February 16, 2023

ARCHITECTURE
COMMUNITY
363 State Street
Salem, OR 97301-3533
P: 503.581.4114
www.accoac.com

Bryce Bishop, Planner III
City of Salem Community Development Planning Division
555 Liberty St SE Room 305
Salem, OR 97301-3503

RE: 22-125120-PLN
Reid Saunders Association
3985 Lindburg Road SE
Salem, OR 97302

Dear Bryce:

We wish to express our appreciation for your timely review of the Construction Documents for Reid Saunders Association. Attached is your Plan Review Comments, and following are our proposed responses.

1. Application Fee:
    a. The posted fees have been paid by the owner.

2. Application Form:
    a. The land use application form has been revised with the request for the development to include a Class 2 Adjustment and a Class 2 Driveway Approach Permit. The Neighborhood Association, Salem-Keizer Transit contact and Homeowners Association portions of the form have been updated as well.

3. Proof of Signature Authority:
    a. Reid Saunders Association is not and LLC, but a non-profit organization, which Reid Saunders has the authority for signatures. See attached Articles of Incorporation which states this.

4. List of Organization Members:
    a. Reid Saunders Association is not and LLC, but a non-profit organization and therefore exempt from any conflicts of interest regarding land use actions.

5. Confirmation of Proposed Use:
    a. Confirmed, the proposed use of this development is office use.

6. Site Plan:
    a. A revised site plan is attached with dimensions to the property lines, refer to Sheet A1.1.

7. Elevations:
    a. Building elevations are attached, refer to Sheet A3.1.

8. Transit Improvements:
    a. Two Cherriots stops are now provided on the revised site plan. Refer to the attached Sheet A1.1.

9. Class 2 Adjustment Applications:
    a. Parking Lot Setbacks:
        i. See revised Class 2 Adjustment attached addressing parking lot setbacks.
    b. Landscape Strip Along Private Street:
        i. See revised Class 2 Adjustment attached requesting consideration under SRC 803.065.
    c. FAR and Lot Frontage:
        i. See revised Class 2 Adjustment attached addressing FAR and lot frontage.

10. Public Works Department Comments:
    a. Stormwater Management:
        i. See attached Stormwater Report by Westech Engineering.
    b. Driveway Approach Permit:
        i. The driveways are existing, no new permit shall be required.
    c. Public Utility Easement:
        i. The building has been moved so that it is outside of the PUE.

11. Additional Comments on Plan:
    a. The site plan on Sheet A1.1 has been updated to reflect the markups.

Once again, thank you for your review of the Construction Documents for Reid Saunders Association. We trust our responses to your Plan Review Comments will meet with approval. Please let us know if you have any further questions.

Sincerely,

Sarah Rose, AIA

Enc.
cc: Lisa Fordyce, lisa@reidsaunders.org ; Reid Saunders, reid@reidsaunders.org

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 3 Site Plan Review Class 2 Adjustment, Class 2 Driveway Approach Permit

Work site location and information

Street address or location of subject property	NW corner of Strong RD SE and Lindburg RD SE
Total size of subject property	1.2 acres
Assessor tax lot numbers	083W11AB02900
Existing use structures and/or other improvements on site	Vacant Lot
Zoning	FMU
Comprehensive Plan Designation	Mixed Use
Project description	Development of a new 9,000 square foot, two-story office building

People information

	Name	Full Mailing Address	Phone Number and Email address
Applicant	Reid Saunders Association	PO Box 4275 Salem OR 97302	503.851.7394 lisa@reidsaunders.org
Agent	SARAH ROSE	1100 LIBERTY ST SE STE 200 SALEM OR 97302	503.581.4114 srose@accoac.com
Paid By	MARIE JACOBSEN	AGENT	mjacobsen@accoac.com

Project information

Project Valuation for Site Plan Review	2,000,000.00
Neighborhood Association	
Have you contacted the Neighborhood Association?	◉ Yes ~~◉ No~~
Date Neighborhood Association contacted	12.29.22
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.)	see attached email correspondence
Have you contacted Salem-Keizer Transit? planning@cherriots.org	◉ Yes ○ No
Date Salem-Keizer Transit contacted	02.14.23
Describe contact with Salem-Keizer Transit	see attached email correspondence
Type the name and address of the Homeowners Association (If none, type "N/A".)	N/A

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: Reid Saunders

Print Name: REID SAUNDERS Date: 12-26-22

Address (include ZIP): PO BOX 4275, SALEM, OR 97302

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.

From: Sarah Rose
Sent: Thursday, December 29, 2022 12:25 PM
To: sidrakdragon@live.com; geoffreyjames@comcast.net
Cc: Blake Bural; Sarah Rose
Subject: New Class III Site Plan Review
Attachments: RSA Land Use Application-Executed.pdf; 2203-A1.1-SITE.pdf

Geoffrey and Pamela,
We are submitting a Class III Site Plan Review for a new development at the NW corner of Strong RD SE and Lindburg RD SE, see attached application and drawings as required to submit to you prior to approvals. The scope of this project is a new 9,000 square foot, two-story office building.

Thanks,

Sarah Rose, AIA, LEED AP BD+C
Architect

AC + Co Architecture | Community
1100 Liberty Street SE STE 200
Salem, OR 97302
P: 503.581.4114
www.accoac.com

ARCHITECTURE
COMMUNITY

earth WISE
CERTIFIED

From: Sarah Rose
Sent: Tuesday, February 14, 2023 3:27 PM
To: planning@cherriots.org
Cc: Bryce Bishop; Blake Bural; Sarah Rose
Subject: Cherriot Stops at 3985 Lindburg Rd SE
Attachments: 22-125120-PLN Completeness Review.pdf

Hi Jolynn,
Refer to the attached plan review comments regarding 3985 Lindburg Rd SE. The proposed approximate bus stop on Strong Rd indicated on page 8 of the completeness review puts a bus stop in a swale. According to our civil engineer, this is not possible for the street grading and drainage design. We could've made a stop work closer to the intersection and out of the swale, but not if two landing pads are required as the rear bus exit pad would still be in the swale. The notice says Cherriots is *requesting* two stops, does that mean we can comply without either, or just one along Lindburg? Or can we put the second stop on the south side of Strong where there are no swales to contest? What are our options here?

Thanks,

Sarah Rose, AIA, LEED AP BD+C
Architect

AC + Co Architecture | Community
1100 Liberty Street SE STE 200
Salem, OR 97302
P: 503.581.4114
www.accoac.com

ARTICLES OF INCORPORATION

OF

REID SAUNDERS EVANGELISTIC ASSOCIATION, INC.

An Oregon Non-Profit Corporation

Amended: April, 2013

The undersigned person of the age of eighteen years or more, acting as incorporator under Oregon Nonprofit Corporation Law, adopts the following Articles of Incorporation.

ARTICLE I.

Name

The name of this corporation is REID SAUNDERS EVANGELISTIC ASSOCIATION, INC.

ARTICLE II.

Type of Corporation

The type of corporation is Religious.

ARTICLE III.

Registered Agent and Registered Office

The registered agent for the corporation is George Price, and the address of the registered office in the state of Oregon is:

317 Court St. NE, Suite 203
Salem, Oregon 97301-3525

ARTICLE IV.

Incorporator

The name and address of the incorporator is:

Gerald E. Montgomery
9900 S.W. Greenburg Road. Suite 130
Portland, OR 97223

ARTICLE V.

Notices

The address which the Corporation Division may use for mailing notices, which address is also the principal place of business of the corporation, is:

Reid Saunders Evangelistic Association
PO Box 4275
Salem, OR 97302

ARTICLE VI.

Membership

This corporation shall not have members.

ARTICLE VII.

TAX EXEMPT STATUS

1. No part of the net earnings of the corporations shall inure to the benefit of or be distributable to, its members, directors, officers, or other private persons, except that the corporation shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in

furtherance of the purposes set forth in Article II hereof. No substantial part of the activities of the corporation shall be carrying on of propaganda, or otherwise attempting to influence legislation, and the corporation shall not participate in, or intervene in (including the publishing or distribution of statements) any political campaign on behalf of any candidate for public office.

ARTICLE VIII.

Initial Board of Directors

The number of initial directors constituting the Board of Directors of the corporation is four (4) and the names and addresses of the persons who are to serve as Directors until the first annual meeting or until their successors are elected by a majority of the Board of Directors and shall qualify are:

Reid D.C. Saunders
9008 N.E. Hassalo, Apt. A
Portland, Oregon 97220

Paul R. Petersen
8527 N.E. Pacific Street
Portland, Oregon 97220

Don Rhodes
18164 Pioneer Court
Lake Owego, Oregon 97034

Dan Nordstrom
120 Nordstrom Lane
Kelso, WA 986226

Each director named has consented to this appointment.

ARTICLE IX.

Purpose

The purposes for which the corporation is organized are:

1. Christian Evangelism: and

2. For any other purposes which are not for profit and are exclusively for civic, charitable, religious, educational and scientific purposes as defined under 501 (c) (3) of the Internal Revenue Code of 1986, as amended. In furtherance of these objects and purposes, the corporation any also engage in any lawful activity for which corporations may be organized under Chapter 65 of the Oregon Revised Statutes, none of which shall be inconsistent with Section 501 (c) (3) of the Internal Revenue Code of 1986, as amended, and shall have all the rights, powers and privileges now conferred or hereafter granted to non-profit corporations under the laws if the State of Oregon.

ARTICLE X.

Election of Board of Directors

The new Board of Directors shall be elected at one of four quarterly meetings by the existing Board of Directors for a term of three years. After one term, board members may have the opportunity to be elected to a second term. After serving two terms (six years) a mandatory one year leave is required. The President and Executive Director are excluded from the mandatory leave requirement.

ARTICLE XI.

Liability

No director or uncompensated officer shall be personally liable to the corporation or its members, if any, for monetary damages for conduct as a directors or uncompensated officer, provided that this Article shall not eliminate or limit the liability of a director or uncompensated officer for:

1. Any breach of the duty of loyalty of the director or uncompensated officer to the corporation or its members, if any;

2. Acts or omissions not in good faith or which involved intentional misconduct or knowing violation of the law;

3. Any unlawful distribution of corporate assets; or

4. Any transaction from which the director or uncompensated officer derived an improper personal benefit.

ARTICLE XII.

Indemnification

1. To the extent its assets, the corporation shall indemnify any Board member or officer or former Board member or officer of the corporation against claims, liabilities, expenses and costs necessarily incurred by such person in connection with the defense, compromise or settlement of any action, suit or proceeding, civil or criminal, in which such person is made a party by reason of

being or having been such director or officer, except in relation to matters as to which such person shall be adjudged in such action, suit or proceeding to be liable for misconduct in the performance of duty to the corporation, to the extent not otherwise compensated, indemnified or reimbursed by insurance.

2. The corporation may also advance expenses or reimburse reasonable expenses incurred by director or officer who is a party to a proceeding in advance of the final disposition of the proceeding if:

(a) The director or officer furnishes the corporation a written affirmation of the director or officer's good faith belief that the director of officer has met the standard of conduct described in ORS 65.391; and

(b) The director or officer furnishes the corporation a written undertaking, executed personally or on the director's or officer's behalf, to repay the advance if it is ultimately determined that the director or officer did not meet the standard of conduct.

ARTICLE XIII.

Administrative and Financial Provisions

1. Fiscal Year. The fiscal year of the Corporation shall end on the last day of December

2. Seal. The Corporation shall have no seal.

3. Books and Records. The Corporation shall keep current and complete books and records of account and shall keep minutes of meetings of the Board of Directors.

4. Amendments to Articles of Incorporation. These Articles of Incorporation may be altered, amended or repealed by the Board of Directors at a regular scheduled Board meeting.

5. Rules of Procedure. The rules of procedure at meetings of the Board of Directors of the Corporation are contained in Roberts' Rules of Order on Parliamentary Procedure, as amended, so far as applicable and when not inconsistent what these Bylaws, the Articles of Incorporation, and resolution of the Board of Directors or pertinent statutes of the State of Oregon.

6. President and Executive Director. The President and Executive Director shall be hired by the Board. The terms and conditions shall be set by the Board.

7. Earnings. No part of the net earnings of the organization shall inure to the benefit of, or be distributable to, directors, or other private persons, except that the corporation shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of the purposes set forth. No substantial part of the activities of the corporation shall be the carrying on of propaganda, or otherwise attempting to influence legislation, and the corporation shall not participate in, or intervene in (including the publishing or distribution of statements) any political campaign on

behalf of or in opposition to any candidate for public office. Notwithstanding any other provision of these articles, the corporation shall not carry on any other activities not permitted to be carried on:

(a) by a corporation exempt from federal income tax under section 501 (c)(3) of the Internal Revenue Code, or corresponding section of any future federal tax code; or

(b) by a corporation, contributions to which are deductible under section 170(c)(2) of the Internal Revenue Code, or corresponding section of any future federal tax code.

8. Investments. The Corporation shall have the right to retain all or any part of any securities or property acquired by it in whatever manner, and to invest and reinvest any funds held by it, according to the judgment of the Board, without being restricted to the class of investments which a Board member is or may hereafter be permitted by law to make or any similar restriction; provided, however, that no action shall be taken by or on behalf of the Corporation if such action is a prohibited transaction or would result in the denial of the tax exemption under Section 501 (c)(3) of the Internal Revenue Code and its Regulations as they now exist, or as they may hereafter be amended.

(a) Nondiscriminatory Policy. The corporation's programs shall serve persons of any sex, race, color, national and ethnic origin and all persons are entitled to the same rights, privileges, programs, and activities generally accorded or made available to persons served by the corporation's programs.

The corporation does not discriminate on the basis of sex, race, color, national and ethnic origin in administration of its policies or programs.

ARTICLE XIV.

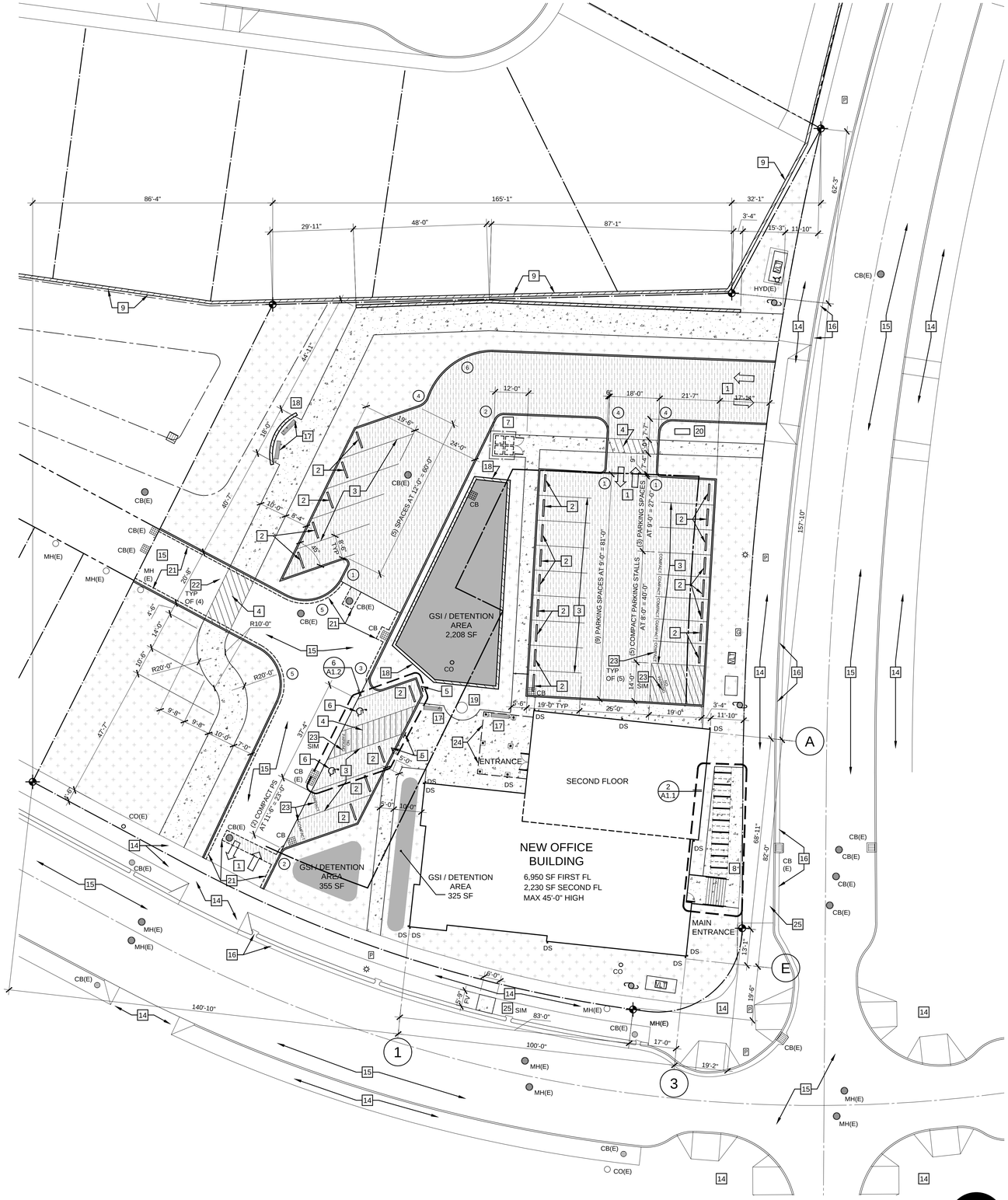
Dissolution

1. Upon the dissolution of the Corporation, assets shall be distributed to an organization having purposes similar to Reid Saunders Evangelistic Association, Inc. and which is qualified under 501 (c)(3) of the Internal Revenue Code of 1986, as amended, for one or more exempt purposes within the meaning of 501(c)(3) of the Internal Revenue Code 1986, as amended, or corresponding section of any future federal tax code, or shall be distributed to the federal government, or to a state or local government, for a public purpose. Any such assets not so disposed of shall be disposed of by the Circuit Court of the country in which the principal office of the corporation is then located, exclusively for such purposes or to such organization or organizations, as said Court shall determine.

I hereby certify this to be a true and accurate copy.

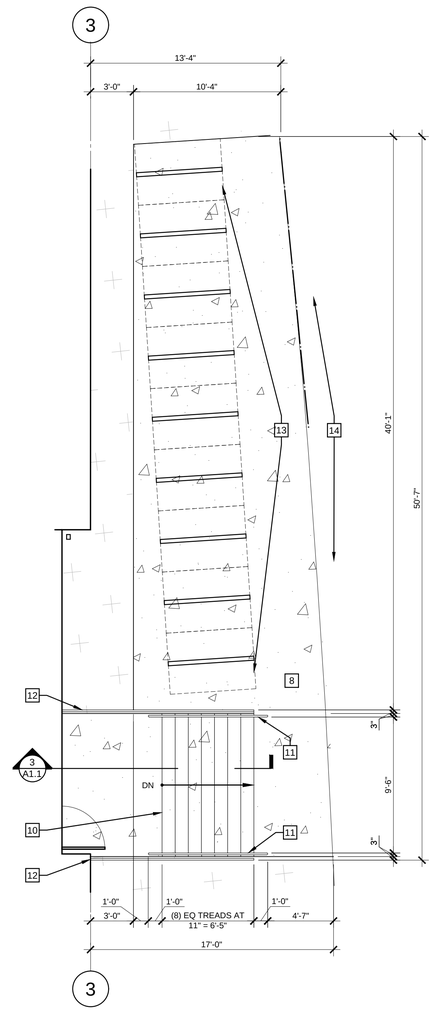
Ruth Daniels
Secretary

May 29, 2013
Date



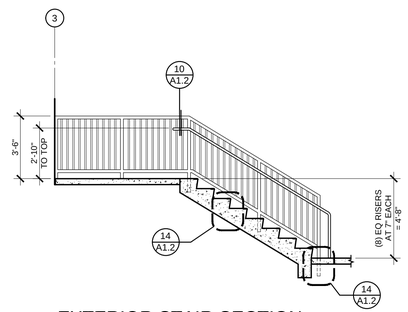
1 SITE PLAN

SCALE: 1"=20'-0"



2 ENLARGED BIKE RACK PLAN

SCALE: 1"=10'-0"



3 EXTERIOR STAIR SECTION

SCALE: 1/4" = 1'-0"

2203-A1.1-03

GENERAL NOTES:

1. GENERAL NOTES APPLY TO ALL DRAWINGS.
2. DIMENSIONS ARE TO EXISTING FACE OF WALL, FACE OF NEW FRAMING, AND FACE OF EXISTING CONCRETE UNLESS NOTED OTHERWISE.
3. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOULD NOT BE SCALED. NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES OR QUESTIONABLE DIMENSIONS PRIOR TO PROCEEDING WITH AREA OF QUESTIONABLE WORK.
4. IN CASE OF ANY CONFLICTS IN THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR IS REQUIRED TO INCLUDE THE BETTER QUALITY AND LARGER QUANTITY OF THE WORK.
5. CONTRACTOR AND BIDDERS SHALL USE COMPLETE SETS OF CONTRACT DOCUMENTS; NEITHER THE OWNER NOR ARCHITECT ASSUMES RESPONSIBILITY FOR ERRORS OR MISINTERPRETATIONS RESULTING FROM THE USE OF INCOMPLETE SETS OF CONTRACT DOCUMENTS.
6. COORDINATE AND PROVIDE WOOD BACKING FOR ALL OFCI ITEMS

REFERENCE NOTES:

1. NEW PAINTED ARROW MARKINGS (1 / A1.2)
2. NEW CONCRETE WHEELSTOP (2 / A1.2)
3. NEW 4" PAINTED PARKING STRIPE
4. NEW 4" PAINTED PARKING SAFETY STRIPES AT 2'-0" o.c.
5. NEW HANDICAP ACCESSIBLE PARKING SIGN (7 / A1.2) (8 / A1.2)
6. NEW PAINTED HANDICAP SYMBOL (5 / A1.2)
7. NEW CONCRETE PAD FOR TRASH BINS, PROVIDE A 6'-0" HIGH CEDAR FENCE WITH GATE
8. NEW DEDICATED BICYCLE PARKING AREA
9. EXISTING RETAINING WALL TO REMAIN, PROTECT AT ALL TIMES
10. NEW CONCRETE STAIR, REFER TO CIVIL DRAWINGS (15 / A1.2)
11. NEW GALVANIZED METAL HANDRAIL (9 / A1.2)
12. NEW GALVANIZED METAL GUARDRAIL (10 / A1.2)
13. NEW BIKE RACK (11 / A1.2) (12 / A1.2)
14. EXISTING CONCRETE SIDEWALK TO REMAIN
15. EXISTING ASPHALT TO REMAIN
16. EXISTING GUTTER TO REMAIN
17. NEW OFCI BENCH
18. NEW RETAINING WALL, REFER TO CIVIL DRAWINGS
19. NEW OFCI WATER FEATURE AND BOLDER, REFER TO LANDSCAPE DRAWINGS
20. NEW IRRIGATION DCA, REFER TO LANDSCAPE DRAWINGS
21. EXISTING ASPHALT TO BE SAWCUT AND REMOVED FOR UTILITY CONNECTION AND NEW CURB CONSTRUCTION. INFILL WITH NEW ASPHALT TO MATCH EXISTING, REFER TO CIVIL DRAWINGS.
22. NEW 8'-0" LONG SPEED BUMP, REFER TO CIVIL DRAWINGS
23. NEW 12" TALL PAINTED LETTERING, 'COMPACT'. AT SIM CONDITION, 'NO PARKING'
24. NEW STEEL CANOPY, REFER TO STRUCTURAL DRAWINGS
25. NEW LOCATION FOR BUS TRANSIT STOP, AT SIM CONDITION PROVIDE A 6'-0" WIDE BRIDGE OVER SWALE OF PERVIOUS MATERIAL

SITE LEGEND

- NEW CONCRETE PAVEMENT, REFER TO CIVIL DRAWINGS
- NEW A. C. PAVEMENT, REFER TO CIVIL DRAWINGS
- NEW LANDSCAPED AREA, REFER TO LANDSCAPE DRAWINGS
- NEW GSI / DETENTION AREA, REFER TO CIVIL DRAWINGS
- EXISTING CURB TO REMAIN, REFER TO CIVIL DRAWINGS
- NEW CONCRETE CURB, REFER TO CIVIL DRAWINGS (4 / A1.2)
- PROPERTY BOUNDARY
- NEW CONCRETE PAVEMENT JOINT (3 / A1.2)
- C.O. NEW CLEAN OUT, (E) DESIGNATES EXISTING TO REMAIN, REFER TO CIVIL DRAWINGS
- M.H. NEW MAN HOLE, (E) DESIGNATES EXISTING TO REMAIN, REFER TO CIVIL DRAWINGS
- DS NEW DOWN SPOUT, REFER TO CIVIL DRAWINGS
- CB NEW CATCH BASIN, (E) DESIGNATES EXISTING TO REMAIN, (D) DENOTES TO BE REMOVED, REFER TO CIVIL DRAWINGS
- WM NEW WATER METER, (E) DESIGNATES EXISTING TO REMAIN. REFER TO CIVIL DRAWINGS
- HYD NEW FIRE HYDRANT (E) DESIGNATES EXISTING TO REMAIN, REFER TO CIVIL DRAWINGS
- EXISTING POWER POLE TO REMAIN
- EXISTING ELECTRICAL BOX TO REMAIN
- EXISTING POWER JUNCTION BOX TO REMAIN
- EXISTING LIGHT POLE TO REMAIN
- NEW SIGN, (E) DENOTES EXISTING TO REMAIN

CURB RADII:

(1) 2'-0"	(4) 5'-0"
(2) 3'-0"	(5) 15'-0"
(3) 4'-0"	(6) 25'-0"

CONSTRUCTION DOCUMENTS

NOT FOR CONSTRUCTION

AC+Co ARCHITECTURE | COMMUNITY JAN 30, 2023

JOB NO. 2022.0003

DATE JAN 30, 2023

DRAWN SR

REVISIONS

ARCHITECTURE
COMMUNITY
1100 Liberty St SE, Suite 200
Salem, OR 97302-5385
P: 503.581.4114
www.acccoac.com

REID SAUNDERS

3985 LINDBURG RD SE
SALEM, OREGON 97302

SHEET

A1.1

ELEVATION REFERENCE NOTES:

1. OFCI SIGNAGE, COORDINATE SIZE AND LOCATION WITH OWNER
2. WINDOW PER PLAN
3. STEEL CANOPY, PAINT, REFER TO STRUCTURAL
4. FIBER CEMENT TRIM, PAINT
5. HORIZONTAL FIBER CEMENT LAP SIDING, PAINT
6. STANDING SEAM METAL ROOF
7. FIBER CEMENT FASCIA, PAINT
8. COLUMN PER STRUCTURAL, PAINT
9. STONE VENEER, STEP WITH GRADE
10. STONE SILL
11. PRE-FINISHED PARAPET FLASHING CAP FLASHING
12. DOOR PER PLAN
13. PRE-FINISHED SHEET METAL GUTTER AND DOWNSPOUT, AT SIM CONDITION, DAYLIGHT ONTO LOWER ROOF
14. METAL BUILDING ADDRESS NUMBER; 12" HEIGHT, REFER TO SPECIFICATIONS
15. PARAPET BEYOND
16. VERTICAL BOARD AND BATTEN SIDING, PAINT

GENERAL NOTES:

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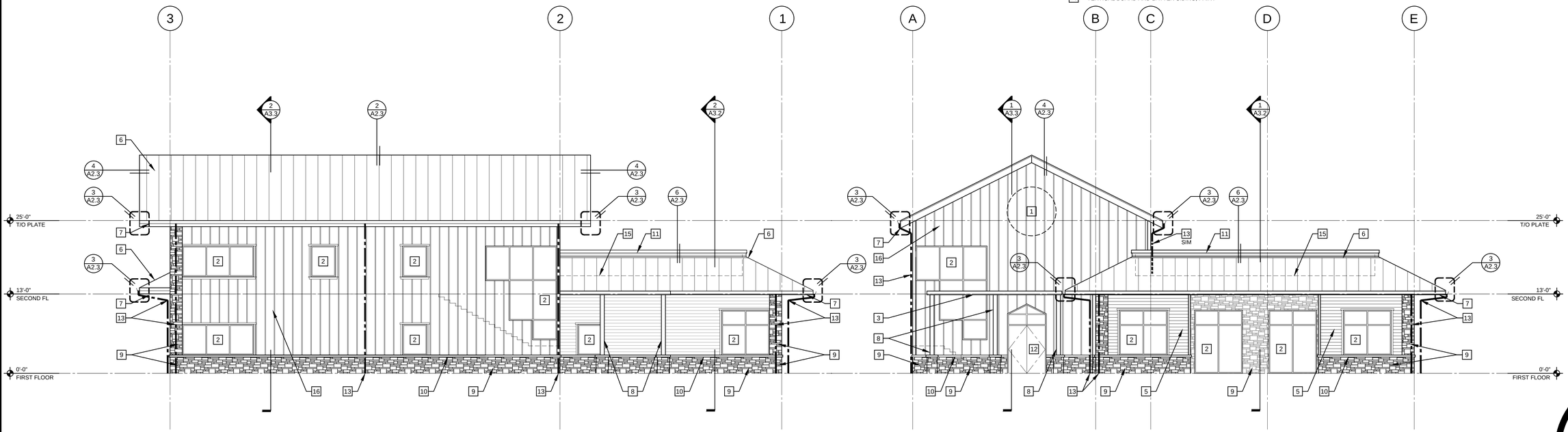
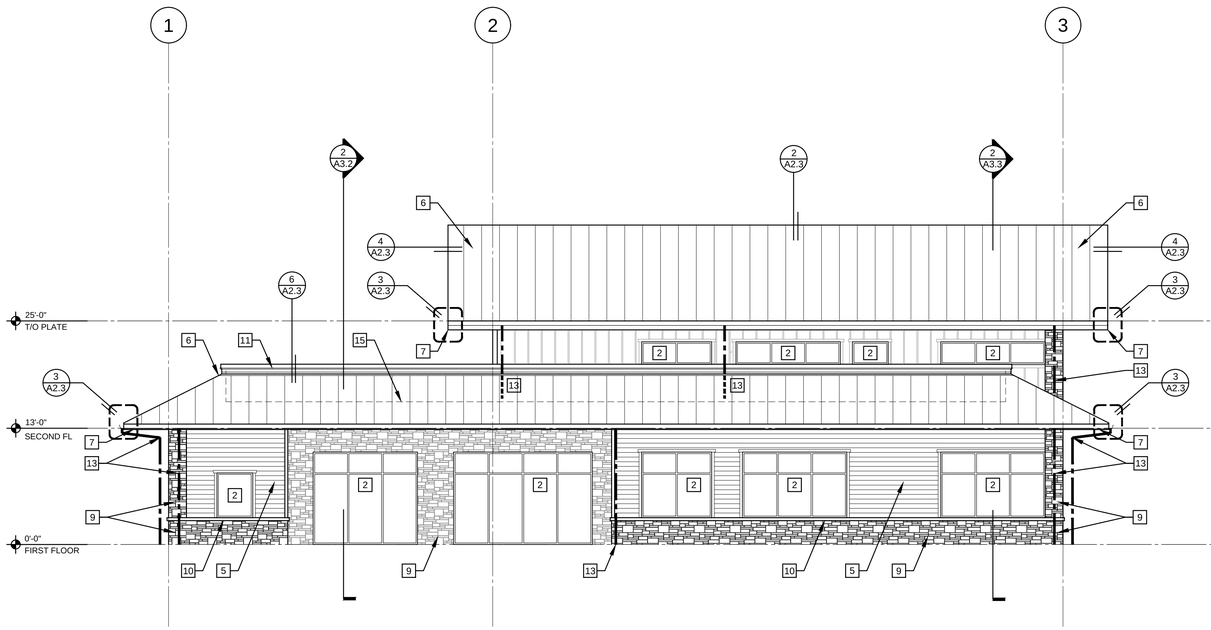


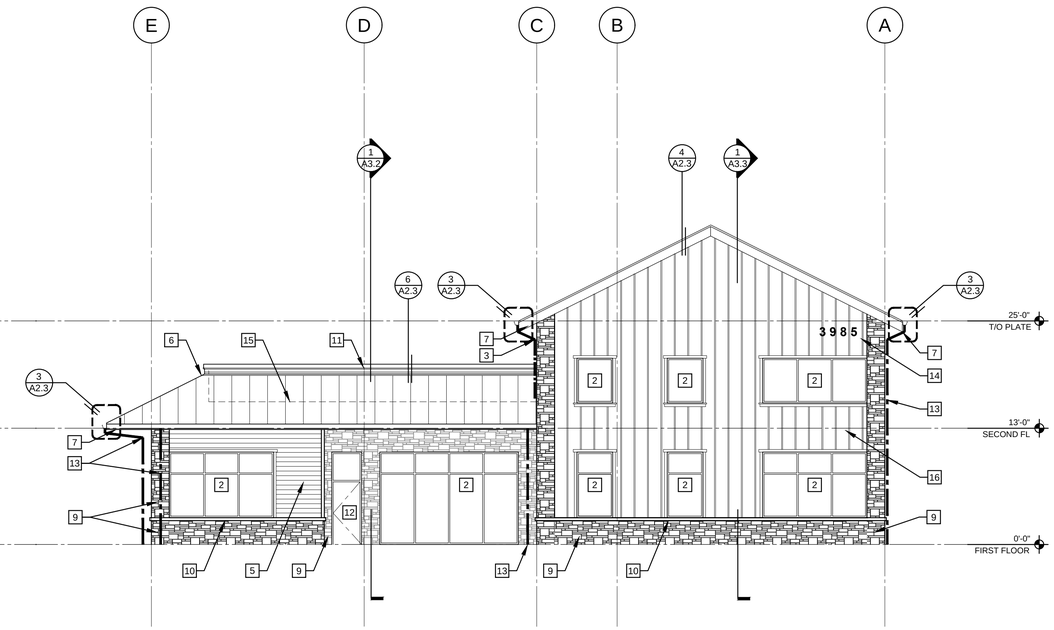
1 NORTH EXTERIOR ELEVATION

SCALE: 1/8" = 1'-0"



2 WEST EXTERIOR ELEVATION

SCALE: 1/8" = 1'-0"



3 SOUTH EXTERIOR ELEVATION

SCALE: 1/8" = 1'-0"

4 EAST EXTERIOR ELEVATION

SCALE: 1/8" = 1'-0"

CONSTRUCTION DOCUMENTS

NOT FOR CONSTRUCTION

AC+CO ARCHITECTURE | COMMUNITY — JAN 30, 2023

In the event conflicts are discovered between the original signed and sealed documents prepared by the Architects and/or their Consultants, and any copy of the documents transmitted by mail, fax, electronically or otherwise, the original signed and sealed documents shall govern.

JOB NO. 2022.0003

DATE JAN 30, 2023

DRAWN CJA

REVISIONS

ARCHITECTURE
COMMUNITY
1100 Liberty St SE, Suite 200
Salem, OR 97302-5385
P: 503.581.4114
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REID SAUNDERS

3985 LINDBURG RD SE
SALEM, OREGON 97302

SHEET

A3.1

Feb 16, 2023

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363 State Street
Salem, OR 97301-3533
P: 503.581.4114
www.accoac.com

Planning Manager
City of Salem Community Development Planning Division
555 Liberty St SE Room 305
Salem, OR 97301-3503

RE: Reid Saunders Association
Strong Rd SE & Lindburg Rd SE
Salem, OR 97302

To Whom it May Concern:

Our written statement to criteria found in SRC 250.005, d, 2 is as follows:

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.

   a. Answer (Adjustment 1 Request: Setbacks):
      i. Given the existing lot and its physical constraints our office does not believe the required 10'-20' setback to private drive and property lines can be obtained in all areas of the site. We have provided this along the east and south facades, although due to the site irregular shape and the planned private drive, this is unattainable on the north and west facades. Along the west, the private drive is between 22' to 59' from the façade. Along the north, the façade is 95' to 100' from the property line. To provide a building that would comply with this standard is impossible on the north because the site is bisected with the private drive. Due to the angle of the private drive and location on the site, a building that would comply with the standard on the west would be an irregular shaped building with non-traditional construction, and therefore, detracting from the intent of the standard. We feel the proposed development equally or better meets the intent of the setback requirements rather than an irregular and massive building on the site.

      ii. Due to the angled private drive, the 20' minimum required setback from parking lots abutting streets cannot be met. There is not adequate room on the site to accommodate this setback along the private drive nor Lindburg Rd. There is a pinch point due to the angled private drive that the parking cannot accommodate. We have gotten the surface parking lot 20'-0" from the private road; however, the constraints of the site limit us to not be able to achieve 20'-0" from the right-of-way, which is inclusive of the entire street section of landscape strips and sidewalks. We believe our proposed development meets the intent of the setback requirements because the areas between the road and parking area are heavily landscaped and will provide visual screening of the parking lot, which will offset the reduced setback depth.

b. Answer (Adjustment 2 Request: Frontage): Due to the extensive frontage of this corner lot, a building that would comply with the frontage requirement of 70% along Strong Road SE and Lindburg Road SE is unfeasible. The building would need to be disproportionately long and narrow to meet this standard. This also would create additional site disturbance than necessary. The site is also bisected along both frontages with the private drive, making frontage unachievable. We have provided 37% frontage along Strong Rd SE and 25% frontage along Lindburg Road SE. We are proposing a building that has a first floor building height of at least 14 feet. We are providing large ground floor windows facing Strong Rd and Lindburg Road, totaling 41% of the façade. We are providing a primary building entrance adjacent to the intersection of Strong Road and Lindburg Road. We are also providing large overhanging soffits around the first floor building area and a canopy in the entry adjacent the surface parking lot and ADA stalls. These building elements we believe will offset the smaller sized building and reduced lot frontage by ensuring that those portions of the building which do occupy the required setbacks along the public street are designed to visually reinforce and support an active and inviting pedestrian environment at the intersection of Strong Road and Lindburg Road, which is the key most prominent and significant street intersection within the Fairview Training Site located in the core of the Village Center area. We feel we have met the intent of the standard to the best of our ability given the restrictions of the site.

c. Answer (Adjustment 3 Request: FAR): Due to the large area of the site, a building that would meet the standard floor area ratio requirement of 0.75 would be enormous. This standard would require a 40,000 square foot building on the site. Also, because of the private drive, landscaping and sidewalk requirements and GSI detention, there is no room left on the site for a building this size. We have provided a 9,000 square foot building in a 52,093 square foot lot, resulting in a FAR of 0.17. We are deficient to the standard by 0.58. We believe a building meeting this standard would be infeasibly large and would result in failing all other required standards. We are proposing a building that has a first floor building height of at least 14 feet. We are providing large ground floor windows facing Strong Rd and Lindburg Road, totaling 41% of the façade. We are providing a primary building entrance adjacent to the intersection of Strong Road and Lindburg Road. We are also providing large overhanging soffits around the first floor building area and a canopy in the entry adjacent the surface parking lot and ADA stalls. These building elements we believe will offset the smaller sized building and reduced lot frontage by ensuring that those portions of the building which do occupy the required setbacks along the public street are designed to visually reinforce and support an active and inviting pedestrian environment at the intersection of Strong Road and Lindburg Road, which is the key most prominent and significant street intersection within the Fairview Training Site located in the core of the Village Center area. Therefore, we believe our proposed development equally or better meets the intent of this standard rather than a building that completely covers the site.

d. Answer (Request for consideration under SRC 803.065 – Alternative street standards: Street Cross Section): The development standard requires a 10’ wide multi-use path on one side of the private drive, a 5’ wide sidewalk on the other side of the private drive, and a 7’ wide landscape strip on both sides of the private drive separating the walkways from the street. We have met this standard

in almost all places of the site with the exception of the small area adjacent the ADA parking. There is about a 20' length of sidewalk that does not allow for a 7' wide landscape buffer between the walkway and the private drive street parking. This is due to site grades for providing adequate GSI detention on the site, as well as providing a connection from the ADA parking stall to access the sidewalk and building. Because of the site constraints we request to be considered under SRC 803.065 for an alternative street standard.

B. *If located within a residential zone, the proposed development will not detract from the livability or appearance of the residential area.*

a. Answer: Not applicable, the proposed development is not within a residential zone. Note, the FMU zone this and adjacent properties is within does support residential uses. The proposed development will not detract from the livability and appearance of the 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.*

a. Answer: Yes, the cumulative effect of all of the requested adjustments will result in a project that is still consistent with the intent of the FMU zone. The requested adjustments will not detract from the intent and overall purpose of the zone.

Thank you for taking the time to review our statement. Feel free to reach out if you have any questions.

Sincerely,

Sarah Rose, AIA

Enc.

cc: Lisa Fordyce, lisa@reidsaunders.org
Reid Saunders, reid@reidsaunders.org

STORMWATER CALCULATIONS

Prepared For:

Reid Saunders

1790 16th Street SE #201

Salem, OR 97302

Project:

Reid Saunders - New Office

Strong Road SE and Lindburg Road SE

Salem, OR 97302

Prepared By:

Westech Engineering, Inc.
3841 Fairview Industrial Drive SE, Suite 100
Salem, OR 97302
(503) 585-2474 FAX: (503) 585-3986

J.O. 3391.0000.0

March 2023

TABLE OF CONTENTS

LIST OF TABLES

Table **Page**

APPENDICES

PROJECT OVERVIEW & DESCRIPTION

SECTION 1

1.1 SIZE & LOCATION OF PROJECT

The proposed commercial development project is located on a 1.20-acre lot. The property is located at the intersection of Strong Road SE and Lindburg Road SE, in Salem, Oregon. Refer to the Civil Drawings for a site map of the project area.

1.2 BRIEF DESCRIPTION OF PROJECT SCOPE AND PROPOSED IMPROVEMENTS

The project scope is to develop the remainder of the lot for commercial use with construction of a parking lot, new office building, and associated improvements. The project includes site preparation and construction of the facilities.

1.3 DESCRIPTION OF SIZE OF WATERSHED DRAINING TO THE SITE

The proposed stormwater facilities receive runoff from a 35,500 square foot area on-site. Approximately 3,160 square feet of new impervious area will not drain to the proposed stormwater facilities due to site constraints. Therefore, we are proposing to overdetain to mitigate this portion of undetained runoff. No additional drainage area drains to the project site.

1.4 DESCRIPTION OF THE EXISTING SITE CONDITIONS, TREES & NATIVE VEGETATION, CONSTRAINTS, SENSITIVE AREAS & WATERWAYS

The existing site is primarily covered in grass with an existing building on site. The existing site does not contain any trees. Please refer to the Basin Maps in Appendix A for more details. Stormwater from the site will drain to the proposed stormwater facility.

1.5 SUMMARY OF GREEN STORMWATER INFRASTRUCTURE

Per Appendix 4E of the City of Salem (COS) Design Standards, a large project will be considered to have met the maximum extent feasible (MEF) requirement when the stormwater runoff from the total amount of new plus replaced impervious surfaces flows into an area set aside for GSI that is at least 10% of the total area of the new plus replaced impervious surfaces or at least 80% of all impervious area must be treated by GSI. This design implements GSI for the entire project impervious area and therefore meets MEF for GSI.

1.6 REGULATORY PERMITS REQUIRED

City of Salem permits are required. No other permits are required for this project.

1.7 100 YEAR STORM ESCAPE ROUTES

Flows exceeding the 100-year storm (emergency overflow) will be routed through the 24-inch wide weir opening in the top of the Type III Flow Control Catch Basin.

METHODOLOGY

2.1 DEPTH TO GROUNDWATER

Per the Geotechnical Report in Appendix D groundwater was encountered at a depth of 15-30 feet below ground surface during field explorations. The proposed stormwater rain garden has drain rock to an elevation of 247.25', which is 7.75 feet below ground surface and therefore conforms to the COS Design Standards requirement of 3 feet of separation from groundwater.

2.2 MAXIMUM INFILTRATION AND VEGETATIVE TREATMENT

Per the attached Geotechnical Reports, the measured infiltration rate onsite is 0.2 inches per hour near the location of the raingarden. The design infiltration rate for the stormwater infiltration facility was determined based on the adjacent measured infiltration rate. A design infiltration rate of 0.1 inches per hour is used for stormwater calculations for the raingarden.

The proposed stormwater design will treat and detain the entire site's impervious area with one raingarden, therefore GSI has been implemented to the maximum extent feasible.

2.3 SOIL INFORMATION

The pre-developed project site contains primarily hydrologic soil group C/D soils. Hydrologic group D-rated soils were used for analysis. Refer to the Soils Report in Appendix B for more details.

2.4 HAZARDOUS MATERIAL

The owner is not aware of any hazardous material contamination onsite.

ANALYSIS

3.1 METHODS & SOFTWARE USED

HydroCAD modeling software was used to size the stormwater facilities. The Santa Barbara Unit Hydrograph Type 1A storm was used to model the required design storms. Per the City of Salem Design Standards, the design storms used were the 1.38-inch, 24-hour (water quality storm), half the 2-year, 24-hour, the 10-year, 24-hour, the 25-year, 24-hour, and the 100-year, 24-hour storm events.

Table 1 | City of Salem 24-hour Design Storms

	24-Hour Rainfall Depths for Salem, OR						
Recurrence Interval, Years	WQ	2	5	10	25	50	100
24-Hour Depths, Inches	1.38	2.2	2.7	3.2	3.6	4.1	4.4

Source: City of Salem Administrative Rules Chapter 109 – Division 004 Appendix D

3.2 CURVE NUMBER AND TIME OF CONCENTRATION CALCULATIONS

Per the COS Design Standards, the pre-developed site was covered in a combination of woods and grass, which corresponds to a pre-developed curve number of 79 for hydrologic soil group D-rated soils.

The developed impervious areas were assigned a curve number of 98. The impervious areas were assigned a curve number of 98 which corresponds paved areas.

Time of concentration (Tc) for the pre-developed conditions was calculated to be 35.5 minutes using the sheet flow equation. See the Pre-Developed Basin Map in Appendix A for the flow path used and refer to the HydroCAD Summaries in Appendix C for calculations. A minimum time of concentration (Tc) of 5 minutes is applied to the developed basins due to the minimum time-step used by the HydroCAD modeling software.

3.3 TREATMENT & FLOW CONTROL SIZING CALCULATIONS

The site was analyzed as one (1) basin for predeveloped and developed stormwater calculations. General basin characteristics of both pre-developed and developed conditions are listed in Table 2. For more detail refer to the Basin Maps in Appendix A and the Civil Drawings.

Table 2 | General Basin Characteristics

Basin ID	Source (Roof/Road/ Other)	Impervious Area (sf)	Pervious Area (sf)	Design Storms				CN[1]	Tc (min)
				½ 2 Year (cfs)	10 Year (cfs)	25 Year (cfs)	100 Year (cfs)		
Predeveloped	Native	-	35,500	0.025	0.15	0.19	0.28	79	35.5
Developed	Paved/Roof/ Landscape	26,400	9,100	0.14	0.52	0.59	0.75	93	5.0

[1] Curve numbers listed for the impervious / pervious areas in the basin

Stormwater is released from the RG by exfiltration into the subsoils and a Flow Control Catch Basin. See Table 3 below for a summary of facility release rates for the RG. Refer to the Civil Drawings for details.

Table 3 | Summary of Facility Outlet Sizing and Release Rates – RG

Outlet ID/ Storm Event	Orifice Size (in)	Orifice Elevation (ft)	Release Rate (cfs)	Peak WSE[1] (ft)	Overflow Elevation (ft)	Infiltration Rate (in/hr)
Half 2 Year	1.0	250.5	0.02	250.99	254.33	0.1
WQ	-	-	0.03	251.55	254.33	0.1
10 Year	2.1	251.0	0.15	252.14	254.33	0.1
25 Year	3.0	252.6	0.17	252.39	254.33	0.1
100 Year	24	252.8	0.24	252.78	254.33	0.1

[1] WSE = water surface elevation

The RG has been sized to drain the water quality storm below the growing media in 22 hours from the start of the event, which is less than the required 54 hours per the COS Design Standards. See the HydroCAD Summaries in Appendix C for drain time during the water quality storm.

As noted above the developed release from the site is less than or equal to that of the predeveloped release for all design storms.

A summary of the rain garden geometry and required drain rock is provided in Table 4 below. Please note that the RG requires drain rock with areas shown in Table 4 (and denoted on the Civil Drawings) to detain and control the design storms in conformance with COS standards.

Table 4 | Facility Sizing Summary – RG 1

Facility ID[1]	Facility Elevations[2] (ft)		Facility Surface Area[2] (SF)		Required Drain Rock Surface Area (SF)	Depth of Drain Rock (in)
	Top	Bottom	Top	Bottom		
RG	254.33	251.0	1,640	700	1,640	24

[1] All facilities are privately owned and maintained stormwater GSI facilities.
[2] The top facility elevation and corresponding square footage area refer to the top of the 3:1 slope. The bottom elevation and corresponding square footage area refer to the bottom of the 3:1 slope.

The HydroCAD modeled release rates and water surface elevations (WSE) shown in Table 3 assume free-flow though the rain garden growing media. Release from the rain garden facility can also be controlled by the filtration capacity of the growing media. To verify the entire WQ storm event is filtered through the growing media for treatment, the rain garden hydraulics were also modeled at the facility surface with an assumed filtration rate of 2 in/hr per COS Design Standards. The surface tests were calculated using Darcy's Law of hydraulic conductivity with the groundwater elevation set 1.5 feet below the surface to represent the 1.5 feet (18 inches) of growing media thickness per COS Design Standards. The rain gardens provide treatment for the entire developed basin. See the HydroCAD analysis in Appendix C for surface test calculations.

Table 5 | Surface Filtration Test Summary – WQ Storm

Facility ID[1]	Facility Bottom Elevation (ft)	Max. Treatment Elevation[2]	WSE (ft)
RG	251.0	251.6	251.55

[1] The facility is a privately owned and maintained rain garden
[2] Elevation at which water overtops the 24-inch Beehive Inlet Control Catch Basin within rain garden.

3.4 CONVEYANCE CAPACITY CALCULATIONS

Per the COS Design Standards for sites less than 50 acres, the stormwater facilities were designed to convey the developed 100-year, 24-hour storm which has a total peak flow of 0.24 cfs released from the RG. The 100-year. Stormwater runoff is conveyed from the rain garden by an 8-inch pipe. See the Civil Drawings for more detail. The 8-inch pipe has a full-flow capacity of 0.57 cfs using a minimum slope of 0.5%.

3.5 SUMMARY

The stormwater system has been designed to release half the 2-year, 24-hour, the 10-year, 24-hour, the 25-year, 24-hour, and the 100-year, 24-hour storm events at rates less than their respective pre-developed storm. The proposed design also treats the water quality storm in less than the required 54 hours from the start of the storm event. Therefore, the project meets the flow control and treatment requirements as set forth in Administrative Rule 109 Division 004 - Stormwater System.

APPENDIX A

BASIN MAPS

Predeveloped Basin Map

EROSION CONTROL LEGEND
SILT SACK
BIO–BAG
SILT FENCE
DEMOLITION LEGEND
(R) REMOVE
(P) PROTECT
(S) SAWCUT

0 10 20 40
(feet)

Predeveloped Basin:
Total Area = 35,500 SF

Flow Path:
L = 250 FT
S = 3.2%

LEGACY HEIGHTS, VOLUME H48, PAGE 90, BOTP
LOT 18 · LOT 19 · LOT 20 · LOT 1 · LOT 2 · LOT 3 · LOT 74, LEGACY HEIGHTS "5"
PRIVATE WAY
LINDBURG RD SE
STRONG RD SE
SANITARY FACILITIES
CONCRETE WASHOUT
GRAVEL CONSTRUCTION ENTRANCE
RAINGARDEN FG=252
WATER, SANITARY SEWER, STORM DRAIN, AND WATER QUALITY EASEMENT TO CITY OF SALEM PER LEGACY HEIGHTS
10' PUBLIC UTILITY EASEMENT AND PUBLIC SIDEWALK EASEMENT PER LEGACY HEIGHTS
STORM WATER STRUCTURE [RIM 252.36] NO INVERT INFO
SSMH FLOW CONTROL [RIM 260.32] PVC 12" NE IE=253.51 PVC 10" SE IE=253.53
SSMH [RIM 258.67] PVC 8" SW IE=257.78
CB-SRIM 258.26] PVC 8" NE IE=257.71 PVC 8" NW IE=252.08
SSMH [RIM 255.06] PVC 8" SW IE=247.46 PVC 8" NW IE=247.59
SSMH [RIM 252.33] PVC 10" N IE=249.05 PVC 8" NE IE=249.06 PVC 10" SW IE=248.99
CB BEEHIVE [RIM 251.43] PVC 10" NE IE=248.93 PVC 18" S IE=248.67
SSMH [RIM 252.05] PVC 8" NE IE=244.93 PVC 8" SE IE=244.75 PVC 8" NW IE=244.82
SSMH [RIM 252.11] PVC 10" N IE=242.61 PVC 18" SE IE=246.71 PVC 10" SW IE=246.86 PVC 10" NW IE=246.42
CB BEEHIVE [RIM 251.43] PVC 10" SW IE=247.68 PVC 10" NE IE=247.53
SSMH [RIM 249.03] PVC 8" E IE=241.46 PVC 8" NW IE=241.59
SSMH [RIM 249.61] PVC 18" E IE=243.01 PVC 18" NW IE=243.12
CB BEEHIVE [RIM 248.42] PVC 10" N IE=242.75 PVC 10" S IE=244.37
SSMH [RIM 258.60] S 48" IE=244.60
CB BEEHIVE [RIM 248.47] PVC 10" N IE=245.17 PVC 12" S IE=244.97
CB [RIM 247.98] PVC 12" S IE=243.18
SSMH [RIM 247.87] PVC 8" E IE=238.52 PVC 8" W IE=238.64
SSMH [RIM 247.80] PVC 12" N IE=242.40 PVC 18" E IE=240.97 PVC 12" S IE=241.98 PVC 18" W IE=242.06
CB [RIM 249.35] PVC 10" E IE=245.92
SDMH FLOW CONTROL [RIM 249.72] PVC 24" N IE=244.32 PVC 10" E IE=245.62 PVC 10" S IE=244.34 PVC 8" W IE=245.62
CB [RIM 249.41] PVC 10" W IE=245.85
STORM WATER QUALITY MH
SSMH [RIM 249.12] PVC 10" N IE=243.32 PVC 10" E IE=243.45 PVC 12" S IE=243.27 PVC 10" W IE=243.32
Δ=20°59'08" R=480.00, L=175.81, CH=N72°16'32"W, 174.83
Δ=96°49'55" R=30.00, L=50.70, CH=S48°48'56"W, 44.85
S00°21'59"W 56.61
N61°46'58"W 72.12'
CP CONDUIT GAS
12" BLOCK WALL
BRASS CAP
CONC SWK
CURB/GUTTER
ASPH
BC WILSON
R/W

3/3/2023 10:42:18 AM
C:\Users\CAD\Desktop\Work (PC)\Projects\Saunders, Reid\Fairview Office\Civil\Plots\C1.0 – Erosion Control – Demolition & Clearing.dwg, (C1.0 tab)

NO.	DATE	DESCRIPTION REVISIONS	BY

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
1"
DSN. SW
DRN. AK
CKD. SW
DATE: 11/2022

REGISTERED PROFESSIONAL ENGINEER 11843
OREGON JULY 16, 1982 STEVEN A. WEST
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585–2474 Fax: (503) 585–3986
E–mail: westech@westech–eng.com

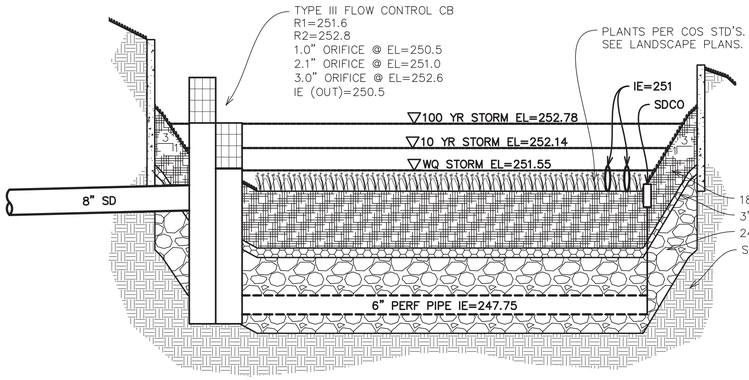
REID SAUNDERS
REID SAUNDERS – NEW OFFICE

EROSION CONTROL PLAN – DEMOLITION & CLEARING

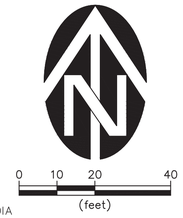
DRAWING
C1.0

JOB NUMBER
3391.0000.0

Developed Basin Map



RAINGARDEN SECTION A–A
NTS



Developed Basin:
Total Area = 35,500 SF
Impervious Area = 26,400 SF
Pervious Area = 9,100 SF

Undetained Basin:
Total Area = 3,160 SF

VERIFY SCALE			
BAR IS ONE INCH ON ORIGINAL DRAWING	DSN.	SW	
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRN.	AK	
	CKD.	SW	
	DATE:	11/2022	

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 2002 STEVEN A. WEST
11843
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
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Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

REID SAUNDERS
REID SAUNDERS – NEW OFFICE

GRADING & DRAINAGE PLAN

DRAWING
C2.0

JOB NUMBER
3391.0000.0

APPENDIX B
NRCS SOIL REPORT

Map Scale: 1:906 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 40 80 160 240

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 Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

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 20, Sep 14, 2022

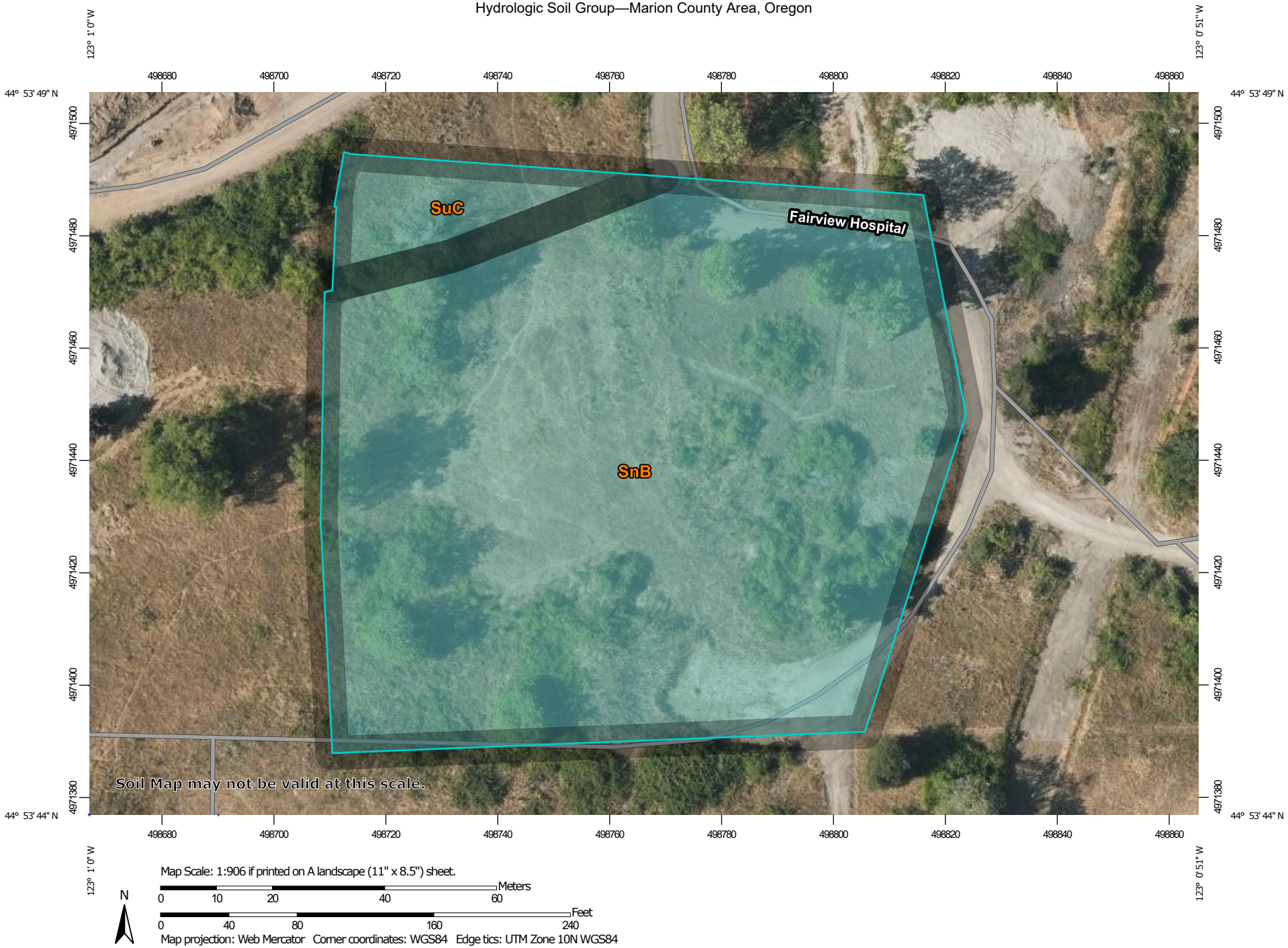
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 1, 2018—Aug 31, 2018

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SnB	Santiam silt loam, 3 to 6 percent slopes	2.5	93.2%
SuC	Silverton silt loam, 2 to 12 percent slopes	0.2	6.8%
Totals for Area of Interest		**2.7**	**100.0%**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123° 0' 51" W
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44° 53' 44" N
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498720
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498800
498820
498840
498860
4971500
4971480
4971460
4971440
4971420
4971400
4971380
SuC
SnB
Fairview Hospital
Soil Map may not be valid at this scale.
Map Scale: 1:906 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 10 20 40 60
Feet
0 40 80 160 240
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

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Survey Area Data: Version 20, Sep 14, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 1, 2018—Aug 31, 2018

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
SnB	Santiam silt loam, 3 to 6 percent slopes	C	2.5	93.2%
SuC	Silverton silt loam, 2 to 12 percent slopes	C	0.2	6.8%
Totals for Area of Interest			**2.7**	**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

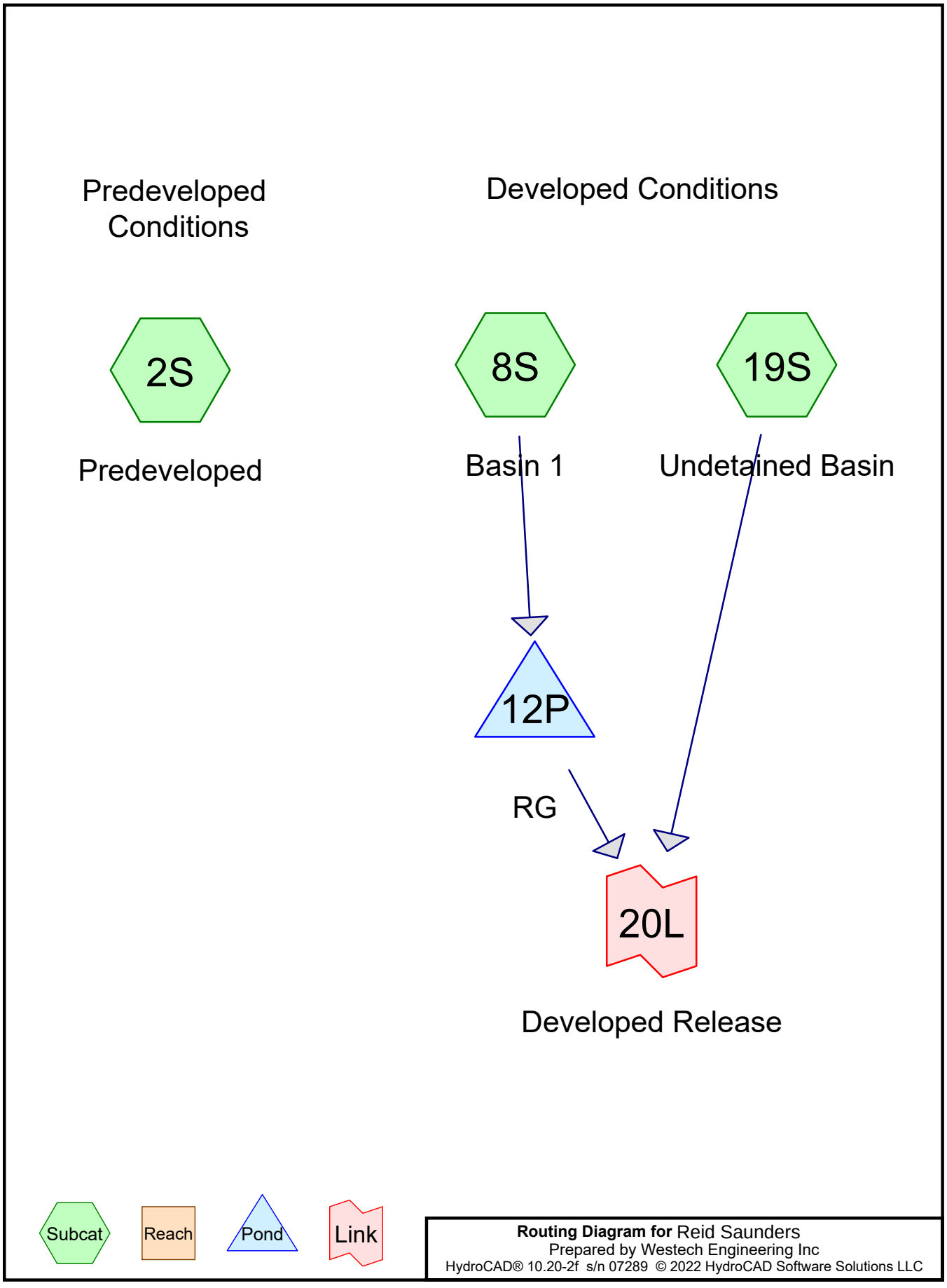
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX C

HYDROCAD SUMMARIES


Predeveloped Conditions
Developed Conditions
2S
8S
19S
Predeveloped
Basin 1
Undetained Basin
12P
RG
20L
Developed Release
Subcat
Reach
Pond
Link
Routing Diagram for Reid Saunders
Prepared by Westech Engineering Inc
HydroCAD® 10.20-2f s/n 07289 © 2022 HydroCAD Software Solutions LLC

Summary for Subcatchment 2S: Predeveloped

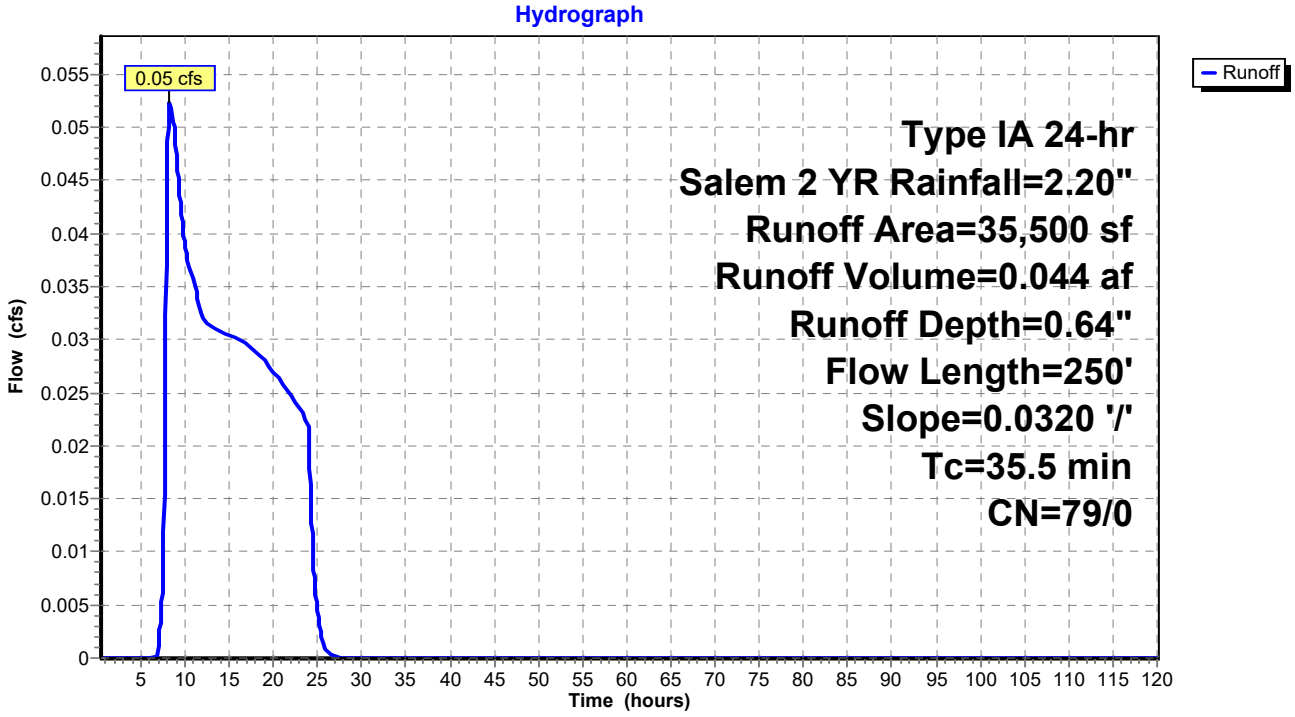
Runoff = 0.05 cfs @ 8.30 hrs, Volume= 0.044 af, Depth= 0.64"
Routed to nonexistent node 5L

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr Salem 2 YR Rainfall=2.20"

Area (sf)	CN	Description
35,500	79	Woods/grass comb., Good, HSG D
35,500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.5	250	0.0320	0.12		**Sheet Flow, Longest Flow Path** n= 0.300 P2= 2.20"

Subcatchment 2S: Predeveloped



Summary for Subcatchment 2S: Predeveloped

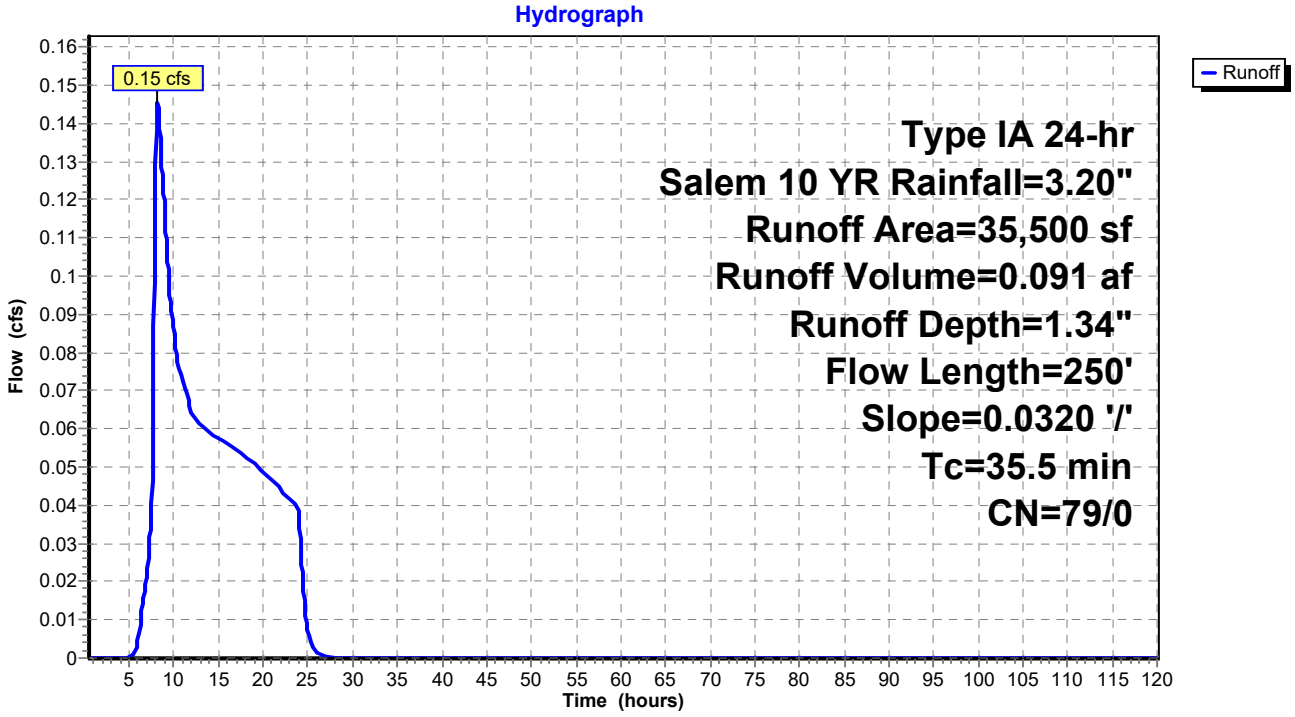
Runoff = 0.15 cfs @ 8.16 hrs, Volume= 0.091 af, Depth= 1.34"
Routed to nonexistent node 5L

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr Salem 10 YR Rainfall=3.20"

Area (sf)	CN	Description
35,500	79	Woods/grass comb., Good, HSG D
35,500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.5	250	0.0320	0.12		**Sheet Flow, Longest Flow Path** n= 0.300 P2= 2.20"

Subcatchment 2S: Predeveloped



Summary for Subcatchment 2S: Predeveloped

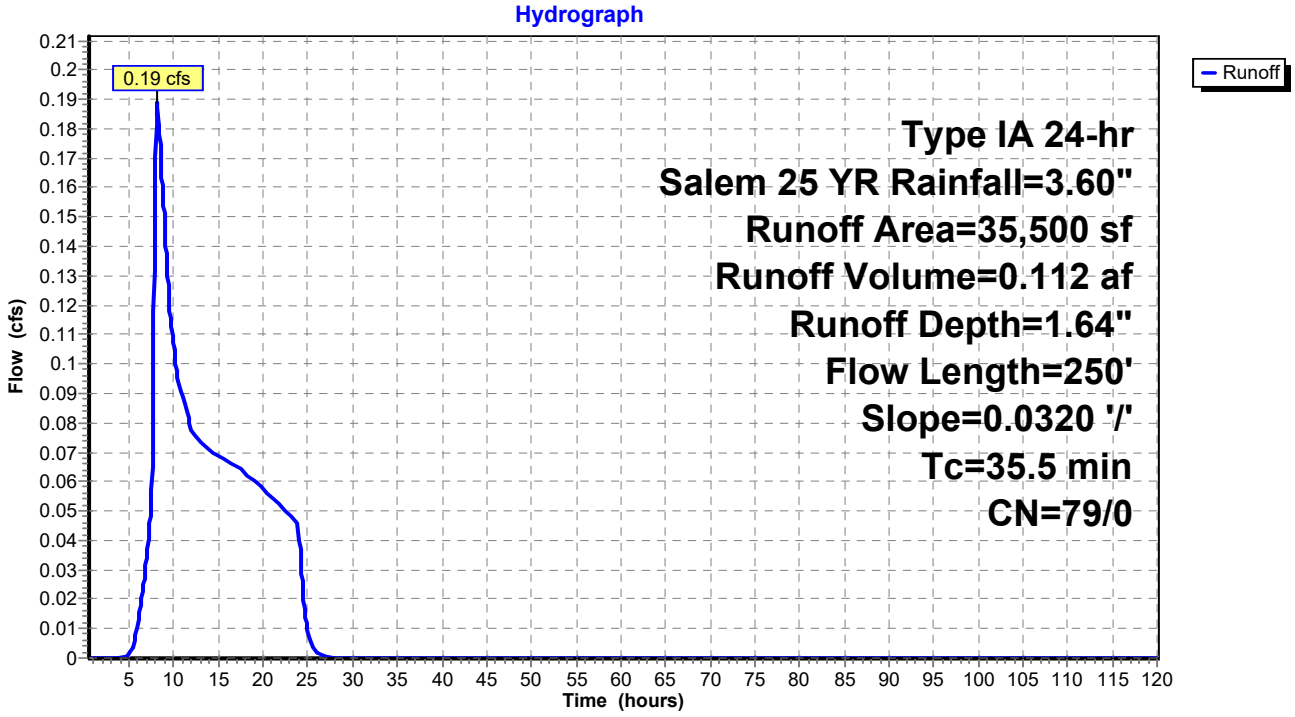
Runoff = 0.19 cfs @ 8.14 hrs, Volume= 0.112 af, Depth= 1.64"
Routed to nonexistent node 5L

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr Salem 25 YR Rainfall=3.60"

Area (sf)	CN	Description
35,500	79	Woods/grass comb., Good, HSG D
35,500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.5	250	0.0320	0.12		**Sheet Flow, Longest Flow Path** n= 0.300 P2= 2.20"

Subcatchment 2S: Predeveloped



Summary for Subcatchment 2S: Predeveloped

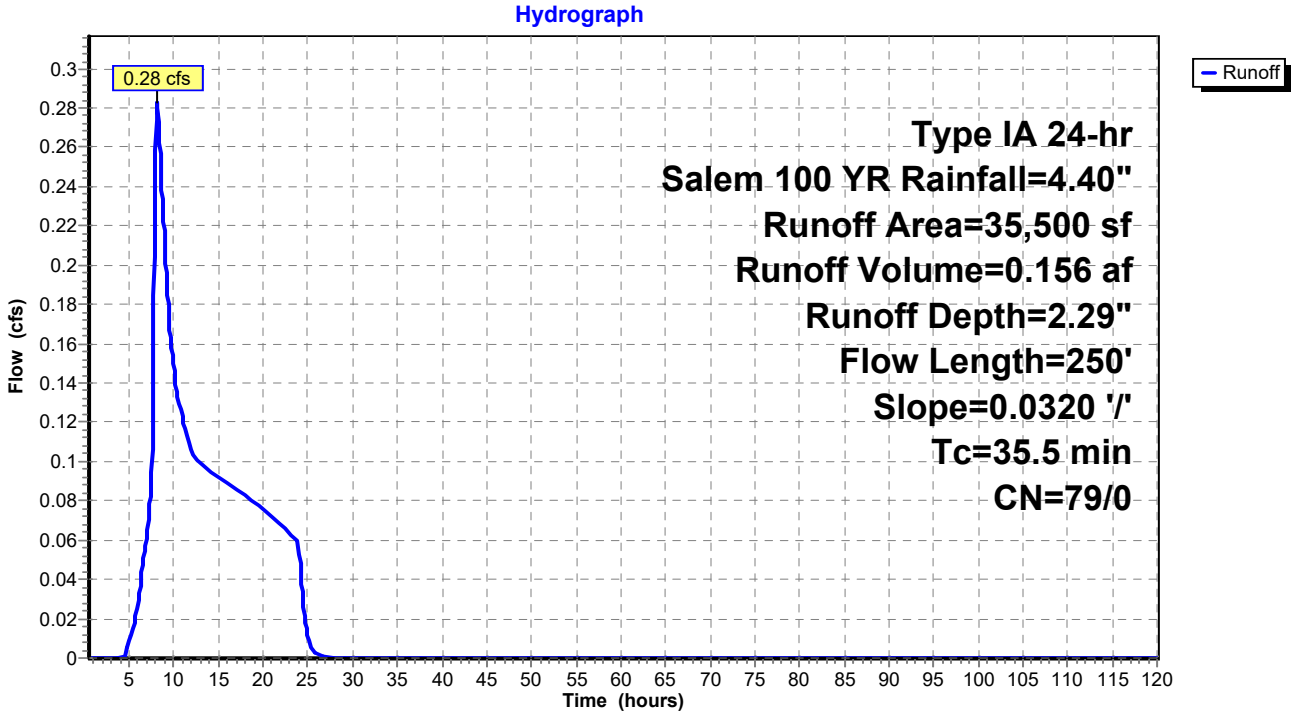
Runoff = 0.28 cfs @ 8.10 hrs, Volume= 0.156 af, Depth= 2.29"
Routed to nonexistent node 5L

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr Salem 100 YR Rainfall=4.40"

Area (sf)	CN	Description
35,500	79	Woods/grass comb., Good, HSG D
35,500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.5	250	0.0320	0.12		**Sheet Flow, Longest Flow Path** n= 0.300 P2= 2.20"

Subcatchment 2S: Predeveloped



Summary for Subcatchment 8S: Basin 1

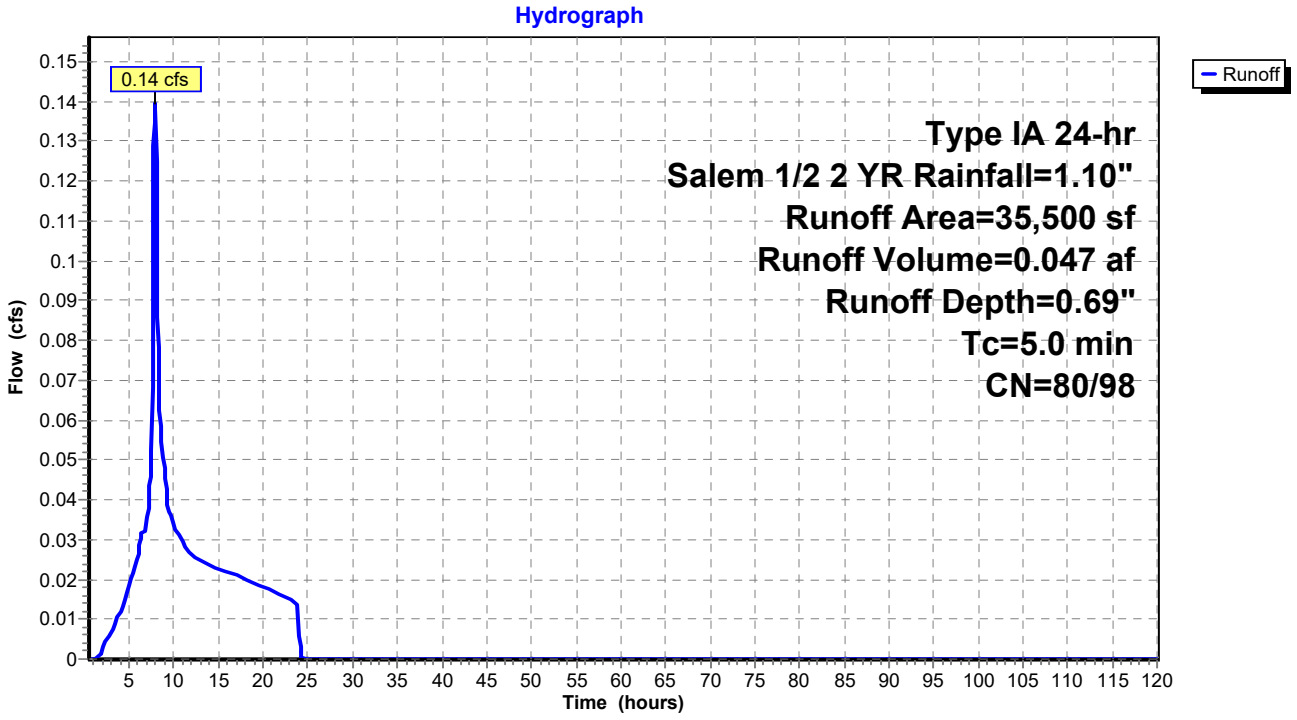
Runoff = 0.14 cfs @ 7.92 hrs, Volume= 0.047 af, Depth= 0.69"
Routed to Pond 12P : RG

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr Salem 1/2 2 YR Rainfall=1.10"

Area (sf)	CN	Description
26,400	98	Paved parking, HSG D
9,100	80	>75% Grass cover, Good, HSG D
35,500	93	Weighted Average
9,100		25.63% Pervious Area
26,400		74.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 8S: Basin 1



Summary for Subcatchment 8S: Basin 1

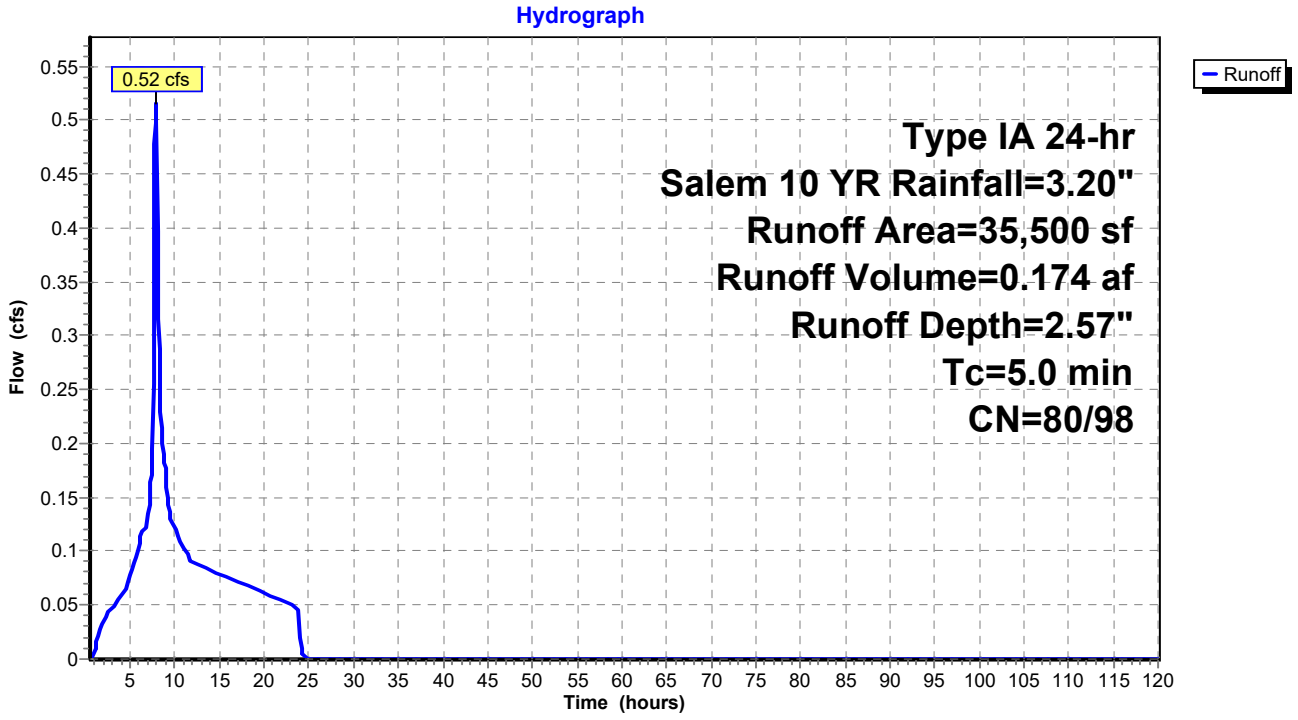
Runoff = 0.52 cfs @ 7.91 hrs, Volume= 0.174 af, Depth= 2.57"
Routed to Pond 12P : RG

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr Salem 10 YR Rainfall=3.20"

Area (sf)	CN	Description
26,400	98	Paved parking, HSG D
9,100	80	>75% Grass cover, Good, HSG D
35,500	93	Weighted Average
9,100		25.63% Pervious Area
26,400		74.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 8S: Basin 1



Summary for Subcatchment 8S: Basin 1

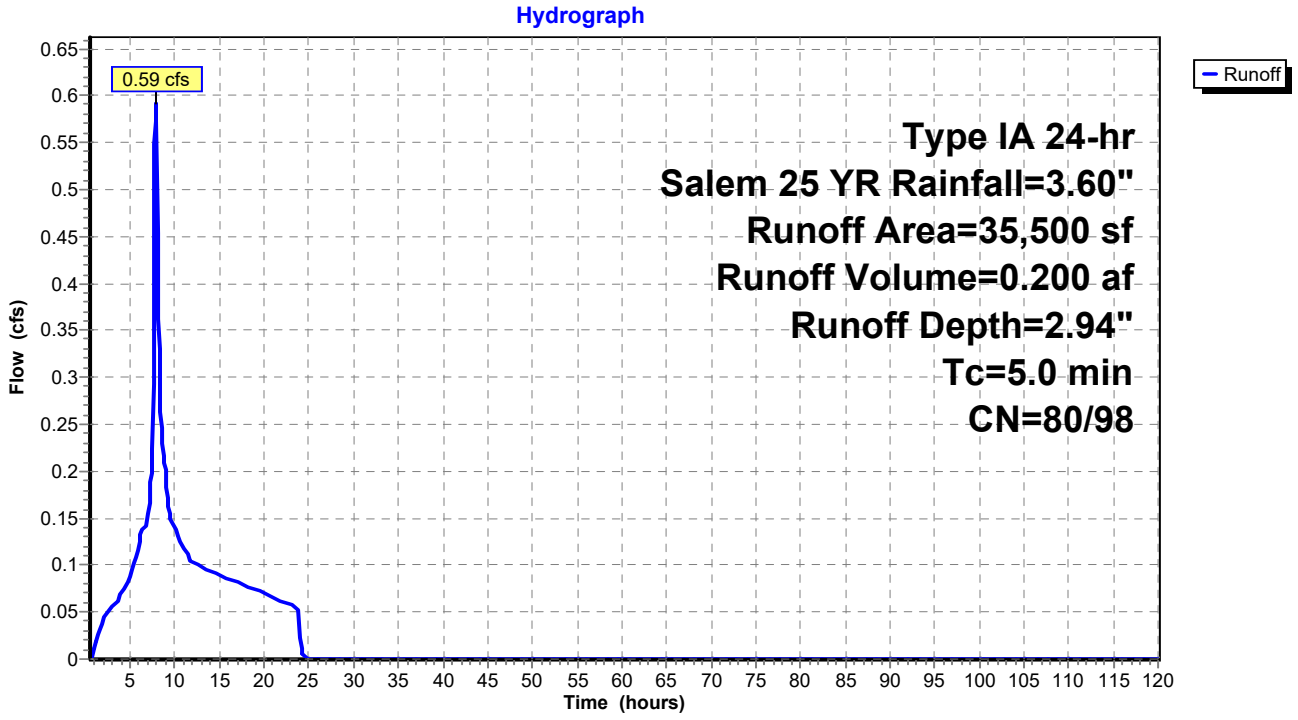
Runoff = 0.59 cfs @ 7.91 hrs, Volume= 0.200 af, Depth= 2.94"
Routed to Pond 12P : RG

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr Salem 25 YR Rainfall=3.60"

Area (sf)	CN	Description
26,400	98	Paved parking, HSG D
9,100	80	>75% Grass cover, Good, HSG D
35,500	93	Weighted Average
9,100		25.63% Pervious Area
26,400		74.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 8S: Basin 1



Summary for Subcatchment 8S: Basin 1

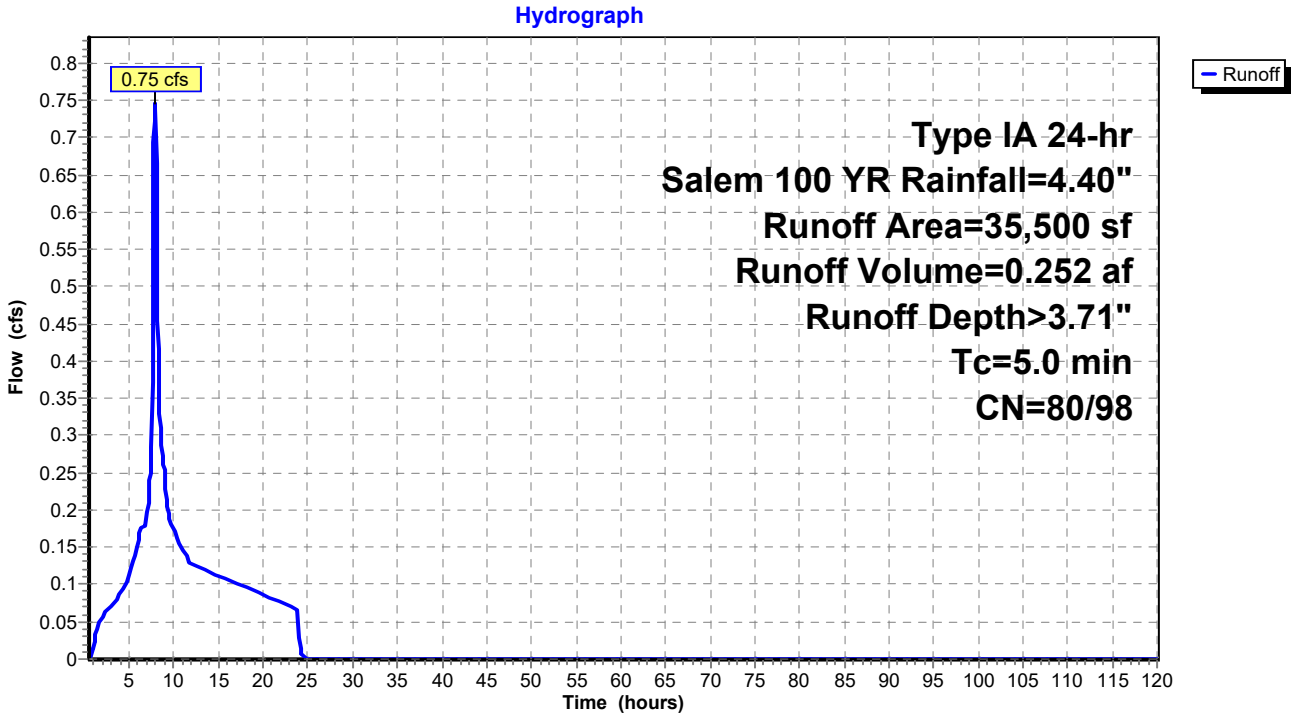
Runoff = 0.75 cfs @ 7.91 hrs, Volume= 0.252 af, Depth> 3.71"
Routed to Pond 12P : RG

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr Salem 100 YR Rainfall=4.40"

Area (sf)	CN	Description
26,400	98	Paved parking, HSG D
9,100	80	>75% Grass cover, Good, HSG D
35,500	93	Weighted Average
9,100		25.63% Pervious Area
26,400		74.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 8S: Basin 1



Summary for Subcatchment 19S: Undetained Basin

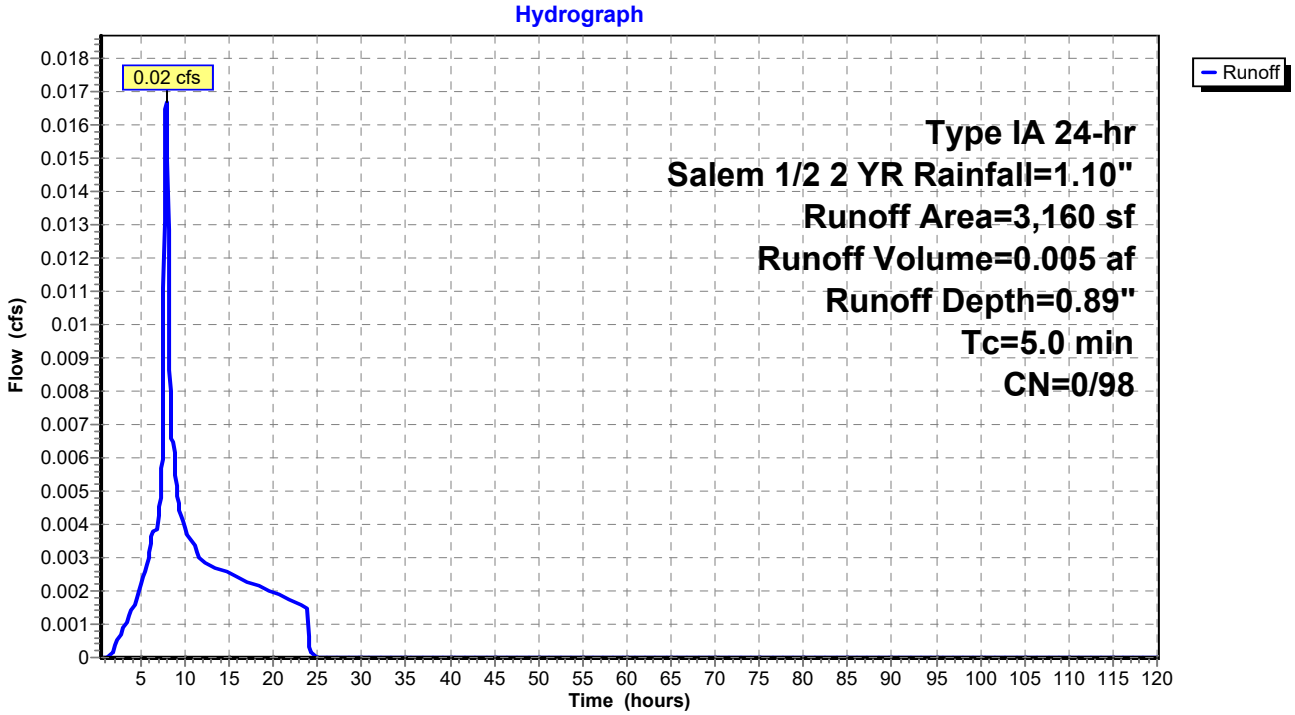
Runoff = 0.02 cfs @ 7.92 hrs, Volume= 0.005 af, Depth= 0.89"
Routed to Link 20L : Developed Release

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr Salem 1/2 2 YR Rainfall=1.10"

Area (sf)	CN	Description
3,160	98	Paved parking, HSG D
3,160		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 19S: Undetained Basin



Summary for Subcatchment 19S: Undetained Basin

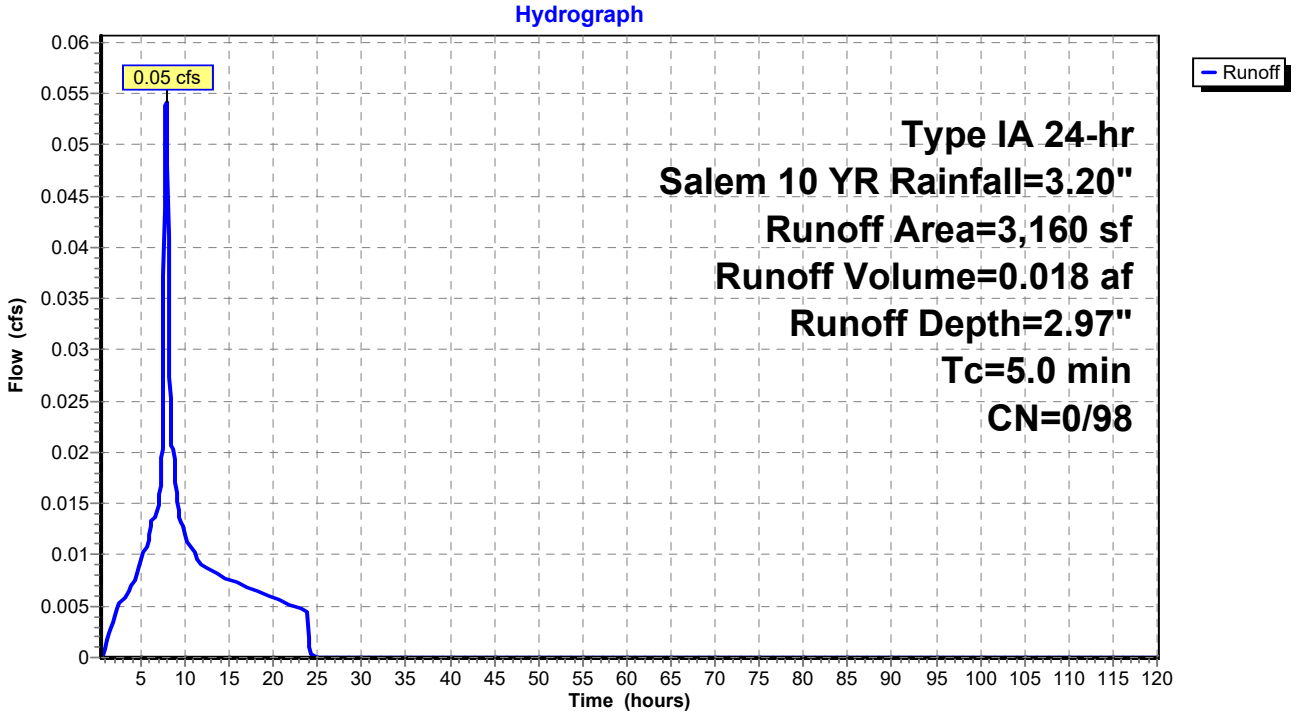
Runoff = 0.05 cfs @ 7.90 hrs, Volume= 0.018 af, Depth= 2.97"
Routed to Link 20L : Developed Release

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr Salem 10 YR Rainfall=3.20"

Area (sf)	CN	Description
3,160	98	Paved parking, HSG D
3,160		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 19S: Undetained Basin



Summary for Subcatchment 19S: Undetained Basin

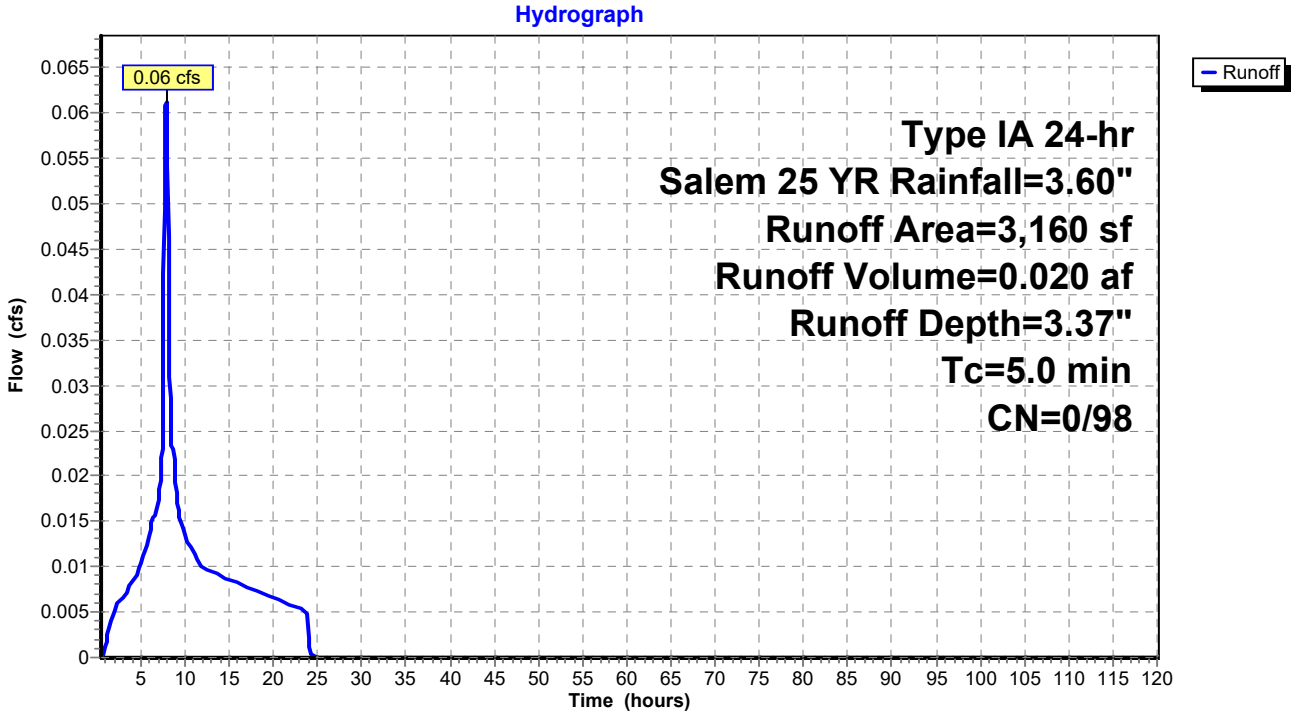
Runoff = 0.06 cfs @ 7.90 hrs, Volume= 0.020 af, Depth= 3.37"
Routed to Link 20L : Developed Release

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr Salem 25 YR Rainfall=3.60"

Area (sf)	CN	Description
3,160	98	Paved parking, HSG D
3,160		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 19S: Undetained Basin



Summary for Subcatchment 19S: Undetained Basin

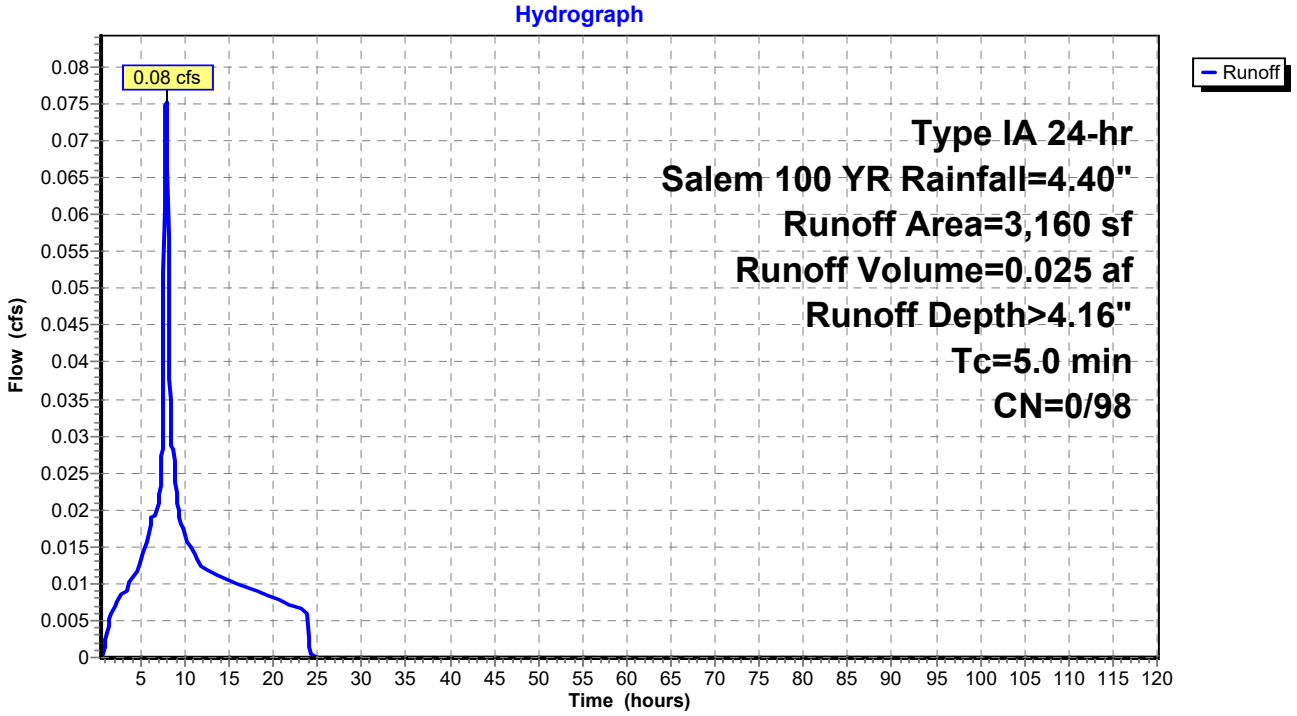
Runoff = 0.08 cfs @ 7.90 hrs, Volume= 0.025 af, Depth> 4.16"
Routed to Link 20L : Developed Release

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr Salem 100 YR Rainfall=4.40"

Area (sf)	CN	Description
3,160	98	Paved parking, HSG D
3,160		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 19S: Undetained Basin



Summary for Pond 12P: RG

Inflow Area = 0.815 ac, 74.37% Impervious, Inflow Depth = 0.69" for Salem 1/2 2 YR event
Inflow = 0.14 cfs @ 7.92 hrs, Volume= 0.047 af
Outflow = 0.02 cfs @ 18.28 hrs, Volume= 0.043 af, Atten= 85%, Lag= 621.6 min
Discarded = 0.00 cfs @ 4.15 hrs, Volume= 0.037 af
Primary = 0.02 cfs @ 18.28 hrs, Volume= 0.006 af
Routed to Link 20L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 250.99' @ 18.25 hrs Surf.Area= 1,613 sf Storage= 1,479 cf

Plug-Flow detention time= 2,671.0 min calculated for 0.043 af (92% of inflow)
Center-of-Mass det. time= 2,614.3 min (3,336.0 - 721.7)

Volume	Invert	Avail.Storage	Storage Description
#1	247.25'	5,991 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

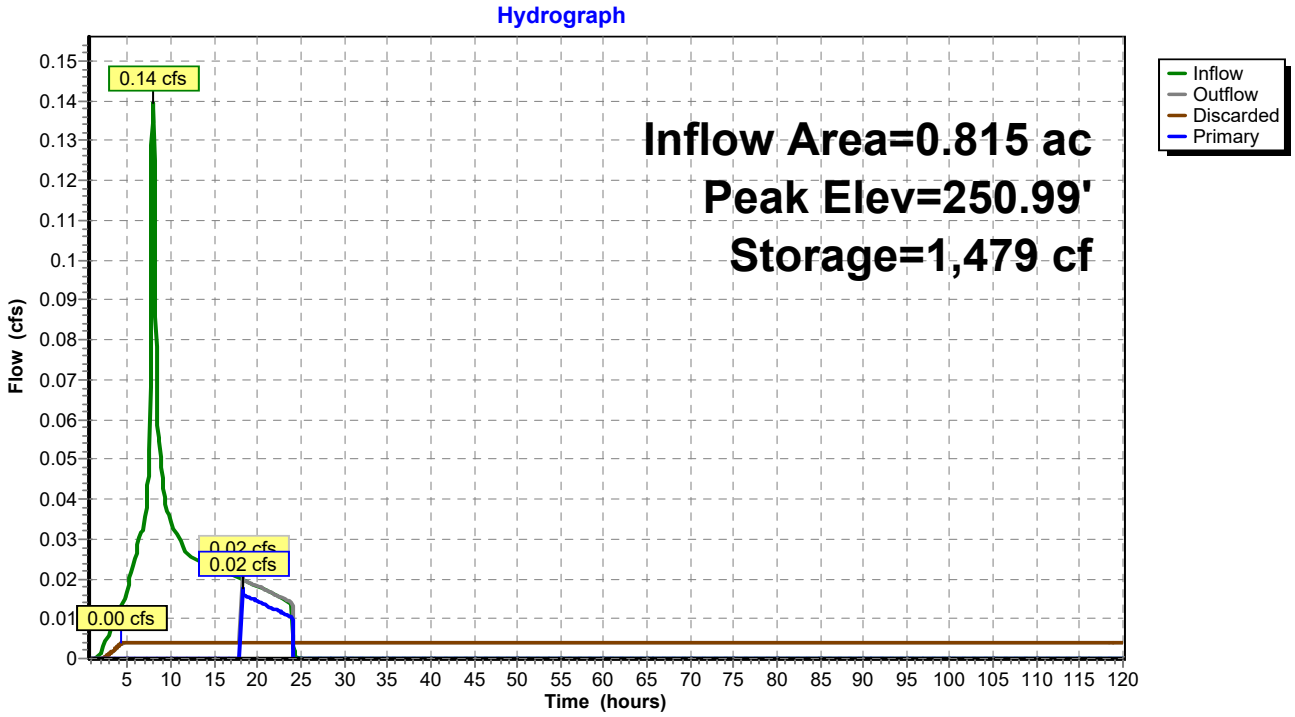
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
247.25	1,640	0.0	0	0
249.50	1,640	40.0	1,476	1,476
250.99	1,640	0.1	2	1,478
251.00	700	100.0	12	1,490
252.00	1,150	100.0	925	2,415
253.00	1,640	100.0	1,395	3,810
254.00	1,640	100.0	1,640	5,450
254.33	1,640	100.0	541	5,991

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.25'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	250.50'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	251.00'	**2.1" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	252.60'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	252.80'	**2.0' long x 0.5' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.00 cfs @ 4.15 hrs HW=247.32' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.02 cfs @ 18.28 hrs HW=250.99' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 3.22 fps)
├**3=Orifice/Grate** (Controls 0.00 cfs)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 12P: RG


Hydrograph
Inflow Area=0.815 ac
Peak Elev=250.99'
Storage=1,479 cf
0.14 cfs
0.02 cfs
0.02 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.1 0.11 0.12 0.13 0.14 0.15
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120

Summary for Pond 12P: RG

Inflow Area = 0.815 ac, 74.37% Impervious, Inflow Depth = 2.57" for Salem 10 YR event
Inflow = 0.52 cfs @ 7.91 hrs, Volume= 0.174 af
Outflow = 0.15 cfs @ 9.12 hrs, Volume= 0.170 af, Atten= 70%, Lag= 72.5 min
Discarded = 0.00 cfs @ 1.75 hrs, Volume= 0.035 af
Primary = 0.15 cfs @ 9.12 hrs, Volume= 0.135 af
Routed to Link 20L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 252.14' @ 9.12 hrs Surf.Area= 1,218 sf Storage= 2,579 cf

Plug-Flow detention time= 799.6 min calculated for 0.170 af (98% of inflow)
Center-of-Mass det. time= 781.6 min (1,469.8 - 688.2)

Volume	Invert	Avail.Storage	Storage Description
#1	247.25'	5,991 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

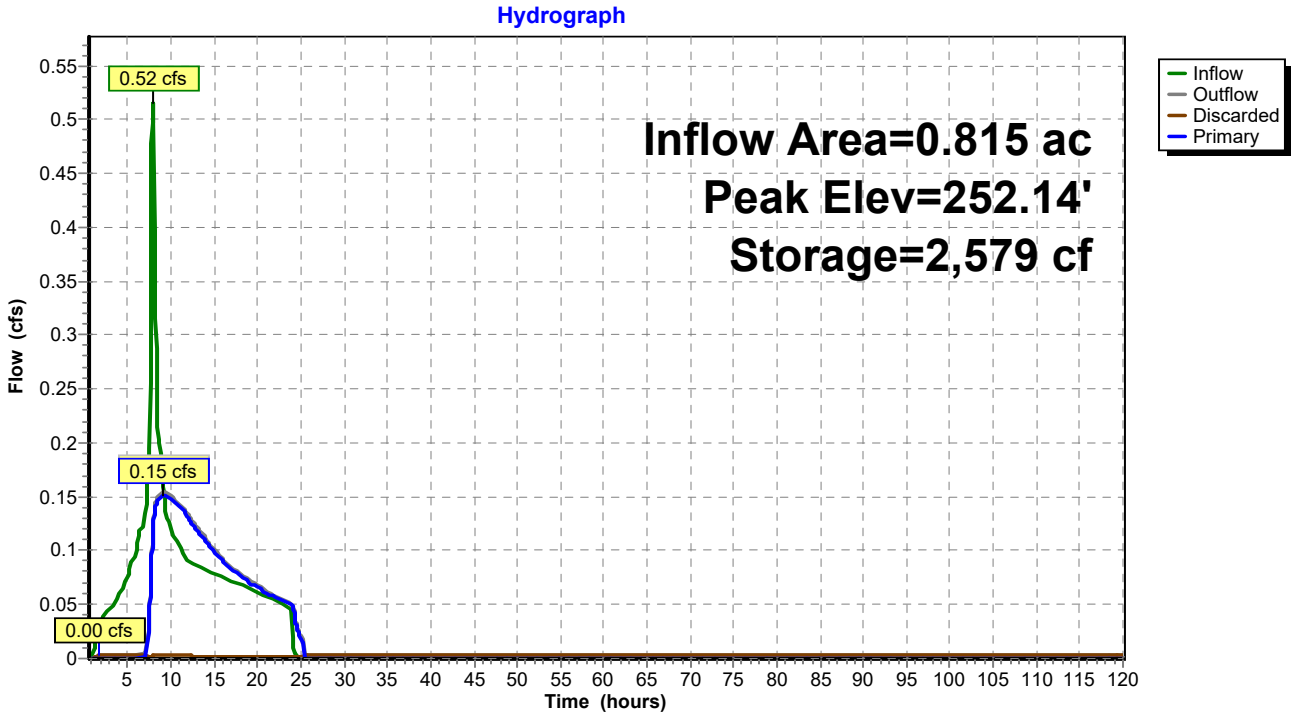
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
247.25	1,640	0.0	0	0
249.50	1,640	40.0	1,476	1,476
250.99	1,640	0.1	2	1,478
251.00	700	100.0	12	1,490
252.00	1,150	100.0	925	2,415
253.00	1,640	100.0	1,395	3,810
254.00	1,640	100.0	1,640	5,450
254.33	1,640	100.0	541	5,991

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.25'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	250.50'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	251.00'	**2.1" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	252.60'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	252.80'	**2.0' long x 0.5' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.00 cfs @ 1.75 hrs HW=247.33' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.15 cfs @ 9.12 hrs HW=252.14' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 6.08 fps)
├**3=Orifice/Grate** (Orifice Controls 0.12 cfs @ 4.94 fps)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 12P: RG


Hydrograph
Inflow Area=0.815 ac
Peak Elev=252.14'
Storage=2,579 cf
0.52 cfs
0.15 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.55
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120

Summary for Pond 12P: RG

Inflow Area = 0.815 ac, 74.37% Impervious, Inflow Depth = 2.94" for Salem 25 YR event
Inflow = 0.59 cfs @ 7.91 hrs, Volume= 0.200 af
Outflow = 0.17 cfs @ 9.18 hrs, Volume= 0.196 af, Atten= 71%, Lag= 76.0 min
Discarded = 0.00 cfs @ 1.60 hrs, Volume= 0.035 af
Primary = 0.17 cfs @ 9.18 hrs, Volume= 0.161 af
Routed to Link 20L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 252.39' @ 9.18 hrs Surf.Area= 1,343 sf Storage= 2,906 cf

Plug-Flow detention time= 721.1 min calculated for 0.196 af (98% of inflow)
Center-of-Mass det. time= 705.2 min (1,390.3 - 685.1)

Volume	Invert	Avail.Storage	Storage Description
#1	247.25'	5,991 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

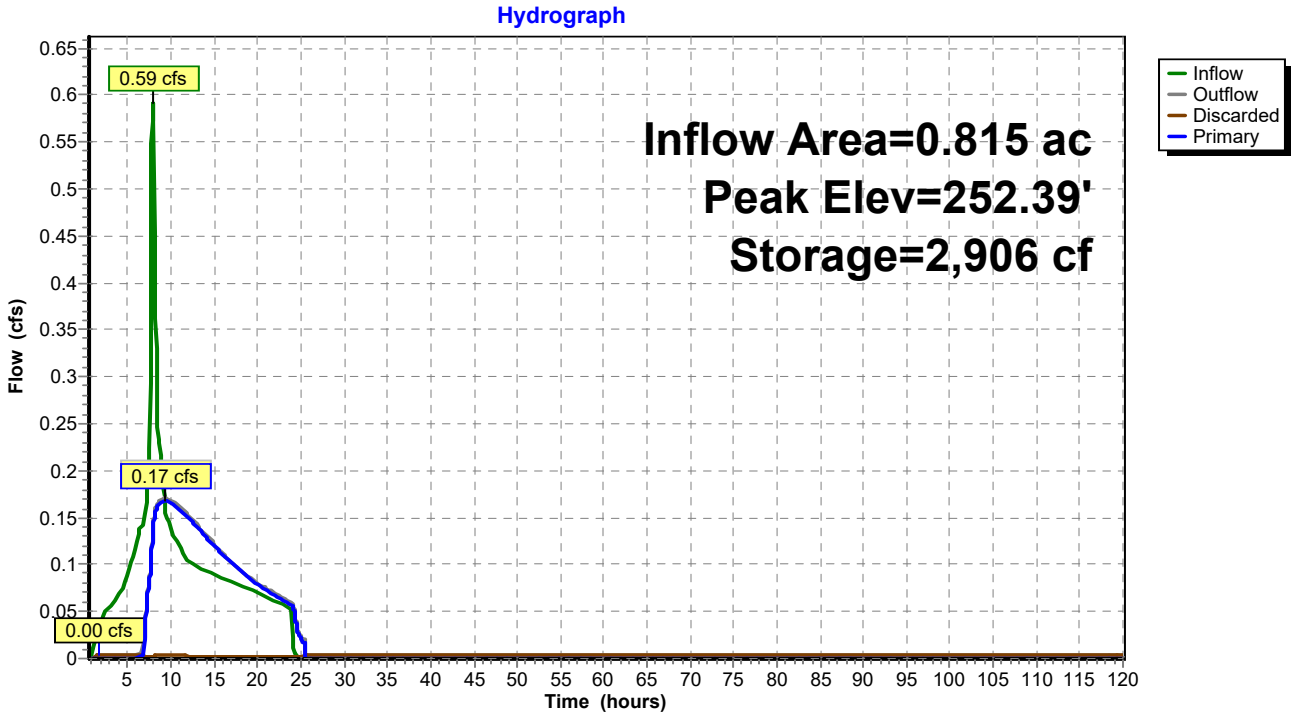
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
247.25	1,640	0.0	0	0
249.50	1,640	40.0	1,476	1,476
250.99	1,640	0.1	2	1,478
251.00	700	100.0	12	1,490
252.00	1,150	100.0	925	2,415
253.00	1,640	100.0	1,395	3,810
254.00	1,640	100.0	1,640	5,450
254.33	1,640	100.0	541	5,991

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.25'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	250.50'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	251.00'	**2.1" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	252.60'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	252.80'	**2.0' long x 0.5' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.00 cfs @ 1.60 hrs HW=247.33' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.17 cfs @ 9.18 hrs HW=252.39' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 6.55 fps)
├**3=Orifice/Grate** (Orifice Controls 0.13 cfs @ 5.50 fps)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 12P: RG


Hydrograph
Inflow Area=0.815 ac
Peak Elev=252.39'
Storage=2,906 cf
0.59 cfs
0.17 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.55
0.6
0.65
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120

Summary for Pond 12P: RG

Inflow Area = 0.815 ac, 74.37% Impervious, Inflow Depth > 3.71" for Salem 100 YR event
Inflow = 0.75 cfs @ 7.91 hrs, Volume= 0.252 af
Outflow = 0.25 cfs @ 8.95 hrs, Volume= 0.247 af, Atten= 67%, Lag= 62.3 min
Discarded = 0.00 cfs @ 1.40 hrs, Volume= 0.035 af
Primary = 0.24 cfs @ 8.95 hrs, Volume= 0.212 af
Routed to Link 20L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 252.78' @ 8.95 hrs Surf.Area= 1,531 sf Storage= 3,457 cf

Plug-Flow detention time= 611.7 min calculated for 0.247 af (98% of inflow)
Center-of-Mass det. time= 598.7 min (1,278.8 - 680.1)

Volume	Invert	Avail.Storage	Storage Description
#1	247.25'	5,991 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

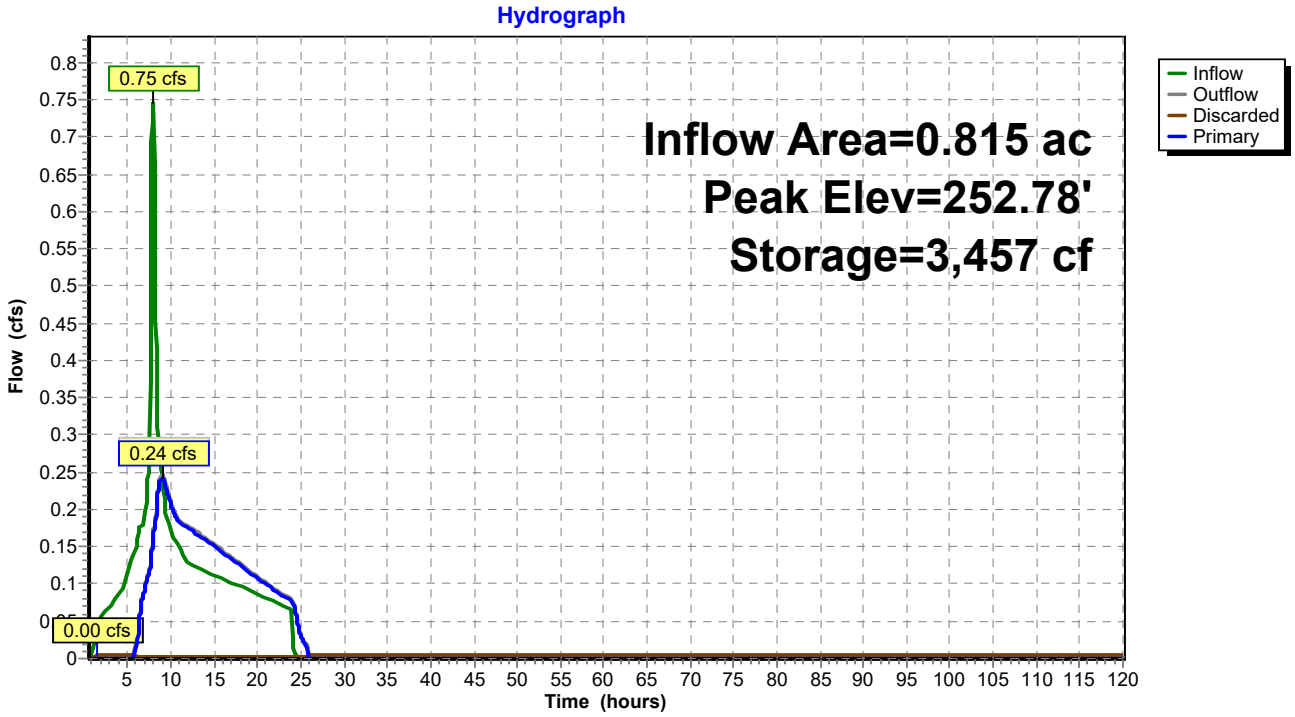
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
247.25	1,640	0.0	0	0
249.50	1,640	40.0	1,476	1,476
250.99	1,640	0.1	2	1,478
251.00	700	100.0	12	1,490
252.00	1,150	100.0	925	2,415
253.00	1,640	100.0	1,395	3,810
254.00	1,640	100.0	1,640	5,450
254.33	1,640	100.0	541	5,991

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.25'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	250.50'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	251.00'	**2.1" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	252.60'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	252.80'	**2.0' long x 0.5' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.00 cfs @ 1.40 hrs HW=247.33' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.24 cfs @ 8.95 hrs HW=252.78' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 7.20 fps)
├**3=Orifice/Grate** (Orifice Controls 0.15 cfs @ 6.26 fps)
├**4=Orifice/Grate** (Orifice Controls 0.05 cfs @ 1.43 fps)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 12P: RG


Hydrograph
Inflow Area=0.815 ac
Peak Elev=252.78'
Storage=3,457 cf
0.75 cfs
0.24 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond 12P: RG

Inflow Area = 0.815 ac, 74.37% Impervious, Inflow Depth = 0.92" for Salem WQ event
Inflow = 0.18 cfs @ 7.93 hrs, Volume= 0.063 af
Outflow = 0.03 cfs @ 15.45 hrs, Volume= 0.059 af, Atten= 84%, Lag= 451.6 min
Discarded = 0.00 cfs @ 3.45 hrs, Volume= 0.035 af
Primary = 0.03 cfs @ 15.45 hrs, Volume= 0.024 af
Routed to Link 20L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 251.07' @ 15.45 hrs Surf.Area= 732 sf Storage= 1,541 cf

Plug-Flow detention time= 2,038.3 min calculated for 0.059 af (94% of inflow)
Center-of-Mass det. time= 1,994.6 min (2,708.1 - 713.5)

Volume	Invert	Avail.Storage	Storage Description
#1	247.25'	5,991 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

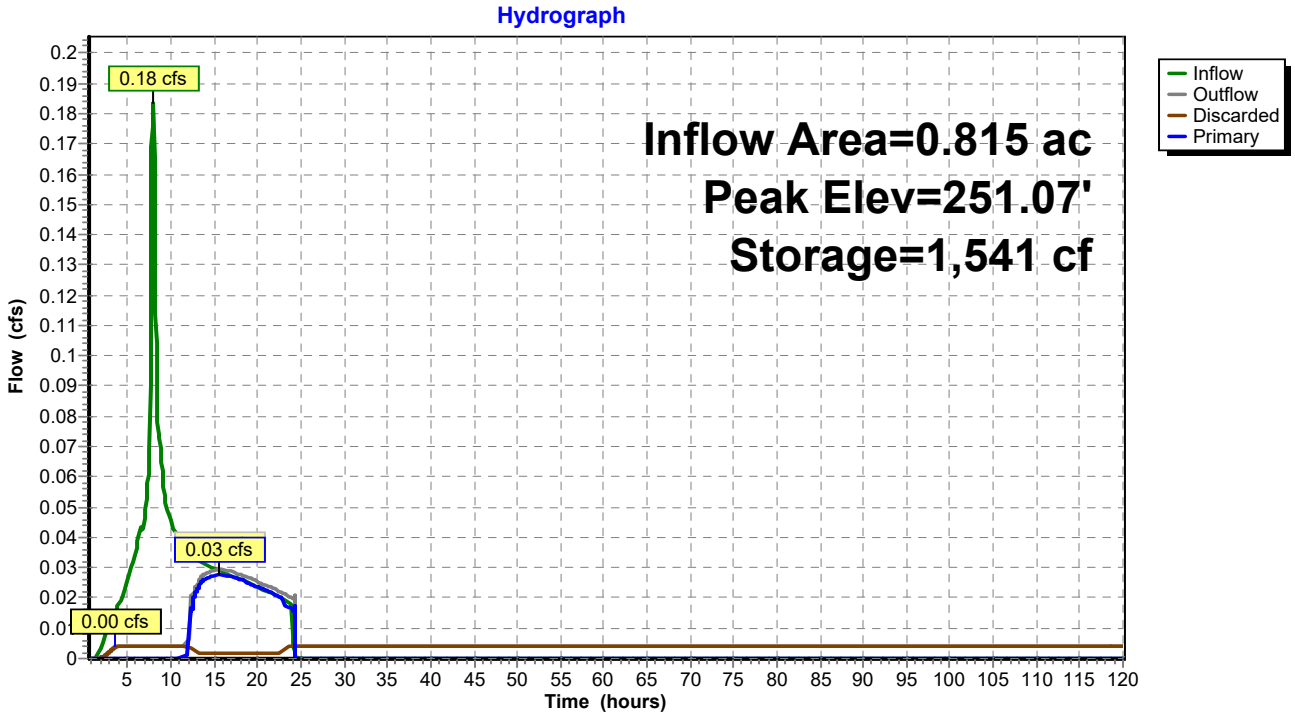
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
247.25	1,640	0.0	0	0
249.50	1,640	40.0	1,476	1,476
250.99	1,640	0.1	2	1,478
251.00	700	100.0	12	1,490
252.00	1,150	100.0	925	2,415
253.00	1,640	100.0	1,395	3,810
254.00	1,640	100.0	1,640	5,450
254.33	1,640	100.0	541	5,991

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.25'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	250.50'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	251.00'	**2.1" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	252.60'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	252.80'	**2.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.00 cfs @ 3.45 hrs HW=247.32' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.03 cfs @ 15.45 hrs HW=251.07' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 3.50 fps)
├**3=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.91 fps)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 12P: RG

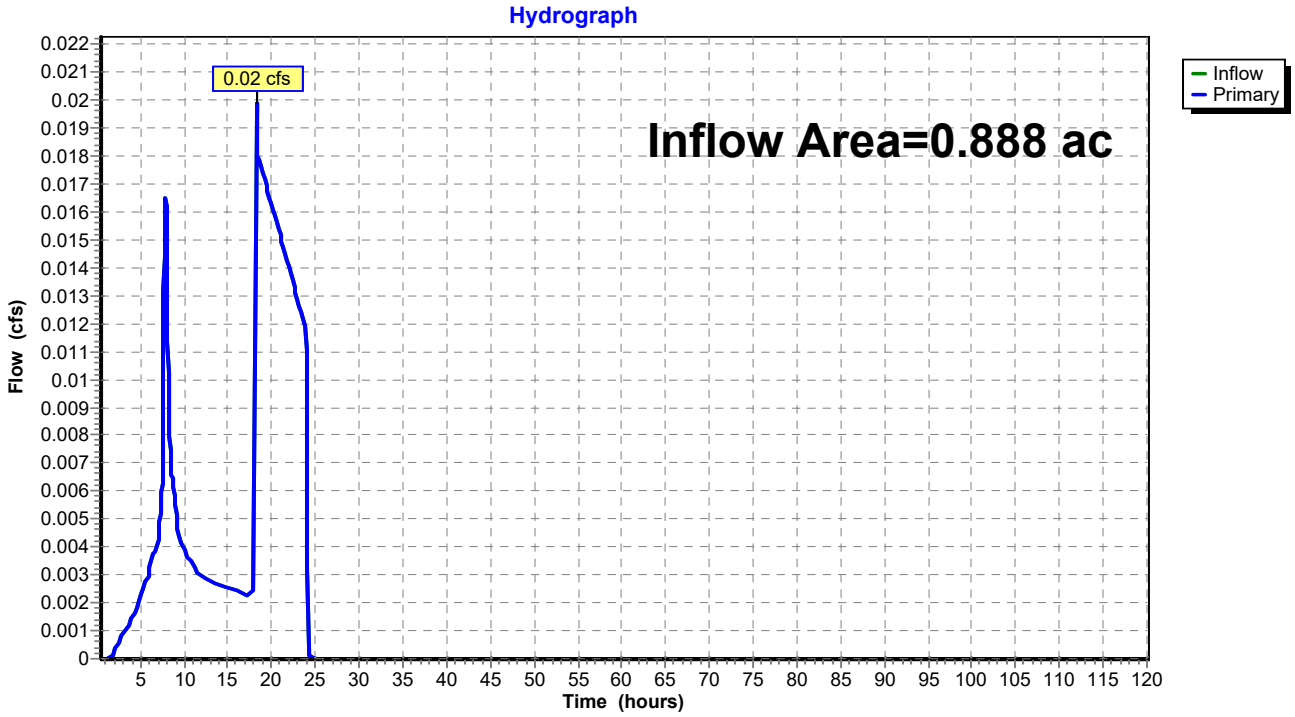

Hydrograph
Inflow Area=0.815 ac
Peak Elev=251.07'
Storage=1,541 cf
0.18 cfs
0.03 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Link 20L: Developed Release

Inflow Area = 0.888 ac, 76.46% Impervious, Inflow Depth = 0.16" for Salem 1/2 2 YR event
Inflow = 0.02 cfs @ 18.28 hrs, Volume= 0.012 af
Primary = 0.02 cfs @ 18.28 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 20L: Developed Release

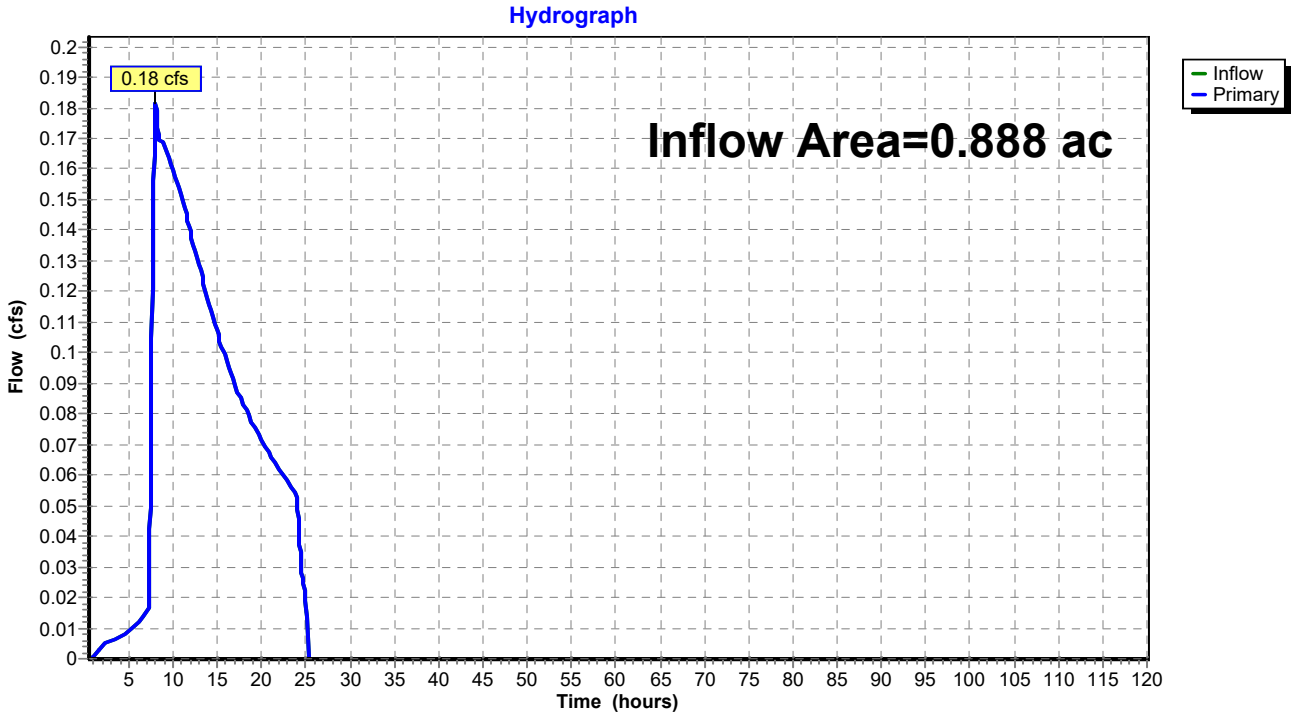


Summary for Link 20L: Developed Release

Inflow Area = 0.888 ac, 76.46% Impervious, Inflow Depth = 2.07" for Salem 10 YR event
Inflow = 0.18 cfs @ 8.02 hrs, Volume= 0.153 af
Primary = 0.18 cfs @ 8.02 hrs, Volume= 0.153 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 20L: Developed Release

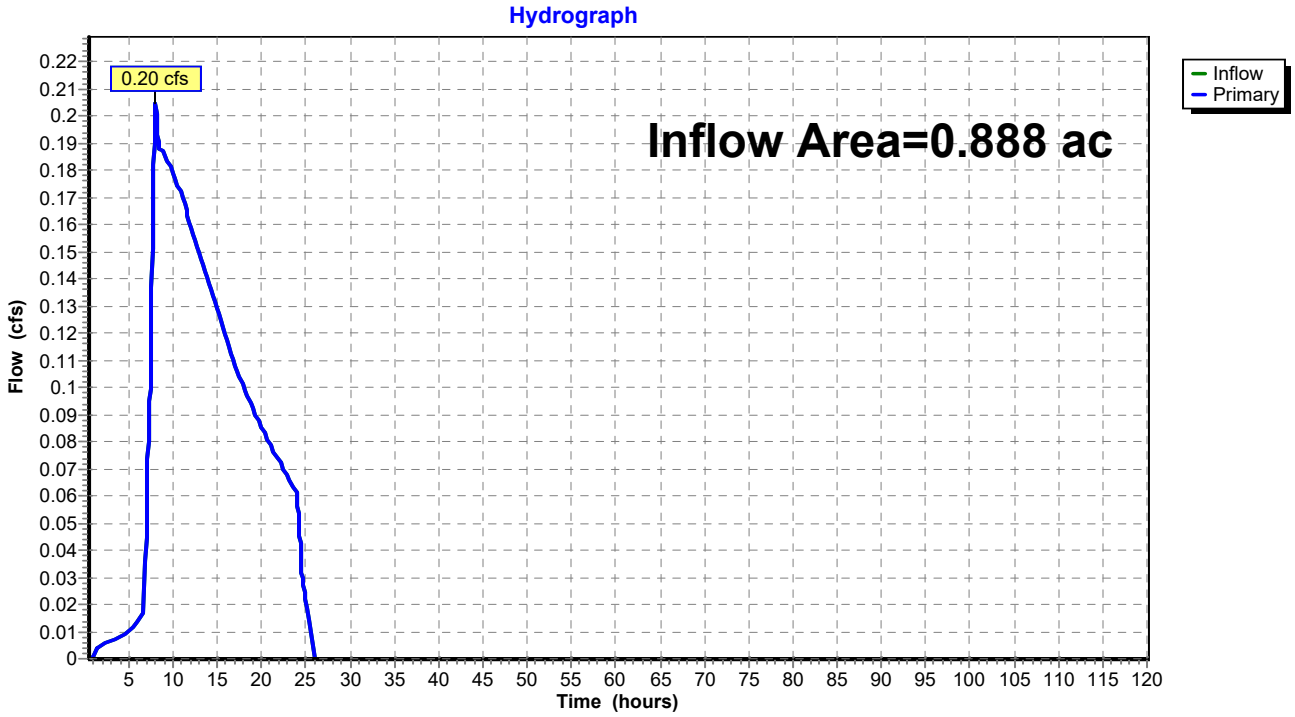


Summary for Link 20L: Developed Release

Inflow Area = 0.888 ac, 76.46% Impervious, Inflow Depth = 2.45" for Salem 25 YR event
Inflow = 0.20 cfs @ 8.01 hrs, Volume= 0.181 af
Primary = 0.20 cfs @ 8.01 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 20L: Developed Release

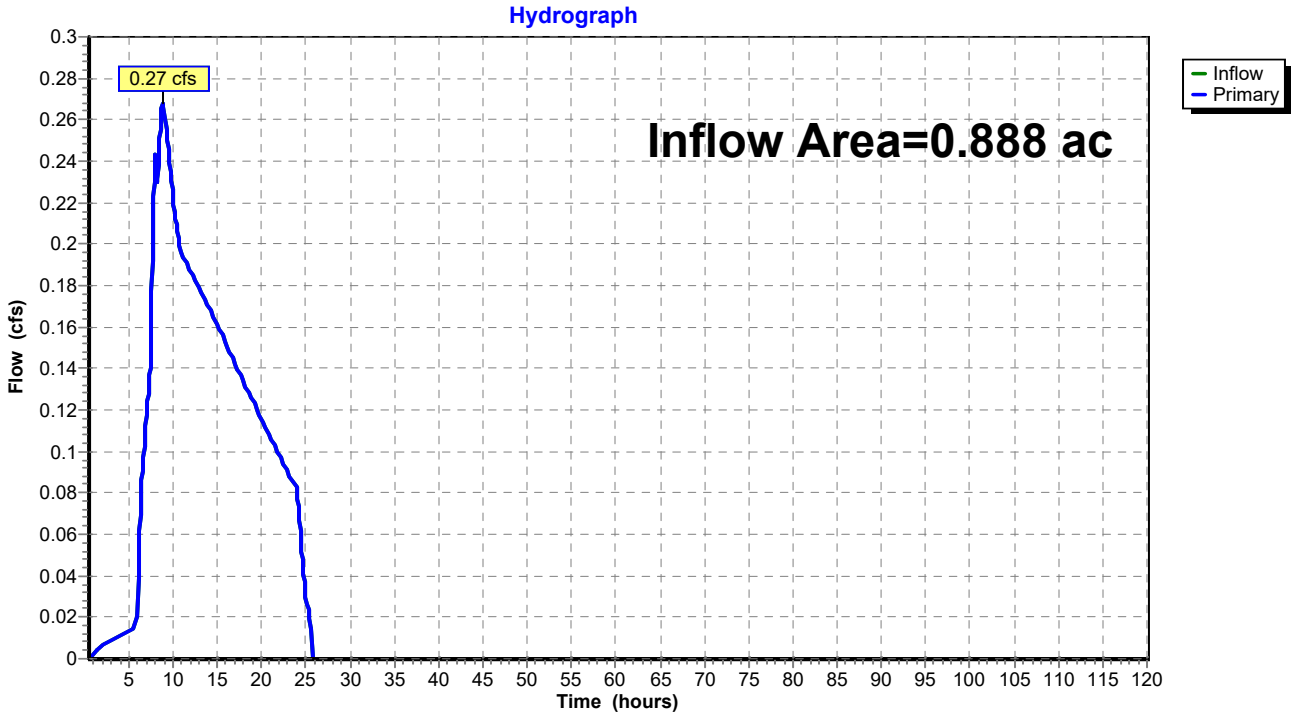


Summary for Link 20L: Developed Release

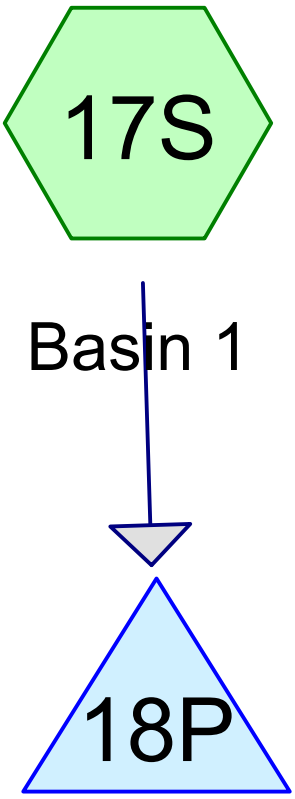
Inflow Area = 0.888 ac, 76.46% Impervious, Inflow Depth > 3.21" for Salem 100 YR event
Inflow = 0.27 cfs @ 8.87 hrs, Volume= 0.237 af
Primary = 0.27 cfs @ 8.87 hrs, Volume= 0.237 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 20L: Developed Release



Surface Test



Subcat Reach Pond Link

Routing Diagram for Reid Saunders
Prepared by Westech Engineering Inc

Summary for Subcatchment 17S: Basin 1

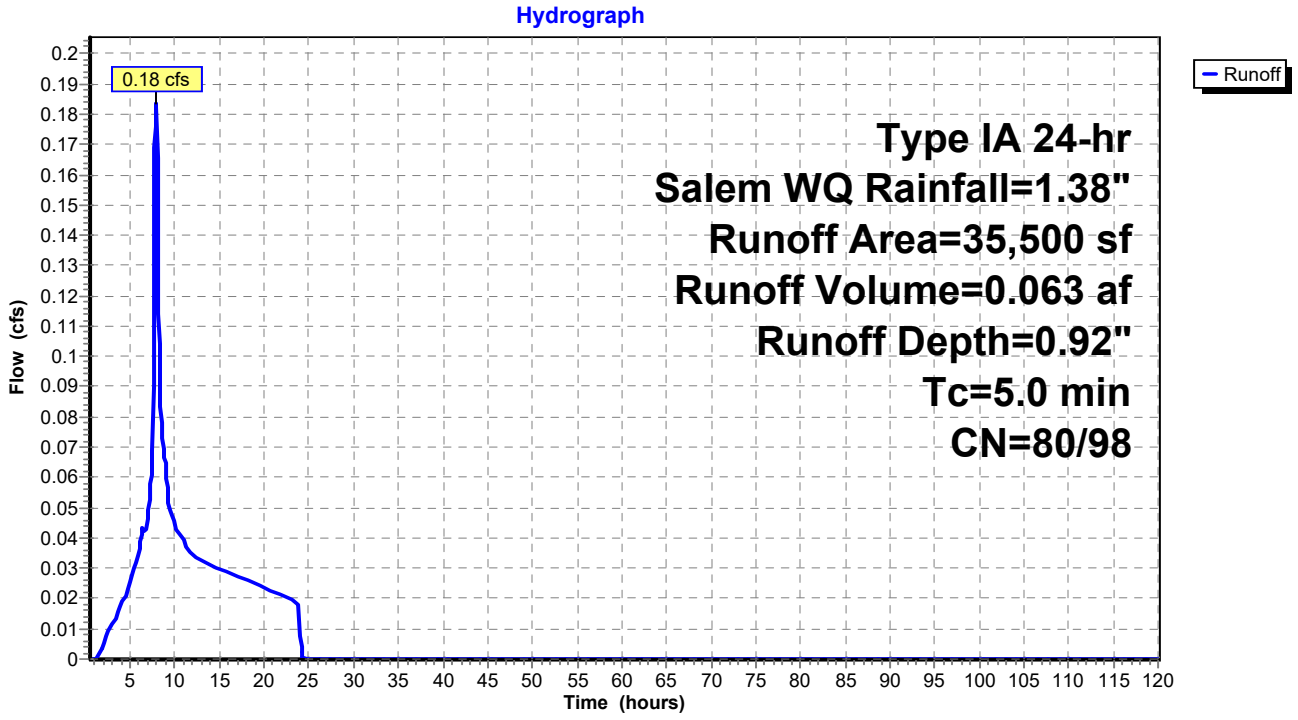
Runoff = 0.18 cfs @ 7.93 hrs, Volume= 0.063 af, Depth= 0.92"
Routed to Pond 18P : RG

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr Salem WQ Rainfall=1.38"

Area (sf)	CN	Description
26,400	98	Paved parking, HSG D
9,100	80	>75% Grass cover, Good, HSG D
35,500	93	Weighted Average
9,100		25.63% Pervious Area
26,400		74.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 17S: Basin 1



Summary for Pond 18P: RG

Inflow Area = 0.815 ac, 74.37% Impervious, Inflow Depth = 0.92" for Salem WQ event
Inflow = 0.18 cfs @ 7.93 hrs, Volume= 0.063 af
Outflow = 0.05 cfs @ 9.39 hrs, Volume= 0.063 af, Atten= 73%, Lag= 88.1 min
Discarded = 0.05 cfs @ 9.39 hrs, Volume= 0.063 af

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 251.55' @ 9.39 hrs Surf.Area= 950 sf Storage= 457 cf

Plug-Flow detention time= 79.3 min calculated for 0.063 af (100% of inflow)
Center-of-Mass det. time= 79.3 min (792.8 - 713.5)

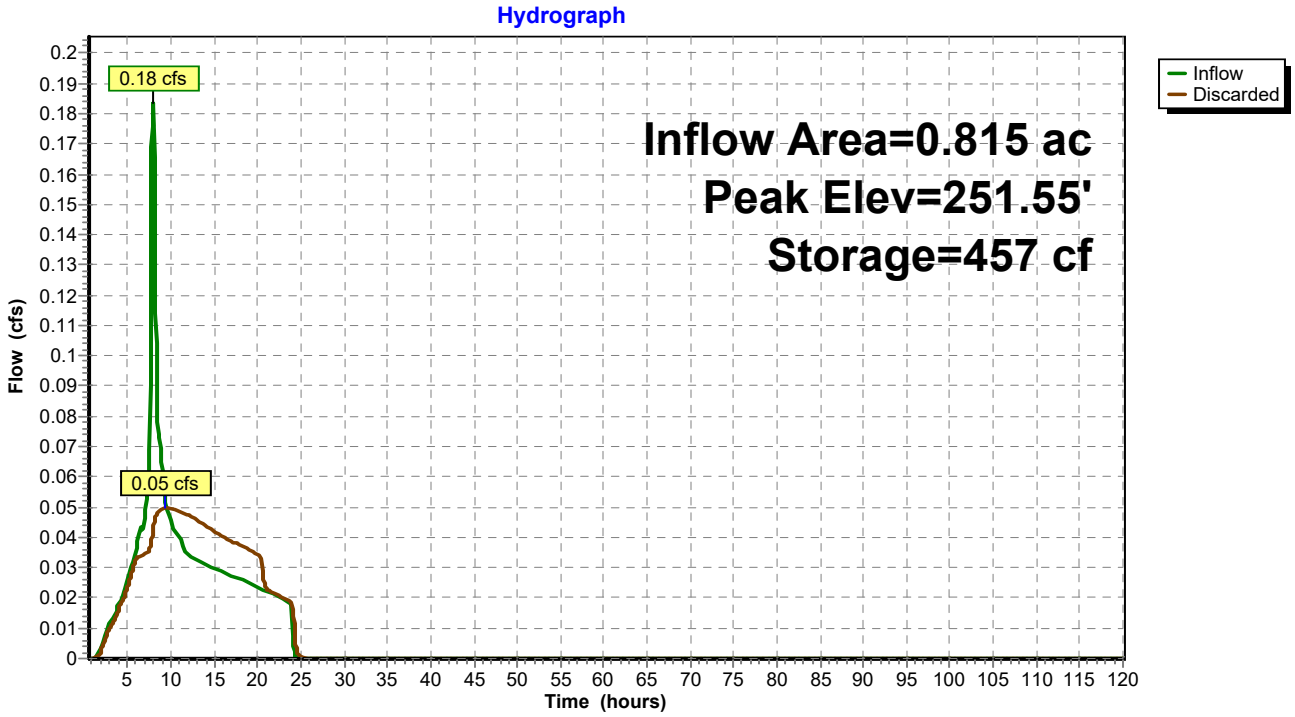
Volume	Invert	Avail.Storage	Storage Description
#1	251.00'	4,501 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
251.00	700	0.0	0	0
252.00	1,150	100.0	925	925
253.00	1,640	100.0	1,395	2,320
254.00	1,640	100.0	1,640	3,960
254.33	1,640	100.0	541	4,501

Device	Routing	Invert	Outlet Devices
#1	Discarded	251.00'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.50'

Discarded OutFlow Max=0.05 cfs @ 9.39 hrs HW=251.55' (Free Discharge)
↑**1=Exfiltration** (Controls 0.05 cfs)

Pond 18P: RG


Hydrograph
Inflow Area=0.815 ac
Peak Elev=251.55'
Storage=457 cf
0.18 cfs
0.05 cfs
Inflow
Discarded
Flow (cfs)
Time (hours)
0 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.1 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19 0.2
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120

APPENDIX D

GEOTECHNICAL REPORT

GeoEngineers
333 High Street NE, Suite 102
Salem, Oregon 97301
971.304.3078

October 8, 2020

Ward Development, LLC
6998 Chakarun Lane SE
Salem, Oregon 97306

Attention: Steve Ward

Subject: Letter Report
Infiltration Testing Services – Data Results Summary
Legacy Heights Development
2250 Old Strong Rd SE
Salem, Oregon
File No. 24737-001-00

INTRODUCTION

GeoEngineers, Inc. (GeoEngineers) is pleased to submit this letter report to summarize on-site infiltration testing data for recently constructed WC facilities at the Legacy Heights development located at the site of the former Fairview Hospital and Training site located at 2250 Old Strong Road SE in Salem, Oregon. Field infiltration confirmation testing was requested by you as site earthwork is on-going.

GeoEngineers provided a pavement recommendations and geologic assessment report for the project dated March 10, 2020, including geotechnical construction recommendations for fill placement and permanent slopes. In addition, GeoEngineers is providing on-going geotechnical construction observation to confirm fill compaction and roadway construction as part of infrastructure development. Our report did not include structural foundation recommendations and our observations are provided as part of overall site and infrastructure development. The location of the infiltration test sites relative to the surrounding area is shown in the Site Plan, Figure 1, based on the plan set provided to us by Ward Development, LLC.

SCOPE OF SERVICES

The purpose of our services was to characterize near-surface soil conditions and to determine field-tested infiltration rates at the requested location at a depth near the surface to reflect in-place infiltration rates. Our proposed scope of services was conducted based on the information provided by you, our experience in the site area, the infiltration testing procedures for a pit infiltration test as outlined in "Division 004" of the *City of Salem Department of Public Works Administrative Rules Design Standards* (COSDS) and our understanding of the project.

A backhoe excavator, operator, and a water truck were provided on site for our testing by the on-site earthwork contractor as arranged by Ward Development. Our geotechnical work was directly supervised by a professional engineer licensed in the state of Oregon.

SITE CONDITIONS

Field explorations and infiltration testing at the site were conducted on September 16, 2020. Our exploration included one infiltration test pit to a depth of approximately 2 feet below ground surface (bgs) at each test site. The approximate location of the infiltration tests performed is shown in Figure 1.

The ground surface at the existing WC facilities consisted of on-site soils recently graded to plan elevations with slopes up to surrounding grades. At the north location, near proposed Audubon Avenue (Site A, see Figure 1) the facility base consisted of sandy silt fill with gravel. Grades in the area of Site A had been raised from original site grade by approximately 1 foot at the base of the facility based on our observations of the testing pit. Photos 1 and 2 below were taken at the test location prior to testing.

Photo 1. Test Location A - Audubon Avenue (View to southeast)

Photo 2. Test Location A - Audubon Avenue (View to northwest)

At the south location near proposed Strong Alley (Site B, see Figure 1) the facility base consisted of a very dense silty gravel. Grades in the area of Site B had reportedly been cut up to 7 feet based on discussions with the project civil engineer. Excavations in the base of Site B, shown in Photos 3 and 4 below, show a thin graded section of silty fill at the surface underlain by native residual (weathered in place rock) clayey and silty gravel soils.

Photo 3. Test Location B - Strong Alley (View to east)

Photo 4. Test Location B - Strong Alley (View to west)

INFILTRATION TESTING

As requested, we conducted an infiltration test on site to assist in evaluation of the capacity of the on-site soils for the recently constructed WC facilities. We conducted one infiltration test at each location as requested at depth of approximately 2 feet bgs. Testing was conducted using the open pit falling head procedure consistent with the method outlined in "Division 004" of the COSDS. A 2-inch layer of washed, bagged gravel was placed in the bottom of the approximate 2-foot by 2-foot excavation prior to adding water to diminish disturbance from flowing water at the base of the test pit. The test area was pre-soaked over a 4-hour period by repeated addition of water into the excavation when necessary.

After the saturation period, the hole was filled with clean water to at least 12 inches above the soil in the bottom of the excavation. The drop in water level was measured over a period of time after the soak period. In the case where the water level falls during the time-measured testing, infiltration rates diminish as a result of less head from the water column in the test.

Field test results are summarized in Table 1 below. Field data and incremental infiltration rate over time are included in Appendix A – Infiltration Test Summaries, Figures A-1 and A-2.

TABLE 1. INFILTRATION RESULTS

Infiltration Test No.	Location	Depth (feet)	Material Type	Field Measured Infiltration Rate[1] (inches/hour)
IT-1	Site A – Audubon Avenue (See Figure 1)	2	Sandy silt with gravel	5.0
IT-2	Site B – Strong Alley (See Figure 1)	2	Silty, clayey gravel (residual material)	0.2

Notes:

[1] Appropriate factors should be applied to the field-measured infiltration rate, based on the design methodology and specific system used.

As required to be reported by "Division 004" the infiltration rate shown in Table 1 is a field-measured infiltration rate. This represents a short-term measured rate, and factors of safety have not been applied for the type of infiltration system being considered, or for variability that may be present in on-site soils.

With respect to long-term performance of stormwater facilities, infiltration flow rates of focused systems typically diminish over time as suspended solids and precipitates in the stormwater tend to clog the void spaces between the soil particles or cake on the infiltration surface or in the engineered media. Serviceable life of an infiltration media in a stormwater system can be extended if pre-filtering is a part of the existing system, or with on-going accessible maintenance over the infiltrating media. As a backup, infiltration systems should include an overflow that is connected to a suitable discharge point.

Suitability of Infiltration System

When considering successful performance of stormwater infiltration systems, and whether a system is well-suited for use in a development, depend on several site-specific factors. Stormwater infiltration systems are generally best suited for sites having sandy or gravelly soil with saturated hydraulic conductivities greater than 2 inches per hour. Sites with silty or clayey soil, including sites with fine sand, silty sand, or gravel with have a high percentage of silt or clay in the matrix are generally not well suited for stormwater

infiltration. Soil that has fine-grained matrices is susceptible to volumetric change and softening during wetting and drying cycles. Fine-grained soil also has large variations in the magnitude of infiltration rates because of bedding and stratification that occurs during deposition and often has thin layers of less permeable or impermeable soil within a larger layer.

Based on our field testing, unfactored stormwater infiltration rates as shown in Table 1, based on in-place testing at the recently built facilities, may be used and appropriately factored to evaluate the proposed facility performance.

LIMITATIONS

We have prepared this report for the exclusive use of the Ward Development, LLC and their authorized agents for the recently constructed WC facilities at the Legacy Heights development project in Salem, Oregon. This report is not intended for use by others, and the information contained herein is not applicable to other sites or other areas of the site. No other party may rely on the product of our services unless we agree in advance and in writing to such reliance.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in the area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

REFERENCES

City of Salem Department of Public Works Administrative Rules Design Standards (COSDS), 2014. City of Salem Administrative Rules Division 004.

We appreciate the opportunity to provide services to Ward Development on this project. Please call if you have questions or require additional information regarding this project.

Sincerely,
GeoEngineers, Inc.

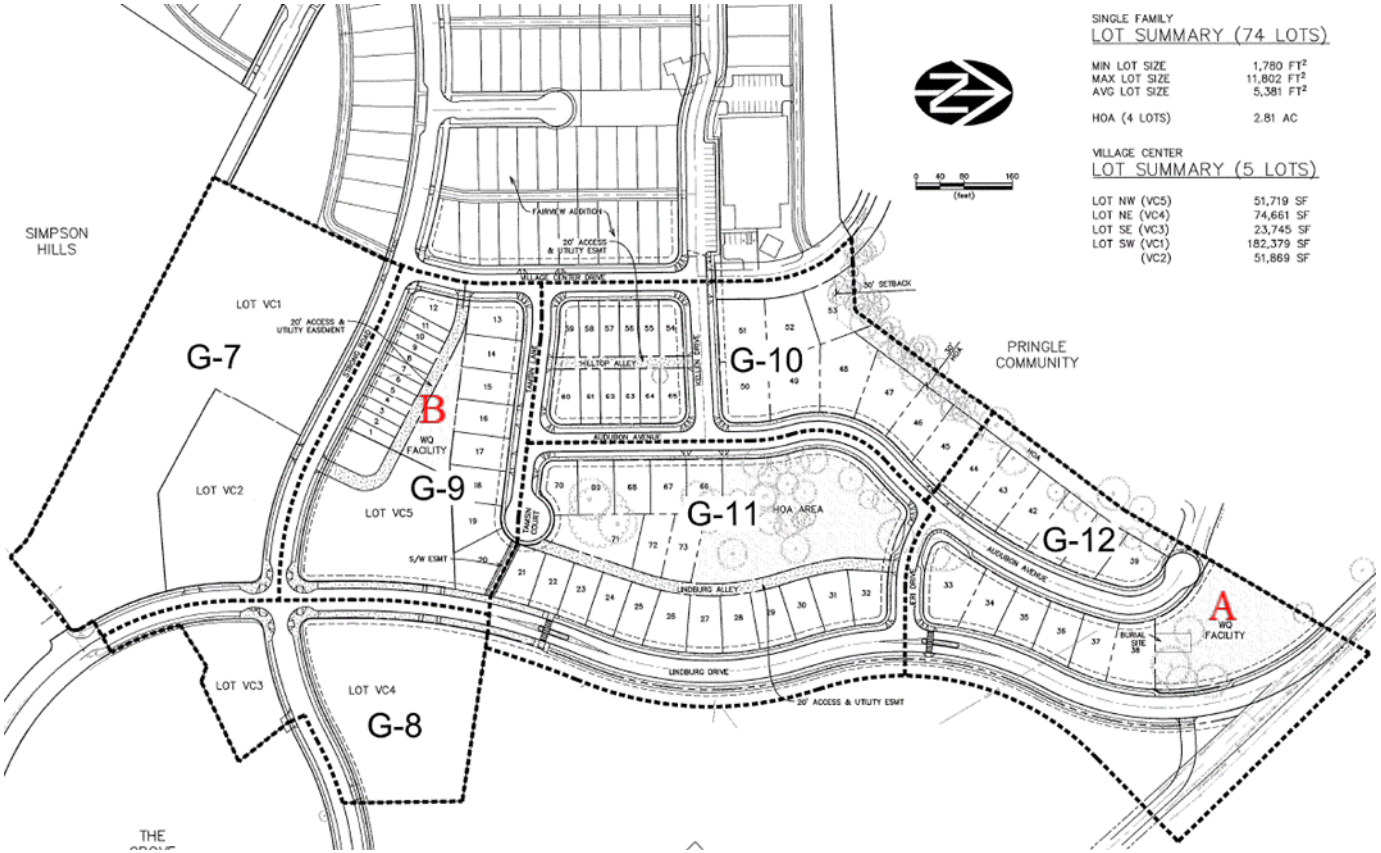
REGISTERED PROFESSIONAL ENGINEER
60333
10/09/2020
OREGON
FEBRUARY 08, 2000
JULIO C VELA

Julio C. Vela, PhD, PE, GE
Principal

JCV:cje

EXPIRES: 06/30/21

Attachments:
Figure 1. Site Plan
Appendix A. Infiltration Test Summaries and Photo
Figures A-1 and A-2. Infiltration Test Summaries



Legend

A WC Facility – Audubon Avenue

B WC Facility – Strong Alley

Not to Scale

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Site Plan	
Legacy Heights Development Salem, Oregon	
GeoEngineers	Figure 1

APPENDIX A
Infiltration Test Summaries and Photo

APPENDIX A
INFILTRATION TEST SUMMARIES AND PHOTO

Photo A-1. Infiltration Test Pit for IT-1.

Location: North End of Site
Depth to bottom: 2.3'
Tester's Name: Torey Crosby
Tester's Company: GeoEngineers

Date: 9/16/2020
Dimension: 2'x2'x1'
Tester's Contact No: 225-921-0456

Test Hole Number: A-1
Test Method: Open Pit Falling Head
GeoEngineers Job: 24737-001-00

	Depth	Soil Texture
	0-1'	Lt. brown clayey silt to silty clay (stiff to very stiff, moist) (compacted fill)
	1' - 2.3'	Brown silt with sand and clay (medium stiff to stiff, moist) (very stiff near interface with upper fill from fill compaction)

Time of Day	Time Interval (min)	Total Time (min)	Depth of Water from Bottom of Hole (inches)	Dist. Interval (inches)	Infiltration (inches/hour)	
12:32	0	0	12.0			
12:42	10	10	8.3	3.8	22.5	
12:52	10	20	7.3	0.9	5.6	Test #1
13:02	10	30	5.6	1.7	10.1	
13:12	10	40	4.4	1.2	7.1	
13:22	10	50	3.5	0.9	5.6	
13:32	10	60	2.75	0.8	4.5	Avg.
			Total	9.3	9.3	
14:25	0	0	9.2			
14:35	10	10	7.9	1.3	7.5	
14:45	10	20	5.9	2.1	12.4	Test #1
14:55	10	30	4.5	1.4	8.3	
15:05	10	40	3.7	0.8	4.9	
15:15	10	50	2.8	0.9	5.3	
15:25	10	60	2.00	0.8	4.9	Avg.
			Total	7.2	7.2	
15:54	0	0	12.0			
16:04	10	10	9.8	2.2	13.1	
16:14	10	20	8.1	1.8	10.5	Test #1
16:24	10	30	6.3	1.8	10.5	
16:34	10	40	5.0	1.3	7.9	
16:44	10	50	4.1	0.9	5.6	
16:54	10	60	3.19	0.9	5.3	Avg.
			Total	8.8	8.8	

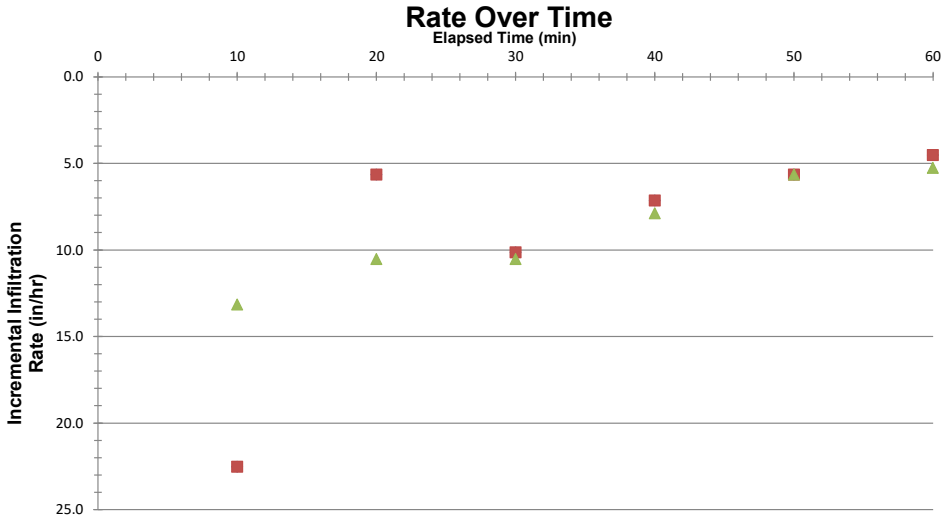


Figure A-1

Location: South End of Site
Depth to bottom: 2.3'
Tester's Name: Torey Crosby
Tester's Company: GeoEngineers

Date: 9/16/2020
Dimension: 2'x2'x1'
Tester's Contact No: 225-921-0456

Test Hole Number: A-2
Test Method: Open Pit Falling Head
GeoEngineers Job: 24737-001-00

	Depth	Soil Texture
	0-1'	Lt. brown clayey silt to silty clay (stiff to very stiff, moist) (compacted fill)
	1' - 2.1'	Reddish Brown clayey silt with gravel (very stiff, moist) (residual clayey soil)

Time of Day	Time Interval (min)	Total Time (min)	Depth of Water from Bottom of Hole (inches)	Dist. Interval (inches)	Infiltration (inches/hour)	
12:39	0	0	12.0			
12:49	10	10	11.8	0.3	1.5	
12:59	10	20	11.6	0.2	1.1	Test #1
13:09	10	30	11.5	0.1	0.4	
13:19	10	40	11.4	0.1	0.4	
13:29	10	50	11.4	0.1	0.4	
13:39	10	60	11.38	0.0	0.0	Avg.
			Total	0.6	0.6	
14:31	0	0	12.0			
14:41	10	10	12.0	0.0	0.0	
14:51	10	20	11.9	0.1	0.4	
15:01	10	30	11.9	0.0	0.0	Test #1
15:11	10	40	11.9	0.0	0.0	
15:21	10	50	11.9	0.1	0.4	
15:31	10	60	11.9	0.0	0.0	Avg.
			Total	0.1	0.1	
16:01	0	0	12.0			
16:11	10	10	11.9	0.1	0.4	
16:21	10	20	11.9	0.0	0.0	
16:31	10	30	11.9	0.1	0.4	Test #1
16:41	10	40	11.9	0.0	0.0	
16:51	10	50	11.9	0.0	0.0	
17:01	10	60	11.81	0.1	0.4	Avg.
			Total	0.2	0.2	

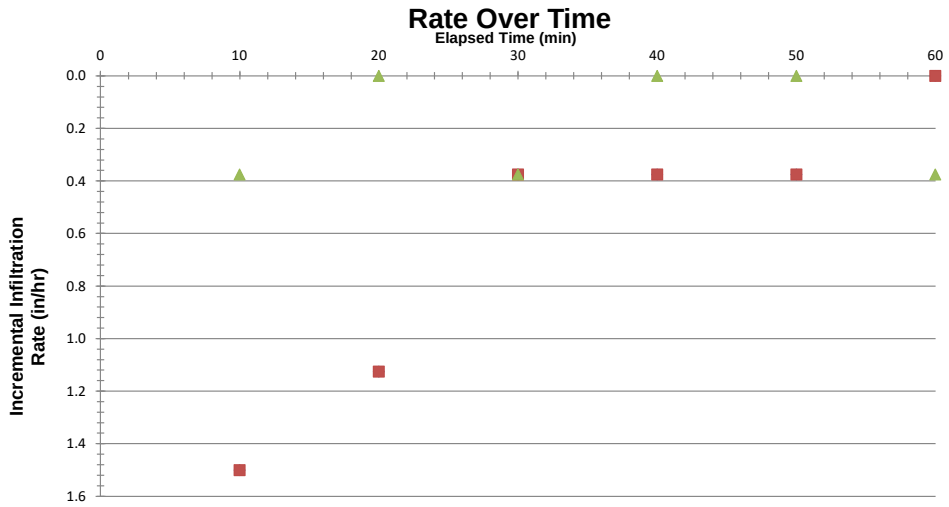


Figure A-2

APPENDIX E

OPERATIONS AND MAINTENANCE

2. Rain Garden

A rain garden is a **vegetated infiltration basin** or depression created by excavation, berms, or small dams to provide for short-term ponding of surface water until it percolates into the soil. The basin should infiltrate stormwater within 24 hours.

Inspections

All facility components and vegetation shall be inspected for proper operations and structural stability. *These inspections shall occur, at a minimum, quarterly for the first two years from the date of installation, and two times per year thereafter.* It is recommended that a visual inspection be made within 48 hours after each major storm event to ensure proper function. The facility owner must keep a log, recording all inspection dates, observations, and maintenance activities. The following items shall be inspected and maintained as stated:

Date: ____/____/_____ Inspector's Name: _____

Basin inlet shall ensure unrestricted stormwater flow to the vegetated basin.

- □ Sources of erosion shall be identified and controlled when native soil is exposed or erosion channels are present.
- □ Inlet shall be kept clear at all times.
- □ Rock splash pads shall be replenished to prevent erosion.

Inspection Comments: _____

Embankment, dikes, berms, and side slopes retain water in the infiltration basin.

- □ Structural deficiencies shall be corrected upon discovery.
- □ Slopes shall be stabilized using appropriate erosion control measures when soil is exposed/flow channels are forming.
- □ Sources of erosion damage shall be identified and controlled.

Inspection Comments: _____

Overflow or emergency spillway conveys flow exceeding reservoir capacity to an approved stormwater receiving system.

- □ Overflow shall be kept clear at all times.
- □ Sources of erosion damage shall be identified and controlled when soil is exposed.
- □ Rocks or other armament shall be replaced when only one layer of rock exists.

Inspection Comments: _____

Amended soils shall allow stormwater to percolate uniformly through the infiltration basin. If water remains 36 hours after a storm, sources of possible clogging shall be identified and corrected.

- □ Basin shall be raked and, if necessary, soil shall be excavated and cleaned or replaced.

Inspection Comments: _____

Appendix B to 109-011 – Facility Maintenance Forms

2. Rain Garden (continued)

Sediment/Basin debris management shall prevent loss of infiltration basin volume caused by sedimentation.

- □ Sediment exceeding 3 inches in depth, or so thick as to damage or kill vegetation, shall be removed.
- □ Sediment accumulation shall be hand-removed with minimum damage to vegetation using proper erosion control measures.

Inspection Comments: _____

_____

Debris and litter shall be removed to ensure stormwater infiltration and to prevent clogging of overflow drains and interference with plant growth.

- □ Restricted sources of sediment and debris, such as discarded lawn clippings, shall be identified and prevented.

Inspection Comments: _____

_____

Vegetation shall be healthy and dense enough to provide filtering while protecting underlying soils from erosion. Proper horticultural practices shall be employed to ensure that plants are vigorous and healthy.

- □ Mulch shall be replenished as needed, but not inhibiting water flow.
- □ Vegetation, large shrubs, or trees that interfere with rain garden operation shall be pruned.
- □ Fallen leaves and debris from deciduous plant foliage shall be raked and removed.
- □ Nuisance or prohibited vegetation from the City of Salem Non-Native Invasive Plant list shall be removed when discovered. Invasive vegetation shall be removed immediately upon discovery.
- □ Dead vegetation shall be removed upon discovery.
- □ Vegetation shall be replaced as soon as possible to maintain cover density and control erosion where soils are exposed.

Inspection Comments: _____

_____

Spill prevention measures shall be exercised when handling substances that contaminate stormwater.

- □ Releases of pollutants shall be corrected as soon as identified.

Inspection Comments: _____

Training and/or written guidance information for operating and maintaining vegetated infiltration basins shall be provided to all property owners and tenants. This Facility Maintenance Form can be used to meet this requirement.

Inspection Comments: _____

Access to the infiltration basin shall be safe and efficient. Egress and ingress routes shall be maintained to design standards. Roadways shall be maintained to accommodate size and weight of vehicles, if applicable.

- □ Obstacles preventing maintenance personnel and/or equipment access to the infiltration basin shall be removed.
- □ Gravel or ground cover shall be added if erosion has occurred.

Inspection Comments: _____

_____

2. Rain Garden (continued)

Nuisance insects and rodents shall not be harbored in the infiltration basin. Pest control measures shall be taken when nuisance insects/rodents are found to be present.

- □ Holes in the ground located in and around the infiltration basin shall be filled.

Inspection Comments: _____

_____

If used at this site, the following will be applicable:

Fences shall be maintained to preserve their functionality and appearance.

- □ Collapsed fences shall be restored to an upright position.
- □ Jagged edges and damaged fences shall be repaired or replaced.

Inspection Comments: _____

_____

APPENDIX F

CIVIL DRAWINGS

EROSION CONTROL LEGEND

- SILT SACK
- BIO-BAG
- SILT FENCE

DEMOLITION LEGEND

- (R) REMOVE
- (P) PROTECT
- (S) SAWCUT

0 10 20 40
(feet)

LEGACY HEIGHTS, VOLUME H48, PAGE 90, BOTP

LOT 18 | LOT 19 | LOT 20

12" BLOCK WALL

IR 5/8" YPC

BRASS CAP

CITY OF SALEM STORMWATER FACILITY

PRIVATE WAY

SDMH FLOW CONTROL [RIM 260.32]
PVC 12" NE IE=253.51
PVC 10" SE IE=253.52

CB [RIM 258.87]
PVC 8" SW IE=257.78

CB [RIM 258.26]
PVC 8" NE IE=257.17
PVC 8" NW IE=252.08

SANITARY FACILITIES

WATER, SANITARY SEWER, STORM DRAIN, AND WATER QUALITY EASEMENT TO CITY OF SALEM PER LEGACY HEIGHTS

CONCRETE WASHOUT

GRAVEL CONSTRUCTION ENTRANCE

RAINGARDEN FG=252

SDMH [RIM 255.08]
PVC 8" SW IE=247.48
PVC NW IE=247.59

SDMH [RIM 250.03]
PVC 12" SW IE=250.03
PVC 12" NW IE=250.14

10' PUBLIC UTILITY EASEMENT AND PUBLIC SIDEWALK EASEMENT PER LEGACY HEIGHTS

Δ=13°01'57"
R=1,030.00,
L=234.20,
CH=S6°54'58"W,
232.64

LOT 74, LEGACY HEIGHTS "VC5"

LOT 3 | LOT 2 | LOT 1

ACCESS EASEMENT GRANTING ACCESS TO SWM FACILITY PER LEGACY HEIGHTS

1 STORM WATER STRUCTURE [RIM 252.36]
NO INVERT INFO

SDMH [RIM 252.33]
PVC 10" N IE=248.05
PVC 8" NE IE=249.06
PVC 10" SW IE=248.99

CP CONDUIT GAS

N61°46'58"W 82.12'

CB BEEHIVE [RIM 251.43]
PVC 10" NE IE=248.93
PVC 18" S IE=248.67

SSMH [RIM 252.05]
PVC 8" NE IE=244.93
PVC 8" SE IE=244.75
PVC 8" NW IE=244.82

SDMH [RIM 252.11]
PVC 10" N IE=247.61
PVC 18" SE IE=246.71
PVC 10" SW IE=246.86
PVC 10" NW IE=246.42

CB BEEHIVE [RIM 251.43]
PVC 10" SW IE=247.68
PVC 10" NE IE=247.53

Δ=20°59'08"
R=480.00,
L=175.81,
CH=N72°16'32"W,
174.83

Δ=96°49'55"
R=30.00,
L=50.70,
CH=S48°48'56"W,
44.88

S00°23'59"W 56.61'

STRONG RD SE

SDMH [RIM 249.62]
PVC 8" E IE=241.46
PVC 8" NE IE=241.59

SDMH [RIM 243.16]
PVC 18" E IE=243.01
PVC 18" NW IE=243.12

CB BEEHIVE [RIM 248.42]
PVC 10" N IE=242.75
PVC 10" S IE=244.37

LINDBURG RD SE

SDMH [RIM 258.60]
S 48" IE=244.60

CB [RIM 249.35]
PVC 10" E IE=245.92

SDMH FLOW CONTROL [RIM 249.72]
PVC 24" N IE=244.32
PVC 10" E IE=245.62
PVC 10" S IE=244.34
PVC 8" W IE=245.62

CB [RIM 249.41]
PVC 10" W IE=245.85

STORM WATER QUALITY MH

SDMH [RIM 249.12]
PVC 10" N IE=243.32
PVC 10" E IE=243.45
PVC 12" S IE=243.27
PVC 10" W IE=243.32

CB BEEHIVE [RIM 248.47]
PVC 10" N IE=245.17
PVC 12" S IE=244.97

CB [RIM 247.98]
PVC 12" S IE=243.18

SSMH [RIM 247.87]
PVC 8" E IE=238.52
PVC 8" W IE=238.64

SDMH [RIM 247.80]
PVC 12" N IE=242.40
PVC 18" E IE=240.97
PVC 12" S IE=241.98
PVC 18" W IE=242.06

10' PUBLIC UTILITY EASEMENT AND PUBLIC SIDEWALK EASEMENT PER LEGACY HEIGHTS

CONC SWK | CURB/GUTTER | ASPH | BC WLSSD | R/W | SSCO | SD | SS | GAS | ELEC | TELE

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH, OT THIS SHEET, ADJUST SCALES ACCORDINGLY

BY	DESCRIPTION	NO.	DATE
	REVISIONS		

DSN. SW
DRN. AK
CKD. SW
DATE: 11/2022

REGISTERED PROFESSIONAL ENGINEER
11843
OREGON
JULY 16, 1982
STEVEN A. WEST
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

REID SAUNDERS
REID SAUNDERS – NEW OFFICE

EROSION CONTROL PLAN – DEMOLITION & CLEARING

DRAWING
C1.0

JOB NUMBER
3391.0000.0

3/3/2023 10:42:18 AM
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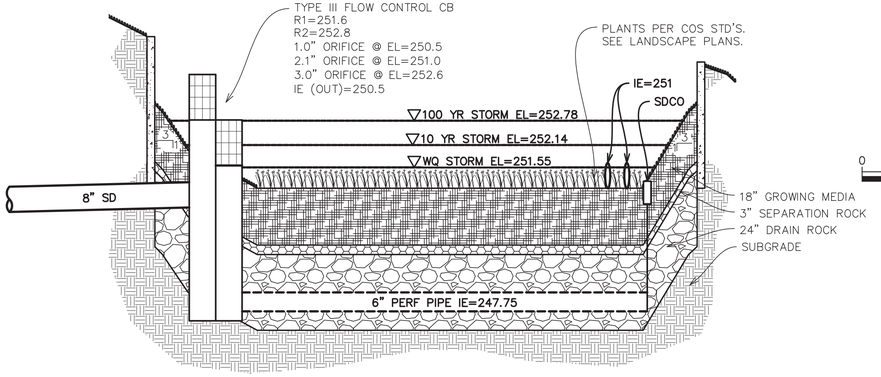
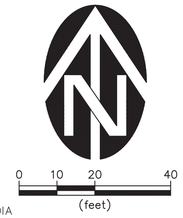
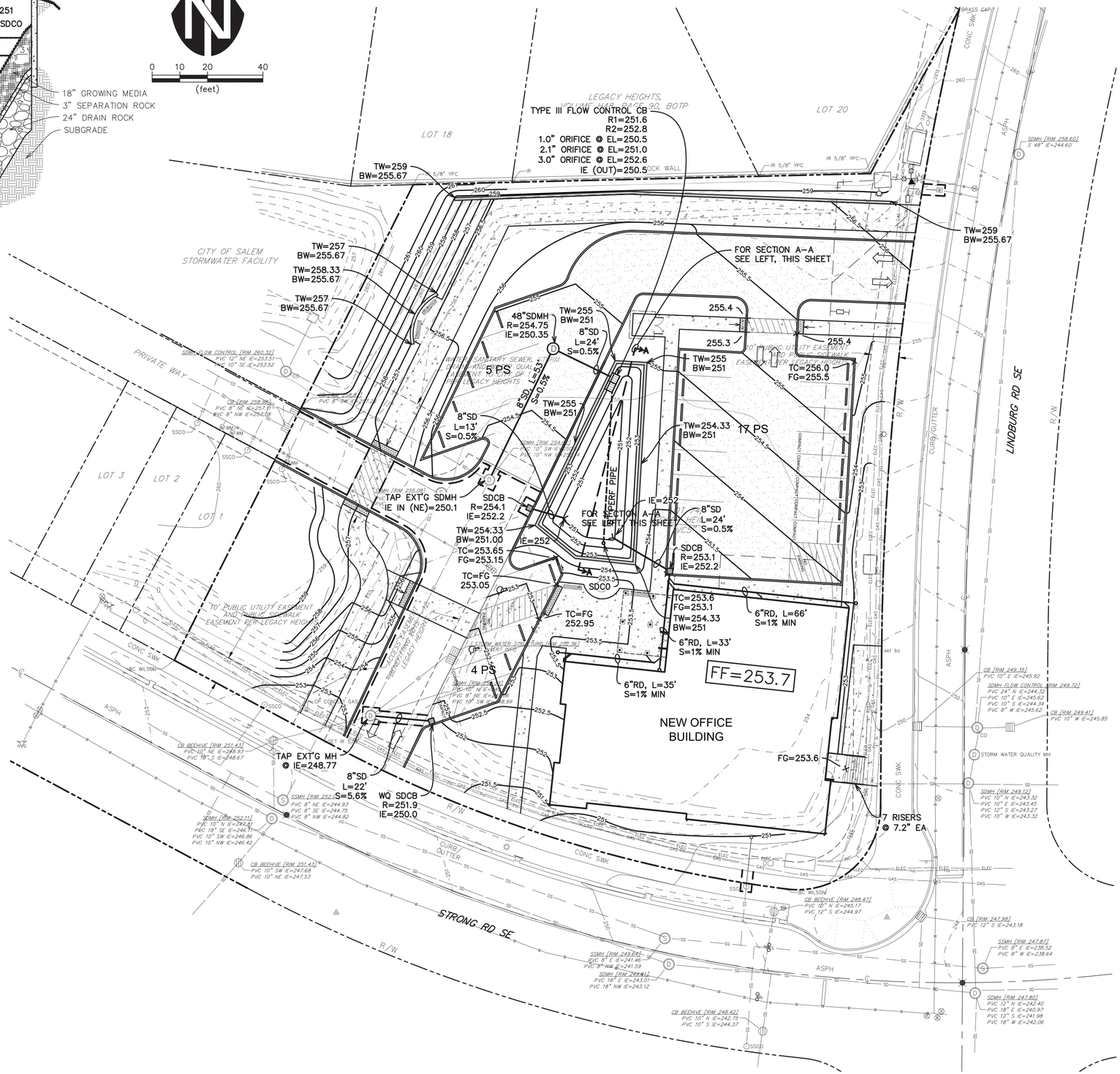


RAINGARDEN SECTION A–A
NTS





WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SW
DRN. AK
CKD. SW
DATE: 11/2022

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WILSON
11843
RENEWS: 6/30/2024

REID SAUNDERS
REID SAUNDERS – NEW OFFICE

GRADING & DRAINAGE PLAN

DRAWING
C2.0

JOB NUMBER
3391.0000.0

3/10/2023 5:39:17 PM
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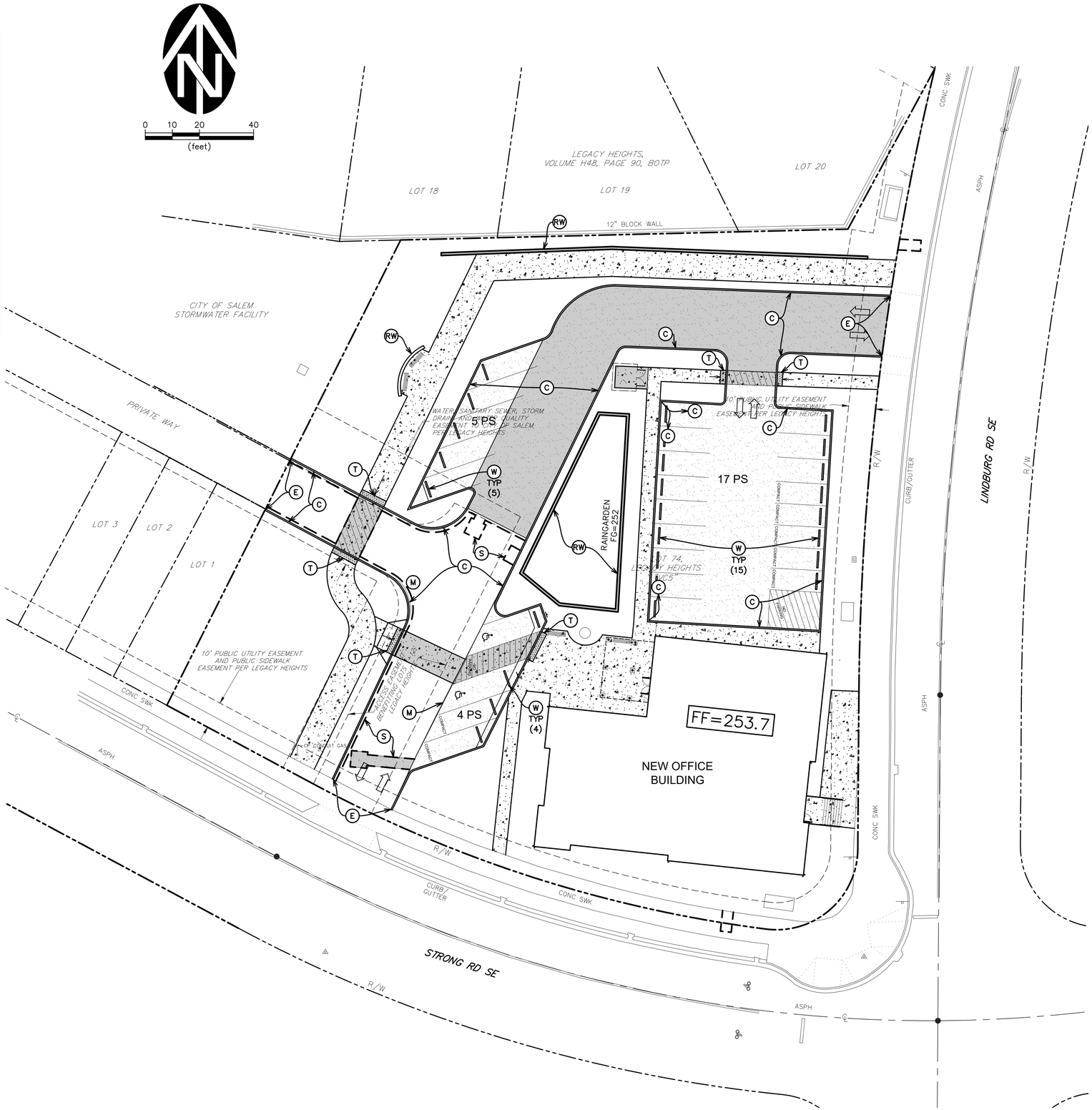
SURFACING LEGEND

	HEAVY DUTY ASPHALT 3.5" AC (2 LIFTS) OVER 12" CR BASE OVER COMPACTED SUBGRADE
	LIGHT DUTY ASPHALT 3.5" AC (2 LIFTS) OVER 6" CR BASE OVER COMPACTED SUBGRADE
	PEDESTRIAN CONCRETE 4" 3300 PSI PCC OVER 2" CR BASE OVER COMPACTED SUBGRADE
	HEAVY DUTY CONCRETE 7" 3300 PSI PCC OVER 2" CR BASE OVER COMPACTED SUBGRADE
(C)	TYPE 'C' CURB
(E)	END CURB
(M)	MATCH
(RW)	SEGMENTAL RETAINING WALL
(S)	SAWCUT
(T)	TRUNCATED DOMES
(W)	WHEELSTOPS



NO.	DATE	DESCRIPTION	BY
		REVISIONS	

VERIFY SCALE
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IF NOT ONE INCH, ADJUST THIS SHEET ACCORDINGLY

DSN. SW
DRN. AK
CKD. SW
DATE: 11/2022

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WEST
11843
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

REID SAUNDERS

REID SAUNDERS – NEW OFFICE

SURFACING PLAN

DRAWING
C2.1

JOB NUMBER
3391.0000.0

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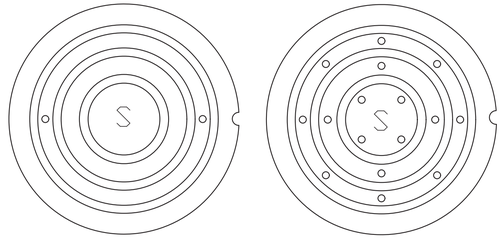
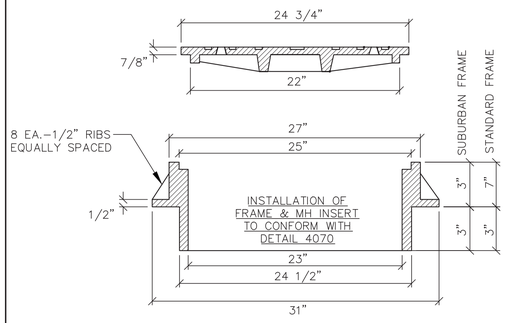


SANITARY STORM



NOTES:

1. COVER AND FRAME SHALL BE GRAY CAST IRON ASTM A–48, CLASS 30.
2. COVER AND FRAME TO BE MACHINED TO A TRUE BEARING ALL AROUND.
3. NOTCH LID FOR LIFTING HOOK.

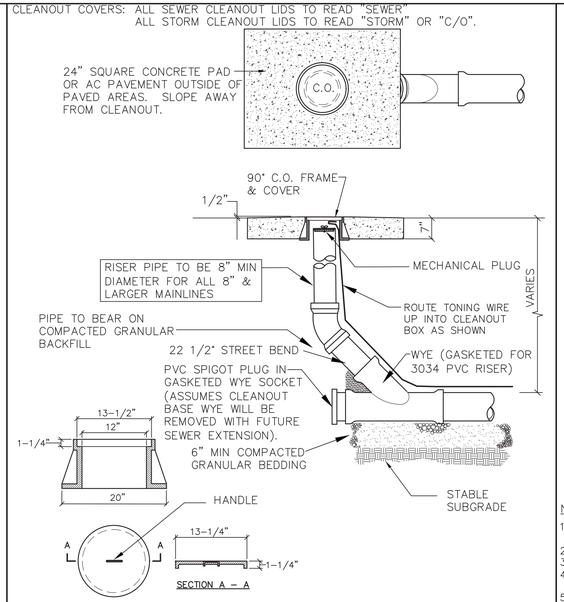
LAST REVISION DATE:	JO #
DEC 2015	STANDARD

MANHOLE FRAME AND COVER (STANDARD AND SUBURBAN)

(NTS)

WESTECH ENG.	DETAIL NO.
	4050

CLEANOUT COVERS: ALL SEWER CLEANOUT LIDS TO READ "SEWER"
ALL STORM CLEANOUT LIDS TO READ "STORM" OR "C/O".



CLEANOUT FRAME & COVER

NOTES:

1. USE INLAND FOUNDRY MODEL 240 FRAME & COVER IN ALL AREAS.
2. COVER AND FRAME SHALL BE GRAY CAST IRON ASTM A–48, CLASS 30.
3. COVER AND FRAME TO BE MACHINED TO A TRUE BEARING ALL AROUND.

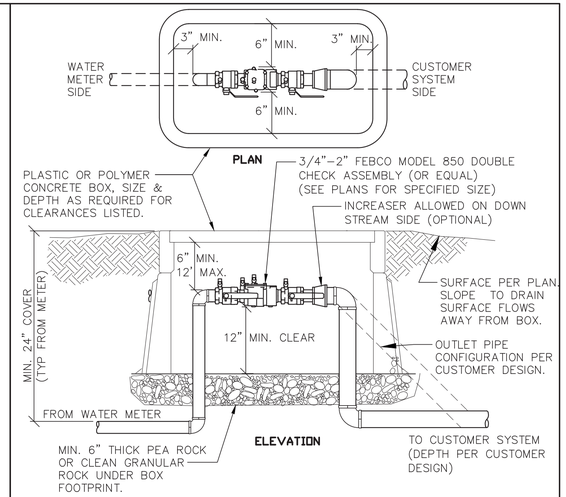
ALL CONCRETE SHALL BE 3300 PSI @ 28 DAYS, MAX 5" SLUMP, 4.5% AIR (±1.5%).

LAST REVISION DATE:	COPYRIGHT 1996 WESTECH ENGINEERING, INC.
AUG 2020	

MAINLINE CLEANOUT

(NTS)

WESTECH ENG.	DETAIL NO.
	4110



NOTES:

1. VERIFY THE ENCLOSURE/BOX DIMENSIONS & DEPTH ARE ADEQUATE FOR CLEARANCES SHOWN, BASED ON THE SIZE OF THE DCA AND FITTINGS ACTUALLY PROVIDED & INSTALLED.
2. ENCLOSURE/BOX SHALL BE CENTERED OVER THE COMPLETED DOUBLE CHECK ASSEMBLY.
3. PER OAR 333–61–0071, DCA SHALL NOT BE SUBJECT TO CONTINUOUS IMMERSION.
4. DCA's SHALL BE INSTALLED ABOVE THE 100 YEAR FLOOD LEVEL UNLESS OTHERWISE APPROVED IN WRITING BY THE PUBLIC WORKS DIRECTOR.
5. BYPASS LINES AROUND DOUBLE CHECK ASSEMBLIES ARE NOT ALLOWED.
6. DCA's SHALL BE PROVIDED WITH BRASS OR PLASTIC PLUGS IN ALL TEST PORTS.
7. DCA SHALL BE LOCATED ON PRIVATE PROPERTY, AND SHALL NOT BE INSTALLED IN SIDEWALKS OR AREAS SUBJECT TO VEHICULAR TRAFFIC.
8. THE PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN A MINIMUM OF 3 FEET OF MAINTENANCE ACCESS WORKING CLEARANCE AROUND DCA ENCLOSURES/BOXES.
9. PRIOR TO REQUESTING APPROVAL OR FINAL INSPECTION BY THE CITY, CONTRACTOR SHALL HAVE DCA TESTED, AND COPIES OF TEST REPORTS PROVIDED TO PUBLIC WORKS.
10. PROPERTY OWNER SHALL BE RESPONSIBLE TO PROVIDE FREEZE PROTECTION DURING COLD WEATHER PERIODS AS NECESSARY.

LAST REVISION DATE:	JO #
AUG 2015	STANDARD

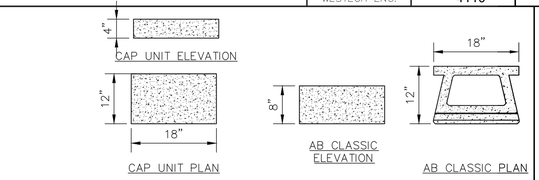
2" AND SMALLER DOUBLE CHECK VALVE ASSEMBLY (DCA)

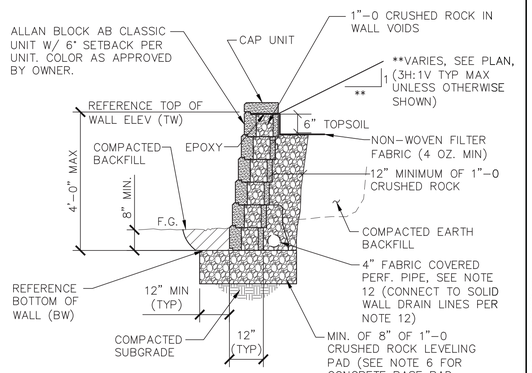
(NTS)

WESTECH ENG	DETAIL NO.
	5311

RETAINING WALL NOTES:

1. Segmental Retaining Wall (SRW) concrete units shall be the standard color, rough face finish and conform to the requirements of ASTM C–90, ASTM C–140 and ASTM C–145. **Owner to select color from samples submitted by Contractor.**
2. Segmental concrete block units shall conform to the Allan Block® retaining wall system, manufactured by Allan Block® Corporation, or an approved alternate and conform to the requirements of ASTM C–90. The wall design is based upon **Allan Block® AB Classic units (8"H x 18"W x 12D"; 75 lbs./unit.)**
3. The Allan Block retaining wall, or approved equal, shall be constructed per manufacturer specifications and approved construction drawings, unless modified herein.
4. This SRW design is based upon the blocks specified above. The Contractor, may, at no additional cost to the owner, submit SRW design and shop drawings for an alternate SRW system for approval by the Owner's representative. The shop drawings shall include design calculations stamped by a professional engineer registered in the State of Oregon. Special inspection requirements, as specified herein, still apply to the substitute design. If the alternate wall system is approved, the Contractor shall be responsible for revising the block layout as necessary to address any differences in the SRW block dimensions.
5. The Contractor shall protect from damage, store and handle all materials in accordance with manufacturers recommendations and in a manner to prevent deterioration or damage due to moisture, temperature changes, Ultraviolet (UV) degradation, contaminants, corrosion, breaking, chipping or other causes. Damaged material shall not be incorporated into the segmental retaining wall.
6. Crushed rock leveling pad shall be placed on top of compacted subgrade (except where concrete base pad/footing is required on the drawings). Granular leveling pad shall be placed and compacted to a minimum of 92% of maximum dry density per AASHTO T–180 (Modified Proctor). Leveling pad thickness shall be a minimum of 8 inches as measured in place. An acceptable alternative is a 5" concrete (3300 psi) base pad on compacted subgrade.
7. Maximum particle size for wall backfill shall not exceed 2 inches in diameter.
8. The plasticity index (PI) for the backfill material used in the reinforced wall backfill shall not exceed 30 and the liquid limit shall not exceed 40, as per ASTM D–4318. The owner does not guarantee that all site soils meet these criteria.
9. Backfill shall be placed and compacted in lifts not to exceed a loose depth thickness of 8 inches for hand operated vibratory equipment and 12 inches for walk behind, self–propelled vibratory equipment. Backfill shall be compacted to 92% of AASHTO T–180 compaction standard.
10. Drainage backfill behind wall and voids in the SRW units shall consist of 1"–0 crushed rock containing no more than 5% passing No. 200 sieve. Provide 4 oz minimum drainage fabric above drain rock (12" minimum lap at any joints).
11. Wall drainpipe shall be fabric covered (3 oz min) HDPE slotted pipe conforming to ASTM F–405 (ADS Sock or approved equivalent). Wall drain pipe shall be connected to solid–wall drain pipe(s) draining to daylight or to an approved storm drain system.
12. The overall tolerance for the constructed face of wall relative to the vertical wall design or batter shall not exceed ± 1.25 inches maximum over a 10 foot distance; 3 inches maximum.
13. Cap units shall be secured in place using a flexible exterior grade masonry sealant.
14. The wall drainage system specified is intended to serve the Segmental Retaining Wall (SRW) in its final constructed condition in conjunction with the final site improvements in their final constructed condition. During construction, the Contractor shall manage site drainage and divert stormwater away from the wall structure as necessary to prevent overloading of wall drainage reinforced systems.
15. At the end of the each day's operation, the Contractor shall slope the last level of backfill away from the wall face to direct runoff of rainwater away from the wall face. In addition, the Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.
16. Inspection is required for construction of this segmental block retaining wall (SRW). Inspection to be arranged and scheduled by Contractor as specified.
17. Contractor shall insure all inspections are performed prior to proceeding with the next phase of work. At a minimum inspections shall include the following items: Observation that the wall subgrade bearing capacity meets the specified soil bearing capacity, or a minimum of 2,000 psf, whichever is greater. Observations of the compacted crushed rock leveling pads and wall drainage system. Observation of the wall batter. Soil testing results for plasticity index and liquid limit values for wall backfill material. Compaction results for the wall backfill.



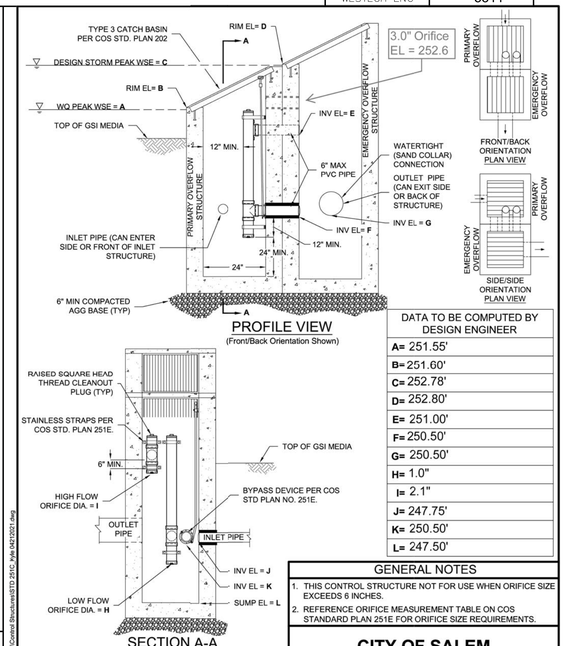


LAST REVISION DATE:	JO #
AUG. 2020	STANDARD

SEGMENTAL RETAINING WALL (NON-REINFORCED)

(NTS)

WESTECH ENG.	DETAIL NO.
	8310



DATA TO BE COMPUTED BY DESIGN ENGINEER
A= 251.55'
B= 251.60'
C= 252.78'
D= 252.80'
E= 251.00'
F= 250.50'
G= 250.50'
H= 1.0"
I= 2.1"
J= 247.75'
K= 250.50'
L= 247.50'

GENERAL NOTES

1. THIS CONTROL STRUCTURE NOT FOR USE WHEN ORIFICE SIZE EXCEEDS 6 INCHES.
2. REFERENCE ORIFICE MEASUREMENT TABLE ON COS STANDARD PLAN 251E FOR ORIFICE SIZE REQUIREMENTS.

CITY OF SALEM DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

FLOW CONTROL STRUCTURE-TYPE 3

CHANGES						
APPROVED	CITY ENGINEER	6/8/2021 DATE	DRAWN BY	KLA	4/2021	**NO.251C**
			CHECKED BY	JDL	4/2021	

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NO.	DATE	DESCRIPTION	BY
		REVISIONS	

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. SW
DRN. AK
CKD. SW
DATE: 11/2022

REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1982 STEVEN A. WAY
11843
RENEWS: 6/30/2024

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585–2474 Fax: (503) 585–3986
E–mail: westech@westech–eng.com

REID SAUNDERS
REID SAUNDERS – NEW OFFICE

CONSTRUCTION DETAILS

DRAWING
C5.1

JOB NUMBER
3391.0000.0