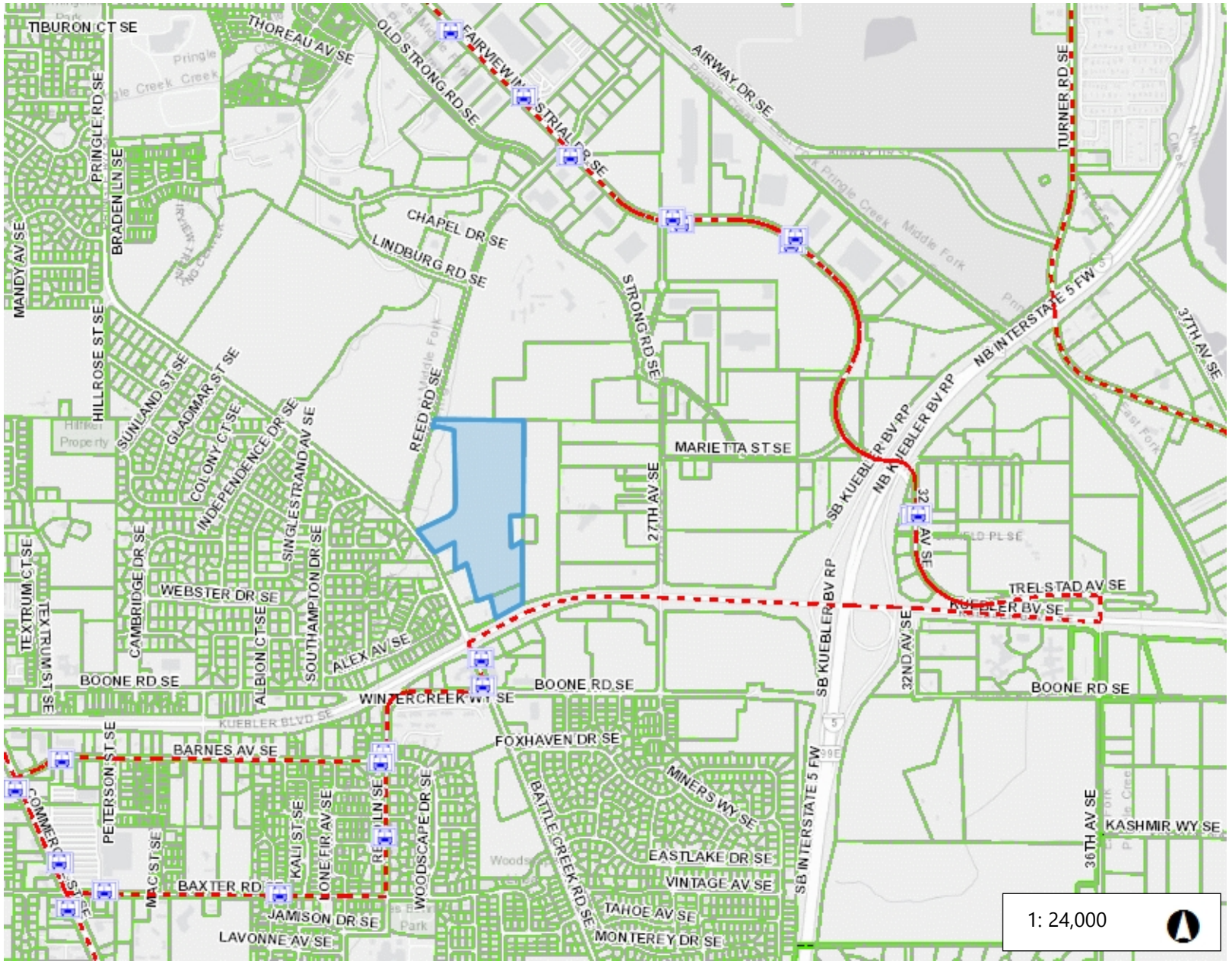
	Entering	Exiting	Total
AM Peak Hour	20	58	78
PM Peak Hour	58	37	95
Weekday	590	590	1180

Data Source: *Trip Generation Manual, 10th Edition* , Institute of Transportation Engineers, 2017

CITY OF Salem AT YOUR SERVICE

City of Salem Map

Attachment E



Legend

- Bus Stop
- Core Network
- Cherriots_Local-Regional_Rou
- Centerline (Labels)
- Taxlots
- City Limit

Notes

Enter notes here...

0.76 0 0.38 0.76 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
City of Salem, Oregon

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

CITY OF Salem AT YOUR SERVICE

MEMO

TO: Olivia Dias, Planner III
Community Development Department

FROM: Glenn J. Davis, PE, CFM, Chief Development Engineer
Public Works Department

DATE: October 5, 2020

SUBJECT: **PUBLIC WORKS RECOMMENDATIONS**
CPC-NPC-ZC20-07 (20-106290)
4800 BLOCK OF BATTLE CREEK ROAD SE
COMPREHENSIVE PLAN CHANGE AND ZONE CHANGE

PROPOSAL

A consolidated application to change the Comprehensive Plan Map Designation, Neighborhood Plan Change, and Zone change of an approximately 10-acre land area from Developing Residential with RS (Single Family Residential) zoning to Multiple Family with RM-II (Multiple Family Residential) zoning. The subject site is approximately 27.72 acres in size, zoned RA (Residential Agriculture), and located at 4800 Block of Battle Creek Road SE (Marion County Assessor map and tax lot numbers: 083W11D 00400 and 00601).

RECOMMENDED CONDITIONS OF APPROVAL

1. At the time of future development, provide access within the subject property from the existing street system through future local street(s) to serve adjacent parcels.

FACTS

Public Infrastructure Plan—The *Water System Master Plan*, *Wastewater Management Master Plan*, and *Stormwater Master Plan* provide the outline for facilities adequate to serve the proposed zone.

Streets

1. Battle Creek Road SE

    a. Standard—This street is designated as a Minor Arterial street in the Salem TSP. The standard for this street classification is a 46-foot-wide improvement within a 72-foot-wide right-of-way.

Code authority references are abbreviated in this document as follows: *Salem Revised Code* (SRC); *Public Works Design Standards* (PWDS); and *Salem Transportation System Plan* (Salem TSP).

b. Existing Conditions—This street has an approximate 20-foot to 46-foot improvement within a 60-foot to 72-foot-wide right-of-way abutting the subject property.

2. Reed Road SE

a. Standard—This street is designated as a Minor Arterial street in the Salem TSP. The standard for this street classification is a 46-foot-wide improvement within a 72-foot-wide right-of-way.

b. Existing Conditions—This street has an approximate 20-foot improvement within a 40-foot-wide right-of-way abutting the subject property.

3. Kuebler Boulevard SE

a. Standard—This street is designated as a Parkway street in the Salem TSP. The standard for this street classification is an 80-foot-wide improvement within a 120-foot-wide right-of-way.

b. Existing Conditions—This street has an approximate 70-foot to 80-foot improvement within a 120-foot to 150-foot-wide right-of-way abutting the subject property. The parkway was previously approved for an alternative street standard to allow the 70-foot improvement width.

c. Access control—No driveway access will be granted onto Kuebler Boulevard SE.

Storm Drainage

1. Existing Conditions

a. Drainage patterns in this area are generally conveyed into Pringle Creek. A portion of the property appears to drain southeast toward Kuebler Boulevard SE.

Water

1. Existing Conditions

a. The subject property is located in the S-1 and S-2 water service levels.

b. A 12-inch water line in the S-2 service level is located in Kuebler Boulevard SE. Mains of this size generally convey flows of 2,100 to 4,900 gallons per minute.

Sanitary Sewer

1. Existing Conditions

    a. A 15-inch sewer main is located in Battle Creek Road SE.

CRITERIA AND FINDINGS

Criteria: SRC 265.005(e)(1)(F) The zone change does not significantly affect a transportation facility, or, if the zone change would significantly affect a transportation facility, the significant effects can be adequately addressed through the measures associated with, or conditions imposed on, the zone change.

Finding: The applicant has submitted a TPR analysis that is required to address the Transportation Planning Rule (OAR 660-012-0060). The TPR analysis demonstrates that the proposed CPC/ZC will not have a significant impact on the transportation system as defined by OAR 660-012-0060. The Assistant City Traffic Engineer has reviewed the TPR analysis and concurs with the finding of no significant effect.

Pursuant to 803.035(a), the proposed development is required to provide connectivity to underdeveloped adjacent properties as shown on the drawing labeled “Proposed Right of Way Map” provided with the application materials. At the time of future development, the applicant shall provide access within the subject property from the existing street system through future local street(s) to serve adjacent parcels.

Criteria: SRC 265.005(e)(1)(G) The property is currently served, or is capable of being served, with public facilities and services necessary to support the uses allowed by the proposed zone.

Finding: Public utility requirements to serve the subject property is specified in land use case SUB-ADJ19-08 & UGA17-03MOD1. Water service for the subject property will be provided from a new 18-inch main in Reed Road SE. Sewer service will be provided from a 15-inch sewer main in Reed Road SE. Stormwater point of discharge will be provided from West Middle Fork Pringle Creek. Site-specific infrastructure requirements will be addressed in the Site Plan Review process in SRC Chapter 220.

Prepared by: Jennifer Scott, Program Manager
cc: File

NOTICE OF DECISION

PLANNING DIVISION
555 LIBERTY ST. SE, RM 305
SALEM, OREGON 97301
PHONE: 503-588-6173
FAX: 503-588-6005

CITY OF Salem AT YOUR SERVICE

Si necesita ayuda para comprender esta informacion, por favor llame 503-588-6173

DECISION OF THE SALEM PLANNING COMMISSION

MINOR COMPREHENSIVE PLAN MAP AMENDMENT / NEIGHBORHOOD PLAN CHANGE / ZONE CHANGE CASE NO.: CPC-NPC-ZC20-08

APPLICATION NO.: 20-111845-ZO / 20-115346 / 20-111846-ZO

NOTICE OF DECISION DATE: October 22, 2020

REQUEST: A consolidated application to change the Comprehensive Plan Map Designation, Neighborhood Plan Change and Zone change of an approximately 2.5 acres land area from Public with PH Public and Private Health Services) zoning to Multiple Family with RM-II (Multiple Family Residential) zoning. The subject site is an approximately 18 acres in size, zoned PH Public and Private Health Services) and RA (Residential Agriculture), and located at 4200 Block of Strong Road SE (Marion County Assessor map and tax lot numbers: 083W12B / 1600).

APPLICANT: Brandie Dalton, Multi-Tech Engineering Services Inc., on behalf of Westwood Homes LLC (Todd Richard Boyce and Bill Wagoner)

LOCATION: 4200 Block of Strong Road SE, Salem OR 97302

CRITERIA: Salem Revised Code (SRC) Chapters 64.025(e)(2) – Comprehensive Plan Map Amendments and 265.005(e)(1) – Zone Changes

FINDINGS: The findings are in the attached Decision dated October 22, 2020.

DECISION: The **Planning Administrator APPROVED** Minor Comprehensive Plan Map Amendment, Neighborhood Plan Change, and Zone Change CPC-NPC-ZC20-08 based upon the application materials deemed complete on September 23, 2020 and the findings as presented in this report.

VOTE:

Yes 8 No 1 (Slater) Absent 0

Chane Griggs, President
Salem Planning Commission

Application Deemed Complete:	September 23, 2020
Public Hearing Date:	October 20, 2020
Notice of Decision Mailing Date:	October 22, 2020
Decision Effective Date:	November 7, 2020
State Mandate Date:	January 21, 2021

Case Manager: Olivia Dias, odias@cityofsalem.net, 503-540-2343

This decision is final unless written appeal and associated fee (if applicable) from an aggrieved party is filed with the City of Salem Planning Division, Room 320, 555 Liberty Street SE, Salem OR 97301, or by email at planning@cityofsalem.net, no later than 5:00 p.m., Friday, November 6, 2020. Any person who presented evidence or testimony at the hearing may appeal the decision. The notice of appeal must contain the information required by SRC 300.1020 and must state where the decision failed to conform to the provisions of the applicable code section, SRC Chapter(s) 64 and 265. The appeal fee must be paid at the time of filing. If the appeal is untimely and/or lacks the proper fee, the appeal will be rejected. The Salem City Council will review the appeal at a public hearing. After the hearing, the Salem City Council may amend, rescind, or affirm the action, or refer the matter to staff for additional information.

The complete case file, including findings, conclusions and conditions of approval, if any, is available for review by contacting the case manager, or at the Planning Desk in the Permit Application Center, Room 305, City Hall, 555 Liberty Street SE, during regular business hours.

http://www.cityofsalem.net/planning

FACTS & FINDINGS

COMPREHENSIVE PLAN CHANGE / NEIGHBORHOOD PLAN CHANGE / ZONE CHANGE CASE NO. CPC-NPC-ZC20-08

OCTOBER 22, 2020

PROCEDURAL FINDINGS

1. On September 2, 2020, an application was filed for a Comprehensive Plan Map Amendment, Neighborhood Plan Map Amendment and Quasi-Judicial Zone Change by Brandie Dalton of Multi Tech Engineering to change 2.5 acre portion a 18 acre property from "Community Service Hospital" to "Multiple Family Residential" and to change the zoning of that portion from PH (Public and Private Health Services) to RM-II (Multi-Family Residential).

2. The consolidated application was deemed complete for processing on September 23, 2020, and a public hearing to consider the application was scheduled for October 20, 2020.

3. On August 12, 2020, the applicant and their representatives attended the Neighborhood Association Meeting and presented their proposal, meeting the open house requirements of SRC 300.320.

4. Notice of the consolidated application was provided to surrounding property owners and tenants, pursuant to Salem Revised Code (SRC) requirements, on September 30, 2020. The property was posted in accordance with the posting provision outlined in SRC 300.620.

5. DLCD Notice. State law (ORS 197.610) and SRC 300.620(b)(1) require the City to provide the Oregon Department of Land Conservation and Development (DLCD) a minimum 35-day notice when an applicant or the City proposes an amendment to an acknowledged Comprehensive Plan or land use regulation or to adopt a new land use regulation. The City sent notice of the proposed Comprehensive Plan Change and Zone Change application to DLCD on September 15, 2020.

6. On October 20, 2020, the Planning Commission held a public hearing for the consolidated applications. The Planning Commission received testimony both for and against the application. The public hearing was closed and voted to grant the Comprehensive Plan Change, Neighborhood Plan Change, Zone Change applications.

7. 120-Day Rule. Pursuant to Oregon Revised Statutes (ORS) 227.128, amendments to an acknowledged Comprehensive Plan are not subject to the 120-day rule. In addition, the requested Quasi-Judicial Zone Change included with the application is similarly not subject to the 120-day rule because, pursuant to ORS 227.178(10), the zone change has been filed concurrently, and is being considered jointly, with the proposed comprehensive plan amendment.

BACKGROUND / PROPOSAL

The applicant is requesting a comprehensive plan change, neighborhood plan change from "Community Service Hospital" to "Multiple Family" and to change the zoning of that portion from PH (Public and Private Health Services) to RM-II (Multiple Family Residential).

APPLICANT'S STATEMENT

Land use applications must include a statement addressing the applicable approval criteria and be supported by proof they conform to all applicable standards and criteria of the Salem Revised Code. The written statement provided by the applicant summarizing the request and addressing compliance with the applicable approval criteria, as well as the existing conditions plan illustrating the existing development on the property, are attached to this report as follows:

- Applicant's Written Statement: **Attachment C**

Planning Commission utilized the information included in the applicant's statement to evaluate the proposal and to establish the facts and findings.

SUMMARY OF RECORD

The following items are submitted to the record and are available upon request: All materials submitted by the applicant, including any applicable professional studies such as traffic impact analysis, geologic assessments, stormwater reports, any materials and comments from public agencies, City Departments, neighborhood associations, and the public; and all documents referenced in this report.

FACTS AND FINDINGS

1. Salem Area Comprehensive Plan (SACP)

The Salem Area Comprehensive Plan (SACP) map designates the subject property as "Community Service Hospital" and "Developing Residential". The proposal is for a Comprehensive Plan Change and Zone Change of the land area designated "Community Service Hospital".

The Comprehensive Plan designations of surrounding properties include:

North: "Community Service Hospital"

South: "Developing Residential"

East: "Developing Residential"

West: "Community Service Hospital"

Components of the Comprehensive Plan

The Salem Area Comprehensive Plan is the long-range plan for guiding development in the Salem urban area. The overall goal of the plan is to accommodate development in a timely, orderly, and efficient arrangement of land uses and public facilities and services that meets the needs of present and future residents of the Salem urban area. Many different documents and maps, when taken together, comprise the Salem Area Comprehensive Plan.

Salem Transportation System Plan (TSP): The TSP uses a Street Classification System to determine the functional classification of each street within the City's street system. Strong Road SE, designated as a collector street in the TSP, abuts the southern boundary of the subject property.

Relationship to the Urban Service Area

The subject property is located outside of the Urban Service Area. A UGA permit is not required for the Comprehensive Map Change or Zone Change applications. The applicant has an approved UGA Permit (UGA17-03MOD1). Prior to plat of SUB-ADJ19-08 or future development of multi-family, a modification to the previous UGA permit will be required.

Infrastructure

Water:	The *Salem Water System Master Plan* identifies the subject property to be within the S-1 water service levels. As specified in land use case SUB-ADJ19-08 & UGA17-03MOD1, water service for the subject property will be provided from a new 18-inch main in Reed Road.
Sewer:	A 15-inch sewer line is located in Reed Road SE.
Storm Drainage:	The portion of property proposed for the zone change generally flows to the northwest over adjacent property, toward the West Middle Fork of Pringle Creek.
Streets:	Strong Road SE has an approximate 20 to 30-foot improvement within a 40 to 60-foot-wide right-of-way abutting the subject property. This street is designated as a Collector street in the Salem TSP. The standard for this street classification is a 34 to 40-foot-wide improvement within a 60-foot-wide right-of-way.
Transportation Planning Rule:	A Transportation Planning Rule (TPR) Analysis in consideration of the requirements of the TPR (OAR 660-012-0060) is needed to demonstrate that the proposed Comprehensive Plan Change/Zone Change (CPC/ZC) will not have a significant effect on the transportation

system as defined by OAR 660-012-0060. Findings addressing the Transportation Planning Rule can be found below.

2. Zoning

The subject property is zoned PH (Public and Private Health Services) and RA (Residential Agriculture) and is currently vacant. The proposal is to change the zone for a portion of the property from PH to RM-II. Surrounding properties are zoned and used as follows:

North: PH (Public and Private Health Services); Hillcrest Youth Correctional Facility.

South: RA (Residential Agriculture); Vacant.

East: RA (Residential Agriculture); Vacant

West: PH (Public and Private Health Services); Vacant

3. Existing Conditions

The subject property is approximately 18 acres in size and is currently vacant. The property was previously approved for a phased subdivision (SUB-ADJ19-08). The subdivision was approved for a total of 209-lots on a total of 52.80 acres. The subdivision has not yet been platted or constructed.

4. City Department Comments

Salem Public Works Department – The Public Works Department, Development Services Section, reviewed the proposal and submitted comments **(Attachment F)**.

Salem Fire Department – The Salem Fire Department submitted comments indicating no concerns with the proposed Comprehensive Plan and zone change, and that Fire Code issues would be addressed at the time of building permit application.

Salem Community Development Department, Building and Safety Division – The Building and Safety Division submitted comments indicating no concerns with the proposal.

5. Public Agency & Private Service Provider Comments

Salem-Keizer Public Schools – Salem-Keizer Public Schools reviewed the proposal and submitted comments detailing school capacity.

Oregon Department of Land Conservation and Development (DLCD) – No comments received.

6. Neighborhood Association and Public Comments

The subject property is located within the boundaries of the Morningside Neighborhood Association (Morningside) and adjacent to South Gateway Neighborhood Association (SGNA).

Required Open House/Neighborhood Meeting. Prior to application submittal, SRC 300.320 requires the applicant for a proposed minor amendment to the City's comprehensive plan map to either arrange and conduct an open house or present their proposal at a regularly scheduled meeting of the neighborhood association the property is located within. On August 12, 2020, the applicant and their representatives attended Morningside Neighborhood Association meeting to present their proposal. A summary of the comments provided at the neighborhood association meeting prepared by the applicant's representative are included in the record**.**

Notification was sent to the Morningside, SGNA, surrounding property owners and tenants on September 23, 2020. One comment from Oregon Fair Housing Council was submitted in support of the application.

Morningside Neighborhood Association submitted comments in opposition and raised the following issues:

Traffic Impacts to Reed Road

The Morningside Neighborhood Association is opposed to the zone change due to the increase in traffic on Reed Road SE. Several projects in the area will bring additional vehicle traffic volumes to the existing street, which is already unsafe and dangerous. Reed Road SE is narrow, has no shoulder. Reed Road SE is in need of widening and improvements to the intersection of Battle Creek Road SE and Reed Road should be completed prior to approval of any zone changes that result in increased traffic until those improvements have been made.

Findings:

Transportation Planning Rule (TPR)

The determination of significant impact on a transportation facility is based upon a comparison of potential trip generation from uses allowed under the current designations and uses allowed under the proposed designations; it is not based upon a comparison of trips generated from the current use -- undeveloped land – to trips generated from potential uses under the proposed designations. The applicant is not required to identify proposed land uses or provide a development plan for this application for land use designations, and the City is not required to impose conditions that will mitigate <u>any</u> potential effect development may have on transportation facilities. The finding in the original staff report discusses the requirement and staff analysis:

“The applicant submitted a Transportation Planning Rule (TPR) Analysis in consideration of the requirements of the Transportation Planning Rule (OAR 660-012-0060). The TPR analysis demonstrates that the proposed Comprehensive Plan Change and Zone Change

will not have a significant effect on the transportation system. The TPR analysis takes into consideration the existing zoning in the vicinity, including the previously approved residential and commercial property across Kuebler Blvd (Costco). The Assistant City Traffic Engineer has reviewed the TPR analysis and concurs with the finding of no significant effect."

The requested comprehensive plan change, neighborhood plan change, and zone change will not have a significant effect on the existing transportation system beyond what the current land use designations would allow. The previously approved UGA17-03MOD1, conditions of approval require right-of-way dedication and improvements on Reed Road and the intersection of Reed Road SE and Battle Creek Road SE, which will include a bike lane and sidewalk along the frontage of the property.

Development funded improvements:

The subject property was granted previous approval for a single-family subdivision and Urban Growth Preliminary Declaration permit (UGA17-03MOD1), which requires the widening and construction of Reed Road, along the properties' frontage to include sidewalks and on-street parking abutting the future park. In addition to frontage improvements to Reed Road, the existing subdivision approval requires that prior to any development, or lots being created, the applicant construct a realigned intersection of Battle Creek Road SE and Reed Road SE to minor arterial standards. The intersection will include the following:

- A westbound to southbound left turn lane on Reed Road SE;
- A southbound to eastbound left turn lane on Battle Creek Road SE;
- A northbound to eastbound right turn lane on Battle Creek Road SE; and
- A pedestrian island on Battle Creek Road SE along the south side of the intersection. (UGA17-03;1)

Future developments along the westside of Reed Road frontage will be required to construct a three-quarter street improvement (including travel lanes, sidewalks, and bike lanes on the east side). There have been inquiries regarding development in Fairview on parcels that have frontage along Reed Road. Any development on these parcels would be required to widen Reed Road from Fairview Industrial Road SE to Lindburg Road SE and make improvements, including: 46-foot wide (two lane) travel width, sidewalks and street trees along the property's frontage. In addition, potential redevelopment of the Hillcrest Youth Correctional Facility property, which is on east side of Reed Road between the subject property and Strong Road, would be responsible for frontage improvements on their side of Reed Road, minimizing the gap between improvements.

Development within the former Fairview Training Center and subject to the Fairview Plan is required to contribute over 20 million dollars in Development District Fees (DDFs) for public improvements identified in the area. Reed Road is an identified street eligible for improvements with DDFs. Since development is required to partially improve the property frontages with development, the funds are typically used to fund additional improvements, such as increased travel width, and improvements on the opposite side of the street. Funds are intended to be used by developers to add to the required improvements that they are constructing.

7. MINOR COMPREHENSIVE PLAN MAP AMENDMENT APPROVAL CRITERIA

Salem Revised Code (SRC) 64.025(e)(2) establishes the approval criteria for Comprehensive Plan Map amendments. In order to approve a quasi-judicial Plan Map amendment request, the decision-making authority shall make findings of fact based on evidence provided by the applicant that demonstrates satisfaction of all of the applicable criteria. The applicable criteria are shown below in **bold** print. Following each criterion is a finding relative to the amendment requested.

SRC 64.025(e)(2)(A): The Minor Plan Map Amendment is justified based on the existence of one of the following:

(i) ***Alteration in Circumstances.*** **Social, economic, or demographic patterns of the nearby vicinity have so altered that the current designations are no longer appropriate.**

(ii) ***Equally or Better Suited Designation.*** **A demonstration that the proposed designation is equally or better suited for the property than the existing designation.**

(iii) ***Conflict Between Comprehensive Plan Map Designation and Zone Designation.*** **A Minor Plan Map Amendment may be granted where there is conflict between the Comprehensive Plan Map designation and the zoning of the property, and the zoning designation is a more appropriate designation for the property than the Comprehensive Plan Map designation. In determining whether the zoning designation is the more appropriate designation, the following factors shall be considered:**

(aa) Whether there was a mistake in the application of a land use designation to the property;

(bb) Whether the physical characteristics of the property are better suited to the uses in the zone as opposed to the uses permitted by the Comprehensive Plan Map designation;

(cc) Whether the property has been developed for uses that are incompatible with the Comprehensive Plan Map designation; and

(dd) Whether the Comprehensive Plan Map designation is compatible with the surrounding Comprehensive Plan Map designations.

Finding: The applicant has provided findings which can be found in **Attachment C**. There is no conflict between the existing “Community Service Hospital” designation and PH (Public and Private Health Services) zoning. The applicant does not assert that a mistake has been made in the application of the Public designation to the subject property. Staff concurs that the proposal is justified based on (ii); the proposed designation is equally or better suited for the property.

The land area is adjacent to the former Hillcrest Youth Correctional Facility. The State of Oregon does not own the land area proposed for development and is unlikely to be developed with the current zoning designation.

The City has accepted, but not adopted, a Housing Needs Analysis (HNA) prepared in 2015 which includes a Buildable Land Inventory identifying a surplus of approximately 1,975 acres for single family residential development and a deficit of land available for multifamily residential development. The proposal would convert approximately 2.5 acres of land away from a health services designation, to a multiple family residential designation, where the HNA identifies a deficit.

According to the Housing Needs Analysis (HNA), “Salem has a deficit of capacity in the MF designation, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of residential land.” With a Multiple Family Residential designation, the subject property could be developed as multi-family dwellings; the rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary. The proposed 2.5 acres could provide between a 30 and 70 of unit based on the minimum and maximum density of the RM-II zone. The increase in density will reduce the deficit of identified in the HNA.

The proposed change in designation would allow for redevelopment for multi-family which will help to meet the changing needs of the Salem urban area. The Multiple Family Residential designation would be equally or better than the Public designation for the property due to their location on a Collector and with future connections to major arterials and a Parkway, within a future residential neighborhood, their location which provides an ability to buffer higher intensity uses from single family uses, and their contribution to the identified deficit of land designated multi-family.

The Planning Commission finds the application meets this criterion.

SRC 64.025(e)(2)(B): The property is currently served, or is capable of being served, with public facilities and services necessary to support the uses allowed by the proposed plan map designation.

Finding: The subject property is located outside of the Urban Service Area. The water, sewer, and storm infrastructure area available within surrounding streets/areas and appear to be adequate to serve the proposed development, as conditioned in UGA17-03MOD1. Site-specific infrastructure requirements will be addressed in the Site Plan Review process in SRC Chapter 220. As conditioned below, the applicant will be required to modify the previously approved phased subdivision and urban growth preliminary declaration permit ensuring public facilities are adequate to serve the development.

The proposal meets this criterion.

SRC 64.025(e)(2)(C): The proposed plan map designation provides for the logical urbanization of land.

Finding: There is no conflict between the existing "Community Service Hospital" designation and PH (Public and Private Health Services) zoning. The applicant does not assert that a mistake has been made in the application of the Public designation to the subject property. Staff concurs that the proposal is justified based on (ii); the proposed designation is equally or better suited for the property.

The land area is adjacent to the former Hillcrest Youth Correctional Facility. The State of Oregon does not own the land area proposed for development and is unlikely to be developed with the current zoning designation.

The City has accepted, but not adopted, a Housing Needs Analysis (HNA) prepared in 2015 which includes a Buildable Land Inventory identifying a surplus of approximately 1,975 acres for single family residential development and a deficit of land available for multifamily residential development. The proposal would convert approximately 2.5 acres of land away from a health services designation, to a multiple family residential designation, where the HNA identifies a deficit.

According to the Housing Needs Analysis (HNA), "Salem has a deficit of capacity in the MF designation, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of residential land." With a Multiple Family Residential designation, the subject property could be developed as multi-family dwellings; the rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary. The proposed 2.5 acres could provide between a 30 and 70 of unit based on the minimum and maximum density of the RM-II zone. The increase in density will reduce the deficit of identified in the HNA.

The proposed change in designation would allow for redevelopment for multi-family which will help to meet the changing needs of the Salem urban area. The Multiple Family Residential designation would be equally or better than the Public designation for the property due to their location on a Collector and with future connections to major arterials and a Parkway, within a future residential neighborhood, their location which provides an ability to buffer higher intensity uses from single family uses, and their contribution to the identified deficit of land designated multi-family.

The proposal meets this criterion.

SRC 64.025(e)(2)(D): The proposed land use designation is consistent with the Salem Area Comprehensive Plan and applicable Statewide planning goals and administrative rules adopted by the Department of Land Conservation and Development.

Finding: The applicable Goals and Policies of the Comprehensive Plan are addressed as follows:

<u>Salem Urban Area Goals and Policies, Residential Development Goal (Page 30, Salem Comprehensive Policies Plan):</u>

Policy E.1. The location and density of residential uses shall be determined after consideration of the following factors;

a. The type and distribution of housing units required to meet expected population growth within the Salem urban growth boundary.

Finding: The City has accepted, but not adopted, a Housing Needs Analysis (HNA) prepared in 2015 which includes a Buildable Land Inventory identifying a surplus of approximately 1,975 acres for single family residential development and a deficit of land available for multifamily residential development. The proposal would convert approximately ten acres of land away from a single-family designation, where the accepted HNA identifies a surplus, to a Multiple Family Residential designation, where the HNA identifies a deficit.

b. The capacity of land resources given slope, elevation, wetlands, flood plains, geologic hazards and soil characteristics.

Finding: The land proposed for the Comprehensive Plan Map and zone change appears to have capacity for Multiple Family Residential development. The relative environmental suitability of the property is even greater when compared to the steeper residential properties in the southern portions of the City. There are no known natural hazards or geographical constraints which would prevent development of higher-density housing on the site.

c. The capacity of public facilities, utilities, and services. Public facilities, utilities, and services include, but are not limited to municipal services such as water, sanitary and storm sewer, fire, police protection and transportation facilities.

Finding: The subject property is located outside of the Urban Service Area. A UGA permit is not required for the Comprehensive Map Change or Zone Change applications. The applicant has an approved UGA Permit (UGA17-03MOD1), Prior to plat of SUB-ADJ19-08 or development, a modification to the previous UGA permit will be required.

d. Proximity to services. Such services include, but are not limited to, shopping, employment and entertainment opportunities, parks, religious institutions, schools and municipal services.

Finding: The property is located in an urbanized area of the city where services exist in the vicinity of the site, including a shopping, employment, entertainment, parks, elementary, middle and high schools. The Commercial Street corridor is located west of the property which has commercial nodes providing a wide range of shopping, employment, and entertainment opportunities. There are several churches and undeveloped commercial properties within the immediate vicinity. The Fairview Industrial area is located north of the subject property providing for multiple opportunities for employment.

e. The character of the existing neighborhoods based on height, bulk and scale of existing and proposed development in the neighborhood.

Finding: As described in findings above, residential properties in the vicinity of the site are developed, or planned for development, at a range of densities. The proposed Multiple Family Residential designation matches property to the south near Boone Road. Where the site abuts lower density residential properties to the north, Multiple Family Design Guidelines and Standards established in SRC Chapter 702 require multifamily design guidelines requires increased setbacks and screening to ensure a transition to the smaller bulk and scale of single-family residences.

f. Policies contained in facility plans, urban renewal plans, residential infill studies and neighborhood and specific development plans.

Finding: The subject property is located outside of the Urban Service Area and adequate utilities are available to serve the property. A UGA permit is not required for the Comprehensive Map Change or Zone Change applications. The applicant has an approved UGA Permit (UGA17-03MOD1). Prior to plat of SUB-ADJ19-08 or future multi-family development, a modification to the previous UGA permit will be required.

g. The density goal of General Development Policy 7.

Finding: General Development Policy 7 provides in part that "the cumulative effect of all new residential development in the Salem urban area should average 6.5 dwelling units per gross acre of residential development." When applied to the subject property, the range of densities allowed in zones implementing the Multiple Family Residential designation provides for more dwelling units than the 6.5 dwelling units per acre, which is consistent with the Housing Needs Analysis (HNA) prepared in 2015.

Policy E.2 Residential uses and neighborhood facilities and services shall be located to:

a. Accommodate pedestrian, bicycle and vehicle access;
b. Accommodate population growth;
c. Avoid unnecessary duplication of utilities, facilities, and services; and
d. Avoid existing nuisances and hazards to residents.

Finding: As described in findings above, the subject property is located outside of the Urban Service Area. The water, sewer, and storm infrastructure area available within surrounding streets/areas and appear to be adequate to serve the proposed development, as conditioned by UGA17-03MOD1. The development standards established in the UDC will ensure the commercial or multifamily residential uses developed on the site are adequately served.

Policy E.6 Multi-family housing shall be located in areas proximate to existing or planned transportation corridors, public facilities and services:

a. To encourage the efficient use of residential land and public facilities, development regulations shall require minimum densities for multiple family residential zones;
b. Development regulations shall promote a range of densities that encourage a variety of housing types;
c. Multiple family developments should be located in areas that provide walking, auto, or transit connections to:

(1) Employment centers;
(2) Shopping areas;
(3) Transit service;
(4) Parks;
(5) Public buildings.

Finding: The RM-2 (Multiple Family Residential) zone proposed by the applicant includes a minimum density of 12 units per gross acre, encouraging efficient use of residential land and public facilities. As described in findings above, the immediate vicinity includes a range of densities within existing developments and zoning district standards for undeveloped properties. The nearest transit service available to the subject property near the corner of Boone Road and Battle Creek Road, by way of Salem Keizer Transit's Route 6 bus line. The existing transit stop would require pedestrian and bicycles to cross Kuebler Blvd, a Parkway, which is over a half mile from the subject property. The need for public transportation to serve the additional density may be needed. To ensure public transportation can be provided to the proposed development will need to coordinate with Salem-Keizer Cherriots prior to any development proposal. The Comprehensive Parks System Master Plan shows that a Neighborhood Park (NP 32) and Urban Park (UP 3) are planned on or near the subject property. The previous subdivision is conditioned to reserve property for dedication of neighborhood park facility NP-32 based on sizing criteria established in SRC 200.075(b) and as proposed in the application.

The City in in contract to purchase a 7.35-acre abutting property for a future park.

Policy E.7 Residential neighborhoods shall be served by a transportation system that provides access for pedestrian, bicycles, and vehicles while recognizing the neighborhoods physical constraints and transportation service needs:

a. The transportation system shall promote all modes of transportation and dispersal rather than concentration of through traffic;
b. Through traffic shall be addressed by siting street improvements and road networks that serve new development so that short trips can be made without driving;
c. The transportation system shall provide for a network of streets fitted to the terrain with due consideration for safety, drainage, views, and vegetation.

Finding: The planned street transportation system in the vicinity of the subject property establishes a framework of parkway and a arterials that provide both east/west and north/south access across the area which allows for short trips within the neighborhood to be made by a variety of routes, with or without driving.

Policy E.10 Requests for rezonings to higher density residential uses to meet identified housing needs will be deemed appropriate provided:

a. The site is so designated on the comprehensive plan map;
b. Adequate public services are planned to serve the site;
c. The site's physical characteristics support higher density development; and
d. Residential Development Policy 7 is met.

Finding: The applicant's proposal includes a request for a quasi-judicial zone change from RA (Residential Agriculture) to the higher density RM-II (Multiple Family Residential) zone. The RM-II zone implements the "Multi-Family Residential" Comprehensive Plan Map designation proposed as part of the consolidated application. As described in findings above, the subject property is located outside the Urban Service Area but served by utilities (UGA17-03MOD1). The water, sewer, and storm infrastructure area available within surrounding streets/areas and appear to be adequate to serve the proposed development. The property is unencumbered by sensitive areas such as wetlands or riparian areas. The existing street network on properties in the vicinity meet the circulation requirements of Residential Development Policy 7.

Staff finds that the proposal is consistent with the applicable Goals and Policies of the Comprehensive Plan.

Finding: The applicable Statewide Planning Goals are addressed as follows:

Statewide Planning Goal 1 – Citizen Involvement: *To develop a citizen involvement program that ensures the opportunity for citizens to be involved in all phases of the planning process.*

Finding: Required Open House/Neighborhood Meeting. Prior to application submittal, SRC 300.320 requires the applicant for a proposed minor amendment to the City's comprehensive plan map to either arrange and attend an open house or present their proposal at a regularly scheduled meeting of the neighborhood association the property is located within. On August 12, 2020, the applicant and their representatives attended the Morningside Neighborhood Association meeting to present their proposal. A summary of the comments provided at the neighborhood association meeting prepared by the applicant's representative is included in the record**.** The applicant did not identify a homeowner's association for the subject property; therefore, no notice is required. A public hearing notice was mailed to the affected property owners, all property owners and tenants within 250 feet of the subject property and to the Morningside Neighborhood Association and South Gateway Neighborhood Association. This satisfies Citizen Involvement described in Goal 1.

Statewide Planning Goal 2 – Land Use Planning: *To establish a land use planning process and policy framework as a basis for all decision and actions related to use of land and to assure an adequate factual base for such decisions and actions.*

Finding: The City has complied with the Goal requirements for establishing and maintaining a land use planning process. The Oregon Land Conservation and Development Commission have acknowledged the Salem Area Comprehensive Plan to be in compliance with the Statewide Planning Goals.

Statewide Planning Goal 5 – Open Spaces, Scenic and Historic Areas, and Natural Resources: *To protect natural resources and conserve scenic and historic areas and open spaces.*

Finding: The subject property does not contain any protected natural resources or scenic and historic areas; this Statewide Planning Goal is not applicable.

Statewide Planning Goal 6– Air, Water, and Land Resources Quality: *To maintain and improve the quality of the air, water and land resources of the state.*

Finding: Land located within the Urban Growth Boundary is considered urbanizable and is intended to be developed to meet the needs of the City, and the effects of urban development on air, water and land resources are anticipated. Development of the property is subject to tree preservation, stormwater and wastewater requirements of the UDC which are intended to minimize the impact of development on the state's natural resources. The proposal is consistent with Goal 6.

Statewide Planning Goal 7 – Areas Subject to Natural Hazards: *To protect people and property from natural hazards.*

Finding: The subject property is not located within a floodplain or floodway. Mapped landslide hazards are identified on subject property, prior to development a geotechnical assessment will be required. The proposal is consistent with Goal 7.

Statewide Planning Goal 8 – Recreational Needs: *To satisfy the recreational needs of the citizens of the state and visitors and, where appropriate, to provide for the siting of necessary recreational facilities including destination resorts.*

Finding: The subject property is not within an identified open space, natural or recreation area, and no destination resort is planned for this property, therefore, Goal 8 is not applicable to this proposal.

Statewide Planning Goal 9 – Economic Development: *To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens.*

Finding: In 2014, the City conducted a study called the Salem Economic Opportunities Analysis (EOA). The EOA examined Salem's needs for industrial and commercial land

through 2035 and concluded that Salem has a projected commercial land shortage of 271 acres and a surplus of approximately 907 acres of industrial land. The EOA provides strategies to meet the projected employment land needs in the Salem area. In 2015, the City Council adopted the EOA and updated the Comprehensive Plan accordingly; the City now uses the EOA and its findings to inform policy decisions, including how to respond to request for rezoning land.

Statewide Planning Goal 10 – Housing: *To provide for the housing needs of the citizens of the state.*

Finding: In 2014, the City conducted a Housing Needs Analysis (HNA) to develop strategies for the community to meet housing needs through 2035 and to inform policy decisions related to residential land. According to the Housing Needs Analysis (HNA), "Salem has a deficit of capacity in the MF designation, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of residential land." With a Multiple Family Residential designation, the subject property could be developed as multi-family dwellings; the rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary. The proposed 10.32 acres could provide between a 124 and 289 of unit based on the minimum and maximum density of the RM-II zone. The increase in density will reduce the deficit of identified in the HNA.

The proposed comprehensive plan map amendment would change the current "Community Service Hospital" designation to "Multiple Family Residential", and the zoning from PH (Public and Private Health Services) to RM-II (Multiple Family Residential - II).

The current Community Services – Health designation does not allow residential uses. The proposal will help provide diverse housing options to meet the future needs of the City. The proposed RM-II zoning designation allows for a greater variety of residential uses than the current zoning does, including single family, two family, and multiple family residential. The proposed change in designation is in compliance with Goal 10 by providing a designation that allows more diverse housing options than the current zoning to contribute towards the future housing needs of the City.

Statewide Planning Goal 11 – Public Facilities and Services: *To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.*

Finding: The subject property is located outside of the Urban Service Area. The water, sewer, and storm infrastructure area available within surrounding streets/areas and appear to be adequate to serve the proposed development. Site-specific infrastructure requirements will be addressed in the Site Plan Review process in SRC Chapter 220. As conditioned below, the applicant will be required to modify the previously approved phased subdivision and urban growth preliminary declaration permit ensuring public facilities are adequate to serve the development.

Statewide Planning Goal 12 – Transportation: *To provide and encourage a safe, convenient and economic transportation system.*

Goal 12 is implemented by the Transportation Planning Rule (TPR). In summary, the TPR requires local governments to adopt Transportation System Plans (TSPs) and requires local governments to consider transportation impacts resulting from land use decisions and development. The key provision of the TPR related to local land use decisions is Oregon Administrative Rule (OAR) 660-012-0060. This provision is triggered by amendments to comprehensive plans and land use regulations that "significantly affect" a surrounding transportation facility (road, intersection, etc.). Where there is a "significant effect" on a facility, the local government must ensure that any new allowed land uses are consistent with the capacity of the facility. In the context of a site-specific comprehensive plan change request, such as this proposal, a "significant effect" is defined under Oregon Administrative Rule (OAR) 660-012-0060(1) as either an amendment that "allows types or levels of land uses which would result in levels of travel or access which are inconsistent with the functional classification of a transportation facility," or an amendment that would "reduce the performance standards of an existing or planned facility below the minimum acceptable level identified in the TSP."

The applicant for a comprehensive plan change is required to submit a Transportation Planning Rule (TPR) analysis to demonstrate that their request will not have a "significant effect" on the surrounding transportation system, as defined above or to propose mitigation of their impact.

The applicant submitted a Transportation Planning Rule (TPR) Analysis in consideration of the requirements of the Transportation Planning Rule (OAR 660-012-0060). The TPR analysis demonstrates that the proposed Comprehensive Plan Change and Zone Change will not have a significant effect on the transportation system. The Assistant City Traffic Engineer has reviewed the TPR analysis and concurs with the finding of no significant effect.

The proposal complies with Goal 12.

Statewide Planning Goal 14 – Urbanization*: To provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities.*

Finding: The subject property is located within the Urban Growth Boundary (UGB), and public facilities required to serve future development of the property are in close proximity. The proposed comprehensive plan map amendment will allow the efficient use of vacant land within the UGB in compliance with Goal 14.

SRC 64.025(e)(2)(E): The amendment is in the public interest and would be of general benefit.

Finding: The proposed Comprehensive Plan Map amendment from Community Service Hospital to Multifamily Residential is in the public interest and would be of general benefit

because it would increase the number of housing units that can be provided on the subject property, consistent with the planned capacity of infrastructure serving future development. The proposed change in land use designation is consistent with the location and character of the property, with adjacent land use designations, and with the planned transportation facilities available to serve the property.

The proposal satisfies this criterion.

MORNINGSIDE NEIGHBORHOOD PLAN

Finding: The property is located within the boundaries of the Morningside Neighborhood Association. The Morningside Neighborhood Plan was adopted in 2014 and is in effect pursuant to SRC Chapter 64.

Residential

Goal 2: Maintain and reinforce the residential areas of the neighborhood as safe, pleasant and engaging places to live.

POLICIES:
Policy 2.5 - New multi-family buildings should be designed to engage the streetscape, with entrances and windows facing the public right-of-way.

Policy 2.6 - New residential developments of 15-dwelling units or more are encouraged to incorporate amenities such as community plazas, playgrounds, community gardens, open space tracts or pocket parks.

Policy 2.7 - The height, bulk and massing of new developments proposed adjacent to existing single-family dwellings should be designed in a context-sensitive manner to create a cohesive visual urban form and protect the single-family residential character of the neighborhood.

Finding: Multifamily development on the site would be subject to development standards adopted in the RM-2 Zone (SRC Chapter 514), as well as Multiple Family Design Review Guidelines and Standards (SRC Chapter 702). Future development will be reviewed for design, setbacks, open space, height and architectural detail, which would be consistent with the policies above.

Goal 3: Promote architectural variety and a mix of housing unit types to accommodate changing demographics and economic conditions, and to provide appropriate affordable housing and age-in-place options throughout the neighborhood.

POLICIES:
Policy 3.1 - Multifamily housing developments are encouraged in locations with access to arterial or collector streets with existing or planned transit service.

Policy 3.3 - New residential developments are encouraged to incorporate a diversity of housing types to attract residents of varying income levels, lifestyles and housing preferences.

Finding: The proposed zone change would locate Multi-family housing near an arterial street with future planned transit in the area. The proposed multifamily uses will be located near and in conjunction with a single-family residential subdivision providing a diversity of housing types.

Transportation

Goal 10: Foster a local transportation system that achieves the following:

- *Promotes improved efficient travel movement and a high level of connectivity for all modes of transportation.*
- *Encourages the development of safe walkable places with a high degree of pedestrian connectivity.*
- *Increases the availability and viability of transit and alternative transportation for neighborhood residents.*
- *Places a high priority on Level of Service (LOS) analysis that reflects design impacts for all transportation modes.*

POLICIES:
Policy 10.2 - New subdivisions should provide multiple external street connections to foster vehicle flow through a distributed or grid-type system and multiple access points to the arterial and collector street network.

Finding: The subject property is located along a collector street, and the previously approved subdivision provides for the single connection to Battle Creek Road and Reed Road and limits multiple access points to the arterial system.

The criteria for approval of a Neighborhood Plan Change are the same as the Minor Comprehensive Plan Map amendment, the findings above adequately address the proposed Neighborhood Plan change.

8. QUASI-JUDICIAL ZONE CHANGE APPROVAL CRITERIA

The following analysis addresses the proposed zone change for the subject property from PH (Public and Private Health Services) to RM-II (Multiple Family Residential).

SRC Chapter 265.005 provides the criteria for approval for Quasi-Judicial Zone Changes. In order to approve a Quasi-Judicial Zone Map amendment request, the review authority shall make findings based on evidence provided by the applicant demonstrating that all the following criteria and factors are satisfied. The extent of the consideration given to the various factors set forth below will depend on the degree of impact of the proposed change, and the greater the impact of a proposal on the area, the greater is the burden on the applicant to demonstrate that, in weighing all the factors, the zone change is appropriate.

The applicable criteria and factors are stated below in **bold** print. Following each criterion is a response and/or finding relative to the amendment requested.

SRC 265.005(e)(1)(A): The zone change is justified based on one or more of the following:

(i) A mistake in the application of a land use designation to the property;

(ii) A demonstration that there has been a change in the economic, demographic, or physical character of the vicinity such that the proposed zone would be compatible with the vicinity's development pattern; or

(iii) A demonstration that the proposed zone change is equally or better suited for the property than the existing zone. A proposed zone is equally or better suited than an existing zone if the physical characteristics of the property are appropriate for the proposed zone and the uses allowed by the proposed zone are logical with the surrounding land uses.

Finding: The proposed 2.5 acres satisfies (iii); the proposed zone change is equally or better suited for the property than the existing zone. The physical characteristics of the property, including its relationship to a parkway and arterial street, its location within an area that is approved to and has a wide range of housing types.

According to the Housing Needs Analysis, "Salem has a deficit of capacity in the MF designation, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of residential land" while conversely finding that the City has a surplus of available single family residential lands. The proposed change in designation would allow for a redevelopment that will allow multi-family development which will help to meet the changing needs of the Salem urban area. With the RM-II zone, the subject property could be developed as multi-family dwellings; the rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary.

In implementing the "Multifamily Residential" Comprehensive Plan Map designation, the RM-2 zone primarily allows apartments and related multifamily uses, as well as compatible services such as libraries, small scale day care facilities, and churches. Multifamily development on the site would be subject to development standards adopted in the RM-2 zone (SRC Chapter 514), as well as Multiple Family Design Review Guidelines and Standards (SRC Chapter 702).

Pursuant to 803.035(a), the proposed development is required to provide connectivity to underdeveloped adjacent properties. At the time of future development, the applicant shall provide access to the subject property from the existing street system through future local street(s).

This criterion is satisfied.

SRC 265.005(e)(1)(B): If the zone change is City-initiated, and the change is for other than City-owned property, the zone change is in the public interest and would be of general benefit.

Finding: The proposal is not a City-initiated zone change. Therefore, this criterion does not apply.

SRC 265.005(e)(1)(C): The zone change complies with the applicable provisions of the Salem Area Comprehensive Plan.

Finding: Findings addressing the Comprehensive Plan Change criterion SRC 64.025(e)(2)(D), included earlier in this report, address the applicable provisions of the Salem Area Comprehensive Plan for this collective application.

SRC 265.005(e)(1)(D): The zone change complies with applicable Statewide Planning Goals and applicable administrative rules adopted by the Department of Land Conservation and Development.

Finding: Findings addressing the Comprehensive Plan Change criterion SRC 64.025(e)(2)(D), included earlier in this report, address applicable Statewide Planning Goals and Oregon Administrative Rules for this collective application. The proposal satisfies this criterion.

SRC 265.005(e)(1)(E): If the zone change requires a comprehensive plan change from an industrial designation to a non-industrial designation, or from a commercial or employment designation to any other use designation, a demonstration that the proposed zone change is consistent with the most recent economic opportunities analysis and the parts of the Comprehensive Plan which address the provision of land for economic development and employment growth; or be accompanied by an amendment to the Comprehensive Plan to address the proposed zone change; or include both the demonstration and an amendment to the Comprehensive Plan.

Finding: The subject property is not currently designated for industrial, commercial, or employment use. Therefore, this criterion does not apply to the proposal.

SRC 265.005(e)(1)(F): The zone change does not significantly affect a transportation facility, or, if the zone change would significantly affect a transportation facility, the significant effects can be adequately addressed through the measures associated with, or conditions imposed on, the zone change.

Finding: The applicant submitted a Transportation Planning Rule (TPR) Analysis in consideration of the requirements of the Transportation Planning Rule (OAR 660-012-0060). The TPR analysis is required to demonstrate that the proposed Comprehensive Plan Change and Zone Change will not have a significant effect on the transportation system as defined by OAR 660-012-0060.

The proposal meets this criterion.

SRC 265.005(e)(1)(G): The property is currently served, or is capable of being served, with public facilities and services necessary to support the uses allowed by the proposed zone.

Finding: Findings addressing the Comprehensive Plan Change criterion SRC 64.025(e)(2)(B), included earlier in this report, address the public facilities and services available to support the uses allowed on the subject property. The proposal satisfies this criterion.

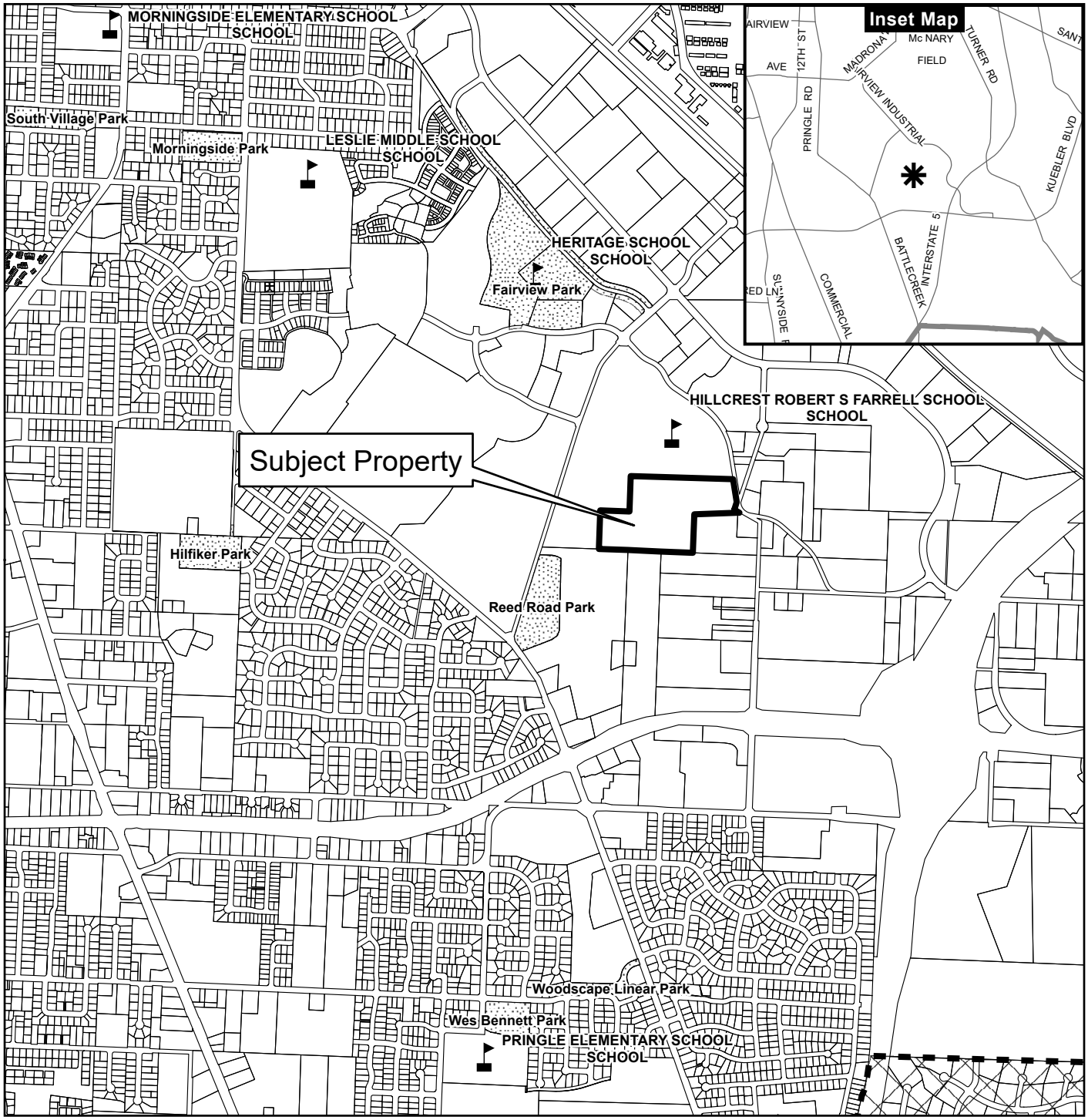
CONCLUSION

Based on the facts and findings presented herein, the proposed Minor Comprehensive Plan Map Amendment, Minor Neighborhood Plan Map Amendment, and Quasi-Judicial Zone Change, as conditioned, satisfy the applicable criteria contained under SRC 64.025(e)(2) and 265.005(e)(1) for approval.

Attachments:
A. Vicinity Map, Comprehensive Plan Map and Zoning
B. Site Plan
C. Applicant's Written Statement
D. Traffic Planning Rule Analysis
E. Cherriots Routes
F. Public Works Department Memo

Prepared by Olivia Dias, Current Planning Manager

Vicinity Map
4200 Block Strong Road



Legend

- Taxlots
- Urban Growth Boundary
- City Limits
- Outside Salem City Limits
- Historic District
- Schools
- Parks

0 100 200 400 Feet

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Community Development Dept.

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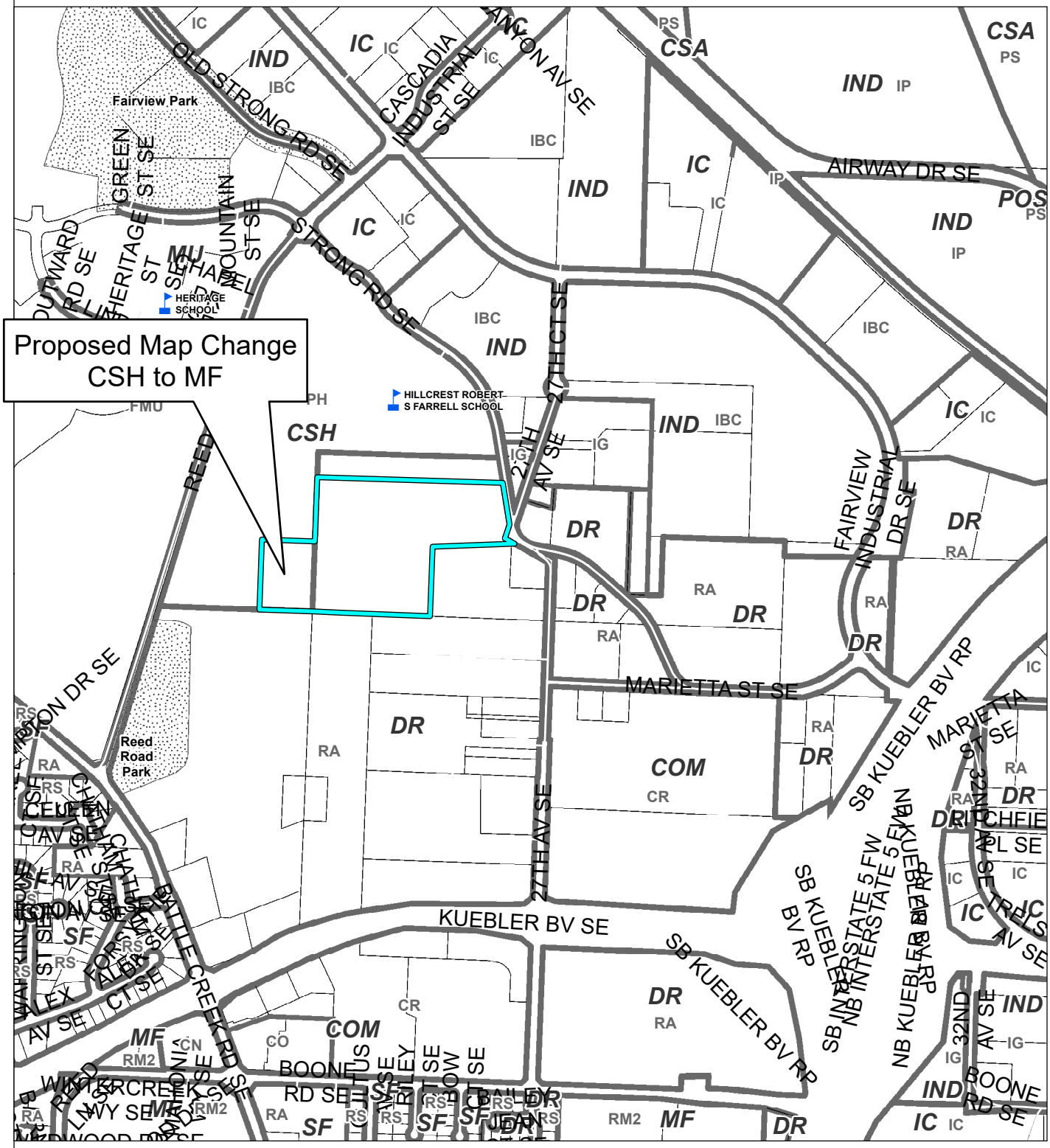
Comprehensive Plan Map - 4200 Block Strong Road



Legend

- SF — Comprehensive Plan
- Urban Growth Boundary
- Outside Salem City Limits
- Taxlots
- Parks
- Schools

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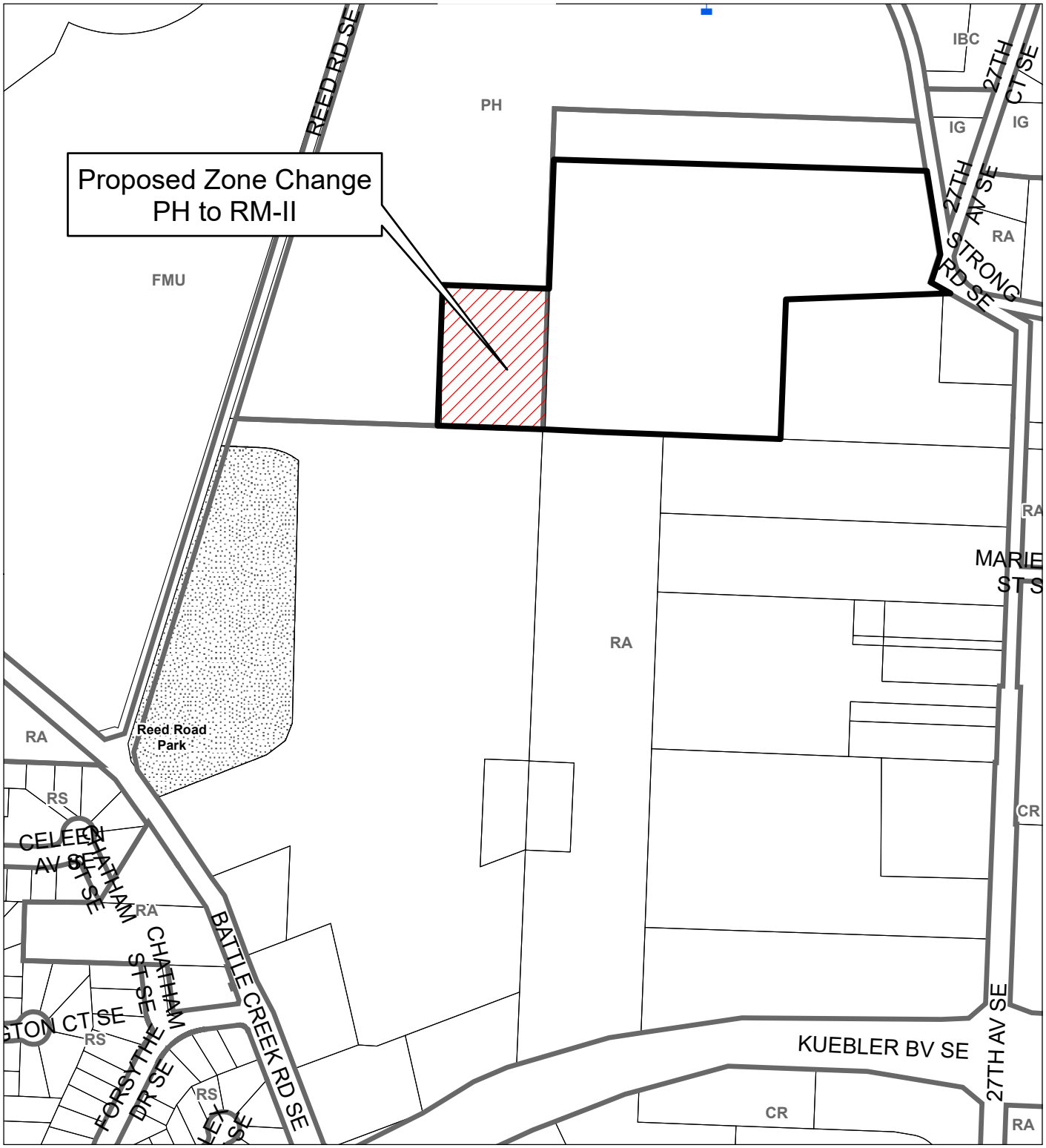
Vicinity Zoning - 4200 Block Strong Road



Legend

- RS — Base Zoning
- Urban Growth Boundary
- Outside Salem City Limits
- Taxlots
- Parks
- Schools

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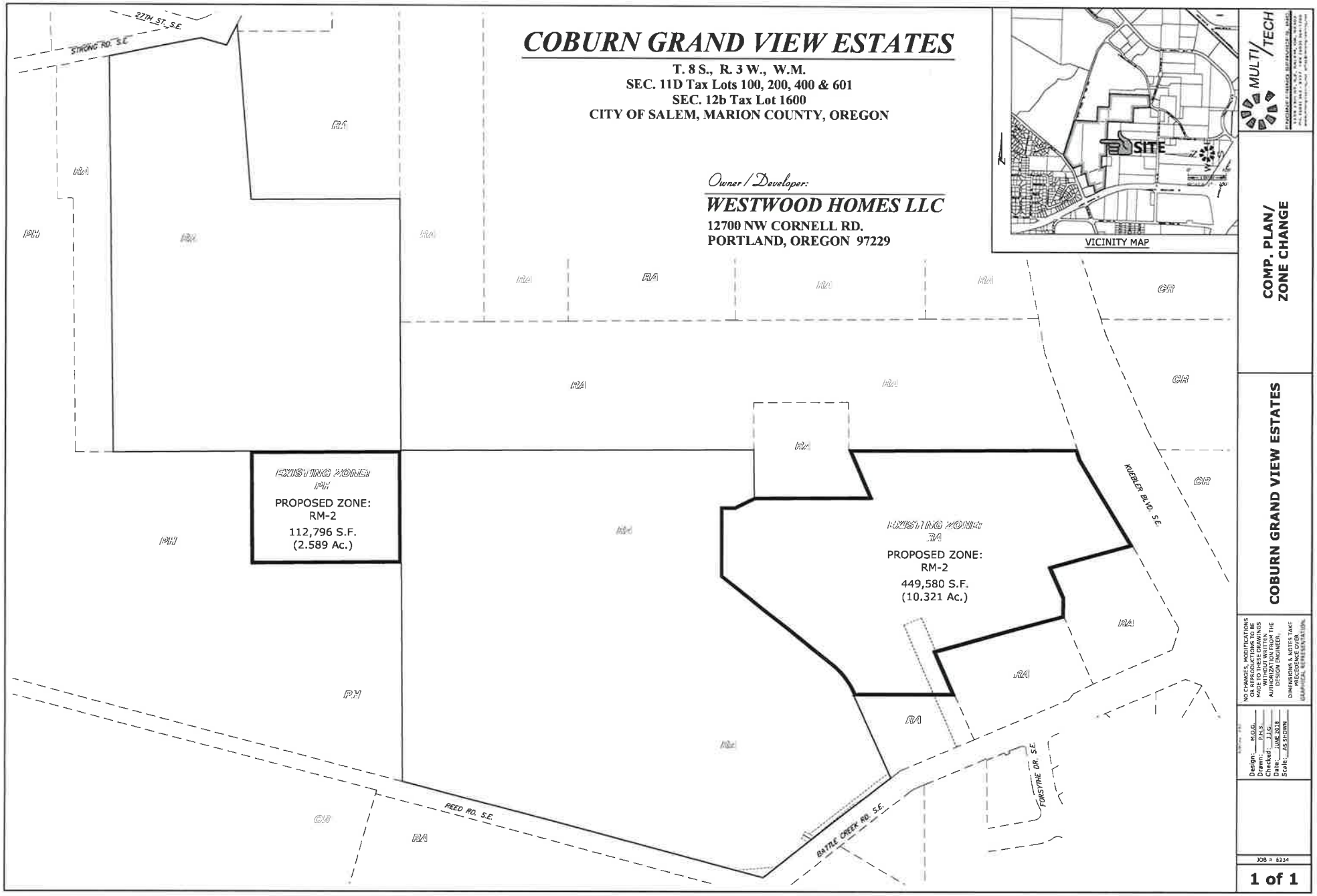
Attachment B



Comprehensive Plan/Zone Change

September 2, 2020

BACKGROUND/PROPOSAL

The subject property is approximately 2.59 acres in size and located at the northeast intersection of Kuebler Boulevard SE and Battle Creek Road SE (083W12B-Tax Lot 1600). The subject property is zoned PH (Public Health) and designated as "Public" on the Salem Area Comprehensive Plan (SACP) Map. The subject property is part of the approved SUB-ADJ19-08 and UGA17-03MOD1.

On November 21, 2019, SUB-ADJ19-08 and UGA17-03MOD1 were approved and included the subject properties

On March 5, 2020, a pre-application conference (PRE-AP20-24) was held with City of Salem staff to discuss development of the subject property.

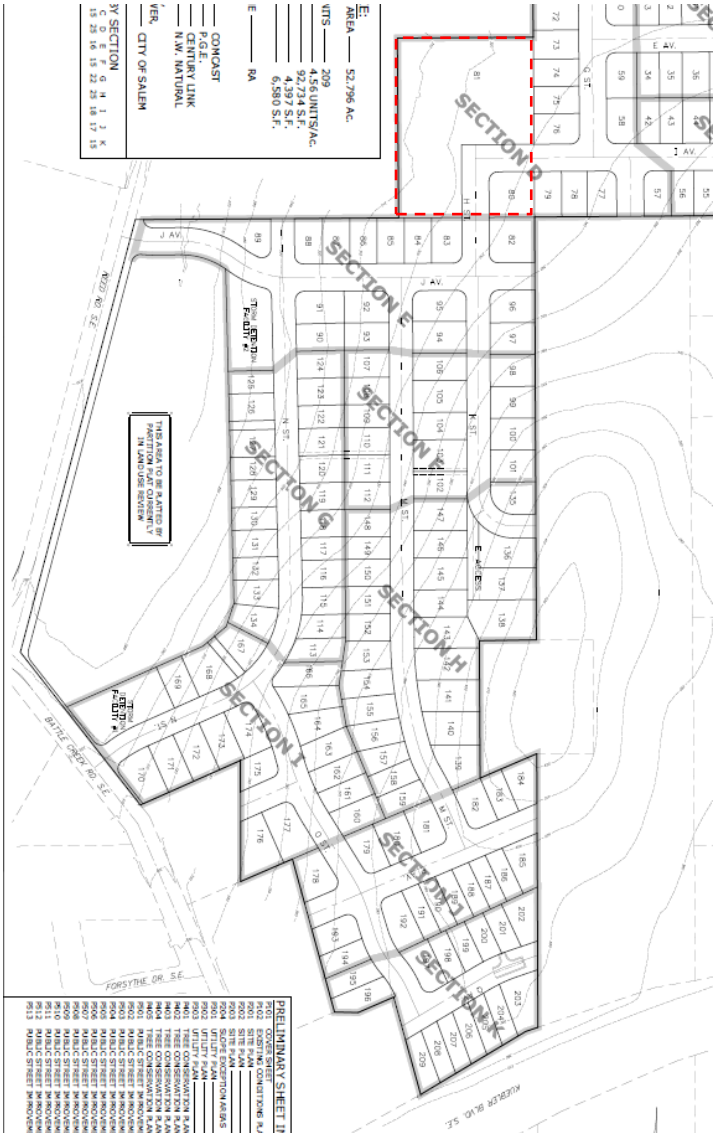
Proposal: The applicant is proposing to rezone the eastern portion of 083W12B/Tax Lot 1600 from PH to RM2 and change the comprehensive plan designation from "Public" to "Multi-Family Residential".

083W12B-Tax Lot 1600 (eastern portion)
2.59 acres
Rezone PH to RM2

EXISTING SITE CONDITIONS

The subject property is approximately 2.59 acres in size and located at the northeast intersection of Kuebler Boulevard SE and Battle Creek Road SE (083W12B-Tax Lot 1600). The subject property is zoned PH (Public Health) and designated as "Public" on the Salem Area Comprehensive Plan (SACP) Map.

The subject property is part of the approved SUB-ADJ19-08 and UGA17-03MOD1.



Vicinity Information:

<u>The subject properties located outside the Urban Service Area (USA). On November 21, 2019, UGA17-03MOD1 was approved for the subject properties.</u> The surrounding land uses within the vicinity are zoned and used as follows and as shown.

North: PH (Public Health); vacant land and existing single-family dwellings
East: RA (Residential Agriculture); vacant land and existing single-family dwellings
South: RA (Residential Agriculture); vacant land and existing single-family dwellings
West: Across Reed Road, FMU (Fairview Mixed-Use); vacant land and existing single-family dwelling

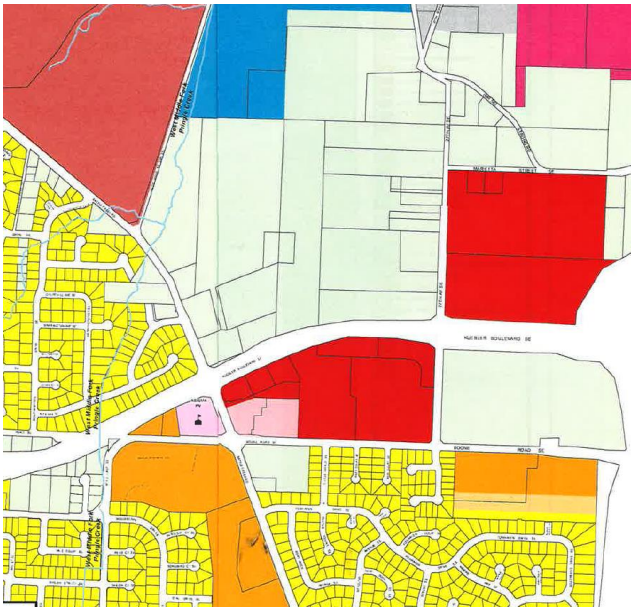
APPLICANT'S REASONS ADDRESSING THE COMPREHENSIVE PLAN CHANGE CRITERIA

SRC 64.020(f)(2) minor plan change criteria:

This is a minor plan change in that it only involves the land that the applicant owns. The minor plan change is consistent with the overall objectives of the SACP. No substantive changes are needed to SACP policies or text amendments to accomplish the change in designation. The applicant has outlined below how the proposed meets the criteria under 64.025(e)(2):

64.025(e)(2)(A)(ii): Equally or Better Suited Designation

There is a lack of appropriately designated vacant RMII sites within this vicinity. There is RM zoned property located to the south along Boone Road that is fully developed and along Battlecreek Road that has hazards that make development difficult. This site gives the applicant the ability to provide multi-family housing within this area and help Salem meet their housing needs.



As shown on the City land zone map there is no property contiguous to the existing site that is vacant RMII land, and there is none in the necessary proximity. The only appropriately designated property within the necessary proximity to the existing site is currently developed or difficult to developed.

According to the Housing Needs Analysis, "Salem has a deficit of capacity in the MF designation, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of residential land. With a multi-family designation, the subject property can be developed with multi-family dwellings; the rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary.

The subject property will not only be a site that will contribute to the multi-family housing needs, but it is also a site that can help improve the transportation circulation in the area. The subject property when developed has the potential to provide street connections to the properties to the north, east, and west for proposed and existing development.

The property totals 2.59 acres and could be developed with a minimum of 31 units to a maximum of 73 units on the site. This could include multi-family units and attached single family dwellings. Therefore, the rezone would allow 31 to 73 housing units within the City of Salem and within an area where higher density housing is needed.

In conclusion, there are no vacant sites for the proposed use located along Reed Road, Boone Road, Battlecreek Road, and Keubler Boulevard, that provide the necessary access to the major street system and adjacent properties, an area large enough, or which are appropriately designated. There are no appropriately designated alternative sites within the vicinity for the proposed use that are currently vacant. The rezone will allow the properties to be fully developed with a needed housing type in the area. Therefore, this zone is better suited for the site because of allowed density, the location and the minimal visual impacts on the area, along with helping to provide additional housing in the City of Salem.

Therefore, the proposal satisfies this criterion has been met.

64.025(e)(2)(B): Services

The City provided information at the pre-application conference (PRE-AP20-24) and within the approved UGA17-02MOD1 that water and sewer lines are available for extension into the site. Natural gas, telephone and electrical services are located within the public right-of-way.

Applicable state or federal permits are required to be obtained for issuance of building or construction permits from the City.

Private utilities will be provided with under grounding of electrical, gas, telephone and cable lines into the site.

The needed services are available for the development of the site.

64.025(e)(2)(C): Urbanization

The City's adopted Comprehensive Plan Goal and Policies implements Urbanization through its Statewide Planning Goals. The subject property is within the City of Salem and located within the UGB.

The subject property is within a developing area of the City and does not convert the urban areas beyond the City limits. Specific development triggers specific facilities that are required to be connected to existing systems for looped service. Police, fire and applicable government services can be provided via the increase in property taxes as a result of new development. The proposal permits efficient, compact development to contain sprawl and preserves the land by developing under the requirements of the Code.

64.025(e)(2)(D): Comprehensive Plan/Applicable Goals

The following Statewide Planning Goals apply to this proposal:

The request is in conformance with State Wide Planning Goals and all applicable land use standards imposed by state law and administrative regulation, which permit applications to be filed. Development of the subject property can meet the minimum standards of the zone code and the STSP. The proposal complies with the applicable intent statements of the SACP as addressed in this report. The applicant has presented evidence sufficient to prove compliance with these standards.

Goal 1 – Citizen Involvement:

The City's adopted Comprehensive Plan General Development Goal and Policies, and its adopted zone code, implement the Statewide Citizen Involvement Goal. This application will be reviewed according to the public review process established by the City of Salem. The City's Plan is acknowledged to be in compliance with this Goal. Notice of the proposal will be provided to property owners and public agencies, and posted on the property. The published notice will identify the applicable criteria. A public hearing to consider the request will be held by the Planning Commission. Through the notification and public hearing process all interested parties are afforded the opportunity to review the application, comment on the proposal, attend the public hearing, and participate in the decision. These procedures meet the requirements of this Goal for citizen involvement in the land use planning process.

Goal 2 – Land Use Planning:

The City's adopted Comprehensive Plan implements the Statewide Land Use Planning Goal. The Salem Area Comprehensive Plan (SACP) is acknowledged to be in compliance with the Statewide Planning Goals. This proposal is made under the goals, policies and procedures of the SACP and its implementing ordinance. A description of the proposal in relation to the intent of the Plan, its applicable goals and policies, the comprehensive plan change/zone change criteria is part of this review. Facts and evidence have been provided that support and justify the proposed comprehensive plan/zone change, along with findings and evidence to support the zone change application. For these reasons, the proposal conforms to the land use planning process established by this Goal.

Goal 5 – Natural Resources, Scenic and Historic Areas, and Open Spaces:

The City's adopted General Development, Scenic and Historic Areas, Natural Resources and Hazards Goals and Policies address the Statewide Goal. According to City map there are no mapped wetlands or waterways on the subject property. In the event that a resource is identified, the City's applicable riparian, tree protection and wetland development standards will apply at the time of development and will ensure compliance with Goal 5.

There are trees located throughout the site. Prior to development of the site, the applicant will be required to get Site Plan Review approval. At the time of Site Plan Review, the layout of the site will take into consideration the location of the trees. All significant trees will be identified on the site plan.

A Geological Assessment dated June 20, 2018 was done for the entire site and approved.

There are no significant historic buildings on the subject property. The applicant has taken the opportunity to consider existing conditions and influences that enables them to explore potential development. The City has standards in place to address access, internal circulation, topography, drainage, public facilities, overall site design and layout.

Goal 6 – Air, Water and Land Resources Quality:

The City's adopted Comprehensive Plan Growth Management, Scenic and Historic Areas, Natural Resources and Hazards, Commercial, Industrial and Transportation Goals and Policies along with adopted facilities plans implement this Goal.

Development is required to meet applicable State and Federal requirements for air and water quality. The proposal to redevelop is reviewed by the City and any applicable outside agencies for impacts on environment and compliance to applicable standards and regulations. Development is required to meet applicable water, sewer, and storm drainage system master plan requirements. Upon development, the City is responsible for assuring that wastewater discharges are treated to meet the applicable standards for environmental quality.

The City has identified the process through which water; sewer and storm drainage will be supplied to the site. Storm water runoff will be collected and removed by the City storm drainage system, in a manner determined by the City to be appropriate prior to development.

The proposed site is outside the noise contours of the air traffic, and that the facility will nevertheless utilize building materials that mitigate such noise, if any.

The major impact to air quality in the vicinity is vehicle traffic along the boundary streets, Reed Road, Battle Creek Road, and Keubler Boulevard. Reed Road (west) is designated as a minor

arterial in the Salem Transportation System Plan (STSP). Battle Creek Road (southwest) is designated as a minor collector in the Salem Transportation System Plan (STSP). Kuebler Boulevard (south) is designated as a parkway in the Salem Transportation System Plan (STSP). The traffic generated from the site will be minor compared to the total volume of traffic in this area (on Kuebler Boulevard) and will not create a significant additional air quality impact. The TIA dated June 20, 2018, identifies the traffic needs for the site and mitigation measures.

The site is vacant. Development of vacant urban land is expected. The proposed change will have no significant impact on the quality of the land. Considering the location of the site within the city, the availability of public facilities to provide water, sewage disposal and storm drainage services, and the surrounding transportation system, the proposal will have no significant impacts to the quality of the air, water or land. The City's adopted facility plans implement Goal 6.

Goal 8 – Recreational Needs:

The City's adopted Comprehensive Plan Open Space, Parks and Recreation Goal and Policies implements the Statewide Recreation Needs Goal by encouraging conservation and identification of existing and needed park resources and funding mechanisms. Salem identifies programs, activities and policies relating to parks and recreational activities in the community. The City's needs for leisure areas and open space areas have been identified in its adopted plans. At the time of development, the proposal provides improved public pedestrian connections via hard-surfaced sidewalks. As part of SUB-ADJ19-08 and UGA17-03MOD1, the applicant provided 7 acres of land to the City of Salem for park land. This park site will provide adequate parks and recreation within the area. Therefore, the proposal complies with this Goal.

Goal 9-Economic Development:

The proposed zone change will have a positive impact on the economy of the City of Salem. The rezone will allow the property to be developed, which will create employment along with a housing type that is a less expensive option for families.

Goal 10 – Housing:

The applicant is proposing to rezone the eastern portion of 083W12B/Tax Lot 1600 from PH to RM2 and change the comprehensive plan designation from "Public" to "Multi-Family Residential".

083W12B-Tax Lot 1600 (eastern portion)
2.59 acres
Rezone PH to RM2

According to the 2014 Housing Needs Analysis, "Salem has a deficit of land for nearly 2,900 dwelling units (2,897) in the Multi-Family Residential designation. …Salem has a deficit of about 207 gross acres of land in the Multi-Family Residential." The rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary.

As stated in the Salem's Housing Needs Analysis dated December 2014:

"Re-designate or rezone land to Multi-Family. Salem's biggest opportunity to address the deficit of Multi-Family land will be through re-designating land from SF (or possibly DR) to MF. There may be opportunities to up-zone existing residential land to increase capacity, such as from RM1 to RM2. "

The applicant's proposal helps the City re-designate land while helping meet the housing needs.

The property totals 2.59 acres and could be developed with a minimum of 31 units to a maximum of 73 units on the site. This could include multi-family units and attached single family dwellings. Therefore, the rezone would allow 31 to 73 housing units within the City of Salem and within an area where higher density housing is needed.

The development will also be located in an area in close proximity to existing and proposed services. Lee Middle School is located about ½ a mile to the north of the site. As part of SUB-ADJ19-08 and UGA17-03MOD1, the applicant provided 7 acres of land to the City of Salem for park land. This park site will provide adequate parks and recreation within the area. Commercial Services are currently available to the west along Commercial Street.

The existing neighborhood consists of single-family housing and some multi-family housing on Boone Road. In order to maintain the character of the neighborhood, the site will be developed in compliance with required Design Standards and provide bufferyards along property lines.

The City's adopted Comprehensive Plan Growth Management, Residential, Transportation Goals and Policies and applicable adopted facilities plans implement the Statewide Housing Goal.

Goal 11 - Public Facilities and Services:

The City's adopted Comprehensive Plan Growth Management, residential, and Transportation Goal and Polices and adopted Stormwater and Water Master Plans implement the Statewide Public Facilities and Services Goal by requiring development to be served by public services. The proposal is for revitalized urban development in an area where future extensions of those services can be provided in the most feasible, efficient and economical manner. The City's capital improvement program and its minimum code standards for public facilities provide a means for improving and updating public facilities systems (water and sewer). All necessary and appropriate public services and facilities essential for development will be provided to this property at levels that are adequate to serve the proposed use.

The City maintains an infrastructure of public services that includes sewer, water, and storm drainage facilities. The City will specify any needed changes to the existing service levels at the time building permits are requested.

Sidewalks are or will be provided (at the time of development) throughout the site to connect to the public sidewalk system. The location along a major transportation corridor facilitates access to a transit route, bicycle and pedestrian access, provides significant opportunity to reduce vehicle miles traveled. The vehicle, transit, bicycle, and pedestrian circulation systems will be designed to connect major population and employment centers in the Salem urban area, as well as provide access to local neighborhood residential, shopping, schools, and other activity centers.

The Salem-Keizer School District provides public education facilities. The education district's master plan provides for growth in the district and has options to meet the demand. The education district reviews the population factors to determine planning, funding and locating new schools or providing additional facilities on the sites of existing schools.

Other private service providers supply garbage, telephone, television, postal and internet services as needed by the development. The required public services and facilities to serve new development will be determined by the City at the time development permits are requested. By providing adequate public facilities and services for the proposed use, the requirements of this Goal are met.

Goal 12 – Transportation:

The City's adopted Comprehensive Plan Transportation Goal and Policies and the adopted Salem Transportation System Plan (STSP) implements the Statewide Transportation Goal by encouraging a safe, convenient and economic transportation system. The subject property is bordered be Reed Road, Battle Creek Road, and Keubler Boulevard. Reed Road (west) is designated as a minor arterial in the Salem Transportation System Plan (STSP). Battle Creek Road (southwest) is designated as a minor collector in the Salem Transportation System Plan (STSP). Kuebler Boulevard (south) is designated as a parkway in the Salem Transportation System Plan (STSP). The TIA dated June 20, 2018, identifies the traffic needs for the site and mitigation measures.

64.025(e)(2)(E): Public Interest

The public is benefitted by creating a well-located parcel of multi-family land; it will increase the City and State tax base; will be an attractive and efficient development; will identify and mitigate any hazard areas in a reasonable and a responsible manner.

The rezoning addresses planning issues such as use, access, circulation, public facilities, topography, and drainage. Site constraints such as configuration, frontage and topography are always taken into consideration for lot layout and access. Enhanced vehicular circulation is critical to City as well as the applicant.

In summary, by establishing a use that is consistent with the future economic and multi-family needs, and by providing a compatible use, the proposed change benefits the public.

ZONE CHANGE CRITERIA SRC CHAPTER 265

The intent and purpose of a zone change is described in SRC 265. In this section, it is recognized that due to a variety of factors including normal and anticipated growth, changing development patterns and concepts, and other factors which cannot be specifically anticipated, the zoning pattern cannot remain static. The zone change review process is established as a means of reviewing proposals and determining when they are appropriate.

This zone change is requested in order to allow a higher density use on the site. The proposed RMII zone will implement the requested "Multi-Family Residential" SACP map designation.

ZONE CHANGE CRITIERIA SRC 265.005(e)(1)(A)(ii)-(iii) and (C)-(G):

(1) *A quasi-judicial zone change shall be granted if all of the following criteria are met:*

> ***(A)*** *The zone change is justified based on the existence of one or more of the following:*
> ***(i)*** *A mistake in the application of a land use designation to the property;*
> ***(ii)*** *A demonstration that there has been a change in the economic, demographic, or physical character of the vicinity such that the proposed zone would be compatible with the vicinity's development pattern; or*
> ***(iii)*** *A demonstration that the proposed zone is equally or better suited for the property than the existing zone. A proposed zone is equally or better suited for the property than an existing zone if the physical characteristics of the property are appropriate for the proposed zone and the uses allowed by the proposed zone are logical with the surrounding land uses.*

Applicant Response to (A)(iii): The proposed zone change fits the development pattern of the vicinity. The surrounding properties are developed as multi-family residential and single-family residential. The proposed apartments will be compatible with the existing uses.

As shown on the City land zone map there is no property contiguous to the existing site that is vacant RM2 land, and there is none in the necessary proximity. The only appropriately designated property within the necessary proximity to the existing site is currently developed or being developed.

According to the Housing Needs Analysis, "Salem has a deficit of capacity in the MF designation, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of residential land. With a multi-family designation, the subject property can be developed with multi-family dwellings; the rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary.

The applicant is proposing to rezone the eastern portion of 083W12B/Tax Lot 1600 from PH to RM2 and change the comprehensive plan designation from "Public" to "Multi-Family Residential".

083W12B-Tax Lot 1600 (eastern portion)
2.59 acres
Rezone PH to RM2

The applicant's proposal helps the City re-designate land while helping meet the housing needs.

The properties total 2.59 acres and could be developed with a minimum of 31 units to a maximum of 73 units on the site. This could include multi-family units and attached single family dwellings. Therefore, the rezone would allow 31 to 73 housing units within the City of Salem and within an area where higher density housing is needed.

The subject property will not only be a site that will contribute to the multi-family housing needs, but it is also a site that can help improve the transportation circulation in the area. The subject property when

developed has the potential to provide street connections to adjacent properties for existing and proposed development.

The proposed RM2 zone is equally or better suited for the site because; 1) the site is located within an area of Salem with available public facilities and services; 2) per the TIA dated June 20, 2018, traffic impacts area minimal and will be mitigated as required; 3) the RM2 zone will allow the site to be developed with uses that are compatible with the surrounding existing single-family and multi-family uses; and, 4) the development of the site will provide additional housing in order to help meet housing needs within the City of Salem.

Therefore, the proposed RM2 zone will be equally or better suited for the site then the existing RA and PH zones.

This criteria has been met.

> ***(B)*** *City-initiated zone change.*

Applicant Response to (B): The proposed zone change is not City-initiated. Therefore, this criterion is not applicable.

> **(C)** *The zone change complies with the applicable provisions of the Salem Area Comprehensive Plan.*

Applicant Response to (C): The applicant is requesting a change to the Comprehensive Plan Designation from "Developing Residential" to 'Multi-Family Residential'.

The proposal complies with the "Residential" Goals and provisions of the SACP by creating an area that promotes multi-family uses.

Residential Development Goal

The SACP states that one of the intents of the Residential Development goals is, "To promote a variety of housing and opportunities for all income levels and an adequate supply of development land to support such housing."

The zone change will allow the property to be developed at a higher density, therefore, meeting or exceeding the dwelling average.

Residential Development Policies

Establishing Residential Uses: The applicant's proposal is to rezone 2.59 acres of property to RM2 to allow a higher density to be built on the site. As stated above, according to the Housing Needs Analysis, Salem has a deficit of MF designated land, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of multi-family land. The rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary. Therefore, establishing a mixture of residential uses within the area.

The property totals 2.59 acres and could be developed with a minimum of 31 units to a maximum of 73 units on the site. This could include multi-family units and attached single family dwellings. Therefore, the rezone would allow 31 to 74 housing units within the City of Salem and within an area where higher density housing is needed.

Facilities and Services Location: The City's adopted Comprehensive Plan Transportation Goal and Policies and the adopted Salem Transportation System Plan (STSP) implements the Statewide Transportation Goal by encouraging a safe, convenient and economic transportation system. The subject property is located east of Reed Road, northeast of Battle Creek Road and north of Kuebler Boulevard.

The major streets are in place due to previous development. Street extensions to properties will be provided where feasible for existing and future development.

The City's adopted Comprehensive Plan Growth Management, residential, and Transportation Goal and Polices and adopted Stormwater and Water Master Plans implement the Statewide Public Facilities and Services Goal by requiring development to be served by public services. The proposal is for revitalized urban development in an area where future extensions of those services can be provided in the most feasible, efficient and economical manner. The City's capital improvement program and its minimum code standards for public facilities provide a means for improving and updating public facilities systems (water and sewer). All necessary and appropriate public services and facilities essential for development will be provided to this property at levels that are adequate to serve the proposed use.

The subject property is located within the Salem Urban Growth Boundary and in the corporate city limits. The subject property is located outside the Urban Service Area. The subject property received UGA approval through UGA preliminary declaration Case No. 17-03MOD1.

The City maintains an infrastructure of public services that includes sewer, water, and storm drainage facilities. The City will specify any needed changes to the existing service levels at the time building permits are requested.

Infill Development: The subject property is currently vacant. In order to provide a mixture of housing in the area, the applicant is requesting a zone change. The comprehensive plan encourages a mixture of housing types with in a neighborhood.

The comprehensive plan designation for the sites are "Developing Residential" and "Public". The rezoning of the site to RM2 will be consistent with State Wide Planning Goal 10, and current housing needs in the in area.

The comprehensive plan change/zone change will promote infill development with the development of a property that is already served by City Services and all transportation to be developed with a higher density of housing that is needed in this area.

Multi-Family Housing: The development will also be located in an area in close proximity to existing and proposed services. Lee Middle School is located about ½ a mile to the north of the site. As part of SUB-ADJ19-08 and UGA17-03MOD1, the applicant provided 7 acres of land to the City of Salem for park land. This park site will provide adequate parks and recreation within the area. Commercial Services are currently available to the west along Commercial Street.

The existing neighborhood consists of single-family housing and some multi-family dwellings on Boone Road. In order to maintain the character of the neighborhood, the site will be developed in compliance with required Design Standards.

Circulation System and Through Traffic: The subject property is located east of Reed Road, northeast of Battle Creek Road and north of Kuebler Boulevard. The major streets are in place due to previous development. Street extensions to properties will be provided where feasible for existing and future development.

Alternative Housing Patterns: The surrounding properties are zoned for single family development. In order to provide a residential housing pattern while being consistent with the neighborhood, the proposed development will provide a higher density of needed housing in Salem.

Requests for Rezoning*:* The subject properties are currently designated for Residential and Public development. All public facilities and services are available to the site. The proposed development will meet Statewide Planning Goals and Policies pertaining to residential development. The development of the sites will not impact adjacent properties.

Urban Design: The City has adopted Design Standards and has a process in place to help implement multi-family design standards. At the time of development, the applicant's development will be in compliance with the Multi-Family Design Standards as outlined in 702. As required by code, prior to development of the site, the applicant will submit a Design Review and Site Plan Review application.

The rezoning of the site will help to maximize the densities in the area while providing a mixture of housing in the area. The rezoning of the property will provide 31 to 73 needed multi-family units within the area. This development will be in a location with accessibility to the commercial developments on Commercial Street to the west. Therefore, meeting the guidelines of providing housing within in areas with services. The development of the site will encourage a mixture of housing types and higher densities within an infill lot.

Salem-Keizer Housing Needs Analysis:

According to the Housing Needs Analysis, "Salem has a deficit of capacity in the MF designation, with a deficit of 2,897 dwelling units and a deficit of 207 gross acres of residential land. The rezone helps maximize the density while helping to meet housing needs.

The property totals 2.59 acres and could be developed with a minimum of 31 units to a maximum of 73 units on the site. This could include multi-family units and attached single family dwellings. Therefore, the rezone would allow 31 to 73 housing units within the City of Salem and within an area where higher density housing is needed.

Therefore, this criteria has been met.

> ***(D)*** *The zone change complies with applicable Statewide Planning Goals and applicable administrative rules adopted by the Department of Land Conservation and Development.*

Applicant Response to (D): All Planning Goals have been addressed above. See findings under ***64.025(e)(2)(D).***

> ***(E)*** *If the zone change requires a comprehensive plan change from an industrial designation to a non-industrial designation, or a comprehensive plan change from a commercial or employment designation to any other designation, a demonstration that the proposed zone change is consistent with the most recent economic opportunities analysis and the parts of the Comprehensive Plan which address the provision of land for economic development and employment growth; or be accompanied by an amendment to the Comprehensive Plan to address the proposed zone change; or include both the demonstration and an amendment to the Comprehensive Plan.*

Applicant Response to (E): The applicant is proposing to change the zoning from PH to RM2.

083W12B-Tax Lot 1600 (eastern portion)
2.59 acres
Rezone PH to RM2

Therefore, this criteria is not applicable.

> ***(F)*** *The zone change does not significantly affect a transportation facility, or, if the zone change would significantly affect a transportation facility, the significant effects can be Adequately addressed through the measures associated with, or conditions imposed on, the zone change.*

Applicant Response to (F): The current zoning of the property is PH. The applicant is proposing to change the zone to RM2, so the sites can be developed at a higher density.

A TIA dated June 20, 2018, has been submitted with the application. The subject property is bordered be Reed Road, Battle Creek Road, and Keubler Boulevard. Reed Road (west) is designated as a minor arterial in the Salem Transportation System Plan (STSP). Battle Creek Road (southwest) is designated as a minor collector in the Salem Transportation System Plan (STSP). Kuebler Boulevard (south) is designated as a parkway in the Salem Transportation System Plan (STSP). The TIA identifies the traffic needs for the site and mitigation measures.

This criterion has been met.

> **(G)** The property is currently served, or is capable of being served, with public facilities and services necessary to support the uses allowed by the proposed zone.

Applicant Response to (G): The subject property is currently served, or is capable of being served, with public facilities and services necessary to support the uses allowed in the RM2 zone.

Therefore, this criteria has been met.

Neighborhood Plan

The subject property is located within the Morningside Neighborhood Association. The Morningside Neighborhood Plan was established on July 10, 2013. The subject property is identified as PH (Public Health) within the Morningside NA Plan.

Goal 1 of the Morningside Plan is (Page 15 of the Morningside Plan):

> ***"Provide for the future development of the Morningside Neighborhood through a compatible balance and appropriate mix of residential, commercial, industrial, public, mixed-use and open space uses facilitated through the implementation of effective and innovative development codes."***

Applicant Response: The applicant is proposing to rezone the eastern portion of 083W12B/Tax Lot 1600 from PH to RM2 and change the comprehensive plan designation from "Public" to "Multi-Family Residential".

083W12B-Tax Lot 1600 (eastern portion)
2.59 acres
Rezone PH to RM2

According to the 2014 Housing Needs Analysis, "Salem has a deficit of land for nearly 2,900 dwelling units (2,897) in the Multi-Family Residential designation. …Salem has a deficit of about 207 gross acres of land in the Multi-Family Residential." The rezone helps maximize the density while helping to meet housing needs within the Salem Urban Growth Boundary.

The applicant's proposal helps the City re-designate land while helping meet the housing needs.

The property totals 2.59 acres and could be developed with a minimum of 31 units to a maximum of 73 units on the site. This could include multi-family units and attached single family dwellings. The rezone allows the property to be developed with a needed housing type that will be required to provide open space, pedestrian circulation, and go through the Design Review process. Therefore, meeting Goal 1.

Goal 2 of the Morningside Plan is (Page 16-17 of the Morningside Plan):

> ***"Maintain and reinforce the residential areas of the neighborhood as safe, pleasant, and engaging places to live."***

Applicant Response: As stated above, the applicant is proposing to rezone the property from PH to RM2 and change the comprehensive plan designation from "Public Health" to "Multi-Family Residential.

Uses allowed within the RMII zone have to meet Design Review Standards, like greater setbacks adjacent residential uses, open space areas, adequate parking, and pedestrian circulation. All these things help maintain and reinforce the existing and proposed residential uses in the neighborhood by providing a safe and visual engaging place to live.

Furthermore, the development will also be located in an area in close proximity to existing and proposed services. Lee Middle School is located about ½ a mile to the north of the site. As part of SUB-ADJ19-08 and UGA17-03MOD1, the applicant provided 7 acres of land to the City of Salem for park land. This park site will provide adequate parks and recreation within the area. Commercial Services are currently available to the west along Commercial Street.

The existing neighborhood consists of single-family housing and some multi-family housing on Boone Road. In order to maintain the character of the neighborhood, the site will be developed in compliance with required Design Standards and provide bufferyards along property lines.

Therefore, meeting Goal 2.

Goal 3 of the Morningside Plan is (Page 18 of the Morningside Plan):

> ***"Promote architectural variety and a mix of housing unit types to accommodate changing demographics and economic conditions, and to provide appropriate affordable housing and age-in-place options throughout the neighborhood."***

Applicant Response: Prior to development of the site, the applicant will be required to show compliance with the Design Review Standards. These standards are intended to promote building and site design that contributes positively to a sense of neighborhood and to the overall streetscape by carefully relating building mass, entries and yards to public streets.

The subject property will not only be a site that will provide a needed and affordable housing type in this area, but it is also a site that can help improve the transportation circulation in the area. The subject property when developed has the potential to provide street connections to the properties to the north, east, and west for proposed and existing development.

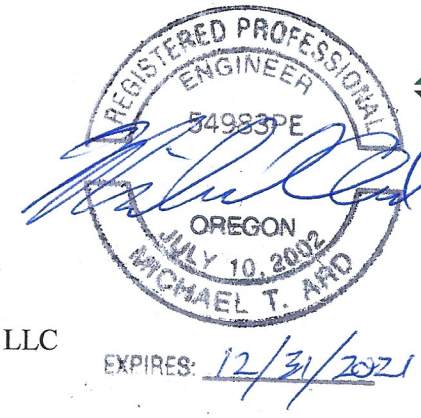
Therefore, meeting Goal 3.

CONCLUSION

We believe that requested Comprehensive Land Plan Change/Zone Change application is appropriate for the subject property for the reasons describe herein. The proposal is consistent and in compliance with the applicable goals and policies of the Comprehensive Plan and the Statewide Planning Goals, and satisfies all applicable criteria. As demonstrated herein, the "Multi-Family Residential" land use designations and corresponding RM2 (Multi-Family Residential) zoning designation are appropriate for the subject property.

We believe that the materials submitted address all the relevant City criteria for a Comprehensive Plan Change/Zone Change. Obviously, there are other approval processes needed for the development of the property at the time proceeding actual development. For these reasons, we believe that the proposal is warranted and that the Planning Commission has sufficient findings to grant the proposal as requested.

Attachment D



ARD ENGINEERING
21370 SW Langer Farms Pkwy
Suite 142, Sherwood, OR 97140

Technical Memorandum

To: Todd Boyce - Westwood Homes, LLC

From: Michael Ard, PE

Date: August 31, 2020

Re: Coburn Grand View Zone Change - Salem, OR

This memorandum is written to provide information related to two proposed zone change applications related to the planned Coburn Grand View Estates residential development located on the east side of Battle Creek Road north of Kuebler Boulevard in Salem, Oregon. The proposed zone changes consist of a conversion of 2.589 acres of property from PH (Public and Private Health Services) to RM-2 (Multiple Family Residential) and a conversion of 10.321 acres of property from RA (Residential Agriculture) to RM-2 (Multiple Family Residential).

The following analysis addresses the potential transportation impacts that can be anticipated following each of the two proposed zone changes, as well as the cumulative impacts of both zone changes. The analysis also includes a detailed examination of the requirements of Oregon's Transportation Planning Rule.

TRIP GENERATION

In order to quantify the potential change in site traffic volumes associated with each of the two proposed zone changes, estimates of trip generation for the "reasonable worst-case development scenarios" were developed for the existing and proposed zoning. The comparison between the existing and proposed zoning traffic levels thereby shows the maximum potential change in traffic that could result from each proposed zone change.

PH to RM-2 Zone Change (2.589 acres)

Under existing conditions, the City of Salem's PH zoning allows for development of the 2.589-acre (112,796 sf) property with a medical/dental office building. Assuming that the maximum reasonable gross floor area of the building will be 25 percent of the gross area of the property, the maximum reasonable building size for the medical/dental office would be 28,200 square feet.

Following approval of the proposed change to RM-2 zoning, the 2.589-acre property could be developed with multi-family residential uses, with up to 28 dwelling units per net acre. Assuming that 25 percent of the gross land area is used for roads and necessary infrastructure to support residential development, a maximum of 54 mid-rise apartments could be constructed on the subject property.

Trip generation estimates for the existing and proposed zoning were prepared using data from the *Trip Generation Manual, 10th Edition,* published by the Institute of Transportation Engineers. Trip generation was calculated for the existing PH zoning using the published trip rates for ITE land use code 720, *Medical-Dental Office Building*. The calculations are based on the gross floor area of the building. For the proposed RM-2 zoning, the trip estimate was calculated using data for land use code 221, *Multi-Family Housing (Mid-Rise)*. The calculations are based on the number of dwelling units.

Based on the analysis, the first proposed zone change would be projected to result in a net decrease in site trips as compared to the development potential under the existing zoning. A summary of the trip generation calculations is provided in the table below. Detailed trip estimate worksheets for the existing and proposed zoning scenarios are provided in the attached technical appendix.

Coburn Grand View Zone Change #1 - Trip Generation Summary

	Morning Peak Hour			Evening Peak Hour			Daily
	In	**Out**	**Total**	**In**	**Out**	**Total**	**Total**
Proposed RM-2 Zoning (54 Units)	5	14	19	15	9	24	294
-Ex PH Zoning (28,200 sf medical office)	-61	-17	-78	-27	-71	-98	-982
Net Change in Site Trips	**-56**	**-3**	**-59**	**-12**	**-62**	**-74**	**-688**

RA to RM-2 Zone Change (10.321 Acres)

Under existing conditions, the City of Salem's RA zoning allows for development of the 10.321-acre (449,580 sf) property with single-family homes with a minimum lot area of 4,000 square feet. Again, assuming that 25 percent of the gross land area is used for roads and necessary infrastructure to support residential development, a maximum of 84 single-family homes could be constructed on the subject property.

Following approval of the proposed change to RM-2 zoning, the 10.321-acre property could be developed with multi-family residential uses, with up to 28 dwelling units per acre. Assuming that 25 percent of the gross land area is used for roads and necessary infrastructure to support residential development, a maximum of 217 mid-rise apartment units could be constructed on the subject property.

Again, trip generation estimates for the existing and proposed zoning were prepared using data from the *Trip Generation Manual, 10th Edition,* published by the Institute of Transportation Engineers. Trip generation was calculated for the existing RA zoning using the published trip rates for ITE land use code 210, *Single-Family Detached Housing*. The calculations are based on the number of dwelling units. For the

proposed RM-2 zoning, the trip estimate was calculated using data for land use code 221, *Multi-Family Housing (Mid-Rise)*. The calculations are based on the number of dwelling units.

Based on the analysis, the second proposed zone change could result would be projected to result in a net increase of 16 trips during the morning peak hour, 12 trips during the evening peak hour, and 388 daily trips under the reasonable worst-case development scenarios. A summary of the trip generation calculations is provided in the table below. Detailed trip estimate worksheets for the existing and proposed zoning scenarios are provided in the attached technical appendix.

Coburn Grand View Zone Change #2 - Trip Generation Summary

	Morning Peak Hour			Evening Peak Hour			Daily
	In	**Out**	**Total**	**In**	**Out**	**Total**	**Total**
Proposed RM-2 Zoning (217 Units)	20	58	78	58	37	95	1180
-Ex RA Zoning (84 Homes)	-16	-46	-62	-52	-31	-83	-792
Net Change in Site Trips	**4**	**12**	**16**	**6**	**6**	**12**	**388**

The trip generation analysis demonstrates that neither of the proposed zone changes will result in any significant increase in peak hour traffic. Although a slight increase in traffic is projected in association with the second zone change (RA to RM-2), 16 or fewer additional trips are projected during each of the peak hours. Additionally, the two zone changes cumulatively are projected to result in a net decrease of 43 trips during the morning peak hour, 62 fewer trips during the evening peak hour, and 300 fewer daily site trips.

Based on the analysis, neither of the proposed zone changes are projected to result in traffic added traffic volumes significant enough to require detailed operational analysis of impacts at the 20-year planning horizon, and when the two proposed zone changes are considered together, site traffic for the Coburn Grand View Estates site is decreased under the reasonable worst-case development scenario.

TRANSPORTATION PLANNING RULE ANALYSIS

In order to allow the proposed zone change, the City of Salem must find that the requirements of Oregon's Transportation Planning Rule (OAR 660-012-0060) are met. This rule provides guidance regarding whether and how the potential transportation impacts of a plan amendment must be mitigated. The relevant portions of the Transportation Planning Rule are quoted, along with responses specific to the proposed zone change.

660-012-0060
Plan and Land Use Regulation Amendments

(1) If an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) would significantly affect an existing or planned transportation facility, then the local government must put in place measures as provided in section (2) of this rule, unless the amendment is allowed under section (3), (9) or (10) of this rule. A plan or land use regulation amendment significantly affects a transportation facility if it would:

(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

No changes are proposed to the functional classification of existing or planned transportation facilities.

(b) Change standards implementing a functional classification system; or

No changes are proposed to the standards implementing the functional classification system.

(c) Result in any of the effects listed in paragraphs (A) through (C) of this subsection based on projected conditions measured at the end of the planning period identified in the adopted TSP. As part of evaluating projected conditions, the amount of traffic projected to be generated within the area of the amendment may be reduced if the amendment includes an enforceable, ongoing requirement that would demonstrably limit traffic generation, including, but not limited to, transportation demand management. This reduction may diminish or completely eliminate the significant effect of the amendment.

(A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

(B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or

(C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan.

The proposed residential zonings would generate traffic types and volumes consistent with the functional classifications of all existing and planned transportation facilities. The first zone change will result in a net decrease in traffic as measured at the planning horizon and the second zone change will result in a minimal increase in traffic. Neither zone change would be projected to degrade the performance of any existing or planned transportation facilities, and cumulatively approval of the two zone changes is projected to result in a reduction in traffic.

CONCLUSIONS

Based on the analysis, the proposed zone changes from City of Salem "PH" zoning to "RM-2" zoning and from "RA zoning to "RM-2" zoning will not result in a significant effect as defined under Oregon's Transportation Planning Rule, and will not result in increases in traffic which would reasonably require detailed operational analysis of impacts at the long-range planning horizon. Accordingly, no mitigation is necessary or recommended in conjunction with either zone change individually or with the two zone changes cumulatively.

If you have any questions regarding this analysis, please feel free to contact me via email at mike.ard@gmail.com or via phone at 503-537-8511.

Appendix

Trip Generation Calculation Worksheet

Land Use Description: Medical-Dental Office Building
ITE Land Use Code: 720
Independent Variable: Gross Floor Area
Quantity: 28.2 Thousand Square Feet

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic
Trip Rate: 2.78 trips per ksf
Directional Distribution: 78% Entering 22% Exiting

PM Peak Hour of Adjacent Street Traffic
Trip Rate: 3.46 trips per ksf
Directional Distribution: 28% Entering 72% Exiting

Total Weekday Traffic
Trip Rate: 34.80 trips per ksf
Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

28.2 ksf Medical-Dental Office Building

	Entering	Exiting	Total
AM Peak Hour	61	17	78
PM Peak Hour	27	71	98
Weekday	491	491	982

Data Source: *Trip Generation Manual, 10th Edition* , Institute of Transportation Engineers, 2017

Trip Generation Calculation Worksheet

Land Use Description: Multi-Family Housing (Mid-Rise)
ITE Land Use Code: 221
Independent Variable: Dwelling Units
Quantity: 54 Dwelling Units

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.36 trips per dwelling unit
Directional Distribution: 26% Entering 74% Exiting

PM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.44 trips per dwelling unit
Directional Distribution: 61% Entering 39% Exiting

Total Weekday Traffic
Trip Rate: 5.44 trips per dwelling unit
Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

54 Dwelling Units

	Entering	Exiting	Total
AM Peak Hour	5	14	19
PM Peak Hour	15	9	24
Weekday	147	147	294

Data Source: *Trip Generation Manual, 10th Edition* , Institute of Transportation Engineers, 2017

Trip Generation Calculation Worksheet

Land Use Description: Single-Family Detached Housing
ITE Land Use Code: 210
Independent Variable: Dwelling Units
Quantity: 84 Dwelling Units

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.74 trips per dwelling unit
Directional Distribution: 25% Entering 75% Exiting

PM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.99 trips per dwelling unit
Directional Distribution: 63% Entering 37% Exiting

Total Weekday Traffic
Trip Rate: 9.44 trips per dwelling unit
Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

84 Dwelling Units

	Entering	Exiting	Total
AM Peak Hour	16	46	62
PM Peak Hour	52	31	83
Weekday	396	396	792

Data Source: *Trip Generation Manual, 10th Edition* , Institute of Transportation Engineers, 2017

Trip Generation Calculation Worksheet

Land Use Description: Multi-Family Housing (Mid-Rise)
ITE Land Use Code: 221
Independent Variable: Dwelling Units
Quantity: 217 Dwelling Units

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.36 trips per dwelling unit
Directional Distribution: 26% Entering 74% Exiting

PM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.44 trips per dwelling unit
Directional Distribution: 61% Entering 39% Exiting

Total Weekday Traffic
Trip Rate: 5.44 trips per dwelling unit
Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

217 Dwelling Units

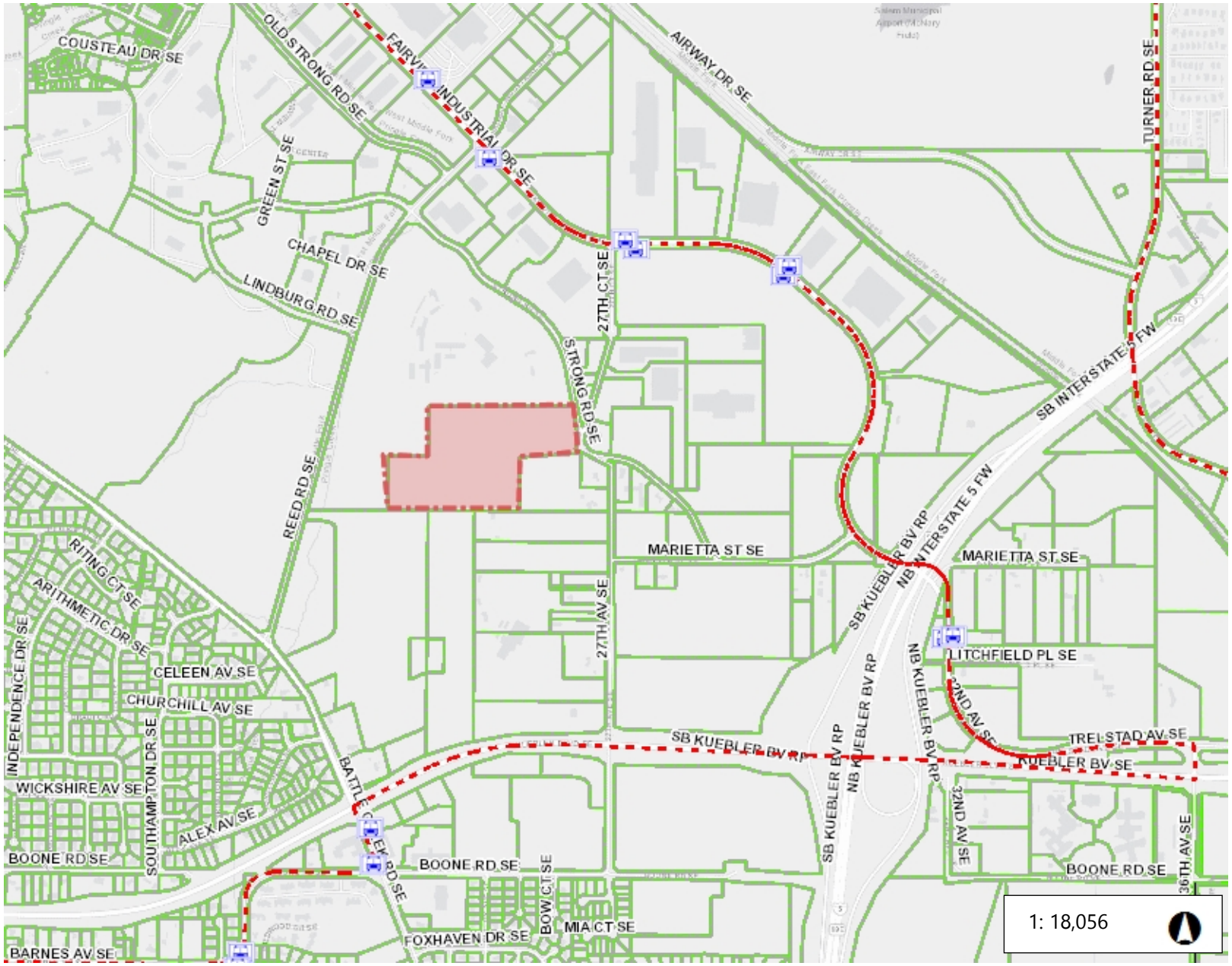
	Entering	Exiting	Total
AM Peak Hour	20	58	78
PM Peak Hour	58	37	95
Weekday	590	590	1180

Data Source: *Trip Generation Manual, 10th Edition* , Institute of Transportation Engineers, 2017

CITY OF Salem AT YOUR SERVICE

City of Salem Map

Attachment E



Legend

- Bus Stop
- Core Network
- Cherriots_Local-Regional_Rou
- Centerline (Labels)
- Taxlots
- City Limit

Notes

Enter notes here...

0.57 0 0.28 0.57 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
City of Salem, Oregon

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

CITY OF Salem AT YOUR SERVICE

MEMO

TO: Olivia Dias, Planner III
Community Development Department

FROM: Glenn J. Davis, PE, CFM, Chief Development Engineer
Public Works Department

DATE: October 5, 2020

SUBJECT: **PUBLIC WORKS RECOMMENDATIONS**
CPC-NPC-ZC20-08 (20-111845)
4200 BLOCK OF STRONG ROAD SE
COMPREHENSIVE PLAN CHANGE AND ZONE CHANGE

PROPOSAL

A consolidated application to change the Comprehensive Plan Map Designation, Neighborhood Plan Change, and Zone change of an approximately 2.5-acre land area from Public with PH Public and Private Health Services) zoning to Multiple Family with RM-II (Multiple Family Residential) zoning. The subject site is approximately 18 acres in size, zoned PH Public and Private Health Services) and RA (Residential Agriculture), and located at 4200 Block of Strong Road SE (Marion County Assessor map and tax lot numbers: 083W12B 01600).

SUMMARY OF FINDINGS

The proposed development meets applicable criteria related to Public Works infrastructure.

FACTS

Public Infrastructure Plan—The *Water System Master Plan*, *Wastewater Management Master Plan*, and *Stormwater Master Plan* provide the outline for facilities adequate to serve the proposed zone.

Streets

1. Strong Road SE

Code authority references are abbreviated in this document as follows: *Salem Revised Code* (SRC); *Public Works Design Standards* (PWDS); and *Salem Transportation System Plan* (Salem TSP).

a. Standard—This street is designated as a Collector street in the Salem TSP. The standard for this street classification is a 34- to 40-foot-wide improvement within a 60-foot-wide right-of-way.

b. Existing Conditions—This street has an approximate 20-foot to 30-foot improvement within a 40-foot to 60-foot-wide right-of-way abutting the subject property.

Storm Drainage

1. Existing Conditions

    a. The portion of property proposed for the zone change generally flows to the northwest over adjacent property, toward the West Middle Fork of Pringle Creek.

Water

1. Existing Conditions

    a. The subject property is located in the S-1 water service level.

2. As specified in land use case SUB-ADJ19-08 & UGA17-03MOD1, water service for the subject property will be provided from a new 18-inch main in Reed Road SE.

Sanitary Sewer

1. Existing Conditions

    a. A 15-inch sewer main is located in Reed Road SE.

CRITERIA AND FINDINGS

Criteria: SRC 265.005(e)(1)(F) The zone change does not significantly affect a transportation facility, or, if the zone change would significantly affect a transportation facility, the significant effects can be adequately addressed through the measures associated with, or conditions imposed on, the zone change.

Finding: The applicant has submitted a TPR analysis that is required to address the Transportation Planning Rule (OAR 660-012-0060). The TPR analysis demonstrates that the proposed CPC/ZC will not have a significant impact on the transportation

system as defined by OAR 660-012-0060. The Assistant City Traffic Engineer has reviewed the TPR analysis and concurs with the finding of no significant effect.

Criteria: SRC 265.005(e)(1)(G) The property is currently served, or is capable of being served, with public facilities and services necessary to support the uses allowed by the proposed zone.

Finding: Public utility requirements to serve the subject property is specified in land use case SUB-ADJ19-08 & UGA17-03MOD1. Water service for the subject property will be provided from a new 18-inch main in Reed Road SE. Sewer service will be provided from a 15-inch sewer main in Reed Road SE. Stormwater point of discharge will be provided from West Middle Fork Pringle Creek. Site-specific infrastructure requirements will be addressed in the Site Plan Review process in SRC Chapter 220.

Prepared by: Jennifer Scott, Program Manager
cc: File

NOTICE OF DECISION

PLANNING DIVISION
555 LIBERTY ST. SE, RM 305
SALEM, OREGON 97301
PHONE: 503-588-6173
FAX: 503-588-6005

CITY OF Salem AT YOUR SERVICE

Si necesita ayuda para comprender esta informacion, por forvor llame 503-588-6173

ADMINISTRATIVE DECISION FOR PROPERTY LINE ADJUSTMENT

CASE NO.:	PLA 20-04
AMANDA NO.:	20-105250-LD
DATE OF DECISION :	March 23, 2020
PROPERTY LOCATION:	4700 Block Battle Creek Road SE
APPLICANT:	Brandie Dalton, Multi-Tech Engineering

REQUEST

A property line adjustment to eliminate a common property line between two abutting units of land which results a 26.29-acre property and a 7.35-acre property, for property zoned RA (Residential Agriculture), and located at 4700 Block Battle Creek Road SE - 97302 (Marion County Assessor's Map and Tax Lot number: 083W11D / 100, 200 and 400).

FINDINGS

The proposed property line adjustment affects properties located at located at 4700 Block Battle Creek Road SE (Attachment A). The proposed property line adjustment would result in a 26.29-acre property and a 7.35-acre property between Tax Lots 083W11D / 100, 200 and 400 (Attachment B).

A. City Department and Public Agency Comments

1. The Salem Fire Department reviewed the proposal and indicated that they have no issues with this request.

2. The Building and Safety Division reviewed the proposal and indicated that they have no comments.

3. The Salem City Surveyor reviewed the proposal and indicated no concerns at this time and will review final documents as part of the “final property line adjustment approval”

B. Property Line Adjustment Approval Criteria

Pursuant to SRC 205.055(a), a property line adjustment is required to relocate or eliminate all or a portion of a common property line between two abutting units of land that were lawfully established, as defined by ORS 92.010(3)(a). Property line adjustments shall not be used to create an additional unit of land, or to create

units of land that are nonconforming. No property line shall be relocated or eliminated without property line adjustment approval as set forth in this section.

SRC 205.055(d) establishes the following approval criteria which must be met in order for a property line adjustment to be approved:

(1) The property line adjustment will not create an additional unit of land;

(2) The property line adjustment will not create nonconforming units of land or nonconforming development, or increase the degree of nonconformity in existing units of land or existing development;

(3) The property line adjustment involves only units of land that were lawfully established, where the instruments creating the units of land have been properly recorded;

(4) The property line adjustment is not prohibited by any existing City land use approval, or previous condition of approval, affecting one or both of the units of land;

(5) The property line adjustment does not involve the relocation or elimination of any public easement or right-of-way; and

(6) The property line adjustment does not adversely affect the availability or access to public and private utilities or streets.

Analysis of Property Line Adjustment Approval Criteria

(1) The property line adjustment will not create an additional unit of land.

Finding: The proposed property line adjustment moves a common property line between two existing properties. The proposed property line adjustment would not create an additional unit of land. This criterion is met.

(2) The property line adjustment will not create nonconforming units of land or nonconforming development, or increase the degree of nonconformity in existing units of land or existing development.

Finding: The property located at the 4700 Block of Battle Creek Road SE are zone RA (Residential Agriculture). Both lots are currently vacant. The proposed property line adjustment will result in a 26.29-acre property and a 7.35-acre property.

The resulting lot area and dimensions meet or exceed the minimum lot area, lot width, lot depth, and street frontage requirements of the RA zone.

The proposed property line adjustment does not result in the creation of nonconforming development. Any future development on the lots will be reviewed for conformance with the applicable development standards of the Salem Revised Code at the time of building permit review and approval for development.

Because the proposed property line adjustment does not result in the creation of non-conforming units of land or nonconforming development or increase the degree of nonconformity in existing units of land, this criterion is met.

(3) The property line adjustment involves only units of land that were lawfully established, where the instruments creating the units of land have been properly recorded.

Finding: The proposed property line adjustment involves two units of land. The property created by a previous property line adjustment (LLA 98-27), contains Marion County Assessor's numbers 083W11D / 100 and 083W11D 200, together. The property known as Marion County Assessor's number 083W11D / 400 was created by deed prior to 1968. This criterion is met.

(4) The property line adjustment is not prohibited by any existing City land use approval, or previous condition of approval, affecting one or both of the units of land.

Finding: There are no existing City land use approval, or previous condition of approval on either unit of land that would affect the proposal. This criterion is met.

(5) The property line adjustment does not involve the relocation or elimination of any public easement or right-of-way.

Finding: The proposed property line adjustment does not relocate or eliminate any easements or public right-of-way. Because the proposed property line adjustment will not relocate or eliminate any public easements or right-of-way, this criterion is met.

(6) The property line adjustment does not adversely affect the availability or access to public and private utilities or streets.

Finding: The proposed property line adjustment relocates the common property line between two existing units of land. The proposed property line adjustment does not affect availability or access to public and private utilities or streets. This criterion is met.

CONCLUSION

Based upon the requirements of SRC 205.055, the proposed property line adjustment has been reviewed for compliance with the applicable standards and criteria of the Unified Development Code (UDC). The Planning Administrator certifies that the proposed property line adjustment is in conformance with the UDC, provided compliance occurs with any applicable items noted above.

The applicant is required to have the property line adjustment surveyed and monumented, and legal descriptions prepared and recorded, per SRC 205.055(f) and (g). The surveyor of record takes the survey and legal descriptions to the appropriate county for recording.

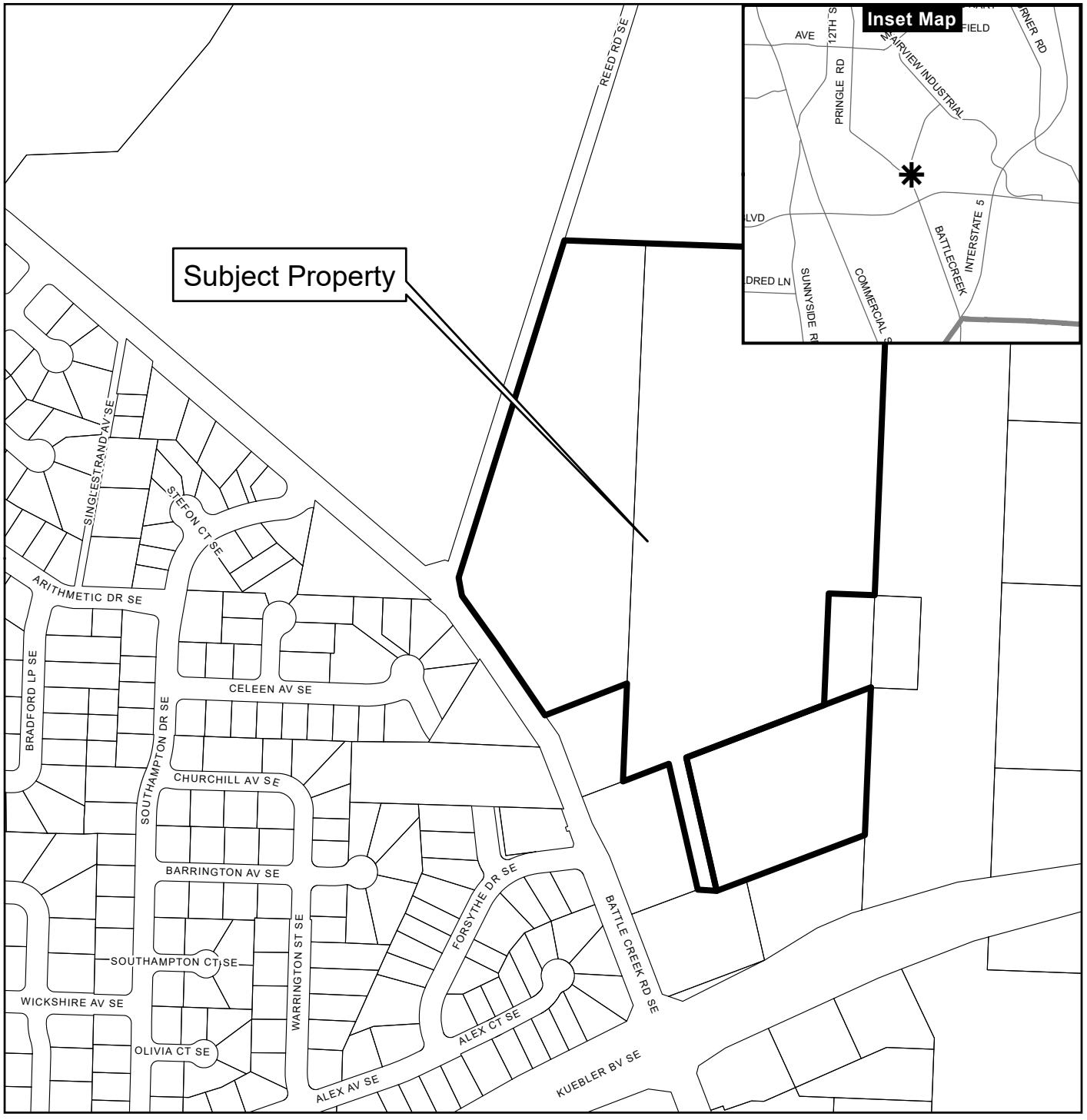
It is the owner/developer's responsibility to record all necessary documentation with the appropriate county. To expedite any future land use applications or building permits, submit a copy of the recorded survey and deed with your application(s). If you have any questions regarding items in this decision, please feel free to contact me at 503-540-2343 or odias@cityofsalem.net.

_____
Olivia Dias, Planner III
Planning Administrator Designee

Attachments: A. Vicinity Map
B. Proposed Property Line Adjustment Site Plan and Deed

G:\CD\PLANNING\CASE APPLICATION Files 2011-On\PLA - PBV\2020\Decisions\PLA\Decisions\PLA20-04.ocd.docx

Vicinity Map
4600 Block Reed Road



Legend

- Taxlots
- Urban Growth Boundary
- City Limits
- Outside Salem City Limits
- Historic District
- Schools
- Parks

0 100 200 400 Feet

CITY OF Salem AT YOUR SERVICE
Community Development Dept.

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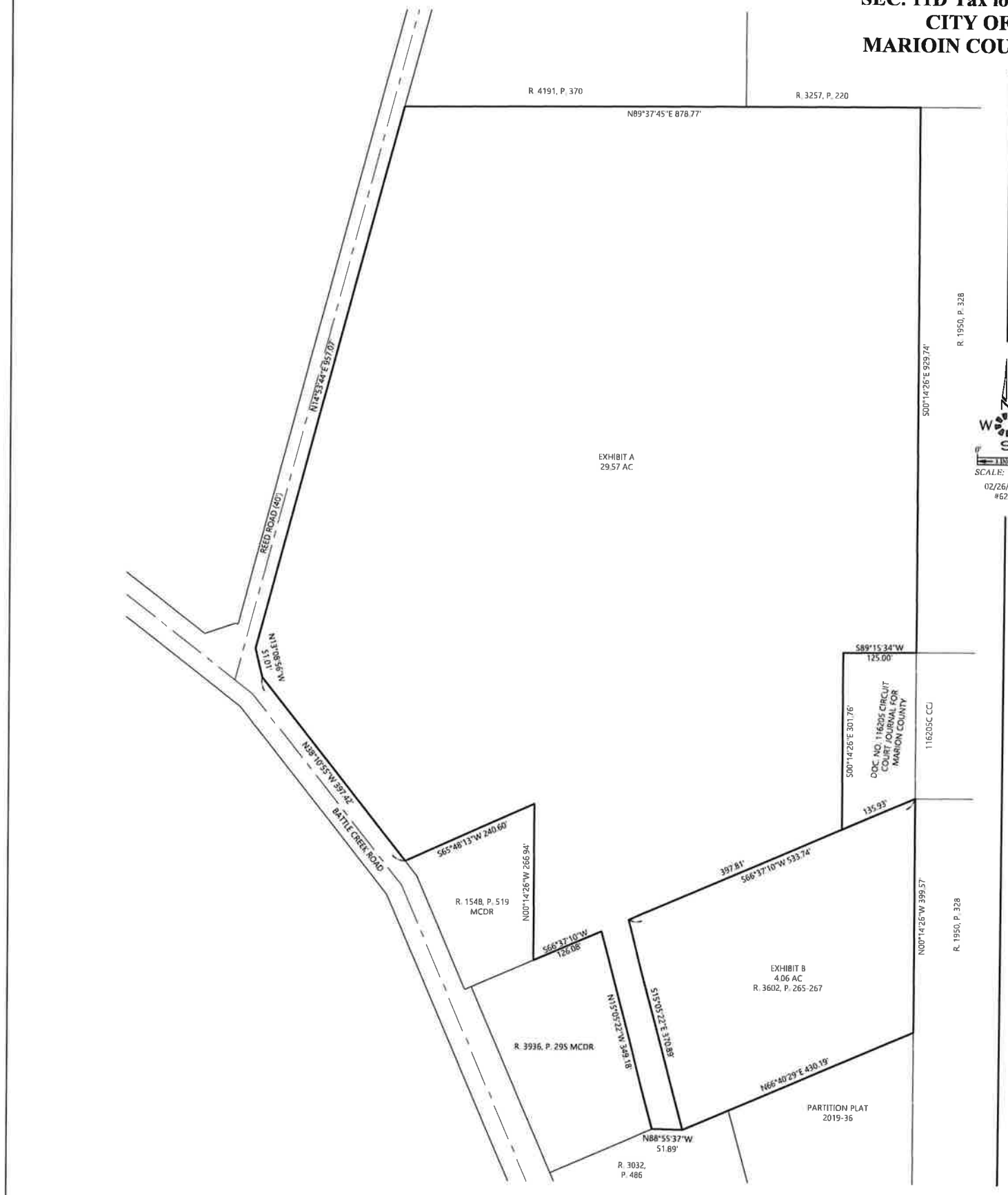
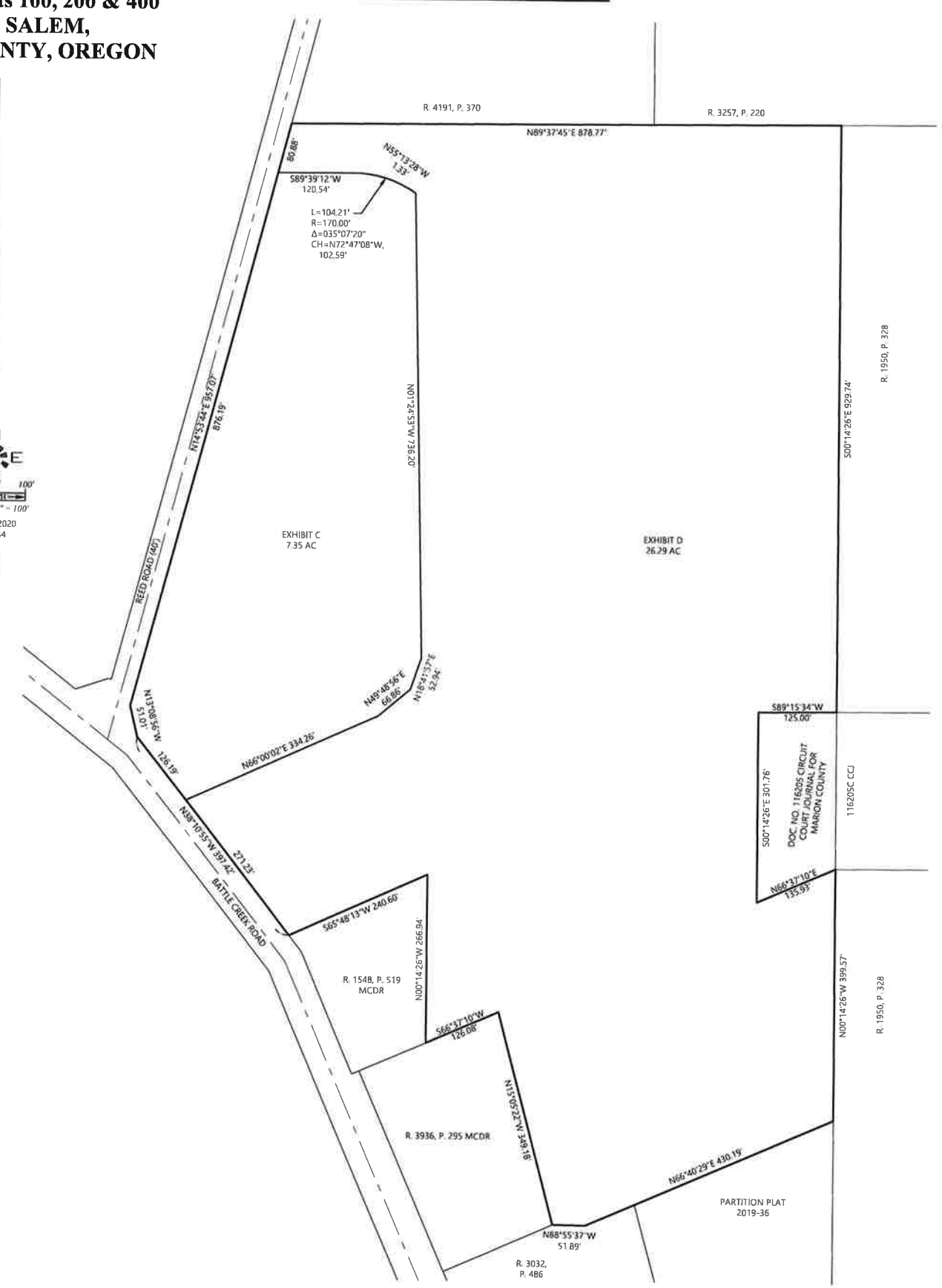
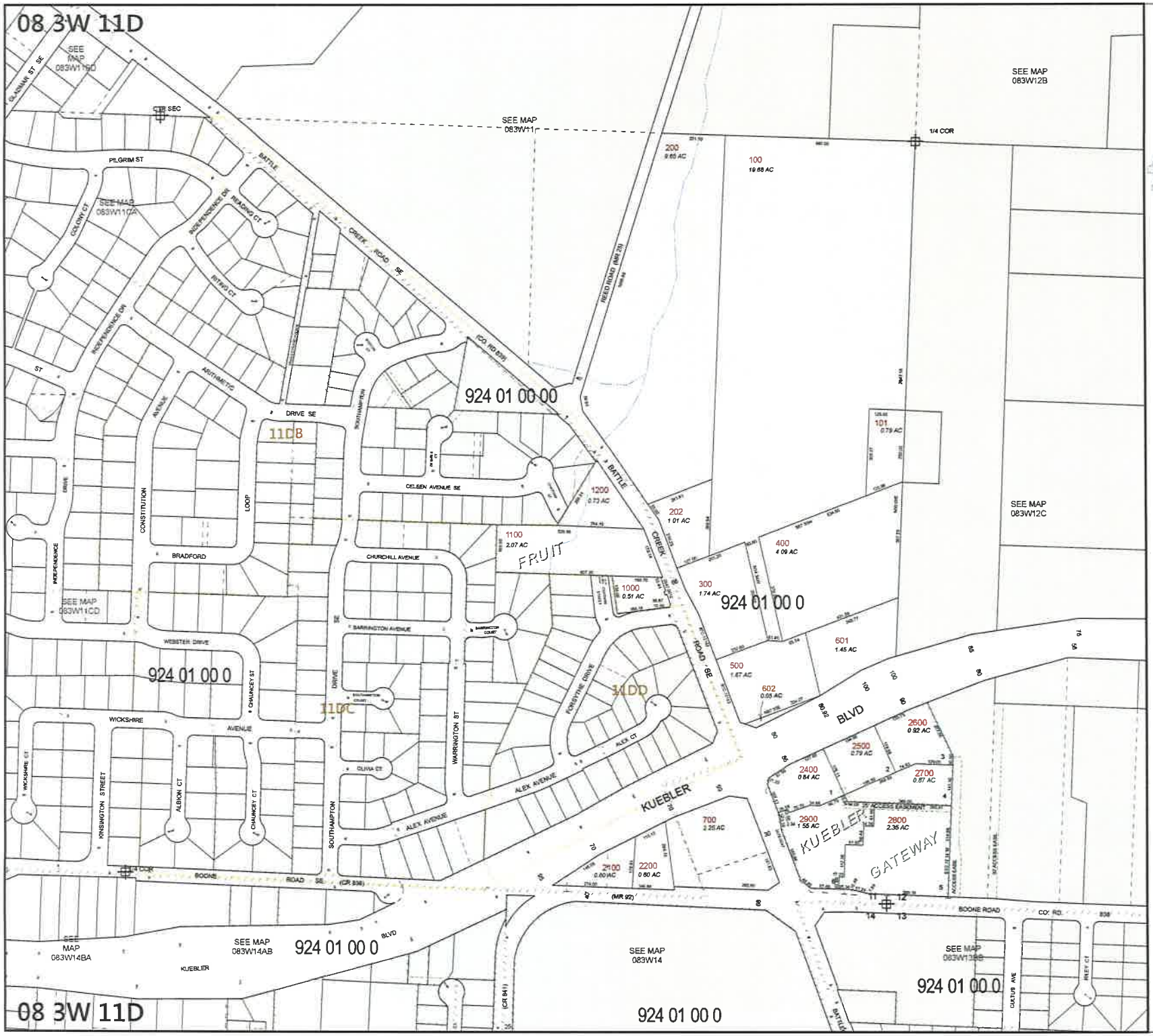
Existing Conditions

Proposed Conditions

T. 8 S., R. 3 W., W.M.
SEC. 11D Tax lots 100, 200 & 400
CITY OF SALEM,
MARIOIN COUNTY, OREGON







08 3W 11D
SALEM

MARION COUNTY, OREGON
SE1/4 SEC11 T8S R3W W.M.
SCALE 1" = 200'

LEGEND

LINE TYPES

Taxlot Boundary	Historical Boundary
Road Right-of-Way	Easement
Railroad Right-of-Way	Railroad Centerline
Private Road ROW	Taxcode Line
Subdivision/Plat Bndry	Map Boundary
Waterline - Taxlot Bndry	Waterline - Non Bndry

CORNER TYPES

- 1/16TH Section Cor.
- 1/4 Section Cor.
- DLC Corner
- Section Corner (16 15 / 21 22)

NUMBERS

Tax Code Number
000 00 00 0

Acreage
0.25 AC

All acres listed are Net Acres, excluding any portions of the taxlot within public ROWs

NOTES

Tick Marks: A tick mark in the road indicates that the labeled dimension extends into the public ROW

CANCELLED NUMBERS

201	1400	2302
301	1500	2303
501	1600	
502	1601	
600	1700	
603	1800	
700A1	1801	
701	1900	
702	1901	
703	2000	
800	2001	
801	2002	
900	2101	
901	2102	
902	2201	
1001	2300	
1300	2301	

DISCLAIMER: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY

Assessors Office Cartography Dept

FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT www.co.marion.or.us

PLOT DATE: 1/24/2018

SALEM
08 3W 11D

UNTIL FURTHER NOTICE, SEND ALL TAX STATEMENTS TO:
Boulder Hill LLC
Robert W. Nunn, Manager
1000 SW Broadway, Suite 1400
Portland, OR 97205-3089

REEL 1950 PAGE 327

AFTER COMPLETING RECORDING, RETURN THIS DOCUMENT TO:
Evans, Freeby & Jennings, LLP
Attorneys at Law
280 Court St. NE
Salem, OR 97301

BARGAIN AND SALE DEED

ROBERT W. NUNN, Trustee under the EVELYN M. COBURN LIVING TRUST, dated March 15, 1995, GRANTOR

Conveys to

BOULDER HILL LLC, an Oregon Manager-Managed Limited Liability Company GRANTEE

All the following real property situated in Marion County, State of Oregon, specifically described on Exhibit "A" hereto and by this reference incorporated herein, generally described as: Tax Lot 100, Tax Account No. R32164; Tax Lot 200, Tax Account No. R32163, and Tax Lot 601, Tax Account No. R32158.

The true and actual consideration for this transfer is other than money.

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES AND TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930.

Dated this 23rd day of May, 2002.

GRANTOR
Evelyn M. Coburn Living Trust, dated March 15, 1995

By: Robert W. Nunn, Trustee

STATE OF OREGON, County of Marion) ss.

Personally appeared before me this 23rd day of May, 2002, Robert W. Nunn, as Trustee and acknowledged the foregoing instrument to be his voluntary act.

OFFICIAL SEAL
JAIME LYNNE TREMBLY
NOTARY PUBLIC - OREGON
COMMISSION NO. A322597
MY COMMISSION EXPIRES APR 18, 2003

Jaime Lynne Trembly
Notary Public for Oregon
My Commission Expires: 4/18/03

MAY 29 2002

EXHIBIT A

LEGAL DESCRIPTION
Map 8S-3W-11D; Tax Lots 100, 200, and 601:

Tax Lot 100
Account No. R32164

Beginning at the Northeast corner of the Southeast Quarter of Section 11, Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon; thence South 0° 30' West along the East line of said Section, a distance of 929.74 feet, more or less, to the North line of that tract of land described in Document No. 116205 Circuit Court Journal for Marion County; thence westerly along the North line of said tract, a distance of 125.00 feet; thence South 0° 30' West parallel with the East line of said Section 11, a distance of 303.27 feet to a point on the northerly line of that tract of land conveyed to Kathryn L. Young, Linda S. Schaeffers and Robert W. Nunn by deed recorded in Reel 1021, Page 231, Deed Records for Marion County, Oregon; thence South 67° 30' West along said northerly line a distance of 398.72 feet to the Northwest corner thereof; thence South 14° 34' 00" East 370.20 feet to the Southwest corner of said tract; thence North 89° 47' 36" West 51.83 feet to the Southeast corner of that tract of land conveyed to Dale E. Christison and Darlene A. Christison by deed recorded in Reel 76, Page 282, Deed Records for Marion County, Oregon; thence North 14° 34' 00" West along the easterly line of said Christison tract, a distance of 350.00 feet to the Northeast corner thereof; thence South 67° 30; 00" West along the northerly line of said Christison tract, a distance of 131.77 feet to a point which is 660.00 feet West of the East line of said Section 11, thence North 0° 30' East parallel with the East line of said Section 11, a distance of 1454.12 feet to a point on the North line of the Southeast Quarter of said Section 11; thence easterly along said North line, a distance of 660.00 feet to the point of beginning.

Contains 19.57 acres of land, more or less.

****

Tax Lot 200
Tax Account No. R32163

Beginning 10 chains West of the Northeast corner of the Southeast quarter of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, State of Oregon, and running thence South 26.62 chains; thence North 23°45' West 9.68 chains; thence North 50°45' West 4.80 chains; thence North 15° East 16.60 chains; thence East 3.35 chains to the place of beginning in Section 11, Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon.

SAVE AND EXCEPT: Beginning in the center of a County Road at a point which is North 89°49' West 315.48 feet and North 22°30' West 876.91 feet from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon; thence North 67°30' East 232.90 feet; thence North 14°34' West 350.00 feet; thence South 67°30' West 281.20 feet to the center of said County Road; thence South 22°30' East along the center of said County Road 346.50 feet to the place of beginning.

SAVE AND EXCEPT: Beginning at the point of intersection of the Northerly line of County Road No. 839 (commonly known as Battle Creek Rd.) and the Easterly line of Market Road No. 25 (commonly known as Read Road) and being in the Southeast quarter of Section 11, Township 8 South, Range 3 West, of the Willamette Meridian, Marion County, Oregon; thence South 88°11'36" East 90.00 feet along the Northerly line of said County Road No. 839 to a point; thence North 13°09'17" West 51.01 feet to a point on the Easterly line of said Market Road No. 25; thence South 14°53'45" West 37.00 feet along said Easterly line to the point of beginning.

SAVE AND EXCEPT that portion of the premises herein described lying within the limits of roads, streets and highways

Tax Lot 601
Tax Account No. R32158

Beginning at the Southeast corner of that tract of land conveyed to Kathryn L. Young, Linda S. Schaeffers and Robert W. Nunn by deed recorded in Reel 1021, Page 231, Deed Records for Marion County, Oregon which point is recorded as being North 0° 30' East 1064.65 feet from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon; thence South 0° 30' West along the East line of said Section 11, a distance of 208.73 feet, more or less, to a point on the northerly right-of-way line of Kuebler Boulevard; thence South 69° 58' 53" West along the northerly right-of-way line, a distance of 24.48 feet, more or less, to an angle point in said right-of-way line; thence South 63° 02' 05" West along said right-of-way line a distance of 102.74 feet to an angle point in said right-of-way line; thence South 54° 40' 44" West along said right-of-way line a distance of 167.14 feet to the Southeast corner of that tract of land conveyed to Bernard F. Bednarz and Miriam L. Bednarz, husband and wife, by deed recorded in Volume 681, Page 328, Deed Records for Marion County, Oregon; thence North 14° 34' West along the East line of said Bednarz tract, a distance of 222.00 feet to the Northeast corner thereof; thence North 67° 30' East along the southerly line of said tract described in Reel 1021, Page 231, Deed Records, a distance of 345.77 feet to the point of beginning.

Contains 1.44 acres of land, more or less.

MAY 29 2002

REEL:1950 **PAGE: 327**

May 29, 2002, 02:46 pm.

CONTROL #: 59651

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 36.00

ALAN H DAVIDSON
COUNTY CLERK

THIS IS NOT AN INVOICE.

MAY 29 2002

NOTICE OF DECISION

PLANNING DIVISION
555 LIBERTY ST. SE, RM 305
SALEM, OREGON 97301
PHONE: 503-588-6173
FAX: 503-588-6005

CITY OF Salem AT YOUR SERVICE

Si necesita ayuda para comprender esta informacion, por favor llame 503-588-6173

ADMINISTRATIVE DECISION FOR PROPERTY LINE ADJUSTMENT

CASE NO.:	PLA 20-24
AMANDA NO.:	20-114448-LD
DATE OF DECISION:	November 17, 2020
PROPERTY LOCATION:	4600 Block of Reed Rd SE
APPLICANT:	Brandie Dalton on behalf of Robert Nunn

REQUEST

A property line adjustment to relocate the common property line between two abutting units of land reducing the size of Tax Lot 400 to 14.85 acres and increasing the size of Tax Lot 601 to 12.87 acres in size, for properties zoned RA (Residential Agriculture), and located at the 4600 Block of Reed Rd SE - 97302 (Marion County Assessor map and tax lot numbers: 083W11D / 400 and 601).

FINDINGS

The proposed property line adjustment affects tax lots 083W11D / 400 and 601 located at the 4600 Block of Reed Rd SE **(Attachment A)**. The proposed property line adjustment relocates the common property line between the two abutting units of land reducing the size of Tax Lot 400 to 14.85 acres and increasing the size of Tax Lot 601 to 12.87 acres in size. A draft survey is included as **Attachment B**.

A. City Department and Public Agency Comments

1. The City of Salem Building and Safety Division reviewed the proposal and indicated no objections.
2. The Salem City Fire Department reviewed the proposal and indicated no objections but noted that Fire Department access and water supply will be required for future developments.
3. Public Works staff recommends the applicant request a Pre-PLA Review Meeting between the City Surveyor and the applicant's project surveyor to ensure compliance with applicable ORS/SRC regulations. At the time of final PLA submittal, the application shall provide the required field survey and Deed as per the statute and code requirements outlined in the Oregon Revised Statues (ORS) and the Salem Revised Code (SRC). If said documents are not in compliance with the requirements outlined in the ORS and the SRC, and as per SRC 205.055, the approval of the PLA by the City Surveyor may be delayed or held indefinitely based on the non-compliant violation.

B. Property Line Adjustment Approval Criteria

Pursuant to SRC 205.055(a), a property line adjustment is required to relocate or eliminate all or a portion of a common property line between two abutting units of land that were lawfully established, as defined by ORS 92.010(3)(a), or to incorporate into another unit of land, as provided by ORS 92.010(9)(e), excess right-of-way that was acquired for street or other right-of-way purposes and subsequently sold by a public body. Property line adjustments shall not be used to create an additional unit of land, or to create units of land that are non-conforming. No property line shall be relocated or eliminated without property line adjustment approval as set forth in this section.

SRC 205.055(d) establishes the following approval criteria which must be met in order for a property line adjustment to be approved:

Analysis of Property Line Adjustment Approval Criteria

(1) The property line adjustment will not create an additional unit of land.

Finding: The proposed property line adjustment relocates a common property line between two existing properties. The proposed property line adjustment would not create an additional unit of land. This criterion is met.

(2) The property line adjustment will not create nonconforming units of land or nonconforming development, or increase the degree of nonconformity in existing units of land or existing development.

Finding: The subject properties are zoned RA (Residential Agriculture). The proposed property line adjustment will result in one property approximately 14.85 acres in size and one property approximately 12.87 acres in size.

The resulting lot area and dimensions of both properties meet or exceed the minimum lot area, lot width, lot depth, and street frontage requirements of the RA zone.

The proposed property line adjustment does not result in the creation of nonconforming development. Any future development on the lots will be reviewed for conformance with the applicable development standards of the Salem Revised Code at the time of building permit review and approval for development.

Because the proposed property line adjustment does not result in the creation of nonconforming units of land or nonconforming development or increase the degree of nonconformity in existing units of land, this criterion is met.

(3) The property line adjustment involves only units of land that were lawfully established, where the instruments creating the units of land have been properly recorded.

Finding: The proposed property line adjustment involves parcels of land that were lawfully established. The land area known as tax lot 400 was created through

Property Line Adjustment PLA20-04, which was approved by the Planning Administrator on March 23, 2020. Prior to this property line adjustment being finalized, PLA 20-04 will be recorded. Since the previous property line adjustment will be recorded prior to finalization of this application, the property is a lawfully established unit of land.

The land area known as tax lot 601 was recorded by Partition Plat 2019-36, which was lawfully established through Validation of Unit of Land Case VUL18-02, approved by the Hearings Officer on January 29, 2019.

Because the proposed property line adjustment involves legal units of land that were lawfully established, this criterion is met.

(4) The property line adjustment is not prohibited by any existing City land use approval, or previous condition of approval, affecting one or both of the units of land.

Finding: Staff has reviewed previous land use decisions at this location, including a Urban Growth Area Development permit (UGA), a Subdivision and UGA modification, and multiple PLAs, and have determined there are no existing land use approvals or previous conditions of approval that would prohibit the proposed property line adjustment. Because the proposed property line adjustment is not prohibited by any existing City land use approvals, or previous conditions of approval, affecting one or both of the units of land, this criterion is met.

(5) The property line adjustment does not involve the relocation or elimination of any public easement or right-of-way.

Finding: The property line adjustment does not propose to relocate or eliminate any easements or public right-of-way. Because the proposed property line adjustment will not relocate or eliminate any public easements or right-of-way, this criterion is met.

(6) The property line adjustment does not adversely affect the availability or access to public and private utilities or streets.

Finding: The proposed property line adjustment relocates the common property line between two existing lots. The proposed property line adjustment does not affect availability or access to public and private utilities or streets. This criterion is met.

CONCLUSION

Based upon the requirements of SRC 205.055, the proposed property line adjustment has been reviewed for compliance with the applicable standards and criteria of the Unified Development Code (UDC). The Planning Administrator certifies that the proposed property line adjustment is in conformance with the UDC, provided compliance occurs with any applicable items noted above.

The applicant is required to have the property line adjustment surveyed and monumented, and legal descriptions prepared and recorded, per SRC 205.055(f) and (g). The surveyor of record takes the survey and legal descriptions to the appropriate county for recording.

It is the owner/developer's responsibility to record all necessary documentation with the appropriate county. To expedite any future land use applications or building permits, submit a copy of the recorded survey and deed with your application(s).

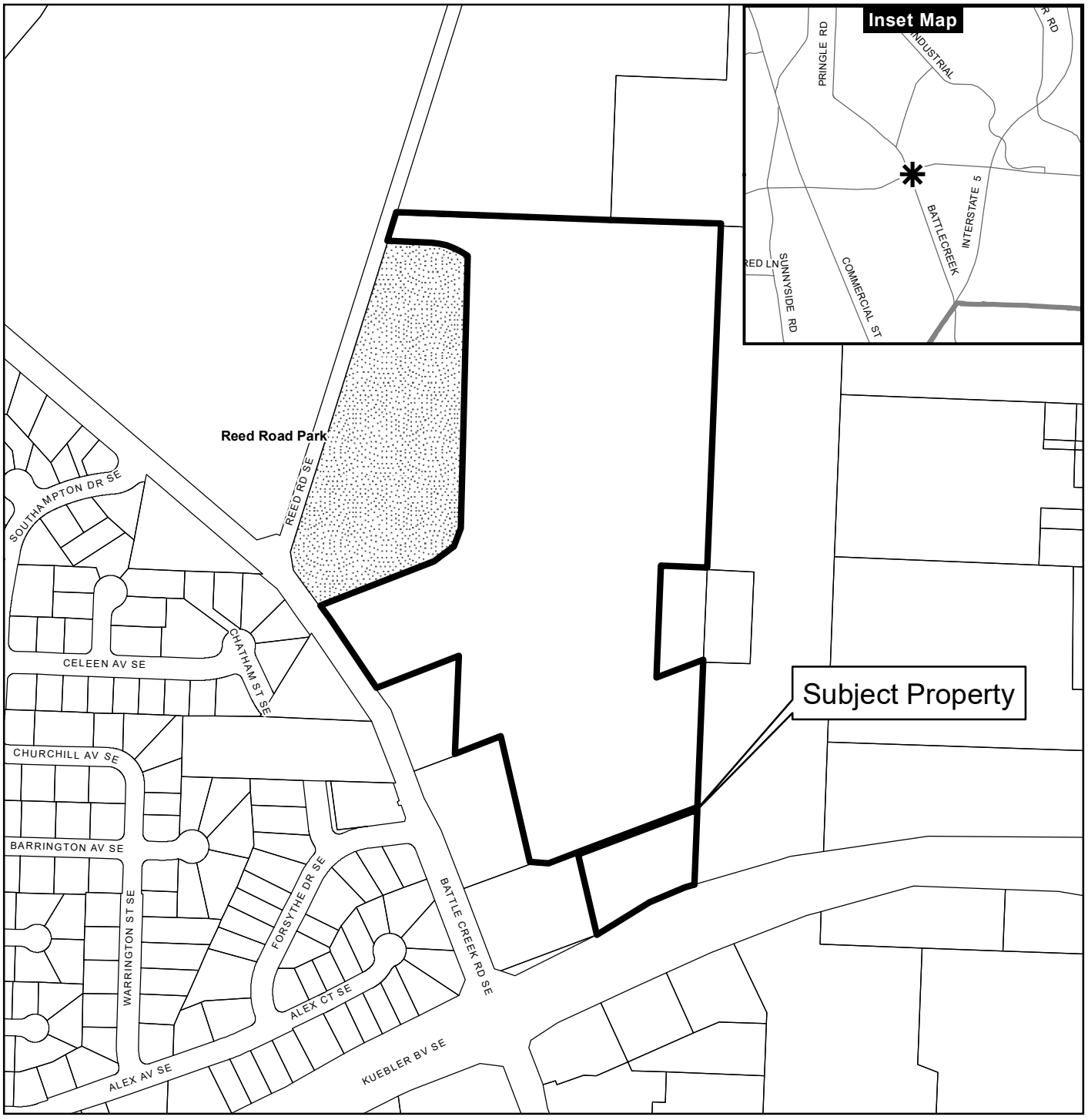
If you have any questions regarding items in this decision, please feel free to contact me at 503-540-2347 or kstraus@cityofsalem.net.

Kirsten Straus, Planner I, on behalf of
Lisa Anderson-Ogilvie, AICP
Planning Administrator

Attachments:

A. Vicinity Map
B. Proposed Property Line Adjustment Site Plan and Draft Record of Survey

Vicinity Map
4600 Block of Reed Rd SE



Legend

- Taxlots
- Urban Growth Boundary
- City Limits
- Outside Salem City Limits
- Historic District
- Schools
- Parks

0 100 200 400 Feet

CITY OF Salem AT YOUR SERVICE
Community Development Dept.

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G:\CD\PLANNING\Kirsten Straus\Current Planning\Vicinity Maps\4600 Block Reed Rd.mxd - 10/21/2020 @ 8:19:33 AM

ATTACHMENT B

EXISTING CONDITIONS

R. 4191, P. 370

R. 3257, P. 220

[N89°37'45"E 878.78']

R. 1950, P. 328

[S00°14'26"E 929.74']

[N14°53'14"E 80.86']

(20')

REED ROAD (40')

[S89°39'12"W 120.54']

[N55°10'28"W 1.33']

[L=104.21'
R=170.00'
Δ=035°07'20"
CH=N72°47'08"W, 102.59']

[N01°24'53"W 736.20']

EXHIBIT D
26.29 AC
R. 4345,
P. 413, MCDR

EXHIBIT C
7.35 AC
R. 4345,
P. 413, MCDR

[N18°41'07"E 52.84']

[N49°48'56"E 66.86']

[N66°00'02"E 334.26']

[S89°15'34"W 125.00']

[S00°14'26"E 301.76']

DOC. NO. 1162015 CIRCUIT COURT JOURNAL FOR MARION COUNTY

1162015C CCJ

(S66°37'10"W) N66°37'10"E [135.93']

30'

[N38°10'05"W 271.23']

[S45°48'13"W 240.60']

[N00°14'26"W 266.94']

R. 1548, P. 519
MCDR

[S66°37'10"W 126.08']

[S00°14'26"E 399.57']

[N15°05'22"W 349.18']

R. 3936, P. 295 MCDR

BATTLE CREEK ROAD (VARIABLE)

[N66°40'29"E) ? [344.88'] 10

(S67°24'55"W) 10

S66°40'29"W [85.31'] 10

PARTITION PLAT
2019-36
1.43 AC

S00°14'26"E [202.84'] 10
(N00°30'00"E) 10

[N88°55'37"W 51.89']

N15°33'54"W [222.60'] 10
(S14°47'26"E) 10

(N64°58'18"E) 10
S64°13'52"W [102.60'] 10

S71°12'59"W
(N71°57'25"E) 10
[28.52'] 10

S55°54'45"W [167.25'] 10
(N58°39'11"E) 10

R. 3032, P. 486 MCDR

KUEBLER BLVD (VARIABLE)

N
6237
1" = 100'

PROPOSED CONDITIONS

R. 4191, P. 370

R. 3257, P. 220

[N89°37'45"E 878.78']

R. 1950, P. 328

[S00°14'26"E 929.74']

[N14°53'14"E 80.86']

(20')

REED ROAD (40')

[S89°39'12"W 120.54']

[N55°10'28"W 1.33']

[L=104.21'
R=170.00'
Δ=035°07'20"
CH=N72°47'08"W, 102.59']

[N01°24'53"W 736.20']

EXHIBIT C
7.35 AC
R. 4345,
P. 413, MCDR

PROPOSED EXHIBIT C
14.85 AC

N67°31'04"W 54.12'

S89°45'34"W 186.35'

N00°14'26"W 37.46'

N26°31'24"W 58.32'

[N18°41'07"E 52.84']

[N49°48'56"E 66.86']

10.21'

N23°39'10"W 203.18'

S38°35'19"W 352.65'

[N66°00'02"E 334.26']
324.05'

[S89°15'34"W 125.00']

[S00°14'26"E 301.76']

DOC. NO. 1162015 CIRCUIT COURT JOURNAL FOR MARION COUNTY

1162015C CCJ

(S66°37'10"W) N66°37'10"E [135.93']

30'

[N38°10'05"W 271.23']

S66°02'50"W 16.74'

L=47.92'
R=100.00'
Δ=027°27'30"
CH=S52°19'05"W, 47.47'

[S45°48'13"W 240.60']

[N00°14'26"W 266.94']

R. 1548, P. 519
MCDR

[S66°37'10"W 126.08']

PROPOSED EXHIBIT D
12.865 AC

[S00°14'26"E 399.57']

[N15°05'22"W 349.18']

R. 3936, P. 295 MCDR

BATTLE CREEK ROAD (VARIABLE)

(S67°24'55"W) 10

S66°40'29"W [85.31'] 10

[N88°55'37"W 51.89']

S00°14'26"E [202.84'] 10
(N00°30'00"E) 10

N15°33'54"W [222.60'] 10
(S14°47'26"E) 10

(N64°58'18"E) 10
S64°13'52"W [102.60'] 10

S71°12'59"W
(N71°57'25"E) 10
[28.52'] 10

S55°54'45"W [167.25'] 10
(N58°39'11"E) 10

R. 3032, P. 486 MCDR

KUEBLER BLVD (VARIABLE)

RECORD OF SURVEY

PROPERTY LINE ADJUSTMENT

IN THE SE 1/4 SEC. 11, T. 8 S., R. 3 W., W.M.

CITY OF SALEM, MARION COUNTY, OREGON

DATE OF MAP 09/04/2020

NARRATIVE

THE PURPOSE OF THIS SURVEY IS TO PERFORM A PROPERTY LINE ADJUSTMENT AS ALLOWED BY CITY OF SALEM CASE NO. PLA _____. THE BASIS OF BEARING IS ALONG THE EAST LINE OF EXHIBIT D, REEL 4345, PAGE 413, MARION COUNTY DEED RECORDS PER MCSR 39260.

THE TWO PARENT TRACTS IN THIS SURVEY WERE PREVIOUSLY SURVEYED IN MCSR 39260 AND PARTITION PLAT 2019-36, AND I HELD THE MONUMENTS AS PREVIOUSLY TIED.

RESULTANT DEEDS ARE RECORDED AS REEL _____, PAGE _____, MARION COUNTY DEED RECORDS.

MCSR = MARION COUNTY SURVEY RECORD
MCDR = MARION COUNTY DEED RECORD
BOTP = BOOK OF TOWN PLATS
DOC = DOCUMENT
CCJ = CIRCUIT COURT JOURNAL
P.P. = PARTITION PLAT
AC = ACRES
R. = REEL
B. = BOOK
P. = PAGE
[ ] = RECORD AND MEASURED DATA PER MCSR 39260, UNLESS OTHERWISE NOTED
( ) = RECORD DATA PER MCSR 39260, UNLESS OTHERWISE NOTED
{ } = CALCULATED RECORD DATA MCSR 39260, UNLESS OTHERWISE NOTED

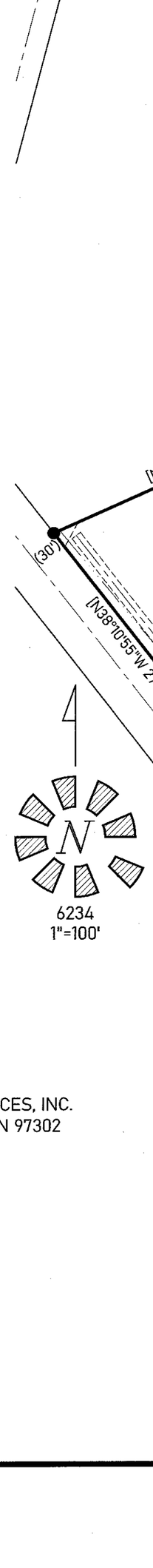
● = FOUND 5/8" IRON ROD WITH YELLOW PLASTIC CAP SCRIBED "MULTI/TECH ENG." PER MCSR 39260, UNLESS OTHERWISE NOTED

◉ = FOUND MONUMENT, SEE TABLE

○ = SET 5/8" X 30" IRON ROD WITH YELLOW PLASTIC CAP SCRIBED "MULTI/TECH ENG." FLUSH WITH GROUND ON __/__/_____

REFERENCE SURVEYS:
1. MCSR 1689
2. MCSR 6400
3. MCSR 14257
4. MCSR 21333
5. MCSR 34811
6. MCSR 37437A
7. MCSR 37442
8. MCSR 37906
9. MCSR 39260
10. P.P. 2019-36

FOUND MONUMENT TABLE:
A. STONE AT QUARTER CORNER COMMON TO SECTIONS 11 AND 12 SCRIBED "CS +" PER MCSR 6400, HELD
C. 5/8" IRON ROD WITH YELLOW PLASTIC CAP SCRIBED "ANDREWS RLS 1626" PER MCSR 37442, S21°59'09"W 0.77' FROM CALCULATED POSITION
D. 1/2" IRON PIPE PER MCSR 21333, N32°48'29"W 0.20' FROM CALCULATED POSITION PER P.P. 2019-36
E. 5/8" IRON ROD PER MCSR 14257, HELD
G. 1/2" IRON ROD PER MCSR 14257, HELD
H. 5/8" IRON ROD WITH YELLOW PLASTIC CAP SCRIBED "ANDREWS RLS 1626" PER MCSR 34811, S66°37'10"W 1.85' FROM SET MONUMENT
J. 5/8" IRON ROD WITH YELLOW PLASTIC CAP SCRIBED "ANDREWS RLS 1626" PER MCSR 34811, HELD
K. 5/8" IRON ROD WITH YELLOW PLASTIC CAP SCRIBED "ANDREWS RLS 1626" PER MCSR 34811, HELD
Q. 5/8" IRON ROD WITH YELLOW PLASTIC CAP SCRIBED "LAND MARKERS" PER MCSR 34737A, HELD
R. 5/8" IRON ROD WITH YELLOW PLASTIC CAP SCRIBED "MULTI/TECH ENGINEERING" PER MCSR 37906, HELD
S. 5/8" IRON ROD, W/YPC SCRIBED "MULTI/TECH ENG" PER P.P. 2019-36, HELD
T. 5/8" IRON ROD WITH YELLOW PLASTIC CAP SCRIBED "ANDREWS RLS 1626" N85°59'27"W 0.11' FROM TRUE CORNER, NO RECORD, IN MCSR 37442 IT APPEARS THE SYMBOL HAS BEEN LEFT OFF AT THIS POINT.
U. 5/8" IRON ROD WITH ALUMINUM CAP SCRIBED "CITY OF SALEM" PER MCSR 1689, HELD
V. 5/8" IRON ROD WITH ALUMINUM CAP SCRIBED "CITY OF SALEM" PER MCSR 1689, HELD
W. 1/2" IRON PIPE PER MCSR 21333, HELD



REGISTERED PROFESSIONAL LAND SURVEYOR

DRAFT

OREGON
JULY 14, 2020
LEO LITOWICH
91070

RENEWS: 12-31-2022

BY:
MULTI/TECH ENGINEERING SERVICES, INC.
1155 13TH ST. S.E. SALEM, OREGON 97302
503-363-9227

NOTICE OF DECISION

PLANNING DIVISION
555 LIBERTY ST. SE, RM 305
SALEM, OREGON 97301
PHONE: 503-588-6173
FAX: 503-588-6005

CITY OF Salem AT YOUR SERVICE

Si necesita ayuda para comprender esta informacion, por favor llame 503-588-6173

DECISION OF THE PLANNING ADMINISTRATOR

TENTATIVE SUBDIVISION PLAN / CLASS 2 ADJUSTMENT / URBAN GROWTH PRELIMINARY DECLARATION MODIFICATION CASE NO. SUB-ADJ19-08 & UGA17-03MOD1

APPLICATION NO.: 19-111656-LD / 19-111658-ZO / 19-118114-LD

NOTICE OF DECISION DATE: NOVEMBER 21, 2019

SUMMARY: A consolidated application to create 212-lots for single family development (Coburn Grand View Estates).

REQUEST: A consolidated application for a 212-lot phased subdivision (Coburn Grand View Estates) northeast of the intersection of Kuebler Boulevard SE and Battle Creek Road SE, containing the following requests:

1) A subdivision tentative plan to divide approximately 52.80 acres into 212lots ranging in size from approximately 4,400 square feet to approximately 13,500 square feet, including Alternative Street Standards request to increase the street grade from 12% to 15% for five street intervals and 52-foot right-of-way, where 60-feet is required and removal of street trees along Reed Road, Battle Creek Road and Strong Road;
2) Zoning Adjustment application to reduce lot width for Lot 89 from 70-feet to 59-feet; and
3) Urban Growth Preliminary Declaration Modification (UGA17-03) to re-evaluate the location of off-site water mains that provide City water to the development.

The subject properties are approximately 68.14 acres (52.80 acres for subdivision), zoned RA (Residential Agriculture), and located on the 4700 Block of Battle Creek Road SE (Marion County Assessor Map and Tax Lot Numbers 083W12B / 1600, 083W12C / 700 and 083W11D /100, 200, 400, 500, 601, 602).

APPLICANT: Brandie Dalton, MultiTech Engineering, on behalf of Westwood Homes, LLC (Todd Boyce, Bill Wagoner)

LOCATION: 4700 Battle Creek Rd SE / 97302

CRITERIA: Salem Revised Code (SRC) Chapters 205.010(d), 205.015(d), 250.005(d)(2), 200.030(d)

FINDINGS: The findings are in the attached Decision dated November 21, 2019.

DECISION: The **Planning Administrator APPROVED** Tentative Subdivision Plan / Class 2 Adjustment / UGA Modification Case No. SUB-ADJ19-08 & UGA17-03MOD1 subject to the following conditions of approval:

Prior to final any subdivision plat:

Condition 1: The front property lines are designated below:

Corner Lot	Front Property Line
Lot 1	West property line – fronting on Street 'B'
Lot 2	West property line – fronting on Street 'B'
Lot 5	East property line – fronting on Street 'B'
Lot 20	North property line – fronting on 'C Avenue'
Lot 22	North property line – fronting on 'C Avenue'
Lot 52	North property line – fronting 'I Avenue"
Lot 53	North property line – fronting 'I Avenue"
Lot 58	South property line – fronting on 'I Avenue'
Lot 59	North property line – fronting on 'E Avenue'
Lot 60	North property line – fronting on Street 'C'
Lot 61	South property line – fronting Street 'E'
Lot 70	East property line – fronting Street 'G'
Lot 76	South property line – fronting on Street 'G'
Lot 84	South property line – fronting 'J Avenue'
Lot 89	South property line – fronting 'J Avenue'
Lot 90	North property line – fronting Street 'N'
Lot 92	South property line – fronting Street 'N'
Lot 93	East property line – fronting Street 'M'
Lot 96	South property line – fronting Street 'M'
Lot 97	South property line – fronting Street 'K'
Lot 136	South property line – fronting Street 'K'
Lot 172	North property line – fronting Street "N"
Lot 176	North property line – fronting Street "N"
Lot 182	South property line - fronting 'P Avenue'
Lot 184	South property line - fronting 'P Avenue'
Lot 185	South property line - fronting 'P Avenue'
Lot 195	North property line - fronting 'P Avenue'
Lot 196	East property line – fronting Street 'Q'

Condition 2: The front property line for Lots 203-209 shall be the north property line and the front property line for Lot 3 shall be the west property line. No access to the higher classified street shall be allowed.

Condition 3: Lots 144-147 shall take access from Street 'M' and the south property line is the designated the front property line.

Condition 4: Prior to the issuance of building permits, the subject property shall have a favorable Airport Overlay zone height variance.

Condition 5: Prior to final plat, provide an engineered stormwater design pursuant to SRC 71 and PWDS to accommodate future impervious surface on all proposed lots, including stormwater facilities needed to serve new streets.

Condition 6: All streets within the proposed subdivision shall meet 12 percent grade; with the exception of the five street sections, identified on the proposed tentative plan, which shall not exceed 15 percent.

Conditions 7: The applicant shall provide mid-block pedestrian access as shown on the tentative subdivision plan.

Condition 8: Proposed Streets K, M and N shall be a minimum of 52-feet in width, which includes a four-foot planter to accommodate street trees and sidewalks adjacent to one foot from property line. All other streets shall meet local street standards.

Condition 9: Dedicate a 10-foot-wide public utility easement (PUE) along the street frontage of all abutting and internal streets.

Condition 10: Prior to issuance of public construction permits, a tree preservation and protection plan pursuant to SRC Chapter 86 and Salem Administrative Rule 109-500, and signed by a certified arborist, shall be submitted for the identified preserved "Future Street Trees" (32" Oak, 10" Oak and 24" Oak along Reed Road & 32" Oak along Strong), to the City for review. Future Street Trees, identified above, shall be preserved. Any proposed removal of identified Future Street Trees (listed above) would require a separate removal permit pursuant to SRC 86.090.

Condition 11: The significant oak located on Lot 68 and the two 40-inch Fir trees near Strong Road shall be preserved.

Condition 12: Trees proposed for removal that are located within the right of way abutting streets shall follow the procedures of SRC Chapter 86.

Condition 13: All lots within the S-1 service level shall be served by S-1 water mains, and all lots within the S-2 service level shall be served by S-2 water mains. Water mains may need to be extended through future unconstructed phases within temporary easements in order to serve all lots in each phase.

Condition 14: Construct Coburn Reservoir, Boone Road S-1 Pump Station, and S-1 connecting water mains as indicated in Water System Master Plan; or pay a Temporary Access Fee (TAF) pursuant to SRC 200.080(a). The TAF shall be $10,000 per acre of land being developed within the S-1 service area as proportional payments within each section as specified below. The TAF shall be subtracted by the market value of lot 138 but shall not be less than $0. (UGA17-03;4)

Condition 15: Dedicate a neighborhood park facility not less than 6.5 acres in size. (UGA17-03;5)

Condition 16: Demonstrate that the proposed subdivision conforms to the access requirements of the Fire Code by one of the following methods:

(a) Provide written evidence from the Fire Marshal that the subdivision, as approved, does not exceed the maximum 30 dwelling units allowed to be served by a single fire apparatus road; or

(b) Provide written approval from the Fire Marshal allowing more than 30 dwelling units to be served by a single fire apparatus road subject to all of the dwelling units within the subdivision being equipped with an automatic sprinkler system; or

(c) The subdivision so that no more than 30 dwelling units will be served by a single fire apparatus road.

Condition 17: Demonstrate adequate Fire Department turn-arounds prior to final plat of Phase K, H, F and A.

Condition 18: Prior to any plat, the applicant shall coordination with Salem-Keizer Cherriots for a transit stop and provide evidence of the location of a future transit stop or a letter from Salem-Keizer Cherriots that no stop is needed in the vicinity.

Condition 19: The subdivision shall be phased in the following order:

Section E: 16 lots
Section G: 22 lots
Section I: 18 lots
Section J: 17 lots
Section F: 15 lots
Section H: 25 lots
Section K: 15 lots
Section A: 24 lots
Section D: 25 lots
Section B: 17 lots
Section C: 15 lots

Prior to plat of Section E:

Condition 20: Construct a realigned intersection of Battle Creek Road SE and Reed Road SE to minor arterial standards pursuant to PWDS. Acquire and/or convey land for dedication of right-of-way as needed to construct the improvements. If off-site right-of-way is needed to construct the improvements and the applicant is unable to acquire the right-of-way from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. The intersection shall include:

- A westbound to southbound left turn lane on Reed Road SE;
- A southbound to eastbound left turn lane on Battle Creek Road SE;
- A northbound to eastbound right turn lane on Battle Creek Road SE; and
- A pedestrian island on Battle Creek Road SE along the south side of the intersection. (UGA17-03;1)

Condition 21: Construct a minimum 18-inch S-1 water main in Reed Road SE from Strong Road SE to J Avenue SE. (UGA17-03;4)

Condition 22: Construct a minimum 18-inch S-1 water main in J Avenue SE from Reed Road SE to H Street SE, and in H Street SE from the south line of Section E to the north line of Section E. (UGA17-03;4)

Condition 23: Pay $43,362 as the proportional amount of the water TAF. (UGA17-03;4)

Condition 24: A temporary pedestrian access route, at least 5-feet in width, shall be provided from sidewalks along J Avenue to the intersection of Reed Road and Battle Creek Road.

Prior to plat of Section G:

Condition 25: Construct Reed Road SE from Battle Creek Road SE to the north line of the subject property, at a minimum 23-foot-wide half street improvement to Minor Arterial standards within a minimum 36-foot-wide half-width right-of-way. The improvements shall include on-street parking and tapers. (UGA17-03;1)

Condition 26: Pay $52,491 as the proportional amount of the water TAF. (UGA17-03;4)

Condition 27: Construct multi-modal trails to proposed park as shown on tentative subdivision plan to PWDS Standards.

Prior to plat of Section I:

Condition 28: Construct Battle Creek Road from Reed Road to the southern edge of Segment I to a 23-foot-wide half street improvement to Minor Arterial standards within a minimum 36-foot-wide half-width right-of-way. (UGA17-03;1)

Condition 29: Construct a minimum 12-inch S-1 water main in Reed Road SE from J Avenue SE to Battle Creek Road SE, and in Battle Creek Road SE from Reed Road SE to N Street SE. (UGA17-03;4)

Condition 30: Pay $43,362 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section J:

Condition 31: Pay a temporary access fee of $13,680 toward the future signal at Battle Creek Road SE and Reed Road SE.

Condition 32: Construct a pedestrian access route along missing sections of sidewalk on the west side of Battle Creek Road SE from Reed Road SE to Forsythe Drive SE.

Prior to plat of Section F:

Condition 33: Construct a minimum 18-inch S-1 water main in K Street SE from the north line to the south line of Section F. (UGA17-03;4)

Condition 34: Pay $27,387 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section H:

Condition 35: Paved width of accessway shall be 20-feet within a 25-foot wide easement, which serves Lots131,132 and the future Coburn Reservoir (Lot 130).

Condition 36: "NO PARKING—FIRE LANE" signs shall be posted on both sides of the segments of the proposed flag lot accessway that are fire apparatus roadways and "NO PARKING" signs shall be posted on both sides of any remaining portion of the accessway.

Condition 37: Convey lot 138 to the City for future construction of Coburn Reservoir. (UGA17-03;4)

Condition 38: Construct a minimum 18-inch S-1 water main in K Street SE from the north line of Section H to the south line of lot 138. (UGA17-03;4)

Condition 39: Pay $11,411 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section A:

Condition 40: Convey land for dedication of right-of-way to equal a half-width of 30 feet from centerline along the entire frontage of Strong Road SE.

Condition 41: Construct a 15-foot-wide half-street improvement on the development of centerline and a 15-foot-wide pavement widening on the opposite side of centerline along Strong Road SE.

Condition 42: Construct a minimum 18-inch S-1 water main within Sections A and D from H Street SE at the south line of Section D to Strong Road SE at the south line of Section A. Design City infrastructure improvements needed for Section D in sufficient detail to determine that the water main construction meets PWDS. Construct a temporary utility and emergency access road along the water main alignment. (UGA17-03;4)

Condition 43: Pay $59,377 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section D:

Condition 44: Pay $57,055 as the proportional amount of the water TAF. (UGA17-03;4)

Condition 45: Lots 57-59 and 74-81 shall connect to the existing sanitary system in Reed Road SE. Lots 60-73 shall connect to the existing sanitary system in Strong Road SE. If off-site easements are needed because of topographic constraints and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. (UGA17-03;2)

Condition 46: Lot 57-59 and 74-81 shall connect to the existing stormwater facilities abutting Reed Road SE. Lots 60-73 shall connect to the existing stormwater facilities in Strong Road SE. If off-site easements are needed because of topographic constraints and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. (UGA17-03;3)

Prior to plat of Section B:

Condition 47: Pay $38,798 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section C:

Condition 48: Pay $38,798 as the proportional amount of the water TAF. (UGA17-03;4)

The rights granted by the attached decision must be exercised, or an extension granted, by December 7, 2021 or this approval shall be null and void.

Application Deemed Complete:	July 18, 2019
Notice of Decision Mailing Date:	November 21, 2019
Decision Effective Date:	December 7, 2019
State Mandate Date (Subdivision and Adjustment):	March 6, 2020
State Mandate Date (UGA Modification):	March 1, 2020

Case Manager: Olivia Glantz, OGlantz@cityofsalem.net, 503-540-2343

This decision is final unless written appeal from an aggrieved party is filed with the City of Salem Planning Division, Room 305, 555 Liberty Street SE, Salem OR 97301, no later than 5:00 p.m., Friday, December 6, 2019. The notice of appeal must contain the information required by SRC 300.1020 and must state where the decision failed to conform to the provisions of the applicable code section, SRC Chapter(s) 205, 205, 250, 200. The appeal must be filed in duplicate with the City of Salem Planning Division. The appeal fee must be paid at the time of filing. If the appeal is untimely and/or lacks the proper fee, the appeal will be rejected. The Planning Commission will review the appeal at a public hearing. After the hearing, the Planning Commission may amend, rescind, or affirm the action, or refer the matter to staff for additional information.

The complete case file, including findings, conclusions and conditions of approval, if any, is available for review at the Planning Division office, Room 305, City Hall, 555 Liberty Street SE, during regular business hours.

http://www.cityofsalem.net/planning

BEFORE THE PLANNING ADMINISTRATOR
OF THE CITY OF SALEM
(CASE NO. SUB-ADJ19-08 & UGA17-03MOD1)

Si necesita ayuda para comprender esta información, por favor llame 503-588-6173
http://www.cityofsalem.net/planning

IN THE MATTER OF THE APPROVAL OF CONSOLIDATED URBAN GROWTH PRELIMINARY DECLARATION MODIFICAITN, TENTATIVE SUBDIVISION PLAN AND ADJUSTMENT CASE NO. SUB-ADJ19-08 & UGA17-03MOD1; 4700 BLOCK BATTLE CREEK ROAD SE	**)**	**FINDINGS AND ORDER** **NOVEMBER 21, 2019**

REQUEST

Summary: A consolidated application to create 209-lots for single family development (Coburn Grand View Estates).

A consolidated application for a 209-lot phased subdivision ("Coburn Grand View Estates") northeast of the intersection of Kuebler Boulevard SE and Battle Creek Road SE, containing the following requests:

1) A subdivision tentative plan to divide approximately 52.80 acres into 209 lots ranging in size from approximately 4,400 square feet to approximately 13,500 square feet, including "Alternative Street Standards" request to increase the street grade from 12% to 15% for five street intervals and 52-foot right-of-way, where 60-feet is required and removal of street trees along Reed Road, Battle Creek Road and Strong Road;

2) Zoning Adjustment application to reduce lot width for Lot 89 from 70-feet to 59-feet; and

3) Urban Growth Preliminary Declaration Modification (UGA17-03) to re-evaluate the location of off-site water mains that provide City water to the development.

The subject properties are approximately 68.14 acres (52.80 acres for subdivision), zoned RA (Residential Agriculture), and located on the 4700 Block of Battle Creek Road SE (Marion County Assessor Map and Tax Lot Numbers 083W12B / 1600, 083W12C / 700 and 083W11D /100, 200, 400, 500, 601, 602).

DECISION

A. The tentative subdivision plan is APPROVED subject to the applicable standards of the Salem Revised Code, the findings contained herein, and the following conditions of final plat approval, unless otherwise indicated:

Prior to final any subdivision plat:

Condition 1: The front property lines are designated below:

Corner Lot	Front Property Line
Lot 1	West property line – fronting on Street 'B'
Lot 2	West property line – fronting on Street 'B'
Lot 5	East property line – fronting on Street 'B'
Lot 20	North property line – fronting on 'C Avenue'
Lot 22	North property line – fronting on 'C Avenue'
Lot 52	North property line – fronting 'I Avenue"
Lot 53	North property line – fronting 'I Avenue"
Lot 58	South property line – fronting on 'I Avenue'
Lot 59	North property line – fronting on 'E Avenue'
Lot 60	North property line – fronting on Street 'C'
Lot 61	South property line – fronting Street 'E'
Lot 70	East property line – fronting Street 'G'
Lot 76	South property line – fronting on Street 'G'
Lot 84	South property line – fronting 'J Avenue'
Lot 89	South property line – fronting 'J Avenue'
Lot 90	North property line – fronting Street 'N'
Lot 92	South property line – fronting Street 'N'
Lot 93	East property line – fronting Street 'M'
Lot 96	South property line – fronting Street 'M'
Lot 97	South property line – fronting Street 'K'
Lot 136	South property line – fronting Street 'K'
Lot 172	North property line – fronting Street "N"
Lot 176	North property line – fronting Street "N"
Lot 182	South property line - fronting 'P Avenue'
Lot 184	South property line - fronting 'P Avenue'
Lot 185	South property line - fronting 'P Avenue'
Lot 195	North property line - fronting 'P Avenue'
Lot 196	East property line – fronting Street 'Q'

Condition 2: The front property line for Lots 203-209 shall be the north property line and the front property line for Lot 3 shall be the west property line. No access to the higher classified street shall be allowed.

Condition 3: Lots 144-147 shall take access from Street 'M' and the south property line is the designated the front property line.

Condition 4: Prior to the issuance of building permits, the subject property shall have a favorable Airport Overlay zone height variance.

Condition 5: Prior to final plat, provide an engineered stormwater design pursuant to SRC 71 and PWDS to accommodate future impervious surface on all proposed lots, including stormwater facilities needed to serve new streets.

Condition 6: All streets within the proposed subdivision shall meet 12 percent grade; with the exception of the five street sections, identified on the proposed tentative plan, which shall not exceed 15 percent.

Conditions 7: The applicant shall provide mid-block pedestrian access as shown on the tentative subdivision plan.

Condition 8: Proposed Streets K, M and N shall be a minimum of 52-feet in width, which includes a four-foot planter to accommodate street trees and sidewalks adjacent to one foot from property line. All other streets shall meet local street standards.

Condition 9: Dedicate a 10-foot-wide public utility easement (PUE) along the street frontage of all abutting and internal streets.

Condition 10: Prior to issuance of public construction permits, a tree preservation and protection plan pursuant to SRC Chapter 86 and Salem Administrative Rule 109-500, and signed by a certified arborist, shall be submitted for the identified preserved “Future Street Trees” (32” Oak, 10” Oak and 24” Oak along Reed Road & 32” Oak along Strong), to the City for review. Future Street Trees, identified above, shall be preserved. Any proposed removal of identified Future Street Trees (listed above) would require a separate removal permit pursuant to SRC 86.090.

Condition 11: The significant oak located on Lot 68 and the two 40-inch Fir trees near Strong Road shall be preserved.

Condition 12: Trees proposed for removal that are located within the right of way abutting streets shall follow the procedures of SRC Chapter 86.

Condition 13: All lots within the S-1 service level shall be served by S-1 water mains, and all lots within the S-2 service level shall be served by S-2 water mains. Water mains may need to be extended through future unconstructed phases within temporary easements in order to serve all lots in each phase.

Condition 14: Construct Coburn Reservoir, Boone Road S-1 Pump Station, and S-1 connecting water mains as indicated in Water System Master Plan; or pay a Temporary Access Fee (TAF) pursuant to SRC 200.080(a). The TAF shall be $10,000 per acre of land being developed within the S-1 service area as proportional payments within each section as specified below. The TAF shall be subtracted by the market value of lot 138 but shall not be less than $0. (UGA17-03;4)

Condition 15: Dedicate a neighborhood park facility not less than 6.5 acres in size. (UGA17-03;5)

Condition 16: Demonstrate that the proposed subdivision conforms to the access requirements of the Fire Code by one of the following methods:

(a) Provide written evidence from the Fire Marshal that the subdivision, as approved, does not exceed the maximum 30 dwelling units allowed to be served by a single fire apparatus road; or

(b) Provide written approval from the Fire Marshal allowing more than 30 dwelling units to be served by a single fire apparatus road subject to all of the dwelling units within the subdivision being equipped with an automatic sprinkler system; or

(c) The subdivision so that no more than 30 dwelling units will be served by a single fire apparatus road.

Condition 17: Demonstrate adequate Fire Department turn-arounds prior to final plat of Phase K, H, F and A.

Condition 18: Prior to any plat, the applicant shall coordination with Salem-Keizer Cherriots for a transit stop and provide evidence of the location of a future transit stop or a letter from Salem-Keizer Cherriots that no stop is needed in the vicinity.

Condition 19: The subdivision shall be phased in the following order:

Section E: 16 lots
Section G: 22 lots
Section I: 18 lots
Section J: 17 lots
Section F: 15 lots
Section H: 25 lots
Section K: 15 lots
Section A: 24 lots
Section D: 25 lots
Section B: 17 lots
Section C: 15 lots

Prior to plat of Section E:

Condition 20: Construct a realigned intersection of Battle Creek Road SE and Reed Road SE to minor arterial standards pursuant to PWDS. Acquire and/or convey land for dedication of right-of-way as needed to construct the improvements. If off-site right-of-way is needed to construct the improvements and the applicant is unable to acquire the right-of-way from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. The intersection shall include:

- A westbound to southbound left turn lane on Reed Road SE;
- A southbound to eastbound left turn lane on Battle Creek Road SE;
- A northbound to eastbound right turn lane on Battle Creek Road SE; and
- A pedestrian island on Battle Creek Road SE along the south side of the intersection. (UGA17-03;1)

Condition 21: Construct a minimum 18-inch S-1 water main in Reed Road SE from Strong Road SE to J Avenue SE. (UGA17-03;4)

Condition 22: Construct a minimum 18-inch S-1 water main in J Avenue SE from Reed Road SE to H Street SE, and in H Street SE from the south line of Section E to the north line of Section E. (UGA17-03;4)

Condition 23: Pay $43,362 as the proportional amount of the water TAF. (UGA17-03;4)

Condition 24: A temporary pedestrian access route, at least 5-feet in width, shall be provided from sidewalks along J Avenue to the intersection of Reed Road and Battle Creek Road.

Prior to plat of Section G:

Condition 25: Construct Reed Road SE from Battle Creek Road SE to the north line of the subject property, at a minimum 23-foot-wide half street improvement to Minor Arterial standards within a minimum 36-foot-wide half-width right-of-way. The improvements shall include on-street parking and tapers. (UGA17-03;1)

Condition 26: Pay $52,491 as the proportional amount of the water TAF. (UGA17-03;4)

Condition 27: Construct multi-modal trails to proposed park as shown on tentative subdivision plan to PWDS Standards.

Prior to plat of Section I:

Condition 28: Construct Battle Creek Road from Reed Road to the southern edge of Segment I to a 23-foot-wide half street improvement to Minor Arterial standards within a minimum 36-foot-wide half-width right-of-way. (UGA17-03;1)

Condition 29: Construct a minimum 12-inch S-1 water main in Reed Road SE from J Avenue SE to Battle Creek Road SE, and in Battle Creek Road SE from Reed Road SE to N Street SE. (UGA17-03;4)

Condition 30: Pay $43,362 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section J:

Condition 31: Pay a temporary access fee of $13,680 toward the future signal at Battle Creek Road SE and Reed Road SE.

Condition 32: Construct a pedestrian access route along missing sections of sidewalk on the west side of Battle Creek Road SE from Reed Road SE to Forsythe Drive SE.

Prior to plat of Section F:

Condition 33: Construct a minimum 18-inch S-1 water main in K Street SE from the north line to the south line of Section F. (UGA17-03;4)

Condition 34: Pay $27,387 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section H:

Condition 35: Paved width of accessway shall be 20-feet within a 25-foot wide easement, which serves Lots131,132 and the future Coburn Reservoir (Lot 130).

Condition 36: "NO PARKING—FIRE LANE" signs shall be posted on both sides of the segments of the proposed flag lot accessway that are fire apparatus roadways and "NO PARKING" signs shall be posted on both sides of any remaining portion of the accessway.

Condition 37: Convey lot 138 to the City for future construction of Coburn Reservoir. (UGA17-03;4)

Condition 38: Construct a minimum 18-inch S-1 water main in K Street SE from the north line of Section H to the south line of lot 138. (UGA17-03;4)

Condition 39: Pay $11,411 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section A:

Condition 40: Convey land for dedication of right-of-way to equal a half-width of 30 feet from centerline along the entire frontage of Strong Road SE.

Condition 41: Construct a 15-foot-wide half-street improvement on the development of centerline and a 15-foot-wide pavement widening on the opposite side of centerline along Strong Road SE.

Condition 42: Construct a minimum 18-inch S-1 water main within Sections A and D from H Street SE at the south line of Section D to Strong Road SE at the south line of Section A. Design City infrastructure improvements needed for Section D in sufficient detail to determine that the water main construction meets PWDS. Construct a

temporary utility and emergency access road along the water main alignment. (UGA17-03;4)

Condition 43: Pay $59,377 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section D:

Condition 44: Pay $57,055 as the proportional amount of the water TAF. (UGA17-03;4)

Condition 45: Lots 57-59 and 74-81 shall connect to the existing sanitary system in Reed Road SE. Lots 60-73 shall connect to the existing sanitary system in Strong Road SE. If off-site easements are needed because of topographic constraints and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. (UGA17-03;2)

Condition 46: Lot 57-59 and 74-81 shall connect to the existing stormwater facilities abutting Reed Road SE. Lots 60-73 shall connect to the existing stormwater facilities in Strong Road SE. If off-site easements are needed because of topographic constraints and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. (UGA17-03;3)

Prior to plat of Section B:

Condition 47: Pay $38,798 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section C:

Condition 48: Pay $38,798 as the proportional amount of the water TAF. (UGA17-03;4)

PROCEDURAL FINDINGS

1. On May 17, 2019, a consolidated application for a Tentative Subdivision Plan and Class 2 Adjustment was filed, proposing to divide a 52.80-acre property at 4700 Block Battle Creek Road SE (**Attachment A**) into 209 lots. The applicant subsequently submitted a Urban Growth Preliminary Declaration (UGA) Amendment to modify previously approved UGA 17-03.

2. The subdivision and adjustment applications were deemed complete for processing on July 18, 2019. The Modification to UGA17-03 was deemed complete on September 19, 2019. Notice to surrounding property owners was mailed pursuant to Salem Revised Code on September 19, 2019.
3. After time extensions, the state-mandated local decision deadline for the subdivision and adjustment case is to March 6, 2020 and the Modification to UGA17-03 is March 1, 2020.

SUBSTANTIVE FINDINGS

1. Proposal

The tentative plan proposes to divide the property into 209 lots for residential development (**Attachment B**), with lots ranging in size from 4,400 square feet to approximately 13,500 square feet. All lots within the subdivision are proposed to take access directly from internal public streets, with the exception of Lots 136 and 137, which are proposed as flag lots. The applicant proposes to dedicate Lot 138 for the Cobrun Reservoir. The applicant's written findings are included as **Attachment C**.

The applicant has not proposed any specific phasing for the subdivision or residential development. The subject property is outside of the Urban Service Area, and the tentative subdivision plan application is consolidated with an application for an Urban Growth Area Preliminary Declaration Modification (UGA17-03) for the determination of public facilities required under the Urban Growth Management Program to develop the proposed subdivision.

2. Existing Conditions

Site and Vicinity

The subject property consists of four tax lots, approximately 52.80 acres in size, which includes land previously approved for a partition. The previously approved partition (PAR 18-08) would exclude 7.35 acres from the total acreage. The proposal is to subdivide approximately 45.5 acres located on the north side of Kuebler Boulevard, west of Strong Road SE and east of Reed Road SE. The abutting portion of Strong Road is designated in the Salem Transportation System Plan (TSP) as a collector; Reed Road SE is designated a minor arterial and Kuebler Boulevard is designated a parkway in the TSP.

The site is irregular, approximately 650 feet in width from west to east, and approximately 2,000 feet from north to south. The site is currently vacant and used as pasture for grazing. The site slopes uphill from the western boundary, rising from approximately 272 feet to 422 feet above sea level at the eastern property line. Environmental resource and natural hazard maps show wetlands on the portion of the property previously approved for a partition and to be used for a future park. The site does not have any floodplains on the subject property. An area of steeper slopes, indicating possible landslide hazard susceptibility, is shown on hazard maps near the center of the property.

The majority of the site was annexed into the City of Salem in July 1990, the portion of the property zoned PH was annexed previously in 1960. Hillcrest Youth Correctional Facility is located just north of the site, a future park is adjacent to the site to the west and large rural lots surround the remainder of the site.

Salem Area Comprehensive Plan (SACP) Designation

Urban Growth Policies: The subject property is located inside of the Salem Urban Growth Boundary and inside the corporate city limits.

Comprehensive Plan Map: The subject property is designated "Developing Residential" on the Salem Area Comprehensive Plan (SACP) Map. The surrounding properties are designated as follows:

North: Community Service Hospital

South: (Across Kuebler Blvd); Commercial

East: Developing Residential

West: (Across Reed Road SE); Mixed Use

Zoning and Surrounding Land Use

The subject properties re zoned RA (Residential Agriculture) and is vacant. The surrounding properties are zoned and used as follows:

North: PH (Public and Private Health Services); Oregon Youth Authority

South: (Across Kuebler Blvd) CR (Retail Commercial); Salem Clinic

East: RA (Residential Agriculture); single family dwelling

West: (Across Reed Road SE) FMU (Fairview Mixed use); vacant

Relationship to Urban Service Area

The subject property is outside of the City's Urban Service Area. The properties have previously been approved for an Urban Growth Preliminary Declaration (UGA17-03).

Infrastructure

Water: The subject property is located in the S-1 and S-2 water service level.

A 12-inch public water line in the S-2 service level is located in Kuebler Boulevard SE.

Sewer: A 15-inch public sewer line is located in Reed Road SE.

A 24-inch public sewer line is located in 27TH Avenue SE.

Storm Drainage: Drainage patterns in this area are generally convey stormwater into Pringle Creek. The property is on a ridge in which the drainage flows either to the northwest toward the West Middle Fork of Pringle Creek or northeast toward Strong Road SE or southeast toward Kuebler Boulevard SE.

Streets: Reed Road SE abuts the northwest boundary of the subject property. The Salem TSP designates the abutting portion of Reed Road is designated as a Minor Arterial in the Salem TSP.

- The standard for a Minor Arterial street is a 46-foot-wide improvement within a 72-foot-wide right-of-way.
- The abutting portion of Reed Road SE currently has an approximately 20-foot-wide improvement within a 40-foot-wide right-of-way.

Battle Creek Road SE abuts the west boundary of the subject property. Battle Creek Road SE is designated as a Minor Arterial street in the Salem TSP.

- The standard for this street classification is a 46-foot-wide improvement within a 72-foot-wide right-of-way.
- The abutting portion of Battle Creek Road SE currently has an approximately 20-foot to 46-foot-wide improvement within a 60-foot to 72-foot-wide right-of-way.

Strong Road SE abuts the west boundary of the subject property. Strong Road SE is designated as a Collector street in the Salem TSP.

- The standard for this street classification is a 34-foot-wide improvement within a 60-foot-wide right-of-way.
- The abutting portion of Strong Road SE currently has an approximately 20-foot to 30-foot-wide improvement within a 40-foot to 60-foot-wide right-of-way.

Kuebler Boulevard SE abuts the west boundary of the subject property. Kuebler Boulevard SE is designated as a Parkway street in the Salem TSP.

- The standard for this street classification is a 80-foot-wide improvement within a 120-foot-wide right-of-way.

- The abutting portion of Kuebler Boulevard SE currently has an approximately 70-foot to 80-foot-wide improvement within a 120-foot to 150-foot-wide right-of-way.

- No driveway access will be granted to Kuebler Boulevard.

Land Use History

- **Annexation Case No. C-710 (1990):** The City-initiated annexation of the subject property, which was then enclave territory surrounded by the City limits. The annexation became effective on March 26, 2016.
- **LLA98-27:** Relocation of a property line between Tax Lots 100 and 200, resulting in a 28.91-acre property and 1.43 acre property.
- **PLA10-19:** Relocation of a property line between Tax Lots 1499 and 1600, resulting in 44.6 acres and 17.7 acres.
- **UGA17-03:** Request to determine the public facilities and infrastructure required to develop 68.14 acres northeast of the intersection of Kuebler Boulevard SE and Battle Creek Road SE for single family residential development.
- **PAR18-08:** A tentative partition plan to divide approximately 29.57 acres into two parcels, with Parcel 1 consisting of 22.22 acres in size, and Parcel 2 consisting of 7.35 acres in size to be used for a future park.
- **VUL18-02:** To validate a unit of land (Tax Lot 601) that was created as separate tax lots through a sale by deed in 1998.

3. Public and Private Agency Review

Public Works Department - The City of Salem Public Works Department, Development Services Section, reviewed the proposal and has provided their comments and recommendation for plat approval. Their memorandum is included as **Attachment D**.

Fire Department - The Salem Fire Department submitted comments indicating that fire hydrants are not shown and are required to be provided within 600 feet of all portions of the structures. Fire Department access is required to be provided within 150 feet of all portions of the structures. Dead end Fire Department access roads over 150 feet require an approved turnaround, including temporary dead-end roads created by phasing. Two approved means of Fire Department access is required when the development exceeds 30 dwelling units.

Staff Response: Condition 16 and 17 requires the applicant demonstrate that fire apparatus access requirements are met by either providing written findings from the Fire Marshal that the proposed configuration does not result in greater than 30 dwelling units being served by a single fire apparatus road, obtaining written approval from the Fire Marshal granting an exception available when all dwelling units are equipped with sprinklers, or reconfiguring the subdivision to include less than 30 lots for dwelling units.

Prior to final Plat adequate turn around locations will need to be provided to the satisfaction of the Fire Marshal.

Building and Safety Division – The Salem Community Development Department, Building and Safety Division, submitted comments indicating no concerns with the proposal at this time.

Pacific General Electric – Street improvements and the relocation of PGE faculties will need to be completed prior to serving the subdivision.

4. Neighborhood Association Comments

The subject property is within the Morningside Neighborhood Association. Notice of the application was provided to the neighborhood association, pursuant to SRC 300.620(b)(2)(B)(iii), which requires public notice to be sent to "any City-recognized neighborhood association whose boundaries include, or are adjacent to, the subject property." No comments were received from Morningside prior to the comment deadline.

5. Public Comments

All property owners within 250 feet of the subject property were mailed notification of the proposed subdivision. Seven comments were received from adjacent property owners or members of the public at large prior to the comment deadline. One comments had not objections and six comments of concern are summarized below:

A. **Game Refuge, Loss of Wildlife Habitat and Open Space.** Several comments received express concern regarding the loss of wildlife habitat and open space that will result from the clearing and development of the property and suggest that rather than it being developed as a subdivision it should be donated to the City for creation of a new park. One comment raised concerns that the subject property was designated as a "Game Refuge."

Staff Response: In regard to impacts to wildlife habitat, the subject property has not been identified as a significant wildlife habitat by state wildlife management agencies or by the City. The subject property is located within the Urban Growth Boundary and incorporated limits of the City of Salem and has been designated on the City of Salem Comprehensive Plan Map as "Single Family Residential," which anticipates existing or future residential development similar to the subdivision proposed by the applicant. Loss of wildlife habitat that has not been identified as significant and is not a criterion under the Salem Revised Code for granting or denying a phased tentative subdivision approval.

In regard to impacts on open space, the Salem Area Comprehensive Plan has adopted goals, policies, and plan map designations to protect identified open space areas. The subject property has not been identified as a natural open space area.

Instead, the Comprehensive Plan Map designates the subject property as "Single Family Residential," and the site has been zoned RS (Single Family Residential). While currently undeveloped, the subject property is located within an already developed residential area within the corporate limits of the City of Salem, and changes to the landscape from future residences in the proposed subdivision are not expected to exceed what would occur from the presumed development of land within the City zoned for single family residential development.

B. **Impact of Increased Traffic on Adjacent Streets.** Several comments received express concern with increased traffic in the vicinity as a result of the subdivision. Specific concerns raised regarding traffic and impacts on adjacent streets include the following:

- Re-alignment and improvements of Reed Road
- A Traffic Impact Analysis (TIA) is insufficient for the proposed.

Staff Response: The Public Works Department has evaluated the proposal and submitted comments indicating that as conditioned will have adequate width and pedestrian access. The proposal will result in street improvement of Battle Creek Road, Strong Road and Reed Road and the extension of new local streets through the subdivision in conformance with current standards for vehicle, pedestrian, and bicycle facilities. These streets will connect to existing streets and fill in gaps within the current street network. The TIA identifies traffic impacts and necessary mitigation measures to accommodate the proposed development. The City Traffic Engineer has determined that the proposed development as conditioned will mitigate traffic impacts. Mitigation of traffic impacts is provided through construction of frontage improvements along Strong Road, Reed Road and Battle Creek Road. In addition, the re-alignment and construction of the intersection of Reed Road and Battle Creek Road and a proportional share or temporary access fee for a future signal light at the intersection of Reed Road and Battle Creek Road will provide for a safe transportation system.

C. **Well Location for 4826 Battle Creek Road SE.** Comments were received that an existing well located on the subject property serves a neighboring property.

Staff Response: The location and use of the existing well is not part of the decision criteria and should be resolved between the private parties.

6. Criteria for Granting Tentative Subdivision Plan Approval

The Salem Revised Code (SRC), which includes the Unified Development Code (UDC), implements the Salem Area Comprehensive Plan land use goals, and governs development of property within the city limits. The subdivision process reviews development for compliance with City standards and requirements contained in the UDC, the Salem Transportation System Plan (TSP), and the Water, Sewer, and Storm

Drain System Master Plans. A second review occurs for the created lots at the time of site plan review/building permit review to assure compliance with the UDC. Compliance with conditions of approval to satisfy the UDC is checked prior to the Planning Administrator signing the final subdivision plat.

SRC Chapter 205.010(d) sets forth the criteria that must be met before approval can be granted to a subdivision request. The following subsections are organized with approval criteria shown in bold, followed by findings of fact upon which the Planning Administrator's decision is based. The requirements of SRC 205.010(d) are addressed within the specific findings which evaluate the proposal's conformance with the applicable criteria. Lack of compliance with the following criteria is grounds for denial of the tentative plan or for the issuance of conditions of approval to more fully satisfy the criteria.

SRC 205.010(d)(1): The tentative subdivision complies with all standards of this Chapter and with all applicable provisions of the UDC, including, but not limited to, the following:

(A) Lot standards, including, but not limited to, standards for lot area, lot width and depth, lot frontage, and designation of front and rear lot lines.

The proposed subdivision would divide the 52.80-acre property into 209 lots, rights-of-way for internal streets, and a public stormwater facility, with no remainder. The subject property is currently zoned RA (Residential Agriculture) and PH (Public and Private Health Services).

SRC Chapter 543 (Public and Private Health Services):

Lot Standards for PH zone (*see* SRC Chapter 543, Table 543-2)

	Minimum Standard
Lot Area (All Uses)	10,000 square feet
Lot Width	50 feet
Lot Depth	80 feet
Street Frontage	16 feet

The subject property is zoned RA (Residential Agriculture) and PH (Public and Private Health Services). The proposal includes a single lot consisting of the entire PH zone; Lot 82 is proposed to be two acres in size and is entirely within the PH zone and Lot 81 is proposed to be 10,536 square feet in size and entirely within the PH zone. Pursuant to SRC 543.010, Table 543-2, the minimum parcels size is 10,000 square feet with a minimum width of 50-feet, minimum depth of 80 feet and 16-feet of frontage. Lot 81 and 82 meet these development standards.

SRC Chapter 511 (Single Family Residential): The proposed subdivision would divide the 52.80-acre property into 209 lots, rights-of-way for internal streets, and a public stormwater facility, with no remainder. The subject property is currently zoned RA (Residential Agriculture) and PH (Public and Private Health Services).

SRC Chapter 265.015 provides that any land within an RA zone district that is subject to a subdivision approval shall automatically be re-classified to an RS zone district on the date the subdivision plat is recorded. This provision applies to the RA portion of the subject property. Because the zoning of the subject property will be changed to RS with the recording of the final subdivision plat, the following analysis of the subdivision for conformance with the requirements of the UDC is based upon the property being rezoned to RS (Single Family Residential). The minimum lot area requirements of the RS zone are established under SRC 511.010(a) as follows:

Lot Standards for RS zone (*see* SRC Chapter 511, Table 511-2)

Requirement	Minimum Standard
Lot Area (Single Family)	4,000 square feet
Lot Width	40 feet
Lot Depth (Single Family)	70 feet
Lot Depth (Double Frontage Lots)	120 feet
Street Frontage	40 feet

Proposed lots in the subdivision range from approximately 4,456 square feet to 2.12 acres in size. On the plans submitted by the applicant, Lot 90 is less than 70 feet in depth, and therefore does not meet the minimum depth for a Single-Family lot in the RS zone. The applicant is requesting an adjustment to the minimum lot depth to reduce lot width for Lot 89 from 70-feet to 59-feet, which is addressed below in Section 7.

With the exception of Lot 89, which is address below, the proposed lots meet or exceed minimum lot area, dimension, and frontage requirements and therefore conform to the applicable standards. The proposed lots within the subdivision, as conditioned, are also of sufficient size and dimension to permit future development of uses allowed within the zone.

Setback Requirements: SRC Chapter 511 establishes the following setback standards for development within an RS (Single Family Residential) zone:

Front Yards and Yards Adjacent to Streets:

- Minimum 12 feet (minimum 20 feet when adjacent to a street designated 'Collector', 'Arterial', or 'Parkway')

- Minimum 20 feet for garages

Rear Yards:

- Minimum 14 feet (for any portion of a main building not more than one story in height); or

- Minimum 20 feet (for any portion of a main building greater than one story in height)

Interior Side Yards:

- Minimum 5 feet

Setback requirements for future development on the proposed lots will be reviewed at the time of application for building permits on those individual parcels.

The proposal conforms to the requirements of SRC Chapter 511.

SRC Chapter 800 (General Development Standards):

SRC 800.020 (Designation of Lot Lines): SRC 800.020 establishes front lot line designation requirements for corner lots, double frontage lots, flag lots, and all other lots. For lots that have frontage on a public street, other than corner lots, the front lot line shall be the property line that has frontage on the public street. Corner lots are lots located at the intersection of two streets, typically with street frontage on two sides. Provided that lot dimension requirements are met, the front lot line for a corner lot shall be the property line abutting a street provided by the building permit applicant.

With the exception of the lots listed below, the lots in the table below are corner lots, which do not meet lot depth requirement abutting both streets, which dictates which property line must be the front property line. Lots 19, 27 and 81, 82, 83 and 181 are corner lots meeting the depth requirement abutting both streets, although the western abutting street (Battle Creek Road) is designated a Minor Arterial, which restricts residential access. Therefore, the front lot line for the lots below are as follows:

Condition - The front property lines are designated below:

Corner Lot	Front Property Line
Lot 1	West property line – fronting on Street ‘B’
Lot 2	West property line – fronting on Street ‘B’
Lot 5	East property line – fronting on Street ‘B’
Lot 20	North property line – fronting on ‘C Avenue’
Lot 22	North property line – fronting on ‘C Avenue’
Lot 52	North property line – fronting ‘I Avenue”
Lot 53	North property line – fronting ‘I Avenue”

Lot 58	South property line – fronting on 'I Avenue'
Lot 59	North property line – fronting on 'E Avenue'
Lot 60	North property line – fronting on Street 'C'
Lot 61	South property line – fronting Street 'E'
Lot 70	East property line – fronting Street 'G'
Lot 76	South property line – fronting on Street 'G'
Lot 84	South property line – fronting 'J Avenue'
Lot 89	South property line – fronting 'J Avenue'
Lot 90	North property line – fronting Street 'N'
Lot 92	South property line – fronting Street 'N'
Lot 93	East property line – fronting Street 'M'
Lot 96	South property line – fronting Street 'M'
Lot 97	South property line – fronting Street 'K'
Lot 136	South property line – fronting Street 'K'
Lot 172	North property line – fronting Street "N"
Lot 176	North property line – fronting Street "N"
Lot 182	South property line - fronting 'P Avenue'
Lot 184	South property line - fronting 'P Avenue'
Lot 185	South property line - fronting 'P Avenue'
Lot 195	North property line - fronting 'P Avenue'
Lot 196	East property line – fronting Street 'Q'

Lots 3, 95-102 and 203-209 are double frontage lots. These lots abut a local street and a higher classification street (ie. Collector or Arterial), therefore the lots are required to take access to the local (interior) street, designated below:

Double Frontage	Front Property Line
Lots 203-209	North property line
Lot 3	West property line

Condition - The front property line for Lots 203-209 shall be the north property line and the front property line for Lot 3 shall be the west property line. No access to the higher classified street shall be allowed.

Lots 136-138 are flag lots. SRC 800.020(a)(4) sets forth that, unless otherwise provided by the Planning Administrator, the front lot line for a flag lot shall be the outside property line that is an extension of the flag lot accessway or the property line separating the flag portion of the lot from the lot between it and the street. Each lot meets the applicable lot dimensions if either the north or east property lines are designated as the front property line. Therefore, the front property line for both lots will be designated by the building permit applicant.

There are several lots that have rear property lines that abut the flag lot accessway. If these lots took access to the proposed flag lot accessway, it would exceed the number of users allowed on an accessway. Therefore, the following condition applies:

Condition - Lots 144-147 shall take access from Street 'M' and the south property line is the designated the front property line.

Subsection (c) establishes standards for flag lots and flag lot accessways. Pursuant to SRC Chapter 800, Table 800-1, flag lot accessways serving 1 to 2 lots must be a minimum of 20 feet in overall width and must be paved to a minimum width of 15 feet. Plans submitted by the applicant show a 25-foot-wide access easement on Lot 137, exceeding the standard set forth in subsection (c) and providing sufficient width for the required 15-foot-wide paved improvement. The flag lot accessway is large enough to serve 3-4 lot, if paved to a 20-foot width and could be used to serve Lot 136. The applicant has indicated that Lot 138 will be dedicated to the City for Coburn Reservoir, which requires the access to be paved to 20-feet. To ensure the accessway is adequately paved prior to plat the following condition applies:

Condition - Paved width of accessway shall be 20-feet wide within a minimum of a 25-foot wide easement.

Subsection (d) prohibits parking on flag lot accessways. In order to ensure that resident and emergency access remains unobstructed, the following condition shall apply:

Condition - "NO PARKING—FIRE LANE" signs shall be posted on both sides of the segments of the proposed flag lot accessway that are fire apparatus roadways and "NO PARKING" signs shall be posted on both sides of any remaining portion of the accessway.

Subsection (e) limits the maximum number of flag lots within a subdivision to 15 percent of the proposed lots. The proposed subdivision includes two flag lots (Lots 138 and 139), or less than one percent of the total proposed lots, therefore meeting the standard provided in SRC 800.025(e).

SRC Chapter 602 (Airport Overlay Zone):

The property is within the "Horizontal Surface" section of the Airport Overlay zone. Within the Horizontal Surface portion of the overlay, no building, structure, object, or vegetative growth shall have a height greater than that established by a horizontal plane of 150 feet above the airport elevation. The maximum height for structures within the RS (Single Family Residential) zone is 35 feet. The Salem Airport elevation is 210 feet above sea level. The highest elevation on the subject property is approximately 424 feet, which exceeds the 150-foot elevation limit within the "Horizontal Surface" overlay for the airport. Pursuant to SRC 602.025, an Airport Overlay Zone height variance is required to erect or increase the height in excess of the height limitations listed above.

Each structure within the proposed subdivision will exceed the allowable elevation within the "Horizontal Surface", for that reason the following condition shall apply:

Condition - Prior to the issuance of building permits, the subject property shall have a favorable Airport Overlay zone height variance.

(B) City Infrastructure Standards.

The Public Works Department reviewed the proposal for compliance with the City's public facility plans pertaining to provision of water, sewer, and storm drainage facilities. While SRC Chapter 205 does not require submission of utility construction plans prior to tentative subdivision plan approval, it is the responsibility of the applicant to design and construct adequate City water, sewer, and storm drainage facilities to serve the proposed development prior to final plat approval without impeding service to the surrounding area.

SRC Chapter 71 (Stormwater): The proposed subdivision is subject to the stormwater requirements of SRC Chapter 71 and the revised Public Works Design Standards (PWDS) as adopted in Administrative Rule 109, Division 004. To demonstrate that the proposed parcels can meet the PWDS, the applicant shall provide an engineered tentative stormwater design to accommodate future impervious surface on all lots. Since, the applicant's engineer has not submitted a preliminary design report that demonstrates compliance with PWDS. Prior to final plat of all subdivision phases, the applicant shall provide an engineered stormwater design pursuant to SRC 71 and PWDS to accommodate future impervious surface on all proposed lots, including stormwater facilities needed to serve new streets.

Condition – Prior to final plat, provide an engineered stormwater design pursuant to SRC 71 and PWDS to accommodate future impervious surface on all proposed lots, including stormwater facilities needed to serve new streets.

SRC Chapter 200 (Urban Growth Management): The Urban Growth Management Program, detailed in SRC Chapter 200, requires that an Urban Growth Area (UGA) Development Permit must be obtained prior to subdivision of property outside of the Salem Urban Service Area. The subject property is located outside the Urban Service Area and an application for an Urban Growth Preliminary Declaration for the subject property is included as part of the consolidated application. As indicated by the Public Works Department, water, sewer, and stormwater infrastructure is available to serve the proposed development, subject to the requirements listed in the Urban Growth Preliminary Declaration. Pursuant to SRC 200.025(e), the developer must construct these improvements as a condition of approval for the tentative subdivision plan.

Subject to the conditions of approval of the corresponding Urban Growth Preliminary Declaration, the proposal meets the requirements of SRC Chapter 200. The current application includes a modification to UGA17-03 and is addressed below.

SRC Chapter 802 (Public Improvements): Comments from the Public Works Department indicate that water and sewer infrastructure is available along the perimeter of the site and appears to be adequate to serve the proposed subdivision. Specifications for required public improvements are summarized in the Public Works Department memo dated October 28, 2019 (Attachment D).

SRC 802.015 requires development to be served by city utilities designed and constructed according to all applicable provisions of the Salem Revised Code and Public Works Design Standards. The Schematic Utility Plan included in the proposal shows that each individual lot can be served by City utilities designed and constructed according to the applicable provisions of the SRC and PWDS. In order to ensure that appropriate public infrastructure is provided to each of the new lots created by the subdivision and extended to adjacent upstream parcels.

SRC Chapter 803 (Streets and Right-of-Way Improvements):

SRC 803.015 (Traffic Impact Analysis): The proposed 209-lot subdivision will generate more than 1,000 average daily vehicle trips to the abutting streets, designated in the Transportation System Plan as Minor Arterials, Collector and Parkway streets. A Transportation Impact Analysis (TIA) is required as part of the review of the tentative subdivision plan. The applicant submitted a TIA from Associated Transportation Engineering and Planning, Inc on June 20, 2018. The TIA requires turn lanes to be constructed at the Reed Road /Battle Creek Road intersection. No other mitigation is recommended. The Assistant City Traffic Engineer has determined that additional mitigation measures are necessary based on the volume of traffic being generated by the development.

Based on the TIA data, the applicant shall be required to construct a realigned intersection of Battle Creek Road SE and Reed Road SE to minor arterial standards pursuant to PWDS and acquire and/or convey land for dedication of right-of-way as needed to construct the improvements. The new intersection shall include a westbound to southbound left turn lane on Reed Road SE, a southbound to eastbound left turn lane on Battle Creek Road SE, a northbound to eastbound right turn lane on Battle Creek Road SE, and a pedestrian island on Battle Creek Road SE along the south side of the intersection. The reconstruction and alignment of the intersection is needed to provided safe turning movement on to Reed Road SE for the additional 209 dwellings.

A future signal will be warranted in the future at the Reed/Battle Creek intersection. Based on the TIA, the proposed development will add 32 PM peak hour vehicles to the Reed Road /Battle Creek Road intersection, which is a 3.04 percent increase because the intersection currently has 1,056 vehicles at build-out during the PM peak hour. The applicant is required to pay a temporary access fee of 3.04 percent of the future signal and interconnect cost of $450,000, or $13,680.

The following conditions are required to mitigate the traffic impacts:

Condition - Pay a temporary access fee of $13,680 toward the future signal at Battle Creek Road SE and Reed Road SE.

SRC 803.020 (Public and Private Streets): The applicant proposes for all internal streets within the subdivision to be public streets.

SRC 803.025 (Right-of-Way and Pavement Widths): Reed Road SE and Battle Creek Road SE are designated as a Minor Arterial street in the TSP. Reed Road SE abuts the northwestern boundary of the subject property and Battle Creek Road SE the southern property line. Currently, Battle Creek Road SE and Reed Road SE do not meet Minor Arterial standards. The applicant will be required to convey for dedication half-width right-of-way equal to 36 feet from center line and construct a half-street improvement along the entire frontage to a Minor Arterial standard. A realignment of the Reed/Battle Creek intersection is warranted because the intersection angle does not meet Public Works Design Standards.

Traffic Engineering Staff reviewed the Traffic Impact Analysis and determined that the street improvement shall include a westbound to southbound left turn lane on Reed Road SE, a southbound to eastbound left turn lane on Battle Creek Road SE, a northbound to eastbound right turn lane on Battle Creek Road SE, and a pedestrian island on Battle Creek Road SE along the south side of the intersection to mitigate impacts. The Urban Growth Preliminary Declaration Permit 17-03 (UGA permit) and modification below identified the abutting streets as a requirement. If off-site right-of-way is needed to construct the improvements and the applicant is unable to acquire the right-of-way from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050.

The Urban Growth Preliminary Declaration (UGA17-03), the applicant proposed a neighborhood park within the development along Reed Road SE. Neighborhood parks are generally located on local streets. Neighborhood park standards do not generally include a separate parking lot, but instead are served by on-street parking. The standard minor arterial street section includes bike lanes, but not parking. Therefore, the applicant is required to provide on-street parking along Reed Road SE in order to provide safe and convenient bicycle and pedestrian access from within the subdivision to adjacent residential areas to neighborhood activity centers within one-half mile of the development.

Condition - Construct a realigned intersection of Battle Creek Road SE and Reed Road SE to minor arterial standards pursuant to PWDS. Acquire and/or convey land for dedication of right-of-way as needed to construct the improvements. If off-site right-of-way is needed to construct the improvements and the applicant is unable to acquire the right-of-way from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. The intersection shall include:

- A westbound to southbound left turn lane on Reed Road SE;
- A southbound to eastbound left turn lane on Battle Creek Road SE;

- A northbound to eastbound right turn lane on Battle Creek Road SE; and
- A pedestrian island on Battle Creek Road SE along the south side of the intersection. (UGA17-03;1)

Condition - Construct Battle Creek Road from Reed Road to the southern edge of Segment I to a 23-foot-wide half street improvement to Minor Arterial standards within a minimum 36-foot-wide half-width right-of-way. (UGA17-03;1)

Condition - Construct Reed Road SE from Battle Creek Road SE to the north line of the subject property, at a minimum 23-foot-wide half street improvement to Minor Arterial standards within a minimum 36-foot-wide half-width right-of-way. The improvements shall include on-street parking and tapers. (UGA17-03;1)

Condition - Convey land for dedication of right-of-way to equal a half-width of 30 feet from centerline along the entire frontage of Strong Road SE.

Condition - Construct a 15-foot-wide half-street improvement on the development of centerline and a 15-foot-wide pavement widening on the opposite side of centerline along Strong Road SE.

The applicant is proposing an alternative street standard to increase the street grade from 12% to 15% for five street intervals and 52-foot right-of-way, where 60-feet is required. Due to the slope in the general vicinity of Streets K, M and N an alternative street standard to exceed 12% grade for short runs (less than 120 feet) is warranted. The proposed streets exceed the maximum 600-foot block length and provide a 52-foot wide right-of-way where a 60-foot is required.

Condition – All streets within the proposed subdivision shall meet 12 percent grade; with the exception of the five street sections, identified on the proposed tentative plan, which shall not exceed 15 percent.

The applicant is proposing mid-block pedestrian access from K Street to the proposed park abutting Reed Road SE. Due to the slope in the area and with the mid-block pedestrian access the applicant is meeting the intent of SRC 803.030(a) with a pedestrian only access. To ensure the intent of the standard is met the following condition applies:

Condition - The applicant shall provide mid-block pedestrian access as shown on the tentative subdivision plan, which shall be dedicated to the public.

Construct internal streets to Local street standards, including property-line sidewalks and installation of street trees. Portions of future streets K, M, and N (as shown on the Slope Exception Areas plan) are approved as an alternative street standard pursuant to SRC 803.065 with required right-of-way width to equal 52 feet and a 4-foot-wide planter strip to accommodate street trees. The remainder of the subdivision streets meet street standards.

Condition - Proposed Streets K, M and N shall be a minimum of 52-feet in width, which includes a four-foot planter to accommodate street trees and sidewalks adjacent to one foot from property line. All other streets shall meet local street standards.

Pursuant to SRC 803.065(a)(3), the Director may authorize the use of one or more alternate street standards where topography or other conditions make the construction that conforms to the standards impossible or undesirable. All internal streets will be constructed to Local Street standards as specified in the Salem TSP, with the exception Street K, M and N. The alternative street standards are approved as conditioned above and shown in the application. In addition, the property has several existing trees within the current right-of-way (Reed Road, Battle Creek Road and Strong Road), which will be preserved to the greatest extent possible as part of the boundary street improvements. An alternative street standard for the meandering of the future sidewalk along each boundary street is approved to accommodate the preservation of trees.

As conditioned, the proposal meets this requirement.

SRC 803.030 (Street Spacing): The applicant proposed mid-block pedestrian access from K Street to the proposed park abutting Reed Road SE. Due to the slope in the area and with the mid-block pedestrian access the applicant is meeting the intent of SRC 803.030(a). As conditioned above, an alternative street standard is approved. There remainder of the subdivision meets SRC 803.030.

SRC 803.035 (Street Standards): Subsection (a) requires streets within the subdivision to provide connectivity to existing streets and undeveloped properties within the vicinity of the subject property. Subsection (a) requires streets within the subdivision to provide connectivity to existing streets and undeveloped properties within the vicinity of the subject property. The subject property abuts vacant land to the north, south and east. The subdivision plan proposes to provide street connectivity to all adjacent properties, with a series of internal streets providing connectivity within the subject property.

As conditioned, the proposal meets the requirements of subsection (f).
Pursuant to subsection (n), public utility easements (PUEs) may be required for all streets. Comments from Portland General Electric, the franchise utility provider of electricity for the subject property, request a 10-foot-wide PUE on all street front lots. In order to ensure adequate access for the provision of electricity and other utilities, the following condition shall apply:

Condition - Dedicate a 10-foot-wide public utility easement (PUE) along the street frontage of all abutting and internal streets.

As conditioned, the proposal conforms to applicable street standards.

SRC 803.040 (Boundary Streets): Reed Road SE and Battle Creek Road SE are designated as a Minor Arterial street in the TSP. Reed Road SE abuts the northwestern boundary of the subject property and Battle Creek Road SE the southern property line.

Currently, Battle Creek Road SE and Reed Road SE do not meet Minor Arterial standards. The applicant will be required to convey for dedication half-width right-of-way equal to 36 feet from center line and construct a half-street improvement along the entire frontage to a Minor Arterial standard. A realignment of the Reed/Battle Creek intersection is warranted because the intersection angle does not meet PWDS.

This street improvement shall include a westbound to southbound left turn lane on Reed Road SE, a southbound to eastbound left turn lane on Battle Creek Road SE, a northbound to eastbound right turn lane on Battle Creek Road SE, and a pedestrian island on Battle Creek Road SE along the south side of the intersection. The Urban Growth Preliminary Declaration Permit 17-03 (UGA permit) and modification below identified the abutting streets as a requirement. If off-site right-of-way is needed to construct the improvements and the applicant is unable to acquire the right-of-way from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050.

As conditioned, the proposal conforms to applicable boundary street requirements.

(C) Any special development standards, including, but not limited to, floodplain development, special setbacks, geological or geotechnical analysis, and vision clearance.

SRC Chapter 808 (Preservation of Trees and Vegetation): The City's tree preservation ordinance (SRC Chapter 808) protects Heritage Trees, Significant Trees *(including Oregon White Oaks with diameter-at-breast-height of 24 inches or greater)*, trees and native vegetation in riparian corridors, and trees on lots and parcels greater than 20,000 square feet. The tree preservation ordinance defines "tree" as, "any living woody plant that grows to 15 feet or more in height, typically with one main stem called a trunk, which is 10 inches or more dbh, and possesses an upright arrangement of branches and leaves."

Under the City's tree preservation ordinance, pursuant to SRC 808.035(a), tree conservation plans are required in conjunction with development proposals involving the creation of lots or parcels to be used for the construction of single family or duplex dwelling units, if the development proposal will result in the removal of trees.

The applicant submitted a Tree Conservation Plan in conjunction with the proposed subdivision identifying a total of 184 trees on the property, ten of which are significant oaks. The 184 total trees do not include any trees on lot 82, which is zoned PH (Public and Private Health Services) and is not subject to the requirements for a Tree Conservation Plan. There are no heritage trees or riparian corridor trees and vegetation located on the property.

The applicant is not proposing to remove any trees on Lot 82. The Tree Conservation Plan for the remainder of the subdivision identifies 47 trees (25.5%) for preservation and 137 trees (74.5%) for removal.

Of the 137 trees proposed for removal, seven are significant oaks which the applicant has identified for removal based on their location within either the future building envelopes of lots *(applicable to one of the seven significant oaks)* or adjacent to required street and/or sidewalk improvements *(applicable to six of the seven significant oaks)*.

Staff determined that the significant oak located on Lot 68 is not located within a building setback and can be preserved. In addition, two significant trees would be located within the future right-of-way and may be able to be preserved with the above alternative street standard to meander the sidewalk. A 32" significant oak tree near the new right of way of Strong Road, adjacent to Lot 3 shall be preserved as a future street tree and any future removal analyzed pursuant to SRC 86. The applicant is proposing to save a 24" significant oak tree adjacent to the proposed park. Oregon White Oak trees are more likely to survive when clustered with others, therefore, staff finds that the two oak trees (32" significant oak and 10" oak) adjacent to the proposed preserved tree may should be preserved. The three trees adjacent to the proposed park, along Reed Road shall be considered future street trees and any future removal shall be analyzed pursuant to SRC 86.

Condition - Prior to issuance of public construction permits, a tree preservation and protection plan pursuant to SRC Chapter 86 and Salem Administrative Rule 109-500, and signed by a certified arborist, shall be submitted for the identified preserved "Future Street Trees" (32" Oak, 10" Oak and 24" Oak along Reed Road & 32" Oak along Strong), to the City for review. Future Street Trees, identified above, shall be preserved. Any proposed removal of identified Future Street Trees (listed above) would require a separate removal permit pursuant to SRC 86.090.

Condition – The significant oak located on Lot 68 and the two 40-inch Fir trees near Strong Road shall be preserved.

The modified tree conservation plan preserves 25.5 percent of the existing trees on the property and designating four trees as future street trees, therefore exceeding the minimum 25 percent preservation requirement under SRC Chapter 808. In addition, though four of the ten existing significant oaks on the property are to be removed, their removal is necessary because of no reasonable design alternatives that would enable their preservation. The tree conservation plan is being reviewed by staff and, if approved, will be binding on the lots until final occupancy is granted for the construction of dwelling units on the lots.

In addition to the trees located on the subject property, there are also trees located within the existing right-of-way along Battle Creek Road, Reed Road and Strong Road. Pursuant to the tree preservation ordinance (SRC Chapter 808), tree conservation plans are required to identify and preserve the minimum required number of trees on the property. Because there are trees located within the existing right-of-way's which are not located on the property, they are not subject to the provisions of SRC Chapter 808 and are not counted toward the total number of trees on the site. These trees are instead considered trees on City owned property and subject to the provisions of SRC

Chapter 86. All boundary streets (Reed Road, Battle Creek Road and Strong Road) are approved for an alternative street standard to meander the sidewalk to accommodate for street trees to be preserved. To ensure that the street trees are reviewed under SRC 86, the following condition applies:

Condition - Trees proposed for removal that are located within the right-of-way abutting streets shall follow the procedures of SRC Chapter 86.

SRC Chapter 809 (Wetlands): Grading and construction activities within wetlands are regulated by the Oregon Department of State Lands (DSL) and US Army Corps of Engineers. State and Federal wetlands laws are also administered by the DSL and Army Corps, and potential impacts to jurisdictional wetlands are addressed through application and enforcement of appropriate mitigation measures. SRC Chapter 809 establishes requirements for notification of DSL when an application for development is received in an area designated as a wetland on the official wetlands map.

The Salem-Keizer Local Wetland Inventory (LWI) does not identify any wetlands on the site. As proposed, the tentative subdivision plan conforms to all applicable SRC Chapter 809 requirements.

SRC Chapter 810 (Landslide Hazards): City's landslide hazard ordinance (SRC Chapter 810) establishes standards and requirements for the development of land within areas of identified landslide hazard susceptibility. According to the City's adopted landslide hazard susceptibility maps and SRC Chapter 810 Landslide Hazards, there are areas of landslide susceptibility on the subject property. There are 3 mapped site points for the property pursuant to SRC Chapter 810. The proposed subdivision adds three activity points to the proposal, which results in a total of 6 points. Therefore, the proposed subdivision is classified as a moderate landslide risk and requires a geologic assessment. A geologic assessment, prepared by Redmond Geotechnical Services and dated July 20, 2018, was submitted to the City of Salem. This assessment demonstrates the subject property could be subdivided and developed with single-family dwellings, without increasing the potential for slope hazard on the site or adjacent properties.

SRC 205.010(d)(2): The tentative subdivision plan does not impede the future use or development of the property or adjacent land.

Finding: The subdivision provides suitable lots for development of allowed uses in the RS zone and is generally precluded by existing and planned development from providing street connections to adjacent properties. The proposal is providing access and utilities to surrounding properties. The proposal meets this criterion.

SRC 205.010(d)(3): Development within the tentative subdivision plan can be adequately served by City infrastructure.

Finding: Water and sewer infrastructure is available along the perimeter of the site or will be brought to the site pursuant to UGA17-03 and appears to be adequate to serve the property as shown on the applicant's preliminary utility plan. Conditions of approval require construction of water, sewer, and storm connections to serve each lot, street and cul-de-sac improvements, and dedication of a public utility easement to allow installation and maintenance of private utility infrastructure.

The nearest adequate water main is located in Reed Road SE at Strong Road SE, approximately 2,000 feet north of the subject property. The applicant shall be required to construct a minimum 18-inch S-1 water main from the Reed/Strong intersection through the subject property to Strong Road at Section A and to the Coburn Reservoir site. A 12-inch main is required from J Avenue SE in Section E to N Avenue in Section I. The proposal is located within two water service levels and to ensure adequate mains are extended to adequately serve the property and properties abutting the following condition applies:

Condition - All lots within the S-1 service level shall be served by S-1 water mains, and all lots within the S-2 service level shall be served by S-2 water mains. Water mains may need to be extended through future unconstructed phases within temporary easements in order to serve all lots in each phase.

The Water System Master Plan specifies that the subject property is to be served by the future Coburn Reservoir and future Boone Road S-1 pump station. The subject property surrounds the site of the future Coburn Reservoir (tax lots 083W12C / 701 and 083W11D / 101). The existing reservoir site does not provide two acres of land needed for construction of the reservoir. As previously identified in UGA17-03, the applicant shall be required to convey lot 138 for future construction of Coburn Reservoir.

Temporary capacity is available in the Mill Creek Reservoir and Deer Park Pump Station through payment of a temporary access fee pursuant to SRC 200.080(a). In lieu of constructing Coburn Reservoir and Boone Road Pump Station, the applicant has the option of paying a temporary access fee. The temporary access fee for this area of the S-1 service area is based on approximately 13 million dollars of improvements needed to serve 1,300 acres, totaling $10,000 per acre.

The S-1 area of the subject property is 43 acres, resulting in a temporary access fee of $430,000. The temporary access fee shall be reduced by the market value of the land conveyed for Coburn Reservoir and by the certified cost of the non-reimbursed off-site portion of the water main needed to serve the proposed development. If the land value and certified costs exceed $430,000, then the temporary access fee shall be $0.

Previously approved UGA17-03 required the following:

As a condition of development in the S-1 water service level, the applicant shall:

~~a) Reserve property for dedication of an approximately 90 foot~~

~~by 252 foot area of land abutting the north line of tax lots 083W12C00701 and 083W11D00101 for future construction of Coburn Reservoir.~~

~~b) Construct a minimum 18-inch S-1 water main from the terminus of the existing S-1 water main in Marietta Street SE near Fairview Industrial Drive SE to the Coburn Reservoir site.~~

~~c) Construct Coburn Reservoir, Boone Road S-1 Pump Station, and S-1 connecting water mains as indicated in the Water System Master Plan; or pay a temporary access fee pursuant to SRC 200.080(a). The temporary access fee shall be $10,000 per acre of land being developed within the S-1 service area. The TAF is not due for land conveyed to the City. The TAF shall be subtracted by the following, but shall not be less than $0~~

~~(i) the market value of the land conveyed pursuant to Condition 1.a above; and~~

~~(ii) the certified cost of the non-reimbursed off-site portion of the water main constructed pursuant to Condition 1.b above.~~

As part of the modification request Condition 4 or UGA17-03 is modified to read as follows:

Condition - The applicant shall be required to convey lot 138 for future construction of Coburn Reservoir (UGA17-03;4)

Construct a minimum 18-inch water main in one of the following locations:

i. In Reed Road SE from the north line of the subject property to Strong Road SE; or
ii. In Strong Road and Marietta Street, from the south line of the subject property to the terminus of the existing S-1 water main in Marietta Street SE near Fairview Industrial Drive SE.

Construct a minimum 18-inch water main from the south line of the subject property along Strong Road SE through the subject property to the north line of the subject property along Reed Road SE. The 18-inch water main shall be extended also to the south line of lot 138.

Construct a minimum 12-inch water main from the intersection of Reed Road SE and future J Street SE to the intersection of Battle Creek SE and future N Street SE.

Construct Coburn Reservoir, Boone Road S-1 Pump Station, and S-1 connecting water mains as indicated in Water System Master Plan; or pay a Temporary Access Fee (TAF) pursuant to SRC 200.080(a). The TAF shall be $10,000 per acre of land being

developed within the S-1 service area. The TAF is not due for land conveyed to the City. The TAF shall be subtracted by the following, but shall not be less than $0:

i. the market value of the land conveyed in condition 1a above; and
ii. the certified cost of the non-reimbursed off-site portion of the water main in condition 1b above. (UGA17-03;4)

All developments will be required to provide public sewers to adjacent upstream parcels. This shall include the extension of sewer mains in easements or rights-of-way across the property to adjoining properties, and across the street frontage of the property to adjoining properties when the main is located in the street right-of-way. Existing sewer mains in Strong Road SE and Reed Road SE may not be available to serve the northernmost portion of the site (Section D) because of topographic constraints. Proposed lots 57-59 and 74-81 shall connect to the existing sewer mains in, and stormwater facilities abutting, Reed Road SE. Proposed lots 60-73 shall connect to the existing sanitary system and stormwater facilities in Strong Road SE. If off-site easements are needed and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050.

Condition - Lots 57-59 and 74-81 shall connect to the existing sanitary system in Reed Road SE. Lots 60-73 shall connect to the existing sanitary system in Strong Road SE. If off-site easements are needed because of topographic constraints and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. (UGA17-03;2)

Condition - Lot 57-59 and 74-81 shall connect to the existing stormwater facilities abutting Reed Road SE. Lots 60-73 shall connect to the existing stormwater facilities in Strong Road SE. If off-site easements are needed because of topographic constraints and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. (UGA17-03;3)

The Public Works Department reviewed the proposal for consistency with the Comprehensive Parks Master Plan Update and is not currently served by park facilities. The Comprehensive Parks System Master Plan shows that a Neighborhood Park (NP 32) and Urban Park (UP 3) are planned on or near the subject property. The applicant shall reserve property for dedication of neighborhood park facility NP-32 based on sizing criteria established in SRC 200.075(b) and as proposed in the application.

Condition - Dedicate a neighborhood park facility not less than 6.5 acres in size. (UGA17-03;5)

The City in in contract to purchase a 7.35-acre portion of the subject property for a future park, which would satisfy this condition.

All public and private City infrastructure proposed to be located in the public right-of-way shall be constructed or secured per SRC 205.035(c)(6)(B) prior to final plat approval. Any easements needed to serve the proposed parcels with City infrastructure shall be shown on the final plat.

The proposal meets this criterion.

SRC 205.010(d)(4): The street system in and adjacent to the tentative subdivision plan conforms to the Salem Transportation System Plan.

Staff Response: As conditioned above the proposed street system meets TSP requirements. As proposed and conditioned, the tentative subdivision plan meets this criterion.

SRC 205.010(d)(5): The street system in and adjacent to the tentative subdivision plan is designed so as to provide for the safe, orderly, and efficient circulation of traffic into, through, and out of the subdivision.

Staff Response: As conditioned above, boundary street improvements along the abutting portions of Battle Creek Road, Reed Road and Strong Road are required. In addition to the boundary improvement, internal circulation would be provided by new internal streets. The proposed network of boundary and internal streets serving the subdivision provides direct connections between all lots within the subdivision to the existing street network.

Comments from the Salem Fire Department indicate that all 31 lots proposed for development of single-family residential dwellings are provided with one fire access road. Under the applicable section of the Oregon Fire Code, more than 30 dwellings on a single public or private fire apparatus access road can only be approved under an exception in which all dwelling units are equipped throughout with an approved automatic sprinkler system.

In order to ensure that the subdivision is designed to provide for safe and efficient fire apparatus access, the following condition shall apply:

Condition - Demonstrate that the proposed subdivision conforms to the access requirements of the Fire Code by one of the following methods:

(a) Provide written evidence from the Fire Marshal that the subdivision, as approved, does not exceed the maximum 30 dwelling units allowed to be served by a single fire apparatus road; or

(b) Provide written approval from the Fire Marshal allowing more than 30 dwelling units to be served by a single fire apparatus road subject to all of the dwelling units within the subdivision being equipped with an automatic sprinkler system; or

(c) The subdivision so that no more than 30 dwelling units will be served by a single fire apparatus road.

Condition - Demonstrate adequate Fire Department turn-arounds prior to final plat of Phase K, H, F and A.

The subdivision, as proposed and conditioned, is served with adequate transportation infrastructure. The street system adjacent to the subdivided property will conform to the Salem Transportation System Plan, and provide for safe, orderly, and efficient circulation of traffic into, through, and out of the subdivision.

SRC 205.010(d)(6): The tentative subdivision plan provides safe and convenient bicycle and pedestrian access from within the subdivision to adjacent residential areas and transit stops, and to neighborhood activity centers within one-half mile of the development. For purposes of this criterion, neighborhood activity centers include, but are not limited to, existing or planned schools, parks, shopping areas, transit stops, or employment centers.

Finding: The proposed subdivision is situated within one-half mile of four neighborhood activity centers:

- Pringle Elementary School, a public elementary school located at 5500 Reed Lane SE, approximately one-half mile southwest of the closest lots within the proposed subdivision. Wes Bennett Park, a 4.43-acre neighborhood park located at 2200 Baxter Road SE, abuts the elementary school campus to the north.

- Commercial development located at the intersection of Boone Road SE and Battle Creek Road SE is approximately 1,300 feet west of the closest lots within the proposed subdivision and includes several office and mixed-use buildings.

- A portion of the subject property has received tentative approval to be partitioned for the City to acquire a 7.35-acre parcel, which will be developed at a park.

- Woodscape Linear Park, a 1.7-acre linear park located at 2433 Baxter Road SE, approximately 2,500 feet southwest of the closest lots within the proposed subdivision.

- Lee Elementary School, a public elementary school located at 5650 Venice Avenue SE, approximately one mile south of the closest lots within the proposed subdivision. Lee School Park, a 3.8-acre neighborhood park, abuts the elementary school campus to the north and east.

- Fairview Industrial Area, an employment center located approximately XX miles from the subject property. The area consists of Industrial and Commercial Uses, which provide employment opportunities in the area.

- Fairview Park, a 226.3-acre Community park located at 2200 Block Strong Road SE, approximately 0.30 west of the closest lots within the proposed subdivision.

The subject property is not currently served by park facilities. The Comprehensive Parks System Master Plan shows that a Neighborhood Park (NP 32) and Urban Park (UP 3) are planned on or near the subject property. The applicant shall reserve property for dedication of neighborhood park facility NP-32 based on sizing criteria established in SRC 200.075(b) and as proposed in the application.

As conditioned above, dedication of a neighborhood park facility not less than 6.5 acres in size is required by UGA17-03.

The park facility shall be located along Pringle Creek in the vicinity of Marion County Tax Lot 083W11D / 200. The City is in contract to purchase a 7.35-acre portion of the subject property for a future park, which would satisfy this condition.

The nearest transit service available to the subject property near the corner of Boone Road and Battle Creek Road, by way of Salem Keizer Transit's Route 6 bus line. The existing transit stop would require pedestrian and bicycles to cross Kuebler Blvd, a Parkway, which over a half mile from the subject property. The need for public transportation to serve 209 single family dwelling in addition to the proposed development in the Fairview Master plan may be needed. To ensure public transportation can be provided to the proposed development the following condition applies:

Condition - Prior to any plat, the applicant shall coordination with Salem-Keizer Cherriots for a transit stop and provide evidence of the location of a future transit stop or a letter from Salem-Keizer Cherriots that no stop is needed in the vicinity.

There are no sidewalks along portions of the west side of Battle Creek Road SE from Reed Road SE to Forsythe Drive SE. Sidewalk improvements are required to provide safe pedestrian access to the proposed park being developed in conjunction with the proposed development. To ensure a safe connection to the future park proposed by the applicant the following condition applies:

Condition - Construct a pedestrian access route along missing sections of sidewalk on the west side of Battle Creek Road SE from Reed Road SE to Forsythe Drive SE.

The proposal meets this criterion.

The subject property will provide internal streets with safe and convenient bicycle and pedestrian access and provide boundary street improvements along the north of the subject property, connecting existing multi-modal transportation facilities with the internal street system of the subdivision. Although the immediate vicinity of the subject property includes sloping topography and large undeveloped properties, existing bicycle

and pedestrian access to neighborhood activity centers is safe and convenient. The bicycle and pedestrian network in the vicinity is likely to improve as development occurs on surrounding properties. To ensure safe and convenient access for pedestrians and bicycles the following conditions apply:

Condition - Construct multi-modal trails to proposed park as shown on tentative subdivision plan to PWDS Standards.

SRC 205.010(d)(7): The tentative subdivision plan mitigates impacts to the transportation system consistent with the approved Traffic Impact Analysis, where applicable.

Finding: The proposed 209-lot subdivision will generate more than 1,000 average daily vehicle trips to the abutting streets, designated in the Transportation System Plan as Minor Arterials, Collector and Parkway streets. A Transportation Impact Analysis (TIA) is required as part of the review of the tentative subdivision plan. The Assistant City Traffic Engineer has determined that additional mitigation measures are necessary based on the volume of traffic being generated by the development.

As conditioned above construction a realignment of the intersection of Battle Creek Road SE and Reed Road SE to minor arterial standards pursuant to PWDS and acquire and/or convey land for dedication of right-of-way as needed to construct the improvements. The new intersection shall include a westbound to southbound left turn lane on Reed Road SE, a southbound to eastbound left turn lane on Battle Creek Road SE, a northbound to eastbound right turn lane on Battle Creek Road SE, and a pedestrian island on Battle Creek Road SE along the south side of the intersection. The reconstruction and alignment of the intersection is needed to provided safe turning movement on to Reed Road SE for the additional 209 dwellings.

A future signal will be warranted in the future at the Reed/Battle Creek intersection. The applicant is required to pay a temporary access fee of 3.04 percent of the future signal and interconnect cost of $450,000, or $13,680.

The criterion is met.

SRC 200.010(d)(8): The tentative subdivision plan takes into account the topography and vegetation of the site so the need for variances is minimized to the greatest extent practicable.

Finding: The proposed subdivision has been reviewed to ensure that adequate measures have been planned to alleviate natural or fabricated hazards and limitations to development, including topography and vegetation of the site. The applicant submitted a tree conservation plan in conjunction with the proposed subdivision identifying a total of 184 trees on the property, seven of which are significant oaks. There are no heritage trees or riparian corridor trees and vegetation located on the property.

Of the 184 total trees existing on the property excluding Lot 82, which is zoned PH (Public and Private Health Services). The applicant is not proposing to remove any trees on Lot 82. The remainder of the subdivision is included in the proposed tree conservation plan identifies 47 trees (25.5%) for preservation and 137 trees (74.5%) for removal. Of the 137 trees proposed for removal, seven are significant oaks which the applicant has identified for removal based on their location within either the future building envelopes of lots *(applicable to two of the seven significant oaks)* or adjacent to required street and/or sidewalk improvements *(applicable to five of the seven significant oaks)*.

As described in findings above, the lot and street configuration proposed by the applicant meets applicable development standards without the need for any variances. No existing conditions of topography or vegetation have been identified on the site which would necessitate variances during future development of the property. The layout allows for reasonable development of all lots within the subdivision without variances from the UDC.

The proposal meets this criterion.

SRC 200.010(d)(9): The tentative subdivision plan takes into account the topography and vegetation of the site, such that the least disruption of the site, topography, and vegetation will result from the reasonable development of the lots.

Staff Response: There are 3 mapped site points for the property pursuant to SRC Chapter 810. The proposed subdivision adds three activity points to the proposal, which results in a total of 6 points. Therefore, the proposed subdivision is classified as a moderate landslide risk and requires a geologic assessment. A geologic assessment, prepared by Redmond Geotechnical Services and dated July 20, 2018, was submitted to the City of Salem. This assessment demonstrates the subject property could be subdivided and developed with single-family dwellings, without increasing the potential for slope hazard on the site or adjacent properties.

The streets and lots within the proposed subdivision have been arranged to preserve the natural topography and vegetation of the site to the maximum extent possible.

The proposal meets this criterion.

SRC 200.010(d)(10): When the tentative subdivision plan requires an Urban Growth Preliminary Declaration under SRC Chapter 200, the tentative subdivision plan is designed in a manner that ensures that the conditions requiring the construction of on-site infrastructure in the Urban Growth Preliminary Declaration will occur, and, if off-site improvements are required in the Urban Growth Preliminary Declaration, construction of any off-site improvements is assured.

Finding: The subject property is located outside of the Urban Service Area. To assure that major public facilities such as sewers, water, and streets are provided to the

proposed site in accordance with the Salem Urban Growth Management Program, an Urban Growth Preliminary Declaration is required prior to development of the subject property. The site has previously received an Urban Growth Preliminary Declaration (UGA17-03) which is proposed to be modified as part of this decision. The tentative subdivision plan has been designed in a manner that ensures that the conditions requiring construction of on-site infrastructure in the approved Urban Growth Preliminary Declaration will occur.

SRC 205.015(d)(2): Connectivity for streets and City utilities between each phase ensures the orderly and efficient construction of required public improvements among all phases.

Applicant Statement: Due to topography and the location of the S1 Water Service, the applicant requests that the City of Salem condition the subdivision approval to allow Phases/Sections to be developed out of sequence. Below is the anticipated order of development for the proposed Phases/Sections. However, we would like the flexibility to develop in any logical order.

Section E: 16 lots
Section G: 21 lots
Section I: 18 lots
Section J: 17 lots
Section F: 15 lots
Section H: 25 lots
Section K: 15 lots
Section A: 24 lots
Section D: 25 lots
Section B: 17 lots
Section C: 15 lots

Staff Response: The phasing above allows for a configuration of the proposed internal street system will allow public streets and utilities within street rights-of-way to be extended from each phase in a logical and efficient manner. To ensure the phasing is orderly and efficient the following condition applies:

Condition - The subdivision shall be phased in the following order:

Section E: 16 lots
Section G: 22 lots
Section I: 18 lots
Section J: 17 lots
Section F: 15 lots
Section H: 25 lots
Section K: 15 lots
Section A: 24 lots
Section D: 25 lots

Section B: 17 lots
Section C: 15 lots

The previous Urban Growth Preliminary Declaration permit required construction of Coburn Reservoir and Boone Road Pump Station.

Since the Coburn Reservoir and Boone Road Pump station is not built and there is temporary capacity is available in the Mill Creek Reservoir and Deer Park Pump Station the applicant can pay a temporary access fee pursuant to SRC 200.080(a), in lieu of constructing Coburn Reservoir and Boone Road Pump Station. The temporary access fee (TAF) for this area of the S-1 service area is based on approximately nine million dollars of improvements needed to serve 750 acres of undeveloped land, totaling $12,000 per acre. The total S-1 area for the subject property is 31 acres, therefore the TAF shall be a total of $372,000. The TAF has been apportioned to each section based on the number of lots being created in the S-1 area as shown in the following table:

Section	S-1 Lots	Percentage	TAF Amount
E	19	11.7	$43,362
G	23	14.1	$52,491
I	19	11.7	$43,362
J	0	0	$0
F	12	7.4	$27,387
H	5	3.1	$11,411
K	0	0	$0
A	26	16.0	$59,337
D	25	15.3	$57,055
B	17	10.4	$38,798
C	17	10.4	$38,798

As a condition of sewer service, all developments will be required to provide public sewers to adjacent upstream parcels. This shall include the extension of sewer mains in easements or rights-of-way across the property to adjoining properties, and across the street frontage of the property to adjoining properties when the main is located in the street right-of-way. Existing sewer mains in Strong Road SE and Reed Road SE may not be available to serve the northernmost portion of the site (Section D) because of topographic constraints. If off-site easements are needed and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050.

SRC 205.015(d)(3): Each phase is substantially and functionally self-contained and self-sustaining with regard to required public improvements.

Staff Response: The proposed phasing boundaries provide that each phase as platted in the order conditioned above will function as a standalone subdivision, while retaining logical connections to future development of the remaining phases. The conditions listed above are required based on phasing of the development, to ensure that each

phase is substantially and functionally self-contained. The conditioned street improvements between Section E and G cause a deficiency near the proposed park for pedestrian access and safety. The need for a pedestrian path is needed between J Avenue and the intersection of Battle Creek Road and Reed Road. The lack of sidewalks after the reconstruction of the intersection will force pedestrians to walk within the travel lands of Reed Road. The following condition is needed to ensure each phase is functionally self-contained and sustaining:

Condition – Prior to plat of Section E, a temporary pedestrian access route, at least 5-feet in width, shall be provided from sidewalks along J Avenue to the intersection of Reed Road and Battle Creek Road.

Based on the proposed phasing the following is the timing of each condition apply:

Prior to final any subdivision plat:

Condition 1 - The front property lines are designated below:

Corner Lot	Front Property Line
Lot 1	West property line – fronting on Street ‘B’
Lot 2	West property line – fronting on Street ‘B’
Lot 5	East property line – fronting on Street ‘B’
Lot 20	North property line – fronting on ‘C Avenue’
Lot 22	North property line – fronting on ‘C Avenue’
Lot 52	North property line – fronting ‘I Avenue”
Lot 53	North property line – fronting ‘I Avenue”
Lot 58	South property line – fronting on ‘I Avenue’
Lot 59	North property line – fronting on ‘E Avenue’
Lot 60	North property line – fronting on Street ‘C’
Lot 61	South property line – fronting Street ‘E’
Lot 70	East property line – fronting Street ‘G’
Lot 76	South property line – fronting on Street ‘G’
Lot 84	South property line – fronting ‘J Avenue’
Lot 89	South property line – fronting ‘J Avenue’
Lot 90	North property line – fronting Street ‘N’
Lot 92	South property line – fronting Street ‘N’
Lot 93	East property line – fronting Street ‘M’
Lot 96	South property line – fronting Street ‘M’
Lot 97	South property line – fronting Street ‘K’
Lot 136	South property line – fronting Street ‘K’
Lot 172	North property line – fronting Street “N”
Lot 176	North property line – fronting Street “N”
Lot 182	South property line - fronting ‘P Avenue’
Lot 184	South property line - fronting ‘P Avenue’
Lot 185	South property line - fronting ‘P Avenue’
Lot 195	North property line - fronting ‘P Avenue’
Lot 196	East property line – fronting Street ‘Q’

Condition 2 - The front property line for Lots 203-209 shall be the north property line and the front property line for Lot 3 shall be the west property line. No access to the higher classified street shall be allowed.

Condition 3 - Lots 144-147 shall take access from Street 'M' and the south property line is the designated the front property line.

Condition 4 - Prior to the issuance of building permits, the subject property shall have a favorable Airport Overlay zone height variance.

Condition 5 - Prior to final plat, provide an engineered stormwater design pursuant to SRC 71 and PWDS to accommodate future impervious surface on all proposed lots, including stormwater facilities needed to serve new streets, without the need for Design Exceptions.

Condition 6 - All streets within the proposed subdivision shall meet 12 percent grade; with the exception of the five street sections, identified on the proposed tentative plan, which shall not exceed 15 percent.

Conditions 7 - The applicant shall provide mid-block pedestrian access as shown on the tentative subdivision plan.

Condition 8 - Proposed Streets K, M and N shall be a minimum of 52-feet in width, which includes a four-foot planter to accommodate street trees and sidewalks adjacent to one foot from property line. All other streets shall meet local street standards.

Condition 9 - Dedicate a 10-foot-wide public utility easement (PUE) along the street frontage of all abutting and internal streets.

Condition 10 - Prior to issuance of public construction permits, a tree preservation and protection plan pursuant to SRC Chapter 86 and Salem Administrative Rule 109-500, and signed by a certified arborist, shall be submitted for the identified preserved "Future Street Trees" (32" Oak, 10" Oak and 24" Oak along Reed Road & 32" Oak along Strong), to the City for review. Future Street Trees, identified above, shall be preserved. Any proposed removal of identified Future Street Trees (listed above) would require a separate removal permit pursuant to SRC 86.090.

Condition 11 - The significant oak located on Lot 68 and the two 40-inch Fir trees near Strong Road shall be preserved.

Condition 12 - Trees proposed for removal that are located within the right of way abutting streets shall follow the procedures of SRC Chapter 86.

Condition 13 - All lots within the S-1 service level shall be served by S-1 water mains, and all lots within the S-2 service level shall be served by S-2 water mains. Water

mains may need to be extended through future unconstructed phases within temporary easements in order to serve all lots in each phase.

Condition 14 - Construct Coburn Reservoir, Boone Road S-1 Pump Station, and S-1 connecting water mains as indicated in Water System Master Plan; or pay a Temporary Access Fee (TAF) pursuant to SRC 200.080(a). The TAF shall be $10,000 per acre of land being developed within the S-1 service area as proportional payments within each section as specified below. The TAF shall be subtracted by the market value of lot 138 but shall not be less than $0. (UGA17-03;4)

Condition 15 - Dedicate a neighborhood park facility not less than 6.5 acres in size. (UGA17-03;5)

Condition 16 - Demonstrate that the proposed subdivision conforms to the access requirements of the Fire Code by one of the following methods:

(a) Provide written evidence from the Fire Marshal that the subdivision, as approved, does not exceed the maximum 30 dwelling units allowed to be served by a single fire apparatus road; or

(b) Provide written approval from the Fire Marshal allowing more than 30 dwelling units to be served by a single fire apparatus road subject to all of the dwelling units within the subdivision being equipped with an automatic sprinkler system; or

(c) The subdivision so that no more than 30 dwelling units will be served by a single fire apparatus road.

Condition 17 - Demonstrate adequate Fire Department turn-arounds prior to final plat of Phase K, H, F and A.

Condition 18 - Prior to any plat, the applicant shall coordination with Salem-Keizer Cherriots for a transit stop and provide evidence of the location of a future transit stop or a letter from Salem-Keizer Cherriots that no stop is needed in the vicinity.

Condition 19 - The subdivision shall be phased in the following order:

Section E: 16 lots
Section G: 22 lots
Section I: 18 lots
Section J: 17 lots
Section F: 15 lots
Section H: 25 lots
Section K: 15 lots
Section A: 24 lots
Section D: 25 lots
Section B: 17 lots
Section C: 15 lots

Prior to plat of Section E:

Condition 20 - Construct a realigned intersection of Battle Creek Road SE and Reed Road SE to minor arterial standards pursuant to PWDS. Acquire and/or convey land for dedication of right-of-way as needed to construct the improvements. If off-site right-of-way is needed to construct the improvements and the applicant is unable to acquire the right-of-way from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. The intersection shall include:

- A westbound to southbound left turn lane on Reed Road SE;
- A southbound to eastbound left turn lane on Battle Creek Road SE;
- A northbound to eastbound right turn lane on Battle Creek Road SE; and
- A pedestrian island on Battle Creek Road SE along the south side of the intersection. (UGA17-03;1)

Condition 21 - Construct a minimum 18-inch S-1 water main in Reed Road SE from Strong Road SE to J Avenue SE. (UGA17-03;4)

Condition 22 - Construct a minimum 18-inch S-1 water main in J Avenue SE from Reed Road SE to H Street SE, and in H Street SE from the south line of Section E to the north line of Section E. (UGA17-03;4)

Condition 23 - Pay $43,362 as the proportional amount of the water TAF. (UGA17-03;4)

Condition 24 – A temporary pedestrian access route, at least 5-feet in width, shall be provided from sidewalks along J Avenue to the intersection of Reed Road and Battle Creek Road.

Prior to plat of Section G:

Condition 25 - Construct Reed Road SE from Battle Creek Road SE to the north line of the subject property, at a minimum 23-foot-wide half street improvement to Minor Arterial standards within a minimum 36-foot-wide half-width right-of-way. The improvements shall include on-street parking and tapers. (UGA17-03;1)

Condition 26 - Pay $52,491 as the proportional amount of the water TAF. (UGA17-03;4)

Condition 27 - Construct multi-modal trails to proposed park as shown on tentative subdivision plan to PWDS Standards.

Prior to plat of Section I:

Condition 28 - Construct Battle Creek Road from Reed Road to the southern edge of Segment I to a 23-foot-wide half street improvement to Minor Arterial standards within a minimum 36-foot-wide half-width right-of-way. (UGA17-03;1)

Condition 29 - Construct a minimum 12-inch S-1 water main in Reed Road SE from J Avenue SE to Battle Creek Road SE, and in Battle Creek Road SE from Reed Road SE to N Street SE. (UGA17-03;4)

Condition 30 - Pay $43,362 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section J:

Condition 31 - Pay a temporary access fee of $13,680 toward the future signal at Battle Creek Road SE and Reed Road SE.

Condition 32 - Construct a pedestrian access route along missing sections of sidewalk on the west side of Battle Creek Road SE from Reed Road SE to Forsythe Drive SE.

Prior to plat of Section F:

Condition 33 - Construct a minimum 18-inch S-1 water main in K Street SE from the north line to the south line of Section F. (UGA17-03;4)

Condition 34 - Pay $27,387 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section H:

Condition 35 - Paved width of accessway shall be 20-feet within a 25-foot wide easement, which serves Lots131,132 and the future Coburn Reservoir (Lot 130).

Condition 36 - "NO PARKING—FIRE LANE" signs shall be posted on both sides of the segments of the proposed flag lot accessway that are fire apparatus roadways and "NO PARKING" signs shall be posted on both sides of any remaining portion of the accessway.

Condition 37 - Convey lot 138 to the City for future construction of Coburn Reservoir. (UGA17-03;4)

Condition 38 - Construct a minimum 18-inch S-1 water main in K Street SE from the north line of Section H to the south line of lot 138. (UGA17-03;4)

Condition 39 - Pay $11,411 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section A:

Condition 40 - Convey land for dedication of right-of-way to equal a half-width of 30 feet from centerline along the entire frontage of Strong Road SE.

Condition 41 - Construct a 15-foot-wide half-street improvement on the development of centerline and a 15-foot-wide pavement widening on the opposite side of centerline along Strong Road SE.

Condition 42 - Construct a minimum 18-inch S-1 water main within Sections A and D from H Street SE at the south line of Section D to Strong Road SE at the south line of Section A. Design City infrastructure improvements needed for Section D in sufficient detail to determine that the water main construction meets PWDS. Construct a temporary utility and emergency access road along the water main alignment. (UGA17-03;4)

Condition 43 - Pay $59,377 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section D:

Condition 44 - Pay $57,055 as the proportional amount of the water TAF. (UGA17-03;4)

Condition 45 - Lots 57-59 and 74-81 shall connect to the existing sanitary system in Reed Road SE. Lots 60-73 shall connect to the existing sanitary system in Strong Road SE. If off-site easements are needed because of topographic constraints and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. (UGA17-03;2)

Condition 46 - Lot 57-59 and 74-81 shall connect to the existing stormwater facilities abutting Reed Road SE. Lots 60-73 shall connect to the existing stormwater facilities in Strong Road SE. If off-site easements are needed because of topographic constraints and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. (UGA17-03;3)

Prior to plat of Section B:

Condition 47 - Pay $38,798 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section C:

Condition 48 - Pay $38,798 as the proportional amount of the water TAF. (UGA17-03;4)

SRC 205.015(d)(4): Each phase is designed in such a matter that all phases support the infrastructure requirements for the phased subdivision as a whole.

Staff Response: The proposed configuration of lots and streets within each phase, as conditioned above, are designed to provide for efficient connection of utilities and other infrastructure. The design with phasing conditioned above, will support the orderly and efficient extension of utilities to remaining phases effectively ensures that infrastructure requirements are supported for the phased subdivision as a whole.

The proposal meets this criterion.

As proposed and conditioned, the tentative phased subdivision plan meets all applicable approval criterion contained in SRC Chapter 205.

7. Analysis of Amendment (modification) to Urban Growth Preliminary Declaration Criteria

SRC Chapter 200.030(d) provides that an applicant for a amendment to an Urban Growth Preliminary Declaration shall be granted if:

(1) A change in the circumstances has occurred which has the effect of making the list of required public facilities inappropriate or inadequate.
(2) The proposed amendment does not simply reduce the developer's costs by shifting construction to later phases or to another developer or the public, unless the benefits received by such other developer and the public are significantly increased.
(3) The change does not result in a development that does not otherwise meet all requirements of this chapter.

Finding:

The Water System Master Plan specifies that the subject property is to be served by the future Coburn Reservoir and future Boone Road S-1 pump station. The subject property surrounds the site of the future Coburn Reservoir (tax lots 083W12C00701 and 083W11D00101). The existing reservoir site does not provide two acres of land needed for construction of the reservoir. Therefore, the applicant shall be required to convey lot 138 for future construction of Coburn Reservoir. Previously approved UGA17-03 required the following:

> As a condition of development in the S-1 water service level, the applicant shall:
>
> a) Reserve property for dedication of an approximately 90 foot by 252 foot area of land abutting the north line of tax lots 083W12C00701 and 083W11D00101 for future construction of Coburn Reservoir.

b) Construct a minimum 18-inch S-1 water main from the terminus of the existing S-1 water main in Marietta Street SE near Fairview Industrial Drive SE to the Coburn Reservoir site.

c) Construct Coburn Reservoir, Boone Road S-1 Pump Station, and S-1 connecting water mains as indicated in the Water System Master Plan; or pay a temporary access fee pursuant to SRC 200.080(a). The temporary access fee shall be $10,000 per acre of land being developed within the S-1 service area. The TAF is not due for land conveyed to the City. The TAF shall be subtracted by the following, but shall not be less than $0

(iii) the market value of the land conveyed pursuant to Condition 1.a above; and

(iv) the certified cost of the non-reimbursed off-site portion of the water main constructed pursuant to Condition 1.b above.

As part of the modification request Condition 4 or UGA17-03 is modified to read as follows:

Condition 4: The applicant shall be required to convey lot 138 for future construction of Coburn Reservoir (UGA17-03;4)

Construct a minimum 18-inch water main in one of the following locations:

iii. In Reed Road SE from the north line of the subject property to Strong Road SE; or

iv. In Strong Road and Marietta Street, from the south line of the subject property to the terminus of the existing S-1 water main in Marietta Street SE near Fairview Industrial Drive SE.

Construct a minimum 18-inch water main from the south line of the subject property along Strong Road SE through the subject property to the north line of the subject property along Reed Road SE. The 18-inch water main shall be extended also to the south line of lot 138.

Construct a minimum 12-inch water main from the intersection of Reed Road SE and future J Street SE to the intersection of Battle Creek SE and future N Street SE.

Construct Coburn Reservoir, Boone Road S-1 Pump Station, and S-1 connecting water mains as indicated in Water System Master Plan; or pay a Temporary Access Fee (TAF) pursuant to SRC 200.080(a). The TAF shall be $10,000 per acre of land being developed within the S-1 service area. The TAF is not due for land conveyed to the City. The TAF shall be subtracted by the following, but shall not be less than $0:

iii. the market value of the land conveyed in condition 1a above; and

iv. the certified cost of the non-reimbursed off-site portion of the water main in condition 1b above. (UGA17-03;4)

The remaining requirements of UGA17-03 apply and are incorporated above in the conditions of approval for the subdivision. No changes to the following are conditions of UGA17-03 are proposed. The previous requirements have been incorporated above as conditions of approval of the subdivision.

Condition 1: Provide a Traffic Impact Analysis (TIA) pursuant to SRC 803.015. The following requirements for boundary street right-of-way dedication and street improvements represent the minimum necessary to meet SRC 200.055(c); additional transportation requirements may apply as specified in the TIA:

a) Convey land for dedication of right-of-way along all boundary streets to equal the following distances from street centerline:
   i. Battle Creek Road SE – 36 feet
   ii. Reed Road SE – 36 feet
   iii. Strong Road SE – 30 feet
b) Construct a 23-foot-wide half-street improvement along the entire frontage of Battle Creek Road SE and Reed Road SE.
c) Along Strong Road SE, construct a 15-foot-wide half-street improvement on the development side of centerline and a 15-foot-wide pavement widening on the opposite side of centerline along Strong Road SE.

Condition 2: Connect to the existing sewer mains in Strong Road SE and Reed Road SE. If off-site easements are needed because of topographic constraints and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the acquisition procedures established in SRC 200.050.

Condition 3: Connect to the existing stormwater facilities abutting Strong Road SE, Reed Road SE, and Kuebler Boulevard SE. If off-site easements are needed because of topographic constraints, and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the acquisition procedures established in SRC 200.050.

Condition 5: Reserve property for dedication of neighborhood park facility not less than 6.5 acres in size. ~~The park facility shall be located along Pringle Creek in the vicinity of Tax Lot 083W11D00200 or in an alternate location as approved by the Public Works Director.~~

8. Criteria for granting a Class 2 Adjustment

SRC 250.005(d)(2)(A): The purpose underlying the specific development standard proposed for adjustment is:

(i) Clearly inapplicable to the proposed development; or

(ii) Equally or better met by the proposed development.

Criterion 1:

A change in the circumstances has occurred which has the effect of making the list of required public facilities inappropriate or inadequate.

Finding: The proposed adjustment is to reduce lot depth for Lot 89 from 70-feet to 59-feet.

The location of “J Street” cannot be moved south due to the location of the future park, previously approve to be partitioned (PAR18-08). This makes Lot 89 extremely long in depth and teardrop shaped. Lot 89 is over 10,000 square feet in size, greatly exceeding the minimum parcel size of the RS zone. Due to the long narrow of the property the width of the lot is approximately 59-feet, when measured pursuant to SRC 112. The long narrow portion of the lot cannot be built on and is likely to be landscaping. Lot 89 does have a depth of approximately 87-feet at its widest point and the purpose of the setback is to provide a buffer between properties.

Criterion 2:

The proposed amendment does not simply reduce the developer's costs by shifting construction to later phases or to another developer or the public, unless the benefits received by such other developer and the public are significantly increased.

Finding: As described above, the adjustments are to allow single family dwelling to be constructed on lots in a manner that would alleviate future need to reduce setbacks. The adjustment would allow the lot to be developed in a similar way as the surrounding properties, meeting this criterion.

Criterion 3:

The proposed amendment does not simply reduce the developer's costs by shifting construction to later phases or to another developer or the public, unless the benefits received by such other developer and the public are significantly increased.

Finding: One adjustment is requested; therefore, this criterion is not applicable.

Any future development, beyond what is shown in the proposed plans, needs to meet all applicable development standards of Salem Revised code, unless adjusted through a future land use action.

10. Conclusion

Based upon review of SRC Chapter 205.005, SRC 200.030, the findings contained under Sections 8 and 9 above, and the comments described, the consolidated application complies with the requirements for an affirmative decision. Approval will not adversely affect the safe and healthful development and access to any adjoining lands.

IT IS HEREBY ORDERED

That consolidated Subdivision, Class 2 Adjustment No. SUB-ADJ17-07 and Urban Growth Preliminary Declaration (UGA17-03) Modification, which includes the following requests:

1) A subdivision tentative plan to divide approximately 52.80 acres into 209 lots ranging in size from approximately 4,400 square feet to approximately 13,500 square feet, including "Alternative Street Standards" request to increase the street grade from 12% to 15% for five street intervals and 52-foot right-of-way, where 60-feet is required and removal of street trees along Reed Road, Battle Creek Road and Strong Road;

2) Zoning Adjustment application to reduce lot width for Lot 89 from 70-feet to 59-feet; and

3) Urban Growth Preliminary Declaration Modification (UGA17-03) to re-evaluate the location of off-site water mains that provide City water to the development.

On property zoned RA (Residential Agriculture), and located on the 4700 Block of Battle Creek Road SE (Marion County Assessor Map and Tax Lot Numbers 083W12B / 1600, 083W12C / 700 and 083W11D /100, 200, 400, 500, 601, 602), shall be GRANTED as follows:

A. The Urban Growth Area Preliminary Declaration (UGA17-03) Modification of the facility improvements required to obtain an Urban Growth Area (UGA) Development Permit for the subject property is **APPROVED**, the findings contained herein, and requirements for development are incorporated as conditions of approval of SUB-ADJ19-08, below:

B. The subdivision tentative plan is **APPROVED** subject to the applicable standards of the Salem Revised Code, the findings contained herein, and the conditions of approval listed below, which must be completed prior to final plat approval, unless otherwise indicated:

Prior to final any subdivision plat:
Condition 1: The front property lines are designated below:

Corner Lot	Front Property Line
Lot 1	West property line – fronting on Street 'B'
Lot 2	West property line – fronting on Street 'B'
Lot 5	East property line – fronting on Street 'B'

Lot 20	North property line – fronting on ‘C Avenue’
Lot 22	North property line – fronting on ‘C Avenue’
Lot 52	North property line – fronting ‘I Avenue”
Lot 53	North property line – fronting ‘I Avenue”
Lot 58	South property line – fronting on ‘I Avenue’
Lot 59	North property line – fronting on ‘E Avenue’
Lot 60	North property line – fronting on Street ‘C’
Lot 61	South property line – fronting Street ‘E’
Lot 70	East property line – fronting Street ‘G’
Lot 76	South property line – fronting on Street ‘G’
Lot 84	South property line – fronting ‘J Avenue’
Lot 89	South property line – fronting ‘J Avenue’
Lot 90	North property line – fronting Street ‘N’
Lot 92	South property line – fronting Street ‘N’
Lot 93	East property line – fronting Street ‘M’
Lot 96	South property line – fronting Street ‘M’
Lot 97	South property line – fronting Street ‘K’
Lot 136	South property line – fronting Street ‘K’
Lot 172	North property line – fronting Street “N”
Lot 176	North property line – fronting Street “N”
Lot 182	South property line - fronting ‘P Avenue’
Lot 184	South property line - fronting ‘P Avenue’
Lot 185	South property line - fronting ‘P Avenue’
Lot 195	North property line - fronting ‘P Avenue’
Lot 196	East property line – fronting Street ‘Q’

Condition 2: The front property line for Lots 203-209 shall be the north property line and the front property line for Lot 3 shall be the west property line. No access to the higher classified street shall be allowed.

Condition 3: Lots 144-147 shall take access from Street ‘M’ and the south property line is the designated the front property line.

Condition 4: Prior to the issuance of building permits, the subject property shall have a favorable Airport Overlay zone height variance.

Condition 5: Prior to final plat, provide an engineered stormwater design pursuant to SRC 71 and PWDS to accommodate future impervious surface on all proposed lots, including stormwater facilities needed to serve new streets.

Condition 6: All streets within the proposed subdivision shall meet 12 percent grade; with the exception of the five street sections, identified on the proposed tentative plan, which shall not exceed 15 percent.

Conditions 7: The applicant shall provide mid-block pedestrian access as shown on the tentative subdivision plan.

Condition 8: Proposed Streets K, M and N shall be a minimum of 52-feet in width, which includes a four-foot planter to accommodate street trees and sidewalks adjacent to one foot from property line. All other streets shall meet local street standards.

Condition 9: Dedicate a 10-foot-wide public utility easement (PUE) along the street frontage of all abutting and internal streets.

Condition 10: Prior to issuance of public construction permits, a tree preservation and protection plan pursuant to SRC Chapter 86 and Salem Administrative Rule 109-500, and signed by a certified arborist, shall be submitted for the identified preserved "Future Street Trees" (32" Oak, 10" Oak and 24" Oak along Reed Road & 32" Oak along Strong), to the City for review. Future Street Trees, identified above, shall be preserved. Any proposed removal of identified Future Street Trees (listed above) would require a separate removal permit pursuant to SRC 86.090.

Condition 11: The significant oak located on Lot 68 and the two 40-inch Fir trees near Strong Road shall be preserved.

Condition 12: Trees proposed for removal that are located within the right of way abutting streets shall follow the procedures of SRC Chapter 86.

Condition 13: All lots within the S-1 service level shall be served by S-1 water mains, and all lots within the S-2 service level shall be served by S-2 water mains. Water mains may need to be extended through future unconstructed phases within temporary easements in order to serve all lots in each phase.

Condition 14: Construct Coburn Reservoir, Boone Road S-1 Pump Station, and S-1 connecting water mains as indicated in Water System Master Plan; or pay a Temporary Access Fee (TAF) pursuant to SRC 200.080(a). The TAF shall be $10,000 per acre of land being developed within the S-1 service area as proportional payments within each section as specified below. The TAF shall be subtracted by the market value of lot 138 but shall not be less than $0. (UGA17-03;4)

Condition 15: Dedicate a neighborhood park facility not less than 6.5 acres in size. (UGA17-03;5)

Condition 16: Demonstrate that the proposed subdivision conforms to the access requirements of the Fire Code by one of the following methods:

(a) Provide written evidence from the Fire Marshal that the subdivision, as approved, does not exceed the maximum 30 dwelling units allowed to be served by a single fire apparatus road; or

(b) Provide written approval from the Fire Marshal allowing more than 30 dwelling units to be served by a single fire apparatus road subject to all of the dwelling units within the subdivision being equipped with an automatic sprinkler system; or

(c) The subdivision so that no more than 30 dwelling units will be served by a single fire apparatus road.

Condition 17: Demonstrate adequate Fire Department turn-arounds prior to final plat of Phase K, H, F and A.

Condition 18: Prior to any plat, the applicant shall coordination with Salem-Keizer Cherriots for a transit stop and provide evidence of the location of a future transit stop or a letter from Salem-Keizer Cherriots that no stop is needed in the vicinity.

Condition 19: The subdivision shall be phased in the following order:

Section E: 16 lots
Section G: 22 lots
Section I: 18 lots
Section J: 17 lots
Section F: 15 lots
Section H: 25 lots
Section K: 15 lots
Section A: 24 lots
Section D: 25 lots
Section B: 17 lots
Section C: 15 lots

Prior to plat of Section E:

Condition 20: Construct a realigned intersection of Battle Creek Road SE and Reed Road SE to minor arterial standards pursuant to PWDS. Acquire and/or convey land for dedication of right-of-way as needed to construct the improvements. If off-site right-of-way is needed to construct the improvements and the applicant is unable to acquire the right-of-way from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. The intersection shall include:

- A westbound to southbound left turn lane on Reed Road SE;
- A southbound to eastbound left turn lane on Battle Creek Road SE;
- A northbound to eastbound right turn lane on Battle Creek Road SE; and
- A pedestrian island on Battle Creek Road SE along the south side of the intersection. (UGA17-03;1)

Condition 21: Construct a minimum 18-inch S-1 water main in Reed Road SE from Strong Road SE to J Avenue SE. (UGA17-03;4)

Condition 22: Construct a minimum 18-inch S-1 water main in J Avenue SE from Reed Road SE to H Street SE, and in H Street SE from the south line of Section E to the north line of Section E. (UGA17-03;4)

Condition 23: Pay $43,362 as the proportional amount of the water TAF. (UGA17-03;4)

Condition 24: A temporary pedestrian access route, at least 5-feet in width, shall be provided from sidewalks along J Avenue to the intersection of Reed Road and Battle Creek Road.

Prior to plat of Section G:

Condition 25: Construct Reed Road SE from Battle Creek Road SE to the north line of the subject property, at a minimum 23-foot-wide half street improvement to Minor Arterial standards within a minimum 36-foot-wide half-width right-of-way. The improvements shall include on-street parking and tapers. (UGA17-03;1)

Condition 26: Pay $52,491 as the proportional amount of the water TAF. (UGA17-03;4)

Condition 27: Construct multi-modal trails to proposed park as shown on tentative subdivision plan to PWDS Standards.

Prior to plat of Section I:

Condition 28: Construct Battle Creek Road from Reed Road to the southern edge of Segment I to a 23-foot-wide half street improvement to Minor Arterial standards within a minimum 36-foot-wide half-width right-of-way. (UGA17-03;1)

Condition 29: Construct a minimum 12-inch S-1 water main in Reed Road SE from J Avenue SE to Battle Creek Road SE, and in Battle Creek Road SE from Reed Road SE to N Street SE. (UGA17-03;4)

Condition 30: Pay $43,362 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section J:

Condition 31: Pay a temporary access fee of $13,680 toward the future signal at Battle Creek Road SE and Reed Road SE.

Condition 32: Construct a pedestrian access route along missing sections of sidewalk on the west side of Battle Creek Road SE from Reed Road SE to Forsythe Drive SE.

Prior to plat of Section F:

Condition 33: Construct a minimum 18-inch S-1 water main in K Street SE from the north line to the south line of Section F. (UGA17-03;4)

Condition 34: Pay $27,387 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section H:

Condition 35: Paved width of accessway shall be 20-feet within a 25-foot wide easement, which serves Lots131,132 and the future Coburn Reservoir (Lot 130).

Condition 36: "NO PARKING—FIRE LANE" signs shall be posted on both sides of the segments of the proposed flag lot accessway that are fire apparatus roadways and "NO PARKING" signs shall be posted on both sides of any remaining portion of the accessway.

Condition 37: Convey lot 138 to the City for future construction of Coburn Reservoir. (UGA17-03;4)

Condition 38: Construct a minimum 18-inch S-1 water main in K Street SE from the north line of Section H to the south line of lot 138. (UGA17-03;4)

Condition 39: Pay $11,411 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section A:

Condition 40: Convey land for dedication of right-of-way to equal a half-width of 30 feet from centerline along the entire frontage of Strong Road SE.

Condition 41: Construct a 15-foot-wide half-street improvement on the development of centerline and a 15-foot-wide pavement widening on the opposite side of centerline along Strong Road SE.

Condition 42: Construct a minimum 18-inch S-1 water main within Sections A and D from H Street SE at the south line of Section D to Strong Road SE at the south line of Section A. Design City infrastructure improvements needed for Section D in sufficient detail to determine that the water main construction meets PWDS. Construct a temporary utility and emergency access road along the water main alignment. (UGA17-03;4)

Condition 43: Pay $59,377 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section D:

Condition 44: Pay $57,055 as the proportional amount of the water TAF. (UGA17-03;4)

Condition 45: Lots 57-59 and 74-81 shall connect to the existing sanitary system in Reed Road SE. Lots 60-73 shall connect to the existing sanitary system in Strong Road SE. If off-site easements are needed because of topographic constraints and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. (UGA17-03;2)

Condition 46: Lot 57-59 and 74-81 shall connect to the existing stormwater facilities abutting Reed Road SE. Lots 60-73 shall connect to the existing stormwater facilities in Strong Road SE. If off-site easements are needed because of topographic constraints and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050. (UGA17-03;3)

Prior to plat of Section B:

Condition 47: Pay $38,798 as the proportional amount of the water TAF. (UGA17-03;4)

Prior to plat of Section C:

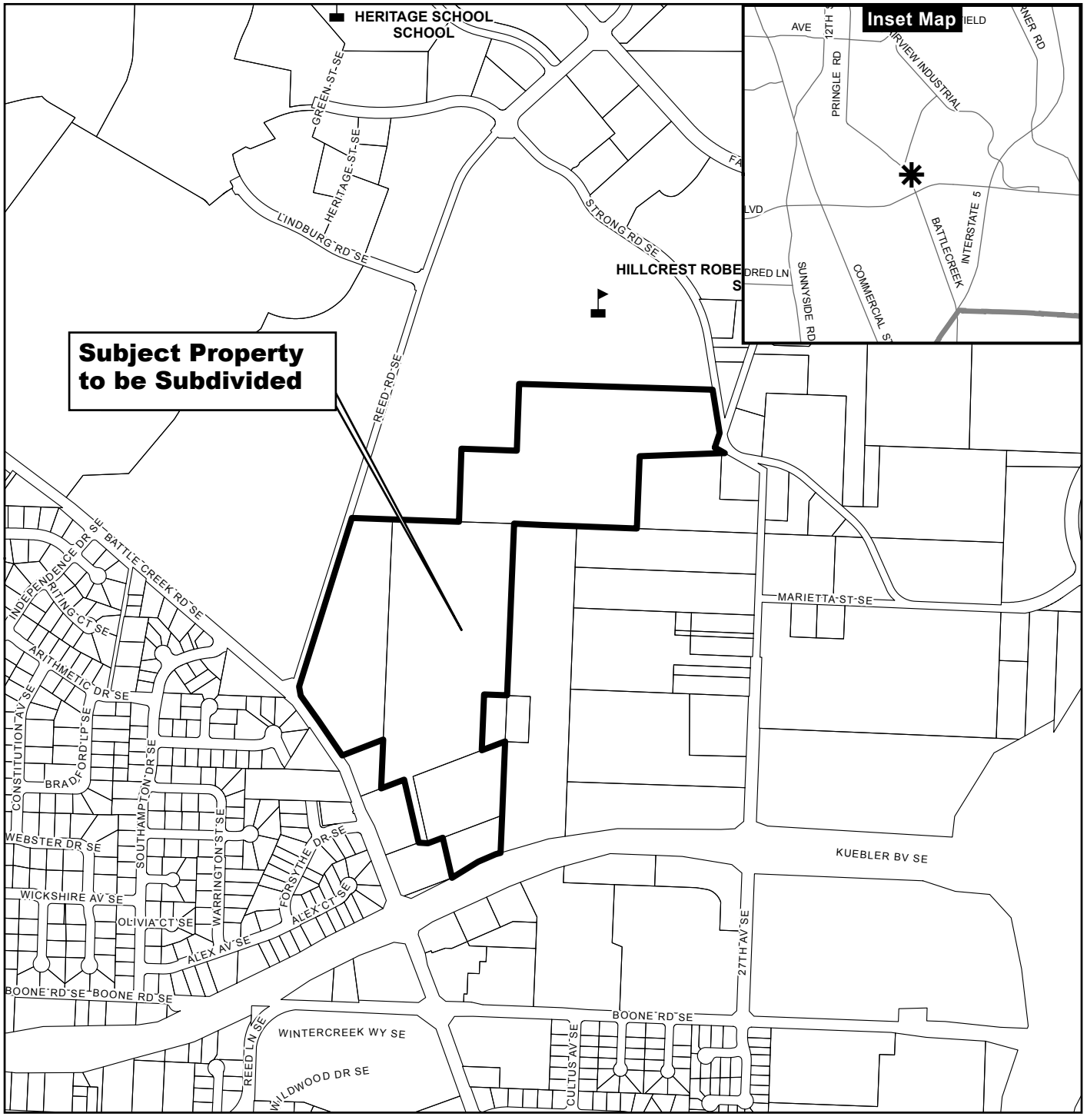
Condition 48: Pay $38,798 as the proportional amount of the water TAF. (UGA17-03;4)

Olivia Glantz, Planner III, on behalf of
Lisa Anderson-Ogilvie, AICP
Planning Administrator

Attachments: A. Vicinity Map
B. Tentative Subdivision Plan
C. Applicant's Written Statement on the Consolidated Application
D. City of Salem Public Works Department Comments

Attachment A

Vicinity Map
4700 Block Battle Creek Road SE



Legend

- Taxlots
- Urban Growth Boundary
- City Limits
- Outside Salem City Limits
- Historic District
- Schools
- Parks

0 100 200 400 Feet

CITY OF Salem AT YOUR SERVICE
Community Development Dept.

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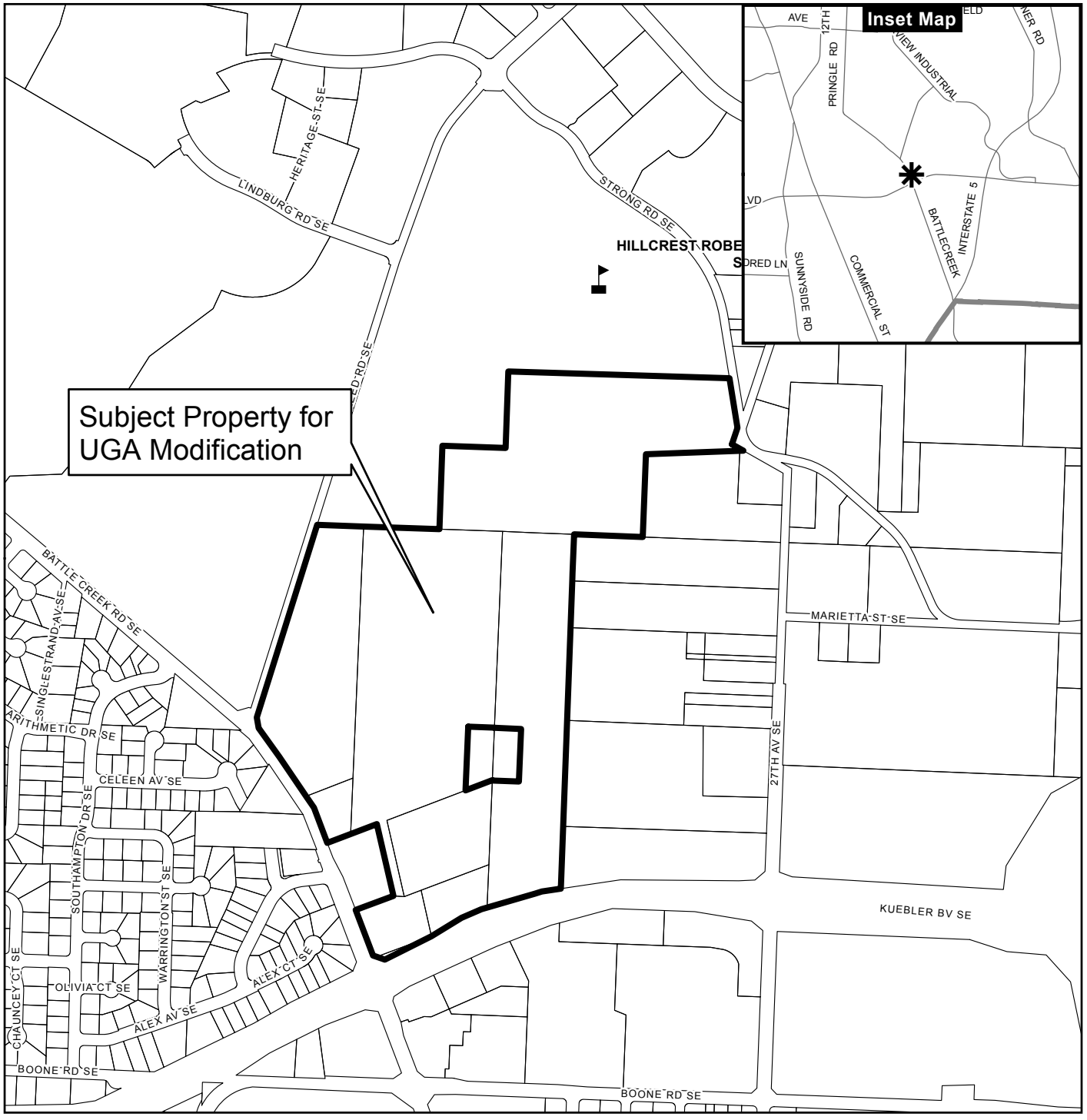
Vicinity Map
4700 Block Battle Creek Road



Legend

- Taxlots
- Urban Growth Boundary
- City Limits
- Outside Salem City Limits
- Historic District
- Schools
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0 100 200 400 Feet

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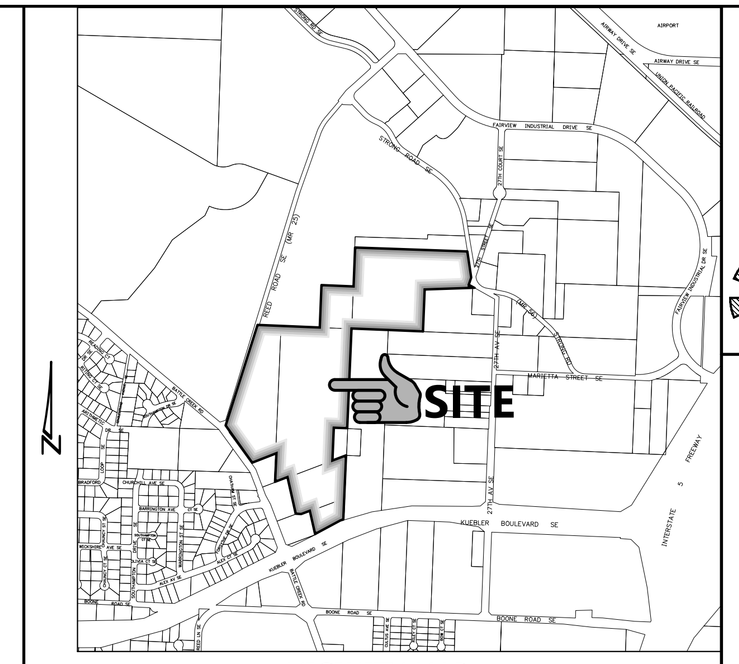
Attachment B

COBURN GRAND VIEW ESTATES

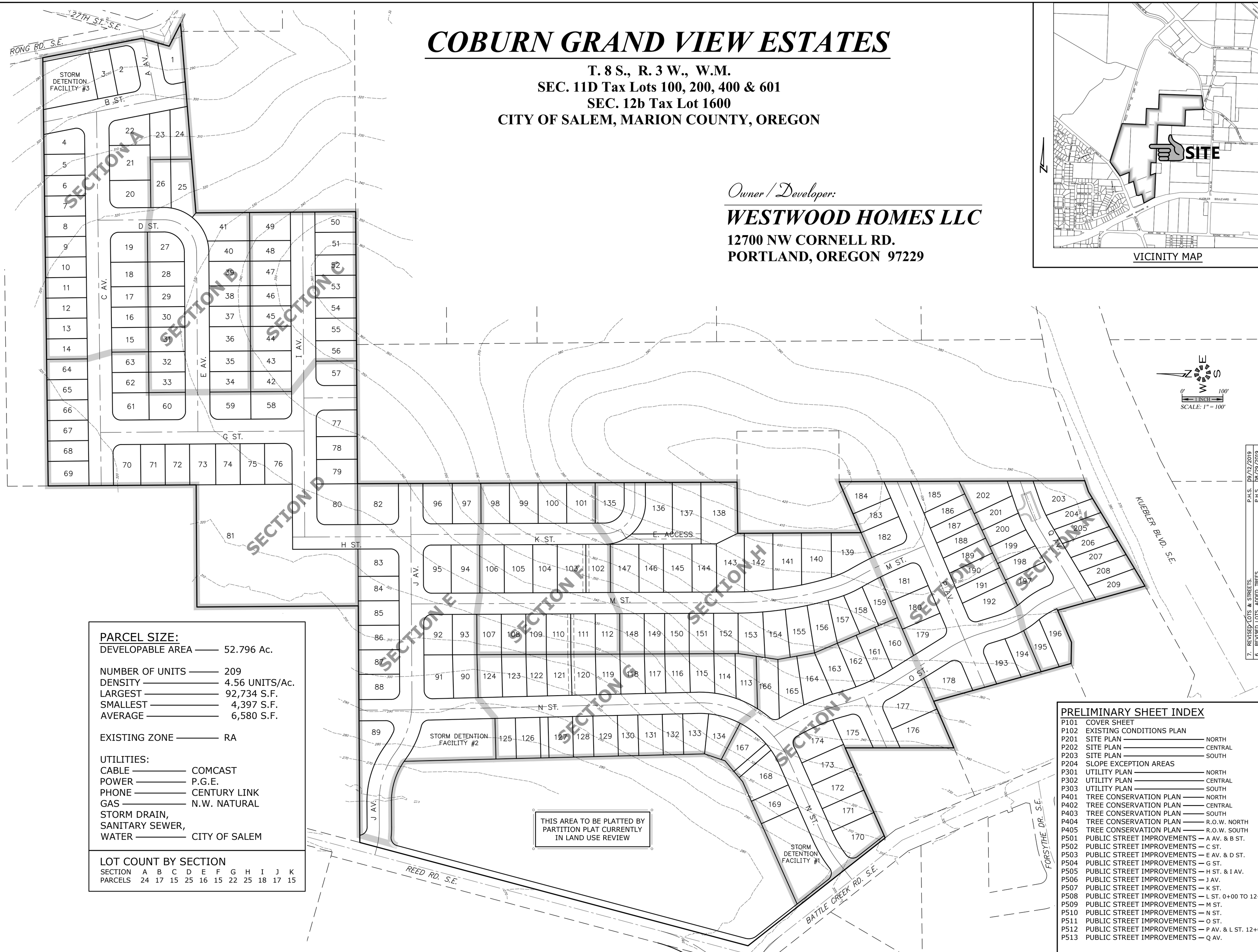
T. 8 S., R. 3 W., W.M.
SEC. 11D Tax Lots 100, 200, 400 & 601
SEC. 12b Tax Lot 1600
CITY OF SALEM, MARION COUNTY, OREGON

Owner / Developer:

WESTWOOD HOMES LLC
12700 NW CORNELL RD.
PORTLAND, OREGON 97229



VICINITY MAP



N
W E
S
0' 100'
1 INCH
SCALE: 1" = 100'

PARCEL SIZE:

DEVELOPABLE AREA	52.796 Ac.
NUMBER OF UNITS	209
DENSITY	4.56 UNITS/Ac.
LARGEST	92,734 S.F.
SMALLEST	4,397 S.F.
AVERAGE	6,580 S.F.
EXISTING ZONE	RA

UTILITIES:

CABLE	COMCAST
POWER	P.G.E.
PHONE	CENTURY LINK
GAS	N.W. NATURAL
STORM DRAIN, SANITARY SEWER, WATER	CITY OF SALEM

LOT COUNT BY SECTION

SECTION	A	B	C	D	E	F	G	H	I	J	K
PARCELS	24	17	15	25	16	15	22	25	18	17	15

PRELIMINARY SHEET INDEX

P101	COVER SHEET
P102	EXISTING CONDITIONS PLAN
P201	SITE PLAN — NORTH
P202	SITE PLAN — CENTRAL
P203	SITE PLAN — SOUTH
P204	SLOPE EXCEPTION AREAS
P301	UTILITY PLAN — NORTH
P302	UTILITY PLAN — CENTRAL
P303	UTILITY PLAN — SOUTH
P401	TREE CONSERVATION PLAN — NORTH
P402	TREE CONSERVATION PLAN — CENTRAL
P403	TREE CONSERVATION PLAN — SOUTH
P404	TREE CONSERVATION PLAN — R.O.W. NORTH
P405	TREE CONSERVATION PLAN — R.O.W. SOUTH
P501	PUBLIC STREET IMPROVEMENTS — A AV. & B ST.
P502	PUBLIC STREET IMPROVEMENTS — C ST.
P503	PUBLIC STREET IMPROVEMENTS — E AV. & D ST.
P504	PUBLIC STREET IMPROVEMENTS — G ST.
P505	PUBLIC STREET IMPROVEMENTS — H ST. & I AV.
P506	PUBLIC STREET IMPROVEMENTS — J AV.
P507	PUBLIC STREET IMPROVEMENTS — K ST.
P508	PUBLIC STREET IMPROVEMENTS — L ST. 0+00 TO 12+00
P509	PUBLIC STREET IMPROVEMENTS — M ST.
P510	PUBLIC STREET IMPROVEMENTS — N ST.
P511	PUBLIC STREET IMPROVEMENTS — O ST.
P512	PUBLIC STREET IMPROVEMENTS — P AV. & L ST. 12+00 TO 17+50
P513	PUBLIC STREET IMPROVEMENTS — Q AV.

7.	REVISED LOTS & STREETS.	P.H.S. 09/12/2019
6.	REVISED LOTS, ADDED TREES	P.H.S. 08/29/2019
5.	STREET WIDTHS & PEDESTRIAN EASEMENTS.	P.H.S. 08/14/2019
4.	ADDED NEW STREETS & EX. EASEMENTS.	P.H.S. 06/28/2019
3.	UPDATED PER DRAINAGE REVISIONS.	P.H.S. 06/06/2019
2.	ADDED PRESSURE REDUCING STATION.	P.H.S. 04/05/2019
1.	REVISED PER CITY OF SALEM REVIEW.	P.H.S. 03/25/2019

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

COVER SHEET

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR CONSTRUCTION TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234p P101CO

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

JOB # 6234

P101

J:\6200-6299\6234-RoadRoot\Eng_r1\6234p-eng_P101CO, 9/12/2019 3:51:05 PM, PSanders

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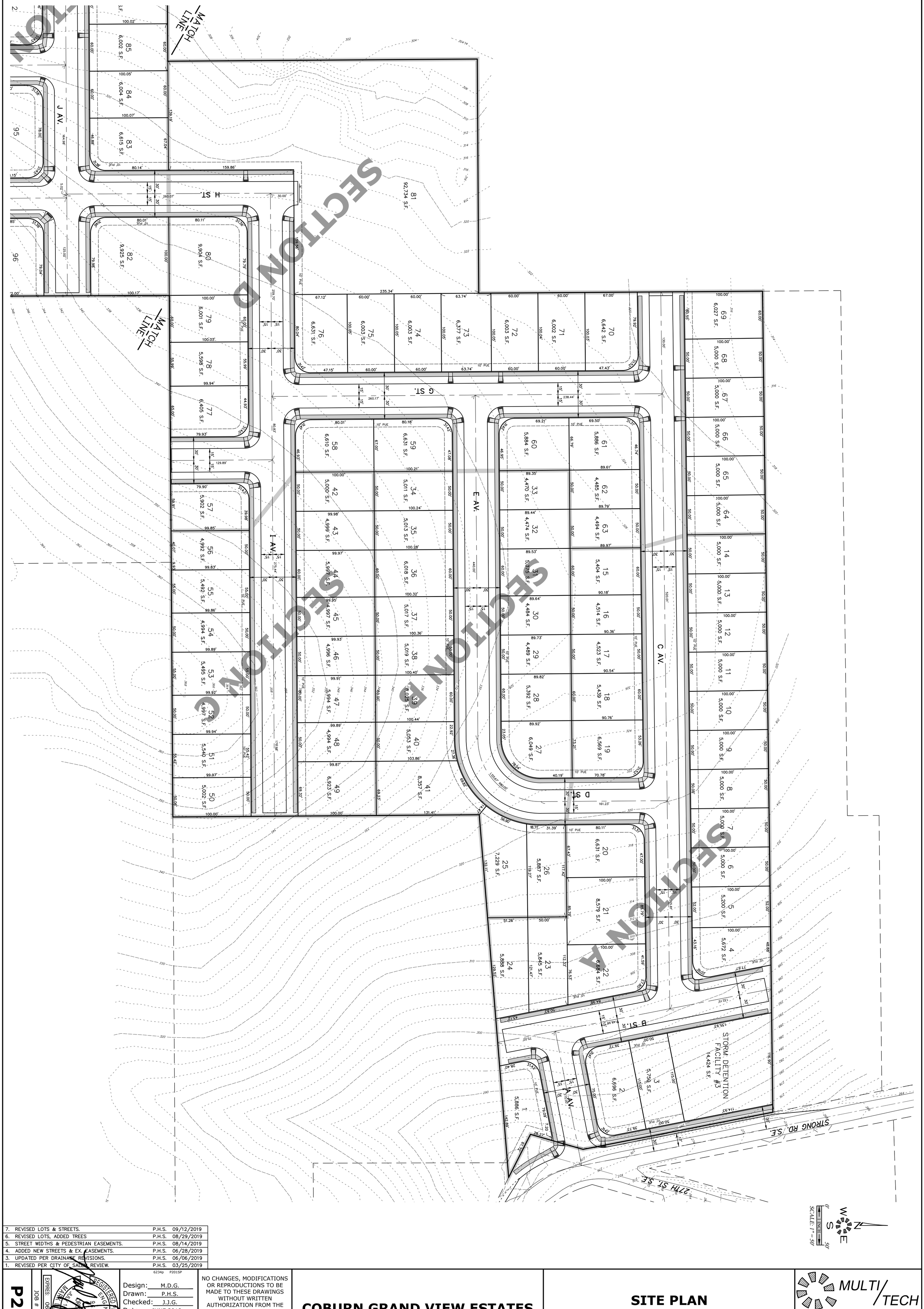


7.	REVISED LOTS & STREETS.	P.H.S.	09/12/2019
6.	REVISED LOTS, ADDED TREES	P.H.S.	08/29/2019
5.	STREET WIDTHS & PEDESTRIAN EASEMENTS.	P.H.S.	08/14/2019
4.	ADDED NEW STREETS & EX. EASEMENTS.	P.H.S.	06/28/2019
3.	UPDATED PER DRAINAGE REVISIONS.	P.H.S.	06/06/2019
1.	REVISED PER CITY OF SALEM REVIEW.	P.H.S.	03/25/2019

P201

JOB # 6234

EXPIRES: 06-30-2021

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 11, 1978 — MARVIN J. GREWE — 9154

6234p P201SP

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

COBURN GRAND VIEW ESTATES

SITE PLAN - NORTH -

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363 - 9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

7.	REVISED LOTS & STREETS.	P.H.S.	09/12/2019
6.	REVISED LOTS, ADDED TREES	P.H.S.	08/29/2019
5.	STREET WIDTHS & PEDESTRIAN EASEMENTS.	P.H.S.	08/14/2019
4.	ADDED NEW STREETS & EX. EASEMENTS.	P.H.S.	06/28/2019
3.	UPDATED PER DRAINAGE REVISIONS.	P.H.S.	06/06/2019
1.	REVISED PER CITY OF SALEM REVIEW.	P.H.S.	03/25/2019

P202

JOB # 6234

EXPIRES: 06-30-2021

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 14, 1978 — MARK D. GRENZ

6234p P202SP

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

COBURN GRAND VIEW ESTATES

SITE PLAN - CENTRAL -

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363 - 9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

7.	REVISED LOTS & STREETS.	P.H.S. 09/12/2019
6.	REVISED LOTS, ADDED TREES	P.H.S. 08/29/2019
5.	STREET WIDTHS & PEDESTRIAN EASEMENTS.	P.H.S. 08/14/2019
4.	ADDED NEW STREETS & EX. EASEMENTS.	P.H.S. 06/28/2019
3.	UPDATED PER DRAINAGE REVISIONS.	P.H.S. 06/06/2019
2.	ADDED PRESSURE REDUCING STATION.	P.H.S. 04/05/2019
1.	REVISED PER CITY OF SALEM REVIEW.	P.H.S. 03/25/2019

P203

JOB # 6234

EXPIRES: 06-30-2021

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 14, 1978 — MARK D. GRENZ

6234p P203SP

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

COBURN GRAND VIEW ESTATES

SITE PLAN - SOUTH -

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363 - 9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

Subdivision Application

July 9, 2019

PROPOSAL:

The subject property is about 52.80 acres in size and zoned RA (Residential Single Agriculture). The applicant is proposing to divide the subject property into 209 single family residential lots (within 11 Phases/Sections).

Section A: 24 lots
Section B: 17 lots
Section C: 16 lots
Section D: 24 lots
Section E: 16 lots
Section F: 15 lots
Section G: 21 lots
Section H: 25 lots
Section I: 18 lots
Section J: 17 lots
Section K: 15 lots

Due to topography and the location of the S1 Water Service, the applicant requests that the City of Salem condition the subdivision approval to allow Phases/Sections to be developed out of sequence. Below is the anticipated order of development for the proposed Phases/Sections. However, we would like the flexibility to develop in any logical order.

Section E: 16 lots
Section G: 21 lots
Section I: 18 lots
Section J: 17 lots
Section F: 15 lots
Section H: 25 lots
Section K: 15 lots
Section A: 24 lots
Section D: 25 lots
Section B: 17 lots
Section C: 16 lots

The applicant is also requesting alternative street standards as outlined in the narrative and on the site plans. Along with an adjustment and alternative street standard request to street grade and an adjustment to lot depth requirements. Both adjustments have been addressed in the narrative below.

SITE VICINITY and CHARACTERISTICS:

The subject property is located on the northeast intersection of Kuebler Boulevard SE and Battle Creek Road. The subject property is identified as 083W11D/Tax Lots 100, 200, 400, and 601; 083W12B/Tax Lot 1600. The subject property is located within the City limits and the Urban

Growth Boundary. UGA 17-03 was issued on August 31, 2017 for the subject property.

The surrounding properties are zoned and used as follows:

North: PH (Public Health); vacant land and existing single-family dwellings
East: RA (Residential Agriculture); vacant land and existing single-family dwellings
South: RA (Residential Agriculture); vacant land and existing single-family dwellings
West: Across Reed Road, FMU (Fairview Mixed-Use); vacant land and existing single-family dwellings

COMPLIANCE WITH THE SALEM AREA COMPREHENSIVE PLAN (SACP):

Citizen involvement is provided via the City of Salem notification process necessary for the subdivision application which allows public comment. The City's Plan is acknowledged to be in compliance with State Land Use Goals. The public notification process is implemented by the Planning Administrator with written notification to property owners. The published notice will identify the applicable criteria. Through the notification process all interested parties are afforded the opportunity to review the application, comment on the proposal and participate in the decision.

In addition, the SACP and its implementing ordinances are adopted by the City through the public hearing process of the City Council ordinance procedure. The subject property is within the city limits and is within the urbanized area. The proposal does not affect the size or location of the city limits or urban growth boundary.

The Statewide Planning Goals are implemented by the adopted goals and policies of the SACP and its implementing ordinances and facility plans. The proposal accommodates the Statewide Goals by being located within an adopted Urban Growth Boundary.

The SACP Residential Development Goal requires the promotion of …. "*. . . a variety of housing opportunities for all income levels and the adequate supply of developable land to support such housing."* The SACP is implemented by the zone and subdivision codes under the provisions of SRC Chapter 510 and 205. The proposal is for a single family development.

The proposal meets SACP General Development Polices 7, 10, 12 and 13 which encourage structures and their sitting in all residential developments to optimize the use of land. The proposed subdivision optimizes the land by providing 214 single family lots on 52.80 acres. The proposed subdivision is in compliance with the code.

The development is sited and designed to minimize the adverse alteration of the natural terrain, the potential for erosion and adverse effects upon the existing topography and soil conditions. The proposal encourages natural open living spaces by providing larger than average lots. The proposed lots range in size from 4,397 square feet to 92,734

square feet in size, with and average lot size of 6,551 square feet.

The property is within the Urban Growth Boundary and the Urban Services Area; however, UGA17-03 was issued on August 31, 2017. Thus, meeting the SACP Growth Management Goal.

All internal streets are shown on the site plan. The proposed internal streets will all be built to public street standards to be consistent with the existing surrounding street system. Therefore, meeting SACP Transportation Policy 19.

CRITERIA AND APPLICANT'S REASONS ADDRESSING UDC 205.010(d)(1):

The intent of the subdivision code is providing for orderly development through the application of appropriate rules and regulations. Pursuant to the application of the current enabling statutes, these regulations are those cited in UDC 205.010(d) and UDC 205.015(d). The decision criteria for subdivisions without a concurrent variance under UDC 205.010(d) and UDC 205.015(d) must be found to exist before an affirmative decision may be made for a subdivision application.

(1) The tentative subdivision plan complies with the standards of this Chapter and with all applicable provisions of the UDC, including, but not limited to, the following:

The Salem Revised Code (SRC), which includes the Salem Zoning Code, implements the Salem Area Comprehensive Plan land use goals, and governs development of property within the city limits. The subdivision process reviews development for compliance with city standards and requirements contained in the Subdivision Code, Zoning Code, Salem TSP and the Water, Sewer and Storm Drain System Master Plans, and adopted design documents applicable to residential development. The proposed meets all applicable provisions of the Salem Revised Code.

(A) Lot standards, including, but not limited to, standards for lot area, lot width and depth, lot frontage and designation of front and rear lot lines.

Proposed Lots 81 and 82 are located within the PH zone. These two lots will be developed in compliance with the requirements and permitted uses allowed within the PH zone.

Minimum Lot Area and Dimensions: As shown on the site plan, all 209 lots meet lot size (4,000 square feet) and lot dimension (40’ by 70’) standards as required under UDC Chapters 510 and 511. The proposed lots range in size from 4,397 square feet to 92,734 square feet in size, with and average lot size of 6,551 square feet.

Lot 1 on the revised site plans is odd in shape, however, it can be built with adequate setbacks and an adequate building envelope of about 1,700 square feet. This will allow the development of a smaller home, while maintaining adequate setbacks.

Lot 89 does not meet the lot depth requirements. Therefore, an adjustment to this standard has been required.

Additional reviews occur at the time of building permits to assure compliance with the zoning code. Compliance with conditions of approval to satisfy the subdivision ordinance is also checked prior to city staff signing the final subdivision plat.

The proposal can conform to applicable conditions imposed as necessary to ensure that development conforms to the standards of the subdivision code and with existing development and public facilities. Expect for those lots mentioned above, the proposed subdivision is in compliance with lot standard requirements and required access. Therefore, this criteria has been met.

(B) City infrastructure standards.

Water, sewer, storm drainage plans will be submitted to the Public Works Department for final plat and construction plan approval at the final plat stage. The tentative site plan illustrates the location of the public utility lines. The proposal meets applicable Salem Area Comprehensive Plan Residential Policies for properties within the Urban Growth Boundary. The proposal encourages the efficient use of developable residential land. Public facilities and services are or will be available to serve the site, including services such as water, sanitary and storm sewer and fire/life/safety services. Therefore, this criteria has been met.

(C) Any special development standards, including, but not limited to, floodplain development, special setbacks, geological or geotechnical analysis, and vision clearance.

There are no wetlands or floodplains located on the subject property.

A geological assessment dated July 20, 2018, has been provided as part of this application packet. The assessment outlines the nature, distribution of underlying geology, and the physical and chemical properties of existing soils; an opinion as to stability of the site, and conclusions regarding the effect of geologic conditions on the proposed development as required. See attached geological assessment.

This criteria has been met.

(2) The tentative subdivision plan does not impede the future use or development of the property or adjacent land.

The proposal is for the entire subject property and will be developed into 209 lots. As shown on the site plan. Therefore, a shadow plan is not required.

Property located north of the site is not part of this subdivision proposal, nor is it under the same ownership. Therefore, property to the north will not be affected by this proposal.

All surrounding properties have direct access onto the existing street system. All 209 lots will have direct access onto the existing street system as well. The subdivision does not impede the future use of the property or adjacent land. Therefore, access to adjacent properties is not necessary.

(3) Development within the tentative subdivision plan can be adequately served by City infrastructure.

Water, sewer, storm drainage plans will be submitted to the Public Works Department for final plat and construction plan approval at the final plat stage. The tentative site plan illustrates the location of the public utility lines. The proposal meets applicable Salem Area Comprehensive Plan Residential Policies for properties within the Urban Growth Boundary. The proposal encourages the efficient use of developable residential land. Public facilities and services are or will be available to serve the site, including services such as water, sanitary and storm sewer and fire/life/safety services.

Water, sewer, storm drainage plans will be submitted to the Public Works Department for final plat and construction plan approval at the final plat stage. The tentative site plan illustrates the location of the public utility lines. Sewer/storm/water has been provided to all lots as required by UGA17-03.

In conclusion, the location and design of the proposed subdivision allows for public sanitary sewer, water service, and storm drainage to be conveniently provided. Therefore, this criterion has been satisfied.

Proposed StormWater Management System:

Stormwater quality and quantity are required for this development. An LID (low impact development) Stormwater technique will be used to mitigate the increase in pollutants contributed from development. This system may also be used to provide storage and water quantity control. The exact system will be determined at the time of design. Any proposed technique will meet City of Salem Stormwater Management standards in means and methods to provide all aspects of Stormwater management. A Preliminary Stormwater Drainage report dated May 17, 2019, has been provided as part of this

submittal.

(4) The street system in and adjacent to the tentative subdivision plan conforms to the Salem Transportation System Plan.

The major street system is in place due to prior development. Reed Road located to the west and Battle Creek Road located to the south of the site will provide access into the development. Both Reed Road and Battle Creek Road are designated as a 'minor arterial' on the Salem Transportation System Plan.

The existing and proposed street systems conform to the City's Transportation Plan. All street design and improvements will be determined through the subdivision review process, and regulated through the Conditions of Approval. The proposed internal streets will be designed to street standards.

The major street network in the area has been established and is consistent with the Transportation System Plan which implements the Comprehensive Plan. Public Works Department will address any applicable requirements for right-of-way conveyance that might be required because of this subdivision.

A Traffic Impact Analysis (TIA) dated June 20, 2018 and a Traffic Memo dated July 27, 2018, have been provided as part of this application package.

The applicant is requesting alternative street standards for the proposed internal streets, to 52-feet in width where 60-feet is required. The site topography and shape create a physical constraint that makes it very difficult to comply with the standard right of way width of 60 feet.

The existing street system and proposed street improvements will be in compliance with the STSP. All lots are in compliance with the UDC/SRC.

The layout of the lots and internal streets take into account the topography and vegetation of the site, such that the least disruption of the site, topography, and vegetation will result from the reasonable development of the site.

The subdivision code requires City approval of lots be suitable for the general purpose for which they are likely to be developed. No lots can be of such a size or configuration that is detrimental to public health, safety, or welfare or sanitary needs of users of the parcel or lot.

The applicant is also requesting an adjustment and alternative street standard to street grade. As shown on the street section provided, J Avenue, K Street, and M Street will have a street grade over 12%. Due to the topography of the site and the proposed street alignments with existing streets, along with required stub street connections,

these proposed streets within the subdivision exceed the street grade allowed.

The intent of the maximum street grade is to allow vehicles to climb and descend the street safely in all conditions. The internal streets proposed will provide safe and efficient circulation throughout the subdivision. As shown on the street sections provided, there is only curtain sections of each street that will exceed the allowed street grade. All streets within the proposed subdivision will be designed to provide safe and efficient conditions.

There are several access points provided throughout the proposed subdivision which provide alternative access options.

The intent of the standard is being met; therefore, the proposal equally meets the intent of the maximum street grade standard.

The major street network in the area has been established and is consistent with the Transportation System Plan which implements the Comprehensive Plan. Public Works Department will address any applicable requirements for right-of-way conveyance that might be required because of this subdivision.

Therefore, the existing street system and proposed street improvements will be in compliance with the STSP.

The subdivision plan takes into consideration the topography and vegetation of the site. The alternative street standards allow lots of sufficient size and dimensions for future development. The lot dimensions are illustrated on the tentative site plan and are in conformance to the minimum standards in UDC 510 and 511.

Transportation Planning Rule Review:

The City of Salem's TPR encourages a reduction in automobile trips by capitalizing on transit opportunities and by creating an environment that encourages people to walk. The proposed subdivision is a "limited land use decision" pursuant to Oregon Revised Statute (ORS) 197.015, and has therefore been reviewed for consistency with the State's TPR multi-modal connectivity requirements.

In conclusion, the development will provide bicycle and pedestrian facilities on-site to encourage people to walk and reduce vehicle trips. The development on the property will allow residents to reduce vehicle usage, by the convenience of bicycle and pedestrian paths to and from the uses and existing sidewalk system. Therefore, the proposed subdivision is in compliance with the intent of the TPR to reduce vehicle usage and encourage other modes of transportation to and from the site.

(5) The street system in and adjacent to the tentative subdivision plan is designed so as to provide for the safe, orderly, and efficient circulation of traffic into, through, and out of the subdivision.

The subject property is located in a developed and developing area where improved streets and sidewalks exist and continue with new development. The local street system serving the development provides the necessary connections and access to the local streets and circulation system serving this residential neighborhood.

Block Length: Blocks shall be a maximum of 600 feet between street centerlines. The length of the blocks was taken into consideration at the time of design layout. There are more than enough street connections within the proposed development, therefore, block lengths are in compliance with the code.

The proposed subdivision provides vehicle and pedestrian connections throughout the development. By providing these connections, the intent of providing a maximum block length and connectivity have been met. Adding additional streets to break of block length would only create unsafe circulation. As shown on the site plan, the proposed subdivision provides a safe an efficient circulation pattern throughout the development for vehicles and pedestrians. Therefore, additional streets are not necessary.

Access to, within, and from the development must be consistent with applicable requirements of the Transportation Planning Rule Requirements (TPR) that requires that development provide connectivity between land uses and transportation. Under the Rule, developments are responsible for providing for the safe and efficient circulation of vehicles, bicycles, and pedestrians into, through, and out of a development. The proposal develops the subject property within an established residential area where local and arterial streets and mass transit facilities exist. These facilities connect the transportation system to the surrounding residential neighborhoods.

The Public Works Department will address the level of street improvements that are roughly proportional to assure conformance to the development to subdivision code and applicable transportation system plan requirements. Completion of conditions of approval prior to the signing of the final plat will satisfy this criterion for the subdivision application.

Street Grade: There are several local streets proposed within the subdivision that exceed the 12% maximum street grade. The applicant is requesting an adjustment and alternative street standards to allow these internal local streets to be developed with a street grade over 12%, up to 15%.

In conclusion, the proposed street plan provides the best economic, safe, and efficient circulation of traffic possible under the circumstances. The proposed subdivision demonstrates this review criterion can be met. Therefore, this criterion has been

satisfied.

(6) The tentative subdivision plan provides safe and convenient bicycle and pedestrian access from within the subdivision to adjacent residential areas and transit stops, and to neighborhood activity centers within one-half mile of the development. For purposes of this criterion, neighborhood activity centers include, but are not limited to, existing or planned schools, parks, shopping areas, transit stops, or employment centers.

The subdivision is served with adequate transportation infrastructure and the street system adjacent the property conforms to the Transportation System Plan and provides for safe, orderly, and efficient circulation of traffic into, through, and out of the subject property on to the public street system.

Therefore, via paved streets and sidewalks, safe and convenient bicycle and pedestrian access will be provided to the site and to adjacent neighborhoods. Therefore, this criteria has been met.

(7) The tentative subdivision plan mitigates impacts to the transportation system consistent with the approved Traffic Impact Analysis, where applicable.

The proposal is for a 209-lot subdivision. A Traffic Impact Analysis (TIA) dated June 20, 2018 and a Traffic Memo dated July 27, 2018, have been provided as part of this application package. The proposed subdivision plan mitigates impacts to transportation system by providing adequate access and circulation for all 209 lots. Therefore, this criterion has been met.

(8) The tentative subdivision plan takes into account the topography and vegetation of the site so the need for variances is minimized to the greatest extent practicable.

All lots are in compliance with the UDC/SRC. Therefore, no variances have been requested.

(9) The tentative subdivision plan takes into account the topography and vegetation of the site, such that the least disruption of the site, topography, and vegetation will result from the reasonable development of the lots.

The subdivision code requires City approval of lots be suitable for the general purpose for which they are likely to be developed. No lots can be of such a size or configuration that is detrimental to public health, safety, or welfare or sanitary needs of users of the parcel or lot.

The subdivision plan takes into consideration the topography and vegetation of the site.

The proposed lots are of sufficient size and dimensions to permit future development. The lot dimensions are illustrated on the tentative site plan and are in conformance to the minimum standards in UDC 510 and 511. Final conformance to minimum lot size and buildable lot area will be confirmed when the final plat is submitted to the City for review and approval.

There are 184 trees located within the boundary of the site. One-hundred and thirty-seven (137) trees are designated for removal. The applicant is preserving 25% of the tree on the site. Trees designated for removal are within the right-of-way, the building envelop or within an area close to the building envelope, which have the potential of being damaged during grading and construction. Therefore, the removal of these 137 trees is necessary for development of the site.

There are ten (10) Oregon White Oaks 24" in diameter or greater located throughout the site. The applicant is removing six (7) of these significant trees.

Lot 3-Oak 32"	Remove
A Avenue-Oak 28"	Remove
A Avenue-Oak 24"	Remove
A Avenue-Oak 60"	Remove
Lot 68-Oak 30"	Remove
J Avenue-Oak 24"	Remove
Lot 74-Oak 40"	Preserve
Lot 168-Oak 48"	Preserve
Reed Road-Oak 32"	Remove
Reed Road-Oak 24"	Preserve

All Oregon White Oaks designated for removal are within the right-of-way, the building envelops or within an area close to the building envelope, which have the potential of being damaged during grading and construction.

The layout of the lots takes into consideration the topography and vegetation of the site. All lots are in compliance with the UDC. Therefore, no variances have been requested. Therefore, this criteria has been met.

10) When the tentative subdivision plan requires an Urban Growth Preliminary Declaration under SRC Chapter 200, the tentative subdivision plan is designed in a manner that ensures that the conditions requiring the construction of on-site infrastructure in the Urban Growth Preliminary Declaration will occur, and, if off-site improvements are required in the Urban Growth Preliminary Declaration, construction of any off-site improvements is assured.

The property and development is located inside the Urban Service Area (USA). However, an Urban Growth Preliminary Declaration (UGA17-03) was issued on August 31, 2017. All conditions of UGA17-03 have been or will be met with the approval of this

subdivision proposal. Condition 4(a) of UGA17-03 requires dedication of land for the future Coburn Reservoir. Proposed Lot 138 will be dedicated to the City of future land for the Coburn Reservoir. Lot 138 will be deeded to the City at the time of recording the final plat. Therefore, this criterion has been met.

TREE CONSERVATION/REMOVAL PLAN

There are 184 trees located within the boundary of the site. One-hundred and thirty-seven (137) trees are designated for removal. The applicant is preserving 25% of the tree on the site. Trees designated for removal are within the right-of-way, the building envelop or within an area close to the building envelope, which have the potential of being damaged during grading and construction. Therefore, the removal of these 137 trees is necessary for development of the site.

There are ten (10) Oregon White Oaks 24" in diameter or greater located throughout the site. The applicant is removing six (7) of these significant trees.

Lot 3-Oak 32"	Remove
A Avenue-Oak 28"	Remove
A Avenue-Oak 24"	Remove
A Avenue-Oak 60"	Remove
Lot 68-Oak 30"	Remove
J Avenue-Oak 24"	Remove
Lot 74-Oak 40"	Preserve
Lot 168-Oak 48"	Preserve
Reed Road-Oak 32"	Remove
Reed Road-Oak 24"	Preserve

PHASED SUBDIVSION 205-015(D)

Criteria. A tentative phased subdivision plan shall be approved if all of the following criteria are met:

(1) The tentative phased subdivision plan meets all of the criteria for tentative subdivision plan approval set forth in SRC 205.010(d).

Applicant Findings: The subject property is about 52.80 acres in size and zoned RA (Residential Single Agriculture). The applicant is proposing to divide the subject property into 209 single family residential lots (within 11 Phases/Sections).

Section A: 24 lots
Section B: 17 lots
Section C: 16 lots
Section D: 24 lots
Section E: 16 lots
Section F: 15 lots

Section G: 21 lots
Section H: 25 lots
Section I: 18 lots
Section J: 17 lots
Section K: 15 lots

Due to topography and the location of the S1 Water Service, the applicant requests that the City of Salem condition the subdivision approval to allow Phases/Sections to be developed out of sequence. Below is the anticipated order of development for the proposed Phases/Sections. However, we would like the flexibility to develop in any logical order.

Section E: 16 lots
Section G: 21 lots
Section I: 18 lots
Section J: 17 lots
Section F: 15 lots
Section H: 25 lots
Section K: 15 lots
Section A: 24 lots
Section D: 25 lots
Section B: 17 lots
Section C: 16 lots

The proposed phased subdivision meets all the criteria for a tentative subdivision as outlined above under SRC 205.010(d).

(2) Connectivity for streets and City utilities between each phase ensures the orderly and efficient construction of required public improvements among all phases.

Applicant Findings: The major street system is in place due to prior and new development. Reed Road located to the west and Battle Creek Road located to the south of the site will provide access into the development. Both Reed Road and Battle Creek Road are designated as a 'minor arterial' on the Salem Transportation System Plan.

The existing and proposed street systems conform to the City's Transportation Plan. All street design and improvements will be determined through the subdivision review process, and regulated through the Conditions of Approval. The proposed internal streets will be designed to street standards.

The major street network in the area has been established and is consistent with the Transportation System Plan which implements the Comprehensive Plan. Public Works Department will address any applicable requirements for right-of-way conveyance that might be required because of this subdivision.

The proposed phased subdivision will not impede the future development of other

phases as shown on the site plan. All phases will have access to the internal street system and the existing street system.

Each phase will ensure the orderly and efficient construction of the required improvements as required by Conditions of Approval and Code compliance.

Therefore, this criteria has been met.

(3) Each phase is substantially and functionally self-contained and self-sustaining with regard to required public improvements.

Applicant Findings: Each phase is required to provide the needed improvements to accommodate that phase. Due to the required conditions of approval and City standards all eleven (11) Phases/Sections will be functionally self-contained and self-sustaining as shown on the site plans.

The subject property is about 52.80 acres in size and zoned RA (Residential Single Agriculture). The applicant is proposing to divide the subject property into 209 single family residential lots (within 11 Phases/Sections). Due to topography and the location of the S1 Water Service, the applicant requests that the City of Salem condition the subdivision approval to allow Phases to be developed out of sequence.

(4) Each phase is designed in such a manner that all phases support the infrastructure requirements for the phased subdivision as a whole.

Applicant Findings: The applicant will be required to comply with conditions of approval that will be designed to ensure that the phases are developed to support the infrastructure requirements for each phase and the subdivision as a whole. See attached site plans.

CLASS-2 ADJUSTMENT

The applicant is requesting an adjustment to SRC 803.035(c):

> ***(c) Alignment and Grade. All streets shall be designed with a vertical alignment that conforms to the Public Works Design Standards. No grade of parkway, major arterial, or minor arterial shall exceed 6 percent. No grade of a collector street shall exceed 8 percent. No grade of a local street shall exceed 12 percent.***

There are several local streets proposed within the subdivision that exceed the 12% maximum street grade. The applicant is requesting an adjustment to allow these internal local streets to be developed with a street grade over 12%, up to 15%.

Adjustment Criteria-SRC 250.005(d)(2) Criteria

(A) The purpose underlying the specific development standard proposed for adjustment is:

> ***(i) Clearly inapplicable to the proposed development; or***
> ***(ii) Equally or better met by the proposed development.***

(B) If located within a residential zone, the proposed development will not detract from the livability or appearance of the residential area.

(C) If more than one adjustment has been requested, the cumulative effect of all the adjustments result in a project which is still consistent with the overall purpose of the zone.

Applicant Findings:

(A) The applicant is requesting an adjustment to street grades. As shown on Sheet 1 of 1, Slope Exception Areas Plan, sections of A Avenue, C Avenue, I Avenue, H Street, M Street, J Avenue, N Street, O Street, and P Avenue within the subdivision will have sections of the roadway with up to a 15% street grade. Due to the topography of the site and the proposed street alignment with existing streets, several streets will exceed the 12% street grade allowed. The areas proposed for slopes in excess of 12% are denoted on the plans and will not exceed a single run length of 200 feet.

The intent of the maximum street grade is to allow vehicles to climb and descend the street safely in all conditions. The internal streets proposed will provide safe and efficient circulation throughout the project. The intent is to construct the streets to provide safe and efficient conditions.

The maximum length of any one section of the 15% grade is 200 feet or less, with sections of flatter slopes between the steep sections. This limits distances, limits the ability of any vehicle to have a speed "run-up" occur while traveling down the roadway.

The increased street grade facilitates access to the lots and property along its route such that quicker exits from the street into driveways can be achieved with reduced cuts and fills into the lots and driveways.

We believe that the intent of the standard is being met; therefore, the proposal equally meets the intent of the maximum street grade standard.

(B) Due to topography and existing streets in this area, the proposed streets are typical to that in any other development in configuration. The use of a steeper roadway will reduce the need for excessive cut or fill slope. This has a positive impact to the surrounding areas. The street will be designed to Public Works standards and will provide efficient access to the lots and property adjacent to its route, therefore, the greater street grade will not distract from the livability or appearance of the residential area.

(C) The applicant is requesting more than one adjustment. The cumulative effect of all the adjustments result in a project which is still consistent with the overall purpose of the zone. Therefore, this criteria is not applicable.

CLASS-1 ADJUSTMENT

The applicant is requesting a Class-1 Adjustment to Section 511.010 (Development Standards) Table 511-2, Lot Standards.

The adjustment is to allow Lot 89 to have a lot depth of about 59 feet where 70 feet is required.

Adjustment Criteria-SRC 250.005(d)(1) Criteria

(1) An application for a Class 1 adjustment shall be granted if all of the following criteria are met:

(A) The purpose underlying the specific development standard proposed for adjustment is:

(i) Clearly inapplicable to the proposed development; or
(ii) Clearly satisfied by the proposed development.

(B) The proposed adjustment will not unreasonably impact surrounding existing or potential uses or development.

Applicant Findings:

(A) The purpose of lot depth is to provide adequate room for a single-family dwelling and required setbacks. This helps provide a buffer between buildings. The applicant is requesting a 16% adjustment to the lot depth requirement for Lot 89. As shown on the site plan, Lot 89 has a lot depth of 59' where 70' is required. Lot 89 has a greater than 70-foot lot depth, however, the lot is odd in shape, therefore, the average lot depth is about 59', has shown on the site plans.

Lot 89 is 10,756 square feet in size. There is an adequate building envelope for this lot. All setbacks will meet or exceed the requirements, providing buffering from adjacent structures.

Therefore, the intent of the lot depth is equally meet by the proposed reduced lot depth.

(B) Adequate setbacks can be provided on Lot 89. The additional length of the odd shaped lot will provide additional landscaped area for Lot 89. Therefore, the decrease in lot depth will have no effect on the surrounding uses.

Urban Growth Preliminary Declaration (UGA) 17-03
Modification

Background:

The applicant and their representative attended a pre-application conference (PRE-AP16-57) on July 7, 2016, with City Staff.

UGA 17-03 was approved for properties identified as 083W11D00100, 00200, 00202, 00400, 00500, 00601, 00602; 083W12B01600; and 083W12C00700, on August 31, 2017.

Proposal:

The applicants are requesting to modify UGA 17-03 in order to modify Condition 4(B).

Current Condition 4: As a condition of development in the S-1 water service level, the applicant shall:

a) Reserve property for dedication of an approximately 90 foot by 252 foot area of land abutting the north line of tax lots 083W12C00701 and 083W11D00101 for future construction of Coburn Reservoir.

b) Construct a minimum 18-inch S-1 water main from the terminus of the existing S-1 water main in Marietta Street SE near Fairview Industrial Drive SE to the Coburn Reservoir site.

c) Construct Coburn Reservoir, Boone Road S-1 Pump Station, and S-1 connecting water mains as indicated in the Water System Master Plan; or pay a temporary access fee pursuant to SRC 200.080(a). The temporary access fee shall be $10,000 per acre of land being developed within the S-1 service area. The TAF is not due for land conveyed to the City. The TAF shall be subtracted by the following, but shall not be less than $0 (i) the market value of the land conveyed pursuant to Condition 1.a above; and (ii) the certified cost of the non-reimbursed off-site portion of the water main constructed pursuant to Condition 1.b above.

Proposed Condition 4: As a condition of development in the S-1 water service level, the applicant shall:

a) Reserve property for dedication of an approximately 90 foot by 252 foot area of land abutting the north line of tax lots 083W12C00701 and 083W11D00101 for future construction of Coburn Reservoir.

b) Construct a minimum 18-inch S-1 water main from Lindburg Road and Strong Road to the Coburn Reservoir site.

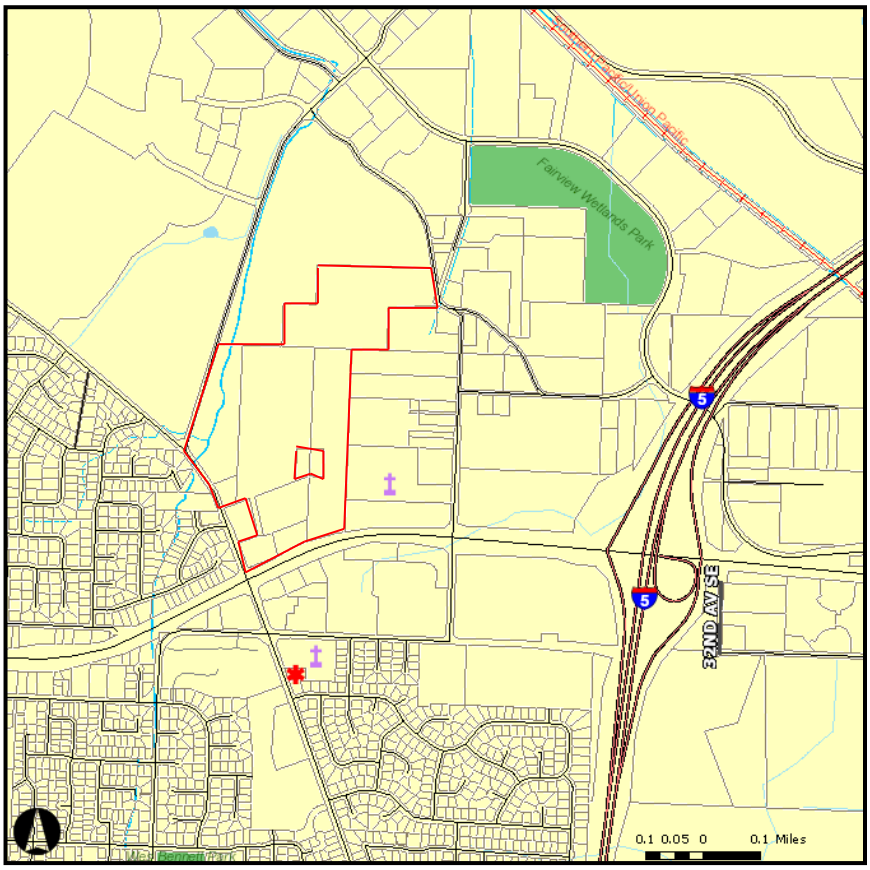
c) Construct Coburn Reservoir, Boone Road S-1 Pump Station, and S-1 connecting water mains as indicated in the Water System Master Plan; or pay a temporary access fee pursuant to SRC 200.080(a). The temporary access fee shall be $10,000 per acre of land being developed within the S-1 service area. The TAF is not due for land conveyed to the City. The TAF shall be subtracted by the following, but shall not be less than $0 (i) the market value of the land conveyed pursuant to Condition 1.a above; and (ii) the certified cost of the non-reimbursed off-site portion of the water main constructed pursuant to Condition 1.b above.

The following properties are involved in this requested UGA modification:

*083W11D/Tax Lots 100, 200, 202, 400, 500, 601, 602

*083W12B/Tax Lot 1600

*083W12C/Tax Lot 700



CITY OF Salem AT YOUR SERVICE

MEMO

TO: Olivia Glantz, Planner III
Community Development Department

FROM: For Glenn J. Davis, PE, CFM, Chief Development Engineer
Public Works Department

DATE: November 20, 2019

SUBJECT: **PUBLIC WORKS RECOMMENDATIONS**
SUB-ADJ19-08 & UGA17-03MOD1
4700 BATTLE CREEK ROAD SE
209-LOT SUBDIVISION

PROPOSAL

A consolidated application for a 209-lot phased subdivision (Coburn Grand View Estates) northeast of the intersection of Kuebler Boulevard SE and Battle Creek Road SE, containing the following requests:

1. A subdivision tentative plan to divide approximately 52.80 acres into 209 lots ranging in size from approximately 4,400 square feet to approximately 13,500 square feet, including Alternative Street Standards request to increase the street grade from 12 percent to 15 percent for five street intervals and 52-foot right-of-way where 60 feet is required, and removal of street trees along Reed Road SE, Battle Creek Road SE, and Strong Road SE;

2. Zoning Adjustment application to reduce lot width for Lot 89 from 70 feet to 59 feet; and

3. Urban Growth Preliminary Declaration Modification (UGA17-03) to re-evaluate the location of off-site water mains that provide City water to the development.

The subject properties are approximately 68.14 acres (52.80 acres for subdivision), zoned RA (Residential Agriculture), and located on the 4700 block of Battle Creek Road SE (Marion County Assessor Map and Tax Lot Numbers 083W12B / 1600, 083W12C / 700 and 083W11D /100, 200, 400, 500, 601, 602).

RECOMMENDED URBAN GROWTH PRELIMINARY DECLARATION CONDITIONS

1. Modify condition 4 to read as follows:

Code authority references are abbreviated in this document as follows: *Salem Revised Code* (SRC); *Public Works Design Standards* (PWDS); *Salem Transportation System Plan* (Salem TSP); and *Stormwater Management Plan* (SMP).

a. Convey lot 138 to the City for future construction of Coburn Reservoir.

b. Construct a minimum 18-inch water main in one of the following locations:

   i. In Reed Road SE from the north line of the subject property to Strong Road SE; or

   ii. In Strong Road SE and Marietta Street, from the south line of the subject property to the terminus of the existing S-1 water main in Marietta Street SE near Fairview Industrial Drive SE.

c. Construct a minimum 18-inch water main from the south line of the subject property along Strong Road SE through the subject property to the north line of the subject property along Reed Road SE. The 18-inch water main shall be extended also to the south line of lot 138.

d. Construct a minimum 12-inch water main from the intersection of Reed Road SE and future J Street SE to the intersection of Battle Creek SE and future N Street SE.

e. Construct Coburn Reservoir, Boone Road S-1 Pump Station, and S-1 connecting water mains as indicated in Water System Master Plan; or pay a Temporary Access Fee (TAF) pursuant to SRC 200.080(a). The TAF shall be $2,310,000 based on $12,000 per acre of land being developed within the S-1 service area.

RECOMMENDED CONDITIONS OF PLAT APPROVAL

As a condition of final plat approval for all phases:

1. Provide an engineered stormwater design pursuant to SRC 71 and PWDS to accommodate future impervious surface on all proposed lots, including stormwater facilities needed to serve new streets.

2. All lots within the S-1 service level shall be served by S-1 water mains, and all lots within the S-2 service level shall be served by S-2 water mains. Water mains may need to be extended through future unconstructed phases within temporary easements in order to serve all lots in each phase.

3. Dedicate a 10-foot public utility easement along the street frontage of all internal streets.

4. Construct internal streets to Local street standards, including property-line sidewalks and installation of street trees. Portions of future streets K, M, and N (as shown on

the Slope Exception Areas plan) are approved as an alternative street standard pursuant to SRC 803.065 with a minimum right-of-way width of 52 feet, and a 4-foot-wide planter strip to accommodate street trees. Boundary street improvements may be modified pursuant to SRC 803.065 as needed to avoid impacts to street trees.

5. The street areas shown on the Slope Exception Areas plan are approved as an alternative street standard pursuant to SRC 803.065 with slopes not exceeding 15 percent.

6. Construct Coburn Reservoir, Boone Road S-1 Pump Station, and S-1 connecting water mains as indicated in Water System Master Plan; or pay a Temporary Access Fee (TAF) pursuant to SRC 200.080(a). The TAF shall be $12,000 per acre of land being developed within the S-1 service area as proportional payments within each section as specified below.

7. Reserve property for dedication of neighborhood park facility not less than 6.5 acres in size.

8. Trees proposed for removal that are located within the special setback of abutting streets shall follow the procedures of SRC Chapter 86.

9. The development phasing shall follow the sequence specified in the application materials.

As a condition of final plat for Section E:

10. Construct a realigned intersection of Battle Creek Road SE and Reed Road SE to minor arterial standards pursuant to PWDS and acquire and/or convey land for dedication of right-of-way as needed to construct the improvements. The new intersection shall include a westbound to southbound left turn lane on Reed Road SE, a southbound to eastbound left-turn lane on Battle Creek Road SE, a northbound to eastbound right-turn lane on Battle Creek Road SE, and a pedestrian island on Battle Creek Road SE along the south side of the intersection. If off-site right-of-way is needed to construct the improvements and the applicant is unable to acquire the right-of-way from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050.

11. Construct a temporary pedestrian access route in Reed Road SE from J Avenue to Battle Creek Road SE,

12. Construct a minimum 18-inch S-1 water main in Reed Road SE from Strong Road SE to J Avenue SE.

13. Construct a minimum 18-inch S-1 water main in J Avenue SE from Reed Road SE to

H Street SE, and in H Street SE from the south line of Section E to the north line of Section E.

14. Pay $43,362 as the proportional amount of the water TAF.

As a condition of final plat for Section G:

15. Along Reed Road SE from Battle Creek Road SE to the north line of the subject property, construct a minimum 23-foot-wide half street improvement to Minor Arterial standards within a minimum 36-foot-wide half-width right-of-way. The improvements shall include on-street parking and tapers.

16. Pay $52,491 as the proportional amount of the water TAF.

17. Construct multi-modal trails to the proposed park as shown on tentative subdivision plan to PWDS Standards.

As a condition of final plat for Section I:

18. Along Battle Creek Road SE from Reed Road SE to the south line of Section I, construct a 23-foot-wide half-street improvement to Minor Arterial standards within a minimum 36-foot-wide half-width right-of-way.

19. Construct a minimum 12-inch S-1 water main in Reed Road SE from J Avenue SE to Battle Creek Road SE, and in Battle Creek Road SE from Reed Road SE to N Street SE. Design City infrastructure improvements at the Reed/Battle Creek intersection in sufficient detail to determine that the water main construction meets PWDS.

20. Pay $43,362 as the proportional amount of the water TAF.

As a condition of final plat for Section J:

21. Pay a temporary access fee of $13,680 toward the future signal at Battle Creek Road SE and Reed Road SE.

22. Construct a pedestrian access route along missing sections of sidewalk on the west side of Battle Creek Road SE from Reed Road SE to Forsythe Drive SE.

As a condition of final plat for Section F:

23. Construct a minimum 18-inch S-1 water main in K Street SE from the north line to the south line of Section F.

24. Pay $27,387 as the proportional amount of the water TAF.

As a condition of final plat for Section H:

25. Convey lot 138 to the City for future construction of Coburn Reservoir.

26. Construct a minimum 18-inch S-1 water main in K Street SE from the north line of Section H to the south line of lot 138.

27. Pay $11,411 as the proportional amount of the water TAF.

As a condition of final plat for Section A:

28. Convey land for dedication of right-of-way to equal a half-width of 30 feet from centerline along the entire frontage of Strong Road SE.

29. Construct a 15-foot-wide half-street improvement on the development of centerline and a 15-foot-wide pavement widening on the opposite side of centerline along Strong Road SE.

30. Construct a minimum 18-inch S-1 water main within Sections A and D from H Street SE at the south line of Section D to Strong Road SE at the south line of Section A. Design City infrastructure improvements needed for Section D in sufficient detail to determine that the water main construction meets PWDS. Construct a temporary utility and emergency access road along the water main alignment.

31. Pay $59,337 as the proportional amount of the water TAF.

As a condition of final plat for Section D:

32. Proposed lots 57-59 and 74-81 shall connect to the existing sewer mains in Reed Road SE. Proposed lots 60-73 shall connect to the existing sewer mains in Strong Road SE. If off-site easements are needed because of topographic constraints and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050.

33. Proposed lots 57-59 and 74-81 shall connect to the existing stormwater facilities abutting Reed Road SE. Proposed lots 60-73 shall connect to the existing stormwater facilities in Strong Road SE. If off-site easements are needed because of topographic constraints and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050.

34. Pay $57,055 as the proportional amount of the water TAF.

As a condition of final plat for Section B:

35. Pay $38,798 as the proportional amount of the water TAF.

As a condition of final plat for Section C:

36. Pay $38,798 as the proportional amount of the water TAF.

FACTS AND FINDINGS

Water

1. Existing Conditions

   a. The subject property is located within the S-1 and S-2 water service levels.

   b. A 12-inch water line in the S-2 service level is located in Kuebler Boulevard SE. Mains of this size generally convey flows of 2,100 to 4,900 gallons per minute.

Sanitary Sewer

1. Existing Conditions

   a. A 15-inch sewer line is located in Reed Road SE.

   b. A 24-Inch sewer line is located in 27th Avenue SE.

Storm Drainage

1. Existing Condition—Drainage patterns in this area are generally conveyed into Pringle Creek. The property is on a ridge in which the drainage flows to the northwest toward the West Middle Fork of Pringle Creek, northeast toward Strong Road SE, or southeast toward Kuebler Boulevard SE.

Streets

1. Reed Road SE

   a. Standard—This street is designated as a Minor Arterial street in the Salem TSP. The standard for this street classification is a 46-foot-wide improvement within a 72-foot-wide right-of-way.

b. Existing Condition—This street has an approximate 20-foot improvement within a 40-foot-wide right-of-way abutting the subject property.

2. Battle Creek Road SE

a. Standard—This street is designated as a Minor Arterial street in the Salem TSP. The standard for this street classification is a 46-foot-wide improvement within a 72-foot-wide right-of-way.

b. Existing Condition—This street has an approximate 20-foot to 46-foot improvement within a 60-foot to 72-foot-wide right-of-way abutting the subject property.

3. Kuebler Boulevard SE

a. Standard—This street is designated as a Parkway street in the Salem TSP. The standard for this street classification is an 80-foot-wide improvement within a 120-foot-wide right of way.

b. Existing Condition—This street has an approximate 70-foot to 80-foot improvement within a 120-foot to 150-foot-wide right-of-way abutting the subject property. The parkway was previously approved for an alternative street standard to allow the 70-foot improvement width.

c. Access control—No driveway access will be granted onto Kuebler Boulevard SE.

4. Strong Road SE

a. Standard—This street is designated as a Collector street in the Salem TSP. The standard for this street classification is a 34-foot-wide improvement within a 60-foot-wide right-of-way.

b. Existing Condition—This street has an approximate 20-foot to 30-foot improvement within a 40-foot to 60-foot-wide right-of-way abutting the subject property.

Parks

No parks facilities are available to serve the proposed development. The Comprehensive Parks System Master Plan shows that a Neighborhood Park (NP 32) and Urban Park (UP 3) are planned on or near the subject property.

CRITERIA AND FINDINGS

The following code references indicate the criteria that must be found to exist before an affirmative decision may be made. The applicable criteria and the corresponding findings are as follows:

SRC 205.010(d)(1)—The tentative subdivision plan complies with the standards of this Chapter and with all applicable provisions of the Unified Development Code, including, but not limited to the following:

1. Lot standards, including, but not limited to, standards for lot area, lot width and depth, lot frontage, and designation of front and rear lot lines;

2. City infrastructure standards; and

3. Any special development standards, including, but not limited to floodplain development, special setbacks, geological or geotechnical analysis, and vision clearance.

Findings—The applicant shall provide the required field survey and subdivision plat per Statute and Code requirements outlined in the *Oregon Revised Statutes* (ORS) and SRC. If said documents do not comply with the requirements outlined in ORS and SRC, and as per SRC Chapter 205, the approval of the subdivision plat by the City Surveyor may be delayed or denied based on the non-compliant violation. It is recommended the applicant request a pre-plat review meeting between the City Surveyor and the applicant's project surveyor to ensure compliance with ORS 672.005(2)(g)&(h), 672.007(2)(b), 672.045(2), 672.060(4), *Oregon Administrative Rules* 850-020-0015(4)&(10), 820-020-0020(2), and 820-020-0045(5).

According to the City's adopted landslide hazard susceptibility maps and SRC Chapter 810 (Landslide Hazards), there are areas of landslide susceptibility on the subject property. There are 3 mapped site points for the property pursuant to SRC Chapter 810. The proposed subdivision adds 3 activity points to the proposal, which results in a total of 6 points. Therefore, the proposed subdivision is classified as a moderate landslide risk and requires a geologic assessment. A geologic assessment, prepared by Redmond Geotechnical Services and dated July 20, 2018, was submitted to the City of Salem. This assessment demonstrates the subject property could be subdivided and developed with single-family dwellings, without increasing the potential for slope hazard on the site or adjacent properties.

SRC 205.010(d)(3)—Development within the tentative subdivision plan can be adequately served by City infrastructure.

Findings— The nearest adequate water main is located in Reed Road SE at Strong Road SE, approximately 2,000 feet north of the subject property. The applicant shall be

required to construct a minimum 18-inch S-1 water main from the Reed/Strong intersection through the subject property to Strong Road SE at Section A and to the Coburn Reservoir site. A 12-inch main is required from J Avenue SE in Section E to N Avenue in Section I.

The Water System Master Plan specifies that the subject property is to be served by the future Coburn Reservoir and future Boone Road S-1 pump station. The subject property surrounds the site of the future Coburn Reservoir (tax lots 083W12C00701 and 083W11D00101). The existing reservoir site does not provide two acres of land needed for construction of the reservoir. Therefore, the applicant shall be required to convey lot 138 for future construction of Coburn Reservoir.

Temporary capacity is available in the Mill Creek Reservoir and Deer Park Pump Station through payment of a temporary access fee pursuant to SRC 200.080(a). In lieu of constructing Coburn Reservoir and Boone Road Pump Station, the applicant has the option of paying a temporary access fee. The temporary access fee for this area of the S-1 service area is based on approximately 9 million dollars of improvements needed to serve 750 acres of undeveloped land, totaling $12,000 per acre. The total S-1 area for the subject property is 31.0 acres; therefore, the TAF shall be a total of $372,000The TAF has been apportioned to each section based on the number of lots being created in the S-1 area as shown in the following table:

Section	S-1 Lots	Percentage	TAF Amount
E	19	11.7	$43,362
G	23	14.1	$52,491
I	19	11.7	$43,362
J	0	0	$0
F	12	7.4	$27,387
H	5	3.1	$11,411
K	0	0	$0
A	26	16.0	$59,337
D	25	15.3	$57,055
B	17	10.4	$38,798
C	17	10.4	$38,798

As a condition of sewer service, all developments will be required to provide public sewers to adjacent upstream parcels. This shall include the extension of sewer mains in easements or rights-of-way across the property to adjoining properties, and across the street frontage of the property to adjoining properties when the main is located in the street right-of-way. Existing sewer mains in Strong Road SE and Reed Road SE may not be available to serve the northernmost portion of the site (Section D) because of topographic constraints. Proposed lots 57-59 and 74-81 shall connect to the existing sewer mains in, and stormwater facilities abutting, Reed Road SE. Proposed lots 60-73

shall connect to the existing sewer mains and stormwater facilities in Strong Road SE. If off-site easements are needed and the applicant is unable to acquire easements from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050.

The proposed development is subject to SRC Chapter 71 and the revised PWDS as adopted in Administrative Rule 109, Division 004. To demonstrate the proposed parcels can meet the PWDS, the applicant shall provide an engineered tentative stormwater design to accommodate future impervious surface on all proposed lots. The applicant's engineer has submitted a preliminary design report that demonstrates compliance with PWDS. Prior to final plat of all subdivision phases, the applicant shall provide an engineered stormwater design pursuant to SRC 71 and PWDS to accommodate future impervious surface on all proposed lots, including stormwater facilities needed to serve new streets.

All public and private City infrastructure proposed to be located in the public right-of-way shall be constructed or secured per SRC 205.035(c)(7)(B) prior to final plat approval. Any easements needed to serve the proposed parcels with City infrastructure shall be shown on the final plat.

SRC 205.010(d)(4) and SRC 205.0010(d)(5)—The street system in and adjacent to the tentative subdivision plan conforms to the *Salem Transportation System Plan*. The street system in and adjacent to the tentative subdivision plan is designed so as to provide for the safe, orderly, and efficient circulation of traffic into, through, and out of the subdivision.

Finding—Battle Creek Road SE, Reed Road SE, and Strong Road SE abut the subject property and do not meet the current standard for their classification of street. Pursuant to SRC 200.055(d), boundary street improvements and right-of-way dedication are required along Battle Creek Road SE, Reed Road SE, and Strong Road SE based on their street classification. A realignment of the Reed/Battle Creek intersection is warranted because the intersection angle does not meet PWDS. The application materials request a number of alternate street standards pursuant to SRC 803.065 for internal streets. These street sections meet the criteria for alternative street standards as described below:

1. A few short sections of internal streets require a street grade up to 15 percent. These street sections are warranted because of topographic constraints.

2. M Street from J Avenue to P Avenue, and N Street from the north line of the subject property to Battle Creek Road SE, are proposed for a 50-foot-wide right-of-way. The minimum right-of-way for these streets shall be 52 feet with a minimum 4-foot-wide landscape strip between the curb and sidewalk. These alternative standards are warranted because of topographic constraints

3. M Street and N Street have block lengths exceeding 600 feet. The applicant shall be required to install mid-block pedestrian accessways between M Street and N Street and between M Street and K Street. These longer block lengths are warranted because of topographic constraints.

SRC 803.025 (Right-of-Way and Pavement Widths): Reed Road SE and Battle Creek Road SE are designated as Minor Arterial streets in the TSP. Reed Road SE abuts the northwestern boundary of the subject property and Battle Creek Road SE the southern property line. Currently, Battle Creek Road SE and Reed Road SE do not meet Minor Arterial standards. The applicant will be required to convey for dedication half-width right-of-way equal to 36 feet from center line and construct a half-street improvement along the entire frontage to a Minor Arterial standard.

Pursuant to UG Preliminary Declaration 17-03, the applicant proposed a neighborhood park within the development along Reed Road SE. Neighborhood parks are generally located on local streets. Neighborhood park standards do not generally include a separate parking lot, but instead are served by on-street parking. The standard minor arterial street section includes bike lanes, but not parking. Therefore, the applicant is required to provide on-street parking along Reed Road SE in order to provide safe and convenient bicycle and pedestrian access from within the subdivision to adjacent residential areas to neighborhood activity centers within one-half mile of the development.

A realignment of the Reed/Battle Creek intersection is warranted because the intersection angle does not meet PWDS. The applicant shall be required to construct a realigned intersection of Battle Creek Road SE and Reed Road SE to minor arterial standards pursuant to PWDS and acquire and/or convey land for dedication of right-of-way as needed to construct the improvements. The new intersection shall include a westbound to southbound left-turn lane on Reed Road SE, a southbound to eastbound left-turn lane on Battle Creek Road SE, a northbound to eastbound right-turn lane on Battle Creek Road SE, and a pedestrian island on Battle Creek Road SE along the south side of the intersection. If off-site right-of-way is needed to construct the improvements and the applicant is unable to acquire the right-of-way from adjacent property owner(s), then the applicant shall follow the procedures established in SRC 200.050.

SRC 205.010(d)(6)—The tentative subdivision plan provides safe and convenient bicycle and pedestrian access from within the subdivision to adjacent residential areas and transit stops, and to neighborhood activity centers within one-half mile of the development. For purposes of this criterion, neighborhood activity centers include, but are not limited to, existing or planned schools, parks, shopping areas, transit stops, or employment centers.

Findings— No sidewalk exists along portions of the west side of Battle Creek Road SE from Reed Road SE to Forsythe Drive SE. Sidewalk improvements are required to provide safe pedestrian access to the proposed park being developed in conjunction with the proposed development. The applicant shall construct a pedestrian access route along missing sections of sidewalk on the west side of Battle Creek Road SE from Reed Road SE to Forsythe Drive SE. Since the boundary street improvement along Reed Road SE will not be completed until Section G, pedestrians will not be provided a safe access. For pedestrian safety, a pedestrian access route is also required in Reed Road SE from J Avenue to Battle Creek Road SE in conjunction with Section E, the first phase.

No parks facilities are available to serve the proposed development. The Comprehensive Parks System Master Plan shows that a Neighborhood Park (NP 32) and Urban Park (UP 3) are planned on or near the subject property. The applicant shall reserve property for dedication of neighborhood park facility NP-32 based on sizing criteria established in SRC 200.075(b). The City is in contract to purchase a 7.35-acre portion of the subject property for a future park, which would satisfy this condition.

SRC 205.010(d)(7)—The tentative subdivision plan mitigates impacts to the transportation system consistent with the approved Traffic Impact Analysis (TIA), where applicable.

Findings— The applicant submitted a TIA from Associated Transportation Engineering & Planning, Inc. on June 20, 2018. The TIA recommends additional turn lanes to be constructed at the Reed/Battle Creek intersection. No other mitigation is recommended. The Assistant City Traffic Engineer has determined that additional mitigation measures are necessary based on the volume of traffic being generated by the development.

Based on the TIA data, the applicant shall be required to construct a realigned intersection of Battle Creek Road SE and Reed Road SE to minor arterial standards pursuant to PWDS and acquire and/or convey land for dedication of right-of-way as needed to construct the improvements. The new intersection shall include a westbound to southbound left turn lane on Reed Road SE, a southbound to eastbound left turn lane on Battle Creek Road SE, a northbound to eastbound right turn lane on Battle Creek Road SE, and a pedestrian island on Battle Creek Road SE along the south side of the intersection. The reconstruction and alignment of the intersection is needed to provided safe turning movement onto Reed Road SE for the additional 209 dwellings.

A future signal will be warranted in the future at the Reed/Battle Creek intersection. Based on the TIA, the proposed development will add 32 PM peak hour vehicles to the Reed/Battle Creek intersection, which is a 3.04 percent increase because the intersection currently has 1,056 vehicles at build-out during the PM peak hour. The applicant is required to pay a temporary access fee of 3.04 percent of the future signal and interconnect cost of $450,000, or $13,680.

Analysis of Amendment (modification) to Urban Growth Preliminary Declaration Criteria

SRC Chapter 200.030(d) provides that an applicant for an amendment to an Urban Growth Preliminary Declaration shall be granted if:

(1) A change in the circumstances has occurred which has the effect of making the list of required public facilities inappropriate or inadequate.

(2) The proposed amendment does not simply reduce the developer's costs by shifting construction to later phases or to another developer or the public, unless the benefits received by such other developer and the public are significantly increased.

(3) The change does not result in a development that does not otherwise meet all requirements of this chapter.

Finding: The original water system requirements proposed to extend water mains from the east and entering the property from Strong Road SE at Section A. However, the first phase of the development is Section E along Reed Lane, and an adequate water main is available to serve the proposed development from Reed Lane. By serving the property from a main to the northeast, the applicant will not be required to modify the phasing sequence and/or construct water mains in undeveloped phases. The proposed modification does not simply reduce the developer's costs or shift construction to later phases.

A. **Impact of Increased Traffic on Adjacent Streets.** Several comments received express concern with increased traffic in the vicinity as a result of the subdivision. Specific concerns raised regarding traffic and impacts on adjacent streets include the following:

- Re-alignment and improvements of Reed Road SE
- A Traffic Impact Analysis (TIA) is insufficient for the proposed development.

Staff Response: The Public Works Department has evaluated the proposal and submitted comments indicating that as conditioned it will have adequate width and pedestrian access. The proposal will result in street improvements of Battle Creek Road SE, Strong Road SE, Reed Road SE, and the extension of new local streets through the subdivision in conformance with current standards for vehicle, pedestrian, and bicycle facilities. These streets will connect to existing streets and fill in gaps within the current street network. The TIA identifies traffic impacts and necessary mitigation measures to accommodate the proposed development.

MEMO

The City Traffic Engineer has determined that additional mitigation measures are necessary based on the volume of traffic being generated by the proposed development. Additional mitigation of traffic impacts is provided through construction of frontage improvements along Strong Road SE, Reed Road SE, and Battle Creek Road SE, as well as the re-alignment and construction of the intersection of Reed Road SE and Battle Creek Road SE, and payment of a proportional share or temporary access fee for a future signal light at the intersection of Reed Road SE and Battle Creek Road SE.

NOTICE OF DECISION

PLANNING DIVISION
555 LIBERTY ST. SE, RM 305
SALEM, OREGON 97301
PHONE: 503-588-6173
FAX: 503-588-6005

CITY OF Salem AT YOUR SERVICE

Si necesita ayuda para comprender esta informacion, por forvor llame 503-588-6173

PLANNING ADMINISTRATOR DECISION FOR TREE CONSERVATION PLAN

CASE NO.:	TCP19-14
AMANDA NO.:	19-111682-NR
DATE OF DECISION :	December 3, 2019
PROPERTY LOCATION:	4700 Block Battle Creek Road
APPLICANT:	Westwood Homes, LLC

REQUEST

A Tree Conservation Plan in conjunction with the Subdivision-Adjustment 19-08 and UGA17-03MOD1 (Case No. SUB-ADJ19-08 and UGA17-03MOD1) proposing the preservation of 47 tree, or 25.5 percent, out of a total of 137 trees on the property. The subject property is approximately 52.80 acres in size, zoned RS (Single Family Residential). The subject properties are approximately 68.14 acres (52.80 acres for subdivision), zoned RA (Residential Agriculture), and located on the 4700 Block of Battle Creek Road SE (Marion County Assessor Map and Tax Lot Numbers 083W12B / 1600, 083W12C / 700 and 083W11D /100, 200, 400, 500, 601, 602).

FINDINGS

The subject properties are approximately 68.14 acres (52.80 acres for subdivision), zoned RA (Residential Agriculture), and located on the 4700 Block of Battle Creek Road SE (Marion County Assessor Map and Tax Lot Numbers 083W12B / 1600, 083W12C / 700 and 083W11D /100, 200, 400, 500, 601, 602) and subject to a subdivision application (Case No. SUB-ADJ19-08 & UGA17-03MOD1).

The tree conservation plan identifies a total of three trees above 10 inches diameter-at-breast-height (dbh) on the property, with two trees identified for removal and one tree identified for preservation.

There are seven significant oak trees located on the subject property proposed to be removed.

There are no heritage trees, or riparian corridor trees or vegetation located on the property.

1. Tree Conservation Plan Approval Criteria (SRC 808.035(d)):

SRC 808.035(d) establishes the following approval criteria for tree conservation plans:

(1) No heritage trees are designated for removal;

(2) No significant trees are designated for removal, unless there are no reasonable design alternatives that would enable preservation of such trees;

(3) No trees or native vegetation in a riparian corridor are designated for removal, unless there are no reasonable design alternatives that would enable preservation of such trees or native vegetation;

(4) Not less than 25 percent of all trees located on the property are designated for preservation; provided, however, if less than 25 percent of all trees located on the property are designated for preservation, only those trees reasonably necessary to accommodate the proposed development shall be designated for removal.

2. Analysis of Tree Conservation Plan Approval Criteria:

(1) No heritage trees are designated for removal.

Finding: There are no heritage trees located on the subject property; therefore, the preservation requirements of SRC 808.035(d)(1) are not applicable to the tree conservation plan.

(2) No significant trees are designated for removal, unless there are no reasonable design alternatives that would enable preservation of such trees.

Finding: There is ten significant trees located on the subject property and seven are proposed for removal.

Staff determined with the subdivision review, that the significant oak located on Lot 68 is not located within a building setback and can be preserved. In addition, two significant trees would be located within the future right-of-way and may be able to be preserved with the above alternative street standard to meander the sidewalk. A 32" significant oak tree near the new right of way of Strong Road, adjacent to Lot 3 shall be preserved as a future street tree and any future removal analyzed pursuant to SRC 86. The applicant is proposing to save a 24" significant oak tree adjacent to the proposed park. Oregon White Oak trees are more likely to survive when clustered with others, therefore, staff finds that the two oak trees (32" significant oak and 10" oak) adjacent to the proposed preserved tree may should be preserved. The three trees adjacent to the proposed park, along Reed Road shall be considered future street trees and any future removal shall be analyzed pursuant to SRC 86. The conditions placed on the property under SUB-ADJ19-08 is as follows;

Condition - Prior to issuance of public construction permits, a tree preservation and protection plan pursuant to SRC Chapter 86 and Salem Administrative Rule 109-500, and signed by a certified arborist, shall be submitted for the identified preserved "Future Street Trees" (32" Oak, 10" Oak and 24" Oak along Reed Road & 32" Oak along Strong), to the City for review. Future Street Trees, identified above, shall be preserved. Any proposed removal of identified Future Street Trees (listed above) would require a separate removal permit pursuant to SRC 86.090.

The subdivision decision (SUB-ADJ19-08) did approve an alternative street standard to preserve existing and future street trees along Reed Road and Strong Road. Any future removal of those street trees will be reviewed pursuant to SRC 86. The conditions placed on the property under SUB-ADJ19-08 is as follows;

Condition - Prior to issuance of public construction permits, a tree preservation and protection plan pursuant to SRC Chapter 86 and Salem Administrative Rule 109-500, and signed by a certified arborist, shall be submitted for the identified preserved "Future Street Trees" (32" Oak, 10" Oak and 24" Oak along Reed Road & 32" Oak along Strong), to the City for review. Future Street Trees, identified above, shall be preserved. Any proposed removal of identified Future Street Trees (listed above) would require a separate removal permit pursuant to SRC 86.090.

Condition – The significant oak located on Lot 68 and the two 40-inch Fir trees near Strong Road shall be preserved.

(3) No trees or native vegetation in a riparian corridor are designated for removal, unless there are no reasonable design alternatives that would enable preservation of such trees or native vegetation.

Finding: There is no riparian corridor present on the subject property; therefore, the preservation requirements of SRC 808.035(d)(3) are not applicable to the tree conservation plan.

(4) Not less than 25 percent of all trees located on the property are designated for preservation; provided, however, if less than 25 percent of all trees located on the property are designated for preservation, only those trees reasonably necessary to accommodate the proposed development shall be designated for removal.

Finding: The applicant submitted a Tree Conservation Plan in conjunction with the proposed subdivision identifying a total of 184 trees on the property, ten of which are significant oaks. The 184 total trees do not include any trees on lot 82, which is zoned PH (Public and Private Health Services) and is not subject to the requirements for a Tree Conservation Plan. There are no heritage trees or riparian corridor trees and vegetation located on the property.

The applicant is not proposing to remove any trees on Lot 82. The Tree Conservation Plan for the remainder of the subdivision identifies 47 trees (25.5%) for preservation and 137 trees (74.5%) for removal.

The subdivision decision added six trees to be preserved. The modified tree conservation plan preserves more than 25 percent of the existing trees on the property and designating four trees as future street trees, therefore exceeding the minimum 25 percent preservation requirement under SRC Chapter 808. In addition, though four of the ten existing significant oaks on the property are to be removed, their removal is necessary because of no reasonable design alternatives that would enable their preservation. The tree conservation plan is being reviewed

by staff and, if approved, will be binding on the lots until final occupancy is granted for the construction of dwelling units on the lots.

In addition to the trees located on the subject property, there are also trees located within the existing right-of-way along Battle Creek Road, Reed Road and Strong Road. Pursuant to the tree preservation ordinance (SRC Chapter 808), tree conservation plans are required to identify and preserve the minimum required number of trees on the property. Because there are trees located within the existing right-of-way's which are not located on the property, they are not subject to the provisions of SRC Chapter 808 and are not counted toward the total number of trees on the site. These trees are instead considered trees on City owned property and subject to the provisions of SRC Chapter 86. All boundary streets (Reed Road, Battle Creek Road and Strong Road) are approved for an alternative street standard to meander the sidewalk to accommodate for street trees to be preserved. To ensure that the street trees are reviewed under SRC 86, the Subdivision applied the following condition:

Condition - Trees proposed for removal that are located within the right-of-way abutting streets shall follow the procedures of SRC Chapter 86.

Because the tree conservation plan preserves more than 25 percent of the existing trees on the subject properties, the tree conservation plan complies with the requirements of SRC 808.035(d)(4).

3. SRC Chapter 808 Planting Requirements

SRC Chapter 808.050 establishes tree planting requirements for lots or parcels to be used for Single Family or Two Family uses. The specific number of trees that must be provided on each lot is based upon the requirements of Table 808-1, as shown below:

Table 808-1

Lot Size	Required Trees
Up to and including 6,000 square feet	2
6,001 to 7,000 square feet	3
7,001 to 8,000 square feet	4
8,001 to 9,000 square feet	5
Above 9,000 square feet	6

In the event there are insufficient existing trees on a lot or parcel to meet the requirements of Table 808-1, the deficiency shall be made up by planting trees that are at least 1.5 inches in caliper.

DECISION

The proposed Tree Conservation Plan is consistent with the provisions of SRC Chapter 808. The Tree Conservation Plan is hereby **APPROVED,** subject to SRC Chapter 808 and the following conditions, adopted pursuant to SRC 808.050(e)(2):

Condition 1: All trees designated for retention under the tree conservation plan shall be marked and protected during construction. Any heritage tree or significant tree shall require that at least 70 percent of a circular area beneath the tree measuring one foot in radius for every one inch of dbh be protected by an above ground silt fence or its equivalent. Tree protection measures shall remain in place until the issuance of Notice of Final Completion for the Single Family dwelling or Two Family dwelling.

Condition 2: Each lot or parcel within the development proposal shall comply with the tree planting requirements set forth in SRC 808.050.

Condition 3: The conditions of SUB-ADJ19-08 and MOD17-03MOD1 shall be complied with during all construction activities.

The applicant, and all representatives thereof, shall comply with all applicable development standards of SRC Chapter 808. The approved Tree Conservation Plan is on file with the City of Salem and is binding on the lots created by the subdivision of the subject property. No tree designated for removal on the approved Tree Conservation Plan shall be removed or critically damaged prior to the Tree Conservation Plan approval date.

Olivia Glantz

Planning Administrator Designee

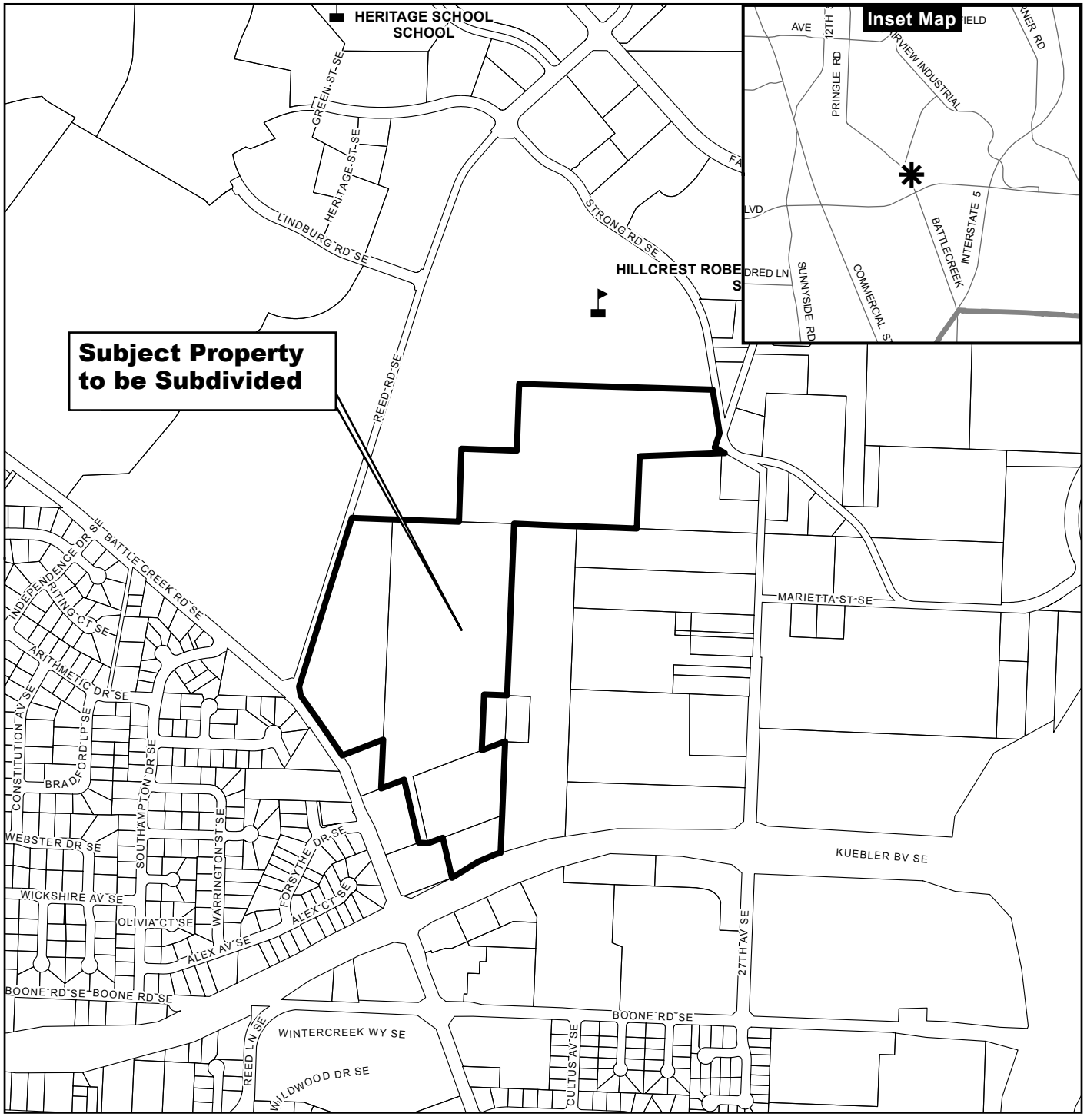
Attachments:
A. Vicinity Map
B. Approved Tree Conservation Plan

This decision is final unless written appeal from the applicant or the owner of the subject property is filed with the City of Salem Planning Division Room 305, 555 Liberty Street SE Salem OR 97301 no later than **Tuesday, December 16, 2019 by 5:00 p.m.** The appeal must state where the decision failed to conform to the approval criteria for a tree conservation plan adjustment (SRC Chapter 808). The appeal must be filed in duplicate with the City of Salem Planning Division. The appeal fee must be paid at the time of filing. If the appeal is untimely and/or lacks the proper fee, the appeal will be rejected. The Salem Hearings Officer will review the appeal at a public hearing. After the hearing, the Hearings Officer may amend, rescind, or affirm the action or refer the matter to staff for additional information. Approval of a tree conservation plan adjustment application does not expire.

cc: Alan Kessler, GIS

Attachment A

Vicinity Map
4700 Block Battle Creek Road SE



Legend

- Taxlots
- Urban Growth Boundary
- City Limits
- Outside Salem City Limits
- Historic District
- Schools
- Parks

0 100 200 400 Feet

CITY OF Salem AT YOUR SERVICE
Community Development Dept.

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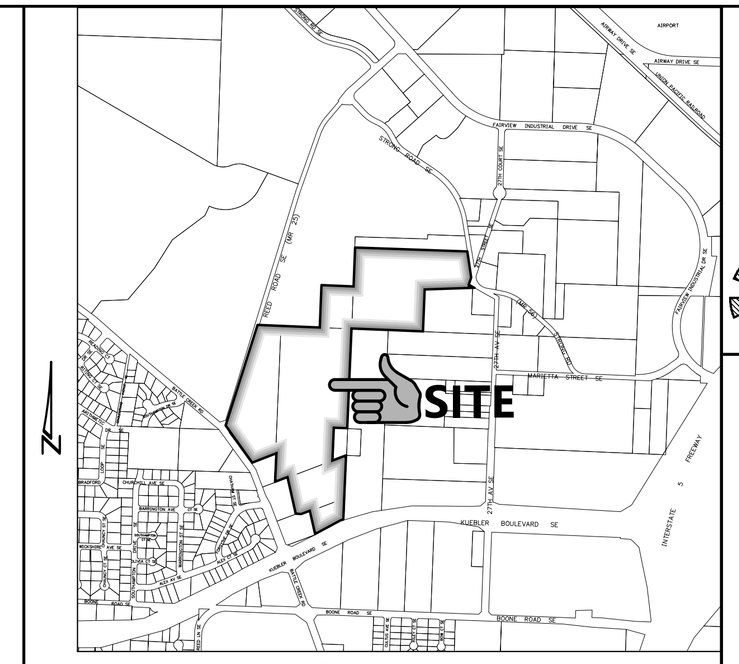
Attachment B

COBURN GRAND VIEW ESTATES

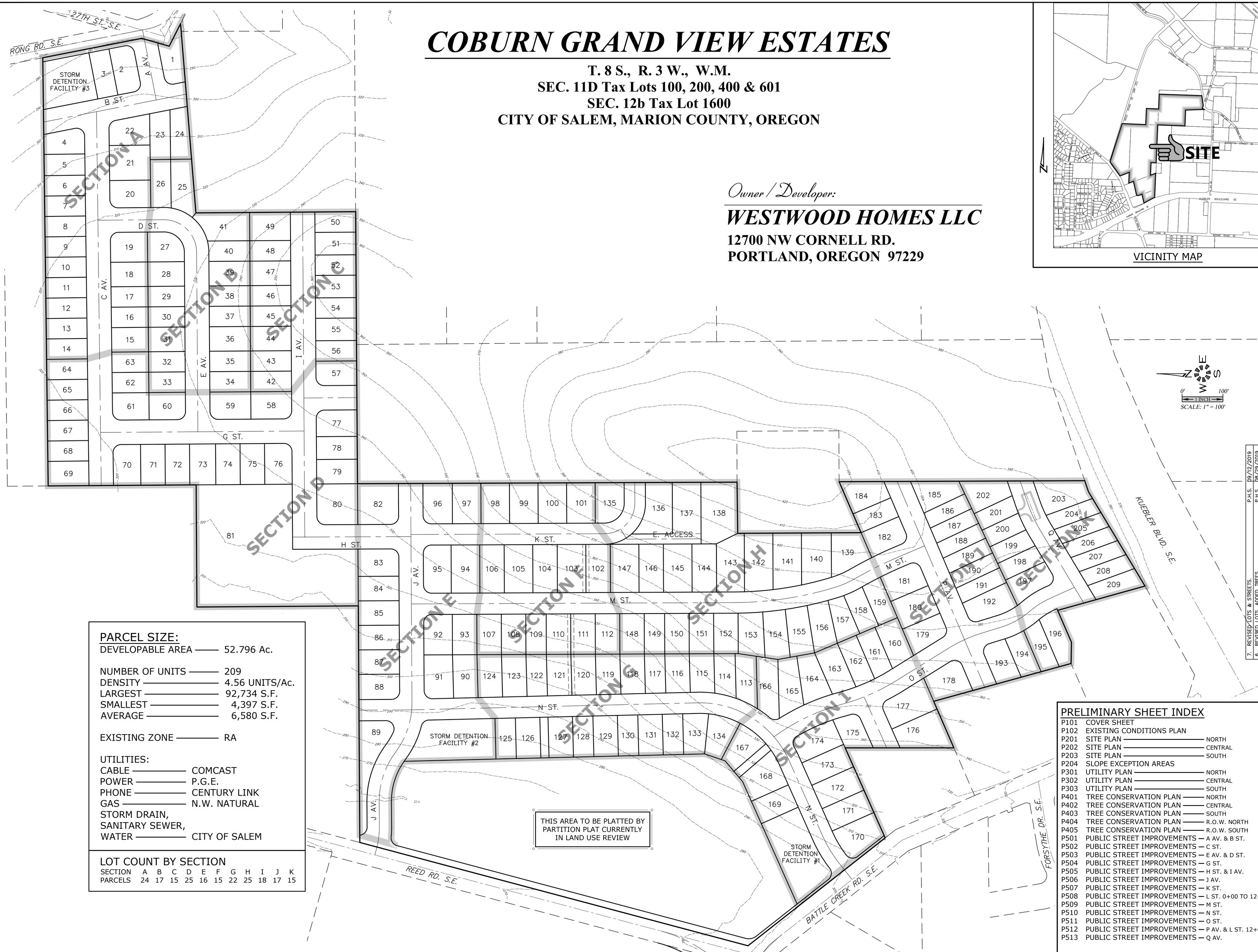
T. 8 S., R. 3 W., W.M.
SEC. 11D Tax Lots 100, 200, 400 & 601
SEC. 12b Tax Lot 1600
CITY OF SALEM, MARION COUNTY, OREGON

Owner / Developer:

WESTWOOD HOMES LLC
12700 NW CORNELL RD.
PORTLAND, OREGON 97229



VICINITY MAP



N
W E
S
0' 100'
1 INCH
SCALE: 1" = 100'

PARCEL SIZE:

DEVELOPABLE AREA	52.796 Ac.
NUMBER OF UNITS	209
DENSITY	4.56 UNITS/Ac.
LARGEST	92,734 S.F.
SMALLEST	4,397 S.F.
AVERAGE	6,580 S.F.
EXISTING ZONE	RA

UTILITIES:

CABLE	COMCAST
POWER	P.G.E.
PHONE	CENTURY LINK
GAS	N.W. NATURAL
STORM DRAIN, SANITARY SEWER, WATER	CITY OF SALEM

LOT COUNT BY SECTION

SECTION	A	B	C	D	E	F	G	H	I	J	K
PARCELS	24	17	15	25	16	15	22	25	18	17	15

PRELIMINARY SHEET INDEX

P101	COVER SHEET
P102	EXISTING CONDITIONS PLAN
P201	SITE PLAN — NORTH
P202	SITE PLAN — CENTRAL
P203	SITE PLAN — SOUTH
P204	SLOPE EXCEPTION AREAS
P301	UTILITY PLAN — NORTH
P302	UTILITY PLAN — CENTRAL
P303	UTILITY PLAN — SOUTH
P401	TREE CONSERVATION PLAN — NORTH
P402	TREE CONSERVATION PLAN — CENTRAL
P403	TREE CONSERVATION PLAN — SOUTH
P404	TREE CONSERVATION PLAN — R.O.W. NORTH
P405	TREE CONSERVATION PLAN — R.O.W. SOUTH
P501	PUBLIC STREET IMPROVEMENTS — A AV. & B ST.
P502	PUBLIC STREET IMPROVEMENTS — C ST.
P503	PUBLIC STREET IMPROVEMENTS — E AV. & D ST.
P504	PUBLIC STREET IMPROVEMENTS — G ST.
P505	PUBLIC STREET IMPROVEMENTS — H ST. & I AV.
P506	PUBLIC STREET IMPROVEMENTS — J AV.
P507	PUBLIC STREET IMPROVEMENTS — K ST.
P508	PUBLIC STREET IMPROVEMENTS — L ST. 0+00 TO 12+00
P509	PUBLIC STREET IMPROVEMENTS — M ST.
P510	PUBLIC STREET IMPROVEMENTS — N ST.
P511	PUBLIC STREET IMPROVEMENTS — O ST.
P512	PUBLIC STREET IMPROVEMENTS — P AV. & L ST. 12+00 TO 17+50
P513	PUBLIC STREET IMPROVEMENTS — Q AV.

7.	REVISED LOTS & STREETS.	P.H.S. 09/12/2019
6.	REVISED LOTS, ADDED TREES	P.H.S. 08/29/2019
5.	STREET WIDTHS & PEDESTRIAN EASEMENTS.	P.H.S. 08/14/2019
4.	ADDED NEW STREETS & EX. EASEMENTS.	P.H.S. 06/28/2019
3.	UPDATED PER DRAINAGE REVISIONS.	P.H.S. 06/06/2019
2.	ADDED PRESSURE REDUCING STATION.	P.H.S. 04/05/2019
1.	REVISED PER CITY OF SALEM REVIEW.	P.H.S. 03/25/2019

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

COVER SHEET

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR CONSTRUCTION TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234p P101CO

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

JOB # 6234

P101

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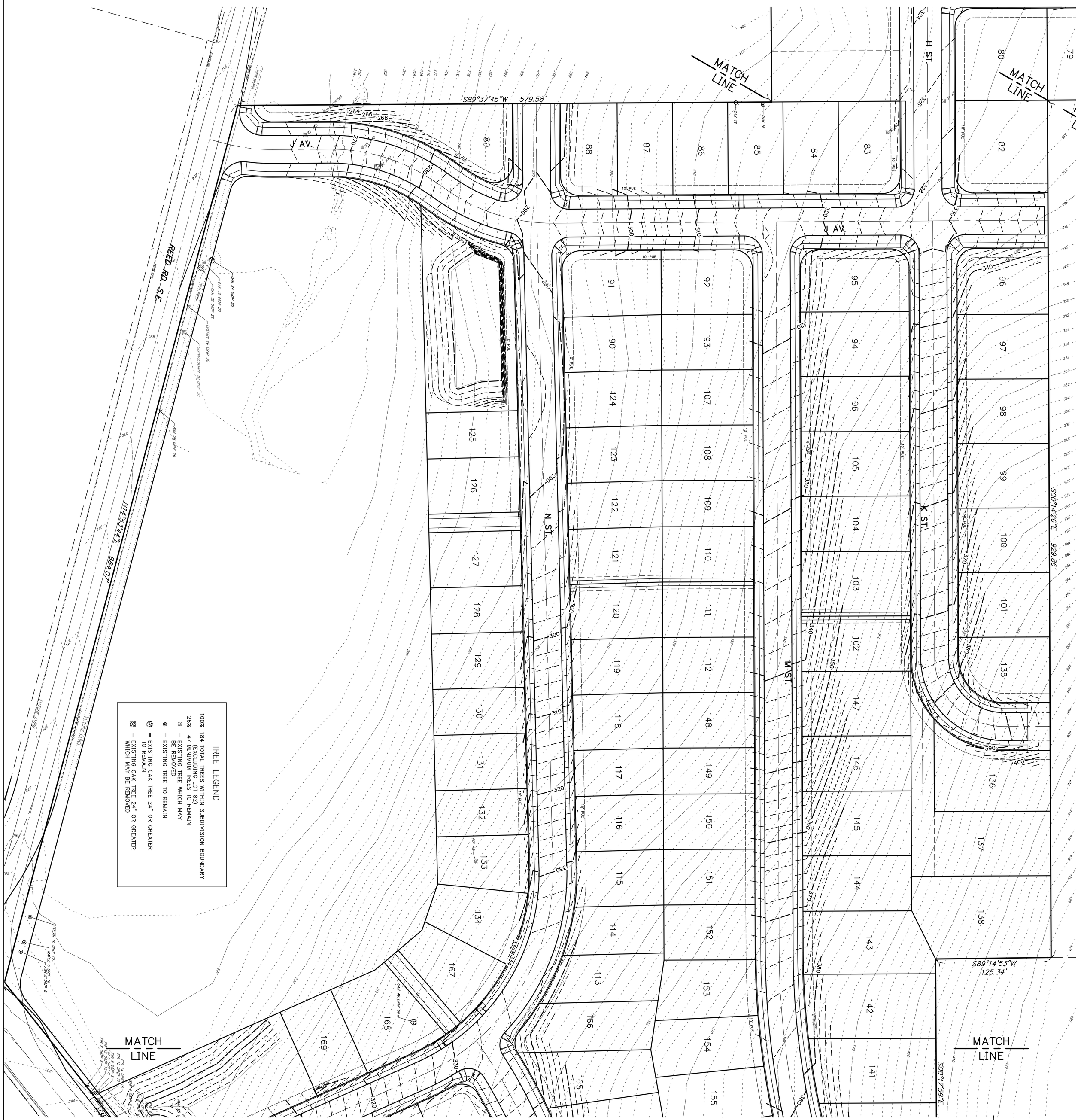

6.	REVISED LOTS, ADDED TREES	P.H.S. 08/29/2019
5.	STREET WIDTHS & PEDESTRIAN EASEMENTS.	P.H.S. 08/14/2019
4.	ADDED NEW STREETS & EX. EASEMENTS.	P.H.S. 06/28/2019
3.	UPDATED PER DRAINAGE REVISIONS.	P.H.S. 06/06/2019
1.	REVISED PER CITY OF SALEM REVIEW.	P.H.S. 03/25/2019

P402

JOB # 6234

EXPIRES: 06-30-2021

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 14, 1978 — MARK D. GRENZ

6234p P402TR

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ---- / ----

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

MULTI/TECH ENGINEERING EXEMPT FROM LIABILITY IF NOT STAMPED APPROVED

NOT FOR CONSTRUCTION UNLESS STAMPED APPROVED HERE

COBURN GRAND VIEW ESTATES

TREE CONSERVATION PLAN - CENTRAL

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363 - 9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

MATCH LINE

MATCH LINE

BATTLE CREEK RD. S.E.

FORSYTHE DR. S.E.

KUEBLER BLVD. S.E.

ALEX. CT. S.E.

N. ST.

M ST.

P AV.

Q AV.

Q ST.

S89°14'53"W 125.34'

S00°17'59"E 302.15'

N66°41'39"E 135.88'

S00°14'26"E 601.66'

S71°09'04"W 28.54'

S59°04'40"W 269.39'

N15°32'26"W 222.18'

N88°52'07"W 51.92'

S66°30'43"W 85.31'

N15°23'33"W 349.02'

S66°34'19"W 124.23'

N00°10'25"W 369.27'

S66°02'50"W 241.25'

N43°40'55"W 422.42'

EX. 50' ACCESS EASEMENT / R. 76, P. 1096

EX. 30' ACCESS EASEMENT / R. 76, P. 1096

EX. 15' SEWER EASEMENT / R. 1356, P. 659

EX. 10' PUE

EX. 40' PUE

EX. 50' PUE

EX. 60' PUE

EX. 70' PUE

EX. 80' PUE

EX. 90' PUE

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FIR 44

ASH 12

WALNUT 28

TREE LEGEND

100% 184 TOTAL TREES WITHIN SUBDIVISION BOUNDARY (EXCLUDING LOT 82)

26% 47 MINIMUM TREES TO REMAIN

= EXISTING TREE WHICH MAY BE REMOVED

= EXISTING TREE TO REMAIN

= EXISTING TREE TO REMAIN

= EXISTING OAK TREE 24" OR GREATER TO REMAIN

= EXISTING OAK TREE 24" OR GREATER WHICH MAY BE REMOVED

SCALE: 1" = 50'

0' 1 INCH 50'

N W E S

6.	REVISED LOTS, ADDED TREES	P.H.S.	08/29/2019
5.	STREET WIDTHS & PEDESTRIAN EASEMENTS.	P.H.S.	08/14/2019
4.	ADDED NEW STREETS & EX. EASEMENTS.	P.H.S.	06/28/2019
3.	UPDATED PER DRAINAGE REVISIONS.	P.H.S.	06/06/2019
1.	REVISED PER CITY OF SALEM REVIEW.	P.H.S.	03/25/2019

P403

JOB # 6234

EXPIRES: 06-30-2021

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 14, 1978 — MARK D. GRENZ

6234p P403TR

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

MULTI/TECH ENGINEERING EXEMPT FROM LIABILITY IF NOT STAMPED APPROVED

NOT FOR CONSTRUCTION UNLESS STAMPED APPROVED HERE

COBURN GRAND VIEW ESTATES

TREE CONSERVATION PLAN - SOUTH

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363 - 9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

N00°24'09"W 395.39'

N89°38'19"E 299.17'

N00°24'21"W 362.52'

S89°34'53"W 340.97'

N89°16'48"E 1,048.94'

S89°38'27"W 325.40'

S00°25'24"E 391.41'

S85°21'49"W 464.89'

S11°04'18"E 947.08'

MATCH LINE

MATCH LINE

J AV.

H ST.

I AV.

G ST.

E AV.

C AV.

F ST.

D ST.

B ST.

A AV.

27TH ST. S.E.

STRONG RD. S.E.

STORM DETENTION FACILITY #3

10' PUE

TREE LEGEND

100% 184 TOTAL TREES WITHIN SUBDIVISION BOUNDARY (EXCLUDING LOT 82)

26% 47 MINIMUM TREES TO REMAIN

= EXISTING TREE WHICH MAY BE REMOVED

= EXISTING TREE TO REMAIN

= EXISTING OAK TREE 24" OR GREATER TO REMAIN

= EXISTING OAK TREE 24" OR GREATER WHICH MAY BE REMOVED

SCALE: 1" = 50'

6.	REVISED LOTS, ADDED TREES	P.H.S. 08/29/2019
5.	STREET WIDTHS & PEDESTRIAN EASEMENTS.	P.H.S. 08/14/2019
4.	ADDED NEW STREETS & EX. EASEMENTS.	P.H.S. 06/28/2019
3.	UPDATED PER DRAINAGE REVISIONS.	P.H.S. 06/06/2019
1.	REVISED PER CITY OF SALEM REVIEW.	P.H.S. 03/25/2019

P401

JOB # 6234

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 11, 1978 — MARK D. GRENZ — EXPIRES: 06-30-2021

6234p P401TR

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ---- ----

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

MULTI/TECH ENGINEERING EXEMPT FROM LIABILITY IF NOT STAMPED APPROVED

NOT FOR CONSTRUCTION UNLESS STAMPED APPROVED HERE

COBURN GRAND VIEW ESTATES

TREE CONSERVATION PLAN - NORTH

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363 - 9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

CITY OF Salem AT YOUR SERVICE

City of Salem, Oregon
Community Development Department
Planning Division

Permit Application Center
Phone: 503-588-6213
Fax: 503-588-6005
www.cityofsalem.net/planning
@Salem_Planning

Expedited Land Division Application Form (ORS 197.360-380)

What is an Expedited Land Division?

The expedited land division process provides an alternative to the standard procedures for certain land division requests. An applicant may choose to use the expedited land division process if their land division request meets all of the applicable requirements specified in Oregon Revised Statute (ORS) 197.360 (see reverse side). The steps in this procedure differ from the regular subdivision procedure, but still include a public review and opportunity for appeal. The steps are described in ORS 197.365-375.

Is it faster than the regular subdivision process?

The expedited land division process is intended to streamline the regular land use process that land divisions normally follow under state law, which allows up to 120 days for final city approval. In Salem, however, the typical processing time for a land division application (subdivision, partition, or replat) that meets city standards and is complete when submitted, is far less than the 120 days that state law allows. Therefore, in Salem, in many cases there is no difference in processing time between a regular land division and expedited land division.

What are the requirements to qualify for the Expedited Land Division process?

ORS 197.360 lists the requirements to qualify for an expedited land division review. These requirements are summarized below. The full text of ORS 197.360 is included on the reverse side of this form.

The proposed land division (i.e. subdivision, partition, or replat):

1. Must be on residentially zoned land and must be solely for the purposes of residential use;
2. Must not create building lots that provide for dwellings or accessory buildings within areas that contain natural resource protections, such as, but not limited to, the Willamette Greenway;
3. Must satisfy all City street standards and connectivity requirements; and
4. Must either:
    a. *Create enough lots or parcels to allow building residential units at 80 percent or more of the maximum net density permitted by the zoning designation of the site; or*
    b. *Will be sold or rented to households with incomes below 120 percent of the median family income for the county in which the project is built.*

Why am I receiving this application form for Expedited Land Division now?

The expedited land division process has existed since 1995; however, the 2015 Oregon Legislature required that all land division applicants be notified of the expedited land division option and how to apply.

Are you applying for an Expedited Land Division?

Yes ☐ **No** ☒ (If yes, then attach a written description of how the proposal satisfies ORS 197.360)

Applicant Name: Brandie Dalton Telephone: 503-363-9227

Applicant Mailing Address: 1155 SE 13th St, Salem, OR 97302

Site Address: Battle Creek Rd / Reed Rd

Brandie Dalton (Signature) Brandie Dalton (Print Name) 2-10-21 (Date)

ORS 197.360:

(1) As used in this section:

(a) "Expedited land division" means a division of land under ORS 92.010 to 92.192, 92.205 to 92.245 or 92.830 to 92.845 by a local government that:

(A) Includes only land that is zoned for residential uses and is within an urban growth boundary.

(B) Is solely for the purposes of residential use, including recreational or open space uses accessory to residential use.

(C) Does not provide for dwellings or accessory buildings to be located on land that is specifically mapped and designated in the comprehensive plan and land use regulations for full or partial protection of natural features under the statewide planning goals that protect:

(i) Open spaces, scenic and historic areas and natural resources;

(ii) The Willamette River Greenway;

(iii) Estuarine resources;

(iv) Coastal shorelands; and

(v) Beaches and dunes.

(D) Satisfies minimum street or other right-of-way connectivity standards established by acknowledged land use regulations or, if such standards are not contained in the applicable regulations, as required by statewide planning goals or rules.

(E) Will result in development that either:

(i) Creates enough lots or parcels to allow building residential units at 80 percent or more of the maximum net density permitted by the zoning designation of the site; or

(ii) Will be sold or rented to households with incomes below 120 percent of the median family income for the county in which the project is built.

(b) "Expedited land division" includes land divisions that create three or fewer parcels under ORS 92.010 to 92.192 and meet the criteria set forth in paragraph (a) of this subsection.

(2) An expedited land division as described in this section is not a land use decision or a limited land use decision under ORS 197.015 or a permit under ORS 215.402 or 227.160.

(3) The provisions of ORS 197.360 to 197.380 apply to all elements of a local government comprehensive plan and land use regulations applicable to a land division, including any planned unit development standards and any procedures designed to regulate:

(a) The physical characteristics of permitted uses;

(b) The dimensions of the lots or parcels to be created; or

(c) Transportation, sewer, water, drainage and other facilities or services necessary for the proposed development, including but not limited to right-of-way standards, facility dimensions and on-site and off-site improvements.

(4) An application for an expedited land division submitted to a local government shall describe the manner in which the proposed division complies with each of the provisions of subsection (1) of this section.

UNTIL FURTHER NOTICE, SEND ALL TAX STATEMENTS TO:
Boulder Hill LLC
Robert W. Nunn, Manager
1000 SW Broadway, Suite 1400
Portland, OR 97205-3089

REEL 1950 PAGE 327

AFTER COMPLETING RECORDING, RETURN THIS DOCUMENT TO:
Evans, Freeby & Jennings, LLP
Attorneys at Law
280 Court St. NE
Salem, OR 97301

BARGAIN AND SALE DEED

ROBERT W. NUNN, Trustee under the EVELYN M. COBURN LIVING TRUST, dated March 15, 1995, GRANTOR

Conveys to

BOULDER HILL LLC, an Oregon Manager-Managed Limited Liability Company GRANTEE

All the following real property situated in Marion County, State of Oregon, specifically described on Exhibit "A" hereto and by this reference incorporated herein, generally described as: Tax Lot 100, Tax Account No. R32164; Tax Lot 200, Tax Account No. R32163, and Tax Lot 601, Tax Account No. R32158.

The true and actual consideration for this transfer is other than money.

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES AND TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930.

Dated this 23rd day of May, 2002.

GRANTOR
Evelyn M. Coburn Living Trust, dated March 15, 1995

By: Robert W. Nunn, Trustee

STATE OF OREGON, County of Marion) ss.

Personally appeared before me this 23rd day of May, 2002, Robert W. Nunn, as Trustee and acknowledged the foregoing instrument to be his voluntary act.

OFFICIAL SEAL
JAIME LYNNE TREMBLY
NOTARY PUBLIC - OREGON
COMMISSION NO. A322597
MY COMMISSION EXPIRES APR 18, 2003

Jaime Lynne Trembly
Notary Public for Oregon
My Commission Expires: 4/18/03

MAY 29 2002

EXHIBIT A

LEGAL DESCRIPTION
Map 8S-3W-11D; Tax Lots 100, 200, and 601:

Tax Lot 100
Account No. R32164

Beginning at the Northeast corner of the Southeast Quarter of Section 11, Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon; thence South 0° 30' West along the East line of said Section, a distance of 929.74 feet, more or less, to the North line of that tract of land described in Document No. 116205 Circuit Court Journal for Marion County; thence westerly along the North line of said tract, a distance of 125.00 feet; thence South 0° 30' West parallel with the East line of said Section 11, a distance of 303.27 feet to a point on the northerly line of that tract of land conveyed to Kathryn L. Young, Linda S. Schaeffers and Robert W. Nunn by deed recorded in Reel 1021, Page 231, Deed Records for Marion County, Oregon; thence South 67° 30' West along said northerly line a distance of 398.72 feet to the Northwest corner thereof; thence South 14° 34' 00" East 370.20 feet to the Southwest corner of said tract; thence North 89° 47' 36" West 51.83 feet to the Southeast corner of that tract of land conveyed to Dale E. Christison and Darlene A. Christison by deed recorded in Reel 76, Page 282, Deed Records for Marion County, Oregon; thence North 14° 34' 00" West along the easterly line of said Christison tract, a distance of 350.00 feet to the Northeast corner thereof; thence South 67° 30; 00" West along the northerly line of said Christison tract, a distance of 131.77 feet to a point which is 660.00 feet West of the East line of said Section 11, thence North 0° 30' East parallel with the East line of said Section 11, a distance of 1454.12 feet to a point on the North line of the Southeast Quarter of said Section 11; thence easterly along said North line, a distance of 660.00 feet to the point of beginning.

Contains 19.57 acres of land, more or less.

****

Tax Lot 200
Tax Account No. R32163

Beginning 10 chains West of the Northeast corner of the Southeast quarter of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, State of Oregon, and running thence South 26.62 chains; thence North 23°45' West 9.68 chains; thence North 50°45' West 4.80 chains; thence North 15° East 16.60 chains; thence East 3.35 chains to the place of beginning in Section 11, Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon.

SAVE AND EXCEPT: Beginning in the center of a County Road at a point which is North 89°49' West 315.48 feet and North 22°30' West 876.91 feet from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon; thence North 67°30' East 232.90 feet; thence North 14°34' West 350.00 feet; thence South 67°30' West 281.20 feet to the center of said County Road; thence South 22°30' East along the center of said County Road 346.50 feet to the place of beginning.

SAVE AND EXCEPT: Beginning at the point of intersection of the Northerly line of County Road No. 839 (commonly known as Battle Creek Rd.) and the Easterly line of Market Road No. 25 (commonly known as Reed Road) and being in the Southeast quarter of Section 11, Township 8 South, Range 3 West, of the Willamette Meridian, Marion County, Oregon; thence South 38°11'36" East 31.00 feet along the Northerly line of said County Road No. 839 to a point; thence North 13°09'17" West 51.01 feet to a point on the Easterly line of said Market Road No. 25; thence South 14°53'45" West 27.00 feet along said Easterly line to the point of beginning.

SAVE AND EXCEPT that portion of the premises herein described lying within the limits of roads, streets and highways

Tax Lot 601
Tax Account No. R32158

Beginning at the Southeast corner of that tract of land conveyed to Kathryn L. Young, Linda S. Schaeffers and Robert W. Nunn by deed recorded in Reel 1021, Page 231, Deed Records for Marion County, Oregon which point is recorded as being North 0° 30' East 1064.65 feet from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon; thence South 0° 30' West along the East line of said Section 11, a distance of 208.73 feet, more or less, to a point on the northerly right-of-way line of Kuebler Boulevard; thence South 69° 58' 53" West along the northerly right-of-way line, a distance of 24.48 feet, more or less, to an angle point in said right-of-way line; thence South 63° 02' 05" West along said right-of-way line a distance of 102.74 feet to an angle point in said right-of-way line; thence South 54° 40' 44" West along said right-of-way line a distance of 167.14 feet to the Southeast corner of that tract of land conveyed to Bernard F. Bednarz and Miriam L. Bednarz, husband and wife, by deed recorded in Volume 681, Page 328, Deed Records for Marion County, Oregon; thence North 14° 34' West along the East line of said Bednarz tract, a distance of 222.00 feet to the Northeast corner thereof; thence North 67° 30' East along the southerly line of said tract described in Reel 1021, Page 231, Deed Records, a distance of 345.77 feet to the point of beginning.

Contains 1.44 acres of land, more or less.

MAY 29 2002

REEL:1950 **PAGE: 327**

May 29, 2002, 02:46 pm.

CONTROL #: 59651

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 36.00

ALAN H DAVIDSON
COUNTY CLERK

THIS IS NOT AN INVOICE.

MAY 29 2002

42405 REEL 3 PAGE 215

EASEMENT

KNOW ALL MEN BY THESE PRESENTS, That [redacted] EVELYN M. COBURN

for the consideration of One Hundred Forty Seven and 50/100 —— DOLLARS to him paid, the receipt whereof is hereby acknowledged, do forever grant unto the CITY OF SALEM, a municipal corporation, a permanent right of way and easement over and along the full width and length of the premises described as follows, to-wit:

15.00 FOOT PERMANENT EASEMENT: 7.50 feet on each side of the following described center-line: Beginning at the most Easterly corner of a certain tract of land conveyed by deed to Roger A. Merulli and Bonnie J. Merulli and recorded in Volume 726, Page 056 of Deed Records for Marion County, Oregon; thence northwesterly along the Northeast line of said Merulli tract to a point 5.00 feet from the Southeast line of said Merulli tract if measured perpendicular thereto, to the TRUE POINT OF BEGINNING; thence N 30° 48' E, 95.8 feet; thence N 18° 09' W to the Easterly line of Reed Road and there terminating.

SAVE AND EXCEPT: All public roads and right-of-ways.

together with a temporary working easement as follows, to-wit:

30.00 FOOT TEMPORARY EASEMENT: 37.50 feet on the right side of the following described line: Beginning at the most Easterly corner of a certain tract of land conveyed by deed to Roger A. Merulli and Bonnie J. Merulli and recorded in Volume 726, Page 056 of Deed Records for Marion County, Oregon; thence northwesterly along the Northeast line of said Merulli tract to a point 5.00 feet from the Southeast line of said Merulli tract if measured perpendicular thereto; to the TRUE POINT OF BEGINNING; thence N 30° 48' E, 95.8 feet; thence N 18° 09' W to the Easterly line of Reed Road and there terminating.

SAVE AND EXCEPT: All public roads and right-of-ways.

ALSO SAVE AND EXCEPT: The previously described permanent easement.

The temporary working easement shall be effective only for and during the time of the initial construction and laying of the pipeline hereinafter described.

The permanent right of way and easement shall include the right, privilege, and authority, to the said City of Salem, to excavate for, and to construct, install, lay,

73 S 968

42405

REEL 3 PAGE 216

operate maintain and remove an underground sewer pipeline or pipelines, with all appurtenances incident thereto or necessary therewith, for the purpose of catching, carrying and conveying sewage waste and surplus waters, and for similar uses in, under and across the said premises, together with the right of the said City of Salem to place, install, maintain, inspect, add to the number of and relocate pipelines and necessary appurtenances, and make excavations therefore from time to time, in, under and through the above described premises within said right of way, and to cut and remove from said right of way any trees and other obstructions which may endanger the safety or interfere with the use of said pipelines, or appurtenances attached to or connected therewith; and the right of ingress and egress to and over said above described premises at any and all times for the purpose of patrolling the pipeline or repairing, renewing, or adding to the number of pipelines and appurtenances, and for doing anything necessary, useful or convenient for the enjoyment of the easement hereby granted.

The City of Salem, upon the initial installation, and upon each and every occasion that the same is repaired, renewed, added to or removed, shall restore the premises of the grantor__, and any buildings or improvements disturbed by the City, to as good condition as they were prior to any such installation or work, including the restoration of any topsoil.

WITNESS her hand and seal this 17 day of October, 1974.

Evelyn M Coburn (SEAL)

(SEAL)

APPROVED:

Director of Utilities

APPROVED AS TO FORM:

City Attorney

STATE OF ORIGON)
) ss.
County of Marion)

On this 17 day of October 1974, before me, a Notary Public in and for said County and State, personally appeared Evelyn M. Coburn.

Known to me to be the person whose name is subscribed to the within instrument and acknowledge that she executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I have hereunto set my hand an official seal on the day and year above written.

NOTARY PUBLIC FOR ORIGON

My Commission Expires: 4-6-77

4.00

STATE OF OREGON } ss. I hereby certify that the within was received and duly recorded by me in Marion County Records
County of Marion } Book 3 Reel 215

10:50 A.M. OCT 30 1974

T. HAROLD TOMLINSON
County Clerk

TICOR TITLE™
Company of Oregon

PRELIMINARY REPORT

In response to the application for a policy of title insurance referenced herein Ticor Title Company of Oregon hereby reports that it is prepared to issue, or cause to be issued, as of the specified date, a policy or policies of title insurance describing the land and the estate or interest hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.

The printed Exceptions and Exclusions from the coverage of said policy or policies are set forth in Exhibit One. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Copies of the policy forms should be read. They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby.

The policy(s) of title insurance to be issued hereunder will be policy(s) of Chicago Title Insurance Company, a/an Florida corporation.

Please read the exceptions shown or referred to herein and the Exceptions and Exclusions set forth in Exhibit One of this report carefully. The Exceptions and Exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.

This preliminary report is for the exclusive use of the parties to the contemplated transaction, and the Company does not have any liability to any third parties nor any liability until the full premium is paid and a policy is issued. Until all necessary documents are placed of record, the Company reserves the right to amend or supplement this preliminary report.

Countersigned

TICOR TITLE™
Company of Oregon

1433 SW 6th Avenue, Portland, OR 97201
(503)646-4444 FAX (503)219-9984

PRELIMINARY REPORT

TITLE OFFICER: Tina Turner

ORDER NO.: 471817060911
Supplement 1: Eff date/taxes/city lien

TO: Lawyers Title of Oregon, LLC
Krista Thorne
1915 NW Amberglen Parkway, Suite 155
Beaverton, OR 97006

OWNER/SELLER: Boulder Hill LLC

BUYER/BORROWER: Westwood Homes LLC

PROPERTY ADDRESS: 0 Battlecreek Road, Salem, OR 97301

EFFECTIVE DATE: March 15, 2018, 08:00 AM

1. THE POLICY AND ENDORSEMENTS TO BE ISSUED AND THE RELATED CHARGES ARE:

	AMOUNT	PREMIUM
ALTA Owner's Policy 2006 **Owner's Standard**	$ 4,822,000.00	$ 7,833.00
Government Lien Search		$ 40.00

2. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

   A Fee

3. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

   Boulder Hill LLC, an Oregon Manager-Managed Limited Liability Company

4. THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE CITY OF SALEM, COUNTY OF MARION, STATE OF OREGON, AND IS DESCRIBED AS FOLLOWS:

   SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

EXHIBIT "A"

Legal Description

Beginning at the Northeast corner of the Southeast one-quarter of Section 11, Township 8 South, Range 3 West, of the Willamette Meridian, in the County of Marion and State of Oregon; thence South 00° 30' West along the East line of said Section, a distance of 929.74 feet, more or less, to the North line of that tract of land described in Document No. 116205, Circuit Court Journal for Marion County; thence Westerly along the North line of said tract, a distance of 125.00 feet; thence South 00° 30' West, parallel with the East line of said Section 11, a distance of 303.27 feet to a point on the Northerly line of that tract of land conveyed to Kathryn L. Young, Linda S. Schaeffers and Robert W. Nunn by deed recorded in Reel 1021, Page 231, Deed Records for Marion County, Oregon; thence South 67° 30' West along said Northerly line, a distance of 398.72 feet to the Northwest corner thereof; thence South 14° 34' 00" East, 370.20 feet to the Southwest corner of said tract; thence North 89° 47' 36" West, 51.83 feet to the Southeast corner of that tract of land conveyed to Dale E. Christison and Darlene A. Christison by deed recorded in Reel 76, Page 282, Deed Records for Marion County, Oregon; thence North 14° 34' 00" West along the Easterly line of said Christison tract, a distance of 350.00 feet to the Northeast corner thereof; thence South 67° 30' 00" West along the Northerly line of said Christison tract, a distance of 131.77 feet to a point which is 660.00 feet West of the East line of said Section 11; thence North 00° 30' East, parallel with the East line of said Section 11, a distance of 1,454.12 feet to a point on the North line of the Southeast one-quarter of said Section 11; thence Easterly along said North line, a distance of 660.00 feet to the point of beginning.

AS OF THE DATE OF THIS REPORT, ITEMS TO BE CONSIDERED AND EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN THE POLICY FORM WOULD BE AS FOLLOWS:

GENERAL EXCEPTIONS:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests or claims, which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.

3. Easements, or claims of easement, which are not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.

4. Any encroachment (of existing improvements located on the Land onto adjoining land or of existing improvements located on adjoining land onto the subject Land), encumbrance, violation, variation or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the subject Land.

5. Any lien or right to a lien for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the Public Records.

SPECIFIC ITEMS AND EXCEPTIONS:

6. The Land has been classified as farm, as disclosed by the tax roll. If the Land becomes disqualified, said Land may be subject to additional taxes and/or penalties.

7. City Liens, if any, in favor of the City of Salem. None found as of March 20, 2018.

8. Rights of the public to any portion of the Land lying within the limits of streets, roads and highways.

9. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	The City of Salem, a municipal corporation
Purpose:	as mentioned in said easement
Recording Date:	October 30, 1974
Recording No:	Reel 3, Page 215

10. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Warne H. Nunn and Delores R. Nunn, husband and wife
Purpose:	road and right of way
Recording Date:	April 4, 1977
Recording No:	Reel 76, Page 1096

11. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	The City of Salem, Oregon, an Oregon municipal corporation
Purpose:	as mentioned in said easement
Filed Date:	February 15, 1989
Case No:	87C12160

12. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: The City of Salem, a municipal corporation
    Purpose: pipeline
    Recording Date: October 4, 1994
    Recording No: Reel 1196, Page 413

13. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: The City of Salem, a municipal corporation
    Purpose: pipeline
    Recording Date: October 4, 1994
    Recording No: Reel 1196, Page 415

14. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: The City of Salem, a municipal corporation
    Purpose: construction
    Recording Date: October 4, 1994
    Recording No: Reel 1196, Page 416

15. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: The City of Salem, a municipal corporation
    Purpose: slope
    Recording Date: October 4, 1994
    Recording No: Reel 1196, Page 417

16. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: The City of Salem, a municipal corporation
    Purpose: storm drain
    Recording Date: October 4, 1994
    Recording No: Reel 1196, Page 418

17. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: Portland General Electric Company ("PGE"), an Oregon corporation
    Purpose: power line
    Recording Date: March 23, 1995
    Recording No: Reel 1227, Page 774

18. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: Douglas M. Drager
    Purpose: sewer
    Recording Date: February 8, 1999
    Recording No: Reel 1566, Page 652

19. Please be advised that our search did not disclose any open Deeds of Trust of record. If you should have knowledge of any outstanding obligation, please contact the Title Department immediately for further review prior to closing.

20. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

Limited Liability Company: Boulder Hill LLC

a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

c) If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

d) If the Limited Liability Company was formed in a foreign jurisdiction, evidence, satisfactory to the Company, that it was validly formed, is in good standing and authorized to do business in the state of origin.

e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

21. If requested to issue an extended coverage ALTA loan policy, the following matters must be addressed:

a) The rights of tenants holding under unrecorded leases or tenancies
b) Matters disclosed by a statement as to parties in possession and as to any construction, alterations or repairs to the Land within the last 75 days. The Company must be notified in the event that any funds are to be used for construction, alterations or repairs.
c) Any facts which would be disclosed by an accurate survey of the Land

ADDITIONAL REQUIREMENTS/NOTES:

A. Note: Property taxes for the fiscal year shown below are paid in full.

Fiscal Year:	2017-2018
Amount:	$246.51
Levy Code:	92401000
Account No.:	R32164
Map No.:	083W11D 00100

Prior to close of escrow, please contact the Tax Collector's Office to confirm all amounts owing, including current fiscal year taxes, supplemental taxes, escaped assessments and any delinquencies.

B. In addition to the standard policy exceptions, the exceptions enumerated above shall appear on the final 2006 ALTA Policy unless removed prior to issuance.

C. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

Limited Liability Company: Westwood Homes LLC

a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

c) If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

d) If the Limited Liability Company was formed in a foreign jurisdiction, evidence, satisfactory to the Company, that it was validly formed, is in good standing and authorized to do business in the state of origin.

e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

D. Note: There are no matters against the party(ies) shown below which would appear as exceptions to coverage in a title insurance product:

Parties: Westwood Homes LLC

E. Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.

F. Note: There are NO conveyances affecting said Land recorded within 24 months of the date of this report.

G. Note: No utility search has been made or will be made for water, sewer or storm drainage charges unless the City/Service District claims them as liens (i.e. foreclosable) and reflects them on its lien docket as of the date of closing. Buyers should check with the appropriate city bureau or water service district and obtain a billing cutoff. Such charges must be adjusted outside of escrow.

H. THE FOLLOWING NOTICE IS REQUIRED BY STATE LAW: YOU WILL BE REVIEWING, APPROVING AND SIGNING IMPORTANT DOCUMENTS AT CLOSING. LEGAL CONSEQUENCES FOLLOW FROM THE SELECTION AND USE OF THESE DOCUMENTS. YOU MAY CONSULT AN ATTORNEY ABOUT THESE DOCUMENTS. YOU SHOULD CONSULT AN ATTORNEY IF YOU HAVE QUESTIONS OR CONCERNS ABOUT THE TRANSACTION OR ABOUT THE DOCUMENTS. IF YOU WISH TO REVIEW TRANSACTION DOCUMENTS THAT YOU HAVE NOT SEEN, PLEASE CONTACT THE ESCROW AGENT.

I. Recording Charge (Per Document) is the following:

County	First Page	Each Additional Page
Marion	$46.00	$5.00
Benton	$68.00	$5.00
Polk	$51.00	$5.00
Linn	$65.00	$5.00

Note: When possible the company will record electronically. An additional charge of $5.00 applies to each document that is recorded electronically.

Note: Please send any documents for recording to the following address:
Portland Title Group
Attn: Recorder
1433 SW 6th Ave.
Portland, OR. 97201

J. Note: This map/plat is being furnished as an aid in locating the herein described Land in relation to adjoining streets, natural boundaries and other land. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the Company does not insure dimensions, distances or acreage shown thereon.

EXHIBIT ONE

2006 AMERICAN LAND TITLE ASSOCIATION LOAN POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions or location of any improvement erected on the land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with the applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in the Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

2006 AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions or location of any improvement erected on the land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in the Covered Risk 9 of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

WIRE SAFE™ | Inquire before you wire!

WIRE FRAUD ALERT

This Notice is not intended to provide legal or professional advice. If you have any questions, please consult with a lawyer.

All parties to a real estate transaction are targets for wire fraud and many have lost hundreds of thousands of dollars because they simply relied on the wire instructions received via email, without further verification. **If funds are to be wired in conjunction with this real estate transaction, we strongly recommend verbal verification of wire instructions through a known, trusted phone number prior to sending funds.**

In addition, the following non-exclusive self-protection strategies are recommended to minimize exposure to possible wire fraud.

- **NEVER RELY** on emails purporting to change wire instructions. Parties to a transaction rarely change wire instructions in the course of a transaction.
- **ALWAYS VERIFY** wire instructions, specifically the ABA routing number and account number, by calling the party who sent the instructions to you. DO NOT use the phone number provided in the email containing the instructions, use phone numbers you have called before or can otherwise verify. **Obtain the number of relevant parties to the transaction as soon as an escrow account is opened.** DO NOT send an email to verify as the email address may be incorrect or the email may be intercepted by the fraudster.
- **USE COMPLEX EMAIL PASSWORDS** that employ a combination of mixed case, numbers, and symbols. Make your passwords greater than eight (8) characters. Also, change your password often and do NOT reuse the same password for other online accounts.
- **USE MULTI-FACTOR AUTHENTICATION** for email accounts. Your email provider or IT staff may have specific instructions on how to implement this feature.

For more information on wire-fraud scams or to report an incident, please refer to the following links:

Federal Bureau of Investigation:
http://www.fbi.gov

Internet Crime Complain Center:
http://www.ic3.gov

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FIDELITY NATIONAL FINANCIAL
PRIVACY NOTICE
Effective: May 1, 2015; Last Updated: March 1, 2017

At Fidelity National Financial, Inc., we respect and believe it is important to protect the privacy of consumers and our customers. This Privacy Notice explains how we collect, use, and protect any information that we collect from you, when and to whom we disclose such information, and the choices you have about the use of that information. A summary of the Privacy Notice is below, and we encourage you to review the entirety of the Privacy Notice following this summary. You can opt-out of certain disclosures by following our opt-out procedure set forth at the end of this Privacy Notice.

Types of Information Collected. You may provide us with certain personal information about you, like your contact information, address demographic information, social security number (SSN), driver's license, passport, other government ID numbers and/or financial information. We may also receive browsing information from your Internet browser, computer and/or mobile device if you visit or use our websites or applications.	**How Information is Collected**. We may collect personal information from you via applications, forms, and correspondence we receive from you and others related to our transactions with you. When you visit our websites from your computer or mobile device, we automatically collect and store certain information available to us through your Internet browser or computer equipment to optimize your website experience.
Use of Collected Information. We request and use your personal information to provide products and services to you, to improve our products and services, and to communicate with you about these products and services. We may also share your contact information with our affiliates for marketing purposes.	**When Information Is Disclosed**. We may disclose your information to our affiliates and/or nonaffiliated parties providing services for you or us, to law enforcement agencies or governmental authorities, as required by law, and to parties whose interest in title must be determined.
Choices With Your Information. Your decision to submit information to us is entirely up to you. You can opt-out of certain disclosure or use of your information or choose to not provide any personal information to us.	**Information From Children**. We do not knowingly collect information from children who are under the age of 13, and our website is not intended to attract children.
Privacy Outside the Website. We are not responsible for the privacy practices of third parties, even if our website links to those parties' websites.	**International Users**. By providing us with your information, you consent to its transfer, processing and storage outside of your country of residence, as well as the fact that we will handle such information consistent with this Privacy Notice.
The California Online Privacy Protection Act. Some FNF companies provide services to mortgage loan servicers and, in some cases, their websites collect information on behalf of mortgage loan servicers. The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through those websites.	
Your Consent To This Privacy Notice. By submitting information to us or by using our website, you are accepting and agreeing to the terms of this Privacy Notice.	**Access and Correction; Contact Us**. If you desire to contact us regarding this notice or your information, please contact us at privacy@fnf.com or as directed at the end of this Privacy Notice.

FIDELITY NATIONAL FINANCIAL
PRIVACY NOTICE
Effective: May 1, 2015; Last Updated: March 1, 2017

Fidelity National Financial, Inc. and its majority-owned subsidiary companies providing title insurance, real estate- and loan-related services (collectively, "FNF", "our" or "we") respect and are committed to protecting your privacy. We will take reasonable steps to ensure that your Personal Information and Browsing Information will only be used in compliance with this Privacy Notice and applicable laws. This Privacy Notice is only in effect for Personal Information and Browsing Information collected and/or owned by or on behalf of FNF, including Personal Information and Browsing Information collected through any FNF website, online service or application (collectively, the "Website").

Types of Information Collected

We may collect two types of information from you: Personal Information and Browsing Information.

Personal Information. FNF may collect the following categories of Personal Information:

- contact information (*e.g.*, name, address, phone number, email address);
- demographic information (*e.g.*, date of birth, gender, marital status);
- social security number (SSN), driver's license, passport, and other government ID numbers;
- financial account information; and
- other personal information needed from you to provide title insurance, real estate- and loan-related services to you.

Browsing Information. FNF may collect the following categories of Browsing Information:

- Internet Protocol (or IP) address or device ID/UDID, protocol and sequence information;
- browser language and type;
- domain name system requests;
- browsing history, such as time spent at a domain, time and date of your visit and number of clicks;
- http headers, application client and server banners; and
- operating system and fingerprinting data.

How Information is Collected

In the course of our business, we may collect *Personal Information* about you from the following sources:

- applications or other forms we receive from you or your authorized representative;
- the correspondence you and others send to us;
- information we receive through the Website;
- information about your transactions with, or services performed by, us, our affiliates or nonaffiliated third parties; and
- information from consumer or other reporting agencies and public records maintained by governmental entities that we obtain directly from those entities, our affiliates or others.

If you visit or use our Website, we may collect *Browsing Information* from you as follows:

- Browser Log Files. Our servers automatically log each visitor to the Website and collect and record certain browsing information about each visitor. The Browsing Information includes generic information and reveals nothing personal about the user.
- Cookies. When you visit our Website, a "cookie" may be sent to your computer. A cookie is a small piece of data that is sent to your Internet browser from a web server and stored on your computer's hard drive. When you visit a website again, the cookie allows the website to recognize your computer. Cookies may store user preferences and other information. You can choose whether or not to accept cookies by changing your Internet browser settings, which may impair or limit some functionality of the Website.

Use of Collected Information

Information collected by FNF is used for three main purposes:

- To provide products and services to you or any affiliate or third party who is obtaining services on your behalf or in connection with a transaction involving you.
- To improve our products and services.
- To communicate with you and to inform you about our, our affiliates' and third parties' products and services, jointly or independently.

When Information Is Disclosed

We may provide your Personal Information (excluding information we receive from consumer or other credit reporting agencies) and Browsing Information to various individuals and companies, as permitted by law, without obtaining your prior authorization. Such laws do not allow consumers to restrict these disclosures. Please see the section "Choices With Your Personal Information" to learn how to limit the discretionary disclosure of your Personal Information and Browsing Information.

Disclosures of your Personal Information may be made to the following categories of affiliates and nonaffiliated third parties:

- to third parties to provide you with services you have requested, and to enable us to detect or prevent criminal activity, fraud, material misrepresentation, or nondisclosure;
- to our affiliate financial service providers for their use to market their products or services to you;
- to nonaffiliated third party service providers who provide or perform services on our behalf and use the disclosed information only in connection with such services;
- to nonaffiliated third party service providers with whom we perform joint marketing, pursuant to an agreement with them to market financial products or services to you;
- to law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoena or court order;
- to lenders, lien holders, judgment creditors, or other parties claiming an interest in title whose claim or interest must be determined, settled, paid, or released prior to closing; and
- other third parties for whom you have given us written authorization to disclose your Personal Information.

We may disclose Personal Information and/or Browsing Information when required by law or in the good-faith belief that such disclosure is necessary to:

- comply with a legal process or applicable laws;
- enforce this Privacy Notice;
- investigate or respond to claims that any material, document, image, graphic, logo, design, audio, video or any other information provided by you violates the rights of a third party; or
- protect the rights, property or personal safety of FNF, its users or the public.

We maintain reasonable safeguards to keep your Personal Information secure. When we provide Personal Information to our affiliates or third party service providers as discussed in this Privacy Notice, we expect that these parties process such information in compliance with our Privacy Notice or in a manner that is in compliance with applicable privacy laws. The use of your information by a business partner may be subject to that party's own Privacy Notice. Unless permitted by law, we do not disclose information we collect from consumer or credit reporting agencies with our affiliates or others without your consent.

We reserve the right to transfer your Personal Information, Browsing Information, and any other information, in connection with the sale or other disposition of all or part of the FNF business and/or assets, or in the event of our bankruptcy, reorganization, insolvency, receivership or an assignment for the benefit of creditors. You expressly agree and consent to the use and/or transfer of the foregoing information in connection with any of the above described proceedings. We cannot and will not be responsible for any breach of security by a third party or for any actions of any third party that receives any of the information that is disclosed to us.

Choices With Your Information

Whether you submit Personal Information or Browsing Information to FNF is entirely up to you. If you decide not to submit Personal Information or Browsing Information, FNF may not be able to provide certain services or products to you. The uses of your Personal Information and/or Browsing Information that, by law, you cannot limit, include:

- for our everyday business purposes – to process your transactions, maintain your account(s), to respond to law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court orders, or report to credit bureaus;
- for our own marketing purposes;
- for joint marketing with financial companies; and
- for our affiliates' everyday business purposes – information about your transactions and experiences.

You may choose to prevent FNF from disclosing or using your Personal Information and/or Browsing Information under the following circumstances ("opt-out"):

- for our affiliates' everyday business purposes – information about your creditworthiness; and
- for our affiliates to market to you.

To the extent permitted above, you may opt-out of disclosure or use of your Personal Information and Browsing Information by notifying us by one of the methods at the end of this Privacy Notice. We do not share your personal information with non-affiliates for their direct marketing purposes.

For California Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties, except as permitted by California law. Currently, our policy is that we do not recognize "do not track" requests from Internet browsers and similar devices.

For Nevada Residents: You may be placed on our internal Do Not Call List by calling (888) 934-3354 or by contacting us via the information set forth at the end of this Privacy Notice. Nevada law requires that we also provide you with the following contact information: Bureau of Consumer Protection, Office of the Nevada Attorney General, 555 E. Washington St., Suite 3900, Las Vegas, NV 89101; Phone number: (702) 486-3132; email: BCPINFO@ag.state.nv.us.

For Oregon Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties for marketing purposes, except after you have been informed by us of such sharing and had an opportunity to indicate that you do not want a disclosure made for marketing purposes.

For Vermont Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties, except as permitted by Vermont law, such as to process your transactions or to maintain your account. In addition, we will not share information about your creditworthiness with our affiliates except with your authorization. For joint marketing in Vermont, we will only disclose your name, contact information and information about your transactions.

Information From Children

The Website is meant for adults and is not intended or designed to attract children under the age of thirteen (13).We do not collect Personal Information from any person that we know to be under the age of thirteen (13) without permission from a parent or guardian. By using the Website, you affirm that you are over the age of 13 and will abide by the terms of this Privacy Notice.

Privacy Outside the Website

The Website may contain links to other websites. FNF is not and cannot be responsible for the privacy practices or the content of any of those other websites.

International Users

FNF's headquarters is located within the United States. If you reside outside the United States or are a citizen of the European Union, please note that we may transfer your Personal Information and/or Browsing Information outside of your country of residence or the European Union for any of the purposes described in this Privacy Notice. By providing FNF with your Personal Information and/or Browsing Information, you consent to our collection and transfer of such information in accordance with this Privacy Notice.

The California Online Privacy Protection Act

For some FNF websites, such as the Customer CareNet ("CCN"), FNF is acting as a third party service provider to a mortgage loan servicer. In those instances, we may collect certain information on behalf of that mortgage loan servicer via the website. The information which we may collect on behalf of the mortgage loan servicer is as follows:

- first and last name;
- property address;
- user name and password;
- loan number;
- social security number - masked upon entry;
- email address;
- three security questions and answers; and
- IP address.

The information you submit through the website is then transferred to your mortgage loan servicer by way of CCN.

The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through this website. For example, if you believe that your payment or user information is incorrect, you must contact your mortgage loan servicer.

CCN does not share consumer information with third parties, other than (1) those with which the mortgage loan servicer has contracted to interface with the CCN application, or (2) law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court orders. All sections of this Privacy Notice apply to your interaction with CCN, except for the sections titled "Choices with Your Information" and "Access and Correction." If you have questions regarding the choices you have with regard to your personal information or how to access or correct your personal information, you should contact your mortgage loan servicer.

Your Consent To This Privacy Notice

By submitting Personal Information and/or Browsing Information to FNF, you consent to the collection and use of the information by us in compliance with this Privacy Notice. Amendments to the Privacy Notice will be posted on the Website. Each time you provide information to us, or we receive information about you, following any amendment of this Privacy Notice will signify your assent to and acceptance of its revised terms for all previously collected information and information collected from you in the future. We may use comments, information or feedback that you submit to us in any manner that we may choose without notice or compensation to you.

Accessing and Correcting Information; Contact Us

If you have questions, would like to access or correct your Personal Information, or want to opt-out of information sharing with our affiliates for their marketing purposes, please send your requests to privacy@fnf.com or by mail or phone to:

Fidelity National Financial, Inc.
601 Riverside Avenue
Jacksonville, Florida 32204
Attn: Chief Privacy Officer
(888) 934-3354

FORM No. 881—Stevens-Ness Law Publishing Co., Portland, Ore. 97204

09036 Mil 76 pg1096

TA

BARGAIN AND SALE DEED—STATUTORY FORM
INDIVIDUAL GRANTOR

EVELYN M. COBURN — Grantor,
conveys to WARNE H. NUNN and DELORES R. NUNN, husband and wife — Grantee,
the following described real property situated in Marion County, Oregon, to-wit:

An easement for road and right-of-way purposes over the following described parcel, beginning at a point which is located North 89° 49' West 315.48 feet and North 22° 30' West 1,223.41 feet and North 67° 30' East 30.00 feet from the Southeast corner of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, Marion County, Oregon;

Thence from said point of beginning continuing North 67° 30' East 351.80 feet to a point on the northerly line of a tract of land described in Deed Book 469, page 411 of Marion County Deed Records;

Thence North 22° 30' West 50.00 feet to a point;

Thence South 67° 30' West 351.80 feet to a point on the easterly right-of-way line of Battle Creek Road (Market Road No. 25);

Thence South 22° 30' East along said easterly right-of-way line 50.00 feet to the point of beginning.

(IF SPACE INSUFFICIENT, CONTINUE DESCRIPTION ON REVERSE SIDE)

The true consideration for this conveyance is the grant of an easement by another deed to the Grantor herein, which is the whole consideration for this conveyance.

Dated this 27th day of March, 19 77.

Evelyn M. Coburn

STATE OF OREGON, County of Multnomah ss. March 27, 19 77

Personally appeared the above named Evelyn M. Coburn

and acknowledged the foregoing instrument to be her voluntary act and deed.

Before me: Robert W. Nunn

Notary Public for Oregon—My commission expires: 3/20/81

(OFFICIAL SEAL)

BARGAIN AND SALE DEED

Evelyn M. Coburn
Warne H. and Delores R. Nunn
2405 S. W. Dellwood Dr. GRANTEE
Lake Oswego, Oregon 97034
GRANTEE'S ADDRESS, ZIP

After recording return to:
Robert W. Nunn
Souther, Spaulding, Kinsey, Williamson & Schwabe
1200 Standard Plaza
Portland, Oregon 97204
NAME, ADDRESS, ZIP

Until a change is requested, all tax statements shall be sent to the following address:
Evelyn M. Coburn
4826 Battle Creek Road
Salem, Oregon 97302
NAME, ADDRESS, ZIP

STATE OF OREGON

09036
STATE OF OREGON ss.
County of Marion

I hereby certify that the within was received and duly recorded by me in Marion County records:
Reel 76 Page 1096

APR 4 4 56 PM '77

EDWIN P. MORGAN
MARION COUNTY CLERK
BY ____ DEPUTY

3.00

IN THE CIRCUIT COURT OF THE STATE OF OREGON

FOR THE COUNTY OF MARION

CITY OF SALEM, OREGON, an Oregon municipal corporation, Plaintiff, v. EVELYN COBURN, Defendant.	No. 87C-12160 STIPULATED JUDGMENT

Plaintiff, appearing through its attorney, William J. Juza, City Attorney, by David J. De Martino, Deputy City, and defendant appearing through Robert W. Nunn of the firm of Schwabe, Williamson and Wyatt, represent that the parties have reached an agreement as to just compensation, and the court being fully advised;

IT IS HEREBY ORDERED, ADJUDGED AND DECREED as follows:

1. That the real property described in exhibit 1 consisting of three pages, attached hereto and made a part of this judgment is hereby condemned and appropriated for public purposes free and clear of all liens and encumbrances to the City of Salem, Oregon, a municipal corporation.

2. That the just compensation in this case is the sum of $45,000. That plaintiff had previously deposited with the clerk of the court the sum of $20,675 and upon the further payment with the clerk of the court of $24,325 (making a total just compensation in the amount of $45,000) the above-described property shall be appropriated to plaintiff.

WILLIAM J. JUZA
CITY ATTORNEY
555 LIBERTY ST. SE
SALEM, OREGON 97301
TEL. 588-6003

110-8-3W
100 10
600
500
NEW MAP

3. The plaintiff has also agreed to place certain fencing and a farm gate as setforth in that letter dated January, 11, 1989. Although the terms of the letter are not expressly made a part of this judgment and settlement, defendant may enforce the terms of said letter in a separate proceeding.

4. No attorney's fees, appraiser's fees, or other costs and disbursements are awarded to either party.

DATED this 15 day of ~~January~~ February 1989.

Circuit Judge

STIPULATED AND AGREED:

Robert W. Nunn, OSB #76273
Attorney for Defendant

David J. De Martino
OSB #65030
Deputy City Attorney
Of Attorneys for Plaintiff

WILLIAM J. JUZA
CITY ATTORNEY
555 LIBERTY ST., S.E.
SALEM, OREGON 97301
TEL. 588-6003

ACQUISITION

A parcel of land lying in Sections 11 and 12, Township 8 South, Range 3 West, Willamette Meridian, Marion County, Oregon and being a portion of the property described in those deeds to Evelyn Coburn a/k/a Evelyn M. Coburn, recorded in Volume 160, Page 518 and Volume 286, Page 391, Marion County Deed Records, the said parcel being that portion of said property included in a strip of land variable in width, lying on the northerly and southerly side of the "L" Center Line, which Center Line is described as follows:

Beginning at the intersection of the Center Line of South Commercial Street and the Center Line of Kuebler Boulevard, in the City of Salem, as shown on the right-of-way survey map of Kuebler Boulevard from Skyline Road to South Commercial on record at the Marion County Surveyor's office, said intersection being Engineer's Station "L" 605 + 72.90 P.O.T. Ahead, "L" 606 + 73.55 P.O.T. Back, and running thence:

North 89° 06' 10" East 182.80 feet along the easterly extension of said Kuebler Boulevard Center Line; thence on a 2500 foot radius curve right 150.97 feet, the long chord bears South 89° 10' 02" East 150.95 feet; thence South 87° 26' 14" East 1958.15 feet; thence on a 750 foot spiral curve left, the long chord bears North 88° 08' 50" East 748.72 feet; thence on a 1909.83 foot radius curve left 223.20 feet; the long chord bears North 77° 57' 55" East 223.08 feet; thence on a 750 foot radius curve left, the long chord bears North 67° 06' 56" East 748.72 feet; thence North 63° 22' East 948.29 feet; thence on a 750 foot spiral curve right, the long chord bears North 67° 06' 56" East 748.72 feet; thence on a 1909.88 foot radius curve right 302.22 feet, the long chord bears North 79° 09' East 301.91 feet; thence on a 750 foot spiral curve right, the long chord bears South 85° 48' 56" East 748.72 feet; thence South 89° 04' East 20.60 feet to the Center Line of 27th Avenue which is Engineer's Station "L" 674 + 59.78.

The widths in feet of the strip of land above referred to in the area of the herein described parcel are as follows:

Station	to	Station	Width on Northerly Side of Center Line
"L" 655+35.69		"L" 655+48.39	0 feet on a straight line to 122.67 feet
"L" 655+48.39		"L" 655+90	122.67 feet on a straight line to 80 feet
"L" 655+90		"L" 658+36.86	80 feet on a straight line to 80.92 feet
"L" 658+36.86		"L" 660+00	80.92 feet on a straight line to 100 feet
"L" 660+00		"L" 661+00	100 feet
"L" 661+00		"L" 663+86.96	100 feet on a straight line to 85 feet
"L" 663+86.96		"L" 667+50	85 feet on a straight line to 75 feet

Station	to	Station	Width on Southerly Side of Center Line
"L" 655+23.47		"L" 655+50	126.05 feet on a straight line to 95 feet
"L" 655+50		"L" 656+36.96	95 feet on a straight line to 85 feet
"L" 656+36.96		"L" 661+00	85 feet on a straight line to 90 feet
"L" 661+00		"L" 663+86.96	90 feet on a straight line to 80 feet
"L" 663+86.96		"L" 666+93.71	80 feet on a straight line to 56.05 feet

and also that portion of the aforementioned Coburn property lying within a strip of land, varying in width, on the easterly side of the "B" line, said "B" line being described as follows:

EXHIBIT 1

PAGE 1

Beginning at a point on the Center Line of Battle Creek Road which bears westerly along the southerly boundary line of Section 11, Township 8 South, Range 3 West, 315.54 feet and North 20° 54' 40" West 1150 feet along said Battle Creek Road Center Line from the southeast corner of Section 11, Township 8 South, Range 3 West, said point being Station "B" 39+50 and running thence South 20° 54' 40" East 1750 feet along said Battle Creek Road Center Line to Station "B" 56+00.

The widths in feet of the strip of land above referred to in the area of the herein described parcel of land are as follows:

Station	to	Station	Width on Easterly Side of the Existing Battle Creek Road Center Line
"B" 43+00		"B" 46+00	42 feet
"B" 46+00		"B" 46+05.76	42 feet on a straight line to 38 feet
"B" 46+05.76		"B" 49+41.20	38 feet
"B" 49+41.20		"B" 49+87.93	38 feet on a straight line to 59.25 feet

and also that portion of the aforementioned Coburn property lying within a strip of land, varying in width on northerly side of the "Bn" line, said "Bn" line being described as follows:

Beginning at a point on the Center Line of Boone Road which bears westerly along said Center Line 665.54 feet more or less to Station "Bn" 36+50, from the southeast corner of Section 11, Township 8 South, Range 3 West of the Willamette Meridian and running thence easterly along said Center Line 350.00 feet to the Center Line of Battle Creek Road and "Bn" Station 40+00.

Thence continuing easterly along said Center Line 200 feet to "Bn" Station "Bn" 42+00.

The widths in feet of the strip of land above referred to in the area of the herein described parcel are as follows:

Station	to	Station	Width on Northerly Side of the Existing Boone Road Center Line
"Bn" 40+40.44		"Bn" 40+50	0 feet on a straight line to 34 feet
"Bn" 40+50		"Bn" 41+00	34 feet
"Bn" 41+00		"Bn" 42+00	34 feet on a straight line to 30 feet

The parcel of land to which these descriptions applies contains 3.89 acres of land more or less.

NOTE: NO ACCESS - ACCESS COMPLETELY RESTRICTED

EXHIBIT 1
PAGE 2

TOGETHER WITH A SLOPE EASEMENT, a permanent right-of-way and easement over and along the following described premises for the purpose of constructing, maintaining and repairing any slopes occasioned by or resulting from the improvement and maintenance of Kuebler Boulevard.

The real property covered by this easement is described as follows, to-wit:

A parcel of land lying in Section 11 and 12, Township 8 South, Range 3 West, Willamette Meridian, Marion County, Oregon, and being a portion of the property described in those deeds to Evelyn Coburn A/K/A Evelyn M. Coburn, recorded in Volume 183, Page 518 and Volume 256, Page 391, Marion County Deed Records, the said parcel being that portion of said property included in a strip of land variable in with, lying on the easterly side of the "B" Line, said "B" line being described as follows:

Beginning at a point on the Center Line of Battle Creek Road which bears westerly along the southerly boundary line of Section 11, Township 8 South, Range 3 West, 315.54 feet and North 20° 54'40" West 1150 feet along said Battle Creek Road Center Line from the Southeast corner of Section 11, Township 8 South, Range 3 West, said point being Station "B" 38+50 and running thence South 20° 54' 40" East 1750 feet along said Battle Creek Road Center Line to Station "B" 56+00.

The widths in feet of the strip of land above referred to in the area of the herein described parcel of land are as follows:

Station	to	Station	Width on easterly Side of Center Line
"B" 45+80		"B"47+00	57 feet
"B" 47+00		"B"48+00	57 feet in a straight line to 47 feet
"B"48+00		"B"49+60	47 feet

Save and except that portion lying within the right-of-way of Battle Creek Road.

The parcel of land to which this description applies contains 0.12 acres of land, more or less.

EXHIBIT 1
PAGE 3

(R/00) 11D-E-2W

IN THE CIRCUIT COURT OF THE STATE OF OREGON

FOR THE COUNTY OF MARION

FILED
STATE OF OREGON
MARION CO. CLERK'S
DEC 22 11 12 AM '87
BY

CITY OF SALEM, OREGON, an Oregon municipal corporation,

Plaintiff,

v.

EVELYN COBURN,

Defendant.

No. 87C-12169

COMPLAINT
EMINENT DOMAIN

WILLIAM A. JAZA
CITY ATTORNEY
555 LIBERTY ST. S.E.
SALEM, OREGON 97301
TEL. 588-6008

COMES NOW the plaintiff and for a cause of action against the defendants, alleges as follows:

1.

THAT the City of Salem, Oregon, is, and at all times mentioned herein has been, a municipal corporation duly organized and existing under and by virtue of the laws of the State of Oregon.

2.

THAT on the 21st day of December, 1987, the City of Salem, by and through its Common Council, duly passed and adopted Resolution No. 87-134, determining and declaring that the public interest and use requires the condemnation and acquisition of real property for right-of-way purposes, which said real property is hereinafter described.

3.

THAT the City of Salem, Oregon, is authorized to condemn the property described herein by virtue of ORS 373.260 and the agreement entered into with Marion County, Oregon.

FEE ACQUISTION

(14100) 1LD-F-30

A parcel of land lying in Sections 11 and 12, Township 8 South, Range 3 West, Willamette Meridian, Marion County, Oregon and being a portion of the property described in those deeds to Evelyn Coburn a/k/a Evelyn M. Coburn, recorded in Volume 183, Page 518 and Volume 288, Page 391, Marion County Deed Records, the said parcel being that portion of said property included in a strip of land variable in width, lying on the northerly and southerly side of the "L" Center Line, which Center Line is described as follows:

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"L" 655+90		"L" 658+36.86	80 feet on a straight line to 80.92 feet
"L" 658+36.86		"L" 660+00	80.92 feet on a straight line to 100 feet
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and also that portion of the aforementioned Coburn property lying within a strip of land, varying in width, on the easterly side of the "B" line, said "B" line being described as follows:

EXHIBIT 1

PAGE 1

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"B" 49+41.20		"B" 49+87.93	38 feet on a straight line to 59.25 feet

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Beginning at a point on the Center Line of Boone Road which bears westerly along said Center Line 665.54 feet more or less to Station "Bn" 36+50, from the southeast corner of Section 11, Township 8 South, Range 3 West of the Willamette Meridian and running thence easterly along said Center Line 350.00 feet to the Center Line of Battle Creek Road and "Bn" Station 40+00.

Thence continuing easterly along said Center Line 200 feet to "Bn" Station "Bn" 42+00.

The widths in feet of the strip of land above referred to in the area of the herein described parcel are as follows:

Station	to	Station	Width on Northerly Side of the Existing Boone Road Center Line
"Bn" 40+40.44		"Bn" 40+50	0 feet on a straight line to 34 feet
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"Bn" 41+00		"Bn" 42+00	34 feet on a straight line to 30 feet

The parcel of land to which these descriptions applies contains 3.89 acres of land more or less.

NOTE: NO ACCESS - ACCESS COMPLETELY RESTRICTED

EXHIBIT

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Station	to	Station	Width on easterly Side of Center Line
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"B" 47+00		"B"48+00	57 feet in a straight line to 47 feet
"B"48+00		"B"49+60	47 feet

Save and except that portion lying within the right-of-way of Battle Creek Road.

The parcel of land to which this description applies contains 0.12 acres of land, more or less.

EXHIBIT ____

PAGE ____

OCT 4 1994

REEL 1196 PAGE 415

RETURN TO:
City of Salem
City Hall
Room 305

TEMPORARY CONSTRUCTION EASEMENT

KNOW ALL MEN BY THESE PRESENTS, that Evelyn Coburn, for the consideration of Two Hundred Ninety Five ($295.00) DOLLARS to her paid, the receipt whereof is hereby acknowledged, do forever grant unto the CITY OF SALEM, a municipal corporation, a temporary construction easement over and along the full width and length of the premises described as follows, to-wit:

Beginning at the point of intersection of the centerline of County Road No. 839 (commonly known as Battle Creek Road S.E.) and the centerline of Market Road No. 25 (commonly known as Reed Road S.E.) and being located in Section 11, Township 8 South Range 3 West of the Willamette Meridian, Marion County, Oregon;

thence South 52°01'22" East 38.71 feet along the centerline of said County Road No. 839 to an angle point;
thence continuing South 38°11'34" East 414.55 feet along said centerline to an angle point;
thence continuing along said centerline South 23°26'35" East 15.00 feet;
thence North 66°33'25" East 30.00 feet to a point on the easterly line of said County Road No. 839 and being the TRUE POINT OF BEGINNING;
thence South 23°26'35" East along the easterly line of said County Road to the northwesterly corner of that tract of land conveyed by deed to Dale E. and Darlene A. Christison as recorded in Reel 76 Page 282 of Marion County Deed Records;
thence Easterly along the northerly line of said Christison tract to a point 25.00 feet from the easterly line of said County Road, if measured perpendicular thereto;
thence North 23°26'35" West parallel with said easterly line to a point which is North 66°33'25" East 25.00 feet from the true point of beginning;
thence South 66°33'25" West 25.00 feet to the true point of beginning.

Containing 4,816 square feet or 0.111 Acres of land more or less.

TO HAVE AND TO HOLD the above-described temporary construction easement unto said grantee in accordance with the conditions and covenants as follows:

The temporary working easement shall be effective only for and during the time of the initial pipeline construction.

Grantee will indemnify and hold harmless the Grantor, her heirs, and assigns from claims of injury to person or property as a result of the negligence of the grantee, its agents, or employees in the construction, operation, or maintenance of said pipeline.

The City of Salem, upon completion of the initial construction, shall restore the premises of the grantor and any improvements disturbed by the City to as good condition as they were prior to any such installation or work, including the restoration of any topsoil and lawn.

TICOR

OCT 4 1994

WITNESS my hand and seal this 19th day of September, 1994.

Evelyn M. Coburn (SEAL)

STATE OF OREGON)
) ss.
County of)

On this 19th day of September, 1994, before me personally appeared Evelyn Coburn, proved to me on the basis of satisfactory evidence to be the person who signed the within instrument in my presence.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal on the day and year above written.

OFFICIAL SEAL
G. WESLEY PREIS
NOTARY PUBLIC - OREGON
COMMISSION NO.005186
MY COMMISSION EXPIRES APR. 02, 1995

G. Wesley Preis
Notary Public for Oregon
My Commission Expires: 4/02/95

APPROVED:

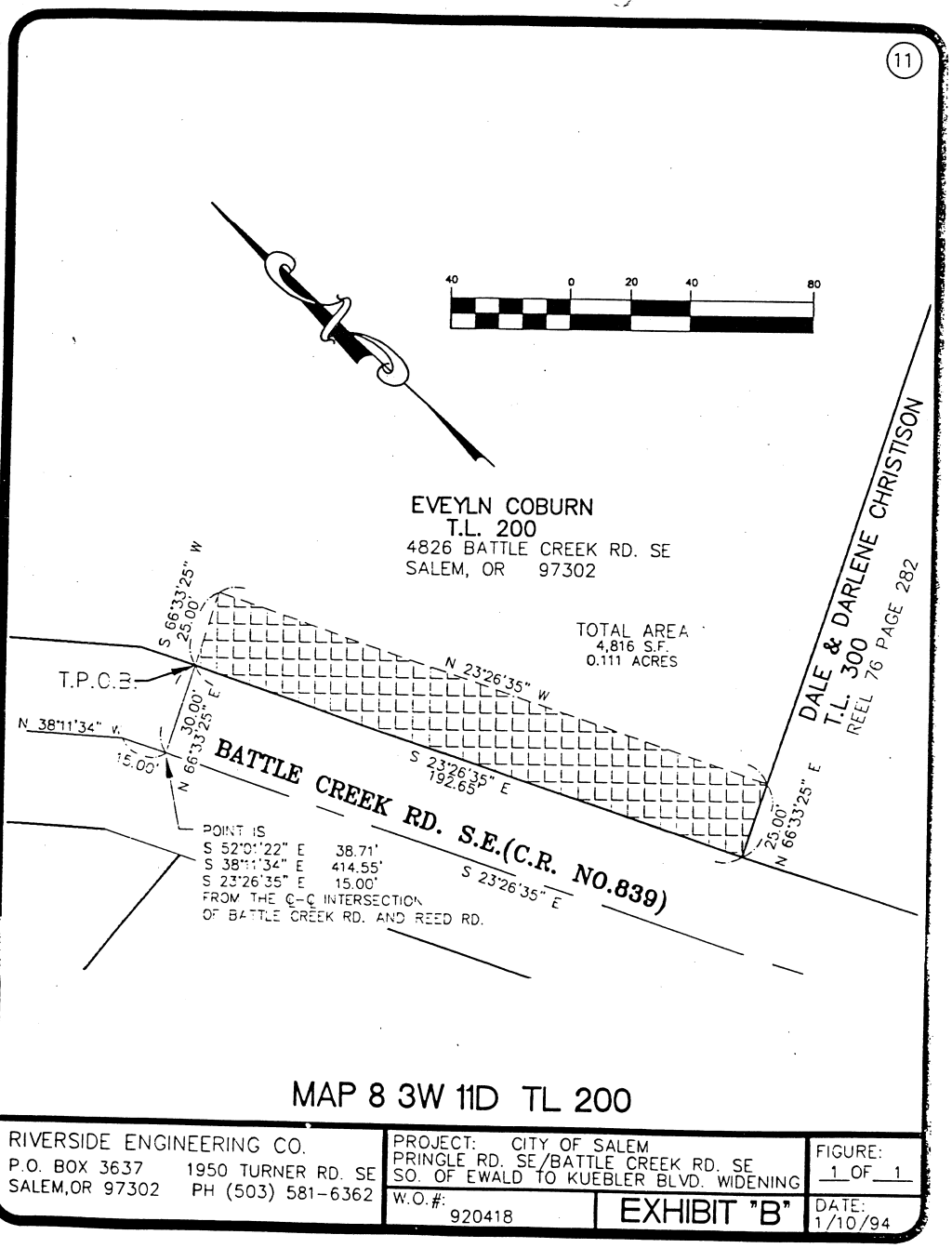
By: Karl M. Ebeling
Public Works Department

APPROVED AS TO FORM:

Donald J. Mattaliano
City Attorney

Checked By: KMR
Project Number: 920418
March 29, 1994

OCT 4 1994



MAP 8 3W 11D TL 200

RIVERSIDE ENGINEERING CO. P.O. BOX 3637 1950 TURNER RD. SE SALEM,OR 97302 PH (503) 581-6362	PROJECT: CITY OF SALEM PRINGLE RD. SE/BATTLE CREEK RD. SE SO. OF EWALD TO KUEBLER BLVD. WIDENING	FIGURE: 1 OF 1
	W.O.#: 920418 EXHIBIT "B"	DATE: 1/10/94

OCT 4 1994

REEL:1196 PAGE: 415

October 04, 1994 , 11:26A

CONTROL #: 1196415

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $25.00

ALAN H DAVIDSON
COUNTY CLERK

OCT 4 1994

REEL 1196 PAGE 413

TEMPORARY PIPELINE CONSTRUCTION EASEMENT

KNOW ALL MEN BY THESE PRESENTS, that Evelyn Coburn, for the consideration of Ten ($10.00) DOLLARS to her paid, the receipt whereof is hereby acknowledged, do forever grant unto the CITY OF SALEM, a municipal corporation, a temporary construction easement over and along the full width and length of the premises described as follows, to-wit:

A 40.00 foot pipeline construction easement 20.00 feet each side of the following described centerline.

Beginning at the point of intersection of the centerline of County Road No. 839 (commonly known as Battle Creek Road SE) and the centerline of Market Road No. 25 (commonly known as Reed Road SE) and being located in Section 11, Township 8 South Range 3 West of the Willamette Meridian Marion County, Oregon;

thence South 52°01'22" East 38.71 feet along the centerline of said County Road No. 839 to an angle point;
thence continuing South 38°11'34" East 123.41 feet along said centerline to a point;
thence North 51°48'26" East 22.09 feet to the TRUE POINT OF BEGINNING;
thence North 28°29'59" East 33.01 feet and there terminating.

SAVE & EXCEPT any portion thereof lying within the County Road right-of-way.

FURTHER SAVE & EXCEPT that portion lying 10.00 feet each side of the previously described centerline.

Containing 488 square feet or 0.011 Acres of land more or less.

TO HAVE AND TO HOLD the above-described temporary construction easement unto said grantee in accordance with the conditions and covenants as follows:

The temporary working easement shall be effective only for and during the time of the initial pipeline construction.

Grantee will indemnify and hold harmless the Grantor, her heirs, and assigns from claims of injury to person or property as a result of the negligence of the grantee, its agents, or employees in the construction, operation, or maintenance of said pipeline.

The City of Salem, upon completion of the initial construction, shall restore the premises of the grantor and any improvements disturbed by the City to as good condition as they were prior to any such installation or work, including the restoration of any topsoil and lawn.

RETURN TO:
City of Salem
City Hall, Room 305

226349KM

TICOR

WITNESS my hand and seal this 19th day of September, 1994.

Evelyn M. Coburn (SEAL)

STATE OF OREGON)
) ss.
County of)

On this 19th day of September, 1994, before me personally appeared Evelyn Coburn, proved to me on the basis of satisfactory evidence to be the person who signed the within instrument in my presence.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal on the day and year above written.

OFFICIAL SEAL
G. WESLEY PREIS
NOTARY PUBLIC - OREGON
COMMISSION NO.005186
MY COMMISSION EXPIRES APR. 02, 1995

Notary Public for Oregon
My Commission Expires: 4/02/95

APPROVED:

By: Public Works Department

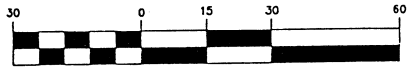
APPROVED AS TO FORM:

City Attorney

Checked By:
Project Number: 920418
March 29, 1994

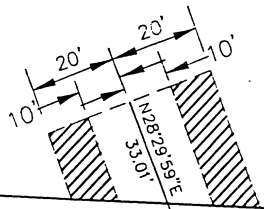
OCT 4 1994

(11)



EVEYLN COBURN
T.L. 200
4826 BATTLE CREEK RD. SE
SALEM, OR 97302

TOTAL AREA
488 S.F.
0.011 ACRES



REED RD. S.E.
M.R. NO.25

T.P.O.B.

S 52°01'22" E
38.71'

123.24'
S 38°11'34" E

22.09'
N 51°48'26" E

BATTLE CREEK RD. S.E.
C.R. NO.839

MAP 8 3W 11D TL 200

RIVERSIDE ENGINEERING CO. P.O. BOX 3637 1950 TURNER RD. SE SALEM,OR 97302 PH (503) 581-6362	PROJECT: CITY OF SALEM PRINGLE RD. SE/BATTLE CREEK RD. SE SO. OF EWALD TO KUEBLER BLVD. WIDENING	FIGURE: 1 OF 1
	W.O.#: 920418 EXHIBIT "B"	DATE: 1/10/94

OCT 4 1994

REEL:1196 PAGE: 413

October 04, 1994 , 11:26A

CONTROL #: 1196413

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $25.00

ALAN H DAVIDSON
COUNTY CLERK

SEND TAX STATEMENTS TO:
Unchanged

REEL 1566 PAGE 652

AFTER RECORDING, RETURN TO:
Evans, Freeby & Jennings, LLP
280 Court St. NE, Suite One
Salem, OR 97301

The true and actual consideration for this transfer is nonmonetary.

EASEMENT

DATE: 2-6-99, 1999

PARTIES: EVELYN M. COBURN and GERTRUDE A. HOBBS, Trustees, or their successors in trust, under the EVELYN M. COBURN LIVING TRUST, dated March 15, 1995, and any amendments thereto, as "*Grantor*" DOUGLAS M. DRAGER, as "*Grantee*"

1. For good and valuable consideration, Grantor hereby conveys to Grantee, his heirs, successors and assigns, Grantees, a permanent nonexclusive easement for installing, repairing, or maintaining an underground sewer pipeline for the purpose of catching, carrying, and conveying sewage waste and surplus waters, along that part of Grantor's property described on Exhibit "A" attached hereto and by this reference incorporated herein ("*Sewer Easement*").

2. The cost of all installation, repair, and maintenance of the Sewer Easement shall be borne by Grantee, and Grantee shall hold Grantor harmless from any and all claims, damages, or expenses in any way related to that Sewer Easement, its installation, maintenance, or use by any party. Upon the initial installation, and upon each and every occasion that the same is repaired, renewed, added to, or removed, Grantee shall restore Grantor's property, and any building or improvement disturbed thereon, to as good condition as they were prior to such installation or work, including the restoration of any topsoil.

3. No installation, repair, or maintenance of the Sewer Easement shall curtail or unreasonably impede use of Grantor's property.

4. In the event that an attorney is employed to construe, interpret, enforce any of the provisions of this agreement or take any action in any bankruptcy, insolvency or similar proceeding affecting creditors' rights generally, the prevailing party shall be entitled to recover from the non-prevailing party its reasonable attorney fees and other costs incurred irrespective of whether any legal proceeding is commenced. If any legal action, arbitration or other proceeding is brought, the prevailing party shall be entitled to recover its reasonable attorney fees and other costs incurred in connection therewith, both at trial and on any appeal therefrom or petitions for review thereof. As used herein, the term "prevailing party" means that party prevailing on issues related to this contract.

5. It is understood by both parties that the law firm of Evans, Freeby & Jennings, LLP represented the Grantor only in the preparation of this easement and that Grantee elected to have or not have it reviewed by counsel of their choice. If Grantee elected to pay part of the fee for drafting this easement, such payment does not imply representation of them by said firm.

6. The easement granted herein shall run with the land as to all property burdened and benefitted by such easement, including any division or partition of such property. The rights, covenants and obligations contained in this easement shall bind, burden, and benefit each party's successors and assigns, lessees, mortgagees, (or beneficiaries under a trust deed).

GRANTOR:
EVELYN M. COBURN LIVING TRUST, dated March 15, 1995

Evelyn M. Coburn
By: EVELYN M. COBURN, Trustee

Gertrude A. Hobbs
By: GERTRUDE A. HOBBS, Trustee

GRANTEE

DOUGLAS M. DRAGER

FEB 08 1999

OFFICIAL SEAL
DOUGLAS B ADAMS
NOTARY PUBLIC - OREGON
COMMISSION NO. 316951
MY COMMISSION EXPIRES OCTOBER 13, 2002

STATE OF OREGON)
) ss.
County of Marion)

PERSONALLY appeared before me this 6 day of 2, 1999, the above named Evelyn M. Coburn and Gertrude A. Hobbs, Trustees, and acknowledged the foregoing instrument to be their voluntary act and deed.

Douglas B Adams
NOTARY PUBLIC FOR OREGON
My Commission Expires: 10-13-2002

OFFICIAL SEAL
DOUGLAS B ADAMS
NOTARY PUBLIC - OREGON
COMMISSION NO. 316951
MY COMMISSION EXPIRES OCTOBER 13, 2002

STATE OF OREGON)
) ss.
County of Marion)

Personally appeared before me this 6 day of 2, 1999, the above named DOUGLAS M. DRAGER and acknowledged the foregoing instrument to be his voluntary act and deed.

Douglas B. Adams
Notary Public of Oregon
My Commission Expires: 10-13-2002

2.2.99 11:45
wre\1977.esm

FEB 08 1999

EXHIBIT A
LEGAL DESCRIPTION
OF SEWER EASEMENT

FEB 08 1999

EASEMENT DESCRIPTION

A sanitary sewer easement situated in the southeast quarter of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, Marion County, Oregon, being 5.00 feet on each side of the following described centerline:

Commencing at the section corner common to sections 11, 12, 13, 14 said Township and Range; thence North 89° 15' 19" West, 315.36 feet to the intersection of Boone Road SE (County Road 838) and Battle Creek Road SE (Market Road 25); thence along the centerline of said Battle Creek Road, North 23° 26' 25" West, 1429.91 feet; thence continue along the said centerline, North 38° 12' 01" West, 37.00 feet; thence leaving said centerline, North 66° 33' 35" East, 46.54 feet to the true point of beginning; thence North 38° 12' 01" West, 260.00 feet to the point of termination..

Sanitary Sewer Easement
Doug Drager
January 20, 1999

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JULY 14, 1975
JAMES E. ANDREWS
1626

Expires 12/31/99

REEL:1566 PAGE: 652

February 08, 1999 , 03:33P

FEB 08 1999

CONTROL #: 1566652

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $45.00

ALAN H DAVIDSON
COUNTY CLERK

REEL 1227 PAGE 774

ELECTRIC POWER LINE EASEMENT

In consideration of the receipt of one and no/100 dollars ($1.00), Evelyn M. Coburn ("Grantors") hereby convey to PORTLAND GENERAL ELECTRIC COMPANY ("PGE"), an Oregon corporation, a perpetual easement over, under, upon and across the following described property (the "Property"), situated in Marion County, State of Oregon, being a strip of land more particularly described as follows:

Beginning at a point on the Northeasterly right-of-way line of Battle Creek Road; said point bears South 38°11'51" East 117.91 feet from the most Southerly corner of the tract of land as described in Reel 1196, Page 414, Deed Records of said County; thence along said centerline South 40°03'12" East 143.43 feet to point "A"; thence South 31°29'33" East 39.78 feet to the said Northeasterly right-of-way line and the terminus of said centerline.

The side lines of said easement to be extended or shortened to terminate on said Northeasterly right-of-way line.

Together with a strip of land Two (2) feet in width, extending One (1) foot on each side of a centerline beginning at said point "A"; thence along said centerline in a Northeasterly direction 23.0 feet to the terminus of said centerline.

Together with a strip of land Two (2) feet in width, extending One (1) foot on each side of a centerline beginning at a point which bears South 38°11'51" East 26.9 feet from most Southerly corner of the tract of land as described in Reel 1196, Page 414, Deed Records of said County; thence along said centerline in a Northeasterly direction 12.0 feet to the terminus of said centerline.

Together with a strip of land Two (2) feet in width, extending One (1) foot on each side of a centerline beginning at a point which bears South 39°27'59" East 558.35 feet from the intersection of the centerlines of Market Road 25 and County Road 839; thence along said centerline in a Easterly direction 12.0 feet to the terminus of said centerline.

Together with a strip of land Two (2) feet in width, extending One (1) foot on each side of a centerline beginning at a point which bears North 14°55'17" East 274.29 feet from the most Northerly corner tract of land as described in Reel 1196, Page 414, Deed Records of said County; thence along said centerline in a Easterly direction 16.0 feet to the terminus of said centerline.

The above described centerlines are shown on P.G.E. Drawing E-8875, attached hereto which by reference thereto is made a part hereof.

"See Attached Sketch"

TERMS, CONDITIONS, AND COVENANTS

1. This easement shall be for the right to enter upon the Property and to erect, maintain, repair, rebuild, operate and patrol electric power lines and appurtenant signal or communication lines, and all uses directly or indirectly necessary thereto. Such uses shall include the necessary erection of poles, towers, wires, cables, guys, supports and appurtenances and the protection thereof from fire and other hazards. Such uses shall also include keeping the Property free from structures, equipment, trees, vines, brush and any and all other obstructions of any kind.

2. PGE shall have the present right to top, limb or fell trees located on land owned by Grantors adjacent to the Property if PGE determines that such trees represent a danger to the use of this easement.

3. Grantors shall have the right to use the Property for all purposes not inconsistent with the uses and purposes of this easement, except Grantors shall not build or erect any structure or improvement upon, over or under the Property without the prior written consent of PGE.

4. The Grantors warrant that they have marketable title to the Property and that PGE may peaceably enjoy the rights and benefits of this easement.

5. If PGE shall fail to use this easement for a continuous period of five years after the installation of electric power lines, then this easement shall terminate and all rights granted hereunder shall revert to the Grantors.

6. As used herein, the singular shall include the plural and vice versa.

7. This easement inures to the benefit of and binds the parties hereto, their heirs, devisees, administrators, executors, successors and assigns.

After Recording Return To:
Portland General Electric Co.
121 S. W. Salmon St.
Portland, Oregon 97204
c/o Property Dept.-3WTC-PL02

Audit 41229
Job 16588

IN WITNESS WHEREOF, the Grantors have executed this easement this 17th day of February, 1995.

OFFICIAL SEAL
BRUCE W. CARROLL
NOTARY PUBLIC-OREGON
COMMISSION NO. 016000
MY COMMISSION EXPIRES JUNE 21, 1996

Evelyn M. Coburn
(SEAL)
Grantor

(SEAL)
Grantor

(SEAL)
Grantor

STATE OF OREGON)
) ss.
County of Marion)

On the 17th day of February, 1995, the above-named Evelyn M. Coburn, personally appeared before me and acknowledged the foregoing instrument to be Her voluntary act and deed.

Bruce W. Carroll
Notary Public for Oregon
My Commission Expires: 21 June 1996

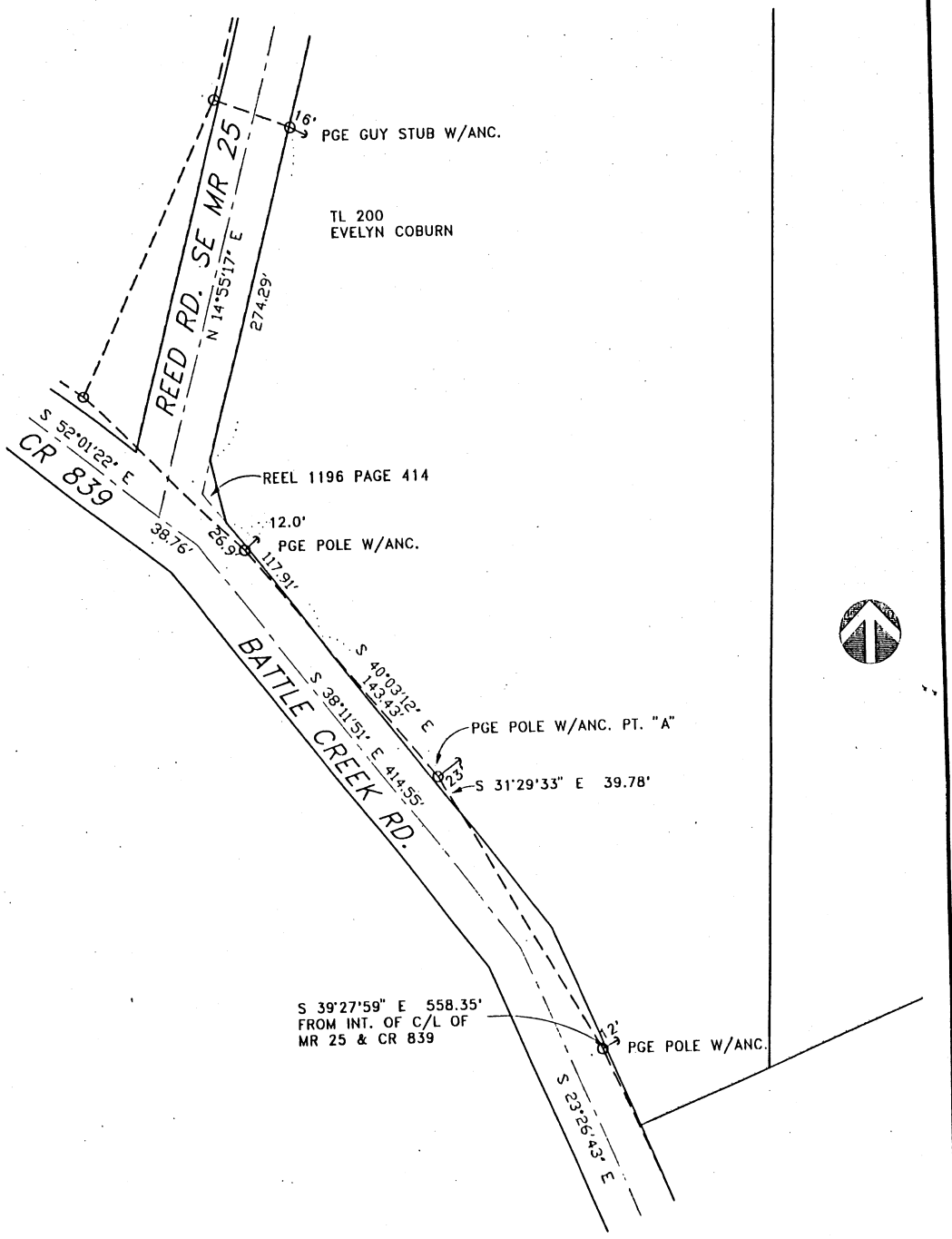
After recording
Return to:

Portland General Electric Company
Attn Property Services
121 SW Salmon St, 3WTCPL02
Portland OR 97204

PGE 1973 (Dec 84)

Job# S-16588

MAR 2 3 1995



Audit 41229

Portland General Electric
Portland, Oregon

To Accompany Power Line Easement
Evelyn Coburn
S.E. 1/4 Sec. 11, T. 8S., R. 3W., W.M., Marion Co., Or.

SCALE 1"=100'	DATE 02/17/95	
DRAWN BY	TRACED BY	CHECKED
R.L.B.		

APPROVED

16589 16818 DWG. NO. E-8875

Job 16588

MAR 2 3 1995

REEL:1227 PAGE: 774

March 23, 1995 , 02:36P

CONTROL #: 1227774

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $25.00

ALAN H DAVIDSON
COUNTY CLERK

OCT 4 1994

REEL 1196 PAGE 418

RETURN TO:
City of Salem
City Hall, Room 305

PIPELINE EASEMENT
(Storm Drain Only)

KNOW ALL MEN BY THESE PRESENTS, that Evelyn Coburn, for the consideration of One Hundred Ten ($110.00) DOLLARS to her paid, the receipt whereof is hereby acknowledged, do forever grant unto the CITY OF SALEM, a municipal corporation, a permanent right-of-way and easement over and along the full width and length of the premises described as follows, to-wit:

A 20.00 foot permanent pipeline easement 10.00 feet each side of the following described centerline.

Beginning at the point of intersection of the centerline of County Road No. 839 (commonly known as Battle Creek Road SE) and the centerline of Market Road No. 25 (commonly known as Reed Road SE) and being located in Section 11, Township 8 South Range 3 West of the Willamette Meridian, Marion County, Oregon;

thence South 52°01'22" East 38.71 feet along the centerline of said County Road No. 839 to an angle point;
thence continuing South 38°11'34" East 121.70 feet along said centerline to a point;
thence North 51°48'26" East 26.04 feet to the TRUE POINT OF BEGINNING;
thence North 28°29'59" East 28.70 feet and there terminating.

SAVE & EXCEPT any portion thereof lying within the County Road right-of-way.

Containing 488 square feet or 0.011 Acres of land more or less.

together with a temporary working easement as follows, to-wit:

None

The temporary working easement shall be effective only for and during the time of the initial construction and laying of the pipeline hereinafter described.

TO HAVE AND TO HOLD the above-described permanent right-of-way unto said Grantee in accordance with the conditions and covenants as follows:

The permanent easement shall include the right to the said City of Salem, to excavate for, and to construct, operate, maintain, repair, replace, and remove an underground storm drain pipeline with all appurtenances incident thereto or necessary therewith, including manholes, for the purpose of conveying surplus waters under said premises, together with the right of said City of Salem to place, excavate, replace, repair, install, maintain, operate, inspect, and relocate pipelines and necessary appurtenances, and make excavations therefor from time to time, in, under, and through the above-described premises within said easement, and to cut and remove from said easement any trees and other obstructions which may endanger the safety or interfere with the use of said pipelines, or appurtenances attached to or connected therewith; and the right of ingress and egress to and over said above-described premises at any and all times for the purpose of repairing, renewing, excavating, replacing, inspecting, maintaining the number of pipelines and appurtenances, and for doing anything necessary, useful, or convenient for the

2363494KM

TICOR

enjoyment of the easement hereby granted. No building shall be constructed over the pipeline easement and no earthfill or embankment shall be placed within this easement, nor over this pipeline without a specific written agreement between the Grantee and the Grantor, her successors or assigns. Should such specific agreement be executed, Grantee will set forth the conditions under which such fill or embankment may be placed, including a stipulation that all risks of damage to the pipeline shall be assumed by Grantor, her successors or assigns.

Grantee will indemnify and hold harmless the Grantor, her heirs and assigns, from claims for injury to person or property as a result of the negligence of the Grantee, its agents or employees in the construction, operation or maintenance of said pipeline.

The City of Salem, upon the initial installation, and upon each and every occasion that the same be repaired, replaced, renewed, added to, or removed, shall restore the premises of the Grantor, and any improvements disturbed by the City, to as good condition as they were prior to any such installation or work, including the restoration of any topsoil and lawn.

WITNESS my hand and seal this 19th day of September, 1994.

Evelyn M. Coburn (SEAL)

STATE OF OREGON)
) ss.
County of)

On this 19th day of September, 1994, before me personally appeared Evelyn Coburn, proved to me on the basis of satisfactory evidence to be the person who signed the within instrument in my presence.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal on the day and year above written.

OFFICIAL SEAL
G. WESLEY PREIS
NOTARY PUBLIC - OREGON
COMMISSION NO.005186
MY COMMISSION EXPIRES APR. 02, 1995

Notary Public for Oregon
My Commission Expires: 4/02/95

APPROVED:

By: Paul D. Gherke
Public Works Department

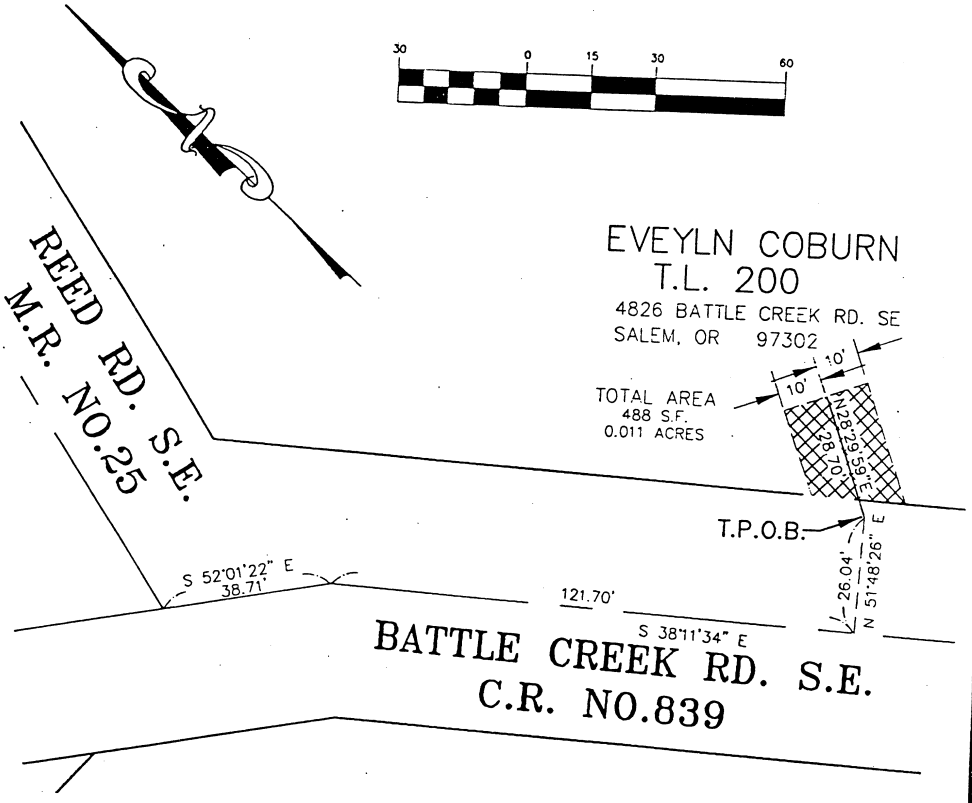
APPROVED AS TO FORM:

City Attorney

Checked By: MDR
Project Number: 920418
March 29, 1994

OCT 4 1994

(11)



MAP 8 3W 11D TL 200

RIVERSIDE ENGINEERING CO. P.O. BOX 3637 1950 TURNER RD. SE SALEM,OR 97302 PH (503) 581-6362	PROJECT: CITY OF SALEM PRINGLE RD. SE/BATTLE CREEK RD. SE SO. OF EWALD TO KUEBLER BLVD. WIDENING	FIGURE: 1 OF 1
	W.O.#: 920418 EXHIBIT "B"	DATE: 1/10/94

OCT 4 1994

REEL:1196 **PAGE: 418**

October 04, 1994 , 11:26A

CONTROL #: 1196418

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $25.00

ALAN H DAVIDSON
COUNTY CLERK

OCT 4 1994

REEL 1196 PAGE 417

SLOPE EASEMENT

KNOW ALL MEN BY THESE PRESENTS, that Evelyn Coburn, for the consideration of Two Hundred Thirty Five ($235.00) DOLLARS and other valuable consideration to her paid, the receipt whereof is hereby acknowledged, hereby do forever grant unto the CITY OF SALEM, a municipal corporation, a permanent right-of-way and easement over and along the following described premises for the purpose of constructing, maintaining, and repairing any slopes occasioned by or resulting from the improvement and maintenance of .

The real property covered by this easement is described as follows, to wit:

Beginning at a point which is South 38°11'34" East 30.00 feet from the point of intersection of the northerly line of County Road No. 839 (commonly known as Battle Creek Rd) and the easterly line of Market Road No. 25 (commonly known as Reed Road) and being in the Southeast Quarter of Section 11, Township 8 South, Range 3 West of the Willamette Meridian Marion County, Oregon;

thence South 38°11'34" East 15.00 feet along the northerly line of said County Road No. 839 to a point;
thence North 04°31'48" West 108.18 feet to a point on the easterly line of said Market Road No. 25;
thence South 14°53'44" West 48.00 feet along said easterly line to a point;
thence South 13°09'17" East 51.01 feet to the point of beginning.

Containing 1025 square feet or 0.024 Acres of land, more or less.

The grantor, her heirs, and assigns shall retain full use and domain over the above-described real property except that they shall not be permitted to destroy or damage the lateral support of said Battle Creek Road SE (CR No. 839) and Reed Road SE (MR No. 25)

RETURN TO:
City of Salem
City Hall, Room 305

TICOR

OCT 4 1994

WITNESS my hand and seal this 19th day of September, 1994.

Evelyn M. Coburn (SEAL)

STATE OF OREGON)
) ss.
County of)

On this 19th day of September, 1994, before me personally appeared Evelyn Coburn, proved to me on the basis of satisfactory evidence to be the person who signed the within instrument in my presence.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal on the day and year above written.

OFFICIAL SEAL
G. WESLEY PREIS
NOTARY PUBLIC - OREGON
COMMISSION NO.005186
MY COMMISSION EXPIRES APR. 02, 1995

Notary Public for Oregon
My Commission Expires: 4/02/95

APPROVED:

By: Karl O. Goertzen
Public Works Department

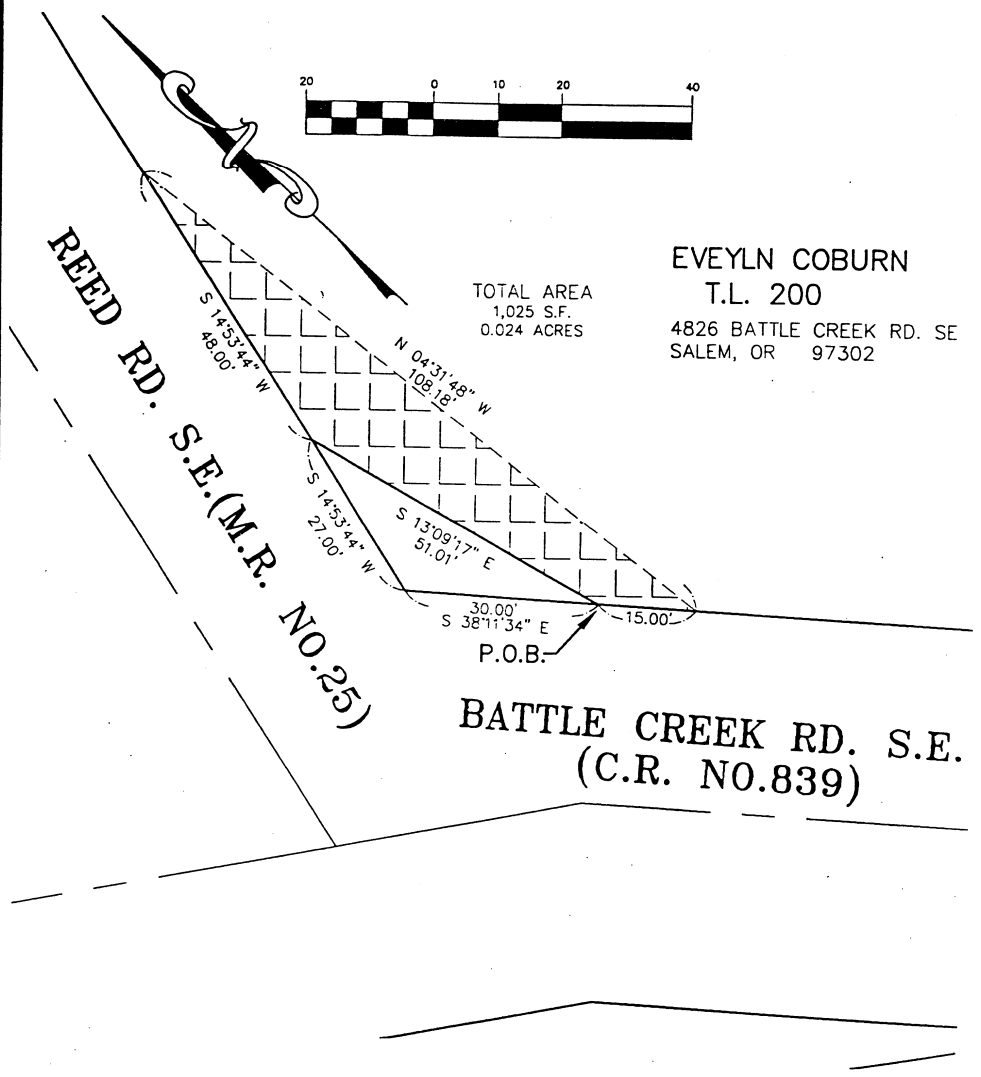
APPROVED AS TO FORM:

City Attorney

Checked By: KOR
Project Number: 920418
February 10, 1994

OCT 4 1994

(11)



MAP 8 3W 11D TL 200

RIVERSIDE ENGINEERING CO. P.O. BOX 3637 1950 TURNER RD. SE SALEM,OR 97302 PH (503) 581-6362	PROJECT: CITY OF SALEM PRINGLE RD. SE/BATTLE CREEK RD. SE SO. OF EWALD TO KUEBLER BLVD. WIDENING	FIGURE: 1 OF 1
	W.O.#: 920418 EXHIBIT "B"	DATE: 1/10/94

OCT 4 1994

REEL:1196 PAGE: 417

October 04, 1994 , 11:26A

CONTROL #: 1196417

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $25.00

ALAN H DAVIDSON
COUNTY CLERK

OCT 4 1994

REEL 1196 PAGE 416

TEMPORARY CONSTRUCTION EASEMENT

KNOW ALL MEN BY THESE PRESENTS, that Evelyn Coburn, for the consideration of Four Hundred Thirty Five ($435.00) DOLLARS to her paid, the receipt whereof is hereby acknowledged, do forever grant unto the CITY OF SALEM, a municipal corporation, a temporary construction easement over and along the full width and length of the premises described as follows, to-wit:

Beginning at the point of intersection of the centerline of County Road No. 839 (commonly known as Battle Creek Road S.E.) and the centerline of Market Road No. 25 (commonly known as Reed Road S.E.) and being in Section 11, Township 8 South Range 3 West of the Willamette Meridian Marion County, Oregon;

thence South 52°01'22" East 38.71 feet along the centerline of said County Road No. 839 to an angle point;
thence continuing South 38°11'34" East 40.00 feet along said centerline to a point;
thence North 51°48'26" East 30.00 feet to a point on the Easterly line of said County Road No. 839 and being the TRUE POINT OF BEGINNING;
thence South 38°11'34" East 320.00 feet along the Easterly line of said County Road to a point;
thence North 51°48'26" East to a point 35.00 feet from the Easterly line of said County Road, if measured perpendicular thereto;
thence North 38°11'34" West 320.00 feet parallel with said easterly line to a point;
thence South 51°48'26" West 35.00 feet to the true point of beginning.

Containing 11,200 square feet or 0.257 Acres of land more or less.

TO HAVE AND TO HOLD the above-described temporary construction easement unto said grantee in accordance with the conditions and covenants as follows:

The temporary working easement shall be effective only for and during the time of the initial pipeline construction.

Grantee will indemnify and hold harmless the Grantor, her heirs, and assigns from claims of injury to person or property as a result of the negligence of the grantee, its agents, or employees in the construction, operation, or maintenance of said pipeline.

The City of Salem, upon completion of the initial construction, shall restore the premises of the grantor and any improvements disturbed by the City to as good condition as they were prior to any such installation or work, including the restoration of any topsoil and lawn.

RETURN TO:
City of Salem
City Hall, Room 305

226349 K'm
TICOR

OCT 4 1994

WITNESS my hand and seal this 19th day of September, 1994.

Evelyn M. Coburn (SEAL)

STATE OF OREGON)
) ss.
County of)

On this 19th day of September, 1994, before me personally appeared Evelyn Coburn, proved to me on the basis of satisfactory evidence to be the person who signed the within instrument in my presence.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal on the day and year above written.

OFFICIAL SEAL
G. WESLEY PREIS
NOTARY PUBLIC - OREGON
COMMISSION NO.005186
MY COMMISSION EXPIRES APR. 02, 1995

Notary Public for Oregon
My Commission Expires: 4/02/95

APPROVED:

By: Karl O Sentzer
Public Works Department

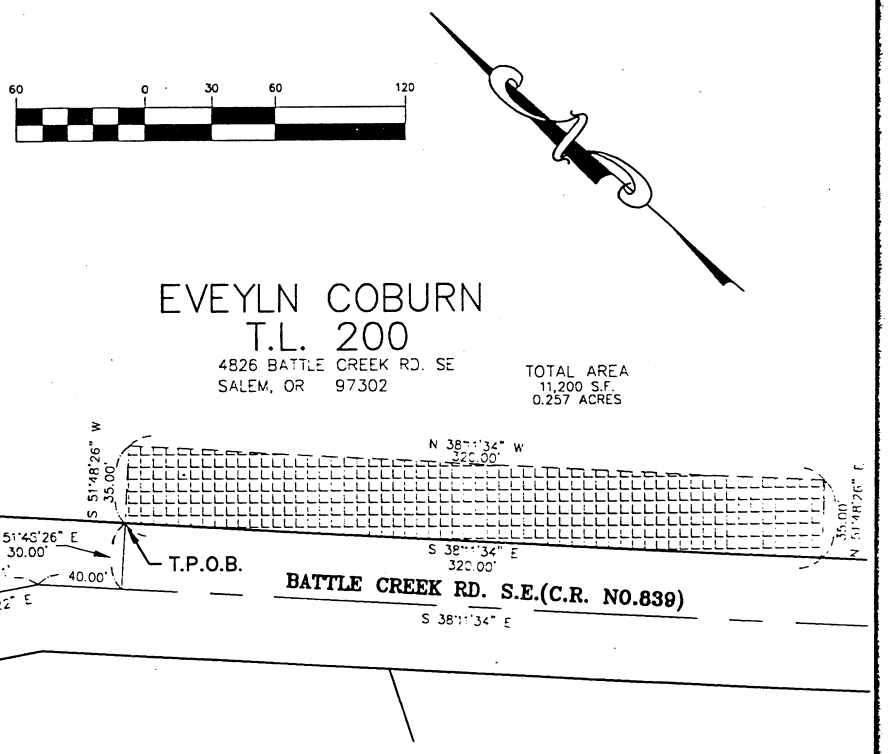
APPROVED AS TO FORM:

City Attorney

Checked By: RDR
Project Number: 920418
March 29, 1994

OCT 4 1994

(11)



MAP 8 3W 11D TL 200

RIVERSIDE ENGINEERING CO. P.O. BOX 3637 1950 TURNER RD. SE SALEM,OR 97302 PH (503) 581-6362	PROJECT: CITY OF SALEM PRINGLE RD. SE/BATTLE CREEK RD. SE SO. OF EWALD TO KUEBLER BLVD. WIDENING	FIGURE: 1 OF 1
	W.O.#: 920418 EXHIBIT "B"	DATE: 1/10/94

OCT 4 1994

REEL:1196 **PAGE: 416**

October 04, 1994 , 11:26A

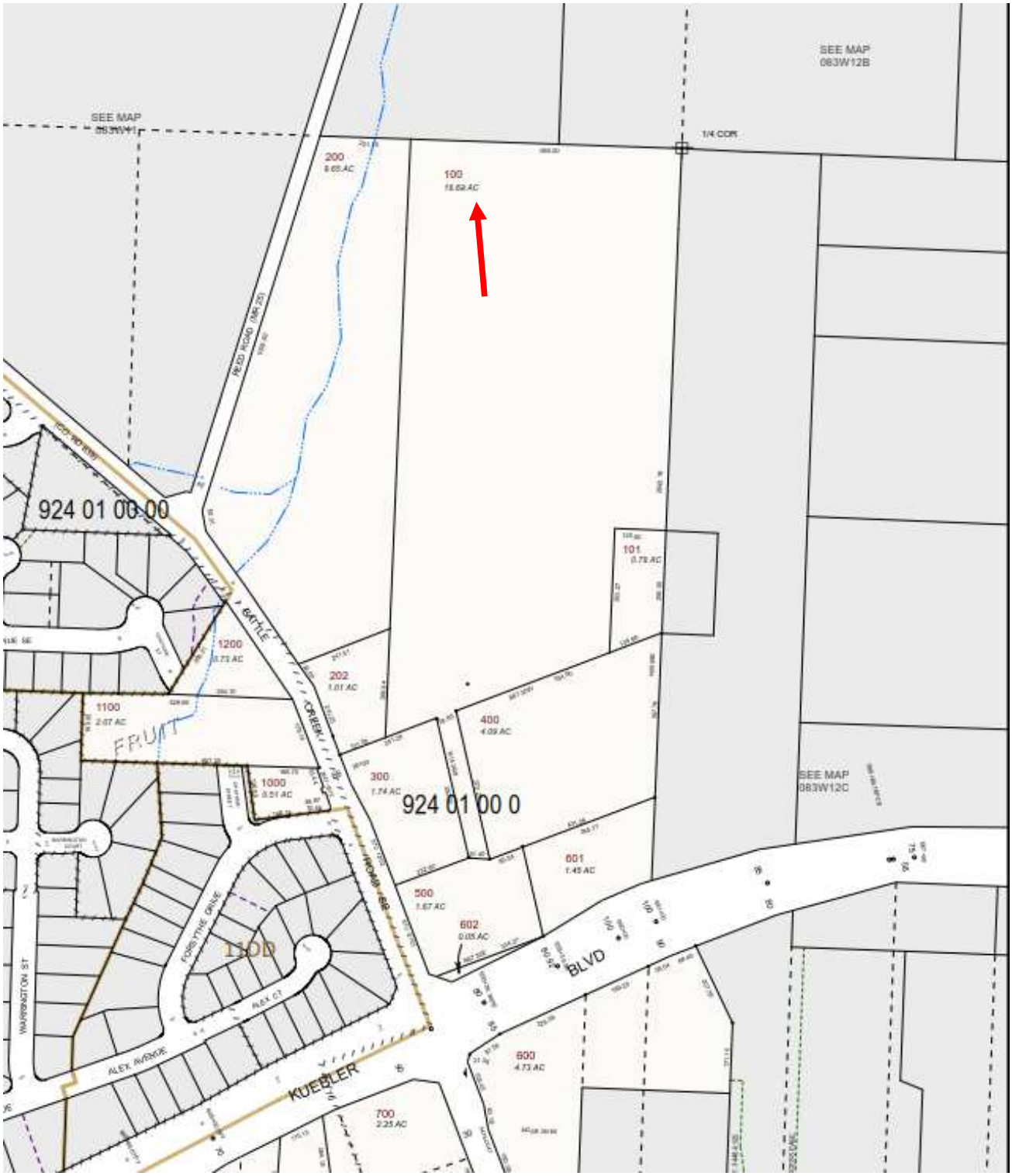
CONTROL #: 1196416

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $25.00

ALAN H DAVIDSON
COUNTY CLERK



THIS MAP IS MADE SOLELY FOR THE PURPOSE OF ASSISTING IN LOCATING SAID PREMISES, AND THE COMPANY ASSUMES NO LIABILITY FOR VARIATIONS. IF ANY, IN DIMENSIONS, AREAS, AND LOCATIONS AS CERTAINED BY ACTUAL SURVEY.

CITY OF SALEM
PUBLIC WORKS DEPARTMENT
TEMPORARY SERVICE AGREEMENT

REEL 1472 PAGE 46

KNOW ALL MEN BY THESE PRESENTS: That,

WHEREAS, no public S-1 service level water main is available for fire protection service to the property described below; and

WHEREAS, as a convenience, the City of Salem can make available temporary water for fire protection only from another source pending construction of a permanent S-1 level main;

NOW THEREFORE, Oregon Youth Authority, the undersigned property owner(s), accepts temporary water for the Hillcrest School Facility in Salem at the following described property, to-wit:

See attached legal description.

IN CONSIDERATION for making available the temporary water fire protection service by the City of Salem, the undersigned promise and agree as follows:

1. The owner understands that this temporary water service is solely and exclusively for emergency fire protection purposes and not for domestic or other uses.
2. The owner understands that the City is not providing fire pumps or power for this emergency system; said facilities are the sole responsibility of the owner; and the City assumes no liability for the system or its functionality.
3. This temporary fire protection service does not relieve the above property from connecting to a permanent main at such time as it may be constructed to serve the property, and abandoning the temporary connection, at the expense of the property owner. The owner also agrees not to remonstrate against an assessed water main project should one be proposed utilizing this method of financing.
4. That the property being served will pay a share of costs for the construction of the permanent S-1 service level water system described in the Water System Master Plan, including a share of the Coburn Reservoir, 16-inch connecting water lines, and modifications to the Boone Road Pump Station (urban growth area prior facility charge) as a subsequent developer in accordance with the Urban Growth Area Management rules in effect at the time of construction of said facilities.
5. That in the event of a sale or transfer of the above-described property, the owner will, as a condition of such sale or transfer, require the purchaser, or other new owner, to sign a duplicate copy of this Temporary Service Agreement. The undersigned further agrees that this agreement, and the promises herein, do constitute a covenant running with the land and shall be binding on the undersigned, his heirs, successors, and assigns, and that this agreement shall be filed for record in the deed records of the appropriate county.
6. If any portion of the parcel served under this agreement is partitioned or sold separately from the other and a public water main has not been constructed to serve the parcels, then any new parcels will not be provided City water for either domestic or fire protection purposes from the water line providing the temporary fire protection.
7. This agreement is only valid for the existing structures as of the date of this agreement. Any change of use or further development of the parcel will be cause

After recording, return to:
City Recorder
555 Liberty Street SE, Room 200
Salem OR 97301-3503

MARCH 20 1996

for voiding this agreement and disconnecting the temporary water fire protection service.

8. That this agreement confers no special privilege to the owner that is not enjoyed by other utility users; and that the rules and conditions of the City for the use of water apply.

9. That the service line from the public main to the property requesting service shall be private, constructed and maintained at the expense of the property requesting service.

10. Where an auxiliary water supply is available, it must be completely isolated from the City water system, as per Salem Revised Code Sections 72.150 through 72.210.

11. There will be a connection fee, Systems Development Charge(s), urban growth area prior facility charge, and a water meter installation fee collected prior to connection to the permanent S-1 public main, in accordance with the requirements of Salem Revised Code Sections 41.110, 66.150, 72.111, and 73.032.

12. That failure of the undersigned to comply with the above considerations shall immediately cause discontinuance by the City of Salem of water fire protection service to said property.

DATED this 13 day of March, 19 98.

Service Address: Hillcrest Youth Correctional Facility, 2450 Strong Road SE Salem, OR

Mailing Address: MacLaren Youth Correctional Facility, ATTN: Andy Colay
2630 N. Pacific Highway Woodburn, OR 97071

For Property Owner(s):
Rick Hill, Director, Oregon Youth Authority

STATE OF OREGON)
) ss.
County of Marion)

This instrument was acknowledged before me on March 13, 19 98, by Rick Hill (Name) as Director (Title) of Oregon Youth Authority.

Notary Public—State of Oregon
My commission expires: Oct. 8, 2000

OFFICIAL SEAL
THERESA A MATTIS
NOTARY PUBLIC-OREGON
COMMISSION NO 056342
MY COMMISSION EXPIRES OCT 08, 2000

Approved:
By: _____
Public Works Department

Approved as to form:
_____
City Attorney

Checked By:
Project Number: 976014
March 3, 1998

MARCH 20 1998

BARKER SURVEYING CO.
3657 25th STREET S.E. • SALEM, OREGON 97302

MARCH 20 1998

Description of Hillcrest School Property
February 4, 1998

A tract of land situated in the Northeast Quarter of Section 11 and the Northwest Quarter of Section 12 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon described as follows:

Beginning at the Quarter corner on the East line of Section 11, in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon;

thence West along the South line of the Northeast Quarter of said section, a distance of 870 feet, more or less, to the easterly line of Reed Road S.E. (M.R.25);

thence northeasterly along said easterly line a distance of 2200 feet, more or less, to the southerly line of Strong Road;

thence southeasterly along the southerly line of said Strong Road, a distance of 1750 feet, more or less, to a point on the South line of that tract of land described in Volume 332, Page 64, Deed Records for Marion County, Oregon;

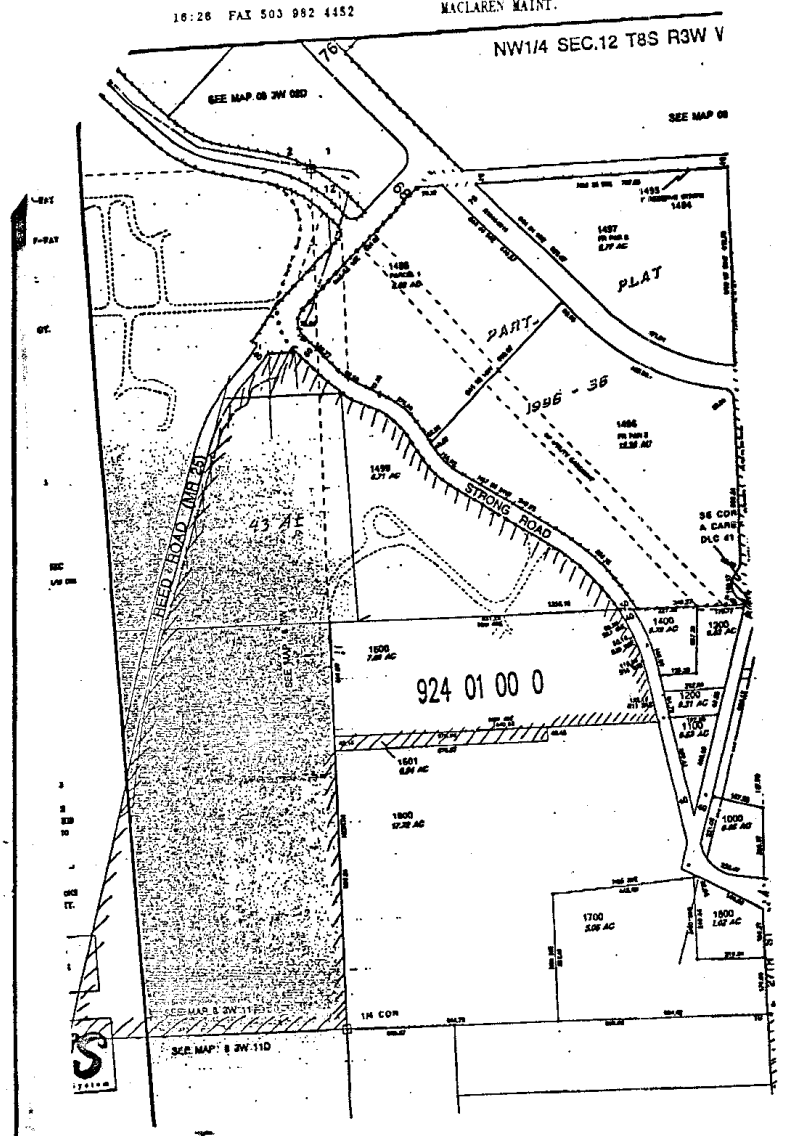
thence South 89°49' West along said South line, a distance of 340 feet, more or less, to the Northeast corner of that tract of land described in Reel 1078, Page 38, Deed Records;

thence South parallel with the West line of Section 12, a distance of 40.48 feet to the Southeast corner thereof;

thence South 89°40'27" West 670.97 feet to the Southwest corner of said tract;

thence South along the West line of said Section 12, a distance of 857.31 feet to the point of beginning.

Contains approximately 43 acres of land.



MARCH 20 1996

REEL:1472 PAGE: 46

March 20, 1998 , 12:39P

CONTROL #: 1472046

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $30.00

ALAN H DAVIDSON
COUNTY CLERK

MARCH 20 1998

FATCO 1584124

Space above this line for Recorder's use.

After recording, return to:
Battle Creek, LLC
Attn Julie Singer
5450 Zena Road NW
Salem, Oregon 97304

Send tax statements to:
(same)

STATUTORY BARGAIN AND SALE DEED

The State of Oregon, acting by and through the Oregon Youth Authority, Grantor, conveys to Battle Creek, LLC, Grantee, the property described in the attached Exhibit A ("the Property") subject to the terms, conditions and reservations set forth below,

Reservation of Mineral Estate

Grantor excepts and reserves to itself, its successors and assigns all "minerals" as defined in ORS 273.775(1), including soil, clay, stone, sand and gravel, and all geothermal resources, as defined in ORS 273.775(2), together with the right to make such use of the surface as may be reasonably necessary for prospecting for, exploring for, mining, extracting, reinjecting, storing, drilling for, and removing, such minerals, materials and geothermal resources. In the event use of the Property by a surface rights owner would be damaged by one or more of the activities described above, then such owner shall be entitled to compensation from the state's lessee to the extent of the diminution in value of the real property, based on the actual use by the surface owner at the time the state's lessee conducts any of the above activities.

The true and actual consideration for the conveyance is the exchange of an equivalent parcel of land to be deeded to Grantor.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR

COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009.

Dated this 1 day of February 2011.

STATE OF OREGON, acting by and through its Oregon Youth Authority

By: _____
Colette S. Peters, Director

STATE OF OREGON)
) ss.
County of Marion)

On this 1st day of February, 2011, before me personally appeared Colette S. Peters, Director, who being duly sworn stated that she has the authority to sign the document as the Director of the Oregon Youth Authority, and acknowledged the foregoing instrument to be the voluntary act of the Oregon Youth Authority, and that he executed the foregoing instrument on behalf of said state agency, acting on behalf of the State of Oregon.

_____
NOTARY PUBLIC FOR OREGON
My commission Expires: 4/6/13

OFFICIAL SEAL
JEAN MARIE BERGEN
NOTARY PUBLIC - OREGON
COMMISSION NO. 437253
MY COMMISSION EXPIRES APR. 6, 2013

*Jean Marie Bergen

Exhibit A

Beginning at the ¼ Corner of section 11 and 12, township 8 South, Range 3 West, in the Willamette Meridian, City of Salem, Marion County, Oregon; thence North 00°25'53" East 395.00 feet; thence South 89°35'40" West 299.22 feet; thence South 00°25'53" East 395.00 feet; thence North 89°35'40" East 299.22 feet to the point of beginning. Containing 2.71 acres of land more or less.

REEL: 3257 **PAGE: 222**

February 04, 2011, 10:57 am.

CONTROL #: 288079

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 51.00

BILL BURGESS
COUNTY CLERK

THIS IS NOT AN INVOICE.

THIS SPACE RESERVED FOR RECORDER'S USE

After recording return to:
Battle Creek LLC
5450 Zena Road NW
Salem, Ore 97304

Until a change is requested all tax statements shall be sent to the following address:
as above

File No.: 7081-1584060 (VJC)
Date: December 09, 2010

FATCO 1584060

STATUTORY BARGAIN AND SALE DEED

Battle Creek LLC, an Oregon Manager-Managed Limited Liability Company, Grantor, conveys to **Battle Creek LLC, an Oregon Manager-Manager Limited Liablity Company**, Grantee, the following described real property:

See Legal Description attached hereto as Exhibit A and by this reference incorporated herein.

The true consideration for this conveyance is **TO EFFECT LOT ADJUSTMENT.** (Here comply with requirements of ORS 93.030)

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, OF CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930 AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, OF CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009.

Dated this _____ day of _____, 20____.

Battle Creek LLC, an Oregon limited liability company

Julie A. Singer

By: Julie Singer, Manager/Member

STATE OF Oregon)
)ss.
County of Marion)

This instrument was acknowledged before me on this 3 day of Feb, 20 11 by Julie Singer as Manager/Member of Battle Creek LLC, on behalf of the limited liability company.

Vicki J Carlson

Notary Public for Oregon
My commission expires: 8-17-13

OFFICIAL SEAL
VICKI J CARLSON
NOTARY PUBLIC - OREGON
COMMISSION NO. 441020
MY COMMISSION EXPIRES AUG. 17, 2013

Battle Creek LLC Parcel

Beginning at the ¼ Corner of section 11 and 12, township 8 South, Range 3 West, in the Willamette Meridian, City of Salem, Marion County, Oregon; thence North 89°30'08" East 340.87 feet; thence North 89°45'32" East 325.36 feet; thence North 00°25'43" West 391.40 feet; thence North 85°22'14" East 465.02 feet to the West right of way of Market Road 56 (Strong Road); thence along the West right of way of Market Road 56 (Strong Road) the following courses North 63°05'45" West 61.91 feet; North 15°54'49" East 69.83 feet; North 11°04'59" West 247.08 feet; thence South 89°15'44" West 1049.02 feet; thence South 00°25'53" East 362.47 feet; thence South 89°35'40" West 299.22 feet; thence South 00°25'53" East 395.00 feet; thence North 89°35'40" East 299.22 feet to the point of beginning. Containing 17.69 acres of land more or less.

REEL: 3257 **PAGE: 221**

February 04, 2011, 10:57 am.

CONTROL #: 288079

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 51.00

BILL BURGESS
COUNTY CLERK

THIS IS NOT AN INVOICE.

THIS MAP IS MADE SOLELY FOR THE PURPOSE OF ASSISTING IN LOCATING SAID PREMISES, AND THE COMPANY ASSUMES NO LIABILITY FOR VARIATIONS. IF ANY, IN DIMENSIONS, AREAS, AND LOCATIONS AS CERTAINED BY ACTUAL SURVEY.

UNTIL FURTHER NOTICE, SEND ALL TAX STATEMENTS TO:
Boulder Hill LLC
Robert W. Nunn, Manager
1000 SW Broadway, Suite 1400
Portland, OR 97205-3089

REEL 1950 PAGE 328

AFTER COMPLETING RECORDING, RETURN THIS DOCUMENT TO:
Evans, Freeby & Jennings, LLP
Attorneys at Law
280 Court St. NE
Salem, OR 97301

BARGAIN AND SALE DEED

ROBERT W. NUNN, Trustee under the EVELYN M. COBURN LIVING TRUST, dated March 15, 1995, GRANTOR

Conveys to

DRAGER LLC, an Oregon Manager-Managed Limited Liability Company GRANTEE

All the following real property situated in Marion County, State of Oregon, generally described as Tax described Tax Lot 700, Tax Account No. R32178, specifically described on Exhibit "A" hereto and by this reference incorporated herein, together with an easement over the property owned by Grantor adjacent to the north specifically described on Exhibit "B" hereto and by this reference incorporated herein, generally described as Tax Lot 1600, Tax Account No. R32212. The purpose of the easement shall be for ingress and egress sufficient to permit development of Tax Lot 700 for its highest and best use. The specific location of the easement shall be determined by the owners of the dominant and servient estates, upon their mutual agreement, with the cost of locating and identifying the actual roadway easement to be shared equally between the owners of both estates.

The true and actual consideration for this transfer is other than money.

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES AND TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930.

Dated this 23rd day of May, 2002.

GRANTOR
Evelyn M. Coburn Living Trust, dated March 15, 1995

By: Robert W. Nunn, Trustee

MAY 2 3 2002

STATE OF OREGON, County of MARION) ss.

Personally appeared before me this 23rd day of May, 2002, Robert W. Nunn, as Trustee and acknowledged the foregoing instrument to be his voluntary act.

OFFICIAL SEAL
JAIME LYNNE TREMBLY
NOTARY PUBLIC - OREGON
COMMISSION NO. A322597
MY COMMISSION EXPIRES APR. 18, 2003

Jaime Lynne Trembly
Notary Public for Oregon
My Commission Expires: 4-18-03

5.7.2 15:08 wbu\coburn\DrDeed

EXHIBIT A

LEGAL DESCRIPTION
Map 8S-3W-12C; Tax Lot 700:

Tax Account No. R32178

Beginning at the Southwest corner of Section 12 in Township 8 south, Range 3 West of the Willamette Meridian, Marion County, Oregon; thence North 0°09' East 40.033 chains to the quarter section corner between Sections 11 and 12; thence East 5.145 chains along the legal subdivision line running East and West through the center of Section 12 to a point; thence South 0°02' East 40.035 chains to the South line of Section 12; thence north 89°58' West 5.267 chains to the place of beginning.

SAVE AND EXCEPT: Beginning at a point North 0°43' East, 1462.12 feet from the Southeast corner of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, Marion County, Oregon, said point being on the Section line between Sections 11 and 12, Township 8 South, Range 3 West of the Willamette Meridian, also said point being the Northeast corner of a parcel of land deeded to Warne H. Nunn and Delores R. Nunn and recorded in Volume 469, Page 411, Marion County Courthouse; thence South 89°17' West 125.0 feet; thence North 0°43' East, 250.0 feet; thence North 89°17' West 125.0 feet; thence South 0°43' West, 250.0 feet to the point of beginning.

SAVE AND EXCEPT: All that portion of the herein described property that lies South of Kuebler Blvd.: Beginning at the Southwest corner of Section 12 in Township 8 South, Range 3 West of the Willamette Meridian, Marion County, Oregon; thence North 0°09' East 40.033 chains to the one quarter section corner between Sections 11 and 12; thence East 5.145 chains along the legal subdivision line running East and West through the center of Section 12 to a point; thence south 0°02' East 40.033 chains to the South line of Section 12; thence North 89°58' West 5.267 chains to the place of beginning.

SAVE AND EXCEPT that portion of the premises herein described lying within the limits of roads, streets and highways.

MAY 2 2

EXHIBIT B

LEGAL DESCRIPTION
Map 8S-3W-12B; Tax Lot 1600:

Tax Account No. 32212

Beginning at the quarter Section corner between Sections 11 and 12 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon; running thence Northerly along the Section line between said Section 11 and 12, 18.94 chains to an iron pipe; thence North 89°49' East 14.11 chains to the center of the county Road; thence South 27°35' East along the center of said County Road, 1.01 chains; thence South 23° East along the center of said County Road 0.76 chains; thence South 16°2' East along the center of said County Road; 1.80 chains; thence South 11°28' East 7.54 chains along the center of said County Road; thence South 20° West 0.632 chains to an iron pipe in the center of the County Road; thence South 43°45' East along the center of the county Road 1.66 chains to an iron pipe; thence South 85°50' West 7.74 chains to an iron pipe; thence South 0°5' West 5.94 chains to an iron pipe; thence Westerly 10.0725 chains to the place of beginning.

SAVE AND EXCEPT: Beginning at a point on the Section line, which is 13.637 chains North of the quarter section corner between Sections 11 and 12, Township 8 South, Range 3 West of the Willamette Meridian, Marion County, Oregon; and running thence North along said Section line 5.303 chains; thence North 89°49' East 14.11 chains to the center of the County Road; thence South 27°35' East 1.01 chains along the center of said County Road; thence South 23° East 0.76 chains along the center of said County Road; thence south 16°2' East 1.80 chains along the center of said County Road; thence South 11°28' East 2.018 chains along the center line of said County Road; thence South 89°49' West 15.772 chains to the point of beginning.

SAVE AND EXCEPT: Beginning at the Southwest corner of a tract of land conveyed to the State of Oregon, by deed described in Volume 332, Page 64, Marion County Records at a point which is 899.46 feet North of the West quarter corner of Section 10, Township 8 South, Range 3 West of the Willamette Meridian, Marion County, Oregon, said point of being on the West line of said Section 12; thence North 89°49' East, along the South line of said Oregon State tract 670.96 feet; thence South, parallel to the West line of said Section, 40.48 feet; thence South 89°40'27" West 670.97 feet to the West line of said Section; thence North 42.15 feet to the point of beginning.

SAVE AND EXCEPT that portion of the premises herein described lying within the limits of roads, streets and highways.

MAY 29 2002

REEL:1950 **PAGE: 328**

May 29, 2002, 02:46 pm.

CONTROL #: 59651

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 36.00

ALAN H DAVIDSON
COUNTY CLERK

THIS IS NOT AN INVOICE.

MAY 29 2002

UNTIL FURTHER NOTICE, SEND ALL TAX STATEMENTS TO:
Boulder Hill LLC
Robert W. Nunn, Manager
1000 SW Broadway, Suite 1400
Portland, OR 97205-3089

REEL 1950 PAGE 126

AFTER COMPLETING RECORDING, RETURN THIS DOCUMENT TO:
Evans, Freeby & Jennings, LLP
Attorneys at Law
280 Court St. NE
Salem, OR 97301

BARGAIN AND SALE DEED

ROBERT W. NUNN, Trustee under the EVELYN M. COBURN LIVING TRUST, dated March 15, 1995, GRANTOR

Conveys to

BATTLE CREEK LLC, an Oregon Manager-Managed Limited Liability Company GRANTEE

All the following real property situated in Marion County, State of Oregon, specifically described on Exhibit "A" hereto and by this reference incorporated herein, generally described as Tax Lot 1600, Tax Account No. R32212, subject to an easement in favor of the property owned by Grantor adjacent to the south, generally described as Tax described Tax Lot 700, Tax Account No. R32178, specifically described on Exhibit "B" hereto and by this reference incorporated herein. The purpose of the easement shall be for ingress and egress sufficient to permit development of Tax Lot 700 for its highest and best use. The specific location of the easement shall be determined by the owners of the dominant and servient estates, upon their mutual agreement, with the cost of locating and identifying the actual roadway easement to be shared equally between the owners of both estates.

The true and actual consideration for this transfer is other than money.

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES AND TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930.

Dated this 23rd day of May, 2002.

GRANTOR
Evelyn M. Coburn Living Trust, dated March 15, 1995

By: Robert W. Nunn, Trustee

MAY 29 2002

STATE OF OREGON, County of MARION) ss.

Personally appeared before me this 23rd day of May, 2002, Robert W. Nunn, as Trustee and acknowledged the foregoing instrument to be his voluntary act.

OFFICIAL SEAL
JAIME LYNNE TREMBLY
NOTARY PUBLIC - OREGON
COMMISSION NO. A322597
MY COMMISSION EXPIRES APR. 18, 2003

Jaime Lynne Trembly
Notary Public for Oregon
My Commission Expires: 4-18-03

EXHIBIT A

LEGAL DESCRIPTION
Map 8S-3W-12B; Tax Lot 1600:

Tax Account No. R32212

Beginning at the quarter Section corner between Sections 11 and 12 in Township 8 South, Range 3 West of the Willamette Meridian in Marion County, Oregon; running thence Northerly along the Section line between said Section 11 and 12, 18.94 chains to an iron pipe; thence North 89°49' East 14.11 chains to the center of the county Road; thence South 27°35' East along the center of said County Road, 1.01 chains; thence South 23° East along the center of said County Road 0.76 chains; thence South 16°2' East along the center of said County Road; 1.80 chains; thence South 11°28' East 7.54 chains along the center of said County Road; thence South 20° West 0.632 chains to an iron pipe in the center of the County Road; thence South 43°45' East along the center of the county Road 1.66 chains to an iron pipe; thence South 85°50' West 7.74 chains to an iron pipe; thence South 0°5' West 5.94 chains to an iron pipe; thence Westerly 10.0725 chains to the place of beginning.

SAVE AND EXCEPT: Beginning at a point on the Section line, which is 13.637 chains North of the quarter section corner between Sections 11 and 12, Township 8 South, Range 3 West of the Willamette Meridian, Marion County, Oregon; and running thence North along said Section line 5.303 chains; thence North 89°49' East 14.11 chains to the center of the County Road; thence South 27°35' East 1.01 chains along the center of said County Road; thence South 23° East 0.76 chains along the center of said County Road; thence south 16°2' East 1.80 chains along the center of said County Road; thence South 11°28' East 2.018 chains along the center line of said County Road; thence South 89°49' West 15.772 chains to the point of beginning.

SAVE AND EXCEPT: Beginning at the Southwest corner of a tract of land conveyed to the State of Oregon, by deed described in Volume 332, Page 64, Marion County Records at a point which is 899.46 feet North of the West quarter corner of Section 10, Township 8 South, Range 3 West of the Willamette Meridian, Marion County, Oregon, said point of being on the West line of said Section 12; thence North 89°49' East, along the South line of said Oregon State tract 670.96 feet; thence South, parallel to the West line of said Section, 40.48 feet; thence South 89°40'27" West 670.97 feet to the West line of said Section; thence North 42.15 feet to the point of beginning.

SAVE AND EXCEPT that portion of the premises herein described lying within the limits of roads, streets and highways

MAY 29 2002

EXHIBIT B

LEGAL DESCRIPTION
Map 8S-3W-12C; Tax Lot 700:

Tax Account No. R32178

Beginning at the Southwest corner of Section 12 in Township 8 south, Range 3 West of the Willamette Meridian, Marion County, Oregon; thence North 0°09' East 40.033 chains to the quarter section corner between Sections 11 and 12; thence East 5.145 chains along the legal subdivision line running East and West through the center of Section 12 to a point; thence South 0°02' East 40.035 chains to the South line of Section 12; thence north 89°58' West 5.267 chains to the place of beginning.

SAVE AND EXCEPT: Beginning at a point North 0°43' East, 1462.12 feet from the Southeast corner of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, Marion County, Oregon, said point being on the Section line between Sections 11 and 12, Township 8 South, Range 3 West of the Willamette Meridian, also said point being the Northeast corner of a parcel of land deeded to Warne H. Nunn and Delores R. Nunn and recorded in Volume 469, Page 411, Marion County Courthouse; thence South 89°17' West 125.0 feet; thence North 0°43' East, 250.0 feet; thence North 89°17' West 125.0 feet; thence South 0°43' West, 250.0 feet to the point of beginning.

SAVE AND EXCEPT: All that portion of the herein described property that lies South of Kuebler Blvd.: Beginning at the Southwest corner of Section 12 in Township 8 South, Range 3 West of the Willamette Meridian, Marion County, Oregon; thence North 0°09' East 40.033 chains to the one quarter section corner between Sections 11 and 12; thence East 5.145 chains along the legal subdivision line running East and West through the center of Section 12 to a point; thence south 0°02' East 40.033 chains to the South line of Section 12; thence North 89°58' West 5.267 chains to the place of beginning.

SAVE AND EXCEPT that portion of the premises herein described lying within the limits of roads, streets and highways.

MAY 29 2002

REEL:1950 **PAGE: 326**

May 29, 2002, 02:46 pm.

CONTROL #: 59651

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 36.00

ALAN H DAVIDSON
COUNTY CLERK

THIS IS NOT AN INVOICE.

MAY 29 2002

TICOR TITLE™
Company of Oregon

PRELIMINARY REPORT

In response to the application for a policy of title insurance referenced herein Ticor Title Company of Oregon hereby reports that it is prepared to issue, or cause to be issued, as of the specified date, a policy or policies of title insurance describing the land and the estate or interest hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.

The printed Exceptions and Exclusions from the coverage of said policy or policies are set forth in Exhibit One. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Copies of the policy forms should be read. They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby.

The policy(s) of title insurance to be issued hereunder will be policy(s) of Chicago Title Insurance Company, a/an Florida corporation.

Please read the exceptions shown or referred to herein and the Exceptions and Exclusions set forth in Exhibit One of this report carefully. The Exceptions and Exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.

This preliminary report is for the exclusive use of the parties to the contemplated transaction, and the Company does not have any liability to any third parties nor any liability until the full premium is paid and a policy is issued. Until all necessary documents are placed of record, the Company reserves the right to amend or supplement this preliminary report.

Countersigned

TICOR TITLE™
Company of Oregon

1433 SW 6th Avenue, Portland, OR 97201
(503)646-4444 FAX (503)219-9984

PRELIMINARY REPORT

TITLE OFFICER: Tina Turner

ORDER NO.: 471817060909
Supplement 1: Eff date/taxes/city lien

TO: Lawyers Title of Oregon, LLC
Krista Thorne
1915 NW Amberglen Parkway, Suite 155
Beaverton, OR 97006

OWNER/SELLER: Battle Creek LLC

BUYER/BORROWER: Westwood Homes LLC

PROPERTY ADDRESS: Lot 1600/ O Strong Road, Salem, OR 97303

EFFECTIVE DATE: March 15, 2018, 08:00 AM

1. THE POLICY AND ENDORSEMENTS TO BE ISSUED AND THE RELATED CHARGES ARE:

	AMOUNT	PREMIUM
ALTA Owner's Policy 2006 **Owner's Standard**	$ 2,979,067.00	$ 5,070.00
Government Lien Search		$ 40.00

2. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

   A Fee

3. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

   Battle Creek LLC, an Oregon Manager-Manager Limited Liability Company

4. THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE CITY OF SALEM, COUNTY OF MARION, STATE OF OREGON, AND IS DESCRIBED AS FOLLOWS:

   SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

EXHIBIT "A"

Legal Description

Beginning at the Quarter corner of Sections 11 and 12, Township 8 South, Range 3 West of the Willamette Meridian, in the City of Salem, Marion County, Oregon; thence North 89°30'08" East 340.87 feet; thence North 89°45'32" East 325.36 feet; thence North 00°25'43" West 391.40 feet; thence North 85°22'14" East 465.02 feet to the West right of way of Market Road 56 (Strong Road); thence along the West right of way of Market Road 56 (Strong Road), the following courses: North 63°05'45" West 61.91 feet; North 15°54'49" East 69.83 feet; North 11°04'59" West 247.08 feet; thence South 89°15'44" West 1049.02 feet; thence South 00°25'53" East 362.47 feet; thence South 89°35'40" West 299.22 feet; thence South 00°25'53" East 395.00 feet; thence North 89°35'40" East 299.22 feet to the Point of Beginning.

AS OF THE DATE OF THIS REPORT, ITEMS TO BE CONSIDERED AND EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN THE POLICY FORM WOULD BE AS FOLLOWS:

GENERAL EXCEPTIONS:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests or claims, which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.

3. Easements, or claims of easement, which are not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.

4. Any encroachment (of existing improvements located on the Land onto adjoining land or of existing improvements located on adjoining land onto the subject Land), encumbrance, violation, variation or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the subject Land.

5. Any lien or right to a lien for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the Public Records.

SPECIFIC ITEMS AND EXCEPTIONS:

6. The Land has been classified as farm, as disclosed by the tax roll. If the Land becomes disqualified, said Land may be subject to additional taxes and/or penalties.

7. City Liens, if any, in favor of the City of Salem. None found as of March 20, 2018.

8. Rights of the public to any portion of the Land lying within the limits of streets, roads and highways.

9. City of Salem Public Works Department Temporary Service Agreement

   Recording Date: March 20, 1998
   Recording No.: Reel 1472, Page 46

10. Easement(s) for the purpose(s) shown below and rights incidental thereto as reserved in a document;

    Reserved by: Robert W. Nunn, Trustee under the Evelyn M. Coburn Living Trust, dated March 15, 1995
    Purpose: ingress and egress
    Recording Date: May 29, 2002
    Recording No: Reel 1950, Page 326
    Affects: Exact location not disclosed

11. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: Drager LLC, an Oregon Manager-Managed Limited Liability Company
    Purpose: ingress and egress
    Recording Date: May 29, 2002
    Recording No: Reel 1950, Page 328
    Affects: Exact location not disclosed

12. Reservation, exception or other severance of minerals, together with the implied or express appurtenant rights to use the surface of the land for the development or extraction of such minerals, contained in or disclosed by instrument,

    In favor of: The State of Oregon, acting by and through the Oregon Youth Authority
    Reservation of: Reference is hereby made to said document for full particulars
    Recording Date: February 4, 2011
    Recording No.: Reel 3257, Page 222

    The Company makes no representation as to the present ownership of this interest or its encumbrances.

13. Please be advised that our search did not disclose any open Deeds of Trust of record. If you should have knowledge of any outstanding obligation, please contact the Title Department immediately for further review prior to closing.

14. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

    Limited Liability Company: Battle Creek LLC

    a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

    b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

    c) If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

    d) If the Limited Liability Company was formed in a foreign jurisdiction, evidence, satisfactory to the Company, that it was validly formed, is in good standing and authorized to do business in the state of origin.

    e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

    The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

15. If requested to issue an extended coverage ALTA loan policy, the following matters must be addressed:

    a) The rights of tenants holding under unrecorded leases or tenancies
    b) Matters disclosed by a statement as to parties in possession and as to any construction, alterations or repairs to the Land within the last 75 days. The Company must be notified in the event that any funds are to be used for construction, alterations or repairs.
    c) Any facts which would be disclosed by an accurate survey of the Land

ADDITIONAL REQUIREMENTS/NOTES:

A. Note: Property taxes for the fiscal year shown below are paid in full.

Fiscal Year:	2017-2018
Amount:	$234.71
Levy Code:	92401000
Account No.:	R32212
Map No.:	083W12B 01600

Prior to close of escrow, please contact the Tax Collector's Office to confirm all amounts owing, including current fiscal year taxes, supplemental taxes, escaped assessments and any delinquencies.

B. In addition to the standard policy exceptions, the exceptions enumerated above shall appear on the final 2006 ALTA Policy unless removed prior to issuance.

C. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

Limited Liability Company: Westwood Homes LLC

a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

c) If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

d) If the Limited Liability Company was formed in a foreign jurisdiction, evidence, satisfactory to the Company, that it was validly formed, is in good standing and authorized to do business in the state of origin.

e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

D. Note: There are no matters against the party(ies) shown below which would appear as exceptions to coverage in a title insurance product:

Parties: Westwood Homes LLC

E. Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.

F. Note: There are NO conveyances affecting said Land recorded within 24 months of the date of this report.

G. Note: No utility search has been made or will be made for water, sewer or storm drainage charges unless the City/Service District claims them as liens (i.e. foreclosable) and reflects them on its lien docket as of the date of closing. Buyers should check with the appropriate city bureau or water service district and obtain a billing cutoff. Such charges must be adjusted outside of escrow.

H. THE FOLLOWING NOTICE IS REQUIRED BY STATE LAW: YOU WILL BE REVIEWING, APPROVING AND SIGNING IMPORTANT DOCUMENTS AT CLOSING. LEGAL CONSEQUENCES FOLLOW FROM THE SELECTION AND USE OF THESE DOCUMENTS. YOU MAY CONSULT AN ATTORNEY ABOUT THESE DOCUMENTS. YOU SHOULD CONSULT AN ATTORNEY IF YOU HAVE QUESTIONS OR CONCERNS ABOUT THE TRANSACTION OR ABOUT THE DOCUMENTS. IF YOU WISH TO REVIEW TRANSACTION DOCUMENTS THAT YOU HAVE NOT SEEN, PLEASE CONTACT THE ESCROW AGENT.

I. Recording Charge (Per Document) is the following:

County	First Page	Each Additional Page
Marion	$46.00	$5.00
Benton	$68.00	$5.00
Polk	$51.00	$5.00
Linn	$65.00	$5.00

Note: When possible the company will record electronically. An additional charge of $5.00 applies to each document that is recorded electronically.

Note: Please send any documents for recording to the following address:
Portland Title Group
Attn: Recorder
1433 SW 6th Ave.
Portland, OR. 97201

J. Note: This map/plat is being furnished as an aid in locating the herein described Land in relation to adjoining streets, natural boundaries and other land. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the Company does not insure dimensions, distances or acreage shown thereon.

EXHIBIT ONE

2006 AMERICAN LAND TITLE ASSOCIATION LOAN POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions or location of any improvement erected on the land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with the applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in the Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

2006 AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions or location of any improvement erected on the land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in the Covered Risk 9 of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

WIRE SAFE™ | Inquire before you wire!

WIRE FRAUD ALERT

This Notice is not intended to provide legal or professional advice. If you have any questions, please consult with a lawyer.

All parties to a real estate transaction are targets for wire fraud and many have lost hundreds of thousands of dollars because they simply relied on the wire instructions received via email, without further verification. **If funds are to be wired in conjunction with this real estate transaction, we strongly recommend verbal verification of wire instructions through a known, trusted phone number prior to sending funds.**

In addition, the following non-exclusive self-protection strategies are recommended to minimize exposure to possible wire fraud.

- **NEVER RELY** on emails purporting to change wire instructions. Parties to a transaction rarely change wire instructions in the course of a transaction.
- **ALWAYS VERIFY** wire instructions, specifically the ABA routing number and account number, by calling the party who sent the instructions to you. DO NOT use the phone number provided in the email containing the instructions, use phone numbers you have called before or can otherwise verify. **Obtain the number of relevant parties to the transaction as soon as an escrow account is opened.** DO NOT send an email to verify as the email address may be incorrect or the email may be intercepted by the fraudster.
- **USE COMPLEX EMAIL PASSWORDS** that employ a combination of mixed case, numbers, and symbols. Make your passwords greater than eight (8) characters. Also, change your password often and do NOT reuse the same password for other online accounts.
- **USE MULTI-FACTOR AUTHENTICATION** for email accounts. Your email provider or IT staff may have specific instructions on how to implement this feature.

For more information on wire-fraud scams or to report an incident, please refer to the following links:

Federal Bureau of Investigation:
http://www.fbi.gov

Internet Crime Complain Center:
http://www.ic3.gov

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FIDELITY NATIONAL FINANCIAL
PRIVACY NOTICE
Effective: May 1, 2015; Last Updated: March 1, 2017

At Fidelity National Financial, Inc., we respect and believe it is important to protect the privacy of consumers and our customers. This Privacy Notice explains how we collect, use, and protect any information that we collect from you, when and to whom we disclose such information, and the choices you have about the use of that information. A summary of the Privacy Notice is below, and we encourage you to review the entirety of the Privacy Notice following this summary. You can opt-out of certain disclosures by following our opt-out procedure set forth at the end of this Privacy Notice.

Types of Information Collected. You may provide us with certain personal information about you, like your contact information, address demographic information, social security number (SSN), driver's license, passport, other government ID numbers and/or financial information. We may also receive browsing information from your Internet browser, computer and/or mobile device if you visit or use our websites or applications.	**How Information is Collected**. We may collect personal information from you via applications, forms, and correspondence we receive from you and others related to our transactions with you. When you visit our websites from your computer or mobile device, we automatically collect and store certain information available to us through your Internet browser or computer equipment to optimize your website experience.
Use of Collected Information. We request and use your personal information to provide products and services to you, to improve our products and services, and to communicate with you about these products and services. We may also share your contact information with our affiliates for marketing purposes.	**When Information Is Disclosed**. We may disclose your information to our affiliates and/or nonaffiliated parties providing services for you or us, to law enforcement agencies or governmental authorities, as required by law, and to parties whose interest in title must be determined.
Choices With Your Information. Your decision to submit information to us is entirely up to you. You can opt-out of certain disclosure or use of your information or choose to not provide any personal information to us.	**Information From Children**. We do not knowingly collect information from children who are under the age of 13, and our website is not intended to attract children.
Privacy Outside the Website. We are not responsible for the privacy practices of third parties, even if our website links to those parties' websites.	**International Users**. By providing us with your information, you consent to its transfer, processing and storage outside of your country of residence, as well as the fact that we will handle such information consistent with this Privacy Notice.
The California Online Privacy Protection Act. Some FNF companies provide services to mortgage loan servicers and, in some cases, their websites collect information on behalf of mortgage loan servicers. The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through those websites.	
Your Consent To This Privacy Notice. By submitting information to us or by using our website, you are accepting and agreeing to the terms of this Privacy Notice.	**Access and Correction; Contact Us**. If you desire to contact us regarding this notice or your information, please contact us at privacy@fnf.com or as directed at the end of this Privacy Notice.

FIDELITY NATIONAL FINANCIAL
PRIVACY NOTICE
Effective: May 1, 2015; Last Updated: March 1, 2017

Fidelity National Financial, Inc. and its majority-owned subsidiary companies providing title insurance, real estate- and loan-related services (collectively, "FNF", "our" or "we") respect and are committed to protecting your privacy. We will take reasonable steps to ensure that your Personal Information and Browsing Information will only be used in compliance with this Privacy Notice and applicable laws. This Privacy Notice is only in effect for Personal Information and Browsing Information collected and/or owned by or on behalf of FNF, including Personal Information and Browsing Information collected through any FNF website, online service or application (collectively, the "Website").

Types of Information Collected

We may collect two types of information from you: Personal Information and Browsing Information.

Personal Information. FNF may collect the following categories of Personal Information:

- contact information (*e.g.*, name, address, phone number, email address);
- demographic information (*e.g.*, date of birth, gender, marital status);
- social security number (SSN), driver's license, passport, and other government ID numbers;
- financial account information; and
- other personal information needed from you to provide title insurance, real estate- and loan-related services to you.

Browsing Information. FNF may collect the following categories of Browsing Information:

- Internet Protocol (or IP) address or device ID/UDID, protocol and sequence information;
- browser language and type;
- domain name system requests;
- browsing history, such as time spent at a domain, time and date of your visit and number of clicks;
- http headers, application client and server banners; and
- operating system and fingerprinting data.

How Information is Collected

In the course of our business, we may collect *Personal Information* about you from the following sources:

- applications or other forms we receive from you or your authorized representative;
- the correspondence you and others send to us;
- information we receive through the Website;
- information about your transactions with, or services performed by, us, our affiliates or nonaffiliated third parties; and
- information from consumer or other reporting agencies and public records maintained by governmental entities that we obtain directly from those entities, our affiliates or others.

If you visit or use our Website, we may collect *Browsing Information* from you as follows:

- Browser Log Files. Our servers automatically log each visitor to the Website and collect and record certain browsing information about each visitor. The Browsing Information includes generic information and reveals nothing personal about the user.
- Cookies. When you visit our Website, a "cookie" may be sent to your computer. A cookie is a small piece of data that is sent to your Internet browser from a web server and stored on your computer's hard drive. When you visit a website again, the cookie allows the website to recognize your computer. Cookies may store user preferences and other information. You can choose whether or not to accept cookies by changing your Internet browser settings, which may impair or limit some functionality of the Website.

Use of Collected Information

Information collected by FNF is used for three main purposes:

- To provide products and services to you or any affiliate or third party who is obtaining services on your behalf or in connection with a transaction involving you.
- To improve our products and services.
- To communicate with you and to inform you about our, our affiliates' and third parties' products and services, jointly or independently.

When Information Is Disclosed

We may provide your Personal Information (excluding information we receive from consumer or other credit reporting agencies) and Browsing Information to various individuals and companies, as permitted by law, without obtaining your prior authorization. Such laws do not allow consumers to restrict these disclosures. Please see the section "Choices With Your Personal Information" to learn how to limit the discretionary disclosure of your Personal Information and Browsing Information.

Disclosures of your Personal Information may be made to the following categories of affiliates and nonaffiliated third parties:

- to third parties to provide you with services you have requested, and to enable us to detect or prevent criminal activity, fraud, material misrepresentation, or nondisclosure;
- to our affiliate financial service providers for their use to market their products or services to you;
- to nonaffiliated third party service providers who provide or perform services on our behalf and use the disclosed information only in connection with such services;
- to nonaffiliated third party service providers with whom we perform joint marketing, pursuant to an agreement with them to market financial products or services to you;
- to law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoena or court order;
- to lenders, lien holders, judgment creditors, or other parties claiming an interest in title whose claim or interest must be determined, settled, paid, or released prior to closing; and
- other third parties for whom you have given us written authorization to disclose your Personal Information.

We may disclose Personal Information and/or Browsing Information when required by law or in the good-faith belief that such disclosure is necessary to:

- comply with a legal process or applicable laws;
- enforce this Privacy Notice;
- investigate or respond to claims that any material, document, image, graphic, logo, design, audio, video or any other information provided by you violates the rights of a third party; or
- protect the rights, property or personal safety of FNF, its users or the public.

We maintain reasonable safeguards to keep your Personal Information secure. When we provide Personal Information to our affiliates or third party service providers as discussed in this Privacy Notice, we expect that these parties process such information in compliance with our Privacy Notice or in a manner that is in compliance with applicable privacy laws. The use of your information by a business partner may be subject to that party's own Privacy Notice. Unless permitted by law, we do not disclose information we collect from consumer or credit reporting agencies with our affiliates or others without your consent.

We reserve the right to transfer your Personal Information, Browsing Information, and any other information, in connection with the sale or other disposition of all or part of the FNF business and/or assets, or in the event of our bankruptcy, reorganization, insolvency, receivership or an assignment for the benefit of creditors. You expressly agree and consent to the use and/or transfer of the foregoing information in connection with any of the above described proceedings. We cannot and will not be responsible for any breach of security by a third party or for any actions of any third party that receives any of the information that is disclosed to us.

Choices With Your Information

Whether you submit Personal Information or Browsing Information to FNF is entirely up to you. If you decide not to submit Personal Information or Browsing Information, FNF may not be able to provide certain services or products to you. The uses of your Personal Information and/or Browsing Information that, by law, you cannot limit, include:

- for our everyday business purposes – to process your transactions, maintain your account(s), to respond to law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court orders, or report to credit bureaus;
- for our own marketing purposes;
- for joint marketing with financial companies; and
- for our affiliates' everyday business purposes – information about your transactions and experiences.

You may choose to prevent FNF from disclosing or using your Personal Information and/or Browsing Information under the following circumstances ("opt-out"):

- for our affiliates' everyday business purposes – information about your creditworthiness; and
- for our affiliates to market to you.

To the extent permitted above, you may opt-out of disclosure or use of your Personal Information and Browsing Information by notifying us by one of the methods at the end of this Privacy Notice. We do not share your personal information with non-affiliates for their direct marketing purposes.

For California Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties, except as permitted by California law. Currently, our policy is that we do not recognize "do not track" requests from Internet browsers and similar devices.

For Nevada Residents: You may be placed on our internal Do Not Call List by calling (888) 934-3354 or by contacting us via the information set forth at the end of this Privacy Notice. Nevada law requires that we also provide you with the following contact information: Bureau of Consumer Protection, Office of the Nevada Attorney General, 555 E. Washington St., Suite 3900, Las Vegas, NV 89101; Phone number: (702) 486-3132; email: BCPINFO@ag.state.nv.us.

For Oregon Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties for marketing purposes, except after you have been informed by us of such sharing and had an opportunity to indicate that you do not want a disclosure made for marketing purposes.

For Vermont Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties, except as permitted by Vermont law, such as to process your transactions or to maintain your account. In addition, we will not share information about your creditworthiness with our affiliates except with your authorization. For joint marketing in Vermont, we will only disclose your name, contact information and information about your transactions.

Information From Children

The Website is meant for adults and is not intended or designed to attract children under the age of thirteen (13).We do not collect Personal Information from any person that we know to be under the age of thirteen (13) without permission from a parent or guardian. By using the Website, you affirm that you are over the age of 13 and will abide by the terms of this Privacy Notice.

Privacy Outside the Website

The Website may contain links to other websites. FNF is not and cannot be responsible for the privacy practices or the content of any of those other websites.

International Users

FNF's headquarters is located within the United States. If you reside outside the United States or are a citizen of the European Union, please note that we may transfer your Personal Information and/or Browsing Information outside of your country of residence or the European Union for any of the purposes described in this Privacy Notice. By providing FNF with your Personal Information and/or Browsing Information, you consent to our collection and transfer of such information in accordance with this Privacy Notice.

The California Online Privacy Protection Act

For some FNF websites, such as the Customer CareNet ("CCN"), FNF is acting as a third party service provider to a mortgage loan servicer. In those instances, we may collect certain information on behalf of that mortgage loan servicer via the website. The information which we may collect on behalf of the mortgage loan servicer is as follows:

- first and last name;
- property address;
- user name and password;
- loan number;
- social security number - masked upon entry;
- email address;
- three security questions and answers; and
- IP address.

The information you submit through the website is then transferred to your mortgage loan servicer by way of CCN.

The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through this website. For example, if you believe that your payment or user information is incorrect, you must contact your mortgage loan servicer.

CCN does not share consumer information with third parties, other than (1) those with which the mortgage loan servicer has contracted to interface with the CCN application, or (2) law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court orders. All sections of this Privacy Notice apply to your interaction with CCN, except for the sections titled "Choices with Your Information" and "Access and Correction." If you have questions regarding the choices you have with regard to your personal information or how to access or correct your personal information, you should contact your mortgage loan servicer.

Your Consent To This Privacy Notice

By submitting Personal Information and/or Browsing Information to FNF, you consent to the collection and use of the information by us in compliance with this Privacy Notice. Amendments to the Privacy Notice will be posted on the Website. Each time you provide information to us, or we receive information about you, following any amendment of this Privacy Notice will signify your assent to and acceptance of its revised terms for all previously collected information and information collected from you in the future. We may use comments, information or feedback that you submit to us in any manner that we may choose without notice or compensation to you.

Accessing and Correcting Information; Contact Us

If you have questions, would like to access or correct your Personal Information, or want to opt-out of information sharing with our affiliates for their marketing purposes, please send your requests to privacy@fnf.com or by mail or phone to:

Fidelity National Financial, Inc.
601 Riverside Avenue
Jacksonville, Florida 32204
Attn: Chief Privacy Officer
(888) 934-3354

REEL 3602 PAGE 265
MARION COUNTY
BILL BURGESS, COUNTY CLERK
05-07-2014 11:26 am.
Control Number 360612 $ 56.00
Instrument 2014 00014759

After recording return to:

Robert W. Nunn
Sussman Shank LLP
Suite 1400
1000 SW Broadway
Portland, OR 97205-3089

Send all tax statements to:

Robert W. Nunn
0841 SW Gaines Street, Unit 606
Portland, OR 97239

FATCO S-2014

WARRANTY DEED

Robert W. Nunn, Grantor, conveys and warrants to Pringle Creek LLC, an Oregon limited liability company, Grantee, all of Grantor's tenant in common interest in the real property described on Exhibit A.

The liability and obligations of Grantor to Grantee and Grantee's heirs and assigns under the warranties and covenants contained herein or provided by law are limited to the amount, nature, and terms of any right or indemnification available to Grantor under any title insurance policy. Grantor has no liability or obligation except to the extent that reimbursement for such liability or obligation is available to Grantor under a title insurance policy.

The property is free of encumbrances except (a) as specifically set forth herein, (b) encumbrances ascertainable from viewing the property, and (c) encumbrances, covenants, conditions, restrictions, and easements of record.

The true and actual consideration for this transfer is $-0- and consists of or includes other property or other value given or promised.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR

215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

DATED this 15 day of November, 2013.

GRANTOR:

Robert W. Nunn

STATE OF OREGON)
) ss.
County of Multnomah)

This instrument was acknowledged before me on November 15, 2013 by Robert W. Nunn.

OFFICIAL SEAL
SUSAN E BUCHANAN
NOTARY PUBLIC-OREGON
COMMISSION NO. 466455
MY COMMISSION EXPIRES APRIL 05, 2016

NOTARY PUBLIC FOR OREGON
My Commission Expires: 4/5/16

15923-002\PRINGLE CREEK WARRANTY DEED (01722624);1

Exhibit A

Beginning at a point which is 315.48 feet N. 89° 49' W. and 1223.41 feet N. 22° 30' W. and 301.80 feet N. 67° 30' E. from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian In Marion County, Oregon; thence S. 14° 34' E. 370.20 feet; thence N. 67° 30' E. 429.93 feet to a point on the East line of said Section, which point is 1064.65 feet N. 0° 30' E. from the Southeast corner of said Section; thence N. 0° 30' E. along said East line 397.79 feet; thence S. 67° 30' W. 534.60 feet to the place of beginning and containing 4.07 acres of land.

Together with an easement for road and right-of-way purposes over the following described parcel, beginning at a point which is located North 89° 49' West 315.48 feet and North 22° 30' West 1,223.41 feet and North 67° 30' East 30.00 feet from the Southeast comer of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, Marion County. Oregon;

Thence from said point of beginning continuing North 67° 30' East 351.80 feet to a point on the northerly line of a tract of land described in Deed Book 469, page 411 of Marion County Deed Records;

Thence North 22° 30' West 50.00 feet to a point;

Thence South 67°30' West 351.80 feet to a point on the easterly right-of-way line of Battle Creek Road (Market Road No. 25);

Thence South 22° 30' East along said easterly right-of-way line 50.00 feet to the point of beginning.

REEL: 3602 **PAGE: 265**

May 07, 2014, 11:26 am.

CONTROL #: 360612

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 56.00

BILL BURGESS
COUNTY CLERK

THIS IS NOT AN INVOICE.

REEL 3602 PAGE 266
MARION COUNTY
BILL BURGESS, COUNTY CLERK
05-07-2014 11:26 am.
Control Number 360612 $ 56.00
Instrument 2014 00014760

After recording return to:

Robert W. Nunn
Sussman Shank LLP
Suite 1400
1000 SW Broadway
Portland, OR 97205-3089

Send all tax statements to:

Robert W. Nunn
0841 SW Gaines Street, Unit 606
Portland, OR 97239

FATCO 5-2014

WARRANTY DEED

Kathryn L. Young, Grantor, conveys and warrants to Sheep Trail LLC, an Oregon limited liability company, Grantee, all of Grantor's tenant in common interest in the real property described on Exhibit A.

The liability and obligations of Grantor to Grantee and Grantee's heirs and assigns under the warranties and covenants contained herein or provided by law are limited to the amount, nature, and terms of any right or indemnification available to Grantor under any title insurance policy. Grantor has no liability or obligation except to the extent that reimbursement for such liability or obligation is available to Grantor under a title insurance policy.

The property is free of encumbrances except (a) as specifically set forth herein, (b) encumbrances ascertainable from viewing the property, and (c) encumbrances, covenants, conditions, restrictions, and easements of record.

The true and actual consideration for this transfer is $-0- and consists of or includes other property or other value given or promised.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR

215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

DATED this 20 day of November, 2013.

GRANTOR:

Kathryn L. Young
Kathryn L. Young

STATE OF WASHINGTON)
) ss.
County of King)

This instrument was acknowledged before me on November 20, 2013 by Kathryn L. Young.

NOTARY PUBLIC FOR WASHINGTON
My Commission Expires: 10-09-17

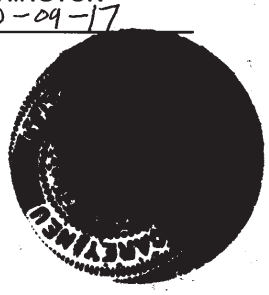

Exhibit A

Beginning at a point which is 315.48 feet N. 89° 49' W. and 1223.41 feet N. 22° 30' W. and 301.80 feet N. 67° 30' E. from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian In Marion County, Oregon; thence S. 14° 34' E. 370.20 feet; thence N. 67° 30' E. 429.93 feet to a point on the East line of said Section, which point is 1064.65 feet N. 0° 30' E. from the Southeast corner of said Section; thence N. 0° 30' E. along said East line 397.79 feet; thence S. 67° 30' W. 534.60 feet to the place of beginning and containing 4.07 acres of land.

Together with an easement for road and right-of-way purposes over the following described parcel, beginning at a point which is located North 89° 49' West 315.48 feet and North 22° 30' West 1,223.41 feet and North 67° 30' East 30.00 feet from the Southeast comer of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, Marion County. Oregon;

Thence from said point of beginning continuing North 67° 30' East 351.80 feet to a point on the northerly line of a tract of land described in Deed Book 469, page 411 of Marion County Deed Records;

Thence North 22° 30' West 50.00 feet to a point;

Thence South 67°30' West 351.80 feet to a point on the easterly right-of-way line of Battle Creek Road (Market Road No. 25);

Thence South 22° 30' East along said easterly right-of-way line 50.00 feet to the point of beginning.

REEL: 3602 **PAGE: 266**

May 07, 2014, 11:26 am.

CONTROL #: 360612

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 56.00

BILL BURGESS
COUNTY CLERK

THIS IS NOT AN INVOICE.

REEL 3602 PAGE 267
MARION COUNTY
BILL BURGESS, COUNTY CLERK
05-07-2014 11:26 am.
Control Number 360612 $ 56.00
Instrument 2014 00014761

After recording return to:

Robert W. Nunn
Sussman Shank LLP
Suite 1400
1000 SW Broadway
Portland, OR 97205-3089

Send all tax statements to:

Robert W. Nunn
0841 SW Gaines Street, Unit 606
Portland, OR 97239

FATCO S-2014

WARRANTY DEED

Linda S. Schaefers, Grantor, conveys and warrants to Margalou LLC, an Oregon limited liability company, Grantee, all of Grantor's tenant in common interest in the real property described on Exhibit A.

The liability and obligations of Grantor to Grantee and Grantee's heirs and assigns under the warranties and covenants contained herein or provided by law are limited to the amount, nature, and terms of any right or indemnification available to Grantor under any title insurance policy. Grantor has no liability or obligation except to the extent that reimbursement for such liability or obligation is available to Grantor under a title insurance policy.

The property is free of encumbrances except (a) as specifically set forth herein, (b) encumbrances ascertainable from viewing the property, and (c) encumbrances, covenants, conditions, restrictions, and easements of record.

The true and actual consideration for this transfer is $-0- and consists of or includes other property or other value given or promised.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR

215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

DATED this 27th day of November, 2013.

GRANTOR:

Linda S. Schaefers

Linda S. Schaefers

STATE OF OREGON)
) ss.
County of Linn)

This instrument was acknowledged before me on November 27th, 2013 by Linda S. Schaefers.

Electra L. Wisegarver

NOTARY PUBLIC FOR OREGON
My Commission Expires: October 28, 2015

15923-002\MARGALOU LLC WARRANTY DEED (01722700);1

OFFICIAL SEAL
Electra L. Wisegarver
NOTARY PUBLIC - OREGON
Commission No. 462691
MY COMMISSION EXPIRES October 28, 2015

Exhibit A

Beginning at a point which is 315.48 feet N. 89° 49' W. and 1223.41 feet N. 22° 30' W. and 301.80 feet N. 67° 30' E. from the Southeast corner of Section 11 in Township 8 South, Range 3 West of the Willamette Meridian In Marion County, Oregon; thence S. 14° 34' E. 370.20 feet; thence N. 67° 30' E. 429.93 feet to a point on the East line of said Section, which point is 1064.65 feet N. 0° 30' E. from the Southeast corner of said Section; thence N. 0° 30' E. along said East line 397.79 feet; thence S. 67° 30' W. 534.60 feet to the place of beginning and containing 4.07 acres of land.

Together with an easement for road and right-of-way purposes over the following described parcel, beginning at a point which is located North 89° 49' West 315.48 feet and North 22° 30' West 1,223.41 feet and North 67° 30' East 30.00 feet from the Southeast comer of Section 11, Township 8 South, Range 3 West of the Willamette Meridian, Marion County. Oregon;

Thence from said point of beginning continuing North 67° 30' East 351.80 feet to a point on the northerly line of a tract of land described in Deed Book 469, page 411 of Marion County Deed Records;

Thence North 22° 30' West 50.00 feet to a point;

Thence South 67°30' West 351.80 feet to a point on the easterly right-of-way line of Battle Creek Road (Market Road No. 25);

Thence South 22° 30' East along said easterly right-of-way line 50.00 feet to the point of beginning.

REEL: 3602 **PAGE: 267**

May 07, 2014, 11:26 am.

CONTROL #: 360612

State of Oregon
County of Marion

I hereby certify that the attached instrument was received and duly recorded by me in Marion County records:

FEE: $ 56.00

BILL BURGESS
COUNTY CLERK

THIS IS NOT AN INVOICE.

TICOR TITLE™
Company of Oregon

PRELIMINARY REPORT

In response to the application for a policy of title insurance referenced herein Ticor Title Company of Oregon hereby reports that it is prepared to issue, or cause to be issued, as of the specified date, a policy or policies of title insurance describing the land and the estate or interest hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.

The printed Exceptions and Exclusions from the coverage of said policy or policies are set forth in Exhibit One. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Copies of the policy forms should be read. They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby.

The policy(s) of title insurance to be issued hereunder will be policy(s) of Chicago Title Insurance Company, a/an Florida corporation.

Please read the exceptions shown or referred to herein and the Exceptions and Exclusions set forth in Exhibit One of this report carefully. The Exceptions and Exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.

This preliminary report is for the exclusive use of the parties to the contemplated transaction, and the Company does not have any liability to any third parties nor any liability until the full premium is paid and a policy is issued. Until all necessary documents are placed of record, the Company reserves the right to amend or supplement this preliminary report.

Countersigned

TICOR TITLE™
Company of Oregon

1433 SW 6th Avenue, Portland, OR 97201
(503)646-4444 FAX (503)219-9984

PRELIMINARY REPORT

TITLE OFFICER: Tina Turner

ORDER NO.: 471817060917
Supplement 1: Eff date/taxes/city lien

TO: Lawyers Title of Oregon, LLC
Krista Thorne
1915 NW Amberglen Parkway, Suite 155
Beaverton, OR 97006

OWNER/SELLER: Pringle Creek LLC, Sheep Trail, LLC, & Margalou LLC

BUYER/BORROWER: Westwood Homes LLC

PROPERTY ADDRESS: Battlecreek Road, Lot 400, Salem, OR 97303

EFFECTIVE DATE: March 15, 2018, 08:00 AM

1. THE POLICY AND ENDORSEMENTS TO BE ISSUED AND THE RELATED CHARGES ARE:

		AMOUNT		PREMIUM
ALTA Owner's Policy 2006 **Owner's Standard**	$	688,772.00	$	1,634.00
Government Lien Search			$	40.00

2. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

   A Fee

3. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

   Pringle Creek LLC, an Oregon limited liability company, Sheep Trail LLC, an Oregon limited liability company and Margalou LLC, an Oregon limited liability company, all as tenants in common

4. THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE CITY OF SALEM, COUNTY OF MARION, STATE OF OREGON, AND IS DESCRIBED AS FOLLOWS:

   SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

EXHIBIT "A"

Legal Description

Beginning at a point which is 315.48 feet North 89º 49' West and 1,223.41 feet North 22º 30' West and 301.80 feet North 67º 30' East from the Southeast corner of Section 11, in Township 8 South, Range 3 West, of the Willamette Meridian, in the City of Salem, County of Marion and State of Oregon; thence South 14º 34' East, 370.20 feet; thence North 67º 30' East, 429.93 feet to a point on the East line of said section, which point is 1,064.65 feet North 00º 30' East from the Southeast corner of said section; thence North 00º 30' East along said East line 397.79 feet; thence South 67º 30' West, 534.60 feet to the place of beginning.

TOGETHER WITH an easement for road and right-of-way purposes over the following described parcel:

Beginning at a point which is located North 89º 49' West, 315.48 feet and North 22º 30' West, 1,223.41 feet and North 67º 30' East, 30.00 feet from the Southeast corner of Section 11, Township 8 South, Range 3 West, of the Willamette Meridian, in the County of Marion and State of Oregon; thence from said point of beginning continuing North 67º 30' East, 351.80 feet to a point on the Northerly line of a tract of land described in Deed Book 469, Page 411 of Marion County Deed Records; thence North 22º 30' West, 50.00 feet to a point; thence South 67º 30' West, 351.80 feet to a point on the Easterly right-of-way line of Battle Creek Road (Market Road No. 25); thence South 22º 30' East along said Easterly right-of-way line 50.00 feet to the point of beginning.

AS OF THE DATE OF THIS REPORT, ITEMS TO BE CONSIDERED AND EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN THE POLICY FORM WOULD BE AS FOLLOWS:

GENERAL EXCEPTIONS:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests or claims, which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.

3. Easements, or claims of easement, which are not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.

4. Any encroachment (of existing improvements located on the Land onto adjoining land or of existing improvements located on adjoining land onto the subject Land), encumbrance, violation, variation or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the subject Land.

5. Any lien or right to a lien for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the Public Records.

SPECIFIC ITEMS AND EXCEPTIONS:

6. City Liens, if any, in favor of the City of Salem. None found as of March 20, 2018.

7. The Land has been classified as farm, as disclosed by the tax roll. If the Land becomes disqualified, said Land may be subject to additional taxes and/or penalties.

8. Rights of the public to any portion of the Land lying within the limits of streets, roads and highways.

9. Please be advised that our search did not disclose any open Deeds of Trust of record. If you should have knowledge of any outstanding obligation, please contact the Title Department immediately for further review prior to closing.

10. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

    Limited Liability Company: Pringle Creek LLC, Sheep Trail LLC and Margalou LLC

    a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

    b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

    c) If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

    d) If the Limited Liability Company was formed in a foreign jurisdiction, evidence, satisfactory to the Company, that it was validly formed, is in good standing and authorized to do business in the state of origin.

    e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

    The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

11. If requested to issue an extended coverage ALTA loan policy, the following matters must be addressed:

    a) The rights of tenants holding under unrecorded leases or tenancies
    b) Matters disclosed by a statement as to parties in possession and as to any construction, alterations or repairs to the Land within the last 75 days. The Company must be notified in the event that any funds are to be used for construction, alterations or repairs.
    c) Any facts which would be disclosed by an accurate survey of the Land

ADDITIONAL REQUIREMENTS/NOTES:

A. Note: Property taxes for the fiscal year shown below are paid in full.

Fiscal Year:	2017-2018
Amount:	$51.17
Levy Code:	92401000
Account No.:	R32162
Map No.:	083W11D 00400

Prior to close of escrow, please contact the Tax Collector's Office to confirm all amounts owing, including current fiscal year taxes, supplemental taxes, escaped assessments and any delinquencies.

B. In addition to the standard policy exceptions, the exceptions enumerated above shall appear on the final 2006 ALTA Policy unless removed prior to issuance.

C. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

Limited Liability Company: Westwood Homes LLC

a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

c) If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

d) If the Limited Liability Company was formed in a foreign jurisdiction, evidence, satisfactory to the Company, that it was validly formed, is in good standing and authorized to do business in the state of origin.

e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

D. Note: There are no matters against the party(ies) shown below which would appear as exceptions to coverage in a title insurance product:

Parties: Westwood Homes LLC

E. Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.

F. Note: There are NO conveyances affecting said Land recorded within 24 months of the date of this report.

G. Note: No utility search has been made or will be made for water, sewer or storm drainage charges unless the City/Service District claims them as liens (i.e. foreclosable) and reflects them on its lien docket as of the date of closing. Buyers should check with the appropriate city bureau or water service district and obtain a billing cutoff. Such charges must be adjusted outside of escrow.

H. THE FOLLOWING NOTICE IS REQUIRED BY STATE LAW: YOU WILL BE REVIEWING, APPROVING AND SIGNING IMPORTANT DOCUMENTS AT CLOSING. LEGAL CONSEQUENCES FOLLOW FROM THE SELECTION AND USE OF THESE DOCUMENTS. YOU MAY CONSULT AN ATTORNEY ABOUT THESE DOCUMENTS. YOU SHOULD CONSULT AN ATTORNEY IF YOU HAVE QUESTIONS OR CONCERNS ABOUT THE TRANSACTION OR ABOUT THE DOCUMENTS. IF YOU WISH TO REVIEW TRANSACTION DOCUMENTS THAT YOU HAVE NOT SEEN, PLEASE CONTACT THE ESCROW AGENT.

I. Recording Charge (Per Document) is the following:

County	First Page	Each Additional Page
Marion	$46.00	$5.00
Benton	$68.00	$5.00
Polk	$51.00	$5.00
Linn	$65.00	$5.00

Note: When possible the company will record electronically. An additional charge of $5.00 applies to each document that is recorded electronically.

Note: Please send any documents for recording to the following address:
Portland Title Group
Attn: Recorder
1433 SW 6th Ave.
Portland, OR. 97201

J. Note: This map/plat is being furnished as an aid in locating the herein described Land in relation to adjoining streets, natural boundaries and other land. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the Company does not insure dimensions, distances or acreage shown thereon.

EXHIBIT ONE

2006 AMERICAN LAND TITLE ASSOCIATION LOAN POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions or location of any improvement erected on the land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with the applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in the Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

2006 AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions or location of any improvement erected on the land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in the Covered Risk 9 of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

WIRE SAFE™ | Inquire before you wire!

WIRE FRAUD ALERT

This Notice is not intended to provide legal or professional advice. If you have any questions, please consult with a lawyer.

All parties to a real estate transaction are targets for wire fraud and many have lost hundreds of thousands of dollars because they simply relied on the wire instructions received via email, without further verification. **If funds are to be wired in conjunction with this real estate transaction, we strongly recommend verbal verification of wire instructions through a known, trusted phone number prior to sending funds.**

In addition, the following non-exclusive self-protection strategies are recommended to minimize exposure to possible wire fraud.

- **NEVER RELY** on emails purporting to change wire instructions. Parties to a transaction rarely change wire instructions in the course of a transaction.
- **ALWAYS VERIFY** wire instructions, specifically the ABA routing number and account number, by calling the party who sent the instructions to you. DO NOT use the phone number provided in the email containing the instructions, use phone numbers you have called before or can otherwise verify. **Obtain the number of relevant parties to the transaction as soon as an escrow account is opened.** DO NOT send an email to verify as the email address may be incorrect or the email may be intercepted by the fraudster.
- **USE COMPLEX EMAIL PASSWORDS** that employ a combination of mixed case, numbers, and symbols. Make your passwords greater than eight (8) characters. Also, change your password often and do NOT reuse the same password for other online accounts.
- **USE MULTI-FACTOR AUTHENTICATION** for email accounts. Your email provider or IT staff may have specific instructions on how to implement this feature.

For more information on wire-fraud scams or to report an incident, please refer to the following links:

Federal Bureau of Investigation:
http://www.fbi.gov

Internet Crime Complain Center:
http://www.ic3.gov

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FIDELITY NATIONAL FINANCIAL
PRIVACY NOTICE
Effective: May 1, 2015; Last Updated: March 1, 2017

At Fidelity National Financial, Inc., we respect and believe it is important to protect the privacy of consumers and our customers. This Privacy Notice explains how we collect, use, and protect any information that we collect from you, when and to whom we disclose such information, and the choices you have about the use of that information. A summary of the Privacy Notice is below, and we encourage you to review the entirety of the Privacy Notice following this summary. You can opt-out of certain disclosures by following our opt-out procedure set forth at the end of this Privacy Notice.

Types of Information Collected. You may provide us with certain personal information about you, like your contact information, address demographic information, social security number (SSN), driver's license, passport, other government ID numbers and/or financial information. We may also receive browsing information from your Internet browser, computer and/or mobile device if you visit or use our websites or applications.	**How Information is Collected**. We may collect personal information from you via applications, forms, and correspondence we receive from you and others related to our transactions with you. When you visit our websites from your computer or mobile device, we automatically collect and store certain information available to us through your Internet browser or computer equipment to optimize your website experience.
Use of Collected Information. We request and use your personal information to provide products and services to you, to improve our products and services, and to communicate with you about these products and services. We may also share your contact information with our affiliates for marketing purposes.	**When Information Is Disclosed**. We may disclose your information to our affiliates and/or nonaffiliated parties providing services for you or us, to law enforcement agencies or governmental authorities, as required by law, and to parties whose interest in title must be determined.
Choices With Your Information. Your decision to submit information to us is entirely up to you. You can opt-out of certain disclosure or use of your information or choose to not provide any personal information to us.	**Information From Children**. We do not knowingly collect information from children who are under the age of 13, and our website is not intended to attract children.
Privacy Outside the Website. We are not responsible for the privacy practices of third parties, even if our website links to those parties' websites.	**International Users**. By providing us with your information, you consent to its transfer, processing and storage outside of your country of residence, as well as the fact that we will handle such information consistent with this Privacy Notice.
The California Online Privacy Protection Act. Some FNF companies provide services to mortgage loan servicers and, in some cases, their websites collect information on behalf of mortgage loan servicers. The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through those websites.	
Your Consent To This Privacy Notice. By submitting information to us or by using our website, you are accepting and agreeing to the terms of this Privacy Notice.	**Access and Correction; Contact Us**. If you desire to contact us regarding this notice or your information, please contact us at privacy@fnf.com or as directed at the end of this Privacy Notice.

FIDELITY NATIONAL FINANCIAL
PRIVACY NOTICE
Effective: May 1, 2015; Last Updated: March 1, 2017

Fidelity National Financial, Inc. and its majority-owned subsidiary companies providing title insurance, real estate- and loan-related services (collectively, "FNF", "our" or "we") respect and are committed to protecting your privacy. We will take reasonable steps to ensure that your Personal Information and Browsing Information will only be used in compliance with this Privacy Notice and applicable laws. This Privacy Notice is only in effect for Personal Information and Browsing Information collected and/or owned by or on behalf of FNF, including Personal Information and Browsing Information collected through any FNF website, online service or application (collectively, the "Website").

Types of Information Collected

We may collect two types of information from you: Personal Information and Browsing Information.

Personal Information. FNF may collect the following categories of Personal Information:

- contact information (*e.g.*, name, address, phone number, email address);
- demographic information (*e.g.*, date of birth, gender, marital status);
- social security number (SSN), driver's license, passport, and other government ID numbers;
- financial account information; and
- other personal information needed from you to provide title insurance, real estate- and loan-related services to you.

Browsing Information. FNF may collect the following categories of Browsing Information:

- Internet Protocol (or IP) address or device ID/UDID, protocol and sequence information;
- browser language and type;
- domain name system requests;
- browsing history, such as time spent at a domain, time and date of your visit and number of clicks;
- http headers, application client and server banners; and
- operating system and fingerprinting data.

How Information is Collected

In the course of our business, we may collect *Personal Information* about you from the following sources:

- applications or other forms we receive from you or your authorized representative;
- the correspondence you and others send to us;
- information we receive through the Website;
- information about your transactions with, or services performed by, us, our affiliates or nonaffiliated third parties; and
- information from consumer or other reporting agencies and public records maintained by governmental entities that we obtain directly from those entities, our affiliates or others.

If you visit or use our Website, we may collect *Browsing Information* from you as follows:

- Browser Log Files. Our servers automatically log each visitor to the Website and collect and record certain browsing information about each visitor. The Browsing Information includes generic information and reveals nothing personal about the user.
- Cookies. When you visit our Website, a "cookie" may be sent to your computer. A cookie is a small piece of data that is sent to your Internet browser from a web server and stored on your computer's hard drive. When you visit a website again, the cookie allows the website to recognize your computer. Cookies may store user preferences and other information. You can choose whether or not to accept cookies by changing your Internet browser settings, which may impair or limit some functionality of the Website.

Use of Collected Information

Information collected by FNF is used for three main purposes:

- To provide products and services to you or any affiliate or third party who is obtaining services on your behalf or in connection with a transaction involving you.
- To improve our products and services.
- To communicate with you and to inform you about our, our affiliates' and third parties' products and services, jointly or independently.

When Information Is Disclosed

We may provide your Personal Information (excluding information we receive from consumer or other credit reporting agencies) and Browsing Information to various individuals and companies, as permitted by law, without obtaining your prior authorization. Such laws do not allow consumers to restrict these disclosures. Please see the section "Choices With Your Personal Information" to learn how to limit the discretionary disclosure of your Personal Information and Browsing Information.

Disclosures of your Personal Information may be made to the following categories of affiliates and nonaffiliated third parties:

- to third parties to provide you with services you have requested, and to enable us to detect or prevent criminal activity, fraud, material misrepresentation, or nondisclosure;
- to our affiliate financial service providers for their use to market their products or services to you;
- to nonaffiliated third party service providers who provide or perform services on our behalf and use the disclosed information only in connection with such services;
- to nonaffiliated third party service providers with whom we perform joint marketing, pursuant to an agreement with them to market financial products or services to you;
- to law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoena or court order;
- to lenders, lien holders, judgment creditors, or other parties claiming an interest in title whose claim or interest must be determined, settled, paid, or released prior to closing; and
- other third parties for whom you have given us written authorization to disclose your Personal Information.

We may disclose Personal Information and/or Browsing Information when required by law or in the good-faith belief that such disclosure is necessary to:

- comply with a legal process or applicable laws;
- enforce this Privacy Notice;
- investigate or respond to claims that any material, document, image, graphic, logo, design, audio, video or any other information provided by you violates the rights of a third party; or
- protect the rights, property or personal safety of FNF, its users or the public.

We maintain reasonable safeguards to keep your Personal Information secure. When we provide Personal Information to our affiliates or third party service providers as discussed in this Privacy Notice, we expect that these parties process such information in compliance with our Privacy Notice or in a manner that is in compliance with applicable privacy laws. The use of your information by a business partner may be subject to that party's own Privacy Notice. Unless permitted by law, we do not disclose information we collect from consumer or credit reporting agencies with our affiliates or others without your consent.

We reserve the right to transfer your Personal Information, Browsing Information, and any other information, in connection with the sale or other disposition of all or part of the FNF business and/or assets, or in the event of our bankruptcy, reorganization, insolvency, receivership or an assignment for the benefit of creditors. You expressly agree and consent to the use and/or transfer of the foregoing information in connection with any of the above described proceedings. We cannot and will not be responsible for any breach of security by a third party or for any actions of any third party that receives any of the information that is disclosed to us.

Choices With Your Information

Whether you submit Personal Information or Browsing Information to FNF is entirely up to you. If you decide not to submit Personal Information or Browsing Information, FNF may not be able to provide certain services or products to you. The uses of your Personal Information and/or Browsing Information that, by law, you cannot limit, include:

- for our everyday business purposes – to process your transactions, maintain your account(s), to respond to law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court orders, or report to credit bureaus;
- for our own marketing purposes;
- for joint marketing with financial companies; and
- for our affiliates' everyday business purposes – information about your transactions and experiences.

You may choose to prevent FNF from disclosing or using your Personal Information and/or Browsing Information under the following circumstances ("opt-out"):

- for our affiliates' everyday business purposes – information about your creditworthiness; and
- for our affiliates to market to you.

To the extent permitted above, you may opt-out of disclosure or use of your Personal Information and Browsing Information by notifying us by one of the methods at the end of this Privacy Notice. We do not share your personal information with non-affiliates for their direct marketing purposes.

For California Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties, except as permitted by California law. Currently, our policy is that we do not recognize "do not track" requests from Internet browsers and similar devices.

For Nevada Residents: You may be placed on our internal Do Not Call List by calling (888) 934-3354 or by contacting us via the information set forth at the end of this Privacy Notice. Nevada law requires that we also provide you with the following contact information: Bureau of Consumer Protection, Office of the Nevada Attorney General, 555 E. Washington St., Suite 3900, Las Vegas, NV 89101; Phone number: (702) 486-3132; email: BCPINFO@ag.state.nv.us.

For Oregon Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties for marketing purposes, except after you have been informed by us of such sharing and had an opportunity to indicate that you do not want a disclosure made for marketing purposes.

For Vermont Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties, except as permitted by Vermont law, such as to process your transactions or to maintain your account. In addition, we will not share information about your creditworthiness with our affiliates except with your authorization. For joint marketing in Vermont, we will only disclose your name, contact information and information about your transactions.

Information From Children

The Website is meant for adults and is not intended or designed to attract children under the age of thirteen (13).We do not collect Personal Information from any person that we know to be under the age of thirteen (13) without permission from a parent or guardian. By using the Website, you affirm that you are over the age of 13 and will abide by the terms of this Privacy Notice.

Privacy Outside the Website

The Website may contain links to other websites. FNF is not and cannot be responsible for the privacy practices or the content of any of those other websites.

International Users

FNF's headquarters is located within the United States. If you reside outside the United States or are a citizen of the European Union, please note that we may transfer your Personal Information and/or Browsing Information outside of your country of residence or the European Union for any of the purposes described in this Privacy Notice. By providing FNF with your Personal Information and/or Browsing Information, you consent to our collection and transfer of such information in accordance with this Privacy Notice.

The California Online Privacy Protection Act

For some FNF websites, such as the Customer CareNet ("CCN"), FNF is acting as a third party service provider to a mortgage loan servicer. In those instances, we may collect certain information on behalf of that mortgage loan servicer via the website. The information which we may collect on behalf of the mortgage loan servicer is as follows:

- first and last name;
- property address;
- user name and password;
- loan number;
- social security number - masked upon entry;
- email address;
- three security questions and answers; and
- IP address.

The information you submit through the website is then transferred to your mortgage loan servicer by way of CCN.

The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through this website. For example, if you believe that your payment or user information is incorrect, you must contact your mortgage loan servicer.

CCN does not share consumer information with third parties, other than (1) those with which the mortgage loan servicer has contracted to interface with the CCN application, or (2) law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court orders. All sections of this Privacy Notice apply to your interaction with CCN, except for the sections titled "Choices with Your Information" and "Access and Correction." If you have questions regarding the choices you have with regard to your personal information or how to access or correct your personal information, you should contact your mortgage loan servicer.

Your Consent To This Privacy Notice

By submitting Personal Information and/or Browsing Information to FNF, you consent to the collection and use of the information by us in compliance with this Privacy Notice. Amendments to the Privacy Notice will be posted on the Website. Each time you provide information to us, or we receive information about you, following any amendment of this Privacy Notice will signify your assent to and acceptance of its revised terms for all previously collected information and information collected from you in the future. We may use comments, information or feedback that you submit to us in any manner that we may choose without notice or compensation to you.

Accessing and Correcting Information; Contact Us

If you have questions, would like to access or correct your Personal Information, or want to opt-out of information sharing with our affiliates for their marketing purposes, please send your requests to privacy@fnf.com or by mail or phone to:

Fidelity National Financial, Inc.
601 Riverside Avenue
Jacksonville, Florida 32204
Attn: Chief Privacy Officer
(888) 934-3354

CITY OF Salem AT YOUR SERVICE
Community Development
Planning Division
555 Liberty Street SE / Room 305 • Salem OR 97301-3503 • Phone 503-588-6213 • TTY 503-588-6005
Fax 503-588-6005 • www.cityofsalem.net/planning • www.cityofsalem.net

March 17, 2021

Brandie Dalton, Multi-Tech Engineering
bdalton@mtengineering.net

Westwood Home LLC
allison@westwoodhomesllc.com

RE: Subdivision and Class 2 Adjustment Applications for Cobrun Estates (AMANDA 21-103682-LD, 21-103366-ZO & 21-103722-NR)

Ms. Dalton,

I am reviewing the partition application for completeness. The following information is required for staff to deem the application complete.

(1) **Neighborhood Association Contact.** You must provide a current neighborhood association contact pursuant to SRC 300.310.

(2) **Homeowners Association**; Please indicate if the subject property is or is not part of a Homeowners Association.

(3) **Approved Subdivision Name.** Please provided approved subdivision name.

(4) **Alternative Street Standards:** Proposed increase in grade, exceeding block length and reducing street width are 'Alternative Street Standard' requests. Each need to address the appliable decision criteria in SRC 803.065. The application packet addresses the increased grade as an adjustment and no findings are provided for the other two requests. The pedestrian paths will either need to meet ADA standards or be owned by a Homeowners association.

(5) **Class 1 Adjustment Criteria:** Findings provided do not address the Class 2 decision criteria and don't appear to meet the Class 1 criteria of not being applicable. There are errors regarding lot numbers and information within each document. Please correct and address Class 2 criteria and indicate how it will be equally or better suited. Additional adjustments maybe needed, see below.

The following items are not listed in SRC as specific requirements for a complete application; however, the applicant should be aware that the following have been identified as items that will be considered by the City while recommending conditions for the proposed development.

1. Lot Density: Density under SRC 514.010(c) is not being met on the RM-II zoned portion of the property. Provide Summary table for density within RM-II Zone.

2. Lot 69 is split zoned, provide evidence how lot meets both standards or more restrictive.
3. Street Standards: The 60-foot minimum width for a local street is not being met and alternative street findings have not been submitted.
4. The 12” Oak tree on Lot 43 appears to be able to be preserved.
5. The 14” Oak tree located within PUE of Lot 101 appears to be able to be preserved.
6. Alternative Street standard to meander sidewalk o preserve 32” Oak tree along strong is suggested.
7. The 20” Oak Tree on Lot 132 appears to be able to be preserved.
8. Provide a key for the color coding of Oak Trees on site.
9. The application is subject to the new stormwater requirements of SRC Chapter 71 (Ordinance 8-20) which took effect in October 2020. The submitted preliminary stormwater report does not meet the new requirements. The applicant is required to either set aside 10 percent of the total new plus replaced impervious surface area for GSI facilities or submit a preliminary stormwater report that meets the current requirements of SRC Chapter 71 and PWDS.

The application will be deemed complete upon receipt of one of the following:

(1) All of the missing information;

(2) Some of the missing information and written notice from the applicant that no other information will be provided;

(3) Written notice from the applicant that none of the missing information will be provided.

You have until August 17, 2021 (180 days from the date the application was submitted) to respond in one of the three ways listed above, or the application will be deemed void.

Please submit the above requested materials and/information to our office through SPLASH, by mail, email, or in person. If you have questions, please contact me at (503) 540-2343 or odias@cityofsalem.net.

The Salem Revised Code may be accessed online at the following location:

https://www.cityofsalem.net/Pages/salem-revised-code.aspx

Sincerely,

Olivia Dias
Current Planning Manager

\\CommDev\CDGroup\CD\PLANNING\Olivia\2021\LD\SUBDIVISION\Coburn Estates\Incomplete Letter.Coburn.docx

TICOR TITLE™
Company of Oregon

PRELIMINARY REPORT

In response to the application for a policy of title insurance referenced herein Ticor Title Company of Oregon hereby reports that it is prepared to issue, or cause to be issued, as of the specified date, a policy or policies of title insurance describing the land and the estate or interest hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.

The printed Exceptions and Exclusions from the coverage of said policy or policies are set forth in Exhibit One. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Copies of the policy forms should be read. They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby.

The policy(s) of title insurance to be issued hereunder will be policy(s) of Chicago Title Insurance Company, a/an Florida corporation.

Please read the exceptions shown or referred to herein and the Exceptions and Exclusions set forth in Exhibit One of this report carefully. The Exceptions and Exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.

This preliminary report is for the exclusive use of the parties to the contemplated transaction, and the Company does not have any liability to any third parties nor any liability until the full premium is paid and a policy is issued. Until all necessary documents are placed of record, the Company reserves the right to amend or supplement this preliminary report.

Countersigned

TICOR TITLE™
Company of Oregon

1433 SW 6th Avenue, Portland, OR 97201
(503)646-4444 FAX (503)219-9984

PRELIMINARY REPORT

TITLE OFFICER: Tina Turner

ORDER NO.: 471817060911
Supplement 1: Eff date/taxes/city lien

TO: Lawyers Title of Oregon, LLC
Krista Thorne
1915 NW Amberglen Parkway, Suite 155
Beaverton, OR 97006

OWNER/SELLER: Boulder Hill LLC

BUYER/BORROWER: Westwood Homes LLC

PROPERTY ADDRESS: 0 Battlecreek Road, Salem, OR 97301

EFFECTIVE DATE: March 15, 2018, 08:00 AM

1. THE POLICY AND ENDORSEMENTS TO BE ISSUED AND THE RELATED CHARGES ARE:

	AMOUNT	PREMIUM
ALTA Owner's Policy 2006 **Owner's Standard**	$ 4,822,000.00	$ 7,833.00
Government Lien Search		$ 40.00

2. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

   A Fee

3. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

   Boulder Hill LLC, an Oregon Manager-Managed Limited Liability Company

4. THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE CITY OF SALEM, COUNTY OF MARION, STATE OF OREGON, AND IS DESCRIBED AS FOLLOWS:

   SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

EXHIBIT "A"

Legal Description

Beginning at the Northeast corner of the Southeast one-quarter of Section 11, Township 8 South, Range 3 West, of the Willamette Meridian, in the County of Marion and State of Oregon; thence South 00° 30' West along the East line of said Section, a distance of 929.74 feet, more or less, to the North line of that tract of land described in Document No. 116205, Circuit Court Journal for Marion County; thence Westerly along the North line of said tract, a distance of 125.00 feet; thence South 00° 30' West, parallel with the East line of said Section 11, a distance of 303.27 feet to a point on the Northerly line of that tract of land conveyed to Kathryn L. Young, Linda S. Schaeffers and Robert W. Nunn by deed recorded in Reel 1021, Page 231, Deed Records for Marion County, Oregon; thence South 67° 30' West along said Northerly line, a distance of 398.72 feet to the Northwest corner thereof; thence South 14° 34' 00" East, 370.20 feet to the Southwest corner of said tract; thence North 89° 47' 36" West, 51.83 feet to the Southeast corner of that tract of land conveyed to Dale E. Christison and Darlene A. Christison by deed recorded in Reel 76, Page 282, Deed Records for Marion County, Oregon; thence North 14° 34' 00" West along the Easterly line of said Christison tract, a distance of 350.00 feet to the Northeast corner thereof; thence South 67° 30' 00" West along the Northerly line of said Christison tract, a distance of 131.77 feet to a point which is 660.00 feet West of the East line of said Section 11; thence North 00° 30' East, parallel with the East line of said Section 11, a distance of 1,454.12 feet to a point on the North line of the Southeast one-quarter of said Section 11; thence Easterly along said North line, a distance of 660.00 feet to the point of beginning.

AS OF THE DATE OF THIS REPORT, ITEMS TO BE CONSIDERED AND EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN THE POLICY FORM WOULD BE AS FOLLOWS:

GENERAL EXCEPTIONS:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests or claims, which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.

3. Easements, or claims of easement, which are not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.

4. Any encroachment (of existing improvements located on the Land onto adjoining land or of existing improvements located on adjoining land onto the subject Land), encumbrance, violation, variation or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the subject Land.

5. Any lien or right to a lien for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the Public Records.

SPECIFIC ITEMS AND EXCEPTIONS:

6. The Land has been classified as farm, as disclosed by the tax roll. If the Land becomes disqualified, said Land may be subject to additional taxes and/or penalties.

7. City Liens, if any, in favor of the City of Salem. None found as of March 20, 2018.

8. Rights of the public to any portion of the Land lying within the limits of streets, roads and highways.

9. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	The City of Salem, a municipal corporation
Purpose:	as mentioned in said easement
Recording Date:	October 30, 1974
Recording No:	Reel 3, Page 215

10. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Warne H. Nunn and Delores R. Nunn, husband and wife
Purpose:	road and right of way
Recording Date:	April 4, 1977
Recording No:	Reel 76, Page 1096

11. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	The City of Salem, Oregon, an Oregon municipal corporation
Purpose:	as mentioned in said easement
Filed Date:	February 15, 1989
Case No:	87C12160

12. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: The City of Salem, a municipal corporation
    Purpose: pipeline
    Recording Date: October 4, 1994
    Recording No: Reel 1196, Page 413

13. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: The City of Salem, a municipal corporation
    Purpose: pipeline
    Recording Date: October 4, 1994
    Recording No: Reel 1196, Page 415

14. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: The City of Salem, a municipal corporation
    Purpose: construction
    Recording Date: October 4, 1994
    Recording No: Reel 1196, Page 416

15. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: The City of Salem, a municipal corporation
    Purpose: slope
    Recording Date: October 4, 1994
    Recording No: Reel 1196, Page 417

16. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: The City of Salem, a municipal corporation
    Purpose: storm drain
    Recording Date: October 4, 1994
    Recording No: Reel 1196, Page 418

17. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: Portland General Electric Company ("PGE"), an Oregon corporation
    Purpose: power line
    Recording Date: March 23, 1995
    Recording No: Reel 1227, Page 774

18. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: Douglas M. Drager
    Purpose: sewer
    Recording Date: February 8, 1999
    Recording No: Reel 1566, Page 652

19. Please be advised that our search did not disclose any open Deeds of Trust of record. If you should have knowledge of any outstanding obligation, please contact the Title Department immediately for further review prior to closing.

20. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

Limited Liability Company: Boulder Hill LLC

a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

c) If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

d) If the Limited Liability Company was formed in a foreign jurisdiction, evidence, satisfactory to the Company, that it was validly formed, is in good standing and authorized to do business in the state of origin.

e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

21. If requested to issue an extended coverage ALTA loan policy, the following matters must be addressed:

a) The rights of tenants holding under unrecorded leases or tenancies
b) Matters disclosed by a statement as to parties in possession and as to any construction, alterations or repairs to the Land within the last 75 days. The Company must be notified in the event that any funds are to be used for construction, alterations or repairs.
c) Any facts which would be disclosed by an accurate survey of the Land

ADDITIONAL REQUIREMENTS/NOTES:

A. Note: Property taxes for the fiscal year shown below are paid in full.

Fiscal Year:	2017-2018
Amount:	$246.51
Levy Code:	92401000
Account No.:	R32164
Map No.:	083W11D 00100

Prior to close of escrow, please contact the Tax Collector's Office to confirm all amounts owing, including current fiscal year taxes, supplemental taxes, escaped assessments and any delinquencies.

B. In addition to the standard policy exceptions, the exceptions enumerated above shall appear on the final 2006 ALTA Policy unless removed prior to issuance.

C. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

Limited Liability Company: Westwood Homes LLC

a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

c) If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

d) If the Limited Liability Company was formed in a foreign jurisdiction, evidence, satisfactory to the Company, that it was validly formed, is in good standing and authorized to do business in the state of origin.

e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

D. Note: There are no matters against the party(ies) shown below which would appear as exceptions to coverage in a title insurance product:

Parties: Westwood Homes LLC

E. Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.

F. Note: There are NO conveyances affecting said Land recorded within 24 months of the date of this report.

G. Note: No utility search has been made or will be made for water, sewer or storm drainage charges unless the City/Service District claims them as liens (i.e. foreclosable) and reflects them on its lien docket as of the date of closing. Buyers should check with the appropriate city bureau or water service district and obtain a billing cutoff. Such charges must be adjusted outside of escrow.

H. THE FOLLOWING NOTICE IS REQUIRED BY STATE LAW: YOU WILL BE REVIEWING, APPROVING AND SIGNING IMPORTANT DOCUMENTS AT CLOSING. LEGAL CONSEQUENCES FOLLOW FROM THE SELECTION AND USE OF THESE DOCUMENTS. YOU MAY CONSULT AN ATTORNEY ABOUT THESE DOCUMENTS. YOU SHOULD CONSULT AN ATTORNEY IF YOU HAVE QUESTIONS OR CONCERNS ABOUT THE TRANSACTION OR ABOUT THE DOCUMENTS. IF YOU WISH TO REVIEW TRANSACTION DOCUMENTS THAT YOU HAVE NOT SEEN, PLEASE CONTACT THE ESCROW AGENT.

I. Recording Charge (Per Document) is the following:

County	First Page	Each Additional Page
Marion	$46.00	$5.00
Benton	$68.00	$5.00
Polk	$51.00	$5.00
Linn	$65.00	$5.00

Note: When possible the company will record electronically. An additional charge of $5.00 applies to each document that is recorded electronically.

Note: Please send any documents for recording to the following address:
Portland Title Group
Attn: Recorder
1433 SW 6th Ave.
Portland, OR. 97201

J. Note: This map/plat is being furnished as an aid in locating the herein described Land in relation to adjoining streets, natural boundaries and other land. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the Company does not insure dimensions, distances or acreage shown thereon.

EXHIBIT ONE

2006 AMERICAN LAND TITLE ASSOCIATION LOAN POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions or location of any improvement erected on the land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with the applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in the Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

2006 AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions or location of any improvement erected on the land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in the Covered Risk 9 of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

WIRE SAFE™ | Inquire before you wire!

WIRE FRAUD ALERT

This Notice is not intended to provide legal or professional advice. If you have any questions, please consult with a lawyer.

All parties to a real estate transaction are targets for wire fraud and many have lost hundreds of thousands of dollars because they simply relied on the wire instructions received via email, without further verification. **If funds are to be wired in conjunction with this real estate transaction, we strongly recommend verbal verification of wire instructions through a known, trusted phone number prior to sending funds.**

In addition, the following non-exclusive self-protection strategies are recommended to minimize exposure to possible wire fraud.

- **NEVER RELY** on emails purporting to change wire instructions. Parties to a transaction rarely change wire instructions in the course of a transaction.
- **ALWAYS VERIFY** wire instructions, specifically the ABA routing number and account number, by calling the party who sent the instructions to you. DO NOT use the phone number provided in the email containing the instructions, use phone numbers you have called before or can otherwise verify. **Obtain the number of relevant parties to the transaction as soon as an escrow account is opened.** DO NOT send an email to verify as the email address may be incorrect or the email may be intercepted by the fraudster.
- **USE COMPLEX EMAIL PASSWORDS** that employ a combination of mixed case, numbers, and symbols. Make your passwords greater than eight (8) characters. Also, change your password often and do NOT reuse the same password for other online accounts.
- **USE MULTI-FACTOR AUTHENTICATION** for email accounts. Your email provider or IT staff may have specific instructions on how to implement this feature.

For more information on wire-fraud scams or to report an incident, please refer to the following links:

Federal Bureau of Investigation:
http://www.fbi.gov

Internet Crime Complain Center:
http://www.ic3.gov

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FIDELITY NATIONAL FINANCIAL
PRIVACY NOTICE
Effective: May 1, 2015; Last Updated: March 1, 2017

At Fidelity National Financial, Inc., we respect and believe it is important to protect the privacy of consumers and our customers. This Privacy Notice explains how we collect, use, and protect any information that we collect from you, when and to whom we disclose such information, and the choices you have about the use of that information. A summary of the Privacy Notice is below, and we encourage you to review the entirety of the Privacy Notice following this summary. You can opt-out of certain disclosures by following our opt-out procedure set forth at the end of this Privacy Notice.

Types of Information Collected. You may provide us with certain personal information about you, like your contact information, address demographic information, social security number (SSN), driver's license, passport, other government ID numbers and/or financial information. We may also receive browsing information from your Internet browser, computer and/or mobile device if you visit or use our websites or applications.	**How Information is Collected**. We may collect personal information from you via applications, forms, and correspondence we receive from you and others related to our transactions with you. When you visit our websites from your computer or mobile device, we automatically collect and store certain information available to us through your Internet browser or computer equipment to optimize your website experience.
Use of Collected Information. We request and use your personal information to provide products and services to you, to improve our products and services, and to communicate with you about these products and services. We may also share your contact information with our affiliates for marketing purposes.	**When Information Is Disclosed**. We may disclose your information to our affiliates and/or nonaffiliated parties providing services for you or us, to law enforcement agencies or governmental authorities, as required by law, and to parties whose interest in title must be determined.
Choices With Your Information. Your decision to submit information to us is entirely up to you. You can opt-out of certain disclosure or use of your information or choose to not provide any personal information to us.	**Information From Children**. We do not knowingly collect information from children who are under the age of 13, and our website is not intended to attract children.
Privacy Outside the Website. We are not responsible for the privacy practices of third parties, even if our website links to those parties' websites.	**International Users**. By providing us with your information, you consent to its transfer, processing and storage outside of your country of residence, as well as the fact that we will handle such information consistent with this Privacy Notice.
The California Online Privacy Protection Act. Some FNF companies provide services to mortgage loan servicers and, in some cases, their websites collect information on behalf of mortgage loan servicers. The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through those websites.	
Your Consent To This Privacy Notice. By submitting information to us or by using our website, you are accepting and agreeing to the terms of this Privacy Notice.	**Access and Correction; Contact Us**. If you desire to contact us regarding this notice or your information, please contact us at privacy@fnf.com or as directed at the end of this Privacy Notice.

FIDELITY NATIONAL FINANCIAL
PRIVACY NOTICE
Effective: May 1, 2015; Last Updated: March 1, 2017

Fidelity National Financial, Inc. and its majority-owned subsidiary companies providing title insurance, real estate- and loan-related services (collectively, "FNF", "our" or "we") respect and are committed to protecting your privacy. We will take reasonable steps to ensure that your Personal Information and Browsing Information will only be used in compliance with this Privacy Notice and applicable laws. This Privacy Notice is only in effect for Personal Information and Browsing Information collected and/or owned by or on behalf of FNF, including Personal Information and Browsing Information collected through any FNF website, online service or application (collectively, the "Website").

Types of Information Collected

We may collect two types of information from you: Personal Information and Browsing Information.

Personal Information. FNF may collect the following categories of Personal Information:

- contact information (*e.g.*, name, address, phone number, email address);
- demographic information (*e.g.*, date of birth, gender, marital status);
- social security number (SSN), driver's license, passport, and other government ID numbers;
- financial account information; and
- other personal information needed from you to provide title insurance, real estate- and loan-related services to you.

Browsing Information. FNF may collect the following categories of Browsing Information:

- Internet Protocol (or IP) address or device ID/UDID, protocol and sequence information;
- browser language and type;
- domain name system requests;
- browsing history, such as time spent at a domain, time and date of your visit and number of clicks;
- http headers, application client and server banners; and
- operating system and fingerprinting data.

How Information is Collected

In the course of our business, we may collect *Personal Information* about you from the following sources:

- applications or other forms we receive from you or your authorized representative;
- the correspondence you and others send to us;
- information we receive through the Website;
- information about your transactions with, or services performed by, us, our affiliates or nonaffiliated third parties; and
- information from consumer or other reporting agencies and public records maintained by governmental entities that we obtain directly from those entities, our affiliates or others.

If you visit or use our Website, we may collect *Browsing Information* from you as follows:

- Browser Log Files. Our servers automatically log each visitor to the Website and collect and record certain browsing information about each visitor. The Browsing Information includes generic information and reveals nothing personal about the user.
- Cookies. When you visit our Website, a "cookie" may be sent to your computer. A cookie is a small piece of data that is sent to your Internet browser from a web server and stored on your computer's hard drive. When you visit a website again, the cookie allows the website to recognize your computer. Cookies may store user preferences and other information. You can choose whether or not to accept cookies by changing your Internet browser settings, which may impair or limit some functionality of the Website.

Use of Collected Information

Information collected by FNF is used for three main purposes:

- To provide products and services to you or any affiliate or third party who is obtaining services on your behalf or in connection with a transaction involving you.
- To improve our products and services.
- To communicate with you and to inform you about our, our affiliates' and third parties' products and services, jointly or independently.

When Information Is Disclosed

We may provide your Personal Information (excluding information we receive from consumer or other credit reporting agencies) and Browsing Information to various individuals and companies, as permitted by law, without obtaining your prior authorization. Such laws do not allow consumers to restrict these disclosures. Please see the section "Choices With Your Personal Information" to learn how to limit the discretionary disclosure of your Personal Information and Browsing Information.

Disclosures of your Personal Information may be made to the following categories of affiliates and nonaffiliated third parties:

- to third parties to provide you with services you have requested, and to enable us to detect or prevent criminal activity, fraud, material misrepresentation, or nondisclosure;
- to our affiliate financial service providers for their use to market their products or services to you;
- to nonaffiliated third party service providers who provide or perform services on our behalf and use the disclosed information only in connection with such services;
- to nonaffiliated third party service providers with whom we perform joint marketing, pursuant to an agreement with them to market financial products or services to you;
- to law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoena or court order;
- to lenders, lien holders, judgment creditors, or other parties claiming an interest in title whose claim or interest must be determined, settled, paid, or released prior to closing; and
- other third parties for whom you have given us written authorization to disclose your Personal Information.

We may disclose Personal Information and/or Browsing Information when required by law or in the good-faith belief that such disclosure is necessary to:

- comply with a legal process or applicable laws;
- enforce this Privacy Notice;
- investigate or respond to claims that any material, document, image, graphic, logo, design, audio, video or any other information provided by you violates the rights of a third party; or
- protect the rights, property or personal safety of FNF, its users or the public.

We maintain reasonable safeguards to keep your Personal Information secure. When we provide Personal Information to our affiliates or third party service providers as discussed in this Privacy Notice, we expect that these parties process such information in compliance with our Privacy Notice or in a manner that is in compliance with applicable privacy laws. The use of your information by a business partner may be subject to that party's own Privacy Notice. Unless permitted by law, we do not disclose information we collect from consumer or credit reporting agencies with our affiliates or others without your consent.

We reserve the right to transfer your Personal Information, Browsing Information, and any other information, in connection with the sale or other disposition of all or part of the FNF business and/or assets, or in the event of our bankruptcy, reorganization, insolvency, receivership or an assignment for the benefit of creditors. You expressly agree and consent to the use and/or transfer of the foregoing information in connection with any of the above described proceedings. We cannot and will not be responsible for any breach of security by a third party or for any actions of any third party that receives any of the information that is disclosed to us.

Choices With Your Information

Whether you submit Personal Information or Browsing Information to FNF is entirely up to you. If you decide not to submit Personal Information or Browsing Information, FNF may not be able to provide certain services or products to you. The uses of your Personal Information and/or Browsing Information that, by law, you cannot limit, include:

- for our everyday business purposes – to process your transactions, maintain your account(s), to respond to law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court orders, or report to credit bureaus;
- for our own marketing purposes;
- for joint marketing with financial companies; and
- for our affiliates' everyday business purposes – information about your transactions and experiences.

You may choose to prevent FNF from disclosing or using your Personal Information and/or Browsing Information under the following circumstances ("opt-out"):

- for our affiliates' everyday business purposes – information about your creditworthiness; and
- for our affiliates to market to you.

To the extent permitted above, you may opt-out of disclosure or use of your Personal Information and Browsing Information by notifying us by one of the methods at the end of this Privacy Notice. We do not share your personal information with non-affiliates for their direct marketing purposes.

For California Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties, except as permitted by California law. Currently, our policy is that we do not recognize "do not track" requests from Internet browsers and similar devices.

For Nevada Residents: You may be placed on our internal Do Not Call List by calling (888) 934-3354 or by contacting us via the information set forth at the end of this Privacy Notice. Nevada law requires that we also provide you with the following contact information: Bureau of Consumer Protection, Office of the Nevada Attorney General, 555 E. Washington St., Suite 3900, Las Vegas, NV 89101; Phone number: (702) 486-3132; email: BCPINFO@ag.state.nv.us.

For Oregon Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties for marketing purposes, except after you have been informed by us of such sharing and had an opportunity to indicate that you do not want a disclosure made for marketing purposes.

For Vermont Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties, except as permitted by Vermont law, such as to process your transactions or to maintain your account. In addition, we will not share information about your creditworthiness with our affiliates except with your authorization. For joint marketing in Vermont, we will only disclose your name, contact information and information about your transactions.

Information From Children

The Website is meant for adults and is not intended or designed to attract children under the age of thirteen (13).We do not collect Personal Information from any person that we know to be under the age of thirteen (13) without permission from a parent or guardian. By using the Website, you affirm that you are over the age of 13 and will abide by the terms of this Privacy Notice.

Privacy Outside the Website

The Website may contain links to other websites. FNF is not and cannot be responsible for the privacy practices or the content of any of those other websites.

International Users

FNF's headquarters is located within the United States. If you reside outside the United States or are a citizen of the European Union, please note that we may transfer your Personal Information and/or Browsing Information outside of your country of residence or the European Union for any of the purposes described in this Privacy Notice. By providing FNF with your Personal Information and/or Browsing Information, you consent to our collection and transfer of such information in accordance with this Privacy Notice.

The California Online Privacy Protection Act

For some FNF websites, such as the Customer CareNet ("CCN"), FNF is acting as a third party service provider to a mortgage loan servicer. In those instances, we may collect certain information on behalf of that mortgage loan servicer via the website. The information which we may collect on behalf of the mortgage loan servicer is as follows:

- first and last name;
- property address;
- user name and password;
- loan number;
- social security number - masked upon entry;
- email address;
- three security questions and answers; and
- IP address.

The information you submit through the website is then transferred to your mortgage loan servicer by way of CCN.

The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through this website. For example, if you believe that your payment or user information is incorrect, you must contact your mortgage loan servicer.

CCN does not share consumer information with third parties, other than (1) those with which the mortgage loan servicer has contracted to interface with the CCN application, or (2) law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court orders. All sections of this Privacy Notice apply to your interaction with CCN, except for the sections titled "Choices with Your Information" and "Access and Correction." If you have questions regarding the choices you have with regard to your personal information or how to access or correct your personal information, you should contact your mortgage loan servicer.

Your Consent To This Privacy Notice

By submitting Personal Information and/or Browsing Information to FNF, you consent to the collection and use of the information by us in compliance with this Privacy Notice. Amendments to the Privacy Notice will be posted on the Website. Each time you provide information to us, or we receive information about you, following any amendment of this Privacy Notice will signify your assent to and acceptance of its revised terms for all previously collected information and information collected from you in the future. We may use comments, information or feedback that you submit to us in any manner that we may choose without notice or compensation to you.

Accessing and Correcting Information; Contact Us

If you have questions, would like to access or correct your Personal Information, or want to opt-out of information sharing with our affiliates for their marketing purposes, please send your requests to privacy@fnf.com or by mail or phone to:

Fidelity National Financial, Inc.
601 Riverside Avenue
Jacksonville, Florida 32204
Attn: Chief Privacy Officer
(888) 934-3354

TICOR TITLE™
Company of Oregon

PRELIMINARY REPORT

In response to the application for a policy of title insurance referenced herein Ticor Title Company of Oregon hereby reports that it is prepared to issue, or cause to be issued, as of the specified date, a policy or policies of title insurance describing the land and the estate or interest hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.

The printed Exceptions and Exclusions from the coverage of said policy or policies are set forth in Exhibit One. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Copies of the policy forms should be read. They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby.

The policy(s) of title insurance to be issued hereunder will be policy(s) of Chicago Title Insurance Company, a/an Florida corporation.

Please read the exceptions shown or referred to herein and the Exceptions and Exclusions set forth in Exhibit One of this report carefully. The Exceptions and Exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.

This preliminary report is for the exclusive use of the parties to the contemplated transaction, and the Company does not have any liability to any third parties nor any liability until the full premium is paid and a policy is issued. Until all necessary documents are placed of record, the Company reserves the right to amend or supplement this preliminary report.

Countersigned

TICOR TITLE™
Company of Oregon

1433 SW 6th Avenue, Portland, OR 97201
(503)646-4444 FAX (503)219-9984

PRELIMINARY REPORT

TITLE OFFICER: Tina Turner

ORDER NO.: 471817060917
Supplement 1: Eff date/taxes/city lien

TO: Lawyers Title of Oregon, LLC
Krista Thorne
1915 NW Amberglen Parkway, Suite 155
Beaverton, OR 97006

OWNER/SELLER: Pringle Creek LLC, Sheep Trail, LLC, & Margalou LLC

BUYER/BORROWER: Westwood Homes LLC

PROPERTY ADDRESS: Battlecreek Road, Lot 400, Salem, OR 97303

EFFECTIVE DATE: March 15, 2018, 08:00 AM

1. THE POLICY AND ENDORSEMENTS TO BE ISSUED AND THE RELATED CHARGES ARE:

		AMOUNT		PREMIUM
ALTA Owner's Policy 2006 **Owner's Standard**	$	688,772.00	$	1,634.00
Government Lien Search			$	40.00

2. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

   A Fee

3. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

   Pringle Creek LLC, an Oregon limited liability company, Sheep Trail LLC, an Oregon limited liability company and Margalou LLC, an Oregon limited liability company, all as tenants in common

4. THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE CITY OF SALEM, COUNTY OF MARION, STATE OF OREGON, AND IS DESCRIBED AS FOLLOWS:

   SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

EXHIBIT "A"

Legal Description

Beginning at a point which is 315.48 feet North 89º 49' West and 1,223.41 feet North 22º 30' West and 301.80 feet North 67º 30' East from the Southeast corner of Section 11, in Township 8 South, Range 3 West, of the Willamette Meridian, in the City of Salem, County of Marion and State of Oregon; thence South 14º 34' East, 370.20 feet; thence North 67º 30' East, 429.93 feet to a point on the East line of said section, which point is 1,064.65 feet North 00º 30' East from the Southeast corner of said section; thence North 00º 30' East along said East line 397.79 feet; thence South 67º 30' West, 534.60 feet to the place of beginning.

TOGETHER WITH an easement for road and right-of-way purposes over the following described parcel:

Beginning at a point which is located North 89º 49' West, 315.48 feet and North 22º 30' West, 1,223.41 feet and North 67º 30' East, 30.00 feet from the Southeast corner of Section 11, Township 8 South, Range 3 West, of the Willamette Meridian, in the County of Marion and State of Oregon; thence from said point of beginning continuing North 67º 30' East, 351.80 feet to a point on the Northerly line of a tract of land described in Deed Book 469, Page 411 of Marion County Deed Records; thence North 22º 30' West, 50.00 feet to a point; thence South 67º 30' West, 351.80 feet to a point on the Easterly right-of-way line of Battle Creek Road (Market Road No. 25); thence South 22º 30' East along said Easterly right-of-way line 50.00 feet to the point of beginning.

AS OF THE DATE OF THIS REPORT, ITEMS TO BE CONSIDERED AND EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN THE POLICY FORM WOULD BE AS FOLLOWS:

GENERAL EXCEPTIONS:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests or claims, which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.

3. Easements, or claims of easement, which are not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.

4. Any encroachment (of existing improvements located on the Land onto adjoining land or of existing improvements located on adjoining land onto the subject Land), encumbrance, violation, variation or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the subject Land.

5. Any lien or right to a lien for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the Public Records.

SPECIFIC ITEMS AND EXCEPTIONS:

6. City Liens, if any, in favor of the City of Salem. None found as of March 20, 2018.

7. The Land has been classified as farm, as disclosed by the tax roll. If the Land becomes disqualified, said Land may be subject to additional taxes and/or penalties.

8. Rights of the public to any portion of the Land lying within the limits of streets, roads and highways.

9. Please be advised that our search did not disclose any open Deeds of Trust of record. If you should have knowledge of any outstanding obligation, please contact the Title Department immediately for further review prior to closing.

10. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

    Limited Liability Company: Pringle Creek LLC, Sheep Trail LLC and Margalou LLC

    a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

    b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

    c) If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

    d) If the Limited Liability Company was formed in a foreign jurisdiction, evidence, satisfactory to the Company, that it was validly formed, is in good standing and authorized to do business in the state of origin.

    e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

    The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

11. If requested to issue an extended coverage ALTA loan policy, the following matters must be addressed:

    a) The rights of tenants holding under unrecorded leases or tenancies
    b) Matters disclosed by a statement as to parties in possession and as to any construction, alterations or repairs to the Land within the last 75 days. The Company must be notified in the event that any funds are to be used for construction, alterations or repairs.
    c) Any facts which would be disclosed by an accurate survey of the Land

ADDITIONAL REQUIREMENTS/NOTES:

A. Note: Property taxes for the fiscal year shown below are paid in full.

Fiscal Year:	2017-2018
Amount:	$51.17
Levy Code:	92401000
Account No.:	R32162
Map No.:	083W11D 00400

Prior to close of escrow, please contact the Tax Collector's Office to confirm all amounts owing, including current fiscal year taxes, supplemental taxes, escaped assessments and any delinquencies.

B. In addition to the standard policy exceptions, the exceptions enumerated above shall appear on the final 2006 ALTA Policy unless removed prior to issuance.

C. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

Limited Liability Company: Westwood Homes LLC

a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

c) If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

d) If the Limited Liability Company was formed in a foreign jurisdiction, evidence, satisfactory to the Company, that it was validly formed, is in good standing and authorized to do business in the state of origin.

e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

D. Note: There are no matters against the party(ies) shown below which would appear as exceptions to coverage in a title insurance product:

Parties: Westwood Homes LLC

E. Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.

F. Note: There are NO conveyances affecting said Land recorded within 24 months of the date of this report.

G. Note: No utility search has been made or will be made for water, sewer or storm drainage charges unless the City/Service District claims them as liens (i.e. foreclosable) and reflects them on its lien docket as of the date of closing. Buyers should check with the appropriate city bureau or water service district and obtain a billing cutoff. Such charges must be adjusted outside of escrow.

H. THE FOLLOWING NOTICE IS REQUIRED BY STATE LAW: YOU WILL BE REVIEWING, APPROVING AND SIGNING IMPORTANT DOCUMENTS AT CLOSING. LEGAL CONSEQUENCES FOLLOW FROM THE SELECTION AND USE OF THESE DOCUMENTS. YOU MAY CONSULT AN ATTORNEY ABOUT THESE DOCUMENTS. YOU SHOULD CONSULT AN ATTORNEY IF YOU HAVE QUESTIONS OR CONCERNS ABOUT THE TRANSACTION OR ABOUT THE DOCUMENTS. IF YOU WISH TO REVIEW TRANSACTION DOCUMENTS THAT YOU HAVE NOT SEEN, PLEASE CONTACT THE ESCROW AGENT.

I. Recording Charge (Per Document) is the following:

County	First Page	Each Additional Page
Marion	$46.00	$5.00
Benton	$68.00	$5.00
Polk	$51.00	$5.00
Linn	$65.00	$5.00

Note: When possible the company will record electronically. An additional charge of $5.00 applies to each document that is recorded electronically.

Note: Please send any documents for recording to the following address:
Portland Title Group
Attn: Recorder
1433 SW 6th Ave.
Portland, OR. 97201

J. Note: This map/plat is being furnished as an aid in locating the herein described Land in relation to adjoining streets, natural boundaries and other land. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the Company does not insure dimensions, distances or acreage shown thereon.

EXHIBIT ONE

2006 AMERICAN LAND TITLE ASSOCIATION LOAN POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions or location of any improvement erected on the land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with the applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in the Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

2006 AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions or location of any improvement erected on the land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in the Covered Risk 9 of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

WIRE SAFE™ | Inquire before you wire!

WIRE FRAUD ALERT

This Notice is not intended to provide legal or professional advice. If you have any questions, please consult with a lawyer.

All parties to a real estate transaction are targets for wire fraud and many have lost hundreds of thousands of dollars because they simply relied on the wire instructions received via email, without further verification. **If funds are to be wired in conjunction with this real estate transaction, we strongly recommend verbal verification of wire instructions through a known, trusted phone number prior to sending funds.**

In addition, the following non-exclusive self-protection strategies are recommended to minimize exposure to possible wire fraud.

- **NEVER RELY** on emails purporting to change wire instructions. Parties to a transaction rarely change wire instructions in the course of a transaction.
- **ALWAYS VERIFY** wire instructions, specifically the ABA routing number and account number, by calling the party who sent the instructions to you. DO NOT use the phone number provided in the email containing the instructions, use phone numbers you have called before or can otherwise verify. **Obtain the number of relevant parties to the transaction as soon as an escrow account is opened.** DO NOT send an email to verify as the email address may be incorrect or the email may be intercepted by the fraudster.
- **USE COMPLEX EMAIL PASSWORDS** that employ a combination of mixed case, numbers, and symbols. Make your passwords greater than eight (8) characters. Also, change your password often and do NOT reuse the same password for other online accounts.
- **USE MULTI-FACTOR AUTHENTICATION** for email accounts. Your email provider or IT staff may have specific instructions on how to implement this feature.

For more information on wire-fraud scams or to report an incident, please refer to the following links:

Federal Bureau of Investigation:
http://www.fbi.gov

Internet Crime Complain Center:
http://www.ic3.gov

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FIDELITY NATIONAL FINANCIAL
PRIVACY NOTICE
Effective: May 1, 2015; Last Updated: March 1, 2017

At Fidelity National Financial, Inc., we respect and believe it is important to protect the privacy of consumers and our customers. This Privacy Notice explains how we collect, use, and protect any information that we collect from you, when and to whom we disclose such information, and the choices you have about the use of that information. A summary of the Privacy Notice is below, and we encourage you to review the entirety of the Privacy Notice following this summary. You can opt-out of certain disclosures by following our opt-out procedure set forth at the end of this Privacy Notice.

Types of Information Collected. You may provide us with certain personal information about you, like your contact information, address demographic information, social security number (SSN), driver's license, passport, other government ID numbers and/or financial information. We may also receive browsing information from your Internet browser, computer and/or mobile device if you visit or use our websites or applications.	**How Information is Collected**. We may collect personal information from you via applications, forms, and correspondence we receive from you and others related to our transactions with you. When you visit our websites from your computer or mobile device, we automatically collect and store certain information available to us through your Internet browser or computer equipment to optimize your website experience.
Use of Collected Information. We request and use your personal information to provide products and services to you, to improve our products and services, and to communicate with you about these products and services. We may also share your contact information with our affiliates for marketing purposes.	**When Information Is Disclosed**. We may disclose your information to our affiliates and/or nonaffiliated parties providing services for you or us, to law enforcement agencies or governmental authorities, as required by law, and to parties whose interest in title must be determined.
Choices With Your Information. Your decision to submit information to us is entirely up to you. You can opt-out of certain disclosure or use of your information or choose to not provide any personal information to us.	**Information From Children**. We do not knowingly collect information from children who are under the age of 13, and our website is not intended to attract children.
Privacy Outside the Website. We are not responsible for the privacy practices of third parties, even if our website links to those parties' websites.	**International Users**. By providing us with your information, you consent to its transfer, processing and storage outside of your country of residence, as well as the fact that we will handle such information consistent with this Privacy Notice.
The California Online Privacy Protection Act. Some FNF companies provide services to mortgage loan servicers and, in some cases, their websites collect information on behalf of mortgage loan servicers. The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through those websites.	
Your Consent To This Privacy Notice. By submitting information to us or by using our website, you are accepting and agreeing to the terms of this Privacy Notice.	**Access and Correction; Contact Us**. If you desire to contact us regarding this notice or your information, please contact us at privacy@fnf.com or as directed at the end of this Privacy Notice.

FIDELITY NATIONAL FINANCIAL
PRIVACY NOTICE
Effective: May 1, 2015; Last Updated: March 1, 2017

Fidelity National Financial, Inc. and its majority-owned subsidiary companies providing title insurance, real estate- and loan-related services (collectively, "FNF", "our" or "we") respect and are committed to protecting your privacy. We will take reasonable steps to ensure that your Personal Information and Browsing Information will only be used in compliance with this Privacy Notice and applicable laws. This Privacy Notice is only in effect for Personal Information and Browsing Information collected and/or owned by or on behalf of FNF, including Personal Information and Browsing Information collected through any FNF website, online service or application (collectively, the "Website").

Types of Information Collected

We may collect two types of information from you: Personal Information and Browsing Information.

Personal Information. FNF may collect the following categories of Personal Information:

- contact information (*e.g.*, name, address, phone number, email address);
- demographic information (*e.g.*, date of birth, gender, marital status);
- social security number (SSN), driver's license, passport, and other government ID numbers;
- financial account information; and
- other personal information needed from you to provide title insurance, real estate- and loan-related services to you.

Browsing Information. FNF may collect the following categories of Browsing Information:

- Internet Protocol (or IP) address or device ID/UDID, protocol and sequence information;
- browser language and type;
- domain name system requests;
- browsing history, such as time spent at a domain, time and date of your visit and number of clicks;
- http headers, application client and server banners; and
- operating system and fingerprinting data.

How Information is Collected

In the course of our business, we may collect *Personal Information* about you from the following sources:

- applications or other forms we receive from you or your authorized representative;
- the correspondence you and others send to us;
- information we receive through the Website;
- information about your transactions with, or services performed by, us, our affiliates or nonaffiliated third parties; and
- information from consumer or other reporting agencies and public records maintained by governmental entities that we obtain directly from those entities, our affiliates or others.

If you visit or use our Website, we may collect *Browsing Information* from you as follows:

- Browser Log Files. Our servers automatically log each visitor to the Website and collect and record certain browsing information about each visitor. The Browsing Information includes generic information and reveals nothing personal about the user.
- Cookies. When you visit our Website, a "cookie" may be sent to your computer. A cookie is a small piece of data that is sent to your Internet browser from a web server and stored on your computer's hard drive. When you visit a website again, the cookie allows the website to recognize your computer. Cookies may store user preferences and other information. You can choose whether or not to accept cookies by changing your Internet browser settings, which may impair or limit some functionality of the Website.

Use of Collected Information

Information collected by FNF is used for three main purposes:

- To provide products and services to you or any affiliate or third party who is obtaining services on your behalf or in connection with a transaction involving you.
- To improve our products and services.
- To communicate with you and to inform you about our, our affiliates' and third parties' products and services, jointly or independently.

When Information Is Disclosed

We may provide your Personal Information (excluding information we receive from consumer or other credit reporting agencies) and Browsing Information to various individuals and companies, as permitted by law, without obtaining your prior authorization. Such laws do not allow consumers to restrict these disclosures. Please see the section "Choices With Your Personal Information" to learn how to limit the discretionary disclosure of your Personal Information and Browsing Information.

Disclosures of your Personal Information may be made to the following categories of affiliates and nonaffiliated third parties:

- to third parties to provide you with services you have requested, and to enable us to detect or prevent criminal activity, fraud, material misrepresentation, or nondisclosure;
- to our affiliate financial service providers for their use to market their products or services to you;
- to nonaffiliated third party service providers who provide or perform services on our behalf and use the disclosed information only in connection with such services;
- to nonaffiliated third party service providers with whom we perform joint marketing, pursuant to an agreement with them to market financial products or services to you;
- to law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoena or court order;
- to lenders, lien holders, judgment creditors, or other parties claiming an interest in title whose claim or interest must be determined, settled, paid, or released prior to closing; and
- other third parties for whom you have given us written authorization to disclose your Personal Information.

We may disclose Personal Information and/or Browsing Information when required by law or in the good-faith belief that such disclosure is necessary to:

- comply with a legal process or applicable laws;
- enforce this Privacy Notice;
- investigate or respond to claims that any material, document, image, graphic, logo, design, audio, video or any other information provided by you violates the rights of a third party; or
- protect the rights, property or personal safety of FNF, its users or the public.

We maintain reasonable safeguards to keep your Personal Information secure. When we provide Personal Information to our affiliates or third party service providers as discussed in this Privacy Notice, we expect that these parties process such information in compliance with our Privacy Notice or in a manner that is in compliance with applicable privacy laws. The use of your information by a business partner may be subject to that party's own Privacy Notice. Unless permitted by law, we do not disclose information we collect from consumer or credit reporting agencies with our affiliates or others without your consent.

We reserve the right to transfer your Personal Information, Browsing Information, and any other information, in connection with the sale or other disposition of all or part of the FNF business and/or assets, or in the event of our bankruptcy, reorganization, insolvency, receivership or an assignment for the benefit of creditors. You expressly agree and consent to the use and/or transfer of the foregoing information in connection with any of the above described proceedings. We cannot and will not be responsible for any breach of security by a third party or for any actions of any third party that receives any of the information that is disclosed to us.

Choices With Your Information

Whether you submit Personal Information or Browsing Information to FNF is entirely up to you. If you decide not to submit Personal Information or Browsing Information, FNF may not be able to provide certain services or products to you. The uses of your Personal Information and/or Browsing Information that, by law, you cannot limit, include:

- for our everyday business purposes – to process your transactions, maintain your account(s), to respond to law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court orders, or report to credit bureaus;
- for our own marketing purposes;
- for joint marketing with financial companies; and
- for our affiliates' everyday business purposes – information about your transactions and experiences.

You may choose to prevent FNF from disclosing or using your Personal Information and/or Browsing Information under the following circumstances ("opt-out"):

- for our affiliates' everyday business purposes – information about your creditworthiness; and
- for our affiliates to market to you.

To the extent permitted above, you may opt-out of disclosure or use of your Personal Information and Browsing Information by notifying us by one of the methods at the end of this Privacy Notice. We do not share your personal information with non-affiliates for their direct marketing purposes.

For California Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties, except as permitted by California law. Currently, our policy is that we do not recognize "do not track" requests from Internet browsers and similar devices.

For Nevada Residents: You may be placed on our internal Do Not Call List by calling (888) 934-3354 or by contacting us via the information set forth at the end of this Privacy Notice. Nevada law requires that we also provide you with the following contact information: Bureau of Consumer Protection, Office of the Nevada Attorney General, 555 E. Washington St., Suite 3900, Las Vegas, NV 89101; Phone number: (702) 486-3132; email: BCPINFO@ag.state.nv.us.

For Oregon Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties for marketing purposes, except after you have been informed by us of such sharing and had an opportunity to indicate that you do not want a disclosure made for marketing purposes.

For Vermont Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties, except as permitted by Vermont law, such as to process your transactions or to maintain your account. In addition, we will not share information about your creditworthiness with our affiliates except with your authorization. For joint marketing in Vermont, we will only disclose your name, contact information and information about your transactions.

Information From Children

The Website is meant for adults and is not intended or designed to attract children under the age of thirteen (13).We do not collect Personal Information from any person that we know to be under the age of thirteen (13) without permission from a parent or guardian. By using the Website, you affirm that you are over the age of 13 and will abide by the terms of this Privacy Notice.

Privacy Outside the Website

The Website may contain links to other websites. FNF is not and cannot be responsible for the privacy practices or the content of any of those other websites.

International Users

FNF's headquarters is located within the United States. If you reside outside the United States or are a citizen of the European Union, please note that we may transfer your Personal Information and/or Browsing Information outside of your country of residence or the European Union for any of the purposes described in this Privacy Notice. By providing FNF with your Personal Information and/or Browsing Information, you consent to our collection and transfer of such information in accordance with this Privacy Notice.

The California Online Privacy Protection Act

For some FNF websites, such as the Customer CareNet ("CCN"), FNF is acting as a third party service provider to a mortgage loan servicer. In those instances, we may collect certain information on behalf of that mortgage loan servicer via the website. The information which we may collect on behalf of the mortgage loan servicer is as follows:

- first and last name;
- property address;
- user name and password;
- loan number;
- social security number - masked upon entry;
- email address;
- three security questions and answers; and
- IP address.

The information you submit through the website is then transferred to your mortgage loan servicer by way of CCN.

The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through this website. For example, if you believe that your payment or user information is incorrect, you must contact your mortgage loan servicer.

CCN does not share consumer information with third parties, other than (1) those with which the mortgage loan servicer has contracted to interface with the CCN application, or (2) law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court orders. All sections of this Privacy Notice apply to your interaction with CCN, except for the sections titled "Choices with Your Information" and "Access and Correction." If you have questions regarding the choices you have with regard to your personal information or how to access or correct your personal information, you should contact your mortgage loan servicer.

Your Consent To This Privacy Notice

By submitting Personal Information and/or Browsing Information to FNF, you consent to the collection and use of the information by us in compliance with this Privacy Notice. Amendments to the Privacy Notice will be posted on the Website. Each time you provide information to us, or we receive information about you, following any amendment of this Privacy Notice will signify your assent to and acceptance of its revised terms for all previously collected information and information collected from you in the future. We may use comments, information or feedback that you submit to us in any manner that we may choose without notice or compensation to you.

Accessing and Correcting Information; Contact Us

If you have questions, would like to access or correct your Personal Information, or want to opt-out of information sharing with our affiliates for their marketing purposes, please send your requests to privacy@fnf.com or by mail or phone to:

Fidelity National Financial, Inc.
601 Riverside Avenue
Jacksonville, Florida 32204
Attn: Chief Privacy Officer
(888) 934-3354

TICOR TITLE™
Company of Oregon

PRELIMINARY REPORT

In response to the application for a policy of title insurance referenced herein Ticor Title Company of Oregon hereby reports that it is prepared to issue, or cause to be issued, as of the specified date, a policy or policies of title insurance describing the land and the estate or interest hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.

The printed Exceptions and Exclusions from the coverage of said policy or policies are set forth in Exhibit One. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Copies of the policy forms should be read. They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby.

The policy(s) of title insurance to be issued hereunder will be policy(s) of Chicago Title Insurance Company, a/an Florida corporation.

Please read the exceptions shown or referred to herein and the Exceptions and Exclusions set forth in Exhibit One of this report carefully. The Exceptions and Exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.

This preliminary report is for the exclusive use of the parties to the contemplated transaction, and the Company does not have any liability to any third parties nor any liability until the full premium is paid and a policy is issued. Until all necessary documents are placed of record, the Company reserves the right to amend or supplement this preliminary report.

Countersigned

TICOR TITLE™
Company of Oregon

1433 SW 6th Avenue, Portland, OR 97201
(503)646-4444 FAX (503)219-9984

PRELIMINARY REPORT

TITLE OFFICER: Tina Turner

ORDER NO.: 471817060909
Supplement 1: Eff date/taxes/city lien

TO: Lawyers Title of Oregon, LLC
Krista Thorne
1915 NW Amberglen Parkway, Suite 155
Beaverton, OR 97006

OWNER/SELLER: Battle Creek LLC

BUYER/BORROWER: Westwood Homes LLC

PROPERTY ADDRESS: Lot 1600/ O Strong Road, Salem, OR 97303

EFFECTIVE DATE: March 15, 2018, 08:00 AM

1. THE POLICY AND ENDORSEMENTS TO BE ISSUED AND THE RELATED CHARGES ARE:

	AMOUNT	PREMIUM
ALTA Owner's Policy 2006 **Owner's Standard**	$ 2,979,067.00	$ 5,070.00
Government Lien Search		$ 40.00

2. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

   A Fee

3. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

   Battle Creek LLC, an Oregon Manager-Manager Limited Liability Company

4. THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE CITY OF SALEM, COUNTY OF MARION, STATE OF OREGON, AND IS DESCRIBED AS FOLLOWS:

   SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

EXHIBIT "A"

Legal Description

Beginning at the Quarter corner of Sections 11 and 12, Township 8 South, Range 3 West of the Willamette Meridian, in the City of Salem, Marion County, Oregon; thence North 89°30'08" East 340.87 feet; thence North 89°45'32" East 325.36 feet; thence North 00°25'43" West 391.40 feet; thence North 85°22'14" East 465.02 feet to the West right of way of Market Road 56 (Strong Road); thence along the West right of way of Market Road 56 (Strong Road), the following courses: North 63°05'45" West 61.91 feet; North 15°54'49" East 69.83 feet; North 11°04'59" West 247.08 feet; thence South 89°15'44" West 1049.02 feet; thence South 00°25'53" East 362.47 feet; thence South 89°35'40" West 299.22 feet; thence South 00°25'53" East 395.00 feet; thence North 89°35'40" East 299.22 feet to the Point of Beginning.

AS OF THE DATE OF THIS REPORT, ITEMS TO BE CONSIDERED AND EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN THE POLICY FORM WOULD BE AS FOLLOWS:

GENERAL EXCEPTIONS:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests or claims, which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.

3. Easements, or claims of easement, which are not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.

4. Any encroachment (of existing improvements located on the Land onto adjoining land or of existing improvements located on adjoining land onto the subject Land), encumbrance, violation, variation or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the subject Land.

5. Any lien or right to a lien for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the Public Records.

SPECIFIC ITEMS AND EXCEPTIONS:

6. The Land has been classified as farm, as disclosed by the tax roll. If the Land becomes disqualified, said Land may be subject to additional taxes and/or penalties.

7. City Liens, if any, in favor of the City of Salem. None found as of March 20, 2018.

8. Rights of the public to any portion of the Land lying within the limits of streets, roads and highways.

9. City of Salem Public Works Department Temporary Service Agreement

   Recording Date: March 20, 1998
   Recording No.: Reel 1472, Page 46

10. Easement(s) for the purpose(s) shown below and rights incidental thereto as reserved in a document;

    Reserved by: Robert W. Nunn, Trustee under the Evelyn M. Coburn Living Trust, dated March 15, 1995
    Purpose: ingress and egress
    Recording Date: May 29, 2002
    Recording No: Reel 1950, Page 326
    Affects: Exact location not disclosed

11. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: Drager LLC, an Oregon Manager-Managed Limited Liability Company
    Purpose: ingress and egress
    Recording Date: May 29, 2002
    Recording No: Reel 1950, Page 328
    Affects: Exact location not disclosed

12. Reservation, exception or other severance of minerals, together with the implied or express appurtenant rights to use the surface of the land for the development or extraction of such minerals, contained in or disclosed by instrument,

    In favor of: The State of Oregon, acting by and through the Oregon Youth Authority
    Reservation of: Reference is hereby made to said document for full particulars
    Recording Date: February 4, 2011
    Recording No.: Reel 3257, Page 222

    The Company makes no representation as to the present ownership of this interest or its encumbrances.

13. Please be advised that our search did not disclose any open Deeds of Trust of record. If you should have knowledge of any outstanding obligation, please contact the Title Department immediately for further review prior to closing.

14. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

    Limited Liability Company: Battle Creek LLC

    a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

    b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

    c) If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

    d) If the Limited Liability Company was formed in a foreign jurisdiction, evidence, satisfactory to the Company, that it was validly formed, is in good standing and authorized to do business in the state of origin.

    e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

    The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

15. If requested to issue an extended coverage ALTA loan policy, the following matters must be addressed:

    a) The rights of tenants holding under unrecorded leases or tenancies
    b) Matters disclosed by a statement as to parties in possession and as to any construction, alterations or repairs to the Land within the last 75 days. The Company must be notified in the event that any funds are to be used for construction, alterations or repairs.
    c) Any facts which would be disclosed by an accurate survey of the Land

ADDITIONAL REQUIREMENTS/NOTES:

A. Note: Property taxes for the fiscal year shown below are paid in full.

Fiscal Year:	2017-2018
Amount:	$234.71
Levy Code:	92401000
Account No.:	R32212
Map No.:	083W12B 01600

Prior to close of escrow, please contact the Tax Collector's Office to confirm all amounts owing, including current fiscal year taxes, supplemental taxes, escaped assessments and any delinquencies.

B. In addition to the standard policy exceptions, the exceptions enumerated above shall appear on the final 2006 ALTA Policy unless removed prior to issuance.

C. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

Limited Liability Company: Westwood Homes LLC

a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

c) If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

d) If the Limited Liability Company was formed in a foreign jurisdiction, evidence, satisfactory to the Company, that it was validly formed, is in good standing and authorized to do business in the state of origin.

e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

D. Note: There are no matters against the party(ies) shown below which would appear as exceptions to coverage in a title insurance product:

Parties: Westwood Homes LLC

E. Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.

F. Note: There are NO conveyances affecting said Land recorded within 24 months of the date of this report.

G. Note: No utility search has been made or will be made for water, sewer or storm drainage charges unless the City/Service District claims them as liens (i.e. foreclosable) and reflects them on its lien docket as of the date of closing. Buyers should check with the appropriate city bureau or water service district and obtain a billing cutoff. Such charges must be adjusted outside of escrow.

H. THE FOLLOWING NOTICE IS REQUIRED BY STATE LAW: YOU WILL BE REVIEWING, APPROVING AND SIGNING IMPORTANT DOCUMENTS AT CLOSING. LEGAL CONSEQUENCES FOLLOW FROM THE SELECTION AND USE OF THESE DOCUMENTS. YOU MAY CONSULT AN ATTORNEY ABOUT THESE DOCUMENTS. YOU SHOULD CONSULT AN ATTORNEY IF YOU HAVE QUESTIONS OR CONCERNS ABOUT THE TRANSACTION OR ABOUT THE DOCUMENTS. IF YOU WISH TO REVIEW TRANSACTION DOCUMENTS THAT YOU HAVE NOT SEEN, PLEASE CONTACT THE ESCROW AGENT.

I. Recording Charge (Per Document) is the following:

County	First Page	Each Additional Page
Marion	$46.00	$5.00
Benton	$68.00	$5.00
Polk	$51.00	$5.00
Linn	$65.00	$5.00

Note: When possible the company will record electronically. An additional charge of $5.00 applies to each document that is recorded electronically.

Note: Please send any documents for recording to the following address:
Portland Title Group
Attn: Recorder
1433 SW 6th Ave.
Portland, OR. 97201

J. Note: This map/plat is being furnished as an aid in locating the herein described Land in relation to adjoining streets, natural boundaries and other land. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the Company does not insure dimensions, distances or acreage shown thereon.

EXHIBIT ONE

2006 AMERICAN LAND TITLE ASSOCIATION LOAN POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions or location of any improvement erected on the land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with the applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in the Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

2006 AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions or location of any improvement erected on the land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in the Covered Risk 9 of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

WIRE SAFE™ | Inquire before you wire!

WIRE FRAUD ALERT

This Notice is not intended to provide legal or professional advice. If you have any questions, please consult with a lawyer.

All parties to a real estate transaction are targets for wire fraud and many have lost hundreds of thousands of dollars because they simply relied on the wire instructions received via email, without further verification. **If funds are to be wired in conjunction with this real estate transaction, we strongly recommend verbal verification of wire instructions through a known, trusted phone number prior to sending funds.**

In addition, the following non-exclusive self-protection strategies are recommended to minimize exposure to possible wire fraud.

- **NEVER RELY** on emails purporting to change wire instructions. Parties to a transaction rarely change wire instructions in the course of a transaction.
- **ALWAYS VERIFY** wire instructions, specifically the ABA routing number and account number, by calling the party who sent the instructions to you. DO NOT use the phone number provided in the email containing the instructions, use phone numbers you have called before or can otherwise verify. **Obtain the number of relevant parties to the transaction as soon as an escrow account is opened.** DO NOT send an email to verify as the email address may be incorrect or the email may be intercepted by the fraudster.
- **USE COMPLEX EMAIL PASSWORDS** that employ a combination of mixed case, numbers, and symbols. Make your passwords greater than eight (8) characters. Also, change your password often and do NOT reuse the same password for other online accounts.
- **USE MULTI-FACTOR AUTHENTICATION** for email accounts. Your email provider or IT staff may have specific instructions on how to implement this feature.

For more information on wire-fraud scams or to report an incident, please refer to the following links:

Federal Bureau of Investigation:
http://www.fbi.gov

Internet Crime Complain Center:
http://www.ic3.gov

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FIDELITY NATIONAL FINANCIAL
PRIVACY NOTICE
Effective: May 1, 2015; Last Updated: March 1, 2017

At Fidelity National Financial, Inc., we respect and believe it is important to protect the privacy of consumers and our customers. This Privacy Notice explains how we collect, use, and protect any information that we collect from you, when and to whom we disclose such information, and the choices you have about the use of that information. A summary of the Privacy Notice is below, and we encourage you to review the entirety of the Privacy Notice following this summary. You can opt-out of certain disclosures by following our opt-out procedure set forth at the end of this Privacy Notice.

Types of Information Collected. You may provide us with certain personal information about you, like your contact information, address demographic information, social security number (SSN), driver's license, passport, other government ID numbers and/or financial information. We may also receive browsing information from your Internet browser, computer and/or mobile device if you visit or use our websites or applications.	**How Information is Collected**. We may collect personal information from you via applications, forms, and correspondence we receive from you and others related to our transactions with you. When you visit our websites from your computer or mobile device, we automatically collect and store certain information available to us through your Internet browser or computer equipment to optimize your website experience.
Use of Collected Information. We request and use your personal information to provide products and services to you, to improve our products and services, and to communicate with you about these products and services. We may also share your contact information with our affiliates for marketing purposes.	**When Information Is Disclosed**. We may disclose your information to our affiliates and/or nonaffiliated parties providing services for you or us, to law enforcement agencies or governmental authorities, as required by law, and to parties whose interest in title must be determined.
Choices With Your Information. Your decision to submit information to us is entirely up to you. You can opt-out of certain disclosure or use of your information or choose to not provide any personal information to us.	**Information From Children**. We do not knowingly collect information from children who are under the age of 13, and our website is not intended to attract children.
Privacy Outside the Website. We are not responsible for the privacy practices of third parties, even if our website links to those parties' websites.	**International Users**. By providing us with your information, you consent to its transfer, processing and storage outside of your country of residence, as well as the fact that we will handle such information consistent with this Privacy Notice.
The California Online Privacy Protection Act. Some FNF companies provide services to mortgage loan servicers and, in some cases, their websites collect information on behalf of mortgage loan servicers. The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through those websites.	
Your Consent To This Privacy Notice. By submitting information to us or by using our website, you are accepting and agreeing to the terms of this Privacy Notice.	**Access and Correction; Contact Us**. If you desire to contact us regarding this notice or your information, please contact us at privacy@fnf.com or as directed at the end of this Privacy Notice.

FIDELITY NATIONAL FINANCIAL
PRIVACY NOTICE
Effective: May 1, 2015; Last Updated: March 1, 2017

Fidelity National Financial, Inc. and its majority-owned subsidiary companies providing title insurance, real estate- and loan-related services (collectively, "FNF", "our" or "we") respect and are committed to protecting your privacy. We will take reasonable steps to ensure that your Personal Information and Browsing Information will only be used in compliance with this Privacy Notice and applicable laws. This Privacy Notice is only in effect for Personal Information and Browsing Information collected and/or owned by or on behalf of FNF, including Personal Information and Browsing Information collected through any FNF website, online service or application (collectively, the "Website").

Types of Information Collected

We may collect two types of information from you: Personal Information and Browsing Information.

Personal Information. FNF may collect the following categories of Personal Information:

- contact information (*e.g.*, name, address, phone number, email address);
- demographic information (*e.g.*, date of birth, gender, marital status);
- social security number (SSN), driver's license, passport, and other government ID numbers;
- financial account information; and
- other personal information needed from you to provide title insurance, real estate- and loan-related services to you.

Browsing Information. FNF may collect the following categories of Browsing Information:

- Internet Protocol (or IP) address or device ID/UDID, protocol and sequence information;
- browser language and type;
- domain name system requests;
- browsing history, such as time spent at a domain, time and date of your visit and number of clicks;
- http headers, application client and server banners; and
- operating system and fingerprinting data.

How Information is Collected

In the course of our business, we may collect *Personal Information* about you from the following sources:

- applications or other forms we receive from you or your authorized representative;
- the correspondence you and others send to us;
- information we receive through the Website;
- information about your transactions with, or services performed by, us, our affiliates or nonaffiliated third parties; and
- information from consumer or other reporting agencies and public records maintained by governmental entities that we obtain directly from those entities, our affiliates or others.

If you visit or use our Website, we may collect *Browsing Information* from you as follows:

- Browser Log Files. Our servers automatically log each visitor to the Website and collect and record certain browsing information about each visitor. The Browsing Information includes generic information and reveals nothing personal about the user.
- Cookies. When you visit our Website, a "cookie" may be sent to your computer. A cookie is a small piece of data that is sent to your Internet browser from a web server and stored on your computer's hard drive. When you visit a website again, the cookie allows the website to recognize your computer. Cookies may store user preferences and other information. You can choose whether or not to accept cookies by changing your Internet browser settings, which may impair or limit some functionality of the Website.

Use of Collected Information

Information collected by FNF is used for three main purposes:

- To provide products and services to you or any affiliate or third party who is obtaining services on your behalf or in connection with a transaction involving you.
- To improve our products and services.
- To communicate with you and to inform you about our, our affiliates' and third parties' products and services, jointly or independently.

When Information Is Disclosed

We may provide your Personal Information (excluding information we receive from consumer or other credit reporting agencies) and Browsing Information to various individuals and companies, as permitted by law, without obtaining your prior authorization. Such laws do not allow consumers to restrict these disclosures. Please see the section "Choices With Your Personal Information" to learn how to limit the discretionary disclosure of your Personal Information and Browsing Information.

Disclosures of your Personal Information may be made to the following categories of affiliates and nonaffiliated third parties:

- to third parties to provide you with services you have requested, and to enable us to detect or prevent criminal activity, fraud, material misrepresentation, or nondisclosure;
- to our affiliate financial service providers for their use to market their products or services to you;
- to nonaffiliated third party service providers who provide or perform services on our behalf and use the disclosed information only in connection with such services;
- to nonaffiliated third party service providers with whom we perform joint marketing, pursuant to an agreement with them to market financial products or services to you;
- to law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoena or court order;
- to lenders, lien holders, judgment creditors, or other parties claiming an interest in title whose claim or interest must be determined, settled, paid, or released prior to closing; and
- other third parties for whom you have given us written authorization to disclose your Personal Information.

We may disclose Personal Information and/or Browsing Information when required by law or in the good-faith belief that such disclosure is necessary to:

- comply with a legal process or applicable laws;
- enforce this Privacy Notice;
- investigate or respond to claims that any material, document, image, graphic, logo, design, audio, video or any other information provided by you violates the rights of a third party; or
- protect the rights, property or personal safety of FNF, its users or the public.

We maintain reasonable safeguards to keep your Personal Information secure. When we provide Personal Information to our affiliates or third party service providers as discussed in this Privacy Notice, we expect that these parties process such information in compliance with our Privacy Notice or in a manner that is in compliance with applicable privacy laws. The use of your information by a business partner may be subject to that party's own Privacy Notice. Unless permitted by law, we do not disclose information we collect from consumer or credit reporting agencies with our affiliates or others without your consent.

We reserve the right to transfer your Personal Information, Browsing Information, and any other information, in connection with the sale or other disposition of all or part of the FNF business and/or assets, or in the event of our bankruptcy, reorganization, insolvency, receivership or an assignment for the benefit of creditors. You expressly agree and consent to the use and/or transfer of the foregoing information in connection with any of the above described proceedings. We cannot and will not be responsible for any breach of security by a third party or for any actions of any third party that receives any of the information that is disclosed to us.

Choices With Your Information

Whether you submit Personal Information or Browsing Information to FNF is entirely up to you. If you decide not to submit Personal Information or Browsing Information, FNF may not be able to provide certain services or products to you. The uses of your Personal Information and/or Browsing Information that, by law, you cannot limit, include:

- for our everyday business purposes – to process your transactions, maintain your account(s), to respond to law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court orders, or report to credit bureaus;
- for our own marketing purposes;
- for joint marketing with financial companies; and
- for our affiliates' everyday business purposes – information about your transactions and experiences.

You may choose to prevent FNF from disclosing or using your Personal Information and/or Browsing Information under the following circumstances ("opt-out"):

- for our affiliates' everyday business purposes – information about your creditworthiness; and
- for our affiliates to market to you.

To the extent permitted above, you may opt-out of disclosure or use of your Personal Information and Browsing Information by notifying us by one of the methods at the end of this Privacy Notice. We do not share your personal information with non-affiliates for their direct marketing purposes.

For California Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties, except as permitted by California law. Currently, our policy is that we do not recognize "do not track" requests from Internet browsers and similar devices.

For Nevada Residents: You may be placed on our internal Do Not Call List by calling (888) 934-3354 or by contacting us via the information set forth at the end of this Privacy Notice. Nevada law requires that we also provide you with the following contact information: Bureau of Consumer Protection, Office of the Nevada Attorney General, 555 E. Washington St., Suite 3900, Las Vegas, NV 89101; Phone number: (702) 486-3132; email: BCPINFO@ag.state.nv.us.

For Oregon Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties for marketing purposes, except after you have been informed by us of such sharing and had an opportunity to indicate that you do not want a disclosure made for marketing purposes.

For Vermont Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties, except as permitted by Vermont law, such as to process your transactions or to maintain your account. In addition, we will not share information about your creditworthiness with our affiliates except with your authorization. For joint marketing in Vermont, we will only disclose your name, contact information and information about your transactions.

Information From Children

The Website is meant for adults and is not intended or designed to attract children under the age of thirteen (13).We do not collect Personal Information from any person that we know to be under the age of thirteen (13) without permission from a parent or guardian. By using the Website, you affirm that you are over the age of 13 and will abide by the terms of this Privacy Notice.

Privacy Outside the Website

The Website may contain links to other websites. FNF is not and cannot be responsible for the privacy practices or the content of any of those other websites.

International Users

FNF's headquarters is located within the United States. If you reside outside the United States or are a citizen of the European Union, please note that we may transfer your Personal Information and/or Browsing Information outside of your country of residence or the European Union for any of the purposes described in this Privacy Notice. By providing FNF with your Personal Information and/or Browsing Information, you consent to our collection and transfer of such information in accordance with this Privacy Notice.

The California Online Privacy Protection Act

For some FNF websites, such as the Customer CareNet ("CCN"), FNF is acting as a third party service provider to a mortgage loan servicer. In those instances, we may collect certain information on behalf of that mortgage loan servicer via the website. The information which we may collect on behalf of the mortgage loan servicer is as follows:

- first and last name;
- property address;
- user name and password;
- loan number;
- social security number - masked upon entry;
- email address;
- three security questions and answers; and
- IP address.

The information you submit through the website is then transferred to your mortgage loan servicer by way of CCN.

The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through this website. For example, if you believe that your payment or user information is incorrect, you must contact your mortgage loan servicer.

CCN does not share consumer information with third parties, other than (1) those with which the mortgage loan servicer has contracted to interface with the CCN application, or (2) law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court orders. All sections of this Privacy Notice apply to your interaction with CCN, except for the sections titled "Choices with Your Information" and "Access and Correction." If you have questions regarding the choices you have with regard to your personal information or how to access or correct your personal information, you should contact your mortgage loan servicer.

Your Consent To This Privacy Notice

By submitting Personal Information and/or Browsing Information to FNF, you consent to the collection and use of the information by us in compliance with this Privacy Notice. Amendments to the Privacy Notice will be posted on the Website. Each time you provide information to us, or we receive information about you, following any amendment of this Privacy Notice will signify your assent to and acceptance of its revised terms for all previously collected information and information collected from you in the future. We may use comments, information or feedback that you submit to us in any manner that we may choose without notice or compensation to you.

Accessing and Correcting Information; Contact Us

If you have questions, would like to access or correct your Personal Information, or want to opt-out of information sharing with our affiliates for their marketing purposes, please send your requests to privacy@fnf.com or by mail or phone to:

Fidelity National Financial, Inc.
601 Riverside Avenue
Jacksonville, Florida 32204
Attn: Chief Privacy Officer
(888) 934-3354

CLASS-1 ADJUSTMENT

The applicant is requesting a Class-1 Adjustment to Section 511.010 (Development Standards) Table 511-2, Lot Standards.

The adjustment is to allow Lot 27 to have a lot depth of about 59 feet where 70 feet is required.

Adjustment Criteria-SRC 250.005(d)(1) Criteria

(1) An application for a Class 1 adjustment shall be granted if all of the following criteria are met:

(A) The purpose underlying the specific development standard proposed for adjustment is:

(i) Clearly inapplicable to the proposed development; or

(ii) Clearly satisfied by the proposed development.

(B) The proposed adjustment will not unreasonably impact surrounding existing or potential uses or development.

Applicant Findings:

(A) The purpose of lot depth is to provide adequate room for a single-family dwelling and required setbacks. This helps provide a buffer between buildings. The applicant is requesting a 16% adjustment to the lot depth requirement for Lot 90. As shown on the site plan, Lot 27 has a lot depth of 59' where 70' is required. Lot 27 has a greater than 70-foot lot depth, however, the lot is odd in shape, therefore, the average lot depth is about 59', has shown on the site plans.

Lot 27 is 10,658 square feet in size. There is an adequate building envelope for this lot. All setbacks will meet or exceed the requirements, providing buffering from adjacent structures.

Therefore, the intent of the lot depth is equally meet by the proposed reduced lot depth.

(B) Adequate setbacks can be provided on Lot 27. The additional length of the odd shaped lot will provide additional landscaped area for Lot 27. Therefore, the decrease in lot depth will have no effect on the surrounding uses.

CLASS-1 ADJUSTMENT

The applicant is requesting a Class-1 Adjustment to Section 511.010 (Development Standards) Table 511-2, Lot Standards.

Lot 81, Lots 95-99 and Lots 107-109 do not meet the minimum 120-foot lot depth requirement for double frontage lots, therefore, and adjustment to this standard has been requested.

Adjustment Criteria-SRC 250.005(d)(1) Criteria

(1) An application for a Class 1 adjustment shall be granted if all of the following criteria are met:

(A) The purpose underlying the specific development standard proposed for adjustment is:
(i) Clearly inapplicable to the proposed development; or

(ii) Clearly satisfied by the proposed development.

(B) The proposed adjustment will not unreasonably impact surrounding existing or potential uses or development.

Applicant Findings:

(A) The purpose of lot depth is to provide adequate room for a single-family dwelling and required setbacks. The applicant is requesting an adjustment to the lot depth requirement for double frontage lots, like Lot 81, Lots 95-99 and Lots 107-109.

As shown on the site plan, Lot 81, Lots 95-99 and Lots 107-109 have lot depths of about 111 to 118 feet. In order to provide setbacks and adequate distance from right-of-way, lot depth of 120 is required. However, the applicant is asking for a 2 to 9-foot reduction in that lot depth. The lot depths provided for the lots will still meet the purpose of the code by allowing for an adequate building envelope and setbacks. Therefore, there will be an adequate building envelope and setbacks for this lots. All setbacks will meet or exceed the requirements.

Therefore, the intent of the lot depth is equally meet by the proposed reduced lot depth.

(B) Adequate setbacks can be provided on these lots, because these lots have a great lot depth that other lots within the subdivision don't have. The length of the lots will still provide adequate setbacks and landscaped area. Therefore, the adjustment to lot depth will have no effect on the surrounding uses.

Coburn Estatest Subdivision

Adjustment Class-2 Application
Table 511-2 (Lot Standards)
April 20, 2021

Proposal:

Lots 34-53, Lots 55-62, Lots 75-77, and Lot 27 do not meet the lot to depth ratio, therefore, and adjustment to this standard has been requested.

Lots 34-53, Lots 55-62, Lots 75-77 are located within the RM2 zone. The minimum lot width required for townhome lots in the RM2 zone is 20 feet with a minimum lot depth of 70 feet. Table 514-2 only allows a maximum lot depth of 300% of average lot width.

Lot 27 are located within the RA zone. The minimum lot width required for lots in the RA zone is 40 feet with a minimum lot depth of 70 feet. Table 510-2 and 511-2 only allows a maximum lot depth of 300% of average lot width.

The applicant is requesting an adjustment to the lot width to lot depth maximum.

Adjustment Criteria-SRC 250.005(d)(2) Criteria

(A) The purpose underlying the specific development standard proposed for adjustment is:

(i) Clearly inapplicable to the proposed development; or
(ii) Equally or better met by the proposed development.

(B) If located within a residential zone, the proposed development will not detract from the livability or appearance of the residential area.

(C) If more than one adjustment has been requested, the cumulative effect of all the adjustments result in a project which is still consistent with the overall purpose of the zone.

Applicant's Reasons:

(A) The applicant is requesting a zoning adjustment to Tables 514-2, 510-2 and 511-2. The minimum lot width required for lots in the RA/RS zone is 40 feet with a minimum lot depth of 70 feet. The minimum lot width for townhome lots within the RM2 zone is 20 feet with a minimum lot depth of 70 feet. Tables 514-2, 510-2 and 511-2 only allows a maximum lot depth of 300% of average lot width.

The applicant is requesting an adjustment to the lot width to lot depth maximum. In order to provide street connections and circulation, the size and layout of the lots had to be taken into consideration. Due to the location of the lots and street connections, the long and narrow lot were created.

The purpose of this requirement is to avoid creating long narrow lots. As stated above, in order to provide for future development of the lot and street connection, the layout of the lots had to be taken into consideration.

The longer lots does not affect the rest of the subdivision or the proposed lots. The longer lot actually provides for larger setbacks and buffers. The longer lots will also allow for adequate development. Therefore, the proposed adjustment equally or better meets the standard.

(B) The subject property is zoned RM2 and RA and is located in a residential area. The RA and RM2 zones allow for this property to be subdivided.

The subject property is located on the northeast intersection of Kuebler Boulevard SE and Battle Creek Road.

The surrounding properties are zoned and used as follows:

North: PH (Public Health); vacant land and existing single-family dwellings
East: RA (Residential Agriculture); vacant land and existing single-family dwellings
South: RA (Residential Agriculture); vacant land and existing single-family dwellings
West: Across Reed Road, FMU (Fairview Mixed-Use); vacant land and existing single-2

The proposal will have little to no impact on the surrounding neighborhood. The purpose of this requirement is to avoid creating long narrow lots. As stated above, in order to provide street connections and circulation and an adequate subdivision layout, the size and layout of the lots had to be taken not consideration. Due to the location of the lots, topography and required street extensions, creating shorter lot depth is not feasible.

The longer lot does not affect the rest of the subdivision or the proposed lots. In order to meet the lot to depth ratio other lays would be affected and street connections would not be feasible.

Therefore, in order to meet lot requirements for other lots within the subdivision and provide all required street connection, longer lots were created. Therefore, by providing a layout that meets code and circulation requirements, this proposal will not detract from the livability or appearance of the residential area.

Any conditions placed on the subdivision will require Code compliance, which will help ensure minimal to no impacts on the neighborhood.

(C) The proposed adjustment will not affect surrounding existing or proposed development. The applicant is requesting more than one adjustment.

CLASS-2 ADJUSTMENT

The applicant is requesting an adjustment to SRC 803.035(c):

> ***(c) Alignment and Grade. All streets shall be designed with a vertical alignment that conforms to the Public Works Design Standards. No grade of parkway, major arterial, or minor arterial shall exceed 6 percent. No grade of a collector street shall exceed 8 percent. No grade of a local street shall exceed 12 percent.***

There are several local streets proposed within the subdivision that exceed the 12% maximum street grade. The applicant is requesting an adjustment to allow these internal local streets to be developed with a street grade over 12%, up to 15%.

Adjustment Criteria-SRC 250.005(d)(2) Criteria

(A) The purpose underlying the specific development standard proposed for adjustment is:

(i) Clearly inapplicable to the proposed development; or

(ii) Equally or better met by the proposed development.

(B) If located within a residential zone, the proposed development will not detract from the livability or appearance of the residential area.

(C) If more than one adjustment has been requested, the cumulative effect of all the adjustments result in a project which is still consistent with the overall purpose of the zone.

Applicant Findings:

(A) The applicant is requesting an adjustment to street grades. As shown on Sheet 1 of 1, Slope Exception Areas Plan, sections of A Avenue, C Avenue, I Avenue, H Street, M Street, J Avenue, N Street, O Street, and P Avenue within the subdivision will have sections of the roadway with up to a 15% street grade. Due to the topography of the site and the proposed street alignment with existing streets, several streets will exceed the 12% street grade allowed. The areas proposed for slopes in excess of 12% are denoted on the plans and will not exceed a single run length of 200 feet.

The intent of the maximum street grade is to allow vehicles to climb and descend the street safely in all conditions. The internal streets proposed will provide safe and efficient circulation throughout the project. The intent is to construct the streets to provide safe and efficient conditions.

The maximum length of any one section of the 15% grade is 200 feet or less, with sections of flatter slopes between the steep sections. This limits distances, limits the ability of any vehicle to have a speed "run-up" occur while traveling down the roadway.

The increased street grade facilitates access to the lots and property along its route such that quicker exits from the street into driveways can be achieved with reduced cuts and fills into the lots and driveways.

We believe that the intent of the standard is being met; therefore, the proposal equally meets the intent of the maximum street grade standard.

(B) Due to topography and existing streets in this area, the proposed streets are typical to that in any other development in configuration. The use of a steeper roadway will reduce the need for excessive cut or fill slope. This has a positive impact to the surrounding areas. The street will be designed to Public Works standards and will provide efficient access to the lots and property adjacent to its route, therefore, the greater street grade will not distract from the livability or appearance of the residential area.

(C) The applicant is requesting more than one adjustment. The cumulative effect of all the adjustments result in a project which is still consistent with the overall purpose of the zone. Therefore, this criteria is not applicable.

Subdivision

April 20, 2021

PROPOSAL:

The applicant currently has approval through the SUB-ADJ19-08 & UGA17-03MOD1 approval.

Proposed:

The subject property is about 32.55 acres in size and zoned RA (Residential Single Agriculture) and RM2 (Multi-Family Residential). The applicant is proposing to divide the subject property into 177 residential lots (within 4 Phases/Sections).

Section A: 82 Lots (Lots 34-75 are designed for townhomes)
Section B: 24 Lots
Section C: 37 Lots
Section D: 34 Lots

The applicant is also requesting alternative street standards as outlined in the narrative and on the site plans. Along with an adjustment request to street grade, an adjustment to lot depth, an adjustment to double lot depth, and an adjustment to lot to depth ratio.

SITE VICINITY and CHARACTERISTICS:

The subject property is located on the northeast intersection of Kuebler Boulevard SE and Battle Creek Road. The subject property is identified as 083W11D/Tax Lots 100, 200, 400, and 601; 083W12B/Tax Lot 1600. The subject property is located within the City limits and the Urban Growth Boundary. UGA 17-03MOD1 was issued on November 21, 2019 for the subject property.

The surrounding properties are zoned and used as follows:

North: PH (Public Health); vacant land and existing single-family dwellings
East: RA (Residential Agriculture); vacant land and existing single-family dwellings
South: RA (Residential Agriculture); vacant land and existing single-family dwellings
West: Across Reed Road, FMU (Fairview Mixed-Use); vacant land and existing single-family dwellings

COMPLIANCE WITH THE SALEM AREA COMPREHENSIVE PLAN (SACP):

Citizen involvement is provided via the City of Salem notification process necessary for the subdivision application which allows public comment. The City's Plan is acknowledged to be in compliance with State Land Use Goals. The public notification process is implemented by the Planning Administrator with written notification to property owners. The published notice will identify the applicable criteria. Through the notification process all interested parties are afforded the opportunity to review the application, comment on the proposal and participate in the decision.

In addition, the SACP and its implementing ordinances are adopted by the City through the public hearing process of the City Council ordinance procedure. The subject property is within the city limits and is within the urbanized area. The proposal does not affect the size or location of the city limits or urban growth boundary.

The Statewide Planning Goals are implemented by the adopted goals and policies of the SACP and its implementing ordinances and facility plans. The proposal accommodates the Statewide Goals by being located within an adopted Urban Growth Boundary.

The SACP Residential Development Goal requires the promotion of …. "*. . . a variety of housing opportunities for all income levels and the adequate supply of developable land to support such housing."* The SACP is implemented by the zone and subdivision codes under the provisions of SRC Chapter 510 and 205. The proposal is for a single family development.

The proposal meets SACP General Development Polices 7, 10, 12 and 13 which encourage structures and their sitting in all residential developments to optimize the use of land. The proposed subdivision optimizes the land by providing 177 lots on 32.55 acres. The proposed subdivision is in compliance with the code.

The development is sited and designed to minimize the adverse alteration of the natural terrain, the potential for erosion and adverse effects upon the existing topography and soil conditions. The proposal encourages natural open living spaces by providing larger than average lots. The proposed single-family lots have an average lot size of 5,545 square feet.

The property is within the Urban Growth Boundary and the Urban Services Area; however, UGA17-03MOD1 was issued on November 21, 2019. Thus, meeting the SACP Growth Management Goal.

All internal streets are shown on the site plan. The proposed internal streets will all be built to public street standards to be consistent with the existing surrounding street system. Therefore, meeting SACP Transportation Policy 19.

CRITERIA AND APPLICANT'S REASONS ADDRESSING UDC 205.010(d)(1):

The intent of the subdivision code is providing for orderly development through the application of appropriate rules and regulations. Pursuant to the application of the current enabling statutes, these regulations are those cited in UDC 205.010(d) and UDC 205.015(d). The decision criteria for subdivisions without a concurrent variance under UDC 205.010(d) and UDC 205.015(d) must be found to exist before an affirmative decision may be made for a subdivision application.

(1) The tentative subdivision plan complies with the standards of this Chapter and with all applicable provisions of the UDC, including, but not limited to, the following:

The Salem Revised Code (SRC), which includes the Salem Zoning Code, implements the Salem Area Comprehensive Plan land use goals, and governs development of property within the city limits. The subdivision process reviews development for compliance with city standards and requirements contained in the Subdivision Code, Zoning Code, Salem TSP and the Water, Sewer and Storm Drain System Master Plans, and adopted design documents applicable to residential development. The proposed meets all applicable provisions of the Salem Revised Code.

(A) Lot standards, including, but not limited to, standards for lot area, lot width and depth, lot frontage and designation of front and rear lot lines.

Proposed Lots 34 through 75 are zoned RM2 and will be developed with attached townhomes. The RM2 site is 2.71 acres in size and requires a minimum density of 33 units. The proposal is for 34 townhome units. The lots within the RM2 meet lot area and density requirements.

Lots 34-53, Lots 55-62, Lots 75-77, and Lot 27 do not meet the lot to depth ratio, therefore, and adjustment to this standard has been requested.

The adjustment is to allow Lot 27 to have a lot depth of about 59 feet where 70 feet is required, therefore, and adjustment to this standard has been requested.

Lot 81, Lots 95-99 and Lots 107-109 do not meet the minimum 120-foot lot depth requirement for double frontage lots, therefore, and adjustment to this standard has been requested.

Minimum Lot Area and Dimensions: As shown on the site plan, all the RA zoned lots meet lot size (4,000 square feet) and lot dimension (40’ by 70’) standards as required under UDC Chapters 510 and 511. The proposed lots range in size from 4,470 square feet to 17,940 square feet in size.

There are 3 flag lots within the proposed subdivision, Lots 11, 105, and 106.

Lot 27 on the site plan is odd in shape, however, it can be built with adequate setbacks and an adequate building envelope of about 1,700 square feet. This will allow the development of a smaller home, while maintaining adequate setbacks.

Additional reviews occur at the time of building permits to assure compliance with the zoning code. Compliance with conditions of approval to satisfy the subdivision ordinance is also checked prior to city staff signing the final subdivision plat.

The proposal can conform to applicable conditions imposed as necessary to ensure that development conforms to the standards of the subdivision code and with existing development and public facilities. Expect for those lots mentioned above, the proposed subdivision is in compliance with lot standard requirements and required access. Therefore, this criteria has been met.

(B) City infrastructure standards.

Water, sewer, storm drainage plans will be submitted to the Public Works Department for final plat and construction plan approval at the final plat stage. The tentative site plan illustrates the location of the public utility lines. The proposal meets applicable Salem Area Comprehensive Plan Residential Policies for properties within the Urban Growth Boundary. The proposal encourages the efficient use of developable residential land. Public facilities and services are or will be available to serve the site, including services such as water, sanitary and storm sewer and fire/life/safety services. Therefore, this criteria has been met.

(C) Any special development standards, including, but not limited to, floodplain development, special setbacks, geological or geotechnical analysis, and vision clearance.

There are no wetlands or floodplains located on the subject property.

A geological assessment dated July 20, 2018, was provided, and approved as part of the original approval. The assessment outlined the nature, distribution of underlying geology, and the physical and chemical properties of existing soils; an opinion as to stability of the site, and conclusions regarding the effect of geologic conditions on the proposed development as required. See attached geological assessment.

This criteria has been met.

(2) The tentative subdivision plan does not impede the future use or development of the property or adjacent land.

The proposal is for the entire subject property and will be developed into 171 lots. The southern portion of the property is no longer a part of the subdivision per PLA20-24 approval. As shown on the site plan. A shadow plan for the southern portion of the site has been provided in order to show how development will connect to the proposed subdivision within compliance with Code.

All surrounding properties have direct access onto the existing street system. All 177 lots will have direct access onto the existing street system as well. The subdivision does not impede the future use of the property or adjacent land. Therefore, access to adjacent properties is not necessary.

A Homeowners Association will not be established for the subdivision as one is not needed.

(3) Development within the tentative subdivision plan can be adequately served by City infrastructure.

Water, sewer, storm drainage plans will be submitted to the Public Works Department for final plat and construction plan approval at the final plat stage. The tentative site plan illustrates the location of the public utility lines. The proposal meets applicable Salem Area Comprehensive Plan Residential Policies for properties within the Urban Growth Boundary. The proposal encourages the efficient use of developable residential land. Public facilities and services are or will be available to serve the site, including services such as water, sanitary and storm sewer and fire/life/safety services.

Water, sewer, storm drainage plans will be submitted to the Public Works Department for final plat and construction plan approval at the final plat stage. The tentative site plan illustrates the location of the public utility lines. Sewer/storm/water has been provided to all lots as required by UGA17-03MOD1.

In conclusion, the location and design of the proposed subdivision allows for public sanitary sewer, water service, and storm drainage to be conveniently provided. Therefore, this criterion has been satisfied.

Proposed StormWater Management System:

Stormwater quality and quantity are required for this development. An LID (low impact development) Stormwater technique will be used to mitigate the increase in pollutants contributed from development. This system may also be used to provide storage and water quantity control. The exact system will be determined at the time of design. Any proposed technique will meet City of Salem Stormwater Management standards in means and methods to provide all aspects of Stormwater management.

A Preliminary Stormwater Drainage report dated April 9, 2021, has been provided as part of this submittal.

(4) The street system in and adjacent to the tentative subdivision plan conforms to the Salem Transportation System Plan.

The major street system is in place due to prior development. Reed Road located to the

west and Battle Creek Road located to the south of the site will provide access into the development. Both Reed Road and Battle Creek Road are designated as a 'minor arterial' on the Salem Transportation System Plan.

The existing and proposed street systems conform to the City's Transportation Plan. All street design and improvements will be determined through the subdivision review process, and regulated through the Conditions of Approval. The proposed internal streets will be designed to street standards.

The major street network in the area has been established and is consistent with the Transportation System Plan which implements the Comprehensive Plan. Public Works Department will address any applicable requirements for right-of-way conveyance that might be required because of this subdivision.

A Traffic Impact Analysis (TIA) dated June 20, 2018 and a Traffic Memo dated July 27, 2018, were approved as part of the original approval and have been provided as part of this application package.

The applicant is requesting alternative street standards for the proposed internal streets, to 50-feet in width where 60-feet is required. The site topography and shape create a physical constraint that makes it very difficult to comply with the standard right of way width of 60 feet.

The existing street system and proposed street improvements will be in compliance with the STSP. All lots are in compliance with the UDC/SRC.

The layout of the lots and internal streets take into account the topography and vegetation of the site, such that the least disruption of the site, topography, and vegetation will result from the reasonable development of the site.

The subdivision code requires City approval of lots be suitable for the general purpose for which they are likely to be developed. No lots can be of such a size or configuration that is detrimental to public health, safety, or welfare or sanitary needs of users of the parcel or lot.

The applicant is also requesting an adjustment and alternative street standard to street grade. As shown on the street section provided, J Avenue, K Street, and M Street will have a street grade over 12%. Due to the topography of the site and the proposed street alignments with existing streets, along with required stub street connections, these proposed streets within the subdivision exceed the street grade allowed.

The intent of the maximum street grade is to allow vehicles to climb and descend the street safely in all conditions. The internal streets proposed will provide safe and efficient circulation throughout the subdivision. As shown on the street sections

provided, there is only curtain sections of each street that will exceed the allowed street grade. All streets within the proposed subdivision will be designed to provide safe and efficient conditions.

There are several access points provided throughout the proposed subdivision which provide alternative access options.

The intent of the standard is being met; therefore, the proposal equally meets the intent of the maximum street grade standard.

The major street network in the area has been established and is consistent with the Transportation System Plan which implements the Comprehensive Plan. Public Works Department will address any applicable requirements for right-of-way conveyance that might be required because of this subdivision.

Therefore, the existing street system and proposed street improvements will be in compliance with the STSP.

The subdivision plan takes into consideration the topography and vegetation of the site. The alternative street standards allow lots of sufficient size and dimensions for future development. The lot dimensions are illustrated on the tentative site plan and are in conformance to the minimum standards in UDC 510 and 511.

Transportation Planning Rule Review:

The City of Salem's TPR encourages a reduction in automobile trips by capitalizing on transit opportunities and by creating an environment that encourages people to walk. The proposed subdivision is a "limited land use decision" pursuant to Oregon Revised Statute (ORS) 197.015, and has therefore been reviewed for consistency with the State's TPR multi-modal connectivity requirements.

In conclusion, the development will provide bicycle and pedestrian facilities on-site to encourage people to walk and reduce vehicle trips. The development on the property will allow residents to reduce vehicle usage, by the convenience of bicycle and pedestrian paths to and from the uses and existing sidewalk system. Therefore, the proposed subdivision is in compliance with the intent of the TPR to reduce vehicle usage and encourage other modes of transportation to and from the site.

(5) The street system in and adjacent to the tentative subdivision plan is designed so as to provide for the safe, orderly, and efficient circulation of traffic into, through, and out of the subdivision.

The subject property is located in a developed and developing area where improved streets and sidewalks exist and continue with new development. The local street system

serving the development provides the necessary connections and access to the local streets and circulation system serving this residential neighborhood.

Block Length: Blocks shall be a maximum of 600 feet between street centerlines. The length of the blocks was taken into consideration at the time of design layout. There are more than enough street connections within the proposed development, therefore, block lengths are in compliance with the code.

The proposed subdivision provides vehicle and pedestrian connections throughout the development. By providing these connections, the intent of providing a maximum block length and connectivity have been met. Adding additional streets to break of block length would only create unsafe circulation. As shown on the site plan, the proposed subdivision provides a safe an efficient circulation pattern throughout the development for vehicles and pedestrians. Therefore, additional streets are not necessary.

Access to, within, and from the development must be consistent with applicable requirements of the Transportation Planning Rule Requirements (TPR) that requires that development provide connectivity between land uses and transportation. Under the Rule, developments are responsible for providing for the safe and efficient circulation of vehicles, bicycles, and pedestrians into, through, and out of a development. The proposal develops the subject property within an established residential area where local and arterial streets and mass transit facilities exist. These facilities connect the transportation system to the surrounding residential neighborhoods.

The Public Works Department will address the level of street improvements that are roughly proportional to assure conformance to the development to subdivision code and applicable transportation system plan requirements. Completion of conditions of approval prior to the signing of the final plat will satisfy this criterion for the subdivision application.

Street Grade: There are several local streets proposed within the subdivision that exceed the 12% maximum street grade. The applicant is requesting an adjustment and alternative street standards to allow these internal local streets to be developed with a street grade over 12%, up to 15%.

In conclusion, the proposed street plan provides the best economic, safe, and efficient circulation of traffic possible under the circumstances. The proposed subdivision demonstrates this review criterion can be met. Therefore, this criterion has been satisfied.

(6) The tentative subdivision plan provides safe and convenient bicycle and pedestrian access from within the subdivision to adjacent residential areas and transit stops, and to neighborhood activity centers within one-half mile of the development. For purposes of this criterion, neighborhood activity centers include, but are not limited to, existing or planned schools, parks, shopping areas, transit stops, or employment centers.

The subdivision is served with adequate transportation infrastructure and the street system adjacent the property conforms to the Transportation System Plan and provides for safe, orderly, and efficient circulation of traffic into, through, and out of the subject property on to the public street system.

Therefore, via paved streets and sidewalks, safe and convenient bicycle and pedestrian access will be provided to the site and to adjacent neighborhoods. Therefore, this criteria has been met.

(7) The tentative subdivision plan mitigates impacts to the transportation system consistent with the approved Traffic Impact Analysis, where applicable.

The proposal is for a 177-lot subdivision. A Traffic Impact Analysis (TIA) dated June 20, 2018 and a Traffic Memo dated July 27, 2018, was approved with the original approval and have been provided as part of this application package. The proposed subdivision plan mitigates impacts to transportation system by providing adequate access and circulation for all 177-lots. Therefore, this criterion has been met.

(8) The tentative subdivision plan takes into account the topography and vegetation of the site so the need for variances is minimized to the greatest extent practicable.

All lots are in compliance with the UDC/SRC. Therefore, no variances have been requested.

(9) The tentative subdivision plan takes into account the topography and vegetation of the site, such that the least disruption of the site, topography, and vegetation will result from the reasonable development of the lots.

The subdivision code requires City approval of lots be suitable for the general purpose for which they are likely to be developed. No lots can be of such a size or configuration that is detrimental to public health, safety, or welfare or sanitary needs of users of the parcel or lot.

The subdivision plan takes into consideration the topography and vegetation of the site. The proposed lots are of sufficient size and dimensions to permit future development. The lot dimensions are illustrated on the tentative site plan and are in conformance to the minimum standards in UDC 510 and 511. Final conformance to minimum lot size

and buildable lot area will be confirmed when the final plat is submitted to the City for review and approval.

There are 192 trees located within the boundary of the site. One-hundred and thirty (130) trees are designated for removal. The applicant is preserving 32% of the tree on the site. Trees designated for removal are within the right-of-way, the building envelop or within an area close to the building envelope, which have the potential of being damaged during grading and construction. Therefore, the removal of these 130 trees is necessary for development of the site.

There are eleven (11) Oregon White Oaks 24" in diameter or greater located throughout the site. The applicant is removing six (6) of these significant trees.

J Avenue-Oak 24"	Remove
Strong Road-Oak 32"	Remove
A Avenue-Oak 60"	Remove
A Avenue-Oak 28"	Remove
A Avenue-Oak 24"	Remove
Lot 124-Oak 30"	Remove

All Oregon White Oaks designated for removal are within the right-of-way, the building envelops or within an area close to the building envelope, which have the potential of being damaged during grading and construction.

The layout of the lots takes into consideration the topography and vegetation of the site. All lots are in compliance with the UDC. Therefore, no variances have been requested. Therefore, this criteria has been met.

10) When the tentative subdivision plan requires an Urban Growth Preliminary Declaration under SRC Chapter 200, the tentative subdivision plan is designed in a manner that ensures that the conditions requiring the construction of on-site infrastructure in the Urban Growth Preliminary Declaration will occur, and, if off-site improvements are required in the Urban Growth Preliminary Declaration, construction of any off-site improvements is assured.

The property and development is located inside the Urban Service Area (USA). However, an Urban Growth Preliminary Declaration (UGA17-03MOD1) was issued on November 21, 2019. All conditions of UGA17-03 have been or will be met with the approval of this subdivision proposal. Therefore, this criterion has been met.

TREE CONSERVATION/REMOVAL PLAN

There are 192 trees located within the boundary of the site. One-hundred and thirty (130) trees are designated for removal. The applicant is preserving 32% of the tree on the site. Trees designated for removal are within the right-of-way, the building envelop or within an area close to the building envelope, which have the potential of being damaged during grading and construction. Therefore, the removal of these 130 trees is necessary for development of the site.

There are eleven (11) Oregon White Oaks 24" in diameter or greater located throughout the site. The applicant is removing six (6) of these significant trees.

J Avenue-Oak 24"	Remove
Strong Road-Oak 32"	Remove
A Avenue-Oak 60"	Remove
A Avenue-Oak 28"	Remove
A Avenue-Oak 24"	Remove
Lot 124-Oak 30"	Remove

PHASED SUBDIVSION 205-015(D)

Criteria. A tentative phased subdivision plan shall be approved if all of the following criteria are met:

(1) The tentative phased subdivision plan meets all of the criteria for tentative subdivision plan approval set forth in SRC 205.010(d).

Applicant Findings: The subject property is about 32.55 acres in size and zoned RA (Residential Single Agriculture) and RM2 (Multi-Family Residential). The applicant is proposing to divide the subject property into 177 residential lots (within 4 Phases/Sections).

Section A: 82 Lots (Lots 34-75 are designed for townhomes)
Section B: 24 Lots
Section C: 37 Lots
Section D: 34 Lots

The proposed phased subdivision meets all the criteria for a tentative subdivision as outlined above under SRC 205.010(d).

(2) Connectivity for streets and City utilities between each phase ensures the orderly and efficient construction of required public improvements among all phases.

Applicant Findings: The major street system is in place due to prior and new

development. Reed Road located to the west and Battle Creek Road located to the south of the site will provide access into the development. Both Reed Road and Battle Creek Road are designated as a 'minor arterial' on the Salem Transportation System Plan.

The existing and proposed street systems conform to the City's Transportation Plan. All street design and improvements will be determined through the subdivision review process, and regulated through the Conditions of Approval. The proposed internal streets will be designed to street standards.

The major street network in the area has been established and is consistent with the Transportation System Plan which implements the Comprehensive Plan. Public Works Department will address any applicable requirements for right-of-way conveyance that might be required because of this subdivision.

The proposed phased subdivision will not impede the future development of other phases as shown on the site plan. All phases will have access to the internal street system and the existing street system.

Each phase will ensure the orderly and efficient construction of the required improvements as required by Conditions of Approval and Code compliance.

Therefore, this criteria has been met.

(3) Each phase is substantially and functionally self-contained and self-sustaining with regard to required public improvements.

Applicant Findings: Each phase is required to provide the needed improvements to accommodate that phase. Due to the required conditions of approval and City standards all four (4) Phases/Sections will be functionally self-contained and self-sustaining as shown on the site plans.

The subject property is about 32.55 acres in size and zoned RA (Residential Single Agriculture) and RM2 (Multi-Family Residential). The applicant is proposing to divide the subject property into 177 single family residential lots (within 4 Phases/Sections).

(4) Each phase is designed in such a manner that all phases support the infrastructure requirements for the phased subdivision as a whole.

Applicant Findings: The applicant will be required to comply with conditions of approval that will be designed to ensure that the phases are developed to support the infrastructure requirements for each phase and the subdivision as a whole. See attached site plans.

COBURN GRAND VIEW ESTATES

T. 8 S., R. 3 W., Willamette Meridian
Sec. 11D Tax Lots 100, 200, 400 & 601 - Sec. 12B Tax Lot 1600
City Of Salem, Marion County, Oregon

Owner / Developer:

WESTWOOD HOMES LLC

12700 NW CORNELL RD.
PORTLAND, OREGON 97229

TOTAL PARCEL SIZE:
DEVELOPABLE AREA — 32.545 Ac.
NUMBER OF UNITS — 177
DENSITY — 5.439 UNITS/Ac.
LARGEST LOT — 17,940 S.F.
SMALLEST LOT — 1,635 S.F.
AVERAGE — 5,545 S.F.

SECTION A:
DEVELOPABLE AREA — 13.492 Ac.
NUMBER OF UNITS — 82
DENSITY — 6.078 UNITS/Ac.
LARGEST LOT — 10,658 S.F.
SMALLEST LOT — 1,635 S.F.
AVERAGE — 4,682 S.F.

SECTION B:
DEVELOPABLE AREA — 6.068 Ac.
NUMBER OF UNITS — 24
DENSITY — 3.96 UNITS/Ac.
LARGEST LOT — 17,940 S.F.
SMALLEST LOT — 5,941 S.F.
AVERAGE — 5,941 S.F.

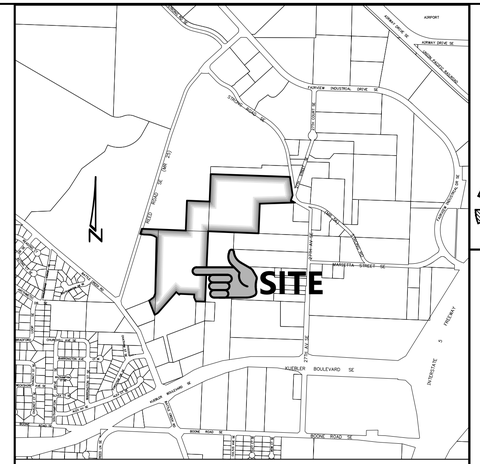
SECTION C:
DEVELOPABLE AREA — 6.828 Ac.
NUMBER OF UNITS — 37
DENSITY — 5.419 UNITS/Ac.
LARGEST LOT — 8,579 S.F.
SMALLEST LOT — 4,001 S.F.
AVERAGE — 5,548 S.F.

SECTION D:
DEVELOPABLE AREA — 6.155 Ac.
NUMBER OF UNITS — 34
DENSITY — 5.52 UNITS/Ac.
LARGEST LOT — 8,353 S.F.
SMALLEST LOT — 4,470 S.F.
AVERAGE — 5,480 S.F.

TOWNHOUSES:
DEVELOPABLE AREA — 2.711 AC.
NUMBER OF UNITS — 34
DENSITY — 12.54 UNITS/AC.
LARGEST LOT — 16,388 S.F.
SMALLEST LOT — 1,635 S.F.
AVERAGE — 3,031 S.F.

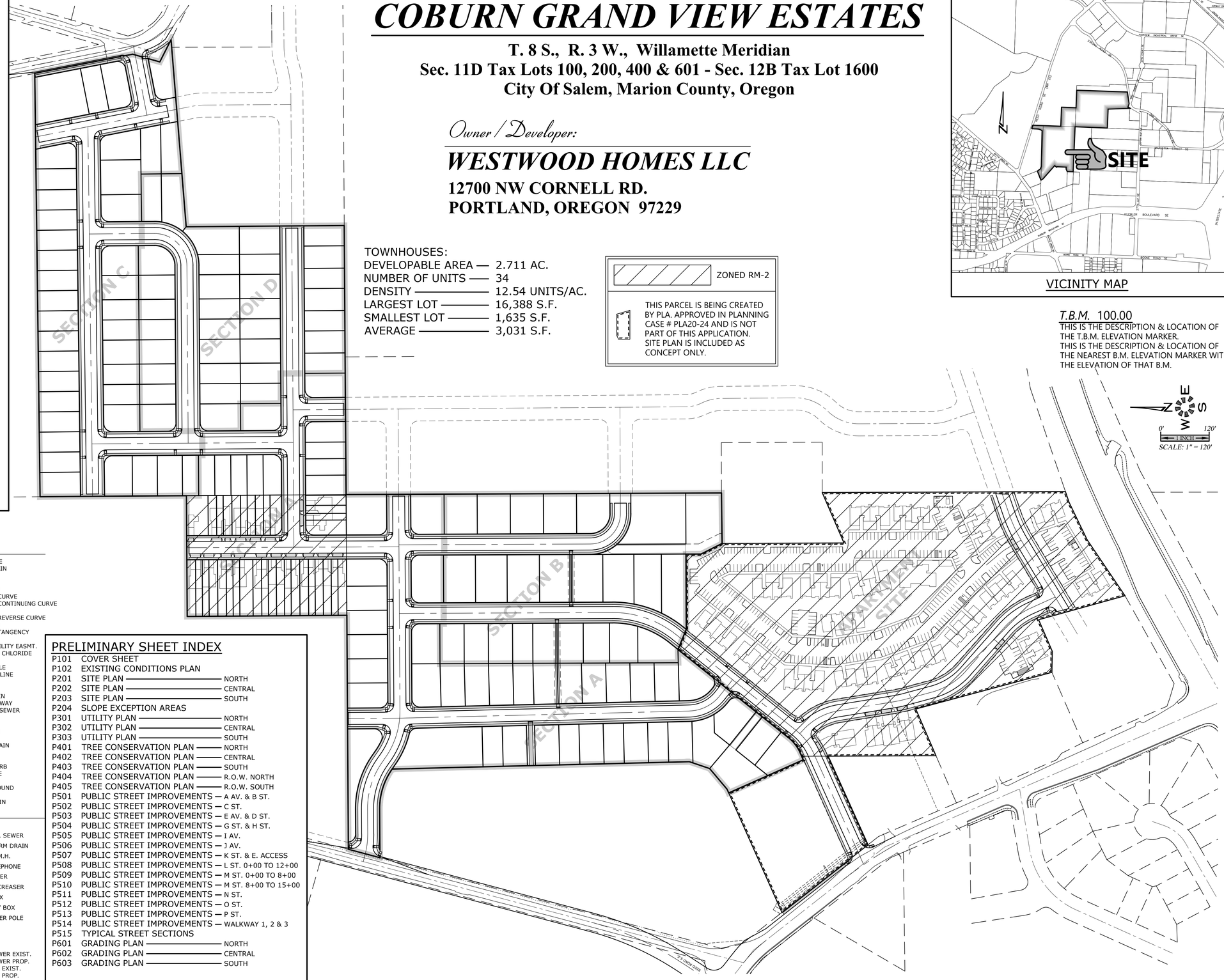
ZONED RM-2

THIS PARCEL IS BEING CREATED BY PLA. APPROVED IN PLANNING CASE # PLA20-24 AND IS NOT PART OF THIS APPLICATION. SITE PLAN IS INCLUDED AS CONCEPT ONLY.



VICINITY MAP

T.B.M. 100.00
THIS IS THE DESCRIPTION & LOCATION OF THE T.B.M. ELEVATION MARKER.
THIS IS THE DESCRIPTION & LOCATION OF THE NEAREST B.M. ELEVATION MARKER WITH THE ELEVATION OF THAT B.M.



ABBREVIATIONS

A.C.	ASPHALTIC CONCRETE	L.P.	LIGHT POLE
ACMP	ALUMINIZED CMP	M	METER, MAIN
ASSY.	ASSEMBLY	M.H.	MANHOLE
B.O.	BLOW OFF	MTL.	METAL
B.F.V.	BUTTERFLY VALVE	O.H.	OVERHEAD
C & G	CURB & GUTTER	PC	POINT OF CURVE
CATV	CABLE TELEVISION	PCC	POINT OF CONTINUING CURVE
C.B.	CATCH BASIN	PED.	PEDESTAL
C.B.C.O.	CATCH BASIN CLEANOUT	PRC	POINT OF REVERSE CURVE
C.B.I.	CATCH BASIN INLET	PROP.	PROPOSED
C.L.	CENTERLINE	PT	POINT OF TANGENCY
CMP	CORRUGATED METAL PIPE	PUB.	PUBLIC
C.O.	CLEANOUT	PUE	PUBLIC UTILITY EASMT.
CONC.	CONCRETE	PVC	POLYVINYL CHLORIDE
CONST.	CONSTRUCT	PVT.	PRIVATE
D.I.	DUCTILE IRON	P.P.	POWER POLE
DIA.	DIAMETER	P.L.	PROPERTY LINE
DWG	DRAWING	R	RADIUS
EASMT.	EASEMENT	R-	RIM
E.G.	EXIST. GRADE / GROUND	RD	ROOF DRAIN
EOP, E.P.	EDGE OF PAVEMENT	R.O.W.	RIGHT-OF-WAY
ELEC.	ELECTRIC	SAN.S. or S.S.	SANITARY SEWER
ELEV. or EL.	ELEVATION	S	SLOPE
EX. or EXIST.	EXISTING	STA.	STATION
FT.	FEET	STD.	STANDARD
F.F.	FINISH FLOOR	STL.	STEEL
F.G.	FINISH GRADE	STM.DRN. or S.D.	STORM DRAIN
F.H.	FIRE HYDRANT	SVC.	SERVICE
F.M.	FORCE MAIN	SW	SIDEWALK
GUT. or GTR.	GUTTER	T.C.	TOP OF CURB
G.V.	GATE VALVE	TEL.	TELEPHONE
IMP.	IMPROVEMENT	TYP.	TYPICAL
INST.	INSERT	U.G.	UNDERGROUND
INV. or I-	INVERT	VLT.	VAULT
L	LENGTH, LINE	W.M.	WATER MAIN

SYMBOLS

EXIST.	PROP.		EXIST.	PROP.	
⊖	◓	BLOW OFF ASSY.	Ⓢ	Ⓢ	MANHOLE SAN. SEWER
▥	▥	CATCH BASIN	Ⓓ	Ⓓ	MANHOLE STORM DRAIN
▣	■	CATCH BASIN CLEANOUT	②	②	2' DIA. C.O. / M.H.
▣	▣	CATCH BASIN INLET	Ⓣ	Ⓣ	MANHOLE TELEPHONE
△	▲	CATV PED. / BOX	Ⓦ	Ⓦ	MANHOLE WATER
○	●	CLEANOUT	▷	▶	REDUCER / INCREASER
▨	◪	ELEC. PED. / BOX	▨	◪	TEL. PED. / BOX
⛑	⛑	FIRE HYDRANT	▭	▭	TRAFFIC PED. / BOX
⊛	⊛	GAS LOCATION MARKER	⚲	⚲	UTILITY / POWER POLE
⋈	⋈	GAS VALVE	□	■	WATER METER
▭	▭	MAIL BOX	⊗	⊗	WATER VALVE

— · — · —	CABLE TELEVISION	——→——	SANITARY SEWER EXIST.
—— . ——	CENTERLINE	——→——	SANITARY SEWER PROP.
—— > ——	DITCH C.L.	——→——	STORM DRAIN EXIST.
·····	ELECTRICAL LINE	——→——	STORM DRAIN PROP.
—— G ——	GAS MAIN	- - - -	WATER MAIN EXIST.
— · — · —	TELEPHONE LINE	————	WATER MAIN PROP.

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P203 SITE PLAN — SOUTH
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P301 UTILITY PLAN — NORTH
P302 UTILITY PLAN — CENTRAL
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P403 TREE CONSERVATION PLAN — SOUTH
P404 TREE CONSERVATION PLAN — R.O.W. NORTH
P405 TREE CONSERVATION PLAN — R.O.W. SOUTH
P501 PUBLIC STREET IMPROVEMENTS — A AV. & B ST.
P502 PUBLIC STREET IMPROVEMENTS — C ST.
P503 PUBLIC STREET IMPROVEMENTS — E AV. & D ST.
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P509 PUBLIC STREET IMPROVEMENTS — M ST. 0+00 TO 8+00
P510 PUBLIC STREET IMPROVEMENTS — M ST. 8+00 TO 15+00
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PRELIMINARY PLAN
COVER SHEET

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

K:\Projects\6234 P101CO

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

JOB # 6234

P101

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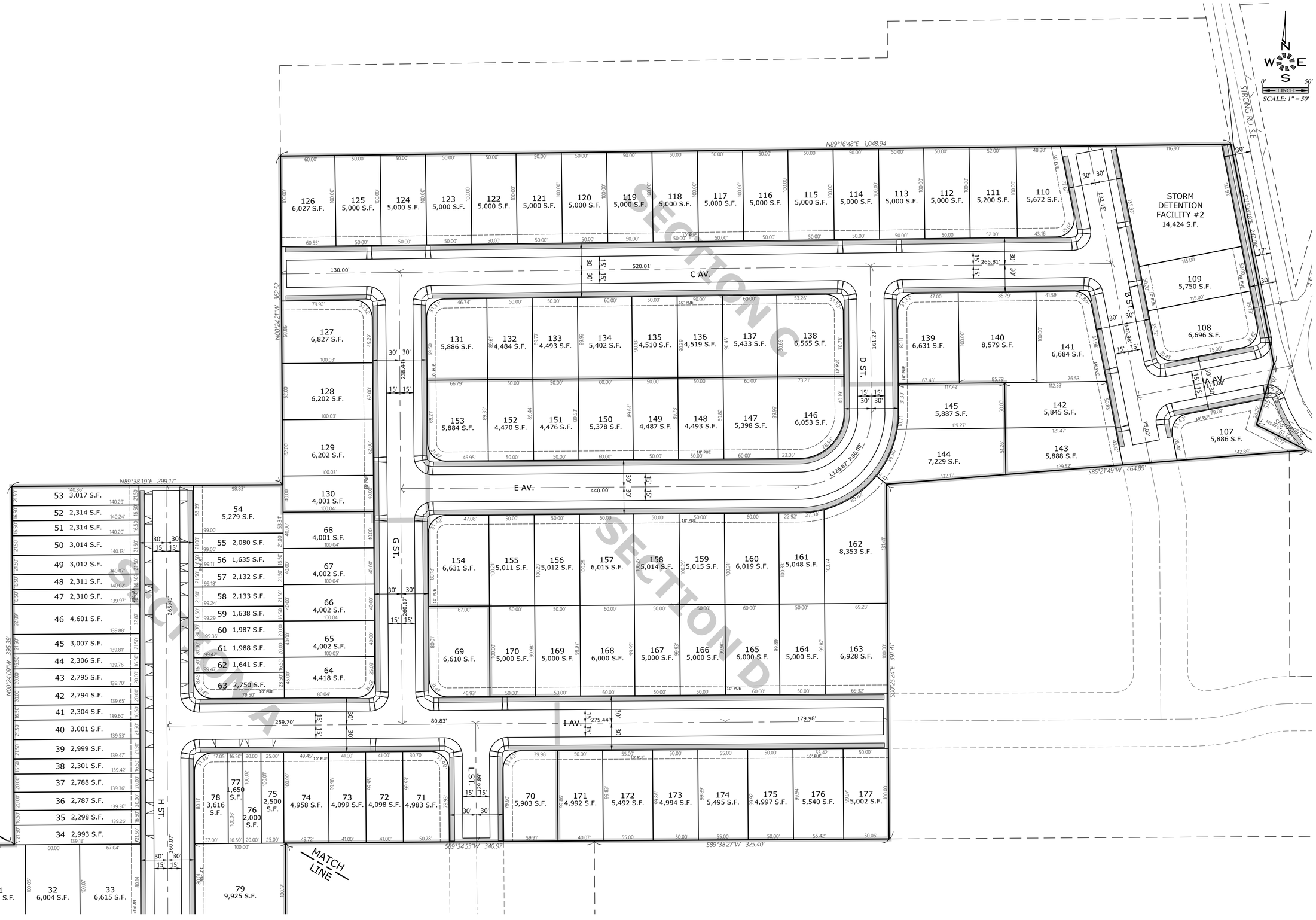

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SITE PLAN - NORTH -

COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

62342020 P201SP

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

JOB # 6234

P201

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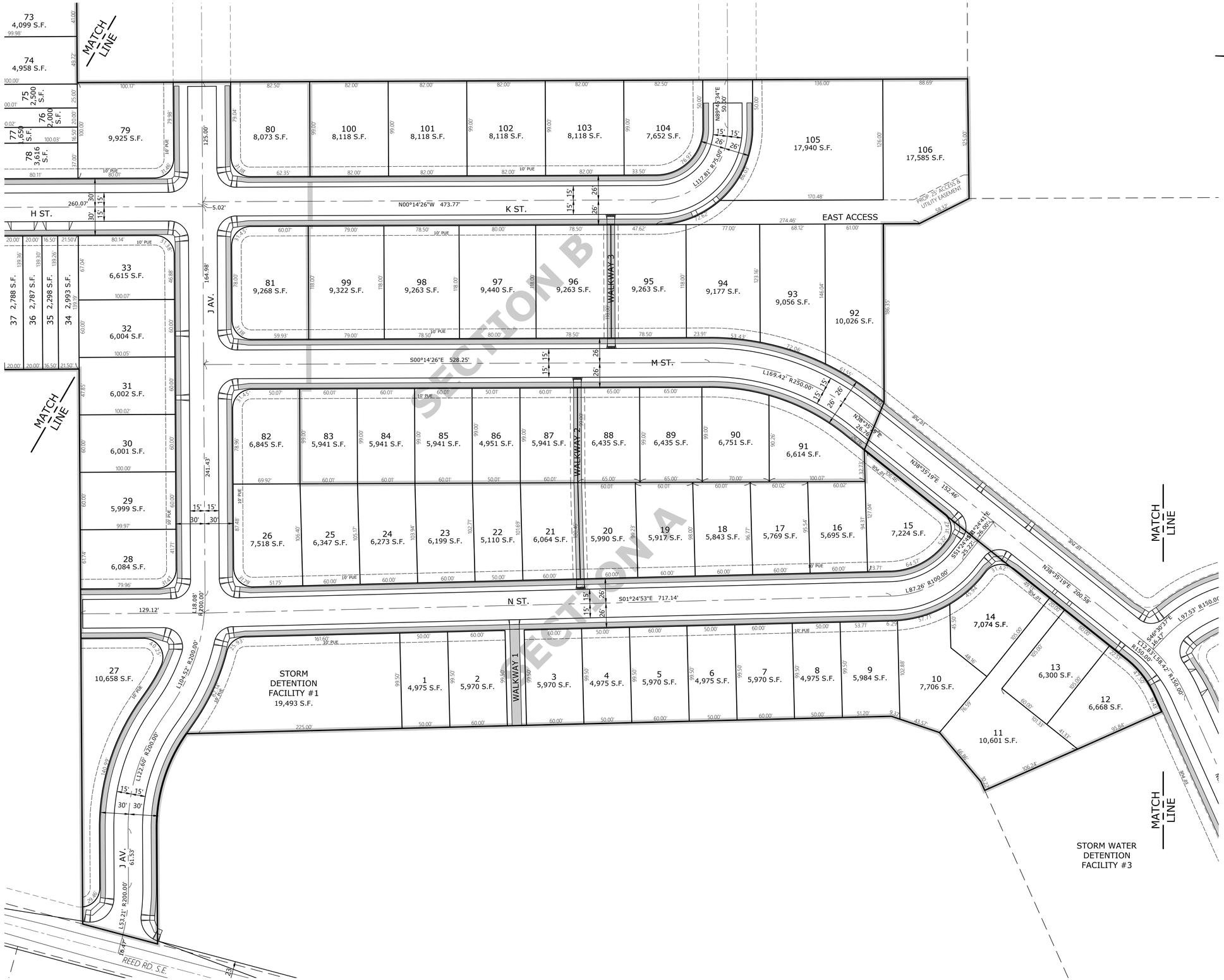

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SITE PLAN - CENTRAL -

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234p2020 P202SP

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

P202

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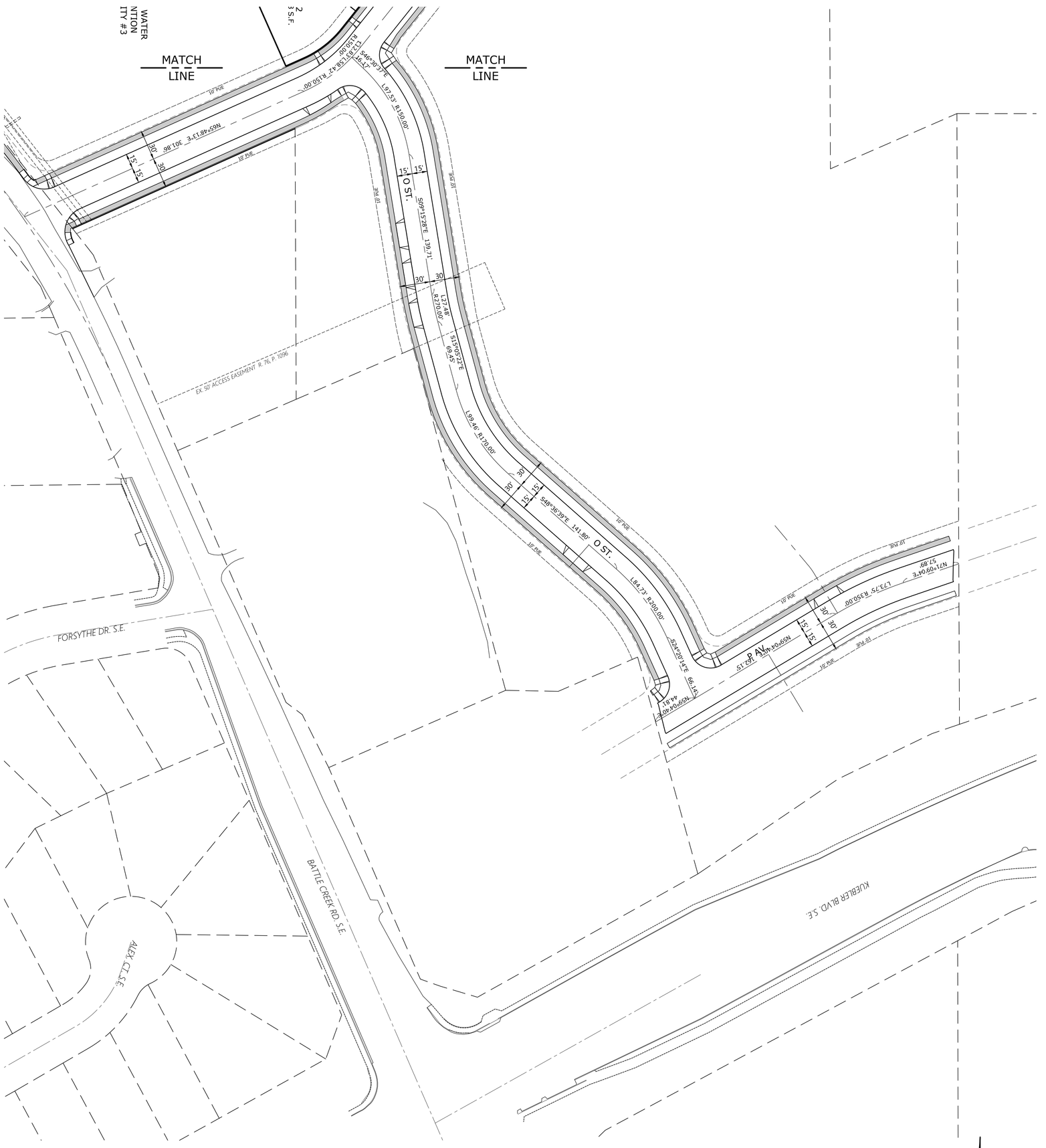

P203	JOB # 6234	EXPIRES: 06-30-2021	6234p2020 P203SP Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES** **SITE PLAN - SOUTH -**

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P102	JOB # 6234 DWG 06-30-2021	REGISTERED PROFESSIONAL ENGINEER MARK D. GRENZ OREGON JULY 14, 1995	6234p2020 P102XC Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES** **EXISTING CONDITIONS**

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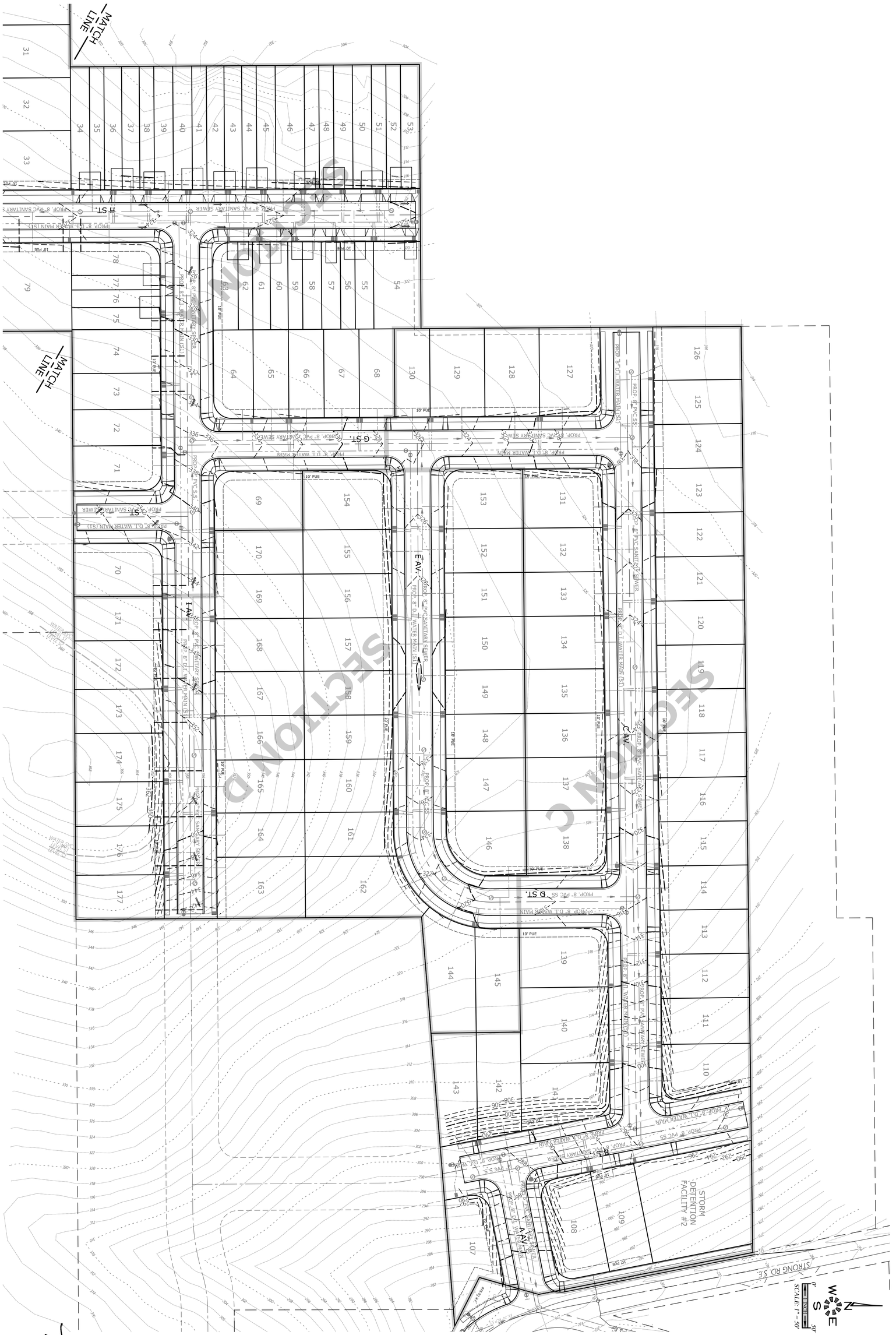
J:\62xx\6234-ReedRoad\Dwg v20\6234p2020.dwg, P301UT, 4/8/2021 1:01:40 PM, TShul



P301	JOB # 6234	EXPIRES: 06-30-2021	6234p2020 P301UT Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES** **UTILITY PLAN - NORTH -**

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 14, 2006 — MARK D. GRENZ

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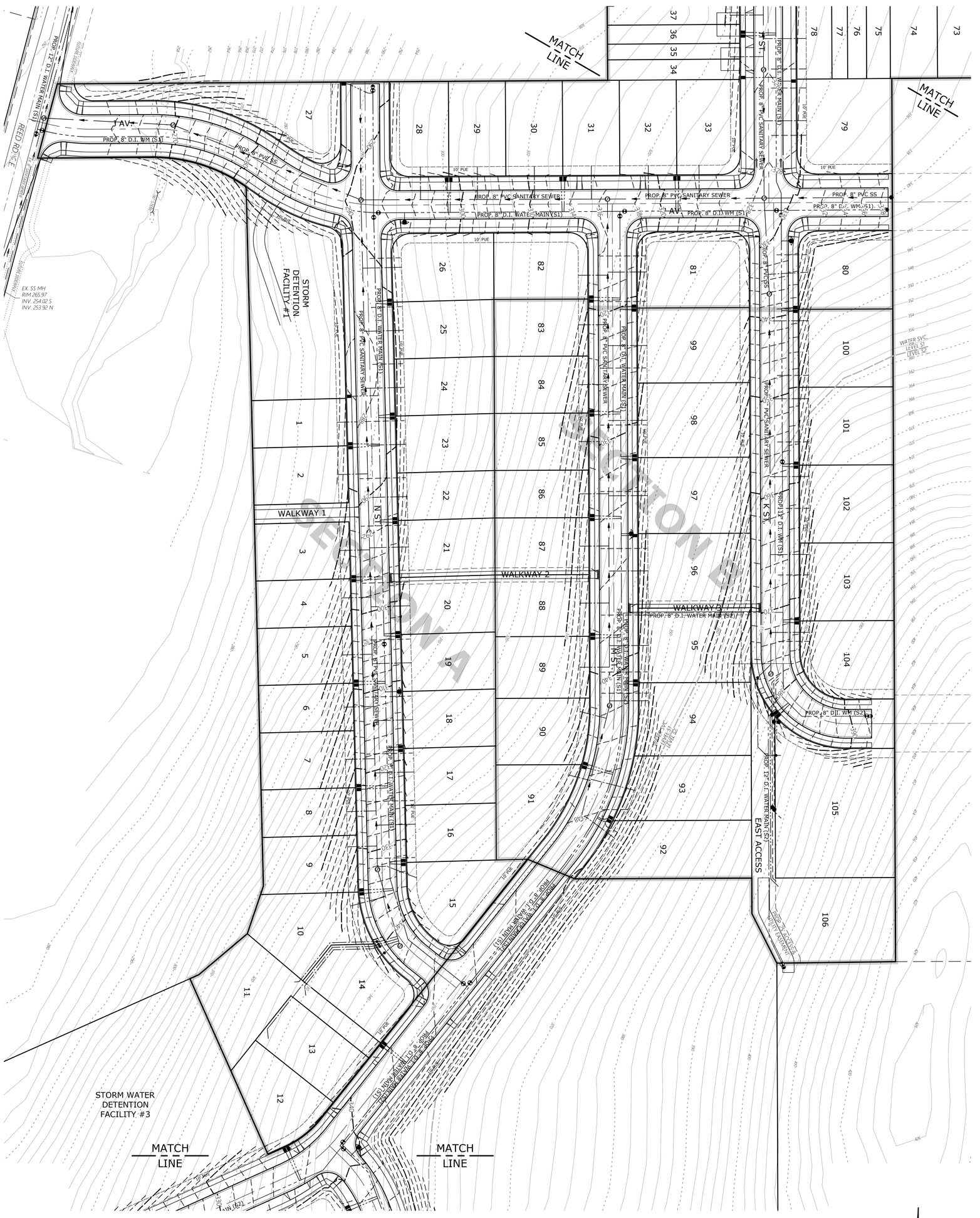
MATCH LINE
MATCH LINE
MATCH LINE
MATCH LINE
PROP. 8" D.I. WATER MAIN (S1)
PROP. 8" PVC SS
PROP. 8" PVC SANITARY SEWER
PROP. 8" D.I. WATER MAIN (S1)
PROP. 8" D.I. WM (S1)
PROP. 8" PVC SANITARY SEWER
PROP. 8" D.I. WATER MAIN (S1)
PROP. 8" PVC SANITARY SEWER
PROP. 8" D.I. WATER MAIN (S1)
PROP. 8" PVC SANITARY SEWER
PROP. 8" D.I. WATER MAIN (S1)
PROP. 8" PVC SANITARY SEWER
PROP. 8" D.I. WATER MAIN (S1)
PROP. 8" D.I. WATER MAIN (S1)
PROP. 8" D.I. WM (S2)
PROP. 12" D.I. WATER MAIN (S2)
PROP. 12" D.I. WATER MAIN (S2)
PROP. 8" D.I. WATER MAIN (S1)
PROP. 8" PVC SANITARY SEWER
PROP. 8" PVC SANITARY SEWER
PROP. 8" PVC SANITARY SEWER

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P303	JOB # 6234	DATE: 06-30-2021	REGISTERED PROFESSIONAL ENGINEER OREGON MARK D. GRENZ 1982 RENEWAL: 12/31/2021	6234p2020 P303UT Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES**	**UTILITY PLAN - SOUTH -**

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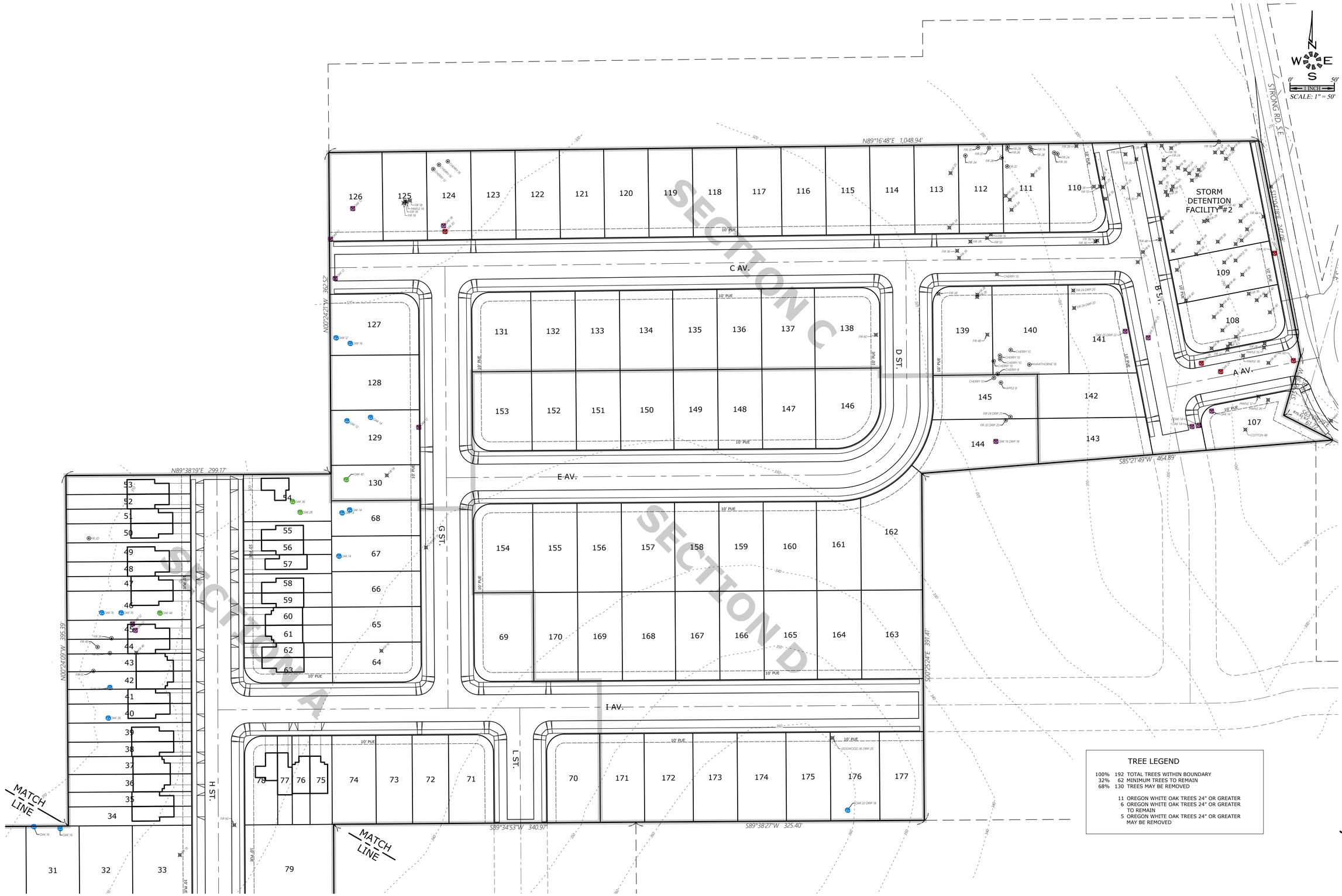

TREE LEGEND

100%	192	TOTAL TREES WITHIN BOUNDARY
32%	62	MINIMUM TREES TO REMAIN
68%	130	TREES MAY BE REMOVED

11 OREGON WHITE OAK TREES 24" OR GREATER
6 OREGON WHITE OAK TREES 24" OR GREATER TO REMAIN
5 OREGON WHITE OAK TREES 24" OR GREATER MAY BE REMOVED

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TREE CONSERVATION PLAN - NORTH -

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

62345/2020 P401TR

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JUNE 10, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

P401

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TREE LEGEND

100% 192 TOTAL TREES WITHIN BOUNDARY
32% 62 MINIMUM TREES TO REMAIN
68% 130 TREES MAY BE REMOVED

11 OREGON WHITE OAK TREES 24" OR GREATER
6 OREGON WHITE OAK TREES 24" OR GREATER TO REMAIN
5 OREGON WHITE OAK TREES 24" OR GREATER MAY BE REMOVED

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TREE CONSERVATION PLAN - CENTRAL - COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234p2020 P402TR

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

P402

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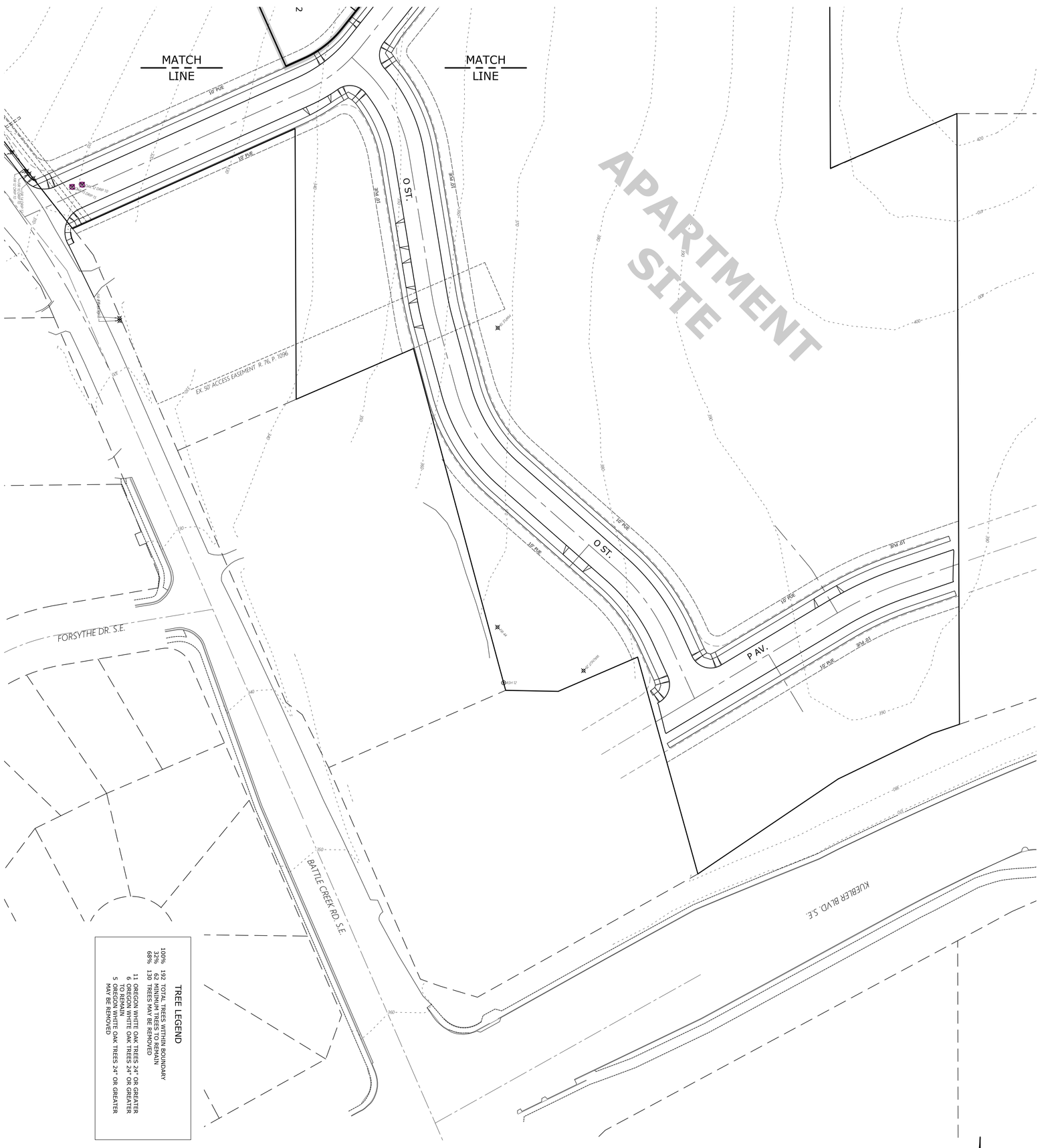

TREE LEGEND

100%	192	TOTAL TREES WITHIN BOUNDARY
32%	62	MINIMUM TREES TO REMAIN
68%	130	TREES THAT BE REMOVED
	11	OREGON WHITE OAK TREES 24" OR GREATER TO REMAIN
	16	OREGON WHITE OAK TREES 24" OR GREATER
	5	OREGON WHITE OAK TREES 24" OR GREATER THAT BE REMOVED

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 14, 1978 — MARK D. GRENZ

EXPIRES: 06-30-2021

P403

JOB # 6234

6234p2020 P403TR

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ---- ----

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

COBURN GRAND VIEW ESTATES

TREE CONSERVATION PLAN - SOUTH -

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1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363 - 9227 FAX (503) 364-1260
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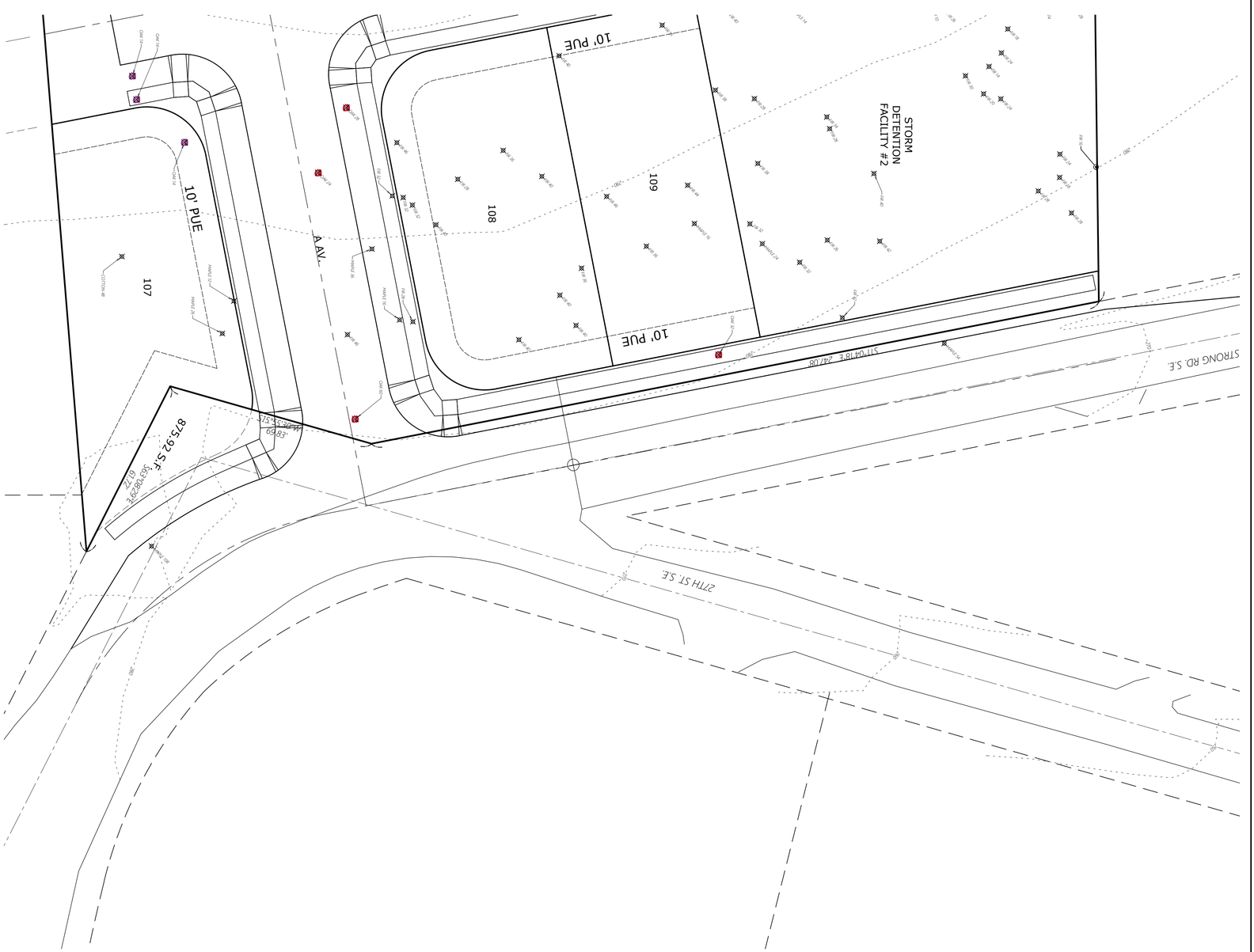

SCALE: 1" = 20'

P404	JOB # 6234	DRAWING NO. 06-30-2021	6234p2020 P404TR Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES** **STREET TREE REMOVAL PLAN - NORTH -**

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ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363 - 9227 FAX (503) 364-1260
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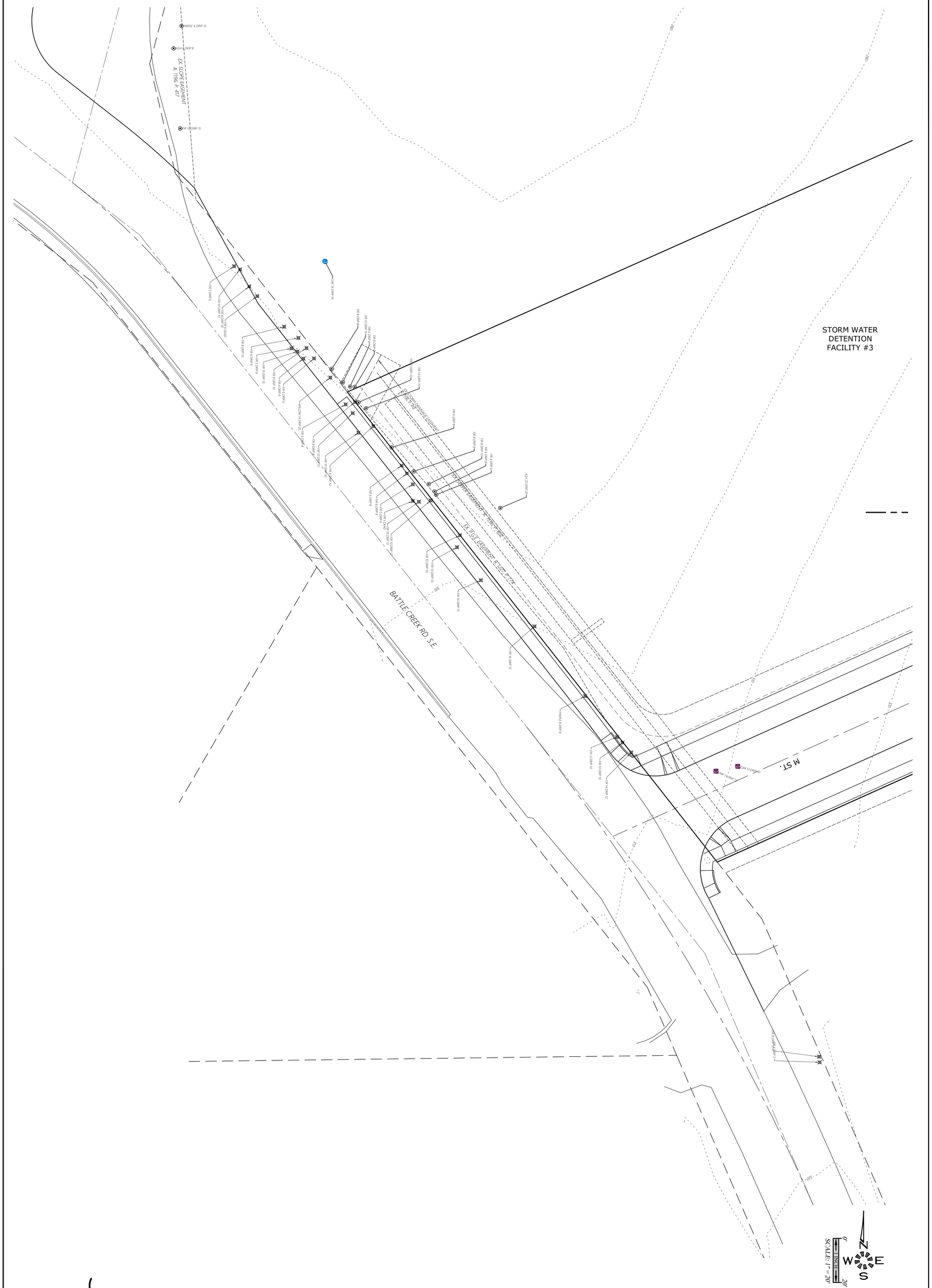
J:\62xx\6234-ReedRoad\Dwg v20\6234p2020.dwg, P405TR, 4/8/2021 1:02:10 PM, TShull



P405

JOB # 6234

PHASE 06-30-2021

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 13, 1984
MARK D. GRENZ

6234p2020 P405TR

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

COBURN GRAND VIEW ESTATES

STREET TREE REMOVAL PLAN - SOUTH -

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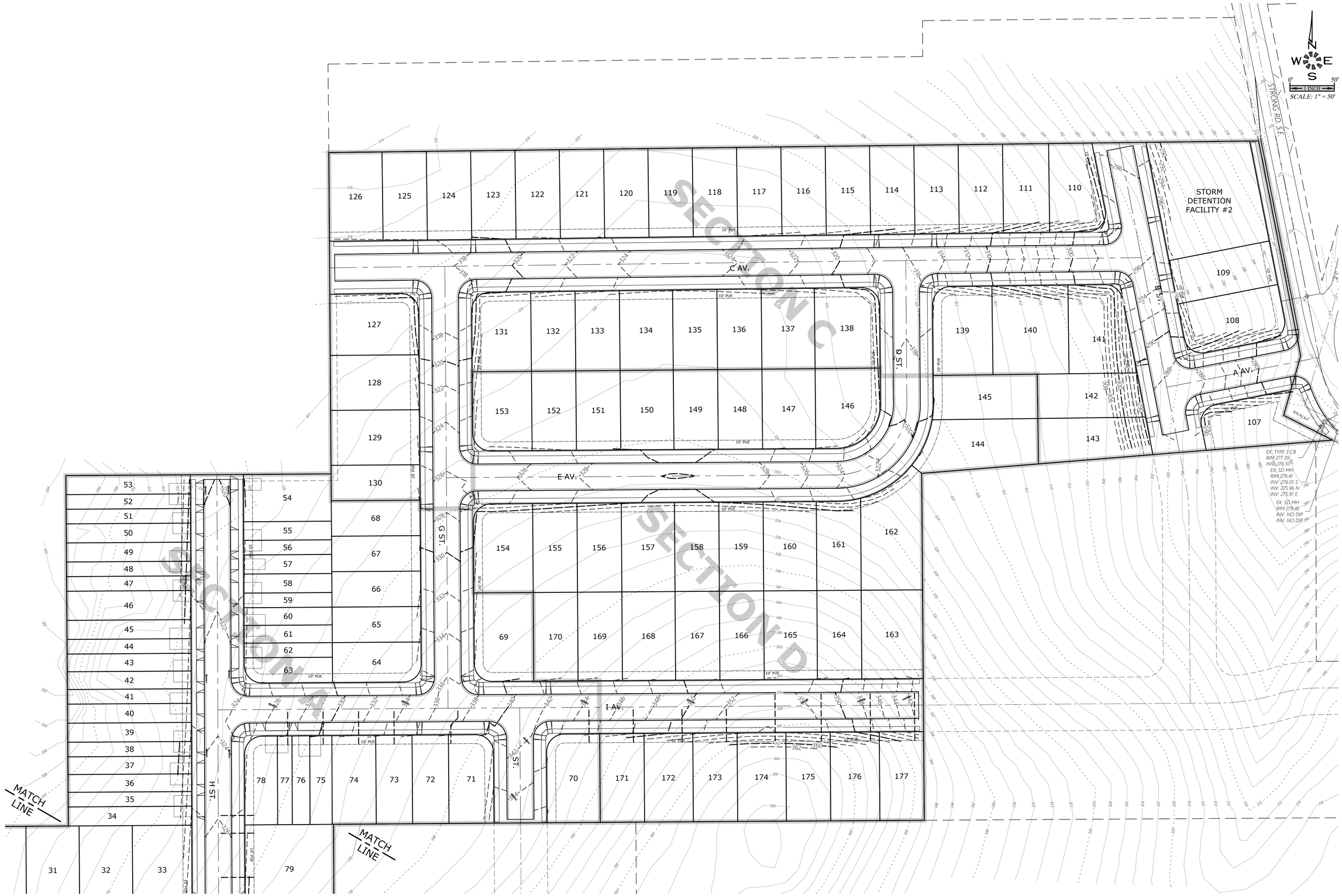
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net



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1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX: (503) 364-1260
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GRADING PLAN - NORTH -

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

623462020 P601GR

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

P601

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PRELIMINARY NOT FOR CONSTRUCTION

P602	JOB # 6234	EXPIRES: 06-30-2021	6234p2020 P602GR Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES** **GRADING PLAN - CENTRAL -**

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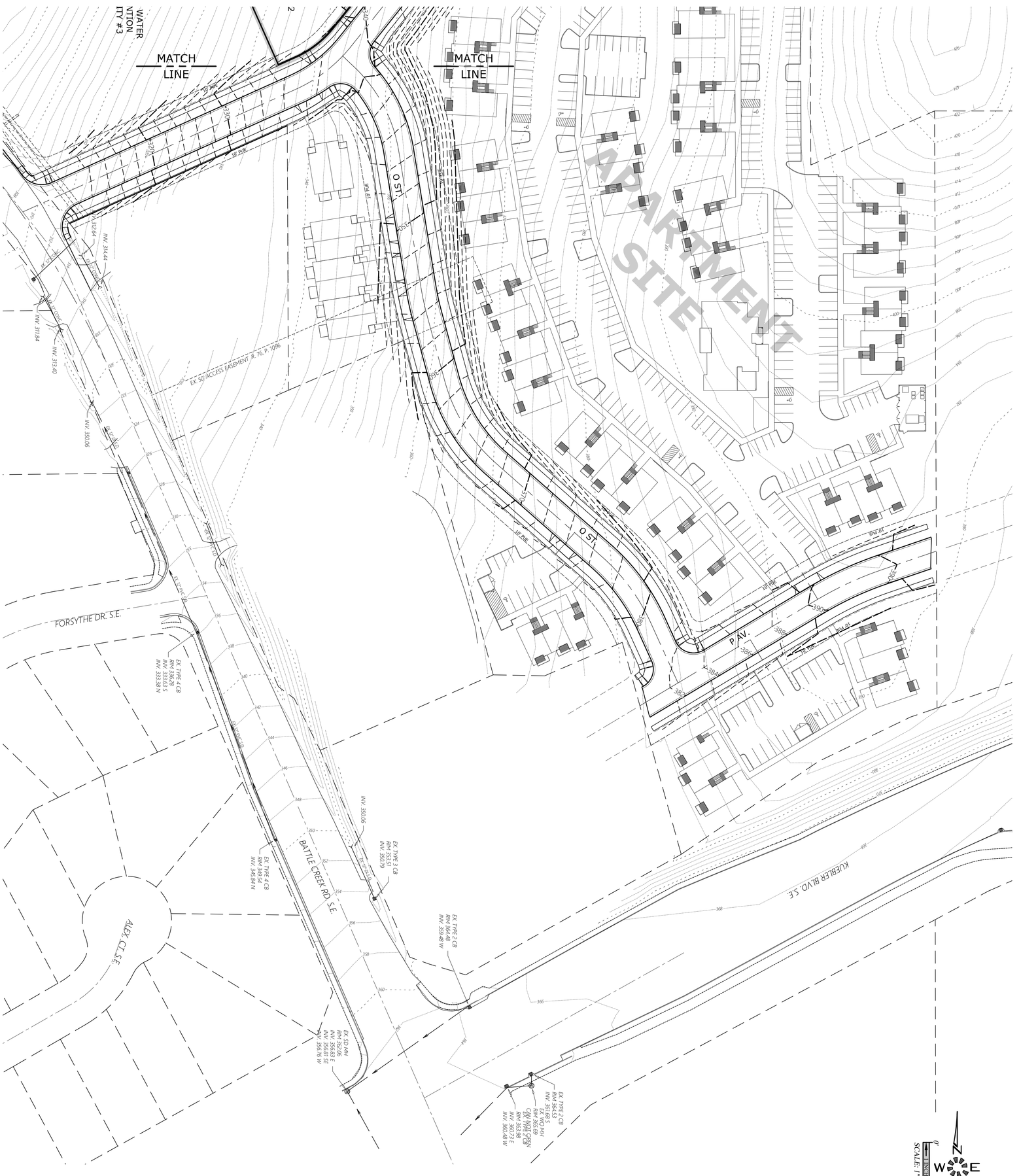
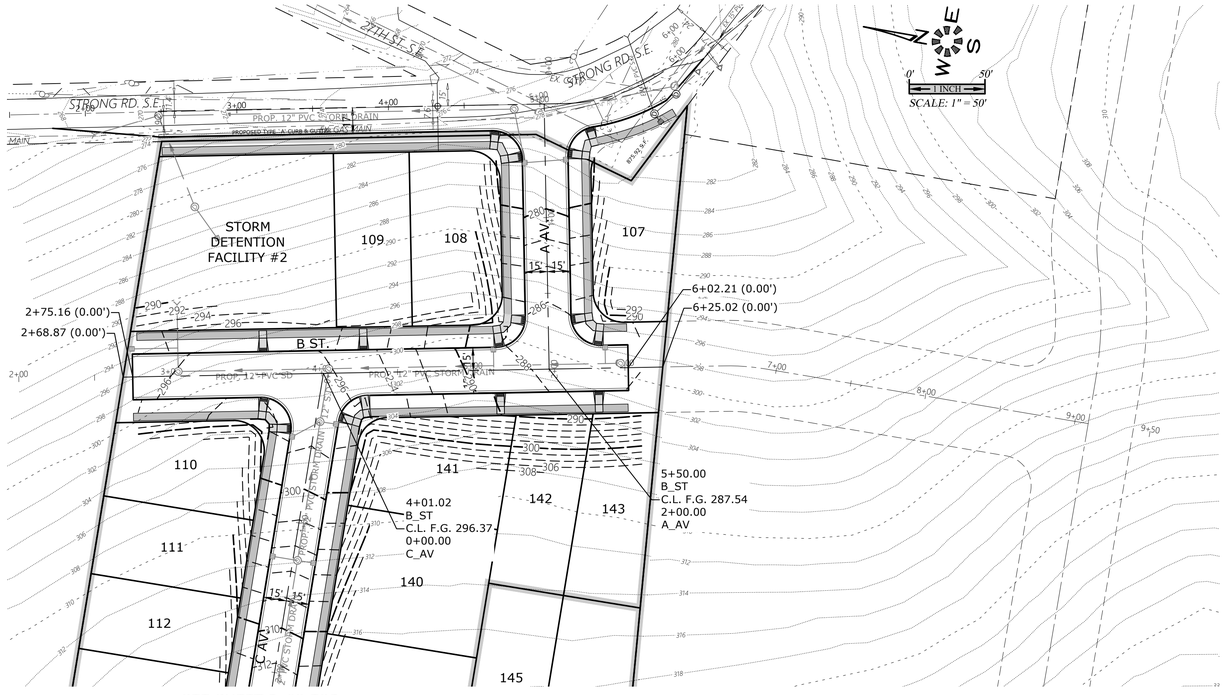
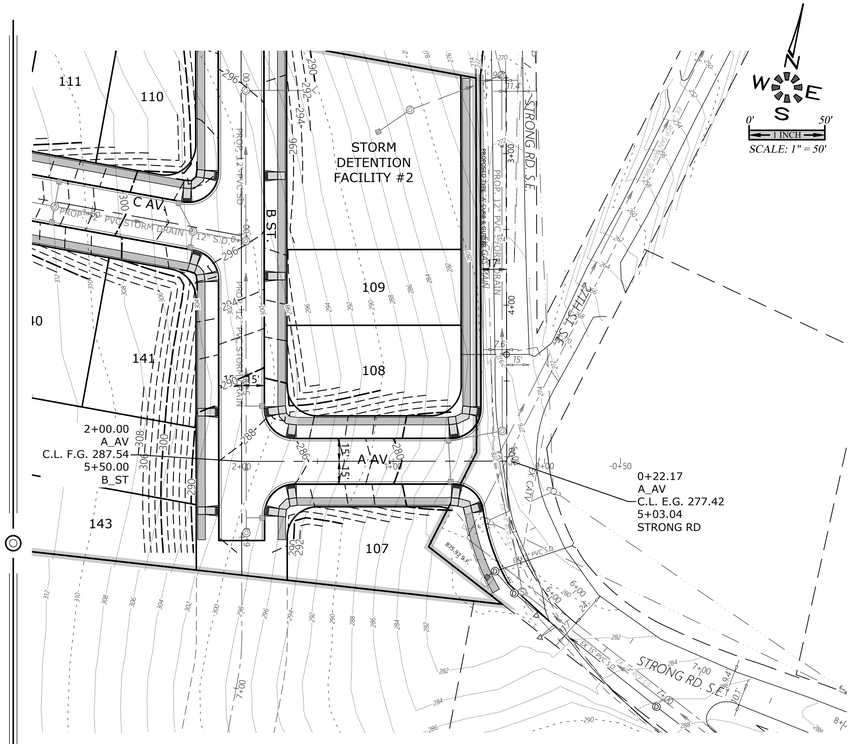


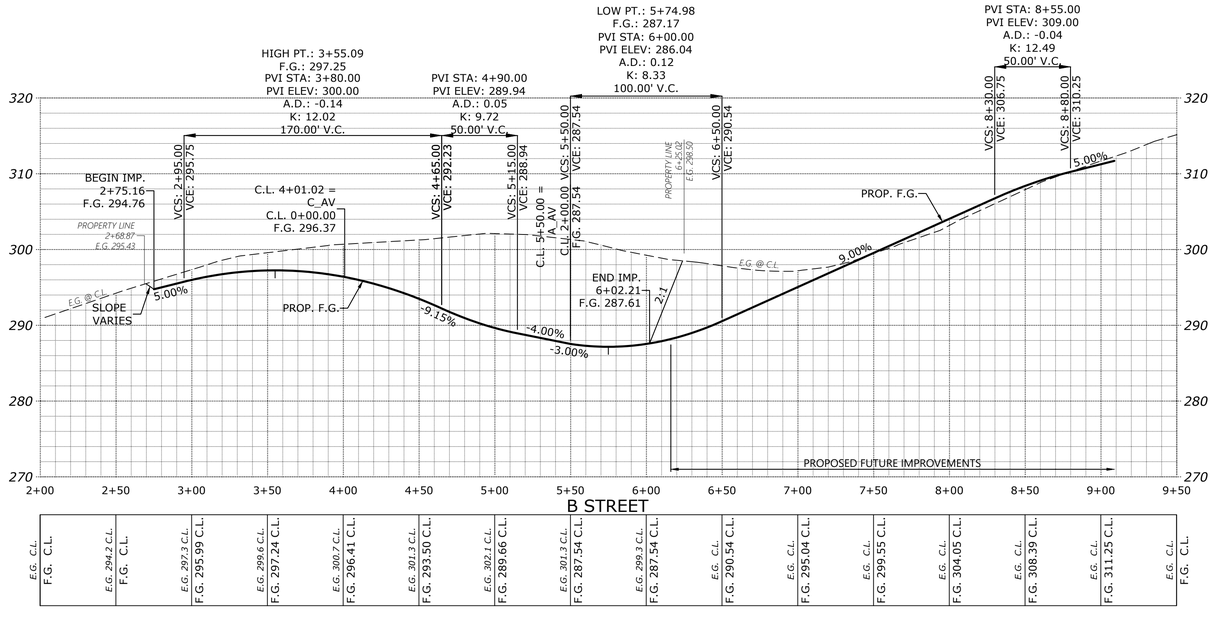
P603	JOB # 6234	EXPIRES: 06-30-2021	6234p2020 P603GR Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES** **GRADING PLAN - SOUTH -**	MULTI/TECH ENGINEERING SERVICES, INC. 1155 13th ST. S.E. SALEM, OR. 97302 PH. (503) 363-9227 FAX (503) 364-1260 www.mtengineering.net office@mtengineering.net

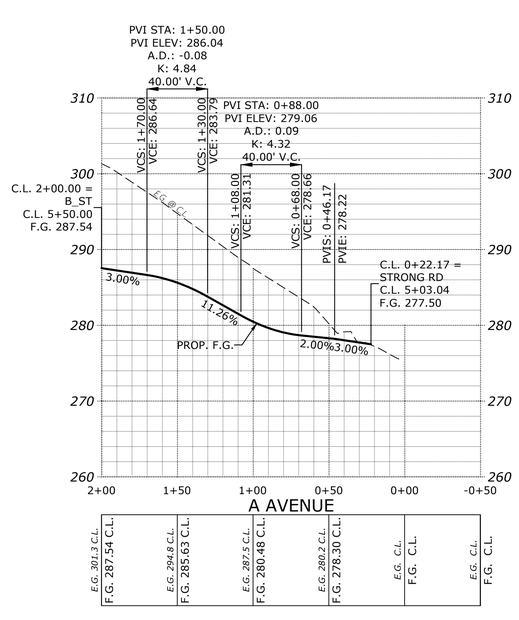


SEE SHEET P502 FOR
C AVENUE DESIGN



SEE SHEET P517 FOR
TYPICAL STREET SECTIONS





MULTI/TECH
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1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX. (503) 364-1260
www.mtengineering.net office@mtengineering.net

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234x2020 P501ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

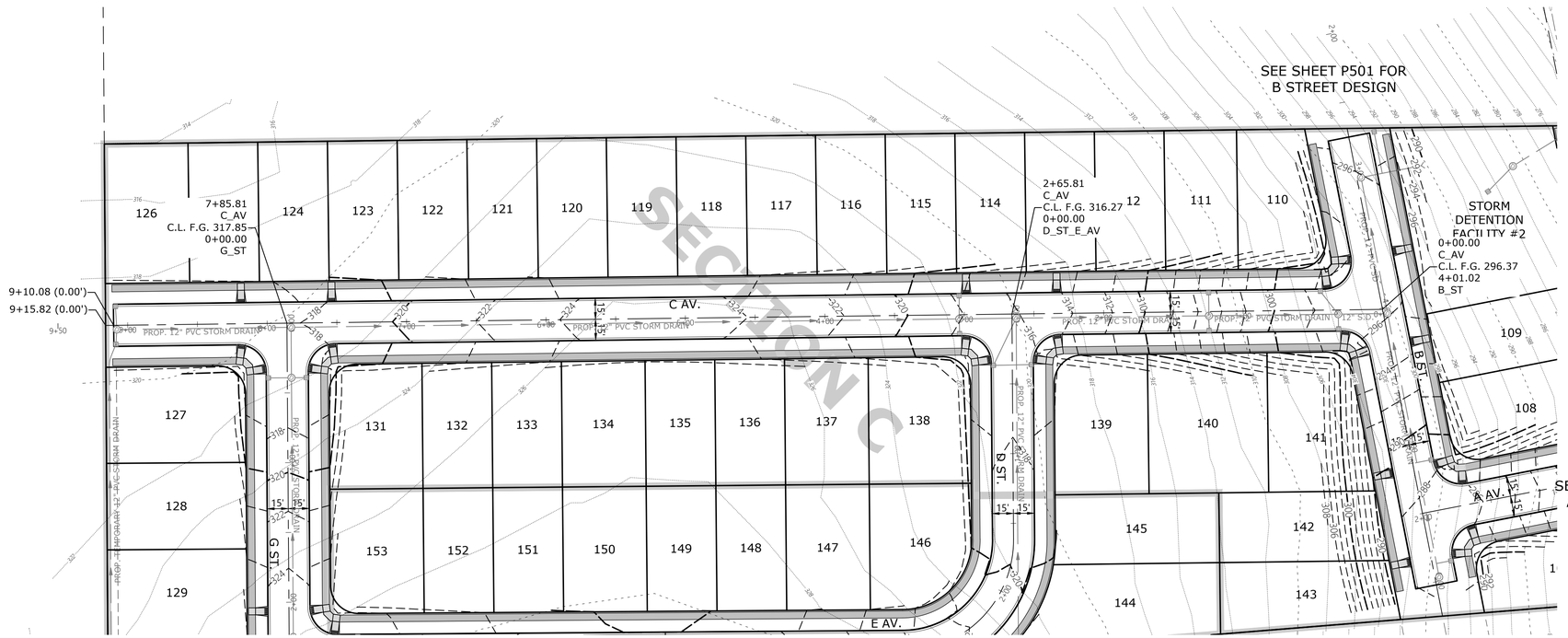
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 1, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

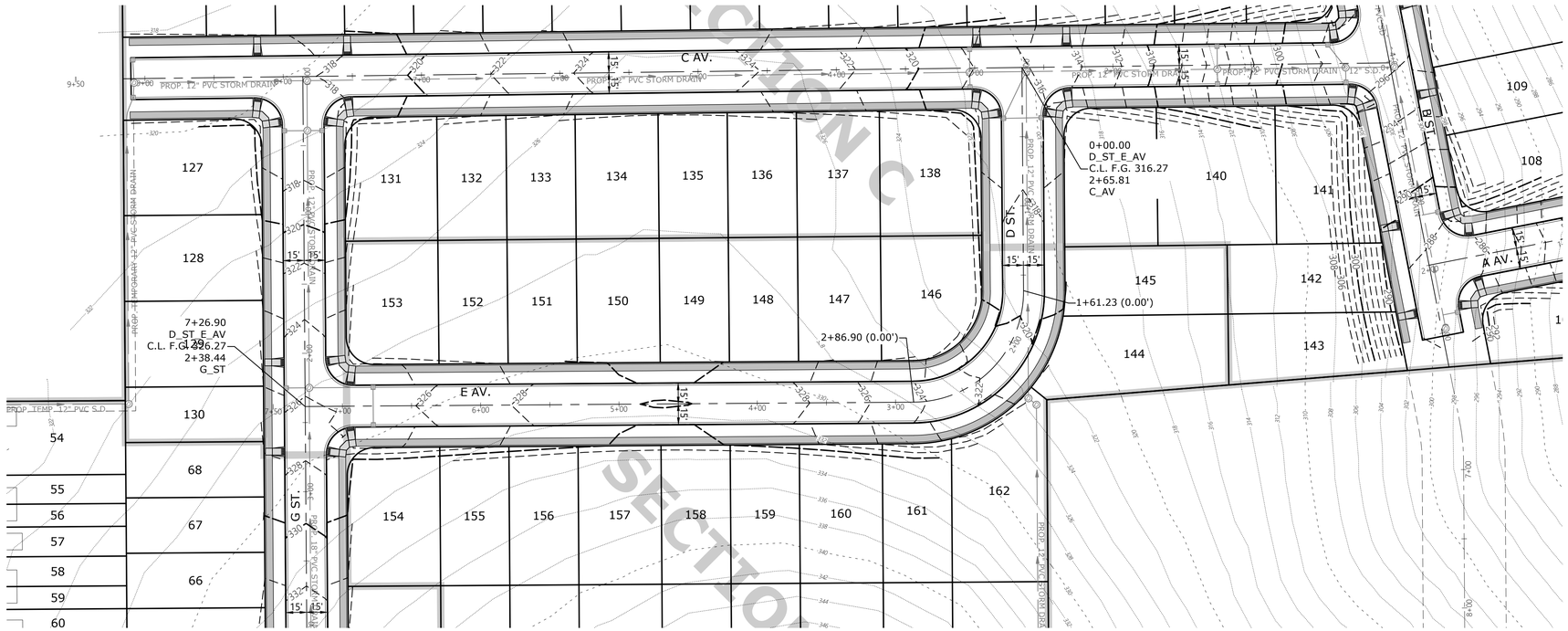
P501

J:\6234x\6234-ReedRoad\Dwg 2020\6234p2020.dwg, P501ST, 4/8/2021 1:02:17 PM, TShull


SECTION C
SEE SHEET P501 FOR B STREET DESIGN
SEE SHEET P501 FOR A STREET DESIGN
SEE SHEET P504 FOR G STREET DESIGN
SEE SHEET P503 FOR E AVENUE & D STREET DESIGN
7+85.81 C_AV C.L. F.G. 317.85 0+00.00 G_ST
2+65.81 C_AV C.L. F.G. 316.27 0+00.00 D_ST_E_AV
STORM DETENTION FACILITY #2 0+00.00 C_AV C.L. F.G. 296.37 4+01.02 B_ST
9+10.08 (0.00')
9+15.82 (0.00')
C AV.
E AV.
G ST.
D ST.
A AV.
PROP. 12" PVC STORM DRAIN
PROP. 12" S.D.
PROP. 12" STORM DRAIN
PROP. 12" PVC STORM DRAIN
PROP. 12" PVC STORM DRAIN
PROP. 12" PVC

SEE SHEET P502 FOR
C STREET DESIGN

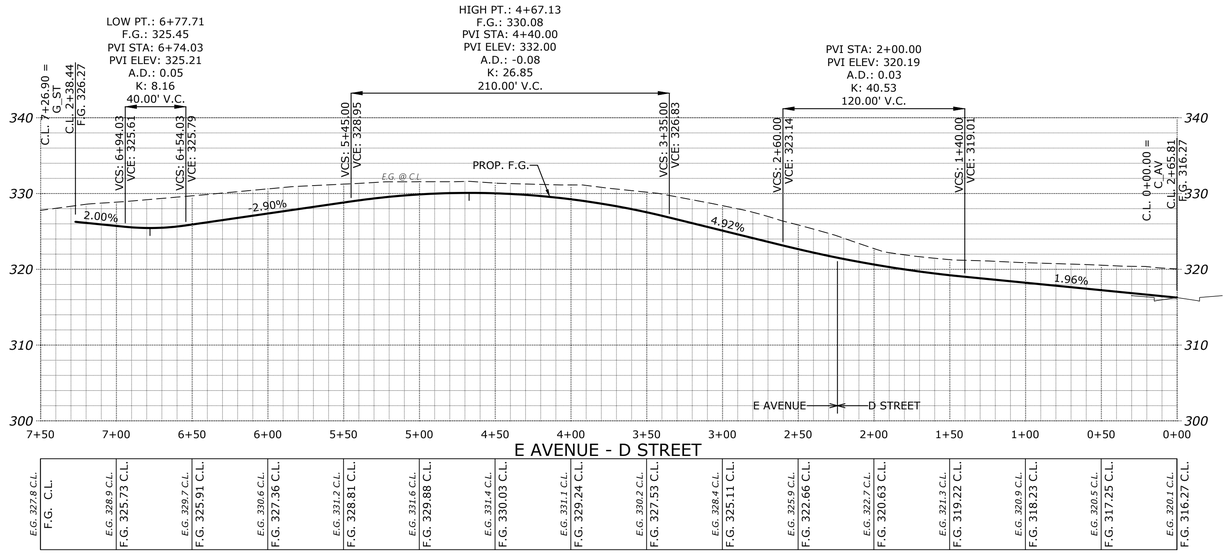
SEE SHEET P501 FOR
B STREET DESIGN



SEE SHEET P504 FOR
G STREET DESIGN

SEE SHEET P51 FOR
A AVENUE DESIGN

SEE SHEET P517 FOR
TYPICAL STREET SECTIONS



E.G. 327.8 C.L.	E.G. 328.9 C.L.	E.G. 329.7 C.L.	E.G. 330.6 C.L.	E.G. 331.2 C.L.	E.G. 331.6 C.L.	E.G. 331.4 C.L.	E.G. 331.1 C.L.	E.G. 330.2 C.L.	E.G. 328.4 C.L.	E.G. 325.9 C.L.	E.G. 322.7 C.L.	E.G. 321.3 C.L.	E.G. 320.9 C.L.	E.G. 320.5 C.L.	E.G. 320.1 C.L.
F.G. C.L.	F.G. 325.73 C.L.	F.G. 325.91 C.L.	F.G. 327.36 C.L.	F.G. 328.81 C.L.	F.G. 329.88 C.L.	F.G. 330.03 C.L.	F.G. 329.24 C.L.	F.G. 327.53 C.L.	F.G. 325.11 C.L.	F.G. 322.66 C.L.	F.G. 320.63 C.L.	F.G. 319.22 C.L.	F.G. 318.23 C.L.	F.G. 317.25 C.L.	F.G. 316.27 C.L.

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH: (503) 363-9227 FAX: (503) 364-1260
www.mtengineering.net office@mtengineering.net

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234p2020 P503ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 2015
MARK D. GRENZ

EXPIRES: 06-30-2021

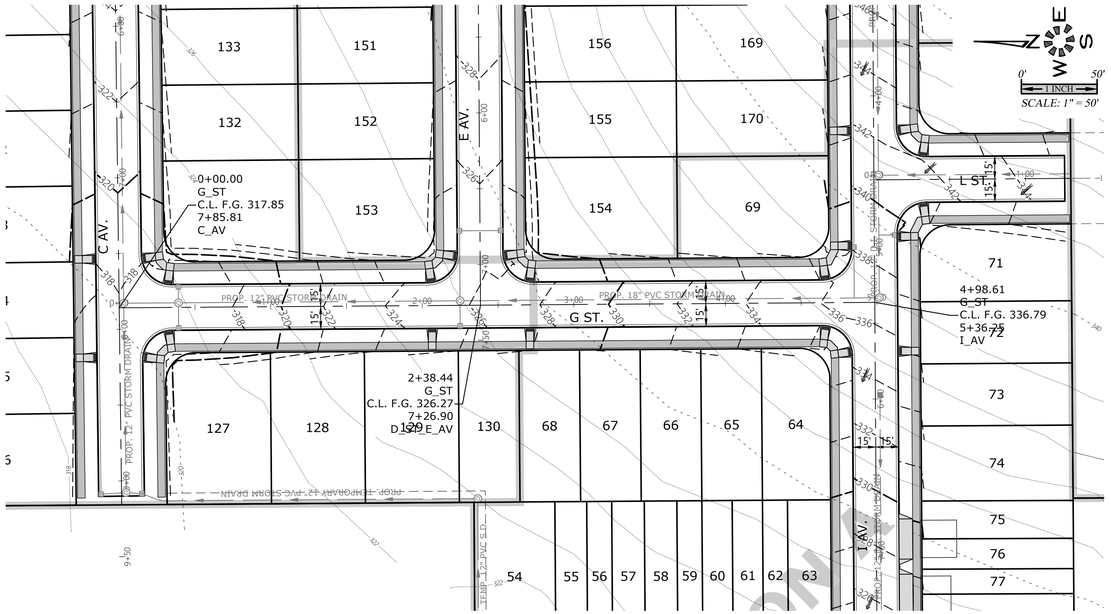
JOB # 6234

P503

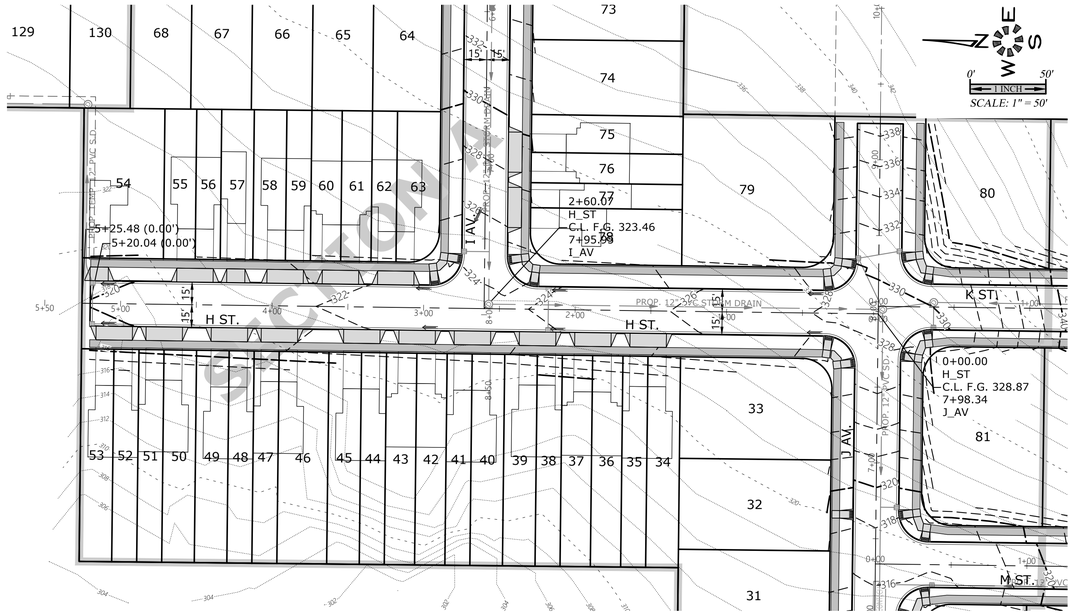
J:\62xx\6234-ReedRoad\Dwg v20\6234v2020.dwg, P503ST, 4/8/2021 1:02:35 PM, TStull

SEE SHEET P502 FOR
C STREET DESIGN

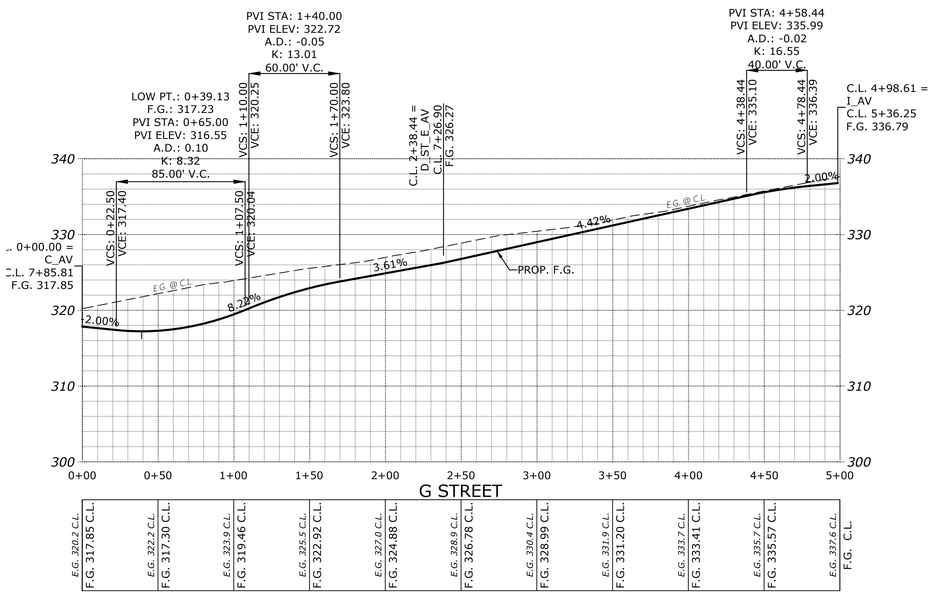
SEE SHEET P503 FOR
E AVENUE & D STREET DESIGN

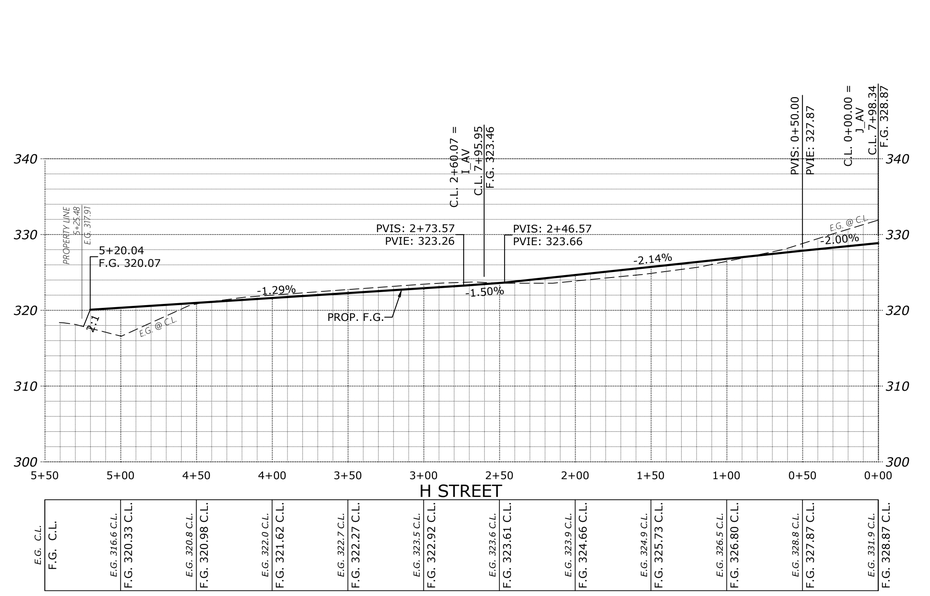


SEE SHEET P505 FOR
I STREET DESIGN



SEE SHEET P506 FOR
J STREET DESIGN





SEE SHEET P517 FOR
TYPICAL STREET SECTIONS

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
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STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234p2020 P504ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

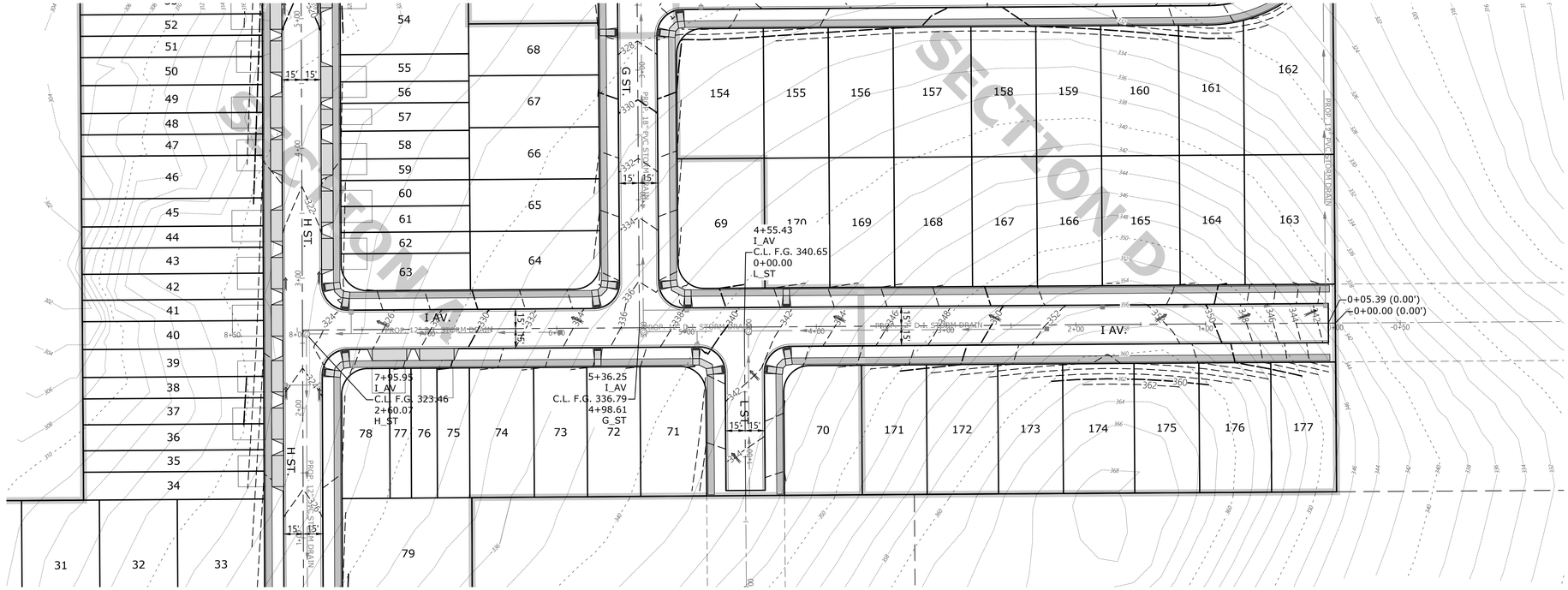
JOB # 6234

P504

J:\62xx\6234-ReedRoad\Dwg v20\6234v2020.dwg, P504ST, 4/8/2021 1:02:38 PM, TSull

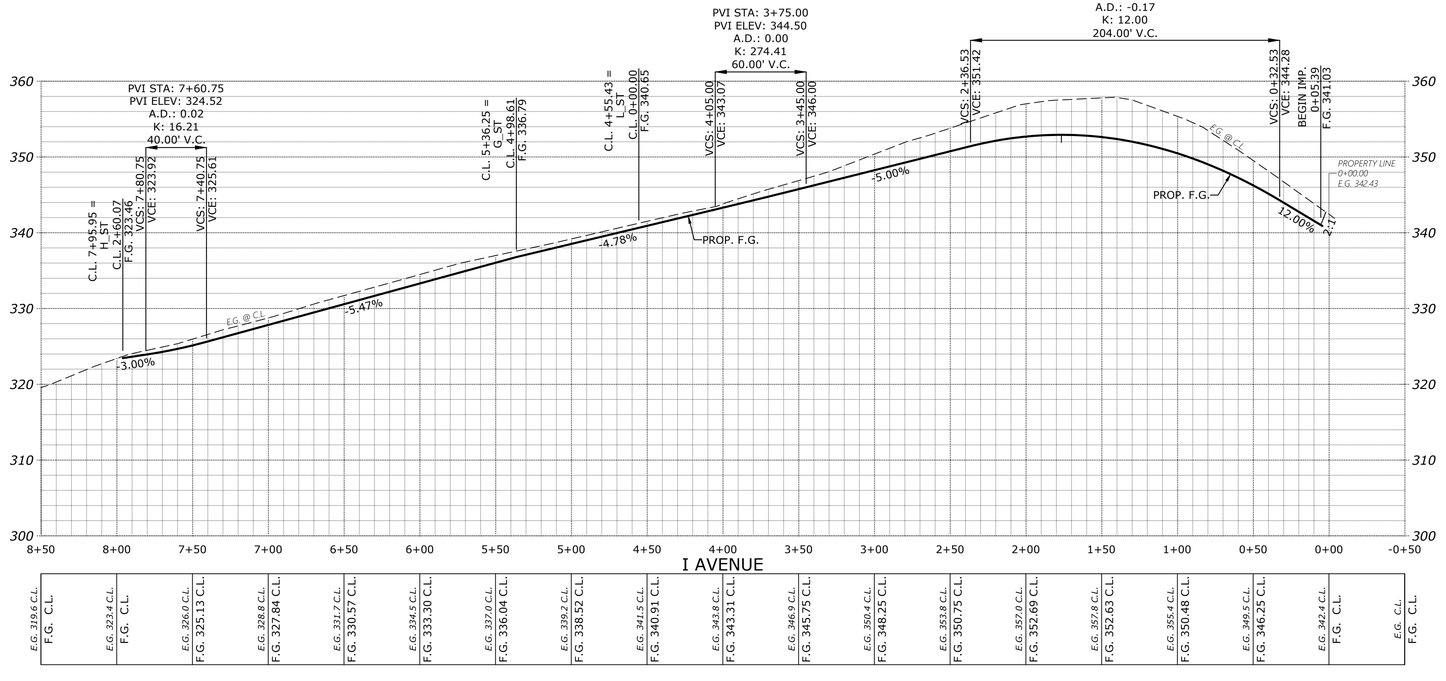
SEE SHEET P504 FOR
G STREET DESIGN

SEE SHEET P503 FOR
E AVENUE & D STREET DESIGN



SEE SHEET P504 FOR
H STREET DESIGN

SEE SHEET P508 FOR
L STREET DESIGN



SEE SHEET P517 FOR
TYPICAL STREET SECTIONS

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1155 13th ST. S.E. SALEM, OR. 97302
PH.(503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

623462020 P505ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

P505

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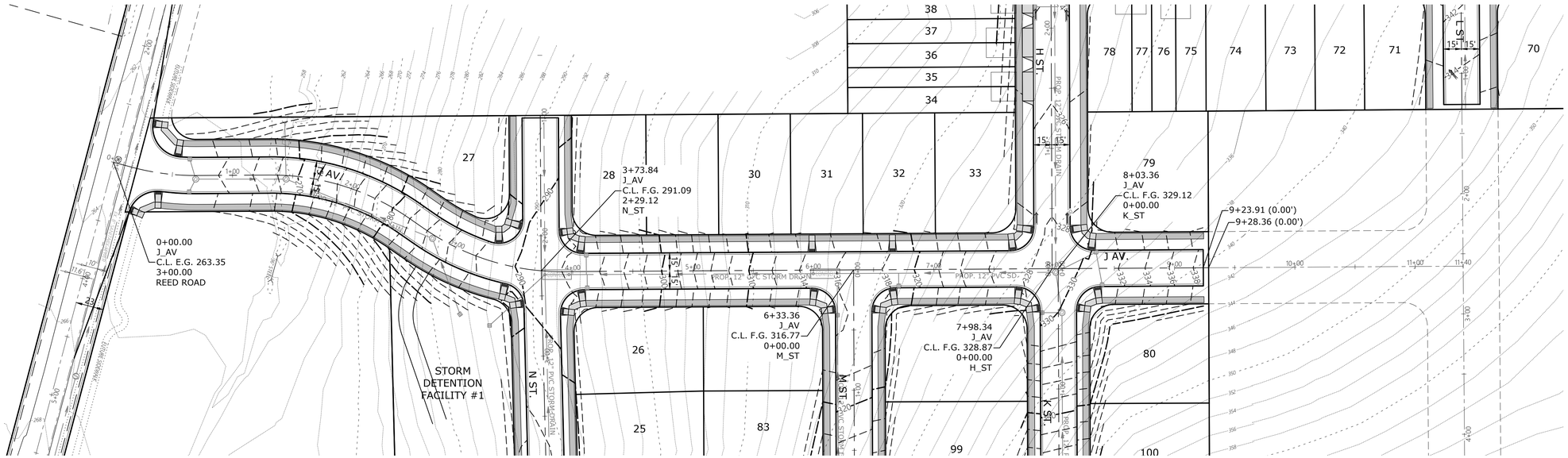
SEE SHEET P504 FOR
H STREET DESIGN

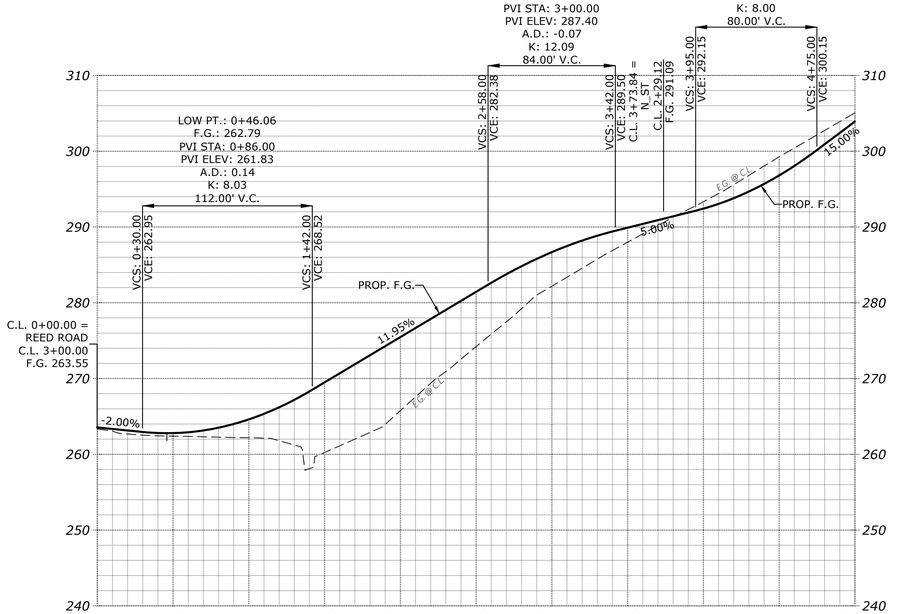


SEE SHEET P511 FOR
N STREET DESIGN

SEE SHEET P509 & P510
FOR M STREET DESIGN

SEE SHEET P507 FOR
K STREET DESIGN

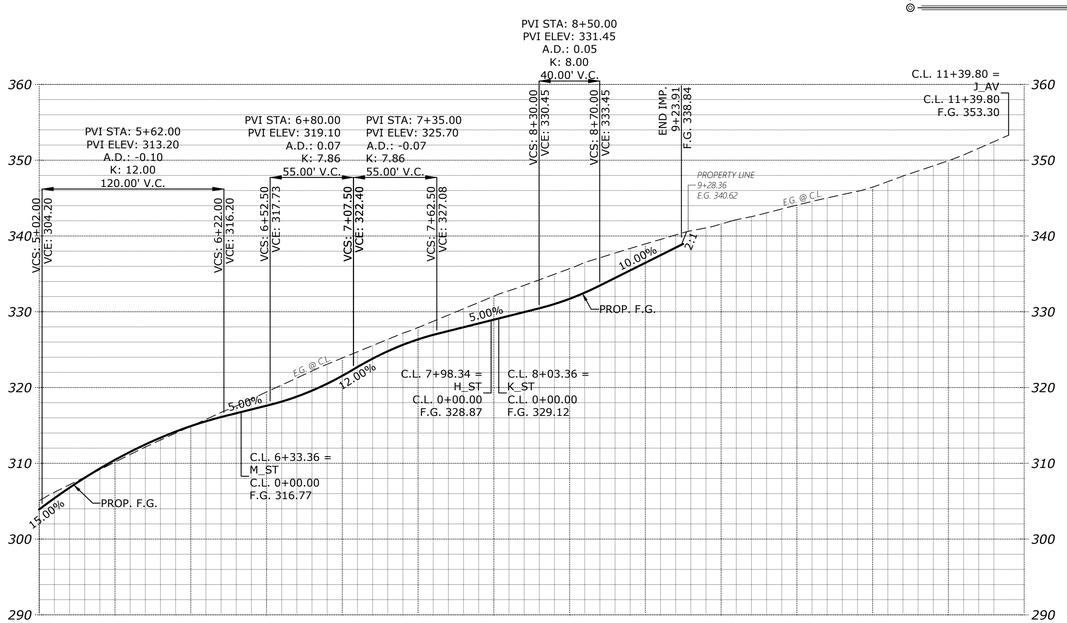
SEE SHEET P517 FOR
TYPICAL STREET SECTIONS



J AVENUE 0+00 TO 6+00

E.G. 263.4 C.L.	E.G. 262.4 C.L.	E.G. 262.2 C.L.	E.G. 260.2 C.L.	E.G. 265.7 C.L.	E.G. 274.2 C.L.	E.G. 282.2 C.L.	E.G. 288.0 C.L.	E.G. 293.3 C.L.	E.G. 299.2 C.L.	E.G. 305.0 C.L.
F.G. 263.55 C.L.	F.G. 262.80 C.L.	F.G. 264.60 C.L.	F.G. 269.48 C.L.	F.G. 275.45 C.L.	F.G. 281.43 C.L.	F.G. 286.67 C.L.	F.G. 289.90 C.L.	F.G. 292.42 C.L.	F.G. 296.79 C.L.	F.G. 303.90 C.L.

PROFILE SCALE
HORIZ. 1" = 50'
VERT. 1" = 10'



J AVENUE 6+00 TO END

E.G. 305.0 C.L.	E.G. 310.2 C.L.	E.G. 314.9 C.L.	E.G. 319.4 C.L.	E.G. 323.9 C.L.	E.G. 327.9 C.L.	E.G. 332.0 C.L.	E.G. 336.7 C.L.	E.G. 338.9 C.L.	E.G. 341.6 C.L.	E.G. C.L.	E.G. C.L.	E.G. C.L.	E.G. C.L.
F.G. 303.90 C.L.	F.G. 310.44 C.L.	F.G. 314.90 C.L.	F.G. 317.60 C.L.	F.G. 321.54 C.L.	F.G. 326.35 C.L.	F.G. 328.95 C.L.	F.G. 331.70 C.L.	F.G. 336.45 C.L.	F.G. C.L.	F.G. C.L.	F.G. C.L.	F.G. C.L.	F.G. C.L.

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234p2020 P506ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

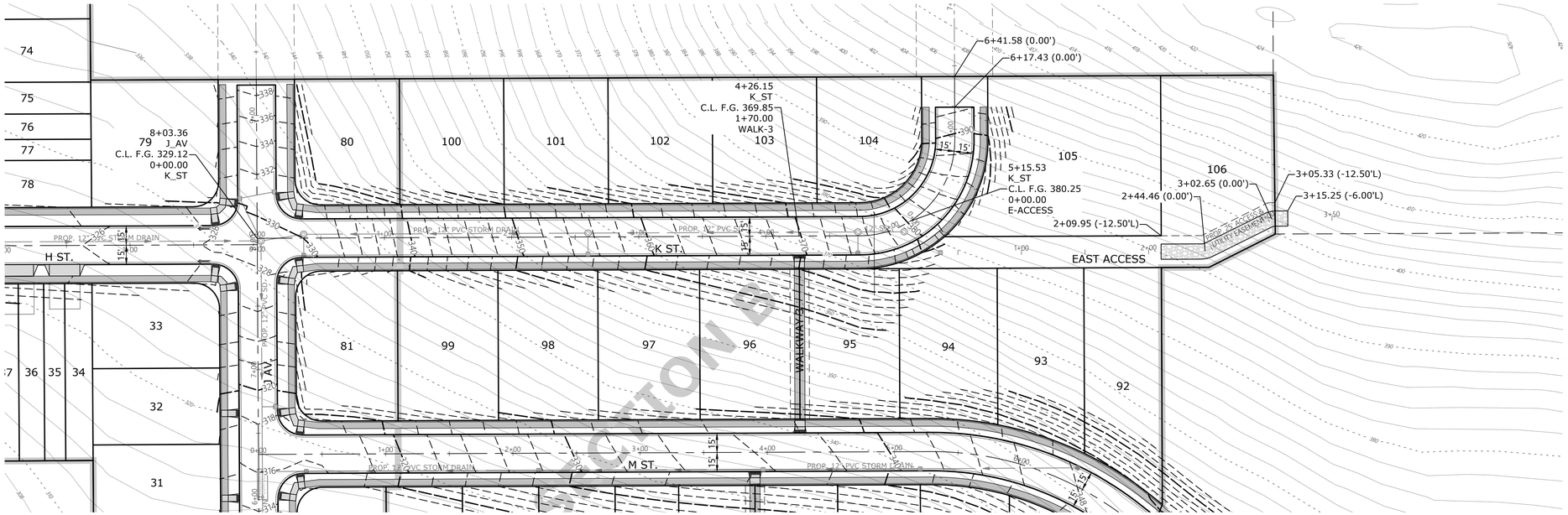
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

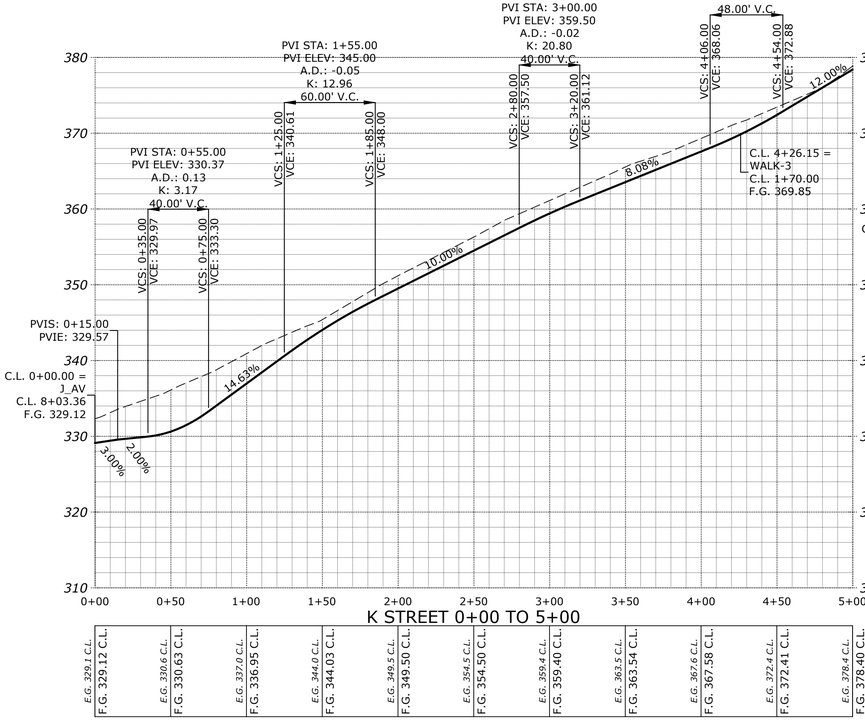
P506

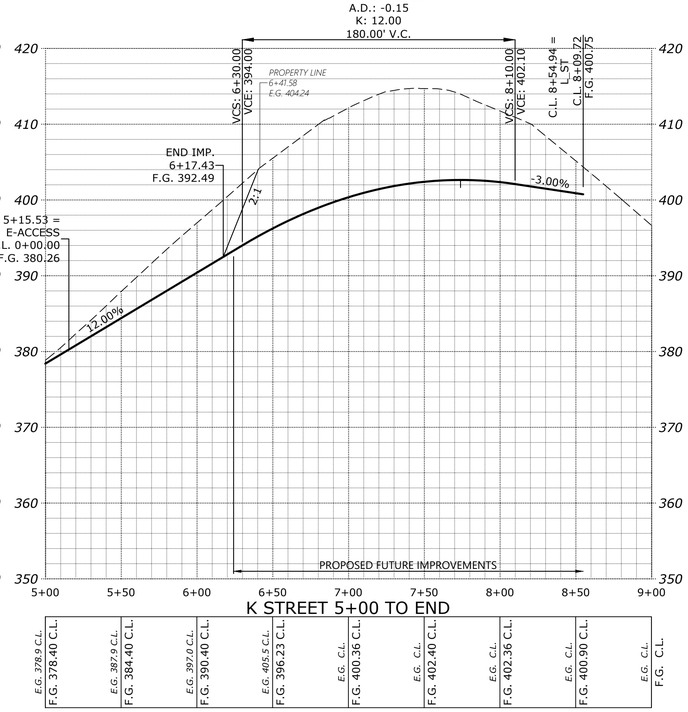
J:\6234\6234-ReedRoad\dwg v20\6234p2020.dwg, P506ST, 4/8/2021 1:02:51 PM, TStull

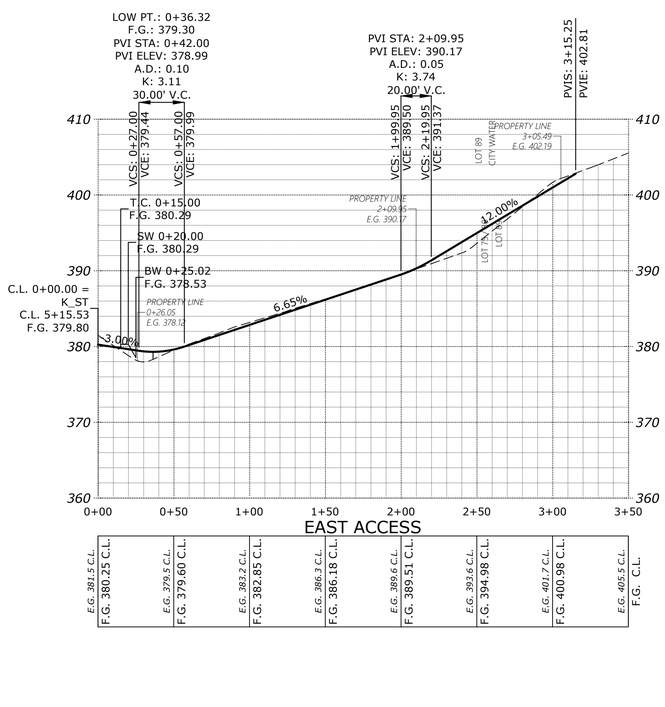


PRELIMINARY NOT FOR CONSTRUCTION

SEE SHEET P517 FOR TYPICAL STREET SECTIONS







MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH.(503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234p2020 P507S7

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

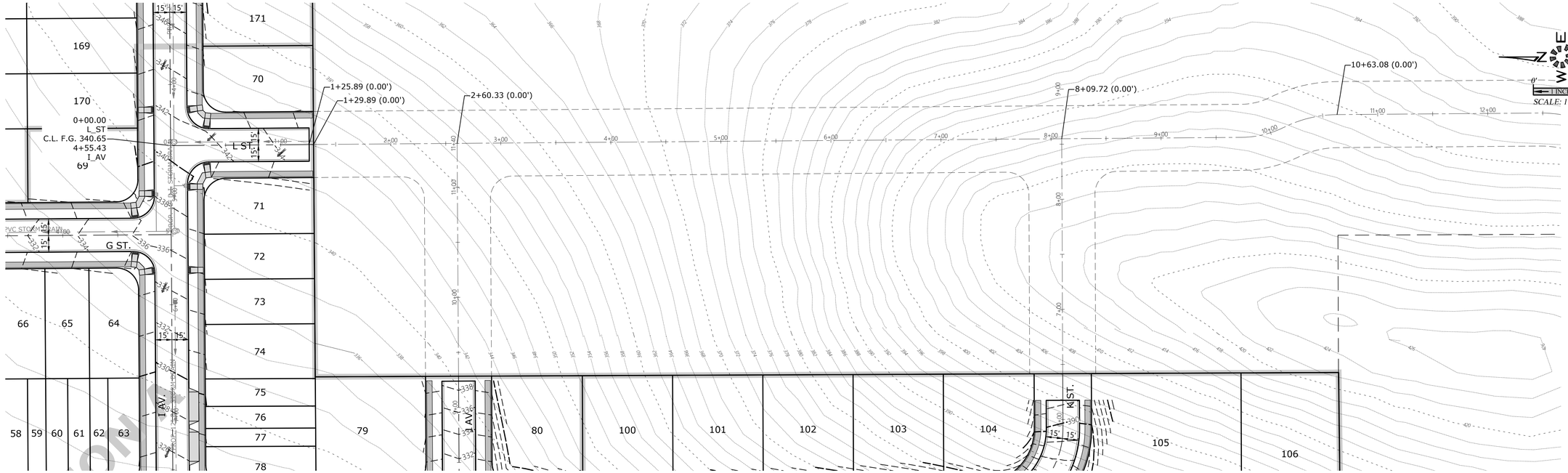
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

P507

J:\6xxx\6234-RaeRoad\Dwg s2\6234p2020.dwg, P507S7, 4/6/2021 11:02:58 PM, TStull

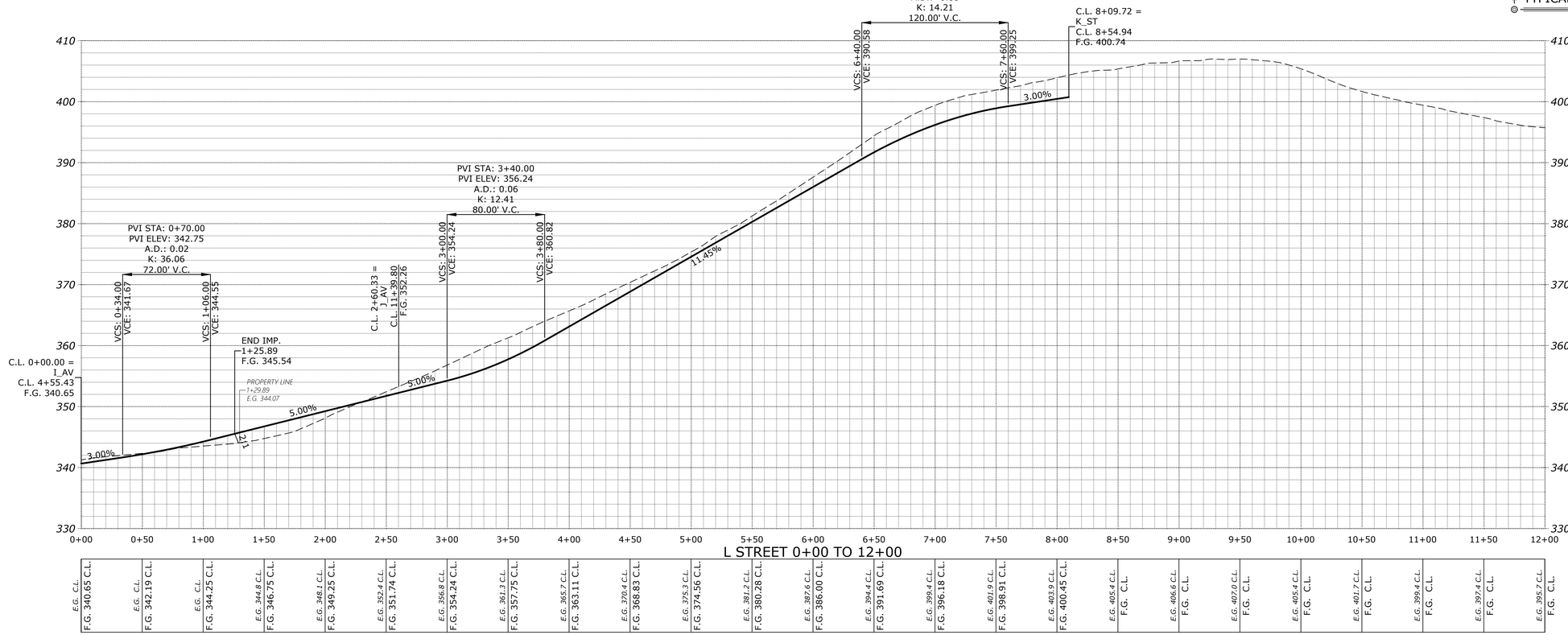


SEE SHEET P505 FOR I AVENUE DESIGN

SEE SHEET P506 FOR J AVENUE DESIGN

SEE SHEET P507 FOR K STREET DESIGN

SEE SHEET P517 FOR TYPICAL STREET SECTIONS



E.G. C.L.	E.G. C.L.	E.G. C.L.	E.G. 344.8 C.L.	E.G. 348.1 C.L.	E.G. 352.4 C.L.	E.G. 356.8 C.L.	E.G. 361.3 C.L.	E.G. 365.7 C.L.	E.G. 370.4 C.L.	E.G. 375.3 C.L.	E.G. 381.2 C.L.	E.G. 387.6 C.L.	E.G. 394.4 C.L.	E.G. 399.4 C.L.	E.G. 401.9 C.L.	E.G. 403.9 C.L.	E.G. 405.4 C.L.	E.G. 406.6 C.L.	E.G. 407.0 C.L.	E.G. 405.4 C.L.	E.G. 401.7 C.L.	E.G. 399.4 C.L.	E.G. 397.4 C.L.	E.G. 395.7 C.L.
F.G. 340.65 C.L.	F.G. 342.19 C.L.	F.G. 344.25 C.L.	F.G. 346.75 C.L.	F.G. 349.25 C.L.	F.G. 351.74 C.L.	F.G. 354.24 C.L.	F.G. 357.75 C.L.	F.G. 363.11 C.L.	F.G. 368.83 C.L.	F.G. 374.56 C.L.	F.G. 380.28 C.L.	F.G. 386.00 C.L.	F.G. 391.69 C.L.	F.G. 396.18 C.L.	F.G. 398.91 C.L.	F.G. 400.45 C.L.	F.G. C.L.	F.G. C.L.	F.G. C.L.	F.G. C.L.	F.G. C.L.	F.G. C.L.	F.G. C.L.	F.G. C.L.	F.G. C.L.

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STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234p2020 P508ST

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 2015
MARK D. GRENZ

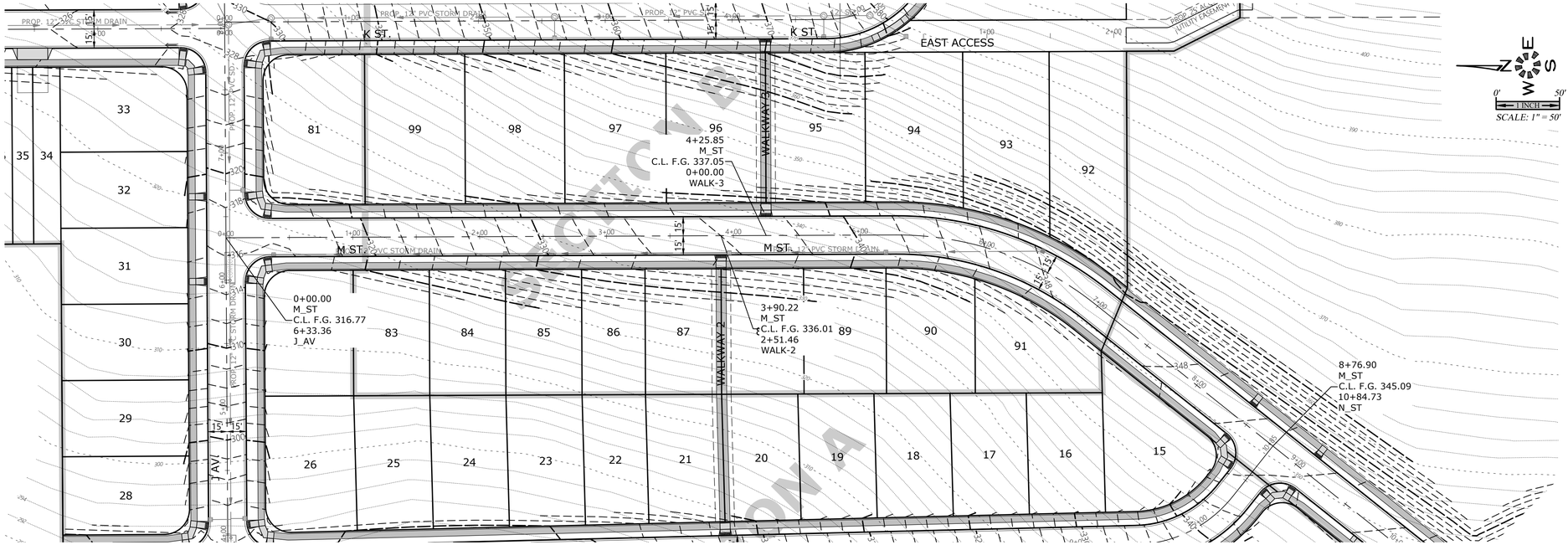
EXPIRES: 06-30-2021

JOB # 6234

P508

J:\62xx\6234-ReedRoad\dwg v20\6234v2020.dwg, P508ST, 4/8/2021 1:03:04 PM, TSull

SEE SHEET P507 FOR
K STREET DESIGN



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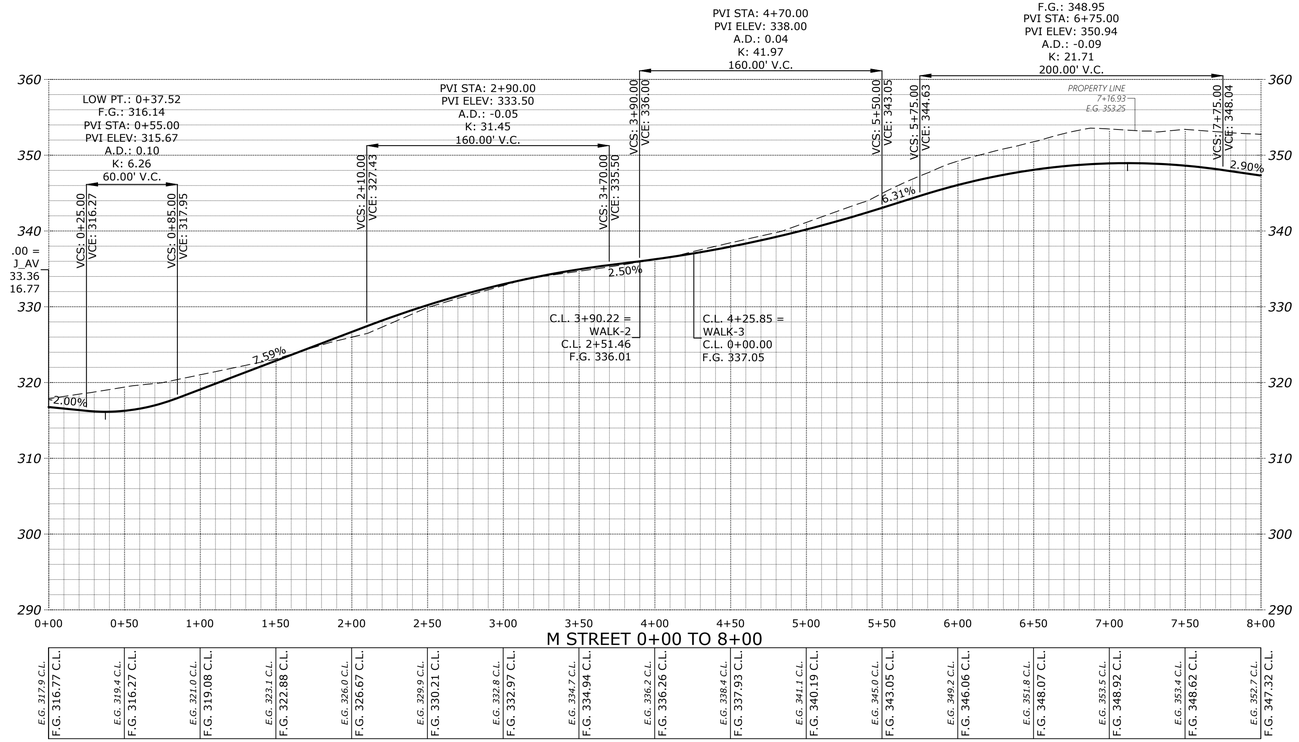
J STREET DESIGN

SEE SHEET P511 FOR
N STREET DESIGN

SEE SHEET P510 FOR
M STREET DESIGN
CONTINUATION



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P509

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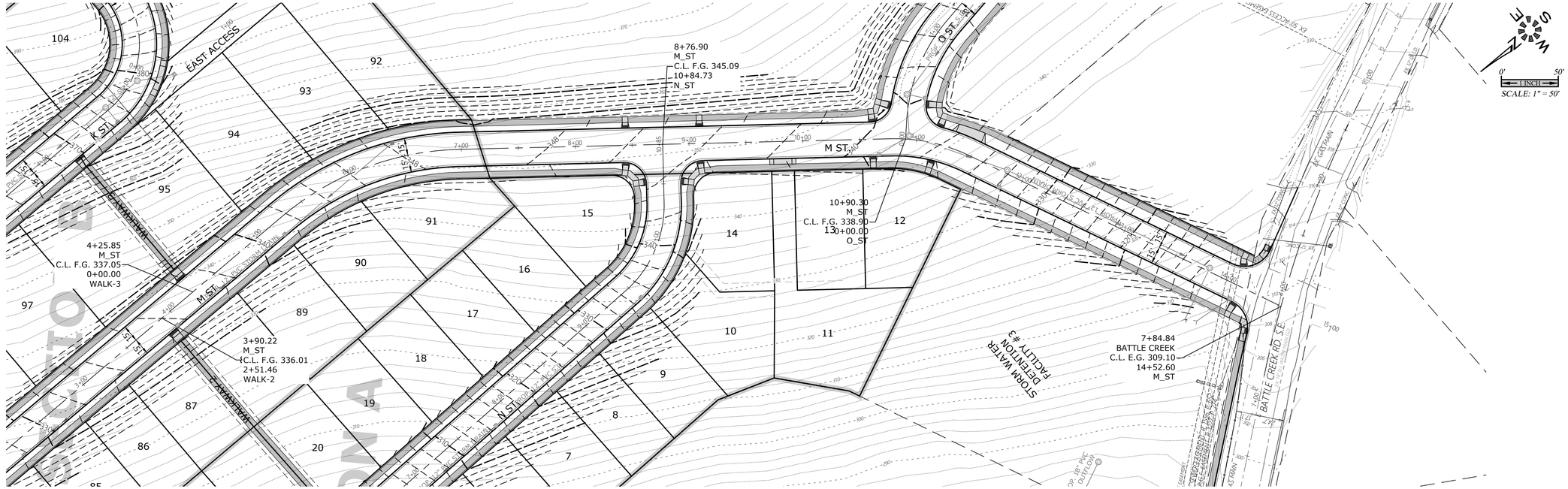

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CONTINUATION

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WALKWAY DESIGNS

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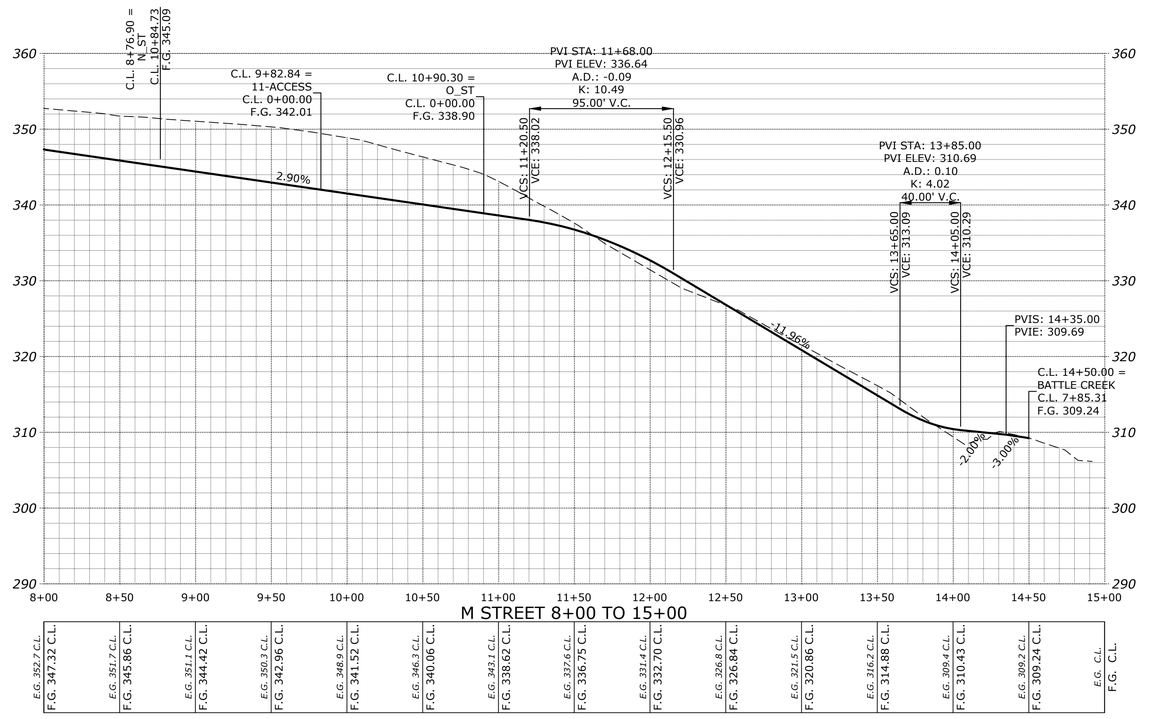

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P510

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J AVENUE DESIGN

SEE SHEET P509 & P510
FOR M STREET DESIGN

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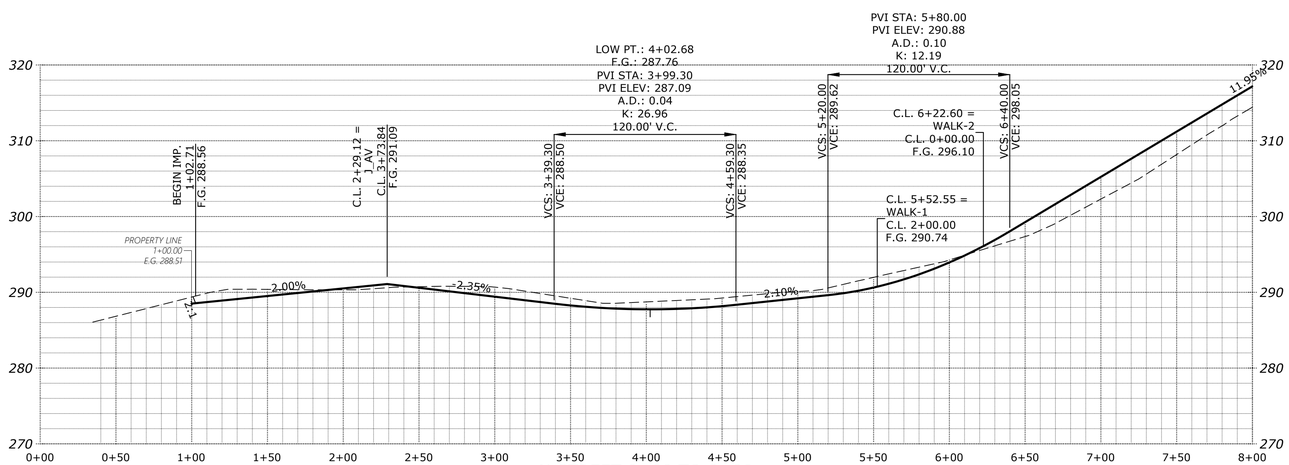

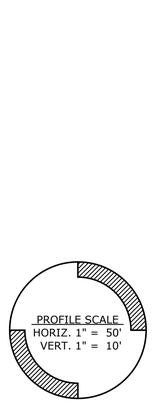

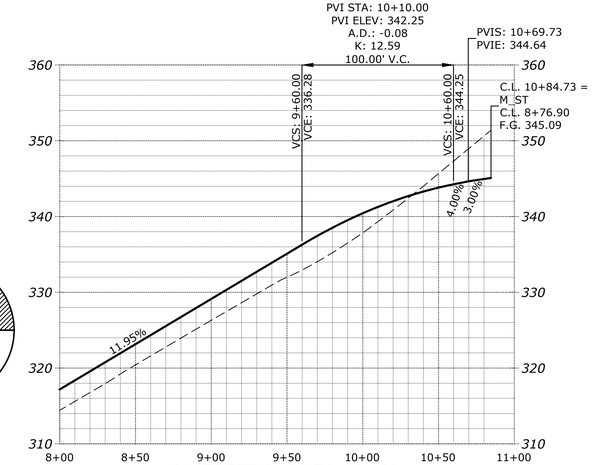

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P511

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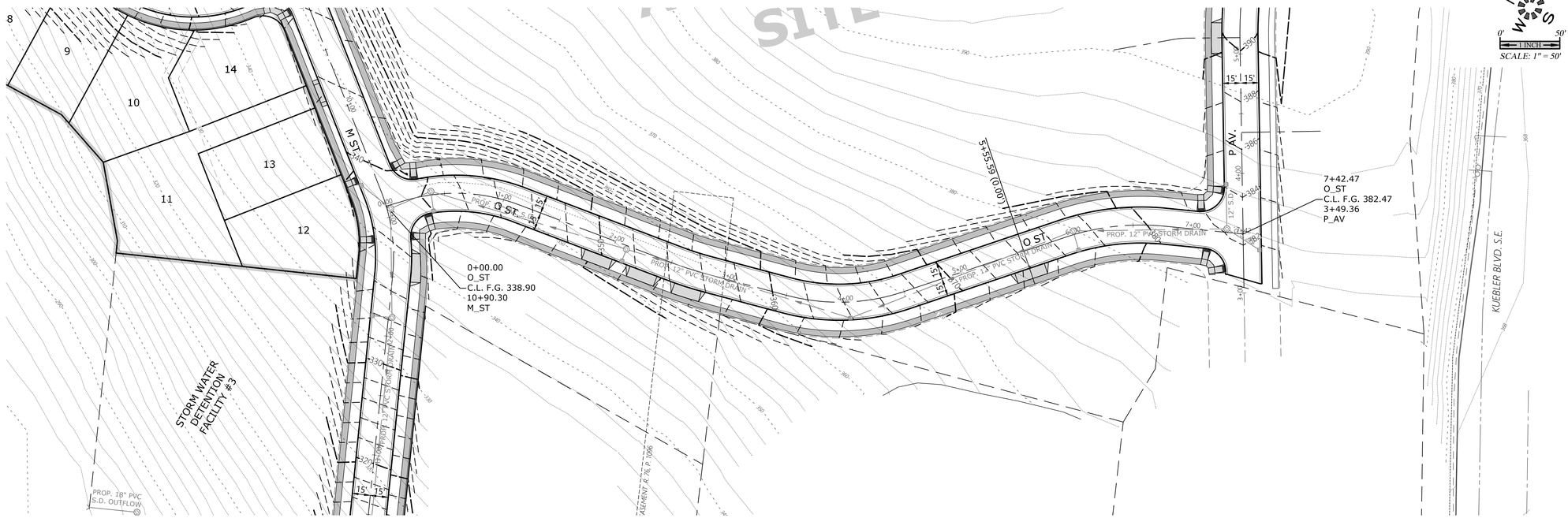
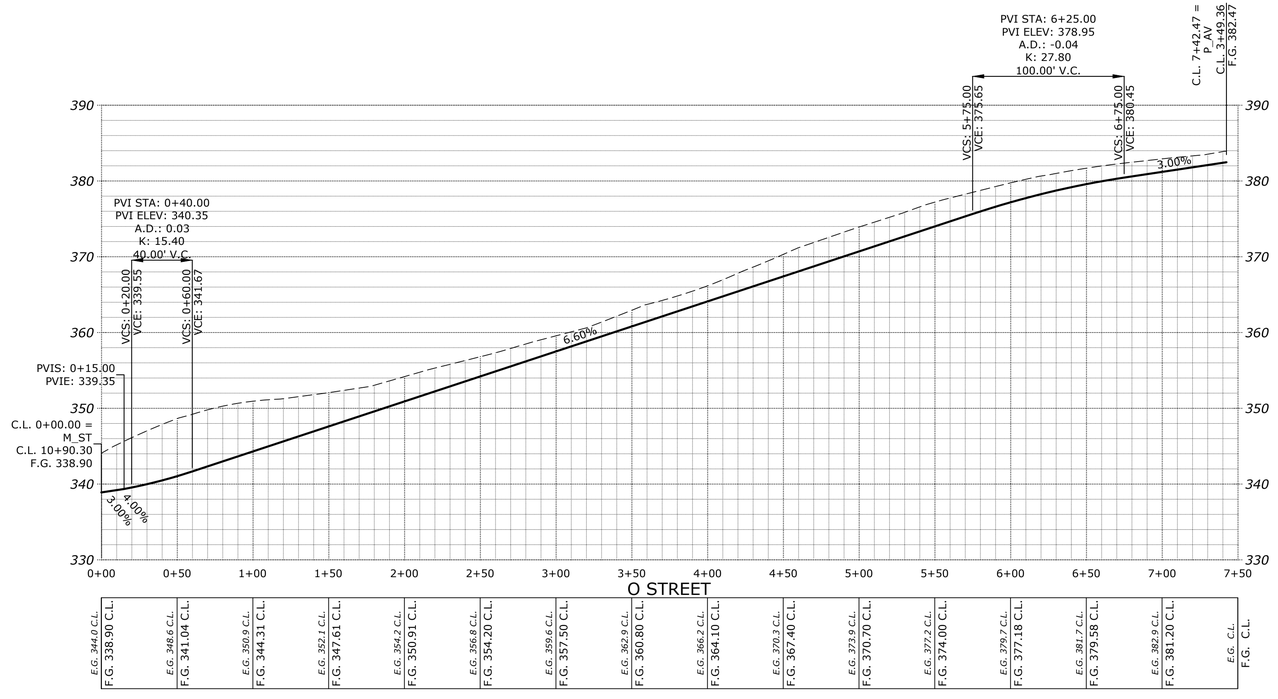
FOR M STREET DESIGN





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OREGON
JUNE 14, 2013
MARK D. GRENZ
EXPIRES: 06-30-2021

JOB # 6234

P512

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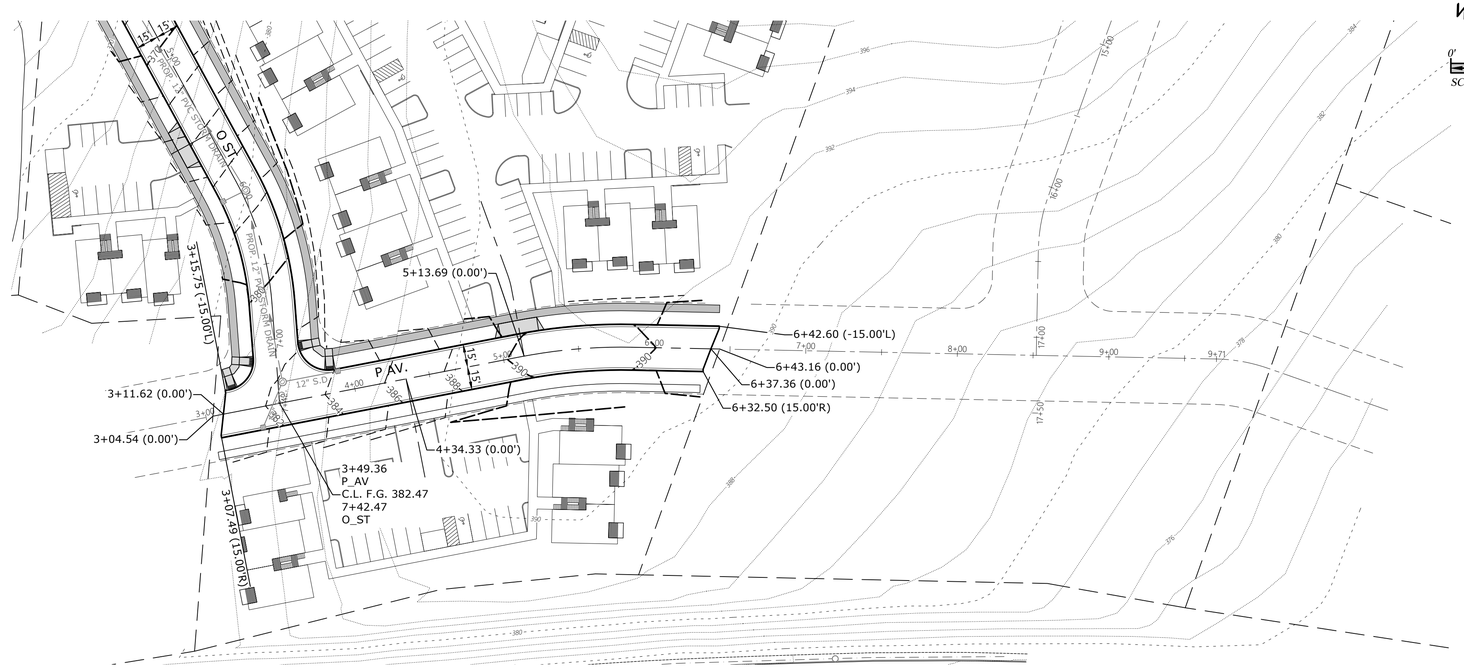

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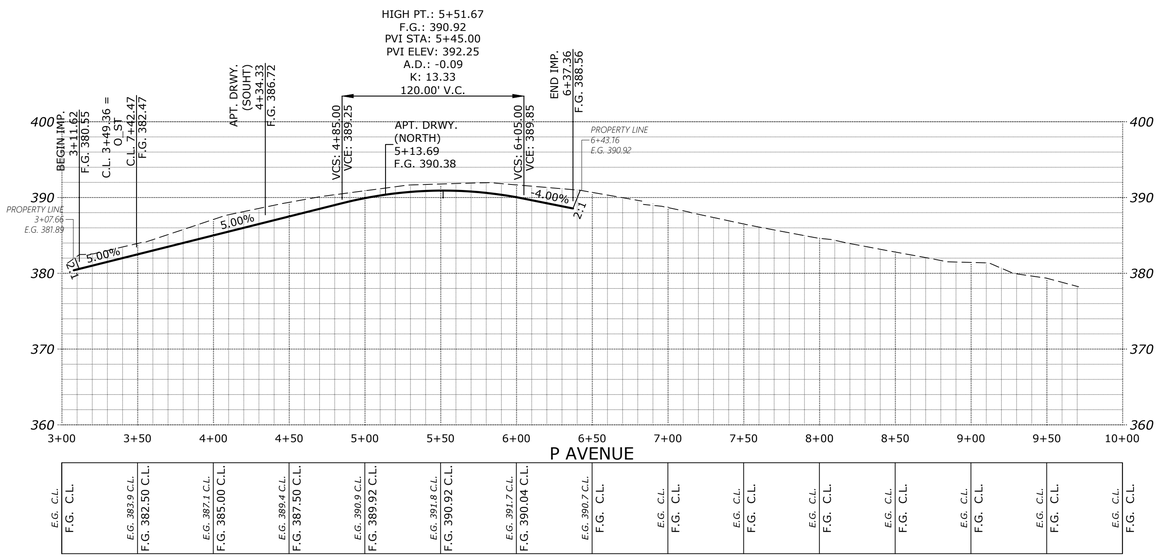

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P513

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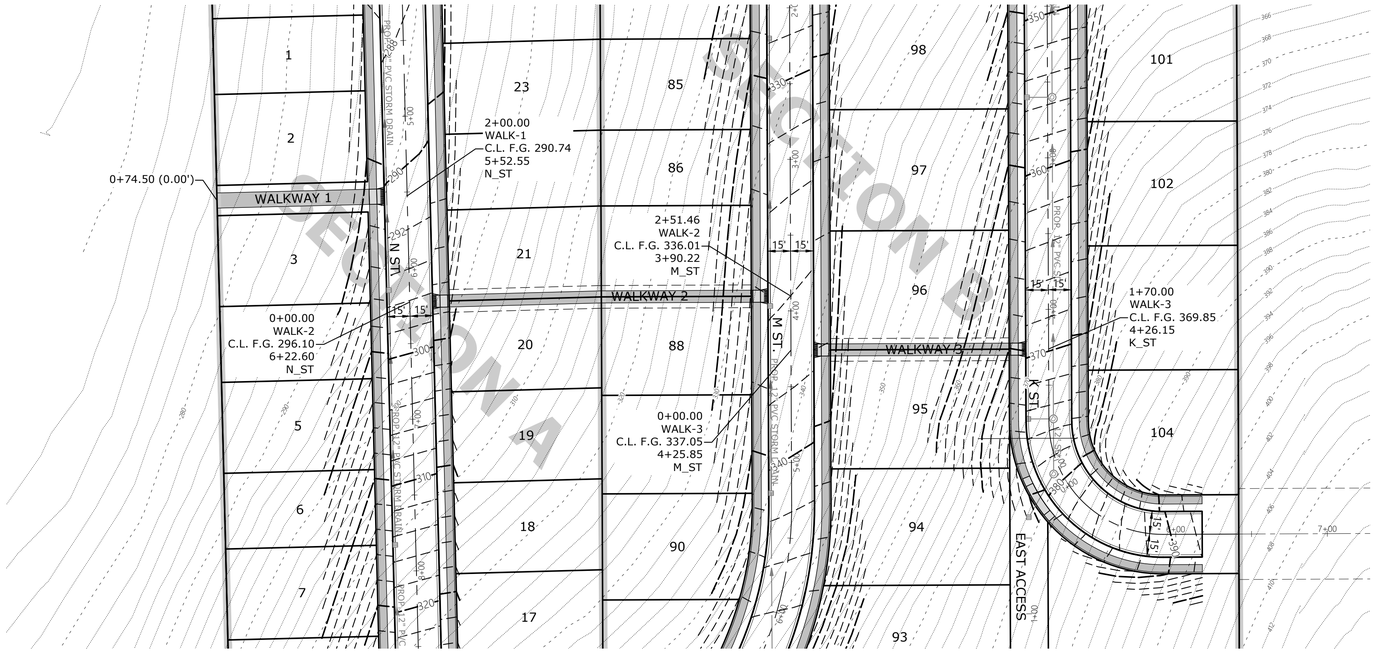
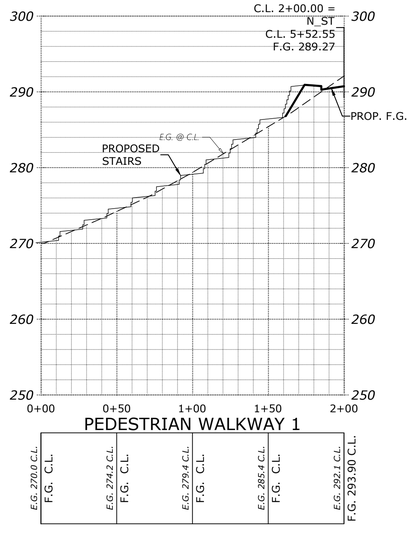
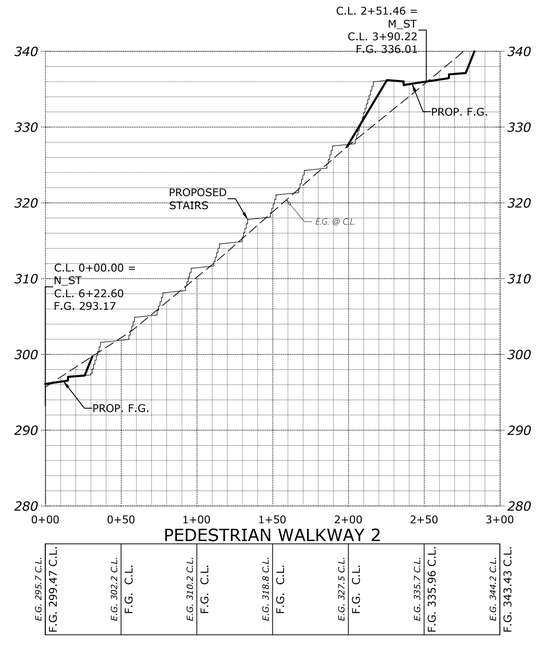
SEE SHEET P511 FOR N STREET DESIGN

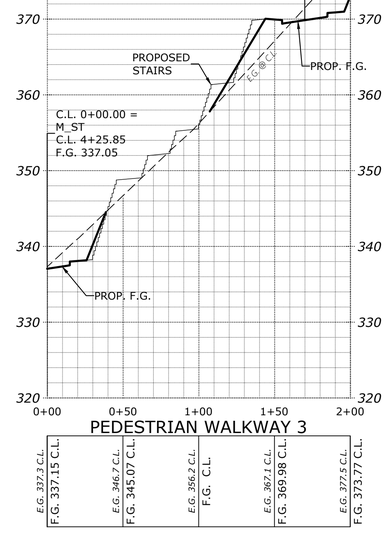
SEE SHEET P509 & P510 FOR M STREET DESIGN

SEE SHEET P507 FOR K STREET DESIGN









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JULY 14, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

P514

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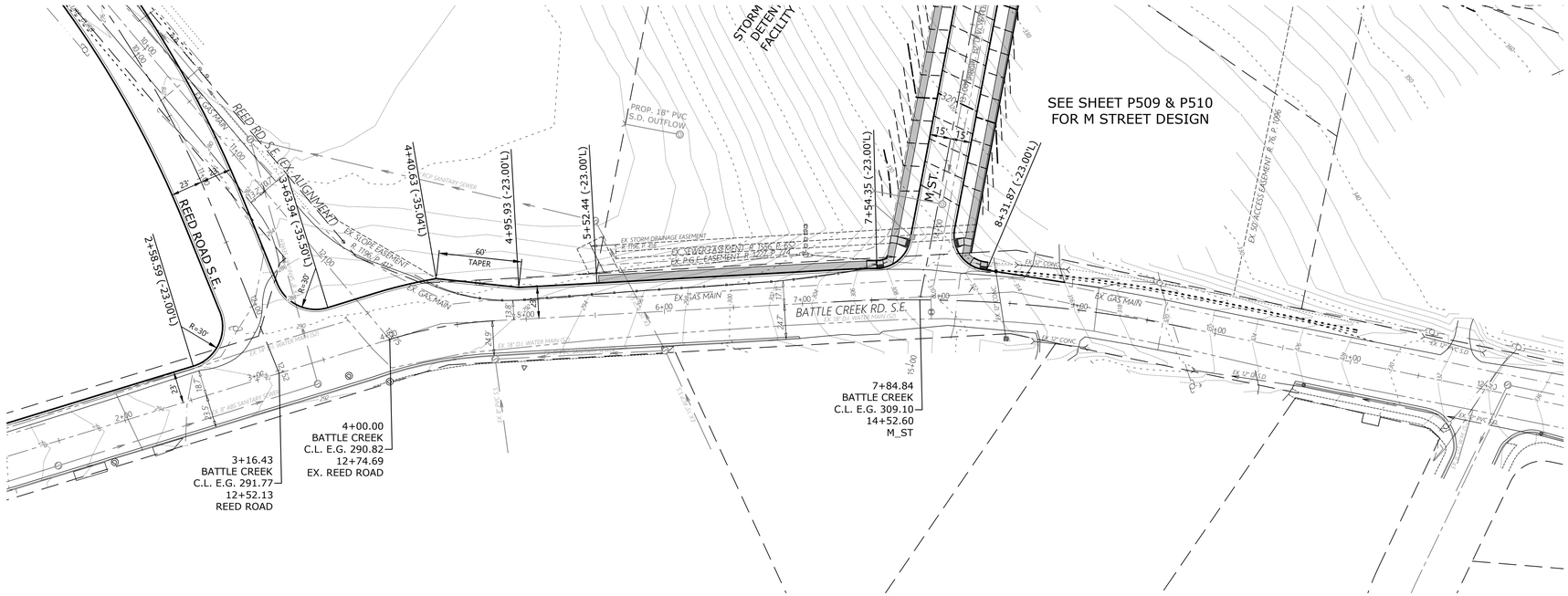

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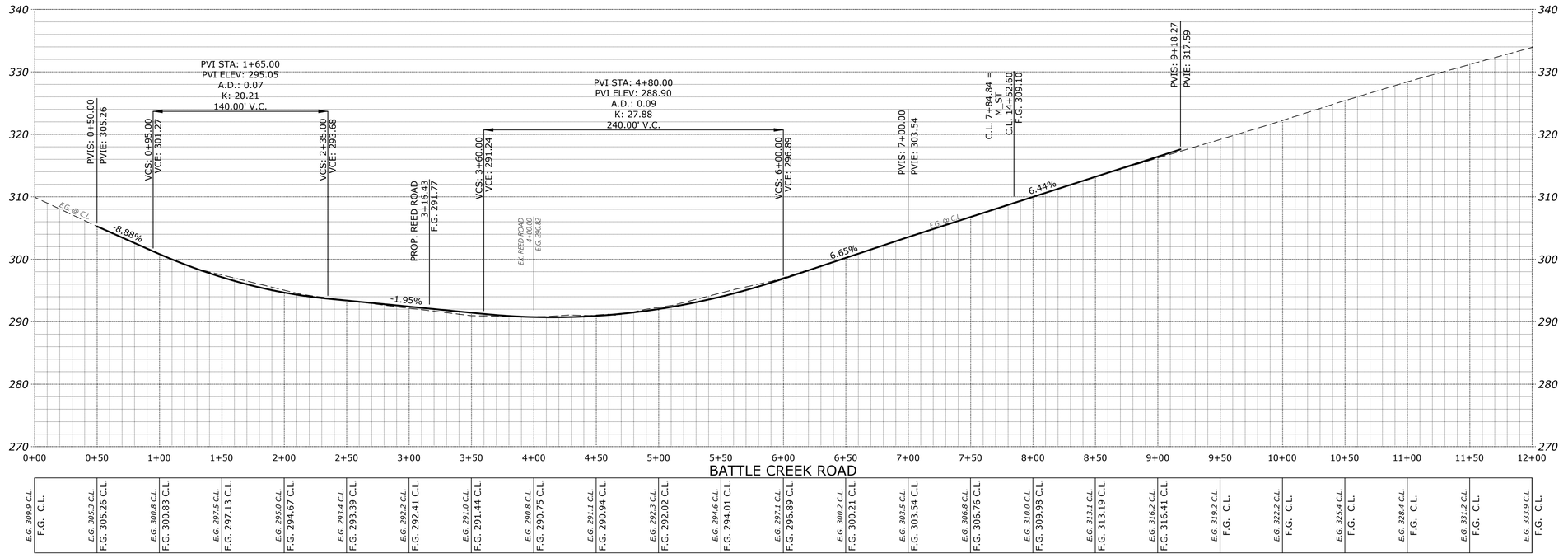

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P515

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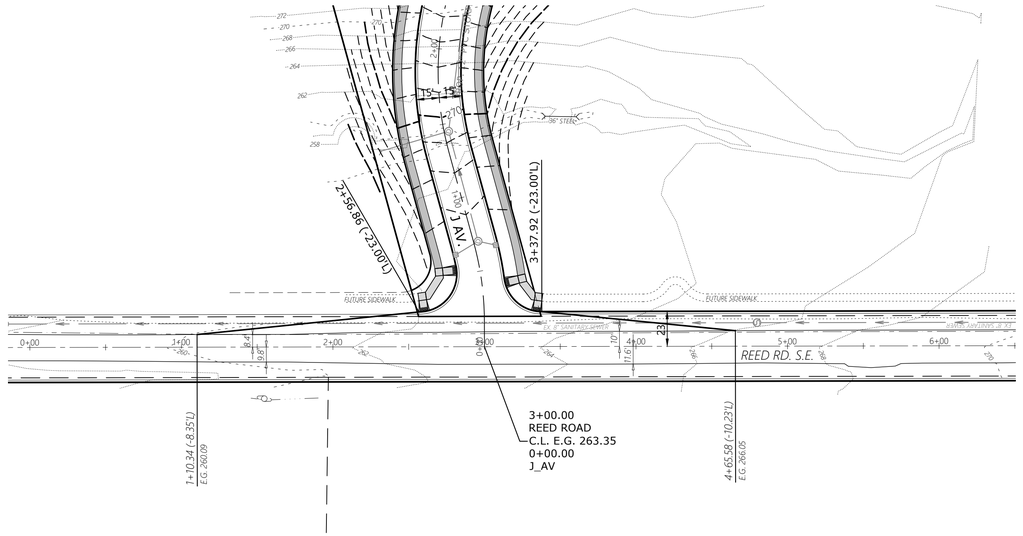

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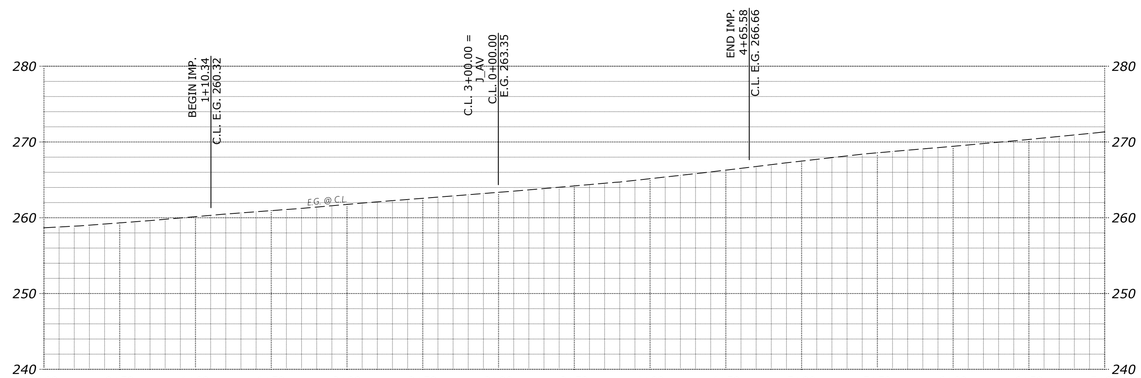

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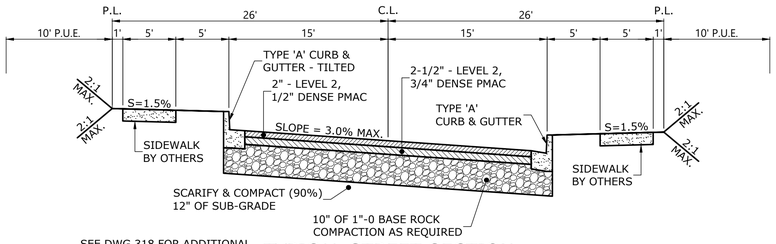
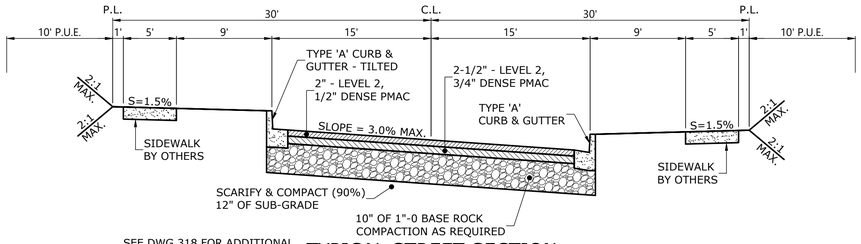


SEE DWG.318 FOR ADDITIONAL CONSTRUCTION INFORMATION.

TYPICAL STREET SECTION

K ST., M ST. 0+00.00 TO 10+90.30 & N ST.

-NTS-

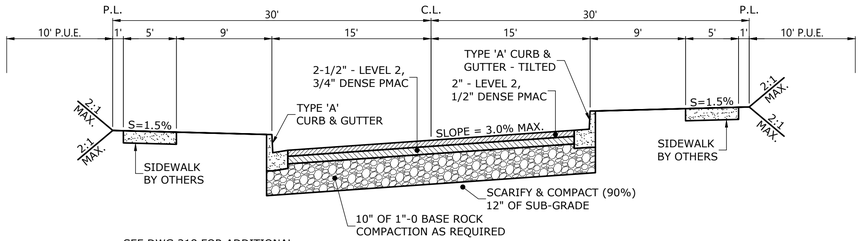


SEE DWG.318 FOR ADDITIONAL CONSTRUCTION INFORMATION.

TYPICAL STREET SECTION

I AV., L ST., M ST. 10+90.30 TO 14+52.60 & O ST.

-NTS-

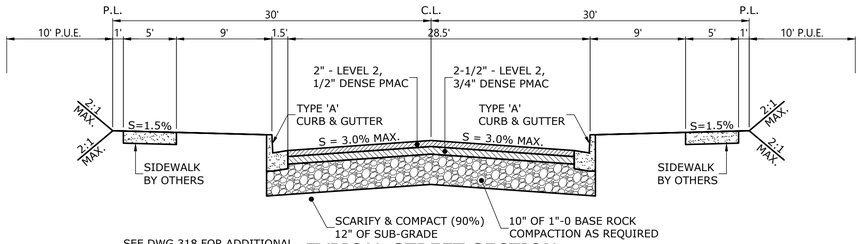


SEE DWG.318 FOR ADDITIONAL CONSTRUCTION INFORMATION.

TYPICAL STREET SECTION

B ST.

-NTS-



SEE DWG.318 FOR ADDITIONAL CONSTRUCTION INFORMATION.

TYPICAL STREET SECTION

A AV., C AV., D ST., E AV., G ST., H ST., J AV. & P AV.

-NTS-

PROVISIONS FOR WET WEATHER CONSTRUCTION

DRY SEASON CONSTRUCTION IS RECOMMENDED; HOWEVER, EXCAVATION TO SUBGRADE CAN PROCEED DURING PERIODS OF LIGHT TO MODERATE RAINFALL PROVIDED THAT THE SUBGRADE REMAINS COVERED WITH AGGREGATE; A TOTAL AGGREGATE THICKNESS OF 8-INCHES MAY BE NECESSARY TO PROTECT THE SUBGRADE FROM HEAVY CONSTRUCTION TRAFFIC. CONSTRUCTION TRAFFIC SHOULD NOT BE ALLOWED DIRECTLY ON THE SUBGRADE ONLY ATOP A SUFFICIENT COMPACTED ROCK THICKNESS TO MITIGATE SUBGRADE "PUMPING". IF THE SUBGRADE BECOMES WET AND "PUMPS" NO CONSTRUCTION TRAFFIC SHALL BE ALLOWED ON THE ROAD ALIGNMENT. POSITIVE SITE DRAINAGE AWAY FROM THE STREET SHALL BE MAINTAINED IF SITE PAVING WILL NOT OCCUR BEFORE THE ON-SET OF THE WET SEASON.

MITIGATION OF WET AND SOFT SUBGRADE, IF ENCOUNTERED

DEPENDING ON THE TIMING FOR THE PROJECT, ANY SOFT SUBGRADE FOUND DURING PROOF-ROLLING OR BY VISUAL OBSERVATION CAN EITHER BE REMOVED AND REPLACED WITH COMPACTED CRUSHED AGGREGATE, REMOVED AND DRIED OR DRIED IN-PLACE AND RECOMPACTED, OR AN AREA OF SUFFICIENT SIZE (GENERALLY AT LEAST 6-FEET BEYOND THE EDGE OF SOFT MATERIAL) MAY BE COVERED WITH A BI-AXIAL GEOGRID AND COVERED WITH COMPACTED CRUSHED AGGREGATE.

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JULY 14, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

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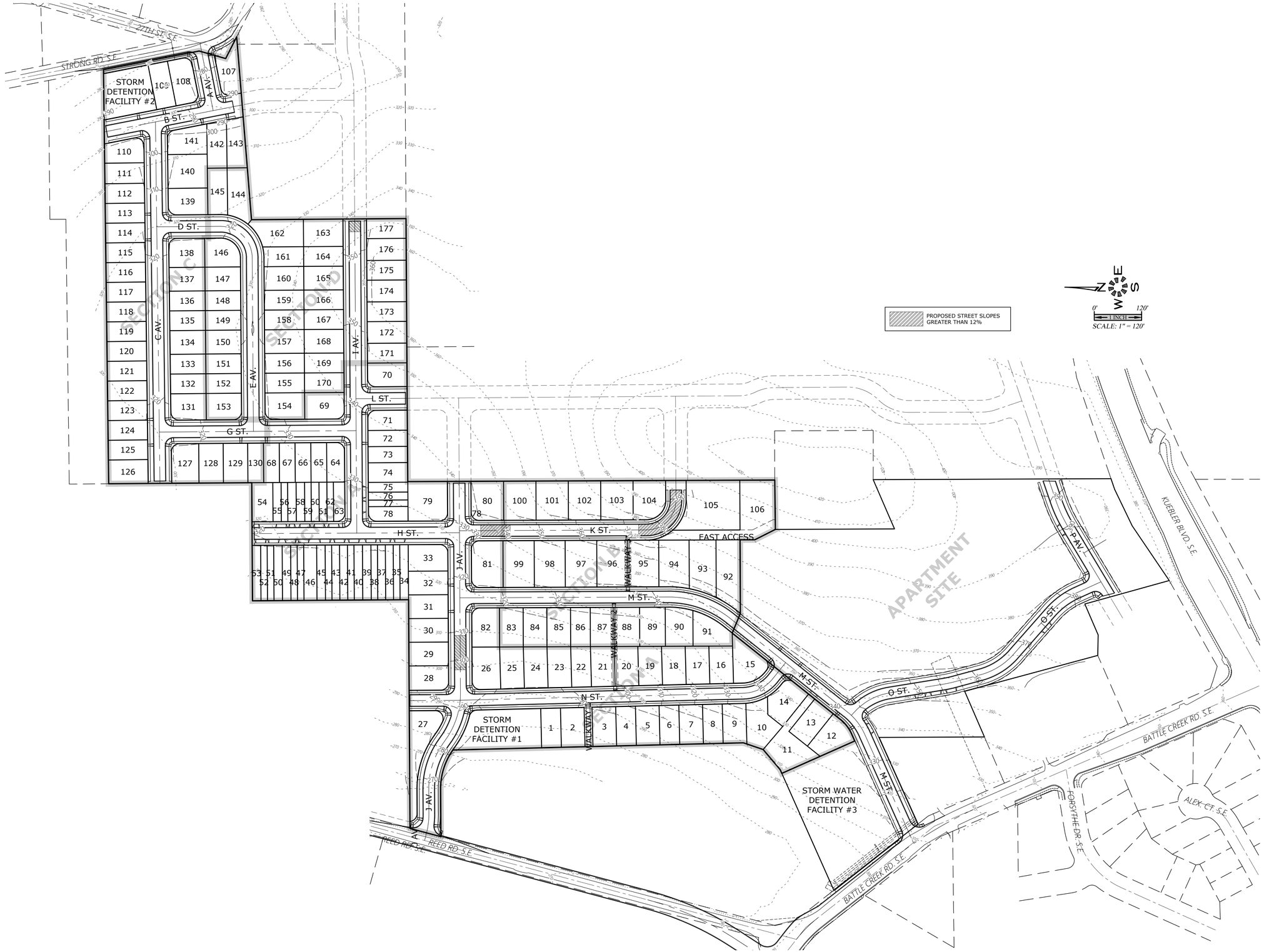

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SLOPE EXCEPTION AREAS

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OREGON
JULY 14, 1978
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

P204

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6234

PRELIMINARY DRAINAGE REPORT
FOR

Coburn Grand View Estates
Salem, Oregon

Prepared For:
Westwood Homes, LLC
12700 NW Cornell Road
Portland, Oregon 97229

April 9, 2021

MULTI/TECH
ENGINEERING SERVICES, INC.

1155 13th Street SE
Salem OR 97302

PHONE: (503) 363-9227
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EMAIL: mhendrick@mtengineering.net

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Water Quality Analysis 2

Water Quality Design 2

Stormwater Quantity Analysis – Basins 2 & 3 3

Stormwater Quantity Analysis – Basin 1 5

Stormwater Quality Analysis 7

Conclusion 7

Appendix A	Maps
Appendix B	Soils Report
Appendix C	Time of Concentration
Appendix D	Stormwater Quantity Analysis
Appendix E	Stormwater Quality Analysis

INTRODUCTION

The Coburn Grand View Estates development is a 212-lot subdivision approved under the City of Salem Planning Case No. SUB-ADJ19-08. A Subdivision Modification has been submitted for a portion of the site, Basin #1, to allow for a multi-family development and reduce the initial lot quantity to approximately 177 lots. The site is located north of Kuebler Blvd and east of Reed Road SE & Battle Creek Road SE. The parcel of land to be developed is Tax Lots 100, 200, 400 & 601 of Marion County Assessor's Map 08 3W 11D and Tax Lots 1600 & 1700 of Marion County Assessor's Map 08 3W 12B. A vicinity map and supporting maps are in Appendix A of this report.

Project Site

Green Stormwater Infrastructure (GSI) to the Maximum Extent Feasible (MEF) is being used per City of Salem Administrative Rules, Chapter 109, Division 004, Stormwater System, Appendix 4E (Standards) and Ordinance No. 8-20. All facilities will be constructed to meet the appropriate City of Salem standards.

Existing Conditions

The 45.4-acre site is irregular in the shape. Surface conditions consists of grass, brush and minimal trees. There are no identified wetlands or sensitive areas located on the property. The West Middle Fork of Pringle Creek runs through the western portion of Tax Lot 200. A topographical high point ridge is located on the easterly side of the site. Drainage from this high point flows northerly and westerly. The maximum relief is approximately 132-feet with a high point elevation of 418. The abutting properties are zoned single family residential, residential agriculture, commercial retail, public health and mixed use with public improvements that include storm water conveyance systems. Appendix A contains multiple maps of the site.

Soils

The Natural Resources Conservation Service (NRCS) Soil Resource Report for Marion County was used to determine a Hydrological Soil Group classification for runoff calculations. The report identifies the site soils to be McAlpin, Nekia and Silverton soils. All the soils are in the hydrologic soil group C. The report is in Appendix B.

Infiltration

An infiltration test was performed at the site to determine percolation rate of the soil. Test results indicate rates below 0.5 inches. Appendix B contains an excerpt from the geotechnical report with recommended infiltration rates.

Water Quality Methodology

Because of the poor percolation rates of the soils and natural steep slopes that dominate the site, green stormwater facilities are designed as volume control facilities with filtration for all sections.

Water Quality Analysis

Water quality flow rates will be calculated with HydroCAD 10.00. The SCS TR-20 Unit Hydrograph method will be used to generate the hydrographs. A Type 1A storm and a 24-hour rainfall depth of 1.38 inches per hour will be used to determine the water quality flow rate.

Water Quality Design

The proposed combination facilities will provide water quality treatment by allowing for the removal of pollutants through sedimentation, adsorption onto surrounding vegetation, filtration and biological uptake. The planters will be designed per the City of Salem designed standards.

STORMWATER QUANTITY ANALYSIS – BASINS 2 & 3

Stormwater quantity (Flow Control) is proposed to be handled by on-site detention. Runoff from the developed basins will be routed to the facilities that ultimately controls runoff to pre-developed flow rates. It should be noted that the site currently has two independent drainage basins but were analyzed as a single basin because the ultimate outlet is the nearby West Middle Fork of Pringle Creek.

Per Subsection 4.2(p)(3)(A) of the standards and Ordinance No. 8-20, one-half of the post development peak runoff rate of the two-year storm must be equal to or less than one-half of the peak runoff rate of the pre-developed two-year, 24-hour storm. This also applies to the 10, 25 and 100-year, 24-hour storm events.

The pre-developed flow rates were calculated using HydroCAD 10.00. Table 1 below lists the 24-hour rainfall depths used for the analysis of each storm event. Please note that the 2-year event was halved and then analyzed.

Table 1

Storm Event	24-hour Rainfall Depth (in)
2	2.2
10	3.2
25	3.6
100	4.4

For the pre-developed conditions, a time of concentration of 17.4 minutes was calculated for the Basin. The time of concentration data is in Appendix C. The calculations are incorporated in the HydroCAD output located in Appendix D. The entire area was classified as "City of Salem Pre-Development, HSG C" with a Curve Number (CN) of 72. A pre-developed basin map is in Appendix A.

The SCS TR-20 Unit Hydrograph method was used to generate the hydrographs. A Type 1A rainfall distribution was used with the above rainfall depths. Table 2 below identifies the allowable pre-developed release rate for each storm event.

Table 2

Storm Event	Basin #2 Allowable Release Rate (cfs)	Basin #3 Allowable Release Rate (cfs
Half of 2-year	0.05	0.04
10-year	2.58	2.12
25-year	3.66	3.01
100-year	6.09	5.01

The post-developed flow rates were calculated using HydroCAD 10.00. A time of concentration of 10 minutes was assumed for all basins. The calculations are incorporated in the HydroCAD output located in Appendix D. Each basin was classified as 60 percent "Impervious, HSG C" with a CN of 98 and 40 percent "> 75% Grass cover, HSG C" with a CN of 74. This was based on code setback requirements, City street section standards and developer design input on housing size. Table 3 below lists the CN values for the developed areas that will contribute storm water runoff to the detention systems. A developed basin map is in Appendix A.

Table 3

Basin	Impervious Area (Ac) CN = 98	Landscape Area (Ac) CN = 74	TOTAL Area (Ac)	Composite CN
Basin B2	10.49	6.99	17.48	88
Basin B3	8.63	5.75	14.38	88

Table 4 below identifies the calculated detention volume requirements for each storm event. The required detention was determined by using HydroCAD.

Table 4

Storm Event	Basin B2 Detention Volume (cf)	Basin B3 Detention Volume (cf)
Half of 2-year	17,100	14,150
10-year	34,600	28,450
25-year	40,900	33,800
100-year	49,850	45,100

The proposed detention systems will be detention pond facilities located near the lowest point in each basin to maximize the capture of runoff. A basin map has been provided in Appendix A showing the locations of the detention ponds.

STORMWATER QUANTITY ANALYSIS – BASIN 1

Stormwater quantity (Flow Control) is proposed to be handled by on-site detention. Runoff from the developed basins will be routed to the facilities that ultimately controls runoff to pre-developed flow rates.

Per Subsection 4.2(p)(3)(A) of the standards and Ordinance No. 8-20, one-half of the post development peak runoff rate of the two-year storm must be equal to or less than one-half of the peak runoff rate of the pre-developed two-year, 24-hour storm. This also applies to the 10, 25 and 100-year, 24-hour storm events.

The pre-developed flow rates were calculated using HydroCAD 10.00. Table 5 below lists the 24-hour rainfall depths used for the analysis of each storm event. Please note that the 2-year event was halved and then analyzed.

Table 5

Storm Event	24-hour Rainfall Depth (in)
2	2.2
10	3.2
25	3.6
100	4.4

For the pre-developed conditions, a time of concentration of 17.4 minutes was calculated for the Basin. The time of concentration data is in Appendix C. The calculations are incorporated in the HydroCAD output located in Appendix D. The entire area was classified as "City of Salem Pre-Development, HSG C" with a Curve Number (CN) of 72. A pre-developed basin map is in Appendix A.

The SCS TR-20 Unit Hydrograph method was used to generate the hydrographs. A Type 1A rainfall distribution was used with the above rainfall depths. Table 6 below identifies the allowable pre-developed release rate for each storm event.

Table 6

Storm Event	Basin #1 Allowable Release Rate (cfs)
1/2 of 2-year	0.04
10-year	2.00
25-year	2.84
100-year	4.73

The post-developed flow rates were calculated using HydroCAD 10.00. A time of concentration of 15 minutes was assumed for all basins. The calculations are incorporated in the HydroCAD output located in Appendix D. Each basin was classified as 60 percent "Impervious, HSG C" with a CN of 98 and 40 percent “> 75% Grass cover, HSG C” with a CN of 74. This was based on code setback requirements and City street section standards. Table 7 below lists the CN values for the developed areas that will contribute storm water runoff to the detention systems. A developed basin map is in Appendix A.

Table 7

Basin	Impervious Area (Ac) CN = 98	Landscape Area (Ac) CN = 74	TOTAL Area (Ac)	Composite CN
Basin B1	8.15	5.43	13.58	88

Table 8 below identifies the calculated detention volume requirements for each storm event. The required detention was determined by using HydroCAD.

Table 8

Storm Event	Basin B2 Detention Volume (cf)
1/2 of 2-year	13,400
10-year	27,500
25-year	31,750
100-year	38,350

The proposed detention systems will be detention pond facilities located near the lowest point in each basin to maximize the capture of runoff. A basin map has been provided in Appendix A showing the locations of the detention ponds.

STORMWATER QUALITY ANALYSIS

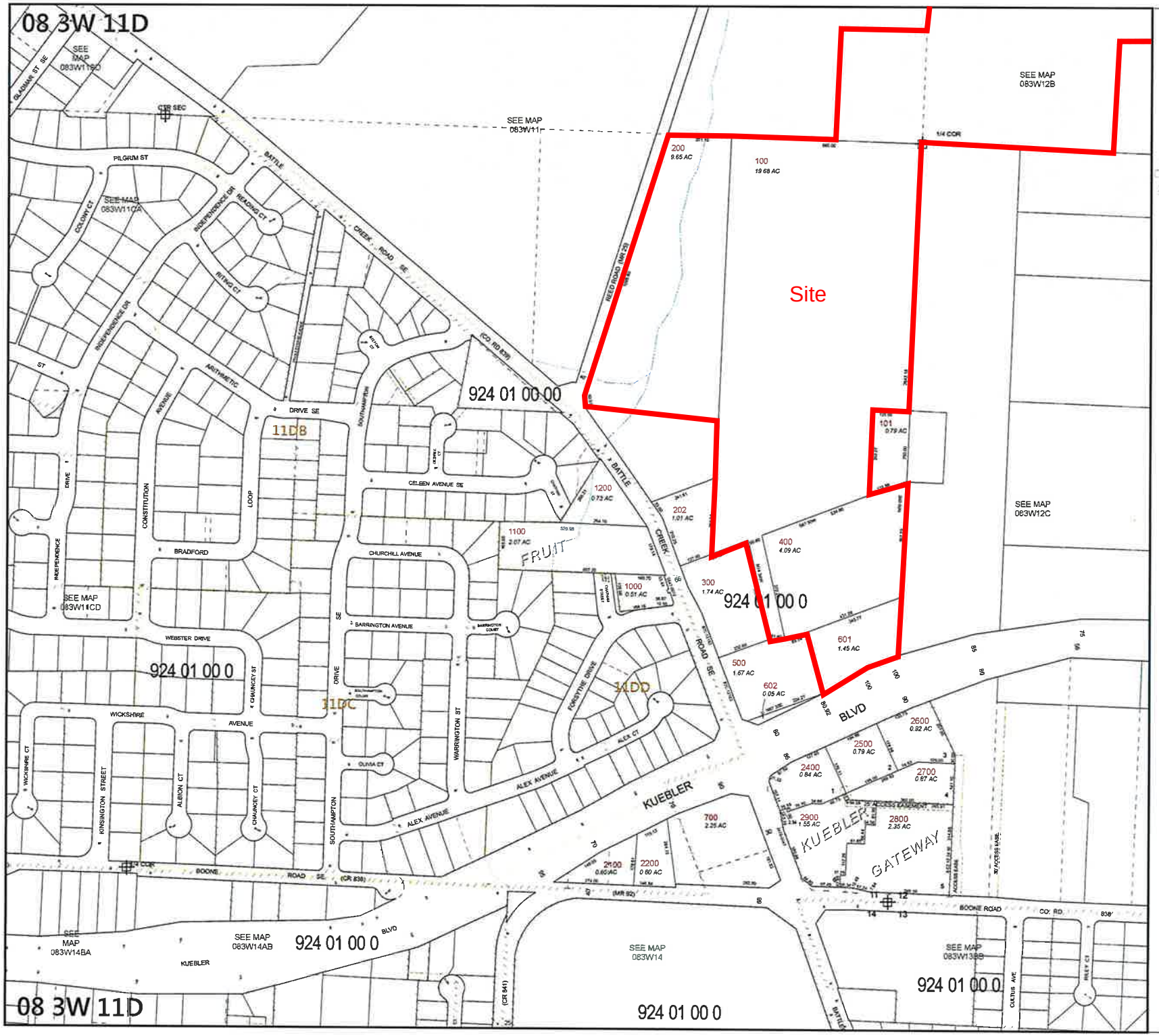
Water quality flow rates were calculated using HydroCAD 10.00. The SCS TR-20 Unit Hydrograph method was used to generate the hydrographs. A Type 1A rainfall distribution was used with a 1.38 rainfall depth. Appendix E contains the analysis.

All detention facilities will incorporate filtration sections and will be constructed per City of Salem standards.

CONCLUSION

Based on the presented information, the proposed design will meet the water quality and quantity standards. If there are any questions regarding this analysis or the design, please contact Matthew Hendrick at Multi/Tech Engineering by phone at (503) 363-9227 or via e-mail at mhendrick@mtengineering.net.

Appendix A



08 3W 11D
SALEM

MARION COUNTY, OREGON
SE1/4 SEC11 T8S R3W W.M.
SCALE 1" = 200'

LEGEND

LINE TYPES

- Taxlot Boundary
- Historical Boundary
- Road Right-of-Way
- Easement
- Railroad Right-of-Way
- Railroad Centerline
- Private Road ROW
- Taxcode Line
- Subdivision/Plat Bndry
- Map Boundary
- Waterline - Taxlot Bndry
- Waterline - Non Bndry

CORNER TYPES

- 1/16TH Section Cor.
- 1/4 Section Cor.
- DLC Corner
- Section Corner (16, 15, 21, 22)

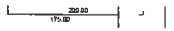
NUMBERS

Tax Code Number
000 00 00 0

Acreage 0.25 AC — All acres listed are Net Acres, excluding any portions of the taxlot within public ROWs

NOTES

Tick Marks: A tick mark in the road indicates that the labeled dimension extends into the public ROW



CANCELLED NUMBERS

201	1400	2302
301	1500	2303
501	1600	
502	1601	
600	1700	
603	1800	
700A1	1801	
701	1900	
702	1901	
703	2000	
800	2001	
801	2002	
900	2101	
901	2102	
902	2201	
1001	2300	
1300	2301	

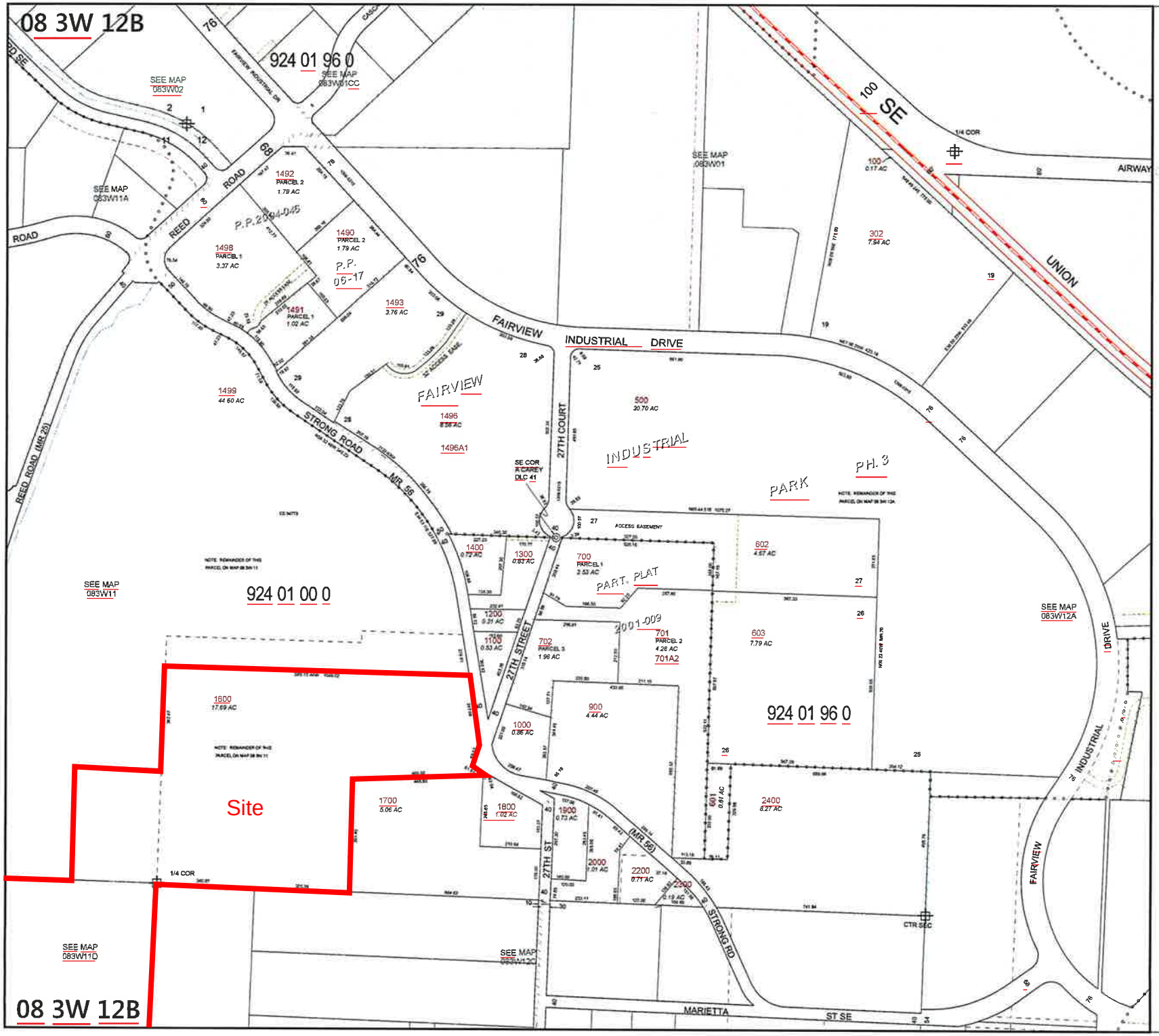
DISCLAIMER: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY

Assessors Office Cartography Dept

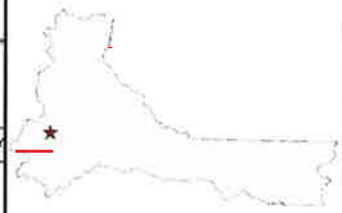
FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT www.co.marion.or.us

PLOT DATE: 1/24/2018

SALEM
08 3W 11D



08 3W 12B
SALEM



MARION COUNTY, OREGON
NW1/4 SEC12 T8S R3W W.M.
SCALE 1" = 200'

LEGEND

LINE TYPES

Taxlot Boundary	Historical Boundary
Road Right-of-Way	Easement
Railroad Right-of-Way	Railroad Centerline
Private Road ROW	Taxcode Line
Subdivision/Plat Bndry	Map Boundary
Waterline - Taxlot Bndry	Waterline - Non Bndry

CORNER TYPES

- 1/16TH Section Cor.
- 1/4 Section Cor.
- DLC Corner
- Section Corner (16, 15, 21, 22)

NUMBERS

Tax Code Number
000 00 00 0

Acreage
0.25 AC

All acres listed are Net Acres, excluding any portions of the taxlot within public ROWs

NOTES

Tick Marks: A tick mark in the road indicates that the labeled dimension extends into the public ROW

CANCELLED NUMBERS

200	1498A1
201	1498A2
202	1498A3
300	1500
301	1601
400	2100
401	
402	
501	
502	
503	
600	
700A1	
701A1	
800	
1494	
1497	

DISCLAIMER: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY

Assessors Office Cartography Dept

FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT www.co.marion.or.us

PLOT DATE: 1/24/2018

SALEM
08 3W 12B

COBURN GRAND VIEW ESTATES

T. 8 S., R. 3 W., Willamette Meridian
Sec. 11D Tax Lots 100, 200, 400 & 601 - Sec. 12B Tax Lot 1600
City Of Salem, Marion County, Oregon

Owner / Developer:

WESTWOOD HOMES LLC

12700 NW CORNELL RD.
PORTLAND, OREGON 97229

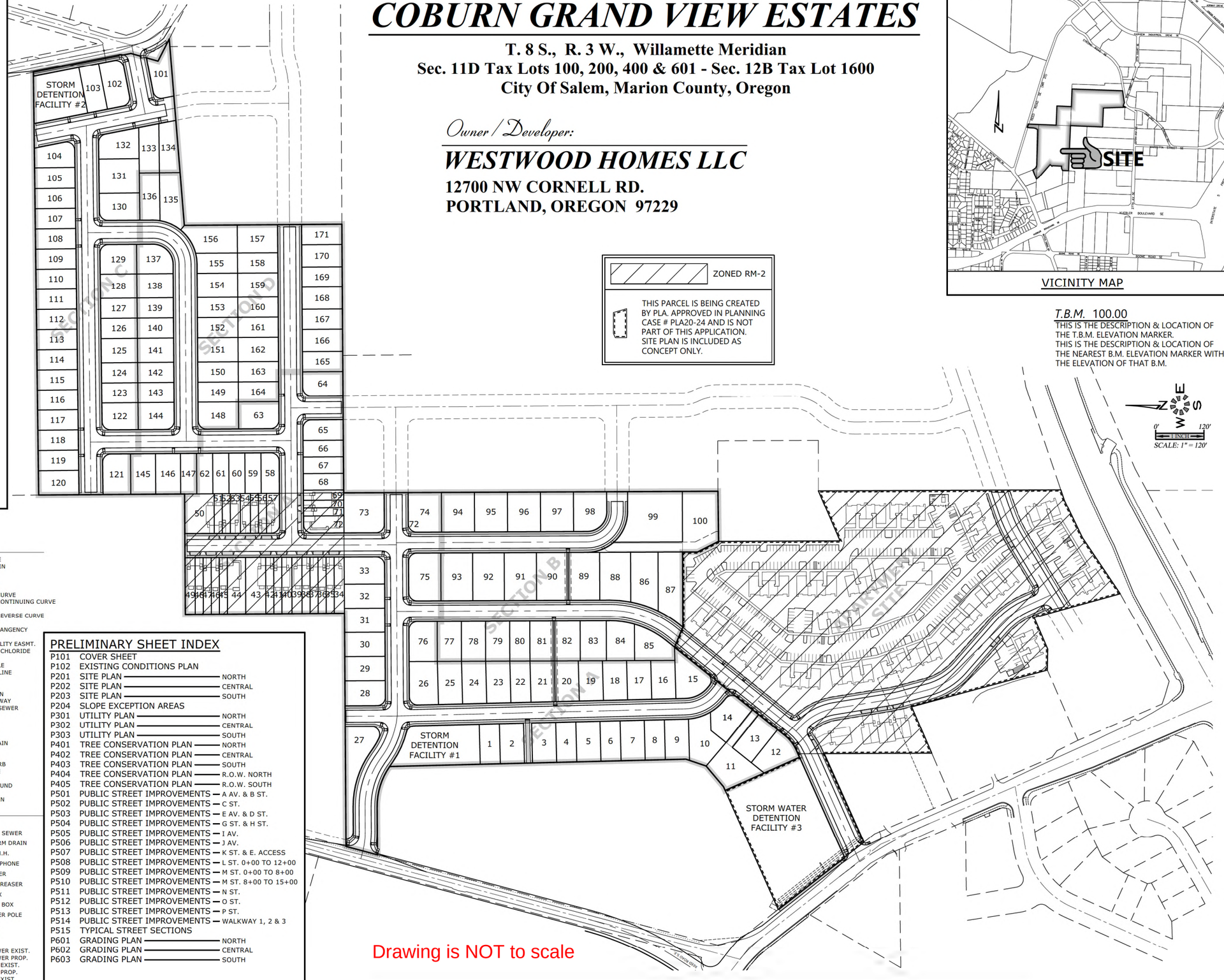
TOTAL PARCEL SIZE:
DEVELOPABLE AREA — 32.545 Ac.
NUMBER OF UNITS — 170
DENSITY — 4.51 UNITS/Ac.
LARGEST LOT — 13,195 S.F.
SMALLEST LOT — 5,500 S.F.
AVERAGE — 6,753 S.F.

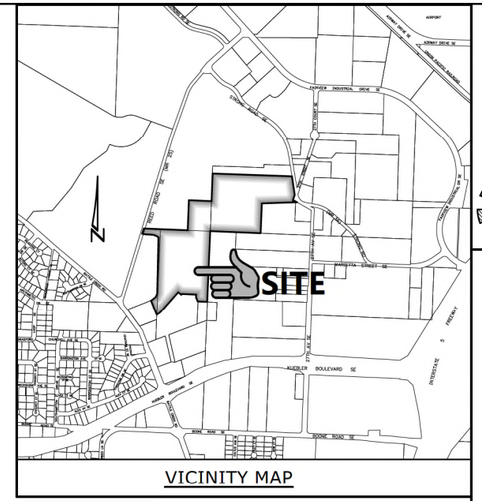
SECTION A:
DEVELOPABLE AREA — 13.492 Ac.
NUMBER OF UNITS — 76
DENSITY — 5.63 UNITS/Ac.
LARGEST LOT — 10,658 S.F.
SMALLEST LOT — 1,982 S.F.
AVERAGE — 5,038 S.F.

SECTION B:
DEVELOPABLE AREA — 6.068 Ac.
NUMBER OF UNITS — 24
DENSITY — 3.96 UNITS/Ac.
LARGEST LOT — 17,940 S.F.
SMALLEST LOT — 4,951 S.F.
AVERAGE — 8,559 S.F.

SECTION C:
DEVELOPABLE AREA — 6.828 Ac.
NUMBER OF UNITS — 34
DENSITY — 4.98 UNITS/Ac.
LARGEST LOT — 10,658 S.F.
SMALLEST LOT — 4,484 S.F.
AVERAGE — 5,499 S.F.

SECTION D:
DEVELOPABLE AREA — 6.155 Ac.
NUMBER OF UNITS — 36
DENSITY — 5.85 UNITS/Ac.
LARGEST LOT — 8,353 S.F.
SMALLEST LOT — 4,001 S.F.
AVERAGE — 5,492 S.F.





T.B.M. 100.00
THIS IS THE DESCRIPTION & LOCATION OF THE T.B.M. ELEVATION MARKER.
THIS IS THE DESCRIPTION & LOCATION OF THE NEAREST B.M. ELEVATION MARKER WITH THE ELEVATION OF THAT B.M.

N
W E
S
0' 120'
1 INCH
SCALE: 1" = 120'

ABBREVIATIONS

A.C.	ASPHALTIC CONCRETE	L.P.	LIGHT POLE
ACMP	ALUMINIZED CMP	M	METER, MAIN
ASSY.	ASSEMBLY	M.H.	MANHOLE
B.O.	BLOW OFF	MTL.	METAL
B.F.V.	BUTTERFLY VALVE	O.H.	OVERHEAD
C & G	CURB & GUTTER	PC	POINT OF CURVE
CATV	CABLE TELEVISION	PCC	POINT OF CONTINUING CURVE
C.B.	CATCH BASIN	PED.	PEDESTAL
C.B.C.O.	CATCH BASIN CLEANOUT	PRC	POINT OF REVERSE CURVE
C.B.I.	CATCH BASIN INLET	PROP.	PROPOSED
C.L.	CENTERLINE	PT	POINT OF TANGENCY
CMP	CORRUGATED METAL PIPE	PUB.	PUBLIC
C.O.	CLEANOUT	PUE	PUBLIC UTILITY EASMT.
CONC.	CONCRETE	PVC	POLYVINYL CHLORIDE
CONST.	CONSTRUCT	PVT.	PRIVATE
D.I.	DUCTILE IRON	P.P.	POWER POLE
DIA.	DIAMETER	P.L.	PROPERTY LINE
DWG.	DRAWING	R	RADIUS
EASMT.	EASEMENT	R-	RIM
E.G.	EXIST. GRADE / GROUND	RD	ROOF DRAIN
EOP, E.P.	EDGE OF PAVEMENT	R.O.W.	RIGHT-OF-WAY
ELEC.	ELECTRIC	SAN.S. or S.S.	SANITARY SEWER
ELEV. or EL.	ELEVATION	S	SLOPE
EX. or EXIST.	EXISTING	STA.	STATION
FT.	FEET	STD.	STANDARD
F.F.	FINISH FLOOR	STL.	STEEL
F.G.	FINISH GRADE	STM.DRN. or S.D.	STORM DRAIN
F.H.	FIRE HYDRANT	SVC.	SERVICE
F.M.	FORCE MAIN	SW	SIDEWALK
GUT. or GTR.	GUTTER	T.C.	TOP OF CURB
G.V.	GATE VALVE	TEL.	TELEPHONE
IMP.	IMPROVEMENT	TYP.	TYPICAL
INST.	INSERT	U.G.	UNDERGROUND
INV. or I-	INVERT	VLT.	VAULT
L	LENGTH, LINE	W.M.	WATER MAIN

SYMBOLS

EXIST.	PROP.		EXIST.	PROP.	
⊖	◓	BLOW OFF ASSY.	Ⓢ	Ⓢ	MANHOLE SAN. SEWER
▥	▥	CATCH BASIN	Ⓓ	Ⓓ	MANHOLE STORM DRAIN
▣	■	CATCH BASIN CLEANOUT	Ⓒ	Ⓒ	2' DIA. C.O. / M.H.
▣	▣	CATCH BASIN INLET	Ⓣ	Ⓣ	MANHOLE TELEPHONE
△	▲	CATV PED. / BOX	Ⓦ	Ⓦ	MANHOLE WATER
○	●	CLEANOUT	▷	▶	REDUCER / INCREASER
◪	◪	ELEC. PED. / BOX	▣	▣	TEL. PED. / BOX
⊖	◓	FIRE HYDRANT	▭	▭	TRAFFIC PED. / BOX
⊛	◉	GAS LOCATION MARKER	⊙	⊙	UTILITY / POWER POLE
⋈	⋈	GAS VALVE	□	■	WATER METER
▭	◧	MAIL BOX	⊗	◓	WATER VALVE

CABLE TELEVISION
CENTERLINE
DITCH C.L.
ELECTRICAL LINE
GAS MAIN
TELEPHONE LINE
SANITARY SEWER EXIST.
SANITARY SEWER PROP.
STORM DRAIN EXIST.
STORM DRAIN PROP.
WATER MAIN EXIST.
WATER MAIN PROP.

PRELIMINARY SHEET INDEX

P101 COVER SHEET
P102 EXISTING CONDITIONS PLAN
P201 SITE PLAN — NORTH
P202 SITE PLAN — CENTRAL
P203 SITE PLAN — SOUTH
P204 SLOPE EXCEPTION AREAS
P301 UTILITY PLAN — NORTH
P302 UTILITY PLAN — CENTRAL
P303 UTILITY PLAN — SOUTH
P401 TREE CONSERVATION PLAN — NORTH
P402 TREE CONSERVATION PLAN — CENTRAL
P403 TREE CONSERVATION PLAN — SOUTH
P404 TREE CONSERVATION PLAN — R.O.W. NORTH
P405 TREE CONSERVATION PLAN — R.O.W. SOUTH
P501 PUBLIC STREET IMPROVEMENTS — A AV. & B ST.
P502 PUBLIC STREET IMPROVEMENTS — C ST.
P503 PUBLIC STREET IMPROVEMENTS — E AV. & D ST.
P504 PUBLIC STREET IMPROVEMENTS — G ST. & H ST.
P505 PUBLIC STREET IMPROVEMENTS — I AV.
P506 PUBLIC STREET IMPROVEMENTS — J AV.
P507 PUBLIC STREET IMPROVEMENTS — K ST. & E. ACCESS
P508 PUBLIC STREET IMPROVEMENTS — L ST. 0+00 TO 12+00
P509 PUBLIC STREET IMPROVEMENTS — M ST. 0+00 TO 8+00
P510 PUBLIC STREET IMPROVEMENTS — M ST. 8+00 TO 15+00
P511 PUBLIC STREET IMPROVEMENTS — N ST.
P512 PUBLIC STREET IMPROVEMENTS — O ST.
P513 PUBLIC STREET IMPROVEMENTS — P ST.
P514 PUBLIC STREET IMPROVEMENTS — WALKWAY 1, 2 & 3
P515 TYPICAL STREET SECTIONS
P601 GRADING PLAN — NORTH
P602 GRADING PLAN — CENTRAL
P603 GRADING PLAN — SOUTH

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

PRELIMINARY PLAN
COVER SHEET

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER SCALED GRAPHICAL REPRESENTATION.

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ---

REGISTERED PROFESSIONAL ENGINEER
OREGON
JUNE 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2021

JOB # 6234

P101

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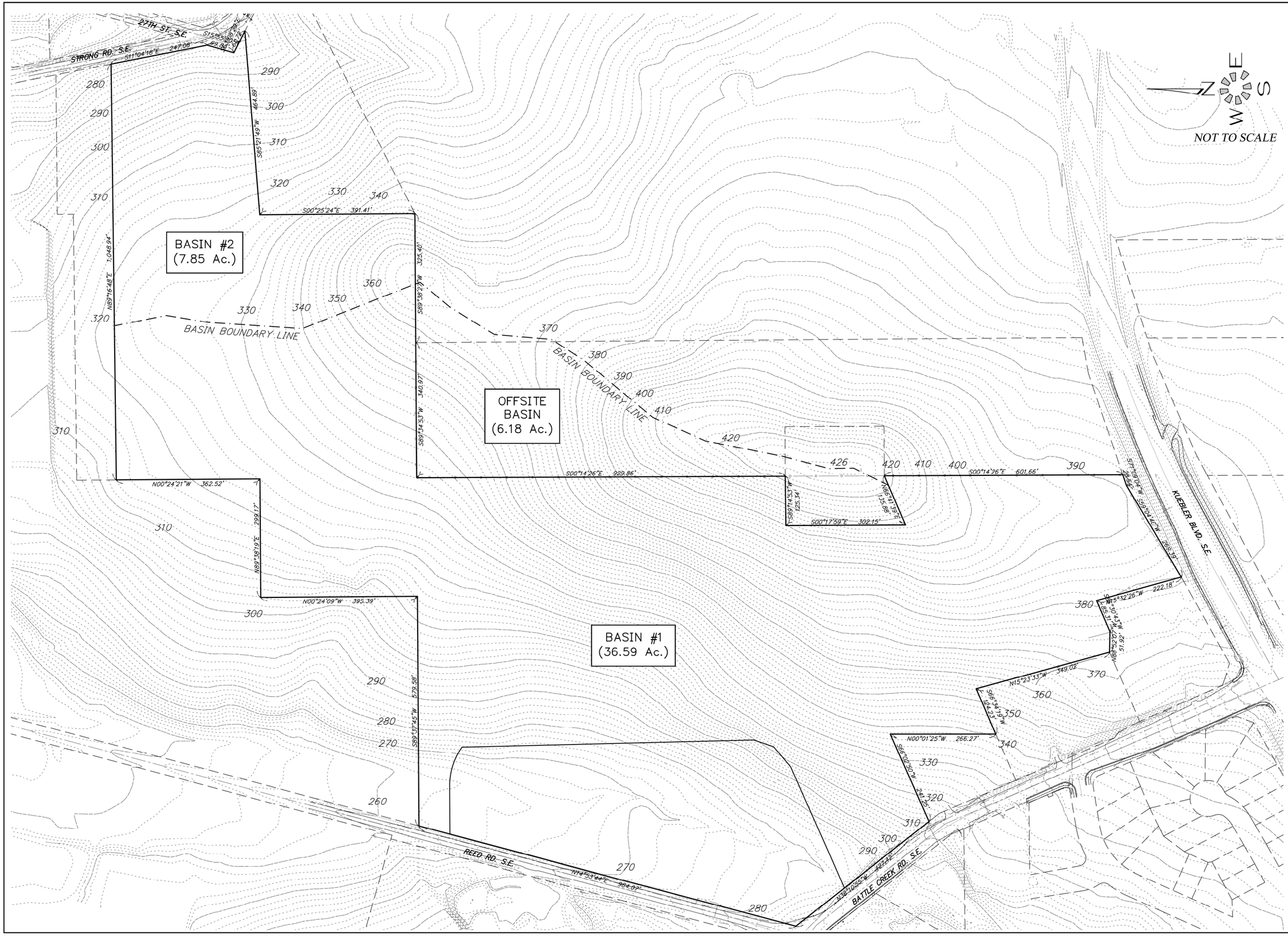

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EXISTING CONDITIONS BASIN MAP

COBURN GRAND VIEW ESTATES

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DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6234 BASIN

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN

JOB # 6234

1 of 1

J:\6200-6299\6234-HeadRoad\Dwg s\R\6234dwg, BASIN, 12/3/2018 9:36:29 PM, PSplunders

SITE AREA: 45.44 Ac.
✱CITY OF SALEM PRE-DEVELOPED, HSG C, CN=79

27TH ST. S.E.

STRONG RD. S.E.

KUEBLER BLVD. S.E.

BATTLE CREEK RD. S.E.

REED RD. S.E.

PRE DEVELOPED PLAN

6234p.dwg-01ExhPre

MULTI/TECH

ENGINEERING SERVICES, INC.

1155 13th ST. S.E. SALEM, OR. 97302

PH. (503) 363 - 9227 FAX (503) 364-1260

www.mtengineering.net office@mtengineering.net

J:\6200-6299\6234-ReedRoad\Dwg v18\6234p.dwg, 01ExhPre, 6/7/2019 9:58:35 AM, PSaunders

DRAINAGE BASIN AREAS	
B1	13.58 Ac.
B2	17.48 Ac.
B3	14.38 Ac.

SITE AREA: 45.44 Ac.		
✱ 60% IMPERVIOUS,	HSG C,	CN=98
✱ 40% LANDSCAPE,	HSG C,	CN=74
COMPOSITE,	HSC C,	CN=88

27TH ST. S.E.

STRONG RD. S.E.

N W E S

BASIN 3

BASIN 2

BASIN 1

KUEBLER BLVD. S.E.

BATTLE CREEK RD. S.E.

REED RD. S.E.

6234p2020.dwg-Exh02

POST DEVELOPED PLAN

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363 - 9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

J:\62xx\6234-ReedRoad\Dwg v20\6234p2020.dwg, EXH02, 2/4/2021 3:25:44 PM, PSaunders

DRAINAGE BASIN AREAS	
B1	13.58 Ac.
B2	17.48 Ac.
B3	14.38 Ac.

DETENTION FACILITY VOLUMES	
No. 1	61,700 C.F.
No. 2	59,400 C.F.
No. 3	52,000 C.F.

27TH ST. S.E.

STRONG RD. S.E.

FACILTY No. 3

N E W S

BASIN 3

BASIN 2

BASIN 1

KUEBLER BLVD. S.E.

BATTLE CREEK RD. S.E.

FACILTY No. 2

FACILTY No. 1

REED RD. S.E.

WATER QUALITY AND DETENTION FACILITY PLAN

6234p2020.dwg-EXH03

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363 - 9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

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Appendix B

United States Department of Agriculture

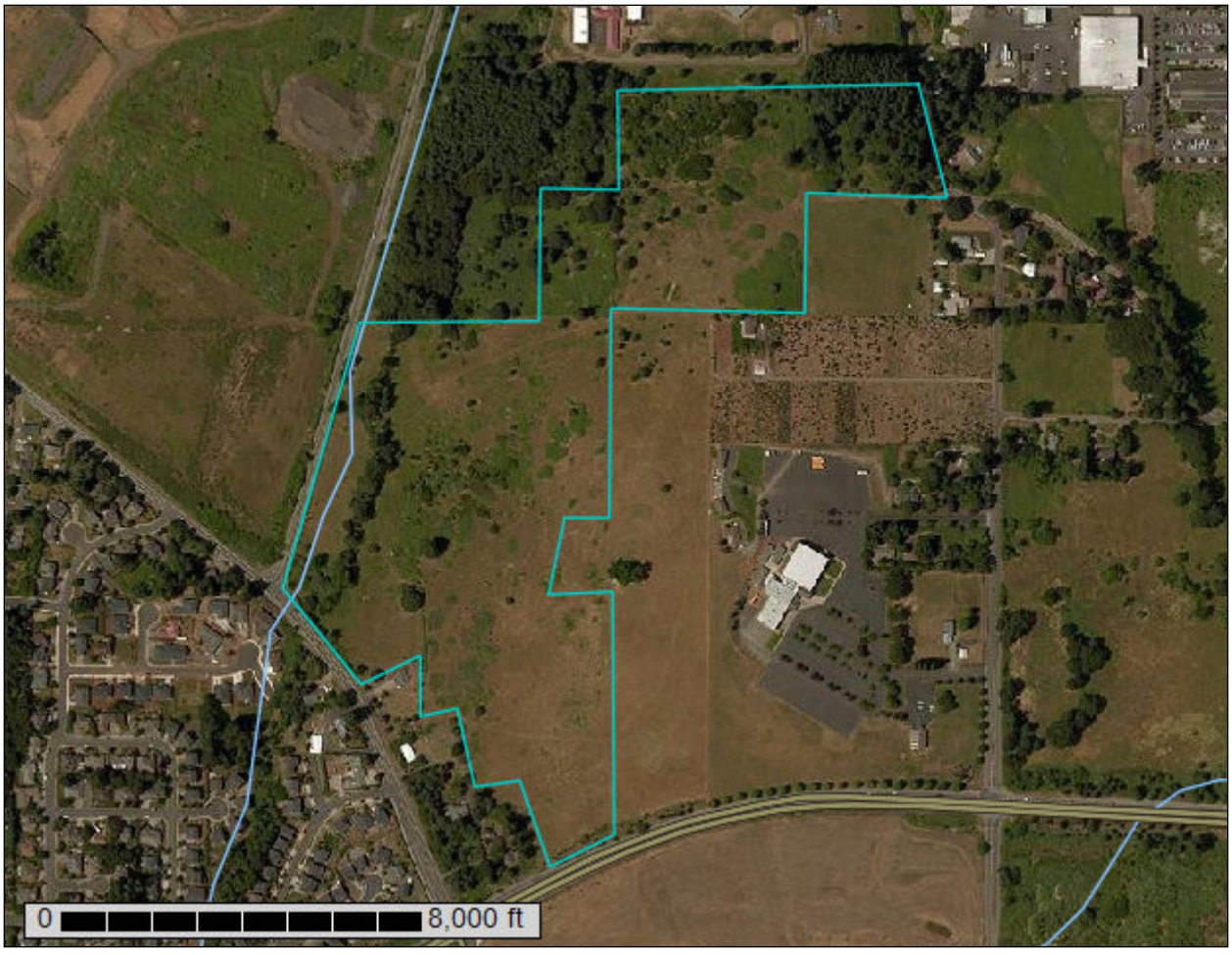
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

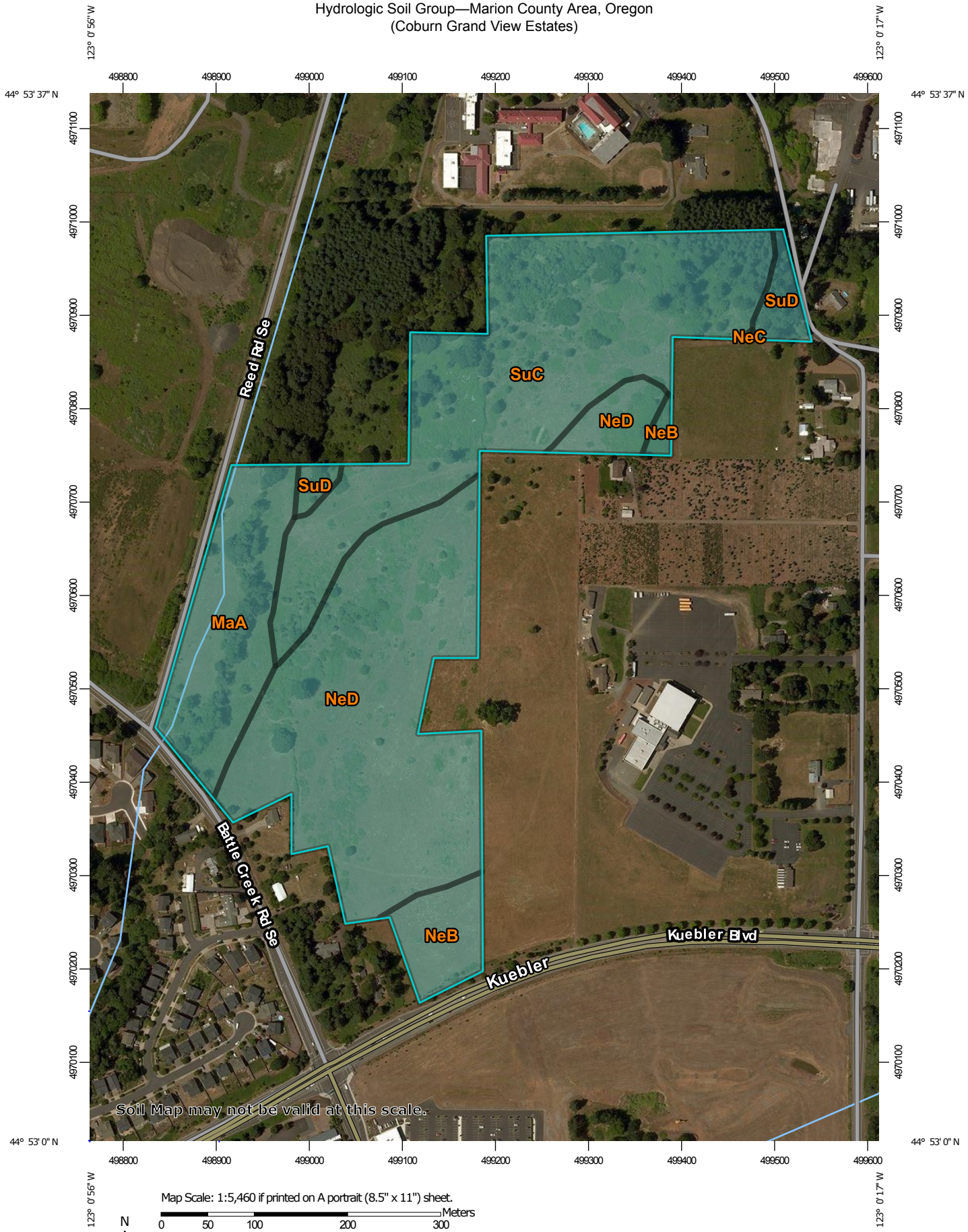
Custom Soil Resource Report for Marion County Area, Oregon

Coburn Grand View Estates



October 1, 2018

Hydrologic Soil Group—Marion County Area, Oregon
(Coburn Grand View Estates)



Map Scale: 1:5,460 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Marion County Area, Oregon
Survey Area Data: Version 15, Sep 18, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 15, 2015—Jun 23, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
MaA	McAlpin silty clay loam, 0 to 3 percent slopes	C	7.2	13.8%
NeB	Nekia silty clay loam, 2 to 7 percent slopes	C	2.7	5.1%
NeC	Nekia silty clay loam, 7 to 12 percent slopes	C	0.0	0.1%
NeD	Nekia silty clay loam, 12 to 20 percent slopes	C	21.3	40.8%
SuC	Silverton silt loam, 2 to 12 percent slopes	C	19.6	37.4%
SuD	Silverton silt loam, 12 to 20 percent slopes	C	1.5	2.8%
Totals for Area of Interest			**52.2**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Surface Drainage/Groundwater

We recommend that positive measures be taken to properly finish grade the site so that drainage waters from the residential structures and landscaping areas as well as adjacent properties or buildings are directed away from the new residential structures foundations and/or floor slabs. All roof drainage should be directed into conduits that carry runoff water away from the residential structures to a suitable outfall. Roof downspouts should not be connected to foundation drains. A minimum ground slope of about 2 percent is generally recommended in unpaved areas around the proposed new residential structures.

Groundwater was not encountered at the site in any of the exploratory test pits (TH-#1 through TH-#11) at the time of excavation to depths of at least 7 feet beneath existing site grades. However, the northwesterly and/or westerly portion(s) of the site contains an existing seasonal drainage basin feature. Additionally, groundwater elevations in the area and/or across the subject property may fluctuate seasonally and may temporarily pond/perch near the ground surface during periods of prolonged rainfall.

As such, based on our current understand of the possible site grading required to bring the subject site and/or residential lots to finish design grade(s), we are of the opinion that an underslab drainage system is not required for the proposed single-family residential structures. However, a perimeter foundation drain is recommended for any perimeter footings and/or below grade retaining walls. A typical recommended perimeter footing/retaining wall drain detail is shown on Figure No. 4. Further, due to our understanding that various surface infiltration ditches and/or swales may be utilized for the project as well as the relatively low infiltration rates of the near surface clayey, sandy silt and/or silty sand subgrade soils anticipated within and/or near to the foundation bearing level of the proposed residential structures, we are generally of the opinion that storm water detention and/or disposal systems should not be utilized within the residential lots and/or around the proposed residential structures unless approved by the Geotechnical Engineer.

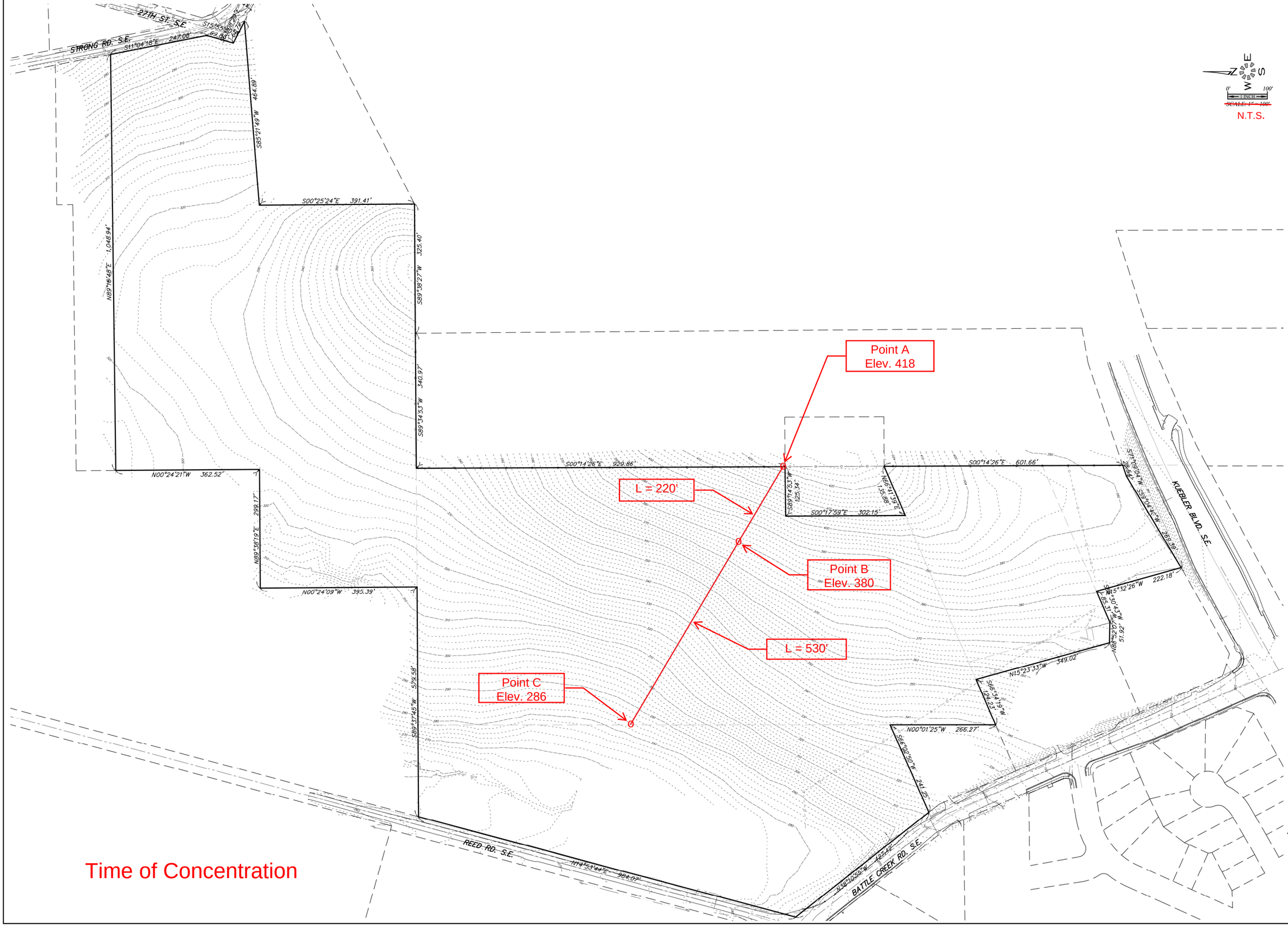
Design Infiltration Rates

Based on the results of our field infiltration testing, we recommend using the following infiltration rate(s) to design any on-site near surface storm water infiltration systems for the project:

Subgrade Soil Type	Recommended Infiltration Rate
sandy, clayey SILT (ML)	0.1 to 0.3 inches per hour (in/hr)

Note: A safety factor of two (2) was used to calculate the above recommended design infiltration rate. Additionally, given the gradational variability of the on-site sandy, clayey sit subgrade soils beneath the site as well as the anticipation of some site grading for the project, it is generally recommended that field testing be performed during and/or following construction of any on-site storm water infiltration system(s) in order to confirm that the above recommended design infiltration rates are appropriate.

Appendix C



Time of Concentration

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH.(503)363-9227 FAX.(503)364-1260
www.mtengineering.net office@mtengineering.net

EXISTING CONDITIONS PLAN

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2016
Scale: AS SHOWN

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2019

JOB # 6234

P102

J:\6200-6299\6234-ReedRoad\Dwg s\R\6234p.rwp, P102XC, 10/2/2018 10:48:26 AM, FSounders

Worksheet 3: Time of Concentration (T_c) or travel time (T_t)

Project	By	Date
Coburn Grand View Estates	M. Hendrick	10/2018
Location	**Checked**	**Date**
Salem, Oregon		

Check one: ☑ Present ☐ Developed

Check one: ☑ T_c ☑ T_t through subarea

Notes: Space for as many as two segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to Tc only)

	Segment ID	A-B	
1.	Surface description (Table 4D-4)	Meadow/Pasture/Farm	
2.	Manning's roughness coefficient, n (Table 4D-4)	0.15	
3.	Flow length, L (total L † 300 ft) ft	220	
4.	Two-year 24-hour rainfall, P_2 in	2.2	
5.	Land slope, s ft/ft	0.173	
6.	$T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ s^{0.4}}$ Compute T_t hr	0.156 +	= 0.156

Shallow concentrated flow

	Segment ID	B-C	
7.	Surface description (paved or unpaved)	Forest & Meadow	
8.	Flow length, L ft	530	
9.	Watercourse slope, s ft/ft	0.177	
10.	Average velocity, V (figure 3-1) ft/s	1.1	
11.	$T_t = \frac{L}{3600\ V}$ Compute T_t hr	0.134 +	= 0.134

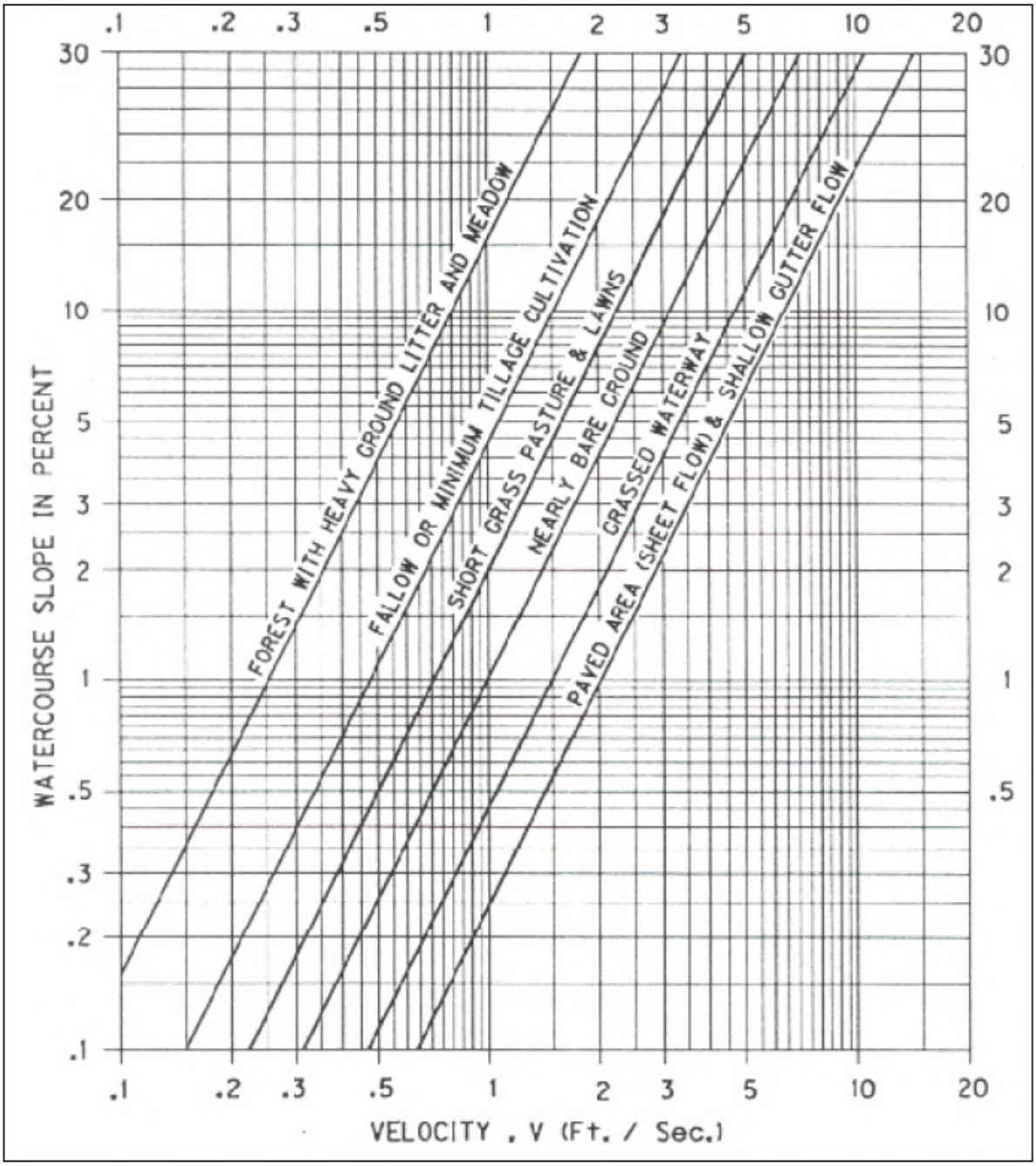
Channel flow

	Segment ID		
12.	Cross sectional flow area, a ft^2		
13.	Wetted perimeter, p_w ft		
14.	Hydraulic radius, $r = \frac{a}{p_w}$ Compute r ft		
15	Channel slope, s ft/ft		
16.	Manning's roughness coefficient, n		
17.	$V = \frac{1.49\ r^{2/3}\ s^{1/2}}{n}$ Compute V ft/s		
18.	~~Flow~~ length, L ft		
19.	$T_t = \frac{L}{3600\ V}$ Compute T_t hr	+	=
20.	Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) Hr		0.29

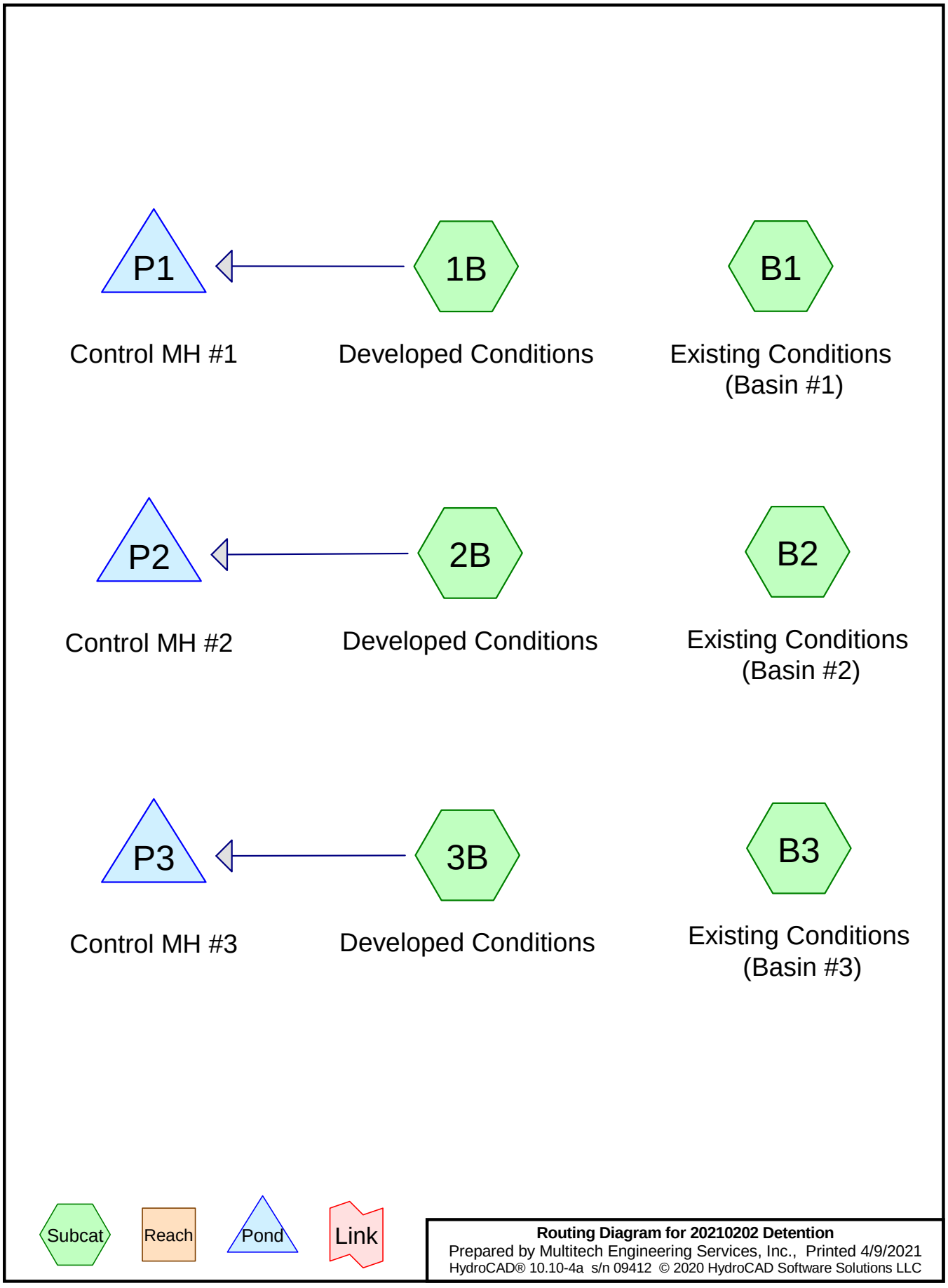
0.29 Hrs = 17.4 Minutes

Manning's Roughness Coefficients for Overland Sheet Flow	
Surface Types:	**n**
Impervious Areas	0.014
Gravel Pavement	0.02
Developed: Landscape Areas (Except Lawns)	0.08
Undeveloped: Meadow, Pasture, or Farm	0.15
Developed: Lawns	0.24
Pre-developed: Mixed	0.30
Pre-developed: Woodland and Forest	0.40
Development Types:	**n**
Commercial Development	0.015
Industrial Development, Heavy	0.04
Industrial Development, Light	0.05
Dense Residential (over 6 units/acre)	0.08
Normal Residential (3 to 6 units/acre)	0.20
Light Residential (1 to 3 units/acre)	0.30
Parks	0.40

Table 4D-4. Manning's Roughness Coefficients for Overland Sheet Flow


.1
.2
.3
.5
1
2
3
5
10
20
30
20
10
5
3
2
1
.5
.3
.2
.1
WATERCOURSE SLOPE IN PERCENT
FOREST WITH HEAVY GROUND LITTER AND MEADOW
FALLOW OR MINIMUM TILLAGE CULTIVATION
SHORT GRASS PASTURE & LAWNS
NEARLY BARE GROUND
GRASSED WATERWAY
PAVED AREA (SHEET FLOW) & SHALLOW GUTTER FLOW
VELOCITY , V (Ft. / Sec.)

Appendix D



Routing Diagram for 20210202 Detention
Prepared by Multitech Engineering Services, Inc., Printed 4/9/2021
HydroCAD® 10.10-4a s/n 09412 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment B1: Existing Conditions (Basin #1)

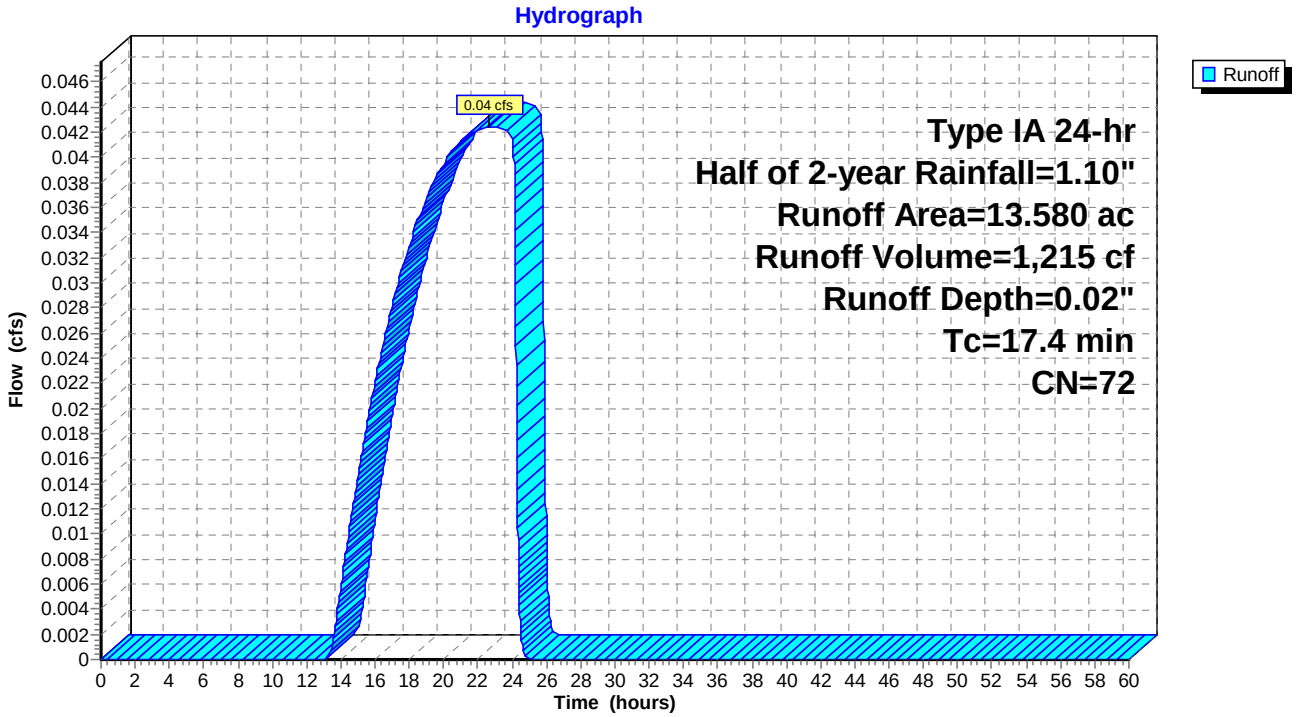
Runoff = 0.04 cfs @ 22.68 hrs, Volume= 1,215 cf, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr Half of 2-year Rainfall=1.10"

	Area (ac)	CN	Description
*	13.580	72	City of Salem Pre-developed, HSG C
	13.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B1: Existing Conditions (Basin #1)



Summary for Subcatchment B2: Existing Conditions (Basin #2)

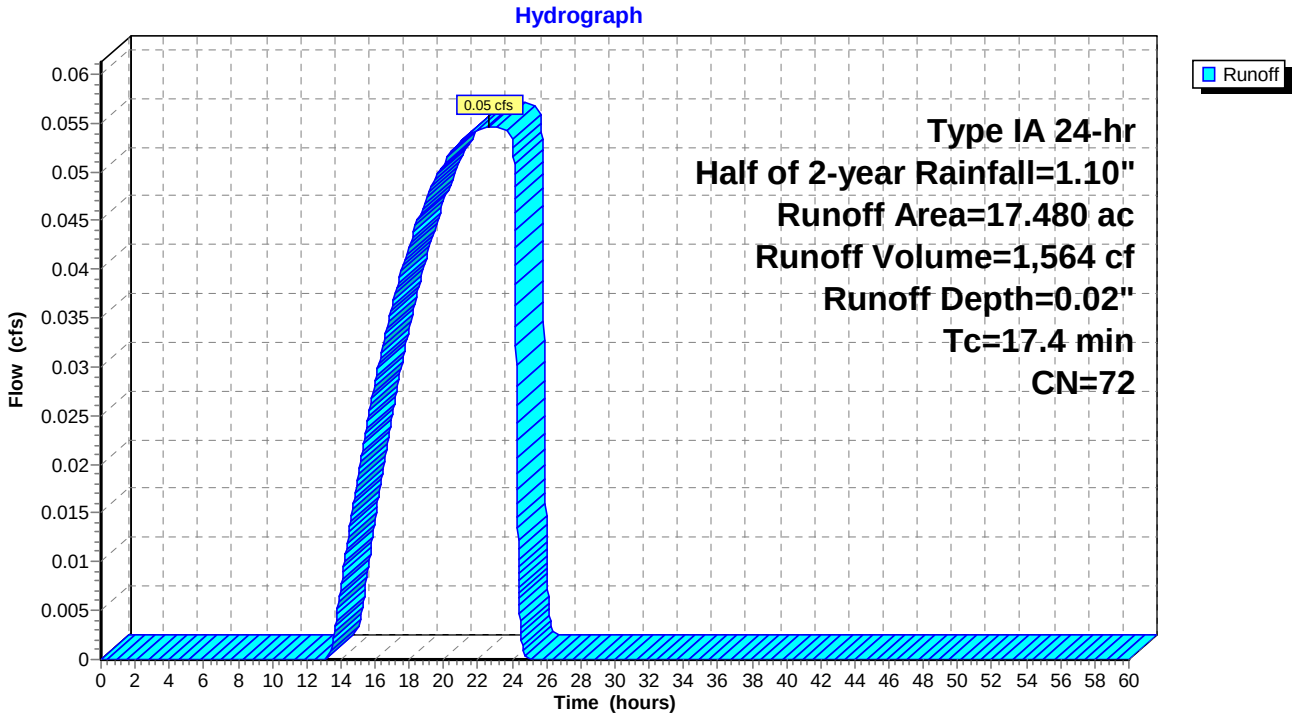
Runoff = 0.05 cfs @ 22.68 hrs, Volume= 1,564 cf, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr Half of 2-year Rainfall=1.10"

	Area (ac)	CN	Description
*	17.480	72	City of Salem Pre-developed, HSG C
	17.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B2: Existing Conditions (Basin #2)



Summary for Subcatchment B3: Existing Conditions (Basin #3)

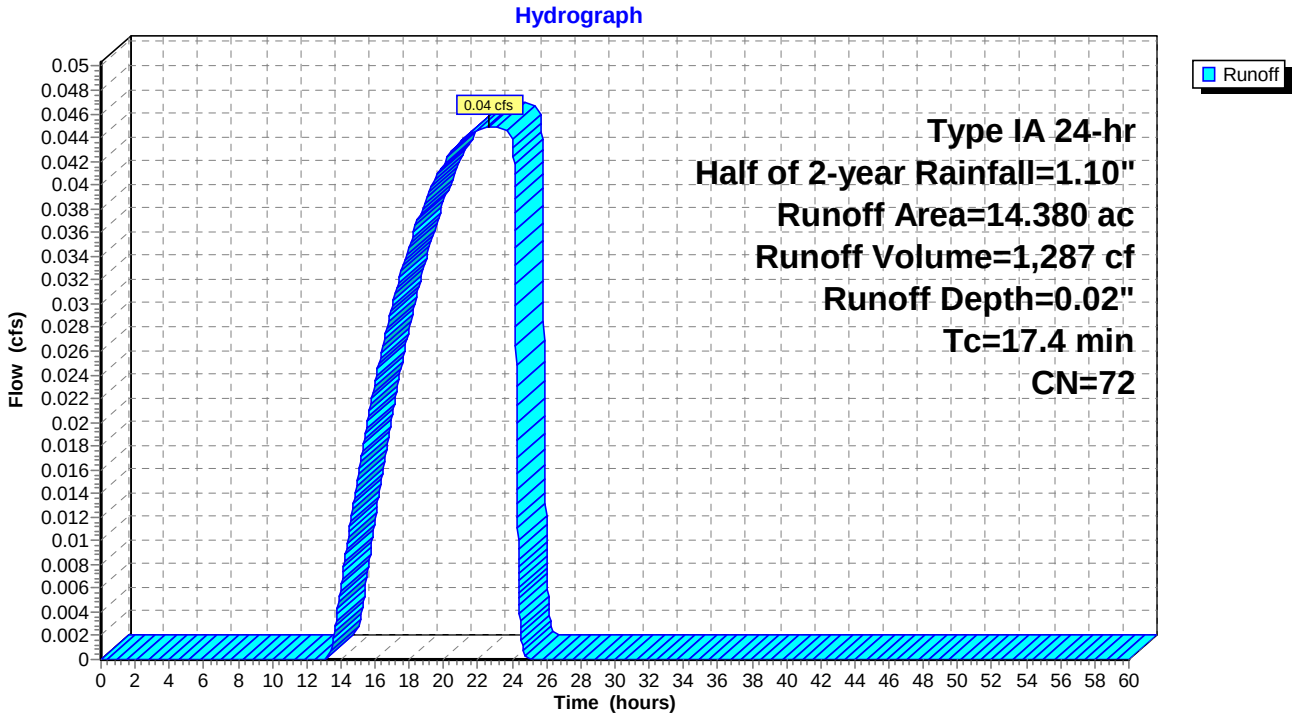
Runoff = 0.04 cfs @ 22.68 hrs, Volume= 1,287 cf, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr Half of 2-year Rainfall=1.10"

	Area (ac)	CN	Description
*	14.380	72	City of Salem Pre-developed, HSG C
	14.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B3: Existing Conditions (Basin #3)



Summary for Subcatchment 1B: Developed Conditions

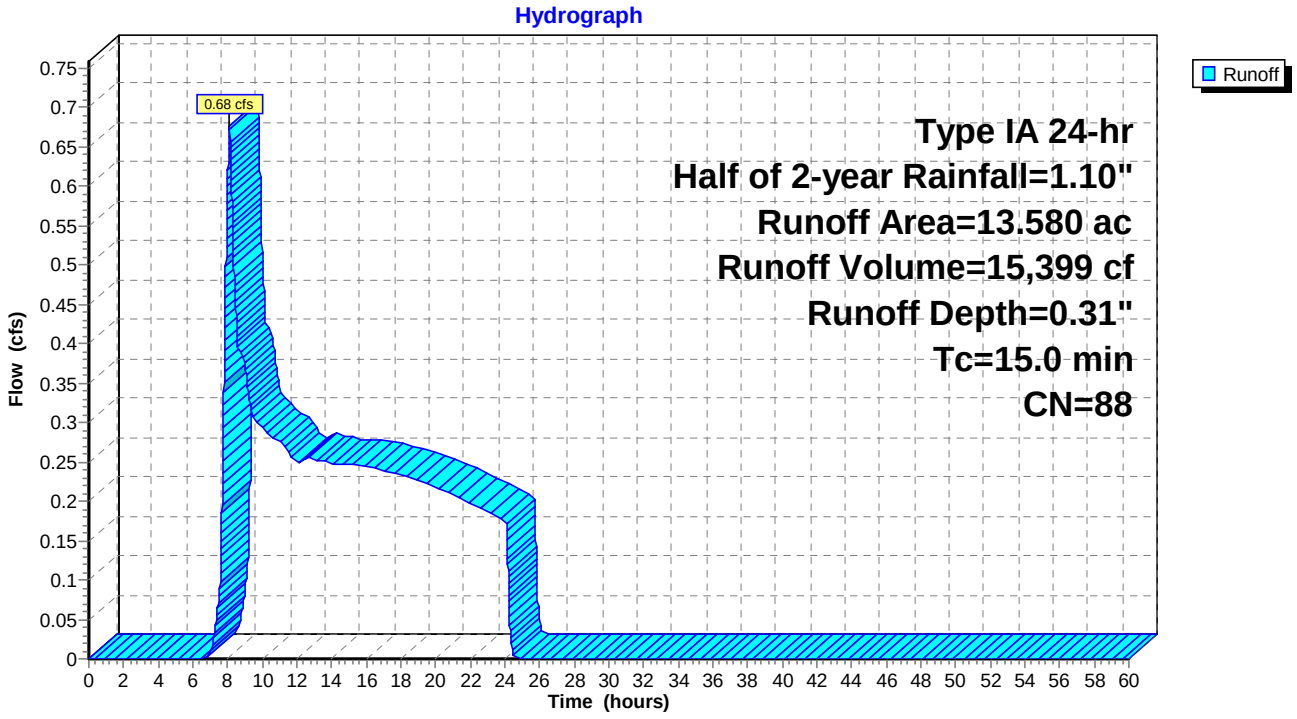
Runoff = 0.68 cfs @ 8.11 hrs, Volume= 15,399 cf, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr Half of 2-year Rainfall=1.10"

	Area (ac)	CN	Description
	5.430	74	>75% Grass cover, Good, HSG C
*	8.150	98	Impervious surface, HSG C
	13.580	88	Weighted Average
	5.430		39.99% Pervious Area
	8.150		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Direct Entry**

Subcatchment 1B: Developed Conditions



Summary for Subcatchment 2B: Developed Conditions

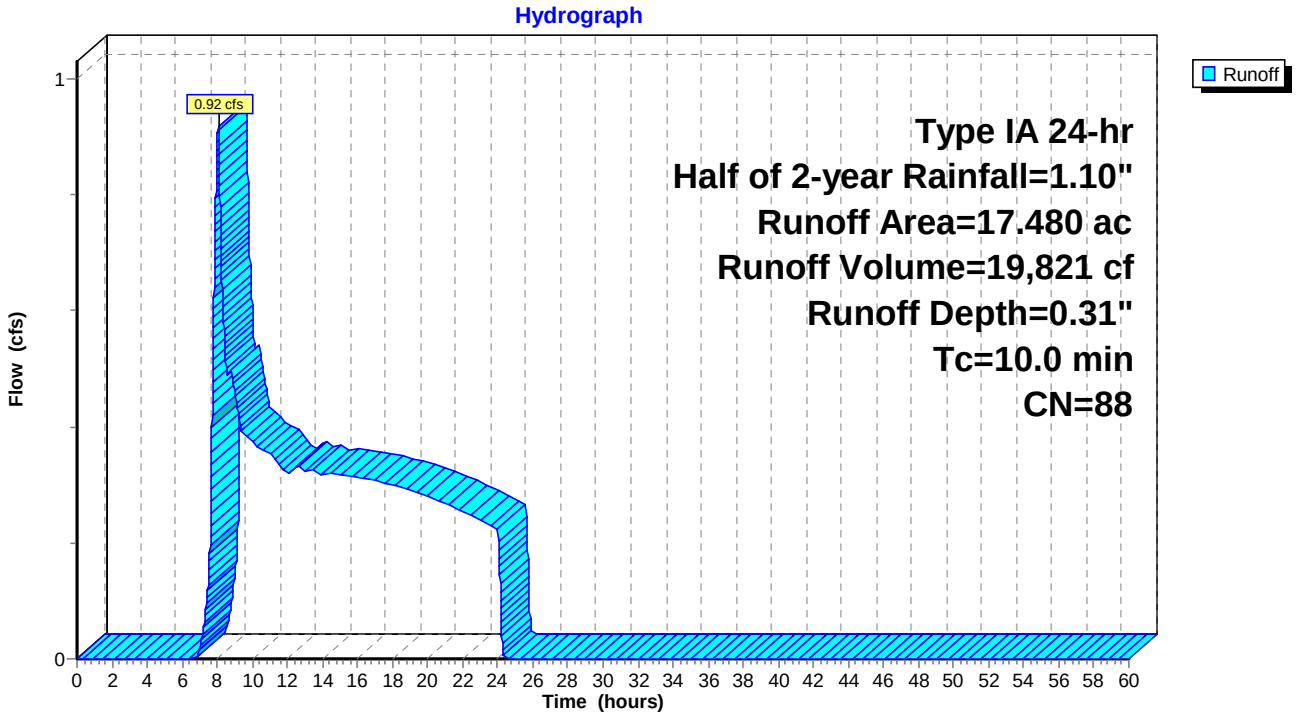
Runoff = 0.92 cfs @ 8.06 hrs, Volume= 19,821 cf, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr Half of 2-year Rainfall=1.10"

	Area (ac)	CN	Description
	6.990	74	>75% Grass cover, Good, HSG C
*	10.490	98	Impervious surface, HSG C
	17.480	88	Weighted Average
	6.990		39.99% Pervious Area
	10.490		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 2B: Developed Conditions



Summary for Subcatchment 3B: Developed Conditions

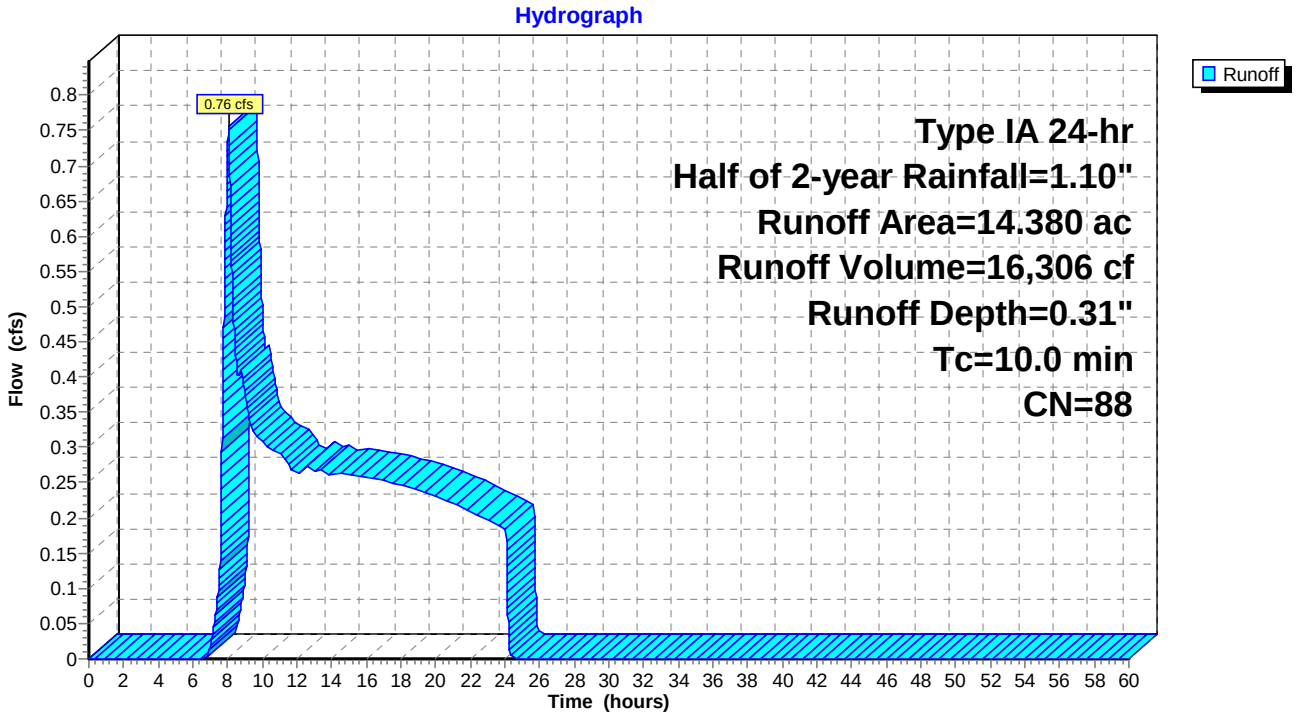
Runoff = 0.76 cfs @ 8.06 hrs, Volume= 16,306 cf, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr Half of 2-year Rainfall=1.10"

	Area (ac)	CN	Description
	5.750	74	>75% Grass cover, Good, HSG C
*	8.630	98	Impervious surface, HSG C
	14.380	88	Weighted Average
	5.750		39.99% Pervious Area
	8.630		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 3B: Developed Conditions



Summary for Pond P1: Control MH #1

Inflow Area = 591,545 sf, 60.01% Impervious, Inflow Depth = 0.31" for Half of 2-year event
Inflow = 0.68 cfs @ 8.11 hrs, Volume= 15,399 cf
Outflow = 0.04 cfs @ 24.29 hrs, Volume= 7,139 cf, Atten= 94%, Lag= 970.7 min
Primary = 0.04 cfs @ 24.29 hrs, Volume= 7,139 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 293.83' @ 24.29 hrs Surf.Area= 9,350 sf Storage= 13,371 cf
Flood Elev= 299.00' Surf.Area= 9,350 sf Storage= 61,719 cf

Plug-Flow detention time= 1,478.2 min calculated for 7,139 cf (46% of inflow)
Center-of-Mass det. time= 1,206.6 min (2,096.1 - 889.6)

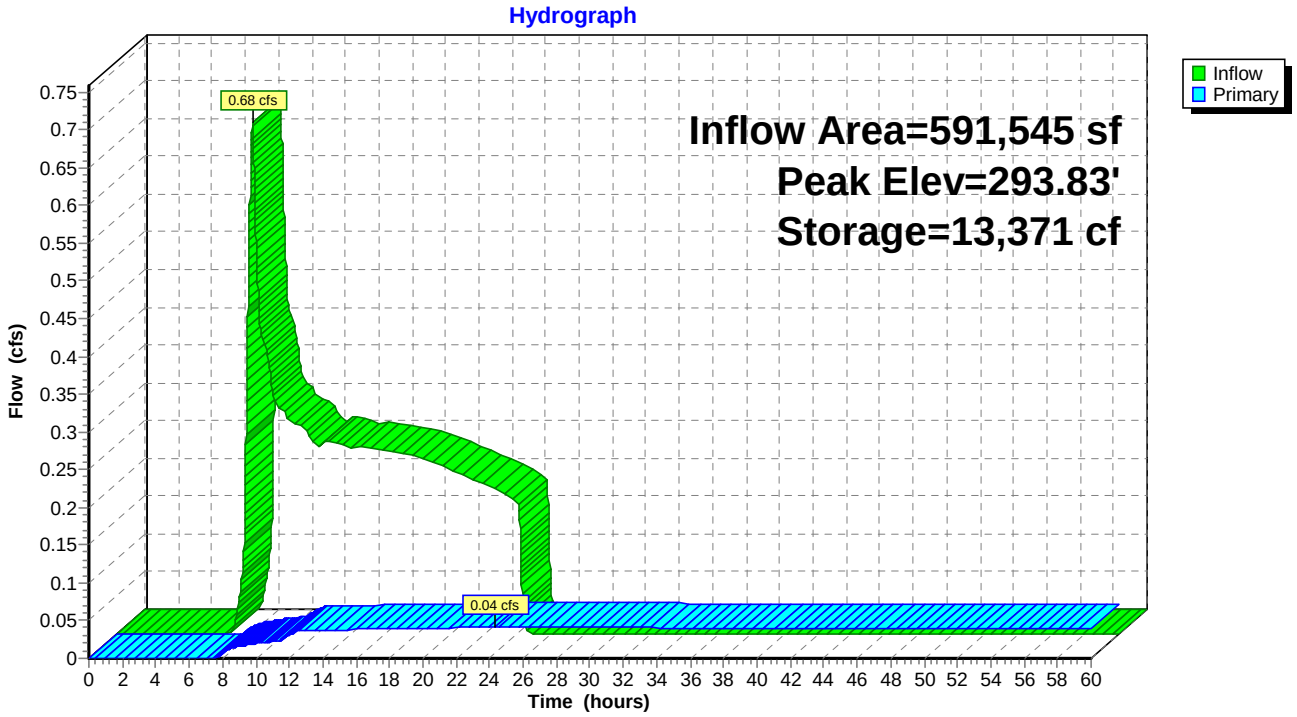
Volume	Invert	Avail.Storage	Storage Description
#1	289.99'	71,069 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
289.99	9,350	0.0	0	0
290.00	9,350	40.0	37	37
291.25	9,350	40.0	4,675	4,712
291.26	9,350	5.0	5	4,717
292.99	9,350	5.0	809	5,526
293.00	9,350	100.0	93	5,619
294.00	9,350	100.0	9,350	14,969
295.00	9,350	100.0	9,350	24,319
296.00	9,350	100.0	9,350	33,669
297.00	9,350	100.0	9,350	43,019
298.00	9,350	100.0	9,350	52,369
299.00	9,350	100.0	9,350	61,719
300.00	9,350	100.0	9,350	71,069

Device	Routing	Invert	Outlet Devices
#1	Primary	290.00'	**15.0" Round 15" Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 290.00' / 289.70' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	290.00'	**0.9" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	294.00'	**8.5" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	295.50'	**8.5" Vert. Orifice #3** C= 0.600 Limited to weir flow at low heads
#5	Device 1	299.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 24.29 hrs HW=293.83' (Free Discharge)
└**1=15" Culvert** (Passes 0.04 cfs of 9.02 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.04 cfs @ 9.38 fps)
  ├**3=Orifice #2** (Controls 0.00 cfs)
  ├**4=Orifice #3** (Controls 0.00 cfs)
  └**5=Overflow** (Controls 0.00 cfs)

Pond P1: Control MH #1



Summary for Pond P2: Control MH #2

Inflow Area = 761,429 sf, 60.01% Impervious, Inflow Depth = 0.31" for Half of 2-year event
Inflow = 0.92 cfs @ 8.06 hrs, Volume= 19,821 cf
Outflow = 0.05 cfs @ 24.19 hrs, Volume= 9,377 cf, Atten= 94%, Lag= 968.1 min
Primary = 0.05 cfs @ 24.19 hrs, Volume= 9,377 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 272.30' @ 24.19 hrs Surf.Area= 9,000 sf Storage= 17,103 cf
Flood Elev= 277.00' Surf.Area= 9,000 sf Storage= 59,377 cf

Plug-Flow detention time= 1,459.0 min calculated for 9,377 cf (47% of inflow)
Center-of-Mass det. time= 1,191.7 min (2,076.6 - 884.9)

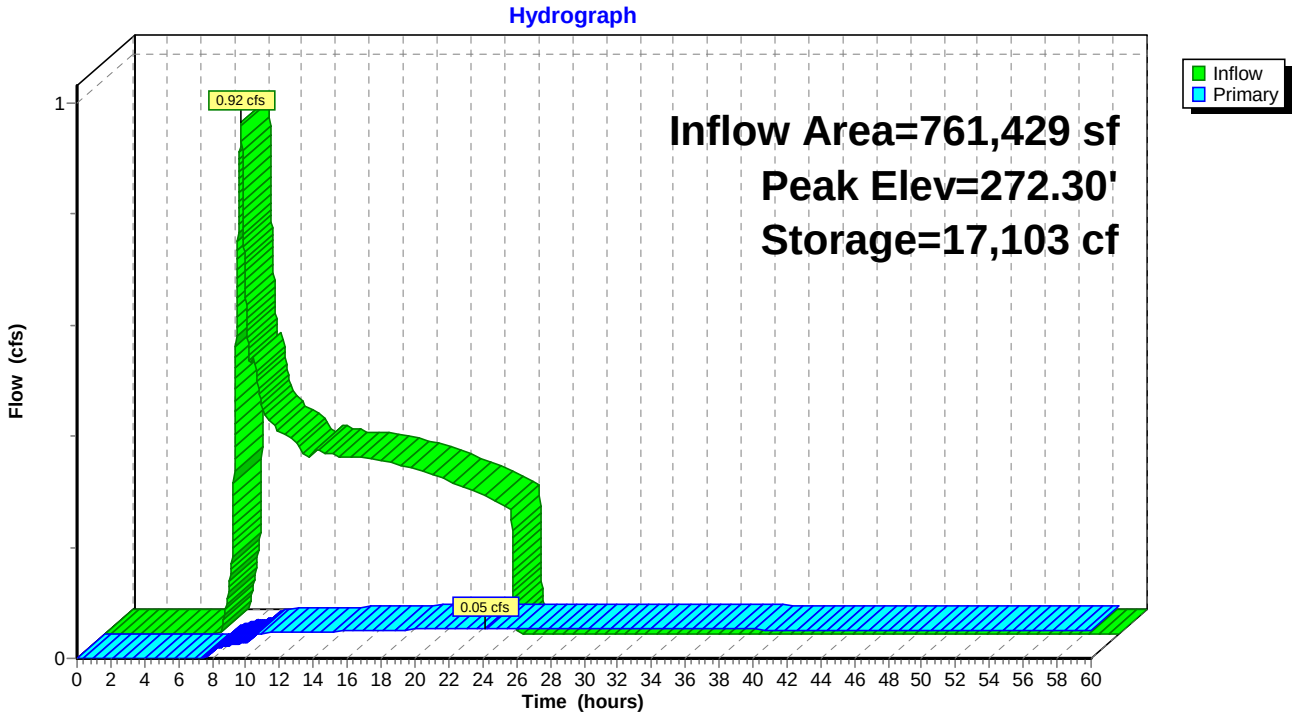
Volume	Invert	Avail.Storage	Storage Description
#1	267.99'	68,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
267.99	9,000	0.0	0	0
268.00	9,000	40.0	36	36
269.24	9,000	40.0	4,464	4,500
269.25	9,000	5.0	4	4,504
270.99	9,000	5.0	783	5,288
271.00	9,000	100.0	90	5,377
272.00	9,000	100.0	9,000	14,377
273.00	9,000	100.0	9,000	23,377
274.00	9,000	100.0	9,000	32,377
275.00	9,000	100.0	9,000	41,377
276.00	9,000	100.0	9,000	50,377
277.00	9,000	100.0	9,000	59,377
278.00	9,000	100.0	9,000	68,377

Device	Routing	Invert	Outlet Devices
#1	Primary	268.00'	**15.0" Round 15" Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 268.00' / 267.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	268.00'	**1.0" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	272.50'	**9.0" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	275.00'	**9.0" Vert. Orifice #3** C= 0.600 Limited to weir flow at low heads
#5	Device 1	277.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.05 cfs @ 24.19 hrs HW=272.30' (Free Discharge)
└**1=15" Culvert** (Passes 0.05 cfs of 10.02 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.05 cfs @ 9.94 fps)
  ├**3=Orifice #2** (Controls 0.00 cfs)
  ├**4=Orifice #3** (Controls 0.00 cfs)
  └**5=Overflow** (Controls 0.00 cfs)

Pond P2: Control MH #2



Summary for Pond P3: Control MH #3

Inflow Area = 626,393 sf, 60.01% Impervious, Inflow Depth = 0.31" for Half of 2-year event
Inflow = 0.76 cfs @ 8.06 hrs, Volume= 16,306 cf
Outflow = 0.04 cfs @ 24.19 hrs, Volume= 7,512 cf, Atten= 94%, Lag= 968.2 min
Primary = 0.04 cfs @ 24.19 hrs, Volume= 7,512 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 272.20' @ 24.19 hrs Surf.Area= 7,875 sf Storage= 14,139 cf
Flood Elev= 278.00' Surf.Area= 7,875 sf Storage= 59,830 cf

Plug-Flow detention time= 1,468.3 min calculated for 7,512 cf (46% of inflow)
Center-of-Mass det. time= 1,195.3 min (2,080.2 - 884.9)

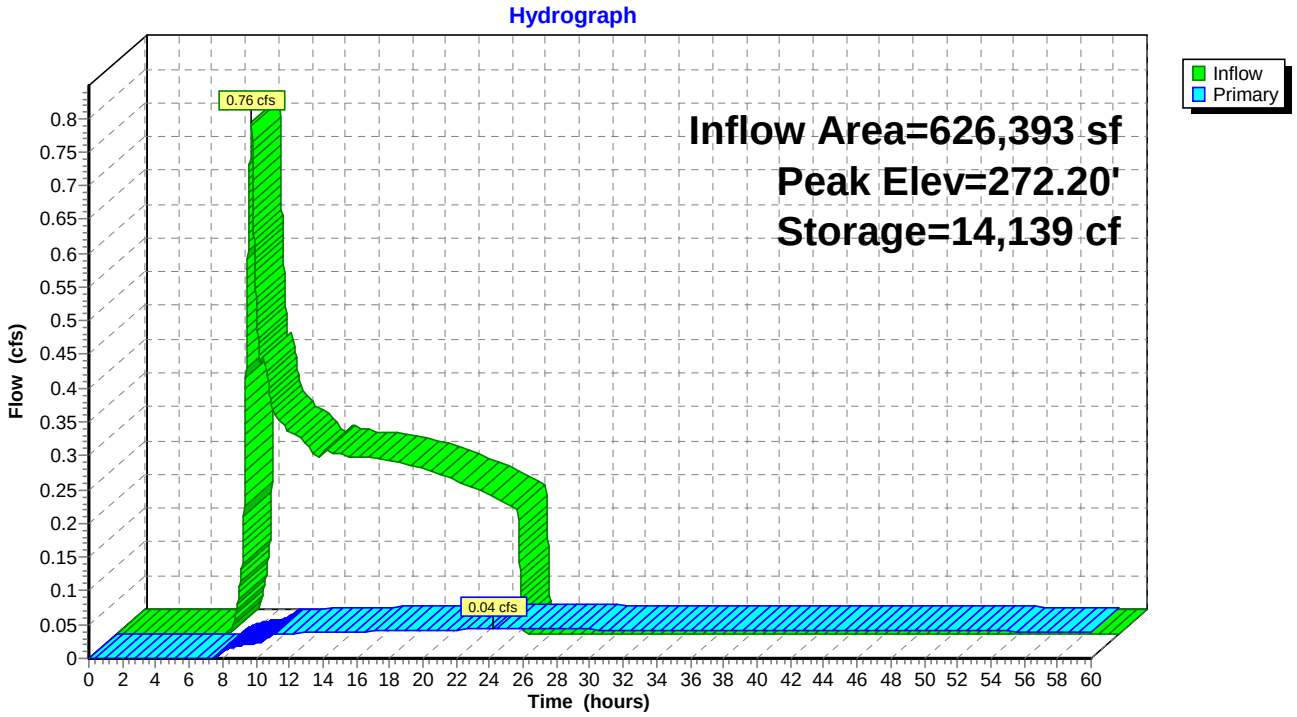
Volume	Invert	Avail.Storage	Storage Description
#1	267.99'	59,830 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
267.99	7,875	0.0	0	0
268.00	7,875	40.0	31	31
269.24	7,875	40.0	3,906	3,938
269.25	7,875	5.0	4	3,941
270.99	7,875	5.0	685	4,627
271.00	7,875	100.0	79	4,705
272.00	7,875	100.0	7,875	12,580
273.00	7,875	100.0	7,875	20,455
274.00	7,875	100.0	7,875	28,330
275.00	7,875	100.0	7,875	36,205
276.00	7,875	100.0	7,875	44,080
277.00	7,875	100.0	7,875	51,955
278.00	7,875	100.0	7,875	59,830

Device	Routing	Invert	Outlet Devices
#1	Primary	268.00'	**15.0" Round 15" Culvert** L= 50.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 268.00' / 267.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	268.00'	**0.9" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	272.25'	**8.0" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	277.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 24.19 hrs HW=272.20' (Free Discharge)
└**1=15" Culvert** (Passes 0.04 cfs of 12.15 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.04 cfs @ 9.82 fps)
  ├**3=Orifice #2** (Controls 0.00 cfs)
  └**4=Overflow** (Controls 0.00 cfs)

Pond P3: Control MH #3



Summary for Subcatchment B1: Existing Conditions (Basin #1)

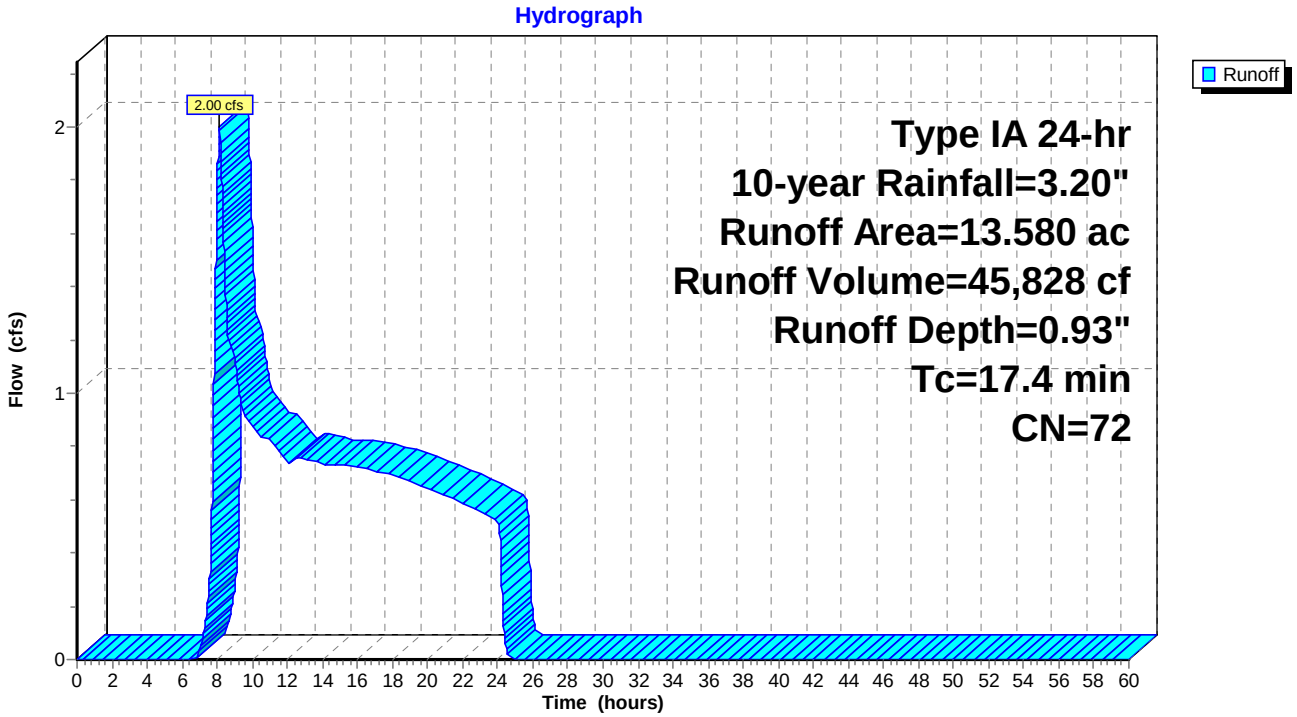
Runoff = 2.00 cfs @ 8.14 hrs, Volume= 45,828 cf, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-year Rainfall=3.20"

	Area (ac)	CN	Description
*	13.580	72	City of Salem Pre-developed, HSG C
	13.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B1: Existing Conditions (Basin #1)



Summary for Subcatchment B2: Existing Conditions (Basin #2)

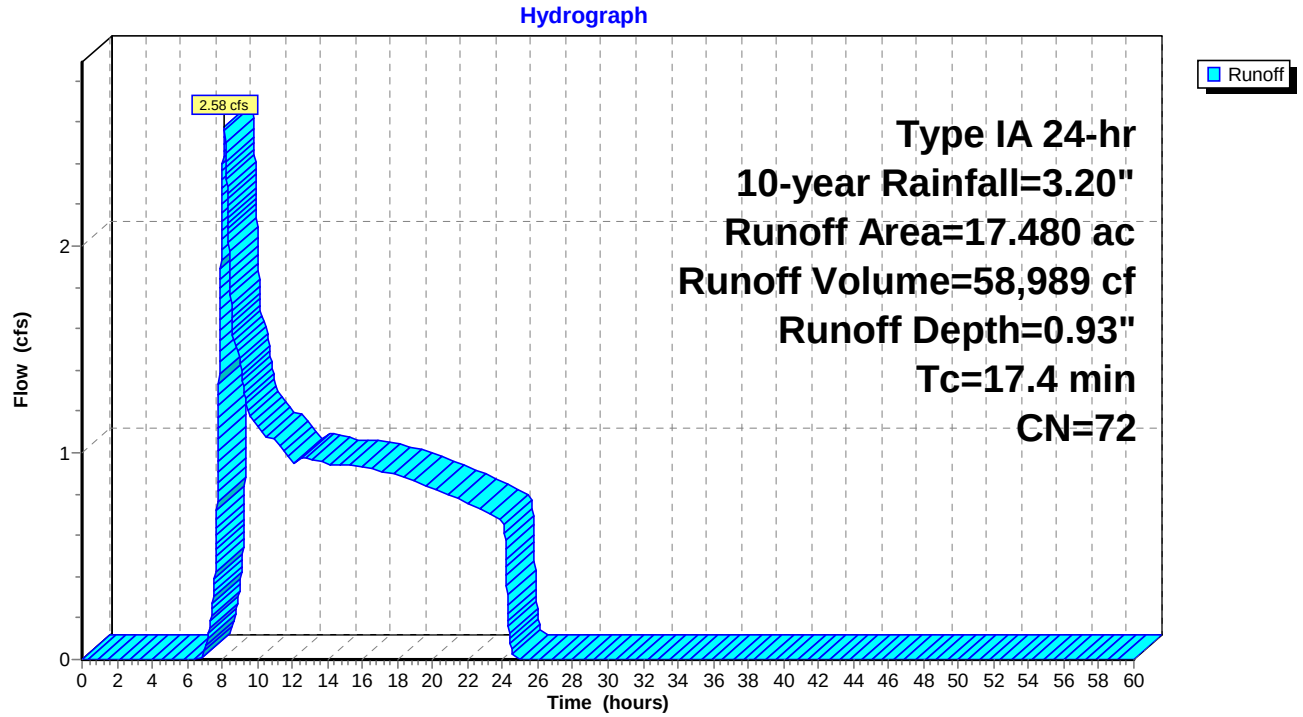
Runoff = 2.58 cfs @ 8.14 hrs, Volume= 58,989 cf, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-year Rainfall=3.20"

	Area (ac)	CN	Description
*	17.480	72	City of Salem Pre-developed, HSG C
	17.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B2: Existing Conditions (Basin #2)



Summary for Subcatchment B3: Existing Conditions (Basin #3)

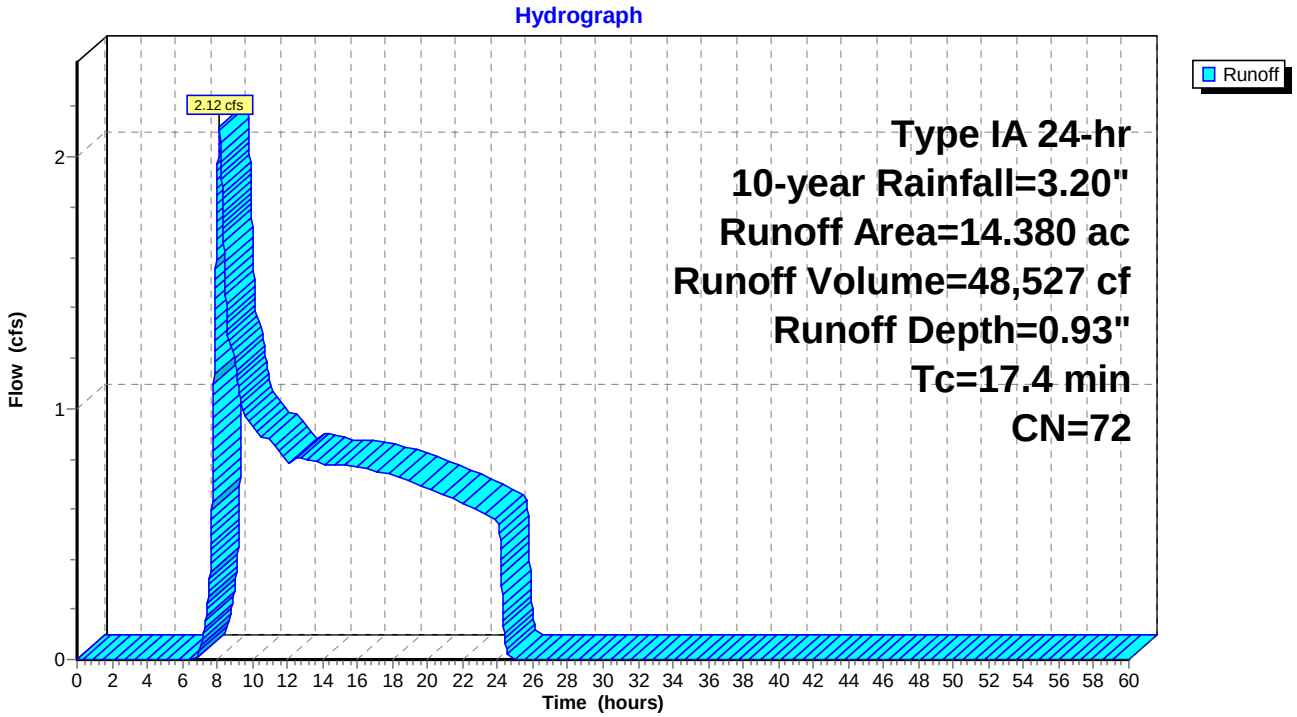
Runoff = 2.12 cfs @ 8.14 hrs, Volume= 48,527 cf, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-year Rainfall=3.20"

	Area (ac)	CN	Description
*	14.380	72	City of Salem Pre-developed, HSG C
	14.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B3: Existing Conditions (Basin #3)



Summary for Subcatchment 1B: Developed Conditions

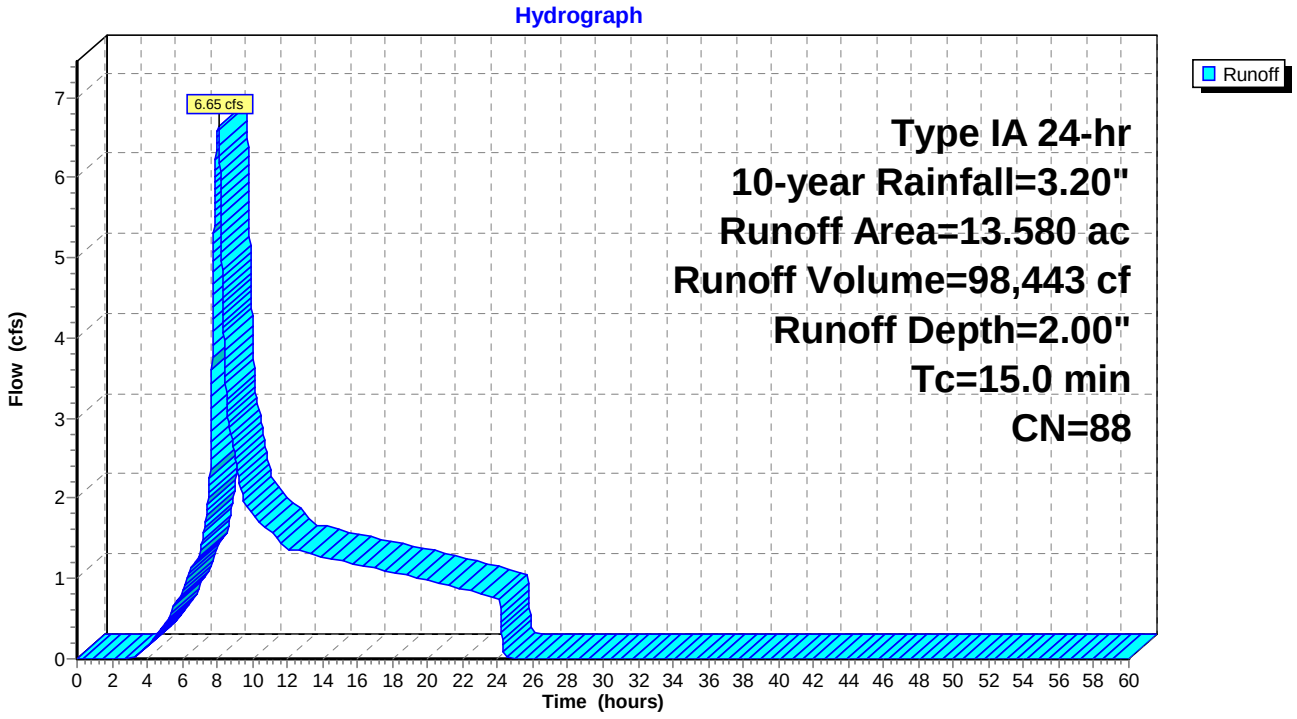
Runoff = 6.65 cfs @ 8.05 hrs, Volume= 98,443 cf, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-year Rainfall=3.20"

	Area (ac)	CN	Description
	5.430	74	>75% Grass cover, Good, HSG C
*	8.150	98	Impervious surface, HSG C
	13.580	88	Weighted Average
	5.430		39.99% Pervious Area
	8.150		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Direct Entry**

Subcatchment 1B: Developed Conditions



Summary for Subcatchment 2B: Developed Conditions

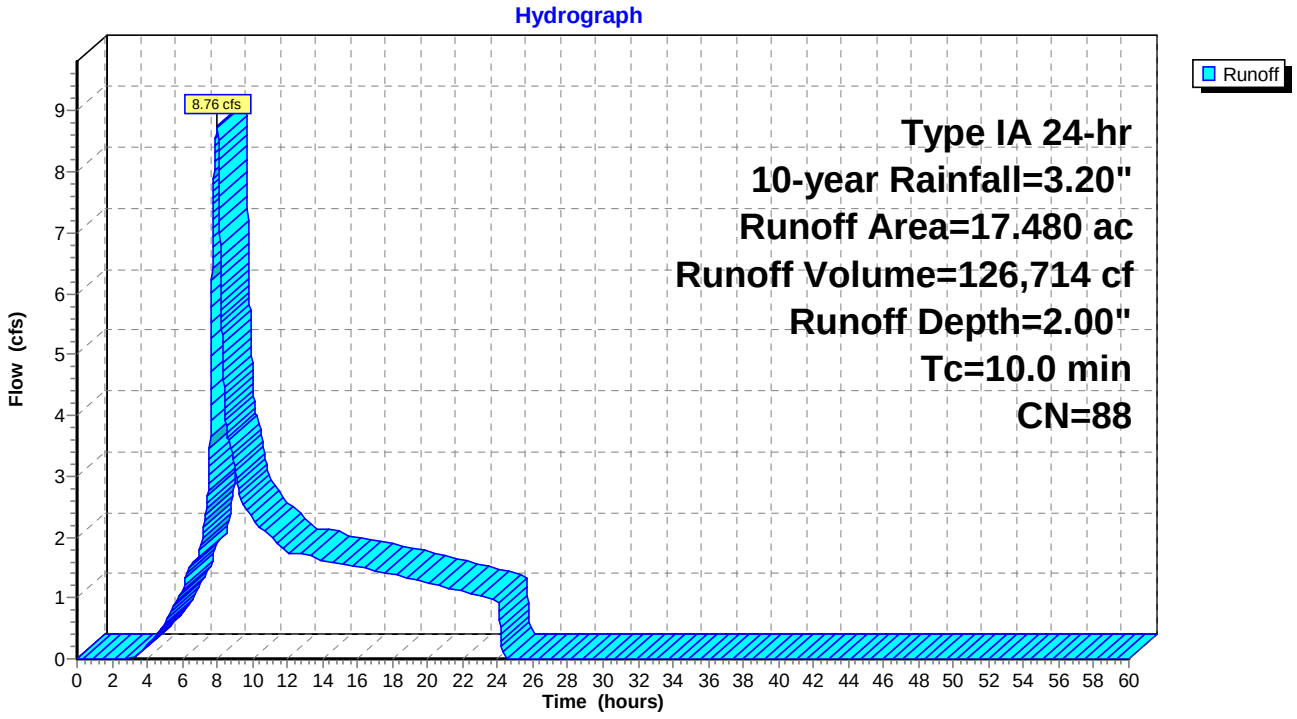
Runoff = 8.76 cfs @ 8.01 hrs, Volume= 126,714 cf, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-year Rainfall=3.20"

	Area (ac)	CN	Description
	6.990	74	>75% Grass cover, Good, HSG C
*	10.490	98	Impervious surface, HSG C
	17.480	88	Weighted Average
	6.990		39.99% Pervious Area
	10.490		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 2B: Developed Conditions



Summary for Subcatchment 3B: Developed Conditions

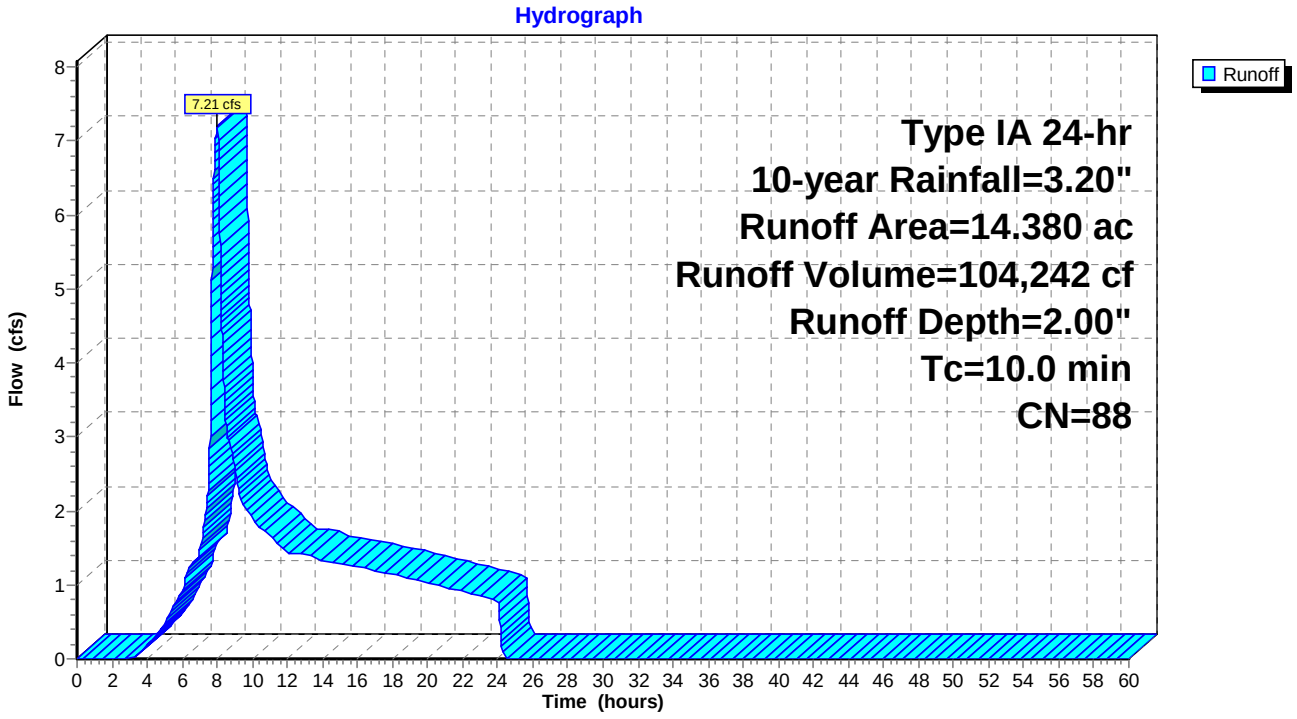
Runoff = 7.21 cfs @ 8.01 hrs, Volume= 104,242 cf, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-year Rainfall=3.20"

	Area (ac)	CN	Description
	5.750	74	>75% Grass cover, Good, HSG C
*	8.630	98	Impervious surface, HSG C
	14.380	88	Weighted Average
	5.750		39.99% Pervious Area
	8.630		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 3B: Developed Conditions



Summary for Pond P1: Control MH #1

Inflow Area = 591,545 sf, 60.01% Impervious, Inflow Depth = 2.00" for 10-year event
Inflow = 6.65 cfs @ 8.05 hrs, Volume= 98,443 cf
Outflow = 1.93 cfs @ 9.59 hrs, Volume= 87,491 cf, Atten= 71%, Lag= 92.2 min
Primary = 1.93 cfs @ 9.59 hrs, Volume= 87,491 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 295.34' @ 9.59 hrs Surf.Area= 9,350 sf Storage= 27,468 cf
Flood Elev= 299.00' Surf.Area= 9,350 sf Storage= 61,719 cf

Plug-Flow detention time= 322.7 min calculated for 87,491 cf (89% of inflow)
Center-of-Mass det. time= 251.4 min (1,022.9 - 771.6)

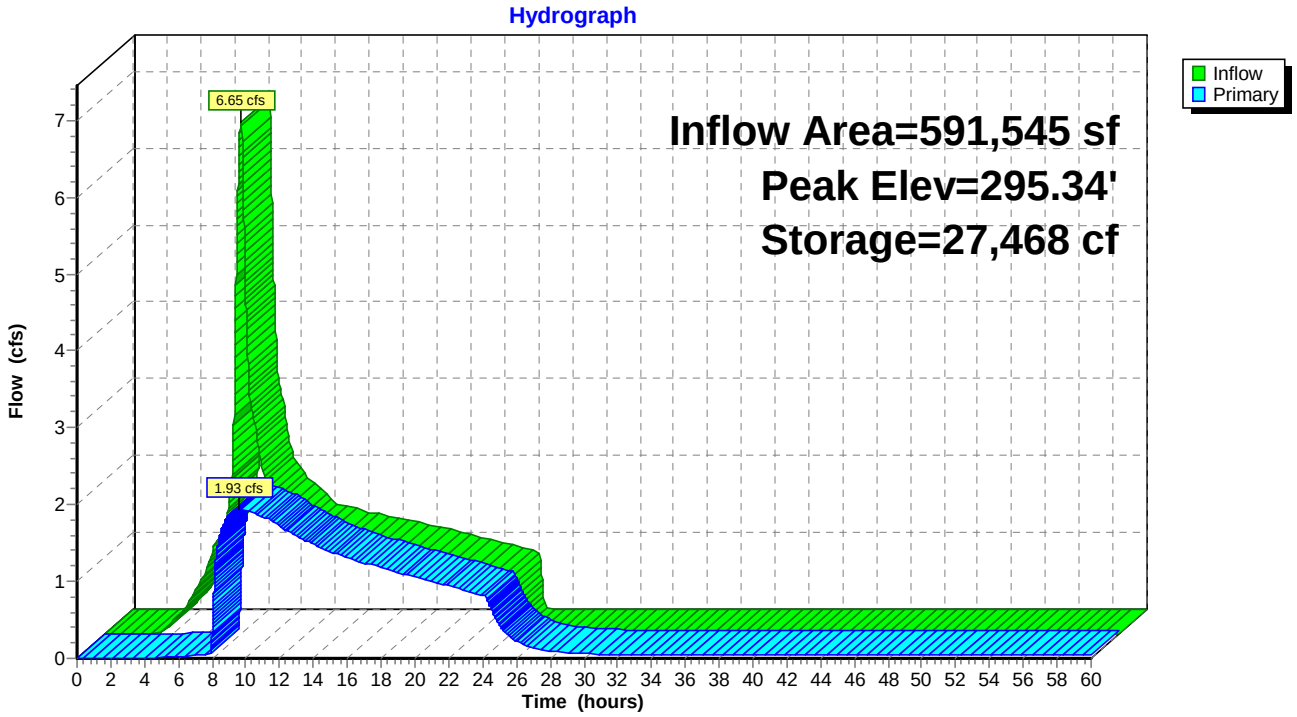
Volume	Invert	Avail.Storage	Storage Description
#1	289.99'	71,069 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
289.99	9,350	0.0	0	0
290.00	9,350	40.0	37	37
291.25	9,350	40.0	4,675	4,712
291.26	9,350	5.0	5	4,717
292.99	9,350	5.0	809	5,526
293.00	9,350	100.0	93	5,619
294.00	9,350	100.0	9,350	14,969
295.00	9,350	100.0	9,350	24,319
296.00	9,350	100.0	9,350	33,669
297.00	9,350	100.0	9,350	43,019
298.00	9,350	100.0	9,350	52,369
299.00	9,350	100.0	9,350	61,719
300.00	9,350	100.0	9,350	71,069

Device	Routing	Invert	Outlet Devices
#1	Primary	290.00'	**15.0" Round 15" Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 290.00' / 289.70' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	290.00'	**0.9" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	294.00'	**8.5" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	295.50'	**8.5" Vert. Orifice #3** C= 0.600 Limited to weir flow at low heads
#5	Device 1	299.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.93 cfs @ 9.59 hrs HW=295.34' (Free Discharge)
└**1=15" Culvert** (Passes 1.93 cfs of 11.13 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.05 cfs @ 11.08 fps)
  ├**3=Orifice #2** (Orifice Controls 1.88 cfs @ 4.77 fps)
  ├**4=Orifice #3** (Controls 0.00 cfs)
  └**5=Overflow** (Controls 0.00 cfs)

Pond P1: Control MH #1



Summary for Pond P2: Control MH #2

Inflow Area = 761,429 sf, 60.01% Impervious, Inflow Depth = 2.00" for 10-year event
Inflow = 8.76 cfs @ 8.01 hrs, Volume= 126,714 cf
Outflow = 2.56 cfs @ 9.41 hrs, Volume= 113,333 cf, Atten= 71%, Lag= 84.3 min
Primary = 2.56 cfs @ 9.41 hrs, Volume= 113,333 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 274.25' @ 9.41 hrs Surf.Area= 9,000 sf Storage= 34,601 cf
Flood Elev= 277.00' Surf.Area= 9,000 sf Storage= 59,377 cf

Plug-Flow detention time= 310.9 min calculated for 113,314 cf (89% of inflow)
Center-of-Mass det. time= 243.3 min (1,010.3 - 766.9)

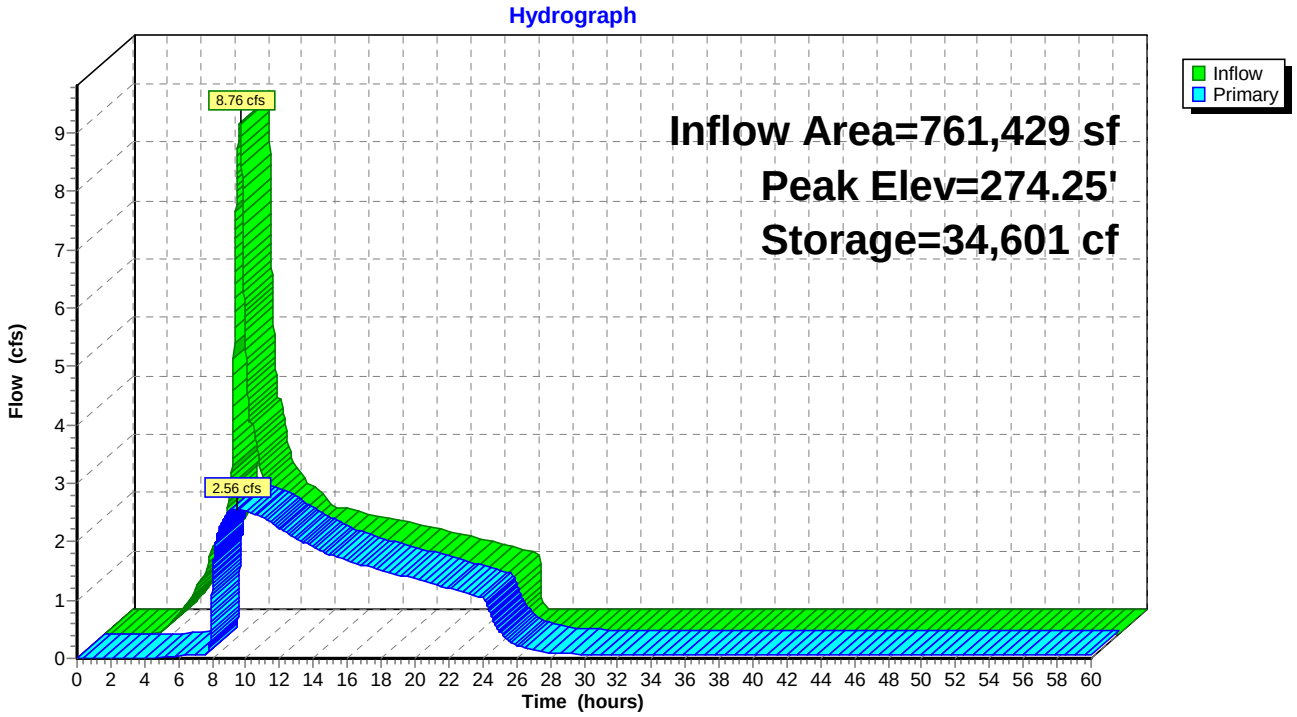
Volume	Invert	Avail.Storage	Storage Description
#1	267.99'	68,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
267.99	9,000	0.0	0	0
268.00	9,000	40.0	36	36
269.24	9,000	40.0	4,464	4,500
269.25	9,000	5.0	4	4,504
270.99	9,000	5.0	783	5,288
271.00	9,000	100.0	90	5,377
272.00	9,000	100.0	9,000	14,377
273.00	9,000	100.0	9,000	23,377
274.00	9,000	100.0	9,000	32,377
275.00	9,000	100.0	9,000	41,377
276.00	9,000	100.0	9,000	50,377
277.00	9,000	100.0	9,000	59,377
278.00	9,000	100.0	9,000	68,377

Device	Routing	Invert	Outlet Devices
#1	Primary	268.00'	**15.0" Round 15" Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 268.00' / 267.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	268.00'	**1.0" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	272.50'	**9.0" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	275.00'	**9.0" Vert. Orifice #3** C= 0.600 Limited to weir flow at low heads
#5	Device 1	277.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.56 cfs @ 9.41 hrs HW=274.25' (Free Discharge)
└**1=15" Culvert** (Passes 2.56 cfs of 12.46 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.07 cfs @ 11.99 fps)
  ├**3=Orifice #2** (Orifice Controls 2.49 cfs @ 5.64 fps)
  ├**4=Orifice #3** (Controls 0.00 cfs)
  └**5=Overflow** (Controls 0.00 cfs)

Pond P2: Control MH #2



Summary for Pond P3: Control MH #3

Inflow Area = 626,393 sf, 60.01% Impervious, Inflow Depth = 2.00" for 10-year event
Inflow = 7.21 cfs @ 8.01 hrs, Volume= 104,242 cf
Outflow = 2.06 cfs @ 9.47 hrs, Volume= 93,983 cf, Atten= 71%, Lag= 87.4 min
Primary = 2.06 cfs @ 9.47 hrs, Volume= 93,983 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 274.02' @ 9.47 hrs Surf.Area= 7,875 sf Storage= 28,452 cf
Flood Elev= 278.00' Surf.Area= 7,875 sf Storage= 59,830 cf

Plug-Flow detention time= 304.8 min calculated for 93,983 cf (90% of inflow)
Center-of-Mass det. time= 241.3 min (1,008.3 - 766.9)

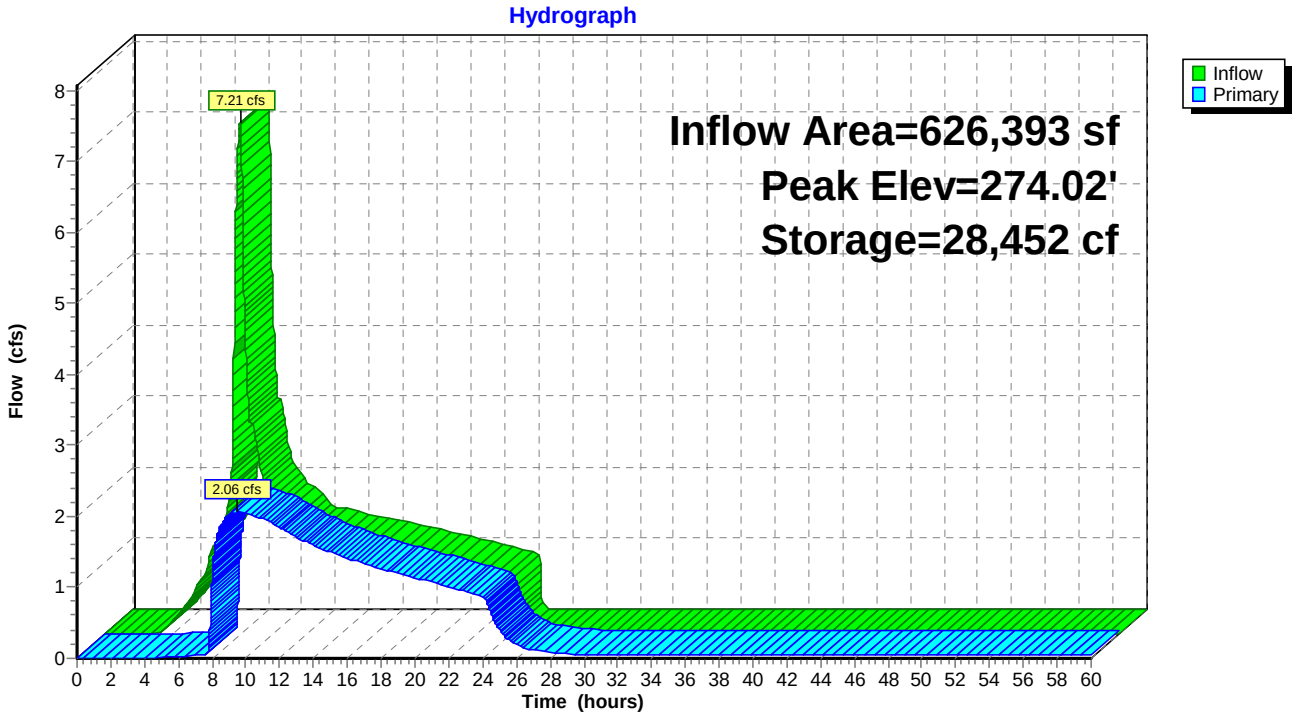
Volume	Invert	Avail.Storage	Storage Description
#1	267.99'	59,830 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
267.99	7,875	0.0	0	0
268.00	7,875	40.0	31	31
269.24	7,875	40.0	3,906	3,938
269.25	7,875	5.0	4	3,941
270.99	7,875	5.0	685	4,627
271.00	7,875	100.0	79	4,705
272.00	7,875	100.0	7,875	12,580
273.00	7,875	100.0	7,875	20,455
274.00	7,875	100.0	7,875	28,330
275.00	7,875	100.0	7,875	36,205
276.00	7,875	100.0	7,875	44,080
277.00	7,875	100.0	7,875	51,955
278.00	7,875	100.0	7,875	59,830

Device	Routing	Invert	Outlet Devices
#1	Primary	268.00'	**15.0" Round 15" Culvert** L= 50.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 268.00' / 267.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	268.00'	**0.9" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	272.25'	**8.0" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	277.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.06 cfs @ 9.47 hrs HW=274.02' (Free Discharge)
↑**1=15" Culvert** (Passes 2.06 cfs of 15.01 cfs potential flow)
↑**2=Orifice #1** (Orifice Controls 0.05 cfs @ 11.77 fps)
3=Orifice #2 (Orifice Controls 2.01 cfs @ 5.76 fps)
4=Overflow (Controls 0.00 cfs)

Pond P3: Control MH #3



Summary for Subcatchment B1: Existing Conditions (Basin #1)

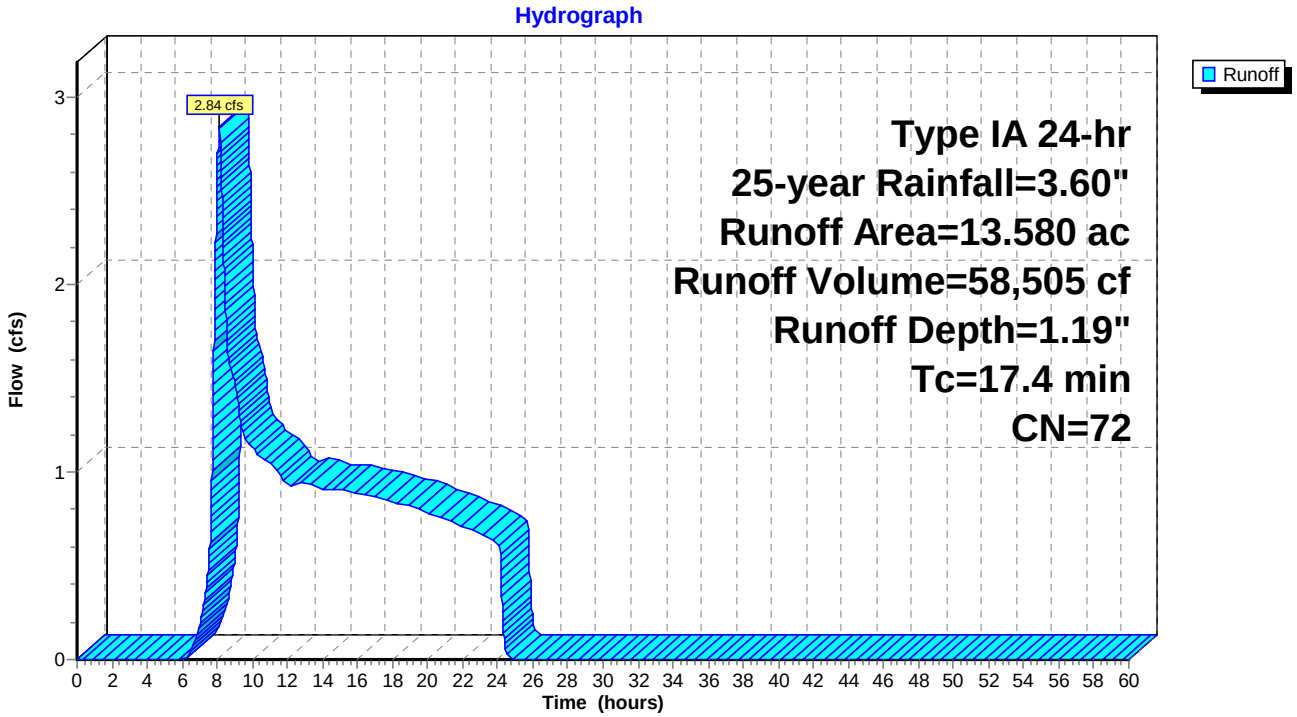
Runoff = 2.84 cfs @ 8.12 hrs, Volume= 58,505 cf, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=3.60"

	Area (ac)	CN	Description
*	13.580	72	City of Salem Pre-developed, HSG C
	13.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B1: Existing Conditions (Basin #1)



Summary for Subcatchment B2: Existing Conditions (Basin #2)

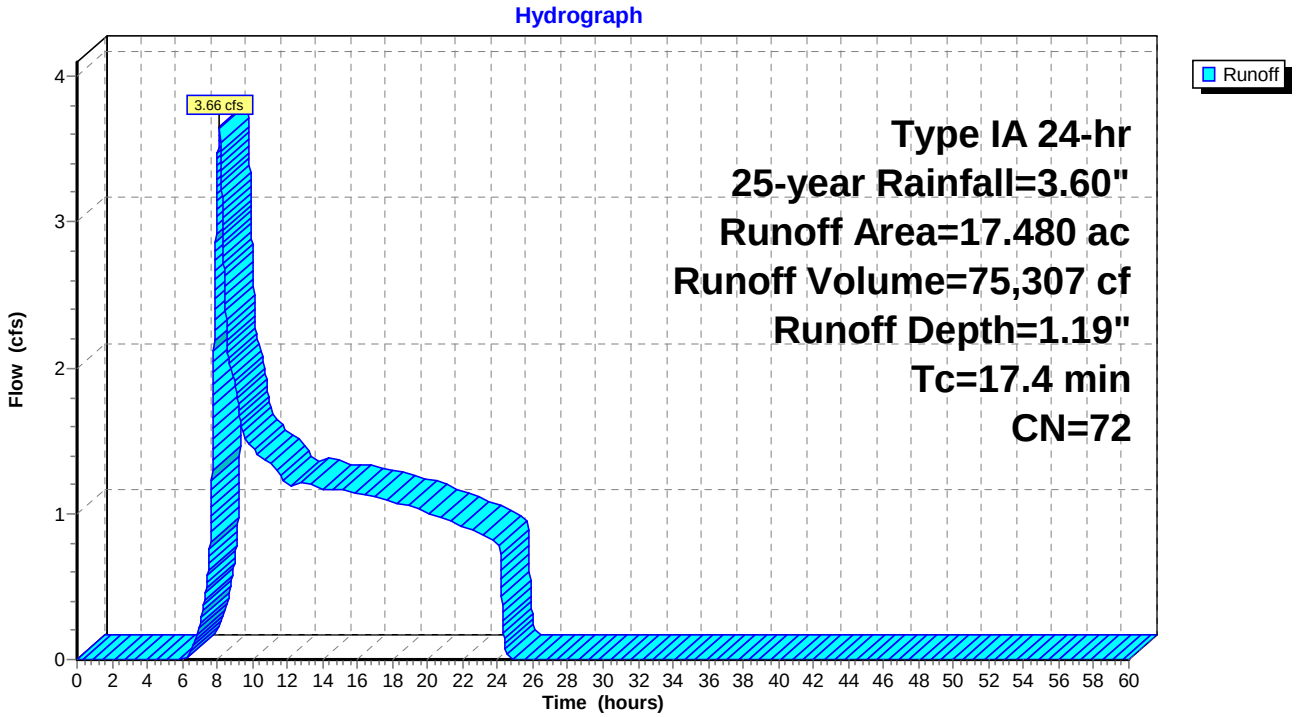
Runoff = 3.66 cfs @ 8.12 hrs, Volume= 75,307 cf, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=3.60"

	Area (ac)	CN	Description
*	17.480	72	City of Salem Pre-developed, HSG C
	17.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B2: Existing Conditions (Basin #2)



Summary for Subcatchment B3: Existing Conditions (Basin #3)

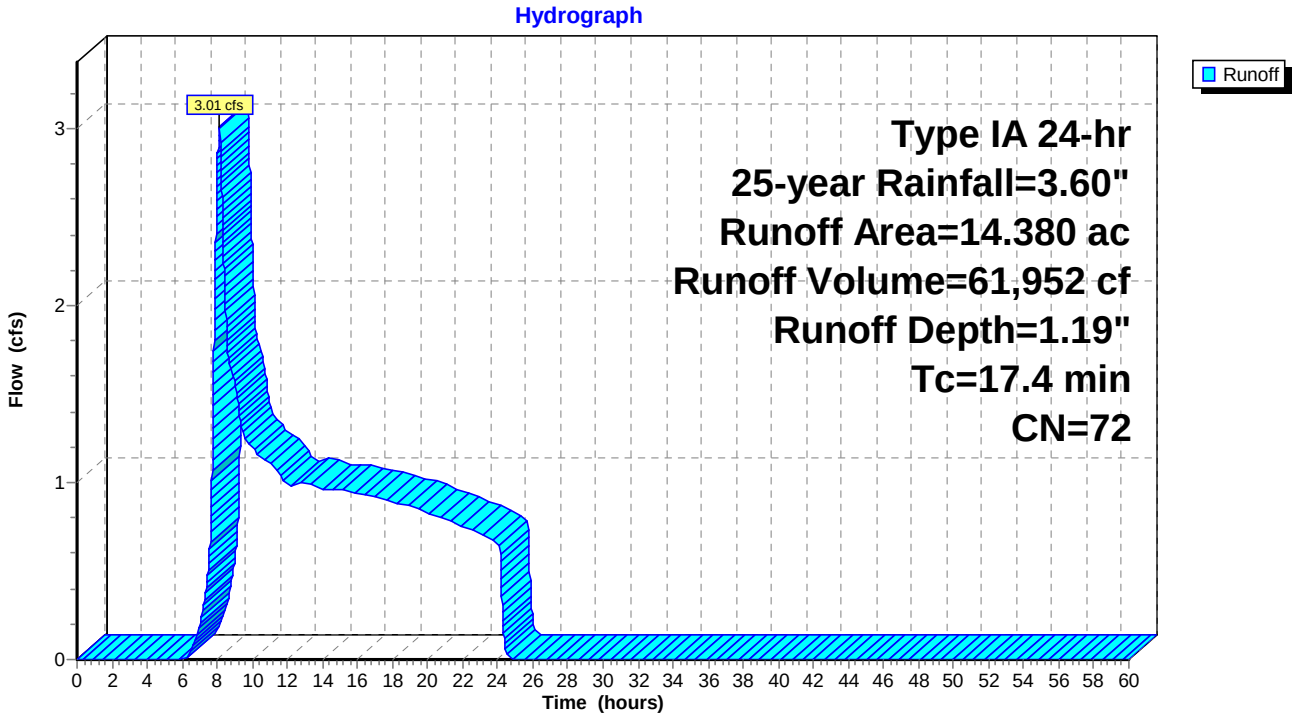
Runoff = 3.01 cfs @ 8.12 hrs, Volume= 61,952 cf, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=3.60"

	Area (ac)	CN	Description
*	14.380	72	City of Salem Pre-developed, HSG C
	14.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B3: Existing Conditions (Basin #3)



Summary for Subcatchment 1B: Developed Conditions

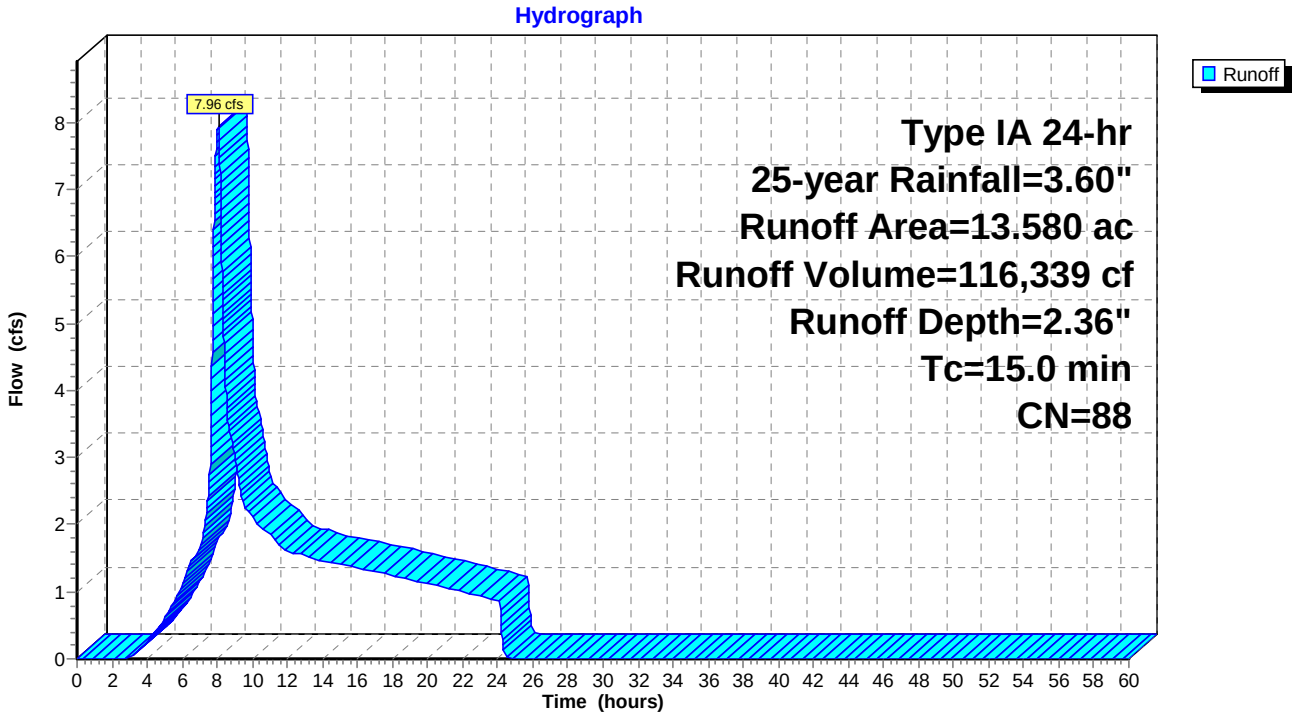
Runoff = 7.96 cfs @ 8.05 hrs, Volume= 116,339 cf, Depth= 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=3.60"

	Area (ac)	CN	Description
	5.430	74	>75% Grass cover, Good, HSG C
*	8.150	98	Impervious surface, HSG C
	13.580	88	Weighted Average
	5.430		39.99% Pervious Area
	8.150		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Direct Entry**

Subcatchment 1B: Developed Conditions



Summary for Subcatchment 2B: Developed Conditions

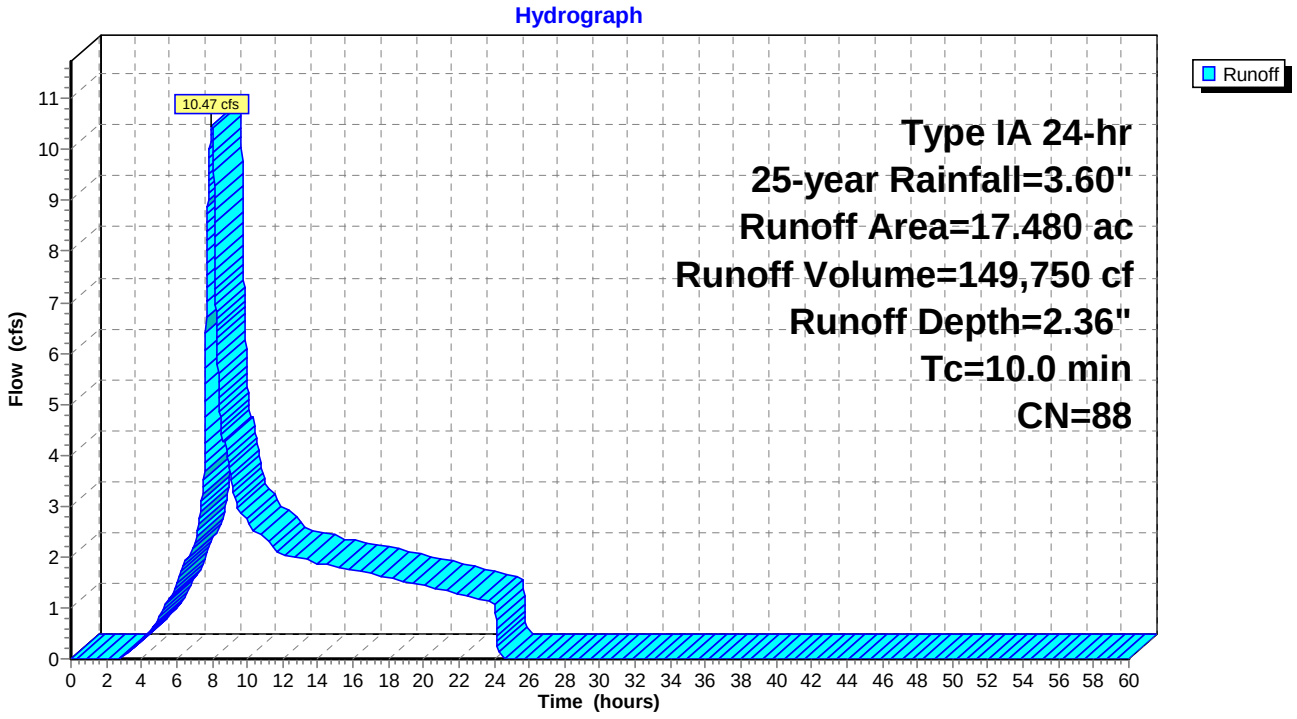
Runoff = 10.47 cfs @ 7.99 hrs, Volume= 149,750 cf, Depth= 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=3.60"

	Area (ac)	CN	Description
	6.990	74	>75% Grass cover, Good, HSG C
*	10.490	98	Impervious surface, HSG C
	17.480	88	Weighted Average
	6.990		39.99% Pervious Area
	10.490		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 2B: Developed Conditions



Summary for Subcatchment 3B: Developed Conditions

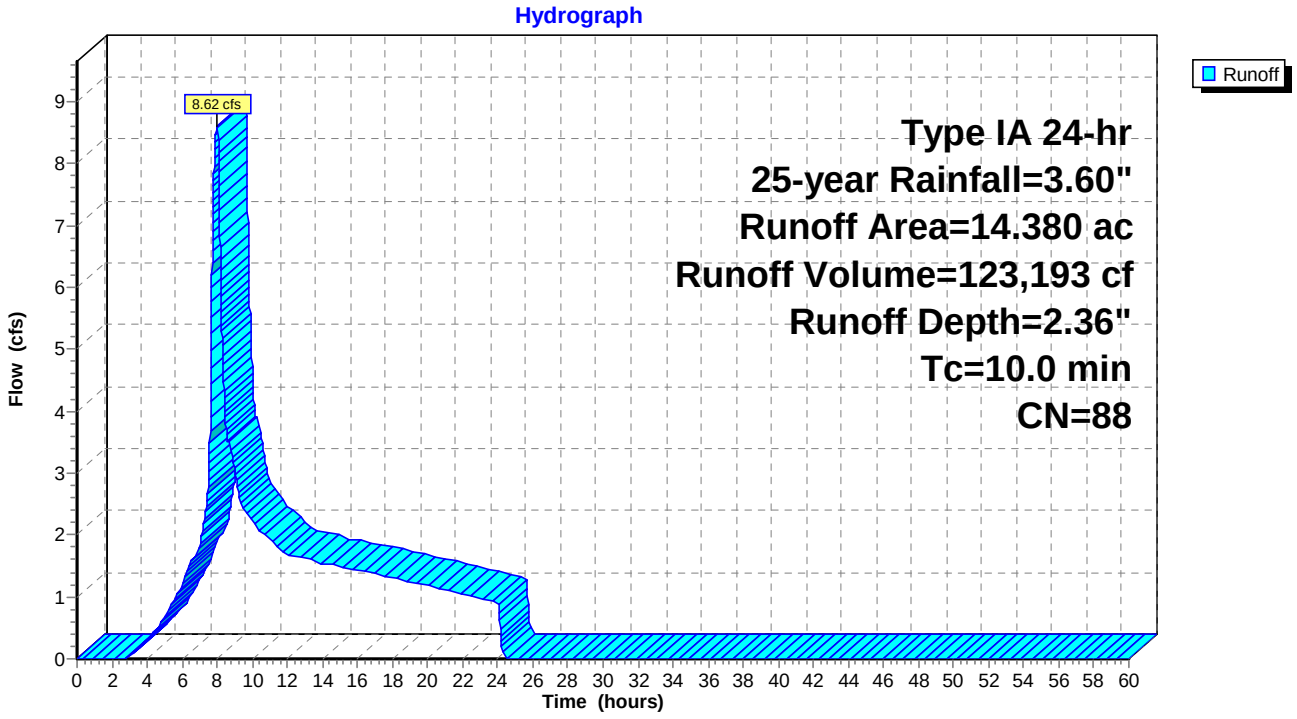
Runoff = 8.62 cfs @ 7.99 hrs, Volume= 123,193 cf, Depth= 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-year Rainfall=3.60"

	Area (ac)	CN	Description
	5.750	74	>75% Grass cover, Good, HSG C
*	8.630	98	Impervious surface, HSG C
	14.380	88	Weighted Average
	5.750		39.99% Pervious Area
	8.630		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 3B: Developed Conditions



Summary for Pond P1: Control MH #1

Inflow Area = 591,545 sf, 60.01% Impervious, Inflow Depth = 2.36" for 25-year event
Inflow = 7.96 cfs @ 8.05 hrs, Volume= 116,339 cf
Outflow = 2.61 cfs @ 9.25 hrs, Volume= 105,363 cf, Atten= 67%, Lag= 72.3 min
Primary = 2.61 cfs @ 9.25 hrs, Volume= 105,363 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 295.79' @ 9.25 hrs Surf.Area= 9,350 sf Storage= 31,749 cf
Flood Elev= 299.00' Surf.Area= 9,350 sf Storage= 61,719 cf

Plug-Flow detention time= 292.3 min calculated for 105,346 cf (91% of inflow)
Center-of-Mass det. time= 230.9 min (993.1 - 762.2)

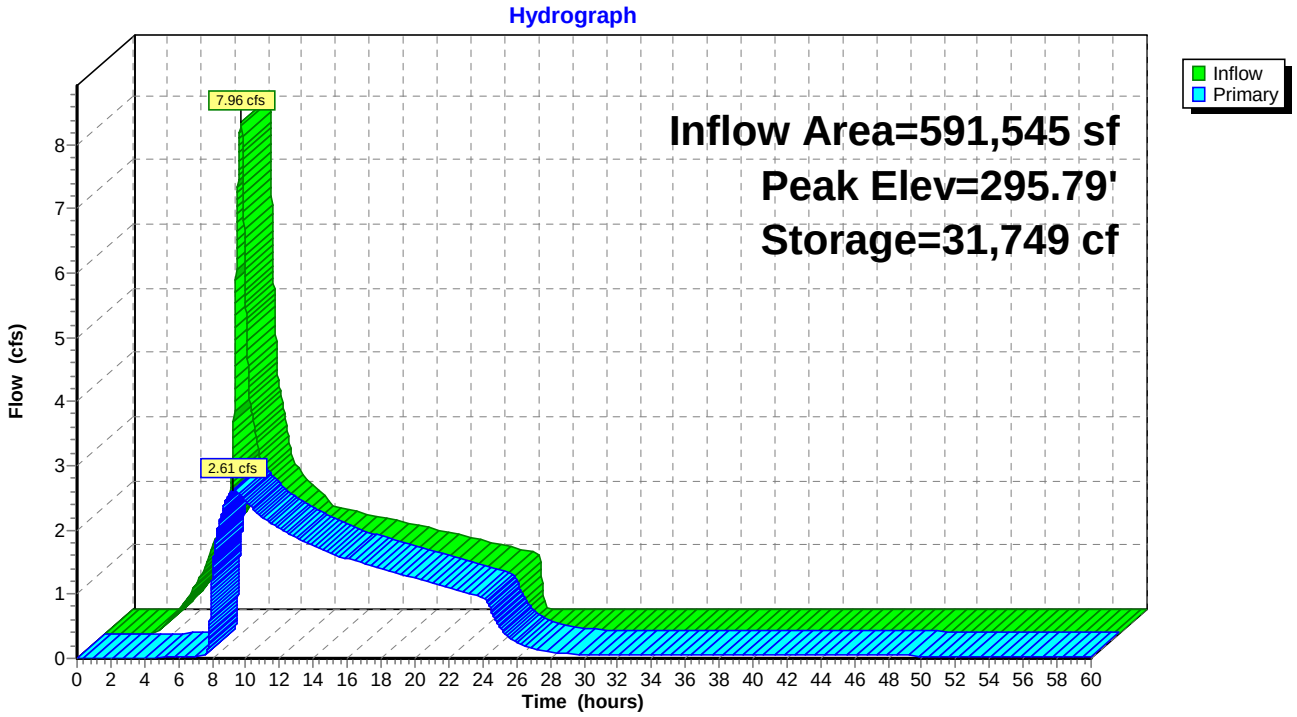
Volume	Invert	Avail.Storage	Storage Description
#1	289.99'	71,069 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
289.99	9,350	0.0	0	0
290.00	9,350	40.0	37	37
291.25	9,350	40.0	4,675	4,712
291.26	9,350	5.0	5	4,717
292.99	9,350	5.0	809	5,526
293.00	9,350	100.0	93	5,619
294.00	9,350	100.0	9,350	14,969
295.00	9,350	100.0	9,350	24,319
296.00	9,350	100.0	9,350	33,669
297.00	9,350	100.0	9,350	43,019
298.00	9,350	100.0	9,350	52,369
299.00	9,350	100.0	9,350	61,719
300.00	9,350	100.0	9,350	71,069

Device	Routing	Invert	Outlet Devices
#1	Primary	290.00'	**15.0" Round 15" Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 290.00' / 289.70' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	290.00'	**0.9" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	294.00'	**8.5" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	295.50'	**8.5" Vert. Orifice #3** C= 0.600 Limited to weir flow at low heads
#5	Device 1	299.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.61 cfs @ 9.25 hrs HW=295.79' (Free Discharge)
└**1=15" Culvert** (Passes 2.61 cfs of 11.70 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.05 cfs @ 11.55 fps)
  ├**3=Orifice #2** (Orifice Controls 2.28 cfs @ 5.78 fps)
  ├**4=Orifice #3** (Orifice Controls 0.29 cfs @ 1.85 fps)
  └**5=Overflow** (Controls 0.00 cfs)

Pond P1: Control MH #1



Summary for Pond P2: Control MH #2

Inflow Area = 761,429 sf, 60.01% Impervious, Inflow Depth = 2.36" for 25-year event
Inflow = 10.47 cfs @ 7.99 hrs, Volume= 149,750 cf
Outflow = 3.13 cfs @ 9.31 hrs, Volume= 136,338 cf, Atten= 70%, Lag= 79.4 min
Primary = 3.13 cfs @ 9.31 hrs, Volume= 136,338 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 274.95' @ 9.31 hrs Surf.Area= 9,000 sf Storage= 40,885 cf
Flood Elev= 277.00' Surf.Area= 9,000 sf Storage= 59,377 cf

Plug-Flow detention time= 285.1 min calculated for 136,315 cf (91% of inflow)
Center-of-Mass det. time= 226.7 min (984.3 - 757.6)

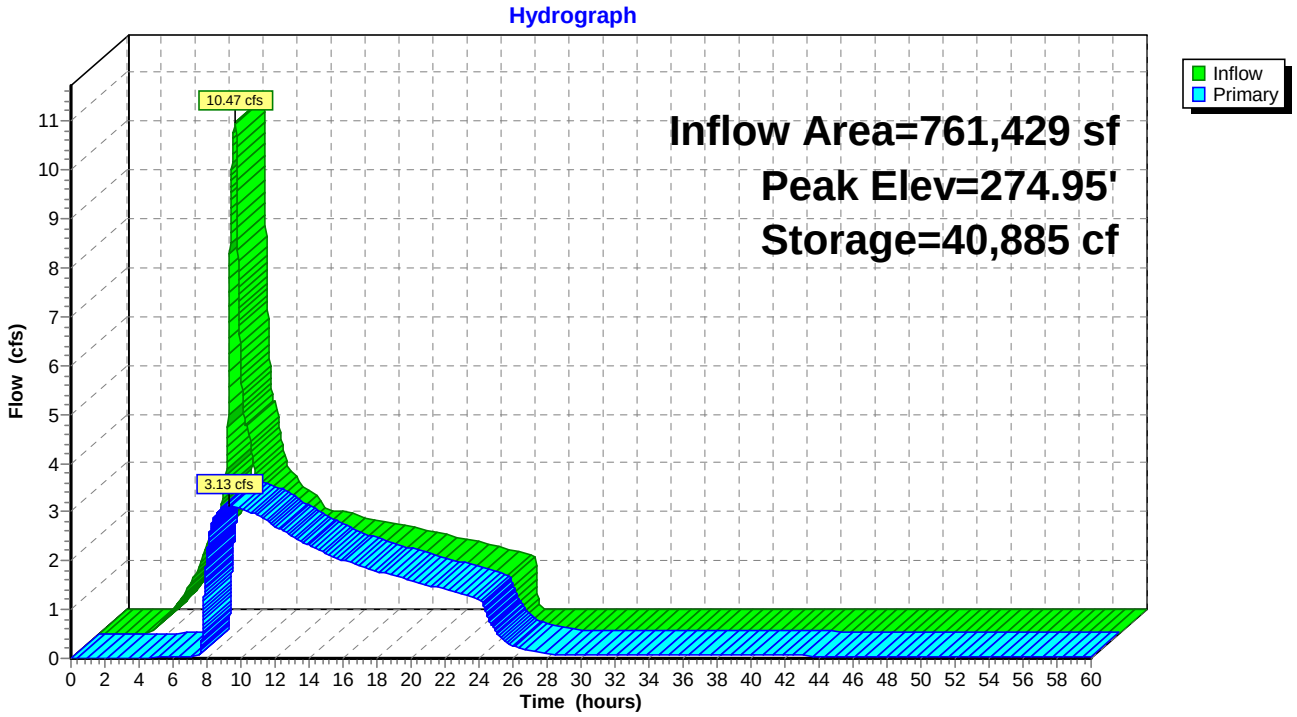
Volume	Invert	Avail.Storage	Storage Description
#1	267.99'	68,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
267.99	9,000	0.0	0	0
268.00	9,000	40.0	36	36
269.24	9,000	40.0	4,464	4,500
269.25	9,000	5.0	4	4,504
270.99	9,000	5.0	783	5,288
271.00	9,000	100.0	90	5,377
272.00	9,000	100.0	9,000	14,377
273.00	9,000	100.0	9,000	23,377
274.00	9,000	100.0	9,000	32,377
275.00	9,000	100.0	9,000	41,377
276.00	9,000	100.0	9,000	50,377
277.00	9,000	100.0	9,000	59,377
278.00	9,000	100.0	9,000	68,377

Device	Routing	Invert	Outlet Devices
#1	Primary	268.00'	**15.0" Round 15" Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 268.00' / 267.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	268.00'	**1.0" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	272.50'	**9.0" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	275.00'	**9.0" Vert. Orifice #3** C= 0.600 Limited to weir flow at low heads
#5	Device 1	277.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.13 cfs @ 9.31 hrs HW=274.95' (Free Discharge)
└**1=15" Culvert** (Passes 3.13 cfs of 13.23 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.07 cfs @ 12.65 fps)
  ├**3=Orifice #2** (Orifice Controls 3.06 cfs @ 6.93 fps)
  ├**4=Orifice #3** (Controls 0.00 cfs)
  └**5=Overflow** (Controls 0.00 cfs)

Pond P2: Control MH #2



Summary for Pond P3: Control MH #3

Inflow Area = 626,393 sf, 60.01% Impervious, Inflow Depth = 2.36" for 25-year event
Inflow = 8.62 cfs @ 7.99 hrs, Volume= 123,193 cf
Outflow = 2.50 cfs @ 9.38 hrs, Volume= 112,903 cf, Atten= 71%, Lag= 83.5 min
Primary = 2.50 cfs @ 9.38 hrs, Volume= 112,903 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 274.70' @ 9.38 hrs Surf.Area= 7,875 sf Storage= 33,817 cf
Flood Elev= 278.00' Surf.Area= 7,875 sf Storage= 59,830 cf

Plug-Flow detention time= 283.0 min calculated for 112,903 cf (92% of inflow)
Center-of-Mass det. time= 228.1 min (985.7 - 757.6)

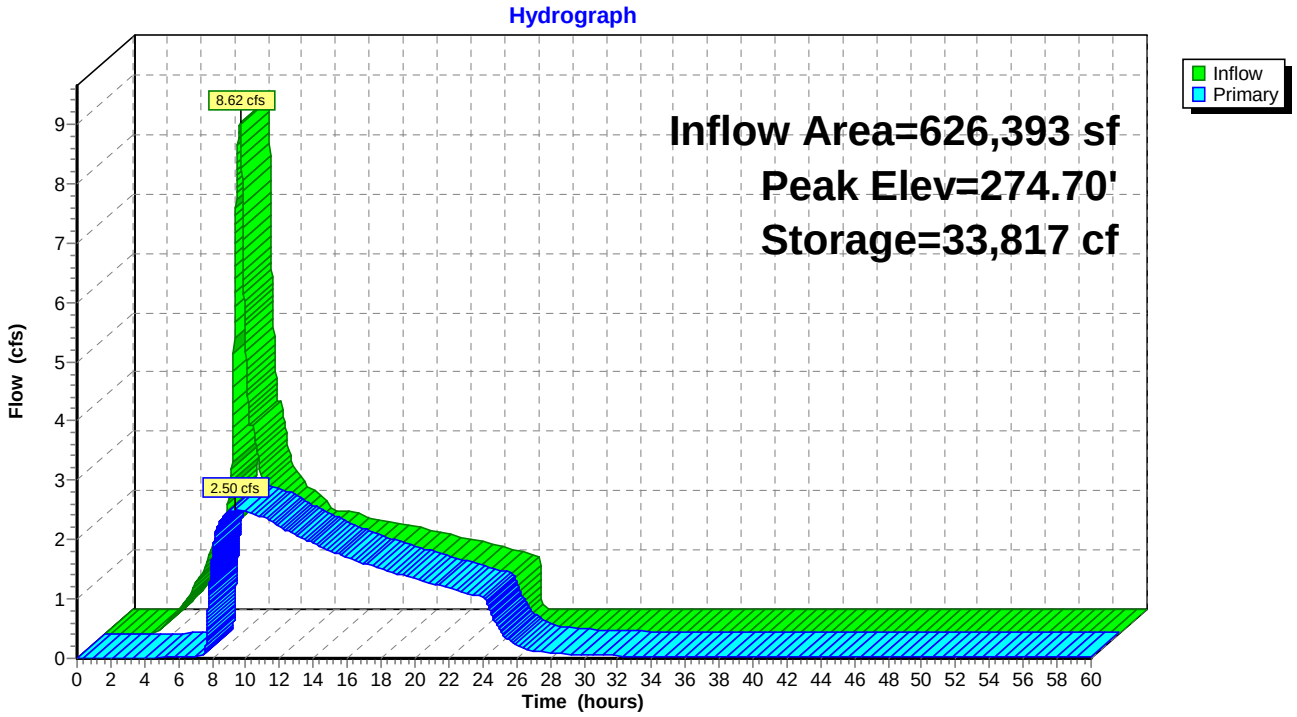
Volume	Invert	Avail.Storage	Storage Description
#1	267.99'	59,830 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
267.99	7,875	0.0	0	0
268.00	7,875	40.0	31	31
269.24	7,875	40.0	3,906	3,938
269.25	7,875	5.0	4	3,941
270.99	7,875	5.0	685	4,627
271.00	7,875	100.0	79	4,705
272.00	7,875	100.0	7,875	12,580
273.00	7,875	100.0	7,875	20,455
274.00	7,875	100.0	7,875	28,330
275.00	7,875	100.0	7,875	36,205
276.00	7,875	100.0	7,875	44,080
277.00	7,875	100.0	7,875	51,955
278.00	7,875	100.0	7,875	59,830

Device	Routing	Invert	Outlet Devices
#1	Primary	268.00'	**15.0" Round 15" Culvert** L= 50.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 268.00' / 267.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	268.00'	**0.9" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	272.25'	**8.0" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	277.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.50 cfs @ 9.38 hrs HW=274.70' (Free Discharge)
└**1=15" Culvert** (Passes 2.50 cfs of 15.95 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.05 cfs @ 12.43 fps)
  ├**3=Orifice #2** (Orifice Controls 2.44 cfs @ 7.00 fps)
  └**4=Overflow** (Controls 0.00 cfs)

Pond P3: Control MH #3



Summary for Subcatchment B1: Existing Conditions (Basin #1)

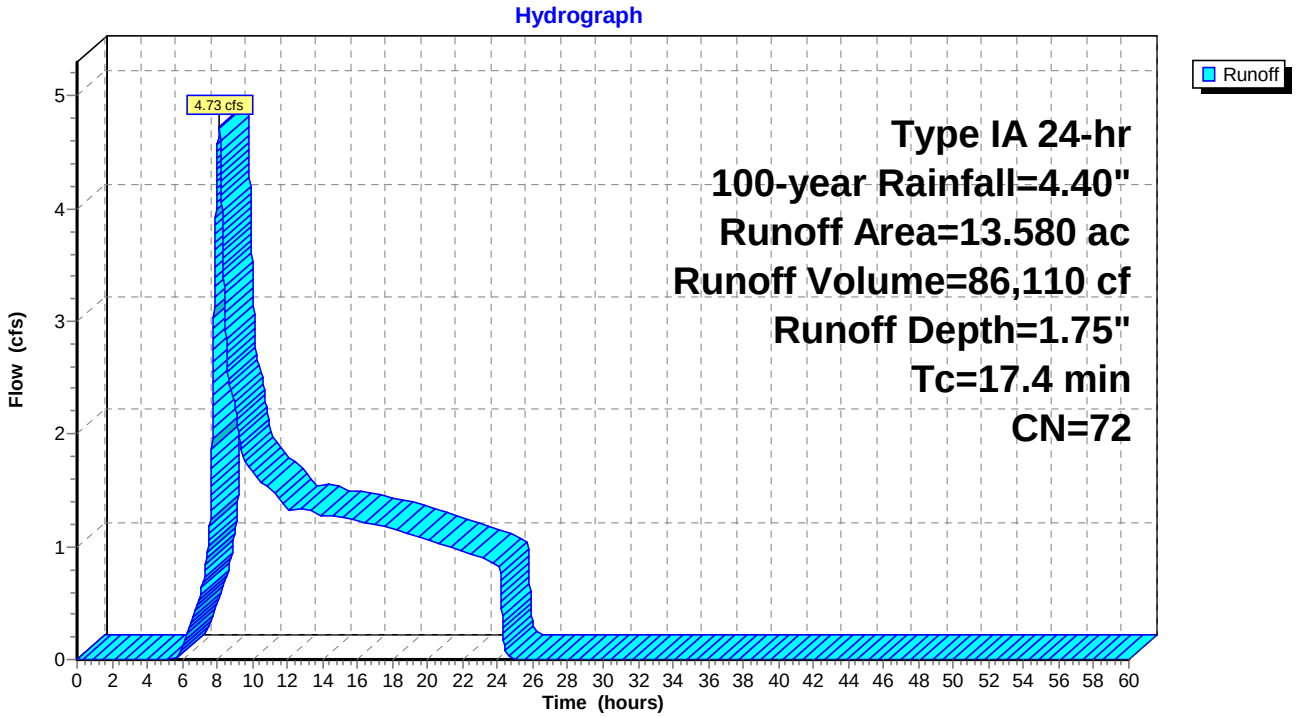
Runoff = 4.73 cfs @ 8.10 hrs, Volume= 86,110 cf, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-year Rainfall=4.40"

	Area (ac)	CN	Description
*	13.580	72	City of Salem Pre-developed, HSG C
	13.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B1: Existing Conditions (Basin #1)



Summary for Subcatchment B2: Existing Conditions (Basin #2)

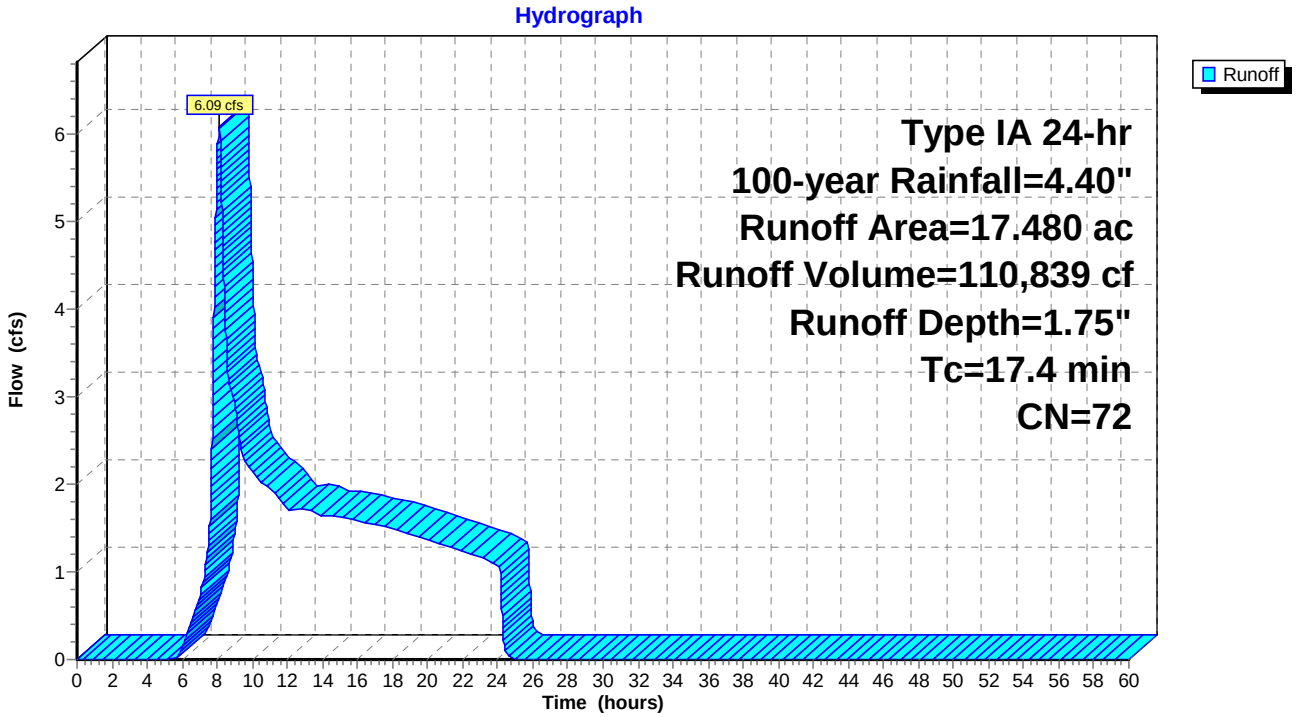
Runoff = 6.09 cfs @ 8.10 hrs, Volume= 110,839 cf, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-year Rainfall=4.40"

	Area (ac)	CN	Description
*	17.480	72	City of Salem Pre-developed, HSG C
	17.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B2: Existing Conditions (Basin #2)



Summary for Subcatchment B3: Existing Conditions (Basin #3)

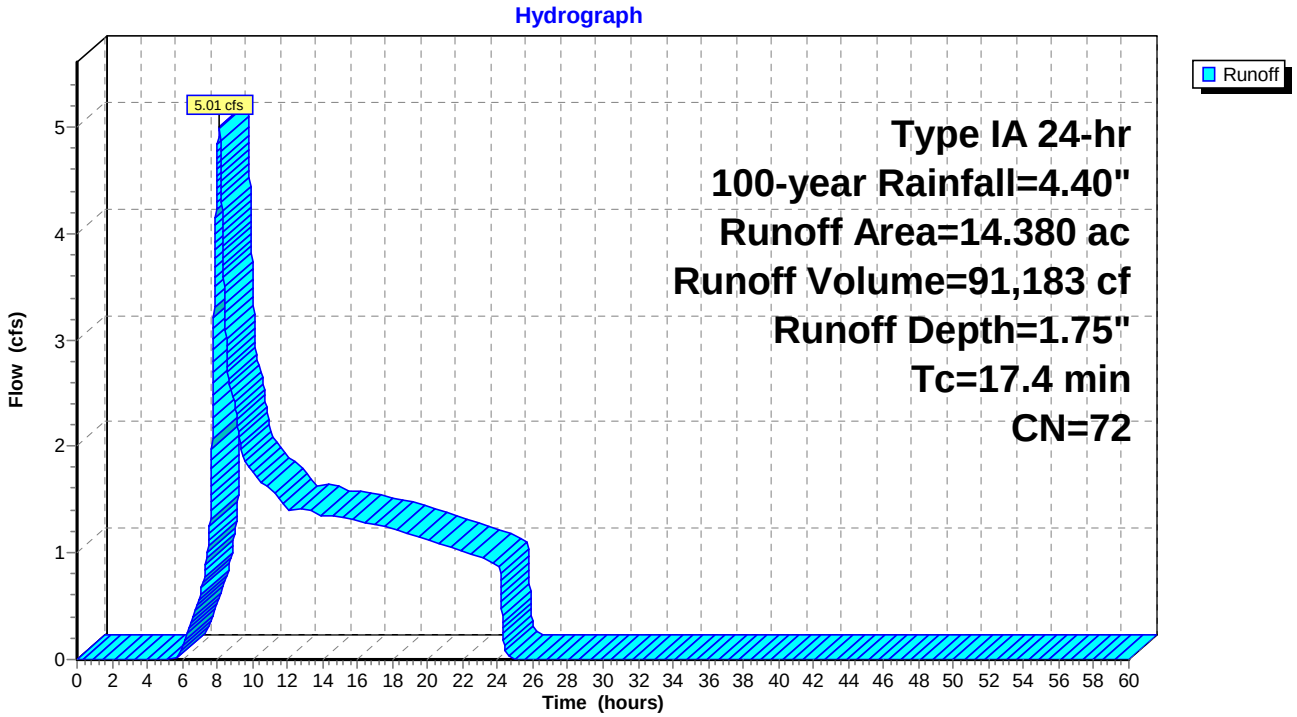
Runoff = 5.01 cfs @ 8.10 hrs, Volume= 91,183 cf, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-year Rainfall=4.40"

	Area (ac)	CN	Description
*	14.380	72	City of Salem Pre-developed, HSG C
	14.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4					**Direct Entry, TR-55 Worksheet**

Subcatchment B3: Existing Conditions (Basin #3)



Summary for Subcatchment 1B: Developed Conditions

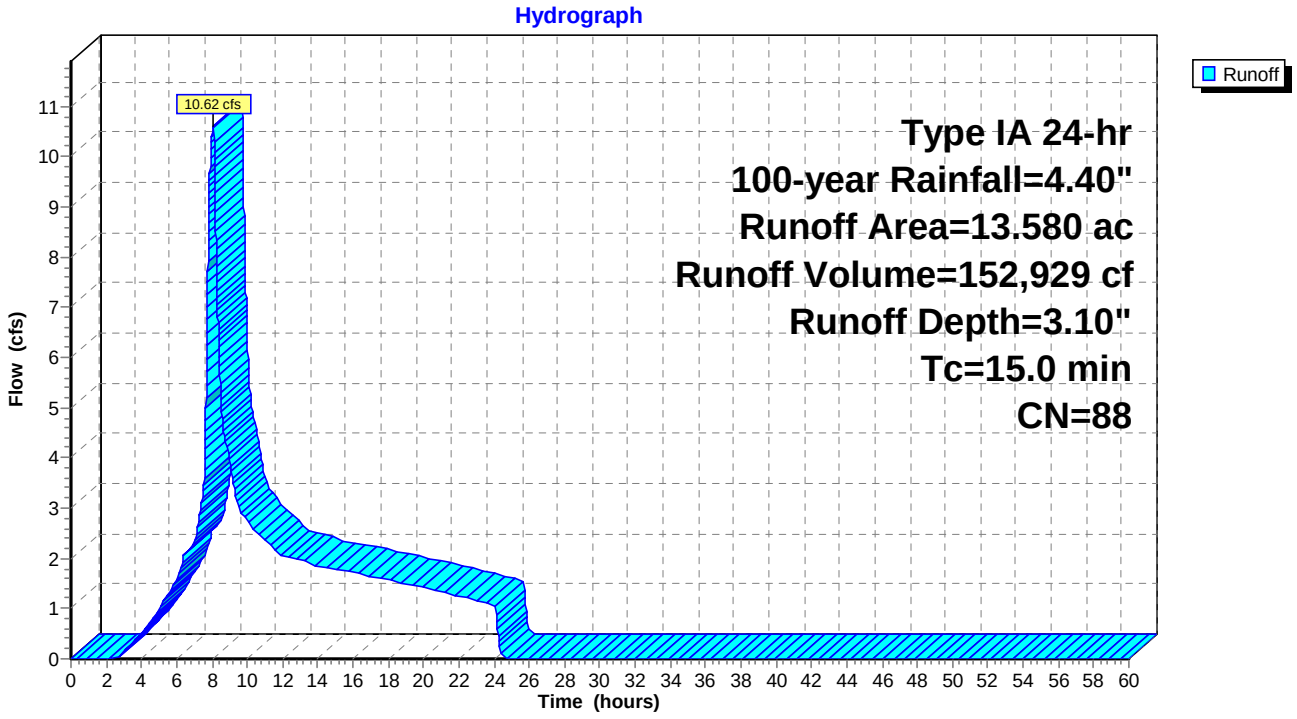
Runoff = 10.62 cfs @ 8.05 hrs, Volume= 152,929 cf, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-year Rainfall=4.40"

	Area (ac)	CN	Description
	5.430	74	>75% Grass cover, Good, HSG C
*	8.150	98	Impervious surface, HSG C
	13.580	88	Weighted Average
	5.430		39.99% Pervious Area
	8.150		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Direct Entry**

Subcatchment 1B: Developed Conditions



Summary for Subcatchment 2B: Developed Conditions

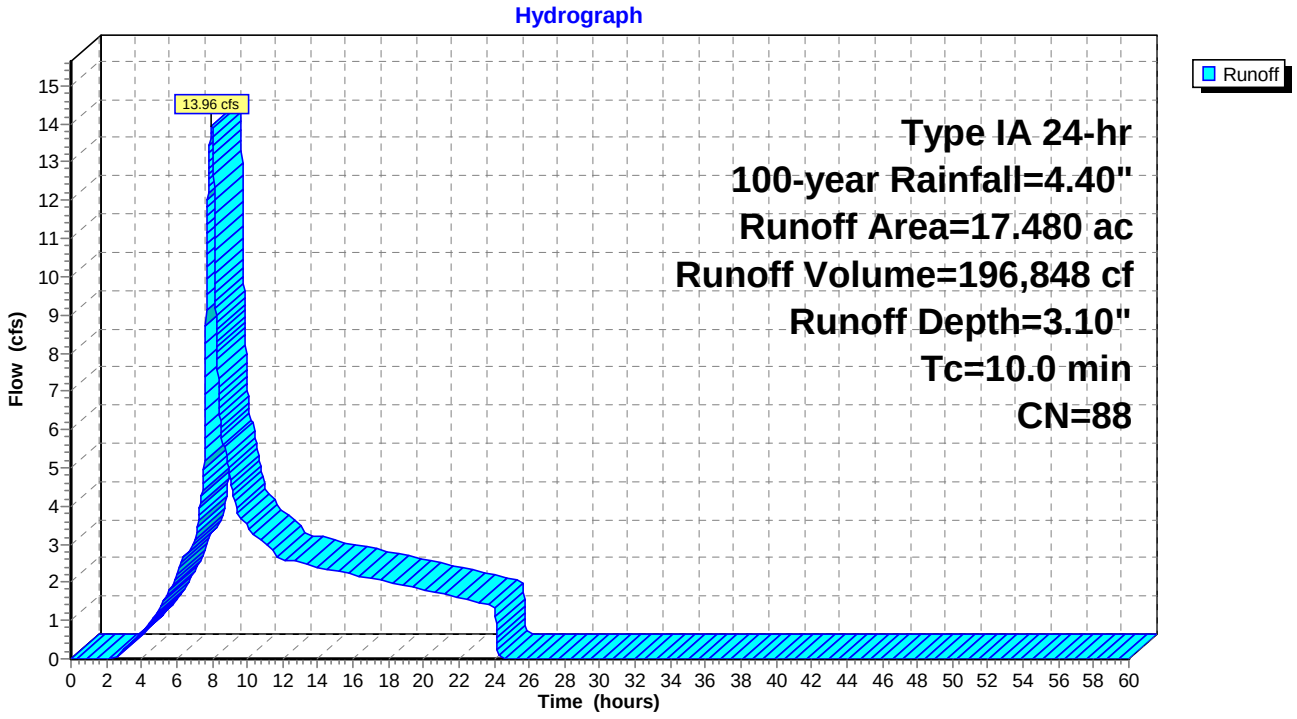
Runoff = 13.96 cfs @ 7.99 hrs, Volume= 196,848 cf, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-year Rainfall=4.40"

	Area (ac)	CN	Description
	6.990	74	>75% Grass cover, Good, HSG C
*	10.490	98	Impervious surface, HSG C
	17.480	88	Weighted Average
	6.990		39.99% Pervious Area
	10.490		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 2B: Developed Conditions



Summary for Subcatchment 3B: Developed Conditions

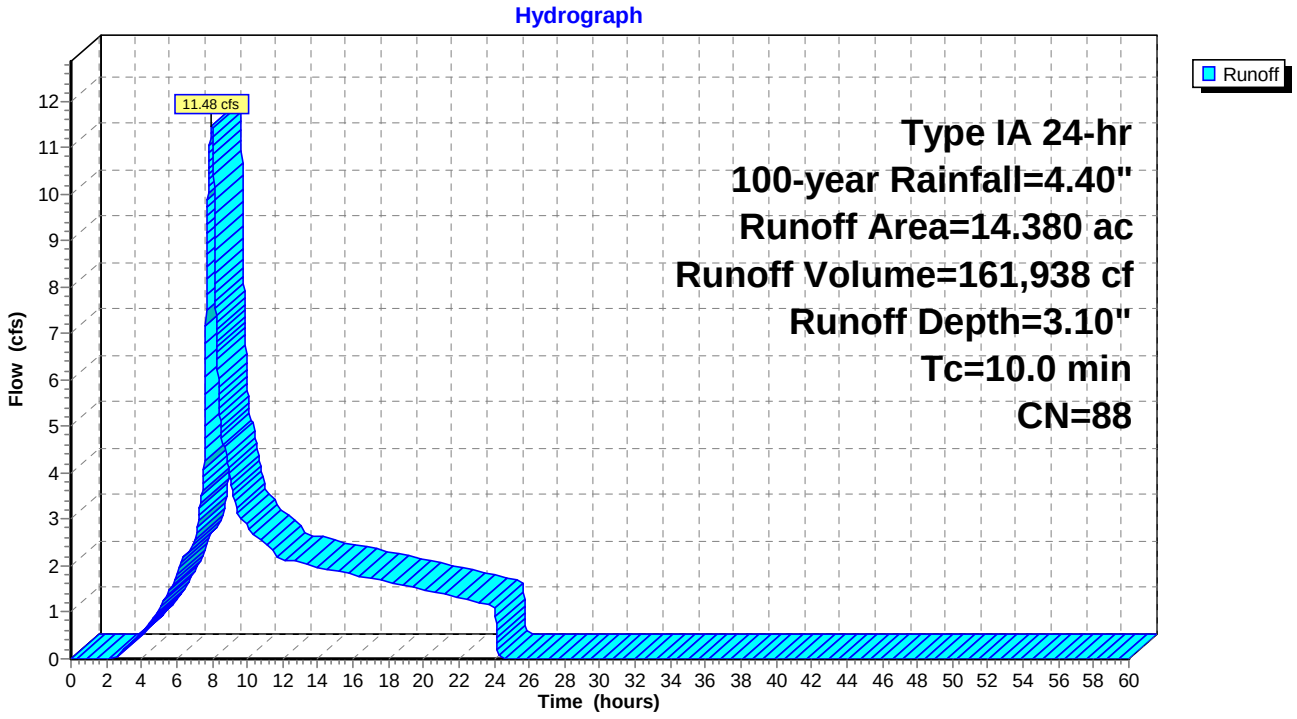
Runoff = 11.48 cfs @ 7.99 hrs, Volume= 161,938 cf, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-year Rainfall=4.40"

	Area (ac)	CN	Description
	5.750	74	>75% Grass cover, Good, HSG C
*	8.630	98	Impervious surface, HSG C
	14.380	88	Weighted Average
	5.750		39.99% Pervious Area
	8.630		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 3B: Developed Conditions



Summary for Pond P1: Control MH #1

Inflow Area = 591,545 sf, 60.01% Impervious, Inflow Depth = 3.10" for 100-year event
Inflow = 10.62 cfs @ 8.05 hrs, Volume= 152,929 cf
Outflow = 4.36 cfs @ 8.78 hrs, Volume= 141,898 cf, Atten= 59%, Lag= 43.9 min
Primary = 4.36 cfs @ 8.78 hrs, Volume= 141,898 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 296.50' @ 8.78 hrs Surf.Area= 9,350 sf Storage= 38,338 cf
Flood Elev= 299.00' Surf.Area= 9,350 sf Storage= 61,719 cf

Plug-Flow detention time= 247.6 min calculated for 141,874 cf (93% of inflow)
Center-of-Mass det. time= 199.4 min (946.9 - 747.5)

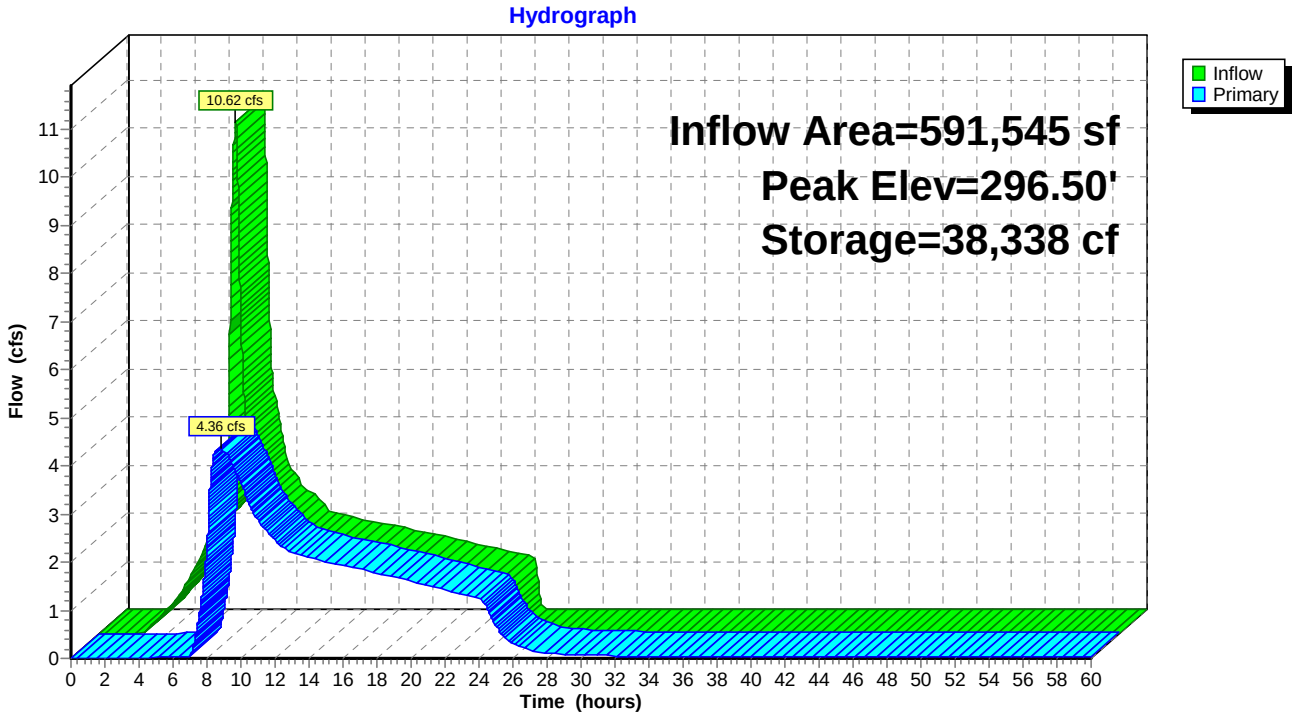
Volume	Invert	Avail.Storage	Storage Description
#1	289.99'	71,069 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
289.99	9,350	0.0	0	0
290.00	9,350	40.0	37	37
291.25	9,350	40.0	4,675	4,712
291.26	9,350	5.0	5	4,717
292.99	9,350	5.0	809	5,526
293.00	9,350	100.0	93	5,619
294.00	9,350	100.0	9,350	14,969
295.00	9,350	100.0	9,350	24,319
296.00	9,350	100.0	9,350	33,669
297.00	9,350	100.0	9,350	43,019
298.00	9,350	100.0	9,350	52,369
299.00	9,350	100.0	9,350	61,719
300.00	9,350	100.0	9,350	71,069

Device	Routing	Invert	Outlet Devices
#1	Primary	290.00'	**15.0" Round 15" Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 290.00' / 289.70' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	290.00'	**0.9" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	294.00'	**8.5" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	295.50'	**8.5" Vert. Orifice #3** C= 0.600 Limited to weir flow at low heads
#5	Device 1	299.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.36 cfs @ 8.78 hrs HW=296.50' (Free Discharge)
└**1=15" Culvert** (Passes 4.36 cfs of 12.52 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.05 cfs @ 12.24 fps)
  ├**3=Orifice #2** (Orifice Controls 2.78 cfs @ 7.05 fps)
  ├**4=Orifice #3** (Orifice Controls 1.52 cfs @ 3.87 fps)
  └**5=Overflow** (Controls 0.00 cfs)

Pond P1: Control MH #1



Summary for Pond P2: Control MH #2

Inflow Area = 761,429 sf, 60.01% Impervious, Inflow Depth = 3.10" for 100-year event
Inflow = 13.96 cfs @ 7.99 hrs, Volume= 196,848 cf
Outflow = 5.40 cfs @ 8.80 hrs, Volume= 183,364 cf, Atten= 61%, Lag= 49.0 min
Primary = 5.40 cfs @ 8.80 hrs, Volume= 183,364 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 275.94' @ 8.80 hrs Surf.Area= 9,000 sf Storage= 49,843 cf
Flood Elev= 277.00' Surf.Area= 9,000 sf Storage= 59,377 cf

Plug-Flow detention time= 246.0 min calculated for 183,334 cf (93% of inflow)
Center-of-Mass det. time= 200.1 min (943.0 - 742.9)

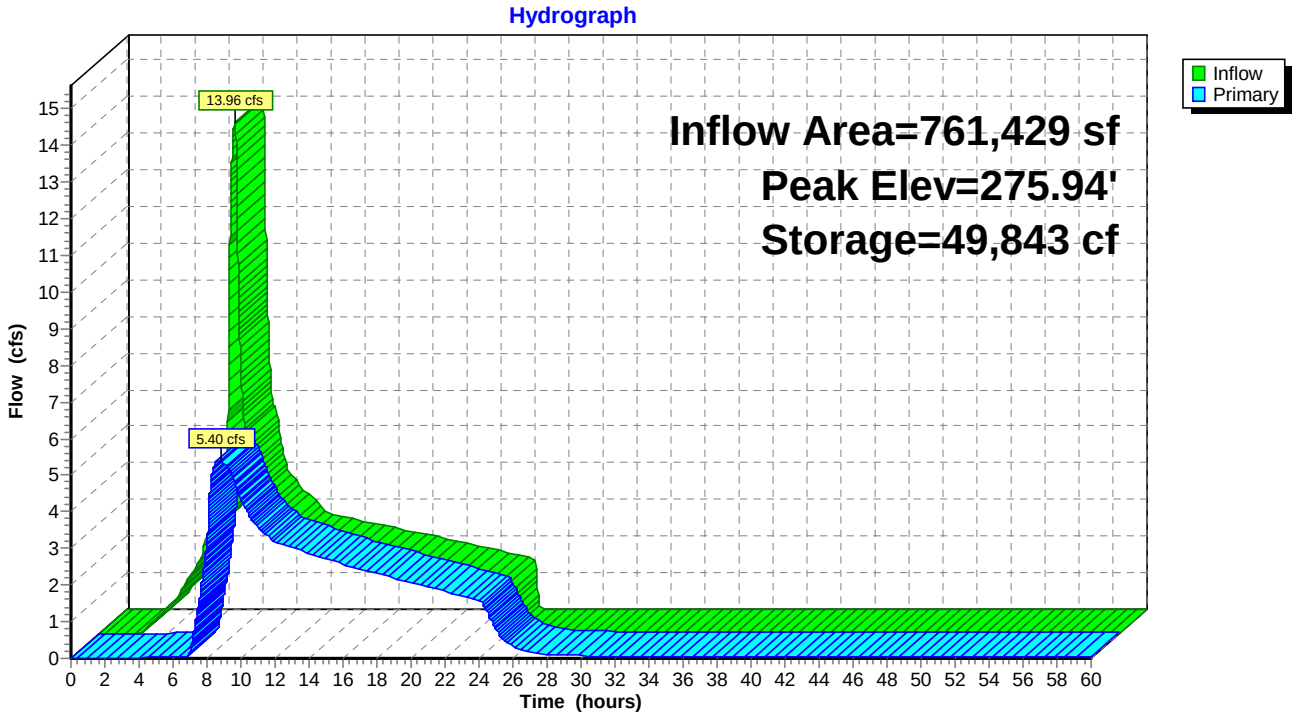
Volume	Invert	Avail.Storage	Storage Description
#1	267.99'	68,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
267.99	9,000	0.0	0	0
268.00	9,000	40.0	36	36
269.24	9,000	40.0	4,464	4,500
269.25	9,000	5.0	4	4,504
270.99	9,000	5.0	783	5,288
271.00	9,000	100.0	90	5,377
272.00	9,000	100.0	9,000	14,377
273.00	9,000	100.0	9,000	23,377
274.00	9,000	100.0	9,000	32,377
275.00	9,000	100.0	9,000	41,377
276.00	9,000	100.0	9,000	50,377
277.00	9,000	100.0	9,000	59,377
278.00	9,000	100.0	9,000	68,377

Device	Routing	Invert	Outlet Devices
#1	Primary	268.00'	**15.0" Round 15" Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 268.00' / 267.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	268.00'	**1.0" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	272.50'	**9.0" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	275.00'	**9.0" Vert. Orifice #3** C= 0.600 Limited to weir flow at low heads
#5	Device 1	277.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.40 cfs @ 8.80 hrs HW=275.94' (Free Discharge)
└**1=15" Culvert** (Passes 5.40 cfs of 14.25 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.07 cfs @ 13.53 fps)
  ├**3=Orifice #2** (Orifice Controls 3.72 cfs @ 8.43 fps)
  ├**4=Orifice #3** (Orifice Controls 1.60 cfs @ 3.62 fps)
  └**5=Overflow** (Controls 0.00 cfs)

Pond P2: Control MH #2



Summary for Pond P3: Control MH #3

Inflow Area = 626,393 sf, 60.01% Impervious, Inflow Depth = 3.10" for 100-year event
Inflow = 11.48 cfs @ 7.99 hrs, Volume= 161,938 cf
Outflow = 3.23 cfs @ 9.39 hrs, Volume= 151,577 cf, Atten= 72%, Lag= 84.1 min
Primary = 3.23 cfs @ 9.39 hrs, Volume= 151,577 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 276.13' @ 9.39 hrs Surf.Area= 7,875 sf Storage= 45,110 cf
Flood Elev= 278.00' Surf.Area= 7,875 sf Storage= 59,830 cf

Plug-Flow detention time= 261.8 min calculated for 151,552 cf (94% of inflow)
Center-of-Mass det. time= 218.7 min (961.6 - 742.9)

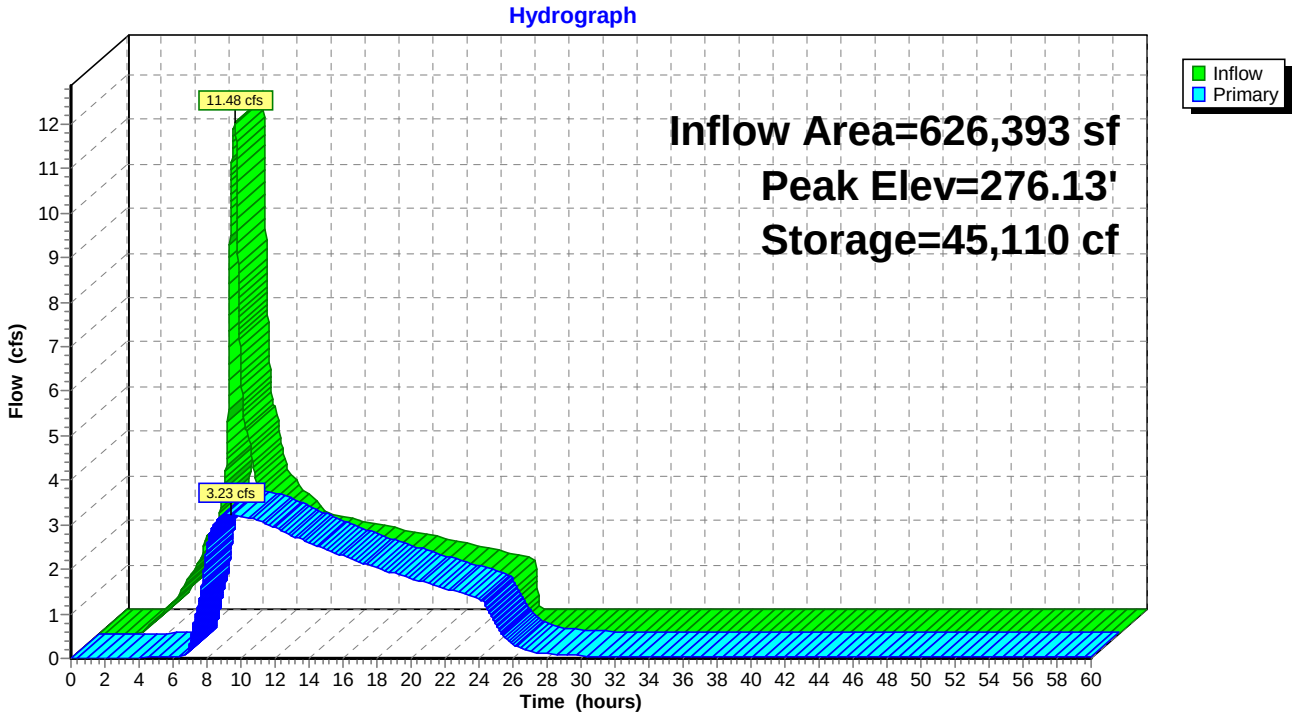
Volume	Invert	Avail.Storage	Storage Description
#1	267.99'	59,830 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
267.99	7,875	0.0	0	0
268.00	7,875	40.0	31	31
269.24	7,875	40.0	3,906	3,938
269.25	7,875	5.0	4	3,941
270.99	7,875	5.0	685	4,627
271.00	7,875	100.0	79	4,705
272.00	7,875	100.0	7,875	12,580
273.00	7,875	100.0	7,875	20,455
274.00	7,875	100.0	7,875	28,330
275.00	7,875	100.0	7,875	36,205
276.00	7,875	100.0	7,875	44,080
277.00	7,875	100.0	7,875	51,955
278.00	7,875	100.0	7,875	59,830

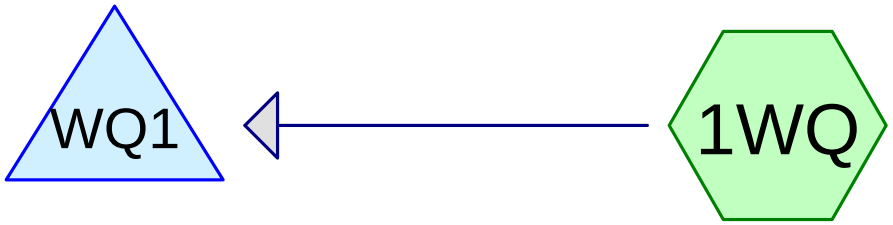
Device	Routing	Invert	Outlet Devices
#1	Primary	268.00'	**15.0" Round 15" Culvert** L= 50.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 268.00' / 267.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	268.00'	**0.9" Vert. Orifice #1** C= 0.600 Limited to weir flow at low heads
#3	Device 1	272.25'	**8.0" Vert. Orifice #2** C= 0.600 Limited to weir flow at low heads
#4	Device 1	277.00'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.23 cfs @ 9.39 hrs HW=276.13' (Free Discharge)
└**1=15" Culvert** (Passes 3.23 cfs of 17.77 cfs potential flow)
  ├**2=Orifice #1** (Orifice Controls 0.06 cfs @ 13.70 fps)
  ├**3=Orifice #2** (Orifice Controls 3.17 cfs @ 9.07 fps)
  └**4=Overflow** (Controls 0.00 cfs)

Pond P3: Control MH #3



Appendix E



Water Quality Media

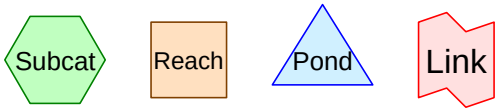
Developed Conditions
(Basin #1)

Water Quality Media

Developed Conditions
(Basin #2)

Water Quality Media

Developed Conditions
(Basin #3)



Routing Diagram for 20210202 WQ
Prepared by Multitech Engineering Services, Inc., Printed 2/3/2021
HydroCAD® 10.10-4a s/n 09412 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 1WQ: Developed Conditions (Basin #1)

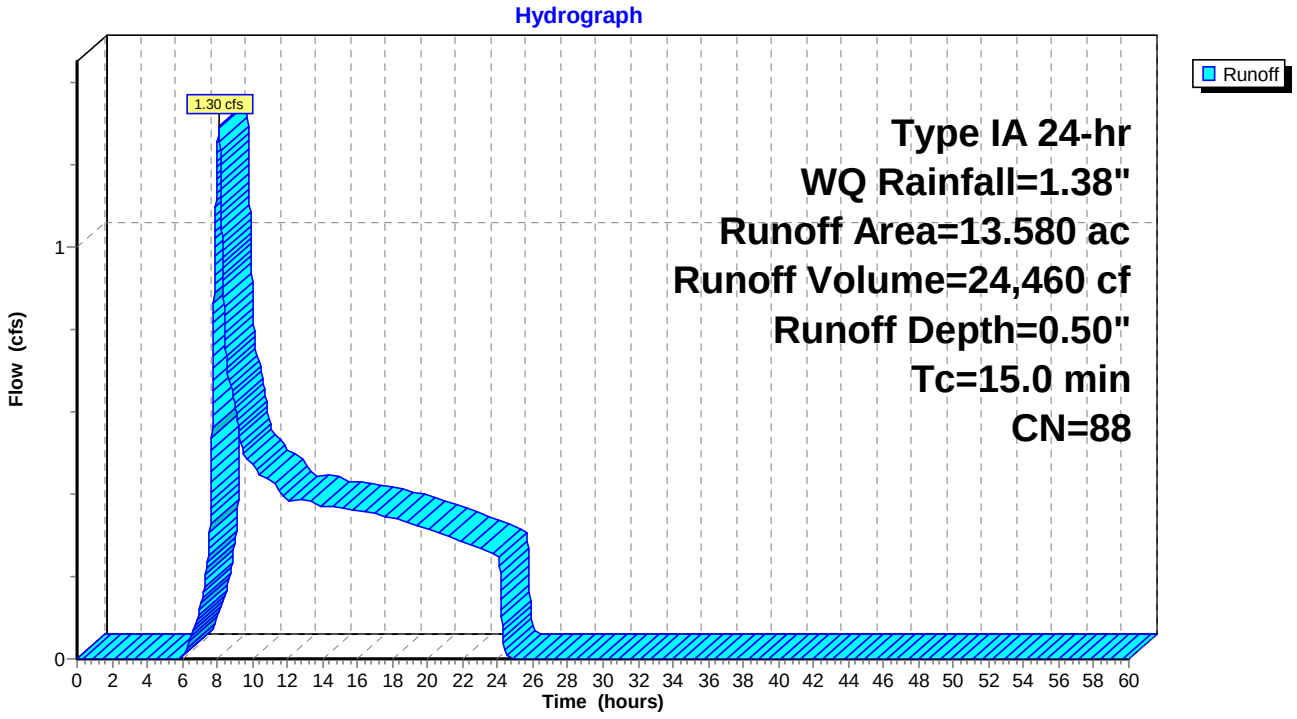
Runoff = 1.30 cfs @ 8.09 hrs, Volume= 24,460 cf, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.38"

	Area (ac)	CN	Description
	5.430	74	>75% Grass cover, Good, HSG C
*	8.150	98	Impervious surface, HSG C
	13.580	88	Weighted Average
	5.430		39.99% Pervious Area
	8.150		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, Direct Entry**

Subcatchment 1WQ: Developed Conditions (Basin #1)



Summary for Pond WQ1: Water Quality Media

Inflow Area = 591,545 sf, 60.01% Impervious, Inflow Depth = 0.50" for WQ event
Inflow = 1.30 cfs @ 8.09 hrs, Volume= 24,460 cf
Outflow = 0.43 cfs @ 7.71 hrs, Volume= 24,460 cf, Atten= 67%, Lag= 0.0 min
Primary = 0.43 cfs @ 7.71 hrs, Volume= 24,460 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 293.26' @ 11.09 hrs Surf.Area= 9,350 sf Storage= 2,544 cf
Flood Elev= 299.00' Surf.Area= 9,350 sf Storage= 56,193 cf

Plug-Flow detention time= 53.7 min calculated for 24,456 cf (100% of inflow)
Center-of-Mass det. time= 53.7 min (911.3 - 857.6)

Volume	Invert	Avail.Storage	Storage Description
#1	292.99'	65,543 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

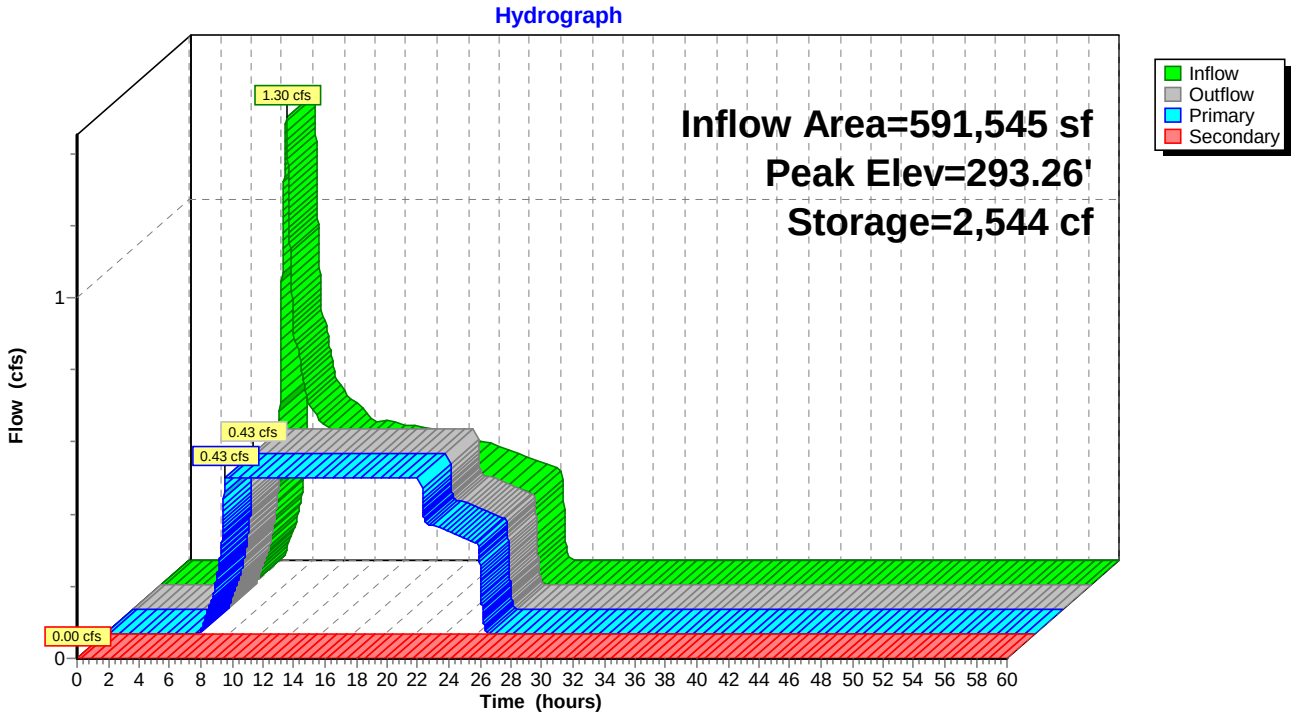
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
292.99	9,350	0.0	0	0
293.00	9,350	100.0	93	93
294.00	9,350	100.0	9,350	9,443
295.00	9,350	100.0	9,350	18,793
296.00	9,350	100.0	9,350	28,143
297.00	9,350	100.0	9,350	37,493
298.00	9,350	100.0	9,350	46,843
299.00	9,350	100.0	9,350	56,193
300.00	9,350	100.0	9,350	65,543

Device	Routing	Invert	Outlet Devices
#1	Primary	292.99'	**2.000 in/hr Exfiltration over Surface area**
#2	Secondary	293.50'	**24.0" Horiz. Beehive Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.43 cfs @ 7.71 hrs HW=293.00' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.43 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=292.99' (Free Discharge)
2=Beehive Overflow (Controls 0.00 cfs)

Pond WQ1: Water Quality Media



Summary for Subcatchment 2WQ: Developed Conditions (Basin #2)

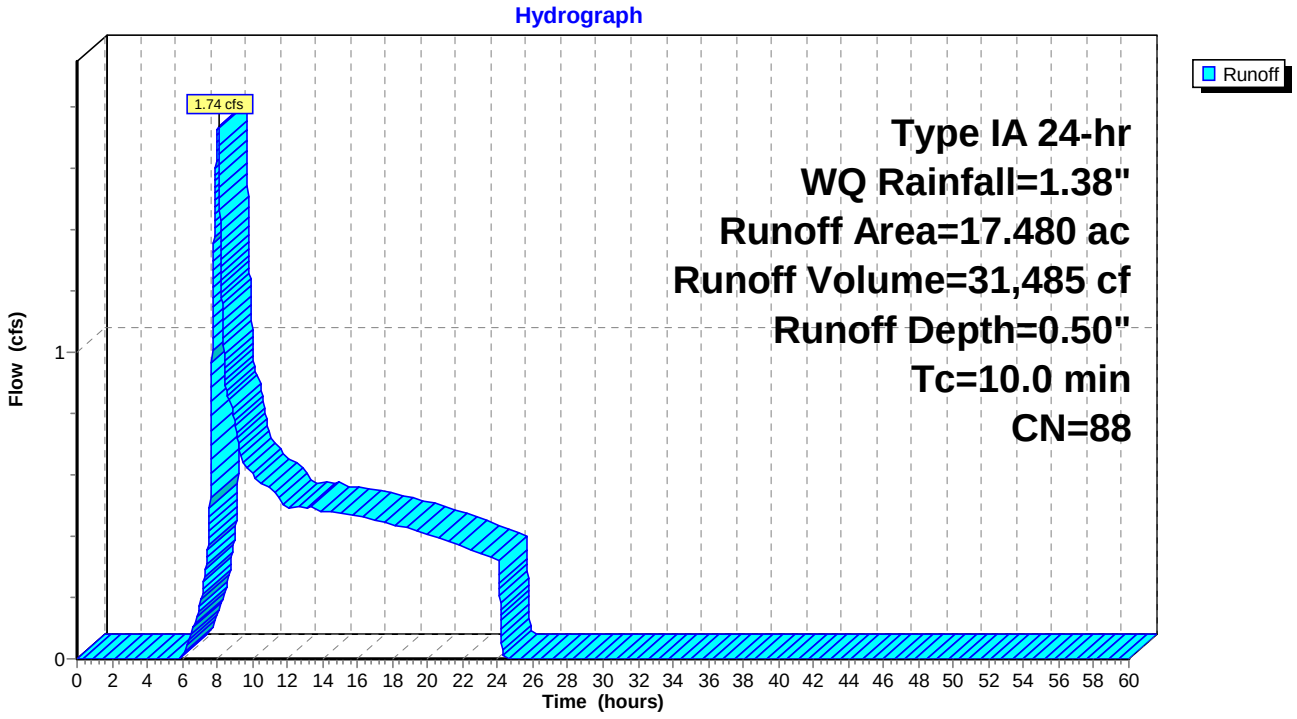
Runoff = 1.74 cfs @ 8.04 hrs, Volume= 31,485 cf, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.38"

	Area (ac)	CN	Description
	6.990	74	>75% Grass cover, Good, HSG C
*	10.490	98	Impervious surface, HSG C
	17.480	88	Weighted Average
	6.990		39.99% Pervious Area
	10.490		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 2WQ: Developed Conditions (Basin #2)



Summary for Pond WQ2: Water Quality Media

Inflow Area = 761,429 sf, 60.01% Impervious, Inflow Depth = 0.50" for WQ event
Inflow = 1.74 cfs @ 8.04 hrs, Volume= 31,485 cf
Outflow = 0.42 cfs @ 7.59 hrs, Volume= 31,485 cf, Atten= 76%, Lag= 0.0 min
Primary = 0.42 cfs @ 7.59 hrs, Volume= 31,485 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 271.73' @ 19.31 hrs Surf.Area= 9,000 sf Storage= 6,640 cf
Flood Elev= 290.00' Surf.Area= 9,000 sf Storage= 54,090 cf

Plug-Flow detention time= 199.0 min calculated for 31,480 cf (100% of inflow)
Center-of-Mass det. time= 199.0 min (1,052.0 - 853.0)

Volume	Invert	Avail.Storage	Storage Description
#1	270.99'	54,090 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

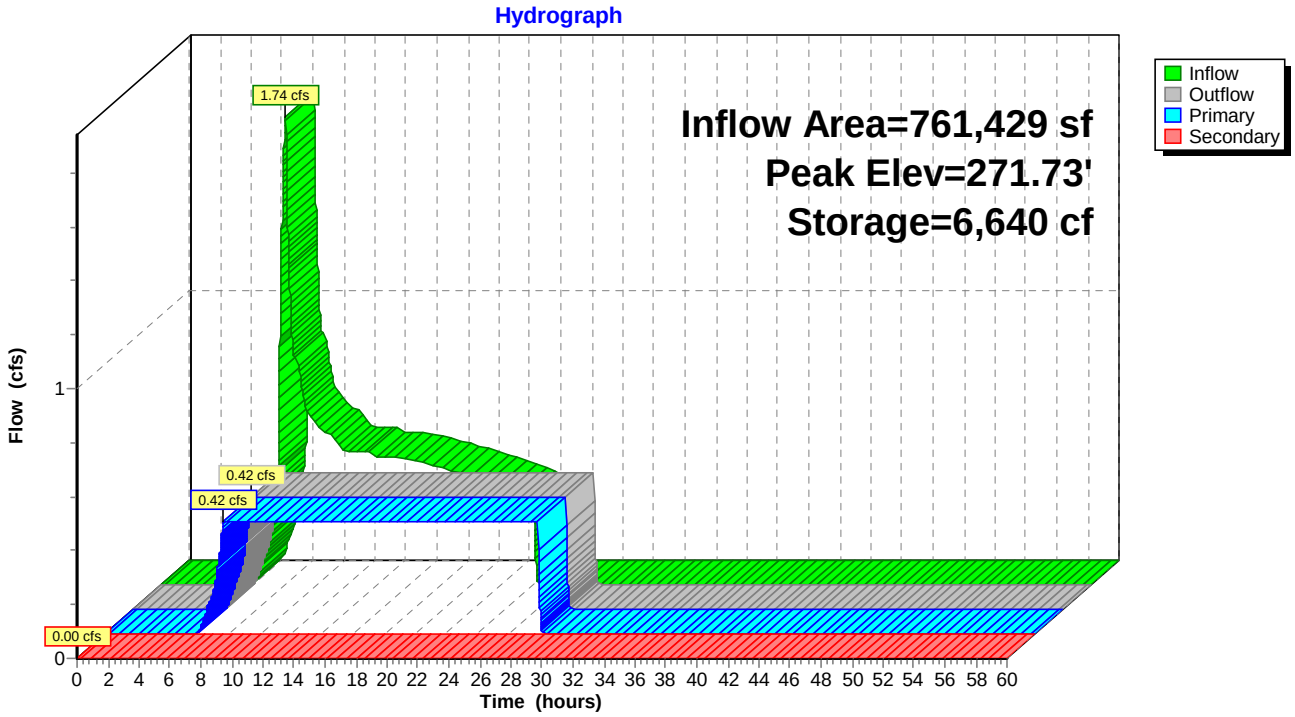
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
270.99	9,000	0.0	0	0
271.00	9,000	100.0	90	90
272.00	9,000	100.0	9,000	9,090
273.00	9,000	100.0	9,000	18,090
274.00	9,000	100.0	9,000	27,090
275.00	9,000	100.0	9,000	36,090
276.00	9,000	100.0	9,000	45,090
277.00	9,000	100.0	9,000	54,090

Device	Routing	Invert	Outlet Devices
#1	Primary	270.99'	**2.000 in/hr Exfiltration over Surface area**
#2	Secondary	272.00'	**24.0" Horiz. Beehive Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.42 cfs @ 7.59 hrs HW=271.00' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.42 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=270.99' (Free Discharge)
└**2=Beehive Overflow** (Controls 0.00 cfs)

Pond WQ2: Water Quality Media



Summary for Subcatchment 3WQ: Developed Conditions (Basin #3)

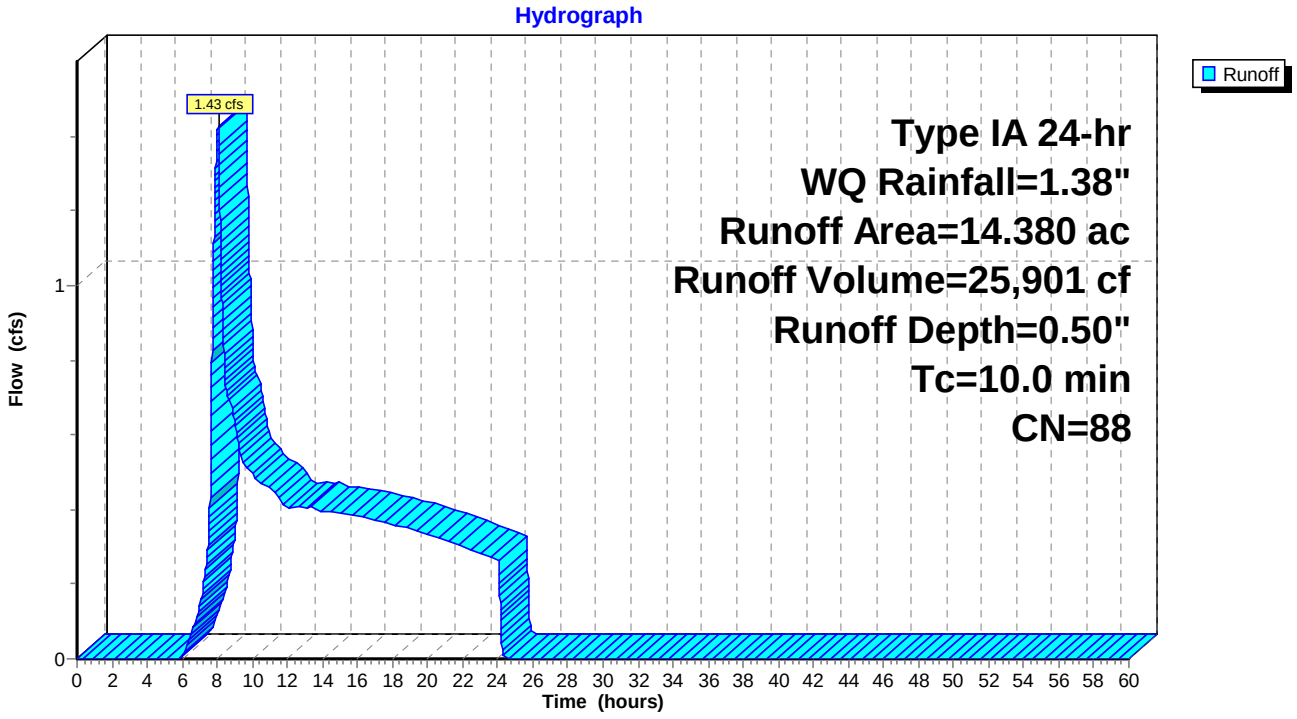
Runoff = 1.43 cfs @ 8.04 hrs, Volume= 25,901 cf, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.38"

	Area (ac)	CN	Description
	5.750	74	>75% Grass cover, Good, HSG C
*	8.630	98	Impervious surface, HSG C
	14.380	88	Weighted Average
	5.750		39.99% Pervious Area
	8.630		60.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, Direct Entry**

Subcatchment 3WQ: Developed Conditions (Basin #3)



Summary for Pond WQ3: Water Quality Media

Inflow Area = 626,393 sf, 60.01% Impervious, Inflow Depth = 0.50" for WQ event
Inflow = 1.43 cfs @ 8.04 hrs, Volume= 25,901 cf
Outflow = 0.36 cfs @ 7.61 hrs, Volume= 25,901 cf, Atten= 74%, Lag= 0.0 min
Primary = 0.36 cfs @ 7.61 hrs, Volume= 25,901 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 271.57' @ 17.66 hrs Surf.Area= 7,875 sf Storage= 4,605 cf
Flood Elev= 278.00' Surf.Area= 7,875 sf Storage= 55,204 cf

Plug-Flow detention time= 163.3 min calculated for 25,897 cf (100% of inflow)
Center-of-Mass det. time= 163.3 min (1,016.3 - 853.0)

Volume	Invert	Avail.Storage	Storage Description
#1	270.99'	55,204 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

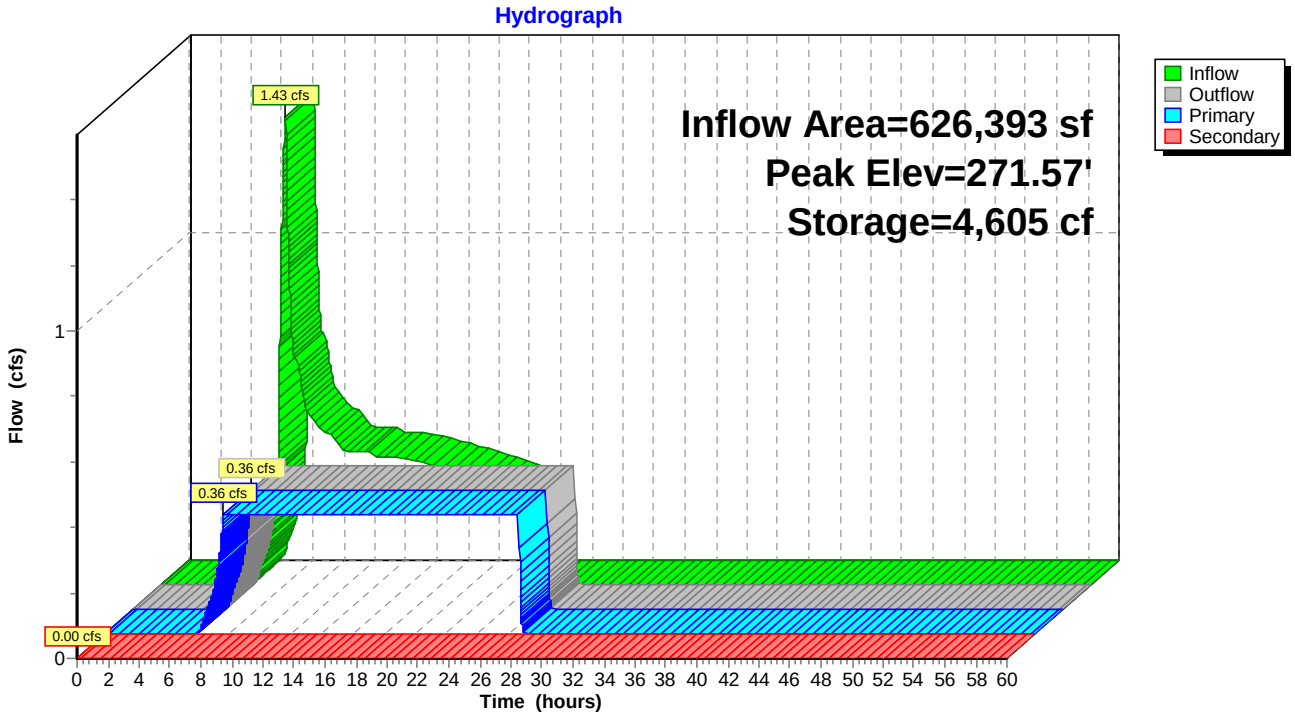
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
270.99	7,875	0.0	0	0
271.00	7,875	100.0	79	79
272.00	7,875	100.0	7,875	7,954
273.00	7,875	100.0	7,875	15,829
274.00	7,875	100.0	7,875	23,704
275.00	7,875	100.0	7,875	31,579
276.00	7,875	100.0	7,875	39,454
277.00	7,875	100.0	7,875	47,329
278.00	7,875	100.0	7,875	55,204

Device	Routing	Invert	Outlet Devices
#1	Primary	270.99'	**2.000 in/hr Exfiltration over Surface area**
#2	Secondary	271.75'	**24.0" Horiz. Beehive Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.36 cfs @ 7.61 hrs HW=271.00' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.36 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=270.99' (Free Discharge)
2=Beehive Overflow (Controls 0.00 cfs)

Pond WQ3: Water Quality Media



#6234

MARION COUNTY
SUBDIVISION/CONDOMINIUM NAME REQUEST

Marion County Surveyor – 5155 Silverton Road NE, Salem, OR 97305
Fax 503-588-7970 Phone 503-588-5155

Proposed Subdivision Name : (Please do not use the word "Subdivision" as part of the name.)

***NOTE:** Reserved names expire 2 years from original approval date.*

Coburn Grand View Estates

Applicant Name: Dave Lucas

Address: 1800 NW 167th Place, Suite 100
Beaverton, OR
97006

Owner/Developer: Dave Lucas

Phone: 503-645-7433 Date: 7-13-18

Location: Is the subdivision in a city? Yes ✓ No_____

City Name: Salem

Section: _____ Township: _____ Range: _____

083W11D/100, 200, 202, 400, 500, 601, 602
083W12B/1600 + 083W12C/700

Office Use Only

Date Received: 7/24/2018

The Proposed Name is:

X Approved as Submitted *(approval expires in 2 years)*

_____ Not Approved for the following reason(s):

Phil R. Jones Date 7/24/2018
Marion County Surveyor

Brandie Dalton

From: Brandie Dalton
Sent: Thursday, March 18, 2021 9:24 AM
To: sidrakdragon@live.com; Geoffrey James
Subject: Proposed Development
Attachments: 60-Cover-Plan-P101CO.pdf; 60-Site-Plan-PART BC.pdf; 60-Site-Plan-PART BH.pdf

Good Morning,

I am sending you an email to inform you of a proposal for Land-Use in your Neighborhood. The owners of property currently located on Battle Creek and Reed Road are requesting to subdivide and partition the subject property. As a requirement of our proposal, we are notifying the neighborhood association.

Proposed Subdivision:

The subject property is about 32.55 acres in size and zoned RA (Residential Single Agriculture) and RM2 (Multi-Family Residential). The applicant is proposing to divide the subject property into 171 residential lots (within 4 Phases/Sections).

Section A: Lots 1-76 (Lots 34-72 are designed for townhomes)
Section B: Lots 77-100
Section C: Lots 101-134
Section D: Lots 135-171

Proposed Partition 1:

The subject properties are 17.69 acres in size and zoned RA and RM2. The applicant is requesting to partition 083W12B/Tax Lot 1600 and a portion of Tax Lot 1699 into three parcels as shown on the site plans.

***Parcel 1- 6.83 acres**
***Parcel 2- 6.15 acres**
***Parcel 3- 4.71 acres**

Proposed Partition 2:

The subject properties are 14.85 acres in size and zoned RA. The applicant is requesting to partition 083W11D/Tax Lot 400 into two parcels as shown on the site plans.

***Parcel 1- 8.78 acres**
***Parcel 2- 6.07 acres**

See attached site plans.

At this time if you have any questions please let me know.
Thank you,

Brandie Dalton
Land-Use Planner
Multi/Tech Engineering Services, Inc

COBURN GRAND VIEW ESTATES

T. 8 S., R. 3 W., Willamette Meridian
Sec. 11D Tax Lots 100, 200, 400 & 601 - Sec. 12B Tax Lot 1600
City Of Salem, Marion County, Oregon

Owner / Developer:

WESTWOOD HOMES LLC

12700 NW CORNELL RD.
PORTLAND, OREGON 97229

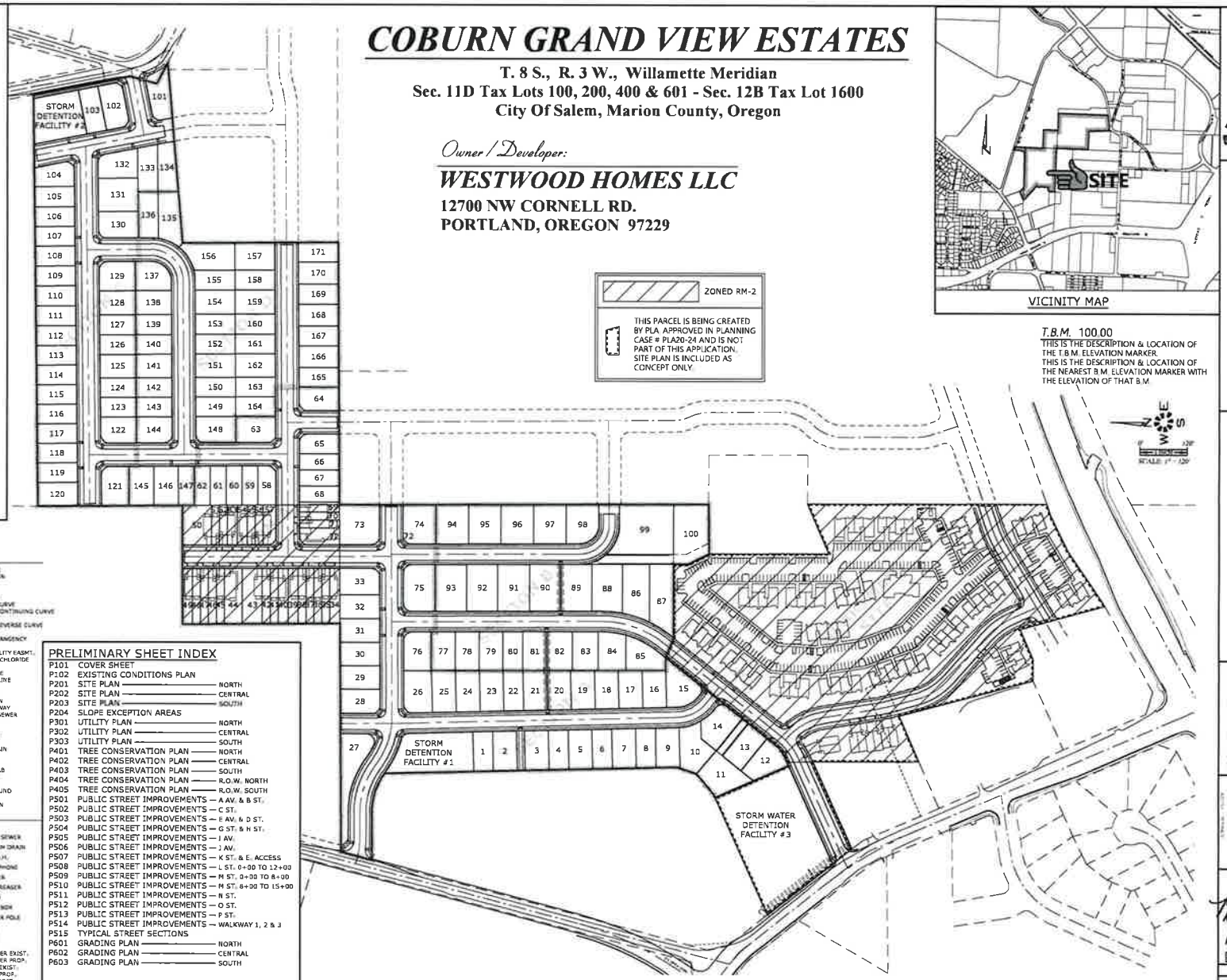
TOTAL PARCEL SIZE:
DEVELOPABLE AREA — 32.545 Ac.
NUMBER OF UNITS — 170
DENSITY — 4.51 UNITS/Ac.
LARGEST LOT — 13,195 S.F.
SMALLEST LOT — 5,500 S.F.
AVERAGE — 6,753 S.F.

SECTION A:
DEVELOPABLE AREA — 13.492 Ac.
NUMBER OF UNITS — 76
DENSITY — 5.63 UNITS/Ac.
LARGEST LOT — 10,658 S.F.
SMALLEST LOT — 1,982 S.F.
AVERAGE — 5,038 S.F.

SECTION B:
DEVELOPABLE AREA — 6.068 Ac.
NUMBER OF UNITS — 24
DENSITY — 3.96 UNITS/Ac.
LARGEST LOT — 17,940 S.F.
SMALLEST LOT — 4,951 S.F.
AVERAGE — 8,559 S.F.

SECTION C:
DEVELOPABLE AREA — 6.828 Ac.
NUMBER OF UNITS — 34
DENSITY — 4.98 UNITS/Ac.
LARGEST LOT — 10,658 S.F.
SMALLEST LOT — 4,484 S.F.
AVERAGE — 5,499 S.F.

SECTION D:
DEVELOPABLE AREA — 6.155 Ac.
NUMBER OF UNITS — 36
DENSITY — 5.85 UNITS/Ac.
LARGEST LOT — 8,353 S.F.
SMALLEST LOT — 4,001 S.F.
AVERAGE — 5,492 S.F.



VICINITY MAP

T.B.M. 100.00
THIS IS THE DESCRIPTION & LOCATION OF THE T.B.M. ELEVATION MARKER.
THIS IS THE DESCRIPTION & LOCATION OF THE NEAREST B.M. ELEVATION MARKER WITH THE ELEVATION OF THAT B.M.

ABBREVIATIONS

A.C.	ASPHALTIC CONCRETE	L.P.	LIGHT POLE
ACMP	ALUMINIZED CMP	M	METER, MAIN
ASSY.	ASSEMBLY	MH	MANHOLE
B.O.	BLOW OFF	MTL.	METAL
B.F.V.	BUTTERFLY VALVE	O.H.	OVERHEAD
C & G	CURB & GUTTER	POC	POINT OF CURVE
CATV	CABLE TELEVISION	POCC	POINT OF CONTINUING CURVE
C.B.	CATCH BASIN	PED.	PEDESTAL
C.B.C.O.	CATCH BASIN CLEANOUT	PRC	POINT OF REVERSE CURVE
C.B.I.	CATCH BASIN INLET	PROP.	PROPOSED
C.L.	CENTERLINE	PT	POINT OF TANGENCY
CMP	CORRUGATED METAL PIPE	PUB.	PUBLIC
C.O.	CLEANOUT	PUE	PUBLIC UTILITY EASMT.
CONC.	CONCRETE	PVC	POLYVINYL CHLORIDE
CONST.	CONSTRUCT	PVT.	PRIVATE
D.I.	DUCTILE IRON	P.P.	POWER POLE
DIA.	DIAMETER	P.L.	PROPERTY LINE
DWG.	DRAWING	R	RADIUS
EASMT.	EASEMENT	R-	RUN
E.G.	EXIST. GRADE / GROUND	RD	ROOF DRAIN
EOP, E.P.	EDGE OF PAVEMENT	R.O.W.	RIGHT-OF-WAY
ELEC.	ELECTRIC	SAN.S. or S.S.	SANITARY SEWER
ELEV. or EL.	ELEVATION	S	SLOPE
EX. or EXIST.	EXISTING	STA.	STATION
FT.	FEET	STD.	STANDARD
F.F.	FINISH FLOOR	STL.	STEEL
F.G.	FINISH GRADE	STM.DRN. or S.D.	STORM DRAIN
F.H.	FIRE HYDRANT	SVC.	SERVICE
F.M.	FORCE MAIN	SW	SIDEWALK
GUT. or GTR.	GUTTER	T.C.	TOP OF CURB
G.V.	GATE VALVE	TEL.	TELEPHONE
IMP.	IMPROVEMENT	TYP.	TYPICAL
INST.	INSERT	U.G.	UNDERGROUND
INV. or I-	INVERT	VLT.	VAULT
L	LENGTH, LINE	W.M.	WATER MAIN

SYMBOLS

EXIST.	PROP.	
⊖	⊖	BLOW OFF ASSY.
▨	▨	CATCH BASIN
▨	■	CATCH BASIN CLEANOUT
◘	■	CATCH BASIN INLET
△	▲	CATV PED. / BOX
○	●	CLEANOUT
⊠	■	ELEC. PED. / BOX
◇	◆	FIRE HYDRANT
⊗	⊗	GAS LOCATION MARKER
⋈	⋈	GAS VALVE
✉	✉	MAIL BOX
ⓢ	Ⓢ	MANHOLE SAN. SEWER
ⓢ	Ⓢ	MANHOLE STORM DRAIN
ⓒ	Ⓒ	C. DIA. (C.D.) / M.H.
ⓣ	Ⓣ	MANHOLE TELEPHONE
ⓦ	Ⓦ	MANHOLE WATER
▷	▶	REDUCER / INCREASER
▣	▣	TEL. PED. / BOX
▤	▤	TRAFFIC PED. / BOX
⚲	⚲	UTILITY / POWER POLE
□	■	WATER METER
⊘	⊘	WATER VALVE

CABLE TELEVISION
CENTERLINE
DITCH C.L.
ELECTRICAL LINE
GAS MAIN
TELEPHONE LINE
SANITARY SEWER EXIST.
SANITARY SEWER PROP.
STORM DRAIN EXIST.
STORM DRAIN PROP.
WATER MAIN EXIST.
WATER MAIN PROP.

PRELIMINARY SHEET INDEX

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P302	UTILITY PLAN — CENTRAL
P303	UTILITY PLAN — SOUTH
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P402	TREE CONSERVATION PLAN — CENTRAL
P403	TREE CONSERVATION PLAN — SOUTH
P404	TREE CONSERVATION PLAN — R.O.W. NORTH
P405	TREE CONSERVATION PLAN — R.O.W. SOUTH
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P506	PUBLIC STREET IMPROVEMENTS — J AV.
P507	PUBLIC STREET IMPROVEMENTS — K ST. & E. ACCESS
P508	PUBLIC STREET IMPROVEMENTS — L ST. 0+00 TO 12+00
P509	PUBLIC STREET IMPROVEMENTS — M ST. 0+00 TO 8+00
P510	PUBLIC STREET IMPROVEMENTS — M ST. 8+00 TO 15+00
P511	PUBLIC STREET IMPROVEMENTS — N ST.
P512	PUBLIC STREET IMPROVEMENTS — O ST.
P513	PUBLIC STREET IMPROVEMENTS — P ST.
P514	PUBLIC STREET IMPROVEMENTS — WALKWAY 1, 2 & 3
P515	TYPICAL STREET SECTIONS
P601	GRADING PLAN — NORTH
P602	GRADING PLAN — CENTRAL
P603	GRADING PLAN — SOUTH

MULTI/TECH ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
CONTACT: GARY STOCKHOFF, EMAIL: GARYS@MULTI-TECH.COM

PRELIMINARY PLAN
COVER SHEET

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR ADDITIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

Design: M.D.G.
Drawn: P.M.S.
Checked: J.J.G.
Date: JUNE 2020
Scale: AS SHOWN
As-Built:

EXPIRES: 06-30-2021

JOB # 6234

P101

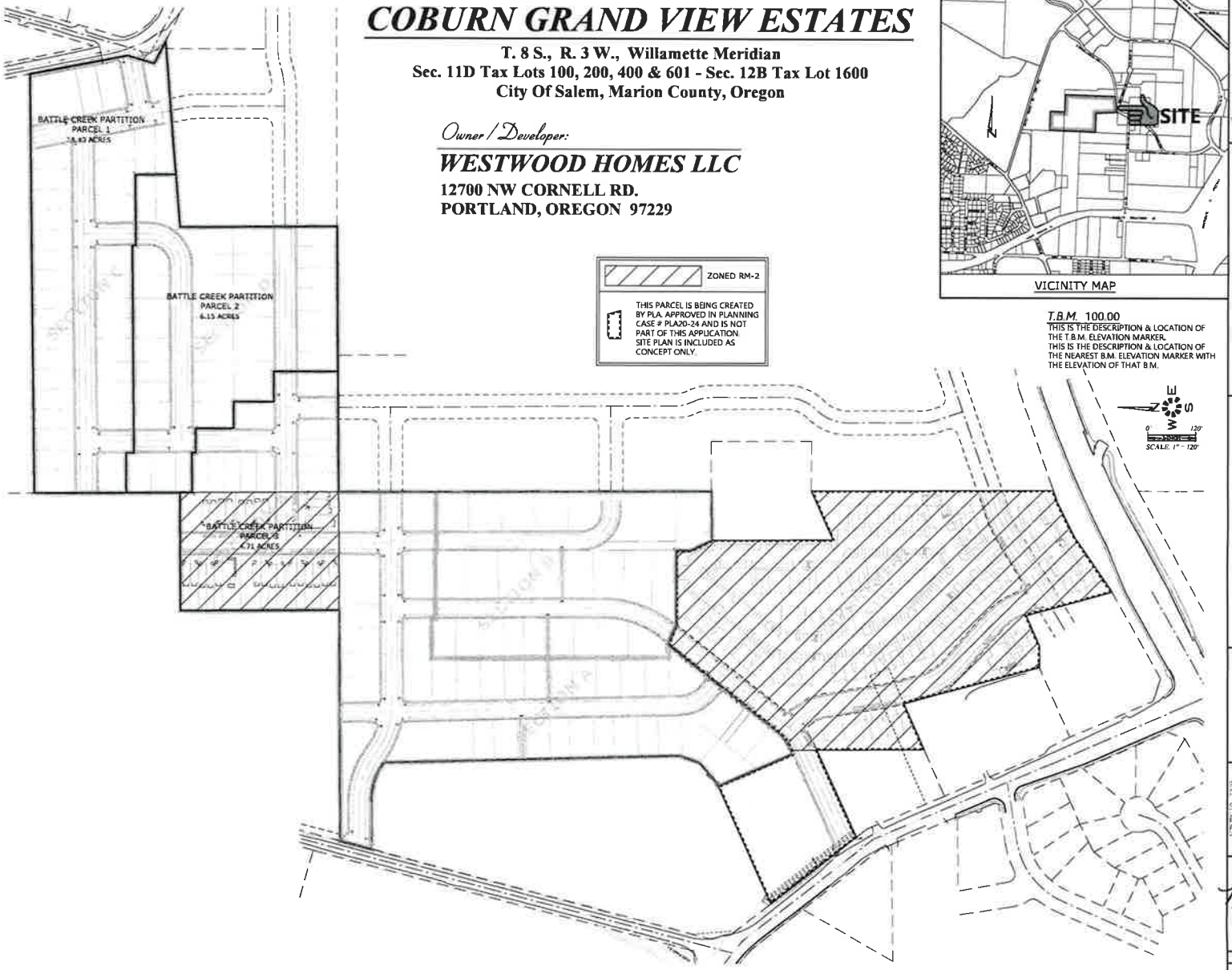
COBURN GRAND VIEW ESTATES

T. 8 S., R. 3 W., Willamette Meridian
Sec. 11D Tax Lots 100, 200, 400 & 601 - Sec. 12B Tax Lot 1600
City Of Salem, Marion County, Oregon

Owner / Developer:

WESTWOOD HOMES LLC

12700 NW CORNELL RD.
PORTLAND, OREGON 97229



MULTI/TECH
ENGINEERING SERVICES, INC.

PRELIMINARY PLAN
COVER SHEET

COBURN GRAND VIEW
ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

Design: M.D.G.
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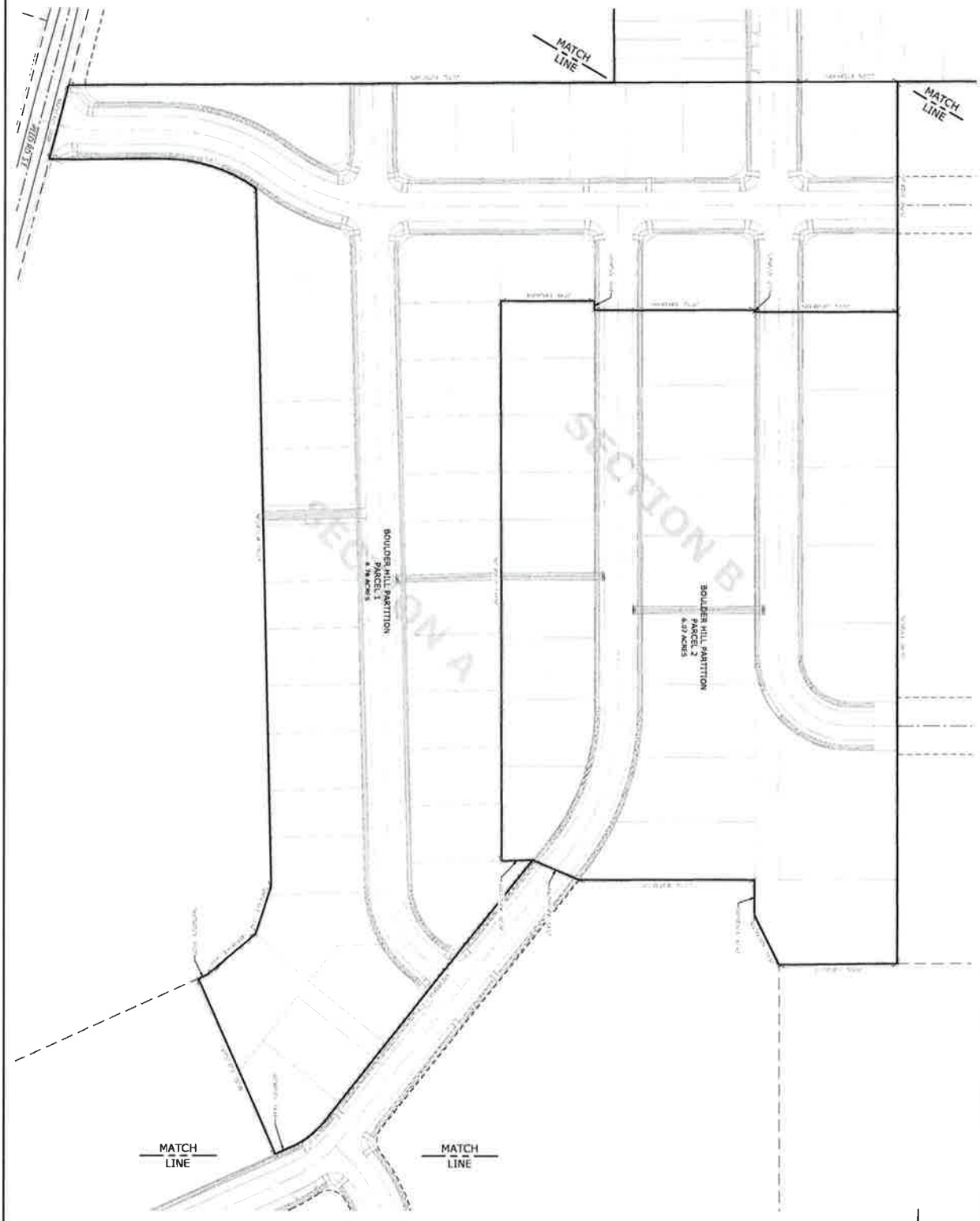
Checked: S.J.G.
Date: JUNE 2021
Scale: AS SHOWN
As-Built:

EXPIRES: 06-30-2021

JOB # 6234

P101



P202

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built:

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

COBURN GRAND VIEW ESTATES

SITE PLAN - CENTRAL -

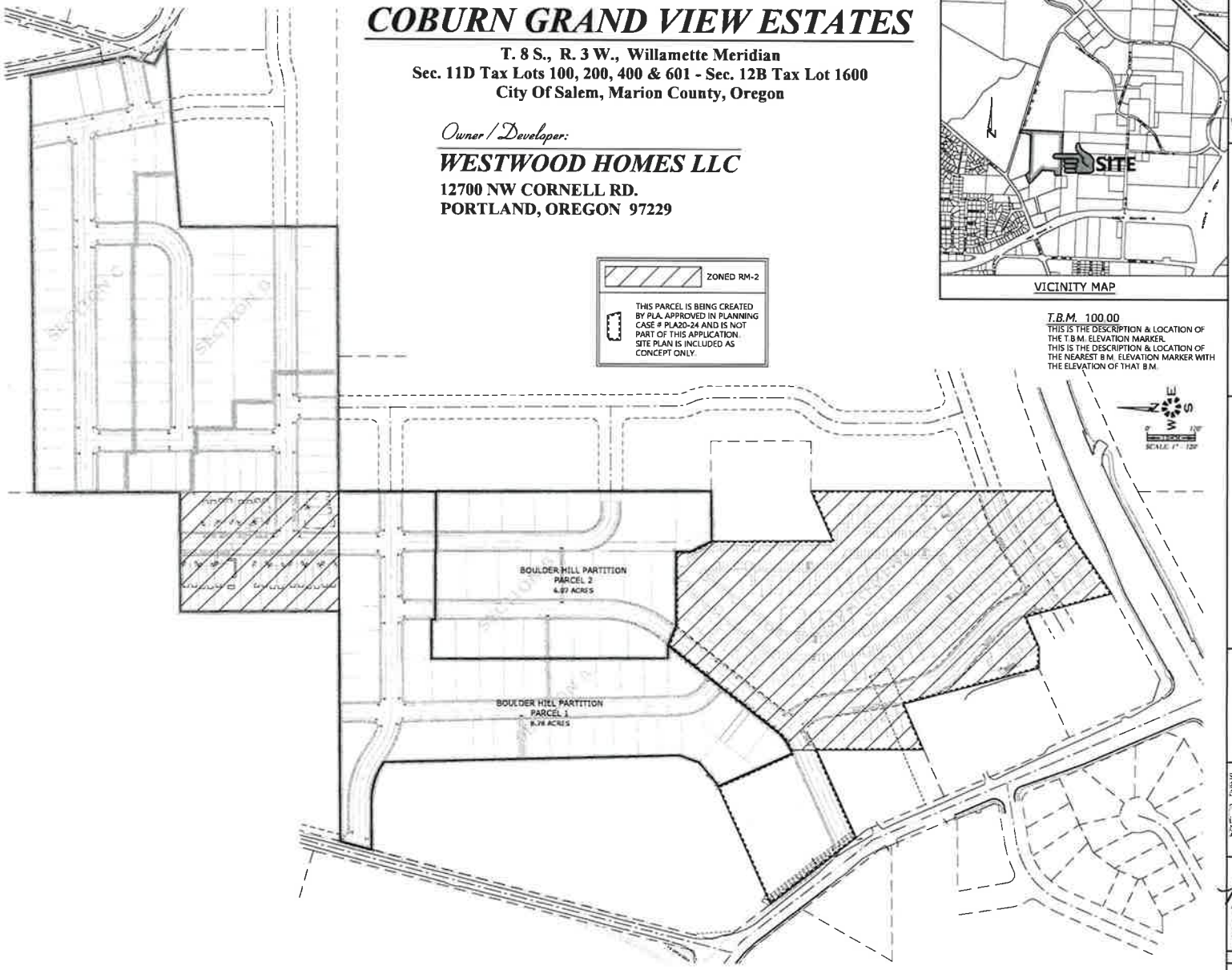
MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13TH ST. S.E. SALEM, OR. 97302
PH: (503) 363-9227 FAX: (503) 364-1260

COBURN GRAND VIEW ESTATES

T. 8 S., R. 3 W., Willamette Meridian
Sec. 11D Tax Lots 100, 200, 400 & 601 - Sec. 12B Tax Lot 1600
City Of Salem, Marion County, Oregon

Owner / Developer:

WESTWOOD HOMES LLC
12700 NW CORNELL RD.
PORTLAND, OREGON 97229



MULTI/TECH ENGINEERING SERVICES, INC.

PRELIMINARY PLAN
COVER SHEET

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

Design: M.D.G.
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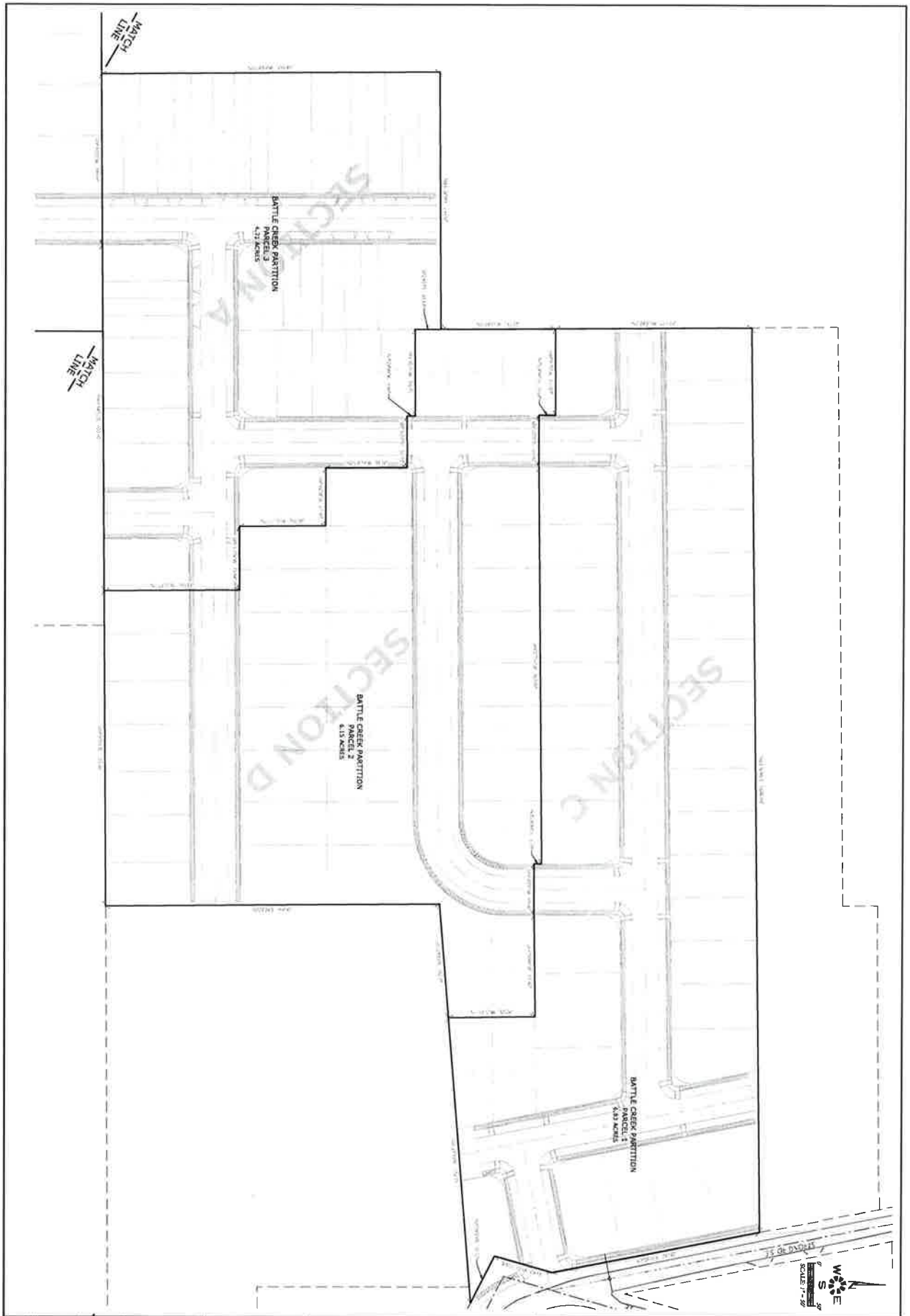
Scale: AS SHOWN
As-Built:

EXPIRES: 06-30-2021

JOB # 6234

P101



P201

JOB # 4324

Design: H.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built:

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

COBURN GRAND VIEW ESTATES

SITE PLAN - NORTH -

MULTI/TECH ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260

DigiSign Verified: 801C5E03-A0EA-446C-A80B-4FF08B0376C8

CITY OF Salem AT YOUR SERVICE

Land Use Application

Planning/Permit Application Center
City Hall / 555 Liberty St. SE / Room 320 / Salem, OR 97301-3513
503-588-6173 * planning@cityofsalem.net

If you need the following translated in Spanish, please call 503-588-6256.
Si usted necesita lo siguiente traducido en español, por favor llame 503-588-6256.

(For office use only)
Permit #: 21-103366

Application type

Please describe the type of land use action requested:

Class-1 Adjustment (Lot Width)

Work site location and information

Street address or location of subject property	Battle Creek Road and Reed Road
Total size of subject property	32.55 Acres
Assessor tax lot numbers	083W12B/Tax Lot 1600 and 1699, 083W11D/Tax Lot 400
Existing use structures and/or other improvements on site	Vacant
Zoning	RS and RM
Comprehensive Plan Designation	Single-Family and Multi-Family
Project description	Modifiy-SUB-ADJ19-08 & UGA17-03MOD1 approval

People information

	Name	Full Mailing Address	Phone Number and Email address
Applicant	Westwood Homes LLC	12700 NW Cornell Road Portland, OR 97229	
Agent	Brandie Dalton Land-Use Consultant	Multi/Tech Engineering 1155 SE 13th St, Salem, OR 97302	503-363-9227 bdalton@mtengineering.net
Paid By			

Project information

Project Valuation for Site Plan Review	
Neighborhood Association	Morningside Neighborhood Association
Have you contacted the Neighborhood Association?	○ Yes ⊙ No
Date Neighborhood Association contacted	
Describe contact with the affected Neighborhood Association (The City of Salem recognizes, values, and supports the involvement of residents in land use decisions affecting neighborhoods across the city and strongly encourages anyone requesting approval for any land use proposal to contact the affected neighborhood association(s) as early in the process as possible.)	
Have you contacted Salem-Keizer Transit?	○ Yes ⊙ No
Date Salem-Keizer Transit contacted	
Describe contact with Salem-Keizer Transit	
Type the name and address of the Homeowners Association (If none, type "N/A".)	

DigiSign Verified: 801C5E03-A0EA-446C-A80B-4FF08B0376C8

Authorization by property owner(s)/applicant

***If the applicant and/or property owner is a Limited Liability Company (LLC), please also provide a list of all members of the LLC with your application.**

Copyright release for government entities: I hereby grant permission to the City of Salem to copy, in whole or part, drawings and all other materials submitted by me, my agents, or representatives. This grant of permission extends to all copies needed for administration of the City's regulatory, administrative, and legal functions, including sharing of information with other governmental entities.

Authorizations: Property owners and contract purchasers are required to authorize the filing of this application and must sign below.

- **All signatures represent that they have full legal capacity to and hereby do authorize the filing of this application and certify that the information and exhibits herewith submitted are true and correct.**
- **I (we) hereby grant consent to the City of Salem and its officers, agents, employees, and/or independent contractors to enter the property identified above to conduct any and all inspections that are considered appropriate by the City to process this application.**
- **I (we) hereby give notice of the following concealed or unconcealed dangerous conditions on the property:**

Electronic signature certification: By attaching an electronic signature (whether typed, graphical or free form) I certify herein that I have read, understood and confirm all the statements listed above and throughout the application form.

Authorized Signature: Robert Nunn

Print Name: Roberrt Nunn **Date:** 02-09-2021 3:15 PM PST

Address (include ZIP):

Authorized Signature:

Print Name: **Date:**

Address (include ZIP):

(For office use only)		
Received by	**Date:**	**Receipt Number:**
Brandon Pike	Apr. 30, 2021	21-103366

Not using Internet Explorer?
Save the file to your computer and email to planning@cityofsalem.net.

DigiSign Verified: D4FE8B6F-1FC2-4562-81CC-C966C1C97FE3

CITY OF Salem AT YOUR SERVICE

Land Use Application

Planning/Permit Application Center
City Hall / 555 Liberty St. SE / Room 320 / Salem, OR 97301-3513
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Paid By			

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Date Salem-Keizer Transit contacted	
Describe contact with Salem-Keizer Transit	
Type the name and address of the Homeowners Association (If none, type "N/A".)	

DigiSign Verified: D4FE8B6F-1FC2-4562-81CC-C966C1C97FE3

Authorization by property owner(s)/applicant

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- **I (we) hereby grant consent to the City of Salem and its officers, agents, employees, and/or independent contractors to enter the property identified above to conduct any and all inspections that are considered appropriate by the City to process this application.**
- **I (we) hereby give notice of the following concealed or unconcealed dangerous conditions on the property:**

Electronic signature certification: By attaching an electronic signature (whether typed, graphical or free form) I certify herein that I have read, understood and confirm all the statements listed above and throughout the application form.

Authorized Signature: Julie Singer

Print Name: Julie Singer **Date:** 02-09-2021 4:49 PM PST

Address (include ZIP):

Authorized Signature:

Print Name: **Date:**

Address (include ZIP):

(For office use only)		
Received by	**Date:**	**Receipt Number:**
Brandon Pike	Apr. 30, 2021	21-103366

Not using Internet Explorer?
Save the file to your computer and email to planning@cityofsalem.net.

CITY OF Salem AT YOUR SERVICE

Public Works Department

555 Liberty Street SE / Room 325 • Salem OR 97301-3513 • Phone 503-588-6211 • Fax 503-588-6025

May 13, 2021

Westwood Homes LLC
12700 NW Cornell Road
Portland OR 97229

SUBJECT: **Wetland Land Use Notification: 4400 Block Battle Creek Road SE**
Permit # 21-103682-LD

Tax lots 083W12B01600, 083W11D00400, 083W11D00601, and 083W11D00202 at the above address may contain mapped wetlands or waterways as is indicated on the Salem-Keizer Local Wetland Inventory. *Oregon Revised Statute* 227.350(5) allows the City of Salem to issue development permits and approvals for activities for parcels identified as, or including wetlands on, the Local Wetland Inventory upon the following:

- Providing written notice to the applicant and landowner of the possible presence of wetlands on your property;
- Providing written notice to the applicant and landowner of the potential need for state and federal wetland permits; and
- Providing Department of State Lands (DSL) with a copy of the notification.

All, or a portion of this property has been identified as wetland and/or waterway on the Statewide Wetland Inventory *or in close proximity* to a mapped wetland and/or waterway site. If you have evidence to the contrary, please contact me as soon as possible at 503-588-6211. If the site contains a jurisdictional wetland, this proposal may require a permit from DSL and/or the Army Corps of Engineers. You must obtain any necessary state or federal permits before beginning your project. The City of Salem is not liable for any delays in the processing of state or federal permits. Enclosed is a copy of the wetland land use notice sent to DSL. DSL will contact you if any permits are required, or further information is necessary.

Jason Valyou
Program Coordinator

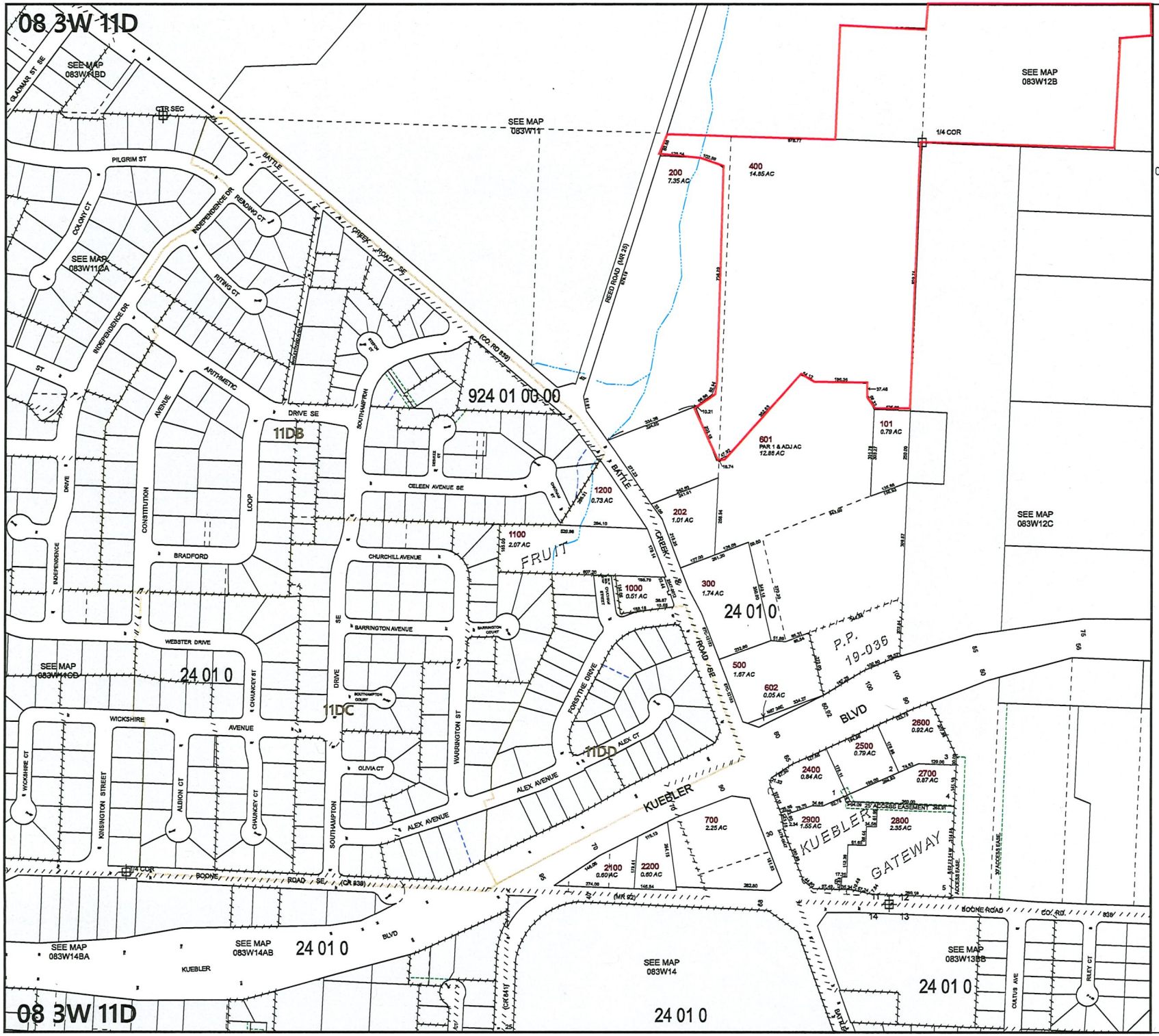
JP\\fileshare2\PWCommon\Common\PAC\DevSvcsLandUse\21-103682-LD_4700 Battle Creek Rd SE\WLUN\WLUN Letter_21-103682-LD.doc.docx
Enclosures: GIS Map; Site Map; Wetland Land Use Notification Form
cc: Zachary Diehl, Natural Resource Program Coordinator
File

Transportation and Utility Operations
1410 20th Street SE / Building 2
Salem OR 97302-1209
Phone 503-588-6063
Fax 503-588-6480

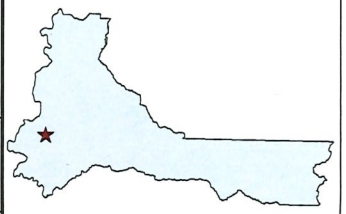
Parks Operations
1460 20th Street SE / Building 14
Salem OR 97302-1209
Phone 503-588-6336
Fax 503-588-6305

Willow Lake Water Pollution Control Facility
5915 Windsor Island Road N
Keizer OR 97303-6179
Phone 503-588-6380
Fax 503-588-6387

◆ ADA Accommodations Will Be Provided Upon Request ◆
Servicios razonables de accesibilidad se facilitáran por petición



08 3W 11D
SALEM



MARION COUNTY, OREGON

SE1/4 SEC11 T8S R3W W.M.
SCALE 1" = 200'

LEGEND

LINE TYPES

- Taxlot Boundary
- Historical Boundary
- Road Right-of-Way
- Easement
- Railroad Right-of-Way
- Railroad Centerline
- Private Road ROW
- Taxcode Line
- Subdivision/Plat Bndry
- Map Boundary
- Waterline - Taxlot Bndry
- Waterline - Non Bndry

CORNER TYPES

- + 1/16TH Section Cor.
- 1/4 Section Cor.
- DLC Corner
- 16 15 / 21 22 Section Corner

NUMBERS

Tax Code Number
00 00 0

Acreage
0.25 AC

All acres listed are Net Acres, excluding any portions of the taxlot within public ROWs

NOTES

Tick Marks: A tick mark in the road indicates that the labeled dimension extends into the public ROW

200.00
175.00

CANCELLED NUMBERS

100	1300	2301
201	1400	2302
301	1500	2303
501	1600	
502	1601	
600	1700	
603	1800	
700A1	1801	
701	1900	
702	1901	
703	2000	
800	2001	
801	2002	
900	2101	
901	2102	
902	2201	
1001	2300	

DISCLAIMER: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY

Marion County OREGON — Assessors Office Cartography Dept

FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT www.co.marion.or.us

PLOT DATE: 4/12/2021

SALEM
08 3W 11D

Wetland Land Use Notification

OREGON DEPARTMENT OF STATE LANDS
775 Summer Street NE, Suite 100, Salem, OR 97301-1279
Phone: (503) 986-5200

This form is to be completed by planning department staff for mapped wetlands and waterways.

Responsible Jurisdiction

*	**Municipality** *	**Date** *
(•) City of ( ) County of	Salem	5/12/2021

Staff Contact

First Name *
JASON

Last Name *
VALYOU

Phone *
5039914581

Email *
jasonvalyou@yahoo.com

Applicant

First Name *
Westwood

Last Name *
Homes LLC

Mailing Address *

Street Address
12700 NW Cornell Road

Address Line 2

City
Portland

State
OR

Postal / Zip Code
97229

Country
USA

Phone

Email (?)

Is the Property Owner name and address the same as the Applicant? *

(•) No ( ) Yes

Property Owner

First Name *
Douglas

Last Name *
Drager

Mailing Address (If different than Applicant Address)

Street Address

4700 Battle Creek Road SE

Address Line 2

City

Salem

State

OR

Postal / Zip Code

97302

Country

USA

Phone

Email (?)

Activity Location

Township * (?)

08S

Range * (?)

03W

Section * (?)

12

Quarter-quarter Section (?)

B

Tax Lot(s) *

01600

You can enter multiple tax lot numbers within this field. i.e. 100, 200, 300, etc.

To add additional tax map and lot information, please click the "add" button below.

Township * (?)

08S

Range * (?)

03W

Section * (?)

11

Quarter-quarter Section (?)

D

Tax Lot(s) *

00400

You can enter multiple tax lot numbers within this field. i.e. 100, 200, 300, etc.

To add additional tax map and lot information, please click the "add" button below.

Township * (?)

08S

Range * (?)

03W

Section * (?)

11

Quarter-quarter Section (?)

D

Tax Lot(s) *

00601

You can enter multiple tax lot numbers within this field. i.e. 100, 200, 300, etc.

To add additional tax map and lot information, please click the "add" button below.

Township * (?)

08S

Range * (?)

03W

Section * (?)

11

Quarter-quarter Section (?)

D

Tax Lot(s) *

00202

You can enter multiple tax lot numbers within this field. i.e. 100, 200, 300, etc.

To add additional tax map and lot information, please click the "add" button below.

Address

Street Address

4700 Battle Creek Road SE

Address Line 2

City

Salem

State

OR

Postal / Zip Code

97302

Country

USA

County*

Marion

Adjacent Waterbody

West Fork Pringle Creek

Proposed Activity

Local Case File #*

21-103682-LD

Zoning

RA

Proposed

- ☑ Building Permit (new structures)
- ☑ Grading Permit
- ☑ Site Plan Approval
- ☐ Other (please describe)
- ☐ Conditional use Permit
- ☐ Planned Unit Development
- ☑ Subdivision

Project*

A consolidated application to create 177-lots for single family development, including 34 townhouses (Coburn Grand View Estates).

A consolidated application for a 177-lot phased subdivision (Coburn Grand View Estates) northeast of the intersection of Kuebler Boulevard SE and Battle Creek Road SE, containing the following requests:

1) A subdivision tentative plan to divide approximately 32.55 acres into 177 lots ranging in size from approximately 4,400 square feet to approximately 13,500 square feet, including Alternative Street Standards request to increase the street grade from 12% to 15% for nine street intervals less than 200-feet long and 52-foot right-of-way, where 60-feet is required for three proposed street;

2) Zoning Adjustment application to increase the Maximum Lot Depth standard of 300% the width for, Lots 34-53, Lots 55-62 and Lots 75-77 to approximately 700%, adjust Lot Depth for double frontage lots 75, 89-93 and 101-103 from 120-feet to 118-feet ; reduce the minimum lot width in the RM-II zone from 20-feet to 16.50-feet for Lots 35, 38, 41, 44, 47, 48, 51, 52, 56, 59, 62 & 77, adjust the Lot Depth of Lot 27 from 70-feet to 30-feet and adjust the minimum Lot Width for Lots 35, 38, 41, 44, 47, 48, 51, 52, 56, 59 and 62 from 20-feet to 16.5-feet.

The subject properties are approximately 32.5 acres, zoned RA (Residential Agriculture) and RM-II (Multiple Family Residential) and located on the 4400 Block of Battle Creek Road SE (Marion County Assessor Map and Tax Lot Numbers 083W12B / 1600, 083W12C / 700 and 083W11D / 200, 400, 601).

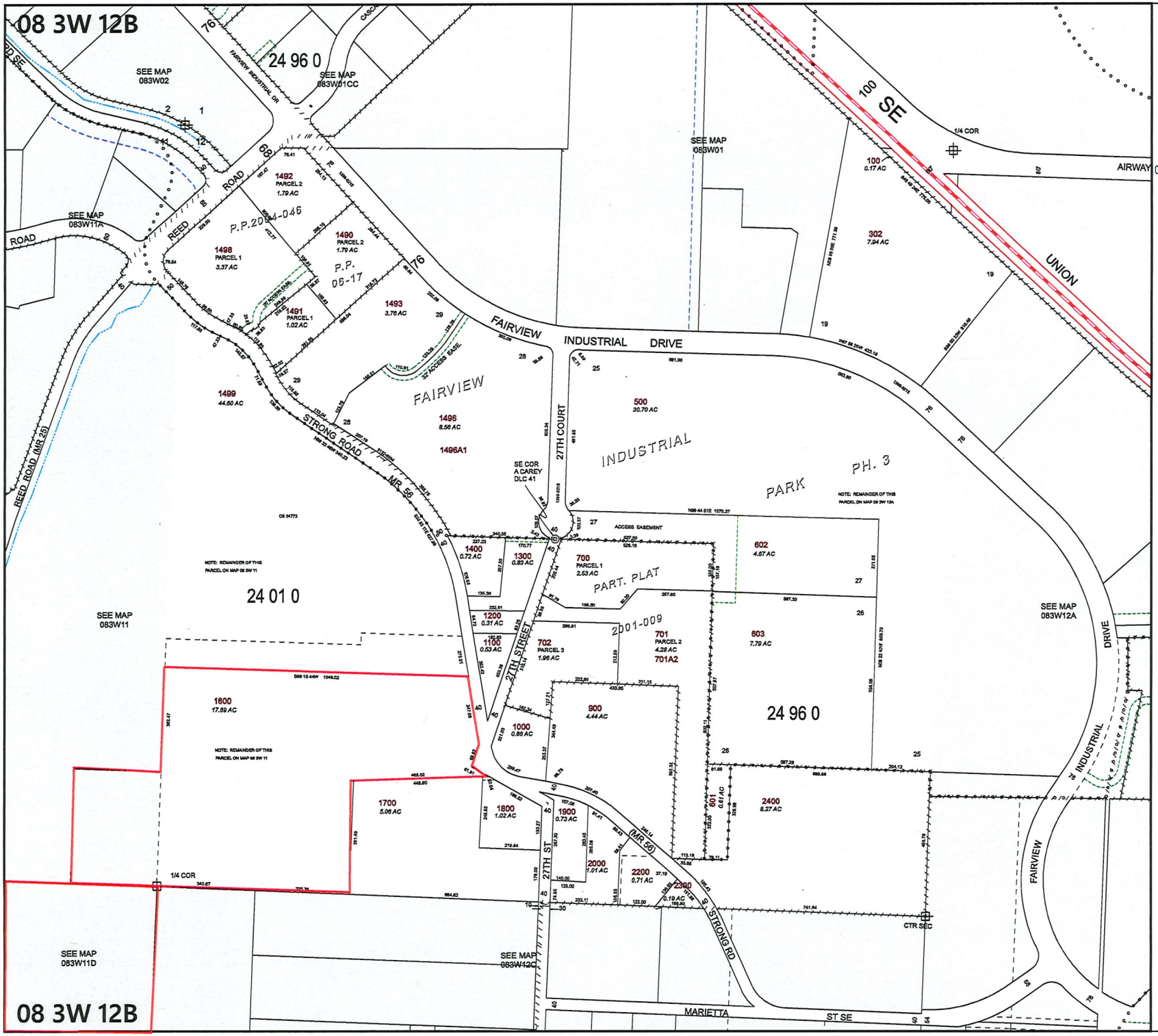
Required attachments with site marked: Tax map and site plan(s). (?)

21-103682-LD_Plans.pdf	29.61MB
21-103682-LD_Tax Lot Map 1.pdf	624.26KB
21-103682-LD_Tax Lot Map 2.pdf	764.55KB
21-103682-LD_LWI Map.pdf	13.31MB

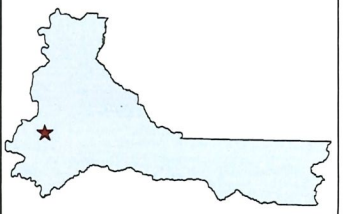
Additional Attachments

Date

5/12/2021



08 3W 12B
SALEM



MARION COUNTY, OREGON
NW1/4 SEC12 T8S R3W W.M.
SCALE 1" = 200'

LEGEND

LINE TYPES

Taxlot Boundary	Historical Boundary
Road Right-of-Way	Easement
Railroad Right-of-Way	Railroad Centerline
Private Road ROW	Taxcode Line
Subdivision/Plat Bndry	Map Boundary
Waterline - Taxlot Bndry	Waterline - Non Bndry

CORNER TYPES

+ 1/16TH Section Cor.
1/4 Section Cor.
DLC Corner
16 15 Section Corner 21 22

NUMBERS

Tax Code Number
00 00 0

Acreage 0.25 AC

All acres listed are Net Acres, excluding any portions of the taxlot within public ROWs

NOTES

Tick Marks: A tick mark in the road indicates that the labeled dimension extends into the public ROW

200.00
175.00

CANCELLED NUMBERS

200	1498A1
201	1498A2
202	1498A3
300	1500
301	1501
400	2100
401	
402	
501	
502	
503	
600	
700A1	
701A1	
800	
1494	
1497	

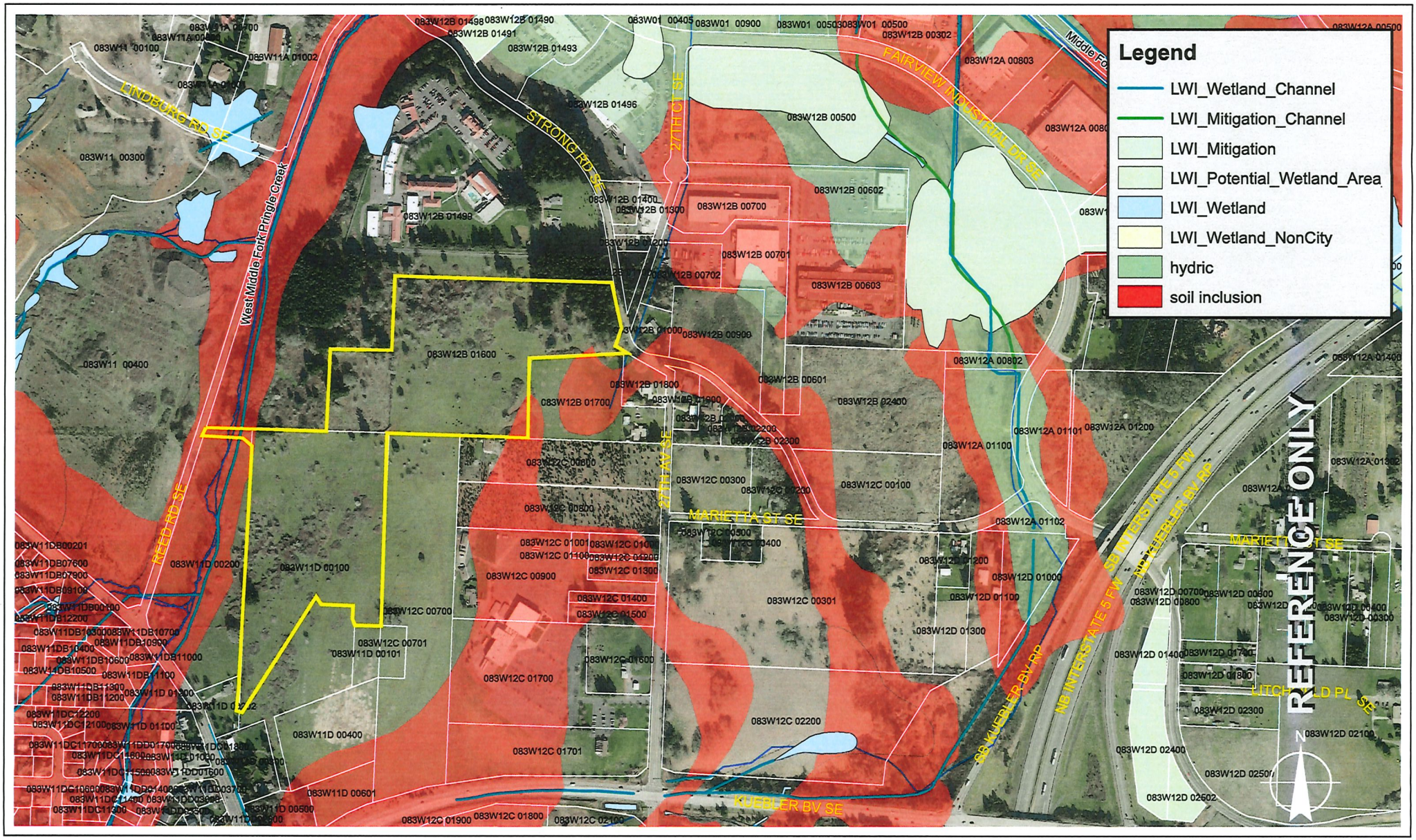
DISCLAIMER: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY

Marion County OREGON — Assessors Office Cartography Dept

FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT www.co.marion.or.us

PLOT DATE: 10/16/2020

SALEM
08 3W 12B



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COBURN GRAND VIEW ESTATES

T. 8 S., R. 3 W., Willamette Meridian
Sec. 11D Tax Lots 100, 200, 400 & 601 - Sec. 12B Tax Lot 1600
City Of Salem, Marion County, Oregon

Owner / Developer:

WESTWOOD HOMES LLC

12700 NW CORNELL RD.
PORTLAND, OREGON 97229

TOTAL PARCEL SIZE:
DEVELOPABLE AREA — 32.545 Ac.
NUMBER OF UNITS — 177
DENSITY — 5.439 UNITS/Ac.
LARGEST LOT — 17,940 S.F.
SMALLEST LOT — 1,635 S.F.
AVERAGE — 5,545 S.F.

SECTION A:
DEVELOPABLE AREA — 13.492 Ac.
NUMBER OF UNITS — 82
DENSITY — 6.078 UNITS/Ac.
LARGEST LOT — 10,658 S.F.
SMALLEST LOT — 1,635 S.F.
AVERAGE — 4,682 S.F.

SECTION B:
DEVELOPABLE AREA — 6.068 Ac.
NUMBER OF UNITS — 24
DENSITY — 3.96 UNITS/Ac.
LARGEST LOT — 17,940 S.F.
SMALLEST LOT — 5,941 S.F.
AVERAGE — 5,941 S.F.

SECTION C:
DEVELOPABLE AREA — 6.828 Ac.
NUMBER OF UNITS — 37
DENSITY — 5.419 UNITS/Ac.
LARGEST LOT — 8,579 S.F.
SMALLEST LOT — 4,001 S.F.
AVERAGE — 5,548 S.F.

SECTION D:
DEVELOPABLE AREA — 6.155 Ac.
NUMBER OF UNITS — 34
DENSITY — 5.52 UNITS/Ac.
LARGEST LOT — 8,353 S.F.
SMALLEST LOT — 4,470 S.F.
AVERAGE — 5,480 S.F.

TOWNHOUSES:
DEVELOPABLE AREA — 2.711 AC.
NUMBER OF UNITS — 34
DENSITY — 12.54 UNITS/AC.
LARGEST LOT — 16,388 S.F.
SMALLEST LOT — 1,635 S.F.
AVERAGE — 3,031 S.F.

ZONED RM-2

THIS PARCEL IS BEING CREATED BY PLA. APPROVED IN PLANNING CASE # PLA20-24 AND IS NOT PART OF THIS APPLICATION. SITE PLAN IS INCLUDED AS CONCEPT ONLY.

VICINITY MAP

T.B.M. 100.00
THIS IS THE DESCRIPTION & LOCATION OF THE T.B.M. ELEVATION MARKER.
THIS IS THE DESCRIPTION & LOCATION OF THE NEAREST B.M. ELEVATION MARKER WITH THE ELEVATION OF THAT B.M.

N W E S
0' 120'
1 INCH
SCALE: 1" = 120'

ABBREVIATIONS

A.C.	ASPHALTIC CONCRETE	L.P.	LIGHT POLE
ACMP	ALUMINIZED CMP	M	METER, MAIN
ASSY.	ASSEMBLY	M.H.	MANHOLE
B.O.	BLOW OFF	MTL.	METAL
B.F.V.	BUTTERFLY VALVE	O.H.	OVERHEAD
C & G	CURB & GUTTER	PC	POINT OF CURVE
CATV	CABLE TELEVISION	PCC	POINT OF CONTINUING CURVE
C.B.	CATCH BASIN	PED.	PEDESTAL
C.B.C.O.	CATCH BASIN CLEANOUT	PRC	POINT OF REVERSE CURVE
C.B.I.	CATCH BASIN INLET	PROP.	PROPOSED
C.L.	CENTERLINE	PT	POINT OF TANGENCY
CMP	CORRUGATED METAL PIPE	PUB.	PUBLIC
C.O.	CLEANOUT	PUE	PUBLIC UTILITY EASMT.
CONC.	CONCRETE	PVC	POLYVINYL CHLORIDE
CONST.	CONSTRUCT	PVT.	PRIVATE
D.I.	DUCTILE IRON	P.P.	POWER POLE
DIA.	DIAMETER	P.L.	PROPERTY LINE
DWG.	DRAWING	R	RADIUS
EASMT.	EASEMENT	R-	RIM
E.G.	EXIST. GRADE / GROUND	RD	ROOF DRAIN
EOP, E.P.	EDGE OF PAVEMENT	R.O.W.	RIGHT-OF-WAY
ELEC.	ELECTRIC	SAN.S. or S.S.	SANITARY SEWER
ELEV. or El.	ELEVATION	S	SLOPE
Ex. or EXIST.	EXISTING	STA.	STATION
FT.	FEET	STD.	STANDARD
F.F.	FINISH FLOOR	STL.	STEEL
F.G.	FINISH GRADE	STM.DRN, or S.D.	STORM DRAIN
F.H.	FIRE HYDRANT	SVC.	SERVICE
F.M.	FORCE MAIN	SW	SIDEWALK
GUT. or GTR.	GUTTER	T.C.	TOP OF CURB
G.V.	GATE VALVE	TEL.	TELEPHONE
IMP.	IMPROVEMENT	TYP.	TYPICAL
INST.	INSERT	U.G.	UNDERGROUND
INV. or I-	INVERT	VLT.	VAULT
L	LENGTH, LINE	W.M.	WATER MAIN

SYMBOLS

EXIST.	PROP.		EXIST.	PROP.	
⊙	●	BLOW OFF ASSY.	⊙	●	MANHOLE SAN. SEWER
▨	▨	CATCH BASIN	ⓓ	ⓓ	MANHOLE STORM DRAIN
▨	■	CATCH BASIN CLEANOUT	⊙	⊙	2' DIA. C.O. / M.H.
▨	■	CATCH BASIN INLET	⊙	⊙	MANHOLE TELEPHONE
△	▲	CATV PED. / BOX	⊙	⊙	MANHOLE WATER
○	●	CLEANOUT	▷	▶	REDUCER / INCREASER
⊠	⊠	ELEC. PED. / BOX	⊠	⊠	TEL. PED. / BOX
◇	◆	FIRE HYDRANT	⊠	⊠	TRAFFIC PED. / BOX
●	●	GAS LOCATION MARKER	⚲	⚲	UTILITY / POWER POLE
⋈	⋈	GAS VALVE	□	■	WATER METER
⊠	⊠	MAIL BOX	⊗	⊖	WATER VALVE

CABLE TELEVISION
CENTERLINE
DITCH C.L.
ELECTRICAL LINE
GAS MAIN
TELEPHONE LINE
SANITARY SEWER EXIST.
SANITARY SEWER PROP.
STORM DRAIN EXIST.
STORM DRAIN PROP.
WATER MAIN EXIST.
WATER MAIN PROP.

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P203 SITE PLAN — SOUTH
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P302 UTILITY PLAN — CENTRAL
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P401 TREE CONSERVATION PLAN — NORTH
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P403 TREE CONSERVATION PLAN — SOUTH
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P405 TREE CONSERVATION PLAN — R.O.W. SOUTH
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P503 PUBLIC STREET IMPROVEMENTS — E AV. & D ST.
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P505 PUBLIC STREET IMPROVEMENTS — I AV.
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P507 PUBLIC STREET IMPROVEMENTS — K ST. & E. ACCESS
P508 PUBLIC STREET IMPROVEMENTS — L ST. 0+00 TO 12+00
P509 PUBLIC STREET IMPROVEMENTS — M ST. 0+00 TO 8+00
P510 PUBLIC STREET IMPROVEMENTS — M ST. 8+00 TO 15+00
P511 PUBLIC STREET IMPROVEMENTS — N ST.
P512 PUBLIC STREET IMPROVEMENTS — O ST.
P513 PUBLIC STREET IMPROVEMENTS — P ST.
P514 PUBLIC STREET IMPROVEMENTS — WALKWAY 1, 2 & 3
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P601 GRADING PLAN — NORTH
P602 GRADING PLAN — CENTRAL
P603 GRADING PLAN — SOUTH

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260

PRELIMINARY PLAN
COVER SHEET

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE PLANS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

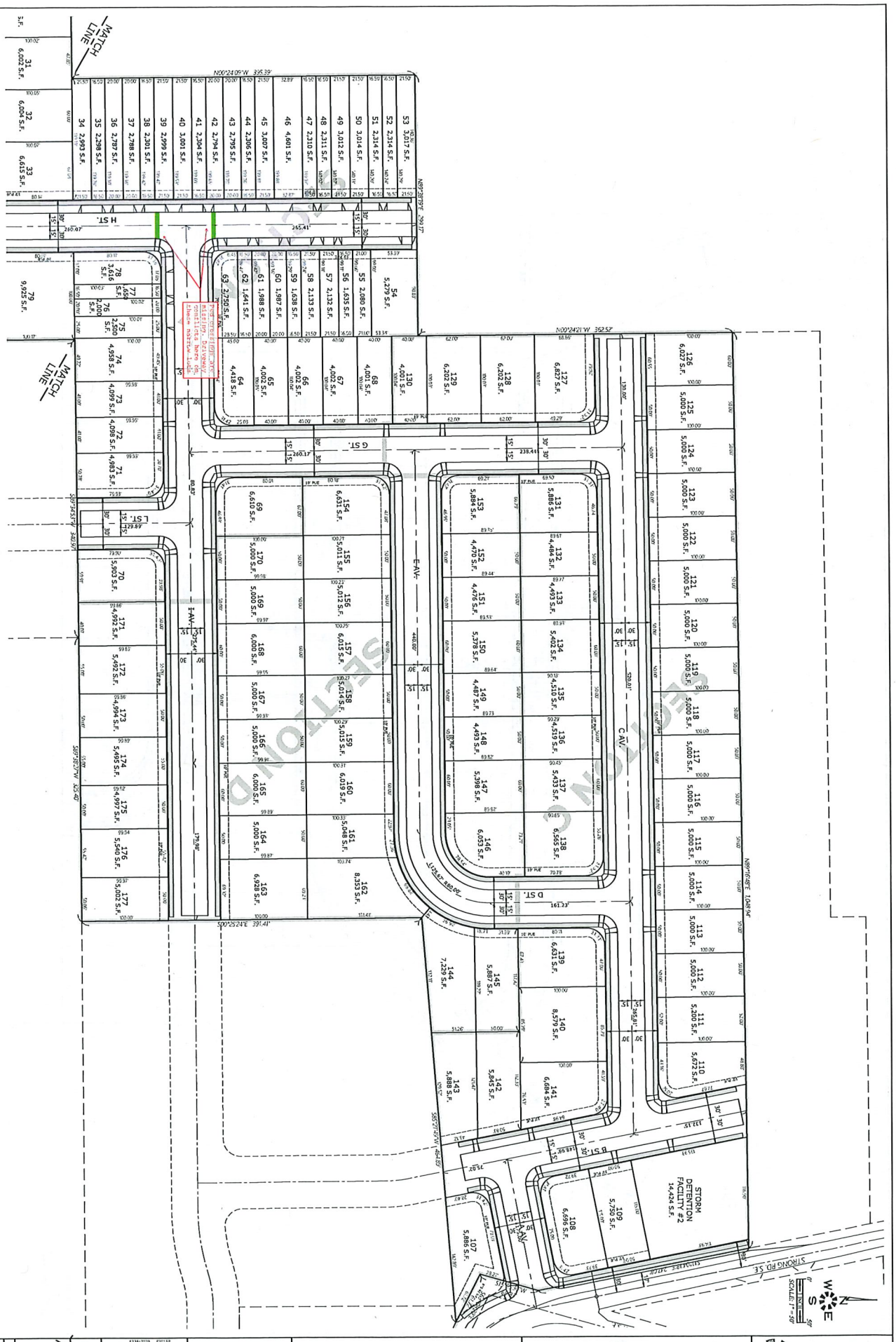
DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

Design: H.D.G.
Drawn: P.M.S.
Checked: S.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 2015
MARK D. GRENZ
EXPIRES: 06-30-2021

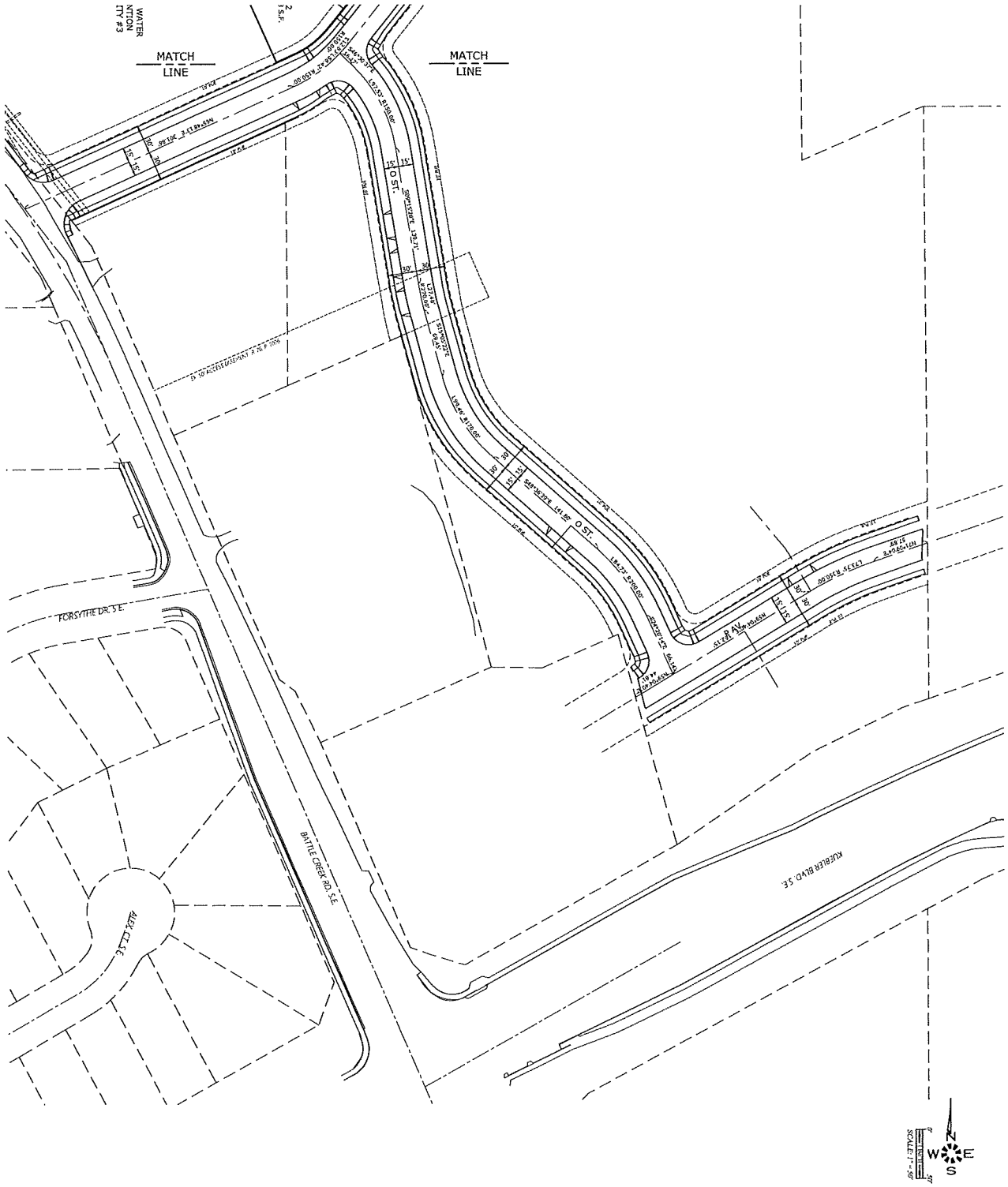
JOB # 6234

P101



P201	Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES**	**SITE PLAN - NORTH -**	MULTI/TECH ENGINEERING SERVICES, INC. 1155 13th ST. S.E. SALEM, OR. 97302 PH. (503) 363-9227 FAX (503) 364-1260 www.mtengineering.net office@mtengineering.net

JOB # 6234



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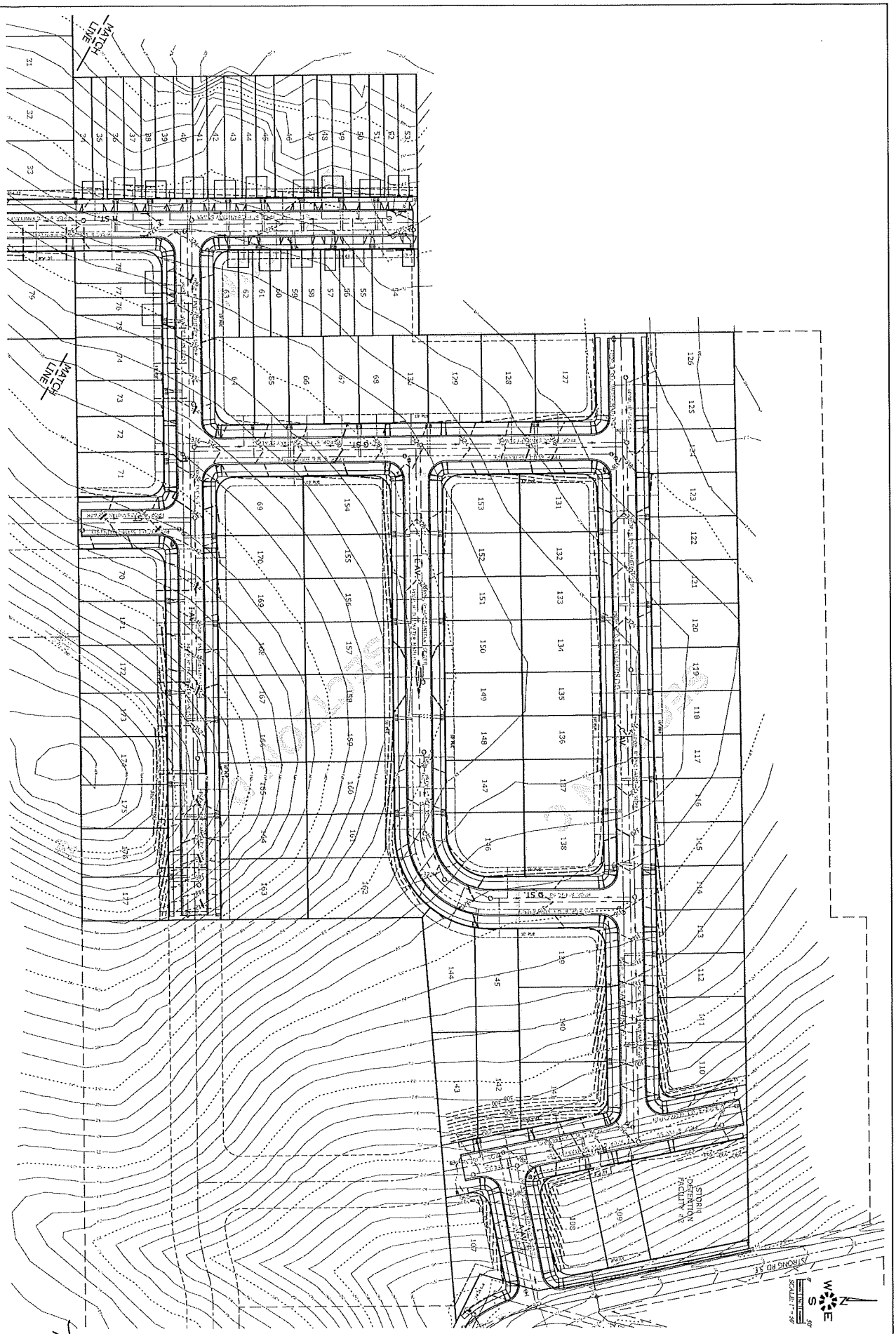
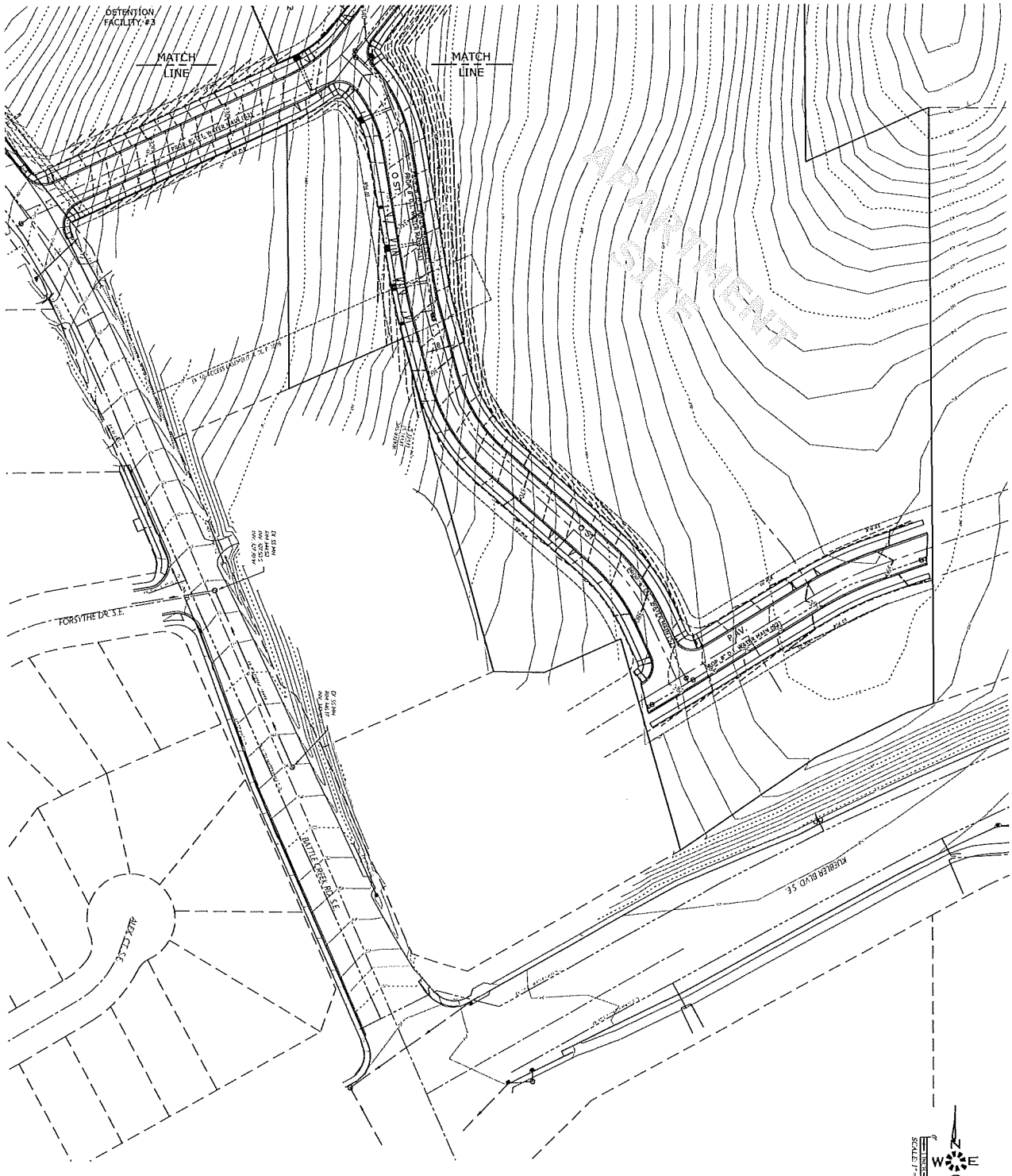


P301	Design: H.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES**	**UTILITY PLAN - NORTH -**	MULTI/TECH ENGINEERING SERVICES, INC. 1155 13th ST. S.E. SALEM, OR. 97302 PH. (503) 363-9227 FAX (503) 364-1260 www.mtengineering.net office@mtengineering.net

EXPIRES: 06-30-2021
JOB # 6234



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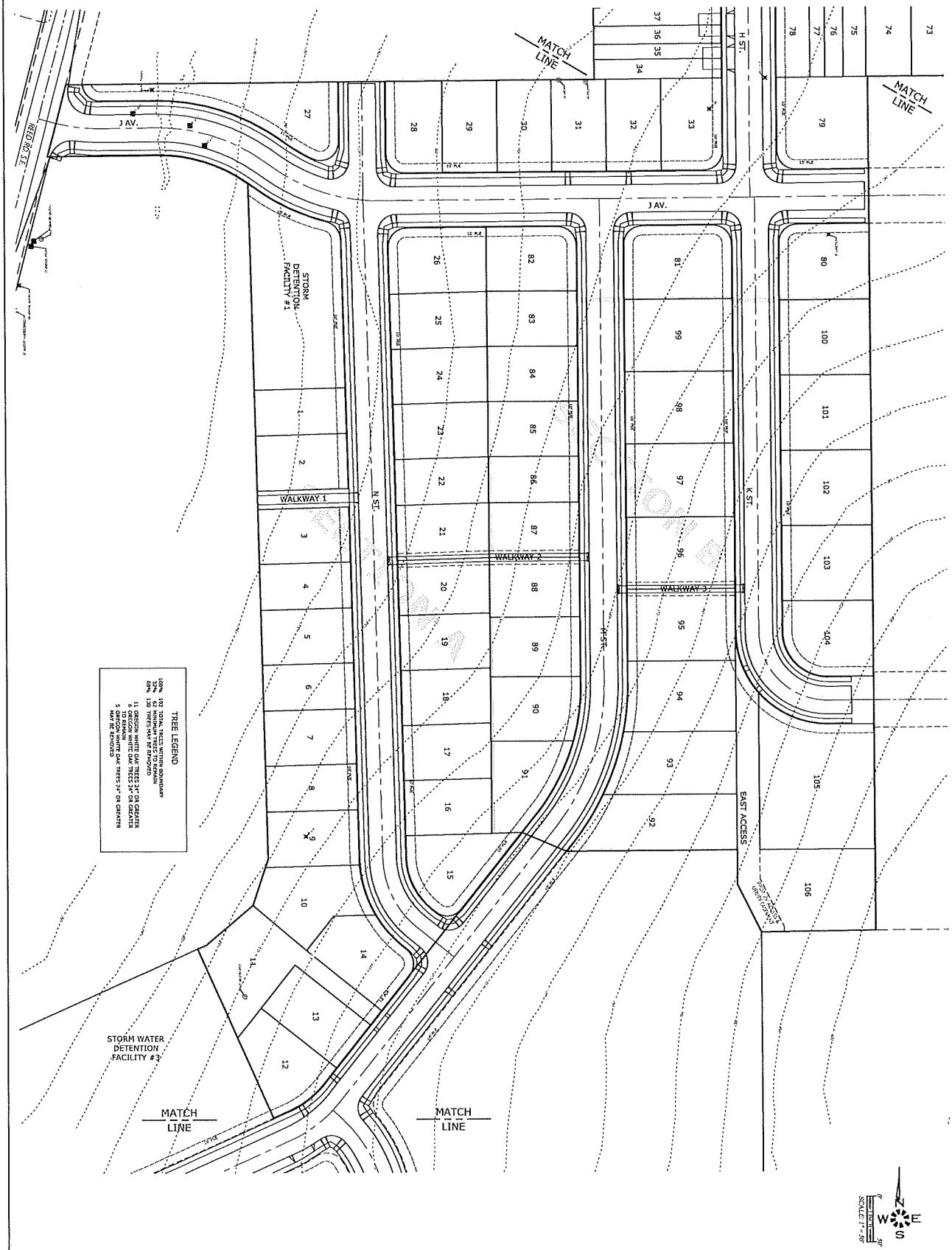
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net



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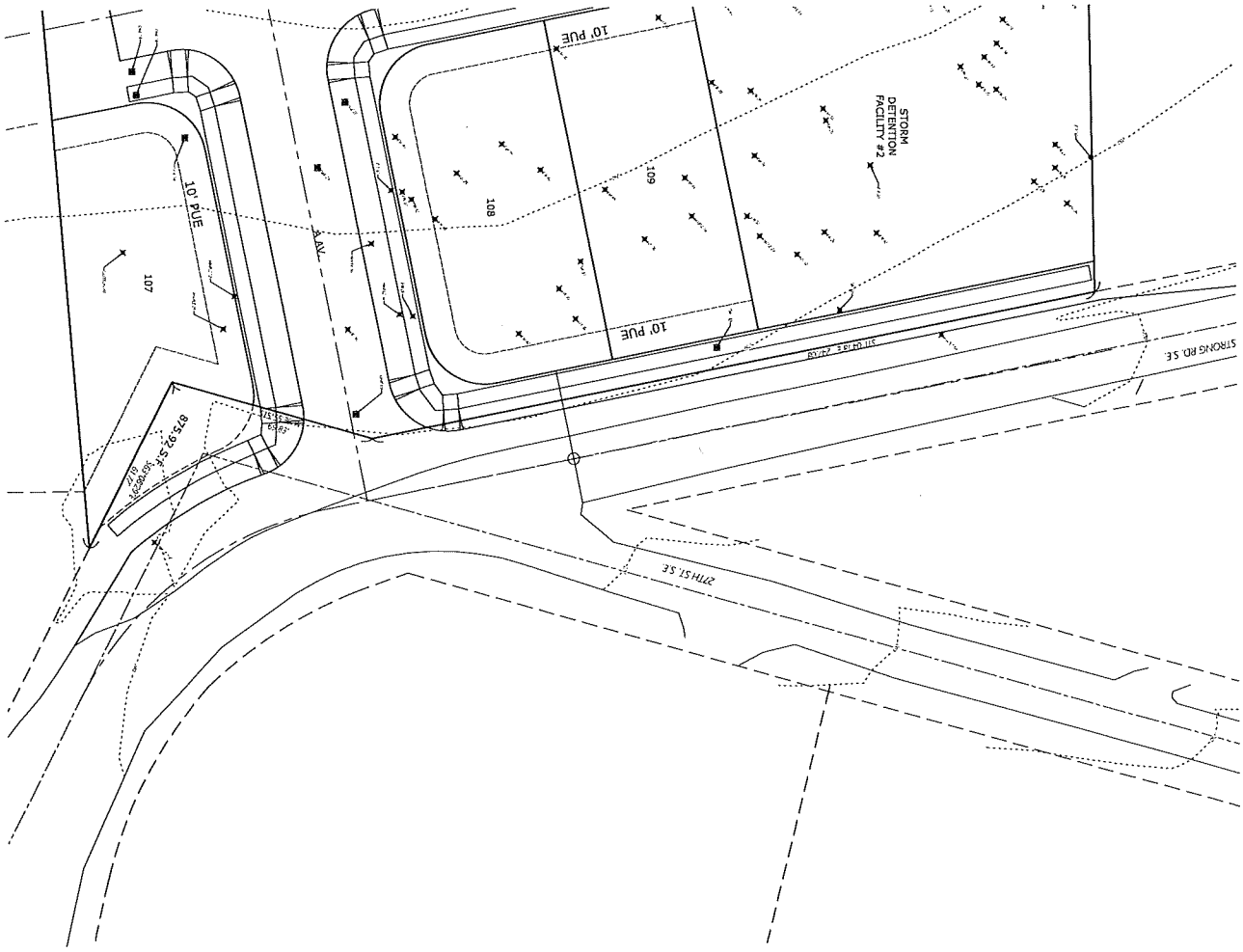
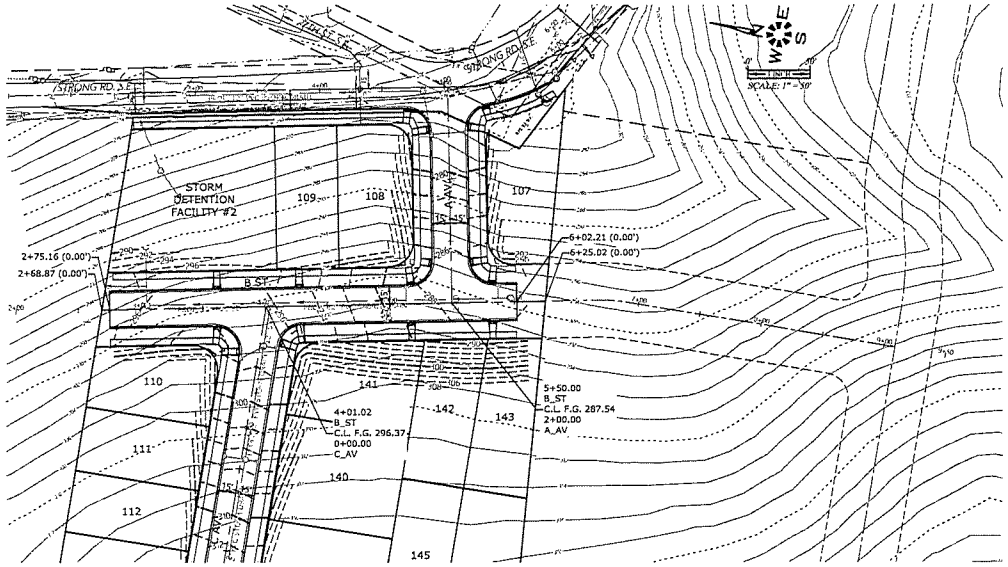
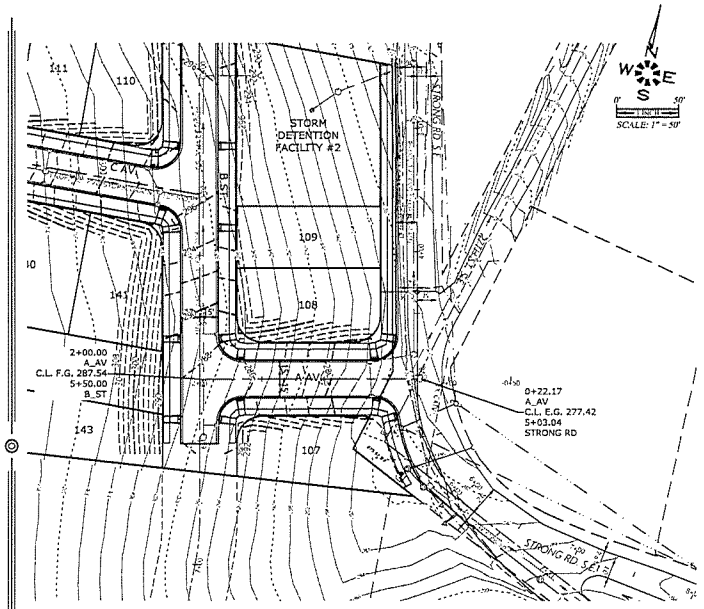


SCALE: 1" = 20'

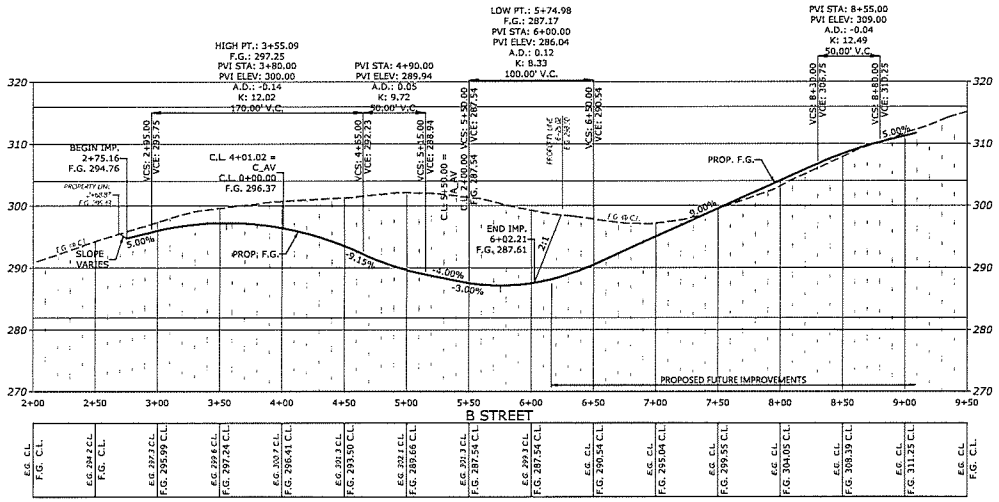
P404	JOB # 5234 DATE: 06-26-2018 SHEET	Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES**	**STREET TREE REMOVAL PLAN - NORTH -**	MULTI/TECH ENGINEERING SERVICES, INC. 1155 13th ST. S.E. SALEM, OR. 97302 PH. (503) 363-9227 FAX (503) 364-1260 www.mtengineering.net email:office@mtengineering.net

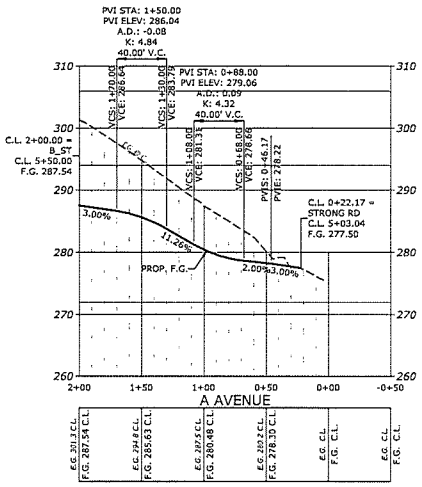


SEE SHEET P502 FOR C AVENUE DESIGN



SEE SHEET P517 FOR TYPICAL STREET SECTIONS





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1155 13th ST. S.E. SALEM, OR. 97302
(503) 363-9227 FAX (503) 364-1260
www.mtengineering.net

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

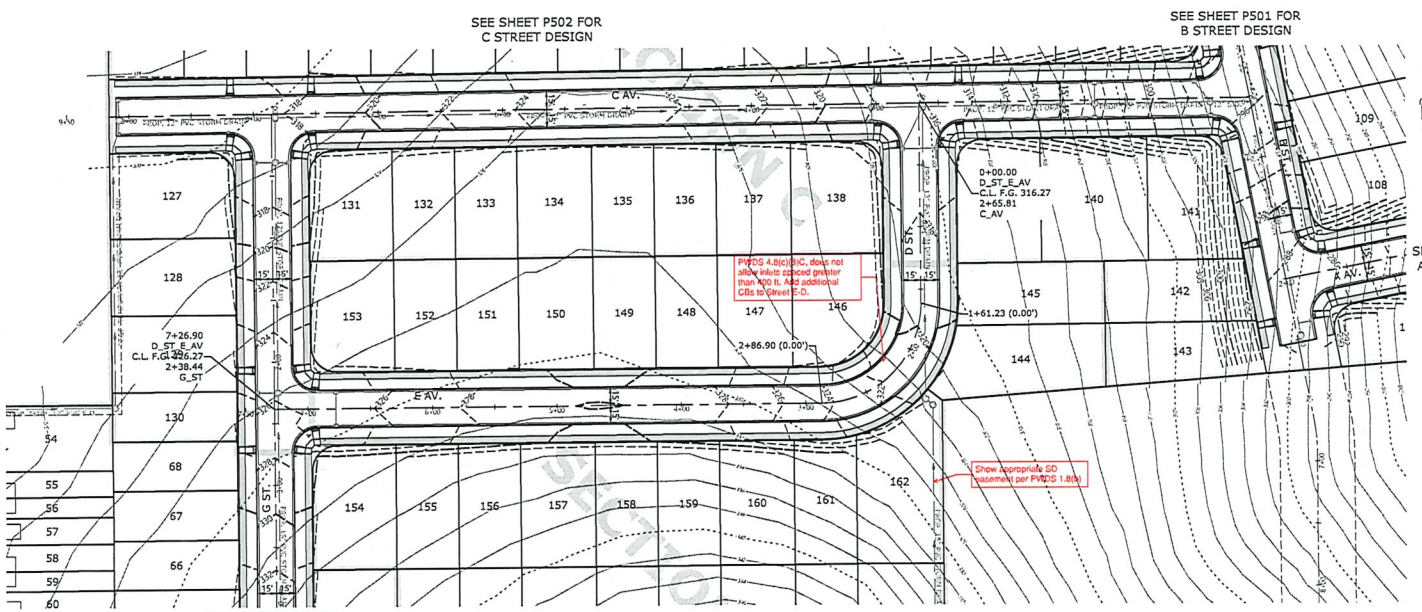
Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 17, 1978
MARK D. GRENZ

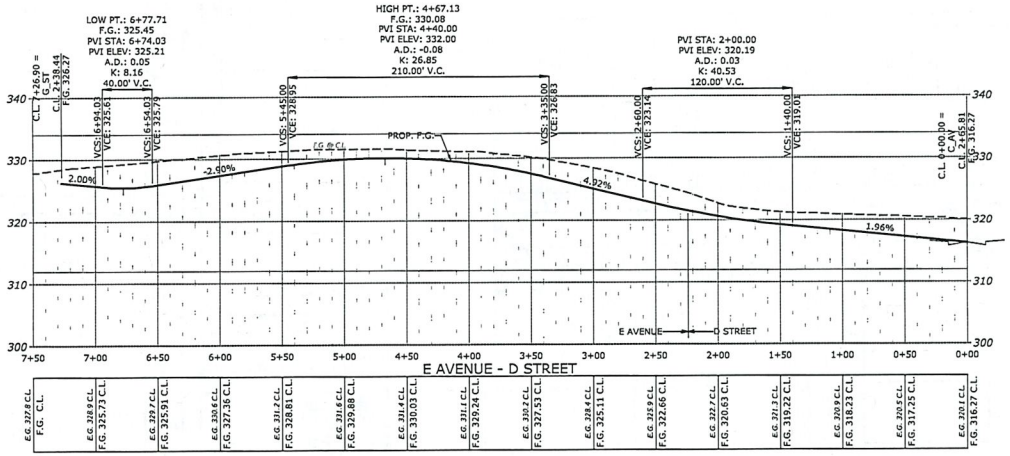
EXPIRES: 06-30-2021

JOB # 6234

P501



SEE SHEET P517 FOR
TYPICAL STREET SECTIONS



MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REVISIONS SHALL BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.
DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

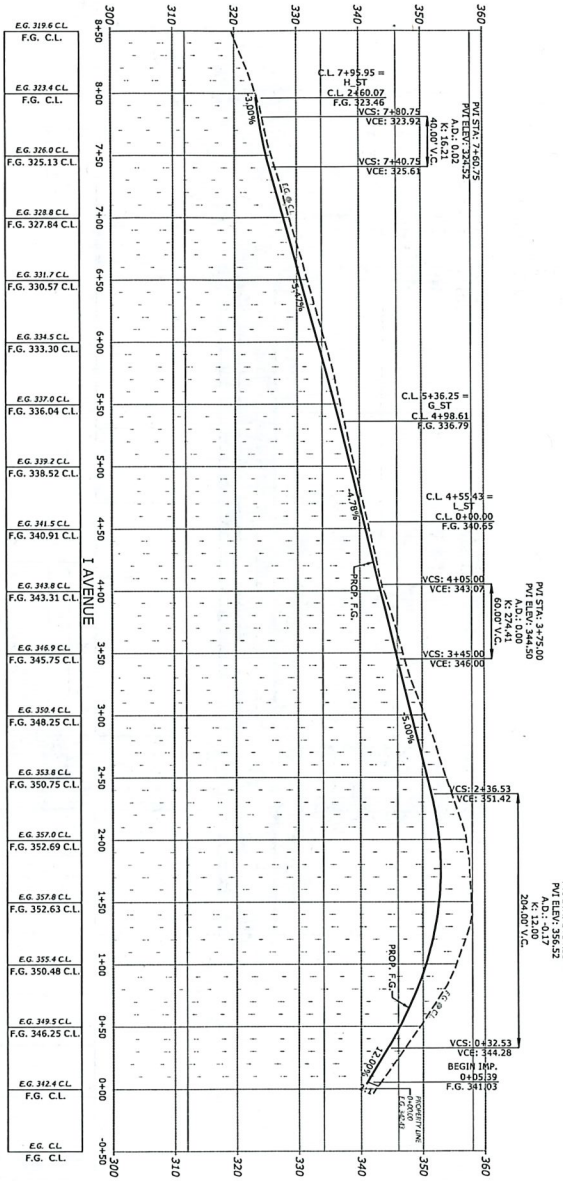
Design: M.D.G.
Drawn: M.L.S.
Checked: M.D.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ---- / ----

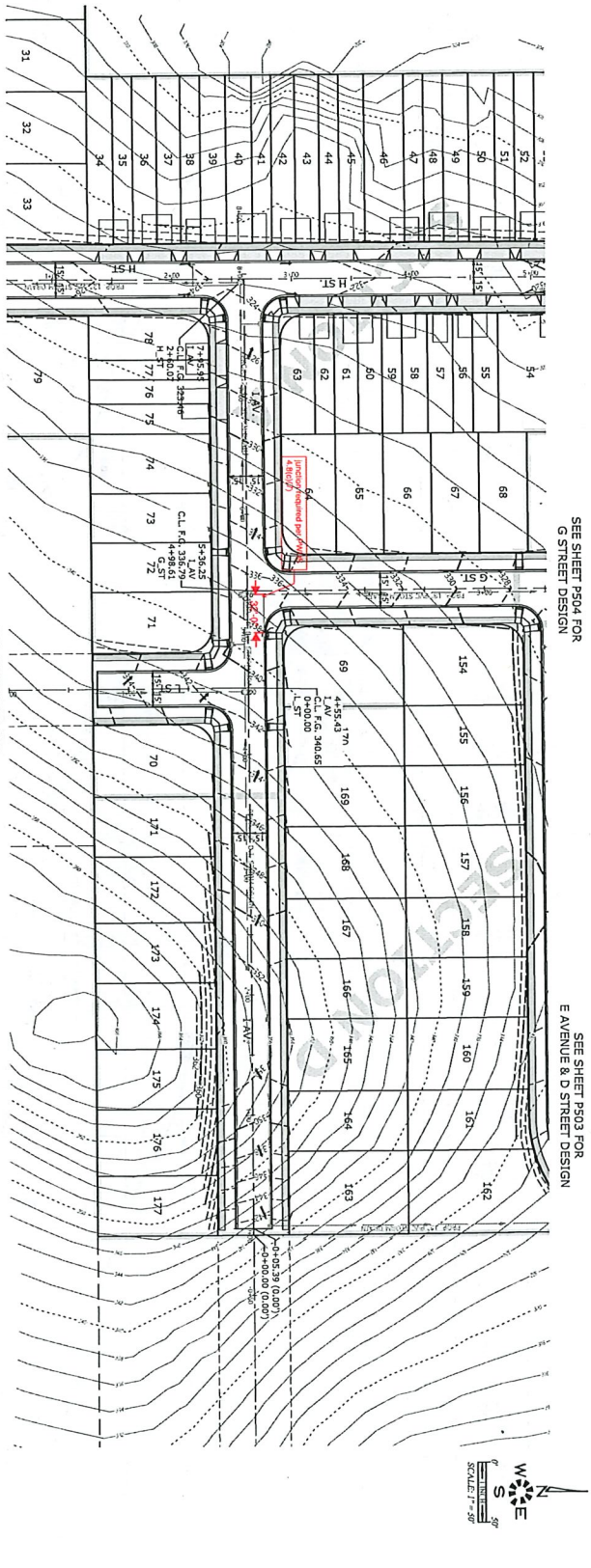
REGISTERED PROFESSIONAL ENGINEER
OREGON
MAY 14, 1976
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

P503

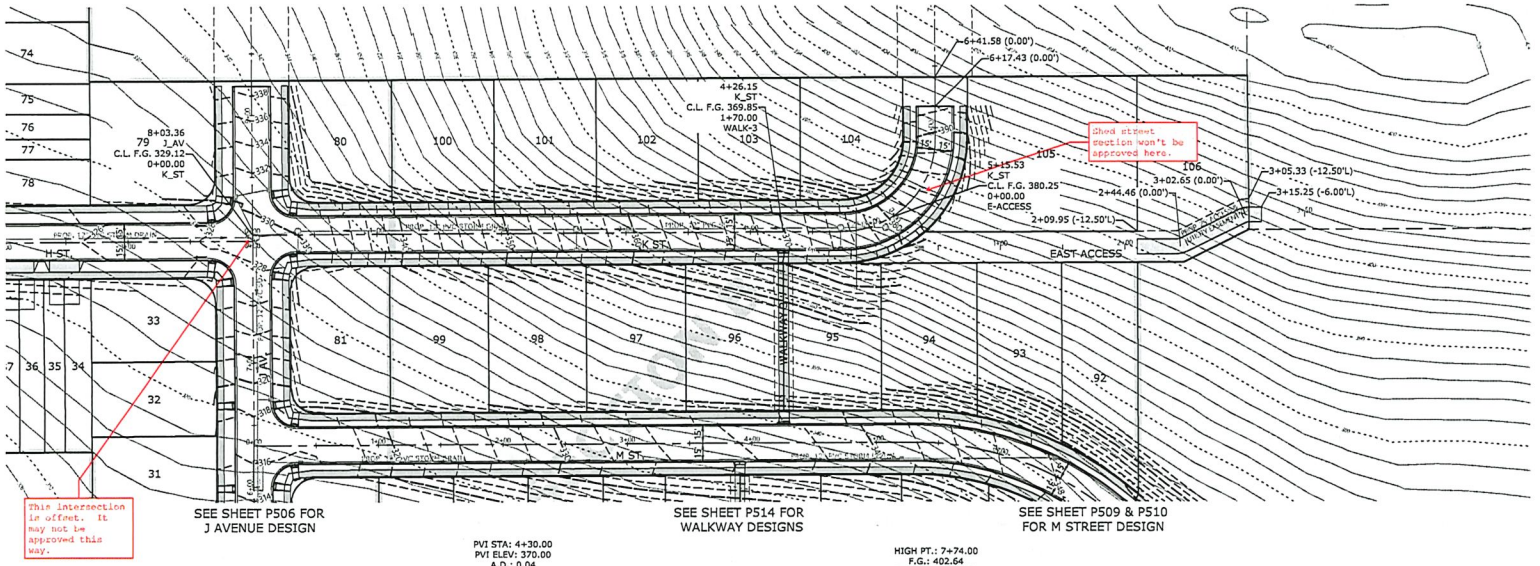




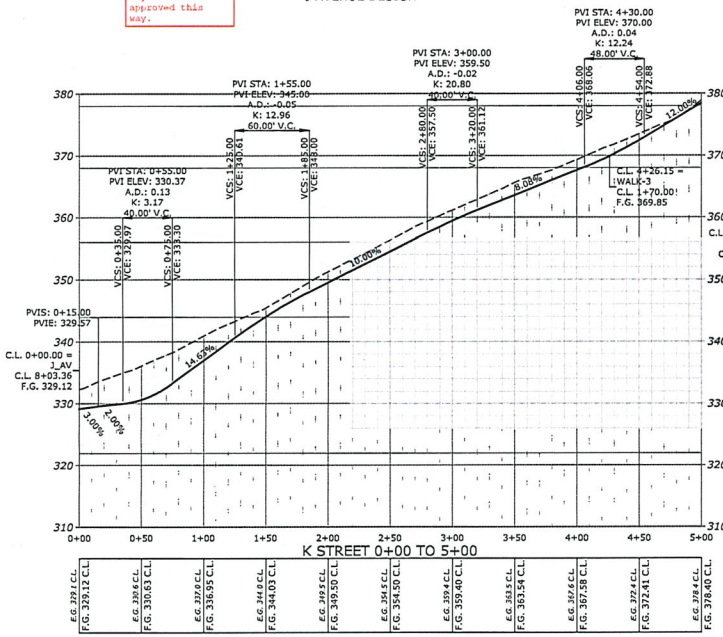
SEE SHEET P517 FOR TYPICAL STREET SECTIONS

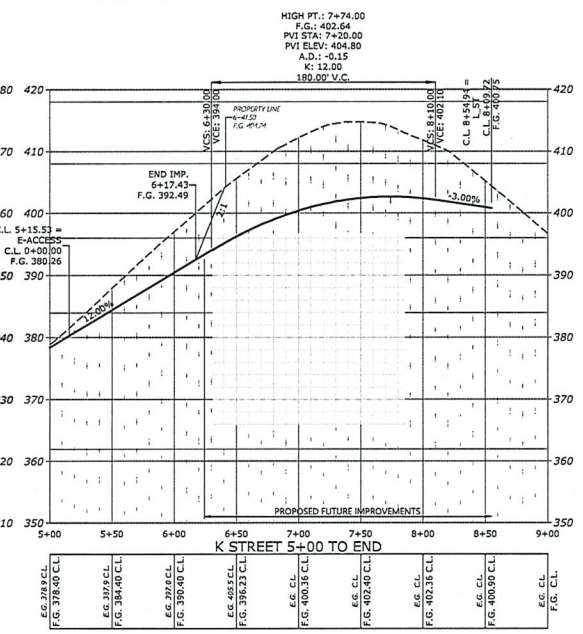
P505	JOB # 6234 DATE: 06-30-2021	Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES**	**STREET IMPROVEMENTS**

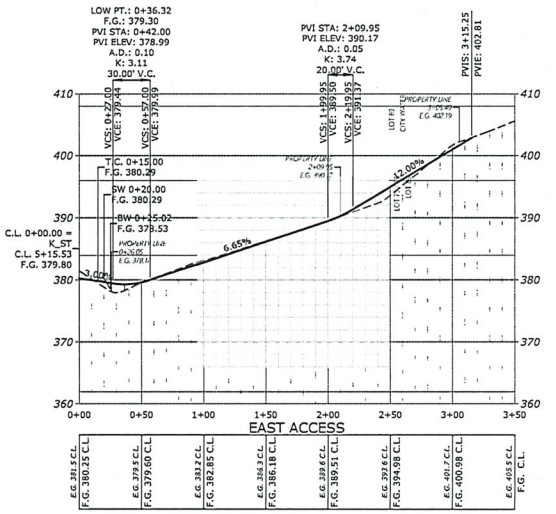
MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net



SEE SHEET P517 FOR TYPICAL STREET SECTIONS







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www.mtengineering.net office@mtengineering.net

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE ON THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

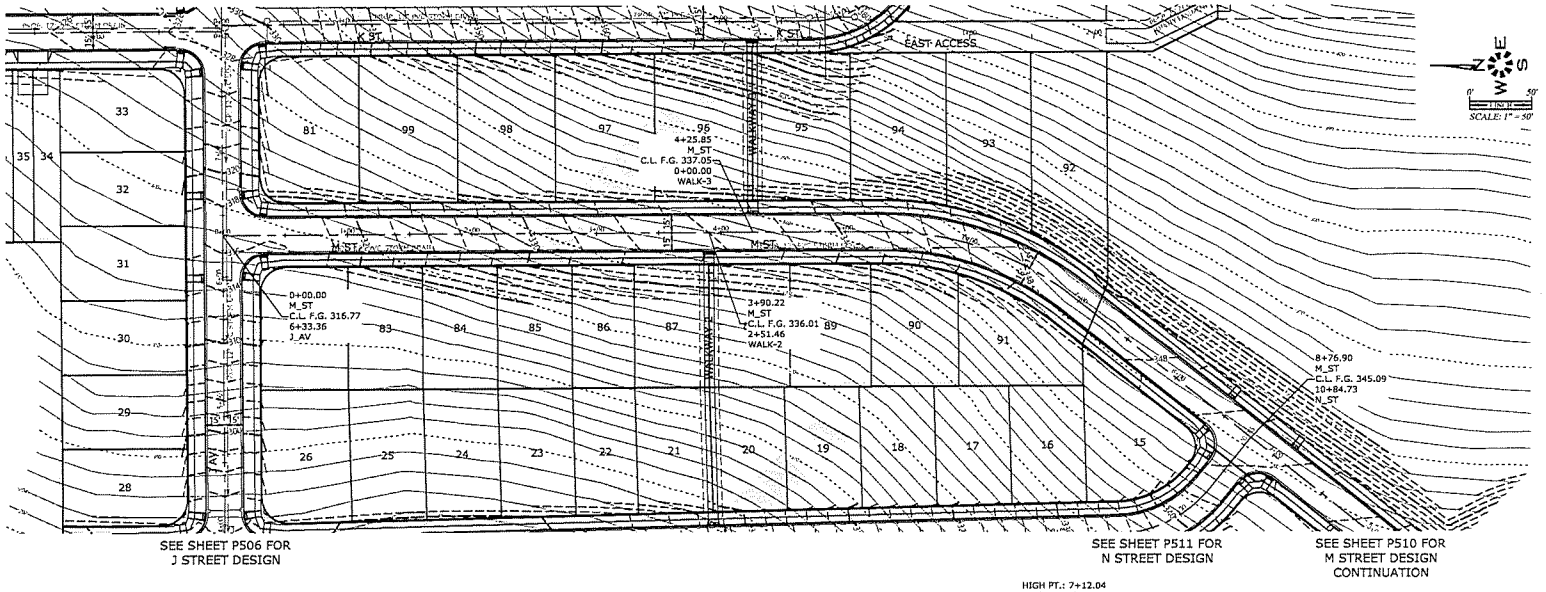
DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

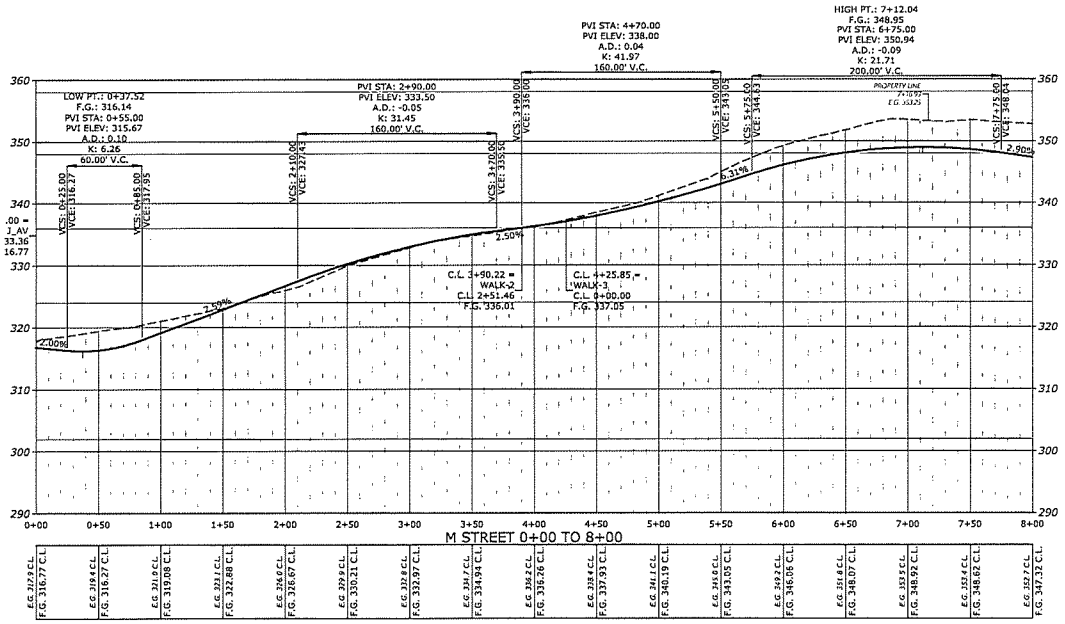
Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 2015
MARK D. GRENZ
EXPIRES: 06-30-2021

JOB # 6234

P507





SEE SHEET P517 FOR TYPICAL STREET SECTIONS

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1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX (503) 364-1260
CONTACT: JON GRAICHEN, JR. EMAIL: jong@mtech.org

STREET IMPROVEMENTS

COBURN GRAND VIEW ESTATES

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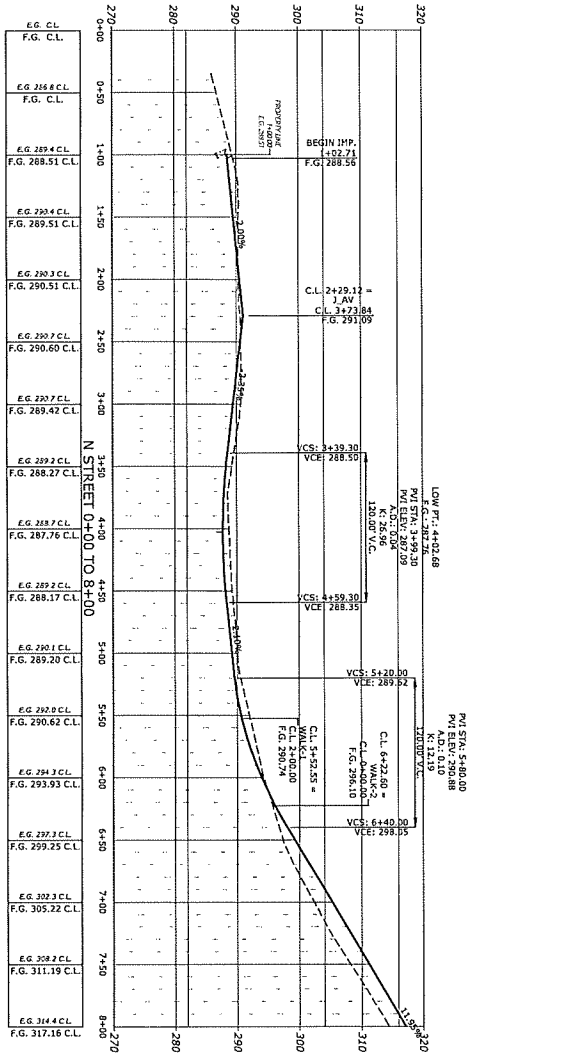
Drawn: P.H.S.
Checked: J.I.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: _____

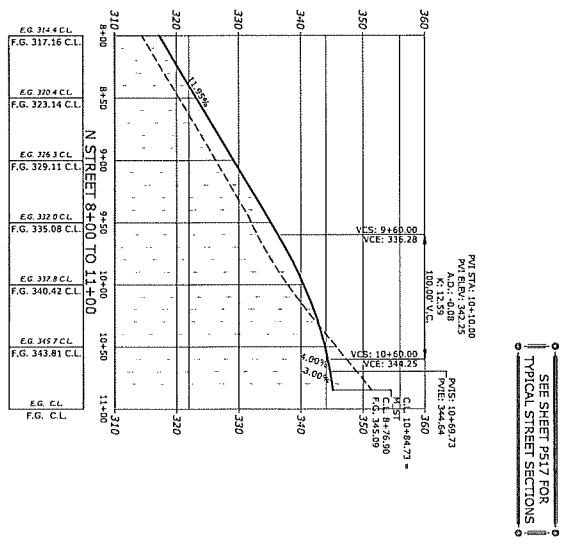
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ

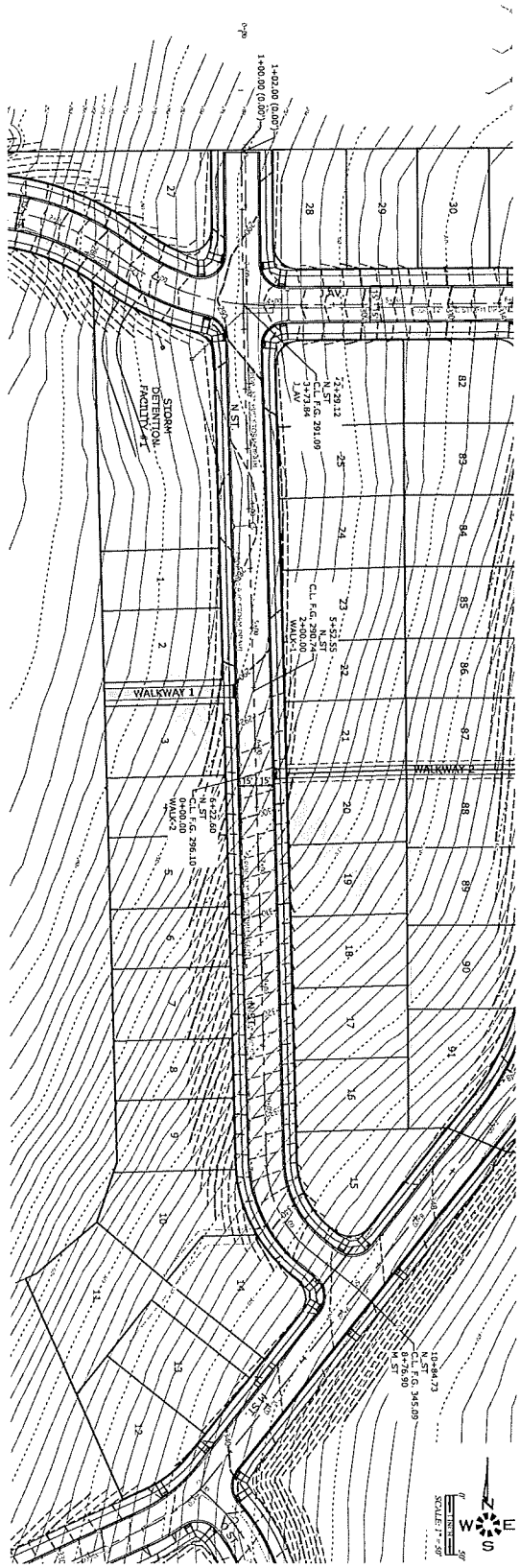
EXPIRES: 06-30-2021

JOB # 6234

P509

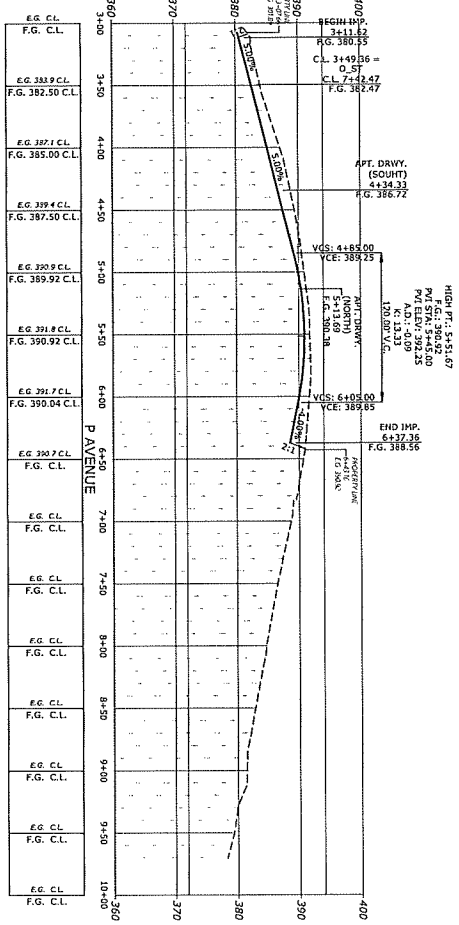


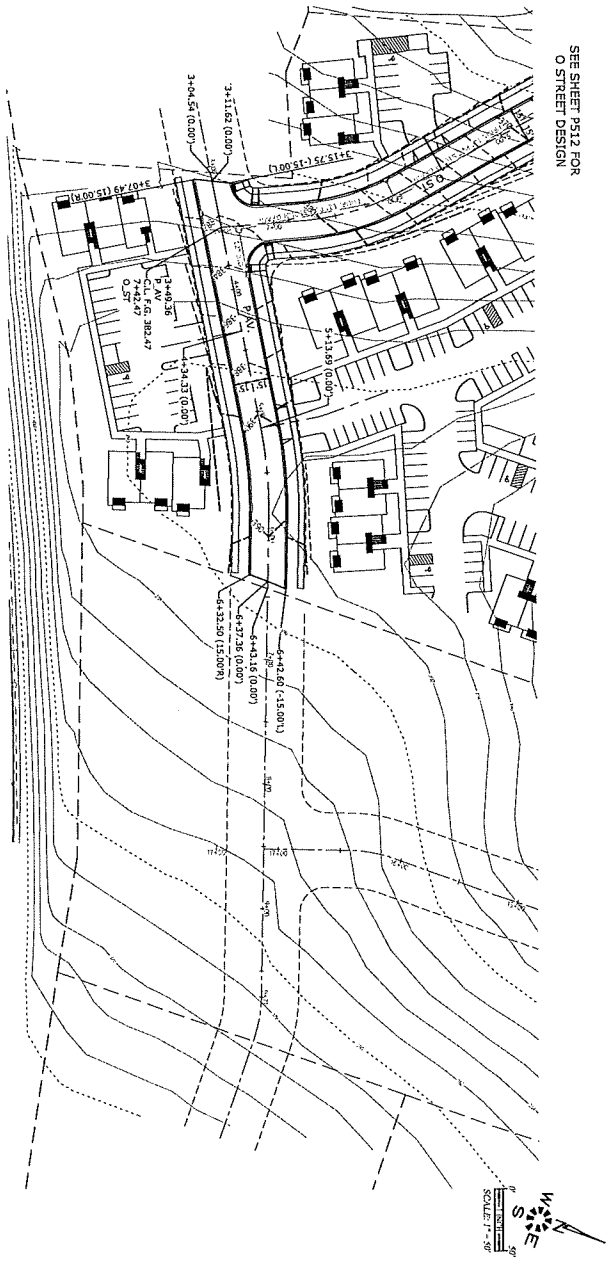




SEE SHEET P517 FOR TYPICAL STREET SECTIONS

P511	JOB # 6234 DATE: 06-30-2021	Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES**	**STREET IMPROVEMENTS**	MULTI/TECH ENGINEERING SERVICES, INC. 1155 13th ST. S.E. SALEM, OR. 97302 PH. (503) 363-9227 FAX (503) 364-1260 www.mtengineering.net office@mtengineering.net





SEE SHEET P512 FOR O STREET DESIGN

SEE SHEET P517 FOR TYPICAL STREET SECTIONS

P513

JOB # 6234

DATE: 06-18-2021

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ____

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COBURN GRAND VIEW ESTATES

STREET IMPROVEMENTS

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PH. (503) 363-9227 FAX (503) 364-1260
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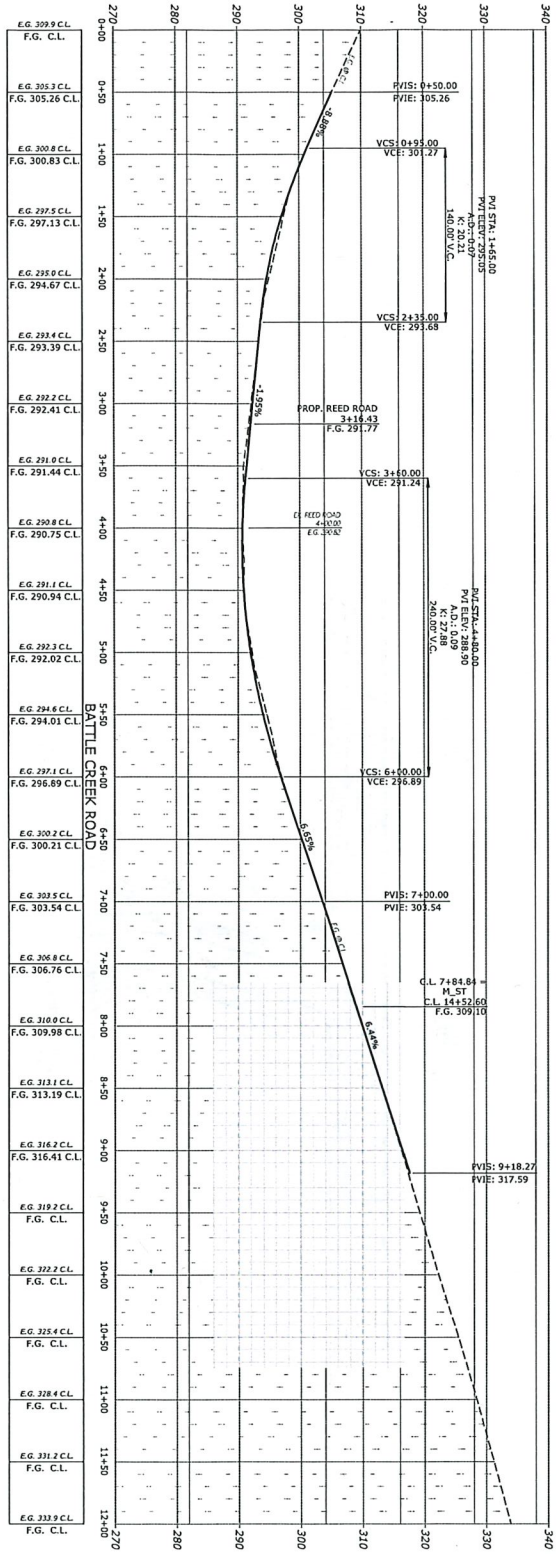
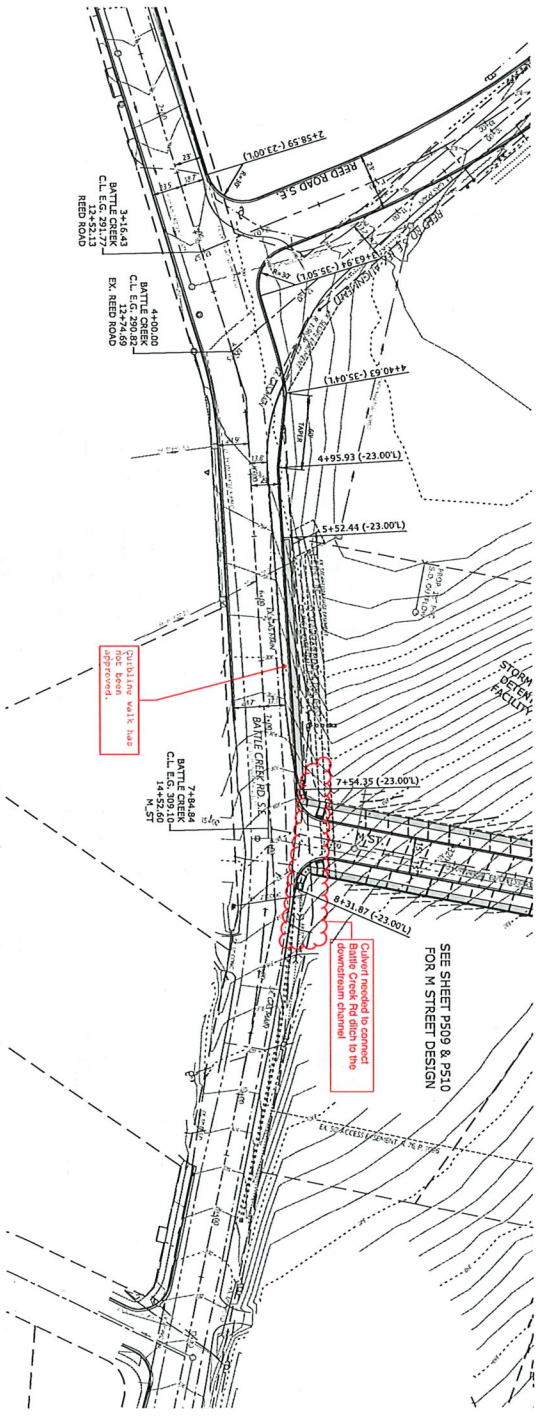
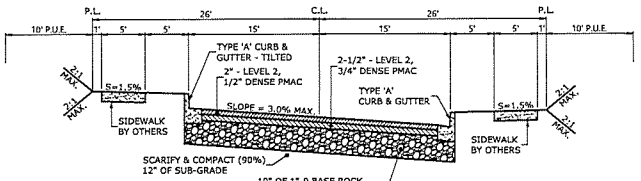




P515	JOB # 6234 EXPIRES: 06-30-2021	6234s3520 P515ST Design: M.D.G. Drawn: P.H.S. Checked: J.J.G. Date: JUNE 2018 Scale: AS SHOWN As-Built: ----	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**COBURN GRAND VIEW ESTATES**	**STREET IMPROVEMENTS**	MULTI/TECH ENGINEERING SERVICES, INC. 1155 13th ST. S.E. SALEM, OR. 97302 PH. (503) 363-9227 FAX (503) 364-1260 www.mtengineering.net office@mtengineering.net

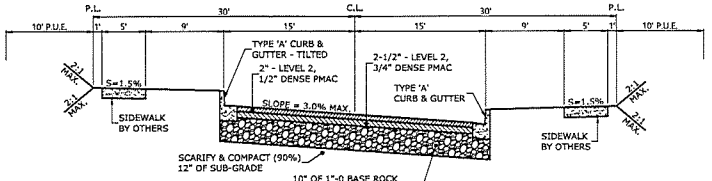


SEE DWG.318 FOR ADDITIONAL CONSTRUCTION INFORMATION.

TYPICAL STREET SECTION

K ST., M ST. 0+00.00 TO 10+90.30 & N ST.

-NTS-

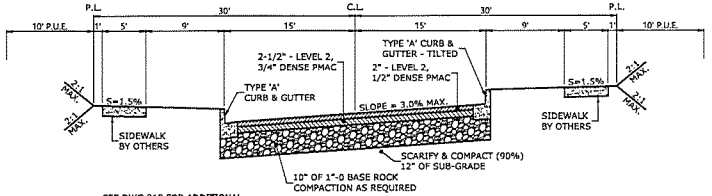


SEE DWG.318 FOR ADDITIONAL CONSTRUCTION INFORMATION.

TYPICAL STREET SECTION

I AV., L ST., M ST. 10+90.30 TO 14+52.60 & O ST.

-NTS-

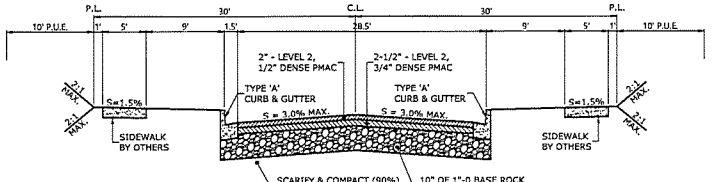


SEE DWG.318 FOR ADDITIONAL CONSTRUCTION INFORMATION.

TYPICAL STREET SECTION

B ST.

-NTS-



SEE DWG.318 FOR ADDITIONAL CONSTRUCTION INFORMATION.

TYPICAL STREET SECTION

A AV., C AV., D ST., E AV., G ST., H ST., J AV. & P AV.

-NTS-

PROVISIONS FOR WET WEATHER CONSTRUCTION

DRY SEASON CONSTRUCTION IS RECOMMENDED; HOWEVER, EXCAVATION TO SUBGRADE CAN PROCEED DURING PERIODS OF LIGHT TO MODERATE RAINFALL PROVIDED THAT THE SUBGRADE REMAINS COVERED WITH AGGREGATE; A TOTAL AGGREGATE THICKNESS OF 8-INCHES MAY BE NECESSARY TO PROTECT THE SUBGRADE FROM HEAVY CONSTRUCTION TRAFFIC. CONSTRUCTION TRAFFIC SHOULD NOT BE ALLOWED DIRECTLY ON THE SUBGRADE ONLY ATOP A SUFFICIENT COMPACTED ROCK THICKNESS TO MITIGATE SUBGRADE "PUMPING". IF THE SUBGRADE BECOMES WET AND "PUMPS" NO CONSTRUCTION TRAFFIC SHALL BE ALLOWED ON THE ROAD ALIGNMENT. POSITIVE SITE DRAINAGE AWAY FROM THE STREET SHALL BE MAINTAINED IF SITE PAVING WILL NOT OCCUR BEFORE THE ON-SET OF THE WET SEASON.

MITIGATION OF WET AND SOFT SUBGRADE, IF ENCOUNTERED

DEPENDING ON THE TIMING FOR THE PROJECT, ANY SOFT SUBGRADE FOUND DURING PROOF-ROLLING OR BY VISUAL OBSERVATION CAN EITHER BE REMOVED AND REPLACED WITH COMPACTED CRUSHED AGGREGATE, REMOVED AND DRIED OR DRIED IN-PLACE AND RECOMPACTED, OR AN AREA OF SUFFICIENT SIZE (GENERALLY AT LEAST 6-FEET BEYOND THE EDGE OF SOFT MATERIAL) MAY BE COVERED WITH A BI-AXIAL GEOGRID AND COVERED WITH COMPACTED CRUSHED AGGREGATE.

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TYPICAL STREET SECTIONS

COBURN GRAND VIEW ESTATES

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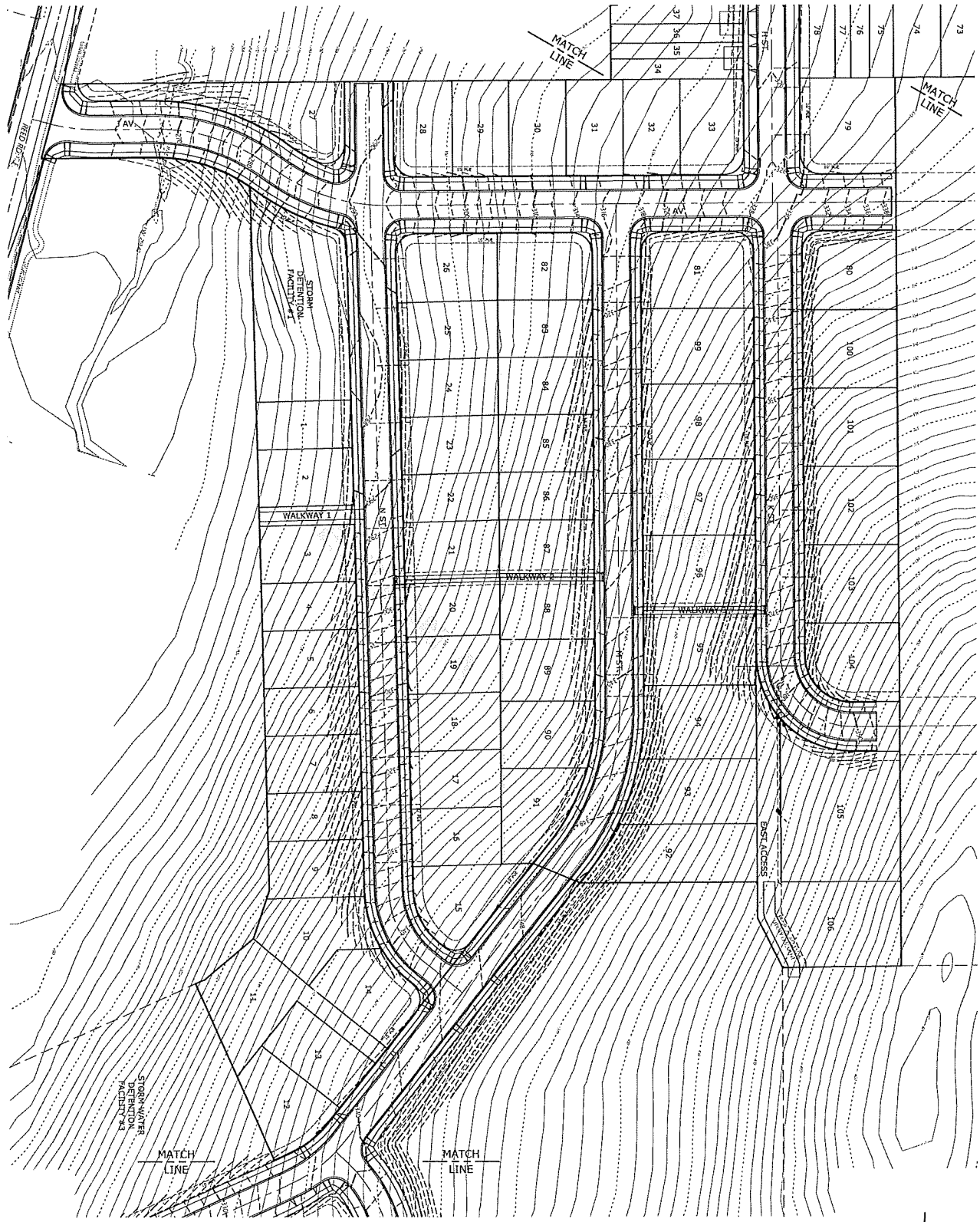
Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ____

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 10, 1979
MARK D. GRENZ

EXPIRES: 06-30-2021

JOB # 6234

P517



P602

Design: M.D.G.
Drawn: P.H.S.
Checked: J.J.G.
Date: JUNE 2018
Scale: AS SHOWN
As-Built: ----

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COBURN GRAND VIEW ESTATES

GRADING PLAN - CENTRAL -

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www.mtengineering.net office@mtengineering.net

Wetland Land Use Notice Response

Response Page

Department of State Lands (DSL) WN# *

WN2021-0561

Responsible Jurisdiction

Staff Contact	Jurisdiction Type	Municipality
Jason Valyou	City	Salem

Local case file #	County
21-103682-LD	Marion

Activity Location

Township	Range	Section	QQ section	Tax Lot(s)
08S	03W	12	B	1600

Street Address

4700 Battle Creek Road SE

Address Line 2

City

Salem

State / Province / Region

OR

Postal / Zip Code

97302

Country

Marion

Latitude	Longitude
44.891639	-123.008468

Township	Range	Section	QQ section	Tax Lot(s)
08S	03W	11	D	202,400,601

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

Latitude	Longitude
44.888536	-123.011734

Wetland/Waterway/Other Water Features

- [x] There are/may be wetlands, waterways or other water features on the property that are subject to the State Removal-Fill Law based upon a review of wetland maps, the county soil survey and other available information.

- [x] The National Wetlands Inventory shows wetland, waterway or other water features on the property

- [x] Local Wetlands Inventory shows wetland, waterway or other water features on the property

Your Activity

- [x] It appears that the proposed project **may** impact wetlands and **may** require a State permit.

- [x] An onsite inspection by a qualified wetland consultant is recommended prior to site development to determine if the site has wetlands or other waters that may be regulated. The determination or delineation report should be submitted to DSL for review and approval. Approved maps will have a DSL stamp with approval date and expiration date.

Applicable Oregon Removal-Fill Permit Requirement(s)

- [x] A state permit is required for 50 cubic yards or more of fill removal or other ground alteration in wetlands, below ordinary high water of waterways, within other waters of the state, or below highest measured tide.

Closing Information

Additional Comments

The majority of this site was responded to in 2019 under DSL File #WN2019-0517, which recommended a wetland delineation for the then-proposed 212-lot subdivision.

Based on the submitted site plan, the current proposed project ("177-lot phased subdivision") appears to impact jurisdictional waterways and/or wetlands, and may require a state permit. If 50 cubic yards (cy) or greater of impacts (fills, removals, or other ground alterations) are anticipated from the project, it is recommended that the applicant have the project areas assessed for jurisdictional wetlands and waterways by a qualified wetland professional prior to earth disturbance activities. A wetland delineation report should then be submitted to DSL for review and approval.

With an approved wetland delineation, the applicant may be able to demonstrate less than 50 cy of wetland impacts and qualify for a No State Permit required letter from DSL. The applicant may contact Carrie Landrum (503-986-5285) if they have any questions about the No State Permit required letter.

This is a preliminary jurisdictional determination and is advisory only.

This report is for the State Removal-Fill law only. City or County permits may be required for the proposed activity.

- [x] A Federal permit may be required by The Army Corps of Engineers: (503)808-4373

Contact Information

- For information on permitting, use of a state-owned water, wetland determination or delineation report requirements please contact the respective DSL Aquatic Resource, Proprietary or Jurisdiction Coordinator for the site county. The current list is found at: http://www.oregon.gov/dsl/ww/pages/wwstaff.aspx
- The current Removal-Fill permit and/or Wetland Delineation report fee schedule is found

at: https://www.oregon.gov/dsl/WW/Documents/Removal-FillFees.pdf

Response Date

6/9/2021

Response by:

Jessica Imbrie

Response Phone:

(503) 986-5250