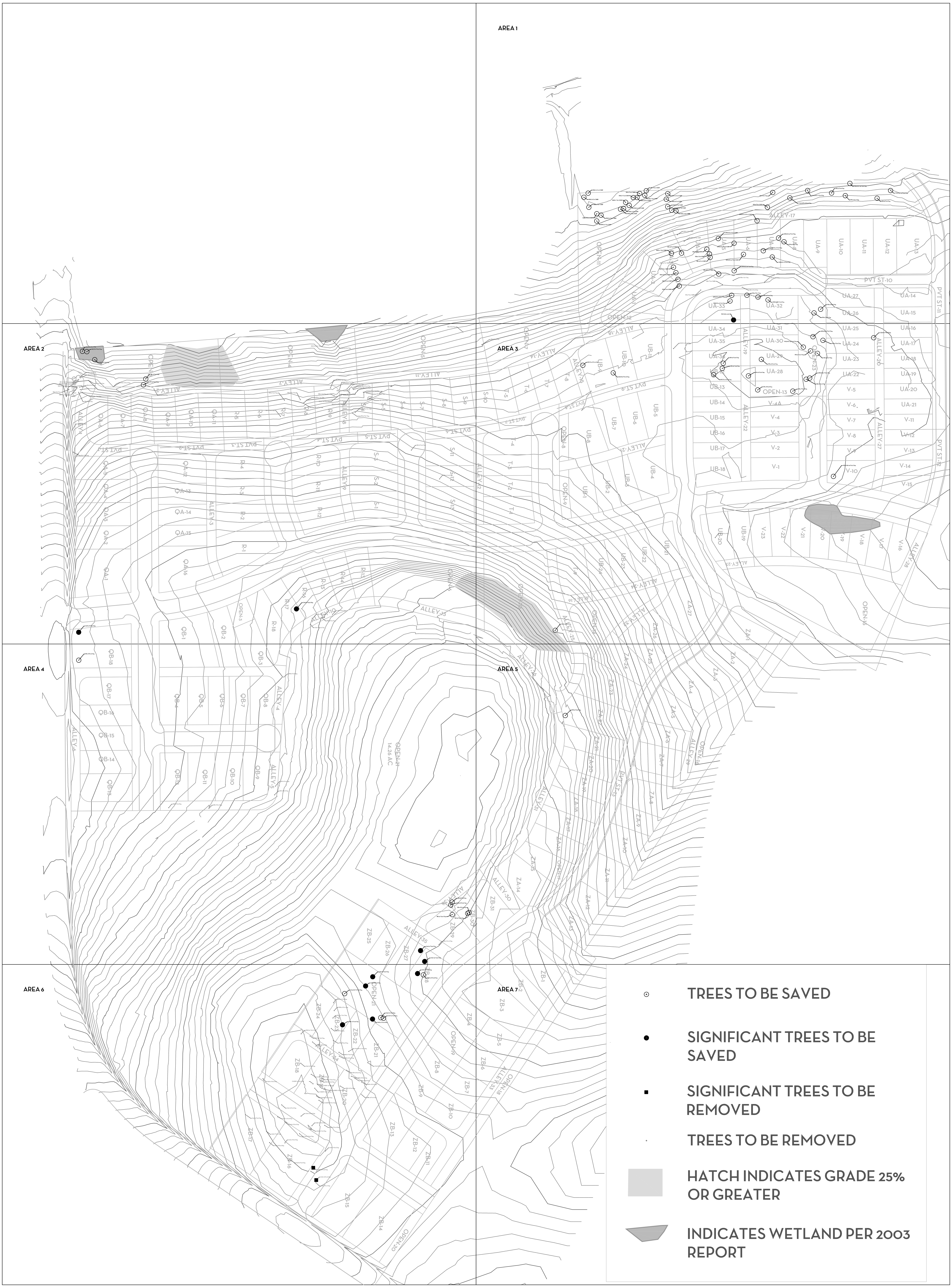
APPENDIX A: TREE INVENTORY FROM SURVEYOR


AREA 1
AREA 2
AREA 3
AREA 4
AREA 5
AREA 6
AREA 7
TREES TO BE SAVED
SIGNIFICANT TREES TO BE SAVED
SIGNIFICANT TREES TO BE REMOVED
TREES TO BE REMOVED
HATCH INDICATES GRADE 25% OR GREATER
INDICATES WETLAND PER 2003 REPORT

APPENDIX B: FAIRVIEW TRAINING CENTER NATURAL RESOURCES INVENTORY

Natural Resources Inventory

EXHIBIT 4

W&H Pacific, October 2003

Natural Resources Inventory for:

Sustainable Fairview Site

Prepared for

Sustainable Fairview Associates

October 22, 2003

Prepared by

W&H Pacific
9755 SW Barnes Road, Suite 300
Portland, Oregon 97225

Prepared for:

Sam Hall
Sustainable Fairview Associates
P.O. Box 144
Salem, Oregon 97308
(503) 371-1758

Title: Natural Resources Inventory for Sustainable Fairview Site

Project: WHP Job No. 30527

Prepared by:

W&H Pacific
9755 SW Barnes Road, Suite 300
Portland, Oregon 97225
(503) 626-0455
Contacts: Philip J. Quarterman, Senior Wetland Scientist

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I INTRODUCTION AND PURPOSE OF REPORT

This report presents results of a natural resources inventory on the Sustainable Fairview Site (the former Fairview Training Center), located in Salem, Oregon. The project area is bounded on the north by Strong Road, on the east by Reed Road SE, on the south by Battle Creek Road, and on the west by Pringle Road SE. See Figure 1, Vicinity Map for the project area location. The site investigation took place on October 3, 2003.

The purpose of this report is to provide a natural resources factual base for the Fairview Plan, a master plan for the Sustainable Fairview site. Sustainable Fairview Associates are currently developing the Fairview Plan as required by the City of Salem Fairview Mixed-Use (FMU) zone (Salem Revised Code Chapter 143C). Part of the purpose of the FMU zone is to:

> "Preserve, to the greatest extent possible, the existing natural areas and open space, that may not otherwise be protected through conventional development". (Ch. 143C.010 (h))

Among the requirements of the Fairview plan is an overall open space plan "identifying an integrated network of open spaces for the purpose of preserving and enhancing identified natural drainage patterns, significant trees and vegetation, and wetlands on the site, accommodating significant topographical features, and providing opportunities for active and passive recreation." (Ch. 143C.080 (b)(2))

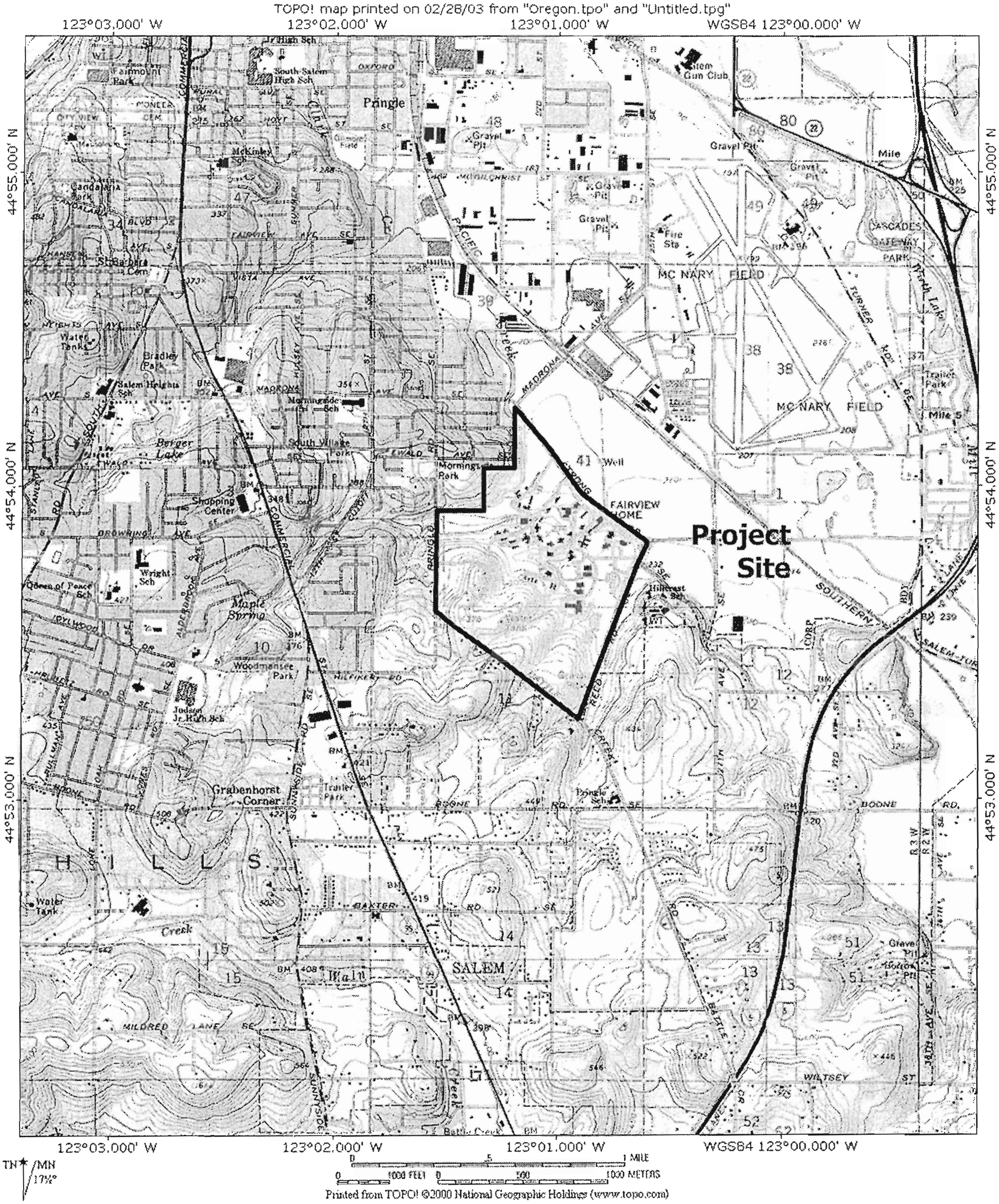
The Fairview Plan includes a site analysis, which includes an "inventory and delineation of existing natural resources, including, but not limited to wetlands, as identified on the Local Wetlands Inventory, perennial and intermittent streams, and significant tree stands or groves, including any provisions for the preservation or conservation of these resources with attention given to the Natural Resource Guidelines in 143C.160." This report provides the inventory and delineation of natural resources required for the Fairview Plan.

The Natural Resources Guidelines state that the Fairview Plan shall identify how existing natural resources shall be protected through compliance with SRC Chapter 68, Preservation of Trees and Vegetation, and SRC Chapter 126, Wetlands. The Fairview Plan "shall consider all of the following:

1) The preservation of the natural drainage patterns of the site;
2) The existence and use of native plant species, where appropriate;
3) The integrity of mature stands of trees that are in good health;
4) The significant wildlife habitat.
5) The minimization of the amount of impervious surfaces near all waterways."

These code requirements provide the basis for this report.

TOPO! map printed on 02/28/03 from "Oregon.tpo" and "Untitled.tpg"



Printed from TOPO! ©2000 National Geographic Holdings (www.topo.com)

Source: Topo! Oregon. 2000. National Geographic Holdings, Inc. Based on the 1986 USGS Salem West quadrangle map.

W&H PACIFIC	VICINITY MAP Sustainable Fairview Site Sustainable Fairview Associates Marion County, Oregon	Figure 1

II WETLANDS AND HYDROLOGY

A wetland delineation report, *Delineation of Wetlands and Other Waters of the United States for Sustainable Fairview Site,* has been prepared for the site, dated March 28, 2003. It has been filed with the Oregon Division of State Lands (DSL) for their review and "Jurisdictional Determination", but has not yet been filed with the U.S. Army Corps of Engineers (Corps). The report identifies 14 areas of "potential jurisdictional wetland" or "other waters" totaling 6.68 acres, as shown on Figure 2, Wetland Map. Wetlands and waters on the site include Pringle Creek and associated wetlands, two drainages in the southern part of the site which include small streams and associated wetlands, and various other emergent wetlands. In our judgment, certain of these areas, though they meet wetland criteria, may not be regulated by either the Corps of Engineers or Division of State Lands, or both. This may be due to their being artificially created in an upland location, or "isolated" from "waters of the U.S." (i.e. streams), or being in some other exempt category. Please refer to the wetland delineation report for discussion of jurisdictional issues.

SRC Chapter 126, Wetlands, sets forth standards for a Local Wetlands Inventory (LWI) and criteria for designating certain wetlands as **"locally significant wetlands"** (LSW). Revisions to Ch. 126 are currently proposed for adoption by the City Council. These revisions, if approved, will adopt the existing LWI (prepared in 1999). The revisions will also adopt a process for the City to add LSWs to the inventory if they meet the specified criteria. The inventory is to be updated as additional wetlands are identified, for instance by wetland delineation reports for proposed development sites, upon concurrence by the DSL. See Appendix B for the text of the proposed revisions to Chapter 126.

Currently, only two wetland areas within the Fairview site are mapped as "LSW": Pringle Creek and a small wetland on the western boundary that is associated with the creek. These areas are identified in the wetland delineation report as Area 4 (Pringle Creek) and Area 9. See the wetland delineation report for photographs of the wetland areas on the site.

The following is a summary description of wetlands and streams identified in the report, which provides additional information on vegetation, soils and hydrology. These descriptions do not classify additional wetlands as "LSW". This may be determined by the City, upon adoption of the above amendments to Chapter 126 using the adopted criteria.

Area 1 is located in a drainage in the southeastern part of the site and consists of a stream channel and three "slope" wetlands. The drainage begins at a culvert under Battle Creek Road. Stormwater from the adjacent residential area enters the drainage through the culvert. The wetlands are located in areas of shallow aquifer discharge (seeps), and provide base flow in the stream. The upper seep wetland is dominated by black cottonwood *(Populus trichocarpa)*, willow *(Salix spp.)*, and native herbaceous species. The smaller seep wetlands downstream are dominated by non-native grasses and native herbaceous species such as soft rush *(Juncus effusus)*. The stream passes through a culvert and ends in a low-lying basin near Reed Road. Water from this wetland appears to drain under Reed Road into a fork of Pringle Creek. No culvert could be located. Area 6 is associated with this drainage. This appears to be a former farm pond impoundment into which the stream once flowed. The stream now flows beneath it through a culvert. Only the lowest part of this former impoundment is now wetland.

The seeps remain saturated at or just below the surface most of the year. The downstream seep was still discharging water to the stream at the time of the October 3 site investigation, after a dry summer.

Area 2 is located in a drainage that extends into the site from the southern boundary at Battle Creek Road. It consists of a stream channel and three wetlands. Stormwater from the adjacent residential area passes through a culvert under Battle Creek Road. The upper wetland appears to be a "slope" wetland like those in Area 1. The lower wetlands appear to have formed in shallow basins, with water feeding into them from the stream and wetland above. This lower wetland drains into a culvert and enters the drainage system beneath the Fairview building complex.

Area 3 is a short segment of a fork of Pringle Creek located in the southeastern corner of the site.

Area 4 consists of the channel of the mainstem of Pringle Creek and adjacent "slope" wetlands. (Note that the LWI does not show the adjacent wetlands.) The area is currently undergoing riparian restoration by Oregon Watersheds. This group has carried out bank stabilization, removal of invasive non-native species, such as Himalayan blackberry *(Rubus procerus)*, and planting of native trees and shrubs. Woody structures have also been placed in the stream channel. The adjacent wetland areas contribute ground water to the creek and help maintain baseflow. Wetland Area 10 is associated with Pringle Creek. It consists of a shallow basin in an adjacent "old field". It may also contribute to flow in Pringle Creek. Wetland Area 11 consists of a stormwater detention facility parallel to Pringle Creek. This broad, linear basin was excavated to receive overbank flows from the creek. Technically, it meets wetland criteria.

Area 5 consists of a shallow basin in an "old field" where a tile drain system has failed. This area is seasonally saturated. Precipitation in the drainage to the south infiltrates into the soil and is conveyed by the tile drain system. The system appears to be broken or blocked, creating Area 5. The tile drain system then carries the water to the east to a field inlet that connects to the drainage system under the Fairview building complex.

Area 7 is a flat grassy area below a zone of local shallow aquifer discharge near the eastern boundary. A shallow drainage ditch carries water to a culvert that leads to a roadside ditch along Reed Road. The existence of a connection to the fork of Pringle Creek across Reed Road could not be verified.

Area 8 and 9 are small "slope" wetlands located along the property boundary in areas of shallow aquifer discharge. . They are south of Pringle Creek on the opposite side of school playing fields, and have no surface connection, nor any apparent direct subsurface connection to the creek. Area 9 is, however, classified as "LSW" in the City's LWI.

Area 12 is a small pond near the main entrance that is reported to have been constructed as a visual amenity. It also receives stormwater, and in effect performs a stormwater detention function.

Area 13 is a small localized area of seasonal saturation in a constructed drainage swale. Area 14 is a small wetland next to a building that appears to have developed as a result of leakage from within the building.

III STREAMS AND RIPARIAN VEGETATION

The Sustainable Fairview site contains reaches of four streams. All are within the Pringle Creek drainage basin. (See Figure 3, Natural Resources Inventory Map)

The mainstem of Pringle Creek flows through the northern part of the site. It drains an extensive basin within the developed part of the city to the west. Pringle Creek is a perennial, fish-bearing stream. Although this reach of the Pringle Creek has not been surveyed, cutthroat trout, a salmonid, have been found downstream, and also in the upper reaches of other branches. They are likely to be present therefore, in the reach on the project site (phone conversation between Phil Quarterman and Wayne Hunt, District Fish Biologist, ODFW, 10/23/03). Lower reaches of the creek beyond the site are known to support fall Chinook salmon, an anadromous species. This population was introduced in the 1970's, but continues to maintain a spawning run in the fall. Juvenile steelhead and probably also juvenile Chinook, have been found in the lower mainstem of Pringle Creek. Pacific lamprey, also an anadromous fish, have been found in this reach. Resident fish species include sculpin and shiners.

The small reach of stream in the southeastern corner of the site is a tributary of the West Fork of Middle Fork Pringle Creek. It may also provide potential habitat for cutthroat trout, though this cannot be confirmed.

The stream in the southeastern part of the site (Area 1 in the wetland delineation report) is perennial at least in its lower reach downstream from the lowest "slope" wetland. The stream was still flowing in this reach at the October 3 site investigation. The upstream reach has intermittent flow, estimated to extend from approximately November 1 to early summer. It is not fish –bearing, as it has no surface connection to the Pringle Creek system.

The stream further to the northwest (Area 2) has intermittent flow for most of its length. However, flow is apparently perennial within part of the lower wetland. We observed flow through a small channel and at the culvert within the lower wetland at the October 3 site investigation. The channel is not fish-bearing. There is no surface connection to the Pringle Creek system.

SRC Chapter 68: Preservation of Trees and Vegetation, states:

- "No trees or intact riparian corridor vegetation shall be removed within the riparian corridor of a fish-bearing waterway, " and

- "No trees shall be removed within the riparian corridor of a non fish-bearing waterway" (Ch. 68.050).

The code provides for exceptions and variances under certain circumstances. See Appendix C for the text of SRC Chapter 68.

"Tree" is defined in the code as "any living, standing, woody plant, having a trunk eight inches or more in diameter or 25 inches or more in circumference, measured at a point four feet above grade at the base of the trunk." The **"riparian corridor"** is measured 50 feet horizontally from the top of bank on each side of a waterway with less than 1,000 cubic feet per second average annual flow. Where a **"significant wetland"** lies within the riparian corridor, the corridor includes all of the wetland, and is measured from the outer wetland boundary. (This latter provision will become will become operational upon City Council adoption of the LWI).

"Fish-bearing waterway" is defined as a waterway that supports salmonid fish species. These waterways are shown on an official city map. Fish-bearing waterways include reaches upstream of those that have been studied, to the first natural or non-removable fish passage barrier.

"Intact riparian corridor vegetation" is defined as "(V)egetation that is characterized by a diverse, multi-layered assemblage of native trees and a vigorous, dense understory of native plants" that provides any of a number of water quality, flood control , or wildlife habitat benefits.

Riparian corridors on both fish-bearing and non fish-bearing streams, including those associated with "significant" wetlands, are shown on Figure 3. Also shown are areas of trees and "intact riparian corridor vegetation" that are protected by SRC Chapter 68, or will become protected upon adoption of the LWI.

The riparian corridor along the mainstem of Pringle Creek includes three wetlands that could potentially become classified as "significant". These wetlands are not shown currently on the LWI map. As Pringle Creek runs along the western property line, part of the riparian corridor includes some adjacent developed residential areas.

Vegetation in the riparian corridor includes a variety of tree species, including Douglas fir *(Pseudotsuga menziesii)*, Oregon white oak *(Quercus garryana)*, black cottonwood, red alder *(Alnus rubra)*, Ponderosa pine *(Pinus ponderosa)*, and Oregon ash *(Fraxinus latifolia)*, ranging in size from small saplings to mature individuals. Worthy of special note is a large (24 inch diameter) old Pacific yew *(Taxus brevifolia)* on the east bank of the stream. Also prevalent are willow, both Piper willow *(Salix piperi)*, a shrub species, and Pacific red willow *(S. lasiandra)*, which may reach tree size). Alder, cottonwood, ash, and willow are the most prevalent along the stream bank and in adjacent wetlands.

The understory consists of a mixture of tree saplings, native shrubs (willow and red osier dogwood *(Cornus sericea)* are the dominant native species), and dense Himalayan blackberry. Recent riparian restoration efforts by Oregon Watersheds, in conjunction with Oregon

Department of Administrative Services, have focused on fish habitat improvements, control of blackberry and replacement by native shrub and tree plantings along the southern part of the riparian corridor within the Fairview site (see Photos 1-3). Blackberry is still very prevalent in the untreated part of the corridor. Given the dominance of blackberry, it is questionable that the untreated part meets the definition of "intact riparian corridor vegetation". The goal of the restoration work is to return the riparian corridor to this condition.

The short reach of the tributary of the West Fork of East Fork Pringle Creek in the southeastern corner of the site has a riparian corridor consisting of black cottonwood, willow, Pacific ninebark *(Physocarpus capitatus)*, and Himalayan blackberry. The main creek is shown as a fish bearing stream. It is unknown whether fish passage exists through the culvert under Reed Road. For the purposes of this report, we assume there is no fish-passage barrier. There is sufficiently diverse native plant cover for the riparian corridor to be considered "intact riparian corridor vegetation".

The two non fish-bearing streams are shown on Figure 3. The larger of the two streams is shown as part of Wetland Area 1 (see Figure 2 and Photo 4). The smaller is part of Wetland Area 2. The non-fish bearing streams generally lack trees within their riparian corridors. The only stand of trees of sufficient diameter to be protected under SRC Chapter 68 is a group of mature black cottonwood in the uppermost seep wetland along the larger of the two streams.

The riparian corridors of these two streams are dominated mostly by dense Himalayan blackberry thickets. There are also openings dominated by non-native grasses. The wetland areas adjacent to the streams are dominated by a mixture of non-native grasses and native wetland herbaceous species. The upper reach of Area 1 passes through an overgrown orchard where the fruit trees remain, though now invaded by blackberry.

The wetlands along these two non fish-bearing streams are classified as "non-significant" in the LWI. These wetlands could potentially become classified as "significant" wetlands under the proposed revisions to SRC Chapter 68. For the purposes of this report, the riparian corridor includes both the streams and the adjacent wetlands.

IV SIGNIFICANT TREE STANDS AND NATIVE PLANT SPECIES

The Fairview site contains a number of significant tree stands, shown on Figure 3, Natural Resources Inventory Map. See Appendix A for a table summarizing the 16 tree stands that were identified, and their characteristics. "Significant tree stand" is not a defined term in City code. For the purposes of this inventory, the term is defined as a group of six or more standing live native trees 12 inches or more diameter at breast height (dbh). SRC Chapter 68 does include a definition of **"significant tree"** for individual trees rather than stands, which includes Heritage trees (as defined in SRC Chapter 86.010) and "rare, threatened, or endangered" trees.

SRC Ch. 68 regulates the removal of trees on parcels of 20,000 square feet or more (SRC 680.040). It also requires submittal of a Tree Conservation Plan in conjunction with a building permit or other types of development proposal, such as a planned unit development, on properties with trees protected by the code. The criteria for "non-discretionary approval" include preservation of all "significant trees", as defined, and trees within riparian corridors, plus at least 25% of the existing trees on the property (SRC Ch. 68.075). There are a number of exceptions, including removal of "hazard trees".

The dominant native tree species in these stands are Douglas fir and Oregon white oak. In certain stands grand fir *(Abies grandis)* is also a dominant species. These native tree stands may be representative of pre-European settlement tree stands at least in their dominant tree and shrub species. The herbaceous layer has been much more heavily altered, and their historic composition is now not precisely known. Except perhaps for the largest trees, these trees are probably not old enough to date from the pre-European settlement era (approximately pre-1840), given the favorable growing conditions and relatively rapid growth rate for these species on this site, compared to higher elevations.

There are no known "rare, threatened, or endangered" tree species or Heritage Trees on the site.

Stand Number 5 in the southwestern corner of the site is the largest in area and the shrub layer is less disturbed than in many other stands. Part of the stand includes an area of former residences. It consists mainly of Douglas fir and Oregon white oak, with trees up to 48 in. dbh (see Photo 5). It has a diverse understory of native shrubs. There has been significant invasion, however, by Himalayan blackberry and English ivy *(Hedera helix)*.

Most of the stands in the developed part of the site have retained some large trees (mainly Douglas fir, Oregon white oak and grand fir), but the understory is maintained as open grass, or has become invaded by Himalayan blackberry or English ivy. Trees exceed 30 in. dbh in several stands, including one very large individual, a 72-in. diameter Douglas fir. One notable stand (Number 13) of large Douglas fir and Oregon white oak is located along the Strong Road frontage (see Photo 6).

Stands Number 9, 10 and 12 lie within the riparian corridor of Pringle Creek. Stand Number 4 lies within the riparian corridor of the southern non-fish bearing stream. (See discussion above).

Introduced trees have been planted within several of the stands. They include trees native to other regions of the Western United States: Port Orford cedar *(Chamaecyparis lawsoniana)*, giant sequoia *(Sequoiadendron gigantea)*, and grey pine *(Pinus sabiniana)*, and European trees, such as Scots pine *(Pinus sylvestris)*. The ponderosa pine seen in several stands may be examples of the native Willamette Valley ecotype, or may have been planted to non-native stock. Some ponderosa pine on site appears to have been planted, as they form rows. Certain stands of Douglas fir also appear to have been planted.

Two stands (Numbers 8 and 14) contain snags, apparently due to relatively recent mortality, the cause of which has not been determined.

A list of the primary native plant species on site is found in Appendix E. This list is not intended to be comprehensive. As outlined above, except in certain tree stands, the native shrub community is not well represented, and has been invaded by species such as Himalayan blackberry or converted to open grass. Over significant areas of the undeveloped portion of the site, outside of tree groves, the plant community is dominated by introduced grasses, remnants of old fruit and nut orchards, or Himalayan blackberry thickets. Native trees and shrubs are beginning to regenerate, however, particularly within open grasslands and where the old orchard trees are sparser. Many young individuals of Douglas fir, Oregon white oak, black hawthorn *(Crataegus douglasii)*, and Indian plum *(Oemleria cerasiformis)*, in particular are becoming well established in a mixed sapling-shrub-grass habitat type.

V SIGNIFICANT WILDLIFE HABITAT

The term "significant wildlife habitat" is not specifically defined in City code. For the purposes of this inventory report, "significant wildlife habitat" includes significant tree stands, streams and riparian corridors already discussed above. "Significant wildlife habitat" also includes corridors between these resources that provide cover, feeding, resting, nesting, and breeding habitat for wildlife species known to be present on the site. In this broader sense, the entire undeveloped portion of the site can be considered significant habitat for certain wildlife species. This is due in large part to the absence of direct human influence and disturbance and the extensive area (more than 60% of the approximately 275 acres on the site). Additional native trees stands are located to the east of the site across Reed Road. Together with the areas to the east, the site provides a broad corridor for wildlife movement.

A list of animal and birds species observed on or near the site is provided in Appendix F.

The southern and western portions of the site are largely undeveloped, except for the former residential cluster within Tree Stand Number 5. There are also undeveloped areas of old fields in the northern portion of the site. The undeveloped area can be classified into six major habitat types:

- Significant tree stands
- Streams and riparian corridors
- Open grasslands and old fields
- Blackberry thickets
- Old orchards
- Mixed sapling/shrub/grassland/orchards.

These general habitat types form a complex mosaic across the undeveloped portion of the site. They are shown on Figure 3.

Open grasslands and old fields are gradually being invaded by blackberry and shrubs and trees such as hawthorn (black and English) and Douglas fir, but retain a predominantly open character (see Photo 8). Grasses and other herbaceous species are almost exclusively non-native and include tall fescue *(Festuca arundinacea)*, bentgrasses *(Agrostis spp.)*, orchardgrass *(Dactylis* *glomerata)*, and Queen Anne's lace *(Daucus carota)*. They support a population of small rodents, such as field mice and shrews, and provide valuable hunting habitat for raptors such as red-tailed hawk *(Buteo jamaicensis)* and coyote *(Canis latrans)*. We observed both species in this area, and abundant coyote scat.

The blackberry thickets have invaded large upland areas that were probably formerly grasslands, and much of the old orchard area (see Photo 9). They have also invaded much of the riparian corridor of the two small non fish-bearing streams. While blackberry eliminates most native species and reduces structural diversity by out-competing trees, it does provide dense cover that is utilized by black-tailed deer *(Odocoileus hemionus spp. columbianus)* and small mammals such as raccoon *(Procyon lotor)*. The fruit is also utilized by these species, and many birds. We observed numerous deer trails through the blackberry thickets. There is reported to be a substantial deer population utilizing the site (pers. conversation with Sam Hall, Sustainable Fairview Associates, 10/3/03).

The old orchards consist of apple, pear, cherry and nut trees. They have been invaded by Himalayan blackberry and Scots broom *(Cytisus scoparius)*. There has also been regeneration of native trees such as Douglas fir and bigleaf maple *(Acer macrophyllum)*. Together, these species have formed a dense matrix of vegetation that provides cover for a variety of species; deer, coyote, raccoon, striped skunk *(Mephitis mephitis)*, and a large number of songbird species. The fruit is also utilized by these species.

In the southwestern corner of the site, near Tree Stand Number 5, lies a more diverse hilly area of mixed saplings, shrubs and grassland with sparser orchard trees. Oregon white oak and Douglas fir have begun to regenerate within this more open area to form a savanna-like stand (see Photo 10). Shrubs regenerating in this area include red elderberry *(Sambucus racemosa)*, Indian plum, black hawthorn, English hawthorn *(Crataegus monogyna)*, and English holly *(Ilex aquifolium)*. While Himalayan blackberry and Scots broom have invaded this area, they are not as dense as in the old orchard area.

APPENDIX A

SIGNIFICANT TREE STANDS ON THE SITE

Stand Number *	Tree Species	Notes
1	Oregon white oak	Up to 24 in. dbh. Near wetland. Grass, blackberry understory
2	Oregon white oak, one ponderosa pine	Up to 24 in. dbh. Near wetland. Grass, blackberry understory
3	Oregon white oak, bigleaf maple, Douglas fir, black cottonwood	Young trees, some >12 in. dbh. Old quarry.
4	Black cottonwood	>36 in. dbh. In riparian corridor of intermittent stream. Some willow, other shrubs.
5	Oregon white oak, Douglas fir, ponderosa pine, madrone	Largest tree stand on site. Trees up to 48 in. dbh. Diverse native understory of black hawthorn, serviceberry, Nootka rose, Indian plum, snowberry, Oregon grape, poison oak vines. Some ornamental trees. Significant invasion by Himalayan blackberry and English ivy in places.
6	Red alder	Up to 12 in. dbh. Dense shrub and Himalayan blackberry understory. Seep area.
7	Douglas fir, grand fir	Up to 48 in. dbh. Open grass understory
8	Douglas fir, grand fir, ponderosa pine, walnut (introduced)	Up to 40 in. dbh, average 18 in. dbh. Mostly open grass understory. A few snags (recent mortality), potential cavity nester habitat. Pine appears to have been planted in row.
9	Douglas fir, ponderosa pine, Scots pine (introduced)	Up to 36 in. dbh. Open grass understory. In riparian corridor of Pringle Creek.
10	Black cottonwood, red alder, Oregon white oak, Oregon ash, ponderosa pine, Pacific yew	In riparian corridor of Pringle Creek. Mostly smaller trees. Yew is 24 in. dbh. Also some mature ash and oak. Many saplings of alder. Shrubs include willow, black hawthorn. Dense Himalayan blackberry in middle and northern part. Currently being restored.

11	Douglas fir, bigleaf maple, Oregon white oak black walnut, Scots pine, grey pine (last three introduced)	Mostly <18 in. dbh. Dense Himalayan blackberry understory, or open grasses.
12	Douglas fir	12-15 in. dbh. Open grass understory
13	Douglas fir, Oregon white oak, Oregon ash, catalpa (ornamental)	Stand of mature fir and oak along Strong Road frontage, up to 50 in. dbh, one individual fir about 72 in. dbh. Open grass understory.
14	Douglas fir, Oregon white oak, giant sequoia (ornamental)	Up to 36 in. dbh. Mostly 12-24 in. dbh range. Dense English ivy or open grass understory. Recent Douglas fir snags.
15	Douglas fir, grand fir, Oregon white oak, Port Orford cedar (ornamental)	Up to 36 in. dbh. Open grass understory. Three oak in separate cluster. Some Port Orford cedar mortality nearby, due to root rot.
16	Oregon white oak	Up to 36 in. dbh. In three clusters. Himalayan blackberry or open grass understory.

*** See Figure 3 for location of tree stands.**

APPENDIX B

SRC CHAPTER 126: WETLANDS (PROPOSED REVISION)

Section 1. SRC 126.010. Intent and Purpose. The intent and purpose of this ordinance is to ~~identify those wetlands within the City of Salem which are significant and non-significant, and to~~ establish the foundation for a wetlands protection program that will provide for the long-term protection of wetlands within the City of Salem~~.~~, by:

(a) Implementing the goals and policies of Salem's Comprehensive Land Use Plan;

(b) Satisfying the wetland protection requirements of Statewide Planning Goal 5;

(c) Protecting and restoring Salem's City Park wetland areas, thereby protecting and restoring the hydrologic and ecologic functions these areas provide for the community;

(d) Protecting fish and wildlife habitat;

(e) Enhancing and protecting water quality and natural hydrology, controlling erosion and sedimentation, and reducing the effects of flooding;

(f) Protecting and restoring the natural beauty and distinctive character of Salem's wetlands as community assets;

(g) Enhancing the value of properties near wetlands by utilizing the wetland as a visual amenity; and

(h) Providing for coordination among local, state, and federal agencies regarding development activities near wetlands.

Section 2. SRC 126.020. Definitions. As used in this chapter, except where the context otherwise clearly requires:

(a) "Best Available Information" means information used in making the classification of a wetland as Locally Significant, including, but not limited to the Salem-Keizer Local Wetland Inventory, ~~aerial photos taken in 2000;~~ most recent aerial photos that are available to the City of Salem prior to time of classification; Oregon Natural Heritage Program data; Department of Environmental Quality data for streams listed under the Clean Water Act (CWA, 33 U.S.C. 1250, *et seq.*, at 1313 (d)) Section 303(d); Geographic Information System (GIS) data from the City of Salem, including, but not limited to location of city parks, local waterways, tax lot data and property ownership, fish-bearing streams, FEMA and floodplain data; and any other data or information from a trustworthy source which may be verified by observation, investigation, or research, or which is considered authoritative by professionals in the scientific community.

(b) "Director" means the Community Development Director for the City of Salem or the Director's designee.

(c) "Indigenous Salmonids" means members of the family Salmonidae which are listed as sensitive, threatened or endangered by a federal or state authority, including Chum, Sockeye, Chinook and Coho salmon, and Steelhead and Cutthroat trout.

(d) "Inhabited by" means the plant species grows on the site or the animal species uses the site for rearing, feeding, or breeding, or as a migration or dispersal corridor. As used in this definition, "inhabited by" does not include the incidental presence on the site by an animal species.

(e) "Land Use Action" means any development activity under the City of Salem zoning code, any subdivision or partition under SRC Chapter 63, or any amendment to the City of Salem Comprehensive Plan under SRC Chapter 64.

~~(e)~~ **(f)** "Locally Significant Wetland" means a wetland which provides functions or exhibits characteristics that are pertinent to planning decisions, including planning decisions within the UGB, and which has been determined to be significant under the criteria listed in OAR 141-086-0350.

~~(f)~~ **(g)** "Local Wetlands Inventory" means that systematic survey ~~of an area to~~ identifying, classifying and mapping the approximate boundaries of wetlands within the Salem-Keizer Urban Growth Boundary, and that includes the supporting documentation required by OAR 141-86-180, and which is designated the "Salem-Keizer Local Wetland Inventory, 1999, as amended," and adopted by the City of Salem pursuant to SRC 126.025.

~~(g)~~ **(h)** "Native Plant Community" means a recognized assemblage of plant species indigenous to Oregon, as identified in the "Classification and Catalog of Native Wetland Plant Communities in Oregon," published by the Oregon Natural Heritage Program.

~~**(h)** "Non-significant Wetland" means those wetlands that are part of the Salem-Keizer Local Wetlands Inventory which were not identified as Locally Significant Wetlands using the OFWAM process.~~

(i) "Oregon Freshwater Wetland Assessment Methodology (OFWAM)" means a wetland function and quality assessment methodology developed by the Oregon Division of State Lands~~. Local governments are required to use OFWAM~~, or an equivalent methodology that is approved in writing by the Director of the Oregon Division of State Lands, to assess wetland functions and determine significance.

(j) "Rare Plant Communities" means plants which are uncommon, unique or relictual in Oregon, as determined by the number of occurrences and threats according to Oregon Natural Heritage Program criteria. Listings of wetland communities in Oregon which meet this standard for rarity may be found in "Oregon Freshwater Wetland Assessment Methodology," Appendix G (1996), published by the Oregon Division of State Lands, and the Classification and Catalog of Native Wetland Plant Communities in Oregon, published by the Oregon Natural Heritage Program.

(k) "Regulatory delineation" means a delineation of the boundary of a wetland that is approved by the Oregon Division of State Lands (DSL) according to OAR 141-90-005 et seq.

~~(k)~~ **(m)** "UGB" means the ~~City of~~ Salem-Keizer Urban Growth Boundary.

~~(l)~~ **(n)** "Wetland" means an area inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and which, under normal circumstances, does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

(o) "Wetland protection area" means a locally significant wetland lying within parks owned or otherwise within and managed by the City of Salem, and subject to the provisions of this chapter.

Section 3. SRC 126.025. Adoption of Local Wetlands Inventory and Locally Significant Wetlands Map.

(a) That certain document entitled the "Salem-Keizer Local Wetlands Inventory, 1999, as amended" (LWI) is hereby adopted as part of this Chapter, as if fully set forth herein. A certified copy of the LWI, along with any amendments thereto, shall be kept on file in the office of the City Recorder.

(b) That certain map designated the "Salem Locally Significant Wetlands Map," is hereby adopted as part of this Chapter, as if fully set forth herein. A certified copy of the Salem Locally Significant Wetlands Map, and amendments thereto, shall be kept on file in the office of the City Recorder.

(c) The Director shall compile, index and publish all adopted amendments as part of the LWI and the Locally Significant Wetlands Map, and shall, as practicable, represent the LWI and Locally Significant Wetlands Maps, and any amendments thereto, on the City's GIS coverage.

Section 4. SRC 126.030. Locally Significant Wetlands; Criteria for Identification.

(a) Using the Local Wetlands Inventory, a functional and quality assessment of all inventoried wetlands within the City and the UGB, and the best available information, the Director shall identify ~~local wetlands as~~ all Locally Significant Wetlands ~~or Non-Significant~~.

~~(a)~~ (b) A wetland shall be identified as Locally Significant if it meets one or more of the following criteria:

(1) The wetland performs any of the following functions according to the OFWAM:

(A) Provides diverse wildlife habitat;

(B) Provides intact fish habitat;

(C) Provides intact water quality function; or

(D) Provides intact hydrologic control function.

(2) The wetland or a portion of the wetland occurs within a horizontal distance of less than one-fourth mile from a water body listed by the Department of Environmental Quality as a water quality limited water body under Clean Water Act (CWA, 33 U.S.C. 1250, et seq., at 1313(d)) Section 303 (d), and the wetland's water quality function is described as "intact" or "impacted or degraded" using OFWAM. The 303(d) List specifies which parameters (e.g., temperature, pH) do not meet state water quality standards for each listed water body. The Director may determine a wetland is not significant under this paragraph upon documentation that the wetland does not provide water quality improvements for the specified parameter or parameters.

(3) The wetland contains one or more rare plant communities, as defined in this rule.

(4) The wetland is inhabited by any species listed by the federal government as threatened or endangered, or listed by the state as sensitive, threatened or endangered, unless the appropriate state or federal agency indicates that the wetland is not important for the maintenance of the species.

(A) The use of the site by listed species must be documented, not anecdotal. Acceptable sources of documentation may include but are not limited to, field observations at the wetland sites during the local wetlands inventory and functional assessments, and existing information on rare species occurrences ~~at~~ as maintained by agencies, including, but not limited to, the Oregon Natural Heritage Program, Oregon Department of Fish and Wildlife, Oregon Department of Agriculture, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service.

(B) Input originating from other locally knowledgeable sources constitutes documentation for the purposes of this paragraph if it is verified by one of the agencies identified under paragraph (A) of this subsection, or in a university or college reference collection.

(5) The wetland has a direct surface water connection to a stream segment mapped by the Oregon Department of Fish and Wildlife as habitat for indigenous salmonids, and the wetland is determined to have "intact" or "impacted or degraded" fish habitat function using OFWAM.

~~(b)~~ **(c)** A wetland may be identified as Locally Significant if the wetland meets one or more of the following criteria:

(1) The wetland represents a locally unique native plant community or, if the entire UGB has been inventoried, the wetland contains the only representative of a particular native wetland plant community in the UGB. To be identified as Locally Significant under this paragraph, the wetland must also have been assessed to perform at least one of the following functions according to OFWAM:

(A) The wetland provides diverse habitat, or provides habitat for some wildlife species;

(B) Its fish habitat is either intact, or impacted or degraded;

(C) Its water quality function is either intact, or impacted or degraded; or

(D) Its hydrologic control function is either intact, or impacted or degraded.

(2) The wetland is publicly owned and determined to "have educational uses" using OFWAM, and such use by a school or organization is documented for that site.

~~(c)~~ **(d) Exclusions.** Notwithstanding subsections ~~(b)~~ (c) and ~~(c)~~ (d) of this section, wetlands shall not be designated as Locally Significant if they fall within any one of the following categories:

(1) Wetlands artificially created entirely from upland that are:

(A) Created for the purpose of controlling, storing, or maintaining stormwater; or

(B) Active surface mining or active log ponds; or

(C) Ditches without a free and open connection to natural waters of the state, as defined in OAR 141-085-0010(9), and which do not contain food or game fish as defined in ORS 496.009; or:

(D) Less than one acre in size and created unintentionally as the result of:

(i) Irrigation water overflow or leakage; or

(ii) Construction activity not related to compensatory mitigation for permitted wetland impacts; or

(E) Of any size and created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.

(2) Wetlands or portions of wetlands that are contaminated by hazardous substances, materials or wastes under the following conditions:

(A) The wetland is documented as contaminated on either the U.S. Environmental Protection Agency's National Priority List ("Superfund List"), or the Oregon Department of Environmental Quality's Inventory of Hazardous Substance Sites.

(B) Only that portion of the wetland affected by such hazardous substances or wastes shall be excluded from the Locally Significant Wetland analysis. Affected portions shall be delineated in consultation with EPA and DEQ, and shall include areas potentially disturbed by clean-up activities.

(C) Contaminated wetlands that have subsequently been removed from the NPL or DEQ Inventory following clean-up shall be re-evaluated under the Locally Significant Wetlands criteria no later than the City of Salem's next periodic review.

Section 5. SRC 126.040. (SECTION MOVED TO SRC 126.045) ~~Notification of Identification; Request for Redesignation; Delineations.~~

~~**(a)** Each property owner whose property contains a wetland which is identified under SRC 126.030, and each person owning property within one hundred of such affected property, shall receive written notice of such designation. The notice shall contain the following:~~

~~**(1)** A description of the affected property;~~

~~**(2)** A statement that a wetland exists on the property, with a map of the approximate location of the wetland, which has been subject to evaluation and identification as Locally Significant or Non-Significant;~~

~~**(3)** A statement that such a determination was performed according to the requirements of the Oregon Division of State Lands and the Department of Land Conservation and Development pursuant to ORS 197.279(3)(b);~~

~~**(4)** A statement that the wetlands may be subject to local, state, or federal regulation.~~

~~**(5)** The name and phone number of a City of Salem staff person to contact for~~

~~further information.~~

~~**(b)** Any property owner who receives a notice under subsection (a) of this section may file a request for redesignation or delineation with the Director within 90 days of the date the notice is issued. No redesignation shall occur unless the property owner can show, using the best available information the designation fails to satisfy the criteria for "local significance under SRC 126.030(a) or (b). No adjustment to the official map based on a delineation shall be made unless the delineation has been approved by the Oregon Division of State Lands. Appeals from the decision of the Director shall be made to the hearings officer pursuant to SRC 114.020(b).~~

Amendments to LWI and Locally Significant Wetlands Maps. Amendments to the LWI or Locally Significant Wetlands Map may be made by the Director if:

(a) Wetlands are identified which are not listed in the Local Wetlands Inventory. Any newly identified wetland shall be assessed for significance as soon as practicable after discovery;

(b) A property owner demonstrates that the wetland significance determination should be redesignated because the criteria for a locally significant wetland under SRC 126.030(a)-(c) are no longer satisfied, and the factors or conditions that have changed the condition of the wetland were not caused by unlawful alteration, fill, or dredging;

(c) The receipt of a delineation approved by the Division of State Lands which changes the boundaries of a wetland identified as locally significant on the LWI or Locally Significant Wetlands Map; or

(d) The Director determines that the wetland significance determination was erroneous at the time of original significance designation.

Section 6. SRC 126.045. Procedure for Notification of Locally Significant Wetlands and Amendments Based on Newly Identified Wetlands.

(a) Each property owner whose property contains either a wetland which will be identified on the LWI or Locally Significant Wetlands Map as a Locally Significant Wetland or a wetland which will be redesignated, each person owning property within two hundred and fifty feet of such affected property, and any person who has requested notice in writing of designation of locally significant wetlands, shall receive written notice of such designation or proposed redesignation. The notice shall contain the following:

(1) A description of the affected property;

(2) A statement that a wetland exists on the property, with a map of the approximate location of the wetland, which has been subject to evaluation and determination of significance;

(3) A statement that such a determination was performed according to the requirements of the Oregon Division of State Lands and the Department of Land Conservation and Development pursuant to ORS 197.279(3)(b);

(4) A statement that the wetlands may be subject to local, state, or federal regulation; and

(5) The name and phone number of a City of Salem staff person to contact for further information, and that any appeal shall be made to the hearings officer pursuant to SRC 114.010(b).

(b) Any property owner who receives a notice under subsection (a) of this section may file a request for redesignation with the Director at the time the property owner files an application for a land use action or building permit, whichever is first submitted. No redesignation shall occur unless the property owner can show, using the best available information, that the wetland fails to satisfy the criteria for locally significane under SRC 126.030(b) or (c).

Section 7. SRC 126.050. ~~Locally Significant and Non-Significant Wetlands Maps; Adoption and~~ Procedure for Amendments to the LWI and Locally Significant Wetlands Map Based on Revised Delineations.

~~(a) The Director shall develop a map depicting each wetland, using the criteria under SRC 126.030. The map shall show the boundary of the wetland, based on the best available information and shall identify each wetland as Locally Significant or Non-Significant. The wetland map shall be adopted or amended by resolution of the city council. Any wetland identified as Locally Significant on the official map shall be subject to the regulations for Locally Significant Wetlands under SRC Chapter 68.~~

~~(b) Wetlands not identified in the Local Wetlands Inventory shall be assessed for local significance pursuant to SRC 126.030 as soon as practicable after discovery, and added to the official wetland map, if determined by the Director to be locally significant.~~

~~(c) Amendments to the official wetland map may be made if the property owner demonstrates, using the best available information, that the designation fails to satisfy the criteria for a locally significant wetland under SRC 126.030(a) and (b), or the delineation is no longer accurate. No adjustment to the official map based on the accuracy of a delineation shall be made unless a redelineation has been approved by the Oregon Division of State Lands.~~

~~(d) Notice of proposed amendments to the official wetlands map shall be made pursuant to SRC 126.040(a). Any property owner who receives a notice of under subsection (d) of this~~

~~section may file a request for redesignation or delineation with the Director within 90 days of the~~
~~date the notice is issued. Appeals from the decisions amending the official wetlands map shall be~~
~~made to the hearings officer pursuant to SRC 114.020(b).~~

(a) The Director shall amend the LWI and Locally Significant Wetlands Map to reflect a new or revised delineation of any wetland identified on the LWI or Locally Significant Wetlands Map. Any amendment made pursuant to this section shall be deemed ministerial in nature.

(b) The Director shall give notice of any such amendment by providing a copy of the amendment available to any person who has requested notice, in writing, and by providing a copy to the owner of the real property affected by the amendment not less than fifteen days prior to adoption. For the purposes of this section, an owner is "affected" if the person owns the property upon which the wetland is located, or contains a buffer area surrounding the wetland. The notice shall include:

(1) A list of the principal documents, reports, or studies, if any, prepared by or relied upon by the Director in considering the need for and in preparing the intended amendment, and a statement of the location at which those documents are available for public inspection.

(2) Any person may request mailed copies of notices of intended amendments. The request shall be in writing, and shall be directed to the Director. Upon receipt, the Director shall acknowledge the request, establish a mailing list, and maintain a record of all mailings made to all persons submitting such requests.

Section 8. SRC 126.055. Basis and Validity for Amendments; Publication of Amendments. All amendments adopted in substantial compliance with SRC 126.045 and SRC 126.050 of this section shall be in effect from and after the date the amendment is adopted.

Section 9. SRC 126.060. Required Notification of the Oregon Division of State Lands. Within 5 working days of receiving a completed application for development or a land use action in an area designated as a wetland on the ~~official wetlands map,~~ Local Wetlands Inventory, the City shall:

(a) Send a Wetland Land Use Notification form to the Division of State Lands of any application for development or land use on a lot or parcel identified as containing a wetland ~~in~~ on the ~~official wetlands map~~ Local Wetlands Inventory; and

(b) Send a letter to the applicant, and, if different from the owner of the lot or parcel, and the watershed council functioning in the area within which the wetland lies, stating that Division of State Lands is being notified, along with a copy of the completed Wetland Land Use Notification form.

Section 10. SRC 126.070. Wetland Protection Areas, Applicability, and Application Submittal

Requirements.

(a) Any wetland identified as Locally Significant on the LWI or Locally Significant Wetlands Map shall be subject to the regulations for Locally Significant Wetlands under this chapter and SRC Chapter 68.

(b) The boundary of a Wetland Protection Area is the edge of a Locally Significant Wetland as determined by a regulatory delineation.

(c) Any application for a land use action or building permit, or any plan for the construction of public facilities, on a real property containing a Wetland Protection Area, or portion thereof, shall contain the following:

> **(1)** A delineation of the Wetland Protection Area completed by a professional wetland scientist or similar expert, qualified to delineate wetlands in accordance with Oregon Division of State Lands rules. If the proposed development is designed to avoid the Wetland Protection Area, a wetland determination report may be provided in place of the delineation.
>
> **(2)** A scale drawing that clearly depicts the Wetland Protection Area, the surface water source, existing trees and vegetation, property boundaries, and proposed site alterations including proposed excavation, fill, structures, and paved areas.
>
> **(3)** Verification that the application packet has been submitted to the Oregon Department of Fish and Wildlife for review and comment.

(d) No review under SRC 126.070 through 126.110 is required if the proposed development is located 50 feet or greater from a Wetland Protection Area.

Section 11. SRC 126.080. Continued Signs, Structures and Landscaping.

(a) Signs or structures existing within a Wetland Protection Area that conform to the zoning code and development standards existing on **(give effective date of ordinance)** are deemed continued signs and structures. Except as otherwise provided in this section, such signs or structures may not be intensified, enlarged, or altered. The maintenance and alteration of pre-existing ornamental landscaping is allowed within a Wetland Protection Area, so long as no native vegetation is disturbed. The owner shall have the burden to demonstrate continuing status under this section.

(b) Any sign or structure that has been determined by the Building Official to be derelict or dangerous, as defined in SRC 50.600 and 56.230, shall be removed.

(c) Replacement of a sign or structure which is deemed continued pursuant to this section shall be allowed, provided, however, that the structure or sign has the same building footprint and does not disturb additional area.

(d) Expansion of a sign or structure which is deemed continued pursuant to this section shall be allowed, provided, however, that the area of expansion is not located within and does not disturb the Wetland Protection Area, and otherwise complies with the development standards applicable within the zone.

Section 12. SRC 126.090. Allowed Activities. The following activities, and maintenance thereof, are allowed within a Wetland Protection Area, provided that any applicable state or federal permits are secured:

(a) Wetland restoration and rehabilitation;

(b) Restoration and enhancement of native vegetation;

(c) Felling, and if necessary to protect wetland functions, removal of trees which pose a hazard to structures or people due to threat of falling;

(d) Removal of non-native vegetation, if replaced with native plant species at an appropriate coverage or density;

(e) Normal farm practices, such as grazing, planting, cultivation and harvesting, that meet the following criteria:

(1) The land is zoned Exclusive Farm Use;

(2) The farm practices were occurring on the property on **(give effective date of ordinance)**, are of no greater scope or intensity than the operations on this date; and

(3) The farm practice does not involve any new or expanded structures, roads, or other facilities, the placement of fill material, excavation, or any new drainage measures.

(f) Maintenance of existing drainage ways or ditches, other than structures, to maintain flow at original design capacity and mitigate upstream flooding, provided that management practices minimize sedimentation and impact to native vegetation;

(g) Emergency stream bank stabilization;

(h) Maintenance and repair of existing roads and streets, including repaving and repair of existing bridges and culverts, provided that effective practices are used to minimize sedimentation and other discharges into the Wetland Protection Area;

(i) Interpretative and educational improvements, including, but not limited to, boardwalks, elevated bridges and ramps, and new fencing, provided, however, that the applicant demonstrates to the Director that the following criteria are satisfied:

(1) The improvements or fencing do not affect the hydrology of the site;

(2) The improvements or fencing do not create an obstruction that would increase flood velocity or intensity;

(3) Fish habitat is not adversely affected;

(4) The improvements or fencing is the minimum necessary to achieve the applicant's purpose;

(5) Applications for improvements or new fencing within a Wetland Protection Area shall contain a scale drawing that clearly depicts the Wetland Protection Area boundary.

Section 13. SRC 126.100. Activities Prohibited within Wetland Protection Areas.

(a) Except as may otherwise be permitted under Section 126.080 or 126.090 above, the following activities are prohibited within a Wetland Protection Area:

(1) Placement of new structures or impervious surfaces;

(2) Excavation, drainage, grading, fill, or removal of vegetation, except for fire protection purposes or removing hazard trees;

(3) Expansion of ornamental landscaping, such as a lawn or garden, into the wetland protection area;

(4) Dumping, piling, or disposal of refuse, yard debris, or other material;

(5) New direct discharge of untreated stormwater, unless in compliance with the City Stormwater Master Plan; and

(6) Uses not allowed as a permitted use in the underlying zone.

Section 14. SRC 126.110. Exceptions.

(a) Notwithstanding SRC 126.090, the City may make excavation, fill, placement of impervious surfaces and vegetation removal in a Wetland Protection Area in order to provide for the improvement of a road in a public right-of-way that existed on (Add Date), where there is a clear public interest in providing the improvement, and there is no reasonable alternative that would result in less damage to the Wetland Protection Area.

(b) An exception to the provisions of SRC 126.070 through 126.100 may be granted to a property owner if all of the following criteria are satisfied:

(1) Through application of this ordinance, the property has been rendered not buildable or a significant hardship under SRC 115.020 has been imposed on the property;

(2) The applicant has sought a redesignation or redelineation, and been denied;

(3) The exception is the minimum necessary to afford relief, considering the potential for increased flood and erosion hazard, and potential adverse impacts on native vegetation, fish and wildlife habitat, and water quality;

(4) No significant adverse impacts on water quality, erosion, or slope stability will result from approval of this hardship variance, or these impacts have been mitigated to the greatest extent possible; and

(5) Loss of vegetative cover is minimized.

(b) Requests for exceptions under this section shall be processed under the provisions of to SRC Chapter 115.

APPENDIX C

SRC CHAPTER 68: PRESERVATION OF TREES AND VEGETATION

CHAPTER 68

PRESERVATION OF TREES AND VEGETATION

68.010. TITLE AND PURPOSE. The purpose of this chapter is to regulate the removal of trees in order to preserve the wooded character of the City and to protect trees and vegetation as natural resources of the City. (Ord. 13-2000)

68.020. DEFINITIONS. DEFINITIONS. As used in this chapter, except where the context otherwise clearly requires: (a) Words and phrases defined in SRC chapter 111 shall have the meaning set forth therein unless another definition is set forth in this section.

(b) Arborist means a person who has met the criteria for certification from the International Society of Arboriculture, American Society of Consulting Arborists, or similar professional organization, and maintains accreditation.

(c) Existing landscaping means an area existing prior to June 21, 2000 and within a waterway that is managed to provide human-oriented benefits and is comprised of, but not limited to, the following elements: a combination of native and non-native trees and vegetation, ponds, rocks, bark chips, cinders, terraces, vegetable or flower gardens, trellises, or pathways that has reasonably required, and continues to reasonably require, human management to distinguish the area from a natural area.

(d) Fish-bearing waterway means a waterway which supports salmonid fish species. Designation of fish-bearing waterways is based on information in "City of Salem Fish Distribution, 1999", prepared by the Oregon Department of Fish and Wildlife, data from the Oregon Division of State Lands, and maps prepared by the Oregon Department of Forestry. Fish-bearing waterways include those waterways upstream of studied waterways, from the point of connection with downstream water where fish presence is known, to the first natural or non-removable fish passage barrier.

(e) Fish Passage Barrier means an obstacle that prevents or impedes any life stage (juvenile to adult) of fish from successful upstream or downstream passage (recognizing that factors such as jumping ability, swimming speed and swimming endurance can vary between age class and species). Typical impediments to passage include: 1) drops or jump heights that are too high; 2) steep gradients; 3) high water velocities; 4) turbulence; 5) inadequate depth in a jump pool or a long reach of stream; 5) distances that require sustained swimming without rest; and, 6) openings too narrow or small for fish to pass through. Barriers can be either natural or artificial. Natural barriers are most often created by waterfalls or reaches of stream that are of extremely high gradient, turbulence, or velocity. Artificial barriers can include dams, culverts, some bridges, fords or even water quality (temperature, pollution) and flow modification.

(f) Hazard tree means a tree that is cracked, split, leaning or physically damaged to the degree that it is likely to fall and injure persons or property. Hazard trees include diseased trees, meaning those trees with a disease of a nature that, without reasonable treatment or pruning, is likely to spread to adjacent trees and cause such adjacent trees to become diseased or hazard trees.

(g) Intact riparian corridor vegetation means vegetation that is characterized by a diverse, multi-layered assemblage of native trees and a vigorous, dense understory of native plants that provide any or all of the following benefits: (1) maintains or improves water quality; (2) provides fish and wildlife habitat; (3) mitigates development-related hydrologic changes, (4) mitigates flood hazards; and, (5) provides other significant ecological, aesthetic, or educational benefits due to its natural conditions and functions.

(h) Invasive non-native vegetation means plant species that have been introduced to an area and due to aggressive growth patterns and lack of natural enemies spread rapidly into native plant communities. For purposes of this chapter, a list of invasive non-native vegetation shall be prepared by the planning administrator and maintained at the city's permit center.

(i) Native vegetation means plant species which are indigenous to the area and appropriate to local site conditions such as hydrology, soils, light availability, and slope aspect.

(j) Non-Removable Fish Passage Barrier means a fish passage barrier, the removal of which is not practicable, considering the permanency of the barrier, the cost and value of its removal, and the availability of resources to effect removal.

(k) Percent slope means an inclined earth surface expressed as the ratio of vertical distance to horizontal distance, multiplied by 100; e.g., a 25 percent slope is a vertical rise of 25 feet over a horizontal distance of 100 feet multiplied by 100.

(l) Person means an individual, corporation, local or state government, association, firm, partnership, limited liability company or joint stock company.

(m) Planning administrator means the Urban Planning Administrator of the department of community development or designee.

(n) Restoration means the return of a stream, wetland, or riparian corridor to a state in which its functions and values approach its unaltered state as closely as possible.

(o) Riparian corridor means the land and water resources included in the area adjacent to a waterway consisting of the area of transition from an aquatic ecosystem to a terrestrial ecosystem. The riparian corridor boundary is measured 50 feet horizontally from the top of bank on each side of a waterway with less than 1,000 cubic feet per second average annual stream flow, and 75 feet horizontally from the top of bank of each side of a waterway with 1,000 or more cubic feet per second average annual stream flow (Willamette River). Where such area includes all or portions of a significant wetland, the riparian corridor includes the whole of the wetland, and the corridor boundary is measured horizontally from the upland edge of the wetland. The upland edge of the wetland is indicated on the significant wetlands map or on a wetland delineation approved by the Oregon Division of State Lands under OAR 141-086-0120.

(p) Salmonid fish species are fish of the family Salmonidae which include salmon and trout.

(q) Significant tree means (1) Heritage, rare, threatened or endangered tree of any size as defined or designated under state or federal law and identified in records maintained by the Planning Administrator, or (2) Heritage tree defined in SRC 86.010, designated by council and identified in records maintained by the Planning Administrator.

(r) Significant wetland means a wetland that meets the criteria for locally significant wetland as defined in OAR 141-086-0350 and as determined by the city council.

(s) Top of bank means the elevation at which water overflows the natural banks and begins to inundate the upland. In the absence of physical evidence, the two-year recurrence interval flood elevation may be used to approximate the top of bank.

(t) Tree means any living, standing, woody plant, having a trunk eight inches or more in diameter or 25 inches or more in circumference, measured at a point four feet above grade at the base of the trunk. If a tree splits into multiple trunks above ground, but below four feet, the trunk is measured at its most narrow point beneath the split, and is considered one tree. If the tree splits into multiple trunks below the ground, each trunk shall be considered one tree. For the purposes of this chapter, English laurel, photinia, arborvitae, poison oak, and English ivy shall not be considered a tree.

(u) Tree conservation plan means a site plan submitted with a building permit or land use application identifying trees for preservation which is prepared, reviewed, and approved as provided in SRC 68.075.

(v) Tree removal, remove or removal means to cut down a tree or remove all or 50% or more of the crown, trunk, or root system of a tree; or to damage a tree so as to cause the tree to decline or die. "Removal" includes but is not limited to topping, damage inflicted upon a root system by application of toxic substances, operation of equipment and vehicles, storage of materials, change of natural grade due to unapproved excavation or filling, or unapproved alteration of natural physical conditions. "Removal" does not include normal trimming or pruning of trees.

(w) Vegetation means any living plant, other than a tree eight inches or more in diameter or 25 inches or more in circumference. Vegetation includes all grasses, plants and shrubs.

(x) Waterway means any perennial river, stream, or creek within the city as designated by the director of public works or designee.

(y) Water-dependent use means a use or activity which can be carried out only on, in, or adjacent to water areas because the use requires access to the water body for water-borne transportation, recreation, energy production, or source of water.

(z) Wetland means an area that is inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. (ORS 196.800). (Ord. 13-2000; Ord No. 30-2000)

68.025. PROHIBITED ACTIVITIES. Except as provided in this chapter, it shall be unlawful for a person to cause, suffer or permit the removal of trees contrary to the provisions of this chapter. (Ord. 13-2000)

68.030. CONSISTENCY; RELATIONSHIP TO OTHER REGULATIONS. Where more than one section of this chapter applies to particular tree stands or significant trees, the sections shall independently apply, unless there is a conflict in which case the more restrictive, (preservation-facilitating) provision will apply. Where the provisions of this chapter conflict with other provisions of this code, or comparable state or federal law, the provisions that are the more restrictive shall govern. (Ord. 13-2000)

68.035. SIGNIFICANT TREES. No significant trees may be removed except pursuant to an approved tree conservation plan as described in SRC 68.075, or if excepted under SRC 68.070 (b) (1), or as permitted under the terms of a variance provided in SRC 68.080. (Ord. 13-2000; Ord. 33-2001)

68.040. TREE STANDS. On lots or parcels 20,000 square feet or more in area, or on contiguous property under the same ownership 20,000 square feet or more in area, no more than five trees or up to 15% of the trees on the property, whichever is greater, may be removed within a calendar year. Exceptions to the requirements of this section may be allowed pursuant to an approved tree conservation plan as described in SRC 68.075, or if excepted under SRC 68.070, or permitted under the terms of a variance as provided in SRC 68.080. (Ord. 13-2000)

68.050. TREES AND VEGETATION IN RIPARIAN CORRIDORS. (a) Corridors of fish-bearing waterways. No trees or intact riparian corridor vegetation shall be removed within the riparian corridor of a fish-bearing waterway.

(b) Corridors of non fish-bearing waterways.

No trees shall be removed within the riparian corridor of a non fish-bearing waterway.

(c) Fish-bearing and non fish-bearing waterways shall be shown on maps adopted as part of this chapter.

(d) Trees and vegetation in riparian corridors may be removed if excepted under Section 68.070 or permitted under the terms of a variance provided in Section 68.080. (Ord No. 30-2000)

68.065. REGULATED AREA MAPS; ADOPTION; AMENDMENT. (a) Maps the boundaries of fish-bearing and non fish-bearing waterways and significant wetlands shall be adopted by ordinance by the council and shall be available in the city's permit center and entered in the city's Geographic Information System data files.

(b) Amendments to these maps may be made by council based upon the receipt of corrected, updated or refined data or the revision of studies upon which the maps were initially based. When map amendments are requested by persons other than the city, field investigation and analysis by a qualified expert shall be required to confirm the extent of the regulated area. A "qualified expert" for the purposes of this subsection means a person who is professionally trained in the relevant area: e.g., wetlands biology or ecology; hydrology; stream and fisheries biology or ecology. (Ord No. 30-2000)

68.070 EXCEPTIONS; REVIEW. (a) **Exceptions Not Requiring Administrative Review.** Unless identified as an exception requiring administrative review under subsection (b) of this section, the following tree removals are excepted from the requirements of this chapter without the need for administrative review and approval.

(1) Those in vision clearance areas, defined in SRC 130.280.

(2) Those required by the city or a public utility for the installation or maintenance or repair of roads, utilities or other structures or improvements within publicly owned and accepted rights-of-way, easements or properties subject to immediate possession condemnation by any government.

(3) Those vegetation removals necessary for continued maintenance of existing landscaping.

(4) Those associated with commercial operation of orchards and Christmas tree farms;.

(5) Those necessary for the installation, maintenance or repair of any of the following: irrigation systems; stormwater detention areas; pumping stations; erosion control and soil stabilization features; and pollution reduction facilities. Maintenance includes the cleaning of existing drainage facilities and trash removal.

(6) Those constituting invasive non-native or nuisance vegetation in riparian corridors, as this vegetation is shown on a list prepared by the planning administrator and maintained in the city permit center.

(7) Those necessary for public trail development and maintenance.

(8) Those necessary to conduct flood mitigation.

(9) Those necessary to effect emergency actions which must be undertaken immediately or for which there is insufficient time for full compliance with this chapter when it is necessary to

prevent an imminent threat to public health or safety, or prevent imminent danger to public or private property, or prevent an imminent threat of serious environmental degradation. Trees subject to emergency removal must present an immediate danger of collapse. For purposes of this subsection, "immediate danger of collapse" means that the tree is already leaning, with the surrounding soil heaving, and there is a significant likelihood that the tree will topple or otherwise fall and cause damage. The person undertaking emergency action shall notify the planning administrator within one working day following the commencement of the emergency activity. If the planning administrator determines that the action or part of the action taken is beyond the scope of allowed emergency action, enforcement action by the department of community development may be taken.

(10) Those on city-owned land, or "shade trees", "street trees" or "trees" defined in and subject to the provisions of SRC chapter 86.

(11) Those associated with the establishment or alteration of any public park.

(12) Those effected in the course and scope of the duties of agents of the city or public utility companies maintaining public facilities or public utilities.

(13) Those commercial timber harvests conducted in accordance with the Oregon Forest Practices Act (FPA), ORS 527.610 to 527.992, on properties enrolled in a forest property tax assessment program, and which are not being converted to a non-forestland use. Properties from which trees have been harvested under the FPA may not be partitioned, subdivided, developed as a planned unit development, or developed for commercial uses for a period of five years following the completion of the timber harvest.

(14) Those associated with mining operations conducted in accordance with an existing operating permit approved by the Oregon Department of Geology and Mineral Industries (DOGAMI) under Oregon Mining Claim law (ORS 517.750 to 517.955).

(b) **Exceptions Requiring Administrative Review**. The following exceptions shall require application to, review and approval by the planning administrator prior to any tree removal under the exception:

(1) Hazard and Diseased Trees. The applicant for a hazard tree exception must show that the condition or location of the tree presents a hazard or danger to persons or property; and that such hazard or danger cannot reasonably be alleviated by treatment or pruning. The applicant for an exception for a diseased tree shall demonstrate that the subject tree has a disease of a nature that even with reasonable treatment or pruning is likely to spread to adjacent trees and cause such trees to become hazard trees.

(2) Restoration Activity. The applicant for an exception for restoration activities must demonstrate that the proposed use or development is designed to improve the habitat, hydrology, or water quality function of the riparian corridor or wetland without reducing any of these functions; that short-term impacts of the activity will be minimized and effective erosion control measures will be implemented; and all necessary permits have been obtained. Examples of restoration activity warranting an exception include replacing non-native invasive species with native species, removing barriers to fish migration, re-shaping and planting a stream bank prone to erosion, or enhancing fish or wildlife habitat. In addition to other application requirements, the applicant must submit plans showing the topography, inventory of vegetation, and details of the area receiving restoration, including proposed work and anticipated results.

(3) Exceptions for maintenance or replacement of existing structure. The applicant for exceptions necessary for repair, alteration or replacement of structures existing as of June 21, 2000 must demonstrate that the exceptions are reasonably necessary to effect the otherwise lawful repair,

alteration or replacement of such structures; that the structure footprint is not enlarged; and that no additional riparian corridor area is disturbed beyond that essential to the undertaking.

(4) Exceptions necessary for water-dependent uses. The applicant for an exception to allow tree or vegetation removal necessary for the development of a water-dependent use shall demonstrate that the proposed use is a water-dependent use as defined, and that no additional riparian corridor area is disturbed beyond that essential to the development.

(5) Tree removal subject to a tree conservation plan under SRC 68.075 (b) when at least 25% of the trees on a property are proposed for preservation.

(6) Tree removal subject to a tree conservation plan under SRC 68.075 (c) when less than 25% of the trees on a property are proposed to be preserved.

(7) Exceptions in areas subject to map error. An applicant claiming a map error shall show that, based upon the information available when the subject map was adopted, a cartographic error or clear interpretational mistake caused the erroneous inclusion of the property.

(c) **Application and Review, Generally.** Applicants seeking exceptions requiring administrative review and determination shall file applications upon forms prescribed by the planning administrator along with such fee as the council shall establish by resolution. The application shall contain (1) the number, size, and location of trees to be removed on a site plan of the property, (2) a statement of the reason for removal, (3) demonstration of required basis for the exception, and (4) any other information reasonably required by the planning administrator. The applicant shall have the burden of proving that the application complies with this section and may be required by the planning administrator at applicant's expense to provide reports from an arborist. The city shall have the right, at its own expense, to hire a qualified expert to obtain a second or additional opinion. (Ord N. 30-2000; Ord. 33-2001)

68.075 TREE CONSERVATION PLANS. Tree conservation plans shall be required in conjunction with any building permit, land division, manufactured dwelling or mobile home placement permit or park permit, conditional use, variance, greenway permit or planned unit development, for properties with trees protected by this chapter and proposed for removal. Tree conservation plans shall be submitted and approved as follows:

(a) **Submittal Requirements**. Tree conservation plan submittals shall be filed with the planning administrator and shall be accompanied by such fee as council adopts by resolution. The submittal shall include a site plan of the subject property showing contour lines at two foot intervals, identification of slopes greater than 25 percent, identification of the type, size and location of all existing trees on the property, existing and proposed structures, parking areas, utilities and other improvements, buffer yards and required yards, and identification of those trees proposed for preservation and those designated for removal.

Where the property is the site of a fish-bearing riparian corridor or fish-bearing riparian corridor containing a significant wetland, the boundary of the riparian corridor and significant wetland shall be shown along with a description of the vegetation within any significant wetland or riparian corridor located on site.

(b) **Non-Discretionary Approval Criteria.** Tree conservation plans designating for preservation 1) all trees subject to SRC 68.035 and 68.050, and 2) at least 25% of the existing trees on the property, shall be approved administratively.

(c) **Discretionary Approval Criteria.** When less than 25% of the trees on a property are proposed for preservation, the applicant shall show, and the planning administrator shall find that only those trees reasonably necessary to be removed to accommodate development are designated for removal. In designating trees, the applicant shall show, and the planning administrator shall find, that trees subject to SRC 68.035 are designated for preservation and that trees have been designated in a manner as to provide buffers from adjacent properties, unless the removal of such trees is shown to be reasonably necessary to accommodate development.

Trees subject to SRC 68.050 shall not be designated for removal unless the applicant demonstrates, and the planning administrator finds, that there are no reasonable design alternatives that would enable preservation of such trees.

Other trees shall be designated for preservation which best meet the following criteria: 1) have the greatest chance for survival; 2) will buffer adjacent properties; 3) are Heritage trees; 4) will be located within required yards and buffer yards; 5) are greater than 24 inches in diameter; 6) are located on slopes greater than 25 percent; and 7) are least subject to windthrow, determined based upon expected wind conditions, tree support conditions, and the impact of the removal of surrounding trees.

(d) **Tree Protection Measures During Construction.** All trees designated for preservation under the tree conservation plan shall be marked and protected from removal during construction.

(e) **Approval, Effect, Appeal.** When less than 25% of the trees on property are proposed for preservation under SRC 68.075 (c), the planning administrator shall adopt written findings and conclusions supporting the administrator's action, and shall serve by regular mail a copy of the decision on the applicant and each property owner in the notification area defined in SRC 111.150. Unless the council initiates review pursuant to SRC 114.210, or an appeal to the Hearings Officer filed within 15 calendar days from the date the decision is mailed, the planning administrator's decision shall be final.

Upon approval by the planning administrator, the tree conservation plan and any amendments of the plan shall be binding on the property and adherence to the plan shall become a condition of approval for any building permit or subdivision, partition, manufactured dwelling or mobile home placement or park permit, conditional use, variance, greenway permit or planned unit development. Tree conservation plans for single family residential land divisions shall be of no further force and effect on any lot following completion of a residence on that lot. Completion of the residence shall mean that a Final Occupancy Permit or Notice of Final Completion has been issued. No tree designated for removal shall be removed until the tree conservation plan is approved and the permit or action it is filed in conjunction with is issued. (Ord No. 13-2000; Ord No. 30-2000)

68.080. VARIANCES. Variances from the requirements of this chapter which are reasonably necessary to permit development or activity associated with an otherwise lawful use may be granted by the planning administrator. Variance applications shall be made upon forms prescribed by the planning administrator and accompanied by such fee as the council by resolution shall provide.

(a) **Hardship Variance**. The applicant for a hardship variance must demonstrate that the criteria set forth in SRC 115.020 are met and that the proposed variance is the minimum necessary to allow for the requested use. In granting a variance, the planning administrator may impose such conditions as are necessary to limit any adverse impacts that may result from granting relief. In addition, the variance to the requirements of SRC 68.050 shall be subject to the following conditions: those altered riparian corridor areas that can be reasonably restored, shall be restored, and in no case shall alterations either (1) occupy more than 50 percent of the width of the riparian area measured from the upland edge of the corridor, or (2) result in less than 15 feet of vegetated corridor on each side of the waterway.

(b) **Economical Use Variance**. The applicant for an economical use variance shall demonstrate that without the exception, the applicant would be denied all economically viable use of the applicant's property or otherwise suffer an unconstitutional taking of property; that the standards of SRC 115.020 cannot be met; that no other application could result in permission for an economically viable use, considering all allowed uses; that the proposed exception is the minimum necessary to allow for economically viable use or otherwise avoid a taking of property, and that the proposed exception is consistent with all other applicable local, state and federal laws.

(c) The planning administrator shall adopt written findings and conclusions supporting the administrator's action, and shall serve by regular mail a copy of the decision on the applicant and each property owner in the notification area defined in SRC 111.150. Unless the council initiates review pursuant to SRC 114.210, or an appeal to the Hearings Officer is filed within 15 calendar days from the date the decision is mailed, the planning administrator's decision shall be final. (Ord. 13-2000; Ord No. 30-2000)

68.085. VIOLATIONS. (a) **Penalties.** A violation of any provision of this chapter or the breach of any condition of a variance or provision of a tree conservation plan shall be an infraction. The second and subsequent violation in any one year period shall be a misdemeanor. In addition to penalties associated with an infraction or misdemeanor, the city enforcement staff may require the person to pay as an enforcement fee an amount established by resolution of the council or in the absence of such resolution, the value of the tree as determined by an arborist in accordance with the methods set forth in the "Guide for Plant Appraisal," an official publication of the International Society of Arboriculture.

(b) **Cumulative remedies.** The rights, remedies and penalties provided in this chapter are cumulative and not mutually exclusive and are in addition to any other right, remedies and penalties available to the city under any other provision of law.

(c) **Evidence of violation.** In cases of tree removal, violations shall be determined by measuring the stump. Lacking evidence to the contrary, a stump that exceeds 110 percent of the regulated diameter shall be considered prima facie evidence of a violation of this chapter. Proof of violation of this chapter shall be deemed prima facie evidence that such violation is that of the owner of the property upon which the violation was committed. Prosecution of or failure to prosecute the owner shall not be deemed to relieve any other responsible person. (Ord. 13-2000)

APPENDIX D

PHOTOGRAPHS

Photo 1: Pringle Creek, showing log structures placed as part of restoration work

Photo 2: Riparian corridor of Pringle Creek showing blackberry control and willow plantings

Photo 3: Pringle Creek riparian corridor, showing area of plantings and red alder reproduction

Photo 4: Non fish-bearing stream (Area 1) showing incised channel and blackberry thickets

Photo 5: Significant Tree Stand Number 5

Photo 6: Significant Tree Stand Number 13

Photo 7: Significant Tree Stand Number 16

Photo 8: Open grasslands and old fields with blackberry thicket

Photo 9: Blackberry thickets and old orchards

Photo 10: Mixed saplings, shrubs and grassland

APPENDIX E

NATIVE PLANTS FOUND ON SITE

Botanical Name	Common Name
Abies grandis	Grand fir
Acer circinatum	Vine maple
Acer macrophylum	Bigleaf maple
Allium sp.	Wild onion
Alnus rubra	Red alder
Amelanchier alnifolia	Serviceberry
Arbutus meziesii	Pacific madrone
Athyrium filix-femina	Lady fern
Bidens frondosa	Beggars' ticks
Callitriche heterophylla	Water starwort
Cardamine oligosperma	Few-seeded bittercress
Carex densa	Dense sedge
Carex obnupta	Slough sedge
Cornus sericea	Red osier dogwood
Corylus cornuta *	Beaked hazelnut
Crataegus douglasii	Black hawthorn
Eleocharis palustris	Common spikerush
Epilobium ciliatum	Watson's willow herb
Equisetum telmateia	Giant horsetail
Fraxinus latifolia	Oregon ash
Gaultheria shallon	Salal
Geum macrophyllum	Large-leaf avens
Impatiens noli-tangere	Western touch-me-not
Juncus effusus	Soft rush
Juncus ensifolius	Daggerleaf rush
Mahonia aquifolium	Tall Oregon grape
Oemleria cerasiformis	Indian plum
Oenanthe sarmentosa	Water parsley
Quercus garryana	Oregon oak
Physocarpus capitatus	Pacific ninebark
Pinus ponderosa	Ponderosa pine
Polystichum munitum	Swordfern
Populus trichocarpa	Black cottonwood
Pseudotsuga menziesii	Douglas fir
Pteridium aquilinum	Brackenfern
Quercus garryana	Oregon white oak
Rhus diversiloba	Poison oak
Rosa nootkatensis	Nootka rose

Botanical Name	Common Name
Rosa pisocarpa	Clustered rose
Rubus spectabilis	Salmonberry
Rubus ursinus	Dewberry
Salix lasiandra	Pacific red willow
Salix piperi	Piper willow
Salix scouleriana	Scouler willow
Sambucus racemosa	Red elderberry
Scirpus microcarpus	Small-fruited bulrush
Symphoricarpos albus	Snowberry
Taxus brevifolia	Pacific yew
Tolmiea menziesii	Piggy-back plant
Typha latifolia	Common cattail
Veronica americana	Veronica
Vicia americana	American purple vetch

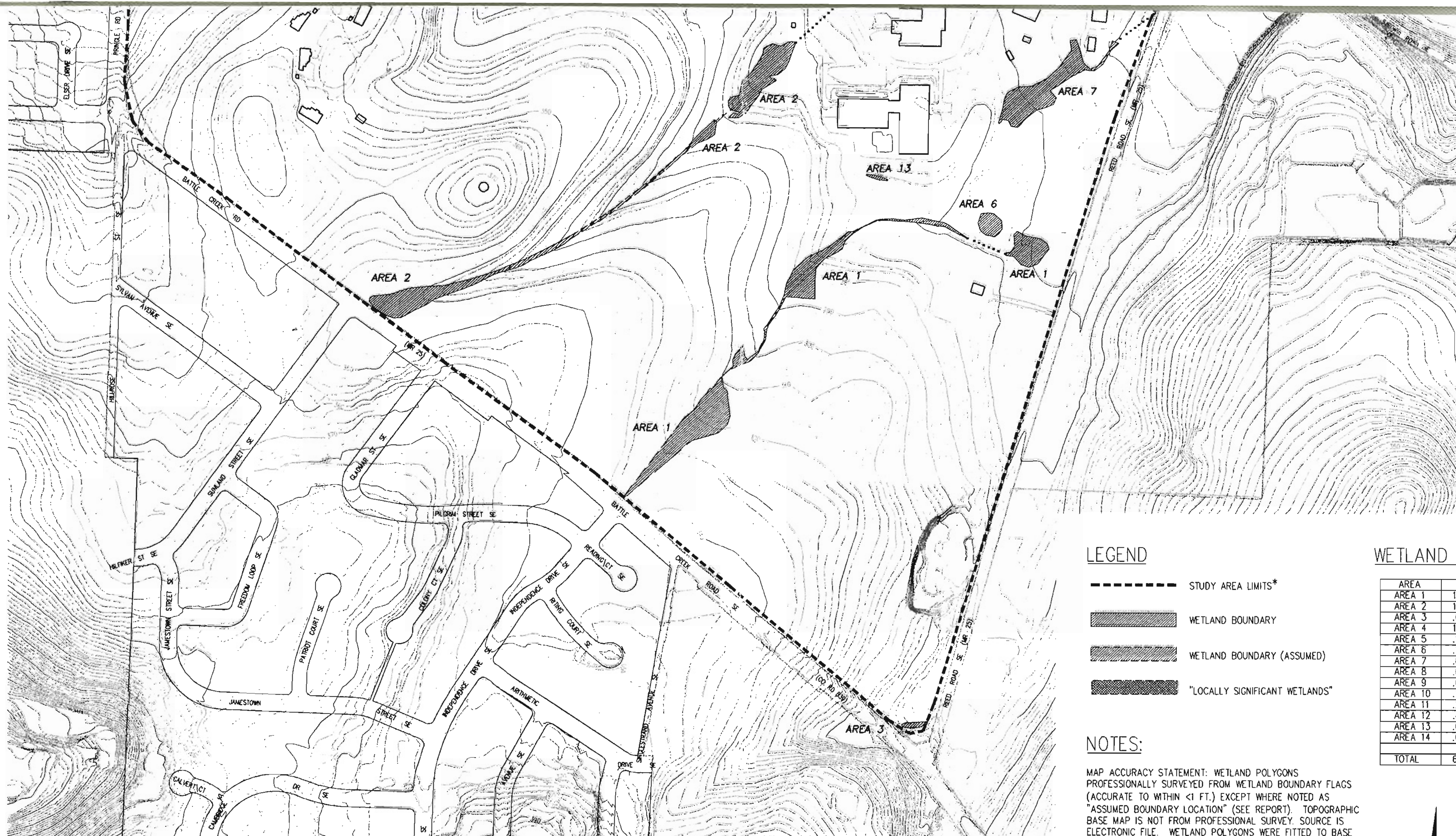
APPENDIX F

ANIMAL AND BIRD SPECIES OBSERVED ON SITE

Common Name	Scientific Name
Black tailed deer *	*Odocoileus hemionus ssp. columbianus*
Striped skunk	*Mephitis mephitis*
Coyote	*Canis latrans*
Nutria *	*Myocastor coypus*
Raccoon *	*Procyon lotor*
Bewick's wren	*Thryomanes bewickii*
Rufous-sided towhee	*Pipilo erythrophthalmus*
Mourning dove	*Zenaida macroura*
Common crow	*Corvus brachyrhynchos*
Red-breasted nuthatch	*Sitta canadensis*
Northern flicker	*Colaptes auratus*
Robin	*Turdus migratorius*
Scrub jay	*Aphelocoma coerulescens*
Red-tailed hawk	*Buteo jamaicensis*
Red-breasted sapsucker	*Sphyrapicus ruber*
American goldfinch	*Carduelis tristis*
Bushtit	*Psaltriparus minimus*
Black-capped chickadee	*Parus atricapillus*
Dark-eyed junco	*Junco hyemalis*

*** Signs of this animal observed. Presence reported by others.**

Office: PORTLAND | System: WHP-PDX-DVBB631 | User: JGILLIES



LEGEND

STUDY AREA LIMITS*

WETLAND BOUNDARY

WETLAND BOUNDARY (ASSUMED)

"LOCALLY SIGNIFICANT WETLANDS"

WETLAND TABLE

AREA	SIZE
AREA 1	1.59 Ac.
AREA 2	1.31 Ac.
AREA 3	.03 Ac.
AREA 4	1.82 Ac.
AREA 5	.13 Ac.
AREA 6	.12 Ac.
AREA 7	.69 Ac.
AREA 8	.03 Ac.
AREA 9	.03 Ac.
AREA 10	.18 Ac.
AREA 11	.22 Ac.
AREA 12	.48 Ac.
AREA 13	.02 Ac.
AREA 14	.03 Ac.
TOTAL	6.68 Ac.

NOTES:

MAP ACCURACY STATEMENT: WETLAND POLYGONS PROFESSIONALLY SURVEYED FROM WETLAND BOUNDARY FLAGS (ACCURATE TO WITHIN <1 FT.) EXCEPT WHERE NOTED AS "ASSUMED BOUNDARY LOCATION" (SEE REPORT). TOPOGRAPHIC BASE MAP IS NOT FROM PROFESSIONAL SURVEY. SOURCE IS ELECTRONIC FILE. WETLAND POLYGONS WERE FITTED TO BASE MAP AND ARE ACCURATE TO WITHIN APPROXIMATELY 20 FT HORIZONTALLY RELATIVE TO CONTOURS AND OTHER FEATURES.

*STUDY AREA LIMITS APPROXIMATE THE PROPERTY LIMITS, EXCEPT ALONG PRINGLE CREEK, WHERE STUDY AREA WAS EXTENDED TO INCLUDE WEST BANK OF CREEK.

N

SCALE

200 0 100 200 400

FIG. 2

SHEET

DESIGNED BY		CHECKED BY	PJO
DRAWN BY	RAI	APPROVED BY	
LAST EDIT	03/26/03	PLOT DATE	10/29/03

DATE	BY	REV#	REVISION	CHK'D	APPR

SUSTAINABLE FAIRVIEW ASSOCIATES
FAIRVIEW - SALEM, OREGON

FIGURE 2
WETLAND MAP

SALEM OREGON

SCALE: AS NOTED

PROJECT NO: 30527 (839931)

DRAWING FILE NAME: 839931-plan-pfvwwt01

W&H PACIFIC
9755 SW Barnes Road
Suite 300
Portland, Oregon 97225
(503)626-0455
(503)526-0775 Fax
whpacific.com
Planners • Engineers • Surveyors • Landscape Architects

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

This form must be included with any wetland delineation report submitted to the Department of State Lands for review and approval. A wetland delineation report submittal is not "complete" unless the fully completed and signed report cover form and the required fee are submitted. Attach this form to the front of an unbound report or include a hard copy of the completed form with a CD/DVD that includes a single PDF file of the report cover form and report (minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279.** A single PDF attachment of the completed cover from and report may be e-mailed to **Wetland_Delineation@dsl.state.or.us**. For submittal of PDF files larger than 10 MB, e-mail instructions on how to access the file from your ftp or other file sharing website. Fees can be paid by check or credit card. Make the check payable to the Oregon Department of State Lands. To pay the fee by credit card, call 503-986-5200.

☒ Applicant ☐ Owner Name, Firm and Address:
Olsen Design and Development, Inc.
Eric Olsen, Principal
170 W. Main Street
Monmouth OR 97361

Business phone # **(503) 838-1600**
Mobile phone # (optional)
E-mail: eric@olsencommunities.com

☒ Authorized Legal Agent, Name and Address:
Philip J. Quarterman, PWS
WHPacific, Inc.
9705 SW Barnes Road, Suite 300
Portland OR 97225

Business phone # **(503) 372-3562**
Mobile phone # **(503) 358-3673**
E-mail: pquarterman@whpacific.com

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.

Typed/Printed Name: **Eric Olsen** Signature: ______________________

Date: **9/22/14** Special instructions regarding site access:

Project and Site Information (using decimal degree format for lat./long., enter centroid of site or start & end points of linear project)

Project Name: **Fairview Addition Tax Lot 200 Residential Development**	Latitude: **45.8957 N** Longitude: **-123.0234 W**
Proposed Use: **Residential development and open space**	Tax Map # **8S 3W 11, 8S 3W 02**
Project Street Address (or other descriptive location): **Between Pringle Road SE and Battle Creek Road SE.**	Township **8S** Range **3W** Section **2, 11** QQ Tax Lot(s) **Section 11: 100 (part), 200. Section 2: 100 (part)**
City: **Salem** County: **Marion**	Waterway: **Pringle Creek** River Mile: **N/A** NWI Quad(s) **Salem East**

Wetland Delineation Information

Wetland Consultant Name, Firm and Address:
As above

Phone #
Mobile phone #
E-mail:

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.

Consultant Signature: Date: 9/22/14

Primary Contact for report review and site access is ☒ Consultant ☐ Applicant/Owner ☐ Authorized Agent

Wetland/Waters Present? ☒ Yes ☐ No | Study Area size: **65.06 acres** | Total Wetland Acreage: **895 s.f.**

Check Box Below if Applicable:

☐ R-F permit application submitted
☐ Mitigation bank site
☐ Wetland restoration/enhancement project (not mitigation)
☐ Industrial Land Certification Program Site
☐ Reissuance of a recently expired delineation
Previous DSL # Expiration date _____

Fees:

☒ Fee payment submitted **$ 396**
☐ Fee ($100) for resubmittal of rejected report
☐ No fee for request for reissuance of an expired report

Other Information:

	Y	N	
Has previous delineation/application been made on parcel?	☒	☐	If known, previous DSL # **WD 2003-0284**
Does LWI, if any, show wetland or waters on parcel?	☒	☐	

For Office Use Only

DSL Reviewer: ______________ Fee Paid Date: ____ / ____ / ____ DSL WD # ______________

Date Delineation Received: ___ / ___ / ___	DSL Project # ______	DSL Site # ______
Scanned: ☐ Final Scan: ☐	DSL WN # ______	DSL App. # ______

Delineation of Wetlands and Other Waters for:

Fairview Addition Tax Lot 200 Residential Development Salem, Marion County, Oregon

Prepared for:

Olsen Design and Development, Inc.

September 22, 2014

Prepared by:

WHPacific, Inc.
9755 S.W. Barnes Road
Portland, Oregon 97225

WHPacific

Prepared for: Eric Olsen
Olsen Design and Development, Inc.
170 W. Main Street, Monmouth OR 97361
E-mail address: eric@olsencommunities.com

Title: Delineation of Wetlands and Other Waters

Project: Fairview Addition Tax Lot 200 Residential Development

Prepared by: WHPacific, Inc.
9755 SW Barnes Road, Suite 300
Portland, Oregon 97225

Contact: Phil Quarterman, PWS
Sr. Wetland Scientist
(503) 372-3562
FAX: (503) 526-0775
E-mail address: pquarterman@whpacific.com

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A LANDSCAPE SETTING AND LAND USE

The study area is located in Township 8S, Range 3W, Sections 2 and 11 in Salem, Oregon, and comprises one entire tax lot (Section 11, T.L. 200), and parts of two other tax lots (Section 2, T.L. 100 and Section 11, T.L. 100) totaling 65.06 acres. Olsen Design and Development proposes to construct a residential development on the site.

Most of the study area consists of rounded hilltops and hillsides typical of south Salem. There is one sloping drainageway which leads to a broad flat area that slopes gradually to the east. The study area drains toward Pringle Creek, the main channel of which is to the north.

The study area is part of the former Fairview Training Center. Some its disused buildings remain in the northeastern part of the study area. The remainder of the study area, with the exception of a few remnants of small structures and some roads, is vacant and consists of forest, scrub or open grassland.

B SITE ALTERATIONS

See the recent aerial photograph (Figure 5). As noted above, there are several disused buildings in the northeastern part of the study area with a network of roads. Access roads enter the study area off Pringle Road SE to the west and Battle Creek Road SE to the south.

As noted in a previous wetland delineation report by WHPacific, Inc. (WD # 2003-0284), there is a tile drain which runs beneath the sloping drainageway and level area below, and discharges to the east of the study area.

C PRECIPITATION DATA AND ANALYSIS

Daily precipitation totals were obtained from the National Weather Service's Salem weather station. Monthly average precipitation data were obtained from the WETS table for the Salem weather station (see Appendix E). We accessed the Preliminary Local Climatology Data (F6) for the water year to date until the day of the site investigation (August 19, 2014). Table 1 presents monthly and cumulative totals.

Rainfall for the 2013-2014 water year to date had been toward the low end of "normal range": 27.33 inches, or 71.3% of average. The fall and early winter had been unusually dry, while February and March were unusually wet, which partially compensated for the early deficit. Since April 1, rainfall had been closer to normal. Rainfall for August to date and the three full months prior to site investigation had totaled 3.45 inches, or 75.5% of the average, thus toward the lower end of the normal range. Rainfall for the previous 14 days had been 0.13 inch, which fell on a single day (August 12), followed by a "trace" the following two days. There was no precipitation on the day of the investigation.

Table 1: Monthly Precipitation Data for 2013-2014 Water YTD

	Actual Precipitation (in.)	Average WETS Table Precipitation (in.)	30% chance will have less than average (in.)	30% chance will have more than average (in.)	Actual precipitation within normal range?	% of normal
October 2013	0.63	3.03	1.54	3.70	No	20.8%
November 2013	2.68	6.39	4.15	7.68	No	41.9%
December 2013	1.27	6.46	4.30	7.75	No	19.7%
January 2014	2.26	5.84	3.63	7.05	No	38.7%
February 2014	7.01	5.09	3.26	6.14	No	137.7%
March 2014	7.32	4.17	2.96	4.94	No	175.5%
April 2014	2.71	2.76	1.83	3.30	Yes	98.2%
May 2014	2.07	2.13	1.23	2.59	Yes	97.2%
June 2014	0.64	1.45	0.85	1.76	No	44.1%
July 2014	0.46	0.57	0.13	0.67	Yes	80.7%
August 2014 *	0.28	0.42 **	0.08 **	0.50 **	Yes	66.7%
Totals	**27.33**	**38.31**	**23.96**	**46.08**	**Yes**	**71.3%**

* Through August 19, 2014
** Pro-rated

D SITE SPECIFIC METHODS

As noted above, WHPacific, Inc. had previously investigated and documented wetlands and "other waters" on the "Sustainable Fairview" site comprising the entire former Fairview Training Center, of which the study area is a part. The investigation identified three wetlands in the study area (Areas 5, 8 and 9). The delineation report, Delineation of Wetlands and Other Waters of the United States for Sustainable Fairview Site (March 28, 2003), received concurrence from the DSL in a letter dated July 15, 2004 (WD 2003-0284). We reviewed the wetland delineation map and report before conducting the investigation. We noted that Areas 8 and 9 were described as small pockets of "Slope" wetland along the northern property line next to school district ball fields, while Area 5 was a wetland area that had developed around a break in a tile drain line.

Before conducting our site investigation, we examined a recent color aerial photograph (see Figure 5). We also reviewed other existing information: the Marion County tax lot map (Figure 2), the National Wetland Inventory map (Figure 3A), the Local Wetland Inventory map for Salem (Figure 3B), and the Marion County Soil Survey map (Figure 4).

We first investigated where Area 5 had been identified in February 2003. We looked for any break in the drain tile or hole in the ground. We established a sample plot (Plot A1) in the lowest area, dug a soil pit, and recorded the plant community, soils and hydrology using the standard Corps delineation methodology.

We then followed the broad drainageway where it was located to check for any evidence of breaks in the tile drain system. We then walked the hilltop and hillsides to the south to ensure that no other wetlands had developed. Lastly, we followed the northern fence line and investigated Areas 8 and 9. At Area 8, we found conditions similar to what was identified in 2003, established two sample plots and delineated the wetlands. At Area 9, we noted changes that had occurred since the 2003 investigation: construction of a roadside swale and catch basin.

At each stage, we took color photographs (see Appendix C).

A total of four sample plots were examined within the study area. We marked the locations of the plots and wetland boundary with wire flags, which were tied by a Barker Surveying crew using total station equipment. See Appendix B for copies of the field data forms.

After data was downloaded and processed, we prepared a wetland map (see Figure 6).

E DESCRIPTION OF WETLANDS AND OTHER WATERS

Wetland 1: One wetland (labeled Area 8 in the 2003 delineation) was identified in the study area, which totals 895 square feet within the study area. It straddles the northern fence line, and extends out into the adjacent school ball field. It is a Palustrine Shrub-Scrub/Emergent, Slope wetland, dominated by *Phalaris arundinacea* (reed canarygrass, FACW), *Salix piperi* (Piper willow, FACW) and *Populus balsamifera* (balsam poplar, FAC). Groundwater discharges seasonally from the hillside and saturates the area at the break in slope. It is characterized by Plot B2. The soil has a 1-chroma matrix with distinct redox concentrations, meeting hydric soil indicator F3 (Depleted Matrix). Although the wetland dries out in the summer, we found one primary indicator of wetland hydrology: oxidized live root channels, and one secondary indicator: water stained leaves. This area had been saturated in the upper 12 inches when investigated in 2003. The adjacent slopes are covered in a thicket of *Rubus armeniacus* (Himalayan blackberry, FACU).

Basis of Delineation: We based the wetland boundary on an obvious break in slope at the toe of the hillside, which corresponded with a marked change from hydrophytic vegetation (reed canarygrass and Piper willow) to upland vegetation (primarily Himalayan blackberry).

Non-Wetlands: As noted above, the previously identified Area 5 had developed around a break in a sub-surface drainage system. It was located in a broad drainageway that slopes gradually toward the east. The drainage system had discharged to a ditch further to the east, outside the present study area. Water had pushed up to the surface, creating a hole in the ground, and saturating the area around it. We found no trace of the break in the drain system. Nor was there any difference in the vegetation distinguishing the lowest part of this broad area from the rest of it.

We established Plot A1 in the lowest point in this area, close to where Plot M1 was established in February 2003. The vegetation is a typical abandoned-field mixture of weedy grasses and forbs and patches of Himalayan blackberry or other low shrubs. The soil is a 2-chroma silt loam without redox concentrations. We could identify no wetland hydrology indicators. The vegetation and soil findings were actually consistent with what was identified at Plot M1 in the 2003 investigation: a mixture of weedy grasses and forbs with *Agrostis stolonifera* (spreading bent, FAC) the dominant species, and a 2-chroma silt loam without redox features. The sole difference was the accumulation of water from the broken drain.

We concluded that the drainage system was repaired several years ago, and the area has dried out, leaving no trace of Area 5.

Previously identified Area 9 had developed at the toe of slope of the hillside south of the school ball fields. In the 2003 investigation, we characterized Area 9 as a “Slope” wetland similar to Area 8. However, at that time we did not identify a narrow gully leading down the slope from Pringle Road SE. In fact, hydrologic support apparently had come from roadway runoff, which flowed down the gully and accumulated in the level area at the toe of slope. This gully is now dry, because the construction of a roadside ditch and swale leading to a catch basin beside the road has intercepted the flow of water. As a result, Area 9 has dried up.

We established Plot C1 in the lowest area under a large Piper willow. This area now has dense Himalayan blackberry cover, and lacks hydrophytic vegetation. The soil has a 2-chroma and redox concentrations meeting hydric soil indicator F3 (Depleted Matrix). There were no indicators of wetland hydrology. The findings were similar to Plot O2 (non-wetland) in the 2003 investigation.

Given the change in hydrology in this area, the redox concentrations may be considered “relict features”.

F DEVIATION FROM LOCAL WETLAND INVENTORY AND NATIONAL WETLAND INVENTORY

See Figure 3A for the National Wetlands Inventory Map. The NWI does not show any of these features. See Figure 3B for the Local Wetland Inventory Map for the City of Salem. This map shows wetland area PC-K, a Palustrine Emergent wetland, which appears to be in the same location as previously identified Area 9. As discussed above, in our judgment, Area 9 has dried up, and no longer meets wetland criteria. The other wetlands were not identified on the LWI map.

G MAPPING METHOD AND ACCURACY STATEMENT

Wetland boundary and sample plot flags were tied by Barker Surveying's survey crew using total station equipment. The post-processing level of accuracy was within 0.1 foot horizontally.

H ADDITIONAL INFORMATION USED TO ESTABLISH JURISDICTION

Wetland 1 has no surface connection to any "water of the U.S.", such as Pringle Creek, which is at least 300 feet to the north on the far side of the Leslie Middle School playing fields. Nor is there any close sub-surface connection to the creek. It may therefore be considered to be an "isolated" wetland under the 2000 "SWANCC" U.S. Supreme Court decision and subsequent 2007 Corps of Engineers guidance on Clean Water Act Jurisdiction.

I RESULTS AND CONCLUSIONS

There is one wetland (895 square feet) within the study area. This wetland is under state jurisdiction, but due to isolation from Pringle Creek, may be considered non-jurisdictional by the Corps of Engineers.

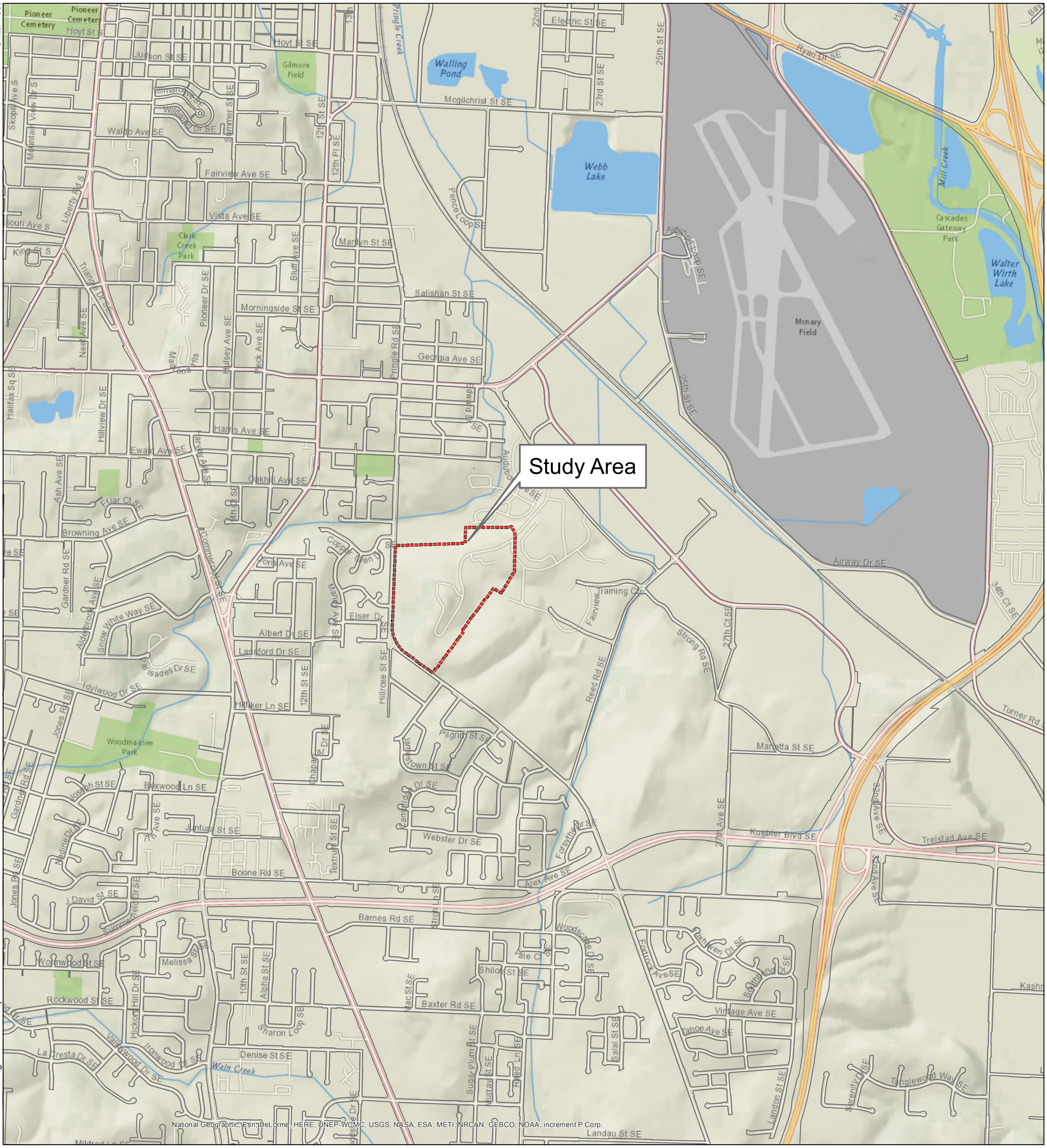
J DISCLAIMER

This report documents the investigation, best professional judgment and conclusions of the investigator. It is correct and complete to the best of our knowledge. It should be considered a preliminary jurisdictional determination of wetlands and other waters and used at your own risk unless it has been reviewed and a letter of concurrence issued by the DSL in accordance with OAR 141-090-0005 through 141-090-0055. Similarly, this report is not official under Corps regulations until reviewed by the Corps and an official Jurisdictional Determination has been issued.

APPENDIX A

MAPS

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Datum: North American 1983 HARN
Units: Foot



0 500 1,000 2,000
Feet

N

User: abednarz WHPacific Inc.
Date: 9/22/2014 Time: 3:21:14 PM
Path: P:\Olsen Design and Development\0004258\WEnvironmental\Exhibits\Fig 1 Location Map.mxd

WHPacific

LOCATION MAP

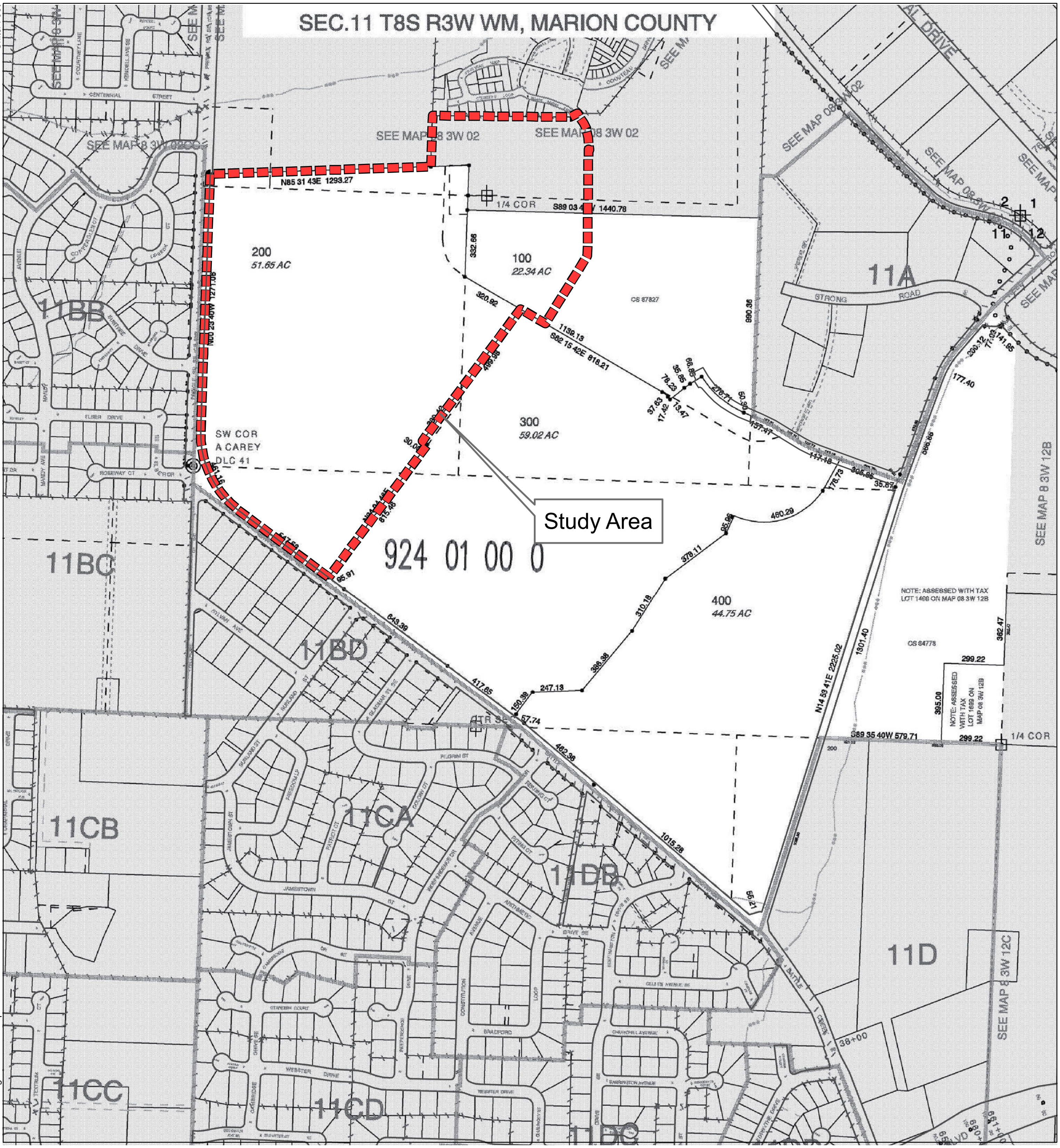
FAIRVIEW ADDITION TAX LOT 200 RESIDENTIAL DEVELOPMENT

MARION COUNTY, OREGON

Figure

1

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Datum: North American 1983 HARN
Units: Foot



Map 8S 3W 11

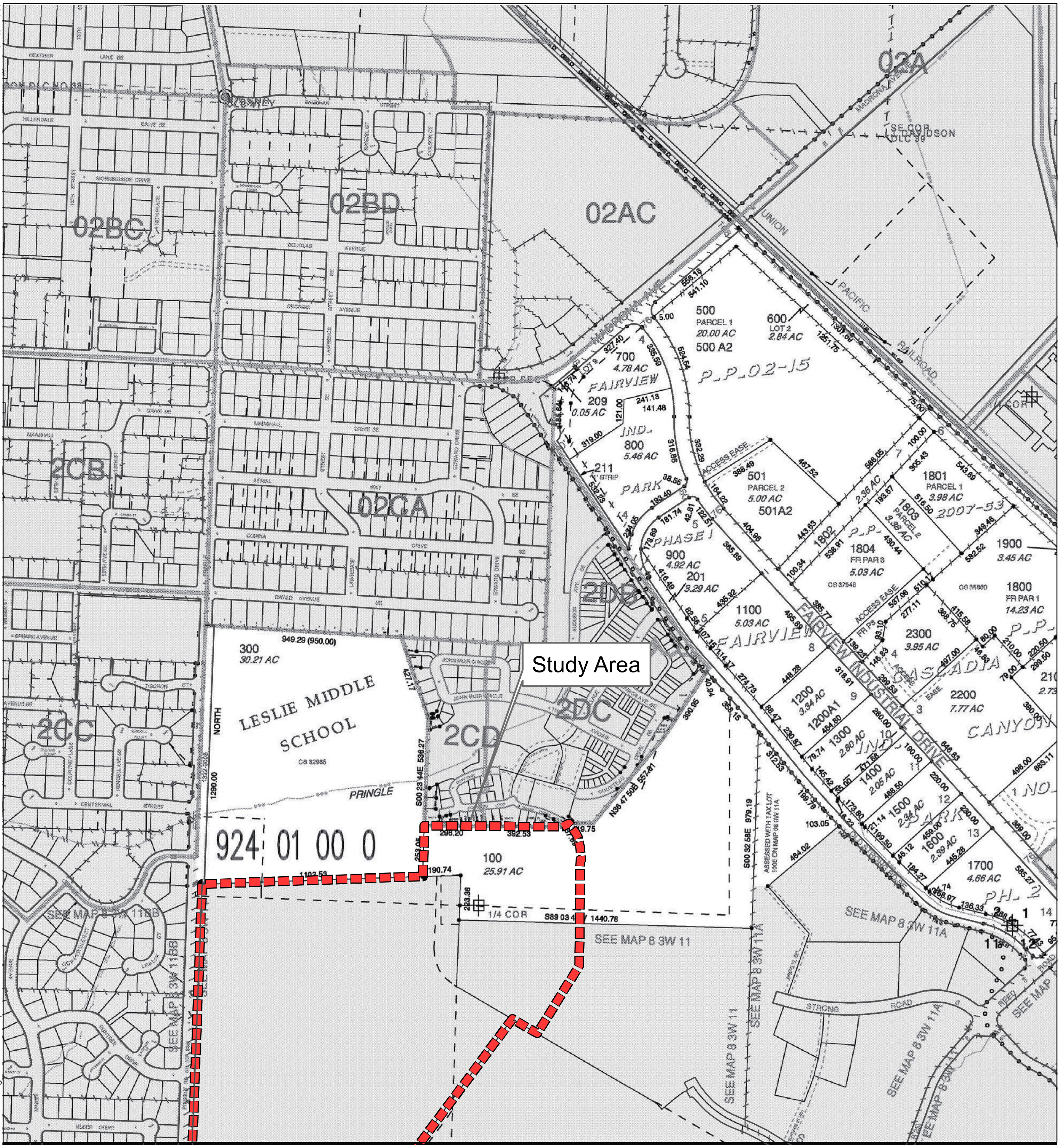
0 500 1,000 2,000
Feet

N

User: abednarz WHPacific Inc.
Date: 9/22/2014 Time: 3:23:49 PM
Path: P:\Olsen Design and Development\0004258\WEnvironmental\Exhibits\Fig 2A Tax Lot Map.mxd

WHPacific	**TAX LOT MAP** FAIRVIEW ADDITION TAX LOT 200 RESIDENTIAL DEVELOPMENT MARION COUNTY, OREGON	**Figure** **2A**

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Datum: North American 1983 HARN
Units: Foot



Map 8S 3W 02

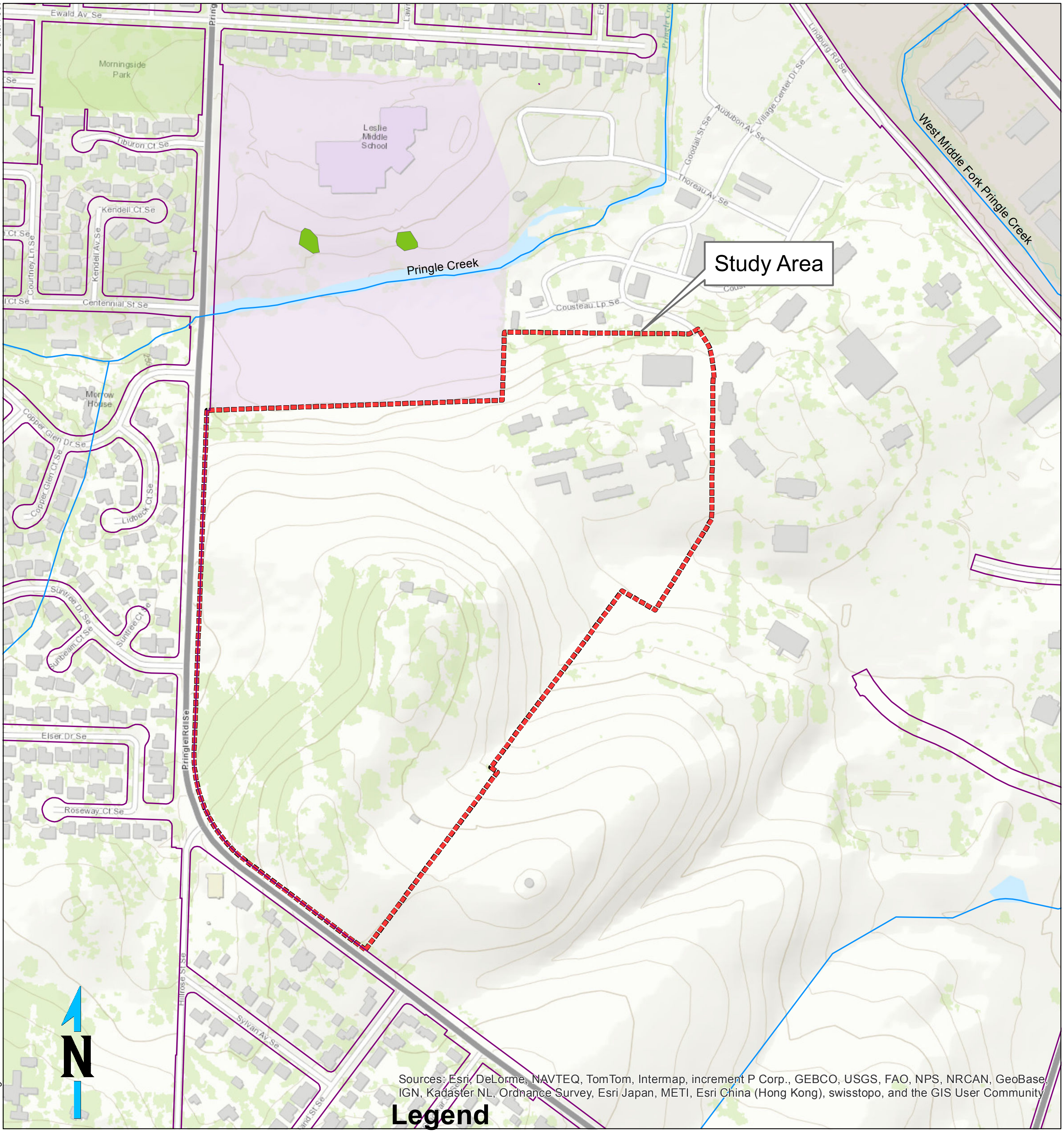
0 500 1,000 2,000
Feet

N

User: abednarz WHPacific Inc.
Date: 9/22/2014 Time: 3:24:31 PM
Path: P:\Olsen Design and Development\0004258\WEnvironmental\Exhibits\Fig 2B Tax Lot Map.mxd

WHPacific	TAX LOT MAP FAIRVIEW ADDITION TAX LOT 200 RESIDENTIAL DEVELOPMENT MARION COUNTY, OREGON	Figure 2B

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Datum: North American 1983 HARN
Units: Foot



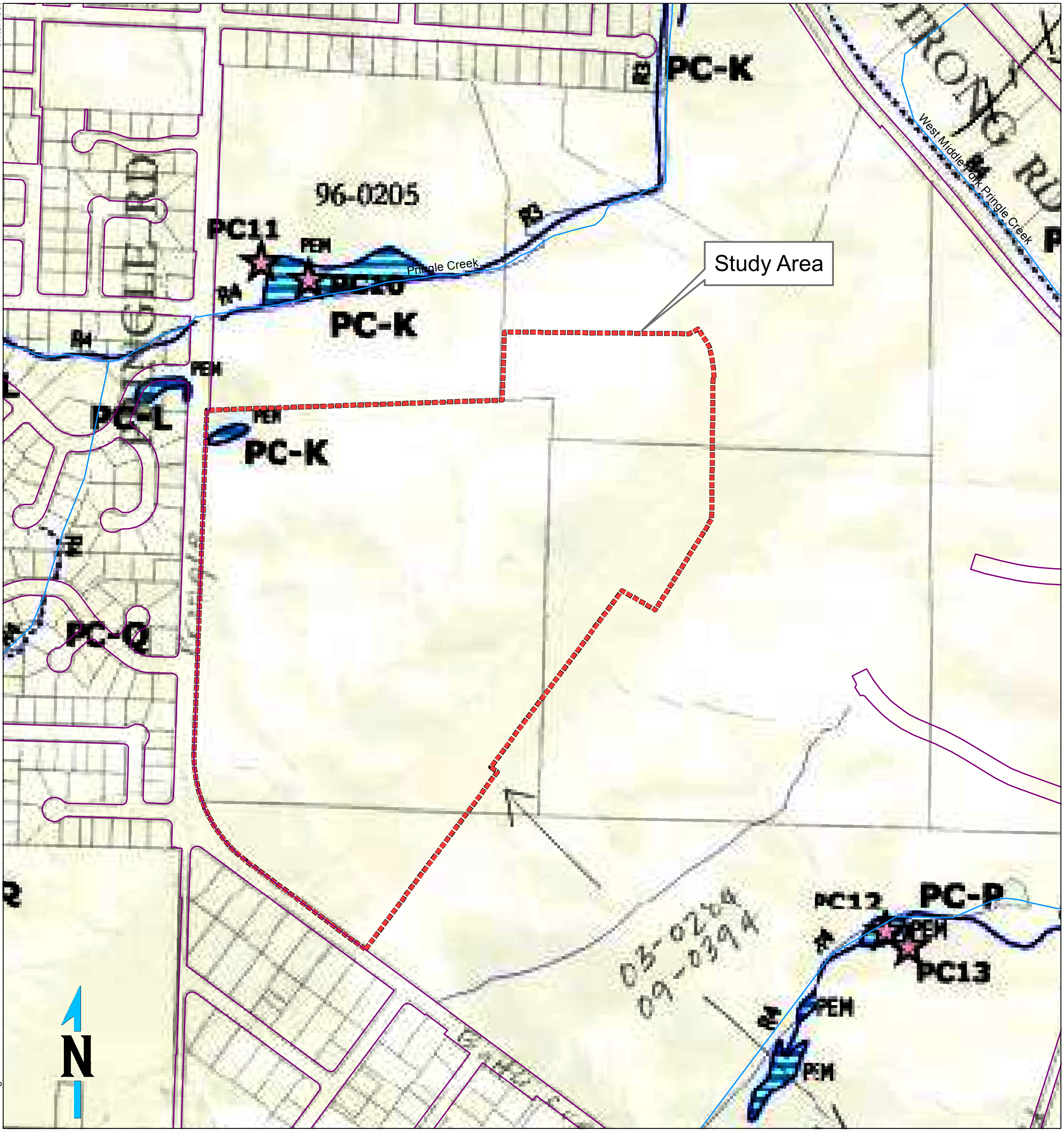
Legend

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

0 250 500 1,000
Feet

Path: P:\Olsen Design and Development\0004258\Environmental\Exhibits\Fig 3 NWI.mxd
User: abednarz WHPacific Inc.
Date: 9/22/2014 Time: 3:30:41 PM

WHPacific	NATIONAL WETLAND INVENTORY FAIRVIEW ADDITION TAX LOT 200 RESIDENTIAL DEVELOPMENT MARION COUNTY, OREGON	Figure 3A



Wetland Class Codes

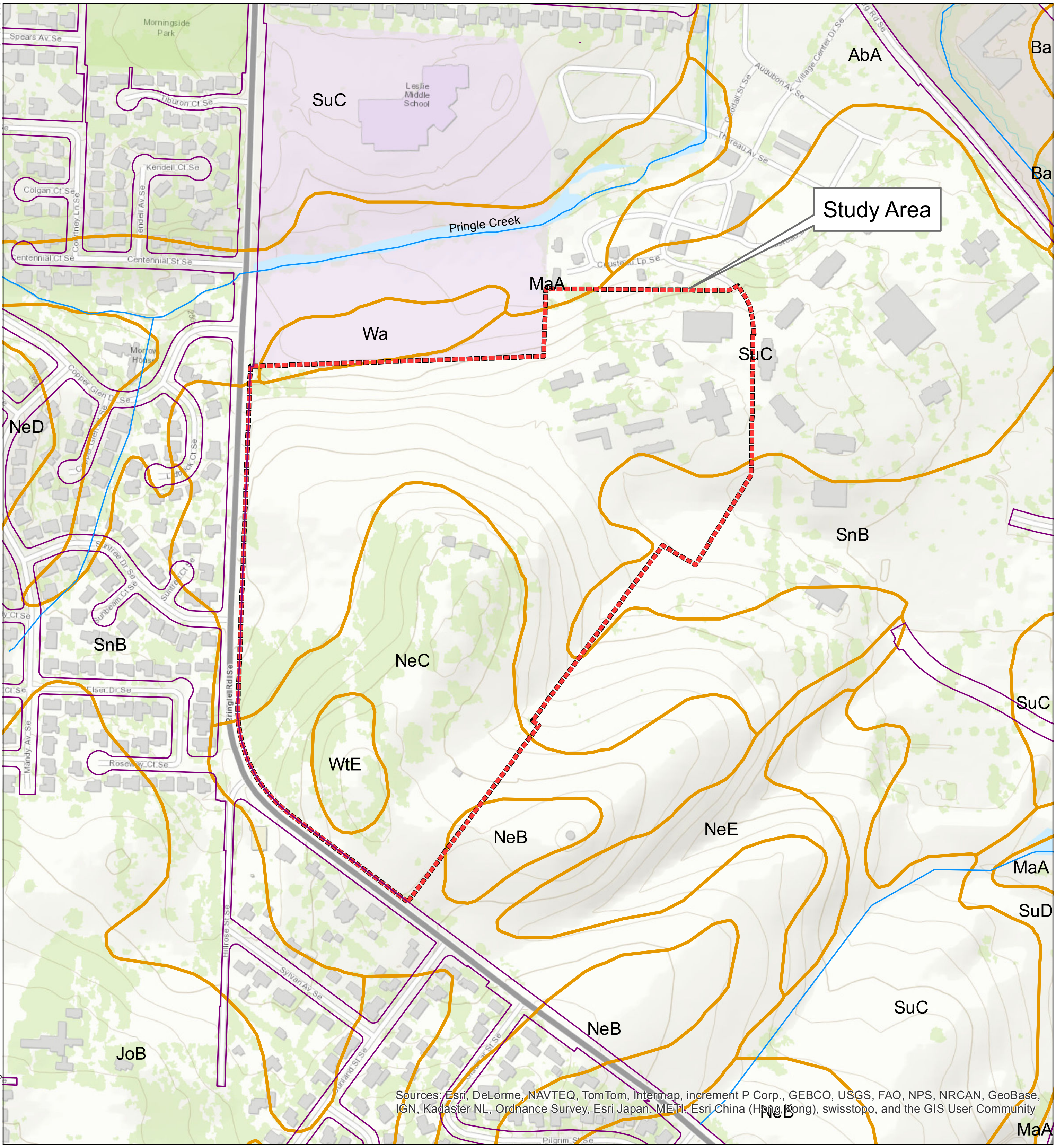
P- Palustrine, EM-Emergent
SS-Scrub/Shrub, UB- Onconsolidated Bottom
AB- Aquatic Bed, R2- Lower Perennial Stream
R3- Upper Perennial Stream, R4- Intermediate Stream

0 250 500 1,000
Feet

WHPacific	LOCAL WETLAND INVENTORY FAIRVIEW ADDITION TAX LOT 200 RESIDENTIAL DEVELOPMENT MARION COUNTY, OREGON	Figure 3B

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Datum: North American 1983 HARN
Units: Foot

User: abednarz WHPacific Inc.
Date: 9/22/2014 Time: 3:32:21 PM
Path: P:\Olsen Design and Development\0004258\WEnvironmental\Exhibits\Fig 3B LWI.mxd



MaA: McAlpine silty clay loam, 0-3% slopes
NeB: Nekia silty clay loam, 3-7% slopes
NeC: Nekia silty clay loam, 7-12% slopes
SnB: Santiam silt loam, 3-6% slopes
SuC: Silverton silt loam
Wa: Waldo silty clay loam
WtE: Witzel very stony silt loam, 3-40% slopes

0 250 500
Feet

N

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Datum: North American 1983 HARN
Units: Foot

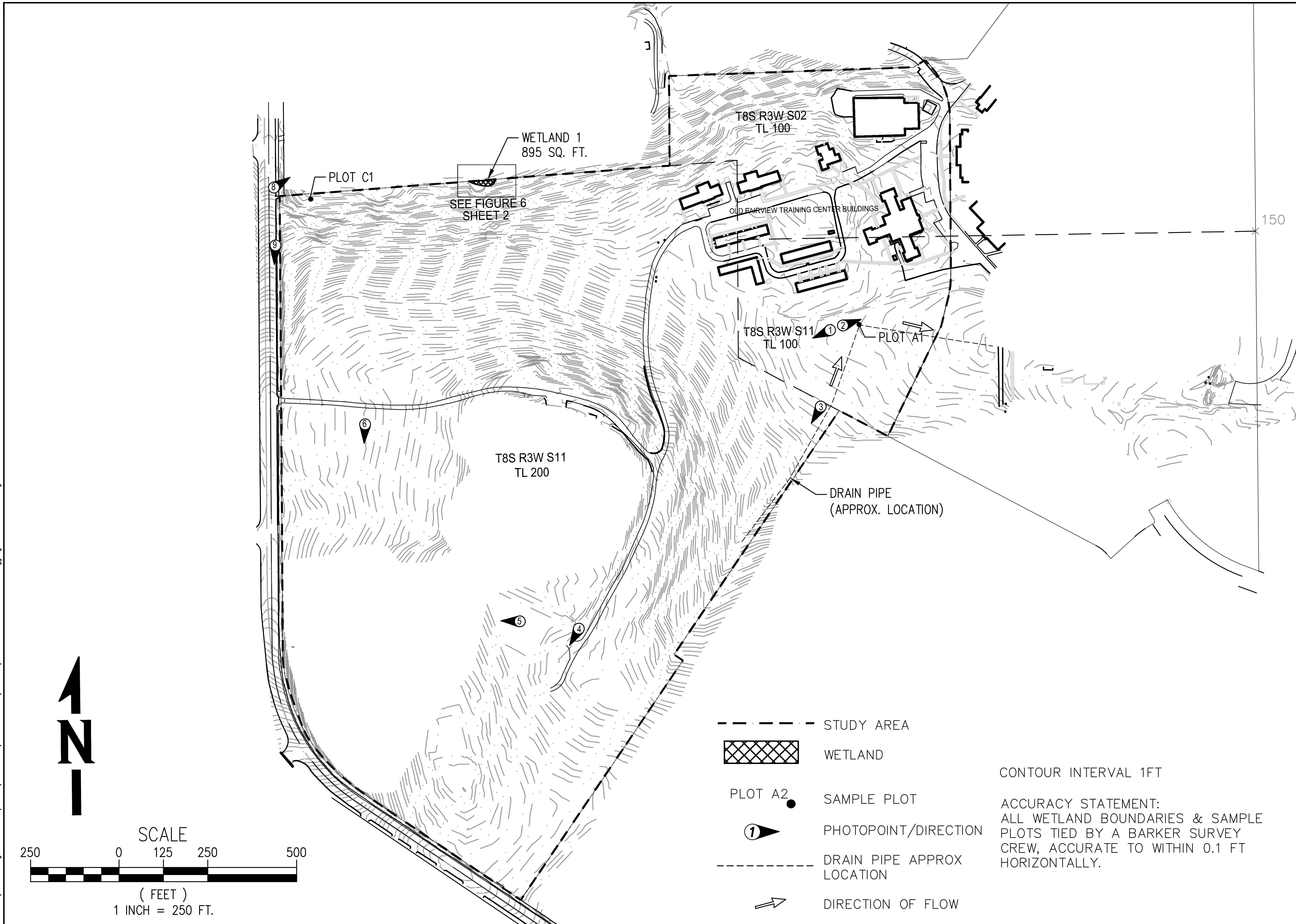
User: abednarz WHPacific Inc.
Date: 9/22/2014 Time: 3:18:45 PM
Path: P:\Olsen Design and Development\0004258\WEnvironmental\Exhibits\Fig 4 Soils.mxd

WHPacific	**SOIL SURVEY MAP** FAIRVIEW ADDITION TAX LOT 200 RESIDENTIAL DEVELOPMENT MARION COUNTY, OREGON	**Figure** **4**

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Datum: North American 1983 HARN
Units: Foot

User: abednarz WHPacific Inc.
Date: 9/22/2014 Time: 3:33:34 PM
Path: P:\Olsen Design and Development\0004258\WEnvironmental\Exhibits\Fig 5 Aerial.mxd

WHPacific	**AERIAL PHOTO** FAIRVIEW ADDITION TAX LOT 200 RESIDENTIAL DEVELOPMENT MARION COUNTY, OREGON	**Figure** **5**



WHPacific

REVISIONS

NO.	BY	DATE	REMARKS

SHEET INFO	###
#######	
DRAWN	AB
CHECKED	###
APPROVED	###
LAST EDIT	9/22/2014
PLOT DATE	9/22/2014
SUBMITTAL	

FIGURE 6: Wetland Map

Olsen Design and Development
Fairview Addition Tax Lot 200 Residential Development

SCALE: NTS

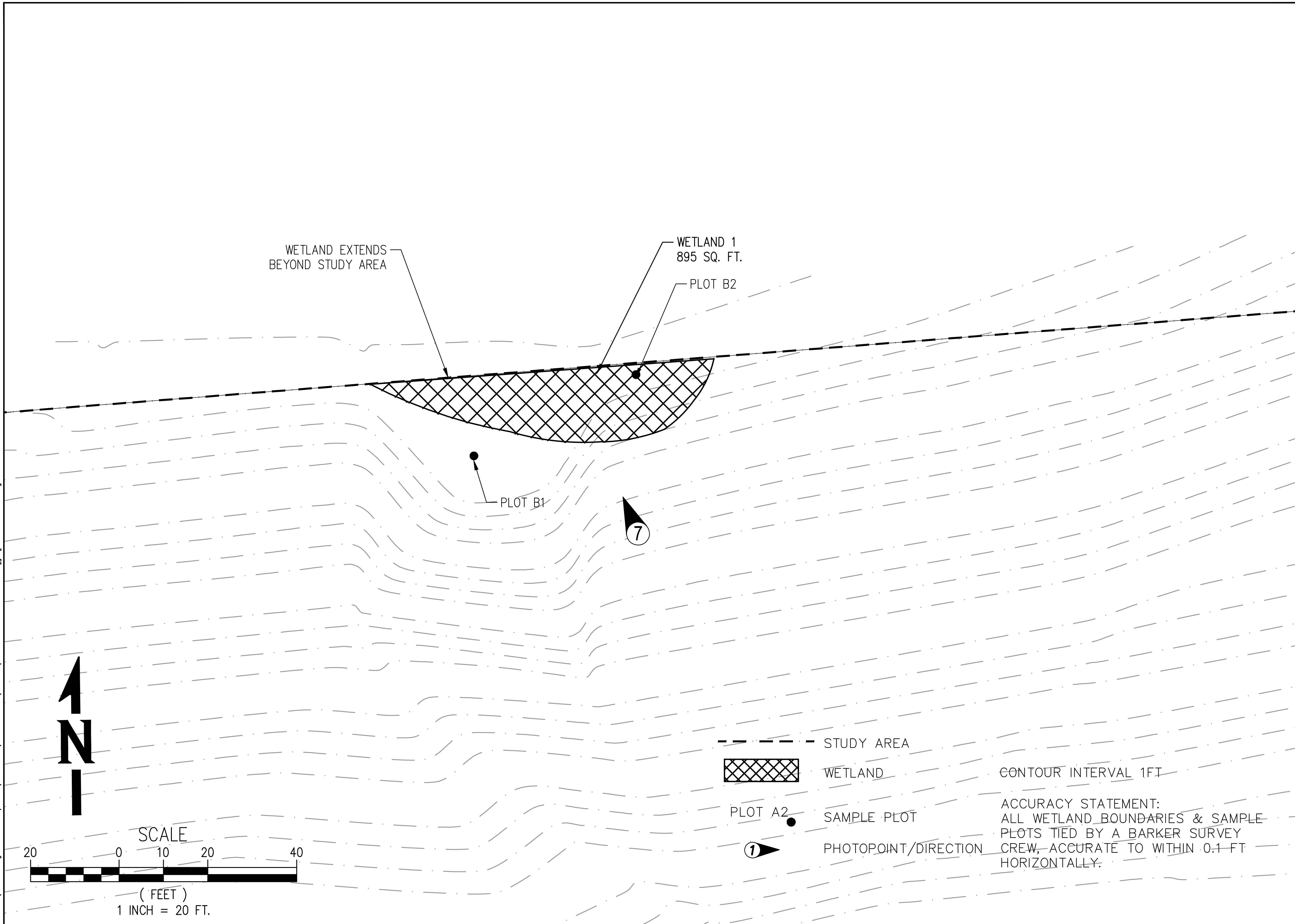
PROJECT NUMBER: 0004258W

DRAWING FILE NAME: 0004258W-FIG6 WETLANDS

SHEET NUMBER: SHEET 1

1 of 2

[DATE: 9/22/2014 3:48 PM] [AUTHOR: abednarz] [PLOTTER: DWG To PDF.pc3] [STYLE: WHP-Standard.ctb]
[PATH: P:\Olsen Design and Development\0004258W\Environmental\Exhibits\0004258W-FIG6 Wetlands.dwg] [LAYOUT: SHEET 1]



WHPacific

#

REVISIONS			
NO.	BY	DATE	REMARKS

SHEET INFO	###
DRAWN	AB
CHECKED	###
APPROVED	###
LAST EDIT	9/22/2014
PLOT DATE	9/22/2014
SUBMITTAL	

FIGURE 6: Wetland Map

Olsen Design and Development
Fairview Addition Tax Lot 200 Residential Development

SCALE NTS

DRAWING FILE NAME 0004258W-FIG6 WETLANDS

PROJECT NUMBER 0004258W

SHEET NUMBER
SHEET 2
2 of 2

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[PATH: P:\Olsen Design and Development\0004258W\Environmental\Exhibits\0004258W-FIG6 Wetlands.dwg] [LAYOUT: SHEET 2]

APPENDIX B

DATA FORMS

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Fairview Addition City/County: Salem Marion Sampling Date: 8/19/14
Applicant/Owner: Oken Development. State: OR Sampling Point: A1
Investigator(s): PQ Section, Township, Range: T8S R3W Section 11 TL 200
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2%
Subregion (LRR): A Lat: 44.8966 N Long: -123.0197 Datum: NAD 83
Soil Map Unit Name: Santiam silt loam NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___	Is the Sampled Area within a Wetland? Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks: Abandoned field - formerly wet due to break in drain tile line - now repaired and dry - low point in drainageway

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15' r)			
1. Crataegus monogyna	5	N	FAC
2.			
3.			
4.			
5.			
= Total Cover	5		
Herb Stratum (Plot size: 5' r)			
1. Hypericum perforatum	10	N	NL
2. Madia glomerata	5	N	FACU
3. Holcus lanatus	20	Y	FAC
4. Epilobium ciliatum	10	N	FACW
5. Rumex crispus	T	N	FAC
6. Unid. forb	T	N	N/A
7. Agrostis sp -	30	Y	FAC
8. Parentucellia viscosa	5	N	FAC
9.			
10.			
11.			
= Total Cover	90		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: A-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-11"	10YR 4/2	—	—	—	—	—	Silt loam	
11-18+	10YR 3/2	—	—	—	—	—	"	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators - drain tile line break has been repaired - not visible
↳ since 2003 investigation

J. L. DARLING CORP.
www.RiteintheRain.com
(253) 922-5000

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Fairview Addition City/County: Salem, Marion Sampling Date: 8/19/14
Applicant/Owner: Olsen Development State: OR Sampling Point: B1
Investigator(s): PQ Section, Township, Range: T8S R3W S11 TL 200
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 5%
Subregion (LRR): A Lat: 44.8977 N Long: -123.0237 W Datum: NAD 83
Soil Map Unit Name: Silverton Silt loam NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___	Is the Sampled Area within a Wetland? Yes ___ No ✓
Hydric Soil Present?	Yes ___ No ✓	
Wetland Hydrology Present?	Yes ___ No ✓	

Remarks: On slope above small slope wetland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 15' r)			
1. Populus balsamifera	25	Y	FAC
2.			
3.			
4.			
	25 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' r)			
1. Crataegus monogyna	T	N	FAC
2.			
3.			
4.			
5.			
	T = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. Cirsium arvense	10	N	FACU
2. Holcus lanatus	80	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
	___ = Total Cover		
% Bare Ground in Herb Stratum 10			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: B1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type¹	Loc²	Texture	Remarks
0-11	10YR 4/2	-	-	-	-	-	sil	
11-18+	10YR 4/2	75	10YR 4/1	20	D	M	"	
			10YR 4/4	5	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

No redox features in upper 10"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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(253) 922-5000

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Fairview Addition City/County: Salem, Marion Sampling Date: 8/19/14

Applicant/Owner: Olsen Development State: OR Sampling Point: B2

Investigator(s): PQ Section, Township, Range: T8S R3W S11 TL200

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 2%

Subregion (LRR): A Lat: 44.8977 N Long: -123.0236 W Datum: NAD 83

Soil Map Unit Name: Silverton silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___	Is the Sampled Area within a Wetland? Yes ✓ No ___
Hydric Soil Present?	Yes ✓ No ___	
Wetland Hydrology Present?	Yes ✓ No ___	

Remarks: Small slope wetland – extends N. past fence on School property.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5' r)			
1. Phalaris arundinacea	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
= Total Cover			
% Bare Ground in Herb Stratum N/A			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: B2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2"	10YR4/1	–	–	–	–	–	silt loam	
2-18"	10YR 4/1	70	10YR 4/4	30	C	M,PL	"	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): ______

Hydric Soil Present? Yes ✓ No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ______

Water Table Present? Yes ____ No ✓ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ______

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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(253) 922-5000

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Fairview Addition City/County: Salem, Marion Sampling Date: 8/19/14
Applicant/Owner: Olsen Development State: OR Sampling Point: C1
Investigator(s): P2 Section, Township, Range: T8S R3W S11 TL 200
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): slope/level Slope (%): 2%
Subregion (LRR): A Lat: 44.8976 N Long: -123.0256 W Datum: NAD 83
Soil Map Unit Name: Waldo silty clay loam NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ___ No ✓		Is the Sampled Area within a Wetland? Yes ___ No ✓
Hydric Soil Present? Yes ✓ No ___		
Wetland Hydrology Present? Yes ___ No ✓		

Remarks: Evidence of former ephemeral drainageway off Pringle Road. Flow now intercepted by roadside swale, catch basin. Roadway runoff was formerly source of hydrology, now dried up.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix piperi	50	Y	FACW
2.			
3.			
4.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. Crataegus douglasii	20	Y	FAC
2. Corylus cornuta	10	Y	FACU
3.			
4.			
5.			
	30	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. Rubus ursinus	20	Y	FACU
2. Rubus armeniacus	20	Y	FACU
3. Polystichum munitum	T	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 60

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks:

SOIL

Sampling Point: C1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR4/2	–	–	–	–	–	silt loam	
8-18+	10YR4/2	80	10YR4/6	20	C	M	"	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): ______

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hillside flattens out in school ball field. No drainage topography to N. of fence line. Redox features may be relict (defined edges)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ______

Water Table Present? Yes ___ No ✓ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ______

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

See remarks in Summary

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APPENDIX C

SITE PHOTOGRAPHS

Taken August 19, 2014

Photo Point 1: Broad drainageway, previously identified Area 5, looking west

Photo Point 2: Plot A1, previously identified Area 5, looking east

Photo Point 3: Looking south up drainageway

Photo Point 4: Looking south across hill toward Battle Creek Road SE

Photo Point 5: Hill top and stand of mature oaks

Photo Point 6: Looking south across Himalayan blackberry thicket

Photo Point 7: Wetland 1, reed canarygrass "Slope" wetland at northern fence line

Photo Point 8: Catch basin next to Pringle Road SE

Photo Point 9: Roadside swale that intercepts runoff from Pringle Road SE

APPENDIX D

REFERENCES

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APPENDIX E

WETS TABLE

USDA Field Office Climate Data

WETS Station : SALEM MCNARY FLD, OR232 Creation Date: 08/20/2014
Latitude: 4454 Longitude: 12300 Elevation: 00205
State FIPS/County(FIPS): 41047 County Name: Marion
Start yr. - 1971 End yr. - 2000

Month	Temperature (Degrees F.) avg daily max	avg daily min	avg	Precipitation (Inches) avg	30% chance will have less than	more than	avg # of days w/.1 or more	avg total snow fall
January	47.0	33.5	40.3	5.84	3.63	7.05	12	1.3
February	51.2	34.7	43.0	5.09	3.26	6.14	12	2.1
March	56.3	36.6	46.5	4.17	2.96	4.94	11	0.1
April	61.1	38.8	50.0	2.76	1.83	3.30	8	0.0
May	67.5	43.6	55.6	2.13	1.23	2.59	6	0.0
June	74.0	48.4	61.2	1.45	0.85	1.76	4	0.0
July	81.5	52.0	66.8	0.57	0.13	0.67	2	0.0
August	81.9	52.1	67.0	0.68	0.13	0.81	2	0.0
September	76.6	47.7	62.2	1.43	0.46	1.73	4	0.0
October	64.5	41.3	52.9	3.03	1.54	3.70	7	0.0
November	52.4	37.9	45.2	6.39	4.15	7.68	13	0.4
December	46.4	33.9	40.2	6.46	4.30	7.75	13	1.9
Annual	-----	-----	-----	------	34.67	44.29	--	----
Average	63.4	41.7	52.6	------	------	------	--	----
Average	-----	-----	-----	40.00	------	------	93	6.0

GROWING SEASON DATES

Probability	Temperature 24 F or higher	28 F or higher	32 F or higher
	Beginning and Ending Dates Growing Season Length		
50 percent *	2/16 to 12/ 1 288 days	3/24 to 11/ 9 229 days	4/26 to 10/17 173 days
70 percent *	2/ 6 to 12/11 308 days	3/14 to 11/19 250 days	4/20 to 10/23 185 days

APPENDIX C: FAIRVIEW TRAINING CENTER HISTORIC ANALYSIS AND INVENTORY

Fairview Training Center: Historic Analysis and Inventory

EXHIBIT 5

Ward Tonsfeldt Consulting, LLC

Introduction

The Institution for the Feeble Minded, later the Oregon Fairview Home, was established near Salem by the State of Oregon in 1908 as a central facility for developmentally disabled Oregonians. In concept, it was to be an institutional farm where residents would work the land to produce food for their own consumption. The original land base was sufficient for cereal crops, row crops, orchards, swine and fowl production, and a dairy. The "patients" lived in "cottages" with their caregivers, worked at appropriate jobs, and could expect to spend their lives in this sequestered environment.

As the 20th century unfolded, ideas about treatment of developmentally disabled children and adults changed. Institutions like Fairview reflected the 19th century model of treatment which segregated the developmentally disabled from the rest of society. In the post-World War II years, newer models of treatment emphasized training the developmentally disabled and returning them to their communities, to live with their families or in foster homes, or in small group living situations. The program at Fairview changed from asylum care to training and out-patient services.

The city of Salem gradually enveloped the Fairview property and what was a rural area in 1908 became industrial and residential land in the mid-20th century. The State sold portions of the original Fairview land for development and for the Salem Municipal Airport. While the physical size of the institution diminished, Oregon's population grew, and the need for services increased in proportion. Despite efforts to change with the times Fairview experienced financial and policy challenges during the 1960s and 1970s. The State of Oregon closed the last program at Fairview in 2000.

Setting

In its development during the historic period of significance (1908-1945) Fairview was an institutional farm. The original plan for the 670 acres included east-sloping hillside land and level bottom land. The elevation at the highest point on the Fairview property is 378' above sea level and the bottom land averages 200'. Pringle Creek drains the western portion of the property. This stream was dammed to create a pond west of the service buildings. An un-named seasonal creek drains the eastern area of the property. This stream flows into a marshy area near the eastern boundary. Pringle Creek also has an impoundment and marsh on the western side of the property.

Indigenous plants on Fairview include oaks, grasses, and Douglas fir. After Euro-American settlement, the area was cleared and devoted to mixed agriculture. The bottom lands were well-suited to farming, and the hills were used as pasture because of their superior drainage.

During the historic period, Fairview looked much like the surrounding farms. The flat bottom fields were farmed for row crops such as potatoes, onions, beans, and carrots, and for cereals such as wheat and oats. Orchards of apple, pear and other fruit trees grew at the crest of the ridge along the property's southern boundary. Cane berries were planted below the orchards. The hills supplied pasture for cattle and sheep, and some hay fields for winter feed. Chickens and swine were confined in buildings in this zone. During the earliest years, there would have been some farm horses pastured here as well.

The farm buildings, including chicken and swine houses, silos, and dairy barns were clustered on the eastern edge of the property. Service buildings were clustered on the northern border along a railroad spur that served the institution. Administrative buildings and the Fairview cottages intruded into this pastoral setting, but the original design of placed the institutional buildings together in a crescent at the lowest part of the hill, thereby minimizing the impact to the landscape. The fir trees were left in place around the institutional buildings, and other trees were planted for shade and visual appeal. An open field remained at the center of the building crescent. This provided a green space and playing fields for the Fairview residents.

Architectural Background: The Cottage Plan

Considerable growth occurred in the state-funded treatment of the developmentally disabled in the United States during the nineteenth century. The growth of the state asylums or "hospitals" intensified as the population grew and the stress of the industrial society increased. Human rights activists and new therapeutic methods brought about a change in the way patients were treated and perceived. Instead of confining patients in prisons or poorhouses, new public hospitals were established that not only housed the disabled but also intended to improve their lives by work training and medicinal therapies. This philosophical change paved the way for new trends in the design of mental institutions; Dr. Thomas Story Kirkbride was the driving force in the function and design of these state facilities.

In 1854, Dr. Kirkbride developed architectural standards that were adopted by many states that advocated constructing one main building that had a central section for administration and services with wards for patients to either side. Also integral to the "plan" was creating a home-like, calming atmosphere where natural light, fresh air and views of nature were incorporated into the design. Plans of this type were referred to as the Kirkbride Plan or the "congregate plan" because everything was housed under one roof.

By the late 1800s, the asylum philosophy began to change again, ushering in a new building type know as the "cottage plan" or "segregate plan." Instead of housing all the patients in one large building, promoters advocated designing a campus-like cluster of smaller cottages that allowed the flexibility of grouping patients according to their age, diagnosis, sex, and level of functioning. The cottage plan made it easier to expand as the demand increased and evacuate people if a fire occurred. The cottage plan was favored as contagious disease hospital such as tuberculosis centers, so patients could be separated from the population. These small, low-scale buildings erected for more specialized treatment, were often strategically located facing south or to open vistas so natural light was maximized. Open air porches, balconies, sunrooms, and home-like atmosphere were integral to the plan.

The focus on fresh air treatments reinforced the public's conviction that the agrarian lifestyle of hard outdoor work is good for one's health. Planners sited institutions in the rural edges of communities where a nearby railroad station or spur would provide savings in both construction and operating costs, and where acres of woods, orchards, and crops provided fuel and food as well as activities for patients. The opportunity for patients to work in fields, care for farm animals, or do the laundry seemed a practical way to defray public expense while providing activity and training. The layout and building types at the State Institution for the Feeble-Minded (later Fairview Home) are prime examples the cottage plan concept.

Building Layout and Types

Architect Walter David Pugh, a Salem architect, laid out and designed the first buildings at Fairview based on the cottage plan concept. The original 1908 layout consisted of the Administration Building (LeBreton), a male cottage (Steel), and a boiler house and laundry sited in the center. A cow barn and a horse barn, also part of the initial building phase, but were located outside the central core. The Administration Building, also the girls' dorm, and Steel Cottage (razed) were two-story Colonial Revival style wood-frame buildings with lap siding. The boiler house and laundry were made of brick that was produced locally by inmates of the State Penitentiary.

As the State erected more buildings at the institute, the crescent-shaped layout became more apparent. This U-shape configuration was a common layout of facilities based on the cottage plan because of its efficiency in its proximity to the other buildings as well as the ability to isolate people when needed. The more formal front façades faced outward maximizing the hilltop views. The rear facade of the cottages was more informal, and included porches and balconies, and back entrances fronting the interior park/play area. Sidewalks connected the cottages. Ten of the original buildings on the crescent are extant; three of the earliest cottages (Steel, Benson, and Jones) were demolished in the 1950s/60s-expansion period.

Soon after the first buildings were constructed, plans were underway to erect additional cottages to meet the demands for care. Prominent Willamette Valley architects William C. Knighton and Charles H. Burggraf designed the next series of cottages (Benson, Chamberlain, Jones, and Withycombe), erected between 1912 and 1918, in the Colonial Revival style. Similar in design, form, detailing, and interior layout, these buildings had low-pitched hip roofs often with intersecting pedimented front gables with fanlight windows, dormers, wide eaves decorated with modillions, multi-pane double-hung wood sash windows, lap siding finished with cornerboards, central front two-story porticos, raised daylight basements, and bilateral symmetry. The entrance porticos included tall Ionic columns, spanning the first and second stories, recessed entrances with open balconies above, and turned balustrades. The back of the buildings varied somewhat but generally had a decorative central rear entrance portico flanked by entrances in the wings, porches on the lower stories, and balconies or sleeping porches on the upper stories.

The post-World War I buildings at the institution mark a change in the building material from wood to more fire resistant materials. These buildings, constructed between 1919 and 1931, were designed by Frederick A. Legg (later with his son, Kenneth Legge) and made of brick, concrete, and wood-frame with a stucco exterior finish. Although they were less ornate than the earlier wood frame buildings, these buildings were similarly designed in the Colonial and Georgian styles. The original hospital building, completed in 1933, was also designed in the Colonial style. This building was partially destroyed in 1949 and was remodeled extensively in the early 1950s as part of the new school.

Continuing on the principles of the cottage plan, these cottages had low-pitched hip roofs (some with intersecting pedimented front gables), hip and gable dormers, moderately projecting eaves, multi-pane double-hung wood sash windows, brick or stucco exterior finish, central front two-story porticos (except Kozer that was designed with a smaller one-story portico), raised daylight basements, and bilateral symmetry. The entrance porticos included a variety of column types including square, Ionic, and Doric, recessed entrances with open balconies above, and turned balustrades. The back of the buildings varied but generally had a central rear entrance area flanked by entrances in the wings, and porches and balconies in the dormitory wings.

The interiors of the cottages were similar in design with only slight variations according to the different patient classifications. Designed to house about 60 patients per cottage or 20-25 per dormitory, the patients were classified and grouped according to age and intellect with an attendant assigned to each ward. The cottages, with a comfortable, airy quality, were sited to maximize the natural light and vistas. Tall windows, open air porches, solariums, balconies, and sunrooms were part of the basic amenities.

The first floors' layout usually consisted of an entrance vestibule and a service core that included a stair hall (some cottages had ramps instead of staircases), a central hallway connecting the side wings, another back hall, toilet rooms, office space, attendant rooms, and closets. On either side of the service core were the patients' wings used as dormitories and, in some cases, day rooms. Porches facing the courtyard/park area extended across the back of the dormitories.

The second floors were organized in a similar manner with the central service core that included toilet rooms, clothes closets, a central balcony, and a hall connecting the dormitory wings or wards. Attendant quarters were often small rooms off the dorms. Doors on the rear wall of the dormitories led to the porches. The basements were open areas only divided by series of support posts. These were later used as play areas for the patients, and also accommodated storage and utility rooms.

Farm and Operations Buildings

Two other clusters of buildings from the period of significance are located at Fairview; the structures associated with farming practice and the buildings associated with the operation of the facility. From 1908 to the early 1940s, various farm-related structures were built at the institution, including cow and dairy barns, a granary, a hog house, and chicken coops. This cluster was located southeast of the cottages. Since large farming operations ceased at institute in the 1960s and 1970s, there are only a few farm-related buildings remaining from the historic period. These include a cow barn and the 1940 silos. The remaining buildings post-date the period of significance. A wood-frame building, the 1942 cow barn was enlarged in the early 1950s to its current length. The building has a gable roof, wood siding, and sliding door for easy interior access. The silos, constructed in 1940, are constructed of concrete and replaced earlier wood silos. Several fires over the years destroyed many of the original farm buildings.

The operational and farm building clusters, northwest and southeast of the cottages, date from 1923 to 1942. These buildings are utilitarian in nature and include the heating plant/laundry (1924/1960s), fuel shed (1938), grounds building (1938), carpenter shop (1938), twin concrete silos (1940), cow barn (1940), granary (1941), greenhouse #1 (1942), and root house (1942). The original heating plant and root house are brick, the grounds building is a wood-frame structure, the carpenter and granary buildings are concrete buildings as are the twin silos. The greenhouse and fuel shed are metal frame structures; a railroad spur originally led from the main track to this area.

Architects and Builders

The designs for the cottages constructed between 1908 and 1931 at Fairview are attributed to five architects; Walter David Pugh, Charles H. Burggraf, William C. Knighton, Frederick A. Legg, and Kenneth C. Legge. Other architects or engineers designed some auxiliary buildings but these firms constructed the majority of the buildings.

Walter David Pugh

Walter David Pugh, who is responsible for the original buildings at Fairview, worked primarily in Portland and Salem in late 1800s and early 1900s. Born on April 4, 1863 in Salem, Pugh learned the building trade from his father David Pugh, a master carpenter and builder. In 1885, Pugh interned in the Portland office of McCaw & Wickersham and then began his career in Salem. He designed many of the city's and region's most prominent buildings including the first Salem High School (1893), the Bush-Breyman and Bush-Brey Blocks, the Thomas Kay Woolen Mills (1896), Chemawa Indian School buildings, the Shelton-McMurphy House (1888) in Eugene, and the Crook County Courthouse (1909) in Prineville. Under Governor Pennoyer, Pugh was hired to design many state-owned buildings including institutional housing at the State Hospital, Penitentiary, and at the Institute for the Feeble-Minded (Fairview). In 1907-08, Pugh was hired to design the original buildings at Fairview with his partner Frederick A. Legg. These included the administration building (1908), laundry, dorm, and boiler house/heating plant. H.N. Eley was awarded the contract for the buildings. About 1910, Pugh dissolved his architectural partnership with Legg, practicing on his own until he retired. Walter Pugh died in Salem on November 22, 1946.

Charles H. Burggraf

Soon after Pugh's first series of Fairview's buildings were completed and occupied, records indicate that additional cottages were needed to meet the housing demand. Charles H. Burggraf designed the second series of cottages constructed at Fairview. Burggraf, a prominent architect, was born in 1866 in Centralia, Marion County, Illinois. Burggraf learned his trade from his German father who was a builder and architect. After moving to Nebraska and attending Hasting College studying engineering and architecture, Burggraf worked in his father's architectural firm from 1888 to 1889. After a stay in Colorado, Burggraf moved to Salem, Oregon in 1891 and started his architectural practice. In 1899, Burggraf moved to Albany, Oregon where he continued his practice. A prolific architect, Burggraf designed many county courthouses, libraries, schools, commercial buildings, residences, and churches in Oregon and Washington. Architectural plans located in the Oregon State Archives indicate that Burggraf designed buildings for different state institutions including the Oregon State Hospital, the Oregon Cottage Farm, and Steel, Benson, Jones, and Withycombe cottages at the Fairview Home. These cottages were built between 1913 and 1916 (all but Withycombe razed in the 1960s). It appears that Burggraf designed the cottages for Fairview in 1909 but the buildings were not constructed until later (1913-1918). Charles H. Burggraf died in 1942 after a long and successful architectural career.

William C. Knighton

In 1912-13, William Christmas Knighton designed Chamberlain Cottage at Fairview. Knighton was a prominent Portland architect, practicing from the late 1890s to the 1930s. Born in Indianapolis, Indiana on December 25, 1864, Knighton received his architectural training in Chicago and Alabama before moving to Oregon in the early 1890s. In 1896, Knighton left Oregon to practice in other states before returning to Portland in 1902. The well-known architect designed many buildings throughout Oregon including the State Supreme Court (1913), Deepwood Estate in Salem (1894), the Governor Hotel (1908), and the Administration Building on the University of Oregon campus (1914). Knighton served as the Oregon state architect from 1913 to 1917 and is responsible for supervising the remodel or construction of over 90 buildings throughout Oregon during this period. It was during this time that Knighton designed Chamberlain Cottage at Fairview. William C. Knighton continued his practice in Portland until his death in 1938.

Legg and Legge

Frederick Arthur Legg and his son, Kenneth Clair Legge (spelling is different than his father's) are responsible for designing several cottages at Fairview between 1919 and 1931. Frederick A. Legg, born in Oregon about 1866, was a druggist in Salem, Oregon prior to starting an architectural practice. From 1907-1910, Legg worked in in partnership with Walter Pugh of Portland (Legg & Pugh). After the partnership was dissolved, Legg continued his practice in Portland before moving back to Salem in 1915. Legg's son, Kenneth Clair Legge joined his father's architectural practice in 1923 after receiving his degree in architecture from the University of Oregon. Legge worked with his father for several years prior to opening his own Salem office. He later moved to Portland where he was employed in the office of Jamieson Parker, worked for the WPA during the Depression, and was hired by the firm of Lawrence, Holdford & Allyn. In 1941, Legge joined the U.S. Army Corps of Engineers, serving as an architect-engineer until he retired in 1962. Kenneth C. Legge died in 1989 at the age of 90 in Milwaukie, Oregon.

Other Associated Architects

Records indicate that other architects/engineers designed some of the auxiliary buildings at Fairview from the mid-1920s to the end of World War II. Jay H. Keller, a Portland engineer, designed the existing heating plant/laundry in 1923. The greenhouses are attributed to Sam Emery, an engineer in Salem who designed the greenhouses in 1940 and 1941.

Lyle Pascoe Bartholomew, a Salem architect, designed a number of buildings including the Capital Journal Building (1934), Leslie Junior High (1937) and the Nurses Dormitory at the Oregon State Hospital (1946). Bartholomew designed the fuel shed at Fairview in 1938 and may have been responsible for the new school building at Fairview built circa 1950. Bartholomew died in the 1970s.

Frederick H. Eley, also a Salem architect, designed the granary at Fairview in 1940-41. Eley received his license in 1937 and from 1938 to 1940 was associated with Frederick R. Eley who later moved to Seattle to practice. Eley may have been related to H.N. Eley who was one of the first contractors hired to construct the original Fairview buildings.

Architects associated with Fairview after the end of the Period of Significance (1945) include Barrett & Logan (employee housing and new laundry), and Endicott and Wilmsen (DeNorval Unthank joined firm in 1955). Charles W. Endicott and Robert Wilmsen formed a partnership in 1948 and are responsible for the master plan for

Fairview that included remodeling existing cottages and constructing new buildings. The firm worked at Fairview from the late 1940s into the 1960s.

Construction

The proposed Fairview Historic District is a discrete area within the institution that includes the nine extant original cottages plus the historic administration building, all situated within the central crescent. All ten of these buildings are contributing features within the historic district. Additional contributing resources include eight features associated with the daily operation of the institution including a greenhouse, grounds building, fuel shed, carpentry shop, root house, granary (paint shop), cow barn and a pair of silos. The historic landscape and walkways in the central triangle also contribute to the properties historic associations. Non-contributing buildings within the central crescent include the Fairview Union (1969) and the (1959) Administration Building.

Information on the individual structures comprising the Fairview Historic District follows. Please refer to the district map for location, keyed by ID numbers.

Contributing Resources: Central Crescent

ID# B-1 | **Year Built: 1908**
Historic Name: Administration Building | **Architect: Walter D. Pugh**
Common Name: LeBreton Hall | **Historic/Contributing**

The Administration Building (LeBreton Cottage), designed by Walter D. Pugh in the Colonial Revival style, is a two-story wood frame building with a daylight basement. Constructed in 1908, the 23,184 square foot building has a hip roof with an intersecting pedimented front gable with a circular decorative element with the 1908 date, hip dormers with multi-light windows, wide overhanging eaves, carved modillions, a wide frieze board, narrow lap siding, six-over-six double-hung wood sash windows, classically detailed cornerboards, and a wood watertable above the brick foundation. The front façade (northeast) has a wide central projecting entrance bay designed with two-story fluted Ionic columns and turned balustrades on both stories. The main entrance has sidelights and transoms. A disabled ramp has been added to the front facade. The northwest elevation has a porch with balcony above supported by square columns; the balcony roof was added later. The southwest facade has a projecting addition that was originally a porch and balcony. This porch was enclosed after the 1960s. Another small one-story porch is located on the southeast façade. Added elements also include a fire escape, egress slides and steps at the northwest entry.

ID# B-3
Historic Name: Hoff Cottage

Year Built: 1919
Architect: Frederick A. Legg
Historic/Contributing

Hoff Cottage, a boy's dormitory built in 1919 in the Colonial style, is a two-story brick building with a daylight basement. Designed by Frederick A. Legg, the building has a hip roof, a central intersecting front gable portico on the southeast facade, hip dormers with multi-light windows, asphalt composition shingles, overhanging eaves, wide frieze, corner brick quoins, and six-over-six double-hung wood sash windows. Contrasting concrete flat arch lintels cap the first story windows. The front portico on the southeast façade has a pedimented gable with a fanlight window surrounded by wood siding. Two Ionic columns and two classically detailed pilasters support the portico. The upper story of the portico has been enclosed with siding and windows (1960s). The original multi-pane entrance door is flanked by sidelights and capped with a transom. Concrete stairs flanked by brick stepped side walls lead to the main entry. The single story rear entrance projecting from the cottage has boxed posts and pilasters. The rear entrance doors have a band of full-length, multi-pane sidelights and doors. Two pedimented gable bays flank the rear entrance. The southwest façade is an open porch with a low-pitched hip roof, small square columns and a low railing. This side entrance has a multi-light transom and a sidelight. The porch on the northeast side has been enclosed and a ramp added to the exterior. The rear elevation has two metal fire escapes.

ID# B-4
Historic Name: Olcott Cottage

Year Built: 1919
Architect: Frederick A. Legg
Historic/Contributing

Olcott Cottage, designed in the Georgian style by Frederick A. Legge, is a two-story brick building with a daylight basement. Built in 1919 as a dormitory for males and an infirmary, the 16, 899 square foot building has a hip roof with a central intersecting gable portico on the west facade, shed dormers, asphalt composition shingles, overhanging eaves, dentilated frieze, round-arched windows on the second story, and six-over-six double-hung wood sash windows on the lower floor. A decorative panel made of rowlock brick separates the first and second story windows, and a soldier course of brick visually separates the raised basement from the upper stories. The front portico on the southeast façade has a pedimented gable embellished with dentils, wood shingle siding, and a central rounded vent window. The portico is supported four square wood columns and paired brick pilasters capped with wooden cornices. Swags inset into panels are between the first and second story windows that flank the entrance door. The entrance door is capped with a fanlight transom. The single story rear entrance porch is recessed between the wings and has a shed roof supported by Tuscan columns, and wooden double doors capped with a transom. Metal fire escape chutes are on the side facades, and a concrete ramp was added to the southwest facade. Some windows have been replaced.

Drawings completed by F.A. Legge, Salem, and Kenneth L. Legge Portland, include an undated elevation of Olcott Cottage, also known as the "hospital [infirmary] building" (Oregon State Archives, NPIP No. 239, Map drawer 32). M.W. Lorenz is credited as the contractor for the building. The interior of Olcott Cottage was remodeled in 1957 and again in 1964-65, when the building began use as a community center for residents, (Sustainable Fairview Collection, No FAC-01-0043).

ID# B-5
Historic Name: Pierce Cottage

Year Built: 1923
Architect: Frederick A. Legg/
Kenneth C. Legge
Historic/Contributing

Pierce Cottage, constructed in 1923 with elements of the Colonial style, is a two-story wood frame building with a stucco skim coat, and a daylight basement. Designed by Frederick A. Legg and Kenneth C. Legge as a dormitory for males, the 19,455 square foot building has a hip roof and dormers, wide overhanging eaves, three-over-one double-hung wood sash windows, and slightly projecting stringcourse above the concrete foundation. The two-story central portico on the southeast façade has a hipped roof.

A flat roof covers the rear two-story entrance. This entrance has a slightly projecting cornice line, a multi-light window, and newer metal entry doors (1965) capped by a multi-light transom. The side facades have closely spaced windows that admit interior light. Side facades have metal fire-escape stairs; dormer windows have some modifications. Wilsem and Endicott Architects prepared plans for remodeling in 1964.

ID# B-6
Historic Name: Holman Cottage

Year Built: 1931
Architect: Frederick A. Legg
Kenneth C. Legge
Historic/Contributing

Holman Cottage, designed in the Colonial style by Frederick A. Legg and Kenneth C. Legge, is a two-story concrete building with stucco veneer and a daylight basement. Constructed in 1931 for males, the building has a hip roof, pedimented gable dormers, asphalt composition shingles, projecting eaves, wide frieze board, six-over-six double-hung wood sash windows, and a stringcourse separating the basement from the upper stories. The pedimented projecting front entrance bay on the south elevation has two-story Ionic columns and pilasters flanking a small one-story recessed entrance. The original two-story porch was enclosed in the 1960s. Concrete stairs with a low half-wall lead to the entrance. The rear façade (north) has a small projecting entrance bay with Palladian window over the porch supported by square posts. The rear entrance doors have sidelights and a transom. A solarium, on each wing of the upper story of the rear façade, has turned balustrades and original multi-light fixed-sash windows. The west side façade has a metal fire escape stairs and the east side has fire escape chute. The front portico roof may have been changed from a hip roof with pedimented gable dormer to a pedimented gable roof with two aluminum sliders in the gable end (1960s).

ID# B-7
Historic Name: Kay Cottage

Year Built: 1925
Architect: Frederick A. Legg
Kenneth C. Legge
Historic/Contributing

Kay Cottage, designed with elements of the Colonial style by Frederick A. Legg and Kenneth C. Legge, is a two-story frame building with stucco veneer and a daylight basement. Constructed in 1925 as a dormitory for girls, the 22,595 square foot building has a hip roof, pedimented gable dormers, asphalt composition shingles, narrow eaves, six-over-six double-hung wood sash windows, and a stringcourse separating the raised basement from the upper stories. The front entrance portico was altered during the 1960s. Originally, the portico had four, two-story Doric columns, turned balustrades, and a recessed entrance with a balcony above. Currently, the portico has a small recessed entrance and evidence of two-story columns under the boxed pilasters. Concrete stairs are flanked by a low concrete side wall. The rear façade (northeast) has a central projecting portico that has eave returns, an arched multi-light window above the lower story recessed entrance. The porches on the wings of the rear elevation were enclosed during the 1960s, some dormer windows were closed. The side façades have metal fire escapes.

ID# B-8
Historic Name: Smith Cottage

Year Built: 1921
Architect: Frederick A. Legg
Historic/Contributing

Smith Cottage, designed in the Colonial style by Frederick A. Legg, is a two-story wood frame building with a stucco veneer, and a daylight basement. Constructed in 1921 as a dormitory for girls, the 19,074 square feet building has a hip roof, pedimented gable dormers, asphalt composition shingles, narrow eaves, six-over-six double-hung wood sash windows, and a stringcourse separating the raised basement from the upper stories. The projecting front entrance bay on the west facade has two-story Doric columns and pilasters, a turned balustrade, and concrete stairs that lead up to the recessed two-story entrance. Although the entrance door has been altered, the original multi-light transom window is intact. The rear façade (east) has a central entrance portico that has a slightly projecting cornice with block modillions, paired classical pilasters, and a half rounded multi-light window above the central door. This entrance door and surrounds have been modified most likely during the 1960s. The north side façade has a metal fire escape chute and stair, and the south side has metal fire escape stairs. Wilmsen and Endicott Architects prepared plans for remodeling during the mid-1960s. Chief among modifications are the closing of dormer windows and enclosing of the southeast entry porch.

ID# B-9 **Year Built: 1920**
Historic Name: Kozer Cottage **Architect: Frederick A. Legg**
Historic/Contributing

Kozer Cottage, built in 1920 in the Colonial style, is a two-story brick building with a daylight basement. Designed by Frederick A. Legg, as a residence for infants, the 15,312 building has a hip roof and dormers, asphalt composition shingles, wide overhanging eaves with wood soffits, dentilated frieze board, six-over-six double-hung wood sash windows, and slightly projecting stringcourse above the concrete foundation. The side wings have larger six-over-six double-hung windows that are grouped on the end walls. The central entrance portico on the northwest façade has square columns that support the wide frieze and balcony with a low decorative wood railing. Multi-light sidelights and a transom surround the entrance door. Wide concrete stairs flanked by a low concrete side wall leads to the portico. The rear two-story sun porch in the center of the southeast façade was enclosed with horizontal siding (ca. 1965) to accommodate day rooms. Metal fire-escape chutes are on the end facades.

ID# B-10 **Year Built: 1918**
Historic Name: Withycombe Cottage **Architect: C.H. Burggraf**
Historic/Contributing

Withycombe Cottage, constructed in 1918 in the Colonial Revival style as a dormitory for females, is a two-story wood frame building with a daylight basement. Attributed to an earlier design of Charles H. Burggraf, the 19, 611 square foot building has a hip roof with intersecting gables, hip dormers with multi-light windows, wide overhanging eaves decorated with carved modillions, narrow lap siding, six-over-six double-hung wood sash windows, decorative classically detailed cornerboards, and a wood watertable above the concrete foundation. The front façade (northwest) has a central pedimented gable portico designed with a fanlight window, two-story fluted Ionic columns, turned balustrade and recessed multi-light entrance doors flanked by sidelights and capped with a transom. Concrete stairs with a low rock half wall lead up to the entrance. The rear façade (southeast) has two pedimented gables flanking a small one story entrance portico supported by squat Tuscan columns resting on a low concrete half wall. Large windows and a rounded dormer window are above the portico. Two other doors are located on the rear façade. The rear façade of each wing was originally an open, two-story porch, enclosed in the 1960s remodel for more interior living spaces. (Wilmsen and Endicott Architects drew plans in 1963 for remodeling the interior).

ID# B-11
Historic Name: Chamberlain Cottage

Year Built: 1913
Architect: William C. Knighton
Historic/Contributing

Chamberlain Cottage, designed by W.C. Knighton with elements of the Colonial Revival style, is a two-story wood frame building with a daylight basement. Constructed in 1913 as a dormitory for females, the 19, 603 square-foot building has a hip roof, hip dormers with multi-light windows, wide overhanging eaves decorated with carved modillions, narrow lap siding, six-over-six double-hung wood sash windows, classically detailed cornerboards, and a wood watertable above the concrete foundation. The front façade (northwest) has a wide central entrance bay designed with two-story fluted Ionic columns and pilasters, and turned balustrades on both stories. The original open porch above the entrance was enclosed during the 1960s. On either side of the front entrance is a two-story hexagonal bay. The rear façade (southeast) has two hip roof bays that flank the one story entrance portico supported by Tuscan columns. The original rear entrance area is composed of full-length, multi-pane sidelights and doors. A band of tall multi-light windows span the area above the rear porch. Originally, open two-story porches were on the wings of the rear and south-facing facade. These were enclosed to increase the interior square footage. Two other doors are located on the rear façade. Metal fire escapes have been added to the northeast and southwest side facades of the cottage. Windows on these side elevations have been altered to accommodate doors for the fire escape.

W.C. Knighton drawings (State Archives NPIP no. 248, Map Drawer 32) are dated September 26, 1912. Wilmsen and Endicott Architects prepared drawings in 1954 for a proposed interior remodel of the structure. (Sustainable Fairview maps FAC-01-0084). The State Department of Mental Health initiated further interior remodeling to the building in 1965.

ID# None
Historic Name: Cottage Landscaping

Year Built: 1908
Architect: None
Historic/Contributing

The central open field within the historic crescent of cottages has been a feature of the Fairview district since the first buildings in 1908. The field encompasses 3.6 acres in its present form, although it was more extensive prior to the construction of the Fairview Union in 1969. Plantings on the field include indigenous Douglas fir trees and several exogenous species of trees and shrubs. The grass on the fields is irrigated and mowed during the summer months. Historic photographs and historic aerial views show that the field has remained essentially the same over Fairview's history, allowing for seasonal variations in the grass and the growth of trees and shrubs. The Master Plan prepared in the 1950s shows the road around the back of the cottages, the walkways in front of the cottages, and the paths between the cottages. These comprise the essential hardscape elements of the historic crescent, and they remain in place today.

Non-contributing Resources: Central Crescent

ID# B-2
Common Name: Administration Building

Year Built: 1958
Architect: Wilmsen and Endicott
Non-Historic/Non-Contributing

The Administration Building, designed by Wilmsen and Endicott in 1958, is a low, two-story steel frame building that has steel panels and concrete on the exterior, a flat roof, built-up roofing, bands of single-light awning windows, and a concrete foundation. The 13,380 square-foot building was used as the administration building and is adjacent to LeBreton Hall. The Administration Building is a non-contributing element within the historic district.

ID# B-12
Historic Name: Fairview Union

Year Built: 1969
Architect:
Non-Historic/Non-Contributing

The Fairview Union, constructed in 1969, is a one-story, 50,354 square-foot concrete and brick veneer building that has a flat roof, built-up roofing, a slightly projecting concrete cornice, bands of fixed and operable single-light window, and a concrete foundation. The single-story building was used a food service building and is in the center of the original crescent-shaped green space. This building is a non-contributing element within the historic district.

Contributing Resources (Optional):

ID# A-2
Historic Name: Greenhouse No. 1

Year Built: 1942
Engineer: Sam Emery
Historic/Contributing

Greenhouse No. 1, completed in 1942, was designed by Sam Emery, a Salem engineer. The 2,274 square-foot, single-story greenhouse has a gable roof that extends down to meet the metal frame (galvanized pipe) side walls that are covered with operational glass windows. The upper windows and framing are supported by low concrete half-wall. The vents in the ridge could be opened for venting the interior. Doors opening are on the end walls of the structure. The greenhouse retains its architectural integrity, although its physical condition has deteriorated, with much of the glazing broken out of the roof and walls.

ID# A-5
Historic Name: Grounds Building

Year Built: 1938
Architect/Builder: Unknown
Historic/Contributing

The rectangular, 1,989 square foot building, located north of the fuel shed (A-6), has a gable roof, corrugated metal roofing, overhanging eaves with brackets on the gable ends, and horizontal wood siding finished with cornerboards. The east and west sides of the one-story building have no openings. The north and south facades have sliding doors on rollers and boarded over windows. The siding on the south elevation has been replaced.

ID# A-6
Historic Name: Fuel Shed
Year Built: 1938
Architect: Lyle Bartholomew
Historic/Contributing

Architect Lyle Bartholomew designed the single-story fuel shed in 1938. The 10,800 square-foot structure has a modified low-pitched gable/shed roof that stands about 20' above the ground and is supported by steel trusses resting on concrete piers. Piers along the east and west sides are supported on concrete half walls. The bottom half of the east and south facades are enclosed by wooden slat crib. Wood slat cover the six ft. chain-link fence that spans the bottom of the north and west facades. The building has had only superficial modifications including some fencing around the perimeter.

ID# A-11
Historic Name: Carpentry Shop
Year Built: 1938
Architect/Builder: Unknown
Historic/Contributing

Built in 1938, the carpenter shop is located west of the heating plant. The one-story, 4,060 square foot concrete building has a hip roof with asphalt composition shingles, wide overhanging boxed eves, shallow pilasters framing the large, multi-light steel sash, and stucco surface. The north and east facades have wide wooden double doors. A lower, hip roof addition and a flat roof carport are on the west addition.

ID# A-12
Historic Name: Root House
Year Built: 1942
Architect/Builder: Unknown
Historic/Contributing

Constructed in 1942, the two-story 3,230 square-foot brick root house has a gable roof covered with asphalt composition shingles, bracketed eaves, lap siding on the gable ends, and a partial stucco exterior skim coat. Wood sash, six-light windows are on upper reaches of the each façade; one of the windows has been modified on the east elevation. A freight door is on the north elevation. The west façade has a one-story shed attachment that has seamed metal roofing, wood shingle siding, shuttered windows, and a door on the north side. A wood-framed shed addition has been attached to the west side of the building. The window on the east elevation has been partially filled in.

ID# Adjacent to D-13
Historic Name: Silos

Year Built: 1940
Architect/Builder: Unknown
Historic/Contributing

Paired cast-concrete silos, constructed in 1940 in place of wooden silos that collapsed, are about 38' high and 16' in diameter. There are small rectangular openings in the concrete walls (on the sides of the silos facing each other). A wood shingled roof once covered both silos; the newer concrete silos, located south of the bull barn (D-14), have a gable roof covering the structures. The silos are well preserved, without additions or modifications.

ID# D-12
Historic Name: Cow Barn
Common Name: Cow Barn

Year Built: 1942
Architect: Unknown
Historic/Contributing

The cow barn, built in 1942, is a one-story wood frame structure located in the farm building area. The building has a gable roof with composition asphalt shingles, overhanging eaves with exposed rafter tails, and horizontal wood siding finished with cornerboards. Six-light windows with simple wood trim extend along the length of the barn. Sliding doors are located on various facades. An addition to the cow barn was made to the north elevation of the building in 1951.

ID# A-17
Historic Name: Granary
Common Name: Paint Shop

Year Built: 1941
Architect: Frederick H. Eley
Historic/Contributing

The granary, measuring 40' x 80', was designed by Frederick N. Eley in 1941, and was later used as a carpentry and paint shop. The reinforced poured concrete building has a gable roof with composition shingles, two ridge vents, a large, cylindrical metal roof vent in the southeast corner, and wood lap siding. Gothic-shaped louvered vents are on the gable ends. The north and south facades have a series of battered pilasters with nine-light fixed steel sash windows in between. A pedestrian door is on the south façade. A low concrete block addition with a shed roof is on the west facade, and an earthen ramp leads up to the freight door on the east façade.

Summary

The buildings and landscape features that comprise the Fairview Historic District reflect the institution's historic associations with the initiation and development of care for the developmentally disabled during the first half of the 20th century. Although somewhat compromised by the diminished land base and the existence of newer buildings on the campus, the integrity of materials, setting, location, association, and feeling of the original cottage plan and support buildings remains strong.

APPENDIX D: Traffic Impact Analysis Update Letter

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
610 SW Alder Street, Suite 700, Portland, OR 97205 P 503.228.5230 F 503.273.8169

MEMORANDUM

Date: August 27, 2014 Project #: 17950

To: Tony Martin, PE
City of Salem
555 Liberty Street SE, Room 325
Salem, Oregon 973091-3513

From: Diego Arguea, PE, and Brian Dunn, PE

Project: Fairview Addition West: Residential Subdivision and Shops

Subject: Trip Generation Impact Assessment

REGISTERED PROFESSIONAL ENGINEER
84418PE
OREGON
Dec. 20, 2011
DIEGO FEDERICO ARGUEA
EXPIRES: Dec. 31 2015

This memorandum presents trip generation estimates for the Fairview Residential Subdivision and Shops (Phase IV: *Fairview Addition West*) of the Sustainable Fairview development located between Battle Creek Road SE, Reed Road SE, and Strong Road SE in Salem, Oregon. Phase IV follows the first three phases of development (*Pringle Creek Community* – September 2005; *Sustainable Fairview also known as Lindburg Green* – February 2012; and *Fairview Hills* – February 2012) and continues to follow the Sustainable Fairview Development Plan, previously submitted and approved by the City of Salem. The purpose of this memorandum is to estimate the number of Phase IV daily, weekday a.m., and weekday p.m. peak hour net new site-generated trips, and identify which, if any, transportation improvements identified in the development's Area Facilities Plan may be required as a result.

The Pringle Creek Community development (Phase I) generated 1,770 net new daily trips and did not trigger any off-site transportation improvements according to the Area Facilities Plan (see Attachment "A"). Phases II and III of the development, Sustainable Fairview (i.e. Lindburg Green) and Fairview Hills, respectively, were analyzed together in a trip generation memorandum prepared in February 2012. The combination of Phases II and III generated approximately 5,190 additional net new daily trips, triggering two off-site transportation improvements based on the Area Facilities Plan. *The February 2012 memorandum that documents these trips for Phases II and III is included in Attachment "B."*

The proposed Phase IV development, Fairview Addition West, is estimated to generate approximately 3,210 net new daily trips, and triggers one additional off-site transportation improvements in the Area Facilities Plan. Additional details of the trip generation methodology are provided herein.

DEVELOPMENT PLAN

Olsen Design and Development is submitting an application for the next phase (Phase IV) of the Sustainable Fairview mixed-use development incorporating additional mixtures of residential and retail land uses. An exact breakdown of the size, number, and mixture of these land uses is presented in the next section of this memorandum.

TRIP GENERATION

Kittelson & Associates, Inc. prepared estimates of daily, weekday a.m., and weekday p.m. peak hour vehicle trip ends for Phase IV of the site development based on empirical observations at similar land uses. These observations are summarized in the standard reference *Trip Generation Manual, 9th Edition*, published by the Institute of Transportation Engineers (Reference 1). This methodology is consistent with previous phases of the Sustainable Fairview Development Plan.

The *Trip Generation Handbook, 2nd Edition*, published by the Institute of Transportation Engineers (Reference 2) provides data and methods for estimating internal capture and pass-by for mixed-use developments. Internal trip reductions for each identified land use were based on the mixed-use nature of the proposed development, and the methodology used to calculate the internalization rates are included in Attachment C. The pass-by reduction is only applicable to the retail component of the development; as such, pass-by trips were deducted from the net external trips generated by the retail use.

As the data represented in the ITE standard reference manual is primarily collected at suburban locations with little or no transit service and minimal pedestrian or bicycle facilities, the cumulative addition of trips generated by ITE rates for all individual land uses likely overestimates the vehicle trip generation of the proposed mixed-use development. To account for the multi-modal aspects of the proposed development for this, net external trips were reduced by ten percent. This reduction is consistent with the Transportation Planning Rule (TPR) policies and has been accepted by the City of Salem in previous development phases.

After reducing trips further to account for multi-modal nature of the site, net new primary trips were calculated for the site. These are trips that are subject to the thresholds established within the Area Facilities Plan.

Table 1 summarizes the estimated site trip generation during a typical weekday as well as during the weekday a.m. and p.m. peak hours for Phase IV of the development. Trip generation estimates shown in the table below are rounded to the nearest five trips.

Table 1 Phase IV (Fairview Addition West) Estimated Trip Generation

Land Use	ITE Code	Size (s.f./units)	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Detached Single-Family Housing	210	330 units	3,142	248	62	186	330	208	122
Internal Reduction (2%)			*(63)*	*(5)*	*(1)*	*(4)*	*(7)*	*(4)*	*(2)*
Apartment	220	20 units	133	10	2	8	12	8	4
Internal Reduction (32%)			*(43)*	*(3)*	*(1)*	*(3)*	*(4)*	*(3)*	*(1)*
Shopping Center	820	18,000 square feet	769	17	11	7	67	32	35
Internal Reduction (16%)			*(123)*	*(3)*	*(2)*	*(1)*	*(11)*	*(5)*	*(6)*
Pass-by Reduction (34%)			*(220)*	*(5)*	*(3)*	*(2)*	*(19)*	*(9)*	*(10)*
Total Site-Generated Trips			4,043	275	75	200	409	248	161
Internal Reduction			*(228)*	*(11)*	*(4)*	*(7)*	*(21)*	*(12)*	*(9)*
10% TPR Reduction			*(381)*	*(26)*	*(7)*	*(19)*	*(39)*	*(24)*	*(15)*
Pass-by Reduction			*(220)*	*(5)*	*(3)*	*(2)*	*(19)*	*(9)*	*(10)*
Net New Trips			**3,214**	**233**	**61**	**172**	**330**	**203**	**127**

As shown in Table 1, Phase IV of the development is anticipated to generate approximately 3,214 net new daily trips. Of these trips, 233 (61 in/172 out) are anticipated during the weekday a.m. peak hour and 330 (203 in/127 out) are anticipated during the weekday p.m. peak hour. The cumulative trips have been rounded (daily trips were rounded to the nearest 10 trips and the hourly trips were rounded to the nearest five trips, consistent with previous updates to the Sustainable Fairview development) and are summarized together with previous phases of development in Table 2 below.

Table 2 Cumulative Sustainable Fairview Estimated Trip Generation

Land Use	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Total	In	Out	Total	In	Out
Net New Trips (Phase I – September 2005)	1,770	140	40	100	160	95	65
Net New Trips (Phases II & III – February 2012)	5,190	665	320	345	660	335	325
Total Net New Trips (Phase I + Phase II + Phase III)	6,960	805	360	445	820	430	390
Fairview Addition West (Phase IV)	**3,210**	**235**	**60**	**175**	**330**	**205**	**125**
Total Net New Trips (Phase I + Phase II + Phase III _ Phase IV)	10,170	1,040	420	620	1,150	635	515

AREA FACILITIES PLAN

Previous development teams and City of Salem staff collectively developed an Area Facilities Plan for the entire Sustainable Fairview development to identify specific required public improvements and the trigger for each improvement. Based on recent conversations with City staff, the project team understands that the Area Facilities Plan is currently being reevaluated and the original identified improvements may not be applicable, and some improvements may have already been constructed.

For consistency with previous trip generation updates, however, the identified Area Facilities Plan improvements that would otherwise be triggered by Phase IV are identified in Table 3 below.

Table 3 Area Facilities Plan – Anticipated Off-Site Improvements

Required Public Improvement	Trigger (Net New Daily Trips)	Estimated Cost[1]	Estimated Start
Transportation 25th Street SE/Madrona Avenue SE. This improvement calls for Madrona Avenue SE to be realigned with 25th Street SE and Airway Drive SE realigned with Madrona Avenue SE. The new Madrona Avenue SE/25th Street SE intersection shall also be signalized. Madrona Avenue SE will be widened to a five-lane cross-section east of the railroad track to 25th Street SE. Right-of-way acquisition is required and/or included in the cost estimate.	8,000	$175,000	7/1/2010
Transportation Madrona Avenue/Fariview Industrial Drive SE. This improvement calls for the construction of an additional westbound left-turn lane from Madrona Avenue SE to southbound Fairview Industrial Drive SE. An additional southbound lane on Fairview Industrial Drive SE must also be constructed to receive the dual left-turn lanes, and shall terminate as a southbound right-turn lane at the intersection with Strong Road SE. Costs of right-of-way acquisition is included in the estimate.	12,000	$2,300,000	9/1/2011

[1] Cost estimates in year 2004 dollars

As shown in Table 3, one public improvement is triggered by the combined total of 10,170 net new daily trips generated by Phases I, II, III, and IV. The next transportation improvement is not triggered until the development reaches 12,000 net new daily trips (see Attachment A).

We trust this memorandum addresses the impacts of Phase III of the Sustainable Fairview development. If you any questions, please call us at (503) 228-5230.

REFERENCES

1. Institute of Transportation Engineers. *Trip Generation, 9th Edition.* 2.

2. Institute of Transportation Engineers. *Trip Generation Handbook.* 2004.

ATTACHMENTS

Attachment "A" – Sustainable Fairview Development Area Facilities Plan

Attachment "B" – February 2012 Sustainable Fairview Development Memorandum

Attachment "C" – Internalization Calculation Worksheet

Attachment A
Area Facilities Plan

Area Facilities Plan

Attachment"D"

	Required Public Improvements	Estimated Cost in 2004 Dollars	Trigger	Estimated Start
1	**Transportation:** Battle Creek Road SE/Kuebler Boulevard SE. This improvement calls for the construction of eastbound and westbound right-turn lanes at this intersection. Construction can be accommodated within the existing right-of-way. Traffic signal modifications to allow protected/permitted left-turns and right-turn overlap phasing are also required.	$300,000.00	2000 total daily vehicle trips (FN 1)	6/1/2006
2	**Water:** Coburn Pump Station 3,000 GPM S-1 and control building.	$1,000,000.00	First Floor Construction Above Elevation 278	6/1/2007
3	**Transportation:** 25th Street SE/Madrona Ave SE. The improvement calls for Madrona Avenue SE to be realigned with 25th Street see and Airway Drive SE realigned with Madrona Avenue SE. The new Madrona Avenue SE/25th Street SE intersection shall also be signalized. Madrona Avenue SE will be widened to a five-lane cross-section east of the railroad track to 25th Street SE. Right of way acquisition is required and or included in the cost estimate. (FN 2)	$3,000,000.00	6,000 total daily vehicle trips	6/1/2008
4	**Parks:** Acquire 5 acre neighborhood park site, within the development.	$500,000.00	When funds have accumulated	6/1/2010
5	**Transportation:** Commercial Street SE/Madrona Ave SE. The developer is required to construct a westbound right-turn lane at this intersection. No right-of-way acquisition is required for this improvement.	$175,000.00	8,000 total daily vehicle trips	7/1/2010
6	**Transportation:** Madrona Avenue SE/Fairview Industrial Drive SE. This improvement calls for the construction of an additional westbound left-turn lane from Madrona Avenue SE to southbound Fairview Industrial Drive SE. An additional southbound lane on Fairview Industrial Drive SE must also be constructed to receive the dual left-turn lanes, and shall terminate as a southbound right-turn lane at the intersection with Strong Road SE. Costs of right of way acquisition is included in the estimate. (FN 3)	$2,300,000.00	12,000 total daily vehicle trips	9/1/2011
7	**Water:** Coburn connecting lines. S-1 Master Plan trunk lines.	$250,000.00	When funds have accumulated	9/1/2011
8	**Water:** Coburn Reservoir. S-1 3.2 million gallon concrete reservoir.	$2,500,000.00	When funds have accumulated	6/1/2012

9	**Parks:** Develop neighborhood park on land previously acquired to master plan standards.	$500,000.00	When funds have accumulated	6/1/2013
10	**Transportation:** Battle Creek Road SE/Reed Lane SE. Construction of a signal and a southbound left-turn lane on Battle Creek Road SE is required. Minimal right-of-way is required to accommodate this improvement and acquisition is included in the cost estimate.	$500,000.00	15,000 total daily vehicle trips	6/1/2013
11	**Transportation:** Fairview Industrial Drive SE/Strong Road SE. This improvement calls for the construction of a traffic signal at this intersection. Minimal right-of-way is required to accommodate this improvement and is included in the estimate.	$350,000.00	15,000 total daily vehicle trips	6/1/2013
12	**Transportation:** Trafic Signal at unspecified location on Pringle/Battle Creek.	$300,000.00	After 15,000 total daily trips and when circumstances warrnt the signal	7/1/2013
13	**Transportation:** Reed Road SE/Fairview Industrial Drive SE. Restripe the southbound approach and add separate right turn lane (or consider a round about).	$200,000.00	17,100 total daily vehicle trips	7/1/2013
14	**City Administration Fee:**	$314,100.00	Payable after City makes its 60% share payment for Reservoir	9/1/2013
	Total:	$12,189,100.00		

Add Back from City: 60% share of Coburn Reservoir, Pump Station, and connecting lines to be paid from city water revenues.	$2,250,000.00		7/1/2013
Existing Capacity Payments: Payment to the City CIP account from Phase 1.	$245,550.00	If funds are available	9/1/2013
Existing Capacity Payments: Payment to the City CIP account from Phase 2.	$310,467.00	If funds are available	9/1/2013
Existing Capacity Payment: Payment to City CIP accounts from Phase 3.	$1,831,649.00	If funds are available	11/1/2015
Prior Trip Redevelopment Exemption Value: Payment to SFA for credits from vehicle trips of prior development. (6770 trips at $190 per trip)	$1,286,300.00	If funds are available	12/1/2015
Prior Sewer Use Redevelopment Exemption Value: Payment to SFA for prior sewer use.	$250,000.00		9/1/2016
Total Estimated Repayments/Exemptions	$3,923,966.00		
Total Estimated City Payment to Account for Reservoir	$2,250,000.00		

	Supplemental Projects	Estimated Cost in 2004 Dollars	Trigger	Estimated Start
1	**Transportation:** Pringle Road SE/Ewald Ave SE. install traffic signal.	$355,000.00	If funds are available	7/1/2016
2	**Transportation:** Battle Creek SE/Kuebler Boulevard SE. construct north bound and south bound right turn lanes. Protected signal leads added to all intersection approaches.	$575,000	If funds are available	7/1/2017
3	**Transportation:** Madrona Avenue SE/Pringle Road SE construct northbound and southbound through lanes.	$1,250,000	If funds are available	7/1/2018
	Total Supplemental Projects	$2,180,000		

(FN 1) If funds are available in the Trust account prior to the stated Trigger, then the project will be buildt with available funds, ahead of the Trigger. This applies to all Required Public Improvements.

(FN 2) Widening of Madrona Ave SE at 25th Street to five lanes may trigger the need for equipment upgrades, relocations, and/or other improvements to the Southern Pacific railroad crossing located approximately 1,900 feet west of the current 25th Street SE/Madrona Avenue SE intersection. It is unlikely that ODOT Rail would require such modifications due to this improvement. Such modifications are much more likely to be required for the Madrona Avenue SE/Fairview Industrial Drive SE intersection improvement outlined below. Because of these reasons and the preliminary nature of this conceptual design, costs associated with such modifications to the existing railroad crossing are not included in this estimate.

FN 3) In order to accommodate a second westbound left-turn lane at this intersection, it may be necessary to reconfigure/update the Southern Pacific railroad crossing on Madrona Avenue SE, located approximately 650 feet east of the intersection. Due to the likelihood of ODOT Rail gates, partial reconstruction, and interconnection to prevent possible queue spillbacks over the tracks when a train is approaching would be required in conjunction with this improvement. The cost of work related to the railroad crossing is estimated to be approximately $500,000, and is included in this cost estimate.

1

09/20/2005 16:52 FAX 503 371 2927 SAALFELD GRIGGS 006/006

Attachment B

February 2012 Sustainable Fairview Development Memorandum

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
610 SW Alder Street, Suite 700, Portland, OR 97205 503.228.5230 503.273.8169

MEMORANDUM

Date: February 7, 2012 Project #: 12243

To: Matt Harrell
Simpson Hills LLC
2260 McGilchrist Street SE
Salem, Oregon 97302

REGISTERED PROFESSIONAL ENGINEER
80404PE
OREGON
June 11, 2008
CHRISTOPHER B. TIESLER
2/7/12
EXPIRES: 6/30/2012

From: Chris Tiesler, P.E.
Project: Sustainable Fairview Development – Fairview Hills
Subject: Phase II Trip Generation Analysis

This memorandum serves to update trip generation estimates for the Fairview Hills portion of Phase II of the Sustainable Fairview development located between Battle Creek Road SE, Reed Road SE, and Strong Road SE in Salem, Oregon. Simpson Hills has revised their land use plan since the last trip generation analysis (memorandum prepared by Kittelson & Associates, Inc.[1]). Phase II follows the first phase of development (Pringle Creek Community – September 2005) and continues to follow the Sustainable Fairview Development Plan, previously submitted and approved by the City of Salem.

The purpose of this memorandum is update the number of Phase II daily, weekday a.m., and weekday p.m. peak hour net new site-generated trips generated by the new Fairview Hills plan, and determine if any transportation improvements identified in the development's Area Facilities Plan will be required as a result.

The Pringle Creek Community development (Phase I) generated 1,770 net new daily trips and did not trigger any off-site transportation improvements according to the Area Facilities Plan (see Attachment "A"). Phase II of the development is anticipated to generate approximately 5,190 additional net new daily trips. Based on the Area Facilities Plan, this will trigger two off-site transportation improvements (sum of Phase I & Phase II net new daily trips).

DEVELOPMENT PLAN

Sustainable Fairview Associates LLC and Simpson Hill LLC propose to develop the next phase of the Sustainable Fairview mixed-use development incorporating additional office and retail land

[1] Kittelson & Associates, Inc. *Sustainable Fairview Development – Phase II Trip Generation Analysis.* July 22, 2009.

uses, a private K-8 school, a public park, and a mixture of residential dwellings. An exact breakdown of the size, number, and mixture of these land uses is presented in the next section of this memorandum.

TRIP GENERATION

Kittelson & Associates, Inc. (KAI) prepared estimates of daily, weekday a.m., and weekday p.m. peak hour vehicle trip ends for Phase II of site development based on empirical observations at similar land uses. These observations are summarized in the standard reference *Trip Generation, 8th Edition*, published by the Institute of Transportation Engineers (Reference 1). This methodology is consistent with the methodology followed in the Sustainable Fairview Development Plan.

As the data represented in the ITE trip generation manual is primarily collected at suburban locations with little or no transit service and minimal pedestrian or bicycle facilities, the process likely overestimates the trip generation of the proposed mixed-use development. To adjust for this, trip generation estimates were reduced by ten percent to represent this multi-modal development. The ten percent reduction is consistent with the Transportation Planning Rule (TPR) policies and the City of Salem agreed to its application in this case.

The *Trip Generation Handbook*, published by the Institute of Transportation Engineers (Reference 2) provides estimates for pass-by and internal trips. Internal trip reductions for each identified land use were based on the mixed-use nature of the proposed development. The mix of land uses proposed in Phase II is roughly equivalent and consistent with the original Sustainable Fairview Development Plan; as such, the same internal trip reductions were applied accordingly. The pass-by reduction is only applicable to the retail component of the development; as such, pass-by trips were deducted from the total trips generated by the retail use. These reductions were subtracted from the total site-generated trips to calculate the final net new trips attributable to the site.

Table 1 summarizes the estimated site trip generation during a typical weekday as well as during the weekday a.m. and p.m. peak hours for Phase II of the development. Trip generation estimates shown in the table below are rounded to the nearest five trips.

Table 1
Estimated Trip Generation – Phase II

Land Use	ITE Code	Size (s.f./units)	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Fairview Hills									
Apartment	220	450 units	2,850	225	45	180	280	180	100
Internal Trips (5%)			*(140)*	*(10)*	*(5)*	*(5)*	*(10)*	*(5)*	*(5)*
Shopping Center	820	24,000 s.f.	1,030	25	15	10	90	45	45
Pass-By (34%)			*(350)*	*(10)*	*(5)*	*(5)*	*(30)*	*(15)*	*(15)*
Sustainable Fairview									
Private School (K-8)	534	500 students	1,380[1]	455	250	205	300	140	160
Internal Trips (4%)			*(60)*	*(20)*	*(10)*	*(10)*	*(10)*	*(5)*	*(5)*
General Office	710	50,000 s.f.	550	80	70	10	75	15	60
Internal Trips (4%)			*(20)*	*(5)*	*(5)*	*(0)*	*(5)*	*(0)*	*(5)*
Specialty Retail	814	20,000 s.f.	890	0	0	0	70	30	40
Pass-By (34%)[2]			*(300)*	*(0)*	*(0)*	*(0)*	*(20)*	*(10)*	*(10)*
City Park[3]	411	5 acres	10	0	0	0	0	0	0
Internal Trips (4%)			*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*
Total Site-Generated Trips (Phase II)			6,710	785	380	405	815	410	405
Total Internal Trips			*(220)*	*(35)*	*(20)*	*(15)*	*(25)*	*(10)*	*(15)*
10% TPR Reduction			*(650)*	*(75)*	*(35)*	*(40)*	*(80)*	*(40)*	*(40)*
Total Pass-By Trips			*(650)*	*(10)*	*(5)*	*(5)*	*(50)*	*(25)*	*(25)*
NET NEW TRIPS (Phase II)			**5,190**	**665**	**320**	**345**	**660**	**335**	**325**
Phase I Net New Trips – September 2005									
NET NEW TRIPS (Phase I)			**1,770**	**140**	**40**	**100**	**160**	**95**	**65**
TOTAL NET NEW TRIPS (Phase I + Phase II)									
TOTAL NET NEW TRIPS			***6,960***	***805***	***360***	***445***	***820***	***430***	***390***

[1] Daily trips estimated based on the relationship of p.m. peak hour trips to daily trips of ITE #530 (Elementary School). No daily trip data is available for ITE #534.
[2] Pass-by rate taken from ITE #820. No pass-by rate is available for ITE #814.
[3] No ITE data is provided for a.m. or p.m. peak hours. Given the relatively small size of the park and its central location within the development, no net new vehicle trips are assumed to occur during the weekday a.m. or p.m. peak hours.

As shown in Table 1, Phase II of the development is anticipated to generate approximately 5,190 net new daily trips. Of these trips, 665 (320 in/345 out) are anticipated during the weekday a.m. peak hour and 660 (335 in/325 out) are anticipated during the weekday p.m. peak hour. Overall, Phases I and II combined are estimated to generate 6,960 net new daily trips.

AREA FACILITIES PLAN

The development team and City of Salem have collectively developed an Area Facilities Plan for the entire Sustainable Fairview development to identify specific required public improvements and the trigger for each improvement. Table 2 summarizes the improvements triggered by Phase II.

Table 2
Area Facilities Plan – Anticipated Off-Site Improvements

Required Public Improvement	Trigger (Net New Daily Trips)	Estimated Cost[1]
Battle Creek Road SE/Kuebler Boulevard SE - Construct eastbound and westbound right-turn lanes within the existing right-of-way. - Traffic signal modifications to allow protected permissive left-turns and right-turn overlap phasing.	2,000	$300,000
25th Street SE/Madrona Avenue SE - Realign Madrona Avenue SE with 25th Street SE and Airway Drive SE with Madrona Avenue SE. - Widen Madrona Avenue SE to a five-lane cross-section east of the railroad to 25th Street SE.	6,000	$3,000,000[2]
Commercial Street SE/Madrona Avenue SE - Construct a westbound right-turn lane within the existing right-of-way.	8,000	$175,000

[1] Cost estimates in year 2004 dollars.
[2] Cost estimate includes right-of-way acquisition.

As shown in Table 2, two public improvements are triggered by the combined total of 6,960 net new daily trips generated by Phases I and II. The next transportation improvement is not triggered until the development reaches 8,000 net new daily trips per the Area Facilities Plan.

We trust this memorandum addresses the impacts of Phase II of the Sustainable Fairview development. If you any questions, please call us at (503) 228-5230.

REFERENCES

1. Institute of Transportation Engineers. *Trip Generation, 8th Edition.* 2008.
2. Institute of Transportation Engineers. *Trip Generation Handbook.* 2004.

ATTACHMENTS

Attachment "A" – Sustainable Fairview Development Area Facilities Plan

Attachment C

Internalization Calculation Worksheet

Analyst	dfa
Project	17950
Date	June 18, 2014
Time Period	P.M. PEAK HOUR OF ADJACENT

LAND USE A	RESIDENTIAL		
ITE LU Code	210		
Size	330		
	Total	*Internal*	*External*
Enter	208	4	204
Exit	122	3	119
Total	330	7	323
%	100%	2%	98%

Exit to External: 119

204: Enter from External

53%	65
Demand	

3 Balanced

9%	3
Demand	

31%	64	N/A	N/A
Demand		Demand	

4 Balanced

0 Balanced

12%	4
Demand	

N/A	N/A
Demand	

0 Balanced

N/A	N/A
Demand	

N/A	N/A
Demand	

LAND USE B	RETAIL		
ITE LU Code	820		
Size	18,000		
	Total	Internal	External
Enter	32	5	27
Exit	35	6	29
Total	67	11	56
%	100%	16%	84%

Exit to External: 29

27: Enter from External

9%	3	2	53%	2
Demand		Balanced	Demand	

12%	4	2	31%	2
Demand		Balanced	Demand	

LAND USE C	RESIDENTIAL		
ITE LU Code	220		
Size	20		
	Total	Internal	External
Enter	8	2	6
Exit	4	2	2
Total	12	4	8
%	100%	32%	68%

Enter to External: 6

2: Exit from External

NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT				
	LAND USE A	**LAND USE B**	**LAND USE C**	**TOTAL**
Enter	204	27	6	237
Exit	119	29	2	150
Total	323	56	8	387
Single-Use Trip Gen Est.	330	67	12	409

INTERNAL CAPTURE: 5.38%

APPENDIX E: FAIRVIEW TRAINING CENTER ARCHAEOLOGICAL CULTURAL RESOURCES INVENTORY AND ASSESSMENT

Archaeological Cultural Resources Inventory and Assesment - Fairview Training Center

EXHIBIT 6

Lower Columbia Research & Archaeology, August 2004

19012 - SHPO Biblio #

Lower Columbia Research & Archaeology

3327 NE Simpson St. Portland OR 97211•503-281-0204•mdarby@teleport.com

Archaeological Cultural Resources Inventory and Assessment-Fairview Training Center

By
Melissa Cole Darby MA RPA

August 8, 2004

Marion County
Township 8S Range 3W Sections S ½ Section 2 & North ½ and SE ¼ Section 11
Salem West 7.5 Minute Series 1986
Project Acreage: 275
Survey Acreage: approximately 200
Phase I Cultural Resource Survey
Agency: State Historic Preservation Office and State Parks
Location of Field Notes: Lower Columbia Research & Anthropology
Results: Postive

Executive Summary

This report describes the design and execution of a cultural resource surface survey of a parcel of land belonging to Sustainable Fairview Associates (SFA) on property formerly owned by the State of Oregon.

Five archaeological sites, an extension of an existing site (35MA142), and five isolated finds were identified during the cultural resources survey of the property. The sites include the following: Site 1 (Holden/Carey Cabin Site), Site 3 (the Cartright/Payne House), Sites 4 & 5 (two field-clearing stone cairn sites) and Site 5 (a boulder with petroglyphs),. 35MA142 was originally identified in 1994 by Archaeological Investigations Northwest (Ellis 1994). This site was found to extend west across Strong Road into the project area near Pringle Creek. The isolated finds include fire cracked rocks (FCR), three clusters of historic domestic artifacts, and one area where two short round nails were found with the metal detector that were in the vicinity identified for the cemetery for the Institute for the Feeble Minded cemetery was reported to exist.

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~~Appendix B: Site Forms and Isolate Forms~~

~~Appendix C: Tribal Notification Letters~~

Introduction

The State of Oregon established the Institution for the Feeble-Minded near Salem in 1908 as a central facility for developmentally disabled Oregonians. The institution's original land base of 672 acres was developed as an institutional farm. Approximately 275 acres of the original holdings have been sold by the State of Oregon to the planning and investment team of Sustainable Fairview Associates (SFA). At full build-out about 1,200 housing units are expected to be established on the property. The Fairview master plan calls for $350 million improvements that will include a town center; diverse, high-density neighborhoods that are easily walkable; and green spaces to provide on-site stormwater management, preserve habitat, retain native vegetation and provide public space.

Extensive ground disturbing activities are planned on the whole parcel. The goal of the Phase I Archaeological Investigation is to identify all archaeological sites within the Area of Potential Effect (APE) that may be potentially eligible for nomination to the National Register of Historic Places.

The Fairview Training Center property is located within the urban growth boundary of Salem, Oregon in sections 2 and 11 of Township 8 South Range 2 West, Willamette Meridian. This is known as Tax Lot 100 on map 8S 3W Section 2, consisting of approximately 274.98 acres. The parcel is irregularly shaped and bounded on the northeast by Strong Road, on the southwest by Reed Road SE, on the southwest by Battle Creek, on the west by Pringle Road and on the North by Morningside Park. The parcel is located mostly on the lower, northeastern, slopes of the Salem Hills and abutting the large alluvial prairie associated with Pringle and Mill Creeks. The parcel has alternating ridges cut by seasonal watercourses, with Pringle Creek, a perennial stream, cutting across the northernmost corner. The flatter portions of the site are developed with various buildings that are common at an institution such as this.

The APE is considered a high-probability area for prehistoric cultural materials. A review of the records of the Oregon State Historic Preservation Office (SHPO) indicated that several sites and isolated finds are immediately adjacent to the project area. The records indicated that four cultural resource investigations have been previously conducted within a mile of the project area and several sites have been reported, including a large (20 acre) prehistoric site directly adjacent to the project area (35MA136).

The area was settled in the 1840's by Euro-Americans. Part of the project area was settled by Horace Holden in 1844. By 1848 much of the land within the project area was part of the Abijah and Sophia Carey Donation Land Claim. The headquarters for the land claim was within the current project area as well. There was a high probability of finding historic archaeological sites associated with settlement activity and subsequent farming development. Cabin locations, the Carey family cemetery, and several historic farmsteads are known to be within the project area.

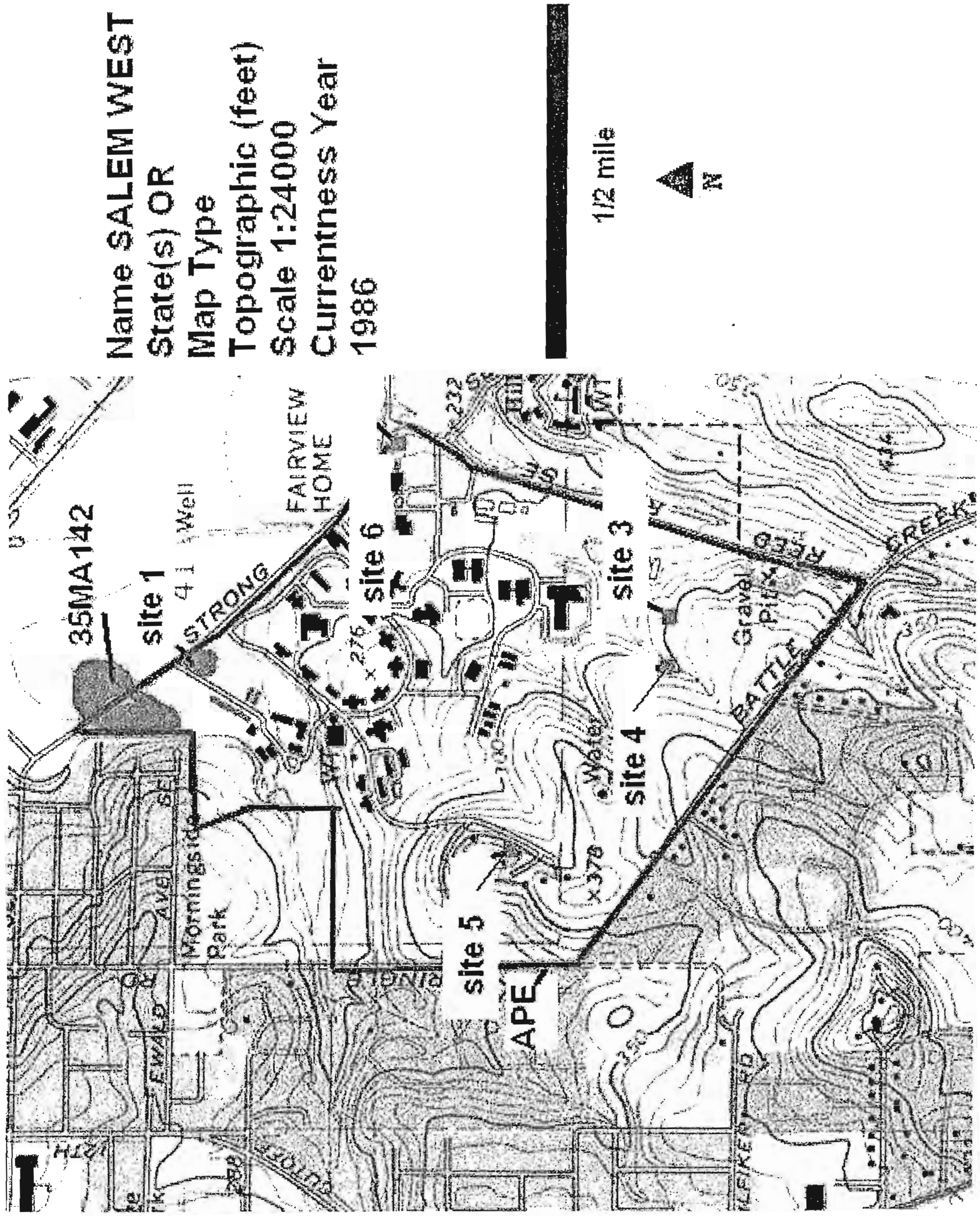
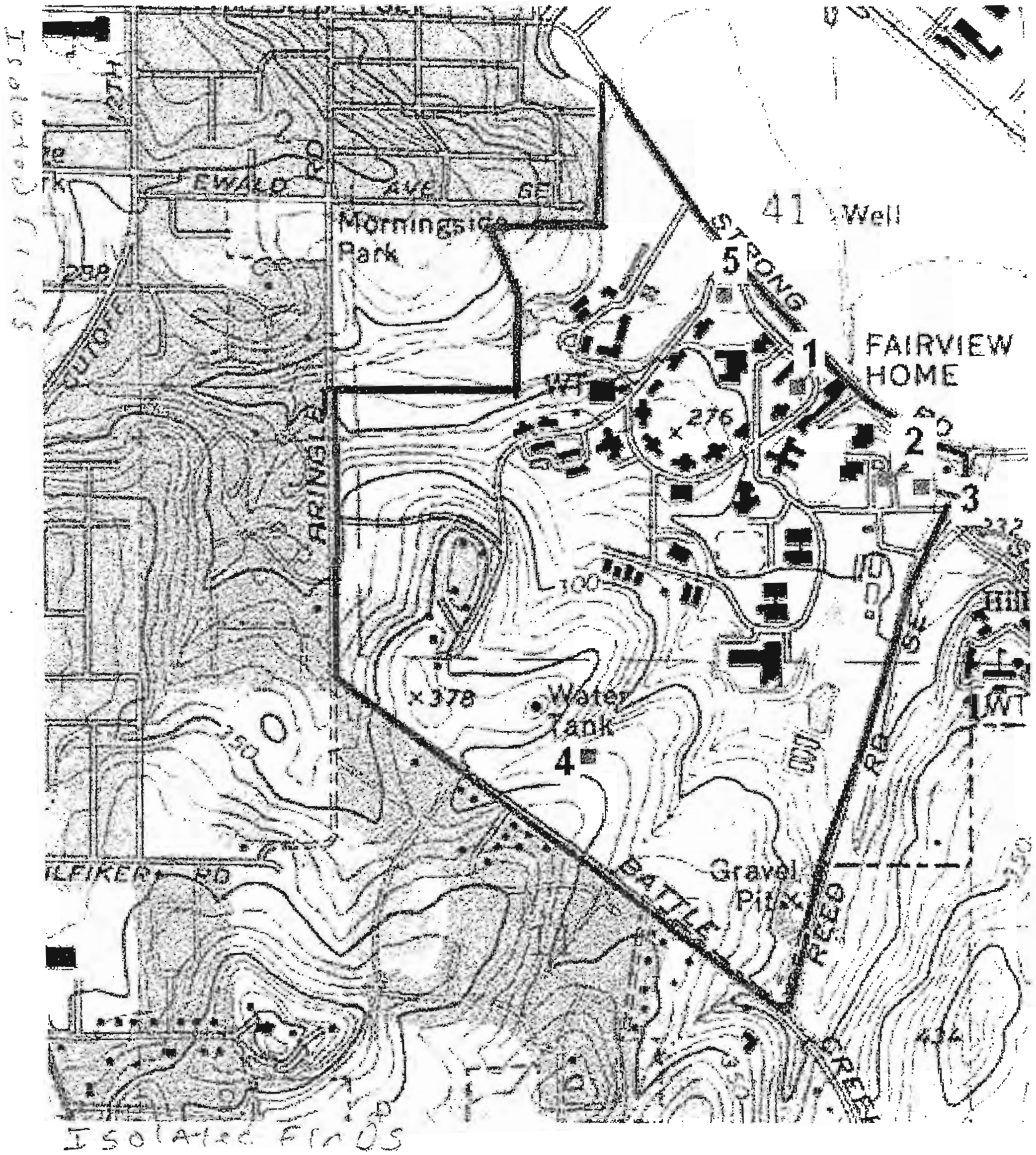


Figure 1 : Site location map and Isolated Find Map on next Page.



Name SALEM WEST
State(s) OR
Map Type
Topographic (feet)
Scale 1:24000
Currentness Year
1986

1/2 mile

N

Environmental Setting

The project area is located on the low foothills known as the south Salem Hills and along the banks and flood plain of Pringle Creek. This creek is a small but permanently flowing creek that flows out of the Salem Hills and bears north when it reaches the floodplain at this location, creating a riparian area along the creek where the flow slows.

The soils along Pringle Creek consist predominately of the Silverton soil series which occupies remnants of old, high terraces along the foot slopes of low foothills. These soils are well-drained soils that have formed in silty material over fine-textured material that contains gravel. These soils are on dissected terraces or on the foot slopes of low foothills. Silverton soils are associated with Santiam and Nekia soils.

The slopes of the project area the soils are typically from the Abiqua series, which are well-drained soils that have formed in alluvium. Abiqua soils are associated with McAlpin and Waldo soils. In a typical profile, the surface layer is very dark brown silty clay loam about 6 inches thick. The subsurface layer is also very dark brown silty clay loam and is about 15 inches thick. The upper part of the subsoil is dark reddish-brown silty clay that extends to a depth of about 54 inches. The lower part of the subsoil is dark-brown silty clay loam that extends to a depth of 72 inches or more.

The average annual precipitation is 40 to 60 inches, the average annual air temperature is 52° to 54° F., and the length of the frost-free season is 190 to 210 days.

In areas that are not cultivated, the vegetation is mainly Douglas fir, vine maple, hazel, poison-oak, ocean-spray, thimbleberry, blackberry, strawberry, pathfinder, brackenfern, and bentgrass.

The slopes of the project area have been planted in orchards containing plums, cherries, apples and pears. The orchards have not been maintained, and many of the trees are overgrown and not producing, and the spaces between the trees have not been maintained and are choked with blackberry vines in many areas.

The northern-most ridge has not been cleared, and consists of a Douglas Fir forested area with openings covered with blackberry vines. Several residences were built in this area in the 1940's that served as employee housing.

Ethnographic Background

Archaeological research has suggested that occupation of the Willamette valley dates back to at least 10,000 years (Aikens 1984). A Clovis fluted spearpoint found near Springfield is the earliest evidence of human occupation in the Willamette Valley. The first substantial evidence for Willamette Valley occupations comes from the Early Archaic period, generally dated to between 8000 and 6000 BP when populations of small, mobile bands exploited a variety of plant and animal resources, including camas bulbs.

From about 6000 to 2000 BP (The Middle Archaic) intensification of settlement in winter villages appears to have occurred. This may have been in response to the intensification of camas and wapato, increased complexity of food storage techniques, and land management practices that increased production of tarweed, hazelnuts, fruits and berries. The transition from the Middle Archaic to the Late Archaic saw this trend continue, with the additional technological change of the rapid spread of bow-and-arrow technology, largely replacing spear and dart technology (Aikens 1993:198-209).

At the time of European contact the Willamette Valley, the area from the Willamette Falls to the Umpqua River drainage, was occupied by people who spoke the Kalapuan language. The northern Willamette Valley within the project area was inhabited by the Santiam band of the Kalapuya Indians.

Their winter villages were composed of semi-subterranean, rectangular plank houses with bark or plank roofs. Settlement patterns suggest that the villages were often associated with wetlands or wet prairie environments. The vicinity prairies and streams provided the natives with an abundant food supply. Their diet consisted of over fifty varieties of edible plant species common the area. Seasonal rounds provided a wide variety of plants including wapato in the spring and fall, camas in the summer, hazelnuts, acorns, tarweed and various berries in the late summer and fall. Deer, elk, and small game were also obtained. Use of fire to burn off brush and grasses in the valley was a strategy used to improve the quality of their resources. Salmon was important but harder to obtain for the Kalapuans than it was to the neighboring Chinookan language speakers because Willamette Falls impeded salmon runs.

Many of the local Native Americans died in epidemics. In the winter of 1847 the local bands known as the Chemeketa and the Chemawa Indians formed their winter camp along Mill Creek in Salem, near what is now Marion Square. The measles broke out among them and according to one account, about half of them died (Henry Brown 1878).

A specific account of Native American activity within the project area is found in the biographical sketch of Abijah Carey, who settled here in 1848:

> After settlement was made on their (Carey's) permanent location, Indians often camped on part of their farm. They made their tents or tepees from the fancy bed quilts stolen from the white folk on French Prairie, but were later on scared sway by reports that soldiers were coming that way,""(Steeves 1927:69).

The Pringle Creek site has long been known to local collectors as a rich source of prehistoric artifacts. A local collector, George Tompkins lists Pringle Creek on his map of archaeological sites where artifacts can be found (Tompkins 1964:44). Employees at the Fairview Training Center would pick up arrowheads and save them in coffee cans (Jon Cooper, personal communication).

Historic Background
This Township and Range is covered in two General Land Office maps. The 1852 map incorrectly identifies E. Parrot as the settler in this section. The 1855 map correctly indicates Abijah Carey as the landholder of claim 41 of 641 acres. The surveyor describes the land as "Timber Oak and Fir Openings part scattering undergrowth grass fern oak hazel etc" (GLO 1852). The areas was described as "gently rolling and rolling, soil first rate clay loam part stoney" (GLO 1852). The map shows a scattering of cultivated fields and a road running along the Mill Creek bottoms

The Holden Family:
A large influx of Euro-Americans to the region occurred in the mid-1800s. The first Euro-American to claim land within the project area was Horace Holden. He settled here with his wife May and a Hawaiian servant in 1844. Horace was born in New Hampshire in 1810, and was a sailor on a whaling ship when he was shipwrecked for two years on a remote Polynesian island. He was a sugar planter in Hawaii for a number of years, and came to the Oregon Territory in 1844 with his wife May who he married in Boston in 1836.

He was shipwrecked in 1832 and wrote a book about the experience published in 1836 by Russell Shattuck and Company of Boston. The title and subtitle of the book are: *Narrative of the Shipwreck, Captivity and Sufferings of Horace Holden and Benj. H. Nute, Who Were Cast Away in the American Ship Mentor, on the Pelew Islands, in the Year 1832; and For Two Years Afterwards were Subjected to Unheard of Sufferings Among the Barbarous Inhabitants of Lord North's Island.*

In a trade the land was transferred from Horace to Abijah Carey in late 1848 or early 1849. In the *Oregon Statesman* in 1929, Dick (Richard) Carey, the son of Abijah Carey was interviewed and related the following:

> Horace Holden had taken his donation land claim of 640 acres where the state institution for the feeble minded now stands. The Careys took over the improvements in a trade, and the Holdens moved to a claim on the river road, next to Painter's woods, just below Salem. The Holdens had a Kanaka man from the Sandwich Islands. Mr. Holden had been shipwrecked and captured by South Sea Islanders and tattooed from head to foot (Hendricks in Oregon Satesman August 9, 1929).

A photograph of Mr. Holden below does not bear out that he was tattooed on his face as far as the photograph shows. However, in his narrative he describes being tattooed on his chest and back.

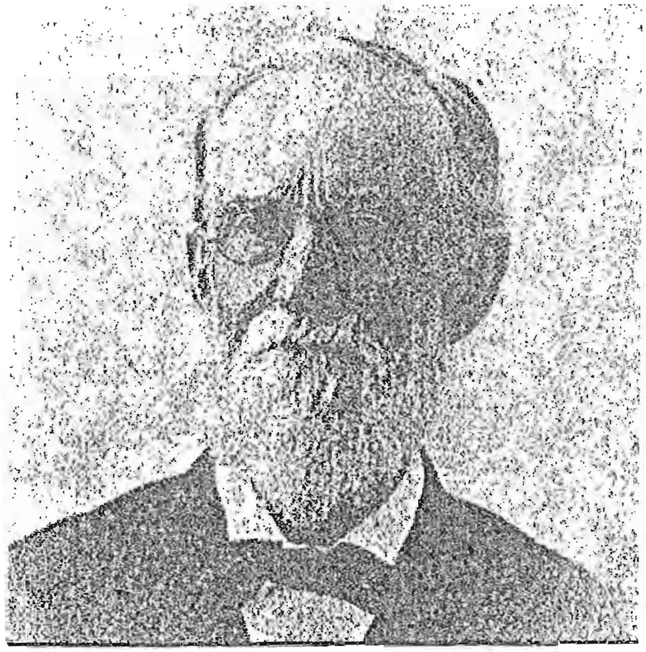


Figure 2: Horace Holden circa 1890-1900.

The Carey Family

The date and place of birth for Abijah Carey are listed differently depending on the source. In his Donation Land Claim papers he said he was born in Ohio in 1816. The 1850-1880 census data confirm a birth place of Ohio, though in his biographical sketch his birthplace is given as New York, and his birth date "about 1810" (Steeves 1927 pg. 68). The census of 1850 indicates he was 30 years old, in 1860 he gives his age as 44, the 1870 census as 59, the 1880 census as 64. It is likely that he was born between 1816 and 1820 in Ohio.

His wife Sophia was born in New York in 1813 and emigrated with her parents to Ohio. In 1839 she married Abijah. By 1846 they had three children: Aseneth, Elias and Richard W. They emigrated to Oregon in1846 with the Pringle Emigration train. The first winter in Oregon they spent on the Molalla River, moving in the spring to the Salem area (Steeves 1927).

In an interview in the Oregon Statesman in 1929 Abijah and Sophia's son Richard noted that "after improving the places that is the site of the school for the feeble minded, the Careys traded it for a full section of land in the Waldo hills," (Hendricks 1929:4). They were sheep breeders, and thought the hill country would be better suited for that pursuit. In 1855 Abijah won a prize for the "best horse colt under 1 year" in the Marion County Fair. In 1861 Abijah won a prize for his French Merino sheep exhibited at the Oregon State Agricultural Society fair (Oregon Statesman Index, 472).

In the biographical sketch of Abijah, a description of Native American Neighbors is as follows:

> After settlement was made on their (Carey's) permanent location, Indians often camped on part of their farm. They made their tents or tepees from the fancy bed quilts stolen from the white folk on French Prairie, but were later on scared sway by reports that soldiers were coming that way,""(Steeves 1927:69).

The census records indicate that the Sophia and Abijah had six children that grew to adulthood. The biographical sketch of Abijah mentions that they had eight children (Steeves 1927). It is likely that two children died, and are buried in the Carey family cemetery that was recorded as an exclusion in the deed when they sold the land in 1861 to William and Hannah Roberts. The exclusion was between Sophia and Hannah:

> Reserving and excepting however unto the said Sophia M. Cary her heirs and assigns that certain parcel of land now used as a family burying ground more particularly described as follows to wit: Beginning at a stake on the point of a knoll near the center of said claim thence South 60 feet to a stake thence East 30 feet, thence North 60 feet, thence West 30 feet to the place of beginning. And the said Sophia M. Cary hereby covenants to and with the said Hannah Roberts that she will not and here heirs shall not use the said parcel of land for any other purpose whatever.

The cemetery had at least one grave as indicated by the above passage "now used as a family burying ground". Two children are un-accounted for in the census records, so it is an assumption that the two children are buried here. Abijah died in Wasco County in 1883. The 1880 census lists him as living alone. Sophia Carey died in 1888 (though the biographical sketch of Abijah written in 1927 said she died in January of 1880). Her obituary mentioned that she lived in Cornelius with her daughter when she died, and was buried at the Methodist Cemetery: "Her remains being followed to its last resting place by a large number of the old settlers, few of whom had spent as many years as she," (Pacific Christian Advocate, April 26, 1888). This burial suggests that she did not choose to be buried on the old Donation Land Claim, which was a day's journey by wagon. It further suggests that since the family burying ground was not used for the mother of the family, it thus probably was abandoned by the time of her death.

<u>Other Landowners</u>

William and Hannah Roberts purchased much of the Carey claim in 1861 (Book 5 page 398). He was a minister in Salem, and they owned large amounts of land as evidenced by the deed index records. The directories for Salem list them living in Salem, not on this land, which may have been rented. The Roberts sold much of the land to John and Zerilda Miller in 1874. The Millers and their family members held most of the land within the project area until it was sold to the State of Oregon in 1907-1908.

The Roberts sold the SE ¼ of the Carey claim to Theo Cartright in 1868. By 1878 a family by the name of "Payne" is listed as the owner, and the Payne house is indicated on the map (Williams Map). The dead records indicate that the deed was recorded in 1868, but that it was drafted in 1858. This is early, and the Roberts did not hold the deed themselves until 1861. By the time the Oregon State Institute for the Feeble Minded purchased this parcel, it was owned by Margaret Thiel.

Other landowners in the project area included William Simpson who owned the land south of the Carey claim. This was never part of a Donation Land Claim due probably to the hilly context. His house was probably located where the remnants of the concrete pig sties now stand. He is listed as owner of this land from ca 1878 to the time when the State of Oregon purchased it for the Institute for the Feeble Minded (Williams Map 1878). It is likely he did not live on this land for most of that time, as he was listed as a justice of the peace in East Portland in the late 1890's. He was a land developer with William Killingsworth, developing the Peninsula residential district of Portland.

Institution for the Feeble Minded

There was a cemetery on the grounds for the State Institution for the Feeble-Minded. Dean Byrd saw this cemetery in April of 1940. He went for a walk on the premises with his sister. He had lived there for several years while his father was superintendent. In 1939 his father died and they moved to Salem. A year after his father died, he and his sister visited the Institution, and that is when he saw the cemetery. He believes that the cemetery was on a hilltop, in an area of pasture. He pointed to the area on the map, and it is indicated in parcel 5 or parcel 6 of the Parcel Map. He is not quite sure where he saw it, but believes it was on one of the hills behind the school. There are two areas that may fit his vague and unsure description. He stated that the grave markers were not stone, but temporary markers to the best of his recollection.

The first death certificates that list burials on the premises occurred in 1909. There were two burials that year. In 1910 twelve burials were recorded. In 1911 there were five, and in 1912 there were seven. In 1913 there were three, and by September 1914 the State cremated the remains. There may be more burials that occurred between 1911 and 1915 because there was a change in how death certificates were filed in those years, being filed in the county where the person was from rather than in Marion County (Dean Byrd, personal communication). There are at least twenty-five graves on the property based on the death certificates and the patient register at the Oregon State Archives. Most of the people buried at the institution were white, with two exceptions; one was described as 'colored' and another as Chinese. All were single. They died of a variety of causes, including tubercular meningitis, malnutrition, heart trouble, epilepsy, and in one case 'strangulation in bed while in restraint' (Oregon State Board of Health Bureau of Vital Statistics, Marion County death certificate no. 165, 1910). For a chart of these statistics, please see Table 1 below.

Table 1: Institute for the Feeble-Minded deaths and burial locations 1909-1914.

NAME	SEX	COLOR	AGE	PLACE OF BURIAL on Death Certificate	Patient Register Book record
Clarence Riggin	m	White	14	Institution for Feeble Minded	
Mark A. Sparling	m	White	28	feeble minded inst cem	"buried here"
Ah Fick	m	Chinese	30	Feeble Minded cemty	
Clarence Earl Warthen	m	White	11	Feeble minded cemt	
William Shearer	m	White	40	Feeble Minded Cemty	
Floyd Griffeth	m	White	34	O.F.M. Cemetery	"buried here"
Mable Merrium	F	White	20	Feeble Minded Cemty	"buried here"
John Deadman	m	White	80	F. Minded Cem	
Grant Gilmore	m	White	42	F m cemetery	
Fred Banker	m	White	16	State Cemetery	
Elmer Sagert	m	White	12	State Cemetery	"buried at institiution"
Arthur Haight	m	White	33	State Cemetery	"buried at institiution"
Fred Patterson	m	White	40	State Cemetery	
Westley Atkins	m	White	unknown	State Cemetery	
Herbert McReynolds	m	White	21	State Cemetery	"buried here"
William H. Coon	m	Colored'	41	State Cemetery	"buried at institiution cemetery"
Arthur Clyde Hobson	m	White	19	State Cemetery	"buried at institution"
Ross Lang	m	White	unknown	State Cemetery	
Frank Williams	m	White	unknown	State Cemetery	"buried in institution cemetery"
Ludger Boire	m	White	37	State Cemetery	
Grace Larkin	f	White	unknown	State Cemetery	
Alg--t Benstone	m	White	30	State Cemetery	
James Hammacher	m	White	14	O.F.M.I.	
Charles Black	m	White	30	Feeble mind cemy	"buried here"
June Rupert	m	White	22	State Cemetery	"buried here"

Research Design and Methods

The goals of the fieldwork were as follows: 1) to find any archaeological sites in the project area and define horizontal parameters; and 2) to identify all archaeological sites that may be potentially eligible for nomination to the National Register of Historic Places. Two important goals of this study were to locate the Carey Family Cemetery and the Institute for the Feeble-Minded Cemetery.

The research design was submitted and approved by SHPO and is included in the context statement which is Appendix A. This section documents the research and field studies as actually implemented, including any deviation from the research design and the reason for the changes.

Background Research

Background research, ethnographic research and environmental research was designed to gather the data necessary to develop a reasoned project-specific research design taking into account the history of land use and known site distributions and types.

The oldest records pertaining to the site were searched first. The General Land Office Maps and surveyors notes located at the Bureau of Land Management Office in Portland. These maps provided information on roads, settlements, historic cabins and land features. Records pertaining to the original Donation Land Claimant were studied for any possible land uses that resulted in an archaeological site.

An archival records search was conducted at the State Historic Preservation Office (SHPO) in order to find records pertaining to previous surveys and sites recorded within and around the current project area. Previous reports and site forms were copied and studied. Research was conducted at other repositories including the Oregon State Archives, Marion County Museum, Marion County Library, Oregon Historical Society and the Multnomah County Library. Deed records were found in microfilm and in deed books and indexes at the Marion County Courthouse.

Letters were sent to several Native American organizations in the region. Consultation was done with the Grand Ronde Tribe cultural resources department. A Grand Ronde representative accompanied the surveyor in the field on three occasions.

Local informants included previous employees of the institution were contacted and interviewed for finer grained information regarding land use in particular areas on the property.

Fieldwork

Fieldwork commenced on July 8, 2004 and continued intermittently until August 7, 2004. Melissa Darby MA RPA conducted all fieldwork. Several areas were mowed with a tractor and towed mowing apparatus in order to improve visibility and mobility. These included the top of the ridge areas where the possible Feeble-Minded cemetery may have been established (see contextual statement). Tractor-mowed areas included areas around Pringle Creek off of Strong Road. The high-probability areas around Pringle Creek were completely mowed. The rolling ridge flanks were determined to be low-probability for cultural materials. In these areas and on some of the lower slopes west and south of the water tower, the mowing was done in winding rows 20-25 meters apart. The pedestrian survey followed the rows and meandered between the rows into the un-mowed areas where access and ground visibility was available. The width of the mowed area was approximately eight feet. One long mowed "road" was cut through the large blackberry thicket to an area that was a high probability area for a historic house.

Pedestrian transects in high-probability areas and all flat areas were spaced 15 meters apart where access allowed except for the low-probability areas mentioned above. Transects were done on compass settings allowing for the longest transect and often parallel to a road or following a contour line. Visible ground surfaces were inspected as well as molehills, ditches, and disturbed ground. Areas where there were blackberry thickets were not surveyed except where the plants were mowed and removed for access. Along Reed Road SE the blackberry areas were in a mosaic pattern so meandering transects were conducted in this area where clearings permitted access. Approximately 1/3 of the project area (92-acres) was not surveyed due to blackberry thickets.

The areas around the buildings were mowed with lawn mowers as part of maintenance activities, which allowed for good visibility especially as the area dried out. Some of the high grass in the flats between buildings and in the lower fields was cut and bailed, improving visibility substantially.

The fieldwork for each potential historic site identified during the archival research phase was implemented in two stages. The first consisted of a remote sensing survey of the site using a metal detector. The metal detector was swept along the surface of the ground, and when an audio signal indicated the presence of metal, a pin flag was inserted to mark the point to obtain a quick visual impression of the spatial distribution of subsurface metal. In the case of multiple signals clustered in an area, pin flags outlined the location as having high artifact frequency. Some of the positive signal areas were excavated, the artifact recorded and photographed, and returned to the ground at the same location.

Problems encountered with the metal detector survey included construction disturbance and buried water pipe in the potential location of the Carey Family Cemetery site (see Contextual Statement).

Possible cemetery areas were to be tested by clearing a 1m by 1m area of sod, and excavating to mineral soil in order to see disturbed areas and cuts. However, this was not done because the potential area where the graves may be was too large to be adequately sampled.

The dump sites were not documented because the main refuse area for the Fairview Institution has been cleared out and excavated, and much of it replanted with riparian vegetation. The dump site in the gravel pit was not recorded because it was mainly used as a transfer station to evacuate refuse from the institution, and is currently full of 1960's era appliances.

An archaeological site was defined as greater than 10 artifacts of the same type and material within a 5 square meter area. As the number of artifact types and/or materials increases, the size limits also increase. For example, one flake, one core, and one mano within a 15 square meter area may be considered an archaeological site. The boundary of a site is determined when another artifact is not encountered for a distance of 20 meters

Archaeological sites were recorded on State Inventory Forms. Each site was plotted onto a 1:24,000 scale topographic map, using a GPS unit. Sites were photographed using a digital camera and a sketch map created from the developers base map. The eligibility of each site was determined using National Park Service Guidelines.

Cultural resources that are not considered part of a site were recorded as isolated occurrences. Isolated Finds were described in a form and the location plotted on a USGS map.

Subsurface Probes

Visibility in the mowed areas was excellent due to the high number of molehills and some areas of sparse vegetation dominated by Queen Anne's Lace and tarweed. One grassy area along the southern bank of Pringle Creek was sampled due to poor visibility.

Six probes were excavated approximately 40-cm x 40-cm and 30-cm deep. The probes were 20 meters apart as measured by a tape. The fill was screened through 1/8-inch mesh hardware cloth. Shovel Probe Record forms were filled out for each probe. These probes were excavated along the fence line along the south bank of Pringle Creek.

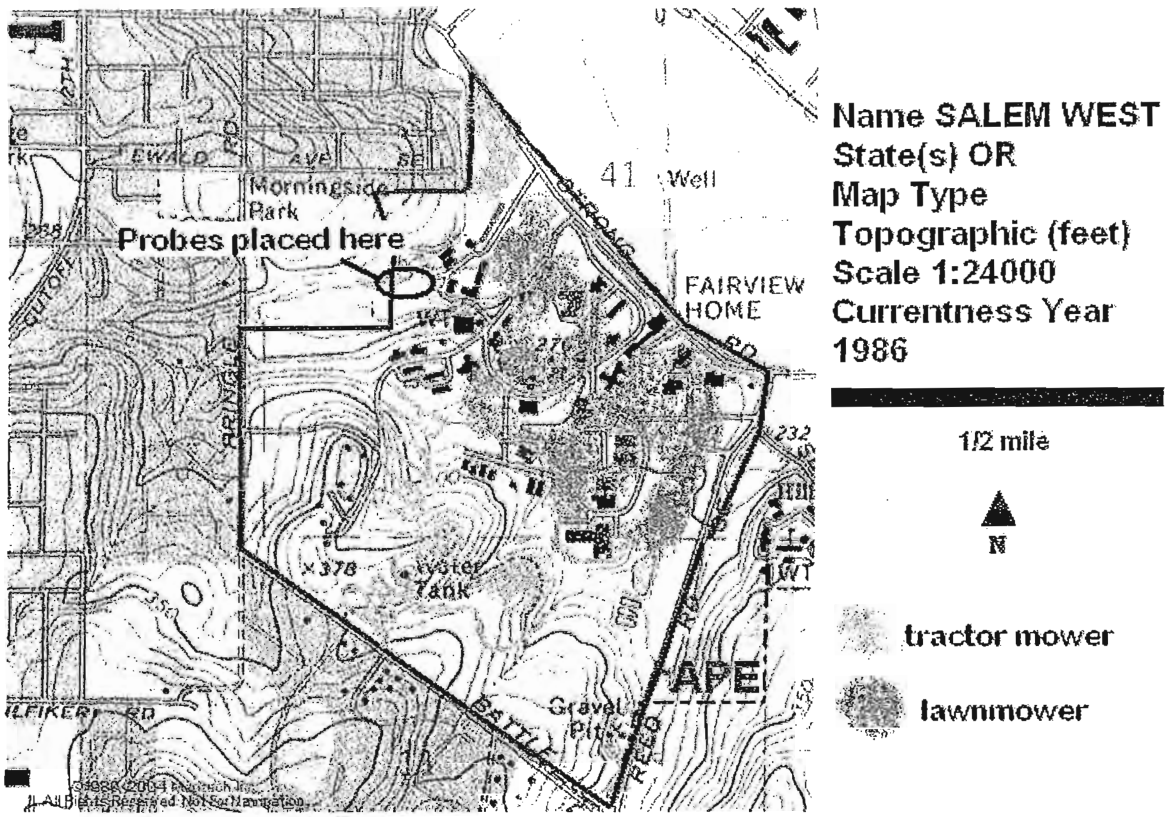


Figure 3: Mowed areas and type of mowing machine used indicated by color.

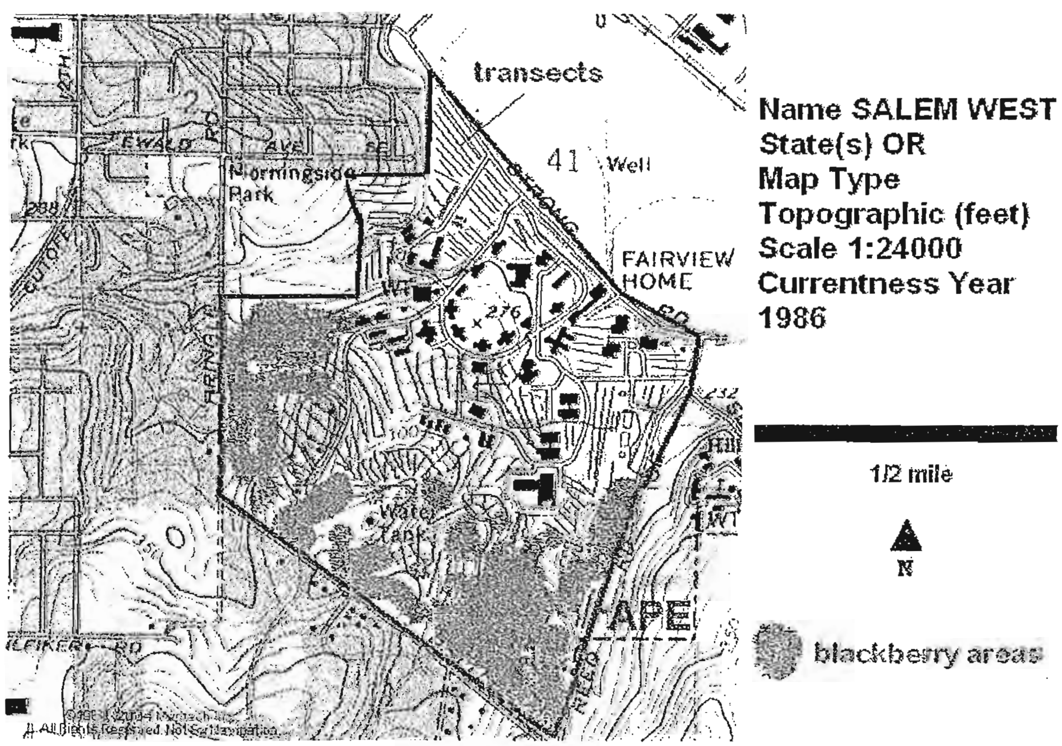


Figure 4: Transects walked and blackberry-covered areas not surveyed indicated in green.

Findings

The cultural resource survey of the Fairview Training Center Property identified five new archaeological sites, an extension of 35MA142, and five isolated finds. The new sites include the following: Holden/Carey Cabin Site, the Cartright/Payne House, a boulder petroglyph, and two field-clearing stone cairn sites. The isolated finds include fire cracked rocks (FCR), three clusters of historic domestic artifacts, and one area where two short round nails were found with the metal detector near one of the possible locations where the Institute for the Feeble Minded cemetery was reported to exist.

<u>35MA142</u>

The new portion of this site is located between Pringle Creek and Strong Road on a flat portion of the floodplain that stretches east. 35MA142 was originally identified in 1994 by Archaeological Investigations Northwest (Ellis 1994). This site was found to extend from Strong Road east approximately 40 meters. At that time the site was evaluated with shovel tests and subsequent testing consisting 63 meters of trenching to a depth of about 80-cm. In addition a 1x1-m unit was excavated which yielded an artifact density of 78 items per cubic meter, excluding Fire-cracked rock. AINW determined that FCR counts were not as important as weight. The site yielded 119 artifacts excluding FCR. AINW concluded that the artifact assemblage exhibited slightly greater diversity than assemblages in neighboring archaeological sites but that the "data potential of 35MA142 is nonetheless comparatively poor." No temporally diagnostic tools were observed, and no evidence of intact cultural deposits or features were observed. Based on the data, AINW concluded that the site was not eligible for listing on the National Register (Ellis 1994:34).

The original site area was approximately 40-m x 40-m. This study has expanded the site boundary to 330-m x 160-m. The archaeological site consists of >40 <60 fragments of fire-cracked rock (FCR) that were visible on the surface. Three basalt flakes, a CCS core fragment, and two chert flakes were also noted. The FCR is scattered in a grass and blackberry covered field.

This site may have potential to yield information important to our understanding of prehistory. Further studies may yield temporally diagnostic tools, and intact cultural deposits. This site should be considered eligible for listing in the National Register of Historic Places.

<u>Site 1</u>

The house and barn were located using surveyors notes from 1851 and 1852. William Ives surveyed the township lines for the General Land Office in November 10 of 1851. In April of 1852 he surveyed the subdivisions. In the surveyor's notes from 1852 Ives identified Carey's house and barn, and takes bearings on the house and barn from two locations, which was required by the surveyor general:

> The law requires that such claims should be laid down temporarily on the township plats; in order to do which, it is indispensably necessary to obtain to

> some extent connexions (sic) of these claims with the lines of survey...if the settler's dwelling or barn is visible from line the bearing thereof should be carefully taken from two points noted on line, and set forth in the field notes (White 1982:444).

Ives sets Carey's house and barn in the SE ¼ of the NW ¼ of the SE ¼ of section 2, Township 6 South, Range 3 West. The barn was noted a few degrees south of the house. The general vicinity of these features is just off of Strong Road, in the general vicinity of the heating plant and utility area of the Fairview Training Center. Artifacts were found in three main locations and the site map was drawn to include these three locations because of their associations

The site was relocated using a metal detector. The site is in a lawn-covered area randomly planted with Sequoia trees. The area is bounded by Strong Road on the northeast, a utility driveway to the northwest, the main entrance driveway to the southwest, and greenhouses to the south. The possible cabin location is located near the intersection of the utility driveway and Strong Road. The possible barn location is located along Strong Road near the main entrance driveway. A third area where the metal detector picked up strong targets is in a cluster of trees near a man-made wetland. See site map for more detail.

This site is the headquarters of the Abijah and Sophia Carey Donation Land Claim, and possibly the original site of the Horace and May Holden cabin. The Careys purchased the land and improvements from Horace Holden in 1848 who had settled here in 1844. The cabin and barn were mapped in 1852 by surveyor William Ives working for the United States General Land Office. The cabin and barn were relocated using the bearings from Ives' notes and a metal detector.

Artifacts consisted of fifteen square cut nails, 1 possible rose head nail, clear vessel glass fragments, one brick, one metal rat tail file fragment, a horse shoe, two prosser button fragments, and several unidentified metal objects. These artifacts are consistent with a mid-19th century date of occupation and suggest a pre-1880 structure in this area.

This site is relatively intact except for a great deal of bioturbation. No building construction has occurred in this field since the house was extant. Maps and aerial photographs indicate that this was a cultivated field or landscaped lawn between 1908 and the present. The deposits are scant, with three concentrations of artifacts noted above.

The site is eligible for listing on the National Register of Historic Places because the site may have identifiable features and representative artifact assemblages, which would yield information important to history. In addition, the site may be significant under Criterion B for its associations with Horace Holden, who was an author and early pioneer. It may be additionally eligible for its associations with Abijah and Sophia Carey, also early pioneers.

Site 3

Rock Cairn 1 consists of a cobble pile approximately 5-m by 6-m and 2-m high. The cobbles are piled up in a rounded heap. The cobbles are basalt; sub-rounded to rounded. One fragment of drain tile pipe was found on the pile. The site is in a drainage approximately 25 meters northeast of a large cottonwood tree that is growing within a cottonwood coppice. The drainage is ephemeral.

This site has every appearance of being evidence of field clearing. The rocks are near where a historic house was indicated on the 1907 State of Oregon map. No sign of a house is present, though this area is almost solid blackberry thicket.

This site is not considered significant or eligible for listing on the National Register of Historic Places.

Site 4

Rock Cairn 2 is located on a hill overlooking the Fairview Training Center. The archaeological site consists of a 5-m by 5-m rock cairn or heap of cobbles, small to boulder size, probably placed here by a historic farmer to clear the field. A piece of metal roofing material is propped against the southern edge of the feature.

The cairn is under the shade of an Oregon White Oak and sits on a prominent place on the point of a ridge. The site area was once a pasture area, and later it was cultivated as an orchard area. Remnants of the orchard are present. This general region may have been where a high concentration of glacial erratics were deposited, as evidenced by the size of the boulders. One of the larger boulders is granite. The stones were probably collected during historic times and deposited in more than one episode.

This site is not considered significant or eligible for listing on the National Register of Historic Places.

Site 5

The boulder is approximately 240-cm long across the longest axis, which runs ENE. The axis across the boulder measures approximately 120-cm meters. The height at the highest point is 75-cm tall. The top of the rock is generally flat with some minor shallow areas in the surface. The top of the rock is sloped to the northeast. No worked areas or polished areas could be found on the surface, which was covered with moss and lichen. Some of the moss was carefully removed to examine the surface.

Panel 1: This is the largest panel and is on the southwest. This panel has incised lines running out from a central place to the edge of the panel and in one case continuing along the spine. They do not appear to be in any sort of alignment or pattern or array. They make use of the shape of the panel and extend to the top edge of the panel, which is a half circle shape.

Panel 2: This is a shape like the letter "S" except on its side. This panel is located on the north side of the boulder.

Panel 3: This panel has lines appearing to run right to left in no pattern or array. They may continue to the top of the boulder.

Panel 4: Lines from the side panel continue on this top panel. Some of these lines may be natural. The site is located on a hill where housing exists that in the past the administrators of the Fairview Training Center lived. The houses are abandoned. The site area has been forested since at least 1852 (GLO). The 1907 map still shows "Timber." The trees may have been logged at some point because the trees seem to be second growth. During logging operations the boulder may have been damaged by vehicles scraping it. There is evidence of the deposition of glacial erratics in this area, and this boulder appears to be one of the erratics.

This site is considered to be in good condition, and eligible for listing on the National Register of Historic Places. Rock art in the Willamette valley is rare. This site has potential to provide important information to our understanding of prehistory.

Site 6

The archaeological site is a dwelling site consisting of square nails, window glass, brick fragments, crock fragments, vessel fragments, and a mirror fragment. Prehistoric artifacts include one chert core fragment and a possible basalt flake. The window glass width primary mode is 1.9 based on two samples, suggesting a date of construction of ca. 1850 to 1860 based on Roenke's study of date ranges by window glass thickness in the Northwest.

The site is on a slight rise overlooking the Mill Creek and Pringle Creek floodplain. A moden house has been constructed adjacent to the site, probably disturbing much of it. The site may be the dwelling site for Theo Cartright who may have settled here as early as 1858, and subseqent owers included a family named Payne who settled here by1878. By 1907 the land was owned by theM. Thiel who sold the land to the State of Oregon in 1907. This residence is recorded on the 1907 Map made for the State of Oregon. The 1852 General Land Office shows the area under cultivation, though surrounded by "Mill Creek bottoms stoney and gravelly" as well as "timber W oak and fir openings part scattering undergrowth grass fern oak hazel etc" (GLO Plat 1852).

The site is in a disturbed context. However, it may be eligible for listing on the National Register of Historic Places because the site may contain identifiable features and representative artifact assemblages, which would yield information important to history.

Isolated Finds

A total of five isolated finds were recorded. The isolated finds include fire cracked rocks (FCR), three clusters of historic domestic artifacts, and one area where two short round nails were found with the metal detector that were in the vicinity identified for the cemetery for the Institute for the Feeble Minded cemetery was reported to exist.

Recommendations

In some areas blackberries prevented survey. When ground-disturbing activities occur within the blackberry-covered areas, I recommend that an archaeologist be on-site during the initiation of land clearing and ground-disturbing activities.

During ground-disturbing activities near the identified potential locations of the cemetery of the Institute for the Feeble-Minded and in the area of the Carey Family Cemetery I recommend ground penetrating radar (GPR) exploration be performed in the three likeliest locations identified (See figure 17). In locations where GPR has indicated a potential target for investigation, machine grading and soil removal to mineral soil shall be done with an archaeologist monitoring the grading operation. Once the ground has been graded, it should be examined for soil color and signs of disturbance that are consistent with a graveyard development. If a cemetery is found to be extant and intact I recommend no ground-disturbing activities be permitted in that vicinity, and a buffer zone of five meters shall be established around the cemetery where no disturbance is allowed.

I recommend archaeological testing of the Holden/Carey cabin and barn areas as well as the extension of site 35MA142. The Holden/Carey site is likely eligible for the National Register of Historic Places. 35MA142 was originally determined not to be eligible due to the scant nature of the deposit. The site may be eligible for the National Register of Historic Places due to the additional site area found. At this time no construction activity is planned for the Cartright/Payne House site. Testing will be necessary if this plan is changed.

The rock cairns most likely represent field-clearing episodes. They can be dismantled in the presence of an archaeologist, and the stones examined for use as ground stone tools.

It is always possible to that undetected cultural remains will be discovered during construction activities. Attention should be given to any cultural materials including deposits of bone, ceramic, glass, shell, fire-cracked rock or chipped stone. If such materials are found during construction, work should be immediately halted at that location and an archaeologist consulted. This caution applies especially to Native American burials, which are specifically protected under Oregon law (ORS 97.745). Disturbance of such graves is prohibited, even "through inadvertence, including construction."

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Wins award for French Merino exhibited at State Agricultural Society Fair; 28 October 1861
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Figure 5: Project area aerial photograph.

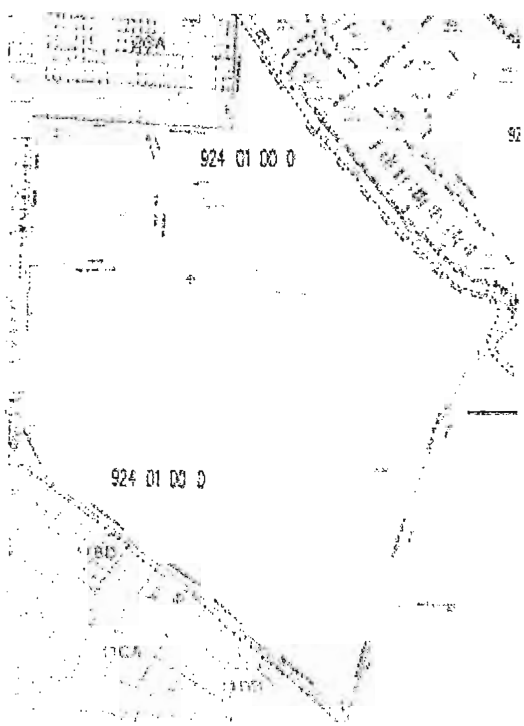

Figure 6: Tax lot map of project area.

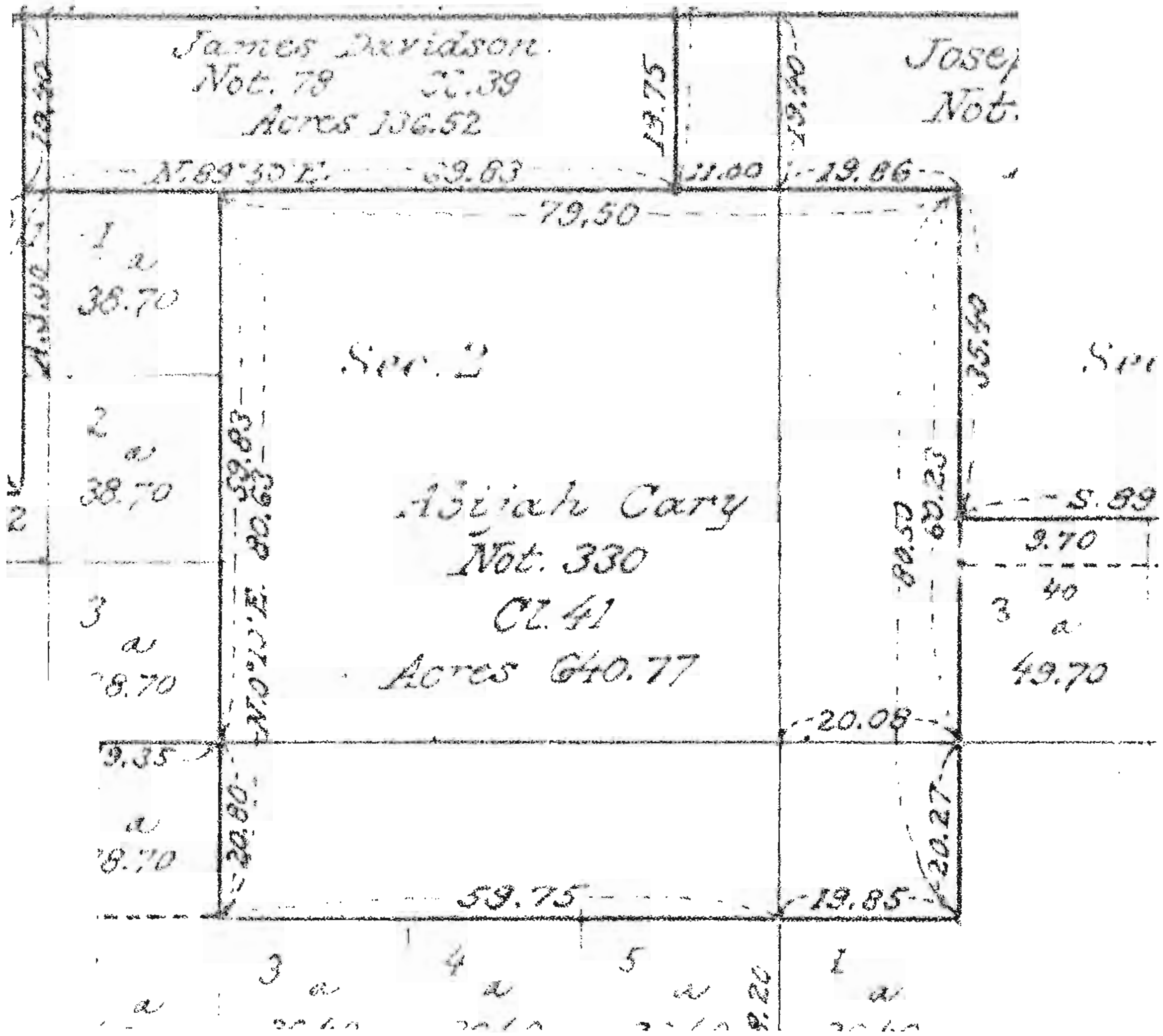

Figure 7: Portion of GLO map 1852 showing Carey Claim.

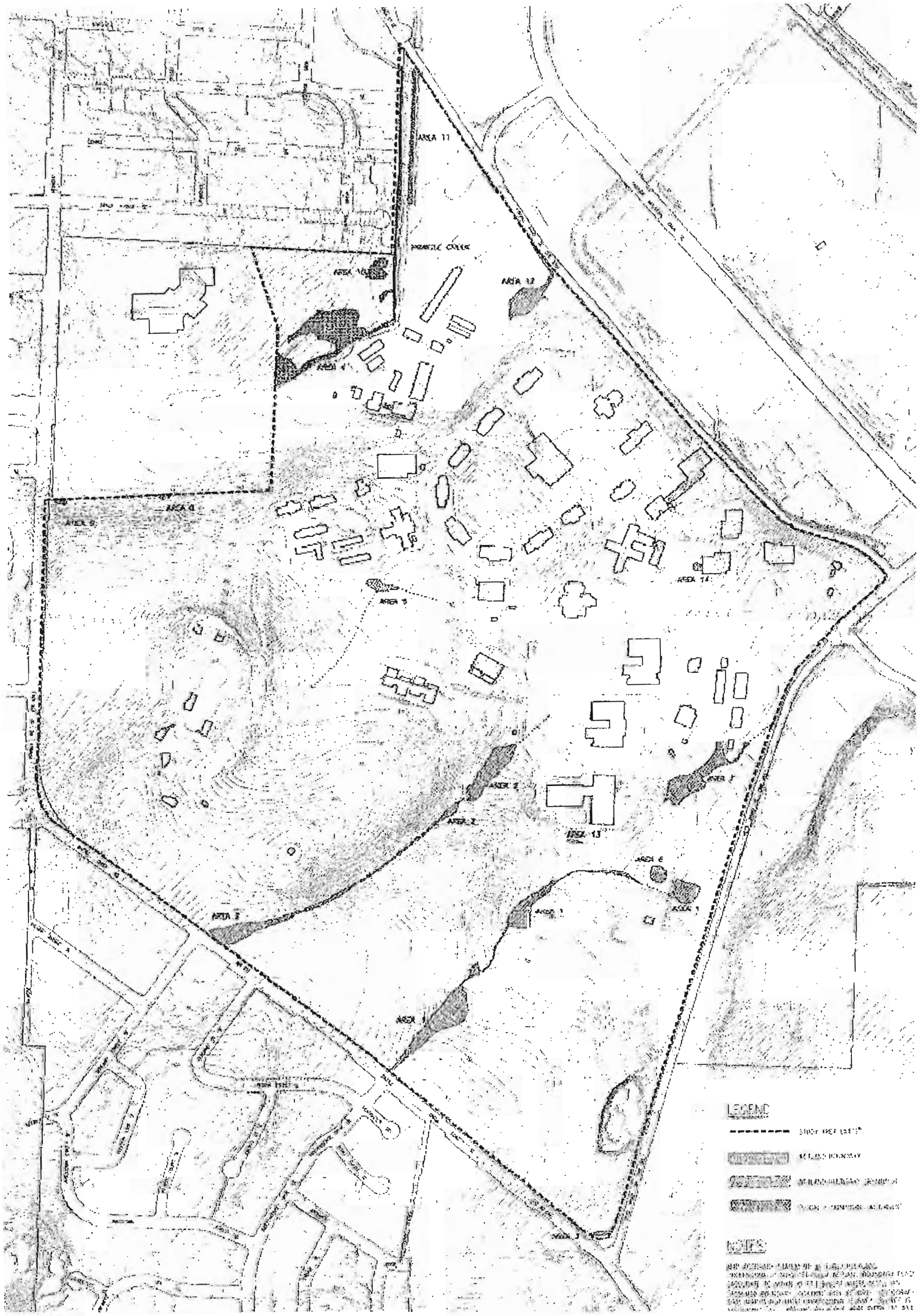

Figure 8: Project area contour map.

Figure 9: Mowing through blackberry thicket.

Figure 10: Looking northeast to water tower from orchard high grass area.

Figure 11: Site 1 looking north from barn area.

Figure 12: 35MA142 looking south from northern point.

Figure 13: Site 3; Rock cairn #1.

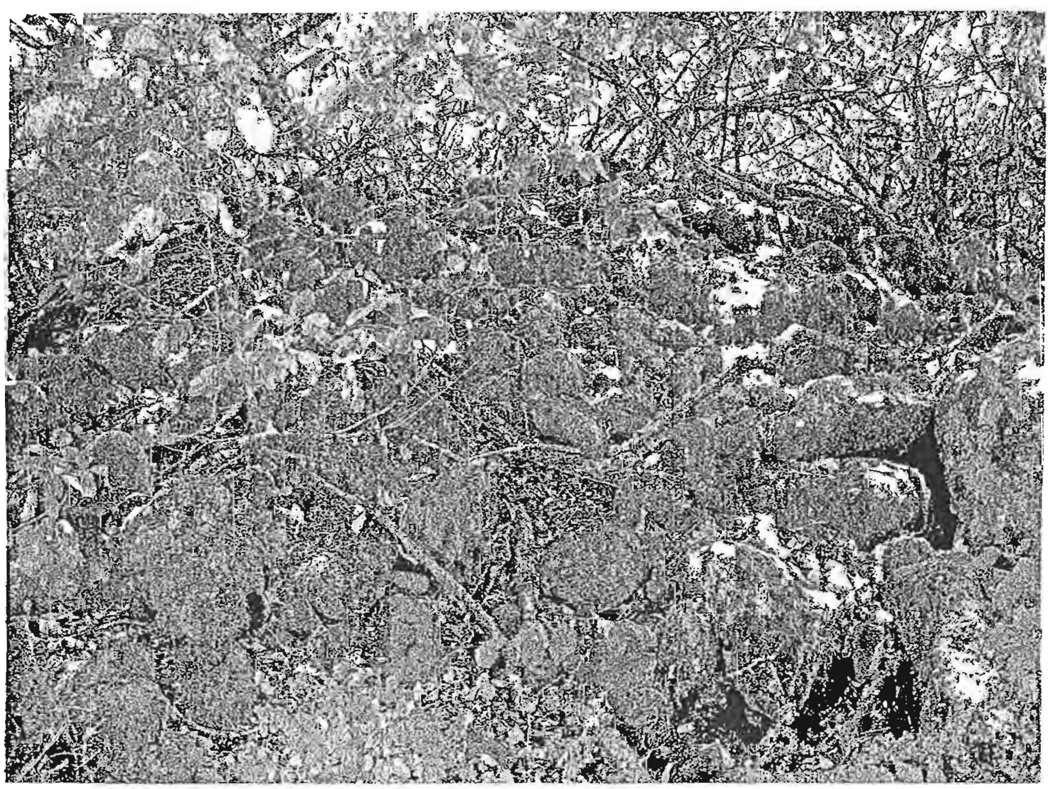

Figure 14: Site 4: rock Cairn #2.

Figure 15: Site 5 Petroglyp site SW panel.

Figure 16: Site 5 looking northwest towards house.

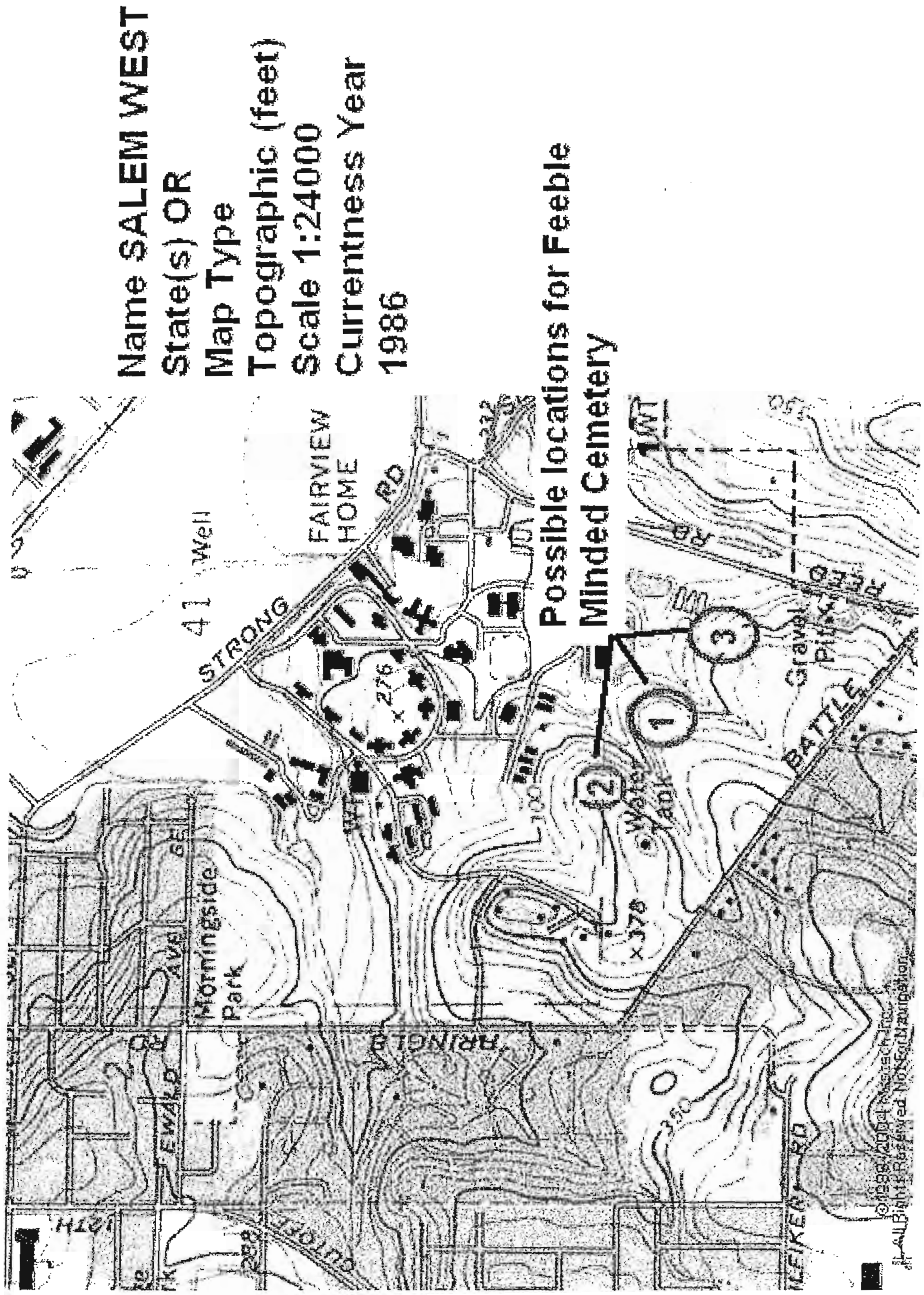

Figure 17: Possible locations of Feeble-Minded Cemetery.

Appendix A

Fairview Training Center

Archaeological Context

Melissa Darby MA RPA

Submitted to Dennis Griffin for approval

June 29, 2004

Introduction

The goal of the Phase I Archaeological Investigation is to identify all archaeological sites that may be potentially eligible for nomination to the National Register of Historic Places. The Area of Potential Effect (APE) or area that will be affected by the undertaking is considered to be the entire parcel. The following is a report describing likely areas where archaeological materials may be encountered. The Fairview Training Center property is located within the urban growth boundary of Salem, Oregon in sections 2 and 11 of Township 8 South Range 2 West, Willamette Meridian. This is known as Tax Lot 100 on map 8S 3W Section 2, consisting of approximately 274.98 acres.

The study area is divided into seven parcels. These parcels are based on the boundaries (within the current APE) of the parcels that were purchased in 1907 to form the grounds. Since these correspond to historic holdings, I am using these seven parcels as study areas for potential archaeological resources. This map will be referenced in the text from here forward as the Parcel Map (See Figure 2).

Previous Archaeological Research

The APE should be considered a high-probability area for prehistoric cultural materials. A review of the records of the Oregon State Historic Preservation Office (SHPO) indicated that several sites and isolated finds are immediately adjacent to the project area. The records indicate that four cultural resource investigations have been previously conducted within a mile of the project area and several sites have been reported, including a large (20 acre) prehistoric site directly adjacent to the project area (35MA136). Mr. Dean Byrd (mentioned above) remembers collecting 'arrowheads' in the field after it was plowed. He pointed to the exact area where 35MA136 is located, though he said artifacts extended further east than the current site boundary. He said that there were no other places on the grounds where he found artifacts.

The first of the previous studies was a survey conducted for the US army corps of Engineers by the Laboratory of Archaeology and Anthropology (LAA) at Portland State University. The area surveyed was around Mill Creek, approximately one-mile northeast of the project area. Ten sites were located and comprise what the authors call the "Mill Creek Prehistoric Site Complex". These are prehistoric "open camps" with fire-modified rock, lithic debitage, and some tools.

In 1993 Archaeological Investigations Northwest (AINW Inc.) conducted a cultural resource investigation of the proposed Pringle Road Middle School, adjacent to the project area on the next tax lot to the northwest. This is where the large 20-acre prehistoric site was identified (35MA 136). This site has been know to collectors for years as a good place to hunt for arrowheads, and one collector had identified this area as a 'camp site' on a map he drew for the periodical Marion County History for the Marion County Historical Society in 1962 (Tompkins 1962).

In 1994 David Ellis of AINW Inc. conducted a cultural resources investigation of the Fairview Industrial Park, on approximately 250 acres between Fairview Home and McNary Field. Six prehistoric resources were found, including three archaeological sites (35MA142, 35MA143, 35MA144). The low densities of artifacts from the plow zone led AINW to conclude that these sites were not eligible for the National Register of Historic Places.

35MA143 is located immediately southeast of the intersection of Madrona and Strong Road, which is across the road and approximately 40 meters east and north of the Fairview project boundary. Site 35MA144 is located across Reed Road from the Fairview project boundary , just southeast of the intersection of Strong Road and Reed Road (see figure 1).

In 1995 AINW conducted testing and evaluation of the Pringle Creek Site, concluding that the site's potential to yield additional important data is poor. The archaeological deposits are shallow and mixed due to agricultural plowing. They determined that it is not eligible for the National Register of Historic Places.

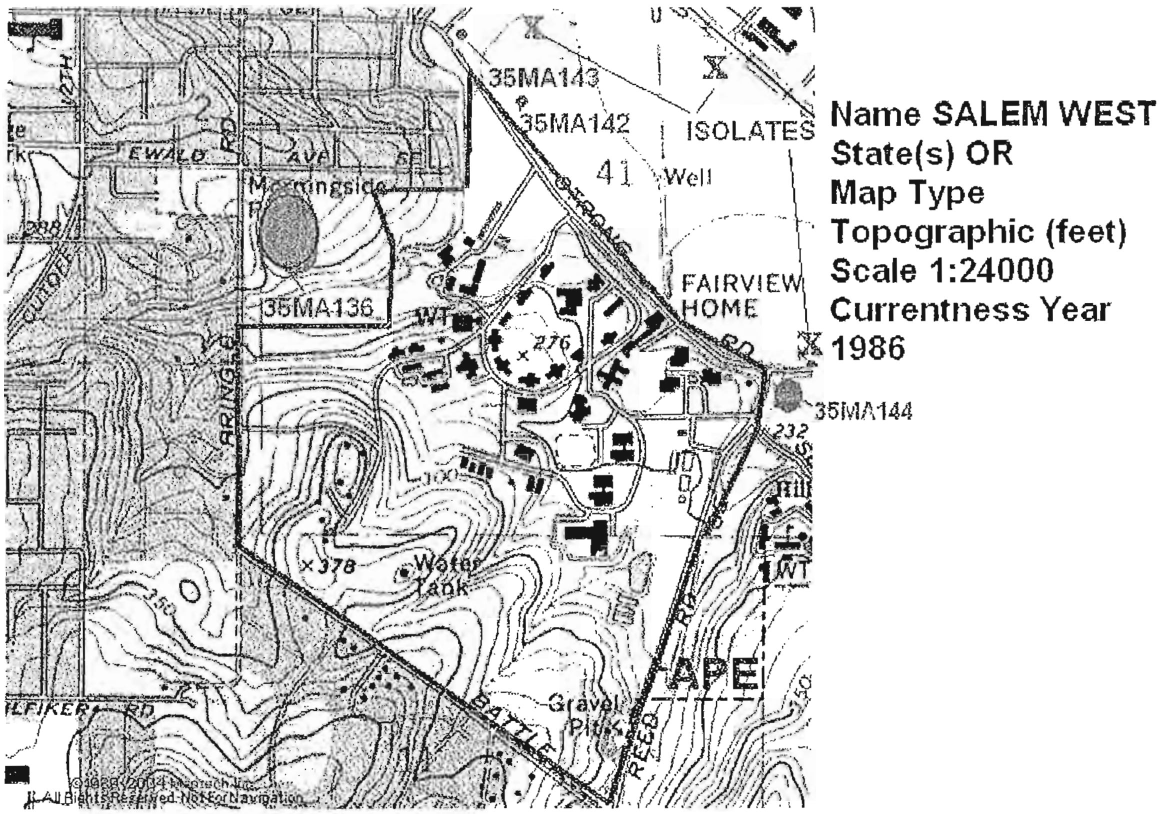

Figure 1: Archaeological sites within the vicinity of the APE.

Ownership History
Much of the land within the APE was part of the Abijah and Sophia M. Carey (Cary) Donation Land Claim. This includes parcels 1-5 on the Parcel Map. They settled their claim in October of 1848 or January 1849.

William Ives surveyed the township lines for the General Land Office in November 10 of 1851. In April of 1852 he surveyed the subdivisions. There is an error on the 1852 map indicating the claim was owned by Joseph Parrott, however the notes and subsequent maps indicate that this was Carey's claim. In the surveyor's notes from 1852 Ives identified Carey's house and barn, and takes bearings on the house and barn from two locations, which was required by the surveyor general:

> The law requires that such claims should be laid down temporarily on the township plats; in order to do which, it is indispensably necessary to obtain to some extent connexions (sic) of these claims with the lines of survey…if the settler's dwelling or barn is visible from line the bearing thereof should be carefully taken from two points noted on line, and set forth in the field notes (White 1982:444).

Ives sets Carey's house in the SE ¼ of the NW ¼ of the SE ¼ of section 2, Township 6 South, Range 3 West. This location is just off of Strong Road, in the general vicinity of the heating plant and utility area of the Fairview Training Center. Both of these potential features are in Parcel 3 on the Parcel Map (Fig. 1).

Between 1860 and 1862 the Careys sold off their land in four transactions. The largest parcel included the area where their house and barn were located, as well as a family cemetery. This was sold to William and Hannah Roberts.

In the deed that transferred the land from the Careys to the Roberts, there was a reserve established for a cemetery that is described as follows:

Reserving and excepting however unto the said Sophia M. Cary here heirs and assigns that certain parcel of land now used as a family burying ground more particularly described as follows to wit: Beginning at a stake on the point of a knoll near the center of said claim thence South 60 feet to a stake thence East 30 feet, thence North 60 feet, thence West 30 feet to the place of beginning. And the said Sophia M. Cary hereby covenants to and with the said Hannah Roberts that she will not and here heirs shall not use the said parcel of land for any other purpose whatever.

There are two knolls that meet this description as being in the center of the land claim. These are both just off of Strong Road in either parcel 1 or parcel 3.

John and Zarilda Miller purchased the land from William and Hannah Roberts in 1874 (Book 17 page 450). It is unlikely that the Roberts lived on the farm; they owned quite a bit of land in the Salem area. The cemetery was described in the deed that they received as well.

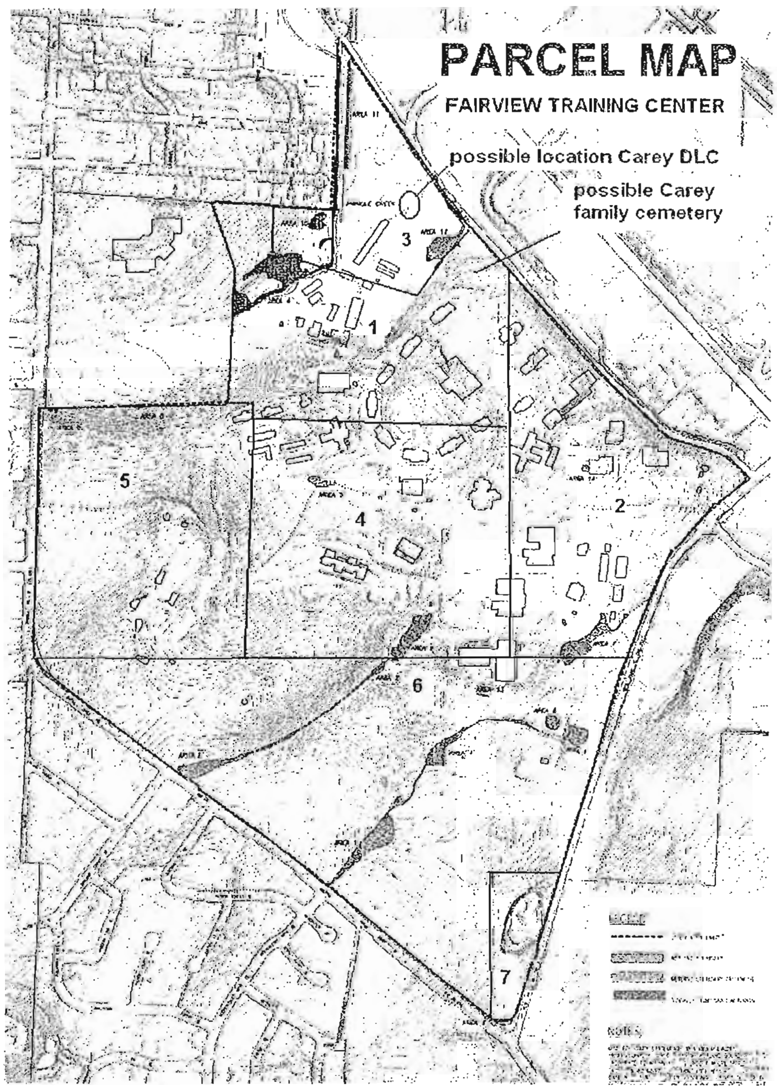

Figure 2: Location of Carey DLC headquarters and cemetery locations indicated in red.

Map Study
The Historical atlas map of Marion & Linn Counties from 1878 shows the names of owners indicated on the tax lots (Williams 1878). J.E. Miller owns the bulk of the current APE (parcels 1, 3, 4 and 5 on the parcel map). H.L Kester owned a small part of parcel 6, and W.H. Simpson owning the rest of parcels 6 and 7 as indicated on the parcel map. The tax lot that corresponds with parcel 2 on the base map was owned by Payne (no first name indicated).

The most important map for this study is the 1907 *State Institution for the Feeble Minded Contour Map* "showing Fences as constructed and character of surface growth" drafted by the Office of the State Engineer. This map will be referred to in this report as the State Engineers Map from 1907, or just the 1907 Map. It shows the tax lots labeled with the owner's names at the time of purchase.

The State purchased the property for the State Institution for the Feeble-Minded from nine landholders. The original holdings were approximately 672 acres. The current boundaries of the parcel encompassing 274.98 acres were held by six of the owners. Though there were six landholders, there were only four farmhouses indicated on the 1907 map within this area. These correspond to the Payne Farmstead, Miller (Carey) Farmstead, Simpson Farmstead, and the Coleman Farmstead. Both the Millers and W. Simpson had a long tenure on their farms, from ca. 1878 to 1907. Each of these areas will be considered a high probability area for historic sites (see figure 3).

Eliza Miller Coleman owned the most substantial farmstead on the 1907 State Engineer Map. She also owned the hop fields and hop dryer to the north, (out of the project area). The parcel where the house was located is in the northern project area, indicated on the base map as parcel 3. Her mother, Zarilda Miller owned parcel 1 that bordered hers on the south and east. The 1907 map shows a farmhouse and some outbuildings on Zarilda Miller's holdings that may be in the general area of the headquarters of the DLC of Abijah and Sophia Carey. The buildings on the 1907 map may have replaced buildings from the Careys' tenure. The Carey family cemetery is not indicated on the 1907 map.

These areas have been disturbed by subsequent construction and paving activities. The potential Carey family cemetery may have had a building directly on top of it in the 1940s according to aerial photographs from that time. The DLC headquarters area has had a railroad spur line constructed through the general areas that was constructed to deliver sawdust to the steam plant that heated the dorms and buildings of the institution.

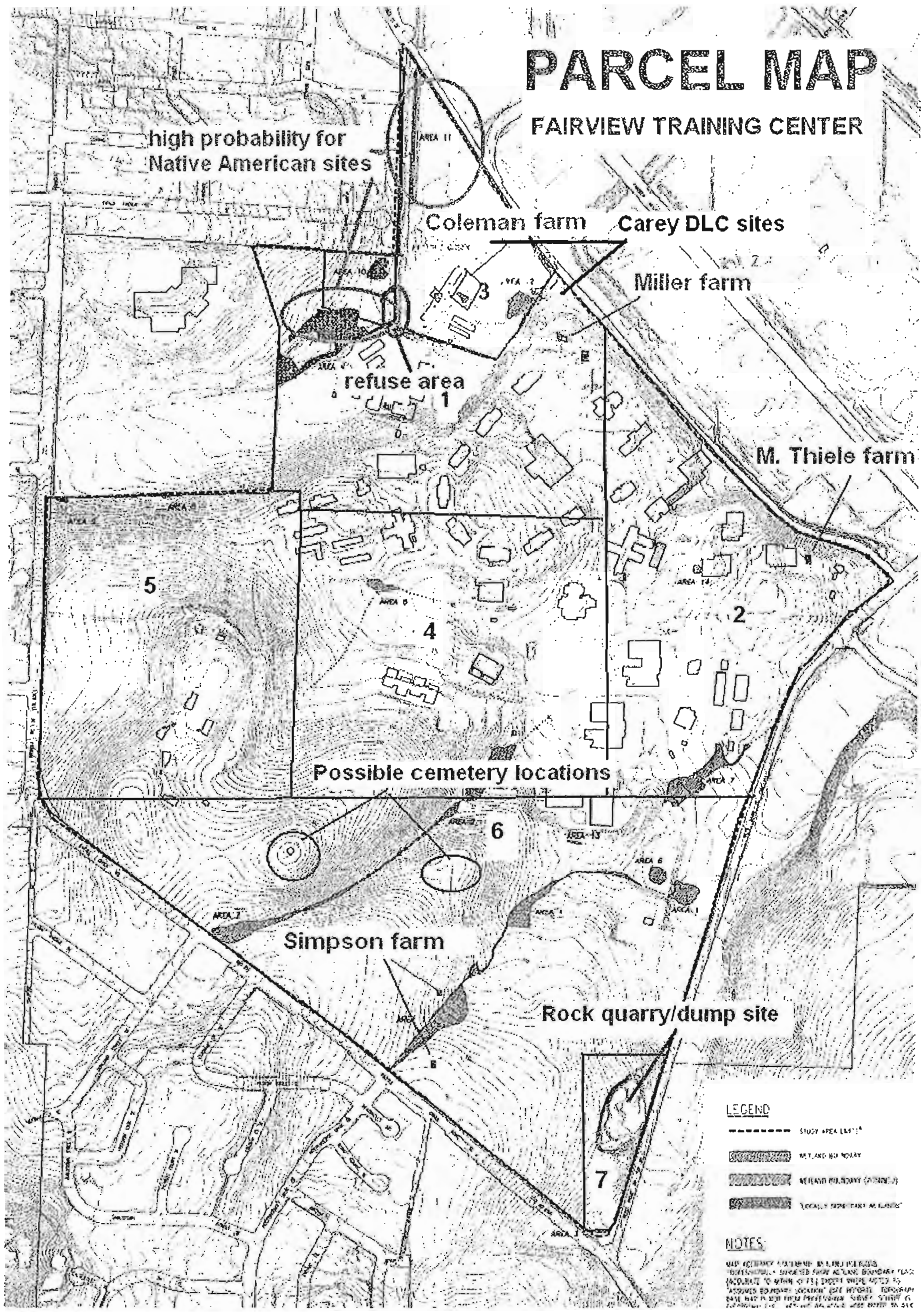

Figure 3: Parcel Map with potential archaeological areas indicated.

The 1907 map indicates some areas within the APE that may be considered 'low probability' for historic cultural materials. These include the uplands which are described as covered in 'timber' or 'timber and brush' in most areas, and as well as 'stumps' near Battle Creek Road. The low elevation areas are described as having 'stubble' and some areas are plowed and some areas are planted in orchards.

Institution for the Feeble Minded
From research and interviews I have found that there are potentially several archaeological sites associated with the State Institution for the Feeble-Minded. These include two garbage dumps (refuse areas) and a cemetery. Dean Byrd saw this cemetery in April of 1940. He went for a walk on the premises with his sister. He had lived there for several years while his father was superintendent. In 1939 his father died and they moved to Salem. A year after his father died, he and his sister visited the Institution, and that is when he saw the cemetery. He believes that the cemetery was on a hilltop, in an area of pasture. He pointed to the area on the map, and it is indicated in parcel 5 or parcel 6 of the Parcel Map. He is not quite sure where he saw it, but believes it was on one of the hills behind the school. There are two that seem to fit his vague and unsure description. He stated that the grave markers were not stone, but temporary markers to the best of his recollection.

The first death certificates that list burials on the premises occurred in 1909. There were two burials that year. In 1910 twelve burials were recorded. In 1911 there were five, and in 1912 there were seven. In 1913 there were three, and by September 1914 the State cremated the remains. There may be more burials that occurred between 1911 and 1915 because there was a change in how death certificates were filed in those years, being filed in the county where the person was from rather than in Marion County (Dean Byrd, personal communication). There are at least thirty graves on the property based on the death certificates that are at the Oregon State Archives. Most of the people buried at the institution were white, with two exceptions; one was described as 'colored' and another as Chinese. All were single. They died of a variety of causes, including tubercular meningitis, malnutrition, valvular heart trouble, epilepsy, and in one case 'strangulation in bed while in restraint' (Oregon State Board of Health Bureau of Vital Statistics, Marion County death certificate no. 165, 1910).

The northernmost refuse area is clearly a dump area. Chairs, metal bed frames and other debris are visible on the surface. This area has been tested for hazardous waste and medical waste. The boundary of the dump will be mapped and a site form will be filled out for this area.

The other refuse area is in a rock quarry in the southern most portion of the APE along Reed Road. This will be surveyed and described as well, and a site form filled out for this feature as well.

Research Design
Pedestrian transects will be spaced 15 meters apart throughout the project area where access allows. Visible ground surfaces will be inspected as well as mole hills, ditches, and any disturbed ground. Areas where there are blackberry thickets will not be surveyed except where the plants have been removed for access. There are two areas where blackberry removal and grass cutting are planned. These areas are both hilltops and potential sites where the Institution for the Feeble-Minded cemetery may have been.

An archaeological site shall be defined as greater than 10 artifacts of the same type and material within a 5 square meter area. As the number of artifact types and/or materials increases, the size limits also increase. For example, one flake, one core, and one mano within a 15 square meter area may be considered an archaeological site. The boundary of a site is determined when another artifact is not encountered for a distance of 20 meters

Archaeological sites will be recorded on State Inventory Forms. Each site will be plotted onto a 1:24,000 scale topographic map, using a GPS unit. Sites will be photographed and a sketch map created. The eligibility of each site will be determined using National Park Service Guidelines.

Subsurface Probes
The sample design is based on results of research, previous surveys and recorded sites in the vicinity. Due to poor visibility some areas of high probability will be sampled. I propose that the following areas be sampled:

Creek Area for Native American materials
Carey DLC as described in surveyor's notes 1852, 1855
Carey Cemetery as described in deed records
Miller House indicated on 1907 Map
Coleman House indicated on 1907 Map
Thiele House indicated on 1907 map
Simpson House indicated on 1907 Map
Potential Institution for the Feeble-Minded Cemetery location #1
Potential Institution for the Feeble-Minded Cemetery location #2
Refuse sites

The goals of the subsurface probes are as follows: 1) identify archaeological sites and find vertical site parameters and if there is depth; and 2) provide data to be used to help determine eligibility of the site to the National Register of Historic Places. Site forms will be submitted to SHPO to obtain Smithsonian site numbers prior to the final report.

The fieldwork for each individual historic site will be implemented in two stages. The first will consist of a remote sensing survey of the site using a metal detector. The metal detector will be swept along the surface of the ground, and when an audio signal indicates the presence of metal, a pin flag will be inserted to mark the point to obtain a quick visual impression of the spatial distribution of subsurface metal. In the case of multiple signals clustered in an area, pin flags will outline the location as having high artifact frequency. Some of the positive signal areas will be excavated, the artifact recorded, and returned to the ground at the same location. Possible cemetery areas will be tested by clearing a 1m by 1m area of sod, and excavating to mineral soil in order to see disturbed areas and cuts.

Areas that are likely to have prehistoric cultural resources areas will be tested using shovel probes in a grid pattern. The scope of work shall include a plan approved by local tribes and interested parties in case human remains are encountered.

The probes will be approximately 40cm x 40cm. Soils will be screened through 1/8-inch mesh hardware cloth. Shovel Probe Record forms will be filled out for each probe.

Cultural resources that are not considered part of a site are recorded as isolated occurrences. Isolated Finds will be described in a form and the location plotted on a USGS map.

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Dean Byrd, June 18, 2004.

APPENDIX F: GEOHAZARD/GEOTECHNICAL REPORT

Carlson Geotechnical

A Division of Carlson Testing, Inc.
Phone: (503) 601-8250
Fax: (503) 601-8254

Bend Office **(541) 330-9155**
Eugene Office **(541) 345-0289**
Salem Office **(503) 589-1252**
Tigard Office **(503) 684-3460**

Report of
Preliminary Geotechnical Investigation,
Infiltration Testing & Geologic Assessment
Fairview Subdivision
Pringle Creek Road SE & Battle Creek Road SE
Salem, Oregon

CGT Project Number G1404007

Prepared for

Olsen Design & Development
Attn: Mr. Eric Olsen
170 West Main Street
Monmouth, Oregon 97361

May 23, 2014

Carlson Geotechnical
A Division of Carlson Testing, Inc.
Phone: (503) 601-8250
Fax: (503) 601-8254

Bend Office (541) 330-9155
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CARLSON CGT GEOTECHNICAL

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Report of
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Salem, Oregon

CGT Project Number G1404007

Dear Mr. Olsen:

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our preliminary geotechnical investigation, infiltration testing, and geologic assessment for the proposed Fairview Subdivision project. The project site encompasses approximately 50-acres and is located northeast of the intersection of Pringle Creek Road SE and Battle Creek Road SE in Salem, Oregon. We performed our work in general accordance with CGT Proposal GP6205.R2, dated April 17, 2014. Written authorization for our services was provided on April 17, 2014.

We appreciate the opportunity to work with you on this project. Please contact us at 503.601.8250 if you have any questions regarding this report.

Respectfully Submitted,
CARLSON GEOTECHNICAL

REGISTERED PROFESSIONAL ENGINEER
70773PE
OREGON
Jan. 10, 2007
BRAD MICHAEL WILCOX
EXPIRES: 6/30/2014

Brad M. Wilcox, P.E., G.E.
Senior Geotechnical Engineer
bwilcox@carlsontesting.com

Jeff A. Jones, CEG
Project Engineering Geologist
jjones@carlsontesting.com

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ATTACHMENTS

1.0 INTRODUCTION

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our preliminary geotechnical investigation, infiltration testing, and geologic assessment for the proposed Fairview Subdivision project. The project site encompasses approximately 50-acres and is located northeast of the intersection of Pringle Creek Road SE and Battle Creek Road SE in Salem, Oregon, as shown on the attached Site Location, Figure 1.

1.1 Project Information

CGT developed our understanding of the planned project based on our correspondence with the project civil engineer, Westech Engineering (Westech), and review of a preliminary site (boundary) plan provided by Westech. We understand preliminary plans include developing the approximate 50-acre site into a residential subdivision. The locations of residential lots and new site roadways have not been defined at this time. Although no grading plans have been provided, we understand permanent grade changes will likely be relatively minimal, with cuts and fills limited to less than 5 feet in depth.

Storm water collected from new impervious surfaces at the site may be diverted into new storm water infiltration facilities. The type(s), location(s), and depth(s) of the infiltration facilities have not been determined at the time of this report. Design of the storm water facilities will rest with others. As part of preliminary planning, Westech requested twenty infiltration tests be performed at a maximum depth of 5 feet below existing site grades and spread relatively uniformly across the project site.

A geologic assessment is required for the project per provided correspondence with City of Salem.

1.2 Scope of Services

The purpose of our work was to explore subsurface conditions at the site in order to provide preliminary geotechnical engineering recommendations for design and construction of the proposed subdivision. In addition, our work included conducting infiltration tests at the site as requested by the project civil engineer. A geologic assessment was performed as required by the City of Salem. Our services are considered "preliminary" as layout and grading plans for the subdivision have not been developed. Our specific scope of services will include the following:

- Contact the Oregon Utilities Notification Center to mark the locations of public utilities at the site within a 15-foot radius of our planned exploration.
- Explore subsurface conditions at the site by excavating twenty test pits to depths up to about 10 feet below ground surface (bgs).
- Classify the soils encountered in the test pits in general accordance with ASTM D2488 (Visual-Manual Procedure).
- Perform twenty infiltration tests at the site (within the prepared test pits) at maximum depths of about 5 feet bgs in general accordance with the Encased Falling Head test method described in Section 4C.3(d) of the City of Salem Department of Public Works Administrative Rules Manual 109-001 (January 2014).
- Collect representative, disturbed samples of the soils encountered in the test pits in order to confirm our field classifications and perform laboratory testing.

- Perform laboratory testing on the soil samples obtained during site exploration to refine our field classifications.
- Provide preliminary geotechnical recommendations for site preparation and earthwork.
- Provide preliminary geotechnical engineering recommendations for design and construction of shallow spread foundations, floor slabs, and pavements.
- Provide preliminary recommendations for the Seismic Site Class, mapped maximum considered earthquake spectral response accelerations, and site seismic coefficients.
- Conduct a qualitative discussion of seismic hazards at the site, including liquefaction potential, slope instability, and surface rupture.
- Perform a geologic assessment of the project site in accordance with City of Salem Engineering Geology Report guidelines.
- Provide a written report summarizing the results of our investigation, infiltration testing, geologic assessment, and recommendations for the project.

2.0 SITE DESCRIPTION

2.1 Geologic Setting

A discussion of regional and local geology and seismic setting for the site is provided in the attached Appendix A.

2.2 Site Surface Conditions

The irregularly-shaped project site is bounded by Leslie Middle School and residential development to the north, a private roadway to the northeast, a grass field to the southeast, Battle Creek Road SE to the southwest, and Pringle Creek Road SE to the west. At the time of our field investigation, the majority of the project site was vacant of any structures and vegetated with grasses, brush (blackberry), and scattered coniferous trees. The northeast quadrant of the site contained several, abandoned, masonry buildings with appurtenant drive lanes. In terms of topography, the site was generally gently to moderately sloped to the north, with a total vertical relief of approximately 120 feet. Existing site features and topography are shown on the attached Site Plan, Figure 2. Photographs taken at the time of our field investigation are shown on the attached Site Photographs, Figure 3.

3.0 FIELD INVESTIGATION

3.1 Test Pits

CGT excavated twenty test pits (TP-1 through TP-20) at the site between April 29 and 30, 2014, to depths ranging from about 4 to 10 feet bgs. The test pits were excavated using a Bobcat E32, track-mounted excavator equipped with a 24-inch wide toothed bucket provided and operated by CGT. Upon completion of logging, the test pits were loosely backfilled with excavated materials.

The approximate locations of the test pits are shown on the attached Site Plan, Figure 2. The latitude and longitude for each test pit was determined using desktop GIS software and input into a handheld GPS receiver (Garmin GPSmap 60CSx) for use in locating in the field. The locations should be considered approximate within the accuracy of the GPS receiver, on average about 30 feet (+/-) as reported by the manufacturer.

3.2 Soil Classification & Sampling

A member of CGT's staff logged the soils observed within the test pits in general accordance with the Unified Soil Classification System (USCS) and collected representative disturbed (grab) samples of the materials encountered. An explanation of the USCS is presented on the attached Soil Classification Criteria and Terminology, Figure 4. Decomposed rock observed in the test pits was logged in accordance with the Oregon Department of Transportation (ODOT) Soil and Rock Classification Manual[1]. An explanation of rock classification is shown on the attached ODOT Rock Classification Criteria and Terminology, Figure 5. The soil and decomposed rock samples were stored in sealable plastic bags and transported to our laboratory for further examination and testing. Our geotechnical staff visually examined all samples returned to our laboratory in order to refine the field classifications. Logs of the test pits are presented on the attached Test Pit Logs, Figures 6 through 25. Surface elevations indicated on the logs were determined based on the provided topographic survey (reproduced and shown on the attached Figure 2). Elevations shown on the logs should be considered approximate.

3.3 Geologic Reconnaissance

CGT Project Engineering Geologist, Jeff Jones, CEG, performed a geologic reconnaissance of the project site on April 29, 2014. The results of the geologic reconnaissance and geologic assessment of the project site are presented in the attached Appendix A.

3.4 Infiltration Tests

CGT performed eighteen infiltration tests at the site within the prepared test pits on April 30, 2014. The complete results of the infiltration testing are presented in the attached Appendix B.

4.0 LABORATORY TESTING

Laboratory testing was performed on samples collected in the field to refine our initial field classifications and determine in-situ parameters. Laboratory testing included 34 moisture content determinations (ASTM D2216), five percentage passing the U.S. Standard No. 200 Sieve tests (ASTM C117), and five Atterberg limits (plasticity) tests (ASTM D4318). Results of the laboratory tests are shown on the attached Test Pit Logs, Figures 6 through 25.

5.0 SUBSURFACE CONDITIONS

5.1 Soils

The following table presents a "checklist" of the subsurface materials encountered in the test pit explorations. Adjacent to those units, the tabulation presents an indicator (X) whether that subsurface material was encountered within the depth explored in the subject test pit.

---

[1] Oregon Department of Transportation, 1987. Soil and Rock Classification Manual.

Table 1: Subsurface Material "Checklist"

Subsurface Material[1]	USCS	Test Pit Exploration																			
		TP-1	TP-2	TP-3	TP-4	TP-5	TP-6	TP-7	TP-8	TP-9	TP-10	TP-11	TP-12	TP-13	TP-14	TP-15	TP-16	TP-17	TP-18	TP-19	TP-20
Clay Topsoil	OL	X			X	X	X	X	X		X	X		X	X	X	X		X		
Undocumented Gravel Fill	GP-GC Fill, GW Fill			X														X			
Undocumented Lean Clay Fill	CL Fill									X											
Lean to Fat Clay	CL-CH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Gravel with clay	GC							X	X												
Decomposed Basalt	RX	X		X	X	X	X									X	X	X			X

[1]Descriptions of each subsurface material are described below.

The following paragraphs provide a summary of the subsurface materials encountered at the site.

<u>Clay Topsoil (OL):</u> Clay topsoil was encountered at the surface of the referenced test pits and extended to depths of about ½- to ¾-foot bgs. The clay topsoil was generally medium stiff, brown, moist, rooted, and exhibited low plasticity.

<u>Gravel Fill (GP-GC Fill, GW Fill):</u> Undocumented gravel fill was encountered at the surface of the referenced explorations and extended to depths of about 1 foot bgs. Undocumented fill refers to materials placed without (available) documentation of subgrade conditions or evaluation of compaction. In TP-3, the gravel fill was generally medium dense, gray, moist, angular, relatively well-graded, and fine-grained. In TP-17, the gravel fill was generally medium dense, brown, moist, round, fine- to coarse-grained, and contained some clay.

<u>Lean Clay Fill (CL Fill):</u> Undocumented lean clay fill was encountered at the surface of TP-9 and extended to a depth of about 4 feet bgs. The lean clay fill was generally stiff, dark brown, moist, exhibited medium plasticity, and contained some angular gravel up to about 3 inches in diameter. The upper ½-foot of this soil contained fine roots.

<u>Lean to Fat Clay (CL-CH):</u> Lean to fat clay was encountered below the clay topsoil and fill materials in the referenced test pits. This soil extended to the full depths explored in TP-2, TP-9 through TP-14, TP-18, and TP-19. This soil extended to depths ranging from about 3 to 6 feet bgs in the remaining test pits. This soil was generally medium stiff to hard, brown, moist to wet, exhibited medium plasticity, and contained no to some weathered rock fragments up to about 2 feet in diameter. In TP-2 and TP-19, the upper 1-foot of this layer contained roots. In-situ moisture content of this soil generally ranged from 23 to 35 percent.

<u>Gravel with clay (GC):</u> Gravel with clay was encountered below the lean to fat clay in the referenced test pits (TP-7 and TP-8) and extended to the full depths explored, about 10 feet bgs. The gravel was generally loose to medium dense, brown and gray, wet, round, and fine- to coarse-grained (up to 3 inches in diameter).

Decomposed Basalt (RX): Decomposed basalt was encountered below the lean to fat clay in the referenced test pits and extended to the full depths explored, up to about 10 feet bgs. In TP-3, TP-4, TP-19, and TP-20, practical refusal of the excavator (Bobcat E32) was encountered on this material due to hard digging conditions or presence of a large (boulder-sized) rock fragment. This material was generally very soft (R1), brown to orange-brown to black, and moist. In-situ moisture content of this material generally ranged from 29 to 47 percent.

5.2 Groundwater

Groundwater seepage was encountered at depths of about 4 to 9½ feet bgs in test pits TP-7 through TP-9. Groundwater was not encountered within the depths explored in the remaining test pits. To determine approximate regional groundwater levels in the area, we researched well logs available at the Oregon Water Resources Department (OWRD)[2] website for wells located within Section 11, Township 8 South, Range 3 West. Our review indicated that groundwater levels were highly variable and ranged from about 40 to 200 feet bgs in the vicinity of the site. It should be noted that groundwater levels vary with local topography. In addition, the groundwater levels reported on the OWRD logs often reflect the purpose of the well, so water well logs may only report deeper, confined groundwater, while geotechnical or environmental test pits will often report any groundwater encountered, including shallow, unconfined groundwater. Therefore, the levels reported on the OWRD well logs referenced above are considered generally indicative of local water levels and may not reflect actual groundwater levels at the project site. We anticipate groundwater levels at the site will fluctuate due to seasonal and annual variations in precipitation, changes in site utilization, or other factors. Additionally, the lean clay fill (CL Fill), native lean to fat clay (CL-CH), and decomposed basalt (RX) are conducive to formation of perched groundwater.

6.0 SEISMIC CONSIDERATIONS

6.1 Seismic Hazards

6.1.1 Liquefaction

In general, liquefaction occurs when deposits of loose/soft, saturated, cohesionless soils, generally sands and silts, are subjected to strong earthquake shaking. If these deposits cannot drain quickly enough, pore water pressures can increase, approaching the value of the overburden pressure. The shear strength of a cohesionless soil is directly proportional to the effective stress, which is equal to the difference between the overburden pressure and the pore water pressure. When the pore water pressure increases to the value of the overburden pressure, the shear strength of the soil approaches zero, and the soil can liquefy. The liquefied soils can undergo rapid consolidation or, if unconfined, can flow as a liquid. Structures supported by the liquefied soils can experience rapid, excessive settlement, shearing, or even catastrophic failure.

For fine-grained soils, susceptibility to liquefaction is evaluated based on penetration resistance and plasticity, among other characteristics. Criteria for identifying non-liquefiable, fine-grained soils are constantly evolving. Current practice[3] to identify non-liquefiable, fine-grained soils is based on plasticity

2 Oregon Water Resources Department, 2014. Water well logs obtained from OWRD website http://www.wrd.state.or.us/

3 Seed, R.B. et al., 2003. Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework. Earthquake Engineering Research Center Report No. EERC 2003-06.

characteristics of the soils, as follows: (1) liquid limit greater than 47 percent, (2) plasticity index greater than 20 percent, and (3) moisture content less than 85 percent of the liquid limit. Soils identified as susceptible to liquefaction are analyzed using the industry standard “simplified procedure”, originally published by Seed and Idriss[4] in 1971 and updated continually since that time. The susceptibility of sands, gravels, and sand-gravel mixtures to liquefaction is typically assessed based on penetration resistance, as measured using SPTs, CPTs, or Becker Hammer Penetration tests (BPTs).

Based on the lack of saturated conditions and medium plasticity, the soils encountered within test pits TP-1 through TP-6 and TP-10 through TP-20 are considered non-liquefiable within the depths explored. Based on its medium plasticity, the lean to fat clay encountered within test pits TP-7 through TP-9 is considered non-liquefiable within the depths explored. Based on its generally medium dense relative density, and review of hazard mapping (presented in the attached Appendix A), the native gravel with clay (GC) is considered to have a very low to negligible potential for liquefaction for a design-level seismic event.

6.1.2 Slope Instability

Opinions related to seismically-induced slope instability are presented in Section A.4.3.1 of the attached Appendix A.

6.1.3 Surface Rupture

6.1.3.1 Faulting

Although the site is situated in a region of the country with known active faults and historic seismic activity, no known faults exist on or immediately adjacent to the site. Therefore, the risk of surface rupture at the site due to faulting is considered low.

6.1.3.2 Lateral Spread

Surface rupture due to lateral spread can occur on sites underlain by liquefiable soils that are located on or immediately adjacent to slopes steeper than about 3 degrees (20H:1V), and/or adjacent to a free face, such as a stream bank or the shore of an open body of water. During lateral spread, the materials overlying the liquefied soils are subject to lateral movement downslope or toward the free face. Given the lack of liquefiable soils at the site, the risk of lateral spread is considered negligible.

6.2 Seismic Site Class

Based on the results of the explorations and review of geologic mapping, we have assigned the site as Site Class D for the subsurface conditions encountered in accordance with Table 1613.5.2 of the 2010 Oregon Structural Specialty Code (OSSC), referenced from Section R301.2.2.1.1 of the 2011 Oregon Residential Specialty Code (ORSC). Recommendations for seismic ground motion values at the site are presented in Section 10.3 of this report.

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[4] Seed, H.B., and Idriss, I.M., 1971, Simplified Procedure for Evaluating Soil Liquefaction Potential, Journal of Geotechnical Engineering Division, ASCE, 97(9), 1249-1273.

7.0 CONCLUSIONS

Based on the results of our field explorations and analyses, the site may be developed as described in Section 1.1 of this report, provided the recommendations presented in this report are incorporated into the design and development. Satisfactory subgrade support for planned shallow foundations, floor slabs, and pavements can be obtained from the native, medium stiff to better, lean to fat clay (CL-CH), the native, medium dense, gravel with clay (GP-GC), the decomposed basalt (RX), or structural fill that is properly placed and compacted on these materials during construction. These soils were first encountered at depths of about ½ to 1 foot bgs within the test pits.

Where encountered at design subgrade elevations for shallow foundations, floor slabs, pavements, or structural fills, existing fill materials (CL Fill, GP-GC Fill, and GW Fill) should be completely over-excavated and replaced with structural fill. These materials may be re-used as structural fill at the site, provided they are prepared in conformance with Section 8.4.1 of this report.

Due to their fine-grained nature, the near surface lean to fat clay (CL-CH) and decomposed basalt (RX) are susceptible to disturbance during wet weather. Trafficability of these soils may be difficult, and significant damage to the subgrade could occur, if earthwork is undertaken without proper precautions at times when the exposed soils are more than a few percentage points above optimum moisture content. In the event that construction occurs during wet weather, we recommend measures be implemented to protect the fine-grained subgrade in areas of repeated construction traffic and in foundation bearing areas. Geotechnical recommendations for wet weather construction are presented in Section 8.3 of this report. Re-use of these soils as structural fill during wet times of the year will require special consideration as discussed in Section 8.4.2 of this report.

8.0 RECOMMENDATIONS: SITE PREPARATION & EARTHWORK

The recommendations presented below are provided for general planning purposes and are subject to revision once layout and grading plans for the project are further developed. Our preliminary recommendations are based on the information provided to us, results of the field investigation, laboratory data, and professional judgment. CGT has observed only a small portion of the pertinent subsurface conditions. The recommendations are based on the assumptions that the subsurface conditions do not deviate appreciably from those found during the field investigation. CGT should be consulted for further recommendations if the design and/or location of the proposed development changes, or variations and/or undesirable geotechnical conditions are encountered during site development.

8.1 Site Preparation

8.1.1 Site Stripping

Surface vegetation, clay topsoil (OL), rooted soils, and undocumented fill (if encountered) should be removed from within, and for a 5-foot margin around, the planned structural fill, building pad, and pavement locations. Based on the results of the field explorations, stripping depths at the site are anticipated to range from about ½- to 1-foot bgs. In the area of TP-9, stripping depths are anticipated to be about 4 feet to remove the existing lean clay fill. These materials may be shallow or deeper away from the exploration locations. The geotechnical engineer or his representative should provide recommendations for actual stripping depths based on observations during site stripping. Stripped surface vegetation and rooted soils should be transported off-site for disposal, or stockpiled for later use in landscaped areas.

8.1.2 Grubbing

Grubbing of trees and shrubs (where slated for removal) should include the removal of the root mass and roots greater than ½-inch in diameter. Grubbed materials should be transported off-site for disposal. Root masses from moderate to large trees may extend greater than 3 feet bgs. Where root masses are removed, the resulting excavation should be properly backfilled with structural fill in conformance with Section 8.4 of this report.

8.1.3 Existing Utilities & Below-Grade Structures

All existing utilities at the site should be identified prior to excavation. Abandoned utility lines beneath new structures, pavements, and hardscaping features should be completely removed or grouted full. Soft, loose, or otherwise unsuitable soils encountered in utility trench excavations should be removed and replaced with structural fill as described in Section 8.4 of this report. No below-grade structures were encountered during our field investigation. If encountered, buried structures (i.e. footings, foundation walls, retaining walls, slabs-on-grade, tanks, etc.) encountered during site preparation should be completely removed and replaced with structural fill in conformance with Section 8.4 of this report.

8.1.4 Test Pits

The test pits conducted at the site were loosely backfilled during our field investigation. Where test pits are located within finalized structural fill, building, or pavement areas, the loose backfill materials should be re-excavated. The resulting excavations should be backfilled with structural fill placed and compacted in general accordance with Section 8.4 of this report.

8.1.5 Subgrade Preparation – Pavement Areas & Residential Lots to Receive Structural Fill

8.1.5.1 Dry Weather Construction
After site preparation as recommended above, but prior to placement of structural fill and/or base rock, the geotechnical engineer or his representative should observe a proof roll test of the exposed subgrade soils in order to identify areas of excessive yielding. Proof rolling of subgrade soils is typically conducted during dry weather conditions using a fully-loaded, 10- to 12-cubic-yard, tire-mounted, dump truck or equivalent weighted water truck. Areas that appear too soft and wet to support proof rolling equipment should be prepared in general accordance with the recommendations for wet weather construction presented in Section 8.3 of this report. If areas of soft soil or excessive yielding are identified, the affected material should be over-excavated to firm, stable subgrade, and replaced with imported granular structural fill in conformance with Section 8.4.3 of this report.

8.1.5.2 Wet Weather Construction
Preparation of residential lot and pavement subgrade soils during wet weather should be in conformance with Section 8.3 of this report. As indicated therein, increased base rock sections and a geotextile separation fabric may be required in wet conditions in order to support construction traffic and protect the

subgrade. Cement amendment may also be considered to help stabilize subgrade soils during wet weather.

8.1.6 Erosion Control

Erosion and sedimentation control measures should be employed in accordance with applicable City, County, and State regulations regarding erosion control.

8.2 Temporary Excavations

8.2.1 Overview

All excavations should be in accordance with applicable OSHA and state regulations. It is the contractor's responsibility to select the excavation methods, to monitor site excavations for safety, and to provide any shoring required to protect personnel and adjacent improvements. A "competent person", as defined by OR-OSHA, should be on-site during construction in accordance with regulations presented by OR-OSHA. CGT's current role on the project does not include review or oversight of excavation safety.

8.2.2 Dewatering

8.2.2.1 Site Areas near Test Pits TP-7 and TP-8
As indicated in Section 5.2 above, we encountered groundwater at depths of about 4 to 5 feet bgs in test pits TP-7 and TP-8, and a depth of about 9½ feet bgs in test pit TP-9. We anticipate dewatering of excavations within this area of the site will be required in order to maintain dry working conditions, particularly in the area of test pits TP-7 and TP-8. At those locations, the soils at depth are primarily gravelly with low fines content and are anticipated to have high rates of transmissivity. Therefore, we would expect moderate to rapid seepage to occur during excavation.

Pumping from sumps may be effective in removing groundwater within shallow or localized excavations in this area of the site. Pumping from multiple well points will likely be required for larger excavations. The sumps or wells should be installed to remove water to a depth of at least 2 feet below the lowest elevation of the excavation, and should be installed and put into operation prior to commencing excavation. The project civil engineer should determine the appropriate size, number, and location of sump pumps or wells, and also evaluate requirements for disposal of the resultant discharge.

In order to refine groundwater levels and estimate flow rates, piezometers or well points could be installed and drawdown tests could be performed prior to, or at the onset of, construction. At a minimum, prior to the start of significant excavations, we recommend test pits be excavated at the site to observe groundwater levels. The geotechnical engineer or his representative should be onsite to observe the excavation of the test pits. Additional recommendations for dewatering plans could be developed following seepage observations and/or drawdown tests.

8.2.2.2 Other Site Areas
Based on the results of the test pits, we do not anticipate that site excavations extending to depths less than 10 feet will require area-wide dewatering during construction. Temporary dewatering of utility trenches and other localized excavations may be required in the event perched groundwater is encountered. We anticipate pumping from sumps should be effective in removing perched groundwater

at the site. Disposal locations should be reviewed by the project civil engineer. If groundwater seepage is encountered on temporary cut slopes during construction, provisions may be required to collect and divert the water from the cut slope and reduce the potential of instability. The geotechnical engineer should be consulted in the event groundwater seepage emerges within cut slopes.

8.2.3 Utility Trenches

Temporary trench cuts should stand near vertical to depths of approximately 4 feet in the native soils encountered at the site. If seepage undermines the stability of the trench, or if caving of the sidewalls is observed during excavation, the sidewalls should be flattened or shored. Trench dewatering may be required to maintain dry working conditions, as discussed in Section 8.2.2 above. If groundwater is present at the base of utility excavations, we recommend placing trench stabilization material at the base of the excavations. Trench stabilization material should be in conformance with Section 8.4.5 of this report.

8.2.4 OSHA Soil Type

8.2.4.1 Lean Clay to Fat Clay (CL-CH)

Conventional earthmoving equipment in proper working condition should be capable of making cuts within this soil. For use in the planning and construction of temporary excavations at the site, an OSHA soil type “B” may be used for this soil.

8.2.4.1 Gravel with clay (GP-GC)

Conventional earthmoving equipment in proper working condition should be capable of making cuts within this material. For use in the planning and construction of temporary excavations at the site, an OSHA soil type “C” should be used for this material.

8.2.4.2 Decomposed Basalt (RX)

As indicated earlier, we encountered practical refusal of the excavating equipment (Bobcat E32 excavator with 2-foot-wide toothed bucket) during excavation of test pits TP-3, TP-4, TP-19, and TP-20, due to hard digging conditions or presence of a large (boulder-sized) rock fragment. Based on experience in the area, we anticipate larger excavating equipment in proper working condition should be capable of making cuts in the decomposed basalt. Although not anticipated, hydraulic hammering may be required for excavation and removal of lesser weathered basalt, if encountered in deeper site excavations. An OSHA soil type “A” may be used when considering temporary excavations into the decomposed basalt.

8.2.5 Excavations Near Foundations

Excavations near footings should <u>not</u> extend within a 1H:1V (horizontal:vertical) plane projected out and down from the outside, bottom edge of the footings. In the event that excavation needs to extend below the referenced plane, temporary shoring of the excavation and/or underpinning of the subject footing may be required. The geotechnical engineer should be consulted to review proposed excavation plans for this design case to provide specific recommendations.

8.3 Wet Weather Considerations

For planning purposes, the wet season should be considered to extend from late September to late June. It is our experience that dry weather working conditions should prevail between early July and the middle of September. Notwithstanding the above, soil conditions should be evaluated in the field by the geotechnical engineer or his representative at the initial stage of site preparation to determine whether the recommendations within this section should be incorporated into construction.

8.3.1 Overview

The near-surface, native lean clay to fat clay (CL-CH) and decomposed basalt (RX) are susceptible to disturbance during wet weather. Trafficability of these soils may be difficult, and significant damage to subgrade soils could occur, if earthwork is undertaken without proper precautions at times when the exposed soils are more than a few percentage points above optimum moisture content. For construction that occurs during wet weather, site preparation activities may need to be accomplished using track-mounted equipment, loading removed material onto trucks supported on granular haul roads, or other methods to limit soil disturbance. A geotechnical representative from CGT should evaluate the subgrade during excavation by probing rather than proof rolling. Soils that have been disturbed during site preparation activities, or soft or loose areas identified during probing, should be over-excavated to firm, stable subgrade, and replaced with imported granular structural fill.

8.3.2 Geotextile Separation Fabric

We recommend a geotextile separation fabric be placed to serve as a barrier between the prepared fine-grained subgrade and granular fill/base rock in areas of repeated or heavy construction traffic. The geotextile fabric should be in conformance with Section 02320 of the current Oregon Department of Transportation (ODOT) Standard Specification for Construction. In accordance with Table 02320-1 of ODOT specifications, the separation fabric should have minimum puncture strength (ASTM D4833) of 80 pounds and an apparent opening size (ASTM D4751) no larger than the U.S. Standard No. 30 sieve. Examples of products that currently meet these requirements include Propex Geotex 200ST and US Fabrics US200. Other products meeting the requirements presented by ODOT may be considered for separation geotextile fabric.

8.3.3 Granular Working Surfaces (Haul Roads & Staging Areas)

Haul roads subjected to repeated heavy, tire-mounted, construction traffic (e.g. dump trucks, concrete trucks, etc.) will require a minimum of 18 inches of imported granular material. For light staging areas, 12 inches of imported granular material should be sufficient. Additional granular material, geo-grid reinforcement, or cement amendment may be recommended based on site conditions and/or loading at the time of construction. The imported granular material should be in conformance with Section 8.4.3 of this report and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. The prepared subgrade should be covered with geotextile fabric prior to placement of the imported granular material. The imported granular material should be placed in a single lift (up to 24-inches deep) and compacted using a smooth-drum, non-vibratory roller until well-keyed.

8.3.4 Footing Subgrade Protection

A minimum of 3 inches of imported granular material is recommended to protect fine-grained footing subgrades from foot traffic during inclement weather. The imported granular material should be in conformance with Section 8.4.3 of this report, have less than 5 percent material passing the U.S. Standard No. 200 Sieve, and have a maximum particle size limited to 1-inch. The imported granular material should be placed in one lift over the prepared, undisturbed subgrade, and compacted using non-vibratory equipment until well keyed.

8.3.5 Cement Amendment

It is sometimes less costly to amend near-surface, moisture-sensitive, fine-grained soils with Portland cement than to remove and replace those soils with imported granular material. Successful use of soil cement amendment depends on use of correct techniques and equipment, soil moisture content, and the amount of cement added to the subgrade (mix design). We anticipate the native lean clay to fat clay (CL-CH) is conducive for cement amendment due to its medium plasticity and experience with similar soils. If cement amendment is considered for the project, the geotechnical engineer should be consulted to provide supplemental recommendations for testing (mix design), cement percentage, and other considerations. We recommend project scheduling allow for a minimum of 2 weeks to conduct the mix design and development of specific recommendations for construction.

8.4 Structural Fill

8.4.1 Overview

On-site or imported materials intended for use as structural fill at the site should be evaluated and accepted by the geotechnical engineer prior to placement. The geotechnical engineer or his representative should be contacted to evaluate compaction of structural fill as the material is being placed. Evaluation of compaction may take the form of in-place density tests, deflection (proof roll) tests, or other testing methods accepted by the geotechnical engineer. The following table presents recommended guidelines for frequency of density testing (where practical) of various fill designations.

Table 2: Recommended Guidelines for Frequency of Density Testing

Fill Designation	Recommended Frequency of Density Tests	
	Maximum Depth Interval	Area-Wide
General Structural Fill (Mass Grading)	Test every 2 vertical feet	At least one density test per 2,000 feet^2 of fill area
Utility Trench Backfill$^{\alpha}$	Test every 2 vertical feet	At least one density test per 50 feet of trench line
Pavement Base Rock$^{\alpha}$	Test at surface of section	At least one density test per 2,000 feet^2 of base rock area
Floor Slab Base Rock	Test at surface of section	At least one density test per 1,000 feet^2 of base rock area

$^{\alpha}$Testing frequency within the public right-of-way should be in conformance with the local jurisdiction requirements.

8.4.2 On-Site Soils – General Use

8.4.2.1 Lean to Fat Clay (CL-CH), Lean Clay Fill (CL Fill)

Re-use of these soils as structural fill may be difficult because these soils are sensitive to small changes in moisture content and are difficult, if not impossible, to adequately compact during wet weather. We anticipate the moisture content of these soils will be higher than the optimum moisture content for satisfactory compaction. Therefore, moisture conditioning (drying) should be expected in order to achieve adequate compaction. If used as structural fill, these soils should be free of organic matter, debris, and particles larger than 4 inches. When used as structural fill, these soils should be placed in lifts with a maximum thickness of about 8 inches at moisture contents within –1 and +3 percent of optimum, and compacted to not less than 92 percent of the material's maximum dry density, as determined in general accordance with ASTM D1557 (Modified Proctor).

8.4.2.2 Decomposed Basalt

Re-use of this material as structural fill may be difficult because this material often "breaks down" into soils exhibiting relatively high fines content. Soils with high fines content, such as those discussed in Section 8.4.2.1, are sensitive to small changes in moisture content and are difficult, if not impossible, to adequately compact during wet weather. We anticipate the moisture content of this material will be higher than the optimum moisture content for satisfactory compaction. Therefore, moisture conditioning (drying) should be expected in order to achieve adequate compaction.

In cases where moderate to large sized, powered compaction equipment (e.g. sheepsfoot roller, smooth drum roller, vibratory hoe-pack compactor) is intended for compaction of this material, we do not anticipate processing (such as crushing or blending with imported material) will be required to render the material in a condition suitable for use as structural fill. This judgment is based on experience with similar materials in the region and expectation that gravel- and cobble-sized fragments (if present) will "break down" to resemble a silty, clayey, gravelly matrix during normal compaction operations. Although not anticipated, in the event particles in excess of 4 inches in diameter remain within the fill material following application of normal compaction effort, we recommend those particles be processed ("picked free") from the fill material. The geotechnical engineer or his representative should be contacted to observe conditions of each lift of fill material following application of compaction effort.

In cases where limited access and/or other factors preclude the use of moderate to large sized, powered compaction equipment, and cobble-sized (or possibly boulder-sized) fragments exist within the material, we anticipate processing will be required to render the material in a condition suitable for use as structural fill. We recommend the geotechnical engineer be consulted to review the proposed application of the material and intended equipment in order to provide specific recommendations.

When used as structural fill, this soil should be placed in lifts with a maximum thickness of about 12 inches at moisture contents within –1 and +3 percent of optimum, and compacted to not less than 95 percent of the material's maximum dry density as determined in accordance with ASTM D1557 (Standard Proctor). Where the material contains a high concentration of over-sized particles, thereby precluding conventional density testing, evaluation of relative compaction should be performed by deflection (proof roll) testing in accordance with ODOT Test Method TM 158.

8.4.2.1 Gravel Fill (GP-GC Fill, GW Fill), Native Gravel with clay (GP-GC)

Re-use of these materials as structural fill is feasible, provided they can be kept free of debris, deleterious materials, and particles larger than 4 inches in diameter. If used as structural fill, this material should be prepared in conformance with Section 8.4.3 of this report.

If the on-site soils cannot be properly moisture-conditioned and/or processed, we recommend using imported granular material for structural fill.

8.4.3 Imported Granular Structural Fill – General Use

Imported granular structural fill should consist of angular pit or quarry run rock, crushed rock, or crushed gravel that is fairly well graded between coarse and fine particle sizes. The granular fill should contain no organic matter, debris, or particles larger than 4 inches, and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. For fine-grading purposes, the maximum particle size should be limited to 1½ inches. The percentage of fines can be increased to 12 percent of the material passing the U.S. Standard No. 200 Sieve if placed during dry weather, and provided the fill material is moisture-conditioned, as necessary, for proper compaction. Granular fill material should be placed in lifts with a maximum thickness of about 12 inches, and compacted to not less than 95 percent of the material's maximum dry density, as determined in general accordance with ASTM D1557 (Modified Proctor). Proper moisture conditioning and the use of vibratory equipment will facilitate compaction of this material.

Compaction of granular fill materials with high percentages of particle sizes in excess of 1½-inches should be evaluated by periodic proof-roll observation or continuous observation by the CGT geotechnical representative during fill placement, since it cannot be tested conventionally using a nuclear densometer. Such materials should be "capped" with a minimum of 12 inches of 1½-inch-minus (or finer) granular fill under all structural elements (footings, concrete slabs, etc.).

8.4.4 Floor Slab Base Rock

Floor slab base rock should consist of well-graded granular material (crushed rock) containing no organic matter or debris, have a maximum particle size of ¾-inch, and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. Floor slab base rock should be placed in one lift and compacted to not less than 95 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor).

8.4.5 Trench Base Stabilization Material

If groundwater is present at the base of utility excavations, trench base stabilization material should be placed. Trench base stabilization material should consist of a minimum of 1-foot of well-graded granular material with a maximum particle size of 4 inches and less than 5 percent material passing the U.S. Standard No. 4 Sieve. The material should be free of organic matter and other deleterious material, placed in one lift, and compacted until well-keyed.

8.4.6 Trench Backfill Material

Trench backfill for the utility pipe base and pipe zone should consist of granular material as recommended by the utility pipe manufacturer. Trench backfill above the pipe zone should consist of well-graded granular material containing no organic matter or debris, have a maximum particle size of ¾-inch, and have less than 8 percent material passing the U.S. Standard No. 200 Sieve. As a guideline, trench backfill should be placed in maximum 12-inch-thick lifts. The earthwork contractor may elect to use alternative lift thicknesses based on their experience with specific equipment and fill material conditions during construction in order to achieve the required compaction. The following table presents recommended relative compaction percentages for utility trench backfill.

Table 3: Utility Trench Backfill Compaction Recommendations

Backfill Zone	Recommended Minimum Relative Compaction	
	Structural Areas[1]	Landscaping Areas
Pipe Base and Within Pipe Zone	90% ASTM D1557 or pipe manufacturer's recommendation	88% ASTM D1557 or pipe manufacturer's recommendation
Above Pipe Zone	92% ASTM D1557	90% ASTM D1557
Within 3 Feet of Design Subgrade	95% ASTM D1557	90% ASTM D1557

[1]Includes proposed structural fill areas, buildings, pavements, hardscaping, etc.

8.4.7 Controlled Low-Strength Material (CLSM)

CLSM is a self-compacting, cementitious material that is typically considered when backfilling localized areas. CLSM is sometimes referred to as "controlled density fill" or CDF. Due to its flowable characteristics, CLSM typically can be placed in restricted-access excavations where placing and compacting fill is difficult. If chosen for use at this site, we recommend the CLSM be in conformance with Section 00442 of the most recent, State of Oregon, Standard Specifications for Highway Construction. The geotechnical engineer's representative should observe placement of the CLSM and obtain samples for compression testing in accordance with ASTM D4832. As a guideline, for each day's placement, two compressive strength specimens from the same CLSM sample should be tested. The results of the two individual compressive strength tests should be averaged to obtain the reported 28-day compressive strength.

8.5 Permanent Slopes

8.5.1 Overview

Permanent cut or fill slopes constructed at the site should be graded at 2H:1V or flatter. Constructed slopes should be overbuilt by a few feet depending on their size and gradient so that they can be properly compacted prior to being cut to final grade. The surface of all slopes should be protected from erosion by seeding, sodding, or other acceptable means. Adjacent on-site and off-site structures should be located at least 5 feet from the top of slopes.

8.5.2 Placement of Fill on Slopes

New fill should be placed and compacted against horizontal surfaces. Where slopes exceed 5H:1V (horizontal to vertical), the slopes should be keyed and benched prior to structural fill placement in general accordance with the attached Fill Slope Detail, Figure 26. If subdrains are needed on benches, subject to the review of the geotechnical engineer or his representative, they should be placed as shown on the attached Fill Slope Detail. In order to achieve well compacted slope faces, slopes should be overbuilt by a few feet and then trimmed back to proposed final grades. The geotechnical engineer or his representative should observe the benches, keyways, and associated subdrains, if needed, prior to placement of structural fill.

8.6 Additional Considerations

8.6.1 Drainage

Subsurface drains should be connected to the nearest storm drain, on-site stormwater infiltration facility (designed by others), or other suitable discharge point. Paved surfaces and ground near or adjacent to the residential buildings should be sloped to drain away from the buildings. Surface water from paved surfaces and open spaces should be collected and routed to a suitable discharge point. Surface water should not be directed onto site slopes or into foundation drains, if incorporated.

The relatively low infiltration rates observed during field testing (Appendix B) are anticipated to present challenges for design of stormwater infiltration systems at the site. Design of stormwater management plans will rest with others. If further site characterization and testing is required for design, CGT would be pleased to provide additional geotechnical services upon request.

8.6.2 Expansive Potential

The near surface soils consist of generally medium plasticity, lean to fat clay (CH). Based on experience, these soils are not considered to be susceptible to appreciable movements from changes in moisture content. Accordingly, no special considerations are required to mitigate expansive potential of the near surface soils at this site.

8.6.3 Freezing Weather Considerations

For construction that occurs during extended periods of sub-freezing temperatures, the following special provisions are recommended:

- Structural fill should not be placed over frozen ground.
- Frozen soil should not be placed as structural fill.
- Fine-grained soils should not be placed as structural fill during sub-freezing temperatures.

Identification of frozen soils at the site should be in accordance with ASTM D4083-01 “Standard Practice for Description of Frozen Soils (Visual-Manual Procedure)” or other approved method. The geotechnical engineer can aid the contractor with supplemental recommendations for earthwork that will take place during extended periods of sub-freezing weather, as required.

8.6.4 Below-Grade Tunnel Structures (if encountered)

Although not encountered during our investigation, anecdotally, we understand there may be below-grade tunnel structures near the existing buildings at the northeast portion of the site. Supplemental geotechnical investigation (geophysical surveys) could be performed to help refine the presence (or lack thereof) of tunnel structures at the site. If below-grade tunnel(s) are encountered during site preparation, the geotechnical engineer should be engaged to help develop plans for mitigation on a case-by-case basis. For preliminary planning and consideration, we have presented two options for the owner to consider in the case that tunnel structures are encountered at the site.

8.6.4.1 Option 1 – Remove & Replace with Structural Fill

This option would include demolishing and removing the below-grade tunnel structure in its entirety and backfilling the resulting excavation with structural fill in conformance with Section 8.3 of this report. The geotechnical engineer or his representative should observe finished excavation conditions following removal, prior to placement of structural backfill.

8.6.4.2 Option 2 – Infilling with CLSM

This option would include infilling the below-grade tunnel structure with CLSM in conformance with Section 8.4.7 of this report. If this approach is considered, the geotechnical engineer and civil engineer should be consulted to review the conditions of the tunnel structure and review the suitability of infilling with respect to improvements (e.g. utilities, foundations, etc.) planned in close proximity to the tunnel structure.

9.0 PRELIMINARY RECOMMENDATIONS: PAVEMENTS

9.1 Subgrade Preparation

Subject to review of the pavement designer, we recommend subgrade preparation of pavements be in conformance with Section 8.1.5 of this report. Pavement subgrade surfaces should be crowned (or sloped) for proper drainage in accordance with specifications provided by the project civil engineer.

9.2 Design Sections

Pavement section design was not included in this assignment. At the time this report was prepared, it was our understanding pavement design will rest with others. CGT would be pleased to provide geotechnical recommendations for design and construction of pavements at this project, upon request, for an additional fee.

10.0 PRELIMINARY RECOMMENDATIONS: STRUCTURAL DESIGN

10.1 Shallow Spread Foundations

10.1.1 Subgrade Preparation

Satisfactory subgrade support for shallow foundations associated with the planned residential buildings can be obtained from the native, medium stiff to better, lean to fat clay (CL-CH), the native decomposed basalt (RX), the native, medium dense, gravel with clay (GC), or structural fill that is properly placed and compacted on these materials during construction. The geotechnical engineer or his representative should be contacted to observe subgrade conditions prior to placement of forms, reinforcement steel, or structural fill (if required). If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with imported granular structural fill in conformance with Section 8.4.3 of this report. The maximum particle size of over-excavation backfill should be limited to 1½ inches. All granular pads for footings should be constructed a minimum of 6 inches wider on each side of the footing for every vertical foot of over-excavation.

10.1.2 Minimum Footing Width & Embedment

Minimum footing widths should be in conformance with the most recent, Oregon Residential Structural Code (ORSC). As a guideline, CGT recommends individual spread footings have a minimum width of 24 inches. For one-story, light-framed structures, we recommend continuous wall footings have a minimum width of 12 inches. Similarly, for two- and three-story, light-framed structures, we recommend continuous wall footings have a minimum width of 15 and 18 inches, respectively. All footings should be founded at least 18 inches below the lowest, permanent adjacent grade.

10.1.3 Foundation Setback from Descending Slopes

We recommend foundations include a minimum setback of 5 feet be maintained near descending site slopes. This distance should be measured between the face of the slope and the bottom, outside edge of the respective foundation. Organic topsoil and loose surface soils (if present) should not be included when determining this distance.

10.1.4 Bearing Pressure & Settlement

Footings founded as recommended above should be proportioned for a maximum allowable soil bearing pressure of 2,000 pounds per square foot (psf). This bearing pressure is a net bearing pressure, applies to the total of dead and long-term live loads, and may be increased by one-third when considering seismic or wind loads. For foundations founded as recommended above, total settlement of foundations is anticipated to be less than 1 inch. Differential settlements between adjacent columns and/or bearing walls should not exceed ½-inch.

10.1.5 Lateral Capacity

A maximum passive (equivalent fluid) earth pressure of 150 pounds per cubic foot (pcf) is recommended for design of footings confined by the native soils described above, or imported granular structural fill that is properly placed and compacted during construction. The recommended earth pressure was computed using a factor of safety of 1½, which is appropriate due to the amount of movement required to develop full passive resistance. In order to develop the above capacity, the following should be understood:

1. Concrete must be poured neat in excavations or the foundations must be backfilled with imported granular structural fill,
2. The adjacent grade must be level,
3. The static ground water level must remain below the base of the footings throughout the year.
4. Adjacent floor slabs, pavements, or the upper 12-inch-depth of adjacent, unpaved areas should not be considered when calculating passive resistance.

An ultimate coefficient of friction equal to 0.35 may be used when calculating resistance to sliding for footings founded on the native soils described above. An ultimate coefficient of friction equal to 0.45 may be used when calculating resistance to sliding for footings founded on a minimum of 6 inches of imported granular structural fill (crushed rock) that is properly placed and compacted during construction.

10.1.6 Subsurface Drainage

Recognizing the predominantly fine-grained nature of the site soils, placement of perimeter foundation drains is recommended at the base elevations of continuous wall footings on the outside of footings. Foundation drains should consist of a minimum 4-inch-diameter, perforated, HDPE (High Density Polyethylene) drainpipe wrapped with a non-woven geotextile filter fabric. The drains should be backfilled with a minimum of 2 cubic feet of open graded drain rock per lineal foot of pipe. The drain rock should be encased in a geotextile filter fabric in order to provide separation from the surrounding soils. Foundation drains should be positively sloped and should outlet to a suitable discharge point. The geotechnical engineer or his representative should be contacted to observe the drains prior to backfilling. Roof drains should not be tied into foundation drains.

10.2 Floor Slabs

10.2.1 Subgrade Preparation

Satisfactory subgrade support for floor slabs constructed on grade, supporting up to 150 psf area loading, can be obtained from the native, medium stiff to better, lean to fat clay (CL-CH), the native decomposed basalt (RX), the native, medium dense, gravel with clay (GC), or structural fill that is properly placed and compacted on these materials during construction. The geotechnical engineer or his representative should observe floor slab subgrade soils to evaluate surface consistencies. If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with imported granular structural fill as described in Section 8.4.3 of this report.

10.2.2 Crushed Rock Base

Concrete floor slabs should be supported on a minimum 6-inch-thick layer of crushed rock (base rock) in conformance with Section 8.4.4 of this report. For design cases where a vapor barrier or retarder is not placed below the slab, we recommend “choking” the surface of the base rock with fine sand just prior to concrete placement. Choking means the voids between the largest aggregate particles are filled with sand, but does not provide a layer of sand above the base rock. Choking the base rock surface reduces the lateral restraint on the bottom of the concrete during curing.

10.2.3 Design Considerations

For floor slabs constructed as recommended, a modulus of subgrade reaction of 100 pounds per cubic inch (pci) is recommended for the design of the floor slab. Floor slabs constructed as recommended will likely settle less than ½-inch. For general floor slab construction, slabs should be jointed around columns and walls to permit slabs and foundations to settle differentially.

10.2.4 Subgrade Moisture Considerations

Liquid moisture and moisture vapor should be expected at the subgrade surface. The recommended crushed rock base is anticipated to provide protection against liquid moisture. Where moisture vapor emission through the slab must be minimized, e.g. impervious floor coverings, storage of moisture sensitive materials directly on the slab surface, etc., a vapor retarding membrane or vapor barrier below the slab should be considered. Factors such as cost, special considerations for construction, floor coverings, and end use suggest that the decision regarding a vapor retarding membrane or vapor barrier be made by the architect and owner.

If a vapor retarder or vapor barrier is placed below the slab, its location should be based on current American Concrete Institute (ACI) guidelines, ACI 302 Guide for Concrete Floor and Slab Construction. In some cases, this indicates placement of concrete directly on the vapor retarder or barrier. Please note that the placement of concrete directly on impervious membranes increases the risk of plastic shrinkage cracking and slab curling in the concrete. Construction practices to reduce or eliminate such risk, as described in ACI 302, should be employed during concrete placement.

10.3 Seismic Design

As indicated in Section 6.2 of this report, the site was assigned as Site Class "D". Seismic ground motion values for the site were determined in accordance with Section R301.2.2 of the 2011 ORSC. Earthquake ground motion parameters for the site were obtained based on the United States Geological Survey (USGS) Seismic Design Values for Buildings - Ground Motion Parameter Calculator[5]. The site Latitude 44.896043° North and Longitude 123.021424° West were input as the site location. The following table shows the recommended seismic design parameters for the site.

Table 4: Seismic Ground Motion Values

Parameter		Value
Mapped Acceleration Parameters	Spectral Acceleration, 0.2 second (S_s)	0.856g
	Spectral Acceleration, 1.0 second (S_1)	0.420g
Coefficients (Site Class D)	Site Coefficient, 0.2 sec. (F_A)	1.158
	Site Coefficient, 1.0 sec. (F_V)	1.580
Adjusted MCE Spectral Response Parameters	MCE Spectral Acceleration, 0.2 sec. (S_{MS})	0.991g
	MCE Spectral Acceleration, 1.0 sec. (S_{M1})	0.663g
Design Spectral Response Accelerations	Design Spectral Acceleration, 0.2 seconds (S_{DS})	0.661g
	Design Spectral Acceleration, 1.0 second (S_{D1})	0.442g

11.0 RECOMMENDED ADDITIONAL SERVICES

11.1 Design Review

Geotechnical design review is of paramount importance. CGT recommends that the geotechnical design review take place prior to releasing bid packets to contractors.

11.2 Observation of Construction

Satisfactory earthwork, foundation, floor slab, and pavement performance depends to a large degree on the quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during subsurface explorations, and recognition of changed conditions often requires experience. We recommend that

[5] United States Geological Survey, 2014. Seismic Design Parameters determined using:, "U.S. Seismic Design Maps Web Application - Version 3.1.0," from the USGS website http://earthquake.usgs.gov.

qualified personnel visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those observed to date and anticipated in this report.

We recommend the geotechnical engineer or his representative attend a pre-construction meeting coordinated by the contractor and/or developer. The project geotechnical engineer or their representative should provide observations and/or testing of at least the following earthwork elements during construction:

- Stripping & Demolition of Existing Structures
- Subgrade Preparation for Structural Fills, Shallow Foundations, and Pavements
- Compaction of Structural Fill
- Compaction of Utility Trench Backfill
- Placement of Foundation Drains and Other Drains
- Compaction of Base Rock for Pavements
- Compaction of Asphaltic Concrete for Pavements.

It is imperative the owner and/or contractor request earthwork observations and testing at a frequency sufficient to allow the geotechnical engineer to provide a final letter of compliance for the earthwork activities.

12.0 LIMITATIONS

We have prepared this report for use by the owner/developer and other members of the design and construction team for the proposed development. The opinions and recommendations contained within this report are not intended to be, nor should they be construed as a warranty of subsurface conditions, but are forwarded to assist in the planning and design process.

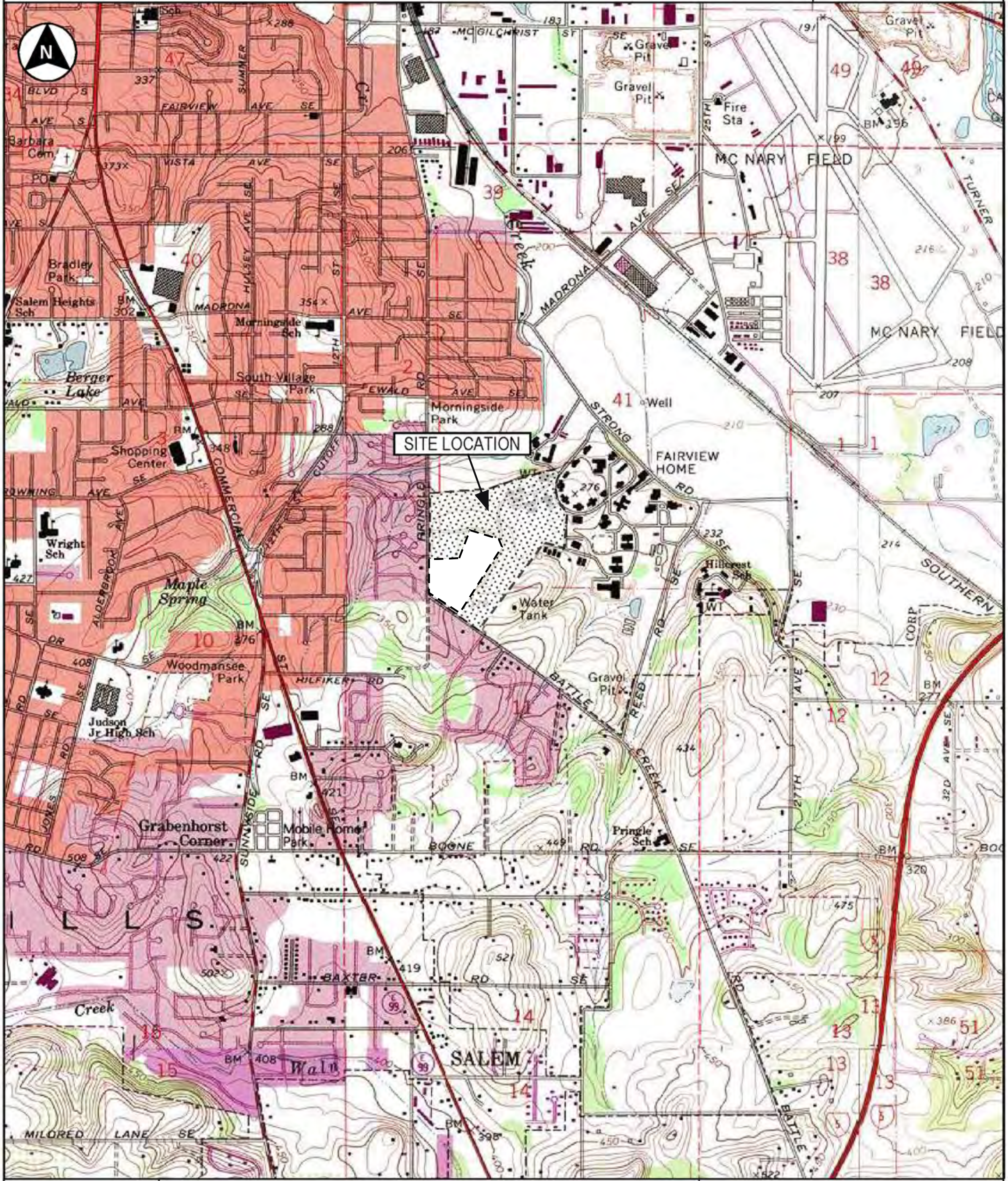
We have made observations based on our explorations that indicate the soil conditions at only those specific locations and only to the depths penetrated. These observations do not necessarily reflect soil types, strata thickness, or water level variations that may exist between or away from our explorations. If subsurface conditions vary from those encountered in our site explorations, CGT should be alerted to the change in conditions so that we may provide additional geotechnical recommendations, if necessary. Observation by experienced geotechnical personnel should be considered an integral part of the construction process.

The owner/developer is responsible for ensuring that the project designers and contractors implement our recommendations. When the design has been finalized, prior to releasing bid packets to contractors, we recommend that the design drawings and specifications be reviewed by our firm to see that our recommendations have been interpreted and implemented as intended. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification. Design review and construction phase testing and observation services are beyond the scope of our current assignment, but will be provided for an additional fee.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design.

Geotechnical engineering and the geologic sciences are characterized by a degree of uncertainty. Professional judgments presented in this report are based on our understanding of the proposed construction, familiarity with similar projects in the area, and on general experience. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared; no warranty, expressed or implied, is made. This report is subject to review and should not be relied upon after a period of three years

FAIRVIEW SUBDIVISION - SALEM, OREGON Job No. G1404007	FIGURE 1 Site Location



CARLSON CGT GEOTECHNICAL 503-601-8250	Map created with TOPO!™, © 2006 National Geographic Holdings USGS 7.5 Minute Topographic Map Series, Salem West, OR Quadrangle. Township 8 South, Range 3 West, Section 11 Willamette Meridian	Latitude 44.896043° N Longitude -123.021424° W Scale 1 Inch = 2,000 feet 0 2000 4000

FAIRVIEW SUBDIVISION - SALEM, OREGON
Job No. G1404007

FIGURE 2
Site Plan

LEGEND

TP-1/IT-1 Test pit exploration and infiltration test

1 Orientation of site photographs shown on Figure 3

Geologic cross section shown on Figure A5 of Appendix A

CARLSON CGT GEOTECHNICAL 503-601-8250

NOTES:
Base site plan provided by Westech Engineering. Drawing was reproduced and modified by CGT staff. All exploration and photograph locations should be considered approximate.

Approximate Scale: 1 Inch = 350 Feet

0 350 700

FAIRVIEW SUBDIVISION - SALEM, OREGON
Job No. G1404007

FIGURE 3

Site Photographs

CARLSON CGT GEOTECHNICAL 503-601-8250

See Figure 2 for approximate photograph locations and directions. Photographs were taken at the time of our fieldwork.

Classification of Terms and Content	USCS Grain Size		
NAME: MINOR Constituents (12-50%); MAJOR Constituents (>50%); Slightly (5-12%) Relative Density or Consistency Color Moisture Content Plasticity Trace Constituents (0-5%) Other: Grain Shape, Approximate Gradation, Organics, Cement, Structure, Odor... Geologic Name or Formation: Fill, Willamette Silt, Till, Alluvium, etc.	Fines		<#200 (.075 mm)
	Sand	Fine Medium Coarse	#200 - #40 (.425 mm) #40 - #10 (2 mm) #10 - #4 (4.75)
	Gravel	Fine Coarse	#4 - 0.75 inch 0.75 inch - 3 inches
	Cobbles		3 to 12 inches; scattered <15% est. numerous >15% est.
	Boulders		> 12 inches

Relative Density or Consistency

Granular Material		Fine-Grained (cohesive) Materials				
SPT N-Value	Density	SPT N-Value	Torvane tsf Shear Strength	Pocket Pen tsf Unconfined	Consistency	Manual Penetration Test
		<2	<0.13	<0.25	Very Soft	Thumb penetrates more than 1 inch
0 - 4	Very Loose	2 - 4	0.13 - 0.25	0.25 - 0.50	Soft	Thumb penetrates about 1 inch
4 - 10	Loose	4 - 8	0.25 - 0.50	0.50 - 1.00	Medium Stiff	Thumb penetrates about ¼ inch
10 - 30	Medium Dense	8 - 15	0.50 - 1.00	1.00 - 2.00	Stiff	Thumb penetrates less than ¼ inch
30 - 50	Dense	15 - 30	1.00 - 2.00	2.00 - 4.00	Very Stiff	Readily indented by thumbnail
>50	Very Dense	>30	>2.00	>4.00	Hard	Difficult to indent by thumbnail

Moisture Content

Dry: Absence of moisture, dusty, dry to the touch

Damp: Some moisture but leaves no moisture on hand

Moist: Leaves moisture on hand

Wet: Visible free water, likely from below water table

	Plasticity	Dry Strength	Dilatancy	Toughness
ML	Non to Low	Non to Low	Slow to Rapid	Low, can't roll
CL	Low to Medium	Medium to High	None to Slow	Medium
MH	Medium to High	Low to Medium	None to Slow	Low to Medium
CH	Medium to High	High to Very High	None	High

Structure

Stratified: Alternating layers of material or color >6 mm thick

Laminated: Alternating layers < 6 mm thick

Fissured: Breaks along definite fracture planes

Slickensided: Striated, polished, or glossy fracture planes

Blocky: Cohesive soil that can be broken down into small angular lumps which resist further breakdown

Lenses: Has small pockets of different soils, note thickness

Homogeneous: Same color and appearance throughout

Unified Soil Classification Chart (Visual-Manual Procedure) (Similar to ASTM Designation D-2487)

Major Divisions			Group Symbols	Typical Names
Coarse Grained Soils: More than 50% retained on No. 200 sieve	Gravels: 50% or more *retained* on the No. 4 sieve	Clean Gravels	GW	Well-graded gravels and gravel/sand mixtures, little or no fines
			GP	Poorly-graded gravels and gravel/sand mixtures, little or no fines
		Gravels with Fines	GM	Silty gravels, gravel/sand/silt mixtures
			GC	Clayey gravels, gravel/sand/clay mixtures
	Sands: More than 50% *passing* the No. 4 sieve	Clean Sands	SW	Well-graded sands and gravelly sands, little or no fines
			SP	Poorly-graded sands and gravelly sands, little or no fines
		Sands with Fines	SM	Silty sands, sand/silt mixtures
			SC	Clayey sands, sand/clay mixtures
Fine-Grained Soils: 50% or more Passes No. 200 Sieve	Silt and Clays Low Plasticity Fines		ML	Inorganic silts, rock flour, clayey silts
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
			OL	Organic silt and organic silty clays of low plasticity
	Silt and Clays High Plasticity Fines		MH	Inorganic silts, clayey silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
Highly Organic Soils			PT	Peat, muck, and other highly organic soils

Additional References:
ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes) and
ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)

Table 22: Scale of Relative Rock Weathering

Designation	Field Identification
Fresh	Crystals are bright. Discontinuities may show some minor surface staining. No discoloration in rock fabric.
Slightly Weathered	Rock mass is generally fresh. Discontinuities are stained and may contain clay. Some discoloration in rock fabric. Decomposition extends up to 1-inch into rock.
Moderately Weathered	Rock mass is decomposed 50% or less. Significant portions of rock show discoloration and weathering effects. Crystals are dull and show visible chemical alteration. Discontinuities are stained and may contain secondary mineral deposits.
Predominantly Weathered	Rock mass is more than 50% decomposed 50%. Rock can be excavated with geologist's pick. All discontinuities exhibit secondary mineralization. Complete discoloration of rock fabric. Surface of core is friable and usually pitted due to washing out of highly altered minerals by drilling water.
Decomposed	Rock mass is completely decomposed. Original rock fabric may be evident. May be reduced to soil with hand pressure.

Table 23: Scale of Relative Rock Hardness

Term	Hardness Designation	Field Identification	Approximate Unconfined Compressive Strength
Extremely Soft	R0	Can be indented with difficulty by thumbnail. May be moldable or friable with finger pressure.	<100 psi
Very Soft	R1	Crumbles under firm blows with point of geology pick. Can be peeled by pocket knife. Scratched with finger nail.	100-1000 psi
Soft	R2	Can be peeled by pocket knife with difficulty. Cannot be scratched with finger nail. Shallow indention made by firm blow of geology pick.	1000-4000 psi
Medium Hard	R3	Can be scratched by knife or pick. specimen can be fractured with a single firm blow of hammer/geology pick.	4000-8000 psi
Hard	R4	Can be scratched with knife or pick only with difficulty. Several hard blows required to fracture specimen.	8000-16000 psi
Very Hard	R5	Cannot be scratched by knife or sharp pick. Specimen requires many blows of hammer to fracture or chip. Hammer rebounds after impact.	>16000 psi

Table 24: Stratification Terms

Term	Characteristics
Laminations	Thin beds (<1cm).
Fissle	Tendency to break along laminations.
Parting	Tendency to break parallel to bedding, any scale.
Foliation	Non-depositional, e.g., segregation and layering of minerals in metamorphic rock.

Tables adapted from the 1987 Soil and Rock Classification Manual, Oregon Department of Transportation.

Carlson Geotechnical
7185 SW Sandburg Street, Suite 110
Tigard, Oregon 97223
Telephone: (503) 601-8250
Fax: (503) 601-8254

FIGURE 6

Test Pit TP-01

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 360 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	U.S.C.S.	MATERIAL DESCRIPTION	DEPTH (ft)
	OL	**CLAY TOPSOIL:** Medium stiff, brown, moist, exhibited low plasticity, and contained rootlets.	0.0
	CL-CH	**LEAN TO FAT CLAY:** Stiff to very stiff, brown, moist, and exhibited medium plasticity. {Residual Soils}	2.5
355	RX	**DECOMPOSED BASALT:** Very soft (R1), brown with black specks, and moist. Material excavated into 6 inches maximum dimension. {Basalt} Infiltration test (IT-1) performed in test pit at about 5 feet bgs. See text for test results. Orange-brown and black below about 5½ feet bgs.	5.0
			7.5
350			10.0

SAMPLE TYPE NUMBER	FINES CONTENT (%)
GRAB TP1-1	33
GRAB TP1-2	47

POCKET PEN. (tsf): 1.00, 1.50, 2.50, 3.00, 3.50, 4.00, 4.00, 4.00

Column headings: GROUNDWATER; RECOVERY % (RQD); BLOW COUNTS (N VALUE); POCKET PEN. (tsf); DRY UNIT WT. (pcf); ▲ SPT N VALUE ▲; PL — MC — LL; □ FINES CONTENT (%) □ 0 20 40 60 80 100

- Test pit terminated at about 10 feet bgs.
- No groundwater or caving observed within depth explored.
- Test pit loosely backfilled with cuttings upon completion.

CGT BOREHOLE - GRAPHIC LAB G1404007.GPJ GINT US.GDT 5/23/14

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7185 SW Sandburg Street, Suite 110
Tigard, Oregon 97223
Telephone: (503) 601-8250
Fax: (503) 601-8254

FIGURE 7

Test Pit TP-02

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 366 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ / PL — MC — LL / ☐ FINES CONTENT (%) ☐ (0 20 40 60 80 100)
365		CL-CH	**LEAN TO FAT CLAY:** Medium stiff to stiff, brown, moist, exhibited medium plasticity, with pieces of weathered rock (up to about 6 inches maximum dimension), isolated small boulders (up to about 18 inches maximum dimension) and roots up to ¼ inch diameter to about 1 foot bgs. {Residual Soils}		0.0				.50 .75 1.50 1.50		
			Stiff to very stiff, red, with no rock or boulders below about 2½ feet bgs.		2.5				1.75 2.50 3.00 3.00		
360			Infiltration test (IT-2) performed in test pit at about 5 feet bgs. See text for results. Red and tan below about 6 feet bgs.		5.0	GRAB TP2-1					MC 68
			With pieces of gray, vesicular, decomposed basalt below about 8 feet bgs.		7.5	GRAB TP2-2					MC 73
355			• Test pit terminated at about 10 feet bgs. • No groundwater or caving observed within depth explored. • Test pit loosely backfilled with cuttings upon completion.		10.0						

Carlson Geotechnical
7185 SW Sandburg Street, Suite 110
Tigard, Oregon 97223
Telephone: (503) 601-8250
Fax: (503) 601-8254

FIGURE 8

Test Pit TP-03

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 353 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	U.S.C.S.	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	PL–MC–LL / FINES CONTENT (%)
	GW-FILL	**GRAVEL FILL:** Medium dense, gray, moist, angular and relatively well graded. Resembled ¾-inch minus crushed rock. {Man-Made Fill}	0.0		
350	CL-CH	**LEAN TO FAT CLAY:** Stiff, brown, moist, medium plasticity, with subangular cobbles and isolated boulders (up to about 2 feet maximum dimension). Roots up to about 3 inches in diameter to about 3 feet bgs. {Residual Soils} Hard with black specks and pieces of very decomposed basalt below about 3 feet bgs. Infiltration test (IT-3) performed in test pit at about 3½ feet bgs. See text for results.	2.5		PL 27, LL 62
345	RX	**DECOMPOSED BASALT:** Very soft (R1), dark orange-brown with black specks, moist, vesicular. to about 10% volume. {Basalt}	5.0 7.5	GRAB TP3-1 GRAB TP3-2	MC 34

Other column headings (no entries): GRAPHIC LOG, GROUNDWATER, RECOVERY % (RQD), BLOW COUNTS (N VALUE), POCKET PEN. (tsf), DRY UNIT WT. (pcf), ▲ SPT N VALUE ▲ (0 20 40 60 80 100)

• Practical refusal met on decomposed basalt at about 8 feet bgs.
• No groundwater or caving observed within depth explored.
• Test pit loosely backfilled with cuttings upon completion.

Carlson Geotechnical
7185 SW Sandburg Street, Suite 110
Tigard, Oregon 97223
Telephone: (503) 601-8250
Fax: (503) 601-8254

FIGURE 9

Test Pit TP-04

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 347 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ / PL — MC — LL / ☐ FINES CONTENT (%) ☐ (0 20 40 60 80 100)
		OL	**CLAY TOPSOIL:** Medium stiff, brown, moist, exhibited low plasticity, and contained rootlets.		0.0						
345		CL-CH	**LEAN TO FAT CLAY:** Stiff, brown, moist, and exhibited medium plasticity. {Residual Soils}		2.5				1.00 1.50 1.50 2.25 2.25 3.00 3.25		
		RX	**DECOMPOSED BASALT:** Very soft (R1), dark brown with black rind, moist, breaks into pieces up to 4 inches maximum dimension. {Basalt}						3.25		
			Infiltration test (IT-4) performed in test pit at about 5 feet bgs. See text for results.		5.0	GRAB TP4-1					29
340					7.5	GRAB TP4-2					45

• Practical refusal of excavator met on decomposed basalt at about 8 feet bgs.
• No groundwater or caving observed within depth explored.
• Test pit loosely backfilled with cuttings upon completion.

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7185 SW Sandburg Street, Suite 110
Tigard, Oregon 97223
Telephone: (503) 601-8250
Fax: (503) 601-8254

FIGURE 10

Test Pit TP-05

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 300 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ / PL — MC — LL / ☐ FINES CONTENT (%) ☐ (0 20 40 60 80 100)
		OL	**CLAY TOPSOIL:** Medium stiff, brown, moist, exhibited low plasticity, and contained rootlets.		0.0						
		CL-CH	**LEAN TO FAT CLAY:** Stiff to very stiff, brown, moist, exhibited medium plasticity, with trace round gravel up to about 1 inch maximum dimension, and isolated cobbles. {Residual Soils}		2.5				.75 1.00 1.50 1.50 2.25		
295		RX	**DECOMPOSED BASALT:** Very soft (R1), dark brown with black rind, moist, breaks into pieces up to 4 inches maximum dimension. {Basalt}		5.0				2.00 3.50 3.50		
			Infiltration test (IT-5) performed in test pit at about 5 feet bgs. See text for results.			GRAB TP5-1					MC 29; fines ☐
			Dark red-brown with tan to black pieces of decomposed basalt below about 7 feet bgs.		7.5						
						GRAB TP5-2					MC 40
290					10.0						

- Test pit terminated at about 10 feet bgs.
- No groundwater or caving observed within depth explored.
- Test pit loosely backfilled with cuttings upon completion.

Carlson Geotechnical
7185 SW Sandburg Street, Suite 110
Tigard, Oregon 97223
Telephone: (503) 601-8250
Fax: (503) 601-8254

FIGURE 11

Test Pit TP-06

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 290 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	U.S.C.S.	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	POCKET PEN. (tsf)	MC (%)
	OL	**CLAY TOPSOIL:** Stiff, brown, moist, exhibited low plasticity, and contained rootlets.	0.0			
	CL-CH	**LEAN TO FAT CLAY:** Stiff to very stiff, brown, moist, and exhibited medium plasticity. {Residual Soils}			1.00, 1.50, 1.50, 2.00	
			2.5		2.00	
		With black specks below about 3 feet bgs.			2.75, 3.00, 3.50	
285		Infiltration test (IT-6) performed in test pit at about 5 feet bgs. See text for results.	5.0	GRAB TP6-1		32
	RX	**DECOMPOSED BASALT:** Very soft (R1), dark brown with black rind, moist, breaks into pieces up to 4 inches maximum dimension. {Basalt}				
			7.5	GRAB TP6-2		30
280			10.0			

Columns also shown: GRAPHIC LOG, GROUNDWATER, RECOVERY % (RQD), BLOW COUNTS (N VALUE), DRY UNIT WT. (pcf), ▲ SPT N VALUE ▲, PL — MC — LL, ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100

- Test pit terminated at about 10 feet bgs.
- No groundwater or caving observed within depth explored.
- Test pit loosely backfilled with cuttings upon completion.

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7185 SW Sandburg Street, Suite 110
Tigard, Oregon 97223
Telephone: (503) 601-8250
Fax: (503) 601-8254

FIGURE 12

Test Pit TP-07

PAGE 1 OF 1

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 270 ft
EXCAVATION METHOD Test Pit
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE 4.0 ft / Elev 266.0 ft
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
2hrs AFTER EXCAVATION 3.0 ft / Elev 267.0 ft

ELEVATION (ft)	U.S.C.S.	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	POCKET PEN. (tsf)	PL / MC / LL, FINES CONTENT (%)
	OL	**CLAY TOPSOIL:** Stiff, brown, moist to very moist, exhibited low plasticity, and contained rootlets.	0.0		.50	
	CL-CH	**LEAN TO FAT CLAY:** Stiff to very stiff, brown, moist, and exhibited medium plasticity. {Alluvium}			.50, 1.00, 1.00	
			2.5	GRAB TP7-1	1.25, 1.50	PL 24, LL 41
265		Wet below about 4 feet bgs.	5.0			
	GP-GC	**GRAVEL with clay:** Loose to medium dense, brown and gray, wet, round, and up to about 3 inches in diameter. {Alluvium}	7.5	GRAB TP7-2		MC 47
260			10.0			

- Test pit terminated at about 10 feet bgs.
- Groundwater observed at about 4 feet bgs during excavation of test pit.
- No caving observed within depth explored.
- Test pit loosely backfilled with cuttings upon completion.

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7185 SW Sandburg Street, Suite 110
Tigard, Oregon 97223
Telephone: (503) 601-8250
Fax: (503) 601-8254

FIGURE 13

Test Pit TP-08

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 260 ft
EXCAVATION METHOD Test Pit
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
▽ **SEEPAGE** 5.0 ft / Elev 255.0 ft
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
▼ **2hrs AFTER EXCAVATION** 3.0 ft / Elev 257.0 ft

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	SPT N VALUE / PL MC LL / FINES CONTENT (%) (0 20 40 60 80 100)
					0.0						
		OL	**CLAY TOPSOIL:** Stiff, brown, moist to very moist, exhibited low plasticity, and contained rootlets.						.50		
		CL-CH	**LEAN TO FAT CLAY:** Stiff to very stiff, brown, moist, and exhibited medium plasticity. {Alluvium}						.75		
									1.00		
									1.00		
					2.5				1.50		
				▼		GRAB TP8-1			1.50		MC 31; Fines ~100
									2.00		
									2.00		
255			Wet below about 5 feet bgs.	▽	5.0						
		GP-GC	**GRAVEL with clay:** Loose to medium dense, brown and gray, wet, round, and up to about 3 inches in diameter. {Alluvium}								
					7.5	GRAB TP8-2					MC 40
250					10.0						

• Test pit terminated at about 10 feet bgs.
• Groundwater observed at about 5 feet bgs during excavation of test pit.
• No caving observed within depth explored.
• Test pit loosely backfilled with cuttings upon completion.

Carlson Geotechnical
7185 SW Sandburg Street, Suite 110
Tigard, Oregon 97223
Telephone: (503) 601-8250
Fax: (503) 601-8254

FIGURE 14

Test Pit TP-09

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 272 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
.25hrs AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ / PL — MC — LL / ☐ FINES CONTENT (%) ☐ (0 20 40 60 80 100)
272		CL FILL	**LEAN CLAY FILL:** Stiff, dark brown, moist, exhibited medium plasticity, with some angular gravel (up to about 3 inches maximum dimension). Rootlets to about ½ foot bgs. {Man-Made Fill}		0.0				2.00, 2.50, 2.50, 2.00, 2.25		
270					2.5	GRAB TP9-1			2.50, 2.25		MC 26
		CL-CH	**LEAN TO FAT CLAY:** Very stiff, brown with some iron staining, moist, and exhibited medium plasticity. {Residual Soils}						2.75		
			Infiltration test (IT-7) performed in test pit at about 5 feet bgs. See text for results.		5.0						
265					7.5						
			Brown and wet below about 8½ feet bgs.	▼							
					10.0	GRAB TP9-2					MC 32
260			• Test pit terminated at about 10 feet bgs. • Groundwater observed within test pit at about 9½ feet bgs. • No caving observed within depth explored. • Test pit loosely backfilled with cuttings upon completion.								

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7185 SW Sandburg Street, Suite 110
Tigard, Oregon 97223
Telephone: (503) 601-8250
Fax: (503) 601-8254

FIGURE 15

Test Pit TP-10

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR

DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 270 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ / PL — MC — LL / ☐ FINES CONTENT (%) ☐ (0 20 40 60 80 100)
		OL	**CLAY TOPSOIL:** Stiff, brown, moist, exhibited low plasticity, and contained rootlets.		0.0						
		CL-CH	**LEAN TO FAT CLAY:** Very stiff, brown, moist to very moist, and exhibited medium plasticity. {Residual Soils}						.75		
									1.50		
									1.50		
									2.00		
					2.5				2.00		
									2.50		
									2.50		
						GRAB TP10-1			3.50		29
265			Infiltration test (IT-8) performed in test pit at about 5 feet bgs. See text for results.		5.0						
			Within eastern half of the test pit, lean clay was gray-brown, very moist, and soft below about 6 feet bgs.								
					7.5						
260					10.0	GRAB TP10-2					25

• Test pit terminated at about 10 feet bgs.
• No groundwater or caving observed within depth explored.
• Test pit loosely backfilled with cuttings upon completion.

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FIGURE 16

Test Pit TP-11

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PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 266 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	U.S.C.S.	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	POCKET PEN. (tsf)	MC (%)
	OL	**CLAY TOPSOIL:** Stiff, brown, moist, exhibited low plasticity, and contained rootlets.	0.0			
265	CL-CH	**LEAN TO FAT CLAY:** Stiff to very stiff, brown, moist, and exhibited medium plasticity. {Residual Soils}			1.00, 1.50, 1.50, 2.00	
			2.5	GRAB TP11-1	2.50, 2.50, 3.50, 3.50	29
260		Soft and with trace black specks, below about 5 feet bgs. Infiltration test (IT-9) performed in test pit at about 5 feet bgs. See text for results.	5.0			
			7.5	GRAB TP11-2		33
255			10.0			

Column headings also include GROUNDWATER, GRAPHIC LOG, RECOVERY % (RQD), BLOW COUNTS (N VALUE), DRY UNIT WT. (pcf), ▲ SPT N VALUE ▲, PL — MC — LL, ☐ FINES CONTENT (%) ☐ (0 20 40 60 80 100).

• Test pit terminated at about 10 feet bgs.
• No groundwater or caving observed within depth explored.
• Test pit loosely backfilled with cuttings upon completion.

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FIGURE 17

Test Pit TP-12

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 250 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ / PL — MC — LL / □ FINES CONTENT (%) □ (0 20 40 60 80 100)
			LEAN TO FAT CLAY: Medium stiff to stiff, brown, moist, exhibited medium plasticity, with roots up to about 3 inches in diameter to about 1 foot bgs. {Residual Soil}		0.0				.50		
									.75		
									1.50		
									1.50		
			Very stiff below about 2½ feet bgs.		2.5				2.25		
									2.50		
									3.00		
			Gray-brown below about 4 feet bgs.						3.00		
245		CL-CH	Infiltration test (IT-10) performed in test pit at about 5 feet bgs. See text for results.		5.0	GRAB TP12-1					PL 23, LL 48
					7.5	GRAB TP12-2					MC 31
			Hard below about 8 feet bgs.								
240					10.0						

- Test pit terminated at about 10 feet bgs.
- No groundwater or caving observed within depth explored.
- Test pit loosely backfilled with cuttings upon completion.

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Fax: (503) 601-8254

FIGURE 18

Test Pit TP-13

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 275 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ / PL —●— LL MC / ☐ FINES CONTENT (%) ☐ (0 20 40 60 80 100)
		OL	**CLAY TOPSOIL:** Stiff, brown, moist, exhibited low plasticity, with roots up to ¼ inch in diameter to about 1 foot bgs.		0.0				.50		
		CL-CH	**LEAN TO FAT CLAY:** Stiff to very stiff, brown, moist, and exhibited medium plasticity. {Residual Soils}						.50		
									1.00		
									1.25		
					2.5				2.00		
									2.00		
									2.50		
									3.00		
270			Infiltration test (IT-11) performed in test pit at about 5 feet bgs. See text for results.		5.0	GRAB TP13-1					MC 30; ☐
			Dark red-brown, very moist, and breaks into subrounded pieces up to about 4 inches maximum dimension below about 7 feet bgs.		7.5	GRAB TP13-2					MC 34
265					10.0						

- Test pit terminated at about 10 feet bgs.
- No groundwater or caving observed within depth explored.
- Test pit loosely backfilled with cuttings upon completion.

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FIGURE 19

Test Pit TP-14

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR

DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 296 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ / PL ● MC LL / ☐ FINES CONTENT (%) ☐ (0 20 40 60 80 100)
		OL	**CLAY TOPSOIL:** Medium stiff, brown, moist, exhibited low plasticity, and contained rootlets.		0.0				.75		
295		CL-CH	**LEAN TO FAT CLAY:** Stiff to very stiff, brown, moist, and exhibited medium plasticity. {Residual Soils}						1.00		
									1.00		
									1.50		
					2.5				1.50		
									2.00		
									3.00		
			With trace black specks and breaks into subangular pieces below about 4 feet bgs.			GRAB TP14-1			4.00		PL 25, LL 59
			Infiltration test (IT-12) performed in test pit at about 4 feet bgs. See text for results.		5.0						
290			Isolated boulders (up to about 18 inches maximum dimension) at about 6 feet bgs.								
					7.5	GRAB TP14-2					MC 32
			With pieces of decomposed basalt below about 8 feet bgs.								
					10.0						
285			• Test pit terminated at about 10 feet bgs. • No groundwater or caving observed within depth explored. • Test pit loosely backfilled with cuttings upon completion.								

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FIGURE 20

Test Pit TP-15

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 257 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ / PL — MC — LL / ☐ FINES CONTENT (%) ☐ (0 20 40 60 80 100)
		OL	**CLAY TOPSOIL:** Medium stiff, brown, moist, exhibited low plasticity, and contained rootlets.		0.0				.75		
255		CL-CH	**LEAN TO FAT CLAY:** Stiff to very stiff, orange-brown, moist, and exhibited medium plasticity. {Residual Soils}		2.5				1.50 1.75 1.75 2.25 2.50 3.00		
250		RX	**DECOMPOSED BASALT:** Very soft (R1), dark brown with black rind, moist, breaks into pieces up to 4 inches maximum dimension. {Basalt} Infiltration test (IT-13) performed in test pit at about 4 feet bgs. See text for results. Red-brown with pieces of decomposed basalt below about 6 feet bgs.		5.0 7.5 10.0	GRAB TP15-1 GRAB TP15-2			4.00		● 30 ● 34
245											

• Test pit terminated at about 10 feet bgs.
• No groundwater or caving observed within depth explored.
• Test pit loosely backfilled with cuttings upon completion.

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FIGURE 21

Test Pit TP-16

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 260 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	U.S.C.S.	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	POCKET PEN. (tsf)	MC (%)
	OL	**CLAY TOPSOIL:** Medium stiff, brown, moist, exhibited low plasticity, and contained rootlets.	0.0		.50	
	CL-CH	**LEAN TO FAT CLAY:** Medium stiff, brown, moist, and exhibited medium plasticity. Isolated roots up to ¼ inch in diameter to about 2 feet bgs. {Residual Soils} Stiff to very stiff below about 1½ feet bgs.	2.5		.50, 1.50, 1.00, 1.50, 2.00, 2.00, 2.50	
255	RX	**DECOMPOSED BASALT:** Very soft (R1), dark red brown with black rind, moist, breaks into pieces up to 4 inches maximum dimension. {Basalt} Infiltration test (IT-14) performed in test pit at about 5 feet bgs. See text for results.	5.0	GRAB TP16-1		33
			7.5			
250			10.0	GRAB TP16-2		34

Other columns: GRAPHIC LOG, GROUNDWATER, RECOVERY % (RQD), BLOW COUNTS (N VALUE), DRY UNIT WT. (pcf), ▲ SPT N VALUE ▲, PL — MC — LL, ☐ FINES CONTENT (%) ☐ (0 20 40 60 80 100)

• Test pit terminated at about 10 feet bgs.
• No groundwater or caving observed within depth explored.
• Test pit loosely backfilled with cuttings upon completion.

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FIGURE 22

Test Pit TP-17

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 304 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ / PL ● MC LL / □ FINES CONTENT (%) □ (0 20 40 60 80 100)
		GP-GC FILL	**GRAVEL FILL:** Medium dense, brown, moist, large, round, up to about 2 inches maximum dimension, with some clay. {Man-Made Fill}		0.0						
		CL-CH	**LEAN TO FAT CLAY:** Stiff to very stiff, brown, moist, and exhibited medium plasticity. {Residual Soils}						1.50 1.50		
					2.5				2.25 3.00 3.00		
300			Infiltration test (IT-15) performed in test pit at about 3½ feet bgs. See text for results. With trace black specks below about 4 feet bgs.			GRAB TP17-1			4.00		MC 35; fines □
		RX	**DECOMPOSED BASALT:** Very soft (R1), brown and moist, breaks into pieces up to 6 inches maximum dimension. {Basalt}		5.0						
					7.5	GRAB TP17-2					MC 38
295					10.0						

• Test pit terminated at about 10 feet bgs.
• No groundwater or caving observed within depth explored.
• Test pit loosely backfilled with cuttings upon completion.

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FIGURE 23

Test Pit TP-18

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 319 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ / PL — MC — LL / ☐ FINES CONTENT (%) ☐ (0 20 40 60 80 100)
		OL	**CLAY TOPSOIL:** Medium stiff, brown, moist, exhibited low plasticity, and contained rootlets.		0.0				.75		
		CL-CH	**LEAN TO FAT CLAY:** Stiff to very stiff, dark red-brown, moist, and exhibited medium plasticity. {Residual Soils}						1.00		
									1.00		
			With pieces of decomposed basalt, breaks into subangular pieces up to about 3 inches maximum dimension below about 2 feet bgs.						1.50		
					2.5				3.00		
									3.75		
									3.75		
315			Infiltration test (IT-16) performed in test pit at about 4 feet bgs. See text for results.			GRAB TP18-1			4.00		28
					5.0						
					7.5						
						GRAB TP18-2					
310											23
					10.0						

• Test pit terminated at about 10 feet bgs.
• No groundwater or caving observed within depth explored.
• Test pit loosely backfilled with cuttings upon completion.

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FIGURE 24

Test Pit TP-19

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 320 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ / PL — MC — LL / ☐ FINES CONTENT (%) ☐ (0 20 40 60 80 100)
			LEAN TO FAT CLAY: Medium stiff, red-brown, moist, exhibited low plasticity, with cobbles and isolated small boulders (up to about 18 inches maximum dimension). Roots up to ¼ inch diameter to about 1 foot bgs. {Residual Soils}		0				.50		
					1				.75		
			Stiff to very stiff below about 1½ feet bgs.						1.00		
318		CL-CH			2				2.00		
									3.00		
			With black specks below about 3 feet bgs.		3				4.00		
			Infiltration test (IT-17) performed in test pit at about 3 feet bgs. See text for results.			GRAB TP19-1					MC 31
									4.00		
316					4				4.00		

• Practical refusal of excavator on large boulder at about 4 feet bgs.
• No groundwater or caving observed within depth explored.
• Test pit loosely backfilled with cuttings upon completion.

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FIGURE 25

Test Pit TP-20

CLIENT Olsen Design & Development
PROJECT NAME Fairview Subdivision
PROJECT NUMBER G1404007
PROJECT LOCATION Pringle Creek Rd & Battle Creek Rd - Salem, OR
DATE STARTED 4/29/14
ELEVATION DATUM Provided Topographic Plan (see figure 2)
EXCAVATION CONTRACTOR CGT
GROUND ELEVATION 302 ft
EXCAVATION METHOD Test Pit & Infiltration Test
GROUND WATER LEVELS:
LOGGED BY MDI **CHECKED BY** BMW
SEEPAGE ---
NOTES Bobcat E32 mini-excavator equipped with a 24-inch 'dig' bucket.
AFTER EXCAVATION ---

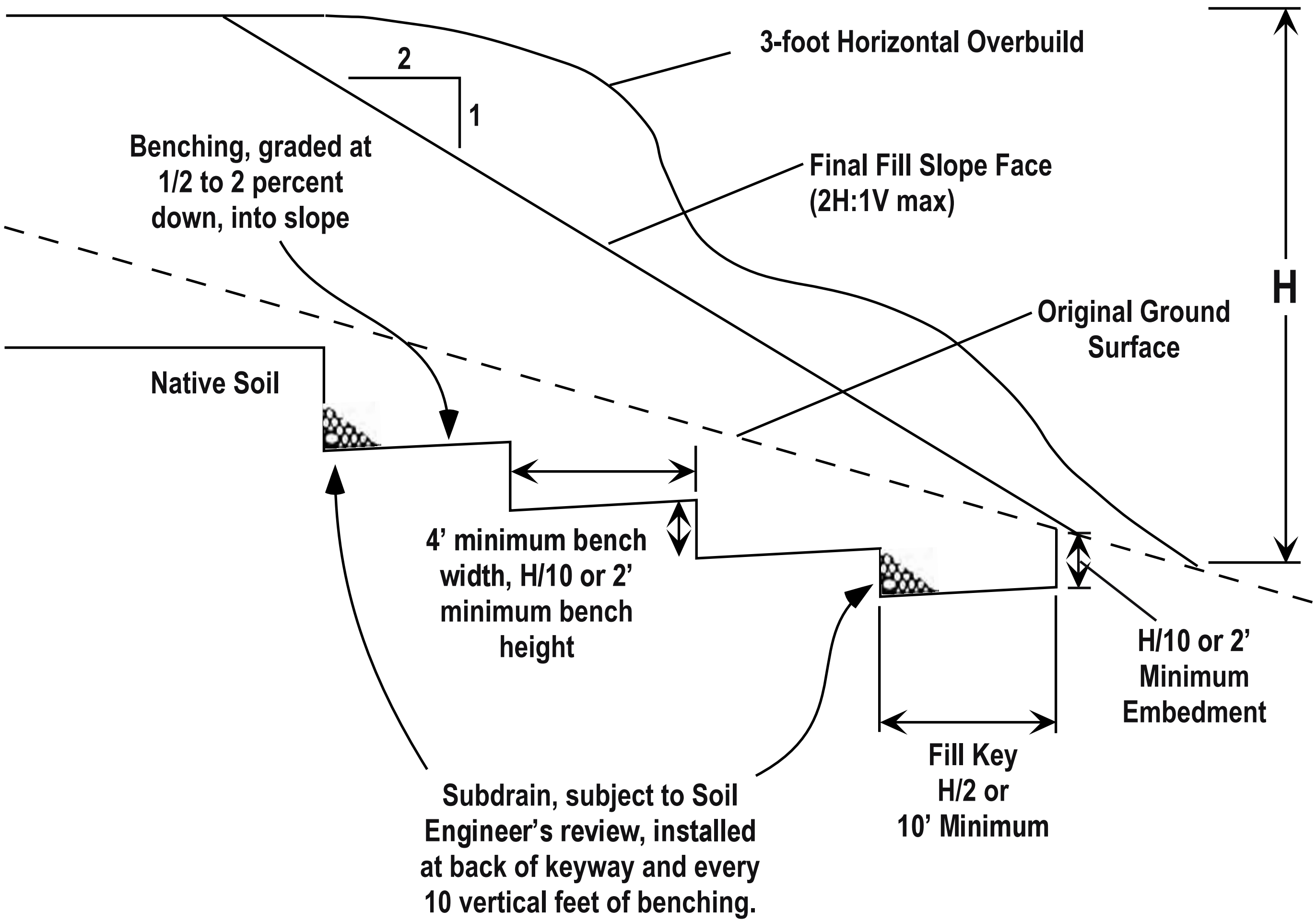
ELEVATION (ft)	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ / PL MC LL / ☐ FINES CONTENT (%) ☐
302 – 300	CL-CH	**LEAN TO FAT CLAY:** Stiff to very stiff, brown, very moist, exhibited medium plasticity, with trace large, subrounded gravel (up to about 3 inches maximum dimension), and isolated cobbles. {Residual Soils} Infiltration test (IT-18) performed in test pit at about 2 feet bgs. See text for results.		0.0 – 2.5	GRAB TP20-1			.50 1.00 1.00 1.50 2.50		PL 24, LL 44
299 – 294	RX	**DECOMPOSED BASALT:** Very soft (R1), orange-brown with black rind, moist, breaks into pieces up to 6 inches maximum dimension. {Basalt}		3.0 – 8.0 (5.0, 7.5)	GRAB TP20-2			4.00 4.00 4.00		MC 45

- Practical refusal of excavator on decomposed basalt at about 8 feet bgs.
- No groundwater or caving observed within depth explored.
- Test pit loosely backfilled with cuttings upon completion.

Elevation scale: 300, 295, 290. Depth scale: 0.0, 2.5, 5.0, 7.5, 10.0. Chart scale: 0, 20, 40, 60, 80, 100.

FIGURE 26

FILL SLOPE DETAIL



NOTE: Surfaces to receive fill with slopes steeper than 5H:1V (horizontal:vertical) should be benched and keyed as shown.

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Fax: (503) 601-8254

Bend Office	**(541) 330-9155**
Eugene Office	**(541) 345-0289**
Salem Office	**(503) 589-1252**
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Appendix A: Engineering Geology Report

Fairview Subdivision
Pringle Road SE & Battle Creek Road SE
Salem, Oregon

CGT Project No. G1404007

May 23, 2014

Prepared For:

Mr. Eric Olsen
Olsen Design & Development
170 West Main Street
Monmouth, Oregon 97361

Prepared By:

Carlson Geotechnical

CERTIFIED
OREGON
JEFFREY A. JONES
E2235
ENGINEERING GEOLOGIST
EXPIRES
12-31-14

CERTIFIED
OREGON
RYAN T. HOUSER
E1914
ENGINEERING GEOLOGIST
EXP
11/30/14

Jeff A. Jones, CEG
Project Engineering Geologist
jjones@carlsontesting.com

Ryan T. Houser, CEG
Senior Engineering Geologist
rhouser@carlsontesting.com

GEOLOGY

A.1.1.1 Regional Geology

The site is located in the central portion of the Willamette Valley physiographic province in Salem, Oregon. The Willamette Valley is a broad trough-like lowland defined by uplift and faulting of the Coast and Western Cascade Ranges to the west and east respectively. Approximately 35 million years ago, a large slab of oceanic crust and associated marine sediments accreted onto the margin of North America, which was located in a rough line from southwestern Oregon to the northeastern portion of the state. A portion of this accreted slab became the Willamette Valley, which was still covered by a shallow ocean. Additional accretion, faulting, and folding created the Coast Range to the west. This folding and faulting also raised the Willamette Valley out of the sea. Volcanic activity from the Cascade Range approximately 25 million years ago covered and filled in much of the southern and eastern portions of the early Willamette Valley[1].

Approximately 15 million years ago, Columbia River Basalts flowed down what is now the Columbia River Gorge as far west as the Oregon and Washington coast, and into the Willamette Valley as far south as Salem, Oregon. Uplift and faulting within the Willamette Basin formed the intra-valley highlands such as the Tualatin and Chehalem Mountains and the Amity, Eola, and Salem Hills. Infilling of the Willamette Valley continued from weathering of the adjacent hills and deposition of alluvium by the Willamette River and its tributaries throughout the valley. Catastrophic glacial floods later flowed into the Willamette Valley approximately 12,000 to 15,000 years ago and deposited fine to coarse-grained sedimentary assemblages (Pleistocene flood deposits) mapped on the eastern edge of the site[2,3,4].

A.1.1.2 Site Geology

According to the geologic map for the site and vicinity[5], excerpted on Figure A1, the site is underlain by Tertiary Columbia River Basalt (Tcr). Unit Tcr is characterized as medium-gray to black, fine-grained basalt with a maximum thickness of about 400 to 600 feet. Weathering of Tcr results in reddish-brown to grayish-brown, crumbly to medium dense basalt, with some exposures altered to red to brown clay (residual soil). The residual soil typically has low to moderate expansive potential.

The geologic map shows a narrow band of Quaternary higher terrace deposits (Qth) in the northeastern part of the site. Unit Qth is characterized as semiconsolidated sand, silt, and clay colluvium, slope wash, and alluvial fan deposits. Thickness of this unit is given as about 3 to 15 feet. On the subject site we anticipate that this material is underlain by Tcr described above.

---

1 Pacific Northwest Ecosystem Research Consortium, 2002. Willamette River Basin: trajectories of environmental and ecological change, Oregon State University Press.

2 Bela, James L., 1981, Geology of the Rickreall, Salem West, Monmouth, and Sidney 7½' Quadrangles, Marion, Polk, and Linn Counties, Oregon: Oregon Department of Geology and Mineral Industries Map GMS-18, 2 plates.

3 Orr, Elizabeth L., Orr, William N., and Baldwin, Ewart M., 1992, Geology of Oregon, Fourth Edition: Kendall/Hunt Publishing, pp. 203-222.

4 O'Connor, Jim E., et al., 2001, Origin, extent, and thickness of quaternary geologic units in the Willamette Valley, Oregon: US Geological Survey, Professional Paper 1620,52p, 1plate.

5 Beeson et. al., 2000, Geologic Map of the Salem East Quadrangle, Marion County, Oregon. USGS Open-File Report 00-351.

A.2.0 SEISMICITY

A.2.1 Earthquake Sources

A.2.1.1 Cascadia Subduction Zone

The Cascadia Subduction Zone (CSZ) is a 1,000-kilometer-long zone of active tectonic convergence where the oceanic crust of the Juan De Fuca Plate is subducting beneath the North American continental plate at a rate of about 3 to 4 centimeters per year[6]. The fault trace is located off of the Oregon Coast, approximately 180 kilometers west of the site. Two primary sources of seismicity are associated with the CSZ: the interface between the two plates, and faulting within the subducting plate. These sources are detailed below. The location of the CSZ and associated sources of seismicity are shown on the attached Figure A2.

A.2.1.1.1 Plate Interface Source

Very little seismicity has occurred on the plate interface in historic time, and as a result, the seismic potential of the CSZ is a subject of scientific controversy. The lack of seismicity may be interpreted as a period of quiescent stress buildup between large magnitude earthquakes, or characteristic of the long-term behavior of the subduction zone. A growing body of geologic evidence; however, strongly suggests that large prehistoric subduction zone earthquakes have occurred[7,8,9,10]. This evidence includes: (1) buried tidal marshes recording episodic, sudden subsidence along the coast of northern California, Oregon, and Washington; (2) burial of subsided tidal marshes by tsunami wave deposits; (3) paleoliquefaction features; and (4) geodetic uplift patterns on the Oregon Coast. Radiocarbon dates on buried tidal marshes indicate a recurrence interval for major subduction zone earthquakes of 250 to 650 years, with the last major event occurring 300 years ago[11,12,13,14,15]. The inferred seismogenic portion of the plate interface is roughly 10 to 25 kilometers deep, spanning a 75-kilometer wide area roughly centered on the Oregon coastline. The eastern margin of the plate interface seismogenic zone is approximately 80 kilometers west of the site.

A.2.1.1.2 Intra-Slab Source

The subducting Juan De Fuca (oceanic) Plate dips at an angle of 10 to 20 degrees as it descends beneath the North American plate. The curvature of the subducted plate increases as the advancing edge moves east, creating extensional forces within the plate. Normal faulting occurs in response to these extensional forces. This region of maximum curvature and faulting of the slab is where large intra-slab earthquakes are expected to occur, and is located at depths ranging from 30 to 60 kilometers[16]. The site is located within the inferred

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6 DeMets, C., Gordon, R.G., Argus, D.F., Stein, S., 1990. Current plate motions: Geophysical Journal International, v. 101, p. 425-478.
7 Geomatrix Consultants, 1995. *Ibid*.
8 Atwater, B.F., 1992. Geologic evidence for earthquakes during the past 2,000 years along the Copalis River, southern coastal Washington: Journal of Geophysical Research, v. 97, p. 1901-1919.
9 Carver, G., 1992. Late Cenozoic tectonics of coastal northern California: American Association of Petroleum Geologists-SEPM Field Trip Guidebook, May, 1992.
10 Peterson, C.D., Darioenzo, M.E., Burns, S.F., and Burris, W.K., 1993. Field trip guide to Cascadia paleoseismic evidence along the northern California coast: evidence of subduction zone seismicity in the central Cascadia margin: Oregon Geology, v. 55, p. 99 144.
11 Geomatrix Consultants, 1995. *Ibid*.
12 Atwater, B.F., 1992. *Ibid*.
13 Carver, G., 1992. *Ibid*.
14 Peterson, C.D., Darioenzo, M.E., Burns, S.F., and Burris, W.K., 1993. *Ibid*.
15 Personius, S.F., and Nelson, A.R., compilers, 2005. Fault number 781, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/regional/qfaults.
16 Geomatrix Consultants, 1995. *Ibid*.

intra-slab seismogenic zone[17] (see attached Figure A2). Historically, the seismicity rate within the Juan De Fuca Plate beneath Oregon is very low in northern Oregon and southwest Washington, and extremely low along the southern and central Oregon coast[18,19,20].

A.2.1.2 Crustal Sources

Several nearby faults capable of producing damaging earthquakes in this region include the Salem-Eola Hills homocline, the Mill Creek fault, and the Waldo Hills fault. Distances from the site to known active or potentially active faults are summarized in Table 1.

Table 1: Known Active or Potentially Active Crustal Faults in the Vicinity of the Site

USGS Fault No.	Fault Name	Distance and Direction from Site	Activity Level*
872	Waldo Hills fault	3 km SE	Active
871	Mill Creek fault	8 km S-SE	Active
719	Salem-Eola Hills homocline	8 km W	Active
* Activity Level derived from USGS fault database. "Active" indicates that the fault has been active during the Quaternary (the last 1.6 million years).			

<u>Salem-Eola Hills homocline (USGS 719)</u>
The Salem-Eola Hills homocline is a 31-kilometer-long homoclinal fold roughly coincident with the southwestern edge of the Salem and Eola Hills[21]. The homocline deforms Teritary Columbia River Basalts (Tcr), and marks the southwestern margin of the Tcr in this area. The Salem-Eola Hills homocline is likely the result of very slow uplift of the Salem and Eola Hills. No direct evidence has been found for recent (Holocene) deformation, so the fold is typically considered to have a low probability of activity and a long recurrence interval.

17 McCrory, Blair, Oppenheimer, and Walter, 2004. Depth to the Juan de Fuca slab beneath the Cascadia subduction margin – A 3-D model for storing earthquakes: U.S. Geological Survey Data Series 91.
18 Geomatrix Consultants, 1995. *Ibid*.
19 Geomatrix Consultants, 1993. Seismic margin Earthquake For the Trojan Site: Final Unpublished Report For Portland General Electric Trojan Nuclear Plant, Rainier, Oregon, May 1993.
20 Personius, S.F., and Nelson, A.R., compilers, 2005. Fault number 781, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/regional/qfaults.
21 Personius, S.F., compiler, 2002. Fault number 719, Salem-Eola Hills homocline, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/regional/qfaults.

Mill Creek fault (USGS 871)

The Mill Creek fault consists of an 18-kilometer-long, steeply-dipping reverse fault bounding the southeast margin of the Waldo Hills[22]. The Mill Creek fault is recognized in the subsurface by at least 160 feet of vertical separation of the top of the Columbia River Basalt[23]. The Mill Creek fault does not appear to deform Pleistocene or Holocene deposits; however, this fault may have a long recurrence interval and is considered active[24].

Waldo Hills fault (USGS 872)

The Waldo Hills fault is a 12-kilometer-long southeast-dipping reverse fault that is mapped on the northwestern front of the Waldo Hills[25]. The fault is recognized in the subsurface by vertical separation of the top of the Columbia River Basalt[26]. No evidence for middle or late Quaternary displacement on the Waldo Hills fault has been identified; however, Oregon State University geologists suggest that the Waldo Hills fault may have a long recurrence interval and is considered active[27]. Recurrence interval estimates for earthquake activity on the Waldo Hills fault are considered to be on the order of 700,000 years or more. Extensive erosion and degradation of the identified fault scarps supports a long recurrence interval.

A.2.1.3 Historic Seismicity

The Pacific Northwest is a seismically active area. Table 2 lists earthquakes with magnitudes larger than M4.9 that have occurred within 200 kilometers of the site since 1873[28]. These earthquakes are also included on Plate 1: Historical Earthquakes.

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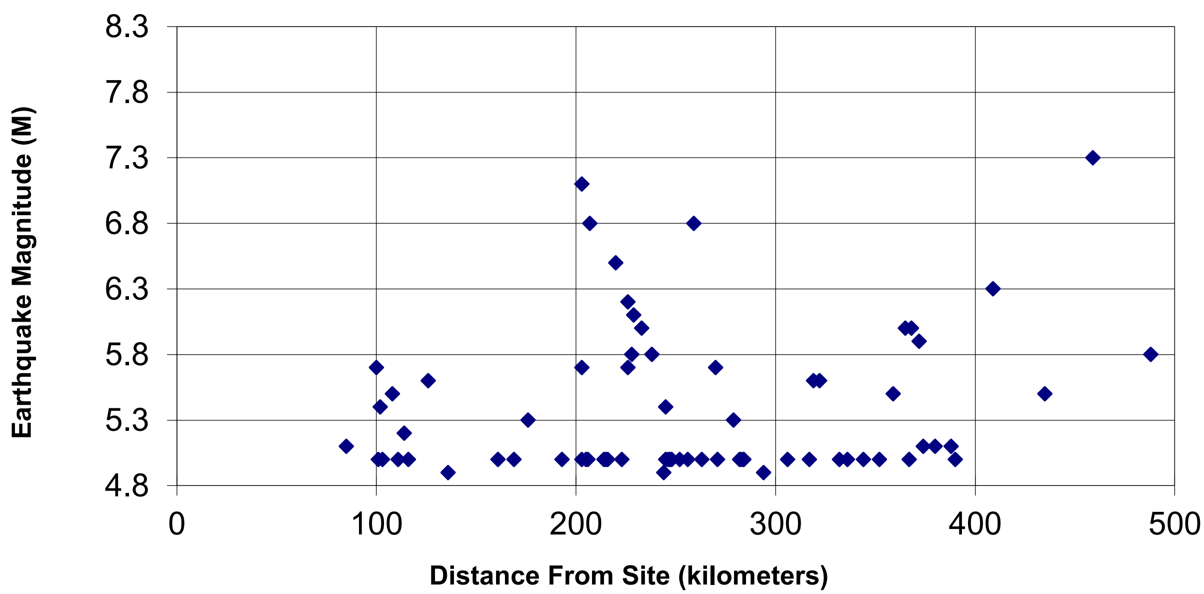
22 Personius, S.F., compiler, 2002. Fault number 871, Mill Creek fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/regional/qfaults.
23 Yeats, R.S., *et al*., 1996. *Ibid.*
24 Geomatrix Consultants, 1995. *Ibid*.
25 Personius, S.F., compiler, 2002. Fault number 872, Waldo Hills fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/regional/qfaults.
26 Yeats, R.S., *et al*., 1996. Tectonics of the Willamette Valley Oregon: in Assessing earthquake hazards and reducing risk in the Pacific Northwest, v. 1: U.S. Geological Survey Professional Paper 1560, p. 183-222, 5 plates, scale 1:100,000.
27 Geomatrix Consultants, 1995. *Ibid*.
28 Wong et al, 2000. Wong, I. Silva, W. Bott, J., Wright, D., Thomas, P., Gregor, N., Li, S., Mabey, M., Sojourner, A., Wang, Y. IMS-15. Earthquake Scenario and Probabilistic Ground Shaking Maps for the Portland, Oregon, Metropolitan area. Portland Hills Fault M6.8 Earthquake, Peak Horizontal Acceleration at the Ground Surface.

Table 2: Historical Earthquakes since 1873 within 200 kilometers of the site with Magnitudes Greater than M4.9

Date	Magnitude	Distance From Site	Location
July 19, 1930	M5.0	20 km	15 km WNW of Salem, OR
March 25, 1993	M5.6	35 km	23 km ESE of Woodburn, OR (Scotts Mills)
December 16, 1953	M5.0	72 km	7 km WSW of Portland, OR
December 29, 1941	M5.0	77 km	1 km S of Portland, OR
November 17, 1957	M5.0	77 km	18 km S of Tillamook, OR
October 12, 1877	M5.4*	78 km	10 km ESE of Portland, OR
November 06, 1962	M5.5	85 km	8 km NNE of Portland, OR
July 12, 2004	M4.9	133 km	48 km SW of Newport, OR
September 17, 1961	M5.1	143 km	20 km SSE of Mt St Helens, WA
March - May, 1980	M4.9 - M5.2	160 km	27 events at Mt St Helens, WA
May 18, 1980	M5.7	159 km	1 km NNE of Mt St Helens, WA
February 14, 1981	M5.2	172 km	2 km N of Elk Lake, WA
November 08, 1960	M5.0	188 km	115 km WNW of Newport, OR

Plate 1. Historical Earthquakes



A.3.0 LOCAL TOPOGRAPHY

Topography in the vicinity of the site was obtained from the USGS 7.5 minute topographic map for the Salem West quadrangle, and is shown on Figure 1 attached to the geotechnical report. The site is located on the northeast margin of the Salem Hills. The subject property wraps around a localized high, with onsite slopes descending to the west, north, and east. Slope gradients on and in the immediate vicinity of the site are generally 5H:1V (Horizontal:Vertical) or flatter. Site topography is discussed in detail in Section A.5.1 below.

A.4.0 HAZARDS

A.4.1 Slope Stability

Landsliding is a common hazard in the Pacific Northwest that can be initiated on marginally stable slopes by human disturbances such as grading and deforestation, and by natural processes including earthquake shaking, volcanism, heavy rainfalls, and rapid snow melt. Recent studies indicate that the most common causes for slope failures are intense rainfall and human alteration, including the placement of building loads on slopes, excavating or over-steepening slopes, and the infiltration or diversion of storm water run off[29]. For example, excavation into the base of marginally stable slopes may reduce forces resisting failure on those slopes, thus causing movement. Adding fill and/or a structure to the top or mid portion of a slope increases the driving forces on a slope and may contribute to failure. Redirecting water onto or into slopes may exploit existing planes of weakness within those slopes, causing failure.

Review of map IMS-22[30] indicates that the site is not located within a mapped “Potential Landslide Hazard Zone.” Review of the Statewide Landslide Information Database for Oregon (SLIDO-2)[31], indicates that no mapped landslides are located on or immediately adjacent to the site. Susceptibility to earthquake-induced landslides is discussed in Section A.4.3.1 of this report.

A.4.2 Flooding

The Federal Emergency Management Agency (FEMA) publishes the Flood Insurance Rate Maps (FIRM) for flood insurance purposes[32]. The FIRM map shows that that the entire site is located within Zone X, outside the mapped 100-year floodplain for the West and Middle forks of Pringle Creek.

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[29] Hofmeister, R., Madin, I., Wang, Y., and Hasenberg, C. 2003, Earthquake and Landslide Hazards Maps and Future Earthquake Damage Estimates, Clackamas County, Oregon: Oregon Department of Geology and Mineral Industries, Open File Report OFR 0-03-10.

[30] Hofmeister, R., Miller, D., Mills, K., Hinkle, J., and Beier, A.,2002. GIS overview map of potential rapidly moving landslide hazards in western Oregon, Oregon Department of Geology and Mineral Industries, Interpretive Map Series 22.

[31] http://www.oregongeology.org/slido/

[32] FEMA, 2003. Flood Insurance Rate Map, Marion County, Oregon and Incorporated Areas. Map Number 41047C0344 H.

A.4.3 Seismic Hazards

Review of Map GMS-105[33] indicates the site is located in seismic hazard Zones B through D, with a low to high relative earthquake hazard. In general, the localized ridges located in the southwestern portion of the site are mapped as Zone C (low to intermediate hazard), the central portion of the site as Zone D (lowest hazard), and the northeastern margin of the site as Zone B (intermediate to high hazard). This map is excerpted on Figure A3. The relative earthquake hazard is based on the evaluation of susceptibility to earthquake-induced landsliding, potential for soil liquefaction, and amplification of ground shaking during a seismic event. The hazard zone indicates which areas have the greatest tendency to experience any one of, or a combination of, these individual hazards. The relative hazard was dominated by earthquake-induced landslide and amplification hazards. The individual hazards are discussed in more detail below.

A.4.3.1 Slope Instability

The landslide susceptibility map from GMS-105, excerpted on Figure A4, indicates the potential for seismically induced landslides, with categories ranging from 0 to 5. Categories 0 (<6 degrees of slope angle) through 4 (>22 degrees of slope angle) are based solely on slope gradient. Category 5 is designated for areas where existing (previous) landslides are identified. Review of the landslide susceptibility map indicates the site is mapped in Categories 1 and 2 (low hazard), reflecting the variable topography across the site. The northeastern margin of the site is located in an area of "High susceptibility to landsliding in areas with existing landslides" (Category 5).

A.4.3.2 Liquefaction

A wide variety of slope and ground failures can occur in response to intense seismic shaking during large magnitude earthquakes. These failures are often related to the phenomenon of liquefaction, the process by which water-saturated sediment changes from a solid to a liquid state. Since liquefied sediment may not support the overlying ground, or any structure built thereon, a variety of failures may occur, including lateral spreading, landslides, ground settlement and cracking, sand boils, oscillation lurching, etc. The conditions necessary for liquefaction to occur are: (1) the presence of poorly consolidated, generally cohesionless sediment; (2) saturation of the sediment by groundwater; and (3) an earthquake that produces intense seismic shaking (generally a moment magnitude greater than M5.0). In general, older, more consolidated sediment, and sediment above the water table will not liquefy[34]. Field performance data and laboratory tests indicate that liquefaction occurs predominantly in well-sorted, loose to medium dense sand or silty sand, but can also occur in lean clays and silts[35].

Review of the liquefaction susceptibility map from GMS-105 indicates no hazard (Category 0) associated with liquefaction at the site.

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[33] Y. Wang and W.J. Leonard, 1996. Relative Earthquake Hazard Maps of the Salem East and Salem West Quadrangles, Marion & Polk Counties, Oregon, Oregon Department of Geology and Mineral Industries GMS-105.

[34] Youd, T.L. and Hoose, S.N. 1978. Historic ground failures in Northern California triggered by earthquakes: U.S. Geological Survey Professional Paper 993, p.117

[35] Seed, R.B., et al. 2003. Recent Advances In Soil Liquefaction Engineering: A Unified And Consistent Framework. Earthquake Engineering Research Center College Of Engineering University Of California, Berkeley.

A.4.3.3 <u>Amplification of Ground Shaking</u>

Thick sequences of unconsolidated, soft sediments typically amplify the shaking of long period ground motions such as those associated with major earthquakes[36]. Areas underlain by shallow soil profiles are not likely to amplify seismic waves. The amplification hazard map from GMS-105 indicates the potential for amplification varies from no susceptibility (Category 0) to possible high susceptibility to amplification in areas of abrupt topographic changes (Category 5). The site is mapped in Categories 0 through 2, with no susceptibility to the southwest and low to moderate susceptibility to the northeast.

A.4.3.4 <u>Estimated Ground Motion</u>

The peak horizontal ground acceleration (PGA) was determined for the site based on data from the United States Geologic Survey (USGS) National Seismic Hazard Mapping Program[37]. PGAs are expressed as a fraction of the acceleration of gravity, and are based on empirical attenuation relationships of seismic wave energy with distance from the causative source. A ground surface (Site Class D) PGA of 0.26g was calculated for the site, with a frequency of occurrence of once in 2,475 years (2% chance of occurrence in any 50 year period). A PGA of 0.26g can potentially cause slight to moderate damage in ordinary structures with considerable damage in poorly built structures.

A.5.0 SITE RECONNAISSANCE

CGT Project Engineering Geologist Jeff Jones, RG, CEG, performed a reconnaissance of the site on April 29, 2014.

A.5.1 Site Surface Conditions

The irregularly-shaped project site is bounded by Leslie Middle School and residential development to the north, a private roadway to the northeast, a grass field to the southeast, Battle Creek Road SE to the southwest, and Pringle Creek Road SE to the west. With the exception of its northeast quadrant, the project site is vacant of any structures and vegetated with grasses, brush (blackberry), and scattered coniferous trees. The northeast quadrant of the site contains several abandoned buildings with appurtenant drive lanes. Site layout, topography, and surface conditions are shown on the Site Plan (Figure 2) and Site Photographs (Figure 3) attached to the geotechnical report. Topographic and generalized geologic profiles of the site are shown on the attached Figure A5.

In terms of topography, the site survey shown on Figure 2 attached to the geotechnical report indicates the site is generally located between about elevation 275 and 340 feet. The site wraps around a localized high, with slopes descending to the west, north, and east. Slope gradients are generally 5H:1V or flatter, with localized areas as steep as 3H:1V. The slopes are generally convex to concave, and exhibit fairly uniform morphology. We did not observe arcuate slopes, uneven topography, tilted tress, disturbed soils, or other obvious signs of previous or on-going slope instability during our reconnaissance.

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[36] Hofmeister, R., Madin, I., Wang, Y., and Hasenberg, C. 2003, *Ibid.*
[37] U.S. Geologic Survey, 2002. National Seismic Hazard Maps, http://earthquake.usgs.gov/research/hazmaps/

A.5.2 Site Subsurface Conditions

Site subsurface conditions are described in Section 5.0 of the geotechnical report. In summary, the site is generally mantled in residual soil (lean to fat clay) resulting from in-place weathering of the underlying basalt. The residual soil was approximately 3 to 10 feet thick, transitioning to decomposed basalt that extended to the full depths explored, approximately 10 feet below ground surface (bgs). Isolated fills were encountered, which were approximately 1 to 4 feet thick.

In the lower, northeastern portion of the site, clay with rounded gravel was encountered in some of the test pits. This material is interpreted as the terrace deposits described above, and extended to the full depths explored where encountered, about 10 feet bgs.

As described in the geotechnical report, perched groundwater was encountered at depths of about 4 to 9 feet bgs within the test pits excavated in the northeastern (lower) portion of the site. Groundwater was not encountered elsewhere on the site.

A.6.0 FINDINGS

It is our opinion that the site is geologically suitable for the proposed development, as described in Section 1.1 of the geotechnical report. The primary geologic hazards identified are associated with slope instability and amplification of seismic shaking. With the use of generally accepted construction techniques and by strictly following the recommendations contained in this report and the attached geotechnical report, we anticipate that the project will have a minimal impact on existing geologic hazards or adjacent properties.

A.6.1 Slope Instability

As indicated in Section A.4.1, the referenced mapping does not indicate a high hazard due to landslides at the site and no known landslides are mapped at or near the site, and we did not observe obvious signs of previous or on-going slope instability during our reconnaissance. As indicated in Section A.4.3.1, the hazard due to seismically-induced landslides is generally low to moderate for the majority of the site.

The northeastern margin of the site is located in an area of "High susceptibility to landsliding in areas with existing landslides" (Category 5). Based on review of the referenced topographic maps and lidar imagery available online[38], the area mapped as Category 5 appears to coincide roughly with the area mapped as terrace deposits referenced in Section A.1.1.2. The terrace deposits include colluvium, slope wash, and alluvial fan deposits. This area appears to be located between two primary drainages, with several interceding, subordinate drainages and the somewhat lobate geomorphology may reflect alluvial fan and slope wash deposits, rather than landslide deposits. It is therefore our opinion that the risk of landslides, seismically-induced or otherwise, in this portion of the site is low to moderate.

As described in the geotechnical report, grading proposed at the site generally consists of cuts and fills limited to less than 5 feet in depth. Site grading should be performed in accordance with the recommendations presented in the geotechnical report. If grading plans change significantly from those described herein, CGT should be consulted to review and, if warranted, revise our conclusions.

[38] http://www.oregongeology.org/slido/

Control and proper disposal of stormwater runoff from impervious areas is critical in ensuring that the proposed development does not increase the risk of instability of the site slopes. Recommendations regarding drainage are presented in Section 8.8.1 of the geotechnical report.

Provided the recommendations contained in the attached geotechnical report regarding grading and drainage are incorporated into design and construction, the proposed development should not increase the hazard posed by slope instability.

Notwithstanding the above, any construction within hillside areas inherently bears greater risk of slope instability. This risk increases in seismically active areas, such as the Pacific Northwest. The existing site slopes may be susceptible to slope instability resulting from factors beyond the owner's control, such as a major earthquake, heavy precipitation, or off-site human activities. The owners must recognize and accept the risk of potential slope instability from causes beyond their control or as yet unrecognized.

A.6.2 Seismic Shaking

The proposed development will have no impact on this hazard. To minimize the risk that this hazard will adversely impact the proposed development, the structures should be designed and constructed in accordance with current building codes (2011 Oregon Residential Specialty Code as of the date of this report).

A.6.3 Other Hazards

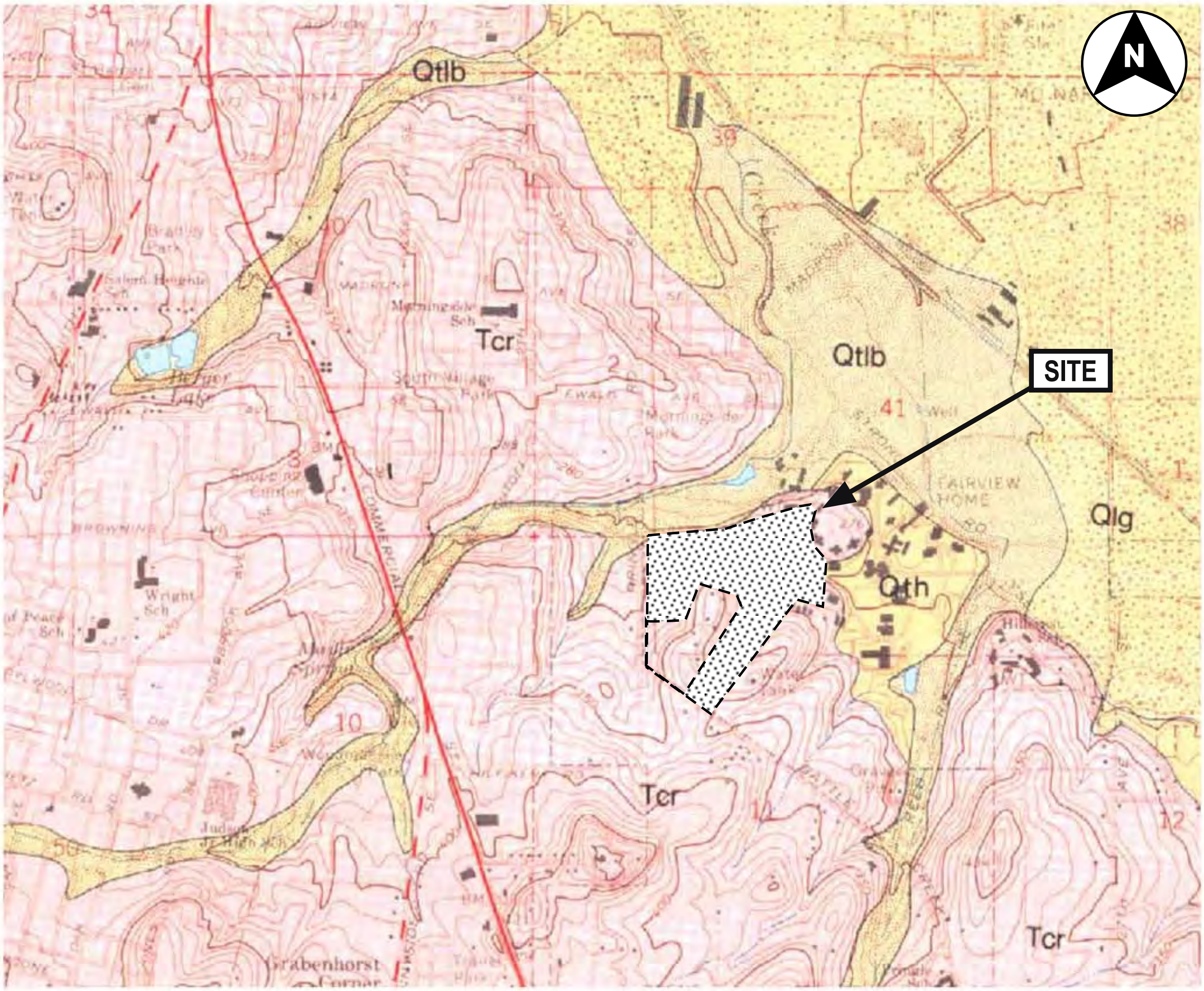
Other geologic hazards identified in the Oregon State Board of Geologist Examiners Guidelines for Preparing Engineering Geologic Reports in Oregon include:

- Flooding/Inundation
- Subsidence
- Fault Rupture

Based on our research, field reconnaissance, and previous experience in the area, none of these hazards are present at the site.

FAIRVIEW SUBDIVISION - SALEM, OREGON

GEOLOGIC MAP



Qal	Recent river alluvium
Qtlw	Lower Willamette River terrace deposits
Qtlt	Lower terrace deposits of tributary rivers
Qtlb	Lower terrace deposits of alluvial bottomlands
Qtm	Middle terrace deposits
Qlg	Linn gravel
Qth	Higher terrace deposits
Tcr	Columbia River Basalt Group
Toe	Eocene-Oligocene sedimentary rock
Ts	Upper Eocene sandstone
Ty	Yamhill Formation
Tsr	Siletz River Volcanics
bc	Basaltic Colluvium and/or landslide debris

Map adapted from Bela, 1981, Geology of the Rickreal, Salem West, Monmouth, and Sidney NE 7.5 Minute Quadrangles, Oregon Department of Geology and Mineral Industries, GMS-18.

Scale 1 Inch = 2,000 feet

0 2000 4000

Township 8 South, Range 3 West, Section 11 Willamette Meridian

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FIGURE A1

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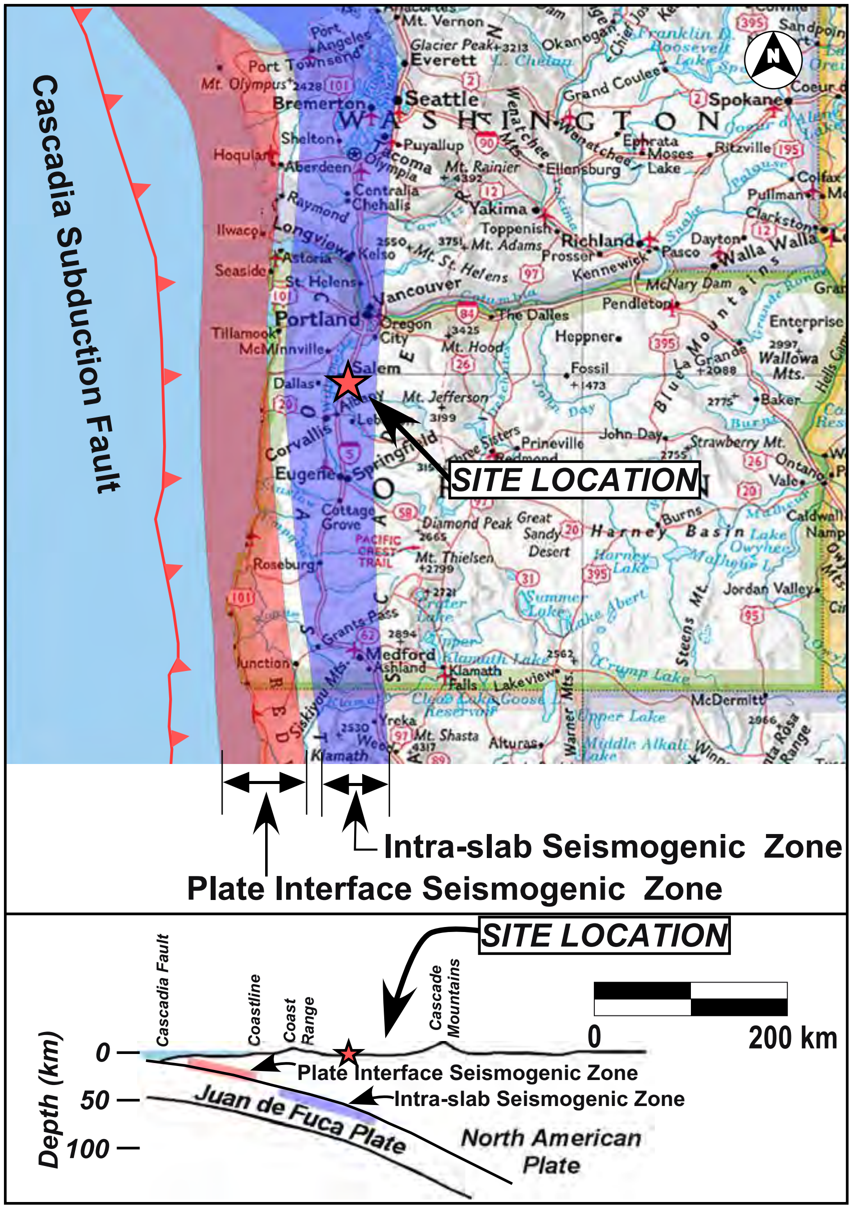
CASCADIA SUBDUCTION ZONE



McCrory, Blair, Oppenheimer, and Walter, 2004. Depth to the Juan de Fuca slab beneath the Cascadia subduction margin - A 3-D model for storing earthquakes: U.S. Geological Survey Data Series 91.

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FIGURE A2

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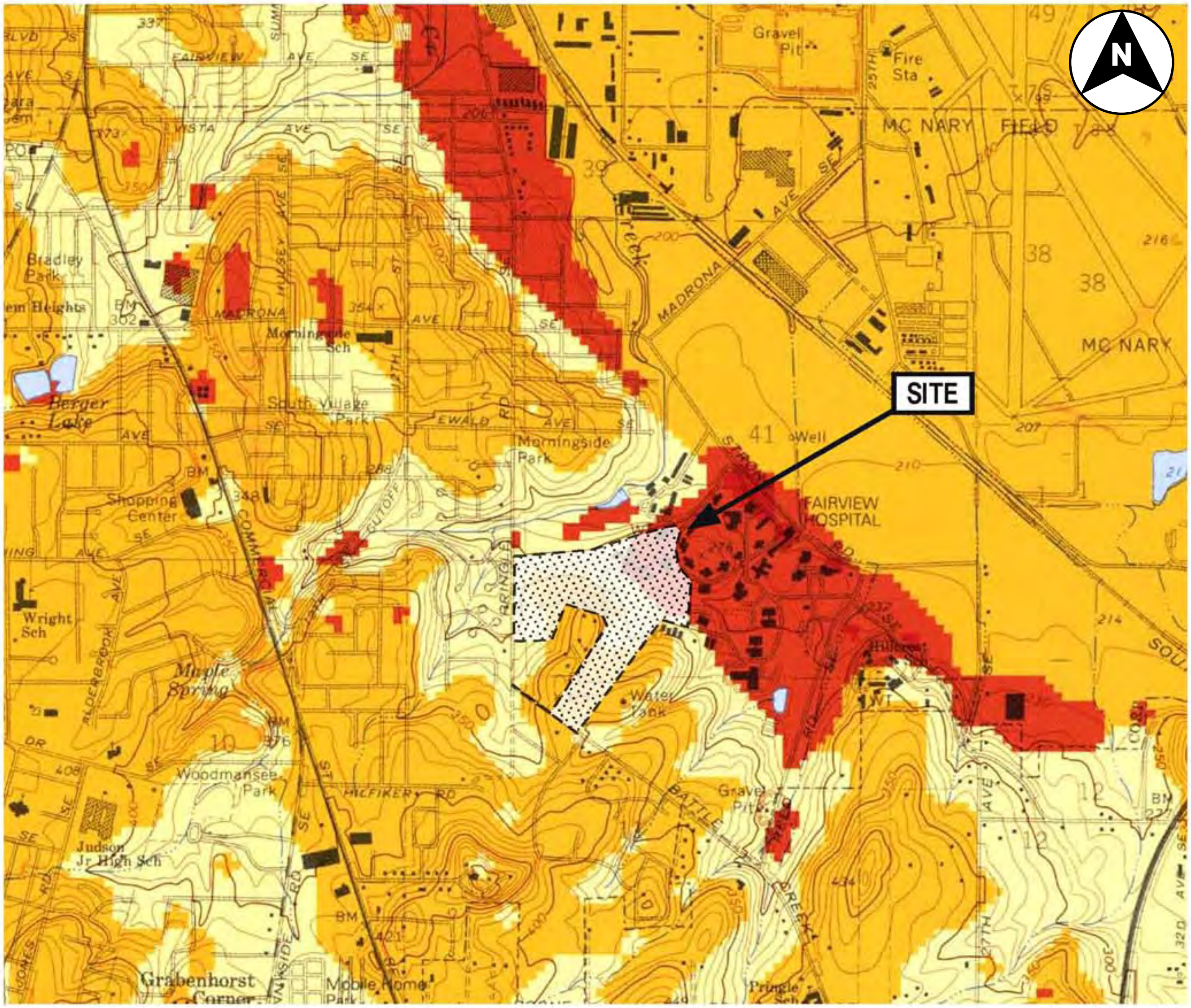
RELATIVE EARTHQUAKE HAZARD MAP



Explanation

Zone A	Highest hazard	Zone C	Low to intermediate hazard
Zone B	Intermediate to high hazard	Zone D	Lowest hazard

Map adapted from Wang, Y., and Leonard, W., 1996, Relative Earthquake Hazard Map of the Salem East and Salem West Quadrangles, Marion and Polk Counties, Oregon. Oregon Department of Geology and Mineral Industries GMS-105.

Scale 1 Inch = 2,000 feet

0 2000 4000

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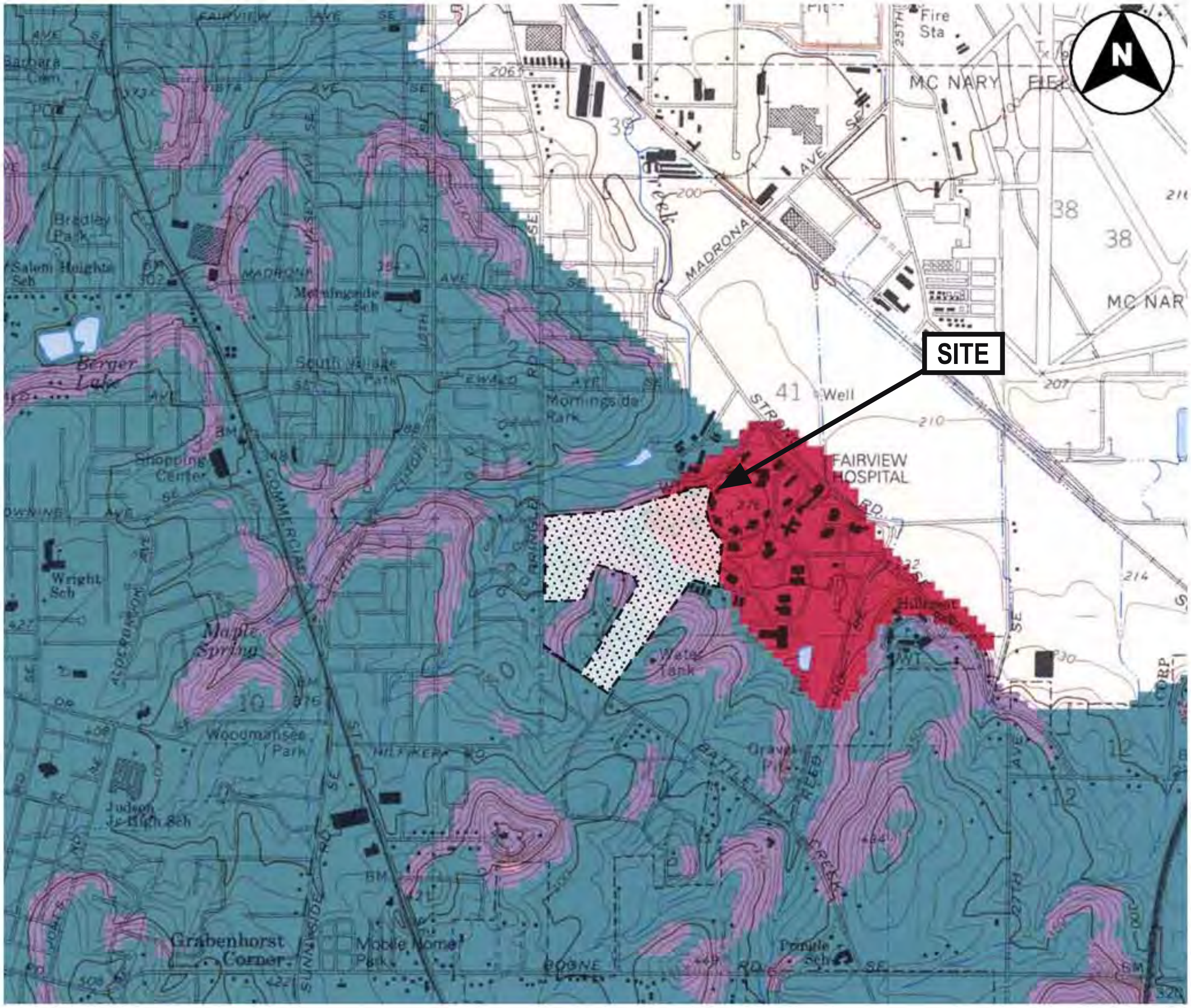
FIGURE A3

FAIRVIEW SUBDIVISION - SALEM, OREGON

LANDSLIDE SUSCEPTIBILITY MAP



Explanation

Category 5		High susceptibility to landsliding in areas with existing landslides	Category 2		≥6-14 degrees of slope angle
Category 4		>22 degrees of slope angle	Category 1		<6 degrees of slope angle in hills
Category 3		≥14-22 degrees of slope angle	Category 0		<6 degrees of slope angle in valley

Map adapted from Wang, Y., and Leonard, W., 1996, Landslide Susceptibility Map of the Salem East and Salem West Quadrangles, Marion and Polk Counties, Oregon. Oregon Department of Geology and Mineral Industries GMS-105.

Scale 1 Inch = 2,000 feet

0 2000 4000

Township 8 South, Range 3 West, Section 11 Willamette Meridian

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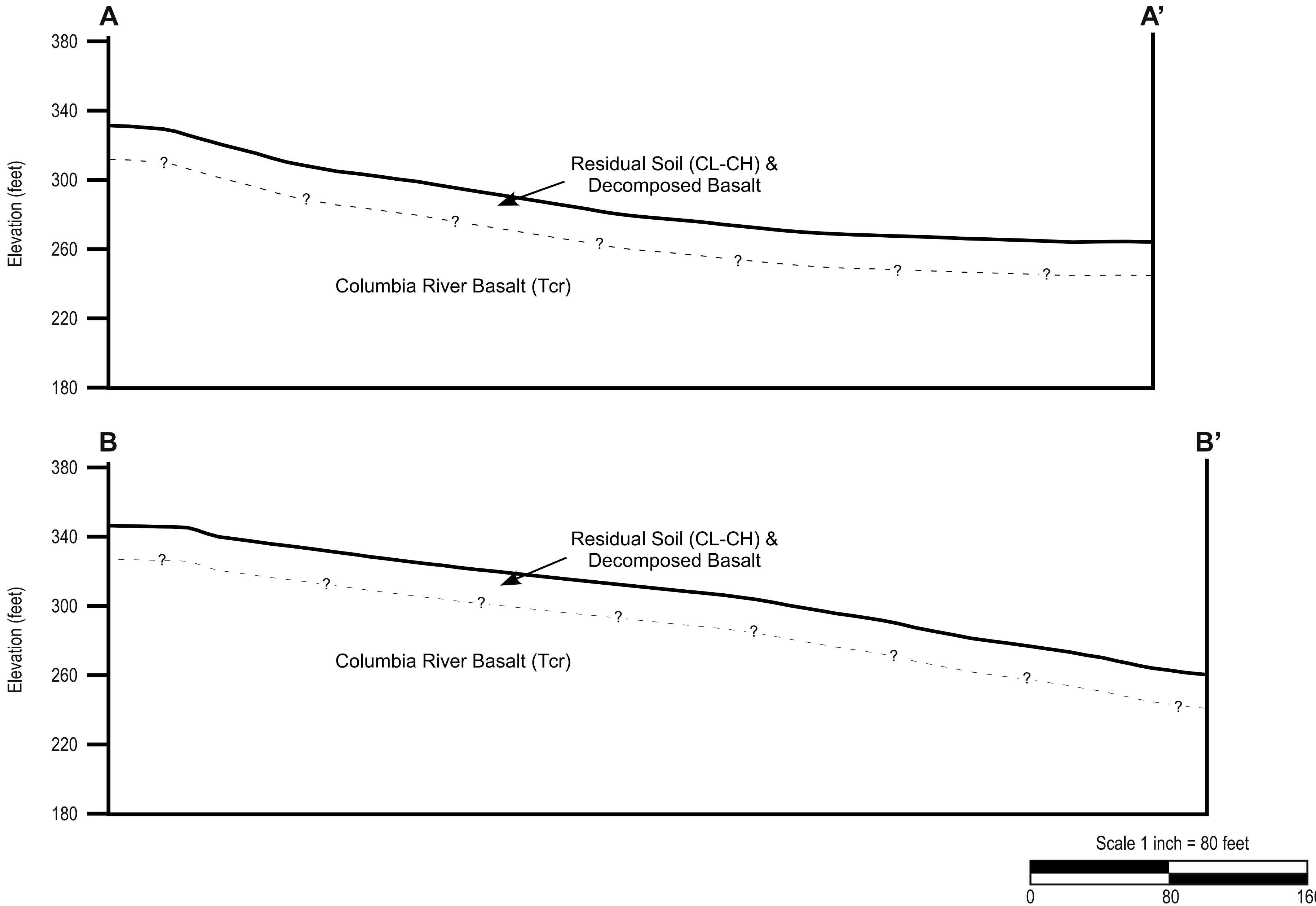
FIGURE A4



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FAIRVIEW SUBDIVISION - SALEM, OREGON

GEOLOGIC CROSS SECTIONS

CGT Job No. G1404007

FIGURE A5

Appendix B: Results of Infiltration Testing

Fairview Subdivision
Pringle Road SE & Battle Creek Road SE
Salem, Oregon

CGT Project No. G1404007

May 23, 2014

Prepared For:

Mr. Eric Olsen
Olsen Design & Development
170 West Main Street
Monmouth, Oregon 97361

Prepared By:

Carlson Geotechnical

B.1.0 CORRESPONDENCE WITH DESIGN TEAM

The project civil engineer, Westech Engineering (Westech), requested twenty infiltration tests be performed at the site at maximum depths of 5 feet below existing site grades. Westech has requested the tests be performed relatively uniformly across the project site. The approximate locations of the infiltration tests (designated as IT-1 through IT-18) are shown on the Site Plan, which is attached to the report as Figure 2. Testing was omitted at test pits TP-7 and TP-8, as relatively shallow groundwater was encountered at those exploration locations.

B.2.0 TEST PROCEDURE

Eighteen infiltration tests were performed within prepared test pits at the site on April 30, 2014, in general accordance with the Encased Falling Head test method described in Section 4C.3(d) of the City of Salem Department of Public Works Administrative Rules Manual 109-001 (January 2014). The following table presents the depth of the tests and the subsurface material encountered at the test depths.

Table B1. Infiltration Test Depths & Materials

Infiltration Test	Test Pit	Test Depth[1] (feet bgs)	Test Elevation[2] (feet)	Subsurface Material at the Test Depth
IT-1	TP-1	5	355	Decomposed Basalt (RX)
IT-2	TP-2	5	361	Lean to Fat Clay (CL-CH)
IT-3	TP-3	3½	349½	Lean to Fat Clay (CL-CH)
IT-4	TP-4	5	342	Decomposed Basalt (RX)
IT-5	TP-5	5	295	Decomposed Basalt (RX)
IT-6	TP-6	5	285	Lean to Fat Clay (CL-CH)
IT-7	TP-9	5	267	Lean to Fat Clay (CL-CH)
IT-8	TP-10	5	265	Lean to Fat Clay (CL-CH)
IT-9	TP-11	5	261	Lean to Fat Clay (CL-CH)
IT-10	TP-12	5	245	Lean to Fat Clay (CL-CH)
IT-11	TP-13	5	270	Lean to Fat Clay (CL-CH)
IT-12	TP-14	5	291	Lean to Fat Clay (CL-CH)
IT-13	TP-15	4	253	Decomposed Basalt (RX)
IT-14	TP-16	5	255	Lean to Fat Clay (CL-CH)
IT-15	TP-17	3½	300½	Lean to Fat Clay (CL-CH)
IT-16	TP-18	4	315	Lean to Fat Clay (CL-CH)
IT-17	TP-19	3	317	Lean to Fat Clay (CL-CH)
IT-18	TP-20	2	300	Lean to Fat Clay (CL-CH)

[1] Relative to existing site grades. bgs = below ground surface.
[2] Determined from provided site topographic survey prepared by Barker Surveying. Elevation should be considered approximate.

In each case, the test pit was excavated to the respective test depth and a 6-inch inner-diameter, PVC pipe was hydraulically pushed (using the excavator bucket) into the soil horizon approximately 6 inches. An approximate 2-inch thick layer of clean gravel was placed within the base of the pipes. The subsurface soils at the base of the pipes were “soaked” in accordance with the referenced test method by pouring about 12 inches of water (measured vertically) into the test pipes. After allowing the soils to soak overnight, testing was initiated by recording the drop in water level of an approximate 6-inch column of water at 30-minute intervals. A minimum of three trials was administered for each infiltration test.

B.3.0 TEST RESULTS

The following table presents the raw data and calculated rates of infiltration that we observed from these infiltration tests. Please note the calculated infiltration rates do <u>not</u> include any safety or correction factors.

Table B2. Results of Infiltration Test IT-1

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level[1] (inches)	Raw Infiltration Rate[2] (inches per hour)
IT-1	1	30	⅜	¾ (see note 2)
	2	30	5/16	⅝ (see note 2)
	3	30	1 5/16	2⅝ (see note 2)
	4	30	1 5/16	2⅝ (see note 2)

[1]Variability in test results due to improper seal of PVC pipe in test pit (due to high concentration of rock fragments).
[2]Rates shown are **not** representative of actual conditions. Supplemental testing (using the test pit method) is recommended to refine actual infiltration rate of weathered rock material. Quantity of water required for test pit method not available at time of field testing.

Table B3. Results of Infiltration Test IT-2

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)
IT-2	1	30	⅛	¼
	2	30	¼	½
	3	30	¼	½
	4	30	¼	½

Table B4. Results of Infiltration Test IT-3

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)
IT-3	1	30	7/16	7/8
	2	30	7/16	7/8
	3	30	7/16	7/8
	4	30	⅜	¾
	5	30	1/16	⅛

Table B5. Results of Infiltration Test IT-4

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level[1] (inches)	Raw Infiltration Rate[2] (inches per hour)
IT-4	1	30	7 7/16	14 7/8 (see note 2)
	2	30	---	Could not be determined
	3	30	---	Could not be determined
	4	30	2½	5 (see note 2)
	5	30	1⅛	2¼ (see note 2)

[1]Variability in test results due to improper seal of PVC pipe in test pit (due to high concentration of rock fragments).
[2]Rates shown are **not** representative of actual conditions. Supplemental testing (using the test pit method) is recommended to refine actual infiltration rate of weathered rock material. Quantity of water required for test pit method not available at time of field testing.

Table B6. Results of Infiltration Test IT-5

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)
IT-5	1	30	⅛	¼
	2	30	⅛	¼
	3	30	⅛	¼
	4	30	1/16	⅛

Table B7. Results of Infiltration Test IT-6

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)
IT-6	1	30	5/8	1¼
	2	30	9/16	1⅛
	3	30	¾	1½
	4	30	5/8	1¼

Table B8. Results of Infiltration Test IT-7

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)
IT-7	1	30	5/8	1¼
	2	30	5/8	1¼
	3	30	¼	½
	4	30	5/8	1¼

Table B9. Results of Infiltration Test IT-8

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)
IT-8	1	30	¼	½
	2	30	¼	½
	3	30	¼	½
	4	30	¼	½

Table B10. Results of Infiltration Test IT-9

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)
IT-9	1	30	⅛	¼
	2	30	⅛	¼
	3	30	3/8	¾
	4	30	¼	½

Table B11. Results of Infiltration Test IT-10

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)
IT-10	1	30	1/16	⅛
	2	30	1/16	⅛
	3	30	0	0
	4	30	⅛	¼

Table B12. Results of Infiltration Test IT-11

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level[1] (inches)	Raw Infiltration Rate[2] (inches per hour)
IT-11	1	30	3⅛	6¼ (see note 2)
	2	30	3⅜	6¾ (see note 2)
	3	30	2¾	5½ (see note 2)
	4	30	2	4 (see note 2)

[1]Variability in test results due to improper seal of PVC pipe in test pit (due to high concentration of rock fragments).
[2]Rates shown are **not** representative of actual conditions. Supplemental testing (using the test pit method) is recommended to refine actual infiltration rate of weathered rock material. Quantity of water required for test pit method not available at time of field testing.

Table B13. Results of Infiltration Test IT-12

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)
IT-12	1	30	½	1
	2	30	⅜	¾
	3	30	½	1
	4	30	⅜	¾

Table B14. Results of Infiltration Test IT-13

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)
IT-13	1	30	⅝	1¼
	2	30	⅝	1¼
	3	30	⅝	1¼
	4	30	⅜	¾

Table B15. Results of Infiltration Test IT-14

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)
IT-14	1	30	⅝	1¼
	2	30	⅝	1¼
	3	30	½	1
	4	30	½	1

Table B16. Results of Infiltration Test IT-15

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)
IT-15	1	30	¾	1½
	2	30	⅝	1¼
	3	30	¾	1½
	4	30	¾	1½

Table B17. Results of Infiltration Test IT-16

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)
IT-16	1	30	¼	½
	2	30	¼	½
	3	30	¼	½
	4	30	¼	½

Table B18. Results of Infiltration Test IT-17

Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level[1] (inches)	Raw Infiltration Rate[2] (inches per hour)
IT-17	1	30	1½	3 (see note 2)
	2	30	1½	3 (see note 2)
	3	30	1	2 (see note 2)
	4	30	1¼	2½ (see note 2)

[1]Variability in test results due to marginal seal of PVC pipe in test pit (due to moderate concentration of rock fragments).
[2]Rates shown are **not** representative of actual conditions. Supplemental testing (using the test pit method) is recommended to refine actual infiltration rate of weathered rock material. Quantity of water required for test pit method not available at time of field testing.

Table B19. Results of Infiltration Test IT-18

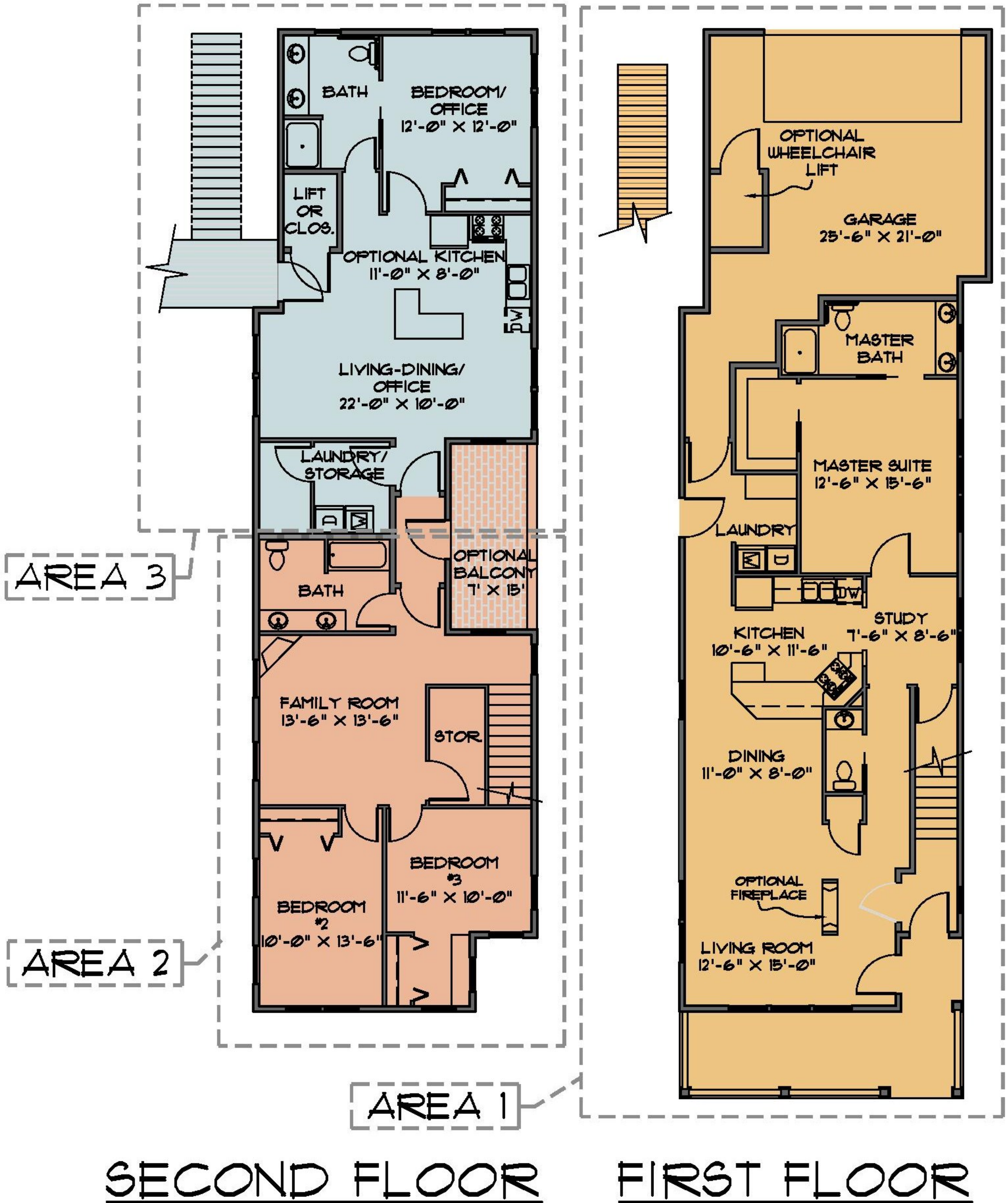
Infiltration Test	Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)
IT-18	1	30	½	1
	2	30	5/8	1¼
	3	30	½	1
	4	30	½	1

B.4.0 DISCUSSION

As indicated in the preceding section, we calculated raw infiltration rates ranging from about ¼ to 1¼ inches per hour in the test pits. These infiltration rates do not include any safety or correction factors. It is recommended the infiltration system designer consult the appropriate design manual in order to assign appropriate safety/correction factors to calculate the design infiltration rate for the infiltration system. Once the design is completed, we recommend the infiltration system design (provided by others) and location be reviewed by CGT. If the location and/or depth of the system changes from what was indicated at the time of our fieldwork, additional testing may be recommended.

As indicated above, a proper seal of the PVC pipes could not be achieved at infiltration test locations IT-1, IT-4, IT-11, and IT-17 due to the presence of rock fragments at the test depths. The infiltration rates calculated at those locations are not anticipated to be representative of actual site conditions. Supplemental testing using an alternative test method (such as the test pit method) is recommended to refine actual infiltration rates of the decomposed basalt (RX) at those locations, if desired. CGT would be pleased to perform supplemental infiltration testing at the site, upon request, for an additional fee.

APPENDIX G: IMAGE GALLERY



Appendix G, Figure 1: Typical Flex House Design

Appendix G, Image 1: Flex House Example

Appendix G, Image 2: Typical Single Family

Appendix G, Image 3: Typical Zero Lot Line

Appendix G, Image 4: Typical Large Single Family

Appendix G, Image 5: Typical Mid-Sized Single Family

Appendix G, Image 6: Typical Large Single Family

Appendix G, Image 7: Typical Small Single Family

Appendix G, Image 8: Typical Large Single Family

Appendix G, Image 9: Typical Front Porch View


Appendix G, Image 10: Typical Community Agriculture

Appendix G, Image 11: Typical Community Agriculture

Appendix G, Image 12: Typical Open Space

Appendix G, Image 13: Typical Pocket Park

APPENDIX H: STORMWATER CALCULATIONS

Fairview Site Subdivision Refinement Plan & Preliminary Plat

STORM DRAINAGE CALCULATIONS

July 1, 2014

REGISTERED PROFESSIONAL ENGINEER
76415PE
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
RENEWS: 6/30/2016

Prepared By

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

J.O. 2834.0001.0

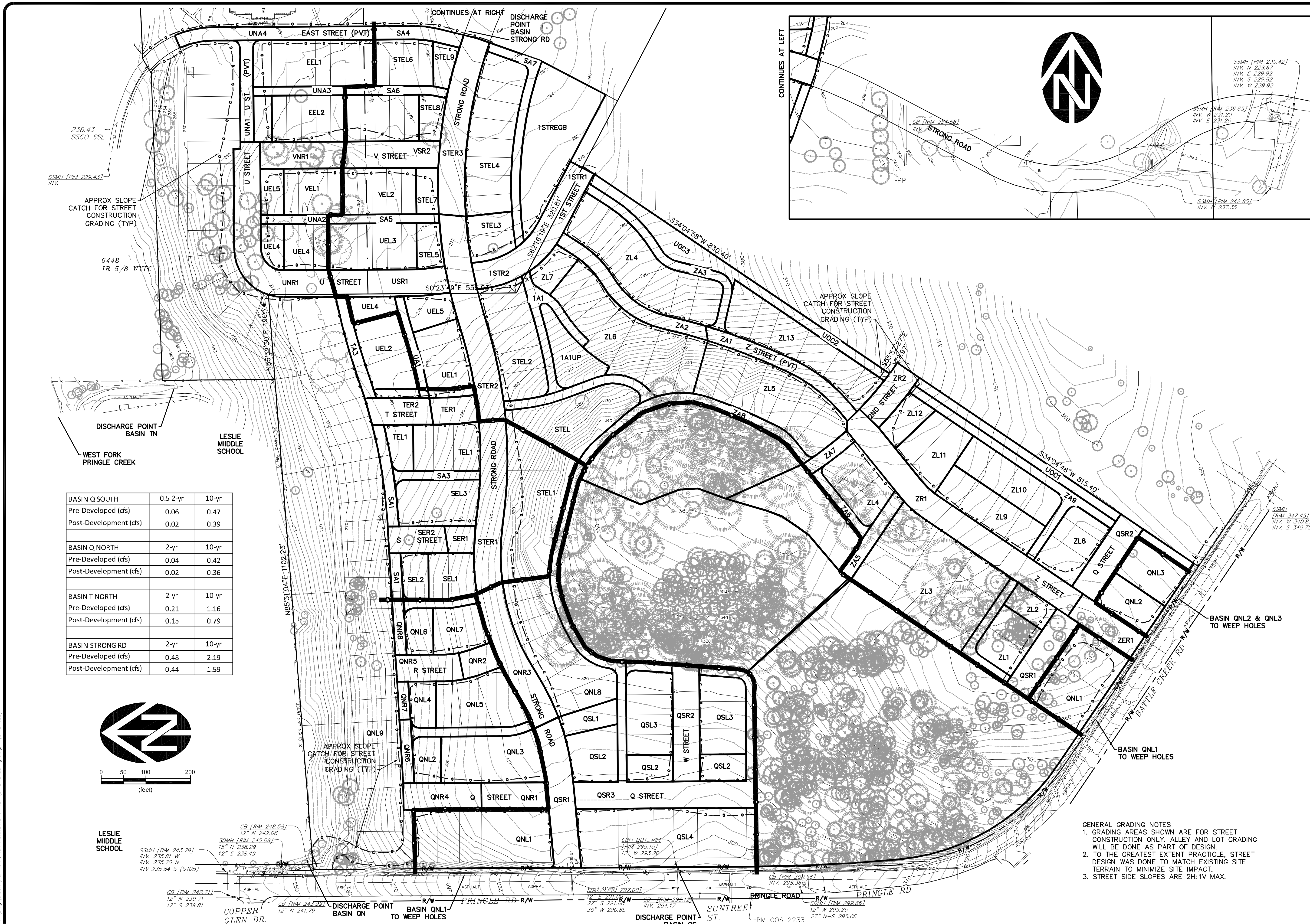
Table of Contents

Olsen Design & Development
Fairview Site Subdivision
Stormwater Design Narrative
06-10-14

General

The general intent for the stormwater system design for this site includes:

1) Infiltration to the maximum extent feasible, up to the amounts necessary to meet City of Salem requirements for stormwater quality treatment and release rate control.
2) A variety of stormwater facility types, both on lots and in the public right-of-way, are proposed to work in combination to meet City standards.
    a) On-Lot Facility Types
        1) Retaining Wall Box Rain Gardens. These are concrete boxes to be used as retaining walls on lots. They provide both detention and infiltration, with overflow release to downstream systems.
        2) On-site Rain Gardens. These provide infiltration, with overflow release to downstream systems.
        3) Drywells for Roof Run-off. These may be used to provide infiltration for roof areas only, with overflow release to downstream systems.
    b) Off-Lot Facility Types
        1) ROW Swales. These are proposed to be similar to City of Salem Detail 233. Due to the steep terrain over various parts of the site check dams will be used to control flow to maximize the infiltration capacity of each swale.
        2) Other Swales. The proposed design includes a number of swales in open space areas. These will serve for both infiltration and water quality treatment on pass-through flows.
        3) Pervious Pavement Alleys. The two northernmost alleys (Northview Alley and Northeast Alley) are proposed as pervious pavement systems. Because of the steep terrain, swales or similar facilities are not feasible in this area. These pervious pavement alleys will be used to infiltrate runoff in these areas.
        4) Other Water Quality Facilities. The final design will meet the City's requirement to provide treatment for a minimum of 80% of the site. The preliminary calculations submitted with this application demonstrate that the 80% requirement will likely be met with the stormwater facilities listed above. However, there are a number of areas where stormwater quality treatment through infiltration systems or swales are limited. This may result in the need for a few isolated individual treatment devices such as filter catch basins.
        5) Detention Facilities. Overall the design provides for infiltration rates such that the pre-development release rates are not exceeded for the 10-year and 100-year events. In a couple of locations the dynamics of the runoff result in to (1/2) 2-year pre-developed runoff exceeding the (1/2) 2-year post-development runoff. In these locations detention is provided to reduce the excess (1/2) 2-year runoff. Where this occurs, a minimum orifice size of 2-inches is used to reduce the potential for plugging. Where the pre-developed runoff is less than that occurring through a 2-inch orifice, the 2-inch orifice release rate is the controlling factor.
3) Consistent with City design standards, existing impervious area was assumed to be undeveloped for the calculations. While not factored into the calculations, it should be noted that the "undeveloped site" is estimated to have more than 4 acres of impervious area.



BASIN Q SOUTH	0.5 2-yr	10-yr
Pre-Developed (cfs)	0.06	0.47
Post-Development (cfs)	0.02	0.39
BASIN Q NORTH	2-yr	10-yr
Pre-Developed (cfs)	0.04	0.42
Post-Development (cfs)	0.02	0.36
BASIN T NORTH	2-yr	10-yr
Pre-Developed (cfs)	0.21	1.16
Post-Development (cfs)	0.15	0.79
BASIN STRONG RD	2-yr	10-yr
Pre-Developed (cfs)	0.48	2.19
Post-Development (cfs)	0.44	1.59

GENERAL GRADING NOTES
1. GRADING AREAS SHOWN ARE FOR STREET CONSTRUCTION ONLY. ALLEY AND LOT GRADING WILL BE DONE AS PART OF DESIGN.
2. TO THE GREATEST EXTENT PRACTICLE, STREET DESIGN WAS DONE TO MATCH EXISTING SITE TERRAIN TO MINIMIZE SITE IMPACT.
3. STREET SIDE SLOPES ARE 2H:1V MAX.

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RENEWS: 12/31/2015

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

Olsen Design & Development Monmouth, Oregon
Fairview Site Subdivision
Refinement Plan & Preliminary Plat
Overall Conceptual Grading & Drainage Plan

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G-3

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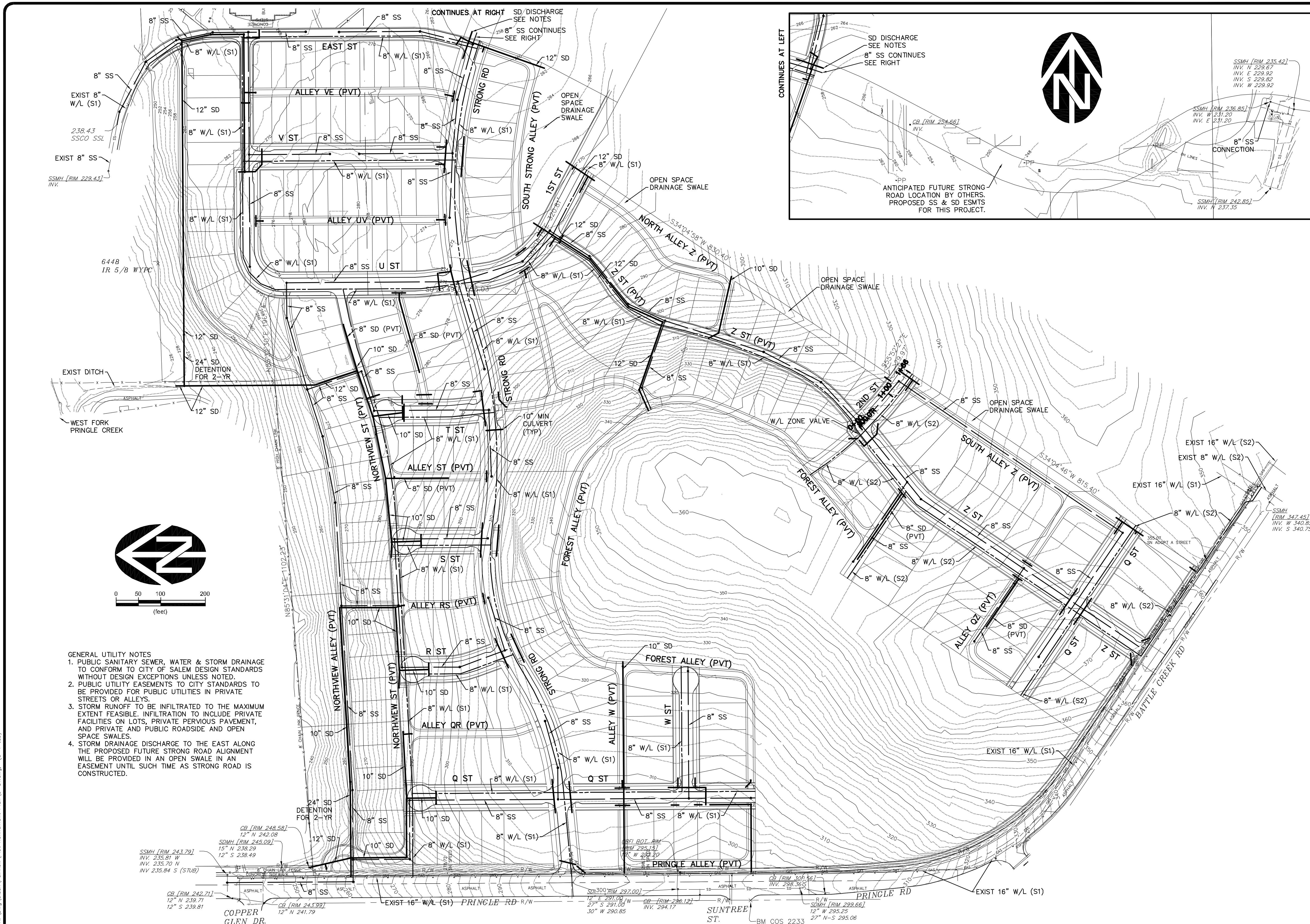

GENERAL UTILITY NOTES

1. PUBLIC SANITARY SEWER, WATER & STORM DRAINAGE TO CONFORM TO CITY OF SALEM DESIGN STANDARDS WITHOUT DESIGN EXCEPTIONS UNLESS NOTED.
2. PUBLIC UTILITY EASEMENTS TO CITY STANDARDS TO BE PROVIDED FOR PUBLIC UTILITIES IN PRIVATE STREETS OR ALLEYS.
3. STORM RUNOFF TO BE INFILTRATED TO THE MAXIMUM EXTENT FEASIBLE. INFILTRATION TO INCLUDE PRIVATE FACILITIES ON LOTS, PRIVATE PERVIOUS PAVEMENT, AND PRIVATE AND PUBLIC ROADSIDE AND OPEN SPACE SWALES.
4. STORM DRAINAGE DISCHARGE TO THE EAST ALONG THE PROPOSED FUTURE STRONG ROAD ALIGNMENT WILL BE PROVIDED IN AN OPEN SWALE IN AN EASEMENT UNTIL SUCH TIME AS STRONG ROAD IS CONSTRUCTED.

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RENEWS: 12/31/2015
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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

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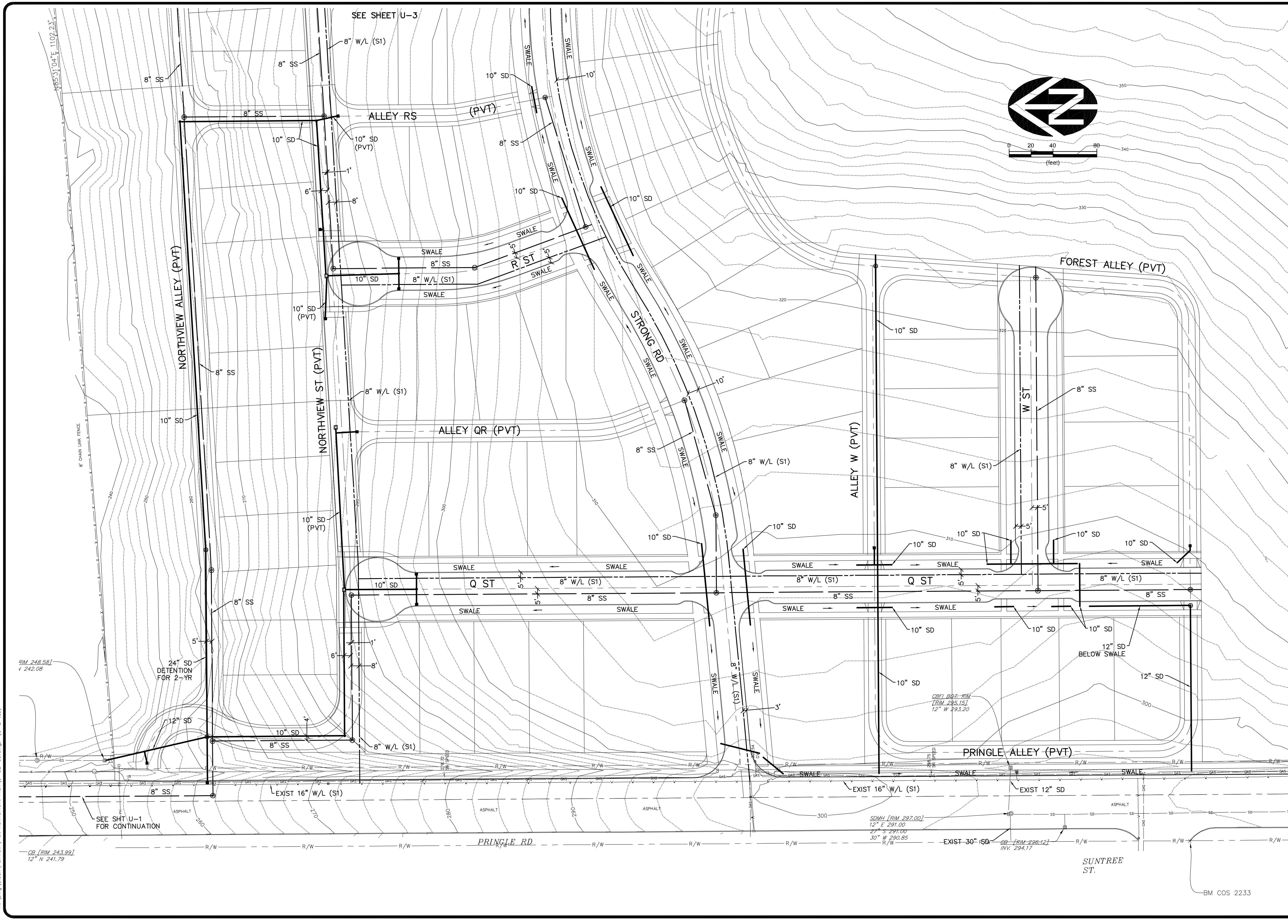

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RAYMOND C. ENGEL

RENEWS: 12/31/2015

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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

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Fairview Site Subdivision
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Northwest Utility Plan

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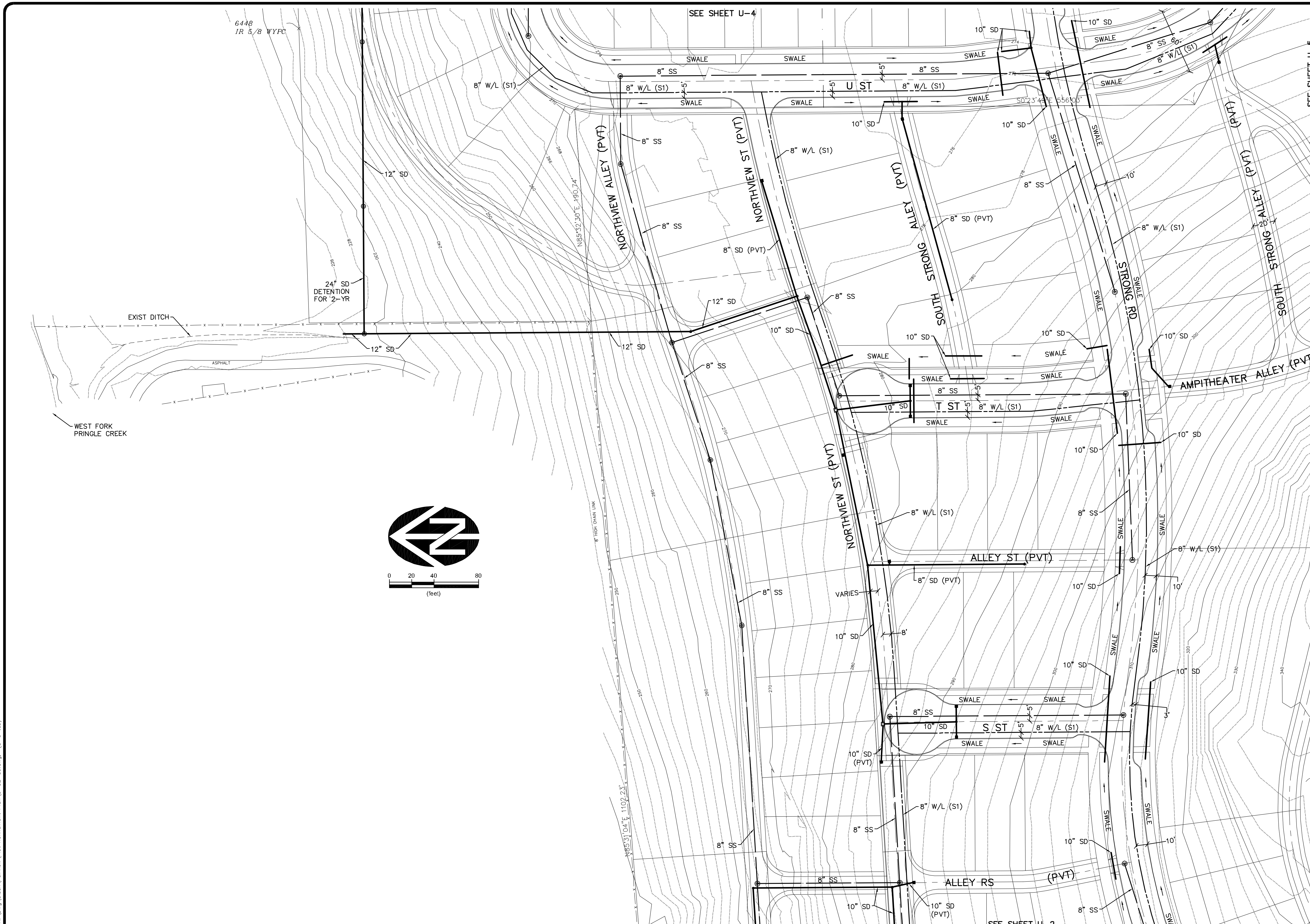

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JULY 15, ...
RAYMOND C. ENGEL
RENEWS: 12/31/2015

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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

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North Central Utility Plan

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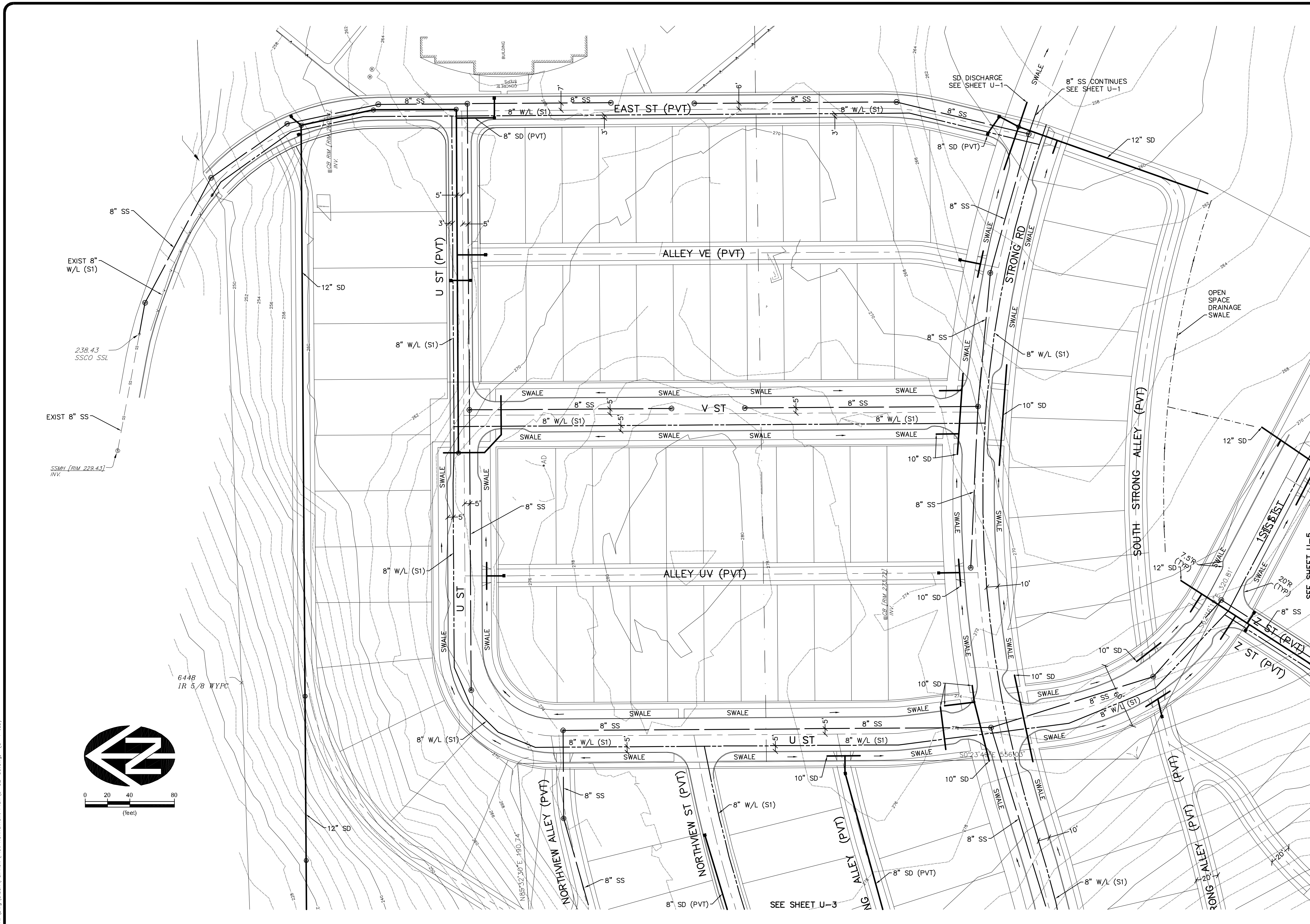

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3841 Fairview Industrial Dr. SE., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

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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
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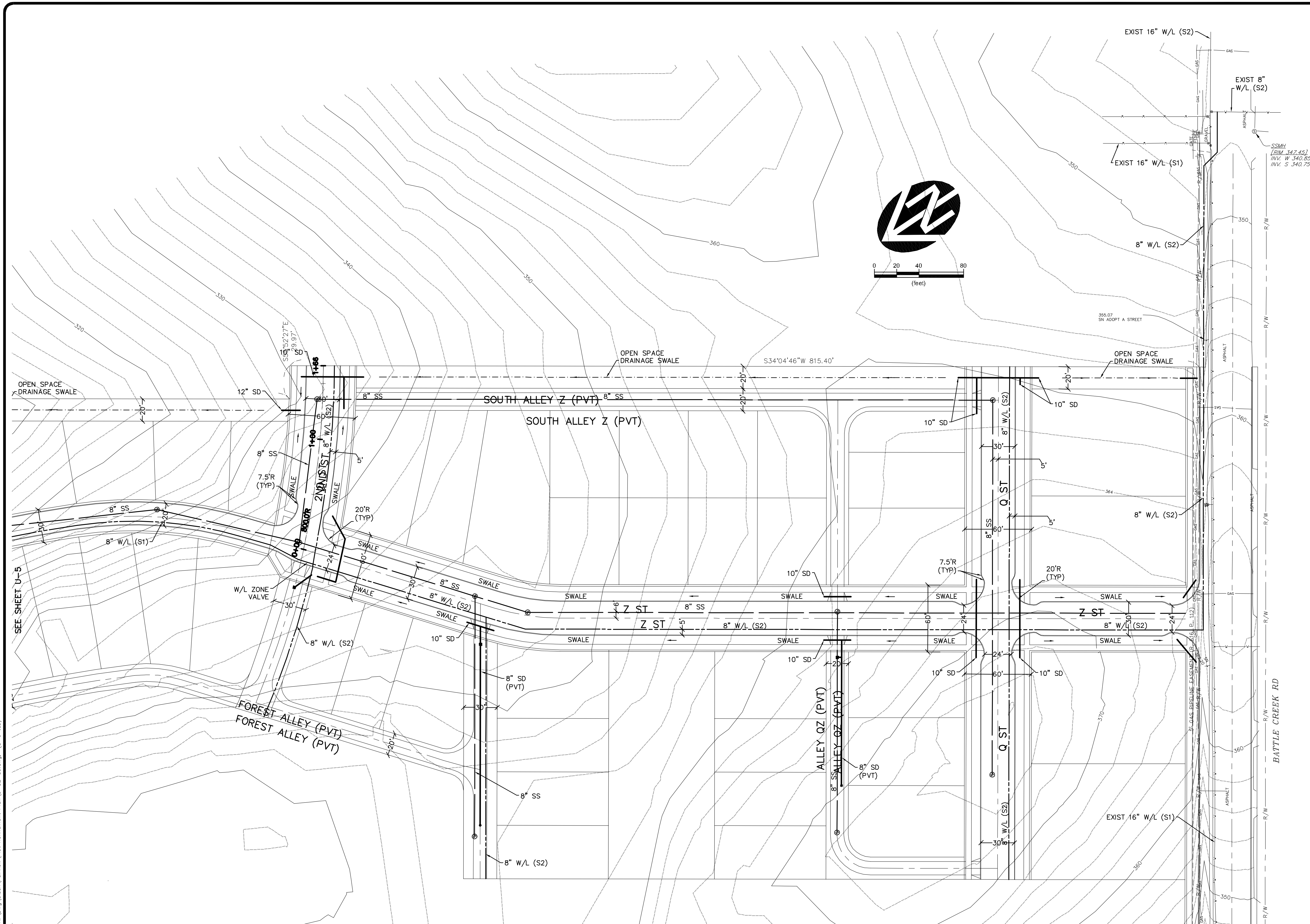

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RAYMOND C. ENGEL
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CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

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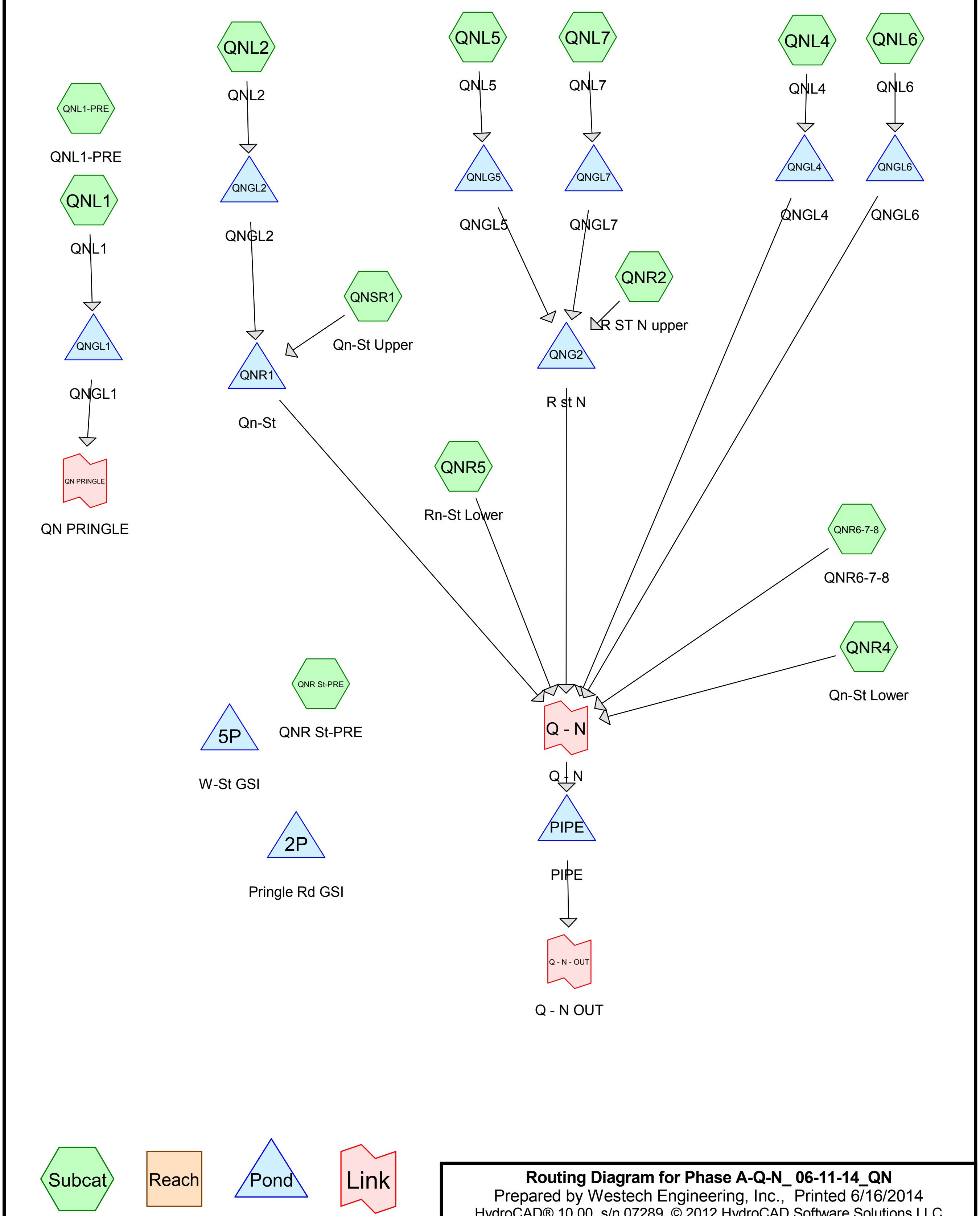

Routing Diagram for Phase A-Q-N_ 06-11-14_QN
Prepared by Westech Engineering, Inc., Printed 6/16/2014
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.209	98	(QNL1, QNL2, QNL4, QNL5, QNL6, QNL7, QNR2, QNR4, QNR5, QNR6-7-8, QNSR1)
4.961	72	(QNL1, QNL1-PRE, QNL2, QNL4, QNL5, QNL6, QNL7, QNR St-PRE, QNR2, QNR4, QNR5, QNR6-7-8, QNSR1)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
7.170	Other	QNL1, QNL1-PRE, QNL2, QNL4, QNL5, QNL6, QNL7, QNR St-PRE, QNR2, QNR4, QNR5, QNR6-7-8, QNSR1

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	7.170	7.170		QNL1, QNL1-PRE, QNL2, QNL4, QNL5, QNL6, QNL7, QNR St-PRE, QNR2, QNR4, QNR5, QNR6-7-8, QNSR1

Time span=0.00-45.00 hrs, dt=0.01 hrs, 4501 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment QNL1: QNL1 Runoff Area=0.910 ac 60.44% Impervious Runoff Depth=2.00"
Tc=10.0 min CN=88 Runoff=0.46 cfs 0.151 af

Subcatchment QNL1-PRE: QNL1-PRE Runoff Area=0.930 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=170' Slope=0.1000 '/' Tc=13.8 min CN=72 Runoff=0.14 cfs 0.072 af

Subcatchment QNL2: QNL2 Runoff Area=0.550 ac 70.91% Impervious Runoff Depth=2.17"
Tc=10.0 min CN=90 Runoff=0.30 cfs 0.099 af

Subcatchment QNL4: QNL4 Runoff Area=0.140 ac 60.00% Impervious Runoff Depth=2.00"
Tc=10.0 min CN=88 Runoff=0.07 cfs 0.023 af

Subcatchment QNL5: QNL5 Runoff Area=0.490 ac 59.18% Impervious Runoff Depth=1.91"
Tc=10.0 min CN=87 Runoff=0.23 cfs 0.078 af

Subcatchment QNL6: QNL6 Runoff Area=0.150 ac 60.00% Impervious Runoff Depth=2.00"
Tc=10.0 min CN=88 Runoff=0.08 cfs 0.025 af

Subcatchment QNL7: QNL7 Runoff Area=0.270 ac 59.26% Impervious Runoff Depth=1.91"
Tc=10.0 min CN=87 Runoff=0.13 cfs 0.043 af

Subcatchment QNR St-PRE: QNR St-PRE Runoff Area=2.780 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=190' Slope=0.1000 '/' Tc=15.1 min CN=72 Runoff=0.42 cfs 0.215 af

Subcatchment QNR2: R ST N upper Runoff Area=0.110 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.06 cfs 0.020 af

Subcatchment QNR4: Qn-St Lower Runoff Area=0.240 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.13 cfs 0.043 af

Subcatchment QNR5: Rn-St Lower Runoff Area=0.200 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.11 cfs 0.036 af

Subcatchment QNR6-7-8: QNR6-7-8 Runoff Area=0.200 ac 60.00% Impervious Runoff Depth=2.00"
Tc=5.0 min CN=88 Runoff=0.10 cfs 0.033 af

Subcatchment QNSR1: Qn-St Upper Runoff Area=0.200 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.11 cfs 0.036 af

Pond 2P: Pringle Rd GSI Peak Elev=0.00' Storage=0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af

Pond 5P: W-St GSI Peak Elev=0.00' Storage=0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af

Pond PIPE: PIPE Peak Elev=102.16' Storage=0.018 af Inflow=0.35 cfs 0.159 af
Outflow=0.35 cfs 0.159 af

Pond QNG2: R st N Peak Elev=298.94' Storage=0.022 af Inflow=0.08 cfs 0.070 af
Discarded=0.01 cfs 0.032 af Primary=0.04 cfs 0.032 af Outflow=0.06 cfs 0.064 af

Pond QNGL1: QNGL1 Peak Elev=305.09' Storage=0.041 af Inflow=0.46 cfs 0.151 af
Discarded=0.01 cfs 0.039 af Primary=0.16 cfs 0.093 af Outflow=0.18 cfs 0.132 af

Pond QNGL2: QNGL2 Peak Elev=305.06' Storage=0.032 af Inflow=0.30 cfs 0.099 af
Discarded=0.01 cfs 0.031 af Primary=0.09 cfs 0.053 af Outflow=0.10 cfs 0.084 af

Pond QNGL4: QNGL4 Peak Elev=298.47' Storage=0.012 af Inflow=0.07 cfs 0.023 af
Discarded=0.01 cfs 0.021 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.021 af

Pond QNGL6: QNGL6 Peak Elev=298.52' Storage=0.013 af Inflow=0.08 cfs 0.025 af
Discarded=0.01 cfs 0.022 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.022 af

Pond QNGL7: QNGL7 Peak Elev=305.02' Storage=0.024 af Inflow=0.13 cfs 0.043 af
Discarded=0.01 cfs 0.024 af Primary=0.02 cfs 0.008 af Outflow=0.02 cfs 0.031 af

Pond QNLG5: QNGL5 Peak Elev=305.05' Storage=0.024 af Inflow=0.23 cfs 0.078 af
Discarded=0.01 cfs 0.024 af Primary=0.06 cfs 0.043 af Outflow=0.07 cfs 0.066 af

Pond QNR1: Qn-St Peak Elev=298.93' Storage=0.044 af Inflow=0.12 cfs 0.089 af
Discarded=0.03 cfs 0.063 af Primary=0.03 cfs 0.014 af Outflow=0.05 cfs 0.077 af

Link Q - N: Q - N Inflow=0.35 cfs 0.159 af
Primary=0.35 cfs 0.159 af

Link Q - N - OUT: Q - N OUT Inflow=0.35 cfs 0.159 af
Primary=0.35 cfs 0.159 af

Link QN PRINGLE: QN PRINGLE Inflow=0.16 cfs 0.093 af
Primary=0.16 cfs 0.093 af

Summary for Subcatchment QNL1: QNL1

Runoff = 0.46 cfs @ 8.01 hrs, Volume= 0.151 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.550	98	
*	0.360	72	
	0.910	88	Weighted Average
	0.360		39.56% Pervious Area
	0.550		60.44% Impervious Area

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

Summary for Subcatchment QNL1-PRE: QNL1-PRE

Runoff = 0.14 cfs @ 8.09 hrs, Volume= 0.072 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.930	72	
	0.930		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	170	0.1000	0.20		**Sheet Flow,** n= 0.240 P2= 2.20"

Summary for Subcatchment QNL2: QNL2

Runoff = 0.30 cfs @ 7.99 hrs, Volume= 0.099 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.390	98	
*	0.160	72	
	0.550	90	Weighted Average
	0.160		29.09% Pervious Area
	0.390		70.91% Impervious Area

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

Summary for Subcatchment QNL4: QNL4

Runoff = 0.07 cfs @ 8.01 hrs, Volume= 0.023 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.084	98	
*	0.056	72	
	0.140	88	Weighted Average
	0.056		40.00% Pervious Area
	0.084		60.00% Impervious Area

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

Summary for Subcatchment QNL5: QNL5

Runoff = 0.23 cfs @ 8.01 hrs, Volume= 0.078 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.290	98	
*	0.200	72	
	0.490	87	Weighted Average
	0.200		40.82% Pervious Area
	0.290		59.18% Impervious Area

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

Summary for Subcatchment QNL6: QNL6

Runoff = 0.08 cfs @ 8.01 hrs, Volume= 0.025 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.090	98	
*	0.060	72	
	0.150	88	Weighted Average
	0.060		40.00% Pervious Area
	0.090		60.00% Impervious Area

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

Summary for Subcatchment QNL7: QNL7

Runoff = 0.13 cfs @ 8.01 hrs, Volume= 0.043 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.160	98	
*	0.110	72	
	0.270	87	Weighted Average
	0.110		40.74% Pervious Area
	0.160		59.26% Impervious Area

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

Summary for Subcatchment QNR St-PRE: QNR St-PRE

Runoff = 0.42 cfs @ 8.10 hrs, Volume= 0.215 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	2.780	72	
	2.780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	190	0.1000	0.21		**Sheet Flow,** n= 0.240 P2= 2.20"

Summary for Subcatchment QNR2: R ST N upper

Runoff = 0.06 cfs @ 7.91 hrs, Volume= 0.020 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.077	98	
*	0.033	72	
	0.110	90	Weighted Average
	0.033		30.00% Pervious Area
	0.077		70.00% Impervious Area

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

Summary for Subcatchment QNR4: Qn-St Lower

Runoff = 0.13 cfs @ 7.91 hrs, Volume= 0.043 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.168	98	
*	0.072	72	
	0.240	90	Weighted Average
	0.072		30.00% Pervious Area
	0.168		70.00% Impervious Area

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

Summary for Subcatchment QNR5: Rn-St Lower

Runoff = 0.11 cfs @ 7.91 hrs, Volume= 0.036 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.140	98	
*	0.060	72	
	0.200	90	Weighted Average
	0.060		30.00% Pervious Area
	0.140		70.00% Impervious Area

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

Summary for Subcatchment QNR6-7-8: QNR6-7-8

Runoff = 0.10 cfs @ 7.93 hrs, Volume= 0.033 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.120	98	
*	0.080	72	
	0.200	88	Weighted Average
	0.080		40.00% Pervious Area
	0.120		60.00% Impervious Area

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

Summary for Subcatchment QNSR1: Qn-St Upper

Runoff = 0.11 cfs @ 7.91 hrs, Volume= 0.036 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.140	98	
*	0.060	72	
	0.200	90	Weighted Average
	0.060		30.00% Pervious Area
	0.140		70.00% Impervious Area

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

Summary for Pond 2P: Pringle Rd GSI

Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 0.00' @ 0.00 hrs Surf.Area= 0.000 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated)
Center-of-Mass det. time= (not calculated)

Volume	Invert	Avail.Storage	Storage Description
#1	295.90'	0.137 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
295.90	0.023	0.0	0.000	0.000
296.00	0.023	40.0	0.001	0.001
297.01	0.023	40.0	0.009	0.010
298.50	0.023	40.0	0.014	0.024
298.51	0.023	0.1	0.000	0.024
300.00	0.023	0.1	0.000	0.024
300.01	0.023	100.0	0.000	0.024
301.00	0.068	100.0	0.045	0.069
302.00	0.068	100.0	0.068	0.137

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	300.50'	**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 @ 0.00 hrs HW=0.00' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: W-St GSI

Discarded =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 0.00' @ 0.00 hrs Surf.Area= 0.000 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated)
Center-of-Mass det. time= (not calculated)

Volume	Invert	Avail.Storage	Storage Description
#1	306.40'	0.136 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
306.40	0.023	0.0	0.000	0.000
306.50	0.023	40.0	0.001	0.001
307.01	0.023	40.0	0.005	0.006
308.50	0.023	40.0	0.014	0.019
308.51	0.023	0.1	0.000	0.019
310.00	0.023	0.1	0.000	0.019
310.01	0.023	100.0	0.000	0.020
311.00	0.070	100.0	0.046	0.066
312.00	0.070	100.0	0.070	0.136

Device	Routing	Invert	Outlet Devices
#1	Discarded	306.40'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	310.25'	**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 @ 0.00 hrs HW=0.00' (Free Discharge)
└─**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond PIPE: PIPE

Inflow Area = 2.550 ac, 65.06% Impervious, Inflow Depth = 0.75" for Salem 10 yrs event
Inflow = 0.35 cfs @ 7.92 hrs, Volume= 0.159 af
Outflow = 0.35 cfs @ 7.96 hrs, Volume= 0.159 af, Atten= 0%, Lag= 2.8 min
Primary = 0.35 cfs @ 7.96 hrs, Volume= 0.159 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 102.16' @ 7.96 hrs Surf.Area= 0.003 ac Storage= 0.018 af

Plug-Flow detention time= 137.5 min calculated for 0.159 af (100% of inflow)
Center-of-Mass det. time= 137.5 min (996.1 - 858.5)

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	0.018 af	**24.0" D x 250.0'L Pipe Storage S= 0.0015 '/'**

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**1.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	102.08'	**4.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Primary OutFlow Max=0.35 cfs @ 7.96 hrs HW=102.16' (Free Discharge)
├─**1=Orifice/Grate** (Orifice Controls 0.04 cfs @ 7.08 fps)
└─**2=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.31 cfs @ 0.94 fps)

Summary for Pond QNG2: R st N

Inflow Area = 0.870 ac, 60.57% Impervious, Inflow Depth = 0.97" for Salem 10 yrs event
Inflow = 0.08 cfs @ 9.50 hrs, Volume= 0.070 af
Outflow = 0.06 cfs @ 16.88 hrs, Volume= 0.064 af, Atten= 24%, Lag= 443.0 min
Discarded = 0.01 cfs @ 16.88 hrs, Volume= 0.032 af
Primary = 0.04 cfs @ 16.88 hrs, Volume= 0.032 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 298.94' @ 16.88 hrs Surf.Area= 0.026 ac Storage= 0.022 af

Plug-Flow detention time= 409.5 min calculated for 0.064 af (91% of inflow)
Center-of-Mass det. time= 362.9 min (1,270.7 - 907.8)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.051 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.009	0.0	0.000	0.000
295.00	0.009	40.0	0.000	0.000
295.01	0.009	40.0	0.000	0.000
296.50	0.009	40.0	0.005	0.006
296.51	0.009	0.1	0.000	0.006
298.00	0.009	0.1	0.000	0.006
298.01	0.009	100.0	0.000	0.006
299.00	0.027	100.0	0.018	0.024
300.00	0.027	100.0	0.027	0.051

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.01 cfs @ 16.88 hrs HW=298.94' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.04 cfs @ 16.88 hrs HW=298.94' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.04 cfs @ 0.54 fps)

Summary for Pond QNGL1: QNGL1

Inflow Area = 0.910 ac, 60.44% Impervious, Inflow Depth = 2.00" for Salem 10 yrs event
Inflow = 0.46 cfs @ 8.01 hrs, Volume= 0.151 af
Outflow = 0.18 cfs @ 8.89 hrs, Volume= 0.132 af, Atten= 62%, Lag= 52.8 min
Discarded = 0.01 cfs @ 4.45 hrs, Volume= 0.039 af
Primary = 0.16 cfs @ 8.89 hrs, Volume= 0.093 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Peak Elev= 305.09' @ 8.89 hrs Surf.Area= 0.023 ac Storage= 0.041 af

Plug-Flow detention time= 381.6 min calculated for 0.132 af (87% of inflow)
Center-of-Mass det. time= 299.6 min (1,066.5 - 766.9)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.062 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.023	0.0	0.000	0.000
301.00	0.023	40.0	0.001	0.001
302.40	0.023	40.0	0.013	0.014
302.50	0.023	0.1	0.000	0.014
303.90	0.023	0.1	0.000	0.014
304.00	0.023	100.0	0.002	0.016
306.00	0.023	100.0	0.046	0.062

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 4.45 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.16 cfs @ 8.89 hrs HW=305.09' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.16 cfs @ 0.86 fps)

Summary for Pond QNGL2: QNGL2

Inflow Area = 0.550 ac, 70.91% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.30 cfs @ 7.99 hrs, Volume= 0.099 af
Outflow = 0.10 cfs @ 9.20 hrs, Volume= 0.084 af, Atten= 69%, Lag= 72.4 min
Discarded = 0.01 cfs @ 4.11 hrs, Volume= 0.031 af
Primary = 0.09 cfs @ 9.20 hrs, Volume= 0.053 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 305.06' @ 9.20 hrs Surf.Area= 0.018 ac Storage= 0.032 af

Plug-Flow detention time= 458.3 min calculated for 0.084 af (85% of inflow)
Center-of-Mass det. time= 360.7 min (1,111.7 - 751.0)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.049 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.018	0.0	0.000	0.000
301.00	0.018	40.0	0.001	0.001
302.40	0.018	40.0	0.010	0.011
302.50	0.018	0.1	0.000	0.011
303.90	0.018	0.1	0.000	0.011
304.00	0.018	100.0	0.002	0.013
306.00	0.018	100.0	0.036	0.049

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 4.11 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.08 cfs @ 9.20 hrs HW=305.06' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.08 cfs @ 0.68 fps)

Summary for Pond QNGL4: QNGL4

Inflow Area = 0.140 ac, 60.00% Impervious, Inflow Depth = 2.00" for Salem 10 yrs event
Inflow = 0.07 cfs @ 8.01 hrs, Volume= 0.023 af
Outflow = 0.01 cfs @ 22.31 hrs, Volume= 0.021 af, Atten= 88%, Lag= 858.2 min
Discarded = 0.01 cfs @ 22.31 hrs, Volume= 0.021 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 298.47' @ 22.31 hrs Surf.Area= 0.017 ac Storage= 0.012 af

Plug-Flow detention time= 710.5 min calculated for 0.021 af (91% of inflow)
Center-of-Mass det. time= 652.1 min (1,419.0 - 766.9)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.051 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.009	0.0	0.000	0.000
295.00	0.009	40.0	0.000	0.000
295.01	0.009	40.0	0.000	0.000
296.50	0.009	40.0	0.005	0.006
296.51	0.009	0.1	0.000	0.006
298.00	0.009	0.1	0.000	0.006
298.01	0.009	100.0	0.000	0.006
299.00	0.027	100.0	0.018	0.024
300.00	0.027	100.0	0.027	0.051

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	299.00'	**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=0.01 cfs @ 22.31 hrs HW=298.47' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNGL6: QNGL6

Inflow Area = 0.150 ac, 60.00% Impervious, Inflow Depth = 2.00" for Salem 10 yrs event
Inflow = 0.08 cfs @ 8.01 hrs, Volume= 0.025 af
Outflow = 0.01 cfs @ 22.48 hrs, Volume= 0.022 af, Atten= 88%, Lag= 868.1 min
Discarded = 0.01 cfs @ 22.48 hrs, Volume= 0.022 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 298.52' @ 22.48 hrs Surf.Area= 0.018 ac Storage= 0.013 af

Plug-Flow detention time= 715.1 min calculated for 0.022 af (89% of inflow)
Center-of-Mass det. time= 647.6 min (1,414.6 - 766.9)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.051 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.009	0.0	0.000	0.000
295.00	0.009	40.0	0.000	0.000
295.01	0.009	40.0	0.000	0.000
296.50	0.009	40.0	0.005	0.006
296.51	0.009	0.1	0.000	0.006
298.00	0.009	0.1	0.000	0.006
298.01	0.009	100.0	0.000	0.006
299.00	0.027	100.0	0.018	0.024
300.00	0.027	100.0	0.027	0.051

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	299.00'	**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=0.01 cfs @ 22.48 hrs HW=298.52' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNGL7: QNGL7

Inflow Area = 0.270 ac, 59.26% Impervious, Inflow Depth = 1.91" for Salem 10 yrs event
Inflow = 0.13 cfs @ 8.01 hrs, Volume= 0.043 af
Outflow = 0.02 cfs @ 16.82 hrs, Volume= 0.031 af, Atten= 83%, Lag= 528.7 min
Discarded = 0.01 cfs @ 5.36 hrs, Volume= 0.024 af
Primary = 0.02 cfs @ 16.82 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 305.02' @ 16.82 hrs Surf.Area= 0.014 ac Storage= 0.024 af

Plug-Flow detention time= 799.4 min calculated for 0.031 af (73% of inflow)
Center-of-Mass det. time= 639.0 min (1,413.6 - 774.6)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 5.36 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.01 cfs @ 16.82 hrs HW=305.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.35 fps)

Summary for Pond QNLG5: QNGL5

Inflow Area = 0.490 ac, 59.18% Impervious, Inflow Depth = 1.91" for Salem 10 yrs event
Inflow = 0.23 cfs @ 8.01 hrs, Volume= 0.078 af
Outflow = 0.07 cfs @ 9.51 hrs, Volume= 0.066 af, Atten= 71%, Lag= 90.1 min
Discarded = 0.01 cfs @ 4.80 hrs, Volume= 0.024 af
Primary = 0.06 cfs @ 9.51 hrs, Volume= 0.043 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 305.05' @ 9.51 hrs Surf.Area= 0.014 ac Storage= 0.024 af

Plug-Flow detention time= 447.6 min calculated for 0.066 af (85% of inflow)
Center-of-Mass det. time= 353.5 min (1,128.1 - 774.6)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 4.80 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.05 cfs @ 9.51 hrs HW=305.05' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.60 fps)

Summary for Pond QNR1: Qn-St

Inflow Area = 0.750 ac, 70.67% Impervious, Inflow Depth = 1.43" for Salem 10 yrs event
Inflow = 0.12 cfs @ 9.17 hrs, Volume= 0.089 af
Outflow = 0.05 cfs @ 17.57 hrs, Volume= 0.077 af, Atten= 55%, Lag= 504.0 min
Discarded = 0.03 cfs @ 17.57 hrs, Volume= 0.063 af
Primary = 0.03 cfs @ 17.57 hrs, Volume= 0.014 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 298.93' @ 17.57 hrs Surf.Area= 0.051 ac Storage= 0.044 af

Plug-Flow detention time= 639.0 min calculated for 0.077 af (86% of inflow)

Center-of-Mass det. time= 560.8 min (1,404.2 - 843.4)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.101 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.018	0.0	0.000	0.000
295.00	0.018	40.0	0.001	0.001
295.01	0.018	40.0	0.000	0.001
296.50	0.018	40.0	0.011	0.012
296.51	0.018	0.1	0.000	0.012
298.00	0.018	0.1	0.000	0.012
298.01	0.018	100.0	0.000	0.012
299.00	0.054	100.0	0.036	0.047
300.00	0.054	100.0	0.054	0.101

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.03 cfs @ 17.57 hrs HW=298.93' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.03 cfs @ 17.57 hrs HW=298.93' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.03 cfs @ 0.48 fps)

Summary for Link Q - N: Q - N

Inflow Area = 2.550 ac, 65.06% Impervious, Inflow Depth = 0.75" for Salem 10 yrs event
Inflow = 0.35 cfs @ 7.92 hrs, Volume= 0.159 af
Primary = 0.35 cfs @ 7.92 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Summary for Link Q - N - OUT: Q - N OUT

Inflow Area = 2.550 ac, 65.06% Impervious, Inflow Depth = 0.75" for Salem 10 yrs event
Inflow = 0.35 cfs @ 7.96 hrs, Volume= 0.159 af
Primary = 0.35 cfs @ 7.96 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Summary for Link QN PRINGLE: QN PRINGLE

Inflow Area =	0.910 ac,	60.44% Impervious,	Inflow Depth = 1.22"	for Salem 10 yrs event	
Inflow =	0.16 cfs @	8.89 hrs,	Volume=	0.093 af	
Primary =	0.16 cfs @	8.89 hrs,	Volume=	0.093 af,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Time span=0.00-45.00 hrs, dt=0.01 hrs, 4501 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment QNL1: QNL1 Runoff Area=0.910 ac 60.44% Impervious Runoff Depth=3.10"
Tc=10.0 min CN=88 Runoff=0.73 cfs 0.235 af

Subcatchment QNL1-PRE: QNL1-PRE Runoff Area=0.930 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=170' Slope=0.1000 '/' Tc=13.8 min CN=72 Runoff=0.33 cfs 0.135 af

Subcatchment QNL2: QNL2 Runoff Area=0.550 ac 70.91% Impervious Runoff Depth=3.30"
Tc=10.0 min CN=90 Runoff=0.47 cfs 0.151 af

Subcatchment QNL4: QNL4 Runoff Area=0.140 ac 60.00% Impervious Runoff Depth=3.10"
Tc=10.0 min CN=88 Runoff=0.11 cfs 0.036 af

Subcatchment QNL5: QNL5 Runoff Area=0.490 ac 59.18% Impervious Runoff Depth=3.01"
Tc=10.0 min CN=87 Runoff=0.38 cfs 0.123 af

Subcatchment QNL6: QNL6 Runoff Area=0.150 ac 60.00% Impervious Runoff Depth=3.10"
Tc=10.0 min CN=88 Runoff=0.12 cfs 0.039 af

Subcatchment QNL7: QNL7 Runoff Area=0.270 ac 59.26% Impervious Runoff Depth=3.01"
Tc=10.0 min CN=87 Runoff=0.21 cfs 0.068 af

Subcatchment QNR St-PRE: QNR St-PRE Runoff Area=2.780 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=190' Slope=0.1000 '/' Tc=15.1 min CN=72 Runoff=0.99 cfs 0.405 af

Subcatchment QNR2: R ST N upper Runoff Area=0.110 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.10 cfs 0.030 af

Subcatchment QNR4: Qn-St Lower Runoff Area=0.240 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.21 cfs 0.066 af

Subcatchment QNR5: Rn-St Lower Runoff Area=0.200 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.17 cfs 0.055 af

Subcatchment QNR6-7-8: QNR6-7-8 Runoff Area=0.200 ac 60.00% Impervious Runoff Depth=3.10"
Tc=5.0 min CN=88 Runoff=0.16 cfs 0.052 af

Subcatchment QNSR1: Qn-St Upper Runoff Area=0.200 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.17 cfs 0.055 af

Pond 2P: Pringle Rd GSI Peak Elev=0.00' Storage=0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af

Pond 5P: W-St GSI Peak Elev=0.00' Storage=0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af

Pond PIPE: PIPE Peak Elev=102.19' Storage=0.018 af Inflow=0.54 cfs 0.358 af
Outflow=0.54 cfs 0.358 af

Pond QNG2: R st N Peak Elev=298.99' Storage=0.023 af Inflow=0.39 cfs 0.149 af
Discarded=0.01 cfs 0.035 af Primary=0.15 cfs 0.108 af Outflow=0.16 cfs 0.142 af

Pond QNGL1: QNGL1 Peak Elev=305.24' Storage=0.045 af Inflow=0.73 cfs 0.235 af
Discarded=0.01 cfs 0.040 af Primary=0.69 cfs 0.175 af Outflow=0.70 cfs 0.216 af

Pond QNGL2: QNGL2 Peak Elev=305.18' Storage=0.034 af Inflow=0.47 cfs 0.151 af
Discarded=0.01 cfs 0.032 af Primary=0.42 cfs 0.104 af Outflow=0.43 cfs 0.136 af

Pond QNGL4: QNGL4 Peak Elev=298.85' Storage=0.020 af Inflow=0.11 cfs 0.036 af
Discarded=0.01 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.031 af

Pond QNGL6: QNGL6 Peak Elev=298.92' Storage=0.022 af Inflow=0.12 cfs 0.039 af
Discarded=0.01 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.033 af

Pond QNGL7: QNGL7 Peak Elev=305.04' Storage=0.024 af Inflow=0.21 cfs 0.068 af
Discarded=0.01 cfs 0.024 af Primary=0.05 cfs 0.032 af Outflow=0.05 cfs 0.056 af

Pond QNLG5: QNGL5 Peak Elev=305.15' Storage=0.026 af Inflow=0.38 cfs 0.123 af
Discarded=0.01 cfs 0.024 af Primary=0.32 cfs 0.087 af Outflow=0.33 cfs 0.111 af

Pond QNR1: Qn-St Peak Elev=298.98' Storage=0.046 af Inflow=0.56 cfs 0.159 af
Discarded=0.03 cfs 0.069 af Primary=0.12 cfs 0.078 af Outflow=0.15 cfs 0.147 af

Link Q - N: Q - N Inflow=0.54 cfs 0.358 af
Primary=0.54 cfs 0.358 af

Link Q - N - OUT: Q - N OUT Inflow=0.54 cfs 0.358 af
Primary=0.54 cfs 0.358 af

Link QN PRINGLE: QN PRINGLE Inflow=0.69 cfs 0.175 af
Primary=0.69 cfs 0.175 af

Summary for Subcatchment QNL1: QNL1

Runoff = 0.73 cfs @ 7.99 hrs, Volume= 0.235 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.550	98	
*	0.360	72	
	0.910	88	Weighted Average
	0.360		39.56% Pervious Area
	0.550		60.44% Impervious Area

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

Summary for Subcatchment QNL1-PRE: QNL1-PRE

Runoff = 0.33 cfs @ 8.08 hrs, Volume= 0.135 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.930	72	
	0.930		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	170	0.1000	0.20		**Sheet Flow,** n= 0.240 P2= 2.20"

Summary for Subcatchment QNL2: QNL2

Runoff = 0.47 cfs @ 7.97 hrs, Volume= 0.151 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.390	98	
*	0.160	72	
	0.550	90	Weighted Average
	0.160		29.09% Pervious Area
	0.390		70.91% Impervious Area

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

Summary for Subcatchment QNL4: QNL4

Runoff = 0.11 cfs @ 7.99 hrs, Volume= 0.036 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.084	98	
*	0.056	72	
	0.140	88	Weighted Average
	0.056		40.00% Pervious Area
	0.084		60.00% Impervious Area

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

Summary for Subcatchment QNL5: QNL5

Runoff = 0.38 cfs @ 7.99 hrs, Volume= 0.123 af, Depth= 3.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.290	98	
*	0.200	72	
	0.490	87	Weighted Average
	0.200		40.82% Pervious Area
	0.290		59.18% Impervious Area

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

Summary for Subcatchment QNL6: QNL6

Runoff = 0.12 cfs @ 7.99 hrs, Volume= 0.039 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.090	98	
*	0.060	72	
	0.150	88	Weighted Average
	0.060		40.00% Pervious Area
	0.090		60.00% Impervious Area

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

Summary for Subcatchment QNL7: QNL7

Runoff = 0.21 cfs @ 7.99 hrs, Volume= 0.068 af, Depth= 3.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.160	98	
*	0.110	72	
	0.270	87	Weighted Average
	0.110		40.74% Pervious Area
	0.160		59.26% Impervious Area

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

Summary for Subcatchment QNR St-PRE: QNR St-PRE

Runoff = 0.99 cfs @ 8.08 hrs, Volume= 0.405 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	2.780	72	
	2.780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	190	0.1000	0.21		**Sheet Flow,** n= 0.240 P2= 2.20"

Summary for Subcatchment QNR2: R ST N upper

Runoff = 0.10 cfs @ 7.89 hrs, Volume= 0.030 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.077	98	
*	0.033	72	
	0.110	90	Weighted Average
	0.033		30.00% Pervious Area
	0.077		70.00% Impervious Area

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

Summary for Subcatchment QNR4: Qn-St Lower

Runoff = 0.21 cfs @ 7.89 hrs, Volume= 0.066 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.168	98	
*	0.072	72	
	0.240	90	Weighted Average
	0.072		30.00% Pervious Area
	0.168		70.00% Impervious Area

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

Summary for Subcatchment QNR5: Rn-St Lower

Runoff = 0.17 cfs @ 7.89 hrs, Volume= 0.055 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.140	98	
*	0.060	72	
	0.200	90	Weighted Average
	0.060		30.00% Pervious Area
	0.140		70.00% Impervious Area

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

Summary for Subcatchment QNR6-7-8: QNR6-7-8

Runoff = 0.16 cfs @ 7.91 hrs, Volume= 0.052 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.120	98	
*	0.080	72	
	0.200	88	Weighted Average
	0.080		40.00% Pervious Area
	0.120		60.00% Impervious Area

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

Summary for Subcatchment QNSR1: Qn-St Upper

Runoff = 0.17 cfs @ 7.89 hrs, Volume= 0.055 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.140	98	
*	0.060	72	
	0.200	90	Weighted Average
	0.060		30.00% Pervious Area
	0.140		70.00% Impervious Area

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

Summary for Pond 2P: Pringle Rd GSI

Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 0.00' @ 0.00 hrs Surf.Area= 0.000 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated)
Center-of-Mass det. time= (not calculated)

Volume	Invert	Avail.Storage	Storage Description
#1	295.90'	0.137 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
295.90	0.023	0.0	0.000	0.000
296.00	0.023	40.0	0.001	0.001
297.01	0.023	40.0	0.009	0.010
298.50	0.023	40.0	0.014	0.024
298.51	0.023	0.1	0.000	0.024
300.00	0.023	0.1	0.000	0.024
300.01	0.023	100.0	0.000	0.024
301.00	0.068	100.0	0.045	0.069
302.00	0.068	100.0	0.068	0.137

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	300.50'	**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 @ 0.00 hrs HW=0.00' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: W-St GSI

Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 0.00' @ 0.00 hrs Surf.Area= 0.000 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated)
Center-of-Mass det. time= (not calculated)

Volume	Invert	Avail.Storage	Storage Description
#1	306.40'	0.136 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
306.40	0.023	0.0	0.000	0.000
306.50	0.023	40.0	0.001	0.001
307.01	0.023	40.0	0.005	0.006
308.50	0.023	40.0	0.014	0.019
308.51	0.023	0.1	0.000	0.019
310.00	0.023	0.1	0.000	0.019
310.01	0.023	100.0	0.000	0.020
311.00	0.070	100.0	0.046	0.066
312.00	0.070	100.0	0.070	0.136

Device	Routing	Invert	Outlet Devices
#1	Discarded	306.40'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	310.25'	**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 @ 0.00 hrs HW=0.00' (Free Discharge)
└—**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond PIPE: PIPE

Inflow Area = 2.550 ac, 65.06% Impervious, Inflow Depth = 1.69" for Salem 100 yrs event
Inflow = 0.54 cfs @ 7.90 hrs, Volume= 0.358 af
Outflow = 0.54 cfs @ 7.90 hrs, Volume= 0.358 af, Atten= 0%, Lag= 0.2 min
Primary = 0.54 cfs @ 7.90 hrs, Volume= 0.358 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 102.19' @ 7.90 hrs Surf.Area= 0.002 ac Storage= 0.018 af

Plug-Flow detention time= 64.9 min calculated for 0.358 af (100% of inflow)
Center-of-Mass det. time= 65.0 min (887.0 - 822.0)

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	0.018 af	**24.0" D x 250.0'L Pipe Storage S= 0.0015 '/'**

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**1.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	102.08'	**4.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Primary OutFlow Max=0.54 cfs @ 7.90 hrs HW=102.19' (Free Discharge)
├—**1=Orifice/Grate** (Orifice Controls 0.04 cfs @ 7.13 fps)
└—**2=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.50 cfs @ 1.10 fps)

Summary for Pond QNG2: R st N

Inflow Area = 0.870 ac, 60.57% Impervious, Inflow Depth = 2.05" for Salem 100 yrs event
Inflow = 0.39 cfs @ 8.10 hrs, Volume= 0.149 af
Outflow = 0.16 cfs @ 10.01 hrs, Volume= 0.142 af, Atten= 59%, Lag= 114.6 min
Discarded = 0.01 cfs @ 10.01 hrs, Volume= 0.035 af
Primary = 0.15 cfs @ 10.01 hrs, Volume= 0.108 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 298.99' @ 10.01 hrs Surf.Area= 0.027 ac Storage= 0.023 af

Plug-Flow detention time= 210.2 min calculated for 0.142 af (96% of inflow)
Center-of-Mass det. time= 185.1 min (1,021.6 - 836.5)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.051 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.009	0.0	0.000	0.000
295.00	0.009	40.0	0.000	0.000
295.01	0.009	40.0	0.000	0.000
296.50	0.009	40.0	0.005	0.006
296.51	0.009	0.1	0.000	0.006
298.00	0.009	0.1	0.000	0.006
298.01	0.009	100.0	0.000	0.006
299.00	0.027	100.0	0.018	0.024
300.00	0.027	100.0	0.027	0.051

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.01 cfs @ 10.01 hrs HW=298.99' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.15 cfs @ 10.01 hrs HW=298.99' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.15 cfs @ 0.83 fps)

Summary for Pond QNGL1: QNGL1

Inflow Area = 0.910 ac, 60.44% Impervious, Inflow Depth = 3.10" for Salem 100 yrs event
Inflow = 0.73 cfs @ 7.99 hrs, Volume= 0.235 af
Outflow = 0.70 cfs @ 8.07 hrs, Volume= 0.216 af, Atten= 4%, Lag= 4.9 min
Discarded = 0.01 cfs @ 3.43 hrs, Volume= 0.040 af
Primary = 0.69 cfs @ 8.07 hrs, Volume= 0.175 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Peak Elev= 305.24' @ 8.07 hrs Surf.Area= 0.023 ac Storage= 0.045 af

Plug-Flow detention time= 249.4 min calculated for 0.216 af (92% of inflow)
Center-of-Mass det. time= 193.6 min (936.5 - 742.9)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.062 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.023	0.0	0.000	0.000
301.00	0.023	40.0	0.001	0.001
302.40	0.023	40.0	0.013	0.014
302.50	0.023	0.1	0.000	0.014
303.90	0.023	0.1	0.000	0.014
304.00	0.023	100.0	0.002	0.016
306.00	0.023	100.0	0.046	0.062

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 3.43 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.68 cfs @ 8.07 hrs HW=305.24' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.68 cfs @ 1.40 fps)

Summary for Pond QNGL2: QNGL2

Inflow Area =	0.550 ac,	70.91% Impervious,	Inflow Depth =	3.30"	for Salem 100 yrs event
Inflow =	0.47 cfs @	7.97 hrs,	Volume=	0.151 af	
Outflow =	0.43 cfs @	8.09 hrs,	Volume=	0.136 af,	Atten= 9%, Lag= 7.4 min
Discarded =	0.01 cfs @	3.11 hrs,	Volume=	0.032 af	
Primary =	0.42 cfs @	8.09 hrs,	Volume=	0.104 af	

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 305.18' @ 8.09 hrs Surf.Area= 0.018 ac Storage= 0.034 af

Plug-Flow detention time= 303.3 min calculated for 0.136 af (90% of inflow)
Center-of-Mass det. time= 235.5 min (964.8 - 729.3)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.049 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.018	0.0	0.000	0.000
301.00	0.018	40.0	0.001	0.001
302.40	0.018	40.0	0.010	0.011
302.50	0.018	0.1	0.000	0.011
303.90	0.018	0.1	0.000	0.011
304.00	0.018	100.0	0.002	0.013
306.00	0.018	100.0	0.036	0.049

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 3.11 hrs HW=300.95' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.42 cfs @ 8.09 hrs HW=305.18' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 0.42 cfs @ 1.18 fps)

Summary for Pond QNGL4: QNGL4

Inflow Area = 0.140 ac, 60.00% Impervious, Inflow Depth = 3.10" for Salem 100 yrs event
Inflow = 0.11 cfs @ 7.99 hrs, Volume= 0.036 af
Outflow = 0.01 cfs @ 22.68 hrs, Volume= 0.031 af, Atten= 89%, Lag= 881.5 min
Discarded = 0.01 cfs @ 22.68 hrs, Volume= 0.031 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 298.85' @ 22.68 hrs Surf.Area= 0.024 ac Storage= 0.020 af

Plug-Flow detention time= 768.3 min calculated for 0.031 af (85% of inflow)
Center-of-Mass det. time= 669.3 min (1,412.2 - 742.9)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.051 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.009	0.0	0.000	0.000
295.00	0.009	40.0	0.000	0.000
295.01	0.009	40.0	0.000	0.000
296.50	0.009	40.0	0.005	0.006
296.51	0.009	0.1	0.000	0.006
298.00	0.009	0.1	0.000	0.006
298.01	0.009	100.0	0.000	0.006
299.00	0.027	100.0	0.018	0.024
300.00	0.027	100.0	0.027	0.051

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	299.00'	**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=0.01 cfs @ 22.68 hrs HW=298.85' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNGL6: QNGL6

Inflow Area = 0.150 ac, 60.00% Impervious, Inflow Depth = 3.10" for Salem 100 yrs event
Inflow = 0.12 cfs @ 7.99 hrs, Volume= 0.039 af
Outflow = 0.01 cfs @ 22.92 hrs, Volume= 0.033 af, Atten= 89%, Lag= 896.1 min
Discarded = 0.01 cfs @ 22.92 hrs, Volume= 0.033 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 298.92' @ 22.92 hrs Surf.Area= 0.026 ac Storage= 0.022 af

Plug-Flow detention time= 783.9 min calculated for 0.033 af (84% of inflow)
Center-of-Mass det. time= 681.2 min (1,424.1 - 742.9)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.051 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.009	0.0	0.000	0.000
295.00	0.009	40.0	0.000	0.000
295.01	0.009	40.0	0.000	0.000
296.50	0.009	40.0	0.005	0.006
296.51	0.009	0.1	0.000	0.006
298.00	0.009	0.1	0.000	0.006
298.01	0.009	100.0	0.000	0.006
299.00	0.027	100.0	0.018	0.024
300.00	0.027	100.0	0.027	0.051

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	299.00'	**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=0.01 cfs @ 22.92 hrs HW=298.92' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNGL7: QNGL7

Inflow Area = 0.270 ac, 59.26% Impervious, Inflow Depth = 3.01" for Salem 100 yrs event
Inflow = 0.21 cfs @ 7.99 hrs, Volume= 0.068 af
Outflow = 0.05 cfs @ 9.93 hrs, Volume= 0.056 af, Atten= 74%, Lag= 116.5 min
Discarded = 0.01 cfs @ 4.19 hrs, Volume= 0.024 af
Primary = 0.05 cfs @ 9.93 hrs, Volume= 0.032 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 305.04' @ 9.93 hrs Surf.Area= 0.014 ac Storage= 0.024 af

Plug-Flow detention time= 524.5 min calculated for 0.056 af (83% of inflow)
Center-of-Mass det. time= 414.7 min (1,164.1 - 749.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 4.19 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.04 cfs @ 9.93 hrs HW=305.04' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.04 cfs @ 0.55 fps)

Summary for Pond QNLG5: QNGL5

Inflow Area = 0.490 ac, 59.18% Impervious, Inflow Depth = 3.01" for Salem 100 yrs event
Inflow = 0.38 cfs @ 7.99 hrs, Volume= 0.123 af
Outflow = 0.33 cfs @ 8.11 hrs, Volume= 0.111 af, Atten= 12%, Lag= 7.5 min
Discarded = 0.01 cfs @ 3.73 hrs, Volume= 0.024 af
Primary = 0.32 cfs @ 8.11 hrs, Volume= 0.087 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 305.15' @ 8.11 hrs Surf.Area= 0.014 ac Storage= 0.026 af

Plug-Flow detention time= 286.2 min calculated for 0.111 af (90% of inflow)
Center-of-Mass det. time= 222.6 min (972.0 - 749.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 3.73 hrs HW=300.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.32 cfs @ 8.11 hrs HW=305.15' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.32 cfs @ 1.08 fps)

Summary for Pond QNR1: Qn-St

Inflow Area = 0.750 ac, 70.67% Impervious, Inflow Depth = 2.55" for Salem 100 yrs event
Inflow = 0.56 cfs @ 8.05 hrs, Volume= 0.159 af
Outflow = 0.15 cfs @ 10.12 hrs, Volume= 0.147 af, Atten= 74%, Lag= 124.0 min
Discarded = 0.03 cfs @ 10.12 hrs, Volume= 0.069 af
Primary = 0.12 cfs @ 10.12 hrs, Volume= 0.078 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 298.98' @ 10.12 hrs Surf.Area= 0.053 ac Storage= 0.046 af

Plug-Flow detention time= 397.5 min calculated for 0.147 af (92% of inflow)

Center-of-Mass det. time= 347.8 min (1,136.6 - 788.8)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.101 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.018	0.0	0.000	0.000
295.00	0.018	40.0	0.001	0.001
295.01	0.018	40.0	0.000	0.001
296.50	0.018	40.0	0.011	0.012
296.51	0.018	0.1	0.000	0.012
298.00	0.018	0.1	0.000	0.012
298.01	0.018	100.0	0.000	0.012
299.00	0.054	100.0	0.036	0.047
300.00	0.054	100.0	0.054	0.101

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.03 cfs @ 10.12 hrs HW=298.98' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.12 cfs @ 10.12 hrs HW=298.98' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.12 cfs @ 0.77 fps)

Summary for Link Q - N: Q - N

Inflow Area = 2.550 ac, 65.06% Impervious, Inflow Depth = 1.69" for Salem 100 yrs event
Inflow = 0.54 cfs @ 7.90 hrs, Volume= 0.358 af
Primary = 0.54 cfs @ 7.90 hrs, Volume= 0.358 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Summary for Link Q - N - OUT: Q - N OUT

Inflow Area = 2.550 ac, 65.06% Impervious, Inflow Depth = 1.69" for Salem 100 yrs event
Inflow = 0.54 cfs @ 7.90 hrs, Volume= 0.358 af
Primary = 0.54 cfs @ 7.90 hrs, Volume= 0.358 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Summary for Link QN PRINGLE: QN PRINGLE

Inflow Area =	0.910 ac,	60.44% Impervious,	Inflow Depth = 2.31"	for Salem 100 yrs event	
Inflow =	0.69 cfs @	8.07 hrs,	Volume=	0.175 af	
Primary =	0.69 cfs @	8.07 hrs,	Volume=	0.175 af,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Time span=0.00-45.00 hrs, dt=0.01 hrs, 4501 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment QNL1: QNL1 Runoff Area=0.910 ac 60.44% Impervious Runoff Depth=1.13"
Tc=10.0 min CN=88 Runoff=0.24 cfs 0.086 af

Subcatchment QNL1-PRE: QNL1-PRE Runoff Area=0.930 ac 0.00% Impervious Runoff Depth=0.38"
Flow Length=170' Slope=0.1000 '/' Tc=13.8 min CN=72 Runoff=0.03 cfs 0.030 af

Subcatchment QNL2: QNL2 Runoff Area=0.550 ac 70.91% Impervious Runoff Depth=1.27"
Tc=10.0 min CN=90 Runoff=0.17 cfs 0.058 af

Subcatchment QNL4: QNL4 Runoff Area=0.140 ac 60.00% Impervious Runoff Depth=1.13"
Tc=10.0 min CN=88 Runoff=0.04 cfs 0.013 af

Subcatchment QNL5: QNL5 Runoff Area=0.490 ac 59.18% Impervious Runoff Depth=1.06"
Tc=10.0 min CN=87 Runoff=0.12 cfs 0.043 af

Subcatchment QNL6: QNL6 Runoff Area=0.150 ac 60.00% Impervious Runoff Depth=1.13"
Tc=10.0 min CN=88 Runoff=0.04 cfs 0.014 af

Subcatchment QNL7: QNL7 Runoff Area=0.270 ac 59.26% Impervious Runoff Depth=1.06"
Tc=10.0 min CN=87 Runoff=0.07 cfs 0.024 af

Subcatchment QNR St-PRE: QNR St-PRE Runoff Area=2.780 ac 0.00% Impervious Runoff Depth=0.38"
Flow Length=190' Slope=0.1000 '/' Tc=15.1 min CN=72 Runoff=0.07 cfs 0.088 af

Subcatchment QNR2: R ST N upper Runoff Area=0.110 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.012 af

Subcatchment QNR4: Qn-St Lower Runoff Area=0.240 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.08 cfs 0.025 af

Subcatchment QNR5: Rn-St Lower Runoff Area=0.200 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.06 cfs 0.021 af

Subcatchment QNR6-7-8: QNR6-7-8 Runoff Area=0.200 ac 60.00% Impervious Runoff Depth=1.13"
Tc=5.0 min CN=88 Runoff=0.05 cfs 0.019 af

Subcatchment QNSR1: Qn-St Upper Runoff Area=0.200 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.06 cfs 0.021 af

Pond 2P: Pringle Rd GSI Peak Elev=0.00' Storage=0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af

Pond 5P: W-St GSI Peak Elev=0.00' Storage=0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af

Pond PIPE: PIPE Peak Elev=102.07' Storage=0.017 af Inflow=0.19 cfs 0.065 af
Outflow=0.04 cfs 0.065 af

Pond QNG2: R st N Peak Elev=298.47' Storage=0.012 af Inflow=0.03 cfs 0.020 af
Discarded=0.01 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.018 af

Pond QNGL1: QNGL1 Peak Elev=305.04' Storage=0.040 af Inflow=0.24 cfs 0.086 af
Discarded=0.01 cfs 0.038 af Primary=0.04 cfs 0.028 af Outflow=0.05 cfs 0.066 af

Pond QNGL2: QNGL2 Peak Elev=305.02' Storage=0.031 af Inflow=0.17 cfs 0.058 af
Discarded=0.01 cfs 0.030 af Primary=0.02 cfs 0.013 af Outflow=0.03 cfs 0.043 af

Pond QNGL4: QNGL4 Peak Elev=298.05' Storage=0.006 af Inflow=0.04 cfs 0.013 af
Discarded=0.00 cfs 0.013 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.013 af

Pond QNGL6: QNGL6 Peak Elev=298.11' Storage=0.007 af Inflow=0.04 cfs 0.014 af
Discarded=0.01 cfs 0.014 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.014 af

Pond QNGL7: QNGL7 Peak Elev=304.25' Storage=0.013 af Inflow=0.07 cfs 0.024 af
Discarded=0.01 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.023 af

Pond QNLG5: QNGL5 Peak Elev=305.02' Storage=0.024 af Inflow=0.12 cfs 0.043 af
Discarded=0.01 cfs 0.023 af Primary=0.02 cfs 0.009 af Outflow=0.02 cfs 0.032 af

Pond QNR1: Qn-St Peak Elev=298.29' Storage=0.018 af Inflow=0.06 cfs 0.034 af
Discarded=0.01 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.033 af

Link Q - N: Q - N Inflow=0.19 cfs 0.065 af
Primary=0.19 cfs 0.065 af

Link Q - N - OUT: Q - N OUT Inflow=0.04 cfs 0.065 af
Primary=0.04 cfs 0.065 af

Link QN PRINGLE: QN PRINGLE Inflow=0.04 cfs 0.028 af
Primary=0.04 cfs 0.028 af

Summary for Subcatchment QNL1: QNL1

Runoff = 0.24 cfs @ 8.03 hrs, Volume= 0.086 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.550	98	
*	0.360	72	
	0.910	88	Weighted Average
	0.360		39.56% Pervious Area
	0.550		60.44% Impervious Area

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

Summary for Subcatchment QNL1-PRE: QNL1-PRE

Runoff = 0.03 cfs @ 8.20 hrs, Volume= 0.030 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.930	72	
	0.930		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	170	0.1000	0.20		**Sheet Flow,** n= 0.240 P2= 2.20"

Summary for Subcatchment QNL2: QNL2

Runoff = 0.17 cfs @ 8.01 hrs, Volume= 0.058 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.390	98	
*	0.160	72	
	0.550	90	Weighted Average
	0.160		29.09% Pervious Area
	0.390		70.91% Impervious Area

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

Summary for Subcatchment QNL4: QNL4

Runoff = 0.04 cfs @ 8.03 hrs, Volume= 0.013 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.084	98	
*	0.056	72	
	0.140	88	Weighted Average
	0.056		40.00% Pervious Area
	0.084		60.00% Impervious Area

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

Summary for Subcatchment QNL5: QNL5

Runoff = 0.12 cfs @ 8.03 hrs, Volume= 0.043 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.290	98	
*	0.200	72	
	0.490	87	Weighted Average
	0.200		40.82% Pervious Area
	0.290		59.18% Impervious Area

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

Summary for Subcatchment QNL6: QNL6

Runoff = 0.04 cfs @ 8.03 hrs, Volume= 0.014 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.090	98	
*	0.060	72	
	0.150	88	Weighted Average
	0.060		40.00% Pervious Area
	0.090		60.00% Impervious Area

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

Summary for Subcatchment QNL7: QNL7

Runoff = 0.07 cfs @ 8.03 hrs, Volume= 0.024 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.160	98	
*	0.110	72	
	0.270	87	Weighted Average
	0.110		40.74% Pervious Area
	0.160		59.26% Impervious Area

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

Summary for Subcatchment QNR St-PRE: QNR St-PRE

Runoff = 0.07 cfs @ 8.24 hrs, Volume= 0.088 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	2.780	72	
	2.780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	190	0.1000	0.21		**Sheet Flow,** n= 0.240 P2= 2.20"

Summary for Subcatchment QNR2: R ST N upper

Runoff = 0.03 cfs @ 7.94 hrs, Volume= 0.012 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.077	98	
*	0.033	72	
	0.110	90	Weighted Average
	0.033		30.00% Pervious Area
	0.077		70.00% Impervious Area

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

Summary for Subcatchment QNR4: Qn-St Lower

Runoff = 0.08 cfs @ 7.94 hrs, Volume= 0.025 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.168	98	
*	0.072	72	
	0.240	90	Weighted Average
	0.072		30.00% Pervious Area
	0.168		70.00% Impervious Area

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

Summary for Subcatchment QNR5: Rn-St Lower

Runoff = 0.06 cfs @ 7.94 hrs, Volume= 0.021 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.140	98	
*	0.060	72	
	0.200	90	Weighted Average
	0.060		30.00% Pervious Area
	0.140		70.00% Impervious Area

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

Summary for Subcatchment QNR6-7-8: QNR6-7-8

Runoff = 0.05 cfs @ 7.96 hrs, Volume= 0.019 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.120	98	
*	0.080	72	
	0.200	88	Weighted Average
	0.080		40.00% Pervious Area
	0.120		60.00% Impervious Area

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

Summary for Subcatchment QNSR1: Qn-St Upper

Runoff = 0.06 cfs @ 7.94 hrs, Volume= 0.021 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.140	98	
*	0.060	72	
	0.200	90	Weighted Average
	0.060		30.00% Pervious Area
	0.140		70.00% Impervious Area

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

Summary for Pond 2P: Pringle Rd GSI

Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 0.00' @ 0.00 hrs Surf.Area= 0.000 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated)
Center-of-Mass det. time= (not calculated)

Volume	Invert	Avail.Storage	Storage Description
#1	295.90'	0.137 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
295.90	0.023	0.0	0.000	0.000
296.00	0.023	40.0	0.001	0.001
297.01	0.023	40.0	0.009	0.010
298.50	0.023	40.0	0.014	0.024
298.51	0.023	0.1	0.000	0.024
300.00	0.023	0.1	0.000	0.024
300.01	0.023	100.0	0.000	0.024
301.00	0.068	100.0	0.045	0.069
302.00	0.068	100.0	0.068	0.137

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	300.50'	**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 @ 0.00 hrs HW=0.00' (Free Discharge)
└─**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: W-St GSI

Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 0.00' @ 0.00 hrs Surf.Area= 0.000 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated)
Center-of-Mass det. time= (not calculated)

Volume	Invert	Avail.Storage	Storage Description
#1	306.40'	0.136 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
306.40	0.023	0.0	0.000	0.000
306.50	0.023	40.0	0.001	0.001
307.01	0.023	40.0	0.005	0.006
308.50	0.023	40.0	0.014	0.019
308.51	0.023	0.1	0.000	0.019
310.00	0.023	0.1	0.000	0.019
310.01	0.023	100.0	0.000	0.020
311.00	0.070	100.0	0.046	0.066
312.00	0.070	100.0	0.070	0.136

Device	Routing	Invert	Outlet Devices
#1	Discarded	306.40'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	310.25'	**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 @ 0.00 hrs HW=0.00' (Free Discharge)
└─**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond PIPE: PIPE

Inflow Area = 2.550 ac, 65.06% Impervious, Inflow Depth = 0.31" for Salem 2 yr event
Inflow = 0.19 cfs @ 7.95 hrs, Volume= 0.065 af
Outflow = 0.04 cfs @ 13.79 hrs, Volume= 0.065 af, Atten= 80%, Lag= 350.9 min
Primary = 0.04 cfs @ 13.79 hrs, Volume= 0.065 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 102.07' @ 13.79 hrs Surf.Area= 0.005 ac Storage= 0.017 af

Plug-Flow detention time= 275.2 min calculated for 0.065 af (100% of inflow)
Center-of-Mass det. time= 275.2 min (1,057.5 - 782.3)

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	0.018 af	**24.0" D x 250.0'L Pipe Storage S= 0.0015 '/'**

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**1.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	102.08'	**4.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Primary OutFlow Max=0.04 cfs @ 13.79 hrs HW=102.07' (Free Discharge)
├─**1=Orifice/Grate** (Orifice Controls 0.04 cfs @ 6.92 fps)
└─**2=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Summary for Pond QNG2: R st N

Inflow Area = 0.870 ac, 60.57% Impervious, Inflow Depth = 0.28" for Salem 2 yr event
Inflow = 0.03 cfs @ 7.94 hrs, Volume= 0.020 af
Outflow = 0.01 cfs @ 24.13 hrs, Volume= 0.018 af, Atten= 75%, Lag= 971.4 min
Discarded = 0.01 cfs @ 24.13 hrs, Volume= 0.018 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 298.47' @ 24.13 hrs Surf.Area= 0.017 ac Storage= 0.012 af

Plug-Flow detention time= 606.9 min calculated for 0.018 af (89% of inflow)
Center-of-Mass det. time= 555.0 min (1,514.1 - 959.2)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.051 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.009	0.0	0.000	0.000
295.00	0.009	40.0	0.000	0.000
295.01	0.009	40.0	0.000	0.000
296.50	0.009	40.0	0.005	0.006
296.51	0.009	0.1	0.000	0.006
298.00	0.009	0.1	0.000	0.006
298.01	0.009	100.0	0.000	0.006
299.00	0.027	100.0	0.018	0.024
300.00	0.027	100.0	0.027	0.051

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.01 cfs @ 24.13 hrs HW=298.47' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNGL1: QNGL1

Inflow Area = 0.910 ac, 60.44% Impervious, Inflow Depth = 1.13" for Salem 2 yr event
Inflow = 0.24 cfs @ 8.03 hrs, Volume= 0.086 af
Outflow = 0.05 cfs @ 14.37 hrs, Volume= 0.066 af, Atten= 79%, Lag= 380.4 min
Discarded = 0.01 cfs @ 5.80 hrs, Volume= 0.038 af
Primary = 0.04 cfs @ 14.37 hrs, Volume= 0.028 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Peak Elev= 305.04' @ 14.37 hrs Surf.Area= 0.023 ac Storage= 0.040 af

Plug-Flow detention time= 666.5 min calculated for 0.066 af (77% of inflow)
Center-of-Mass det. time= 533.0 min (1,333.6 - 800.5)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.062 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.023	0.0	0.000	0.000
301.00	0.023	40.0	0.001	0.001
302.40	0.023	40.0	0.013	0.014
302.50	0.023	0.1	0.000	0.014
303.90	0.023	0.1	0.000	0.014
304.00	0.023	100.0	0.002	0.016
306.00	0.023	100.0	0.046	0.062

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 5.80 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.04 cfs @ 14.37 hrs HW=305.04' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.04 cfs @ 0.53 fps)

Summary for Pond QNGL2: QNGL2

Inflow Area =	0.550 ac, 70.91% Impervious, Inflow Depth = 1.27" for Salem 2 yr event			
Inflow =	0.17 cfs @	8.01 hrs, Volume=	0.058 af	
Outflow =	0.03 cfs @	16.15 hrs, Volume=	0.043 af,	Atten= 82%, Lag= 488.4 min
Discarded =	0.01 cfs @	5.47 hrs, Volume=	0.030 af	
Primary =	0.02 cfs @	16.15 hrs, Volume=	0.013 af	

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 305.02' @ 16.15 hrs Surf.Area= 0.018 ac Storage= 0.031 af

Plug-Flow detention time= 766.2 min calculated for 0.043 af (74% of inflow)
Center-of-Mass det. time= 612.7 min (1,394.1 - 781.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.049 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.018	0.0	0.000	0.000
301.00	0.018	40.0	0.001	0.001
302.40	0.018	40.0	0.010	0.011
302.50	0.018	0.1	0.000	0.011
303.90	0.018	0.1	0.000	0.011
304.00	0.018	100.0	0.002	0.013
306.00	0.018	100.0	0.036	0.049

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 5.47 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.02 cfs @ 16.15 hrs HW=305.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.42 fps)

Summary for Pond QNGL4: QNGL4

Inflow Area = 0.140 ac, 60.00% Impervious, Inflow Depth = 1.13" for Salem 2 yr event
Inflow = 0.04 cfs @ 8.03 hrs, Volume= 0.013 af
Outflow = 0.00 cfs @ 24.00 hrs, Volume= 0.013 af, Atten= 87%, Lag= 958.4 min
Discarded = 0.00 cfs @ 24.00 hrs, Volume= 0.013 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 298.05' @ 24.00 hrs Surf.Area= 0.010 ac Storage= 0.006 af

Plug-Flow detention time= 598.4 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 598.4 min (1,398.9 - 800.5)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.051 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.009	0.0	0.000	0.000
295.00	0.009	40.0	0.000	0.000
295.01	0.009	40.0	0.000	0.000
296.50	0.009	40.0	0.005	0.006
296.51	0.009	0.1	0.000	0.006
298.00	0.009	0.1	0.000	0.006
298.01	0.009	100.0	0.000	0.006
299.00	0.027	100.0	0.018	0.024
300.00	0.027	100.0	0.027	0.051

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	299.00'	**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 @ 24.00 hrs HW=298.05' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond QNGL6: QNGL6

Inflow Area = 0.150 ac, 60.00% Impervious, Inflow Depth = 1.13" for Salem 2 yr event
Inflow = 0.04 cfs @ 8.03 hrs, Volume= 0.014 af
Outflow = 0.01 cfs @ 23.51 hrs, Volume= 0.014 af, Atten= 86%, Lag= 928.9 min
Discarded = 0.01 cfs @ 23.51 hrs, Volume= 0.014 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 298.11' @ 23.51 hrs Surf.Area= 0.011 ac Storage= 0.007 af

Plug-Flow detention time= 633.8 min calculated for 0.014 af (100% of inflow)
Center-of-Mass det. time= 634.0 min (1,434.5 - 800.5)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.051 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.009	0.0	0.000	0.000
295.00	0.009	40.0	0.000	0.000
295.01	0.009	40.0	0.000	0.000
296.50	0.009	40.0	0.005	0.006
296.51	0.009	0.1	0.000	0.006
298.00	0.009	0.1	0.000	0.006
298.01	0.009	100.0	0.000	0.006
299.00	0.027	100.0	0.018	0.024
300.00	0.027	100.0	0.027	0.051

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	299.00'	**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=0.01 cfs @ 23.51 hrs HW=298.11' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNGL7: QNGL7

Inflow Area = 0.270 ac, 59.26% Impervious, Inflow Depth = 1.06" for Salem 2 yr event
Inflow = 0.07 cfs @ 8.03 hrs, Volume= 0.024 af
Outflow = 0.01 cfs @ 6.79 hrs, Volume= 0.023 af, Atten= 89%, Lag= 0.0 min
Discarded = 0.01 cfs @ 6.79 hrs, Volume= 0.023 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 304.25' @ 24.10 hrs Surf.Area= 0.014 ac Storage= 0.013 af

Plug-Flow detention time= 751.3 min calculated for 0.023 af (95% of inflow)
Center-of-Mass det. time= 720.2 min (1,529.9 - 809.7)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 6.79 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNLG5: QNGL5

Inflow Area =	0.490 ac,	59.18% Impervious,	Inflow Depth = 1.06"	for Salem 2 yr event
Inflow =	0.12 cfs @	8.03 hrs, Volume=	0.043 af	
Outflow =	0.02 cfs @	17.24 hrs, Volume=	0.032 af,	Atten= 80%, Lag= 552.9 min
Discarded =	0.01 cfs @	6.17 hrs, Volume=	0.023 af	
Primary =	0.02 cfs @	17.24 hrs, Volume=	0.009 af	

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 305.02' @ 17.24 hrs Surf.Area= 0.014 ac Storage= 0.024 af

Plug-Flow detention time= 776.5 min calculated for 0.032 af (73% of inflow)
Center-of-Mass det. time= 621.5 min (1,431.2 - 809.7)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 6.17 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.01 cfs @ 17.24 hrs HW=305.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.37 fps)

Summary for Pond QNR1: Qn-St

Inflow Area =	0.750 ac,	70.67% Impervious,	Inflow Depth = 0.54"	for Salem 2 yr event
Inflow =	0.06 cfs @	7.94 hrs, Volume=	0.034 af	
Outflow =	0.01 cfs @	24.08 hrs, Volume=	0.033 af,	Atten= 77%, Lag= 968.3 min
Discarded =	0.01 cfs @	24.08 hrs, Volume=	0.033 af	
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 298.29' @ 24.08 hrs Surf.Area= 0.028 ac Storage= 0.018 af

Plug-Flow detention time= 607.7 min calculated for 0.033 af (97% of inflow)

Center-of-Mass det. time= 589.9 min (1,510.0 - 920.1)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.101 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.018	0.0	0.000	0.000
295.00	0.018	40.0	0.001	0.001
295.01	0.018	40.0	0.000	0.001
296.50	0.018	40.0	0.011	0.012
296.51	0.018	0.1	0.000	0.012
298.00	0.018	0.1	0.000	0.012
298.01	0.018	100.0	0.000	0.012
299.00	0.054	100.0	0.036	0.047
300.00	0.054	100.0	0.054	0.101

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.01 cfs @ 24.08 hrs HW=298.29' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link Q - N: Q - N

Inflow Area = 2.550 ac, 65.06% Impervious, Inflow Depth = 0.31" for Salem 2 yr event
Inflow = 0.19 cfs @ 7.95 hrs, Volume= 0.065 af
Primary = 0.19 cfs @ 7.95 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Summary for Link Q - N - OUT: Q - N OUT

Inflow Area = 2.550 ac, 65.06% Impervious, Inflow Depth = 0.31" for Salem 2 yr event
Inflow = 0.04 cfs @ 13.79 hrs, Volume= 0.065 af
Primary = 0.04 cfs @ 13.79 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Summary for Link QN PRINGLE: QN PRINGLE

Inflow Area = 0.910 ac, 60.44% Impervious, Inflow Depth = 0.37" for Salem 2 yr event
Inflow = 0.04 cfs @ 14.37 hrs, Volume= 0.028 af
Primary = 0.04 cfs @ 14.37 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Time span=0.00-45.00 hrs, dt=0.01 hrs, 4501 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment QNL1: QNL1 Runoff Area=0.910 ac 60.44% Impervious Runoff Depth=0.50"
Tc=10.0 min CN=88 Runoff=0.09 cfs 0.038 af

Subcatchment QNL1-PRE: QNL1-PRE Runoff Area=0.930 ac 0.00% Impervious Runoff Depth=0.08"
Flow Length=170' Slope=0.1000 '/' Tc=13.8 min CN=72 Runoff=0.01 cfs 0.006 af

Subcatchment QNL2: QNL2 Runoff Area=0.550 ac 70.91% Impervious Runoff Depth=0.59"
Tc=10.0 min CN=90 Runoff=0.07 cfs 0.027 af

Subcatchment QNL4: QNL4 Runoff Area=0.140 ac 60.00% Impervious Runoff Depth=0.50"
Tc=10.0 min CN=88 Runoff=0.01 cfs 0.006 af

Subcatchment QNL5: QNL5 Runoff Area=0.490 ac 59.18% Impervious Runoff Depth=0.45"
Tc=10.0 min CN=87 Runoff=0.04 cfs 0.019 af

Subcatchment QNL6: QNL6 Runoff Area=0.150 ac 60.00% Impervious Runoff Depth=0.50"
Tc=10.0 min CN=88 Runoff=0.01 cfs 0.006 af

Subcatchment QNL7: QNL7 Runoff Area=0.270 ac 59.26% Impervious Runoff Depth=0.45"
Tc=10.0 min CN=87 Runoff=0.02 cfs 0.010 af

Subcatchment QNR St-PRE: QNR St-PRE Runoff Area=2.780 ac 0.00% Impervious Runoff Depth=0.08"
Flow Length=190' Slope=0.1000 '/' Tc=15.1 min CN=72 Runoff=0.02 cfs 0.019 af

Subcatchment QNR2: R ST N upper Runoff Area=0.110 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.01 cfs 0.005 af

Subcatchment QNR4: Qn-St Lower Runoff Area=0.240 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.012 af

Subcatchment QNR5: Rn-St Lower Runoff Area=0.200 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.010 af

Subcatchment QNR6-7-8: QNR6-7-8 Runoff Area=0.200 ac 60.00% Impervious Runoff Depth=0.50"
Tc=5.0 min CN=88 Runoff=0.02 cfs 0.008 af

Subcatchment QNSR1: Qn-St Upper Runoff Area=0.200 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.010 af

Pond 2P: Pringle Rd GSI Peak Elev=0.00' Storage=0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af

Pond 5P: W-St GSI Peak Elev=0.00' Storage=0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af

Pond PIPE: PIPE Peak Elev=100.75' Storage=0.004 af Inflow=0.08 cfs 0.030 af
Outflow=0.02 cfs 0.030 af

Pond QNG2: R st N Peak Elev=295.09' Storage=0.001 af Inflow=0.01 cfs 0.005 af
Discarded=0.00 cfs 0.005 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.005 af

Pond QNGL1: QNGL1 Peak Elev=304.22' Storage=0.021 af Inflow=0.09 cfs 0.038 af
Discarded=0.01 cfs 0.036 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.036 af

Pond QNGL2: QNGL2 Peak Elev=304.07' Storage=0.014 af Inflow=0.07 cfs 0.027 af
Discarded=0.01 cfs 0.027 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.027 af

Pond QNGL4: QNGL4 Peak Elev=295.09' Storage=0.001 af Inflow=0.01 cfs 0.006 af
Discarded=0.00 cfs 0.006 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.006 af

Pond QNGL6: QNGL6 Peak Elev=295.13' Storage=0.001 af Inflow=0.01 cfs 0.006 af
Discarded=0.00 cfs 0.006 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.006 af

Pond QNGL7: QNGL7 Peak Elev=301.14' Storage=0.001 af Inflow=0.02 cfs 0.010 af
Discarded=0.01 cfs 0.010 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.010 af

Pond QNLG5: QNGL5 Peak Elev=303.92' Storage=0.009 af Inflow=0.04 cfs 0.019 af
Discarded=0.01 cfs 0.019 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.019 af

Pond QNR1: Qn-St Peak Elev=295.06' Storage=0.001 af Inflow=0.03 cfs 0.010 af
Discarded=0.01 cfs 0.010 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.010 af

Link Q - N: Q - N Inflow=0.08 cfs 0.030 af
Primary=0.08 cfs 0.030 af

Link Q - N - OUT: Q - N OUT Inflow=0.02 cfs 0.030 af
Primary=0.02 cfs 0.030 af

Link QN PRINGLE: QN PRINGLE Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Summary for Subcatchment QNL1: QNL1

Runoff = 0.09 cfs @ 8.04 hrs, Volume= 0.038 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.550	98	
*	0.360	72	
	0.910	88	Weighted Average
	0.360		39.56% Pervious Area
	0.550		60.44% Impervious Area

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

Summary for Subcatchment QNL1-PRE: QNL1-PRE

Runoff = 0.01 cfs @ 20.07 hrs, Volume= 0.006 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.930	72	
	0.930		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	170	0.1000	0.20		**Sheet Flow,** n= 0.240 P2= 2.20"

Summary for Subcatchment QNL2: QNL2

Runoff = 0.07 cfs @ 8.03 hrs, Volume= 0.027 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.390	98	
*	0.160	72	
	0.550	90	Weighted Average
	0.160		29.09% Pervious Area
	0.390		70.91% Impervious Area

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

Summary for Subcatchment QNL4: QNL4

Runoff = 0.01 cfs @ 8.04 hrs, Volume= 0.006 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.084	98	
*	0.056	72	
	0.140	88	Weighted Average
	0.056		40.00% Pervious Area
	0.084		60.00% Impervious Area

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

Summary for Subcatchment QNL5: QNL5

Runoff = 0.04 cfs @ 8.05 hrs, Volume= 0.019 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.290	98	
*	0.200	72	
	0.490	87	Weighted Average
	0.200		40.82% Pervious Area
	0.290		59.18% Impervious Area

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

Summary for Subcatchment QNL6: QNL6

Runoff = 0.01 cfs @ 8.04 hrs, Volume= 0.006 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.090	98	
*	0.060	72	
	0.150	88	Weighted Average
	0.060		40.00% Pervious Area
	0.090		60.00% Impervious Area

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

Summary for Subcatchment QNL7: QNL7

Runoff = 0.02 cfs @ 8.05 hrs, Volume= 0.010 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.160	98	
*	0.110	72	
	0.270	87	Weighted Average
	0.110		40.74% Pervious Area
	0.160		59.26% Impervious Area

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

Summary for Subcatchment QNR St-PRE: QNR St-PRE

Runoff = 0.02 cfs @ 20.15 hrs, Volume= 0.019 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	2.780	72	
	2.780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	190	0.1000	0.21		**Sheet Flow,** n= 0.240 P2= 2.20"

Summary for Subcatchment QNR2: R ST N upper

Runoff = 0.01 cfs @ 7.99 hrs, Volume= 0.005 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.077	98	
*	0.033	72	
	0.110	90	Weighted Average
	0.033		30.00% Pervious Area
	0.077		70.00% Impervious Area

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

Summary for Subcatchment QNR4: Qn-St Lower

Runoff = 0.03 cfs @ 7.99 hrs, Volume= 0.012 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.168	98	
*	0.072	72	
	0.240	90	Weighted Average
	0.072		30.00% Pervious Area
	0.168		70.00% Impervious Area

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

Summary for Subcatchment QNR5: Rn-St Lower

Runoff = 0.03 cfs @ 7.99 hrs, Volume= 0.010 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.140	98	
*	0.060	72	
	0.200	90	Weighted Average
	0.060		30.00% Pervious Area
	0.140		70.00% Impervious Area

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

Summary for Subcatchment QNR6-7-8: QNR6-7-8

Runoff = 0.02 cfs @ 8.01 hrs, Volume= 0.008 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.120	98	
*	0.080	72	
	0.200	88	Weighted Average
	0.080		40.00% Pervious Area
	0.120		60.00% Impervious Area

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

Summary for Subcatchment QNSR1: Qn-St Upper

Runoff = 0.03 cfs @ 7.99 hrs, Volume= 0.010 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.140	98	
*	0.060	72	
	0.200	90	Weighted Average
	0.060		30.00% Pervious Area
	0.140		70.00% Impervious Area

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

Summary for Pond 2P: Pringle Rd GSI

Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 0.00' @ 0.00 hrs Surf.Area= 0.000 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated)
Center-of-Mass det. time= (not calculated)

Volume	Invert	Avail.Storage	Storage Description
#1	295.90'	0.137 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
295.90	0.023	0.0	0.000	0.000
296.00	0.023	40.0	0.001	0.001
297.01	0.023	40.0	0.009	0.010
298.50	0.023	40.0	0.014	0.024
298.51	0.023	0.1	0.000	0.024
300.00	0.023	0.1	0.000	0.024
300.01	0.023	100.0	0.000	0.024
301.00	0.068	100.0	0.045	0.069
302.00	0.068	100.0	0.068	0.137

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	300.50'	**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 @ 0.00 hrs HW=0.00' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: W-St GSI

Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 0.00' @ 0.00 hrs Surf.Area= 0.000 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated)
Center-of-Mass det. time= (not calculated)

Volume	Invert	Avail.Storage	Storage Description
#1	306.40'	0.136 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
306.40	0.023	0.0	0.000	0.000
306.50	0.023	40.0	0.001	0.001
307.01	0.023	40.0	0.005	0.006
308.50	0.023	40.0	0.014	0.019
308.51	0.023	0.1	0.000	0.019
310.00	0.023	0.1	0.000	0.019
310.01	0.023	100.0	0.000	0.020
311.00	0.070	100.0	0.046	0.066
312.00	0.070	100.0	0.070	0.136

Device	Routing	Invert	Outlet Devices
#1	Discarded	306.40'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	310.25'	**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 @ 0.00 hrs HW=0.00' (Free Discharge)
└─**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond PIPE: PIPE

Inflow Area = 2.550 ac, 65.06% Impervious, Inflow Depth = 0.14" for Salem Water Quality event
Inflow = 0.08 cfs @ 8.00 hrs, Volume= 0.030 af
Outflow = 0.02 cfs @ 10.94 hrs, Volume= 0.030 af, Atten= 71%, Lag= 176.9 min
Primary = 0.02 cfs @ 10.94 hrs, Volume= 0.030 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 100.75' @ 10.94 hrs Surf.Area= 0.010 ac Storage= 0.004 af

Plug-Flow detention time= 96.6 min calculated for 0.030 af (100% of inflow)
Center-of-Mass det. time= 96.6 min (927.0 - 830.4)

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	0.018 af	**24.0" D x 250.0'L Pipe Storage S= 0.0015 '/'**

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**1.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	102.08'	**4.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Primary OutFlow Max=0.02 cfs @ 10.94 hrs HW=100.75' (Free Discharge)
├─**1=Orifice/Grate** (Orifice Controls 0.02 cfs @ 4.17 fps)
└─**2=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Summary for Pond QNG2: R st N

Inflow Area = 0.870 ac, 60.57% Impervious, Inflow Depth = 0.07" for Salem Water Quality event
Inflow = 0.01 cfs @ 7.99 hrs, Volume= 0.005 af
Outflow = 0.00 cfs @ 7.71 hrs, Volume= 0.005 af, Atten= 69%, Lag= 0.0 min
Discarded = 0.00 cfs @ 7.71 hrs, Volume= 0.005 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 295.09' @ 9.91 hrs Surf.Area= 0.009 ac Storage= 0.001 af

Plug-Flow detention time= 60.5 min calculated for 0.005 af (100% of inflow)
Center-of-Mass det. time= 60.5 min (884.1 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.051 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.009	0.0	0.000	0.000
295.00	0.009	40.0	0.000	0.000
295.01	0.009	40.0	0.000	0.000
296.50	0.009	40.0	0.005	0.006
296.51	0.009	0.1	0.000	0.006
298.00	0.009	0.1	0.000	0.006
298.01	0.009	100.0	0.000	0.006
299.00	0.027	100.0	0.018	0.024
300.00	0.027	100.0	0.027	0.051

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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 @ 7.71 hrs HW=294.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNGL1: QNGL1

Inflow Area = 0.910 ac, 60.44% Impervious, Inflow Depth = 0.50" for Salem Water Quality event
Inflow = 0.09 cfs @ 8.04 hrs, Volume= 0.038 af
Outflow = 0.01 cfs @ 7.53 hrs, Volume= 0.036 af, Atten= 87%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.53 hrs, Volume= 0.036 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Peak Elev= 304.22' @ 24.11 hrs Surf.Area= 0.023 ac Storage= 0.021 af

Plug-Flow detention time= 726.1 min calculated for 0.036 af (97% of inflow)
Center-of-Mass det. time= 707.1 min (1,560.1 - 853.0)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.062 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.023	0.0	0.000	0.000
301.00	0.023	40.0	0.001	0.001
302.40	0.023	40.0	0.013	0.014
302.50	0.023	0.1	0.000	0.014
303.90	0.023	0.1	0.000	0.014
304.00	0.023	100.0	0.002	0.016
306.00	0.023	100.0	0.046	0.062

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 7.53 hrs HW=300.95' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond QNGL2: QNGL2

Inflow Area = 0.550 ac, 70.91% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.07 cfs @ 8.03 hrs, Volume= 0.027 af
Outflow = 0.01 cfs @ 7.29 hrs, Volume= 0.027 af, Atten= 87%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.29 hrs, Volume= 0.027 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 304.07' @ 24.09 hrs Surf.Area= 0.018 ac Storage= 0.014 af

Plug-Flow detention time= 646.8 min calculated for 0.027 af (100% of inflow)
Center-of-Mass det. time= 646.7 min (1,474.9 - 828.2)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.049 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.018	0.0	0.000	0.000
301.00	0.018	40.0	0.001	0.001
302.40	0.018	40.0	0.010	0.011
302.50	0.018	0.1	0.000	0.011
303.90	0.018	0.1	0.000	0.011
304.00	0.018	100.0	0.002	0.013
306.00	0.018	100.0	0.036	0.049

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 7.29 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNGL4: QNGL4

Inflow Area = 0.140 ac, 60.00% Impervious, Inflow Depth = 0.50" for Salem Water Quality event
Inflow = 0.01 cfs @ 8.04 hrs, Volume= 0.006 af
Outflow = 0.00 cfs @ 7.84 hrs, Volume= 0.006 af, Atten= 67%, Lag= 0.0 min
Discarded = 0.00 cfs @ 7.84 hrs, Volume= 0.006 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 295.09' @ 10.86 hrs Surf.Area= 0.009 ac Storage= 0.001 af

Plug-Flow detention time= 66.6 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 66.6 min (919.6 - 853.0)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.051 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.009	0.0	0.000	0.000
295.00	0.009	40.0	0.000	0.000
295.01	0.009	40.0	0.000	0.000
296.50	0.009	40.0	0.005	0.006
296.51	0.009	0.1	0.000	0.006
298.00	0.009	0.1	0.000	0.006
298.01	0.009	100.0	0.000	0.006
299.00	0.027	100.0	0.018	0.024
300.00	0.027	100.0	0.027	0.051

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	299.00'	**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 @ 7.84 hrs HW=294.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNGL6: QNGL6

Inflow Area = 0.150 ac, 60.00% Impervious, Inflow Depth = 0.50" for Salem Water Quality event
Inflow = 0.01 cfs @ 8.04 hrs, Volume= 0.006 af
Outflow = 0.00 cfs @ 7.82 hrs, Volume= 0.006 af, Atten= 70%, Lag= 0.0 min
Discarded = 0.00 cfs @ 7.82 hrs, Volume= 0.006 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 295.13' @ 11.43 hrs Surf.Area= 0.009 ac Storage= 0.001 af

Plug-Flow detention time= 89.3 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 89.4 min (942.3 - 853.0)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.051 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.009	0.0	0.000	0.000
295.00	0.009	40.0	0.000	0.000
295.01	0.009	40.0	0.000	0.000
296.50	0.009	40.0	0.005	0.006
296.51	0.009	0.1	0.000	0.006
298.00	0.009	0.1	0.000	0.006
298.01	0.009	100.0	0.000	0.006
299.00	0.027	100.0	0.018	0.024
300.00	0.027	100.0	0.027	0.051

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	299.00'	**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 @ 7.82 hrs HW=294.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNGL7: QNGL7

Inflow Area = 0.270 ac, 59.26% Impervious, Inflow Depth = 0.45" for Salem Water Quality event
Inflow = 0.02 cfs @ 8.05 hrs, Volume= 0.010 af
Outflow = 0.01 cfs @ 7.85 hrs, Volume= 0.010 af, Atten= 70%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.85 hrs, Volume= 0.010 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 301.14' @ 13.49 hrs Surf.Area= 0.014 ac Storage= 0.001 af

Plug-Flow detention time= 111.4 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 111.3 min (976.5 - 865.2)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 7.85 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNLG5: QNGL5

Inflow Area = 0.490 ac, 59.18% Impervious, Inflow Depth = 0.45" for Salem Water Quality event
Inflow = 0.04 cfs @ 8.05 hrs, Volume= 0.019 af
Outflow = 0.01 cfs @ 7.69 hrs, Volume= 0.019 af, Atten= 83%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.69 hrs, Volume= 0.019 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 303.92' @ 24.09 hrs Surf.Area= 0.014 ac Storage= 0.009 af

Plug-Flow detention time= 526.9 min calculated for 0.019 af (100% of inflow)
Center-of-Mass det. time= 526.9 min (1,392.1 - 865.2)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 7.69 hrs HW=300.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNR1: Qn-St

Inflow Area = 0.750 ac, 70.67% Impervious, Inflow Depth = 0.16" for Salem Water Quality event
Inflow = 0.03 cfs @ 7.99 hrs, Volume= 0.010 af
Outflow = 0.01 cfs @ 7.74 hrs, Volume= 0.010 af, Atten= 66%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.74 hrs, Volume= 0.010 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs
Peak Elev= 295.06' @ 9.26 hrs Surf.Area= 0.018 ac Storage= 0.001 af

Plug-Flow detention time= 47.6 min calculated for 0.010 af (100% of inflow)

Center-of-Mass det. time= 47.7 min (871.2 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.101 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.018	0.0	0.000	0.000
295.00	0.018	40.0	0.001	0.001
295.01	0.018	40.0	0.000	0.001
296.50	0.018	40.0	0.011	0.012
296.51	0.018	0.1	0.000	0.012
298.00	0.018	0.1	0.000	0.012
298.01	0.018	100.0	0.000	0.012
299.00	0.054	100.0	0.036	0.047
300.00	0.054	100.0	0.054	0.101

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.01 cfs @ 7.74 hrs HW=294.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link Q - N: Q - N

Inflow Area = 2.550 ac, 65.06% Impervious, Inflow Depth = 0.14" for Salem Water Quality event
Inflow = 0.08 cfs @ 8.00 hrs, Volume= 0.030 af
Primary = 0.08 cfs @ 8.00 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Summary for Link Q - N - OUT: Q - N OUT

Inflow Area = 2.550 ac, 65.06% Impervious, Inflow Depth = 0.14" for Salem Water Quality event
Inflow = 0.02 cfs @ 10.94 hrs, Volume= 0.030 af
Primary = 0.02 cfs @ 10.94 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

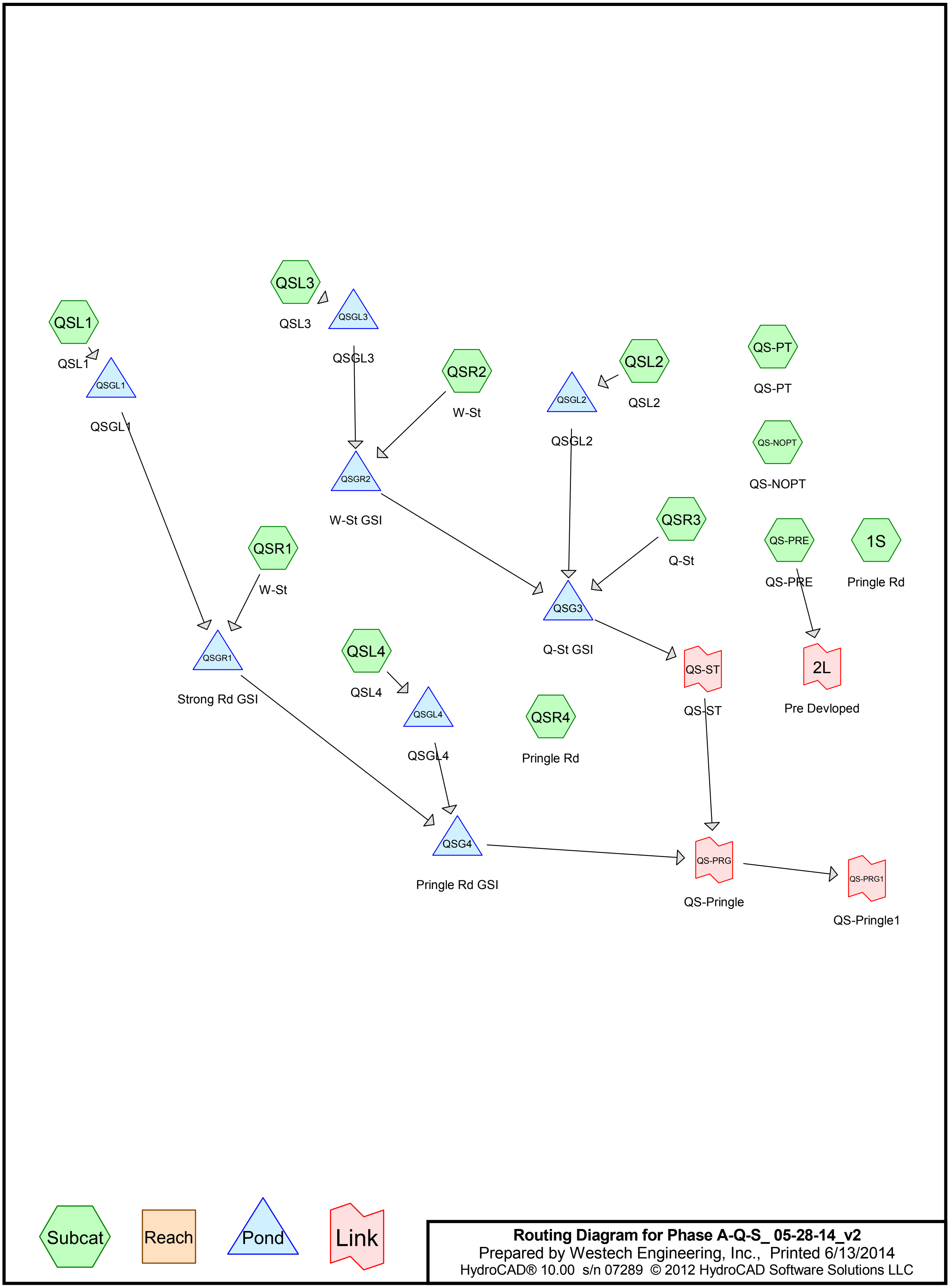
Primary outflow = Inflow, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

Summary for Link QN PRINGLE: QN PRINGLE

Inflow Area = 0.910 ac, 60.44% Impervious, Inflow Depth = 0.00" for Salem Water Quality event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-45.00 hrs, dt= 0.01 hrs

BASIN QS



Routing Diagram for Phase A-Q-S_ 05-28-14_v2
Prepared by Westech Engineering, Inc., Printed 6/13/2014
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.260	98	(1S, QSL1, QSL2, QSL3, QSL4, QSR1, QSR2, QSR3, QSR4)
16.980	72	(1S, QS-NOPT, QS-PRE, QS-PT, QSL1, QSL2, QSL3, QSL4, QSR1, QSR2, QSR3, QSR4)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
21.240	Other	1S, QS-NOPT, QS-PRE, QS-PT, QSL1, QSL2, QSL3, QSL4, QSR1, QSR2, QSR3, QSR4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	21.240	21.240		1S, QS-NOPT, QS-PRE, QS-PT, QSL1, QSL2, QSL3, QSL4, QSR1, QSR2, QSR3, QSR4

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pringle Rd Runoff Area=0.320 ac 75.00% Impervious Runoff Depth=2.35"
Tc=5.0 min CN=92 Runoff=0.20 cfs 0.063 af

Subcatchment QS-NOPT: QS-NOPT Runoff Area=7.200 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=700' Slope=0.1000 '/' Tc=24.6 min CN=72 Runoff=0.98 cfs 0.558 af

Subcatchment QS-PRE: QS-PRE Runoff Area=4.630 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=400' Tc=59.9 min CN=72 Runoff=0.47 cfs 0.359 af

Subcatchment QS-PT: QS-PT Runoff Area=4.140 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=250' Slope=0.1000 '/' Tc=19.9 min CN=72 Runoff=0.59 cfs 0.321 af

Subcatchment QSL1: QSL1 Runoff Area=0.150 ac 73.33% Impervious Runoff Depth=2.26"
Tc=10.0 min CN=91 Runoff=0.09 cfs 0.028 af

Subcatchment QSL2: QSL2 Runoff Area=0.580 ac 70.69% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.32 cfs 0.105 af

Subcatchment QSL3: QSL3 Runoff Area=0.850 ac 70.59% Impervious Runoff Depth=2.17"
Tc=10.0 min CN=90 Runoff=0.47 cfs 0.154 af

Subcatchment QSL4: QSL4 Runoff Area=1.210 ac 90.91% Impervious Runoff Depth=2.75"
Tc=10.0 min CN=96 Runoff=0.86 cfs 0.277 af

Subcatchment QSR1: W-St Runoff Area=0.460 ac 76.09% Impervious Runoff Depth=2.35"
Tc=5.0 min CN=92 Runoff=0.28 cfs 0.090 af

Subcatchment QSR2: W-St Runoff Area=0.410 ac 87.80% Impervious Runoff Depth=2.64"
Tc=5.0 min CN=95 Runoff=0.28 cfs 0.090 af

Subcatchment QSR3: Q-St Runoff Area=0.970 ac 87.63% Impervious Runoff Depth=2.64"
Tc=5.0 min CN=95 Runoff=0.67 cfs 0.214 af

Subcatchment QSR4: Pringle Rd Runoff Area=0.320 ac 75.00% Impervious Runoff Depth=2.35"
Tc=5.0 min CN=92 Runoff=0.20 cfs 0.063 af

Pond QSG3: Q-St GSI Peak Elev=309.01' Storage=0.113 af Inflow=0.99 cfs 0.380 af
Discarded=0.06 cfs 0.105 af Primary=0.22 cfs 0.193 af Outflow=0.27 cfs 0.299 af

Pond QSG4: Pringle Rd GSI Peak Elev=300.64' Storage=0.048 af Inflow=0.83 cfs 0.205 af
Discarded=0.03 cfs 0.043 af Primary=0.29 cfs 0.129 af Outflow=0.32 cfs 0.172 af

Pond QSGL1: QSGL1 Peak Elev=305.03' Storage=0.009 af Inflow=0.09 cfs 0.028 af
Discarded=0.00 cfs 0.006 af Primary=0.03 cfs 0.015 af Outflow=0.03 cfs 0.021 af

Pond QSGL2: QSGL2 Peak Elev=311.15' Storage=0.016 af Inflow=0.32 cfs 0.105 af
Discarded=0.00 cfs 0.010 af Primary=0.32 cfs 0.082 af Outflow=0.32 cfs 0.092 af

Pond QSGL3: QSGL3 Peak Elev=313.05' Storage=0.069 af Inflow=0.47 cfs 0.154 af
Discarded=0.02 cfs 0.045 af Primary=0.07 cfs 0.051 af Outflow=0.09 cfs 0.096 af

Pond QSGL4: QSGL4 Peak Elev=303.28' Storage=0.054 af Inflow=0.86 cfs 0.277 af
Discarded=0.01 cfs 0.033 af Primary=0.83 cfs 0.205 af Outflow=0.85 cfs 0.237 af

Pond QSGR1: Strong Rd GSI Peak Elev=302.73' Storage=0.056 af Inflow=0.28 cfs 0.105 af
Discarded=0.04 cfs 0.066 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.066 af

Pond QSGR2: W-St GSI Peak Elev=310.31' Storage=0.029 af Inflow=0.28 cfs 0.141 af
Discarded=0.02 cfs 0.037 af Primary=0.09 cfs 0.084 af Outflow=0.11 cfs 0.121 af

Link 2L: Pre Devloped Inflow=0.47 cfs 0.359 af
Primary=0.47 cfs 0.359 af

Link QS-PRG: QS-Pringle Inflow=0.39 cfs 0.323 af
Primary=0.39 cfs 0.323 af

Link QS-PRG1: QS-Pringle1 Inflow=0.39 cfs 0.323 af
Primary=0.39 cfs 0.323 af

Link QS-ST: QS-ST Inflow=0.22 cfs 0.193 af
Primary=0.22 cfs 0.193 af

Summary for Subcatchment 1S: Pringle Rd

Runoff = 0.20 cfs @ 7.90 hrs, Volume= 0.063 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.240	98	
*	0.080	72	
	0.320	92	Weighted Average
	0.080		25.00% Pervious Area
	0.240		75.00% Impervious Area

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

Summary for Subcatchment QS-NOPT: QS-NOPT

Runoff = 0.98 cfs @ 8.23 hrs, Volume= 0.558 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	7.200	72	
	7.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	150	0.1000	0.13		**Sheet Flow, Sheet Flow** n= 0.400 P2= 2.20"
5.8	550	0.1000	1.58		**Shallow Concentrated Flow, Forest Overland** Kv= 5.0 fps
24.6	700	Total			

Summary for Subcatchment QS-PRE: QS-PRE

Runoff = 0.47 cfs @ 8.79 hrs, Volume= 0.359 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	4.630	72	
	4.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	150	0.1000	0.20		**Sheet Flow, Sheet Flow** n= 0.240 P2= 2.20"
2.4	250	0.0600	1.71		**Shallow Concentrated Flow, Meadow Overland** Kv= 7.0 fps
30.0					**Direct Entry, x**
15.0					**Direct Entry, m**
59.9	400	Total			

Summary for Subcatchment QS-PT: QS-PT

Runoff = 0.59 cfs @ 8.16 hrs, Volume= 0.321 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	4.140	72	
	4.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	150	0.1000	0.13		**Sheet Flow, Sheet Flow** n= 0.400 P2= 2.20"
1.1	100	0.1000	1.58		**Shallow Concentrated Flow, Forest Overland** Kv= 5.0 fps
19.9	250	Total			

Summary for Subcatchment QSL1: QSL1

Runoff = 0.09 cfs @ 7.99 hrs, Volume= 0.028 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.110	98	
*	0.040	72	
	0.150	91	Weighted Average
	0.040		26.67% Pervious Area
	0.110		73.33% Impervious Area

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

Summary for Subcatchment QSL2: QSL2

Runoff = 0.32 cfs @ 7.91 hrs, Volume= 0.105 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.410	98	
*	0.170	72	
	0.580	90	Weighted Average
	0.170		29.31% Pervious Area
	0.410		70.69% Impervious Area

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

Summary for Subcatchment QSL3: QSL3

Runoff = 0.47 cfs @ 7.99 hrs, Volume= 0.154 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.600	98	
*	0.250	72	
	0.850	90	Weighted Average
	0.250		29.41% Pervious Area
	0.600		70.59% Impervious Area

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

Summary for Subcatchment QSL4: QSL4

Runoff = 0.86 cfs @ 7.95 hrs, Volume= 0.277 af, Depth= 2.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	1.100	98	
*	0.110	72	
	1.210	96	Weighted Average
	0.110		9.09% Pervious Area
	1.100		90.91% Impervious Area

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

Summary for Subcatchment QSR1: W-St

Runoff = 0.28 cfs @ 7.90 hrs, Volume= 0.090 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.350	98	
*	0.110	72	
	0.460	92	Weighted Average
	0.110		23.91% Pervious Area
	0.350		76.09% Impervious Area

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

Summary for Subcatchment QSR2: W-St

Runoff = 0.28 cfs @ 7.88 hrs, Volume= 0.090 af, Depth= 2.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.360	98	
*	0.050	72	
	0.410	95	Weighted Average
	0.050		12.20% Pervious Area
	0.360		87.80% Impervious Area

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

Summary for Subcatchment QSR3: Q-St

Runoff = 0.67 cfs @ 7.88 hrs, Volume= 0.214 af, Depth= 2.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.850	98	
*	0.120	72	
	0.970	95	Weighted Average
	0.120		12.37% Pervious Area
	0.850		87.63% Impervious Area

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

Summary for Subcatchment QSR4: Pringle Rd

Runoff = 0.20 cfs @ 7.90 hrs, Volume= 0.063 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.240	98	
*	0.080	72	
	0.320	92	Weighted Average
	0.080		25.00% Pervious Area
	0.240		75.00% Impervious Area

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

Summary for Pond QSG3: Q-St GSI

Inflow Area = 2.810 ac, 79.00% Impervious, Inflow Depth = 1.62" for Salem 10 yrs event
Inflow = 0.99 cfs @ 7.90 hrs, Volume= 0.380 af
Outflow = 0.27 cfs @ 10.10 hrs, Volume= 0.299 af, Atten= 72%, Lag= 131.9 min
Discarded = 0.06 cfs @ 9.51 hrs, Volume= 0.105 af
Primary = 0.22 cfs @ 10.10 hrs, Volume= 0.193 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 309.01' @ 10.10 hrs Surf.Area= 0.110 ac Storage= 0.113 af

Plug-Flow detention time= 330.2 min calculated for 0.299 af (79% of inflow)
Center-of-Mass det. time= 202.0 min (981.6 - 779.6)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	0.222 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
303.90	0.037	0.0	0.000	0.000
304.00	0.037	40.0	0.001	0.001
305.01	0.037	40.0	0.015	0.016
306.50	0.037	40.0	0.022	0.038
306.51	0.037	0.1	0.000	0.038
308.00	0.037	0.1	0.000	0.039
308.01	0.037	100.0	0.000	0.039
309.00	0.110	100.0	0.073	0.112
310.00	0.110	100.0	0.110	0.222

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	308.90'	**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=0.06 cfs @ 9.51 hrs HW=309.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.22 cfs @ 10.10 hrs HW=309.01' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.22 cfs @ 0.95 fps)

Summary for Pond QSG4: Pringle Rd GSI

Inflow Area = 1.820 ac, 85.71% Impervious, Inflow Depth = 1.35" for Salem 10 yrs event
Inflow = 0.83 cfs @ 8.03 hrs, Volume= 0.205 af
Outflow = 0.32 cfs @ 8.75 hrs, Volume= 0.172 af, Atten= 62%, Lag= 42.8 min
Discarded = 0.03 cfs @ 8.75 hrs, Volume= 0.043 af
Primary = 0.29 cfs @ 8.75 hrs, Volume= 0.129 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 300.64' @ 8.75 hrs Surf.Area= 0.052 ac Storage= 0.048 af

Plug-Flow detention time= 227.3 min calculated for 0.172 af (84% of inflow)
Center-of-Mass det. time= 131.7 min (907.6 - 775.9)

Volume	Invert	Avail.Storage	Storage Description
#1	295.90'	0.137 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
295.90	0.023	0.0	0.000	0.000
296.00	0.023	40.0	0.001	0.001
297.01	0.023	40.0	0.009	0.010
298.50	0.023	40.0	0.014	0.024
298.51	0.023	0.1	0.000	0.024
300.00	0.023	0.1	0.000	0.024
300.01	0.023	100.0	0.000	0.024
301.00	0.068	100.0	0.045	0.069
302.00	0.068	100.0	0.068	0.137

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	300.50'	**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=0.03 cfs @ 8.75 hrs HW=300.64' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.29 cfs @ 8.75 hrs HW=300.64' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.29 cfs @ 1.04 fps)

Summary for Pond QSGL1: QSGL1

Inflow Area = 0.150 ac, 73.33% Impervious, Inflow Depth = 2.26" for Salem 10 yrs event
Inflow = 0.09 cfs @ 7.99 hrs, Volume= 0.028 af
Outflow = 0.03 cfs @ 8.87 hrs, Volume= 0.021 af, Atten= 63%, Lag= 52.8 min
Discarded = 0.00 cfs @ 3.86 hrs, Volume= 0.006 af
Primary = 0.03 cfs @ 8.87 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.03' @ 8.87 hrs Surf.Area= 0.005 ac Storage= 0.009 af

Plug-Flow detention time= 333.1 min calculated for 0.021 af (74% of inflow)
Center-of-Mass det. time= 175.7 min (918.4 - 742.7)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.014 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.005	0.0	0.000	0.000
301.00	0.005	40.0	0.000	0.000
302.40	0.005	40.0	0.003	0.003
302.50	0.005	0.1	0.000	0.003
303.90	0.005	0.1	0.000	0.003
304.00	0.005	100.0	0.001	0.004
306.00	0.005	100.0	0.010	0.014

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 3.86 hrs HW=300.95' (Free Discharge)
└—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.03 cfs @ 8.87 hrs HW=305.03' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.03 cfs @ 0.49 fps)

Summary for Pond QSGL2: QSGL2

Inflow Area = 0.580 ac, 70.69% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.32 cfs @ 7.91 hrs, Volume= 0.105 af
Outflow = 0.32 cfs @ 7.95 hrs, Volume= 0.092 af, Atten= 0%, Lag= 2.0 min
Discarded = 0.00 cfs @ 3.54 hrs, Volume= 0.010 af
Primary = 0.32 cfs @ 7.95 hrs, Volume= 0.082 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 311.15' @ 7.95 hrs Surf.Area= 0.009 ac Storage= 0.016 af

Plug-Flow detention time= 161.3 min calculated for 0.092 af (88% of inflow)
Center-of-Mass det. time= 83.1 min (829.5 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	306.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
306.90	0.009	0.0	0.000	0.000
307.00	0.009	40.0	0.000	0.000
307.01	0.009	40.0	0.000	0.000
308.50	0.009	40.0	0.005	0.006
308.60	0.009	0.1	0.000	0.006
310.00	0.009	0.1	0.000	0.006
310.10	0.009	100.0	0.001	0.007
312.00	0.009	100.0	0.017	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	306.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	311.00'	**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 @ 3.54 hrs HW=306.95' (Free Discharge)
└—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.32 cfs @ 7.95 hrs HW=311.15' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.32 cfs @ 1.07 fps)

Summary for Pond QSGL3: QSGL3

Inflow Area = 0.850 ac, 70.59% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.47 cfs @ 7.99 hrs, Volume= 0.154 af
Outflow = 0.09 cfs @ 12.67 hrs, Volume= 0.096 af, Atten= 81%, Lag= 280.8 min
Discarded = 0.02 cfs @ 4.52 hrs, Volume= 0.045 af
Primary = 0.07 cfs @ 12.67 hrs, Volume= 0.051 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 313.05' @ 12.67 hrs Surf.Area= 0.041 ac Storage= 0.069 af

Plug-Flow detention time= 487.9 min calculated for 0.096 af (62% of inflow)
Center-of-Mass det. time= 273.5 min (1,024.5 - 751.0)

Volume	Invert	Avail.Storage	Storage Description
#1	308.90'	0.108 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
308.90	0.041	0.0	0.000	0.000
309.00	0.041	40.0	0.002	0.002
309.01	0.041	40.0	0.000	0.002
310.50	0.041	40.0	0.024	0.026
310.51	0.041	0.1	0.000	0.026
312.00	0.041	0.1	0.000	0.026
312.01	0.041	100.0	0.000	0.027
314.00	0.041	100.0	0.082	0.108

Device	Routing	Invert	Outlet Devices
#1	Discarded	308.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	313.00'	**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=0.02 cfs @ 4.52 hrs HW=308.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.06 cfs @ 12.67 hrs HW=313.05' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.06 cfs @ 0.63 fps)

Summary for Pond QSGL4: QSGL4

Inflow Area = 1.210 ac, 90.91% Impervious, Inflow Depth = 2.75" for Salem 10 yrs event
Inflow = 0.86 cfs @ 7.95 hrs, Volume= 0.277 af
Outflow = 0.85 cfs @ 8.03 hrs, Volume= 0.237 af, Atten= 2%, Lag= 5.0 min
Discarded = 0.01 cfs @ 2.03 hrs, Volume= 0.033 af
Primary = 0.83 cfs @ 8.03 hrs, Volume= 0.205 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 303.28' @ 8.03 hrs Surf.Area= 0.028 ac Storage= 0.054 af

Plug-Flow detention time= 203.3 min calculated for 0.237 af (86% of inflow)
Center-of-Mass det. time= 106.2 min (800.5 - 694.3)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	0.074 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
298.90	0.028	0.0	0.000	0.000
299.00	0.028	40.0	0.001	0.001
299.01	0.028	40.0	0.000	0.001
300.50	0.028	40.0	0.017	0.018
300.51	0.028	0.1	0.000	0.018
302.00	0.028	0.1	0.000	0.018
302.01	0.028	100.0	0.000	0.018
304.00	0.028	100.0	0.056	0.074

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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=0.01 cfs @ 2.03 hrs HW=298.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.83 cfs @ 8.03 hrs HW=303.28' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.83 cfs @ 1.50 fps)

Summary for Pond QSGR1: Strong Rd GSI

Inflow Area = 0.610 ac, 75.41% Impervious, Inflow Depth = 2.07" for Salem 10 yrs event
Inflow = 0.28 cfs @ 7.90 hrs, Volume= 0.105 af
Outflow = 0.04 cfs @ 22.42 hrs, Volume= 0.066 af, Atten= 87%, Lag= 871.2 min
Discarded = 0.04 cfs @ 22.42 hrs, Volume= 0.066 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 302.73' @ 22.42 hrs Surf.Area= 0.074 ac Storage= 0.056 af

Plug-Flow detention time= 551.2 min calculated for 0.066 af (63% of inflow)
Center-of-Mass det. time= 340.4 min (1,093.0 - 752.6)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	0.168 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
298.90	0.030	0.0	0.000	0.000
299.00	0.030	40.0	0.001	0.001
299.01	0.030	40.0	0.000	0.001
300.40	0.030	40.0	0.017	0.018
300.50	0.030	0.1	0.000	0.018
302.00	0.030	0.1	0.000	0.018
302.01	0.030	100.0	0.000	0.018
303.00	0.090	100.0	0.059	0.078
304.00	0.090	100.0	0.090	0.168

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	302.90'	**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=0.04 cfs @ 22.42 hrs HW=302.73' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=298.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QSGR2: W-St GSI

Inflow Area = 1.260 ac, 76.19% Impervious, Inflow Depth = 1.34" for Salem 10 yrs event
Inflow = 0.28 cfs @ 7.88 hrs, Volume= 0.141 af
Outflow = 0.11 cfs @ 13.30 hrs, Volume= 0.121 af, Atten= 60%, Lag= 325.4 min
Discarded = 0.02 cfs @ 13.30 hrs, Volume= 0.037 af
Primary = 0.09 cfs @ 13.30 hrs, Volume= 0.084 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 310.31' @ 13.30 hrs Surf.Area= 0.037 ac Storage= 0.029 af

Plug-Flow detention time= 229.9 min calculated for 0.121 af (86% of inflow)
Center-of-Mass det. time= 145.4 min (965.6 - 820.3)

Volume	Invert	Avail.Storage	Storage Description
#1	306.40'	0.136 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
306.40	0.023	0.0	0.000	0.000
306.50	0.023	40.0	0.001	0.001
307.01	0.023	40.0	0.005	0.006
308.50	0.023	40.0	0.014	0.019
308.51	0.023	0.1	0.000	0.019
310.00	0.023	0.1	0.000	0.019
310.01	0.023	100.0	0.000	0.020
311.00	0.070	100.0	0.046	0.066
312.00	0.070	100.0	0.070	0.136

Device	Routing	Invert	Outlet Devices
#1	Discarded	306.40'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	310.25'	**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=0.02 cfs @ 13.30 hrs HW=310.31' (Free Discharge)
└—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.09 cfs @ 13.30 hrs HW=310.31' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.71 fps)

Summary for Link 2L: Pre Devloped

Inflow Area = 4.630 ac, 0.00% Impervious, Inflow Depth = 0.93" for Salem 10 yrs event
Inflow = 0.47 cfs @ 8.79 hrs, Volume= 0.359 af
Primary = 0.47 cfs @ 8.79 hrs, Volume= 0.359 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link QS-PRG: QS-Pringle

Inflow Area = 4.630 ac, 81.64% Impervious, Inflow Depth = 0.84" for Salem 10 yrs event
Inflow = 0.39 cfs @ 9.81 hrs, Volume= 0.323 af
Primary = 0.39 cfs @ 9.81 hrs, Volume= 0.323 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link QS-PRG1: QS-Pringle1

Inflow Area = 4.630 ac, 81.64% Impervious, Inflow Depth = 0.84" for Salem 10 yrs event
Inflow = 0.39 cfs @ 9.81 hrs, Volume= 0.323 af
Primary = 0.39 cfs @ 9.81 hrs, Volume= 0.323 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link QS-ST: QS-ST

Inflow Area = 2.810 ac, 79.00% Impervious, Inflow Depth = 0.82" for Salem 10 yrs event
Inflow = 0.22 cfs @ 10.10 hrs, Volume= 0.193 af
Primary = 0.22 cfs @ 10.10 hrs, Volume= 0.193 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pringle Rd Runoff Area=0.320 ac 75.00% Impervious Runoff Depth=3.50"
Tc=5.0 min CN=92 Runoff=0.29 cfs 0.093 af

Subcatchment QS-NOPT: QS-NOPT Runoff Area=7.200 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=700' Slope=0.1000 '/' Tc=24.6 min CN=72 Runoff=2.33 cfs 1.048 af

Subcatchment QS-PRE: QS-PRE Runoff Area=4.630 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=400' Tc=59.9 min CN=72 Runoff=1.12 cfs 0.674 af

Subcatchment QS-PT: QS-PT Runoff Area=4.140 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=250' Slope=0.1000 '/' Tc=19.9 min CN=72 Runoff=1.41 cfs 0.603 af

Subcatchment QSL1: QSL1 Runoff Area=0.150 ac 73.33% Impervious Runoff Depth=3.40"
Tc=10.0 min CN=91 Runoff=0.13 cfs 0.043 af

Subcatchment QSL2: QSL2 Runoff Area=0.580 ac 70.69% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.50 cfs 0.160 af

Subcatchment QSL3: QSL3 Runoff Area=0.850 ac 70.59% Impervious Runoff Depth=3.30"
Tc=10.0 min CN=90 Runoff=0.73 cfs 0.234 af

Subcatchment QSL4: QSL4 Runoff Area=1.210 ac 90.91% Impervious Runoff Depth=3.94"
Tc=10.0 min CN=96 Runoff=1.22 cfs 0.397 af

Subcatchment QSR1: W-St Runoff Area=0.460 ac 76.09% Impervious Runoff Depth=3.50"
Tc=5.0 min CN=92 Runoff=0.42 cfs 0.134 af

Subcatchment QSR2: W-St Runoff Area=0.410 ac 87.80% Impervious Runoff Depth=3.83"
Tc=5.0 min CN=95 Runoff=0.41 cfs 0.131 af

Subcatchment QSR3: Q-St Runoff Area=0.970 ac 87.63% Impervious Runoff Depth=3.83"
Tc=5.0 min CN=95 Runoff=0.97 cfs 0.309 af

Subcatchment QSR4: Pringle Rd Runoff Area=0.320 ac 75.00% Impervious Runoff Depth=3.50"
Tc=5.0 min CN=92 Runoff=0.29 cfs 0.093 af

Pond QSG3: Q-St GSI Peak Elev=309.19' Storage=0.132 af Inflow=1.75 cfs 0.646 af
Discarded=0.06 cfs 0.109 af Primary=0.89 cfs 0.454 af Outflow=0.95 cfs 0.564 af

Pond QSG4: Pringle Rd GSI Peak Elev=300.82' Storage=0.057 af Inflow=1.19 cfs 0.355 af
Discarded=0.03 cfs 0.046 af Primary=1.02 cfs 0.276 af Outflow=1.05 cfs 0.322 af

Pond QSGL1: QSGL1 Peak Elev=305.08' Storage=0.009 af Inflow=0.13 cfs 0.043 af
Discarded=0.00 cfs 0.006 af Primary=0.13 cfs 0.029 af Outflow=0.13 cfs 0.035 af

Pond QSGL2: QSGL2 Peak Elev=311.20' Storage=0.017 af Inflow=0.50 cfs 0.160 af
Discarded=0.00 cfs 0.010 af Primary=0.50 cfs 0.137 af Outflow=0.50 cfs 0.147 af

Pond QSGL3: QSGL3 Peak Elev=313.12' Storage=0.072 af Inflow=0.73 cfs 0.234 af
Discarded=0.02 cfs 0.046 af Primary=0.24 cfs 0.129 af Outflow=0.26 cfs 0.176 af

Pond QSGL4: QSGL4 Peak Elev=303.35' Storage=0.056 af Inflow=1.22 cfs 0.397 af
Discarded=0.01 cfs 0.033 af Primary=1.19 cfs 0.324 af Outflow=1.21 cfs 0.357 af

Pond QSGR1: Strong Rd GSI Peak Elev=302.94' Storage=0.072 af Inflow=0.55 cfs 0.164 af
Discarded=0.04 cfs 0.082 af Primary=0.05 cfs 0.031 af Outflow=0.09 cfs 0.113 af

Pond QSGR2: W-St GSI Peak Elev=310.40' Storage=0.032 af Inflow=0.41 cfs 0.260 af
Discarded=0.02 cfs 0.039 af Primary=0.34 cfs 0.200 af Outflow=0.36 cfs 0.240 af

Link 2L: Pre Devloped Inflow=1.12 cfs 0.674 af
Primary=1.12 cfs 0.674 af

Link QS-PRG: QS-Pringle Inflow=1.87 cfs 0.731 af
Primary=1.87 cfs 0.731 af

Link QS-PRG1: QS-Pringle1 Inflow=1.87 cfs 0.731 af
Primary=1.87 cfs 0.731 af

Link QS-ST: QS-ST Inflow=0.89 cfs 0.454 af
Primary=0.89 cfs 0.454 af

Summary for Subcatchment 1S: Pringle Rd

Runoff = 0.29 cfs @ 7.88 hrs, Volume= 0.093 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.240	98	
*	0.080	72	
	0.320	92	Weighted Average
	0.080		25.00% Pervious Area
	0.240		75.00% Impervious Area

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

Summary for Subcatchment QS-NOPT: QS-NOPT

Runoff = 2.33 cfs @ 8.18 hrs, Volume= 1.048 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	7.200	72	
	7.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	150	0.1000	0.13		**Sheet Flow, Sheet Flow** n= 0.400 P2= 2.20"
5.8	550	0.1000	1.58		**Shallow Concentrated Flow, Forest Overland** Kv= 5.0 fps
24.6	700	Total			

Summary for Subcatchment QS-PRE: QS-PRE

Runoff = 1.12 cfs @ 8.72 hrs, Volume= 0.674 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	4.630	72	
	4.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	150	0.1000	0.20		**Sheet Flow, Sheet Flow** n= 0.240 P2= 2.20"
2.4	250	0.0600	1.71		**Shallow Concentrated Flow, Meadow Overland** Kv= 7.0 fps
30.0					**Direct Entry, x**
15.0					**Direct Entry, m**
59.9	400	Total			

Summary for Subcatchment QS-PT: QS-PT

Runoff = 1.41 cfs @ 8.14 hrs, Volume= 0.603 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	4.140	72	
	4.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	150	0.1000	0.13		**Sheet Flow, Sheet Flow** n= 0.400 P2= 2.20"
1.1	100	0.1000	1.58		**Shallow Concentrated Flow, Forest Overland** Kv= 5.0 fps
19.9	250	Total			

Summary for Subcatchment QSL1: QSL1

Runoff = 0.13 cfs @ 7.97 hrs, Volume= 0.043 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.110	98	
*	0.040	72	
	0.150	91	Weighted Average
	0.040		26.67% Pervious Area
	0.110		73.33% Impervious Area

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

Summary for Subcatchment QSL2: QSL2

Runoff = 0.50 cfs @ 7.89 hrs, Volume= 0.160 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.410	98	
*	0.170	72	
	0.580	90	Weighted Average
	0.170		29.31% Pervious Area
	0.410		70.69% Impervious Area

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

Summary for Subcatchment QSL3: QSL3

Runoff = 0.73 cfs @ 7.97 hrs, Volume= 0.234 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.600	98	
*	0.250	72	
	0.850	90	Weighted Average
	0.250		29.41% Pervious Area
	0.600		70.59% Impervious Area

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

Summary for Subcatchment QSL4: QSL4

Runoff = 1.22 cfs @ 7.94 hrs, Volume= 0.397 af, Depth= 3.94"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	1.100	98	
*	0.110	72	
	1.210	96	Weighted Average
	0.110		9.09% Pervious Area
	1.100		90.91% Impervious Area

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

Summary for Subcatchment QSR1: W-St

Runoff = 0.42 cfs @ 7.88 hrs, Volume= 0.134 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.350	98	
*	0.110	72	
	0.460	92	Weighted Average
	0.110		23.91% Pervious Area
	0.350		76.09% Impervious Area

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

Summary for Subcatchment QSR2: W-St

Runoff = 0.41 cfs @ 7.87 hrs, Volume= 0.131 af, Depth= 3.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.360	98	
*	0.050	72	
	0.410	95	Weighted Average
	0.050		12.20% Pervious Area
	0.360		87.80% Impervious Area

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

Summary for Subcatchment QSR3: Q-St

Runoff = 0.97 cfs @ 7.87 hrs, Volume= 0.309 af, Depth= 3.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.850	98	
*	0.120	72	
	0.970	95	Weighted Average
	0.120		12.37% Pervious Area
	0.850		87.63% Impervious Area

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

Summary for Subcatchment QSR4: Pringle Rd

Runoff = 0.29 cfs @ 7.88 hrs, Volume= 0.093 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.240	98	
*	0.080	72	
	0.320	92	Weighted Average
	0.080		25.00% Pervious Area
	0.240		75.00% Impervious Area

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

Summary for Pond QSG3: Q-St GSI

Inflow Area = 2.810 ac, 79.00% Impervious, Inflow Depth = 2.76" for Salem 100 yrs event
Inflow = 1.75 cfs @ 7.96 hrs, Volume= 0.646 af
Outflow = 0.95 cfs @ 8.30 hrs, Volume= 0.564 af, Atten= 46%, Lag= 20.4 min
Discarded = 0.06 cfs @ 7.92 hrs, Volume= 0.109 af
Primary = 0.89 cfs @ 8.30 hrs, Volume= 0.454 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 309.19' @ 8.30 hrs Surf.Area= 0.110 ac Storage= 0.132 af

Plug-Flow detention time= 205.6 min calculated for 0.564 af (87% of inflow)
Center-of-Mass det. time= 123.9 min (875.9 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	0.222 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
303.90	0.037	0.0	0.000	0.000
304.00	0.037	40.0	0.001	0.001
305.01	0.037	40.0	0.015	0.016
306.50	0.037	40.0	0.022	0.038
306.51	0.037	0.1	0.000	0.038
308.00	0.037	0.1	0.000	0.039
308.01	0.037	100.0	0.000	0.039
309.00	0.110	100.0	0.073	0.112
310.00	0.110	100.0	0.110	0.222

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	308.90'	**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=0.06 cfs @ 7.92 hrs HW=309.00' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.89 cfs @ 8.30 hrs HW=309.19' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.89 cfs @ 1.53 fps)

Summary for Pond QSG4: Pringle Rd GSI

Inflow Area =	1.820 ac,	85.71% Impervious,	Inflow Depth = 2.34"	for Salem 100 yrs event
Inflow =	1.19 cfs @	8.02 hrs, Volume=	0.355 af	
Outflow =	1.05 cfs @	8.16 hrs, Volume=	0.322 af,	Atten= 12%, Lag= 8.4 min
Discarded =	0.03 cfs @	8.16 hrs, Volume=	0.046 af	
Primary =	1.02 cfs @	8.16 hrs, Volume=	0.276 af	

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 300.82' @ 8.16 hrs Surf.Area= 0.060 ac Storage= 0.057 af

Plug-Flow detention time= 140.6 min calculated for 0.322 af (91% of inflow)
Center-of-Mass det. time= 82.0 min (846.4 - 764.4)

Volume	Invert	Avail.Storage	Storage Description
#1	295.90'	0.137 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
295.90	0.023	0.0	0.000	0.000
296.00	0.023	40.0	0.001	0.001
297.01	0.023	40.0	0.009	0.010
298.50	0.023	40.0	0.014	0.024
298.51	0.023	0.1	0.000	0.024
300.00	0.023	0.1	0.000	0.024
300.01	0.023	100.0	0.000	0.024
301.00	0.068	100.0	0.045	0.069
302.00	0.068	100.0	0.068	0.137

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	300.50'	**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=0.03 cfs @ 8.16 hrs HW=300.82' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=1.01 cfs @ 8.16 hrs HW=300.82' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 1.01 cfs @ 1.61 fps)

Summary for Pond QSGL1: QSGL1

Inflow Area = 0.150 ac, 73.33% Impervious, Inflow Depth = 3.40" for Salem 100 yrs event
Inflow = 0.13 cfs @ 7.97 hrs, Volume= 0.043 af
Outflow = 0.13 cfs @ 8.02 hrs, Volume= 0.035 af, Atten= 1%, Lag= 2.8 min
Discarded = 0.00 cfs @ 2.89 hrs, Volume= 0.006 af
Primary = 0.13 cfs @ 8.02 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.08' @ 8.02 hrs Surf.Area= 0.005 ac Storage= 0.009 af

Plug-Flow detention time= 226.3 min calculated for 0.035 af (83% of inflow)
Center-of-Mass det. time= 114.7 min (836.9 - 722.2)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.014 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.005	0.0	0.000	0.000
301.00	0.005	40.0	0.000	0.000
302.40	0.005	40.0	0.003	0.003
302.50	0.005	0.1	0.000	0.003
303.90	0.005	0.1	0.000	0.003
304.00	0.005	100.0	0.001	0.004
306.00	0.005	100.0	0.010	0.014

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 2.89 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.13 cfs @ 8.02 hrs HW=305.08' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.13 cfs @ 0.80 fps)

Summary for Pond QSGL2: QSGL2

Inflow Area = 0.580 ac, 70.69% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.50 cfs @ 7.89 hrs, Volume= 0.160 af
Outflow = 0.50 cfs @ 7.92 hrs, Volume= 0.147 af, Atten= 0%, Lag= 1.7 min
Discarded = 0.00 cfs @ 2.67 hrs, Volume= 0.010 af
Primary = 0.50 cfs @ 7.92 hrs, Volume= 0.137 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 311.20' @ 7.92 hrs Surf.Area= 0.009 ac Storage= 0.017 af

Plug-Flow detention time= 112.5 min calculated for 0.147 af (92% of inflow)
Center-of-Mass det. time= 58.4 min (783.1 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	306.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
306.90	0.009	0.0	0.000	0.000
307.00	0.009	40.0	0.000	0.000
307.01	0.009	40.0	0.000	0.000
308.50	0.009	40.0	0.005	0.006
308.60	0.009	0.1	0.000	0.006
310.00	0.009	0.1	0.000	0.006
310.10	0.009	100.0	0.001	0.007
312.00	0.009	100.0	0.017	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	306.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	311.00'	**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 @ 2.67 hrs HW=306.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.49 cfs @ 7.92 hrs HW=311.20' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.49 cfs @ 1.25 fps)

Summary for Pond QSGL3: QSGL3

Inflow Area = 0.850 ac, 70.59% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.73 cfs @ 7.97 hrs, Volume= 0.234 af
Outflow = 0.26 cfs @ 8.90 hrs, Volume= 0.176 af, Atten= 64%, Lag= 55.9 min
Discarded = 0.02 cfs @ 3.44 hrs, Volume= 0.046 af
Primary = 0.24 cfs @ 8.90 hrs, Volume= 0.129 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 313.12' @ 8.90 hrs Surf.Area= 0.041 ac Storage= 0.072 af

Plug-Flow detention time= 330.8 min calculated for 0.176 af (75% of inflow)
Center-of-Mass det. time= 177.2 min (906.5 - 729.3)

Volume	Invert	Avail.Storage	Storage Description
#1	308.90'	0.108 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
308.90	0.041	0.0	0.000	0.000
309.00	0.041	40.0	0.002	0.002
309.01	0.041	40.0	0.000	0.002
310.50	0.041	40.0	0.024	0.026
310.51	0.041	0.1	0.000	0.026
312.00	0.041	0.1	0.000	0.026
312.01	0.041	100.0	0.000	0.027
314.00	0.041	100.0	0.082	0.108

Device	Routing	Invert	Outlet Devices
#1	Discarded	308.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	313.00'	**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=0.02 cfs @ 3.44 hrs HW=308.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.24 cfs @ 8.90 hrs HW=313.12' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.24 cfs @ 0.98 fps)

Summary for Pond QSGL4: QSGL4

Inflow Area = 1.210 ac, 90.91% Impervious, Inflow Depth = 3.94" for Salem 100 yrs event
Inflow = 1.22 cfs @ 7.94 hrs, Volume= 0.397 af
Outflow = 1.21 cfs @ 8.02 hrs, Volume= 0.357 af, Atten= 1%, Lag= 4.3 min
Discarded = 0.01 cfs @ 1.58 hrs, Volume= 0.033 af
Primary = 1.19 cfs @ 8.02 hrs, Volume= 0.324 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 303.35' @ 8.02 hrs Surf.Area= 0.028 ac Storage= 0.056 af

Plug-Flow detention time= 151.3 min calculated for 0.357 af (90% of inflow)
Center-of-Mass det. time= 80.2 min (761.9 - 681.7)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	0.074 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
298.90	0.028	0.0	0.000	0.000
299.00	0.028	40.0	0.001	0.001
299.01	0.028	40.0	0.000	0.001
300.50	0.028	40.0	0.017	0.018
300.51	0.028	0.1	0.000	0.018
302.00	0.028	0.1	0.000	0.018
302.01	0.028	100.0	0.000	0.018
304.00	0.028	100.0	0.056	0.074

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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=0.01 cfs @ 1.58 hrs HW=298.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=1.19 cfs @ 8.02 hrs HW=303.35' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 1.19 cfs @ 1.71 fps)

Summary for Pond QSGR1: Strong Rd GSI

Inflow Area = 0.610 ac, 75.41% Impervious, Inflow Depth = 3.22" for Salem 100 yrs event
Inflow = 0.55 cfs @ 7.95 hrs, Volume= 0.164 af
Outflow = 0.09 cfs @ 13.29 hrs, Volume= 0.113 af, Atten= 83%, Lag= 320.6 min
Discarded = 0.04 cfs @ 13.29 hrs, Volume= 0.082 af
Primary = 0.05 cfs @ 13.29 hrs, Volume= 0.031 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 302.94' @ 13.29 hrs Surf.Area= 0.086 ac Storage= 0.072 af

Plug-Flow detention time= 498.6 min calculated for 0.113 af (69% of inflow)
Center-of-Mass det. time= 315.2 min (1,043.3 - 728.1)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	0.168 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
298.90	0.030	0.0	0.000	0.000
299.00	0.030	40.0	0.001	0.001
299.01	0.030	40.0	0.000	0.001
300.40	0.030	40.0	0.017	0.018
300.50	0.030	0.1	0.000	0.018
302.00	0.030	0.1	0.000	0.018
302.01	0.030	100.0	0.000	0.018
303.00	0.090	100.0	0.059	0.078
304.00	0.090	100.0	0.090	0.168

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	302.90'	**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=0.04 cfs @ 13.29 hrs HW=302.94' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.04 cfs @ 13.29 hrs HW=302.94' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.04 cfs @ 0.55 fps)

Summary for Pond QSGR2: W-St GSI

Inflow Area = 1.260 ac, 76.19% Impervious, Inflow Depth = 2.48" for Salem 100 yrs event
Inflow = 0.41 cfs @ 7.87 hrs, Volume= 0.260 af
Outflow = 0.36 cfs @ 9.00 hrs, Volume= 0.240 af, Atten= 11%, Lag= 68.2 min
Discarded = 0.02 cfs @ 9.00 hrs, Volume= 0.039 af
Primary = 0.34 cfs @ 9.00 hrs, Volume= 0.200 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 310.40' @ 9.00 hrs Surf.Area= 0.042 ac Storage= 0.032 af

Plug-Flow detention time= 132.6 min calculated for 0.240 af (92% of inflow)
Center-of-Mass det. time= 82.8 min (864.1 - 781.2)

Volume	Invert	Avail.Storage	Storage Description
#1	306.40'	0.136 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
306.40	0.023	0.0	0.000	0.000
306.50	0.023	40.0	0.001	0.001
307.01	0.023	40.0	0.005	0.006
308.50	0.023	40.0	0.014	0.019
308.51	0.023	0.1	0.000	0.019
310.00	0.023	0.1	0.000	0.019
310.01	0.023	100.0	0.000	0.020
311.00	0.070	100.0	0.046	0.066
312.00	0.070	100.0	0.070	0.136

Device	Routing	Invert	Outlet Devices
#1	Discarded	306.40'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	310.25'	**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=0.02 cfs @ 9.00 hrs HW=310.40' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.34 cfs @ 9.00 hrs HW=310.40' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.34 cfs @ 1.10 fps)

Summary for Link 2L: Pre Devloped

Inflow Area = 4.630 ac, 0.00% Impervious, Inflow Depth = 1.75" for Salem 100 yrs event
Inflow = 1.12 cfs @ 8.72 hrs, Volume= 0.674 af
Primary = 1.12 cfs @ 8.72 hrs, Volume= 0.674 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link QS-PRG: QS-Pringle

Inflow Area = 4.630 ac, 81.64% Impervious, Inflow Depth = 1.89" for Salem 100 yrs event
Inflow = 1.87 cfs @ 8.20 hrs, Volume= 0.731 af
Primary = 1.87 cfs @ 8.20 hrs, Volume= 0.731 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link QS-PRG1: QS-Pringle1

Inflow Area = 4.630 ac, 81.64% Impervious, Inflow Depth = 1.89" for Salem 100 yrs event
Inflow = 1.87 cfs @ 8.20 hrs, Volume= 0.731 af
Primary = 1.87 cfs @ 8.20 hrs, Volume= 0.731 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link QS-ST: QS-ST

Inflow Area = 2.810 ac, 79.00% Impervious, Inflow Depth = 1.94" for Salem 100 yrs event
Inflow = 0.89 cfs @ 8.30 hrs, Volume= 0.454 af
Primary = 0.89 cfs @ 8.30 hrs, Volume= 0.454 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pringle Rd Runoff Area=0.320 ac 75.00% Impervious Runoff Depth=1.42"
Tc=5.0 min CN=92 Runoff=0.12 cfs 0.038 af

Subcatchment QS-NOPT: QS-NOPT Runoff Area=7.200 ac 0.00% Impervious Runoff Depth=0.38"
Flow Length=700' Slope=0.1000 '/' Tc=24.6 min CN=72 Runoff=0.19 cfs 0.229 af

Subcatchment QS-PRE: QS-PRE Runoff Area=4.630 ac 0.00% Impervious Runoff Depth=0.38"
Flow Length=400' Tc=59.9 min CN=72 Runoff=0.12 cfs 0.147 af

Subcatchment QS-PT: QS-PT Runoff Area=4.140 ac 0.00% Impervious Runoff Depth=0.38"
Flow Length=250' Slope=0.1000 '/' Tc=19.9 min CN=72 Runoff=0.11 cfs 0.131 af

Subcatchment QSL1: QSL1 Runoff Area=0.150 ac 73.33% Impervious Runoff Depth=1.34"
Tc=10.0 min CN=91 Runoff=0.05 cfs 0.017 af

Subcatchment QSL2: QSL2 Runoff Area=0.580 ac 70.69% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.18 cfs 0.061 af

Subcatchment QSL3: QSL3 Runoff Area=0.850 ac 70.59% Impervious Runoff Depth=1.27"
Tc=10.0 min CN=90 Runoff=0.26 cfs 0.090 af

Subcatchment QSL4: QSL4 Runoff Area=1.210 ac 90.91% Impervious Runoff Depth=1.77"
Tc=10.0 min CN=96 Runoff=0.56 cfs 0.178 af

Subcatchment QSR1: W-St Runoff Area=0.460 ac 76.09% Impervious Runoff Depth=1.42"
Tc=5.0 min CN=92 Runoff=0.17 cfs 0.054 af

Subcatchment QSR2: W-St Runoff Area=0.410 ac 87.80% Impervious Runoff Depth=1.67"
Tc=5.0 min CN=95 Runoff=0.18 cfs 0.057 af

Subcatchment QSR3: Q-St Runoff Area=0.970 ac 87.63% Impervious Runoff Depth=1.67"
Tc=5.0 min CN=95 Runoff=0.43 cfs 0.135 af

Subcatchment QSR4: Pringle Rd Runoff Area=0.320 ac 75.00% Impervious Runoff Depth=1.42"
Tc=5.0 min CN=92 Runoff=0.12 cfs 0.038 af

Pond QSG3: Q-St GSI Peak Elev=308.92' Storage=0.103 af Inflow=0.43 cfs 0.179 af
Discarded=0.05 cfs 0.091 af Primary=0.03 cfs 0.010 af Outflow=0.08 cfs 0.100 af

Pond QSG4: Pringle Rd GSI Peak Elev=300.54' Storage=0.043 af Inflow=0.31 cfs 0.106 af
Discarded=0.02 cfs 0.039 af Primary=0.05 cfs 0.036 af Outflow=0.08 cfs 0.075 af

Pond QSGL1: QSGL1 Peak Elev=305.01' Storage=0.009 af Inflow=0.05 cfs 0.017 af
Discarded=0.00 cfs 0.005 af Primary=0.01 cfs 0.004 af Outflow=0.01 cfs 0.009 af

Pond QSGL2: QSGL2 Peak Elev=311.05' Storage=0.015 af Inflow=0.18 cfs 0.061 af
Discarded=0.00 cfs 0.010 af Primary=0.07 cfs 0.039 af Outflow=0.08 cfs 0.049 af

Pond QSGL3: QSGL3 Peak Elev=312.75' Storage=0.057 af Inflow=0.26 cfs 0.090 af
Discarded=0.02 cfs 0.043 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.043 af

Pond QSGL4: QSGL4 Peak Elev=303.14' Storage=0.050 af Inflow=0.56 cfs 0.178 af
Discarded=0.01 cfs 0.032 af Primary=0.31 cfs 0.106 af Outflow=0.32 cfs 0.139 af

Pond QSGR1: Strong Rd GSI Peak Elev=302.27' Storage=0.028 af Inflow=0.17 cfs 0.058 af
Discarded=0.02 cfs 0.040 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.040 af

Pond QSGR2: W-St GSI Peak Elev=310.26' Storage=0.027 af Inflow=0.18 cfs 0.057 af
Discarded=0.02 cfs 0.033 af Primary=0.01 cfs 0.005 af Outflow=0.03 cfs 0.038 af

Link 2L: Pre Devloped Inflow=0.12 cfs 0.147 af
Primary=0.12 cfs 0.147 af

Link QS-PRG: QS-Pringle Inflow=0.06 cfs 0.045 af
Primary=0.06 cfs 0.045 af

Link QS-PRG1: QS-Pringle1 Inflow=0.06 cfs 0.045 af
Primary=0.06 cfs 0.045 af

Link QS-ST: QS-ST Inflow=0.03 cfs 0.010 af
Primary=0.03 cfs 0.010 af

Summary for Subcatchment 1S: Pringle Rd

Runoff = 0.12 cfs @ 7.92 hrs, Volume= 0.038 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.240	98	
*	0.080	72	
	0.320	92	Weighted Average
	0.080		25.00% Pervious Area
	0.240		75.00% Impervious Area

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

Summary for Subcatchment QS-NOPT: QS-NOPT

Runoff = 0.19 cfs @ 9.05 hrs, Volume= 0.229 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	7.200	72	
	7.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	150	0.1000	0.13		**Sheet Flow, Sheet Flow** n= 0.400 P2= 2.20"
5.8	550	0.1000	1.58		**Shallow Concentrated Flow, Forest Overland** Kv= 5.0 fps
24.6	700	Total			

Summary for Subcatchment QS-PRE: QS-PRE

Runoff = 0.12 cfs @ 16.97 hrs, Volume= 0.147 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	4.630	72	
	4.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	150	0.1000	0.20		**Sheet Flow, Sheet Flow** n= 0.240 P2= 2.20"
2.4	250	0.0600	1.71		**Shallow Concentrated Flow, Meadow Overland** Kv= 7.0 fps
30.0					**Direct Entry, x**
15.0					**Direct Entry, m**
59.9	400	Total			

Summary for Subcatchment QS-PT: QS-PT

Runoff = 0.11 cfs @ 8.96 hrs, Volume= 0.131 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	4.140	72	
	4.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	150	0.1000	0.13		**Sheet Flow, Sheet Flow** n= 0.400 P2= 2.20"
1.1	100	0.1000	1.58		**Shallow Concentrated Flow, Forest Overland** Kv= 5.0 fps
19.9	250	Total			

Summary for Subcatchment QSL1: QSL1

Runoff = 0.05 cfs @ 8.01 hrs, Volume= 0.017 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.110	98	
*	0.040	72	
	0.150	91	Weighted Average
	0.040		26.67% Pervious Area
	0.110		73.33% Impervious Area

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

Summary for Subcatchment QSL2: QSL2

Runoff = 0.18 cfs @ 7.94 hrs, Volume= 0.061 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.410	98	
*	0.170	72	
	0.580	90	Weighted Average
	0.170		29.31% Pervious Area
	0.410		70.69% Impervious Area

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

Summary for Subcatchment QSL3: QSL3

Runoff = 0.26 cfs @ 8.01 hrs, Volume= 0.090 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.600	98	
*	0.250	72	
	0.850	90	Weighted Average
	0.250		29.41% Pervious Area
	0.600		70.59% Impervious Area

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

Summary for Subcatchment QSL4: QSL4

Runoff = 0.56 cfs @ 7.97 hrs, Volume= 0.178 af, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	1.100	98	
*	0.110	72	
	1.210	96	Weighted Average
	0.110		9.09% Pervious Area
	1.100		90.91% Impervious Area

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

Summary for Subcatchment QSR1: W-St

Runoff = 0.17 cfs @ 7.92 hrs, Volume= 0.054 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.350	98	
*	0.110	72	
	0.460	92	Weighted Average
	0.110		23.91% Pervious Area
	0.350		76.09% Impervious Area

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

Summary for Subcatchment QSR2: W-St

Runoff = 0.18 cfs @ 7.89 hrs, Volume= 0.057 af, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.360	98	
*	0.050	72	
	0.410	95	Weighted Average
	0.050		12.20% Pervious Area
	0.360		87.80% Impervious Area

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

Summary for Subcatchment QSR3: Q-St

Runoff = 0.43 cfs @ 7.89 hrs, Volume= 0.135 af, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.850	98	
*	0.120	72	
	0.970	95	Weighted Average
	0.120		12.37% Pervious Area
	0.850		87.63% Impervious Area

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

Summary for Subcatchment QSR4: Pringle Rd

Runoff = 0.12 cfs @ 7.92 hrs, Volume= 0.038 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.240	98	
*	0.080	72	
	0.320	92	Weighted Average
	0.080		25.00% Pervious Area
	0.240		75.00% Impervious Area

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

Summary for Pond QSG3: Q-St GSI

Inflow Area = 2.810 ac, 79.00% Impervious, Inflow Depth = 0.76" for Salem 2 yr event
Inflow = 0.43 cfs @ 7.89 hrs, Volume= 0.179 af
Outflow = 0.08 cfs @ 19.99 hrs, Volume= 0.100 af, Atten= 81%, Lag= 726.1 min
Discarded = 0.05 cfs @ 19.99 hrs, Volume= 0.091 af
Primary = 0.03 cfs @ 19.99 hrs, Volume= 0.010 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 308.92' @ 19.99 hrs Surf.Area= 0.104 ac Storage= 0.103 af

Plug-Flow detention time= 599.0 min calculated for 0.100 af (56% of inflow)
Center-of-Mass det. time= 356.5 min (1,123.6 - 767.1)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	0.222 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
303.90	0.037	0.0	0.000	0.000
304.00	0.037	40.0	0.001	0.001
305.01	0.037	40.0	0.015	0.016
306.50	0.037	40.0	0.022	0.038
306.51	0.037	0.1	0.000	0.038
308.00	0.037	0.1	0.000	0.039
308.01	0.037	100.0	0.000	0.039
309.00	0.110	100.0	0.073	0.112
310.00	0.110	100.0	0.110	0.222

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	308.90'	**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=0.05 cfs @ 19.99 hrs HW=308.92' (Free Discharge)
└—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.02 cfs @ 19.99 hrs HW=308.92' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.40 fps)

Summary for Pond QSG4: Pringle Rd GSI

Inflow Area = 1.820 ac, 85.71% Impervious, Inflow Depth = 0.70" for Salem 2 yr event
Inflow = 0.31 cfs @ 8.27 hrs, Volume= 0.106 af
Outflow = 0.08 cfs @ 13.42 hrs, Volume= 0.075 af, Atten= 75%, Lag= 309.0 min
Discarded = 0.02 cfs @ 13.42 hrs, Volume= 0.039 af
Primary = 0.05 cfs @ 13.42 hrs, Volume= 0.036 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 300.54' @ 13.42 hrs Surf.Area= 0.047 ac Storage= 0.043 af

Plug-Flow detention time= 413.8 min calculated for 0.075 af (70% of inflow)
Center-of-Mass det. time= 257.2 min (1,094.5 - 837.3)

Volume	Invert	Avail.Storage	Storage Description
#1	295.90'	0.137 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
295.90	0.023	0.0	0.000	0.000
296.00	0.023	40.0	0.001	0.001
297.01	0.023	40.0	0.009	0.010
298.50	0.023	40.0	0.014	0.024
298.51	0.023	0.1	0.000	0.024
300.00	0.023	0.1	0.000	0.024
300.01	0.023	100.0	0.000	0.024
301.00	0.068	100.0	0.045	0.069
302.00	0.068	100.0	0.068	0.137

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	300.50'	**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=0.02 cfs @ 13.42 hrs HW=300.54' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.05 cfs @ 13.42 hrs HW=300.54' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.59 fps)

Summary for Pond QSGL1: QSGL1

Inflow Area =	0.150 ac,	73.33% Impervious,	Inflow Depth = 1.34"	for Salem 2 yr event
Inflow =	0.05 cfs @	8.01 hrs, Volume=	0.017 af	
Outflow =	0.01 cfs @	14.59 hrs, Volume=	0.009 af,	Atten= 82%, Lag= 394.7 min
Discarded =	0.00 cfs @	5.19 hrs, Volume=	0.005 af	
Primary =	0.01 cfs @	14.59 hrs, Volume=	0.004 af	

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.01' @ 14.59 hrs Surf.Area= 0.005 ac Storage= 0.009 af

Plug-Flow detention time= 537.3 min calculated for 0.009 af (56% of inflow)
Center-of-Mass det. time= 299.1 min (1,070.5 - 771.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.014 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.005	0.0	0.000	0.000
301.00	0.005	40.0	0.000	0.000
302.40	0.005	40.0	0.003	0.003
302.50	0.005	0.1	0.000	0.003
303.90	0.005	0.1	0.000	0.003
304.00	0.005	100.0	0.001	0.004
306.00	0.005	100.0	0.010	0.014

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 5.19 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 14.59 hrs HW=305.01' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.23 fps)

Summary for Pond QSGL2: QSGL2

Inflow Area = 0.580 ac, 70.69% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.18 cfs @ 7.94 hrs, Volume= 0.061 af
Outflow = 0.08 cfs @ 8.70 hrs, Volume= 0.049 af, Atten= 58%, Lag= 45.3 min
Discarded = 0.00 cfs @ 4.77 hrs, Volume= 0.010 af
Primary = 0.07 cfs @ 8.70 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 311.05' @ 8.70 hrs Surf.Area= 0.009 ac Storage= 0.015 af

Plug-Flow detention time= 267.2 min calculated for 0.049 af (79% of inflow)
Center-of-Mass det. time= 142.8 min (919.6 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	306.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
306.90	0.009	0.0	0.000	0.000
307.00	0.009	40.0	0.000	0.000
307.01	0.009	40.0	0.000	0.000
308.50	0.009	40.0	0.005	0.006
308.60	0.009	0.1	0.000	0.006
310.00	0.009	0.1	0.000	0.006
310.10	0.009	100.0	0.001	0.007
312.00	0.009	100.0	0.017	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	306.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	311.00'	**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 @ 4.77 hrs HW=306.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.07 cfs @ 8.70 hrs HW=311.05' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.64 fps)

Summary for Pond QSGL3: QSGL3

Inflow Area = 0.850 ac, 70.59% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.26 cfs @ 8.01 hrs, Volume= 0.090 af
Outflow = 0.02 cfs @ 5.93 hrs, Volume= 0.043 af, Atten= 92%, Lag= 0.0 min
Discarded = 0.02 cfs @ 5.93 hrs, Volume= 0.043 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 312.75' @ 24.12 hrs Surf.Area= 0.041 ac Storage= 0.057 af

Plug-Flow detention time= 545.0 min calculated for 0.043 af (47% of inflow)
Center-of-Mass det. time= 271.4 min (1,052.8 - 781.4)

Volume	Invert	Avail.Storage	Storage Description
#1	308.90'	0.108 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
308.90	0.041	0.0	0.000	0.000
309.00	0.041	40.0	0.002	0.002
309.01	0.041	40.0	0.000	0.002
310.50	0.041	40.0	0.024	0.026
310.51	0.041	0.1	0.000	0.026
312.00	0.041	0.1	0.000	0.026
312.01	0.041	100.0	0.000	0.027
314.00	0.041	100.0	0.082	0.108

Device	Routing	Invert	Outlet Devices
#1	Discarded	308.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	313.00'	**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=0.02 cfs @ 5.93 hrs HW=308.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=308.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QSGL4: QSGL4

Inflow Area = 1.210 ac, 90.91% Impervious, Inflow Depth = 1.77" for Salem 2 yr event
Inflow = 0.56 cfs @ 7.97 hrs, Volume= 0.178 af
Outflow = 0.32 cfs @ 8.27 hrs, Volume= 0.139 af, Atten= 42%, Lag= 18.3 min
Discarded = 0.01 cfs @ 2.79 hrs, Volume= 0.032 af
Primary = 0.31 cfs @ 8.27 hrs, Volume= 0.106 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 303.14' @ 8.27 hrs Surf.Area= 0.028 ac Storage= 0.050 af

Plug-Flow detention time= 296.9 min calculated for 0.139 af (78% of inflow)
Center-of-Mass det. time= 156.0 min (868.5 - 712.5)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	0.074 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
298.90	0.028	0.0	0.000	0.000
299.00	0.028	40.0	0.001	0.001
299.01	0.028	40.0	0.000	0.001
300.50	0.028	40.0	0.017	0.018
300.51	0.028	0.1	0.000	0.018
302.00	0.028	0.1	0.000	0.018
302.01	0.028	100.0	0.000	0.018
304.00	0.028	100.0	0.056	0.074

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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=0.01 cfs @ 2.79 hrs HW=298.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.31 cfs @ 8.27 hrs HW=303.14' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.31 cfs @ 1.06 fps)

Summary for Pond QSGR1: Strong Rd GSI

Inflow Area =	0.610 ac,	75.41% Impervious,	Inflow Depth = 1.15"	for Salem 2 yr event
Inflow =	0.17 cfs @	7.92 hrs, Volume=	0.058 af	
Outflow =	0.02 cfs @	22.67 hrs, Volume=	0.040 af,	Atten= 86%, Lag= 884.6 min
Discarded =	0.02 cfs @	22.67 hrs, Volume=	0.040 af	
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 302.27' @ 22.67 hrs Surf.Area= 0.046 ac Storage= 0.028 af

Plug-Flow detention time= 486.2 min calculated for 0.040 af (68% of inflow)
Center-of-Mass det. time= 299.8 min (1,081.5 - 781.7)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	0.168 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
298.90	0.030	0.0	0.000	0.000
299.00	0.030	40.0	0.001	0.001
299.01	0.030	40.0	0.000	0.001
300.40	0.030	40.0	0.017	0.018
300.50	0.030	0.1	0.000	0.018
302.00	0.030	0.1	0.000	0.018
302.01	0.030	100.0	0.000	0.018
303.00	0.090	100.0	0.059	0.078
304.00	0.090	100.0	0.090	0.168

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	302.90'	**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=0.02 cfs @ 22.67 hrs HW=302.27' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=298.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QSGR2: W-St GSI

Inflow Area = 1.260 ac, 76.19% Impervious, Inflow Depth = 0.54" for Salem 2 yr event
Inflow = 0.18 cfs @ 7.89 hrs, Volume= 0.057 af
Outflow = 0.03 cfs @ 15.45 hrs, Volume= 0.038 af, Atten= 85%, Lag= 453.8 min
Discarded = 0.02 cfs @ 15.45 hrs, Volume= 0.033 af
Primary = 0.01 cfs @ 15.45 hrs, Volume= 0.005 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 310.26' @ 15.45 hrs Surf.Area= 0.035 ac Storage= 0.027 af

Plug-Flow detention time= 514.2 min calculated for 0.038 af (66% of inflow)
Center-of-Mass det. time= 315.2 min (1,036.5 - 721.3)

Volume	Invert	Avail.Storage	Storage Description
#1	306.40'	0.136 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
306.40	0.023	0.0	0.000	0.000
306.50	0.023	40.0	0.001	0.001
307.01	0.023	40.0	0.005	0.006
308.50	0.023	40.0	0.014	0.019
308.51	0.023	0.1	0.000	0.019
310.00	0.023	0.1	0.000	0.019
310.01	0.023	100.0	0.000	0.020
311.00	0.070	100.0	0.046	0.066
312.00	0.070	100.0	0.070	0.136

Device	Routing	Invert	Outlet Devices
#1	Discarded	306.40'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	310.25'	**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=0.02 cfs @ 15.45 hrs HW=310.26' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.01 cfs @ 15.45 hrs HW=310.26' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.33 fps)

Summary for Link 2L: Pre Devloped

Inflow Area = 4.630 ac, 0.00% Impervious, Inflow Depth = 0.38" for Salem 2 yr event
Inflow = 0.12 cfs @ 16.97 hrs, Volume= 0.147 af
Primary = 0.12 cfs @ 16.97 hrs, Volume= 0.147 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link QS-PRG: QS-Pringle

Inflow Area = 4.630 ac, 81.64% Impervious, Inflow Depth = 0.12" for Salem 2 yr event
Inflow = 0.06 cfs @ 19.55 hrs, Volume= 0.045 af
Primary = 0.06 cfs @ 19.55 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link QS-PRG1: QS-Pringle1

Inflow Area = 4.630 ac, 81.64% Impervious, Inflow Depth = 0.12" for Salem 2 yr event
Inflow = 0.06 cfs @ 19.55 hrs, Volume= 0.045 af
Primary = 0.06 cfs @ 19.55 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link QS-ST: QS-ST

Inflow Area =	2.810 ac,	79.00% Impervious,	Inflow Depth =	0.04"	for Salem 2 yr event
Inflow =	0.03 cfs @	19.99 hrs,	Volume=	0.010 af	
Primary =	0.03 cfs @	19.99 hrs,	Volume=	0.010 af,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pringle Rd Runoff Area=0.320 ac 75.00% Impervious Runoff Depth=0.70"
Tc=5.0 min CN=92 Runoff=0.05 cfs 0.019 af

Subcatchment QS-NOPT: QS-NOPT Runoff Area=7.200 ac 0.00% Impervious Runoff Depth=0.08"
Flow Length=700' Slope=0.1000 '/' Tc=24.6 min CN=72 Runoff=0.05 cfs 0.048 af

Subcatchment QS-PRE: QS-PRE Runoff Area=4.630 ac 0.00% Impervious Runoff Depth=0.08"
Flow Length=400' Tc=59.9 min CN=72 Runoff=0.03 cfs 0.031 af

Subcatchment QS-PT: QS-PT Runoff Area=4.140 ac 0.00% Impervious Runoff Depth=0.08"
Flow Length=250' Slope=0.1000 '/' Tc=19.9 min CN=72 Runoff=0.03 cfs 0.028 af

Subcatchment QSL1: QSL1 Runoff Area=0.150 ac 73.33% Impervious Runoff Depth=0.64"
Tc=10.0 min CN=91 Runoff=0.02 cfs 0.008 af

Subcatchment QSL2: QSL2 Runoff Area=0.580 ac 70.69% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.08 cfs 0.029 af

Subcatchment QSL3: QSL3 Runoff Area=0.850 ac 70.59% Impervious Runoff Depth=0.59"
Tc=10.0 min CN=90 Runoff=0.11 cfs 0.042 af

Subcatchment QSL4: QSL4 Runoff Area=1.210 ac 90.91% Impervious Runoff Depth=0.98"
Tc=10.0 min CN=96 Runoff=0.31 cfs 0.099 af

Subcatchment QSR1: W-St Runoff Area=0.460 ac 76.09% Impervious Runoff Depth=0.70"
Tc=5.0 min CN=92 Runoff=0.08 cfs 0.027 af

Subcatchment QSR2: W-St Runoff Area=0.410 ac 87.80% Impervious Runoff Depth=0.90"
Tc=5.0 min CN=95 Runoff=0.09 cfs 0.031 af

Subcatchment QSR3: Q-St Runoff Area=0.970 ac 87.63% Impervious Runoff Depth=0.90"
Tc=5.0 min CN=95 Runoff=0.22 cfs 0.073 af

Subcatchment QSR4: Pringle Rd Runoff Area=0.320 ac 75.00% Impervious Runoff Depth=0.70"
Tc=5.0 min CN=92 Runoff=0.05 cfs 0.019 af

Pond QSG3: Q-St GSI Peak Elev=308.20' Storage=0.047 af Inflow=0.22 cfs 0.080 af
Discarded=0.03 cfs 0.043 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.043 af

Pond QSG4: Pringle Rd GSI Peak Elev=297.78' Storage=0.017 af Inflow=0.04 cfs 0.029 af
Discarded=0.01 cfs 0.017 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.017 af

Pond QSGL1: QSGL1 Peak Elev=304.16' Storage=0.004 af Inflow=0.02 cfs 0.008 af
Discarded=0.00 cfs 0.005 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.005 af

Pond QSGL2: QSGL2 Peak Elev=311.01' Storage=0.015 af Inflow=0.08 cfs 0.029 af
Discarded=0.00 cfs 0.009 af Primary=0.01 cfs 0.007 af Outflow=0.02 cfs 0.016 af

Pond QSGL3: QSGL3 Peak Elev=309.68' Storage=0.013 af Inflow=0.11 cfs 0.042 af
Discarded=0.02 cfs 0.040 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.040 af

Pond QSGL4: QSGL4 Peak Elev=303.04' Storage=0.047 af Inflow=0.31 cfs 0.099 af
Discarded=0.01 cfs 0.031 af Primary=0.04 cfs 0.029 af Outflow=0.05 cfs 0.059 af

Pond QSGR1: Strong Rd GSI Peak Elev=299.43' Storage=0.006 af Inflow=0.08 cfs 0.027 af
Discarded=0.02 cfs 0.027 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.027 af

Pond QSGR2: W-St GSI Peak Elev=307.78' Storage=0.013 af Inflow=0.09 cfs 0.031 af
Discarded=0.01 cfs 0.024 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.024 af

Link 2L: Pre Devloped Inflow=0.03 cfs 0.031 af
Primary=0.03 cfs 0.031 af

Link QS-PRG: QS-Pringle Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link QS-PRG1: QS-Pringle1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link QS-ST: QS-ST Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Summary for Subcatchment 1S: Pringle Rd

Runoff = 0.05 cfs @ 7.96 hrs, Volume= 0.019 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.240	98	
*	0.080	72	
	0.320	92	Weighted Average
	0.080		25.00% Pervious Area
	0.240		75.00% Impervious Area

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

Summary for Subcatchment QS-NOPT: QS-NOPT

Runoff = 0.05 cfs @ 20.31 hrs, Volume= 0.048 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	7.200	72	
	7.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	150	0.1000	0.13		**Sheet Flow, Sheet Flow** n= 0.400 P2= 2.20"
5.8	550	0.1000	1.58		**Shallow Concentrated Flow, Forest Overland** Kv= 5.0 fps
24.6	700	Total			

Summary for Subcatchment QS-PRE: QS-PRE

Runoff = 0.03 cfs @ 20.83 hrs, Volume= 0.031 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	4.630	72	
	4.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	150	0.1000	0.20		**Sheet Flow, Sheet Flow** n= 0.240 P2= 2.20"
2.4	250	0.0600	1.71		**Shallow Concentrated Flow, Meadow Overland** Kv= 7.0 fps
30.0					**Direct Entry, x**
15.0					**Direct Entry, m**
59.9	400	Total			

Summary for Subcatchment QS-PT: QS-PT

Runoff = 0.03 cfs @ 20.23 hrs, Volume= 0.028 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	4.140	72	
	4.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	150	0.1000	0.13		**Sheet Flow, Sheet Flow** n= 0.400 P2= 2.20"
1.1	100	0.1000	1.58		**Shallow Concentrated Flow, Forest Overland** Kv= 5.0 fps
19.9	250	Total			

Summary for Subcatchment QSL1: QSL1

Runoff = 0.02 cfs @ 8.03 hrs, Volume= 0.008 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.110	98	
*	0.040	72	
	0.150	91	Weighted Average
	0.040		26.67% Pervious Area
	0.110		73.33% Impervious Area

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

Summary for Subcatchment QSL2: QSL2

Runoff = 0.08 cfs @ 7.99 hrs, Volume= 0.029 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.410	98	
*	0.170	72	
	0.580	90	Weighted Average
	0.170		29.31% Pervious Area
	0.410		70.69% Impervious Area

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

Summary for Subcatchment QSL3: QSL3

Runoff = 0.11 cfs @ 8.03 hrs, Volume= 0.042 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.600	98	
*	0.250	72	
	0.850	90	Weighted Average
	0.250		29.41% Pervious Area
	0.600		70.59% Impervious Area

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

Summary for Subcatchment QSL4: QSL4

Runoff = 0.31 cfs @ 7.99 hrs, Volume= 0.099 af, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	1.100	98	
*	0.110	72	
	1.210	96	Weighted Average
	0.110		9.09% Pervious Area
	1.100		90.91% Impervious Area

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

Summary for Subcatchment QSR1: W-St

Runoff = 0.08 cfs @ 7.96 hrs, Volume= 0.027 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.350	98	
*	0.110	72	
	0.460	92	Weighted Average
	0.110		23.91% Pervious Area
	0.350		76.09% Impervious Area

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

Summary for Subcatchment QSR2: W-St

Runoff = 0.09 cfs @ 7.92 hrs, Volume= 0.031 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.360	98	
*	0.050	72	
	0.410	95	Weighted Average
	0.050		12.20% Pervious Area
	0.360		87.80% Impervious Area

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

Summary for Subcatchment QSR3: Q-St

Runoff = 0.22 cfs @ 7.92 hrs, Volume= 0.073 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.850	98	
*	0.120	72	
	0.970	95	Weighted Average
	0.120		12.37% Pervious Area
	0.850		87.63% Impervious Area

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

Summary for Subcatchment QSR4: Pringle Rd

Runoff = 0.05 cfs @ 7.96 hrs, Volume= 0.019 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.240	98	
*	0.080	72	
	0.320	92	Weighted Average
	0.080		25.00% Pervious Area
	0.240		75.00% Impervious Area

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

Summary for Pond QSG3: Q-St GSI

Inflow Area = 2.810 ac, 79.00% Impervious, Inflow Depth = 0.34" for Salem Water Quality event
Inflow = 0.22 cfs @ 7.92 hrs, Volume= 0.080 af
Outflow = 0.03 cfs @ 24.05 hrs, Volume= 0.043 af, Atten= 89%, Lag= 967.7 min
Discarded = 0.03 cfs @ 24.05 hrs, Volume= 0.043 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 308.20' @ 24.05 hrs Surf.Area= 0.051 ac Storage= 0.047 af

Plug-Flow detention time= 541.3 min calculated for 0.043 af (54% of inflow)
Center-of-Mass det. time= 276.8 min (1,067.1 - 790.3)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	0.222 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
303.90	0.037	0.0	0.000	0.000
304.00	0.037	40.0	0.001	0.001
305.01	0.037	40.0	0.015	0.016
306.50	0.037	40.0	0.022	0.038
306.51	0.037	0.1	0.000	0.038
308.00	0.037	0.1	0.000	0.039
308.01	0.037	100.0	0.000	0.039
309.00	0.110	100.0	0.073	0.112
310.00	0.110	100.0	0.110	0.222

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	308.90'	**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=0.03 cfs @ 24.05 hrs HW=308.20' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=303.90' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QSG4: Pringle Rd GSI

Inflow Area = 1.820 ac, 85.71% Impervious, Inflow Depth = 0.19" for Salem Water Quality event
Inflow = 0.04 cfs @ 13.33 hrs, Volume= 0.029 af
Outflow = 0.01 cfs @ 12.62 hrs, Volume= 0.017 af, Atten= 72%, Lag= 0.0 min
Discarded = 0.01 cfs @ 12.62 hrs, Volume= 0.017 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 297.78' @ 24.21 hrs Surf.Area= 0.023 ac Storage= 0.017 af

Plug-Flow detention time= 366.1 min calculated for 0.017 af (59% of inflow)
Center-of-Mass det. time= 223.4 min (1,273.2 - 1,049.7)

Volume	Invert	Avail.Storage	Storage Description
#1	295.90'	0.137 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
295.90	0.023	0.0	0.000	0.000
296.00	0.023	40.0	0.001	0.001
297.01	0.023	40.0	0.009	0.010
298.50	0.023	40.0	0.014	0.024
298.51	0.023	0.1	0.000	0.024
300.00	0.023	0.1	0.000	0.024
300.01	0.023	100.0	0.000	0.024
301.00	0.068	100.0	0.045	0.069
302.00	0.068	100.0	0.068	0.137

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	300.50'	**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=0.01 cfs @ 12.62 hrs HW=295.96' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=295.90' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QSGL1: QSGL1

Inflow Area =	0.150 ac, 73.33% Impervious, Inflow Depth = 0.64"		for Salem Water Quality event
Inflow =	0.02 cfs @	8.03 hrs, Volume=	0.008 af
Outflow =	0.00 cfs @	7.01 hrs, Volume=	0.005 af, Atten= 89%, Lag= 0.0 min
Discarded =	0.00 cfs @	7.01 hrs, Volume=	0.005 af
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 304.16' @ 24.09 hrs Surf.Area= 0.005 ac Storage= 0.004 af

Plug-Flow detention time= 480.1 min calculated for 0.005 af (62% of inflow)
Center-of-Mass det. time= 269.9 min (1,085.3 - 815.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.014 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.005	0.0	0.000	0.000
301.00	0.005	40.0	0.000	0.000
302.40	0.005	40.0	0.003	0.003
302.50	0.005	0.1	0.000	0.003
303.90	0.005	0.1	0.000	0.003
304.00	0.005	100.0	0.001	0.004
306.00	0.005	100.0	0.010	0.014

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 7.01 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QSGL2: QSGL2

Inflow Area = 0.580 ac, 70.69% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.08 cfs @ 7.99 hrs, Volume= 0.029 af
Outflow = 0.02 cfs @ 16.35 hrs, Volume= 0.016 af, Atten= 78%, Lag= 501.5 min
Discarded = 0.00 cfs @ 6.45 hrs, Volume= 0.009 af
Primary = 0.01 cfs @ 16.35 hrs, Volume= 0.007 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 311.01' @ 16.35 hrs Surf.Area= 0.009 ac Storage= 0.015 af

Plug-Flow detention time= 533.7 min calculated for 0.016 af (56% of inflow)
Center-of-Mass det. time= 298.1 min (1,121.6 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	306.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
306.90	0.009	0.0	0.000	0.000
307.00	0.009	40.0	0.000	0.000
307.01	0.009	40.0	0.000	0.000
308.50	0.009	40.0	0.005	0.006
308.60	0.009	0.1	0.000	0.006
310.00	0.009	0.1	0.000	0.006
310.10	0.009	100.0	0.001	0.007
312.00	0.009	100.0	0.017	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	306.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	311.00'	**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 @ 6.45 hrs HW=306.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.01 cfs @ 16.35 hrs HW=311.01' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.32 fps)

Summary for Pond QSGL3: QSGL3

Inflow Area = 0.850 ac, 70.59% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.11 cfs @ 8.03 hrs, Volume= 0.042 af
Outflow = 0.02 cfs @ 7.61 hrs, Volume= 0.040 af, Atten= 81%, Lag= 0.0 min
Discarded = 0.02 cfs @ 7.61 hrs, Volume= 0.040 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 309.68' @ 20.97 hrs Surf.Area= 0.041 ac Storage= 0.013 af

Plug-Flow detention time= 309.1 min calculated for 0.040 af (95% of inflow)
Center-of-Mass det. time= 276.4 min (1,104.6 - 828.2)

Volume	Invert	Avail.Storage	Storage Description
#1	308.90'	0.108 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
308.90	0.041	0.0	0.000	0.000
309.00	0.041	40.0	0.002	0.002
309.01	0.041	40.0	0.000	0.002
310.50	0.041	40.0	0.024	0.026
310.51	0.041	0.1	0.000	0.026
312.00	0.041	0.1	0.000	0.026
312.01	0.041	100.0	0.000	0.027
314.00	0.041	100.0	0.082	0.108

Device	Routing	Invert	Outlet Devices
#1	Discarded	308.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	313.00'	**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=0.02 cfs @ 7.61 hrs HW=308.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=308.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QSGL4: QSGL4

Inflow Area = 1.210 ac, 90.91% Impervious, Inflow Depth = 0.98" for Salem Water Quality event
Inflow = 0.31 cfs @ 7.99 hrs, Volume= 0.099 af
Outflow = 0.05 cfs @ 13.33 hrs, Volume= 0.059 af, Atten= 82%, Lag= 320.8 min
Discarded = 0.01 cfs @ 4.30 hrs, Volume= 0.031 af
Primary = 0.04 cfs @ 13.33 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 303.04' @ 13.33 hrs Surf.Area= 0.028 ac Storage= 0.047 af

Plug-Flow detention time= 510.5 min calculated for 0.059 af (60% of inflow)
Center-of-Mass det. time= 286.4 min (1,027.5 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	0.074 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
298.90	0.028	0.0	0.000	0.000
299.00	0.028	40.0	0.001	0.001
299.01	0.028	40.0	0.000	0.001
300.50	0.028	40.0	0.017	0.018
300.51	0.028	0.1	0.000	0.018
302.00	0.028	0.1	0.000	0.018
302.01	0.028	100.0	0.000	0.018
304.00	0.028	100.0	0.056	0.074

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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=0.01 cfs @ 4.30 hrs HW=298.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.04 cfs @ 13.33 hrs HW=303.04' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.04 cfs @ 0.53 fps)

Summary for Pond QSGR1: Strong Rd GSI

Inflow Area = 0.610 ac, 75.41% Impervious, Inflow Depth = 0.53" for Salem Water Quality event
Inflow = 0.08 cfs @ 7.96 hrs, Volume= 0.027 af
Outflow = 0.02 cfs @ 7.45 hrs, Volume= 0.027 af, Atten= 80%, Lag= 0.0 min
Discarded = 0.02 cfs @ 7.45 hrs, Volume= 0.027 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 299.43' @ 16.21 hrs Surf.Area= 0.030 ac Storage= 0.006 af

Plug-Flow detention time= 229.7 min calculated for 0.027 af (100% of inflow)
Center-of-Mass det. time= 229.6 min (1,027.1 - 797.5)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	0.168 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
298.90	0.030	0.0	0.000	0.000
299.00	0.030	40.0	0.001	0.001
299.01	0.030	40.0	0.000	0.001
300.40	0.030	40.0	0.017	0.018
300.50	0.030	0.1	0.000	0.018
302.00	0.030	0.1	0.000	0.018
302.01	0.030	100.0	0.000	0.018
303.00	0.090	100.0	0.059	0.078
304.00	0.090	100.0	0.090	0.168

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	302.90'	**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=0.02 cfs @ 7.45 hrs HW=298.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=298.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QSGR2: W-St GSI

Inflow Area = 1.260 ac, 76.19% Impervious, Inflow Depth = 0.29" for Salem Water Quality event
Inflow = 0.09 cfs @ 7.92 hrs, Volume= 0.031 af
Outflow = 0.01 cfs @ 6.18 hrs, Volume= 0.024 af, Atten= 88%, Lag= 0.0 min
Discarded = 0.01 cfs @ 6.18 hrs, Volume= 0.024 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 307.78' @ 21.72 hrs Surf.Area= 0.023 ac Storage= 0.013 af

Plug-Flow detention time= 430.2 min calculated for 0.024 af (78% of inflow)
Center-of-Mass det. time= 294.6 min (1,048.1 - 753.5)

Volume	Invert	Avail.Storage	Storage Description
#1	306.40'	0.136 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
306.40	0.023	0.0	0.000	0.000
306.50	0.023	40.0	0.001	0.001
307.01	0.023	40.0	0.005	0.006
308.50	0.023	40.0	0.014	0.019
308.51	0.023	0.1	0.000	0.019
310.00	0.023	0.1	0.000	0.019
310.01	0.023	100.0	0.000	0.020
311.00	0.070	100.0	0.046	0.066
312.00	0.070	100.0	0.070	0.136

Device	Routing	Invert	Outlet Devices
#1	Discarded	306.40'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	310.25'	**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=0.01 cfs @ 6.18 hrs HW=306.46' (Free Discharge)
└—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=306.40' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link 2L: Pre Devloped

Inflow Area = 4.630 ac, 0.00% Impervious, Inflow Depth = 0.08" for Salem Water Quality event
Inflow = 0.03 cfs @ 20.83 hrs, Volume= 0.031 af
Primary = 0.03 cfs @ 20.83 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link QS-PRG: QS-Pringle

Inflow Area = 4.630 ac, 81.64% Impervious, Inflow Depth = 0.00" for Salem Water Quality event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link QS-PRG1: QS-Pringle1

Inflow Area = 4.630 ac, 81.64% Impervious, Inflow Depth = 0.00" for Salem Water Quality event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

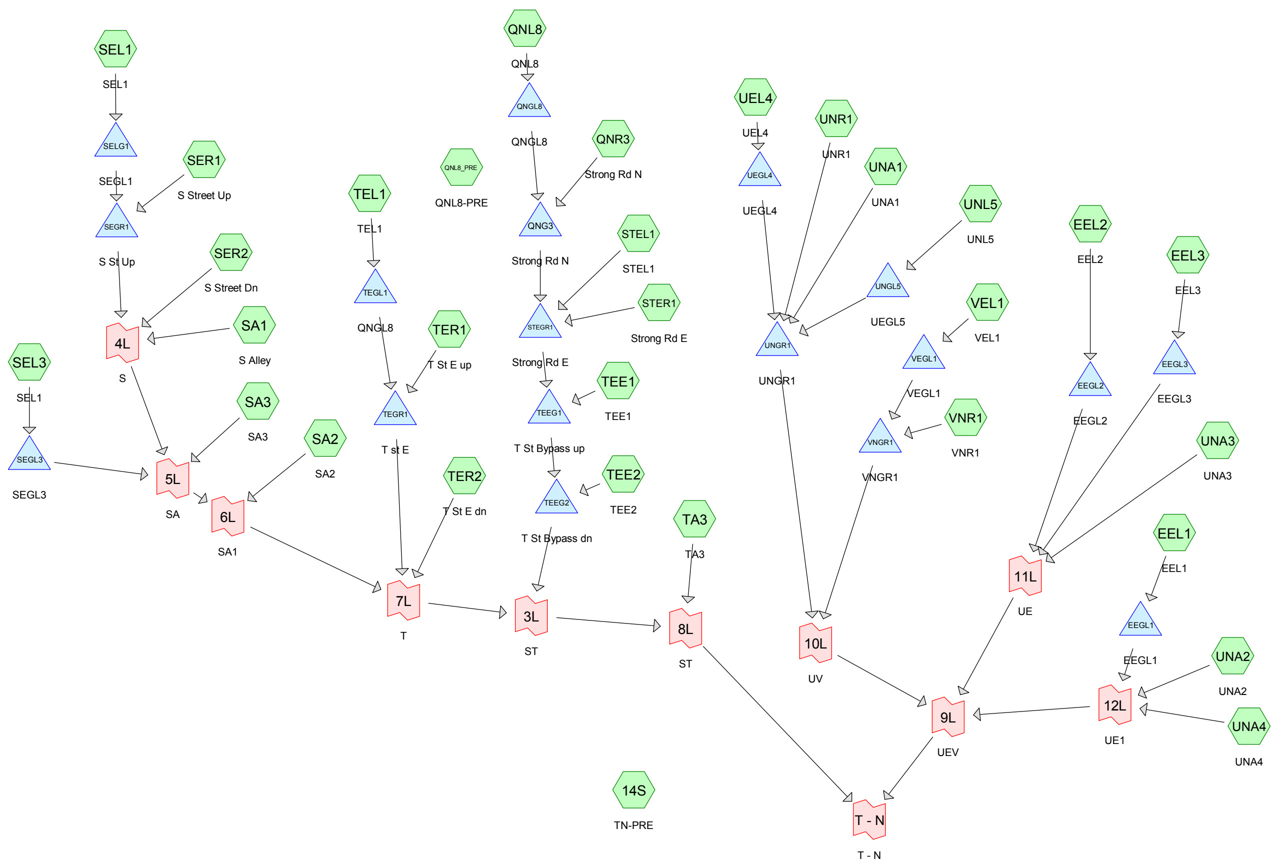
Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

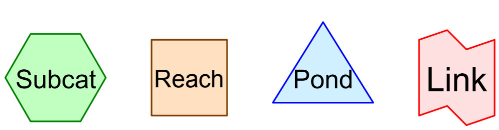
Summary for Link QS-ST: QS-ST

Inflow Area =	2.810 ac,	79.00% Impervious,	Inflow Depth = 0.00"	for Salem Water Quality event	
Inflow =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

BASIN TN





Routing Diagram for Phase A-Q-S_ 06-2-14_N&E
Prepared by Westech Engineering, Inc., Printed 6/13/2014
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
12.746	72	(14S, EEL1, EEL2, EEL3, QNL8, QNL8_PRE, QNR3, SA1, SA2, SA3, SEL1, SEL3, SER1, SER2, STEL1, STER1, TA3, TEE1, TEE2, TEL1, TER1, TER2, UEL4, UNA1, UNA2, UNA3, UNA4, UNL5, UNR1, VEL1, VNR1)
4.559	98	(EEL1, EEL2, EEL3, QNL8, QNR3, SA1, SA2, SA3, SEL1, SEL3, SER1, SER2, STER1, TA3, TEL1, TER1, TER2, UEL4, UNA1, UNA2, UNA3, UNA4, UNL5, UNR1, VEL1, VNR1)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
17.305	Other	14S, EEL1, EEL2, EEL3, QNL8, QNL8_PRE, QNR3, SA1, SA2, SA3, SEL1, SEL3, SER1, SER2, STEL1, STER1, TA3, TEE1, TEE2, TEL1, TER1, TER2, UEL4, UNA1, UNA2, UNA3, UNA4, UNL5, UNR1, VEL1, VNR1

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	17.305	17.305		14S, EEL1, EEL2, EEL3, QNL8, QNL8_PRE, QNR3, SA1, SA2, SA3, SEL1, SEL3, SER1, SER2, STEL1, STER1, TA3, TEE1, TEE2, TEL1, TER1, TER2, UEL4, UNA1, UNA2, UNA3, UNA4, UNL5, UNR1, VEL1, VNR1

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 14S: TN-PRE Runoff Area=8.130 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=560' Slope=0.1400 '/' Tc=17.0 min CN=72 Runoff=1.20 cfs 0.630 af

Subcatchment EEL1: EEL1 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=2.17"
Tc=10.0 min CN=90 Runoff=0.06 cfs 0.018 af

Subcatchment EEL2: EEL2 Runoff Area=0.385 ac 70.91% Impervious Runoff Depth=2.17"
Tc=10.0 min CN=90 Runoff=0.21 cfs 0.070 af

Subcatchment EEL3: EEL3 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=2.17"
Tc=10.0 min CN=90 Runoff=0.06 cfs 0.018 af

Subcatchment QNL8: QNL8 Runoff Area=0.860 ac 60.47% Impervious Runoff Depth=2.00"
Tc=10.0 min CN=88 Runoff=0.43 cfs 0.143 af

Subcatchment QNL8_PRE: QNL8-PRE Runoff Area=1.320 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=190' Slope=0.1300 '/' Tc=13.6 min CN=72 Runoff=0.20 cfs 0.102 af

Subcatchment QNR3: Strong Rd N Runoff Area=0.460 ac 69.57% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.26 cfs 0.083 af

Subcatchment SA1: S Alley Runoff Area=0.060 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.011 af

Subcatchment SA2: SA2 Runoff Area=0.130 ac 60.00% Impervious Runoff Depth=2.00"
Tc=5.0 min CN=88 Runoff=0.07 cfs 0.022 af

Subcatchment SA3: SA3 Runoff Area=0.090 ac 60.00% Impervious Runoff Depth=2.00"
Tc=5.0 min CN=88 Runoff=0.05 cfs 0.015 af

Subcatchment SEL1: SEL1 Runoff Area=0.240 ac 58.33% Impervious Runoff Depth=1.91"
Tc=10.0 min CN=87 Runoff=0.11 cfs 0.038 af

Subcatchment SEL3: SEL1 Runoff Area=0.430 ac 60.00% Impervious Runoff Depth=2.00"
Tc=10.0 min CN=88 Runoff=0.22 cfs 0.072 af

Subcatchment SER1: S Street Up Runoff Area=0.090 ac 60.00% Impervious Runoff Depth=2.00"
Tc=5.0 min CN=88 Runoff=0.05 cfs 0.015 af

Subcatchment SER2: S Street Dn Runoff Area=0.180 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.10 cfs 0.033 af

Subcatchment STEL1: STEL1 Runoff Area=0.950 ac 0.00% Impervious Runoff Depth=0.93"
Tc=5.0 min CN=72 Runoff=0.16 cfs 0.074 af

Subcatchment STER1: Strong Rd E Runoff Area=0.520 ac 69.23% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.29 cfs 0.094 af

Subcatchment TA3: TA3 Runoff Area=0.140 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.08 cfs 0.025 af

Subcatchment TEE1: TEE1 Runoff Area=0.050 ac 0.00% Impervious Runoff Depth=0.93"
Tc=5.0 min CN=72 Runoff=0.01 cfs 0.004 af

Subcatchment TEE2: TEE2 Runoff Area=0.050 ac 0.00% Impervious Runoff Depth=0.93"
Tc=5.0 min CN=72 Runoff=0.01 cfs 0.004 af

Subcatchment TEL1: TEL1 Runoff Area=0.360 ac 61.11% Impervious Runoff Depth=2.00"
Tc=10.0 min CN=88 Runoff=0.18 cfs 0.060 af

Subcatchment TER1: T St E up Runoff Area=0.140 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.08 cfs 0.025 af

Subcatchment TER2: T St E dn Runoff Area=0.190 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.11 cfs 0.034 af

Subcatchment UEL4: UEL4 Runoff Area=0.350 ac 71.43% Impervious Runoff Depth=2.26"
Tc=10.0 min CN=91 Runoff=0.20 cfs 0.066 af

Subcatchment UNA1: UNA1 Runoff Area=0.074 ac 70.27% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.04 cfs 0.013 af

Subcatchment UNA2: UNA2 Runoff Area=0.160 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.09 cfs 0.029 af

Subcatchment UNA3: UNA3 Runoff Area=0.096 ac 69.79% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.05 cfs 0.017 af

Subcatchment UNA4: UNA4 Runoff Area=0.310 ac 70.97% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.17 cfs 0.056 af

Subcatchment UNL5: UNL5 Runoff Area=0.120 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.07 cfs 0.022 af

Subcatchment UNR1: UNR1 Runoff Area=0.650 ac 70.77% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.36 cfs 0.117 af

Subcatchment VEL1: VEL1 Runoff Area=0.320 ac 68.75% Impervious Runoff Depth=2.17"
Tc=10.0 min CN=90 Runoff=0.18 cfs 0.058 af

Subcatchment VNR1: VNR1 Runoff Area=0.250 ac 72.00% Impervious Runoff Depth=2.26"
Tc=5.0 min CN=91 Runoff=0.15 cfs 0.047 af

Pond EEGL1: EEGL1 Peak Elev=301.60' Storage=0.005 af Inflow=0.06 cfs 0.018 af
Discarded=0.01 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.018 af

Pond EEGL2: EEGL2 Peak Elev=305.05' Storage=0.021 af Inflow=0.21 cfs 0.070 af
Discarded=0.01 cfs 0.013 af Primary=0.07 cfs 0.039 af Outflow=0.08 cfs 0.052 af

Pond EEGL3: EEGL3 Peak Elev=305.04' Storage=0.003 af Inflow=0.06 cfs 0.018 af
Discarded=0.00 cfs 0.002 af Primary=0.05 cfs 0.013 af Outflow=0.06 cfs 0.015 af

Pond QNG3: Strong Rd N Peak Elev=298.94' Storage=0.068 af Inflow=0.26 cfs 0.145 af
Discarded=0.04 cfs 0.068 af Primary=0.05 cfs 0.027 af Outflow=0.09 cfs 0.095 af

Pond QNGL8: QNGL8 Peak Elev=305.06' Storage=0.056 af Inflow=0.43 cfs 0.143 af
Discarded=0.02 cfs 0.034 af Primary=0.08 cfs 0.061 af Outflow=0.10 cfs 0.096 af

Pond SEGL3: SEGL3 Peak Elev=305.04' Storage=0.024 af Inflow=0.22 cfs 0.072 af
Discarded=0.01 cfs 0.015 af Primary=0.05 cfs 0.036 af Outflow=0.06 cfs 0.051 af

Pond SEGR1: S St Up Peak Elev=306.49' Storage=0.017 af Inflow=0.05 cfs 0.031 af
Discarded=0.01 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.018 af

Pond SELG1: SEGL1 Peak Elev=307.02' Storage=0.016 af Inflow=0.11 cfs 0.038 af
Discarded=0.00 cfs 0.010 af Primary=0.02 cfs 0.016 af Outflow=0.03 cfs 0.025 af

Pond STEGR1: Strong Rd E Peak Elev=296.95' Storage=0.106 af Inflow=0.44 cfs 0.195 af
Discarded=0.05 cfs 0.087 af Primary=0.07 cfs 0.028 af Outflow=0.12 cfs 0.114 af

Pond TEEG1: T St Bypass up Peak Elev=294.94' Storage=0.017 af Inflow=0.07 cfs 0.032 af
Discarded=0.01 cfs 0.010 af Primary=0.05 cfs 0.009 af Outflow=0.06 cfs 0.019 af

Pond TEEG2: T St Bypass dn Peak Elev=292.51' Storage=0.009 af Inflow=0.05 cfs 0.013 af
Discarded=0.01 cfs 0.006 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.006 af

Pond TEGL1: QNGL8 Peak Elev=305.03' Storage=0.024 af Inflow=0.18 cfs 0.060 af
Discarded=0.01 cfs 0.015 af Primary=0.03 cfs 0.024 af Outflow=0.04 cfs 0.039 af

Pond TEGR1: T st E Peak Elev=298.64' Storage=0.028 af Inflow=0.08 cfs 0.050 af
Discarded=0.02 cfs 0.029 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.029 af

Pond UEGL4: UEGL4 Peak Elev=305.08' Storage=0.016 af Inflow=0.20 cfs 0.066 af
Discarded=0.00 cfs 0.010 af Primary=0.13 cfs 0.043 af Outflow=0.13 cfs 0.053 af

Pond UNGL5: UEGL5 Peak Elev=305.05' Storage=0.004 af Inflow=0.07 cfs 0.022 af
Discarded=0.00 cfs 0.002 af Primary=0.07 cfs 0.017 af Outflow=0.07 cfs 0.019 af

Pond UNGR1: UNGR1 Peak Elev=298.82' Storage=0.105 af Inflow=0.47 cfs 0.190 af
Discarded=0.07 cfs 0.114 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.114 af

Pond VEGL1: VEGL1 Peak Elev=305.05' Storage=0.016 af Inflow=0.18 cfs 0.058 af
Discarded=0.00 cfs 0.010 af Primary=0.07 cfs 0.035 af Outflow=0.07 cfs 0.045 af

Pond VNGR1: VNGR1 Peak Elev=298.91' Storage=0.045 af Inflow=0.15 cfs 0.082 af
Discarded=0.03 cfs 0.047 af Primary=0.01 cfs 0.002 af Outflow=0.04 cfs 0.049 af

Link 3L: ST Inflow=0.35 cfs 0.150 af
Primary=0.35 cfs 0.150 af

Link 4L: S
Inflow=0.13 cfs 0.043 af
Primary=0.13 cfs 0.043 af

Link 5L: SA
Inflow=0.18 cfs 0.094 af
Primary=0.18 cfs 0.094 af

Link 6L: SA1
Inflow=0.25 cfs 0.116 af
Primary=0.25 cfs 0.116 af

Link 7L: T
Inflow=0.35 cfs 0.150 af
Primary=0.35 cfs 0.150 af

Link 8L: ST
Inflow=0.43 cfs 0.176 af
Primary=0.43 cfs 0.176 af

Link 9L: UEV
Inflow=0.37 cfs 0.156 af
Primary=0.37 cfs 0.156 af

Link 10L: UV
Inflow=0.01 cfs 0.002 af
Primary=0.01 cfs 0.002 af

Link 11L: UE
Inflow=0.11 cfs 0.069 af
Primary=0.11 cfs 0.069 af

Link 12L: UE1
Inflow=0.26 cfs 0.085 af
Primary=0.26 cfs 0.085 af

Link T - N: T - N
Inflow=0.79 cfs 0.332 af
Primary=0.79 cfs 0.332 af

Summary for Subcatchment 14S: TN-PRE

Runoff = 1.20 cfs @ 8.14 hrs, Volume= 0.630 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	8.130	72	
	8.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	200	0.1400	0.24		**Sheet Flow,** n= 0.240 P2= 2.20"
3.2	360	0.1400	1.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.0	560	Total			

Summary for Subcatchment EEL1: EEL1

Runoff = 0.06 cfs @ 7.99 hrs, Volume= 0.018 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment EEL2: EEL2

Runoff = 0.21 cfs @ 7.99 hrs, Volume= 0.070 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.273	98	
*	0.112	72	
	0.385	90	Weighted Average
	0.112		29.09% Pervious Area
	0.273		70.91% Impervious Area

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

Summary for Subcatchment EEL3: EEL3

Runoff = 0.06 cfs @ 7.99 hrs, Volume= 0.018 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment QNL8: QNL8

Runoff = 0.43 cfs @ 8.01 hrs, Volume= 0.143 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.520	98	
*	0.340	72	
	0.860	88	Weighted Average
	0.340		39.53% Pervious Area
	0.520		60.47% Impervious Area

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

Summary for Subcatchment QNL8_PRE: QNL8-PRE

Runoff = 0.20 cfs @ 8.09 hrs, Volume= 0.102 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	1.320	72	
	1.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	190	0.1300	0.23		**Sheet Flow,** n= 0.240 P2= 2.20"

Summary for Subcatchment QNR3: Strong Rd N

Runoff = 0.26 cfs @ 7.91 hrs, Volume= 0.083 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.320	98	
*	0.140	72	
	0.460	90	Weighted Average
	0.140		30.43% Pervious Area
	0.320		69.57% Impervious Area

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

Summary for Subcatchment SA1: S Alley

Runoff = 0.03 cfs @ 7.91 hrs, Volume= 0.011 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.042	98	
*	0.018	72	
	0.060	90	Weighted Average
	0.018		30.00% Pervious Area
	0.042		70.00% Impervious Area

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

Summary for Subcatchment SA2: SA2

Runoff = 0.07 cfs @ 7.93 hrs, Volume= 0.022 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.078	98	
*	0.052	72	
	0.130	88	Weighted Average
	0.052		40.00% Pervious Area
	0.078		60.00% Impervious Area

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

Summary for Subcatchment SA3: SA3

Runoff = 0.05 cfs @ 7.93 hrs, Volume= 0.015 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.054	98	
*	0.036	72	
	0.090	88	Weighted Average
	0.036		40.00% Pervious Area
	0.054		60.00% Impervious Area

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

Summary for Subcatchment SEL1: SEL1

Runoff = 0.11 cfs @ 8.01 hrs, Volume= 0.038 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.140	98	
*	0.100	72	
	0.240	87	Weighted Average
	0.100		41.67% Pervious Area
	0.140		58.33% Impervious Area

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

Summary for Subcatchment SEL3: SEL1

Runoff = 0.22 cfs @ 8.01 hrs, Volume= 0.072 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.258	98	
*	0.172	72	
	0.430	88	Weighted Average
	0.172		40.00% Pervious Area
	0.258		60.00% Impervious Area

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

Summary for Subcatchment SER1: S Street Up

Runoff = 0.05 cfs @ 7.93 hrs, Volume= 0.015 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.054	98	
*	0.036	72	
	0.090	88	Weighted Average
	0.036		40.00% Pervious Area
	0.054		60.00% Impervious Area

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

Summary for Subcatchment SER2: S Street Dn

Runoff = 0.10 cfs @ 7.91 hrs, Volume= 0.033 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.126	98	
*	0.054	72	
	0.180	90	Weighted Average
	0.054		30.00% Pervious Area
	0.126		70.00% Impervious Area

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

Summary for Subcatchment STEL1: STEL1

Runoff = 0.16 cfs @ 8.02 hrs, Volume= 0.074 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.950	72	
	0.950		100.00% Pervious Area

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

Summary for Subcatchment STER1: Strong Rd E

Runoff = 0.29 cfs @ 7.91 hrs, Volume= 0.094 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.360	98	
*	0.160	72	
	0.520	90	Weighted Average
	0.160		30.77% Pervious Area
	0.360		69.23% Impervious Area

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

Summary for Subcatchment TA3: TA3

Runoff = 0.08 cfs @ 7.91 hrs, Volume= 0.025 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.098	98	
*	0.042	72	
	0.140	90	Weighted Average
	0.042		30.00% Pervious Area
	0.098		70.00% Impervious Area

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

Summary for Subcatchment TEE1: TEE1

Runoff = 0.01 cfs @ 8.02 hrs, Volume= 0.004 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.050	72	
	0.050		100.00% Pervious Area

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

Summary for Subcatchment TEE2: TEE2

Runoff = 0.01 cfs @ 8.02 hrs, Volume= 0.004 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.050	72	
	0.050		100.00% Pervious Area

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

Summary for Subcatchment TEL1: TEL1

Runoff = 0.18 cfs @ 8.01 hrs, Volume= 0.060 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.220	98	
*	0.140	72	
	0.360	88	Weighted Average
	0.140		38.89% Pervious Area
	0.220		61.11% Impervious Area

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

Summary for Subcatchment TER1: T St E up

Runoff = 0.08 cfs @ 7.91 hrs, Volume= 0.025 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.098	98	
*	0.042	72	
	0.140	90	Weighted Average
	0.042		30.00% Pervious Area
	0.098		70.00% Impervious Area

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

Summary for Subcatchment TER2: T St E dn

Runoff = 0.11 cfs @ 7.91 hrs, Volume= 0.034 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.133	98	
*	0.057	72	
	0.190	90	Weighted Average
	0.057		30.00% Pervious Area
	0.133		70.00% Impervious Area

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

Summary for Subcatchment UEL4: UEL4

Runoff = 0.20 cfs @ 7.99 hrs, Volume= 0.066 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.250	98	
*	0.100	72	
	0.350	91	Weighted Average
	0.100		28.57% Pervious Area
	0.250		71.43% Impervious Area

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

Summary for Subcatchment UNA1: UNA1

Runoff = 0.04 cfs @ 7.91 hrs, Volume= 0.013 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.052	98	
*	0.022	72	
	0.074	90	Weighted Average
	0.022		29.73% Pervious Area
	0.052		70.27% Impervious Area

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

Summary for Subcatchment UNA2: UNA2

Runoff = 0.09 cfs @ 7.91 hrs, Volume= 0.029 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.112	98	
*	0.048	72	
	0.160	90	Weighted Average
	0.048		30.00% Pervious Area
	0.112		70.00% Impervious Area

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

Summary for Subcatchment UNA3: UNA3

Runoff = 0.05 cfs @ 7.91 hrs, Volume= 0.017 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.067	98	
*	0.029	72	
	0.096	90	Weighted Average
	0.029		30.21% Pervious Area
	0.067		69.79% Impervious Area

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

Summary for Subcatchment UNA4: UNA4

Runoff = 0.17 cfs @ 7.91 hrs, Volume= 0.056 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.220	98	
*	0.090	72	
	0.310	90	Weighted Average
	0.090		29.03% Pervious Area
	0.220		70.97% Impervious Area

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

Summary for Subcatchment UNL5: UNL5

Runoff = 0.07 cfs @ 7.91 hrs, Volume= 0.022 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.084	98	
*	0.036	72	
	0.120	90	Weighted Average
	0.036		30.00% Pervious Area
	0.084		70.00% Impervious Area

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

Summary for Subcatchment UNR1: UNR1

Runoff = 0.36 cfs @ 7.91 hrs, Volume= 0.117 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.460	98	
*	0.190	72	
	0.650	90	Weighted Average
	0.190		29.23% Pervious Area
	0.460		70.77% Impervious Area

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

Summary for Subcatchment VEL1: VEL1

Runoff = 0.18 cfs @ 7.99 hrs, Volume= 0.058 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.220	98	
*	0.100	72	
	0.320	90	Weighted Average
	0.100		31.25% Pervious Area
	0.220		68.75% Impervious Area

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

Summary for Subcatchment VNR1: VNR1

Runoff = 0.15 cfs @ 7.91 hrs, Volume= 0.047 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.180	98	
*	0.070	72	
	0.250	91	Weighted Average
	0.070		28.00% Pervious Area
	0.180		72.00% Impervious Area

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

Summary for Pond EEGL1: EEGL1

Inflow Area = 0.100 ac, 70.00% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.06 cfs @ 7.99 hrs, Volume= 0.018 af
Outflow = 0.01 cfs @ 6.64 hrs, Volume= 0.018 af, Atten= 84%, Lag= 0.0 min
Discarded = 0.01 cfs @ 6.64 hrs, Volume= 0.018 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 301.60' @ 15.84 hrs Surf.Area= 0.018 ac Storage= 0.005 af

Plug-Flow detention time= 283.4 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 282.1 min (1,033.1 - 751.0)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.049 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.018	0.0	0.000	0.000
301.00	0.018	40.0	0.001	0.001
302.40	0.018	40.0	0.010	0.011
302.50	0.018	0.1	0.000	0.011
303.90	0.018	0.1	0.000	0.011
304.00	0.018	100.0	0.002	0.013
306.00	0.018	100.0	0.036	0.049

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 6.64 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond EEGL2: EEGL2

Inflow Area = 0.385 ac, 70.91% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.21 cfs @ 7.99 hrs, Volume= 0.070 af
Outflow = 0.08 cfs @ 8.95 hrs, Volume= 0.052 af, Atten= 64%, Lag= 57.5 min
Discarded = 0.01 cfs @ 4.07 hrs, Volume= 0.013 af
Primary = 0.07 cfs @ 8.95 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.05' @ 8.95 hrs Surf.Area= 0.012 ac Storage= 0.021 af

Plug-Flow detention time= 327.0 min calculated for 0.052 af (75% of inflow)
Center-of-Mass det. time= 173.9 min (925.0 - 751.0)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.032 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.012	0.0	0.000	0.000
301.00	0.012	40.0	0.000	0.000
302.40	0.012	40.0	0.007	0.007
302.50	0.012	0.1	0.000	0.007
303.90	0.012	0.1	0.000	0.007
304.00	0.012	100.0	0.001	0.008
306.00	0.012	100.0	0.024	0.032

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 4.07 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.07 cfs @ 8.95 hrs HW=305.05' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.64 fps)

Summary for Pond EEGL3: EEGL3

Inflow Area = 0.100 ac, 70.00% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.06 cfs @ 7.99 hrs, Volume= 0.018 af
Outflow = 0.06 cfs @ 8.02 hrs, Volume= 0.015 af, Atten= 0%, Lag= 1.8 min
Discarded = 0.00 cfs @ 3.76 hrs, Volume= 0.002 af
Primary = 0.05 cfs @ 8.02 hrs, Volume= 0.013 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.04' @ 8.02 hrs Surf.Area= 0.002 ac Storage= 0.003 af

Plug-Flow detention time= 207.9 min calculated for 0.015 af (84% of inflow)
Center-of-Mass det. time= 105.3 min (856.3 - 751.0)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.005 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.002	0.0	0.000	0.000
301.00	0.002	40.0	0.000	0.000
302.40	0.002	40.0	0.001	0.001
302.50	0.002	0.1	0.000	0.001
303.90	0.002	0.1	0.000	0.001
304.00	0.002	100.0	0.000	0.001
306.00	0.002	100.0	0.004	0.005

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 3.76 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.05 cfs @ 8.02 hrs HW=305.04' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.58 fps)

Summary for Pond QNG3: Strong Rd N

Inflow Area = 1.320 ac, 63.64% Impervious, Inflow Depth = 1.31" for Salem 10 yrs event
Inflow = 0.26 cfs @ 7.91 hrs, Volume= 0.145 af
Outflow = 0.09 cfs @ 17.53 hrs, Volume= 0.095 af, Atten= 64%, Lag= 576.8 min
Discarded = 0.04 cfs @ 17.53 hrs, Volume= 0.068 af
Primary = 0.05 cfs @ 17.53 hrs, Volume= 0.027 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 298.94' @ 17.53 hrs Surf.Area= 0.080 ac Storage= 0.068 af

Plug-Flow detention time= 474.4 min calculated for 0.095 af (66% of inflow)

Center-of-Mass det. time= 292.0 min (1,141.9 - 849.9)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.156 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.028	0.0	0.000	0.000
295.00	0.028	40.0	0.001	0.001
295.01	0.028	40.0	0.000	0.001
296.50	0.028	40.0	0.017	0.018
296.51	0.028	0.1	0.000	0.018
298.00	0.028	0.1	0.000	0.018
298.01	0.028	100.0	0.000	0.018
299.00	0.083	100.0	0.055	0.073
300.00	0.083	100.0	0.083	0.156

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.04 cfs @ 17.53 hrs HW=298.94' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.05 cfs @ 17.53 hrs HW=298.94' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.57 fps)

Summary for Pond QNGL8: QNGL8

Inflow Area = 0.860 ac, 60.47% Impervious, Inflow Depth = 2.00" for Salem 10 yrs event
Inflow = 0.43 cfs @ 8.01 hrs, Volume= 0.143 af
Outflow = 0.10 cfs @ 11.19 hrs, Volume= 0.096 af, Atten= 77%, Lag= 190.8 min
Discarded = 0.02 cfs @ 4.78 hrs, Volume= 0.034 af
Primary = 0.08 cfs @ 11.19 hrs, Volume= 0.061 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.06' @ 11.19 hrs Surf.Area= 0.032 ac Storage= 0.056 af

Plug-Flow detention time= 426.1 min calculated for 0.096 af (67% of inflow)
Center-of-Mass det. time= 235.7 min (1,002.7 - 766.9)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.086 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.032	0.0	0.000	0.000
301.00	0.032	40.0	0.001	0.001
302.40	0.032	40.0	0.018	0.019
302.50	0.032	0.1	0.000	0.019
303.90	0.032	0.1	0.000	0.019
304.00	0.032	100.0	0.003	0.022
306.00	0.032	100.0	0.064	0.086

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.02 cfs @ 4.78 hrs HW=300.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.08 cfs @ 11.19 hrs HW=305.06' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.08 cfs @ 0.67 fps)

Summary for Pond SEGL3: SEGL3

Inflow Area = 0.430 ac, 60.00% Impervious, Inflow Depth = 2.00" for Salem 10 yrs event
Inflow = 0.22 cfs @ 8.01 hrs, Volume= 0.072 af
Outflow = 0.06 cfs @ 9.92 hrs, Volume= 0.051 af, Atten= 73%, Lag= 114.6 min
Discarded = 0.01 cfs @ 4.66 hrs, Volume= 0.015 af
Primary = 0.05 cfs @ 9.92 hrs, Volume= 0.036 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.04' @ 9.92 hrs Surf.Area= 0.014 ac Storage= 0.024 af

Plug-Flow detention time= 370.0 min calculated for 0.051 af (71% of inflow)
Center-of-Mass det. time= 201.2 min (968.1 - 766.9)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 4.66 hrs HW=300.95' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.05 cfs @ 9.92 hrs HW=305.04' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.57 fps)

Summary for Pond SEGR1: S St Up

Inflow Area = 0.330 ac, 58.79% Impervious, Inflow Depth = 1.11" for Salem 10 yrs event
Inflow = 0.05 cfs @ 7.93 hrs, Volume= 0.031 af
Outflow = 0.01 cfs @ 24.05 hrs, Volume= 0.018 af, Atten= 73%, Lag= 967.5 min
Discarded = 0.01 cfs @ 24.05 hrs, Volume= 0.018 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 306.49' @ 24.05 hrs Surf.Area= 0.024 ac Storage= 0.017 af

Plug-Flow detention time= 462.8 min calculated for 0.018 af (60% of inflow)
Center-of-Mass det. time= 264.2 min (1,151.0 - 886.8)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.070 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.012	0.0	0.000	0.000
303.00	0.012	40.0	0.000	0.000
304.40	0.012	40.0	0.007	0.007
304.50	0.012	0.1	0.000	0.007
305.90	0.012	0.1	0.000	0.007
306.00	0.012	100.0	0.001	0.008
307.00	0.037	100.0	0.024	0.033
308.00	0.037	100.0	0.037	0.070

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	306.80'	**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=0.01 cfs @ 24.05 hrs HW=306.49' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=302.90' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SELG1: SEGL1

Inflow Area = 0.240 ac, 58.33% Impervious, Inflow Depth = 1.91" for Salem 10 yrs event
Inflow = 0.11 cfs @ 8.01 hrs, Volume= 0.038 af
Outflow = 0.03 cfs @ 11.46 hrs, Volume= 0.025 af, Atten= 78%, Lag= 206.8 min
Discarded = 0.00 cfs @ 5.04 hrs, Volume= 0.010 af
Primary = 0.02 cfs @ 11.46 hrs, Volume= 0.016 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 307.02' @ 11.46 hrs Surf.Area= 0.009 ac Storage= 0.016 af

Plug-Flow detention time= 438.6 min calculated for 0.025 af (66% of inflow)
Center-of-Mass det. time= 242.4 min (1,017.0 - 774.6)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.009	0.0	0.000	0.000
303.00	0.009	40.0	0.000	0.000
304.40	0.009	40.0	0.005	0.005
304.50	0.009	0.1	0.000	0.005
305.90	0.009	0.1	0.000	0.005
306.00	0.009	100.0	0.001	0.006
308.00	0.009	100.0	0.018	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 5.04 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.02 cfs @ 11.46 hrs HW=307.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.41 fps)

Summary for Pond STEGR1: Strong Rd E

Inflow Area = 2.790 ac, 43.01% Impervious, Inflow Depth = 0.84" for Salem 10 yrs event
Inflow = 0.44 cfs @ 7.98 hrs, Volume= 0.195 af
Outflow = 0.12 cfs @ 20.38 hrs, Volume= 0.114 af, Atten= 72%, Lag= 744.1 min
Discarded = 0.05 cfs @ 20.38 hrs, Volume= 0.087 af
Primary = 0.07 cfs @ 20.38 hrs, Volume= 0.028 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 296.95' @ 20.38 hrs Surf.Area= 0.106 ac Storage= 0.106 af

Plug-Flow detention time= 553.6 min calculated for 0.114 af (59% of inflow)

Center-of-Mass det. time= 319.9 min (1,176.1 - 856.2)

Volume	Invert	Avail.Storage	Storage Description
#1	291.90'	0.222 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
291.90	0.037	0.0	0.000	0.000
292.00	0.037	40.0	0.001	0.001
292.01	0.037	40.0	0.000	0.002
294.50	0.037	40.0	0.037	0.038
294.51	0.037	0.1	0.000	0.038
296.00	0.037	0.1	0.000	0.039
296.01	0.037	100.0	0.000	0.039
297.00	0.110	100.0	0.073	0.112
298.00	0.110	100.0	0.110	0.222

Device	Routing	Invert	Outlet Devices
#1	Discarded	291.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	296.90'	**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=0.05 cfs @ 20.38 hrs HW=296.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.06 cfs @ 20.38 hrs HW=296.95' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.06 cfs @ 0.62 fps)

Summary for Pond TEEG1: T St Bypass up

Inflow Area = 2.840 ac, 42.25% Impervious, Inflow Depth = 0.13" for Salem 10 yrs event
Inflow = 0.07 cfs @ 20.37 hrs, Volume= 0.032 af
Outflow = 0.06 cfs @ 22.38 hrs, Volume= 0.019 af, Atten= 16%, Lag= 120.6 min
Discarded = 0.01 cfs @ 22.38 hrs, Volume= 0.010 af
Primary = 0.05 cfs @ 22.38 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 294.94' @ 22.38 hrs Surf.Area= 0.017 ac Storage= 0.017 af

Plug-Flow detention time= 202.3 min calculated for 0.019 af (59% of inflow)
Center-of-Mass det. time= 104.7 min (1,334.2 - 1,229.5)

Volume	Invert	Avail.Storage	Storage Description
#1	289.90'	0.036 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
289.90	0.006	0.0	0.000	0.000
290.00	0.006	40.0	0.000	0.000
290.01	0.006	40.0	0.000	0.000
292.50	0.006	40.0	0.006	0.006
292.51	0.006	0.1	0.000	0.006
294.00	0.006	0.1	0.000	0.006
294.01	0.006	100.0	0.000	0.006
295.00	0.018	100.0	0.012	0.018
296.00	0.018	100.0	0.018	0.036

Device	Routing	Invert	Outlet Devices
#1	Discarded	289.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	294.90'	**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=0.01 cfs @ 22.38 hrs HW=294.94' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.04 cfs @ 22.38 hrs HW=294.94' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.04 cfs @ 0.54 fps)

Summary for Pond TEEG2: T St Bypass dn

Inflow Area = 2.890 ac, 41.52% Impervious, Inflow Depth = 0.05" for Salem 10 yrs event
Inflow = 0.05 cfs @ 22.38 hrs, Volume= 0.013 af
Outflow = 0.01 cfs @ 24.61 hrs, Volume= 0.006 af, Atten= 90%, Lag= 134.2 min
Discarded = 0.01 cfs @ 24.61 hrs, Volume= 0.006 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 292.51' @ 24.61 hrs Surf.Area= 0.011 ac Storage= 0.009 af

Plug-Flow detention time= 193.7 min calculated for 0.006 af (45% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	287.90'	0.032 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
287.90	0.005	0.0	0.000	0.000
288.00	0.005	40.0	0.000	0.000
288.01	0.005	40.0	0.000	0.000
290.50	0.005	40.0	0.005	0.005
290.51	0.005	0.1	0.000	0.005
292.00	0.005	0.1	0.000	0.005
292.01	0.005	100.0	0.000	0.005
293.00	0.016	100.0	0.010	0.016
294.00	0.016	100.0	0.016	0.032

Device	Routing	Invert	Outlet Devices
#1	Discarded	287.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	292.90'	**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=0.01 cfs @ 24.61 hrs HW=292.51' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=287.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond TEGL1: QNGL8

Inflow Area = 0.360 ac, 61.11% Impervious, Inflow Depth = 2.00" for Salem 10 yrs event
Inflow = 0.18 cfs @ 8.01 hrs, Volume= 0.060 af
Outflow = 0.04 cfs @ 11.34 hrs, Volume= 0.039 af, Atten= 78%, Lag= 199.6 min
Discarded = 0.01 cfs @ 4.83 hrs, Volume= 0.015 af
Primary = 0.03 cfs @ 11.34 hrs, Volume= 0.024 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.03' @ 11.34 hrs Surf.Area= 0.014 ac Storage= 0.024 af

Plug-Flow detention time= 439.2 min calculated for 0.039 af (66% of inflow)
Center-of-Mass det. time= 242.7 min (1,009.7 - 766.9)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 4.83 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.03 cfs @ 11.34 hrs HW=305.03' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.03 cfs @ 0.50 fps)

Summary for Pond TEGR1: T st E

Inflow Area = 0.500 ac, 63.60% Impervious, Inflow Depth = 1.19" for Salem 10 yrs event
Inflow = 0.08 cfs @ 7.91 hrs, Volume= 0.050 af
Outflow = 0.02 cfs @ 24.05 hrs, Volume= 0.029 af, Atten= 76%, Lag= 968.3 min
Discarded = 0.02 cfs @ 24.05 hrs, Volume= 0.029 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 298.64' @ 24.05 hrs Surf.Area= 0.037 ac Storage= 0.028 af

Plug-Flow detention time= 485.0 min calculated for 0.029 af (59% of inflow)
Center-of-Mass det. time= 276.3 min (1,146.7 - 870.4)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.093 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.017	0.0	0.000	0.000
295.00	0.017	40.0	0.001	0.001
295.01	0.017	40.0	0.000	0.001
296.50	0.017	40.0	0.010	0.011
296.51	0.017	0.1	0.000	0.011
298.00	0.017	0.1	0.000	0.011
298.01	0.017	100.0	0.000	0.011
299.00	0.049	100.0	0.033	0.044
300.00	0.049	100.0	0.049	0.093

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.02 cfs @ 24.05 hrs HW=298.64' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond UEGL4: UEGL4

Inflow Area =	0.350 ac, 71.43% Impervious, Inflow Depth = 2.26" for Salem 10 yrs event			
Inflow =	0.20 cfs @	7.99 hrs, Volume=	0.066 af	
Outflow =	0.13 cfs @	8.22 hrs, Volume=	0.053 af,	Atten= 34%, Lag= 13.9 min
Discarded =	0.00 cfs @	3.65 hrs, Volume=	0.010 af	
Primary =	0.13 cfs @	8.22 hrs, Volume=	0.043 af	

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.08' @ 8.22 hrs Surf.Area= 0.009 ac Storage= 0.016 af

Plug-Flow detention time= 260.0 min calculated for 0.053 af (80% of inflow)
Center-of-Mass det. time= 134.4 min (877.1 - 742.7)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.009	0.0	0.000	0.000
301.00	0.009	40.0	0.000	0.000
302.40	0.009	40.0	0.005	0.005
302.50	0.009	0.1	0.000	0.005
303.90	0.009	0.1	0.000	0.005
304.00	0.009	100.0	0.001	0.006
306.00	0.009	100.0	0.018	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 3.65 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.13 cfs @ 8.22 hrs HW=305.08' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.13 cfs @ 0.80 fps)

Summary for Pond UNGL5: UEGL5

Inflow Area = 0.120 ac, 70.00% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.07 cfs @ 7.91 hrs, Volume= 0.022 af
Outflow = 0.07 cfs @ 7.92 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.7 min
Discarded = 0.00 cfs @ 3.58 hrs, Volume= 0.002 af
Primary = 0.07 cfs @ 7.92 hrs, Volume= 0.017 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.05' @ 7.92 hrs Surf.Area= 0.002 ac Storage= 0.004 af

Plug-Flow detention time= 174.8 min calculated for 0.019 af (87% of inflow)
Center-of-Mass det. time= 88.3 min (834.7 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.005 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.002	0.0	0.000	0.000
301.00	0.002	40.0	0.000	0.000
302.40	0.002	40.0	0.001	0.001
302.50	0.002	0.1	0.000	0.001
303.90	0.002	0.1	0.000	0.001
304.00	0.002	100.0	0.000	0.001
306.00	0.002	100.0	0.004	0.005

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 3.58 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.06 cfs @ 7.92 hrs HW=305.05' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.06 cfs @ 0.62 fps)

Summary for Pond UNGR1: UNGR1

Inflow Area = 1.194 ac, 70.85% Impervious, Inflow Depth = 1.91" for Salem 10 yrs event
Inflow = 0.47 cfs @ 7.91 hrs, Volume= 0.190 af
Outflow = 0.07 cfs @ 23.27 hrs, Volume= 0.114 af, Atten= 86%, Lag= 921.5 min
Discarded = 0.07 cfs @ 23.27 hrs, Volume= 0.114 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 298.82' @ 23.27 hrs Surf.Area= 0.132 ac Storage= 0.105 af

Plug-Flow detention time= 559.1 min calculated for 0.114 af (60% of inflow)

Center-of-Mass det. time= 340.6 min (1,115.9 - 775.2)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.280 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.049	0.0	0.000	0.000
295.00	0.049	40.0	0.002	0.002
295.01	0.049	40.0	0.000	0.002
296.50	0.049	40.0	0.029	0.031
296.51	0.049	0.1	0.000	0.031
298.00	0.049	0.1	0.000	0.031
298.01	0.049	100.0	0.000	0.032
299.00	0.150	100.0	0.099	0.130
300.00	0.150	100.0	0.150	0.280

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.07 cfs @ 23.27 hrs HW=298.82' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VEGL1: VEGL1

Inflow Area = 0.320 ac, 68.75% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.18 cfs @ 7.99 hrs, Volume= 0.058 af
Outflow = 0.07 cfs @ 8.55 hrs, Volume= 0.045 af, Atten= 59%, Lag= 33.8 min
Discarded = 0.00 cfs @ 3.99 hrs, Volume= 0.010 af
Primary = 0.07 cfs @ 8.55 hrs, Volume= 0.035 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.05' @ 8.55 hrs Surf.Area= 0.009 ac Storage= 0.016 af

Plug-Flow detention time= 294.4 min calculated for 0.045 af (77% of inflow)
Center-of-Mass det. time= 154.5 min (905.6 - 751.0)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.009	0.0	0.000	0.000
301.00	0.009	40.0	0.000	0.000
302.40	0.009	40.0	0.005	0.005
302.50	0.009	0.1	0.000	0.005
303.90	0.009	0.1	0.000	0.005
304.00	0.009	100.0	0.001	0.006
306.00	0.009	100.0	0.018	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 3.99 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.06 cfs @ 8.55 hrs HW=305.05' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.06 cfs @ 0.63 fps)

Summary for Pond VNGR1: VNGR1

Inflow Area = 0.570 ac, 70.18% Impervious, Inflow Depth = 1.72" for Salem 10 yrs event
Inflow = 0.15 cfs @ 7.91 hrs, Volume= 0.082 af
Outflow = 0.04 cfs @ 21.05 hrs, Volume= 0.049 af, Atten= 76%, Lag= 788.4 min
Discarded = 0.03 cfs @ 21.05 hrs, Volume= 0.047 af
Primary = 0.01 cfs @ 21.05 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 298.91' @ 21.05 hrs Surf.Area= 0.054 ac Storage= 0.045 af

Plug-Flow detention time= 552.0 min calculated for 0.049 af (60% of inflow)
Center-of-Mass det. time= 334.6 min (1,131.6 - 797.0)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.108 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.019	0.0	0.000	0.000
295.00	0.019	40.0	0.001	0.001
295.01	0.019	40.0	0.000	0.001
296.50	0.019	40.0	0.011	0.012
296.51	0.019	0.1	0.000	0.012
298.00	0.019	0.1	0.000	0.012
298.01	0.019	100.0	0.000	0.012
299.00	0.058	100.0	0.038	0.050
300.00	0.058	100.0	0.058	0.108

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.03 cfs @ 21.05 hrs HW=298.91' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 21.05 hrs HW=298.91' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.26 fps)

Summary for Link 3L: ST

Inflow Area = 4.800 ac, 50.06% Impervious, Inflow Depth = 0.38" for Salem 10 yrs event
Inflow = 0.35 cfs @ 7.92 hrs, Volume= 0.150 af
Primary = 0.35 cfs @ 7.92 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 4L: S

Inflow Area = 0.570 ac, 63.51% Impervious, Inflow Depth = 0.91" for Salem 10 yrs event
Inflow = 0.13 cfs @ 7.91 hrs, Volume= 0.043 af
Primary = 0.13 cfs @ 7.91 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 5L: SA

Inflow Area = 1.090 ac, 61.83% Impervious, Inflow Depth = 1.04" for Salem 10 yrs event
Inflow = 0.18 cfs @ 7.92 hrs, Volume= 0.094 af
Primary = 0.18 cfs @ 7.92 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 6L: SA1

Inflow Area = 1.220 ac, 61.64% Impervious, Inflow Depth = 1.14" for Salem 10 yrs event
Inflow = 0.25 cfs @ 7.92 hrs, Volume= 0.116 af
Primary = 0.25 cfs @ 7.92 hrs, Volume= 0.116 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 7L: T

Inflow Area =	1.910 ac, 62.98% Impervious,	Inflow Depth = 0.94"	for Salem 10 yrs event	
Inflow =	0.35 cfs @	7.92 hrs, Volume=	0.150 af	
Primary =	0.35 cfs @	7.92 hrs, Volume=	0.150 af,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 8L: ST

Inflow Area =	4.940 ac, 50.63% Impervious,	Inflow Depth = 0.43"	for Salem 10 yrs event	
Inflow =	0.43 cfs @	7.92 hrs, Volume=	0.176 af	
Primary =	0.43 cfs @	7.92 hrs, Volume=	0.176 af,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 9L: UEV

Inflow Area =	2.915 ac, 70.60% Impervious,	Inflow Depth = 0.64"	for Salem 10 yrs event	
Inflow =	0.37 cfs @	7.99 hrs, Volume=	0.156 af	
Primary =	0.37 cfs @	7.99 hrs, Volume=	0.156 af,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 10L: UV

Inflow Area =	1.764 ac, 70.63% Impervious,	Inflow Depth = 0.01"	for Salem 10 yrs event	
Inflow =	0.01 cfs @	21.05 hrs, Volume=	0.002 af	
Primary =	0.01 cfs @	21.05 hrs, Volume=	0.002 af,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 11L: UE

Inflow Area =	0.581 ac, 70.57% Impervious,	Inflow Depth = 1.43"	for Salem 10 yrs event	
Inflow =	0.11 cfs @	8.92 hrs, Volume=	0.069 af	
Primary =	0.11 cfs @	8.92 hrs, Volume=	0.069 af,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 12L: UE1

Inflow Area =	0.570 ac, 70.53% Impervious,	Inflow Depth = 1.79"	for Salem 10 yrs event	
Inflow =	0.26 cfs @	7.91 hrs, Volume=	0.085 af	
Primary =	0.26 cfs @	7.91 hrs, Volume=	0.085 af,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link T - N: T - N

Inflow Area = 7.855 ac, 58.04% Impervious, Inflow Depth = 0.51" for Salem 10 yrs event
Inflow = 0.79 cfs @ 7.98 hrs, Volume= 0.332 af
Primary = 0.79 cfs @ 7.98 hrs, Volume= 0.332 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 14S: TN-PRE Runoff Area=8.130 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=560' Slope=0.1400 '/' Tc=17.0 min CN=72 Runoff=2.84 cfs 1.183 af

Subcatchment EEL1: EEL1 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=3.30"
Tc=10.0 min CN=90 Runoff=0.09 cfs 0.028 af

Subcatchment EEL2: EEL2 Runoff Area=0.385 ac 70.91% Impervious Runoff Depth=3.30"
Tc=10.0 min CN=90 Runoff=0.33 cfs 0.106 af

Subcatchment EEL3: EEL3 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=3.30"
Tc=10.0 min CN=90 Runoff=0.09 cfs 0.028 af

Subcatchment QNL8: QNL8 Runoff Area=0.860 ac 60.47% Impervious Runoff Depth=3.10"
Tc=10.0 min CN=88 Runoff=0.69 cfs 0.222 af

Subcatchment QNL8_PRE: QNL8-PRE Runoff Area=1.320 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=190' Slope=0.1300 '/' Tc=13.6 min CN=72 Runoff=0.47 cfs 0.192 af

Subcatchment QNR3: Strong Rd N Runoff Area=0.460 ac 69.57% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.40 cfs 0.127 af

Subcatchment SA1: S Alley Runoff Area=0.060 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.05 cfs 0.017 af

Subcatchment SA2: SA2 Runoff Area=0.130 ac 60.00% Impervious Runoff Depth=3.10"
Tc=5.0 min CN=88 Runoff=0.10 cfs 0.034 af

Subcatchment SA3: SA3 Runoff Area=0.090 ac 60.00% Impervious Runoff Depth=3.10"
Tc=5.0 min CN=88 Runoff=0.07 cfs 0.023 af

Subcatchment SEL1: SEL1 Runoff Area=0.240 ac 58.33% Impervious Runoff Depth=3.01"
Tc=10.0 min CN=87 Runoff=0.18 cfs 0.060 af

Subcatchment SEL3: SEL1 Runoff Area=0.430 ac 60.00% Impervious Runoff Depth=3.10"
Tc=10.0 min CN=88 Runoff=0.34 cfs 0.111 af

Subcatchment SER1: S Street Up Runoff Area=0.090 ac 60.00% Impervious Runoff Depth=3.10"
Tc=5.0 min CN=88 Runoff=0.07 cfs 0.023 af

Subcatchment SER2: S Street Dn Runoff Area=0.180 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.16 cfs 0.050 af

Subcatchment STEL1: STEL1 Runoff Area=0.950 ac 0.00% Impervious Runoff Depth=1.75"
Tc=5.0 min CN=72 Runoff=0.36 cfs 0.138 af

Subcatchment STER1: Strong Rd E Runoff Area=0.520 ac 69.23% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.45 cfs 0.143 af

Subcatchment TA3: TA3 Runoff Area=0.140 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.12 cfs 0.039 af

Subcatchment TEE1: TEE1 Runoff Area=0.050 ac 0.00% Impervious Runoff Depth=1.75"
Tc=5.0 min CN=72 Runoff=0.02 cfs 0.007 af

Subcatchment TEE2: TEE2 Runoff Area=0.050 ac 0.00% Impervious Runoff Depth=1.75"
Tc=5.0 min CN=72 Runoff=0.02 cfs 0.007 af

Subcatchment TEL1: TEL1 Runoff Area=0.360 ac 61.11% Impervious Runoff Depth=3.10"
Tc=10.0 min CN=88 Runoff=0.29 cfs 0.093 af

Subcatchment TER1: T St E up Runoff Area=0.140 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.12 cfs 0.039 af

Subcatchment TER2: T St E dn Runoff Area=0.190 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.16 cfs 0.052 af

Subcatchment UEL4: UEL4 Runoff Area=0.350 ac 71.43% Impervious Runoff Depth=3.40"
Tc=10.0 min CN=91 Runoff=0.31 cfs 0.099 af

Subcatchment UNA1: UNA1 Runoff Area=0.074 ac 70.27% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.06 cfs 0.020 af

Subcatchment UNA2: UNA2 Runoff Area=0.160 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.14 cfs 0.044 af

Subcatchment UNA3: UNA3 Runoff Area=0.096 ac 69.79% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.08 cfs 0.026 af

Subcatchment UNA4: UNA4 Runoff Area=0.310 ac 70.97% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.27 cfs 0.085 af

Subcatchment UNL5: UNL5 Runoff Area=0.120 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.10 cfs 0.033 af

Subcatchment UNR1: UNR1 Runoff Area=0.650 ac 70.77% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.56 cfs 0.179 af

Subcatchment VEL1: VEL1 Runoff Area=0.320 ac 68.75% Impervious Runoff Depth=3.30"
Tc=10.0 min CN=90 Runoff=0.27 cfs 0.088 af

Subcatchment VNR1: VNR1 Runoff Area=0.250 ac 72.00% Impervious Runoff Depth=3.40"
Tc=5.0 min CN=91 Runoff=0.22 cfs 0.071 af

Pond EEGL1: EEGL1 Peak Elev=303.99' Storage=0.013 af Inflow=0.09 cfs 0.028 af
Discarded=0.01 cfs 0.019 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.019 af

Pond EEGL2: EEGL2 Peak Elev=305.15' Storage=0.022 af Inflow=0.33 cfs 0.106 af
Discarded=0.01 cfs 0.014 af Primary=0.32 cfs 0.075 af Outflow=0.32 cfs 0.088 af

Pond EEGL3: EEGL3 Peak Elev=305.06' Storage=0.004 af Inflow=0.09 cfs 0.028 af
Discarded=0.00 cfs 0.002 af Primary=0.08 cfs 0.022 af Outflow=0.09 cfs 0.025 af

Pond QNG3: Strong Rd N Peak Elev=299.01' Storage=0.074 af Inflow=0.46 cfs 0.266 af
Discarded=0.04 cfs 0.077 af Primary=0.19 cfs 0.138 af Outflow=0.24 cfs 0.216 af

Pond QNGL8: QNGL8 Peak Elev=305.14' Storage=0.059 af Inflow=0.69 cfs 0.222 af
Discarded=0.02 cfs 0.036 af Primary=0.30 cfs 0.139 af Outflow=0.31 cfs 0.175 af

Pond SEGL3: SEGL3 Peak Elev=305.13' Storage=0.026 af Inflow=0.34 cfs 0.111 af
Discarded=0.01 cfs 0.016 af Primary=0.26 cfs 0.075 af Outflow=0.27 cfs 0.091 af

Pond SEGR1: S St Up Peak Elev=306.82' Storage=0.027 af Inflow=0.11 cfs 0.060 af
Discarded=0.02 cfs 0.029 af Primary=0.02 cfs 0.012 af Outflow=0.04 cfs 0.041 af

Pond SELG1: SEGL1 Peak Elev=307.06' Storage=0.016 af Inflow=0.18 cfs 0.060 af
Discarded=0.00 cfs 0.010 af Primary=0.08 cfs 0.037 af Outflow=0.09 cfs 0.047 af

Pond STEGR1: Strong Rd E Peak Elev=297.04' Storage=0.116 af Inflow=0.80 cfs 0.420 af
Discarded=0.06 cfs 0.103 af Primary=0.31 cfs 0.235 af Outflow=0.36 cfs 0.338 af

Pond TEEG1: T St Bypass up Peak Elev=295.04' Storage=0.019 af Inflow=0.31 cfs 0.242 af
Discarded=0.01 cfs 0.015 af Primary=0.30 cfs 0.214 af Outflow=0.31 cfs 0.229 af

Pond TEEG2: T St Bypass dn Peak Elev=293.04' Storage=0.016 af Inflow=0.31 cfs 0.221 af
Discarded=0.01 cfs 0.013 af Primary=0.29 cfs 0.197 af Outflow=0.29 cfs 0.210 af

Pond TEGL1: QNGL8 Peak Elev=305.08' Storage=0.025 af Inflow=0.29 cfs 0.093 af
Discarded=0.01 cfs 0.016 af Primary=0.13 cfs 0.057 af Outflow=0.13 cfs 0.073 af

Pond TEGR1: T st E Peak Elev=298.93' Storage=0.041 af Inflow=0.18 cfs 0.095 af
Discarded=0.02 cfs 0.042 af Primary=0.04 cfs 0.024 af Outflow=0.06 cfs 0.066 af

Pond UEGL4: UEGL4 Peak Elev=305.14' Storage=0.017 af Inflow=0.31 cfs 0.099 af
Discarded=0.00 cfs 0.010 af Primary=0.30 cfs 0.076 af Outflow=0.31 cfs 0.086 af

Pond UNGL5: UEGL5 Peak Elev=305.07' Storage=0.004 af Inflow=0.10 cfs 0.033 af
Discarded=0.00 cfs 0.002 af Primary=0.10 cfs 0.028 af Outflow=0.10 cfs 0.030 af

Pond UNGR1: UNGR1 Peak Elev=298.97' Storage=0.126 af Inflow=1.03 cfs 0.303 af
Discarded=0.07 cfs 0.137 af Primary=0.10 cfs 0.078 af Outflow=0.18 cfs 0.215 af

Pond VEGL1: VEGL1 Peak Elev=305.13' Storage=0.016 af Inflow=0.27 cfs 0.088 af
Discarded=0.00 cfs 0.010 af Primary=0.27 cfs 0.065 af Outflow=0.27 cfs 0.075 af

Pond VNGR1: VNGR1 Peak Elev=298.95' Storage=0.048 af Inflow=0.49 cfs 0.135 af
Discarded=0.03 cfs 0.053 af Primary=0.07 cfs 0.049 af Outflow=0.10 cfs 0.102 af

Link 3L: ST Inflow=0.62 cfs 0.483 af
Primary=0.62 cfs 0.483 af

Link 4L: S
Inflow=0.21 cfs 0.078 af
Primary=0.21 cfs 0.078 af

Link 5L: SA
Inflow=0.43 cfs 0.177 af
Primary=0.43 cfs 0.177 af

Link 6L: SA1
Inflow=0.50 cfs 0.210 af
Primary=0.50 cfs 0.210 af

Link 7L: T
Inflow=0.62 cfs 0.286 af
Primary=0.62 cfs 0.286 af

Link 8L: ST
Inflow=0.71 cfs 0.522 af
Primary=0.71 cfs 0.522 af

Link 9L: UEV
Inflow=0.87 cfs 0.379 af
Primary=0.87 cfs 0.379 af

Link 10L: UV
Inflow=0.16 cfs 0.127 af
Primary=0.16 cfs 0.127 af

Link 11L: UE
Inflow=0.48 cfs 0.123 af
Primary=0.48 cfs 0.123 af

Link 12L: UE1
Inflow=0.41 cfs 0.129 af
Primary=0.41 cfs 0.129 af

Link T - N: T - N
Inflow=1.56 cfs 0.901 af
Primary=1.56 cfs 0.901 af

Summary for Subcatchment 14S: TN-PRE

Runoff = 2.84 cfs @ 8.10 hrs, Volume= 1.183 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	8.130	72	
	8.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	200	0.1400	0.24		**Sheet Flow,** n= 0.240 P2= 2.20"
3.2	360	0.1400	1.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.0	560	Total			

Summary for Subcatchment EEL1: EEL1

Runoff = 0.09 cfs @ 7.97 hrs, Volume= 0.028 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment EEL2: EEL2

Runoff = 0.33 cfs @ 7.97 hrs, Volume= 0.106 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.273	98	
*	0.112	72	
	0.385	90	Weighted Average
	0.112		29.09% Pervious Area
	0.273		70.91% Impervious Area

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

Summary for Subcatchment EEL3: EEL3

Runoff = 0.09 cfs @ 7.97 hrs, Volume= 0.028 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment QNL8: QNL8

Runoff = 0.69 cfs @ 7.99 hrs, Volume= 0.222 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.520	98	
*	0.340	72	
	0.860	88	Weighted Average
	0.340		39.53% Pervious Area
	0.520		60.47% Impervious Area

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

Summary for Subcatchment QNL8_PRE: QNL8-PRE

Runoff = 0.47 cfs @ 8.07 hrs, Volume= 0.192 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	1.320	72	
	1.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	190	0.1300	0.23		**Sheet Flow,** n= 0.240 P2= 2.20"

Summary for Subcatchment QNR3: Strong Rd N

Runoff = 0.40 cfs @ 7.89 hrs, Volume= 0.127 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.320	98	
*	0.140	72	
	0.460	90	Weighted Average
	0.140		30.43% Pervious Area
	0.320		69.57% Impervious Area

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

Summary for Subcatchment SA1: S Alley

Runoff = 0.05 cfs @ 7.89 hrs, Volume= 0.017 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.042	98	
*	0.018	72	
	0.060	90	Weighted Average
	0.018		30.00% Pervious Area
	0.042		70.00% Impervious Area

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

Summary for Subcatchment SA2: SA2

Runoff = 0.10 cfs @ 7.91 hrs, Volume= 0.034 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.078	98	
*	0.052	72	
	0.130	88	Weighted Average
	0.052		40.00% Pervious Area
	0.078		60.00% Impervious Area

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

Summary for Subcatchment SA3: SA3

Runoff = 0.07 cfs @ 7.91 hrs, Volume= 0.023 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.054	98	
*	0.036	72	
	0.090	88	Weighted Average
	0.036		40.00% Pervious Area
	0.054		60.00% Impervious Area

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

Summary for Subcatchment SEL1: SEL1

Runoff = 0.18 cfs @ 7.99 hrs, Volume= 0.060 af, Depth= 3.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.140	98	
*	0.100	72	
	0.240	87	Weighted Average
	0.100		41.67% Pervious Area
	0.140		58.33% Impervious Area

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

Summary for Subcatchment SEL3: SEL1

Runoff = 0.34 cfs @ 7.99 hrs, Volume= 0.111 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.258	98	
*	0.172	72	
	0.430	88	Weighted Average
	0.172		40.00% Pervious Area
	0.258		60.00% Impervious Area

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

Summary for Subcatchment SER1: S Street Up

Runoff = 0.07 cfs @ 7.91 hrs, Volume= 0.023 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.054	98	
*	0.036	72	
	0.090	88	Weighted Average
	0.036		40.00% Pervious Area
	0.054		60.00% Impervious Area

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

Summary for Subcatchment SER2: S Street Dn

Runoff = 0.16 cfs @ 7.89 hrs, Volume= 0.050 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.126	98	
*	0.054	72	
	0.180	90	Weighted Average
	0.054		30.00% Pervious Area
	0.126		70.00% Impervious Area

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

Summary for Subcatchment STEL1: STEL1

Runoff = 0.36 cfs @ 8.00 hrs, Volume= 0.138 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.950	72	
	0.950		100.00% Pervious Area

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

Summary for Subcatchment STER1: Strong Rd E

Runoff = 0.45 cfs @ 7.89 hrs, Volume= 0.143 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.360	98	
*	0.160	72	
	0.520	90	Weighted Average
	0.160		30.77% Pervious Area
	0.360		69.23% Impervious Area

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

Summary for Subcatchment TA3: TA3

Runoff = 0.12 cfs @ 7.89 hrs, Volume= 0.039 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.098	98	
*	0.042	72	
	0.140	90	Weighted Average
	0.042		30.00% Pervious Area
	0.098		70.00% Impervious Area

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

Summary for Subcatchment TEE1: TEE1

Runoff = 0.02 cfs @ 8.00 hrs, Volume= 0.007 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.050	72	
	0.050		100.00% Pervious Area

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

Summary for Subcatchment TEE2: TEE2

Runoff = 0.02 cfs @ 8.00 hrs, Volume= 0.007 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.050	72	
	0.050		100.00% Pervious Area

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

Summary for Subcatchment TEL1: TEL1

Runoff = 0.29 cfs @ 7.99 hrs, Volume= 0.093 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.220	98	
*	0.140	72	
	0.360	88	Weighted Average
	0.140		38.89% Pervious Area
	0.220		61.11% Impervious Area

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

Summary for Subcatchment TER1: T St E up

Runoff = 0.12 cfs @ 7.89 hrs, Volume= 0.039 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.098	98	
*	0.042	72	
	0.140	90	Weighted Average
	0.042		30.00% Pervious Area
	0.098		70.00% Impervious Area

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

Summary for Subcatchment TER2: T St E dn

Runoff = 0.16 cfs @ 7.89 hrs, Volume= 0.052 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.133	98	
*	0.057	72	
	0.190	90	Weighted Average
	0.057		30.00% Pervious Area
	0.133		70.00% Impervious Area

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

Summary for Subcatchment UEL4: UEL4

Runoff = 0.31 cfs @ 7.97 hrs, Volume= 0.099 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.250	98	
*	0.100	72	
	0.350	91	Weighted Average
	0.100		28.57% Pervious Area
	0.250		71.43% Impervious Area

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

Summary for Subcatchment UNA1: UNA1

Runoff = 0.06 cfs @ 7.89 hrs, Volume= 0.020 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.052	98	
*	0.022	72	
	0.074	90	Weighted Average
	0.022		29.73% Pervious Area
	0.052		70.27% Impervious Area

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

Summary for Subcatchment UNA2: UNA2

Runoff = 0.14 cfs @ 7.89 hrs, Volume= 0.044 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.112	98	
*	0.048	72	
	0.160	90	Weighted Average
	0.048		30.00% Pervious Area
	0.112		70.00% Impervious Area

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

Summary for Subcatchment UNA3: UNA3

Runoff = 0.08 cfs @ 7.89 hrs, Volume= 0.026 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.067	98	
*	0.029	72	
	0.096	90	Weighted Average
	0.029		30.21% Pervious Area
	0.067		69.79% Impervious Area

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

Summary for Subcatchment UNA4: UNA4

Runoff = 0.27 cfs @ 7.89 hrs, Volume= 0.085 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.220	98	
*	0.090	72	
	0.310	90	Weighted Average
	0.090		29.03% Pervious Area
	0.220		70.97% Impervious Area

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

Summary for Subcatchment UNL5: UNL5

Runoff = 0.10 cfs @ 7.89 hrs, Volume= 0.033 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.084	98	
*	0.036	72	
	0.120	90	Weighted Average
	0.036		30.00% Pervious Area
	0.084		70.00% Impervious Area

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

Summary for Subcatchment UNR1: UNR1

Runoff = 0.56 cfs @ 7.89 hrs, Volume= 0.179 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.460	98	
*	0.190	72	
	0.650	90	Weighted Average
	0.190		29.23% Pervious Area
	0.460		70.77% Impervious Area

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

Summary for Subcatchment VEL1: VEL1

Runoff = 0.27 cfs @ 7.97 hrs, Volume= 0.088 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.220	98	
*	0.100	72	
	0.320	90	Weighted Average
	0.100		31.25% Pervious Area
	0.220		68.75% Impervious Area

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

Summary for Subcatchment VNR1: VNR1

Runoff = 0.22 cfs @ 7.89 hrs, Volume= 0.071 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.180	98	
*	0.070	72	
	0.250	91	Weighted Average
	0.070		28.00% Pervious Area
	0.180		72.00% Impervious Area

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

Summary for Pond EEGL1: EEGL1

Inflow Area = 0.100 ac, 70.00% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.09 cfs @ 7.97 hrs, Volume= 0.028 af
Outflow = 0.01 cfs @ 5.41 hrs, Volume= 0.019 af, Atten= 89%, Lag= 0.0 min
Discarded = 0.01 cfs @ 5.41 hrs, Volume= 0.019 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 303.99' @ 22.40 hrs Surf.Area= 0.018 ac Storage= 0.013 af

Plug-Flow detention time= 468.5 min calculated for 0.019 af (71% of inflow)
Center-of-Mass det. time= 292.3 min (1,021.6 - 729.3)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.049 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.018	0.0	0.000	0.000
301.00	0.018	40.0	0.001	0.001
302.40	0.018	40.0	0.010	0.011
302.50	0.018	0.1	0.000	0.011
303.90	0.018	0.1	0.000	0.011
304.00	0.018	100.0	0.002	0.013
306.00	0.018	100.0	0.036	0.049

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 5.41 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond EEGL2: EEGL2

Inflow Area =	0.385 ac,	70.91% Impervious,	Inflow Depth = 3.30"	for Salem 100 yrs event
Inflow =	0.33 cfs @	7.97 hrs, Volume=	0.106 af	
Outflow =	0.32 cfs @	8.05 hrs, Volume=	0.088 af,	Atten= 2%, Lag= 4.9 min
Discarded =	0.01 cfs @	3.08 hrs, Volume=	0.014 af	
Primary =	0.32 cfs @	8.05 hrs, Volume=	0.075 af	

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.15' @ 8.05 hrs Surf.Area= 0.012 ac Storage= 0.022 af

Plug-Flow detention time= 220.2 min calculated for 0.088 af (83% of inflow)
Center-of-Mass det. time= 112.7 min (842.0 - 729.3)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.032 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.012	0.0	0.000	0.000
301.00	0.012	40.0	0.000	0.000
302.40	0.012	40.0	0.007	0.007
302.50	0.012	0.1	0.000	0.007
303.90	0.012	0.1	0.000	0.007
304.00	0.012	100.0	0.001	0.008
306.00	0.012	100.0	0.024	0.032

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 3.08 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.31 cfs @ 8.05 hrs HW=305.15' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.31 cfs @ 1.07 fps)

Summary for Pond EEGL3: EEGL3

Inflow Area = 0.100 ac, 70.00% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.09 cfs @ 7.97 hrs, Volume= 0.028 af
Outflow = 0.09 cfs @ 7.99 hrs, Volume= 0.025 af, Atten= 0%, Lag= 1.0 min
Discarded = 0.00 cfs @ 2.85 hrs, Volume= 0.002 af
Primary = 0.08 cfs @ 7.99 hrs, Volume= 0.022 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.06' @ 7.99 hrs Surf.Area= 0.002 ac Storage= 0.004 af

Plug-Flow detention time= 143.1 min calculated for 0.025 af (89% of inflow)
Center-of-Mass det. time= 71.9 min (801.2 - 729.3)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.005 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.002	0.0	0.000	0.000
301.00	0.002	40.0	0.000	0.000
302.40	0.002	40.0	0.001	0.001
302.50	0.002	0.1	0.000	0.001
303.90	0.002	0.1	0.000	0.001
304.00	0.002	100.0	0.000	0.001
306.00	0.002	100.0	0.004	0.005

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 2.85 hrs HW=300.95' (Free Discharge)
└—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.08 cfs @ 7.99 hrs HW=305.06' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.08 cfs @ 0.68 fps)

Summary for Pond QNG3: Strong Rd N

Inflow Area = 1.320 ac, 63.64% Impervious, Inflow Depth = 2.42" for Salem 100 yrs event
Inflow = 0.46 cfs @ 8.40 hrs, Volume= 0.266 af
Outflow = 0.24 cfs @ 10.32 hrs, Volume= 0.216 af, Atten= 49%, Lag= 115.1 min
Discarded = 0.04 cfs @ 9.94 hrs, Volume= 0.077 af
Primary = 0.19 cfs @ 10.32 hrs, Volume= 0.138 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 299.01' @ 10.32 hrs Surf.Area= 0.083 ac Storage= 0.074 af

Plug-Flow detention time= 293.3 min calculated for 0.216 af (81% of inflow)

Center-of-Mass det. time= 182.0 min (979.2 - 797.2)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.156 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.028	0.0	0.000	0.000
295.00	0.028	40.0	0.001	0.001
295.01	0.028	40.0	0.000	0.001
296.50	0.028	40.0	0.017	0.018
296.51	0.028	0.1	0.000	0.018
298.00	0.028	0.1	0.000	0.018
298.01	0.028	100.0	0.000	0.018
299.00	0.083	100.0	0.055	0.073
300.00	0.083	100.0	0.083	0.156

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.04 cfs @ 9.94 hrs HW=299.00' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.19 cfs @ 10.32 hrs HW=299.01' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.19 cfs @ 0.91 fps)

Summary for Pond QNGL8: QNGL8

Inflow Area = 0.860 ac, 60.47% Impervious, Inflow Depth = 3.10" for Salem 100 yrs event
Inflow = 0.69 cfs @ 7.99 hrs, Volume= 0.222 af
Outflow = 0.31 cfs @ 8.45 hrs, Volume= 0.175 af, Atten= 54%, Lag= 27.4 min
Discarded = 0.02 cfs @ 3.70 hrs, Volume= 0.036 af
Primary = 0.30 cfs @ 8.45 hrs, Volume= 0.139 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.14' @ 8.45 hrs Surf.Area= 0.032 ac Storage= 0.059 af

Plug-Flow detention time= 280.0 min calculated for 0.175 af (79% of inflow)
Center-of-Mass det. time= 147.5 min (890.4 - 742.9)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.086 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.032	0.0	0.000	0.000
301.00	0.032	40.0	0.001	0.001
302.40	0.032	40.0	0.018	0.019
302.50	0.032	0.1	0.000	0.019
303.90	0.032	0.1	0.000	0.019
304.00	0.032	100.0	0.003	0.022
306.00	0.032	100.0	0.064	0.086

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.02 cfs @ 3.70 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.30 cfs @ 8.45 hrs HW=305.14' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.30 cfs @ 1.05 fps)

Summary for Pond SEGL3: SEGL3

Inflow Area = 0.430 ac, 60.00% Impervious, Inflow Depth = 3.10" for Salem 100 yrs event
Inflow = 0.34 cfs @ 7.99 hrs, Volume= 0.111 af
Outflow = 0.27 cfs @ 8.16 hrs, Volume= 0.091 af, Atten= 23%, Lag= 10.1 min
Discarded = 0.01 cfs @ 3.60 hrs, Volume= 0.016 af
Primary = 0.26 cfs @ 8.16 hrs, Volume= 0.075 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.13' @ 8.16 hrs Surf.Area= 0.014 ac Storage= 0.026 af

Plug-Flow detention time= 242.0 min calculated for 0.091 af (81% of inflow)
Center-of-Mass det. time= 125.0 min (867.9 - 742.9)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 3.60 hrs HW=300.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.26 cfs @ 8.16 hrs HW=305.13' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.26 cfs @ 1.00 fps)

Summary for Pond SEGR1: S St Up

Inflow Area = 0.330 ac, 58.79% Impervious, Inflow Depth = 2.19" for Salem 100 yrs event
Inflow = 0.11 cfs @ 8.42 hrs, Volume= 0.060 af
Outflow = 0.04 cfs @ 15.39 hrs, Volume= 0.041 af, Atten= 66%, Lag= 418.2 min
Discarded = 0.02 cfs @ 15.39 hrs, Volume= 0.029 af
Primary = 0.02 cfs @ 15.39 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 306.82' @ 15.39 hrs Surf.Area= 0.033 ac Storage= 0.027 af

Plug-Flow detention time= 461.1 min calculated for 0.041 af (68% of inflow)
Center-of-Mass det. time= 288.7 min (1,107.2 - 818.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.070 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.012	0.0	0.000	0.000
303.00	0.012	40.0	0.000	0.000
304.40	0.012	40.0	0.007	0.007
304.50	0.012	0.1	0.000	0.007
305.90	0.012	0.1	0.000	0.007
306.00	0.012	100.0	0.001	0.008
307.00	0.037	100.0	0.024	0.033
308.00	0.037	100.0	0.037	0.070

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	306.80'	**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=0.02 cfs @ 15.39 hrs HW=306.82' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.02 cfs @ 15.39 hrs HW=306.82' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.43 fps)

Summary for Pond SELG1: SEGL1

Inflow Area = 0.240 ac, 58.33% Impervious, Inflow Depth = 3.01" for Salem 100 yrs event
Inflow = 0.18 cfs @ 7.99 hrs, Volume= 0.060 af
Outflow = 0.09 cfs @ 8.44 hrs, Volume= 0.047 af, Atten= 53%, Lag= 26.7 min
Discarded = 0.00 cfs @ 3.91 hrs, Volume= 0.010 af
Primary = 0.08 cfs @ 8.44 hrs, Volume= 0.037 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 307.06' @ 8.44 hrs Surf.Area= 0.009 ac Storage= 0.016 af

Plug-Flow detention time= 283.5 min calculated for 0.047 af (78% of inflow)
Center-of-Mass det. time= 148.1 min (897.6 - 749.4)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.009	0.0	0.000	0.000
303.00	0.009	40.0	0.000	0.000
304.40	0.009	40.0	0.005	0.005
304.50	0.009	0.1	0.000	0.005
305.90	0.009	0.1	0.000	0.005
306.00	0.009	100.0	0.001	0.006
308.00	0.009	100.0	0.018	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 3.91 hrs HW=302.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.08 cfs @ 8.44 hrs HW=307.06' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.08 cfs @ 0.67 fps)

Summary for Pond STEGR1: Strong Rd E

Inflow Area = 2.790 ac, 43.01% Impervious, Inflow Depth = 1.80" for Salem 100 yrs event
Inflow = 0.80 cfs @ 7.95 hrs, Volume= 0.420 af
Outflow = 0.36 cfs @ 11.38 hrs, Volume= 0.338 af, Atten= 55%, Lag= 206.0 min
Discarded = 0.06 cfs @ 10.45 hrs, Volume= 0.103 af
Primary = 0.31 cfs @ 11.38 hrs, Volume= 0.235 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 297.04' @ 11.38 hrs Surf.Area= 0.110 ac Storage= 0.116 af

Plug-Flow detention time= 290.3 min calculated for 0.338 af (80% of inflow)

Center-of-Mass det. time= 179.3 min (1,007.5 - 828.2)

Volume	Invert	Avail.Storage	Storage Description
#1	291.90'	0.222 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
291.90	0.037	0.0	0.000	0.000
292.00	0.037	40.0	0.001	0.001
292.01	0.037	40.0	0.000	0.002
294.50	0.037	40.0	0.037	0.038
294.51	0.037	0.1	0.000	0.038
296.00	0.037	0.1	0.000	0.039
296.01	0.037	100.0	0.000	0.039
297.00	0.110	100.0	0.073	0.112
298.00	0.110	100.0	0.110	0.222

Device	Routing	Invert	Outlet Devices
#1	Discarded	291.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	296.90'	**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=0.06 cfs @ 10.45 hrs HW=297.00' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.30 cfs @ 11.38 hrs HW=297.04' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.30 cfs @ 1.06 fps)

Summary for Pond TEEG1: T St Bypass up

Inflow Area = 2.840 ac, 42.25% Impervious, Inflow Depth = 1.02" for Salem 100 yrs event
Inflow = 0.31 cfs @ 11.38 hrs, Volume= 0.242 af
Outflow = 0.31 cfs @ 11.49 hrs, Volume= 0.229 af, Atten= 0%, Lag= 6.9 min
Discarded = 0.01 cfs @ 11.11 hrs, Volume= 0.015 af
Primary = 0.30 cfs @ 11.49 hrs, Volume= 0.214 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 295.04' @ 11.49 hrs Surf.Area= 0.018 ac Storage= 0.019 af

Plug-Flow detention time= 67.3 min calculated for 0.229 af (94% of inflow)
Center-of-Mass det. time= 40.6 min (1,013.3 - 972.6)

Volume	Invert	Avail.Storage	Storage Description
#1	289.90'	0.036 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
289.90	0.006	0.0	0.000	0.000
290.00	0.006	40.0	0.000	0.000
290.01	0.006	40.0	0.000	0.000
292.50	0.006	40.0	0.006	0.006
292.51	0.006	0.1	0.000	0.006
294.00	0.006	0.1	0.000	0.006
294.01	0.006	100.0	0.000	0.006
295.00	0.018	100.0	0.012	0.018
296.00	0.018	100.0	0.018	0.036

Device	Routing	Invert	Outlet Devices
#1	Discarded	289.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	294.90'	**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=0.01 cfs @ 11.11 hrs HW=295.00' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.30 cfs @ 11.49 hrs HW=295.04' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.30 cfs @ 1.05 fps)

Summary for Pond TEEG2: T St Bypass dn

Inflow Area = 2.890 ac, 41.52% Impervious, Inflow Depth = 0.92" for Salem 100 yrs event
Inflow = 0.31 cfs @ 11.49 hrs, Volume= 0.221 af
Outflow = 0.29 cfs @ 11.92 hrs, Volume= 0.210 af, Atten= 4%, Lag= 26.2 min
Discarded = 0.01 cfs @ 11.69 hrs, Volume= 0.013 af
Primary = 0.29 cfs @ 11.92 hrs, Volume= 0.197 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 293.04' @ 11.92 hrs Surf.Area= 0.016 ac Storage= 0.016 af

Plug-Flow detention time= 60.9 min calculated for 0.210 af (95% of inflow)
Center-of-Mass det. time= 37.1 min (1,034.5 - 997.4)

Volume	Invert	Avail.Storage	Storage Description
#1	287.90'	0.032 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
287.90	0.005	0.0	0.000	0.000
288.00	0.005	40.0	0.000	0.000
288.01	0.005	40.0	0.000	0.000
290.50	0.005	40.0	0.005	0.005
290.51	0.005	0.1	0.000	0.005
292.00	0.005	0.1	0.000	0.005
292.01	0.005	100.0	0.000	0.005
293.00	0.016	100.0	0.010	0.016
294.00	0.016	100.0	0.016	0.032

Device	Routing	Invert	Outlet Devices
#1	Discarded	287.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	292.90'	**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=0.01 cfs @ 11.69 hrs HW=293.00' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.28 cfs @ 11.92 hrs HW=293.04' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.28 cfs @ 1.03 fps)

Summary for Pond TEGL1: QNGL8

Inflow Area = 0.360 ac, 61.11% Impervious, Inflow Depth = 3.10" for Salem 100 yrs event
Inflow = 0.29 cfs @ 7.99 hrs, Volume= 0.093 af
Outflow = 0.13 cfs @ 8.44 hrs, Volume= 0.073 af, Atten= 54%, Lag= 26.8 min
Discarded = 0.01 cfs @ 3.73 hrs, Volume= 0.016 af
Primary = 0.13 cfs @ 8.44 hrs, Volume= 0.057 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.08' @ 8.44 hrs Surf.Area= 0.014 ac Storage= 0.025 af

Plug-Flow detention time= 287.1 min calculated for 0.072 af (78% of inflow)
Center-of-Mass det. time= 150.3 min (893.2 - 742.9)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 3.73 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.12 cfs @ 8.44 hrs HW=305.08' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.12 cfs @ 0.79 fps)

Summary for Pond TEGR1: T st E

Inflow Area = 0.500 ac, 63.60% Impervious, Inflow Depth = 2.29" for Salem 100 yrs event
Inflow = 0.18 cfs @ 8.41 hrs, Volume= 0.095 af
Outflow = 0.06 cfs @ 14.43 hrs, Volume= 0.066 af, Atten= 65%, Lag= 361.3 min
Discarded = 0.02 cfs @ 14.43 hrs, Volume= 0.042 af
Primary = 0.04 cfs @ 14.43 hrs, Volume= 0.024 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 298.93' @ 14.43 hrs Surf.Area= 0.047 ac Storage= 0.041 af

Plug-Flow detention time= 447.8 min calculated for 0.066 af (69% of inflow)
Center-of-Mass det. time= 278.6 min (1,086.7 - 808.1)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.093 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.017	0.0	0.000	0.000
295.00	0.017	40.0	0.001	0.001
295.01	0.017	40.0	0.000	0.001
296.50	0.017	40.0	0.010	0.011
296.51	0.017	0.1	0.000	0.011
298.00	0.017	0.1	0.000	0.011
298.01	0.017	100.0	0.000	0.011
299.00	0.049	100.0	0.033	0.044
300.00	0.049	100.0	0.049	0.093

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.02 cfs @ 14.43 hrs HW=298.93' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.03 cfs @ 14.43 hrs HW=298.93' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.03 cfs @ 0.52 fps)

Summary for Pond UEGL4: UEGL4

Inflow Area = 0.350 ac, 71.43% Impervious, Inflow Depth = 3.40" for Salem 100 yrs event
Inflow = 0.31 cfs @ 7.97 hrs, Volume= 0.099 af
Outflow = 0.31 cfs @ 8.00 hrs, Volume= 0.086 af, Atten= 0%, Lag= 2.0 min
Discarded = 0.00 cfs @ 2.74 hrs, Volume= 0.010 af
Primary = 0.30 cfs @ 8.00 hrs, Volume= 0.076 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.14' @ 8.00 hrs Surf.Area= 0.009 ac Storage= 0.017 af

Plug-Flow detention time= 180.0 min calculated for 0.086 af (87% of inflow)
Center-of-Mass det. time= 91.5 min (813.7 - 722.2)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.009	0.0	0.000	0.000
301.00	0.009	40.0	0.000	0.000
302.40	0.009	40.0	0.005	0.005
302.50	0.009	0.1	0.000	0.005
303.90	0.009	0.1	0.000	0.005
304.00	0.009	100.0	0.001	0.006
306.00	0.009	100.0	0.018	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 2.74 hrs HW=300.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.30 cfs @ 8.00 hrs HW=305.14' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.30 cfs @ 1.06 fps)

Summary for Pond UNGL5: UEGL5

Inflow Area = 0.120 ac, 70.00% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.10 cfs @ 7.89 hrs, Volume= 0.033 af
Outflow = 0.10 cfs @ 7.91 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.8 min
Discarded = 0.00 cfs @ 2.70 hrs, Volume= 0.002 af
Primary = 0.10 cfs @ 7.91 hrs, Volume= 0.028 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.07' @ 7.91 hrs Surf.Area= 0.002 ac Storage= 0.004 af

Plug-Flow detention time= 121.2 min calculated for 0.030 af (91% of inflow)
Center-of-Mass det. time= 61.3 min (786.0 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.005 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.002	0.0	0.000	0.000
301.00	0.002	40.0	0.000	0.000
302.40	0.002	40.0	0.001	0.001
302.50	0.002	0.1	0.000	0.001
303.90	0.002	0.1	0.000	0.001
304.00	0.002	100.0	0.000	0.001
306.00	0.002	100.0	0.004	0.005

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 2.70 hrs HW=300.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.10 cfs @ 7.91 hrs HW=305.07' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.10 cfs @ 0.73 fps)

Summary for Pond UNGR1: UNGR1

Inflow Area = 1.194 ac, 70.85% Impervious, Inflow Depth = 3.04" for Salem 100 yrs event
Inflow = 1.03 cfs @ 7.93 hrs, Volume= 0.303 af
Outflow = 0.18 cfs @ 12.62 hrs, Volume= 0.215 af, Atten= 83%, Lag= 281.5 min
Discarded = 0.07 cfs @ 12.62 hrs, Volume= 0.137 af
Primary = 0.10 cfs @ 12.62 hrs, Volume= 0.078 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 298.97' @ 12.62 hrs Surf.Area= 0.147 ac Storage= 0.126 af

Plug-Flow detention time= 460.8 min calculated for 0.215 af (71% of inflow)

Center-of-Mass det. time= 290.6 min (1,036.3 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.280 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.049	0.0	0.000	0.000
295.00	0.049	40.0	0.002	0.002
295.01	0.049	40.0	0.000	0.002
296.50	0.049	40.0	0.029	0.031
296.51	0.049	0.1	0.000	0.031
298.00	0.049	0.1	0.000	0.031
298.01	0.049	100.0	0.000	0.032
299.00	0.150	100.0	0.099	0.130
300.00	0.150	100.0	0.150	0.280

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.07 cfs @ 12.62 hrs HW=298.97' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.10 cfs @ 12.62 hrs HW=298.97' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.10 cfs @ 0.73 fps)

Summary for Pond VEGL1: VEGL1

Inflow Area = 0.320 ac, 68.75% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.27 cfs @ 7.97 hrs, Volume= 0.088 af
Outflow = 0.27 cfs @ 8.02 hrs, Volume= 0.075 af, Atten= 1%, Lag= 2.9 min
Discarded = 0.00 cfs @ 3.02 hrs, Volume= 0.010 af
Primary = 0.27 cfs @ 8.02 hrs, Volume= 0.065 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.13' @ 8.02 hrs Surf.Area= 0.009 ac Storage= 0.016 af

Plug-Flow detention time= 199.5 min calculated for 0.075 af (85% of inflow)
Center-of-Mass det. time= 101.5 min (830.8 - 729.3)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.009	0.0	0.000	0.000
301.00	0.009	40.0	0.000	0.000
302.40	0.009	40.0	0.005	0.005
302.50	0.009	0.1	0.000	0.005
303.90	0.009	0.1	0.000	0.005
304.00	0.009	100.0	0.001	0.006
306.00	0.009	100.0	0.018	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 3.02 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.27 cfs @ 8.02 hrs HW=305.13' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.27 cfs @ 1.02 fps)

Summary for Pond VNGR1: VNGR1

Inflow Area = 0.570 ac, 70.18% Impervious, Inflow Depth = 2.85" for Salem 100 yrs event
Inflow = 0.49 cfs @ 7.97 hrs, Volume= 0.135 af
Outflow = 0.10 cfs @ 10.81 hrs, Volume= 0.102 af, Atten= 79%, Lag= 170.3 min
Discarded = 0.03 cfs @ 10.81 hrs, Volume= 0.053 af
Primary = 0.07 cfs @ 10.81 hrs, Volume= 0.049 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 298.95' @ 10.81 hrs Surf.Area= 0.056 ac Storage= 0.048 af

Plug-Flow detention time= 387.1 min calculated for 0.102 af (75% of inflow)
Center-of-Mass det. time= 240.1 min (1,000.3 - 760.2)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.108 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.019	0.0	0.000	0.000
295.00	0.019	40.0	0.001	0.001
295.01	0.019	40.0	0.000	0.001
296.50	0.019	40.0	0.011	0.012
296.51	0.019	0.1	0.000	0.012
298.00	0.019	0.1	0.000	0.012
298.01	0.019	100.0	0.000	0.012
299.00	0.058	100.0	0.038	0.050
300.00	0.058	100.0	0.058	0.108

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.03 cfs @ 10.81 hrs HW=298.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.07 cfs @ 10.81 hrs HW=298.95' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.64 fps)

Summary for Link 3L: ST

Inflow Area = 4.800 ac, 50.06% Impervious, Inflow Depth = 1.21" for Salem 100 yrs event
Inflow = 0.62 cfs @ 8.08 hrs, Volume= 0.483 af
Primary = 0.62 cfs @ 8.08 hrs, Volume= 0.483 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 4L: S

Inflow Area = 0.570 ac, 63.51% Impervious, Inflow Depth = 1.65" for Salem 100 yrs event
Inflow = 0.21 cfs @ 7.89 hrs, Volume= 0.078 af
Primary = 0.21 cfs @ 7.89 hrs, Volume= 0.078 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 5L: SA

Inflow Area = 1.090 ac, 61.83% Impervious, Inflow Depth = 1.94" for Salem 100 yrs event
Inflow = 0.43 cfs @ 8.13 hrs, Volume= 0.177 af
Primary = 0.43 cfs @ 8.13 hrs, Volume= 0.177 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 6L: SA1

Inflow Area = 1.220 ac, 61.64% Impervious, Inflow Depth = 2.07" for Salem 100 yrs event
Inflow = 0.50 cfs @ 8.12 hrs, Volume= 0.210 af
Primary = 0.50 cfs @ 8.12 hrs, Volume= 0.210 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 7L: T

Inflow Area = 1.910 ac, 62.98% Impervious, Inflow Depth = 1.80" for Salem 100 yrs event
Inflow = 0.62 cfs @ 8.08 hrs, Volume= 0.286 af
Primary = 0.62 cfs @ 8.08 hrs, Volume= 0.286 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 8L: ST

Inflow Area = 4.940 ac, 50.63% Impervious, Inflow Depth = 1.27" for Salem 100 yrs event
Inflow = 0.71 cfs @ 8.05 hrs, Volume= 0.522 af
Primary = 0.71 cfs @ 8.05 hrs, Volume= 0.522 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 9L: UEV

Inflow Area = 2.915 ac, 70.60% Impervious, Inflow Depth = 1.56" for Salem 100 yrs event
Inflow = 0.87 cfs @ 8.01 hrs, Volume= 0.379 af
Primary = 0.87 cfs @ 8.01 hrs, Volume= 0.379 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 10L: UV

Inflow Area = 1.764 ac, 70.63% Impervious, Inflow Depth = 0.86" for Salem 100 yrs event
Inflow = 0.16 cfs @ 11.61 hrs, Volume= 0.127 af
Primary = 0.16 cfs @ 11.61 hrs, Volume= 0.127 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 11L: UE

Inflow Area = 0.581 ac, 70.57% Impervious, Inflow Depth = 2.55" for Salem 100 yrs event
Inflow = 0.48 cfs @ 8.03 hrs, Volume= 0.123 af
Primary = 0.48 cfs @ 8.03 hrs, Volume= 0.123 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 12L: UE1

Inflow Area = 0.570 ac, 70.53% Impervious, Inflow Depth = 2.72" for Salem 100 yrs event
Inflow = 0.41 cfs @ 7.89 hrs, Volume= 0.129 af
Primary = 0.41 cfs @ 7.89 hrs, Volume= 0.129 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link T - N: T - N

Inflow Area =	7.855 ac,	58.04% Impervious,	Inflow Depth = 1.38"	for Salem 100 yrs event
Inflow =	1.56 cfs @	8.04 hrs, Volume=	0.901 af	
Primary =	1.56 cfs @	8.04 hrs, Volume=	0.901 af,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 14S: TN-PRE Runoff Area=8.130 ac 0.00% Impervious Runoff Depth=0.38"
Flow Length=560' Slope=0.1400 '/' Tc=17.0 min CN=72 Runoff=0.21 cfs 0.258 af

Subcatchment EEL1: EEL1 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=1.27"
Tc=10.0 min CN=90 Runoff=0.03 cfs 0.011 af

Subcatchment EEL2: EEL2 Runoff Area=0.385 ac 70.91% Impervious Runoff Depth=1.27"
Tc=10.0 min CN=90 Runoff=0.12 cfs 0.041 af

Subcatchment EEL3: EEL3 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=1.27"
Tc=10.0 min CN=90 Runoff=0.03 cfs 0.011 af

Subcatchment QNL8: QNL8 Runoff Area=0.860 ac 60.47% Impervious Runoff Depth=1.13"
Tc=10.0 min CN=88 Runoff=0.23 cfs 0.081 af

Subcatchment QNL8_PRE: QNL8-PRE Runoff Area=1.320 ac 0.00% Impervious Runoff Depth=0.38"
Flow Length=190' Slope=0.1300 '/' Tc=13.6 min CN=72 Runoff=0.04 cfs 0.042 af

Subcatchment QNR3: Strong Rd N Runoff Area=0.460 ac 69.57% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.14 cfs 0.049 af

Subcatchment SA1: S Alley Runoff Area=0.060 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.02 cfs 0.006 af

Subcatchment SA2: SA2 Runoff Area=0.130 ac 60.00% Impervious Runoff Depth=1.13"
Tc=5.0 min CN=88 Runoff=0.04 cfs 0.012 af

Subcatchment SA3: SA3 Runoff Area=0.090 ac 60.00% Impervious Runoff Depth=1.13"
Tc=5.0 min CN=88 Runoff=0.02 cfs 0.008 af

Subcatchment SEL1: SEL1 Runoff Area=0.240 ac 58.33% Impervious Runoff Depth=1.06"
Tc=10.0 min CN=87 Runoff=0.06 cfs 0.021 af

Subcatchment SEL3: SEL1 Runoff Area=0.430 ac 60.00% Impervious Runoff Depth=1.13"
Tc=10.0 min CN=88 Runoff=0.11 cfs 0.040 af

Subcatchment SER1: S Street Up Runoff Area=0.090 ac 60.00% Impervious Runoff Depth=1.13"
Tc=5.0 min CN=88 Runoff=0.02 cfs 0.008 af

Subcatchment SER2: S Street Dn Runoff Area=0.180 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.06 cfs 0.019 af

Subcatchment STEL1: STEL1 Runoff Area=0.950 ac 0.00% Impervious Runoff Depth=0.38"
Tc=5.0 min CN=72 Runoff=0.03 cfs 0.030 af

Subcatchment STER1: Strong Rd E Runoff Area=0.520 ac 69.23% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.16 cfs 0.055 af

Subcatchment TA3: TA3 Runoff Area=0.140 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.04 cfs 0.015 af

Subcatchment TEE1: TEE1 Runoff Area=0.050 ac 0.00% Impervious Runoff Depth=0.38"
Tc=5.0 min CN=72 Runoff=0.00 cfs 0.002 af

Subcatchment TEE2: TEE2 Runoff Area=0.050 ac 0.00% Impervious Runoff Depth=0.38"
Tc=5.0 min CN=72 Runoff=0.00 cfs 0.002 af

Subcatchment TEL1: TEL1 Runoff Area=0.360 ac 61.11% Impervious Runoff Depth=1.13"
Tc=10.0 min CN=88 Runoff=0.10 cfs 0.034 af

Subcatchment TER1: T St E up Runoff Area=0.140 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.04 cfs 0.015 af

Subcatchment TER2: T St E dn Runoff Area=0.190 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.06 cfs 0.020 af

Subcatchment UEL4: UEL4 Runoff Area=0.350 ac 71.43% Impervious Runoff Depth=1.34"
Tc=10.0 min CN=91 Runoff=0.12 cfs 0.039 af

Subcatchment UNA1: UNA1 Runoff Area=0.074 ac 70.27% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.02 cfs 0.008 af

Subcatchment UNA2: UNA2 Runoff Area=0.160 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.05 cfs 0.017 af

Subcatchment UNA3: UNA3 Runoff Area=0.096 ac 69.79% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.010 af

Subcatchment UNA4: UNA4 Runoff Area=0.310 ac 70.97% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.10 cfs 0.033 af

Subcatchment UNL5: UNL5 Runoff Area=0.120 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.04 cfs 0.013 af

Subcatchment UNR1: UNR1 Runoff Area=0.650 ac 70.77% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.20 cfs 0.069 af

Subcatchment VEL1: VEL1 Runoff Area=0.320 ac 68.75% Impervious Runoff Depth=1.27"
Tc=10.0 min CN=90 Runoff=0.10 cfs 0.034 af

Subcatchment VNR1: VNR1 Runoff Area=0.250 ac 72.00% Impervious Runoff Depth=1.34"
Tc=5.0 min CN=91 Runoff=0.08 cfs 0.028 af

Pond EEGL1: EEGL1 Peak Elev=301.12' Storage=0.002 af Inflow=0.03 cfs 0.011 af
Discarded=0.01 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.011 af

Pond EEGL2: EEGL2 Peak Elev=305.02' Storage=0.021 af Inflow=0.12 cfs 0.041 af
Discarded=0.01 cfs 0.013 af Primary=0.02 cfs 0.010 af Outflow=0.02 cfs 0.023 af

Pond EEGL3: EEGL3 Peak Elev=305.01' Storage=0.003 af Inflow=0.03 cfs 0.011 af
Discarded=0.00 cfs 0.002 af Primary=0.01 cfs 0.006 af Outflow=0.01 cfs 0.008 af

Pond QNG3: Strong Rd N Peak Elev=298.20' Storage=0.024 af Inflow=0.14 cfs 0.050 af
Discarded=0.02 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.033 af

Pond QNGL8: QNGL8 Peak Elev=305.01' Storage=0.055 af Inflow=0.23 cfs 0.081 af
Discarded=0.02 cfs 0.033 af Primary=0.01 cfs 0.001 af Outflow=0.03 cfs 0.034 af

Pond SEGL3: SEGL3 Peak Elev=305.01' Storage=0.024 af Inflow=0.11 cfs 0.040 af
Discarded=0.01 cfs 0.014 af Primary=0.01 cfs 0.006 af Outflow=0.02 cfs 0.020 af

Pond SEGR1: S St Up Peak Elev=303.20' Storage=0.001 af Inflow=0.02 cfs 0.008 af
Discarded=0.01 cfs 0.008 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.008 af

Pond SELG1: SEGL1 Peak Elev=306.90' Storage=0.014 af Inflow=0.06 cfs 0.021 af
Discarded=0.00 cfs 0.009 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.009 af

Pond STEGR1: Strong Rd E Peak Elev=296.29' Storage=0.052 af Inflow=0.19 cfs 0.085 af
Discarded=0.03 cfs 0.045 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.045 af

Pond TEEG1: T St Bypass up Peak Elev=289.93' Storage=0.000 af Inflow=0.00 cfs 0.002 af
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

Pond TEEG2: T St Bypass dn Peak Elev=287.93' Storage=0.000 af Inflow=0.00 cfs 0.002 af
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

Pond TEGL1: QNGL8 Peak Elev=304.94' Storage=0.023 af Inflow=0.10 cfs 0.034 af
Discarded=0.01 cfs 0.014 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.014 af

Pond TEGR1: T st E Peak Elev=295.40' Storage=0.003 af Inflow=0.04 cfs 0.015 af
Discarded=0.01 cfs 0.015 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.015 af

Pond UEGL4: UEGL4 Peak Elev=305.02' Storage=0.016 af Inflow=0.12 cfs 0.039 af
Discarded=0.00 cfs 0.010 af Primary=0.02 cfs 0.016 af Outflow=0.03 cfs 0.026 af

Pond UNGL5: UEGL5 Peak Elev=305.01' Storage=0.003 af Inflow=0.04 cfs 0.013 af
Discarded=0.00 cfs 0.002 af Primary=0.01 cfs 0.008 af Outflow=0.01 cfs 0.010 af

Pond UNGR1: UNGR1 Peak Elev=298.31' Storage=0.051 af Inflow=0.23 cfs 0.100 af
Discarded=0.04 cfs 0.066 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.066 af

Pond VEGL1: VEGL1 Peak Elev=305.02' Storage=0.015 af Inflow=0.10 cfs 0.034 af
Discarded=0.00 cfs 0.009 af Primary=0.02 cfs 0.011 af Outflow=0.02 cfs 0.021 af

Pond VNGR1: VNGR1 Peak Elev=298.33' Storage=0.020 af Inflow=0.08 cfs 0.039 af
Discarded=0.02 cfs 0.025 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.025 af

Link 3L: ST Inflow=0.19 cfs 0.072 af
Primary=0.19 cfs 0.072 af

Link 4L: S
Inflow=0.08 cfs 0.025 af
Primary=0.08 cfs 0.025 af

Link 5L: SA
Inflow=0.10 cfs 0.039 af
Primary=0.10 cfs 0.039 af

Link 6L: SA1
Inflow=0.13 cfs 0.052 af
Primary=0.13 cfs 0.052 af

Link 7L: T
Inflow=0.19 cfs 0.072 af
Primary=0.19 cfs 0.072 af

Link 8L: ST
Inflow=0.24 cfs 0.086 af
Primary=0.24 cfs 0.086 af

Link 9L: UEV
Inflow=0.18 cfs 0.076 af
Primary=0.18 cfs 0.076 af

Link 10L: UV
Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link 11L: UE
Inflow=0.03 cfs 0.026 af
Primary=0.03 cfs 0.026 af

Link 12L: UE1
Inflow=0.15 cfs 0.050 af
Primary=0.15 cfs 0.050 af

Link T - N: T - N
Inflow=0.42 cfs 0.162 af
Primary=0.42 cfs 0.162 af

Summary for Subcatchment 14S: TN-PRE

Runoff = 0.21 cfs @ 8.29 hrs, Volume= 0.258 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	8.130	72	
	8.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	200	0.1400	0.24		**Sheet Flow,** n= 0.240 P2= 2.20"
3.2	360	0.1400	1.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.0	560	Total			

Summary for Subcatchment EEL1: EEL1

Runoff = 0.03 cfs @ 8.01 hrs, Volume= 0.011 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment EEL2: EEL2

Runoff = 0.12 cfs @ 8.01 hrs, Volume= 0.041 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.273	98	
*	0.112	72	
	0.385	90	Weighted Average
	0.112		29.09% Pervious Area
	0.273		70.91% Impervious Area

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

Summary for Subcatchment EEL3: EEL3

Runoff = 0.03 cfs @ 8.01 hrs, Volume= 0.011 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment QNL8: QNL8

Runoff = 0.23 cfs @ 8.03 hrs, Volume= 0.081 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.520	98	
*	0.340	72	
	0.860	88	Weighted Average
	0.340		39.53% Pervious Area
	0.520		60.47% Impervious Area

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

Summary for Subcatchment QNL8_PRE: QNL8-PRE

Runoff = 0.04 cfs @ 8.20 hrs, Volume= 0.042 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	1.320	72	
	1.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	190	0.1300	0.23		**Sheet Flow,** n= 0.240 P2= 2.20"

Summary for Subcatchment QNR3: Strong Rd N

Runoff = 0.14 cfs @ 7.94 hrs, Volume= 0.049 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.320	98	
*	0.140	72	
	0.460	90	Weighted Average
	0.140		30.43% Pervious Area
	0.320		69.57% Impervious Area

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

Summary for Subcatchment SA1: S Alley

Runoff = 0.02 cfs @ 7.94 hrs, Volume= 0.006 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.042	98	
*	0.018	72	
	0.060	90	Weighted Average
	0.018		30.00% Pervious Area
	0.042		70.00% Impervious Area

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

Summary for Subcatchment SA2: SA2

Runoff = 0.04 cfs @ 7.96 hrs, Volume= 0.012 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.078	98	
*	0.052	72	
	0.130	88	Weighted Average
	0.052		40.00% Pervious Area
	0.078		60.00% Impervious Area

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

Summary for Subcatchment SA3: SA3

Runoff = 0.02 cfs @ 7.96 hrs, Volume= 0.008 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.054	98	
*	0.036	72	
	0.090	88	Weighted Average
	0.036		40.00% Pervious Area
	0.054		60.00% Impervious Area

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

Summary for Subcatchment SEL1: SEL1

Runoff = 0.06 cfs @ 8.03 hrs, Volume= 0.021 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.140	98	
*	0.100	72	
	0.240	87	Weighted Average
	0.100		41.67% Pervious Area
	0.140		58.33% Impervious Area

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

Summary for Subcatchment SEL3: SEL1

Runoff = 0.11 cfs @ 8.03 hrs, Volume= 0.040 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.258	98	
*	0.172	72	
	0.430	88	Weighted Average
	0.172		40.00% Pervious Area
	0.258		60.00% Impervious Area

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

Summary for Subcatchment SER1: S Street Up

Runoff = 0.02 cfs @ 7.96 hrs, Volume= 0.008 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.054	98	
*	0.036	72	
	0.090	88	Weighted Average
	0.036		40.00% Pervious Area
	0.054		60.00% Impervious Area

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

Summary for Subcatchment SER2: S Street Dn

Runoff = 0.06 cfs @ 7.94 hrs, Volume= 0.019 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.126	98	
*	0.054	72	
	0.180	90	Weighted Average
	0.054		30.00% Pervious Area
	0.126		70.00% Impervious Area

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

Summary for Subcatchment STEL1: STEL1

Runoff = 0.03 cfs @ 8.04 hrs, Volume= 0.030 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.950	72	
	0.950		100.00% Pervious Area

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

Summary for Subcatchment STER1: Strong Rd E

Runoff = 0.16 cfs @ 7.94 hrs, Volume= 0.055 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.360	98	
*	0.160	72	
	0.520	90	Weighted Average
	0.160		30.77% Pervious Area
	0.360		69.23% Impervious Area

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

Summary for Subcatchment TA3: TA3

Runoff = 0.04 cfs @ 7.94 hrs, Volume= 0.015 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.098	98	
*	0.042	72	
	0.140	90	Weighted Average
	0.042		30.00% Pervious Area
	0.098		70.00% Impervious Area

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

Summary for Subcatchment TEE1: TEE1

Runoff = 0.00 cfs @ 8.04 hrs, Volume= 0.002 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.050	72	
	0.050		100.00% Pervious Area

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

Summary for Subcatchment TEE2: TEE2

Runoff = 0.00 cfs @ 8.04 hrs, Volume= 0.002 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.050	72	
	0.050		100.00% Pervious Area

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

Summary for Subcatchment TEL1: TEL1

Runoff = 0.10 cfs @ 8.03 hrs, Volume= 0.034 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.220	98	
*	0.140	72	
	0.360	88	Weighted Average
	0.140		38.89% Pervious Area
	0.220		61.11% Impervious Area

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

Summary for Subcatchment TER1: T St E up

Runoff = 0.04 cfs @ 7.94 hrs, Volume= 0.015 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.098	98	
*	0.042	72	
	0.140	90	Weighted Average
	0.042		30.00% Pervious Area
	0.098		70.00% Impervious Area

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

Summary for Subcatchment TER2: T St E dn

Runoff = 0.06 cfs @ 7.94 hrs, Volume= 0.020 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.133	98	
*	0.057	72	
	0.190	90	Weighted Average
	0.057		30.00% Pervious Area
	0.133		70.00% Impervious Area

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

Summary for Subcatchment UEL4: UEL4

Runoff = 0.12 cfs @ 8.01 hrs, Volume= 0.039 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.250	98	
*	0.100	72	
	0.350	91	Weighted Average
	0.100		28.57% Pervious Area
	0.250		71.43% Impervious Area

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

Summary for Subcatchment UNA1: UNA1

Runoff = 0.02 cfs @ 7.94 hrs, Volume= 0.008 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.052	98	
*	0.022	72	
	0.074	90	Weighted Average
	0.022		29.73% Pervious Area
	0.052		70.27% Impervious Area

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

Summary for Subcatchment UNA2: UNA2

Runoff = 0.05 cfs @ 7.94 hrs, Volume= 0.017 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.112	98	
*	0.048	72	
	0.160	90	Weighted Average
	0.048		30.00% Pervious Area
	0.112		70.00% Impervious Area

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

Summary for Subcatchment UNA3: UNA3

Runoff = 0.03 cfs @ 7.94 hrs, Volume= 0.010 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.067	98	
*	0.029	72	
	0.096	90	Weighted Average
	0.029		30.21% Pervious Area
	0.067		69.79% Impervious Area

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

Summary for Subcatchment UNA4: UNA4

Runoff = 0.10 cfs @ 7.94 hrs, Volume= 0.033 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.220	98	
*	0.090	72	
	0.310	90	Weighted Average
	0.090		29.03% Pervious Area
	0.220		70.97% Impervious Area

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

Summary for Subcatchment UNL5: UNL5

Runoff = 0.04 cfs @ 7.94 hrs, Volume= 0.013 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.084	98	
*	0.036	72	
	0.120	90	Weighted Average
	0.036		30.00% Pervious Area
	0.084		70.00% Impervious Area

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

Summary for Subcatchment UNR1: UNR1

Runoff = 0.20 cfs @ 7.94 hrs, Volume= 0.069 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.460	98	
*	0.190	72	
	0.650	90	Weighted Average
	0.190		29.23% Pervious Area
	0.460		70.77% Impervious Area

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

Summary for Subcatchment VEL1: VEL1

Runoff = 0.10 cfs @ 8.01 hrs, Volume= 0.034 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.220	98	
*	0.100	72	
	0.320	90	Weighted Average
	0.100		31.25% Pervious Area
	0.220		68.75% Impervious Area

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

Summary for Subcatchment VNR1: VNR1

Runoff = 0.08 cfs @ 7.93 hrs, Volume= 0.028 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.180	98	
*	0.070	72	
	0.250	91	Weighted Average
	0.070		28.00% Pervious Area
	0.180		72.00% Impervious Area

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

Summary for Pond EEGL1: EEGL1

Inflow Area = 0.100 ac, 70.00% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.03 cfs @ 8.01 hrs, Volume= 0.011 af
Outflow = 0.01 cfs @ 7.69 hrs, Volume= 0.011 af, Atten= 71%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.69 hrs, Volume= 0.011 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 301.12' @ 9.51 hrs Surf.Area= 0.018 ac Storage= 0.002 af

Plug-Flow detention time= 64.6 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 64.6 min (846.0 - 781.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.049 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.018	0.0	0.000	0.000
301.00	0.018	40.0	0.001	0.001
302.40	0.018	40.0	0.010	0.011
302.50	0.018	0.1	0.000	0.011
303.90	0.018	0.1	0.000	0.011
304.00	0.018	100.0	0.002	0.013
306.00	0.018	100.0	0.036	0.049

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 7.69 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond EEGL2: EEGL2

Inflow Area = 0.385 ac, 70.91% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.12 cfs @ 8.01 hrs, Volume= 0.041 af
Outflow = 0.02 cfs @ 14.99 hrs, Volume= 0.023 af, Atten= 81%, Lag= 419.0 min
Discarded = 0.01 cfs @ 5.42 hrs, Volume= 0.013 af
Primary = 0.02 cfs @ 14.99 hrs, Volume= 0.010 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.02' @ 14.99 hrs Surf.Area= 0.012 ac Storage= 0.021 af

Plug-Flow detention time= 534.1 min calculated for 0.023 af (57% of inflow)
Center-of-Mass det. time= 298.0 min (1,079.4 - 781.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.032 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.012	0.0	0.000	0.000
301.00	0.012	40.0	0.000	0.000
302.40	0.012	40.0	0.007	0.007
302.50	0.012	0.1	0.000	0.007
303.90	0.012	0.1	0.000	0.007
304.00	0.012	100.0	0.001	0.008
306.00	0.012	100.0	0.024	0.032

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 5.42 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.01 cfs @ 14.99 hrs HW=305.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.36 fps)

Summary for Pond EEGL3: EEGL3

Inflow Area =	0.100 ac, 70.00% Impervious,	Inflow Depth = 1.27"	for Salem 2 yr event	
Inflow =	0.03 cfs @	8.01 hrs, Volume=	0.011 af	
Outflow =	0.01 cfs @	9.74 hrs, Volume=	0.008 af,	Atten= 71%, Lag= 103.6 min
Discarded =	0.00 cfs @	5.04 hrs, Volume=	0.002 af	
Primary =	0.01 cfs @	9.74 hrs, Volume=	0.006 af	

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.01' @ 9.74 hrs Surf.Area= 0.002 ac Storage= 0.003 af

Plug-Flow detention time= 352.2 min calculated for 0.008 af (72% of inflow)
Center-of-Mass det. time= 190.0 min (971.4 - 781.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.005 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.002	0.0	0.000	0.000
301.00	0.002	40.0	0.000	0.000
302.40	0.002	40.0	0.001	0.001
302.50	0.002	0.1	0.000	0.001
303.90	0.002	0.1	0.000	0.001
304.00	0.002	100.0	0.000	0.001
306.00	0.002	100.0	0.004	0.005

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 5.04 hrs HW=300.95' (Free Discharge)
└—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 9.74 hrs HW=305.01' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.25 fps)

Summary for Pond QNG3: Strong Rd N

Inflow Area =	1.320 ac, 63.64% Impervious,	Inflow Depth = 0.45"	for Salem 2 yr event	
Inflow =	0.14 cfs @	7.94 hrs, Volume=	0.050 af	
Outflow =	0.02 cfs @	24.08 hrs, Volume=	0.033 af,	Atten= 87%, Lag= 968.7 min
Discarded =	0.02 cfs @	24.08 hrs, Volume=	0.033 af	
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 298.20' @ 24.08 hrs Surf.Area= 0.038 ac Storage= 0.024 af

Plug-Flow detention time= 490.1 min calculated for 0.033 af (66% of inflow)

Center-of-Mass det. time= 290.8 min (1,083.5 - 792.8)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.156 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.028	0.0	0.000	0.000
295.00	0.028	40.0	0.001	0.001
295.01	0.028	40.0	0.000	0.001
296.50	0.028	40.0	0.017	0.018
296.51	0.028	0.1	0.000	0.018
298.00	0.028	0.1	0.000	0.018
298.01	0.028	100.0	0.000	0.018
299.00	0.083	100.0	0.055	0.073
300.00	0.083	100.0	0.083	0.156

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.02 cfs @ 24.08 hrs HW=298.20' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNGL8: QNGL8

Inflow Area = 0.860 ac, 60.47% Impervious, Inflow Depth = 1.13" for Salem 2 yr event
Inflow = 0.23 cfs @ 8.03 hrs, Volume= 0.081 af
Outflow = 0.03 cfs @ 24.03 hrs, Volume= 0.034 af, Atten= 87%, Lag= 960.0 min
Discarded = 0.02 cfs @ 6.17 hrs, Volume= 0.033 af
Primary = 0.01 cfs @ 24.03 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.01' @ 24.03 hrs Surf.Area= 0.032 ac Storage= 0.055 af

Plug-Flow detention time= 571.5 min calculated for 0.034 af (42% of inflow)
Center-of-Mass det. time= 277.4 min (1,077.9 - 800.5)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.086 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.032	0.0	0.000	0.000
301.00	0.032	40.0	0.001	0.001
302.40	0.032	40.0	0.018	0.019
302.50	0.032	0.1	0.000	0.019
303.90	0.032	0.1	0.000	0.019
304.00	0.032	100.0	0.003	0.022
306.00	0.032	100.0	0.064	0.086

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.02 cfs @ 6.17 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.01 cfs @ 24.03 hrs HW=305.01' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.33 fps)

Summary for Pond SEGL3: SEGL3

Inflow Area = 0.430 ac, 60.00% Impervious, Inflow Depth = 1.13" for Salem 2 yr event
Inflow = 0.11 cfs @ 8.03 hrs, Volume= 0.040 af
Outflow = 0.02 cfs @ 18.73 hrs, Volume= 0.020 af, Atten= 82%, Lag= 641.9 min
Discarded = 0.01 cfs @ 6.04 hrs, Volume= 0.014 af
Primary = 0.01 cfs @ 18.73 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.01' @ 18.73 hrs Surf.Area= 0.014 ac Storage= 0.024 af

Plug-Flow detention time= 581.5 min calculated for 0.020 af (49% of inflow)
Center-of-Mass det. time= 315.3 min (1,115.8 - 800.5)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 6.04 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.01 cfs @ 18.73 hrs HW=305.01' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.33 fps)

Summary for Pond SEGR1: S St Up

Inflow Area = 0.330 ac, 58.79% Impervious, Inflow Depth = 0.31" for Salem 2 yr event
Inflow = 0.02 cfs @ 7.96 hrs, Volume= 0.008 af
Outflow = 0.01 cfs @ 7.60 hrs, Volume= 0.008 af, Atten= 75%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.60 hrs, Volume= 0.008 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 303.20' @ 11.13 hrs Surf.Area= 0.012 ac Storage= 0.001 af

Plug-Flow detention time= 109.6 min calculated for 0.008 af (100% of inflow)
Center-of-Mass det. time= 109.6 min (905.5 - 795.9)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.070 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.012	0.0	0.000	0.000
303.00	0.012	40.0	0.000	0.000
304.40	0.012	40.0	0.007	0.007
304.50	0.012	0.1	0.000	0.007
305.90	0.012	0.1	0.000	0.007
306.00	0.012	100.0	0.001	0.008
307.00	0.037	100.0	0.024	0.033
308.00	0.037	100.0	0.037	0.070

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	306.80'	**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=0.01 cfs @ 7.60 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=302.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SELG1: SEGL1

Inflow Area = 0.240 ac, 58.33% Impervious, Inflow Depth = 1.06" for Salem 2 yr event
Inflow = 0.06 cfs @ 8.03 hrs, Volume= 0.021 af
Outflow = 0.00 cfs @ 6.40 hrs, Volume= 0.009 af, Atten= 92%, Lag= 0.0 min
Discarded = 0.00 cfs @ 6.40 hrs, Volume= 0.009 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 306.90' @ 24.13 hrs Surf.Area= 0.009 ac Storage= 0.014 af

Plug-Flow detention time= 555.3 min calculated for 0.009 af (43% of inflow)
Center-of-Mass det. time= 263.5 min (1,073.2 - 809.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.009	0.0	0.000	0.000
303.00	0.009	40.0	0.000	0.000
304.40	0.009	40.0	0.005	0.005
304.50	0.009	0.1	0.000	0.005
305.90	0.009	0.1	0.000	0.005
306.00	0.009	100.0	0.001	0.006
308.00	0.009	100.0	0.018	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 6.40 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=302.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond STEGR1: Strong Rd E

Inflow Area = 2.790 ac, 43.01% Impervious, Inflow Depth = 0.37" for Salem 2 yr event
Inflow = 0.19 cfs @ 8.01 hrs, Volume= 0.085 af
Outflow = 0.03 cfs @ 24.05 hrs, Volume= 0.045 af, Atten= 85%, Lag= 962.4 min
Discarded = 0.03 cfs @ 24.05 hrs, Volume= 0.045 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 296.29' @ 24.05 hrs Surf.Area= 0.058 ac Storage= 0.052 af

Plug-Flow detention time= 532.4 min calculated for 0.045 af (53% of inflow)

Center-of-Mass det. time= 278.2 min (1,114.7 - 836.5)

Volume	Invert	Avail.Storage	Storage Description
#1	291.90'	0.222 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
291.90	0.037	0.0	0.000	0.000
292.00	0.037	40.0	0.001	0.001
292.01	0.037	40.0	0.000	0.002
294.50	0.037	40.0	0.037	0.038
294.51	0.037	0.1	0.000	0.038
296.00	0.037	0.1	0.000	0.039
296.01	0.037	100.0	0.000	0.039
297.00	0.110	100.0	0.073	0.112
298.00	0.110	100.0	0.110	0.222

Device	Routing	Invert	Outlet Devices
#1	Discarded	291.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	296.90'	**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=0.03 cfs @ 24.05 hrs HW=296.29' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=291.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond TEEG1: T St Bypass up

Inflow Area = 2.840 ac, 42.25% Impervious, Inflow Depth = 0.01" for Salem 2 yr event
Inflow = 0.00 cfs @ 8.04 hrs, Volume= 0.002 af
Outflow = 0.00 cfs @ 16.67 hrs, Volume= 0.002 af, Atten= 22%, Lag= 518.2 min
Discarded = 0.00 cfs @ 16.67 hrs, Volume= 0.002 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 289.93' @ 16.67 hrs Surf.Area= 0.006 ac Storage= 0.000 af

Plug-Flow detention time= 35.2 min calculated for 0.002 af (100% of inflow)
Center-of-Mass det. time= 35.1 min (980.5 - 945.3)

Volume	Invert	Avail.Storage	Storage Description
#1	289.90'	0.036 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
289.90	0.006	0.0	0.000	0.000
290.00	0.006	40.0	0.000	0.000
290.01	0.006	40.0	0.000	0.000
292.50	0.006	40.0	0.006	0.006
292.51	0.006	0.1	0.000	0.006
294.00	0.006	0.1	0.000	0.006
294.01	0.006	100.0	0.000	0.006
295.00	0.018	100.0	0.012	0.018
296.00	0.018	100.0	0.018	0.036

Device	Routing	Invert	Outlet Devices
#1	Discarded	289.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	294.90'	**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 @ 16.67 hrs HW=289.93' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=289.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond TEEG2: T St Bypass dn

Inflow Area = 2.890 ac, 41.52% Impervious, Inflow Depth = 0.01" for Salem 2 yr event
Inflow = 0.00 cfs @ 8.04 hrs, Volume= 0.002 af
Outflow = 0.00 cfs @ 16.67 hrs, Volume= 0.002 af, Atten= 22%, Lag= 518.2 min
Discarded = 0.00 cfs @ 16.67 hrs, Volume= 0.002 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 287.93' @ 16.67 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= 35.2 min calculated for 0.002 af (100% of inflow)
Center-of-Mass det. time= 35.1 min (980.5 - 945.3)

Volume	Invert	Avail.Storage	Storage Description
#1	287.90'	0.032 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
287.90	0.005	0.0	0.000	0.000
288.00	0.005	40.0	0.000	0.000
288.01	0.005	40.0	0.000	0.000
290.50	0.005	40.0	0.005	0.005
290.51	0.005	0.1	0.000	0.005
292.00	0.005	0.1	0.000	0.005
292.01	0.005	100.0	0.000	0.005
293.00	0.016	100.0	0.010	0.016
294.00	0.016	100.0	0.016	0.032

Device	Routing	Invert	Outlet Devices
#1	Discarded	287.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	292.90'	**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 @ 16.67 hrs HW=287.93' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=287.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond TEGL1: QNGL8

Inflow Area = 0.360 ac, 61.11% Impervious, Inflow Depth = 1.13" for Salem 2 yr event
Inflow = 0.10 cfs @ 8.03 hrs, Volume= 0.034 af
Outflow = 0.01 cfs @ 6.21 hrs, Volume= 0.014 af, Atten= 93%, Lag= 0.0 min
Discarded = 0.01 cfs @ 6.21 hrs, Volume= 0.014 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 304.94' @ 24.13 hrs Surf.Area= 0.014 ac Storage= 0.023 af

Plug-Flow detention time= 558.5 min calculated for 0.014 af (42% of inflow)
Center-of-Mass det. time= 265.2 min (1,065.8 - 800.5)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 6.21 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond TEGR1: T st E

Inflow Area = 0.500 ac, 63.60% Impervious, Inflow Depth = 0.35" for Salem 2 yr event
Inflow = 0.04 cfs @ 7.94 hrs, Volume= 0.015 af
Outflow = 0.01 cfs @ 7.32 hrs, Volume= 0.015 af, Atten= 81%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.32 hrs, Volume= 0.015 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 295.40' @ 13.60 hrs Surf.Area= 0.017 ac Storage= 0.003 af

Plug-Flow detention time= 208.5 min calculated for 0.015 af (100% of inflow)
Center-of-Mass det. time= 208.5 min (985.3 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.093 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.017	0.0	0.000	0.000
295.00	0.017	40.0	0.001	0.001
295.01	0.017	40.0	0.000	0.001
296.50	0.017	40.0	0.010	0.011
296.51	0.017	0.1	0.000	0.011
298.00	0.017	0.1	0.000	0.011
298.01	0.017	100.0	0.000	0.011
299.00	0.049	100.0	0.033	0.044
300.00	0.049	100.0	0.049	0.093

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.01 cfs @ 7.32 hrs HW=294.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond UEGL4: UEGL4

Inflow Area =	0.350 ac, 71.43% Impervious, Inflow Depth = 1.34" for Salem 2 yr event			
Inflow =	0.12 cfs @	8.01 hrs, Volume=	0.039 af	
Outflow =	0.03 cfs @	11.21 hrs, Volume=	0.026 af,	Atten= 77%, Lag= 191.9 min
Discarded =	0.00 cfs @	4.93 hrs, Volume=	0.010 af	
Primary =	0.02 cfs @	11.21 hrs, Volume=	0.016 af	

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.02' @ 11.21 hrs Surf.Area= 0.009 ac Storage= 0.016 af

Plug-Flow detention time= 430.5 min calculated for 0.026 af (66% of inflow)
Center-of-Mass det. time= 237.3 min (1,008.7 - 771.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.009	0.0	0.000	0.000
301.00	0.009	40.0	0.000	0.000
302.40	0.009	40.0	0.005	0.005
302.50	0.009	0.1	0.000	0.005
303.90	0.009	0.1	0.000	0.005
304.00	0.009	100.0	0.001	0.006
306.00	0.009	100.0	0.018	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 4.93 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.02 cfs @ 11.21 hrs HW=305.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.42 fps)

Summary for Pond UNGL5: UEGL5

Inflow Area = 0.120 ac, 70.00% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.04 cfs @ 7.94 hrs, Volume= 0.013 af
Outflow = 0.01 cfs @ 8.83 hrs, Volume= 0.010 af, Atten= 61%, Lag= 53.1 min
Discarded = 0.00 cfs @ 4.82 hrs, Volume= 0.002 af
Primary = 0.01 cfs @ 8.83 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.01' @ 8.83 hrs Surf.Area= 0.002 ac Storage= 0.003 af

Plug-Flow detention time= 293.3 min calculated for 0.010 af (77% of inflow)
Center-of-Mass det. time= 155.9 min (932.6 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.005 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.002	0.0	0.000	0.000
301.00	0.002	40.0	0.000	0.000
302.40	0.002	40.0	0.001	0.001
302.50	0.002	0.1	0.000	0.001
303.90	0.002	0.1	0.000	0.001
304.00	0.002	100.0	0.000	0.001
306.00	0.002	100.0	0.004	0.005

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 4.82 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.01 cfs @ 8.83 hrs HW=305.01' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.33 fps)

Summary for Pond UNGR1: UNGR1

Inflow Area = 1.194 ac, 70.85% Impervious, Inflow Depth = 1.01" for Salem 2 yr event
Inflow = 0.23 cfs @ 7.94 hrs, Volume= 0.100 af
Outflow = 0.04 cfs @ 23.52 hrs, Volume= 0.066 af, Atten= 82%, Lag= 934.6 min
Discarded = 0.04 cfs @ 23.52 hrs, Volume= 0.066 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 298.31' @ 23.52 hrs Surf.Area= 0.080 ac Storage= 0.051 af

Plug-Flow detention time= 480.9 min calculated for 0.066 af (65% of inflow)

Center-of-Mass det. time= 291.2 min (1,113.3 - 822.1)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.280 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.049	0.0	0.000	0.000
295.00	0.049	40.0	0.002	0.002
295.01	0.049	40.0	0.000	0.002
296.50	0.049	40.0	0.029	0.031
296.51	0.049	0.1	0.000	0.031
298.00	0.049	0.1	0.000	0.031
298.01	0.049	100.0	0.000	0.032
299.00	0.150	100.0	0.099	0.130
300.00	0.150	100.0	0.150	0.280

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.04 cfs @ 23.52 hrs HW=298.31' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VEGL1: VEGL1

Inflow Area = 0.320 ac, 68.75% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.10 cfs @ 8.01 hrs, Volume= 0.034 af
Outflow = 0.02 cfs @ 13.32 hrs, Volume= 0.021 af, Atten= 79%, Lag= 318.8 min
Discarded = 0.00 cfs @ 5.32 hrs, Volume= 0.009 af
Primary = 0.02 cfs @ 13.32 hrs, Volume= 0.011 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.02' @ 13.32 hrs Surf.Area= 0.009 ac Storage= 0.015 af

Plug-Flow detention time= 490.7 min calculated for 0.021 af (61% of inflow)
Center-of-Mass det. time= 273.6 min (1,055.0 - 781.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.009	0.0	0.000	0.000
301.00	0.009	40.0	0.000	0.000
302.40	0.009	40.0	0.005	0.005
302.50	0.009	0.1	0.000	0.005
303.90	0.009	0.1	0.000	0.005
304.00	0.009	100.0	0.001	0.006
306.00	0.009	100.0	0.018	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 5.32 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.01 cfs @ 13.32 hrs HW=305.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.36 fps)

Summary for Pond VNGR1: VNGR1

Inflow Area = 0.570 ac, 70.18% Impervious, Inflow Depth = 0.82" for Salem 2 yr event
Inflow = 0.08 cfs @ 7.93 hrs, Volume= 0.039 af
Outflow = 0.02 cfs @ 24.03 hrs, Volume= 0.025 af, Atten= 81%, Lag= 966.2 min
Discarded = 0.02 cfs @ 24.03 hrs, Volume= 0.025 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 298.33' @ 24.03 hrs Surf.Area= 0.032 ac Storage= 0.020 af

Plug-Flow detention time= 457.8 min calculated for 0.025 af (64% of inflow)
Center-of-Mass det. time= 265.1 min (1,117.1 - 852.1)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.108 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.019	0.0	0.000	0.000
295.00	0.019	40.0	0.001	0.001
295.01	0.019	40.0	0.000	0.001
296.50	0.019	40.0	0.011	0.012
296.51	0.019	0.1	0.000	0.012
298.00	0.019	0.1	0.000	0.012
298.01	0.019	100.0	0.000	0.012
299.00	0.058	100.0	0.038	0.050
300.00	0.058	100.0	0.058	0.108

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.02 cfs @ 24.03 hrs HW=298.33' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link 3L: ST

Inflow Area = 4.800 ac, 50.06% Impervious, Inflow Depth = 0.18" for Salem 2 yr event
Inflow = 0.19 cfs @ 7.95 hrs, Volume= 0.072 af
Primary = 0.19 cfs @ 7.95 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 4L: S

Inflow Area = 0.570 ac, 63.51% Impervious, Inflow Depth = 0.53" for Salem 2 yr event
Inflow = 0.08 cfs @ 7.94 hrs, Volume= 0.025 af
Primary = 0.08 cfs @ 7.94 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 5L: SA

Inflow Area = 1.090 ac, 61.83% Impervious, Inflow Depth = 0.43" for Salem 2 yr event
Inflow = 0.10 cfs @ 7.94 hrs, Volume= 0.039 af
Primary = 0.10 cfs @ 7.94 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 6L: SA1

Inflow Area = 1.220 ac, 61.64% Impervious, Inflow Depth = 0.51" for Salem 2 yr event
Inflow = 0.13 cfs @ 7.95 hrs, Volume= 0.052 af
Primary = 0.13 cfs @ 7.95 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 7L: T

Inflow Area = 1.910 ac, 62.98% Impervious, Inflow Depth = 0.45" for Salem 2 yr event
Inflow = 0.19 cfs @ 7.95 hrs, Volume= 0.072 af
Primary = 0.19 cfs @ 7.95 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 8L: ST

Inflow Area = 4.940 ac, 50.63% Impervious, Inflow Depth = 0.21" for Salem 2 yr event
Inflow = 0.24 cfs @ 7.94 hrs, Volume= 0.086 af
Primary = 0.24 cfs @ 7.94 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 9L: UEV

Inflow Area = 2.915 ac, 70.60% Impervious, Inflow Depth = 0.31" for Salem 2 yr event
Inflow = 0.18 cfs @ 7.94 hrs, Volume= 0.076 af
Primary = 0.18 cfs @ 7.94 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 10L: UV

Inflow Area = 1.764 ac, 70.63% Impervious, Inflow Depth = 0.00" for Salem 2 yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 11L: UE

Inflow Area = 0.581 ac, 70.57% Impervious, Inflow Depth = 0.54" for Salem 2 yr event
Inflow = 0.03 cfs @ 7.94 hrs, Volume= 0.026 af
Primary = 0.03 cfs @ 7.94 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 12L: UE1

Inflow Area = 0.570 ac, 70.53% Impervious, Inflow Depth = 1.04" for Salem 2 yr event
Inflow = 0.15 cfs @ 7.94 hrs, Volume= 0.050 af
Primary = 0.15 cfs @ 7.94 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link T - N: T - N

Inflow Area = 7.855 ac, 58.04% Impervious, Inflow Depth = 0.25" for Salem 2 yr event
Inflow = 0.42 cfs @ 7.94 hrs, Volume= 0.162 af
Primary = 0.42 cfs @ 7.94 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 14S: TN-PRE Runoff Area=8.130 ac 0.00% Impervious Runoff Depth=0.08"
Flow Length=560' Slope=0.1400 '/' Tc=17.0 min CN=72 Runoff=0.06 cfs 0.055 af

Subcatchment EEL1: EEL1 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=0.59"
Tc=10.0 min CN=90 Runoff=0.01 cfs 0.005 af

Subcatchment EEL2: EEL2 Runoff Area=0.385 ac 70.91% Impervious Runoff Depth=0.59"
Tc=10.0 min CN=90 Runoff=0.05 cfs 0.019 af

Subcatchment EEL3: EEL3 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=0.59"
Tc=10.0 min CN=90 Runoff=0.01 cfs 0.005 af

Subcatchment QNL8: QNL8 Runoff Area=0.860 ac 60.47% Impervious Runoff Depth=0.50"
Tc=10.0 min CN=88 Runoff=0.09 cfs 0.036 af

Subcatchment QNL8_PRE: QNL8-PRE Runoff Area=1.320 ac 0.00% Impervious Runoff Depth=0.08"
Flow Length=190' Slope=0.1300 '/' Tc=13.6 min CN=72 Runoff=0.01 cfs 0.009 af

Subcatchment QNR3: Strong Rd N Runoff Area=0.460 ac 69.57% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.06 cfs 0.023 af

Subcatchment SA1: S Alley Runoff Area=0.060 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.01 cfs 0.003 af

Subcatchment SA2: SA2 Runoff Area=0.130 ac 60.00% Impervious Runoff Depth=0.50"
Tc=5.0 min CN=88 Runoff=0.01 cfs 0.005 af

Subcatchment SA3: SA3 Runoff Area=0.090 ac 60.00% Impervious Runoff Depth=0.50"
Tc=5.0 min CN=88 Runoff=0.01 cfs 0.004 af

Subcatchment SEL1: SEL1 Runoff Area=0.240 ac 58.33% Impervious Runoff Depth=0.45"
Tc=10.0 min CN=87 Runoff=0.02 cfs 0.009 af

Subcatchment SEL3: SEL1 Runoff Area=0.430 ac 60.00% Impervious Runoff Depth=0.50"
Tc=10.0 min CN=88 Runoff=0.04 cfs 0.018 af

Subcatchment SER1: S Street Up Runoff Area=0.090 ac 60.00% Impervious Runoff Depth=0.50"
Tc=5.0 min CN=88 Runoff=0.01 cfs 0.004 af

Subcatchment SER2: S Street Dn Runoff Area=0.180 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.02 cfs 0.009 af

Subcatchment STEL1: STEL1 Runoff Area=0.950 ac 0.00% Impervious Runoff Depth=0.08"
Tc=5.0 min CN=72 Runoff=0.01 cfs 0.006 af

Subcatchment STER1: Strong Rd E Runoff Area=0.520 ac 69.23% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.07 cfs 0.026 af

Subcatchment TA3: TA3 Runoff Area=0.140 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.02 cfs 0.007 af

Subcatchment TEE1: TEE1 Runoff Area=0.050 ac 0.00% Impervious Runoff Depth=0.08"
Tc=5.0 min CN=72 Runoff=0.00 cfs 0.000 af

Subcatchment TEE2: TEE2 Runoff Area=0.050 ac 0.00% Impervious Runoff Depth=0.08"
Tc=5.0 min CN=72 Runoff=0.00 cfs 0.000 af

Subcatchment TEL1: TEL1 Runoff Area=0.360 ac 61.11% Impervious Runoff Depth=0.50"
Tc=10.0 min CN=88 Runoff=0.04 cfs 0.015 af

Subcatchment TER1: T St E up Runoff Area=0.140 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.02 cfs 0.007 af

Subcatchment TER2: T St E dn Runoff Area=0.190 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.009 af

Subcatchment UEL4: UEL4 Runoff Area=0.350 ac 71.43% Impervious Runoff Depth=0.64"
Tc=10.0 min CN=91 Runoff=0.05 cfs 0.019 af

Subcatchment UNA1: UNA1 Runoff Area=0.074 ac 70.27% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.01 cfs 0.004 af

Subcatchment UNA2: UNA2 Runoff Area=0.160 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.02 cfs 0.008 af

Subcatchment UNA3: UNA3 Runoff Area=0.096 ac 69.79% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.01 cfs 0.005 af

Subcatchment UNA4: UNA4 Runoff Area=0.310 ac 70.97% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.04 cfs 0.015 af

Subcatchment UNL5: UNL5 Runoff Area=0.120 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.02 cfs 0.006 af

Subcatchment UNR1: UNR1 Runoff Area=0.650 ac 70.77% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.09 cfs 0.032 af

Subcatchment VEL1: VEL1 Runoff Area=0.320 ac 68.75% Impervious Runoff Depth=0.59"
Tc=10.0 min CN=90 Runoff=0.04 cfs 0.016 af

Subcatchment VNR1: VNR1 Runoff Area=0.250 ac 72.00% Impervious Runoff Depth=0.64"
Tc=5.0 min CN=91 Runoff=0.04 cfs 0.013 af

Pond EEGL1: EEGL1 Peak Elev=300.95' Storage=0.000 af Inflow=0.01 cfs 0.005 af
Discarded=0.01 cfs 0.005 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.005 af

Pond EEGL2: EEGL2 Peak Elev=304.14' Storage=0.010 af Inflow=0.05 cfs 0.019 af
Discarded=0.01 cfs 0.012 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.012 af

Pond EEGL3: EEGL3 Peak Elev=305.00' Storage=0.003 af Inflow=0.01 cfs 0.005 af
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

Pond QNG3: Strong Rd N Peak Elev=295.29' Storage=0.004 af Inflow=0.06 cfs 0.023 af
Discarded=0.01 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.023 af

Pond QNGL8: QNGL8 Peak Elev=301.91' Storage=0.013 af Inflow=0.09 cfs 0.036 af
Discarded=0.02 cfs 0.030 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.030 af

Pond SEGL3: SEGL3 Peak Elev=302.30' Storage=0.008 af Inflow=0.04 cfs 0.018 af
Discarded=0.01 cfs 0.013 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.013 af

Pond SEGR1: S St Up Peak Elev=302.95' Storage=0.000 af Inflow=0.01 cfs 0.004 af
Discarded=0.01 cfs 0.004 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.004 af

Pond SELG1: SEGL1 Peak Elev=303.68' Storage=0.003 af Inflow=0.02 cfs 0.009 af
Discarded=0.00 cfs 0.008 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.008 af

Pond STEGR1: Strong Rd E Peak Elev=292.30' Storage=0.006 af Inflow=0.07 cfs 0.032 af
Discarded=0.02 cfs 0.032 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.032 af

Pond TEEG1: T St Bypass up Peak Elev=289.91' Storage=0.000 af Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond TEEG2: T St Bypass dn Peak Elev=287.91' Storage=0.000 af Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond TEGL1: QNGL8 Peak Elev=301.80' Storage=0.005 af Inflow=0.04 cfs 0.015 af
Discarded=0.01 cfs 0.013 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.013 af

Pond TEGR1: T st E Peak Elev=294.99' Storage=0.001 af Inflow=0.02 cfs 0.007 af
Discarded=0.01 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.007 af

Pond UEGL4: UEGL4 Peak Elev=304.63' Storage=0.012 af Inflow=0.05 cfs 0.019 af
Discarded=0.00 cfs 0.009 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.009 af

Pond UNGL5: UEGL5 Peak Elev=305.00' Storage=0.003 af Inflow=0.02 cfs 0.006 af
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.001 af Outflow=0.00 cfs 0.003 af

Pond UNGR1: UNGR1 Peak Elev=295.19' Storage=0.006 af Inflow=0.10 cfs 0.037 af
Discarded=0.02 cfs 0.037 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.037 af

Pond VEGL1: VEGL1 Peak Elev=304.31' Storage=0.009 af Inflow=0.04 cfs 0.016 af
Discarded=0.00 cfs 0.009 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.009 af

Pond VNGR1: VNGR1 Peak Elev=295.19' Storage=0.002 af Inflow=0.04 cfs 0.013 af
Discarded=0.01 cfs 0.013 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.013 af

Link 3L: ST Inflow=0.08 cfs 0.030 af
Primary=0.08 cfs 0.030 af

Link 4L: S
Inflow=0.03 cfs 0.012 af
Primary=0.03 cfs 0.012 af

Link 5L: SA
Inflow=0.04 cfs 0.016 af
Primary=0.04 cfs 0.016 af

Link 6L: SA1
Inflow=0.05 cfs 0.021 af
Primary=0.05 cfs 0.021 af

Link 7L: T
Inflow=0.08 cfs 0.030 af
Primary=0.08 cfs 0.030 af

Link 8L: ST
Inflow=0.10 cfs 0.037 af
Primary=0.10 cfs 0.037 af

Link 9L: UEV
Inflow=0.07 cfs 0.028 af
Primary=0.07 cfs 0.028 af

Link 10L: UV
Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link 11L: UE
Inflow=0.01 cfs 0.005 af
Primary=0.01 cfs 0.005 af

Link 12L: UE1
Inflow=0.06 cfs 0.023 af
Primary=0.06 cfs 0.023 af

Link T - N: T - N
Inflow=0.17 cfs 0.065 af
Primary=0.17 cfs 0.065 af

Summary for Subcatchment 14S: TN-PRE

Runoff = 0.06 cfs @ 20.23 hrs, Volume= 0.055 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	8.130	72	
	8.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	200	0.1400	0.24		**Sheet Flow,** n= 0.240 P2= 2.20"
3.2	360	0.1400	1.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.0	560	Total			

Summary for Subcatchment EEL1: EEL1

Runoff = 0.01 cfs @ 8.03 hrs, Volume= 0.005 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment EEL2: EEL2

Runoff = 0.05 cfs @ 8.03 hrs, Volume= 0.019 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.273	98	
*	0.112	72	
	0.385	90	Weighted Average
	0.112		29.09% Pervious Area
	0.273		70.91% Impervious Area

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

Summary for Subcatchment EEL3: EEL3

Runoff = 0.01 cfs @ 8.03 hrs, Volume= 0.005 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment QNL8: QNL8

Runoff = 0.09 cfs @ 8.04 hrs, Volume= 0.036 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.520	98	
*	0.340	72	
	0.860	88	Weighted Average
	0.340		39.53% Pervious Area
	0.520		60.47% Impervious Area

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

Summary for Subcatchment QNL8_PRE: QNL8-PRE

Runoff = 0.01 cfs @ 20.08 hrs, Volume= 0.009 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	1.320	72	
	1.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	190	0.1300	0.23		**Sheet Flow,** n= 0.240 P2= 2.20"

Summary for Subcatchment QNR3: Strong Rd N

Runoff = 0.06 cfs @ 7.99 hrs, Volume= 0.023 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.320	98	
*	0.140	72	
	0.460	90	Weighted Average
	0.140		30.43% Pervious Area
	0.320		69.57% Impervious Area

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

Summary for Subcatchment SA1: S Alley

Runoff = 0.01 cfs @ 7.99 hrs, Volume= 0.003 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.042	98	
*	0.018	72	
	0.060	90	Weighted Average
	0.018		30.00% Pervious Area
	0.042		70.00% Impervious Area

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

Summary for Subcatchment SA2: SA2

Runoff = 0.01 cfs @ 8.01 hrs, Volume= 0.005 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.078	98	
*	0.052	72	
	0.130	88	Weighted Average
	0.052		40.00% Pervious Area
	0.078		60.00% Impervious Area

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

Summary for Subcatchment SA3: SA3

Runoff = 0.01 cfs @ 8.01 hrs, Volume= 0.004 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.054	98	
*	0.036	72	
	0.090	88	Weighted Average
	0.036		40.00% Pervious Area
	0.054		60.00% Impervious Area

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

Summary for Subcatchment SEL1: SEL1

Runoff = 0.02 cfs @ 8.05 hrs, Volume= 0.009 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.140	98	
*	0.100	72	
	0.240	87	Weighted Average
	0.100		41.67% Pervious Area
	0.140		58.33% Impervious Area

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

Summary for Subcatchment SEL3: SEL1

Runoff = 0.04 cfs @ 8.04 hrs, Volume= 0.018 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.258	98	
*	0.172	72	
	0.430	88	Weighted Average
	0.172		40.00% Pervious Area
	0.258		60.00% Impervious Area

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

Summary for Subcatchment SER1: S Street Up

Runoff = 0.01 cfs @ 8.01 hrs, Volume= 0.004 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.054	98	
*	0.036	72	
	0.090	88	Weighted Average
	0.036		40.00% Pervious Area
	0.054		60.00% Impervious Area

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

Summary for Subcatchment SER2: S Street Dn

Runoff = 0.02 cfs @ 7.99 hrs, Volume= 0.009 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.126	98	
*	0.054	72	
	0.180	90	Weighted Average
	0.054		30.00% Pervious Area
	0.126		70.00% Impervious Area

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

Summary for Subcatchment STEL1: STEL1

Runoff = 0.01 cfs @ 19.95 hrs, Volume= 0.006 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.950	72	
	0.950		100.00% Pervious Area

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

Summary for Subcatchment STER1: Strong Rd E

Runoff = 0.07 cfs @ 7.99 hrs, Volume= 0.026 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.360	98	
*	0.160	72	
	0.520	90	Weighted Average
	0.160		30.77% Pervious Area
	0.360		69.23% Impervious Area

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

Summary for Subcatchment TA3: TA3

Runoff = 0.02 cfs @ 7.99 hrs, Volume= 0.007 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.098	98	
*	0.042	72	
	0.140	90	Weighted Average
	0.042		30.00% Pervious Area
	0.098		70.00% Impervious Area

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

Summary for Subcatchment TEE1: TEE1

Runoff = 0.00 cfs @ 19.95 hrs, Volume= 0.000 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.050	72	
	0.050		100.00% Pervious Area

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

Summary for Subcatchment TEE2: TEE2

Runoff = 0.00 cfs @ 19.95 hrs, Volume= 0.000 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.050	72	
	0.050		100.00% Pervious Area

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

Summary for Subcatchment TEL1: TEL1

Runoff = 0.04 cfs @ 8.04 hrs, Volume= 0.015 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.220	98	
*	0.140	72	
	0.360	88	Weighted Average
	0.140		38.89% Pervious Area
	0.220		61.11% Impervious Area

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

Summary for Subcatchment TER1: T St E up

Runoff = 0.02 cfs @ 7.99 hrs, Volume= 0.007 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.098	98	
*	0.042	72	
	0.140	90	Weighted Average
	0.042		30.00% Pervious Area
	0.098		70.00% Impervious Area

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

Summary for Subcatchment TER2: T St E dn

Runoff = 0.03 cfs @ 7.99 hrs, Volume= 0.009 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.133	98	
*	0.057	72	
	0.190	90	Weighted Average
	0.057		30.00% Pervious Area
	0.133		70.00% Impervious Area

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

Summary for Subcatchment UEL4: UEL4

Runoff = 0.05 cfs @ 8.03 hrs, Volume= 0.019 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.250	98	
*	0.100	72	
	0.350	91	Weighted Average
	0.100		28.57% Pervious Area
	0.250		71.43% Impervious Area

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

Summary for Subcatchment UNA1: UNA1

Runoff = 0.01 cfs @ 7.99 hrs, Volume= 0.004 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.052	98	
*	0.022	72	
	0.074	90	Weighted Average
	0.022		29.73% Pervious Area
	0.052		70.27% Impervious Area

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

Summary for Subcatchment UNA2: UNA2

Runoff = 0.02 cfs @ 7.99 hrs, Volume= 0.008 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.112	98	
*	0.048	72	
	0.160	90	Weighted Average
	0.048		30.00% Pervious Area
	0.112		70.00% Impervious Area

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

Summary for Subcatchment UNA3: UNA3

Runoff = 0.01 cfs @ 7.99 hrs, Volume= 0.005 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.067	98	
*	0.029	72	
	0.096	90	Weighted Average
	0.029		30.21% Pervious Area
	0.067		69.79% Impervious Area

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

Summary for Subcatchment UNA4: UNA4

Runoff = 0.04 cfs @ 7.99 hrs, Volume= 0.015 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.220	98	
*	0.090	72	
	0.310	90	Weighted Average
	0.090		29.03% Pervious Area
	0.220		70.97% Impervious Area

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

Summary for Subcatchment UNL5: UNL5

Runoff = 0.02 cfs @ 7.99 hrs, Volume= 0.006 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.084	98	
*	0.036	72	
	0.120	90	Weighted Average
	0.036		30.00% Pervious Area
	0.084		70.00% Impervious Area

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

Summary for Subcatchment UNR1: UNR1

Runoff = 0.09 cfs @ 7.99 hrs, Volume= 0.032 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.460	98	
*	0.190	72	
	0.650	90	Weighted Average
	0.190		29.23% Pervious Area
	0.460		70.77% Impervious Area

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

Summary for Subcatchment VEL1: VEL1

Runoff = 0.04 cfs @ 8.03 hrs, Volume= 0.016 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.220	98	
*	0.100	72	
	0.320	90	Weighted Average
	0.100		31.25% Pervious Area
	0.220		68.75% Impervious Area

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

Summary for Subcatchment VNR1: VNR1

Runoff = 0.04 cfs @ 7.97 hrs, Volume= 0.013 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.180	98	
*	0.070	72	
	0.250	91	Weighted Average
	0.070		28.00% Pervious Area
	0.180		72.00% Impervious Area

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

Summary for Pond EEGL1: EEGL1

Inflow Area = 0.100 ac, 70.00% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.01 cfs @ 8.03 hrs, Volume= 0.005 af
Outflow = 0.01 cfs @ 8.26 hrs, Volume= 0.005 af, Atten= 34%, Lag= 13.4 min
Discarded = 0.01 cfs @ 8.26 hrs, Volume= 0.005 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 300.95' @ 8.26 hrs Surf.Area= 0.018 ac Storage= 0.000 af

Plug-Flow detention time= 29.4 min calculated for 0.005 af (100% of inflow)
Center-of-Mass det. time= 29.4 min (857.5 - 828.2)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.049 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.018	0.0	0.000	0.000
301.00	0.018	40.0	0.001	0.001
302.40	0.018	40.0	0.010	0.011
302.50	0.018	0.1	0.000	0.011
303.90	0.018	0.1	0.000	0.011
304.00	0.018	100.0	0.002	0.013
306.00	0.018	100.0	0.036	0.049

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 8.26 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond EEGL2: EEGL2

Inflow Area = 0.385 ac, 70.91% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.05 cfs @ 8.03 hrs, Volume= 0.019 af
Outflow = 0.01 cfs @ 7.24 hrs, Volume= 0.012 af, Atten= 88%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.24 hrs, Volume= 0.012 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 304.14' @ 24.10 hrs Surf.Area= 0.012 ac Storage= 0.010 af

Plug-Flow detention time= 473.4 min calculated for 0.012 af (62% of inflow)
Center-of-Mass det. time= 266.5 min (1,094.7 - 828.2)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.032 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.012	0.0	0.000	0.000
301.00	0.012	40.0	0.000	0.000
302.40	0.012	40.0	0.007	0.007
302.50	0.012	0.1	0.000	0.007
303.90	0.012	0.1	0.000	0.007
304.00	0.012	100.0	0.001	0.008
306.00	0.012	100.0	0.024	0.032

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 7.24 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond EEGL3: EEGL3

Inflow Area = 0.100 ac, 70.00% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.01 cfs @ 8.03 hrs, Volume= 0.005 af
Outflow = 0.00 cfs @ 24.00 hrs, Volume= 0.002 af, Atten= 85%, Lag= 958.2 min
Discarded = 0.00 cfs @ 6.76 hrs, Volume= 0.002 af
Primary = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.00' @ 24.00 hrs Surf.Area= 0.002 ac Storage= 0.003 af

Plug-Flow detention time= 560.9 min calculated for 0.002 af (41% of inflow)
Center-of-Mass det. time= 261.3 min (1,089.4 - 828.2)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.005 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.002	0.0	0.000	0.000
301.00	0.002	40.0	0.000	0.000
302.40	0.002	40.0	0.001	0.001
302.50	0.002	0.1	0.000	0.001
303.90	0.002	0.1	0.000	0.001
304.00	0.002	100.0	0.000	0.001
306.00	0.002	100.0	0.004	0.005

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 6.76 hrs HW=300.95' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 24.00 hrs HW=305.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.09 fps)

Summary for Pond QNG3: Strong Rd N

Inflow Area = 1.320 ac, 63.64% Impervious, Inflow Depth = 0.21" for Salem Water Quality event
Inflow = 0.06 cfs @ 7.99 hrs, Volume= 0.023 af
Outflow = 0.01 cfs @ 7.62 hrs, Volume= 0.023 af, Atten= 77%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.62 hrs, Volume= 0.023 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 295.29' @ 14.86 hrs Surf.Area= 0.028 ac Storage= 0.004 af

Plug-Flow detention time= 174.3 min calculated for 0.023 af (100% of inflow)

Center-of-Mass det. time= 174.3 min (997.8 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.156 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.028	0.0	0.000	0.000
295.00	0.028	40.0	0.001	0.001
295.01	0.028	40.0	0.000	0.001
296.50	0.028	40.0	0.017	0.018
296.51	0.028	0.1	0.000	0.018
298.00	0.028	0.1	0.000	0.018
298.01	0.028	100.0	0.000	0.018
299.00	0.083	100.0	0.055	0.073
300.00	0.083	100.0	0.083	0.156

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.01 cfs @ 7.62 hrs HW=294.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QNGL8: QNGL8

Inflow Area = 0.860 ac, 60.47% Impervious, Inflow Depth = 0.50" for Salem Water Quality event
Inflow = 0.09 cfs @ 8.04 hrs, Volume= 0.036 af
Outflow = 0.02 cfs @ 7.68 hrs, Volume= 0.030 af, Atten= 81%, Lag= 0.0 min
Discarded = 0.02 cfs @ 7.68 hrs, Volume= 0.030 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 301.91' @ 23.72 hrs Surf.Area= 0.032 ac Storage= 0.013 af

Plug-Flow detention time= 345.4 min calculated for 0.030 af (86% of inflow)
Center-of-Mass det. time= 263.0 min (1,115.9 - 853.0)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.086 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.032	0.0	0.000	0.000
301.00	0.032	40.0	0.001	0.001
302.40	0.032	40.0	0.018	0.019
302.50	0.032	0.1	0.000	0.019
303.90	0.032	0.1	0.000	0.019
304.00	0.032	100.0	0.003	0.022
306.00	0.032	100.0	0.064	0.086

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.02 cfs @ 7.68 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SEGL3: SEGL3

Inflow Area = 0.430 ac, 60.00% Impervious, Inflow Depth = 0.50" for Salem Water Quality event
Inflow = 0.04 cfs @ 8.04 hrs, Volume= 0.018 af
Outflow = 0.01 cfs @ 7.65 hrs, Volume= 0.013 af, Atten= 83%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.65 hrs, Volume= 0.013 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 302.30' @ 24.08 hrs Surf.Area= 0.014 ac Storage= 0.008 af

Plug-Flow detention time= 398.9 min calculated for 0.013 af (75% of inflow)
Center-of-Mass det. time= 261.0 min (1,114.0 - 853.0)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 7.65 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SEGR1: S St Up

Inflow Area = 0.330 ac, 58.79% Impervious, Inflow Depth = 0.14" for Salem Water Quality event
Inflow = 0.01 cfs @ 8.01 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 8.20 hrs, Volume= 0.004 af, Atten= 37%, Lag= 11.4 min
Discarded = 0.01 cfs @ 8.20 hrs, Volume= 0.004 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 302.95' @ 8.20 hrs Surf.Area= 0.012 ac Storage= 0.000 af

Plug-Flow detention time= 29.4 min calculated for 0.004 af (100% of inflow)
Center-of-Mass det. time= 29.4 min (877.7 - 848.3)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.070 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.012	0.0	0.000	0.000
303.00	0.012	40.0	0.000	0.000
304.40	0.012	40.0	0.007	0.007
304.50	0.012	0.1	0.000	0.007
305.90	0.012	0.1	0.000	0.007
306.00	0.012	100.0	0.001	0.008
307.00	0.037	100.0	0.024	0.033
308.00	0.037	100.0	0.037	0.070

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	306.80'	**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=0.01 cfs @ 8.20 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=302.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SELG1: SEGL1

Inflow Area = 0.240 ac, 58.33% Impervious, Inflow Depth = 0.45" for Salem Water Quality event
Inflow = 0.02 cfs @ 8.05 hrs, Volume= 0.009 af
Outflow = 0.00 cfs @ 7.76 hrs, Volume= 0.008 af, Atten= 78%, Lag= 0.0 min
Discarded = 0.00 cfs @ 7.76 hrs, Volume= 0.008 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 303.68' @ 22.85 hrs Surf.Area= 0.009 ac Storage= 0.003 af

Plug-Flow detention time= 295.2 min calculated for 0.008 af (93% of inflow)
Center-of-Mass det. time= 257.1 min (1,122.3 - 865.2)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.009	0.0	0.000	0.000
303.00	0.009	40.0	0.000	0.000
304.40	0.009	40.0	0.005	0.005
304.50	0.009	0.1	0.000	0.005
305.90	0.009	0.1	0.000	0.005
306.00	0.009	100.0	0.001	0.006
308.00	0.009	100.0	0.018	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 7.76 hrs HW=302.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=302.90' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond STEGR1: Strong Rd E

Inflow Area = 2.790 ac, 43.01% Impervious, Inflow Depth = 0.14" for Salem Water Quality event
Inflow = 0.07 cfs @ 7.99 hrs, Volume= 0.032 af
Outflow = 0.02 cfs @ 7.70 hrs, Volume= 0.032 af, Atten= 73%, Lag= 0.0 min
Discarded = 0.02 cfs @ 7.70 hrs, Volume= 0.032 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 292.30' @ 21.89 hrs Surf.Area= 0.037 ac Storage= 0.006 af

Plug-Flow detention time= 171.6 min calculated for 0.032 af (100% of inflow)

Center-of-Mass det. time= 171.5 min (1,047.1 - 875.6)

Volume	Invert	Avail.Storage	Storage Description
#1	291.90'	0.222 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
291.90	0.037	0.0	0.000	0.000
292.00	0.037	40.0	0.001	0.001
292.01	0.037	40.0	0.000	0.002
294.50	0.037	40.0	0.037	0.038
294.51	0.037	0.1	0.000	0.038
296.00	0.037	0.1	0.000	0.039
296.01	0.037	100.0	0.000	0.039
297.00	0.110	100.0	0.073	0.112
298.00	0.110	100.0	0.110	0.222

Device	Routing	Invert	Outlet Devices
#1	Discarded	291.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	296.90'	**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=0.02 cfs @ 7.70 hrs HW=291.96' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=291.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond TEEG1: T St Bypass up

Inflow Area = 2.840 ac, 42.25% Impervious, Inflow Depth = 0.00" for Salem Water Quality event
Inflow = 0.00 cfs @ 19.95 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 20.57 hrs, Volume= 0.000 af, Atten= 0%, Lag= 37.3 min
Discarded = 0.00 cfs @ 20.57 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 289.91' @ 20.57 hrs Surf.Area= 0.006 ac Storage= 0.000 af

Plug-Flow detention time= 35.2 min calculated for 0.000 af (100% of inflow)
Center-of-Mass det. time= 35.1 min (1,119.2 - 1,084.1)

Volume	Invert	Avail.Storage	Storage Description
#1	289.90'	0.036 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
289.90	0.006	0.0	0.000	0.000
290.00	0.006	40.0	0.000	0.000
290.01	0.006	40.0	0.000	0.000
292.50	0.006	40.0	0.006	0.006
292.51	0.006	0.1	0.000	0.006
294.00	0.006	0.1	0.000	0.006
294.01	0.006	100.0	0.000	0.006
295.00	0.018	100.0	0.012	0.018
296.00	0.018	100.0	0.018	0.036

Device	Routing	Invert	Outlet Devices
#1	Discarded	289.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	294.90'	**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 @ 20.57 hrs HW=289.91' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=289.90' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond TEEG2: T St Bypass dn

Inflow Area =	2.890 ac, 41.52% Impervious,	Inflow Depth = 0.00"	for Salem Water Quality event
Inflow =	0.00 cfs @ 19.95 hrs,	Volume= 0.000 af	
Outflow =	0.00 cfs @ 20.57 hrs,	Volume= 0.000 af,	Atten= 0%, Lag= 37.3 min
Discarded =	0.00 cfs @ 20.57 hrs,	Volume= 0.000 af	
Primary =	0.00 cfs @ 0.00 hrs,	Volume= 0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 287.91' @ 20.57 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= 35.2 min calculated for 0.000 af (100% of inflow)
Center-of-Mass det. time= 35.1 min (1,119.2 - 1,084.1)

Volume	Invert	Avail.Storage	Storage Description
#1	287.90'	0.032 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
287.90	0.005	0.0	0.000	0.000
288.00	0.005	40.0	0.000	0.000
288.01	0.005	40.0	0.000	0.000
290.50	0.005	40.0	0.005	0.005
290.51	0.005	0.1	0.000	0.005
292.00	0.005	0.1	0.000	0.005
292.01	0.005	100.0	0.000	0.005
293.00	0.016	100.0	0.010	0.016
294.00	0.016	100.0	0.016	0.032

Device	Routing	Invert	Outlet Devices
#1	Discarded	287.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	292.90'	**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 @ 20.57 hrs HW=287.91' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=287.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond TEGL1: QNGL8

Inflow Area = 0.360 ac, 61.11% Impervious, Inflow Depth = 0.50" for Salem Water Quality event
Inflow = 0.04 cfs @ 8.04 hrs, Volume= 0.015 af
Outflow = 0.01 cfs @ 7.70 hrs, Volume= 0.013 af, Atten= 80%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.70 hrs, Volume= 0.013 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 301.80' @ 23.05 hrs Surf.Area= 0.014 ac Storage= 0.005 af

Plug-Flow detention time= 325.1 min calculated for 0.013 af (89% of inflow)
Center-of-Mass det. time= 263.6 min (1,116.6 - 853.0)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.038 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.014	0.0	0.000	0.000
301.00	0.014	40.0	0.001	0.001
302.40	0.014	40.0	0.008	0.008
302.50	0.014	0.1	0.000	0.008
303.90	0.014	0.1	0.000	0.008
304.00	0.014	100.0	0.001	0.010
306.00	0.014	100.0	0.028	0.038

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 7.70 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond TEGR1: T st E

Inflow Area = 0.500 ac, 63.60% Impervious, Inflow Depth = 0.17" for Salem Water Quality event
Inflow = 0.02 cfs @ 7.99 hrs, Volume= 0.007 af
Outflow = 0.01 cfs @ 7.86 hrs, Volume= 0.007 af, Atten= 54%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.86 hrs, Volume= 0.007 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 294.99' @ 8.43 hrs Surf.Area= 0.017 ac Storage= 0.001 af

Plug-Flow detention time= 32.4 min calculated for 0.007 af (100% of inflow)
Center-of-Mass det. time= 32.4 min (855.9 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.093 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.017	0.0	0.000	0.000
295.00	0.017	40.0	0.001	0.001
295.01	0.017	40.0	0.000	0.001
296.50	0.017	40.0	0.010	0.011
296.51	0.017	0.1	0.000	0.011
298.00	0.017	0.1	0.000	0.011
298.01	0.017	100.0	0.000	0.011
299.00	0.049	100.0	0.033	0.044
300.00	0.049	100.0	0.049	0.093

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.01 cfs @ 7.86 hrs HW=294.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond UEGL4: UEGL4

Inflow Area = 0.350 ac, 71.43% Impervious, Inflow Depth = 0.64" for Salem Water Quality event
Inflow = 0.05 cfs @ 8.03 hrs, Volume= 0.019 af
Outflow = 0.00 cfs @ 6.64 hrs, Volume= 0.009 af, Atten= 91%, Lag= 0.0 min
Discarded = 0.00 cfs @ 6.64 hrs, Volume= 0.009 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 304.63' @ 24.12 hrs Surf.Area= 0.009 ac Storage= 0.012 af

Plug-Flow detention time= 535.6 min calculated for 0.009 af (48% of inflow)
Center-of-Mass det. time= 264.3 min (1,079.7 - 815.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.009	0.0	0.000	0.000
301.00	0.009	40.0	0.000	0.000
302.40	0.009	40.0	0.005	0.005
302.50	0.009	0.1	0.000	0.005
303.90	0.009	0.1	0.000	0.005
304.00	0.009	100.0	0.001	0.006
306.00	0.009	100.0	0.018	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 6.64 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond UNGL5: UEGL5

Inflow Area = 0.120 ac, 70.00% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.02 cfs @ 7.99 hrs, Volume= 0.006 af
Outflow = 0.00 cfs @ 17.86 hrs, Volume= 0.003 af, Atten= 79%, Lag= 592.2 min
Discarded = 0.00 cfs @ 6.51 hrs, Volume= 0.002 af
Primary = 0.00 cfs @ 17.86 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 305.00' @ 17.86 hrs Surf.Area= 0.002 ac Storage= 0.003 af

Plug-Flow detention time= 568.4 min calculated for 0.003 af (51% of inflow)
Center-of-Mass det. time= 309.5 min (1,133.0 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.005 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.002	0.0	0.000	0.000
301.00	0.002	40.0	0.000	0.000
302.40	0.002	40.0	0.001	0.001
302.50	0.002	0.1	0.000	0.001
303.90	0.002	0.1	0.000	0.001
304.00	0.002	100.0	0.000	0.001
306.00	0.002	100.0	0.004	0.005

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 6.51 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 17.86 hrs HW=305.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.14 fps)

Summary for Pond UNGR1: UNGR1

Inflow Area = 1.194 ac, 70.85% Impervious, Inflow Depth = 0.37" for Salem Water Quality event
Inflow = 0.10 cfs @ 7.99 hrs, Volume= 0.037 af
Outflow = 0.02 cfs @ 7.65 hrs, Volume= 0.037 af, Atten= 74%, Lag= 0.0 min
Discarded = 0.02 cfs @ 7.65 hrs, Volume= 0.037 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 295.19' @ 11.53 hrs Surf.Area= 0.049 ac Storage= 0.006 af

Plug-Flow detention time= 123.3 min calculated for 0.037 af (100% of inflow)

Center-of-Mass det. time= 123.3 min (958.1 - 834.8)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.280 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.049	0.0	0.000	0.000
295.00	0.049	40.0	0.002	0.002
295.01	0.049	40.0	0.000	0.002
296.50	0.049	40.0	0.029	0.031
296.51	0.049	0.1	0.000	0.031
298.00	0.049	0.1	0.000	0.031
298.01	0.049	100.0	0.000	0.032
299.00	0.150	100.0	0.099	0.130
300.00	0.150	100.0	0.150	0.280

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.02 cfs @ 7.65 hrs HW=294.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VEGL1: VEGL1

Inflow Area = 0.320 ac, 68.75% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.04 cfs @ 8.03 hrs, Volume= 0.016 af
Outflow = 0.00 cfs @ 7.14 hrs, Volume= 0.009 af, Atten= 89%, Lag= 0.0 min
Discarded = 0.00 cfs @ 7.14 hrs, Volume= 0.009 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 304.31' @ 24.11 hrs Surf.Area= 0.009 ac Storage= 0.009 af

Plug-Flow detention time= 499.0 min calculated for 0.009 af (56% of inflow)
Center-of-Mass det. time= 264.3 min (1,092.4 - 828.2)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.024 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.009	0.0	0.000	0.000
301.00	0.009	40.0	0.000	0.000
302.40	0.009	40.0	0.005	0.005
302.50	0.009	0.1	0.000	0.005
303.90	0.009	0.1	0.000	0.005
304.00	0.009	100.0	0.001	0.006
306.00	0.009	100.0	0.018	0.024

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 7.14 hrs HW=300.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VNGR1: VNGR1

Inflow Area = 0.570 ac, 70.18% Impervious, Inflow Depth = 0.28" for Salem Water Quality event
Inflow = 0.04 cfs @ 7.97 hrs, Volume= 0.013 af
Outflow = 0.01 cfs @ 7.63 hrs, Volume= 0.013 af, Atten= 74%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.63 hrs, Volume= 0.013 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 295.19' @ 11.25 hrs Surf.Area= 0.019 ac Storage= 0.002 af

Plug-Flow detention time= 108.4 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 108.5 min (919.2 - 810.7)

Volume	Invert	Avail.Storage	Storage Description
#1	294.90'	0.108 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
294.90	0.019	0.0	0.000	0.000
295.00	0.019	40.0	0.001	0.001
295.01	0.019	40.0	0.000	0.001
296.50	0.019	40.0	0.011	0.012
296.51	0.019	0.1	0.000	0.012
298.00	0.019	0.1	0.000	0.012
298.01	0.019	100.0	0.000	0.012
299.00	0.058	100.0	0.038	0.050
300.00	0.058	100.0	0.058	0.108

Device	Routing	Invert	Outlet Devices
#1	Discarded	294.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	298.90'	**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=0.01 cfs @ 7.63 hrs HW=294.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=294.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link 3L: ST

Inflow Area = 4.800 ac, 50.06% Impervious, Inflow Depth = 0.08" for Salem Water Quality event
Inflow = 0.08 cfs @ 8.00 hrs, Volume= 0.030 af
Primary = 0.08 cfs @ 8.00 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 4L: S

Inflow Area = 0.570 ac, 63.51% Impervious, Inflow Depth = 0.25" for Salem Water Quality event
Inflow = 0.03 cfs @ 7.99 hrs, Volume= 0.012 af
Primary = 0.03 cfs @ 7.99 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 5L: SA

Inflow Area = 1.090 ac, 61.83% Impervious, Inflow Depth = 0.17" for Salem Water Quality event
Inflow = 0.04 cfs @ 7.99 hrs, Volume= 0.016 af
Primary = 0.04 cfs @ 7.99 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 6L: SA1

Inflow Area = 1.220 ac, 61.64% Impervious, Inflow Depth = 0.21" for Salem Water Quality event
Inflow = 0.05 cfs @ 8.00 hrs, Volume= 0.021 af
Primary = 0.05 cfs @ 8.00 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 7L: T

Inflow Area = 1.910 ac, 62.98% Impervious, Inflow Depth = 0.19" for Salem Water Quality event
Inflow = 0.08 cfs @ 8.00 hrs, Volume= 0.030 af
Primary = 0.08 cfs @ 8.00 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 8L: ST

Inflow Area = 4.940 ac, 50.63% Impervious, Inflow Depth = 0.09" for Salem Water Quality event
Inflow = 0.10 cfs @ 7.99 hrs, Volume= 0.037 af
Primary = 0.10 cfs @ 7.99 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 9L: UEV

Inflow Area = 2.915 ac, 70.60% Impervious, Inflow Depth = 0.11" for Salem Water Quality event
Inflow = 0.07 cfs @ 7.99 hrs, Volume= 0.028 af
Primary = 0.07 cfs @ 7.99 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 10L: UV

Inflow Area = 1.764 ac, 70.63% Impervious, Inflow Depth = 0.00" for Salem Water Quality event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 11L: UE

Inflow Area = 0.581 ac, 70.57% Impervious, Inflow Depth = 0.10" for Salem Water Quality event
Inflow = 0.01 cfs @ 7.99 hrs, Volume= 0.005 af
Primary = 0.01 cfs @ 7.99 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link 12L: UE1

Inflow Area = 0.570 ac, 70.53% Impervious, Inflow Depth = 0.49" for Salem Water Quality event
Inflow = 0.06 cfs @ 7.99 hrs, Volume= 0.023 af
Primary = 0.06 cfs @ 7.99 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min

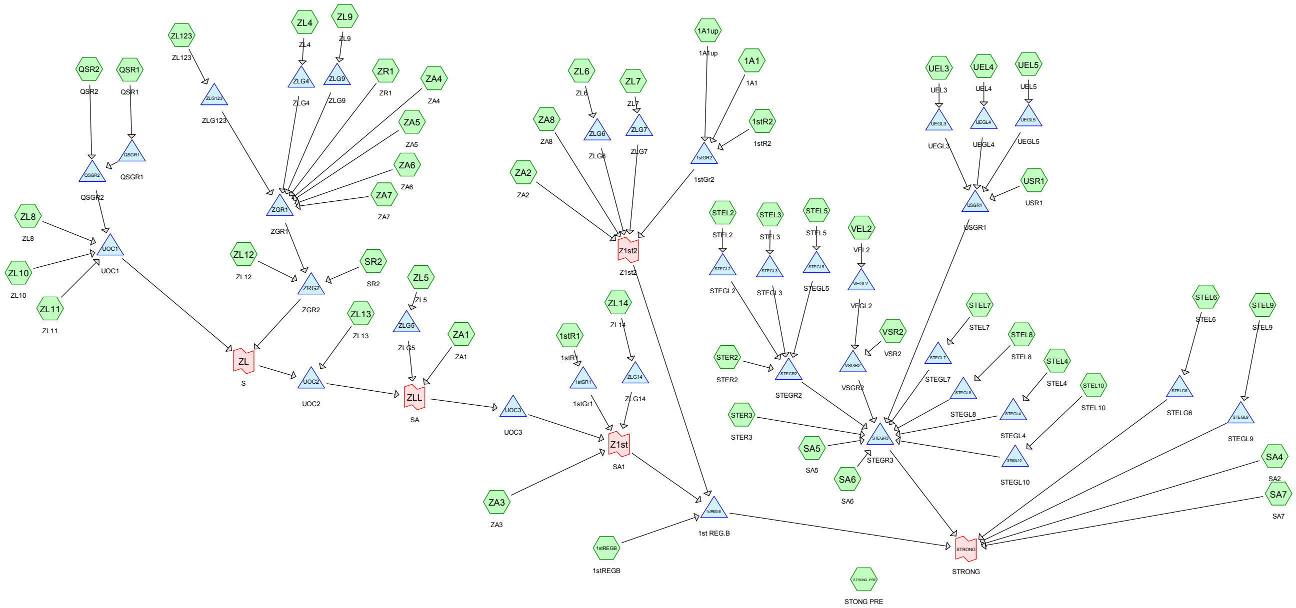
Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

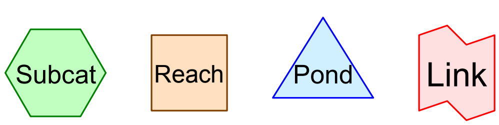
Summary for Link T - N: T - N

Inflow Area =	7.855 ac,	58.04% Impervious,	Inflow Depth = 0.10"	for Salem Water Quality event
Inflow =	0.17 cfs @	7.99 hrs, Volume=	0.065 af	
Primary =	0.17 cfs @	7.99 hrs, Volume=	0.065 af,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

BASIN STRONG





Routing Diagram for Phase A-Q-S_ 06-4-14_Qs_Z_Strong
Prepared by Westech Engineering, Inc., Printed 6/13/2014
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
12.656	98	(1A1, 1stR1, 1stR2, QSR1, QSR2, SA4, SA5, SA6, SA7, SR2, STEL10, STEL2, STEL3, STEL4, STEL5, STEL6, STEL7, STEL8, STEL9, STER2, STER3, UEL3, UEL4, UEL5, USR1, VEL2, VSR2, ZA1, ZA2, ZA3, ZA4, ZA5, ZA6, ZA7, ZA8, ZL10, ZL11, ZL12, ZL123, ZL13, ZL14, ZL4, ZL5, ZL6, ZL7, ZL8, ZL9, ZR1)
26.072	72	(1A1, 1A1up, 1stR1, 1stR2, 1stREGB, QSR1, QSR2, SA4, SA5, SA6, SA7, SR2, STEL10, STEL2, STEL3, STEL4, STEL5, STEL6, STEL7, STEL8, STEL9, STER2, STER3, STRONG -PRE, UEL3, UEL4, UEL5, USR1, VEL2, VSR2, ZA1, ZA2, ZA3, ZA4, ZA5, ZA6, ZA7, ZA8, ZL10, ZL11, ZL12, ZL123, ZL13, ZL14, ZL4, ZL5, ZL6, ZL7, ZL8, ZL9, ZR1)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
38.728	Other	1A1, 1A1up, 1stR1, 1stR2, 1stREGB, QSR1, QSR2, SA4, SA5, SA6, SA7, SR2, STEL10, STEL2, STEL3, STEL4, STEL5, STEL6, STEL7, STEL8, STEL9, STER2, STER3, STRONG -PRE, UEL3, UEL4, UEL5, USR1, VEL2, VSR2, ZA1, ZA2, ZA3, ZA4, ZA5, ZA6, ZA7, ZA8, ZL10, ZL11, ZL12, ZL123, ZL13, ZL14, ZL4, ZL5, ZL6, ZL7, ZL8, ZL9, ZR1

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	38.728	38.728		1A1, 1A1up, 1stR1, 1stR2, 1stREGB, QSR1, QSR2, SA4, SA5, SA6, SA7, SR2, STEL10, STEL2, STEL3, STEL4, STEL5, STEL6, STEL7, STEL8, STEL9, STER2, STER3, STRONG -PRE, UEL3, UEL4, UEL5, USR1, VEL2, VSR2, ZA1, ZA2, ZA3, ZA4, ZA5, ZA6, ZA7, ZA8, ZL10, ZL11, ZL12, ZL123, ZL13, ZL14, ZL4, ZL5, ZL6, ZL7, ZL8, ZL9, ZR1

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A1: 1A1 Runoff Area=0.210 ac 71.43% Impervious Runoff Depth=2.26"
Tc=5.0 min CN=91 Runoff=0.12 cfs 0.040 af

Subcatchment 1A1up: 1A1up Runoff Area=0.280 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=200' Slope=0.1900 '/' Tc=14.6 min CN=72 Runoff=0.04 cfs 0.022 af

Subcatchment 1stR1: 1stR1 Runoff Area=0.250 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.14 cfs 0.045 af

Subcatchment 1stR2: 1stR2 Runoff Area=0.250 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.14 cfs 0.045 af

Subcatchment 1stREGB: 1stREGB Runoff Area=0.890 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=350' Slope=0.0800 '/' Tc=22.4 min CN=72 Runoff=0.12 cfs 0.069 af

Subcatchment QSR1: QSR1 Runoff Area=0.280 ac 71.43% Impervious Runoff Depth=2.26"
Tc=10.0 min CN=91 Runoff=0.16 cfs 0.053 af

Subcatchment QSR2: QSR2 Runoff Area=0.280 ac 71.43% Impervious Runoff Depth=2.26"
Tc=10.0 min CN=91 Runoff=0.16 cfs 0.053 af

Subcatchment SA4: SA2 Runoff Area=0.130 ac 60.00% Impervious Runoff Depth=2.00"
Tc=5.0 min CN=88 Runoff=0.07 cfs 0.022 af

Subcatchment SA5: SA5 Runoff Area=0.120 ac 70.83% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.07 cfs 0.022 af

Subcatchment SA6: SA6 Runoff Area=0.110 ac 72.73% Impervious Runoff Depth=2.26"
Tc=5.0 min CN=91 Runoff=0.06 cfs 0.021 af

Subcatchment SA7: SA7 Runoff Area=0.240 ac 70.83% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.13 cfs 0.043 af

Subcatchment SR2: SR2 Runoff Area=0.190 ac 68.42% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.11 cfs 0.034 af

Subcatchment STEL10: STEL10 Runoff Area=0.390 ac 69.23% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.22 cfs 0.070 af

Subcatchment STEL2: STEL2 Runoff Area=0.630 ac 69.84% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.35 cfs 0.114 af

Subcatchment STEL3: STEL3 Runoff Area=0.240 ac 70.83% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.13 cfs 0.043 af

Subcatchment STEL4: STEL4 Runoff Area=0.840 ac 70.24% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.47 cfs 0.152 af

Subcatchment STEL5: STEL5 Runoff Area=0.150 ac 66.67% Impervious Runoff Depth=2.08"
Tc=5.0 min CN=89 Runoff=0.08 cfs 0.026 af

Subcatchment STEL6: STEL6 Runoff Area=0.310 ac 70.97% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.17 cfs 0.056 af

Subcatchment STEL7: STEL7 Runoff Area=0.138 ac 71.01% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.08 cfs 0.025 af

Subcatchment STEL8: STEL8 Runoff Area=0.130 ac 69.23% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.07 cfs 0.023 af

Subcatchment STEL9: STEL9 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.06 cfs 0.018 af

Subcatchment STER2: STER2 Runoff Area=0.650 ac 70.77% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.36 cfs 0.117 af

Subcatchment STER3: STER3 Runoff Area=0.550 ac 70.91% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.31 cfs 0.099 af

Subcatchment STRONG -PRE: STONG PRE Runoff Area=19.230 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=1,900' Slope=0.0600 '/' Tc=43.9 min CN=72 Runoff=2.19 cfs 1.490 af

Subcatchment UEL3: UEL3 Runoff Area=0.470 ac 70.21% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.26 cfs 0.085 af

Subcatchment UEL4: UEL4 Runoff Area=0.120 ac 66.67% Impervious Runoff Depth=2.08"
Tc=5.0 min CN=89 Runoff=0.06 cfs 0.021 af

Subcatchment UEL5: UEL5 Runoff Area=0.170 ac 70.59% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.10 cfs 0.031 af

Subcatchment USR1: USR1 Runoff Area=0.360 ac 69.44% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.20 cfs 0.065 af

Subcatchment VEL2: VEL2 Runoff Area=0.390 ac 69.23% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.22 cfs 0.070 af

Subcatchment VSR2: VSR2 Runoff Area=0.310 ac 70.97% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.17 cfs 0.056 af

Subcatchment ZA1: ZA1 Runoff Area=0.260 ac 69.23% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.15 cfs 0.047 af

Subcatchment ZA2: ZA2 Runoff Area=0.280 ac 71.43% Impervious Runoff Depth=2.26"
Tc=5.0 min CN=91 Runoff=0.16 cfs 0.053 af

Subcatchment ZA3: ZA3 Runoff Area=0.230 ac 69.57% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.13 cfs 0.042 af

Subcatchment ZA4: ZA4 Runoff Area=0.140 ac 71.43% Impervious Runoff Depth=2.26"
Tc=5.0 min CN=91 Runoff=0.08 cfs 0.026 af

Subcatchment ZA5: ZA5 Runoff Area=0.140 ac 71.43% Impervious Runoff Depth=2.26"
Tc=5.0 min CN=91 Runoff=0.08 cfs 0.026 af

Subcatchment ZA6: ZA6 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.06 cfs 0.018 af

Subcatchment ZA7: ZA7 Runoff Area=0.900 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.50 cfs 0.163 af

Subcatchment ZA8: ZA8 Runoff Area=0.270 ac 70.37% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.15 cfs 0.049 af

Subcatchment ZL10: ZL10 Runoff Area=0.440 ac 59.09% Impervious Runoff Depth=1.91"
Tc=10.0 min CN=87 Runoff=0.21 cfs 0.070 af

Subcatchment ZL11: ZL11 Runoff Area=0.380 ac 71.05% Impervious Runoff Depth=2.17"
Tc=10.0 min CN=90 Runoff=0.21 cfs 0.069 af

Subcatchment ZL12: ZL12 Runoff Area=0.180 ac 66.67% Impervious Runoff Depth=2.08"
Tc=5.0 min CN=89 Runoff=0.10 cfs 0.031 af

Subcatchment ZL123: ZL123 Runoff Area=1.700 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.95 cfs 0.307 af

Subcatchment ZL13: ZL13 Runoff Area=0.730 ac 69.86% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.41 cfs 0.132 af

Subcatchment ZL14: ZL14 Runoff Area=0.250 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.14 cfs 0.045 af

Subcatchment ZL4: ZL4 Runoff Area=0.440 ac 59.09% Impervious Runoff Depth=1.91"
Tc=5.0 min CN=87 Runoff=0.21 cfs 0.070 af

Subcatchment ZL5: ZL5 Runoff Area=0.950 ac 69.47% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.53 cfs 0.172 af

Subcatchment ZL6: ZL6 Runoff Area=1.070 ac 70.09% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.60 cfs 0.193 af

Subcatchment ZL7: ZL7 Runoff Area=0.150 ac 73.33% Impervious Runoff Depth=2.26"
Tc=5.0 min CN=91 Runoff=0.09 cfs 0.028 af

Subcatchment ZL8: ZL8 Runoff Area=0.370 ac 59.46% Impervious Runoff Depth=1.91"
Tc=10.0 min CN=87 Runoff=0.18 cfs 0.059 af

Subcatchment ZL9: ZL9 Runoff Area=0.440 ac 59.09% Impervious Runoff Depth=1.91"
Tc=5.0 min CN=87 Runoff=0.21 cfs 0.070 af

Subcatchment ZR1: ZR1 Runoff Area=0.900 ac 70.00% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=0.50 cfs 0.163 af

Pond 1stGR1: 1stGr1 Peak Elev=301.02' Storage=1,473 cf Inflow=0.14 cfs 0.045 af
Discarded=0.00 cfs 0.005 af Primary=0.02 cfs 0.010 af Outflow=0.02 cfs 0.015 af

Pond 1stGR2: 1stGr2 Peak Elev=303.06' Storage=1,534 cf Inflow=0.30 cfs 0.106 af
Discarded=0.00 cfs 0.006 af Primary=0.09 cfs 0.071 af Outflow=0.09 cfs 0.076 af

Pond 1stREG.B: 1st REG.B Peak Elev=303.32' Storage=12,999 cf Inflow=1.21 cfs 1.195 af
Discarded=0.01 cfs 0.030 af Primary=1.04 cfs 0.932 af Outflow=1.05 cfs 0.962 af

Pond QSGR1: QSGR1 Peak Elev=308.61' Storage=0.037 af Inflow=0.16 cfs 0.053 af
Discarded=0.01 cfs 0.036 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.036 af

Pond QSGR2: QSGR2 Peak Elev=306.61' Storage=0.037 af Inflow=0.16 cfs 0.053 af
Discarded=0.01 cfs 0.036 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.036 af

Pond STEGL10: STEGL10 Peak Elev=307.06' Storage=882 cf Inflow=0.22 cfs 0.070 af
Discarded=0.00 cfs 0.004 af Primary=0.09 cfs 0.049 af Outflow=0.10 cfs 0.053 af

Pond STEGL2: STEGL2 Peak Elev=307.15' Storage=928 cf Inflow=0.35 cfs 0.114 af
Discarded=0.01 cfs 0.022 af Primary=0.34 cfs 0.084 af Outflow=0.35 cfs 0.107 af

Pond STEGL3: STEGL3 Peak Elev=307.08' Storage=357 cf Inflow=0.13 cfs 0.043 af
Discarded=0.00 cfs 0.001 af Primary=0.13 cfs 0.035 af Outflow=0.13 cfs 0.036 af

Pond STEGL4: STEGL4 Peak Elev=307.18' Storage=1,503 cf Inflow=0.47 cfs 0.152 af
Discarded=0.00 cfs 0.004 af Primary=0.42 cfs 0.119 af Outflow=0.42 cfs 0.122 af

Pond STEGL5: STEGL5 Peak Elev=307.06' Storage=176 cf Inflow=0.08 cfs 0.026 af
Discarded=0.00 cfs 0.004 af Primary=0.08 cfs 0.020 af Outflow=0.08 cfs 0.025 af

Pond STEGL7: STEGL7 Peak Elev=307.05' Storage=176 cf Inflow=0.08 cfs 0.025 af
Discarded=0.00 cfs 0.004 af Primary=0.08 cfs 0.019 af Outflow=0.08 cfs 0.024 af

Pond STEGL8: STEGL8 Peak Elev=307.05' Storage=175 cf Inflow=0.07 cfs 0.023 af
Discarded=0.00 cfs 0.001 af Primary=0.07 cfs 0.019 af Outflow=0.07 cfs 0.020 af

Pond STEGL9: STEGL9 Peak Elev=303.04' Storage=175 cf Inflow=0.06 cfs 0.018 af
Discarded=0.00 cfs 0.001 af Primary=0.05 cfs 0.014 af Outflow=0.05 cfs 0.015 af

Pond STEGR2: STEGR2 Peak Elev=304.99' Storage=3,676 cf Inflow=0.91 cfs 0.257 af
Discarded=0.04 cfs 0.115 af Primary=0.16 cfs 0.121 af Outflow=0.20 cfs 0.236 af

Pond STEGR3: STEGR3 Peak Elev=303.08' Storage=3,624 cf Inflow=0.98 cfs 0.529 af
Discarded=0.00 cfs 0.013 af Primary=0.44 cfs 0.452 af Outflow=0.44 cfs 0.465 af

Pond STELG6: STELG6 Peak Elev=303.06' Storage=703 cf Inflow=0.17 cfs 0.056 af
Discarded=0.00 cfs 0.004 af Primary=0.08 cfs 0.039 af Outflow=0.08 cfs 0.042 af

Pond UEGL3: UEGL3 Peak Elev=307.06' Storage=1,059 cf Inflow=0.26 cfs 0.085 af
Discarded=0.01 cfs 0.027 af Primary=0.10 cfs 0.050 af Outflow=0.10 cfs 0.076 af

Pond UEGL4: UEGL4 Peak Elev=307.05' Storage=175 cf Inflow=0.06 cfs 0.021 af
Discarded=0.00 cfs 0.004 af Primary=0.06 cfs 0.015 af Outflow=0.06 cfs 0.019 af

Pond UEGL5: UEGL5 Peak Elev=307.06' Storage=176 cf Inflow=0.10 cfs 0.031 af
Discarded=0.00 cfs 0.004 af Primary=0.09 cfs 0.025 af Outflow=0.10 cfs 0.029 af

Pond UOC1: UOC1 Peak Elev=305.33' Storage=0.075 af Inflow=0.60 cfs 0.198 af
Discarded=0.00 cfs 0.016 af Primary=0.14 cfs 0.122 af Outflow=0.14 cfs 0.138 af

Pond UOC2: UOC2 Peak Elev=305.25' Storage=0.179 af Inflow=0.87 cfs 0.770 af
Discarded=0.01 cfs 0.020 af Primary=0.70 cfs 0.608 af Outflow=0.71 cfs 0.628 af

Pond UOC3: UOC3 Peak Elev=303.27' Storage=4,319 cf Inflow=0.83 cfs 0.792 af
Discarded=0.00 cfs 0.012 af Primary=0.81 cfs 0.705 af Outflow=0.82 cfs 0.716 af

Pond USGR1: USGR1 Peak Elev=304.95' Storage=2,604 cf Inflow=0.36 cfs 0.154 af
Discarded=0.03 cfs 0.092 af Primary=0.07 cfs 0.050 af Outflow=0.10 cfs 0.142 af

Pond VEGL2: VEGL2 Peak Elev=307.06' Storage=879 cf Inflow=0.22 cfs 0.070 af
Discarded=0.01 cfs 0.022 af Primary=0.08 cfs 0.041 af Outflow=0.09 cfs 0.063 af

Pond VSGR2: VSGR2 Peak Elev=304.93' Storage=2,344 cf Inflow=0.17 cfs 0.097 af
Discarded=0.03 cfs 0.073 af Primary=0.02 cfs 0.010 af Outflow=0.05 cfs 0.083 af

Pond ZGR1: ZGR1 Peak Elev=307.03' Storage=0.187 af Inflow=2.34 cfs 0.730 af
Discarded=0.05 cfs 0.150 af Primary=0.64 cfs 0.506 af Outflow=0.69 cfs 0.656 af

Pond ZLG123: ZLG123 Peak Elev=308.30' Storage=2,397 cf Inflow=0.95 cfs 0.307 af
Discarded=0.01 cfs 0.027 af Primary=0.92 cfs 0.248 af Outflow=0.93 cfs 0.275 af

Pond ZLG14: ZLG14 Peak Elev=301.02' Storage=1,204 cf Inflow=0.14 cfs 0.045 af
Discarded=0.00 cfs 0.003 af Primary=0.02 cfs 0.016 af Outflow=0.02 cfs 0.020 af

Pond ZLG4: ZLG4 Peak Elev=308.11' Storage=0.007 af Inflow=0.21 cfs 0.070 af
Discarded=0.00 cfs 0.004 af Primary=0.21 cfs 0.062 af Outflow=0.21 cfs 0.066 af

Pond ZLG5: ZLG5 Peak Elev=307.20' Storage=0.030 af Inflow=0.53 cfs 0.172 af
Discarded=0.00 cfs 0.016 af Primary=0.52 cfs 0.137 af Outflow=0.53 cfs 0.153 af

Pond ZLG6: ZLG6 Peak Elev=307.22' Storage=1,346 cf Inflow=0.60 cfs 0.193 af
Discarded=0.00 cfs 0.016 af Primary=0.59 cfs 0.159 af Outflow=0.60 cfs 0.175 af

Pond ZLG7: ZLG7 Peak Elev=307.06' Storage=176 cf Inflow=0.09 cfs 0.028 af
Discarded=0.00 cfs 0.002 af Primary=0.09 cfs 0.023 af Outflow=0.09 cfs 0.026 af

Pond ZLG9: ZLG9 Peak Elev=308.03' Storage=0.031 af Inflow=0.21 cfs 0.070 af
Discarded=0.01 cfs 0.034 af Primary=0.03 cfs 0.025 af Outflow=0.04 cfs 0.059 af

Pond ZRG2: ZGR2 Peak Elev=306.04' Storage=0.047 af Inflow=0.70 cfs 0.571 af
Discarded=0.01 cfs 0.037 af Primary=0.67 cfs 0.516 af Outflow=0.69 cfs 0.553 af

Link STRONG: STRONG Inflow=1.53 cfs 1.501 af
Primary=1.53 cfs 1.501 af

Link Z1st: SA1 Inflow=0.84 cfs 0.772 af
Primary=0.84 cfs 0.772 af

Link Z1st2: Z1st2 Inflow=0.99 cfs 0.354 af
Primary=0.99 cfs 0.354 af

Link ZL: S Inflow=0.77 cfs 0.638 af
Primary=0.77 cfs 0.638 af

Link ZLL: SA Inflow=0.83 cfs 0.792 af
Primary=0.83 cfs 0.792 af

Summary for Subcatchment 1A1: 1A1

Runoff = 0.12 cfs @ 7.91 hrs, Volume= 0.040 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.150	98	
*	0.060	72	
	0.210	91	Weighted Average
	0.060		28.57% Pervious Area
	0.150		71.43% Impervious Area

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

Summary for Subcatchment 1A1up: 1A1up

Runoff = 0.04 cfs @ 8.10 hrs, Volume= 0.022 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.280	72	
	0.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	200	0.1900	0.23		**Sheet Flow, mixed** n= 0.300 P2= 2.20"

Summary for Subcatchment 1stR1: 1stR1

Runoff = 0.14 cfs @ 7.91 hrs, Volume= 0.045 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.175	98	
*	0.075	72	
	0.250	90	Weighted Average
	0.075		30.00% Pervious Area
	0.175		70.00% Impervious Area

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

Summary for Subcatchment 1stR2: 1stR2

Runoff = 0.14 cfs @ 7.91 hrs, Volume= 0.045 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.175	98	
*	0.075	72	
	0.250	90	Weighted Average
	0.075		30.00% Pervious Area
	0.175		70.00% Impervious Area

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

Summary for Subcatchment 1stREGB: 1stREGB

Runoff = 0.12 cfs @ 8.19 hrs, Volume= 0.069 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.890	72	
	0.890		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.6	200	0.0800	0.16		**Sheet Flow, MIXED** n= 0.300 P2= 2.20"
1.8	150	0.0800	1.41		**Shallow Concentrated Flow, MIXED** Kv= 5.0 fps
22.4	350	Total			

Summary for Subcatchment QSR1: QSR1

Runoff = 0.16 cfs @ 7.99 hrs, Volume= 0.053 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.200	98	
*	0.080	72	
	0.280	91	Weighted Average
	0.080		28.57% Pervious Area
	0.200		71.43% Impervious Area

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

Summary for Subcatchment QSR2: QSR2

Runoff = 0.16 cfs @ 7.99 hrs, Volume= 0.053 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.200	98	
*	0.080	72	
	0.280	91	Weighted Average
	0.080		28.57% Pervious Area
	0.200		71.43% Impervious Area

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

Summary for Subcatchment SA4: SA2

Runoff = 0.07 cfs @ 7.93 hrs, Volume= 0.022 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.078	98	
*	0.052	72	
	0.130	88	Weighted Average
	0.052		40.00% Pervious Area
	0.078		60.00% Impervious Area

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

Summary for Subcatchment SA5: SA5

Runoff = 0.07 cfs @ 7.91 hrs, Volume= 0.022 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.085	98	
*	0.035	72	
	0.120	90	Weighted Average
	0.035		29.17% Pervious Area
	0.085		70.83% Impervious Area

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

Summary for Subcatchment SA6: SA6

Runoff = 0.06 cfs @ 7.91 hrs, Volume= 0.021 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.080	98	
*	0.030	72	
	0.110	91	Weighted Average
	0.030		27.27% Pervious Area
	0.080		72.73% Impervious Area

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

Summary for Subcatchment SA7: SA7

Runoff = 0.13 cfs @ 7.91 hrs, Volume= 0.043 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.170	98	
*	0.070	72	
	0.240	90	Weighted Average
	0.070		29.17% Pervious Area
	0.170		70.83% Impervious Area

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

Summary for Subcatchment SR2: SR2

Runoff = 0.11 cfs @ 7.91 hrs, Volume= 0.034 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.130	98	
*	0.060	72	
	0.190	90	Weighted Average
	0.060		31.58% Pervious Area
	0.130		68.42% Impervious Area

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

Summary for Subcatchment STEL10: STEL10

Runoff = 0.22 cfs @ 7.91 hrs, Volume= 0.070 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.270	98	
*	0.120	72	
	0.390	90	Weighted Average
	0.120		30.77% Pervious Area
	0.270		69.23% Impervious Area

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

Summary for Subcatchment STEL2: STEL2

Runoff = 0.35 cfs @ 7.91 hrs, Volume= 0.114 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.440	98	
*	0.190	72	
	0.630	90	Weighted Average
	0.190		30.16% Pervious Area
	0.440		69.84% Impervious Area

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

Summary for Subcatchment STEL3: STEL3

Runoff = 0.13 cfs @ 7.91 hrs, Volume= 0.043 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.170	98	
*	0.070	72	
	0.240	90	Weighted Average
	0.070		29.17% Pervious Area
	0.170		70.83% Impervious Area

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

Summary for Subcatchment STEL4: STEL4

Runoff = 0.47 cfs @ 7.91 hrs, Volume= 0.152 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.590	98	
*	0.250	72	
	0.840	90	Weighted Average
	0.250		29.76% Pervious Area
	0.590		70.24% Impervious Area

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

Summary for Subcatchment STEL5: STEL5

Runoff = 0.08 cfs @ 7.92 hrs, Volume= 0.026 af, Depth= 2.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.100	98	
*	0.050	72	
	0.150	89	Weighted Average
	0.050		33.33% Pervious Area
	0.100		66.67% Impervious Area

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

Summary for Subcatchment STEL6: STEL6

Runoff = 0.17 cfs @ 7.91 hrs, Volume= 0.056 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.220	98	
*	0.090	72	
	0.310	90	Weighted Average
	0.090		29.03% Pervious Area
	0.220		70.97% Impervious Area

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

Summary for Subcatchment STEL7: STEL7

Runoff = 0.08 cfs @ 7.91 hrs, Volume= 0.025 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.098	98	
*	0.040	72	
	0.138	90	Weighted Average
	0.040		28.99% Pervious Area
	0.098		71.01% Impervious Area

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

Summary for Subcatchment STEL8: STEL8

Runoff = 0.07 cfs @ 7.91 hrs, Volume= 0.023 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.090	98	
*	0.040	72	
	0.130	90	Weighted Average
	0.040		30.77% Pervious Area
	0.090		69.23% Impervious Area

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

Summary for Subcatchment STEL9: STEL9

Runoff = 0.06 cfs @ 7.91 hrs, Volume= 0.018 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment STER2: STER2

Runoff = 0.36 cfs @ 7.91 hrs, Volume= 0.117 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.460	98	
*	0.190	72	
	0.650	90	Weighted Average
	0.190		29.23% Pervious Area
	0.460		70.77% Impervious Area

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

Summary for Subcatchment STER3: STER3

Runoff = 0.31 cfs @ 7.91 hrs, Volume= 0.099 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.390	98	
*	0.160	72	
	0.550	90	Weighted Average
	0.160		29.09% Pervious Area
	0.390		70.91% Impervious Area

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

Summary for Subcatchment STRONG -PRE: STONG PRE

Runoff = 2.19 cfs @ 8.53 hrs, Volume= 1.490 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	19.230	72	
	19.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.9	300	0.0600	0.16		**Sheet Flow, MIXED** n= 0.300 P2= 2.20"
4.1	300	0.0600	1.22		**Shallow Concentrated Flow, MIXED** Kv= 5.0 fps
7.9	1,300	0.0600	2.75	4.59	**Parabolic Channel,** W=10.00' D=0.25' Area=1.7 sf Perim=10.0' n= 0.040
43.9	1,900	Total			

Summary for Subcatchment UEL3: UEL3

Runoff = 0.26 cfs @ 7.91 hrs, Volume= 0.085 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.330	98	
*	0.140	72	
	0.470	90	Weighted Average
	0.140		29.79% Pervious Area
	0.330		70.21% Impervious Area

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

Summary for Subcatchment UEL4: UEL4

Runoff = 0.06 cfs @ 7.92 hrs, Volume= 0.021 af, Depth= 2.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.080	98	
*	0.040	72	
	0.120	89	Weighted Average
	0.040		33.33% Pervious Area
	0.080		66.67% Impervious Area

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

Summary for Subcatchment UEL5: UEL5

Runoff = 0.10 cfs @ 7.91 hrs, Volume= 0.031 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.120	98	
*	0.050	72	
	0.170	90	Weighted Average
	0.050		29.41% Pervious Area
	0.120		70.59% Impervious Area

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

Summary for Subcatchment USR1: USR1

Runoff = 0.20 cfs @ 7.91 hrs, Volume= 0.065 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.250	98	
*	0.110	72	
	0.360	90	Weighted Average
	0.110		30.56% Pervious Area
	0.250		69.44% Impervious Area

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

Summary for Subcatchment VEL2: VEL2

Runoff = 0.22 cfs @ 7.91 hrs, Volume= 0.070 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.270	98	
*	0.120	72	
	0.390	90	Weighted Average
	0.120		30.77% Pervious Area
	0.270		69.23% Impervious Area

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

Summary for Subcatchment VSR2: VSR2

Runoff = 0.17 cfs @ 7.91 hrs, Volume= 0.056 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.220	98	
*	0.090	72	
	0.310	90	Weighted Average
	0.090		29.03% Pervious Area
	0.220		70.97% Impervious Area

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

Summary for Subcatchment ZA1: ZA1

Runoff = 0.15 cfs @ 7.91 hrs, Volume= 0.047 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.180	98	
*	0.080	72	
	0.260	90	Weighted Average
	0.080		30.77% Pervious Area
	0.180		69.23% Impervious Area

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

Summary for Subcatchment ZA2: ZA2

Runoff = 0.16 cfs @ 7.91 hrs, Volume= 0.053 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.200	98	
*	0.080	72	
	0.280	91	Weighted Average
	0.080		28.57% Pervious Area
	0.200		71.43% Impervious Area

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

Summary for Subcatchment ZA3: ZA3

Runoff = 0.13 cfs @ 7.91 hrs, Volume= 0.042 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.160	98	
*	0.070	72	
	0.230	90	Weighted Average
	0.070		30.43% Pervious Area
	0.160		69.57% Impervious Area

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

Summary for Subcatchment ZA4: ZA4

Runoff = 0.08 cfs @ 7.91 hrs, Volume= 0.026 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.100	98	
*	0.040	72	
	0.140	91	Weighted Average
	0.040		28.57% Pervious Area
	0.100		71.43% Impervious Area

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

Summary for Subcatchment ZA5: ZA5

Runoff = 0.08 cfs @ 7.91 hrs, Volume= 0.026 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.100	98	
*	0.040	72	
	0.140	91	Weighted Average
	0.040		28.57% Pervious Area
	0.100		71.43% Impervious Area

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

Summary for Subcatchment ZA6: ZA6

Runoff = 0.06 cfs @ 7.91 hrs, Volume= 0.018 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment ZA7: ZA7

Runoff = 0.50 cfs @ 7.91 hrs, Volume= 0.163 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.630	98	
*	0.270	72	
	0.900	90	Weighted Average
	0.270		30.00% Pervious Area
	0.630		70.00% Impervious Area

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

Summary for Subcatchment ZA8: ZA8

Runoff = 0.15 cfs @ 7.91 hrs, Volume= 0.049 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.190	98	
*	0.080	72	
	0.270	90	Weighted Average
	0.080		29.63% Pervious Area
	0.190		70.37% Impervious Area

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

Summary for Subcatchment ZL10: ZL10

Runoff = 0.21 cfs @ 8.01 hrs, Volume= 0.070 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.260	98	
*	0.180	72	
	0.440	87	Weighted Average
	0.180		40.91% Pervious Area
	0.260		59.09% Impervious Area

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

Summary for Subcatchment ZL11: ZL11

Runoff = 0.21 cfs @ 7.99 hrs, Volume= 0.069 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.270	98	
*	0.110	72	
	0.380	90	Weighted Average
	0.110		28.95% Pervious Area
	0.270		71.05% Impervious Area

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

Summary for Subcatchment ZL12: ZL12

Runoff = 0.10 cfs @ 7.92 hrs, Volume= 0.031 af, Depth= 2.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.120	98	
*	0.060	72	
	0.180	89	Weighted Average
	0.060		33.33% Pervious Area
	0.120		66.67% Impervious Area

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

Summary for Subcatchment ZL123: ZL123

Runoff = 0.95 cfs @ 7.91 hrs, Volume= 0.307 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	1.190	98	
*	0.510	72	
	1.700	90	Weighted Average
	0.510		30.00% Pervious Area
	1.190		70.00% Impervious Area

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

Summary for Subcatchment ZL13: ZL13

Runoff = 0.41 cfs @ 7.91 hrs, Volume= 0.132 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.510	98	
*	0.220	72	
	0.730	90	Weighted Average
	0.220		30.14% Pervious Area
	0.510		69.86% Impervious Area

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

Summary for Subcatchment ZL14: ZL14

Runoff = 0.14 cfs @ 7.91 hrs, Volume= 0.045 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.175	98	
*	0.075	72	
	0.250	90	Weighted Average
	0.075		30.00% Pervious Area
	0.175		70.00% Impervious Area

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

Summary for Subcatchment ZL4: ZL4

Runoff = 0.21 cfs @ 7.93 hrs, Volume= 0.070 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.260	98	
*	0.180	72	
	0.440	87	Weighted Average
	0.180		40.91% Pervious Area
	0.260		59.09% Impervious Area

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

Summary for Subcatchment ZL5: ZL5

Runoff = 0.53 cfs @ 7.91 hrs, Volume= 0.172 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.660	98	
*	0.290	72	
	0.950	90	Weighted Average
	0.290		30.53% Pervious Area
	0.660		69.47% Impervious Area

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

Summary for Subcatchment ZL6: ZL6

Runoff = 0.60 cfs @ 7.91 hrs, Volume= 0.193 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.750	98	
*	0.320	72	
	1.070	90	Weighted Average
	0.320		29.91% Pervious Area
	0.750		70.09% Impervious Area

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

Summary for Subcatchment ZL7: ZL7

Runoff = 0.09 cfs @ 7.91 hrs, Volume= 0.028 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.110	98	
*	0.040	72	
	0.150	91	Weighted Average
	0.040		26.67% Pervious Area
	0.110		73.33% Impervious Area

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

Summary for Subcatchment ZL8: ZL8

Runoff = 0.18 cfs @ 8.01 hrs, Volume= 0.059 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.220	98	
*	0.150	72	
	0.370	87	Weighted Average
	0.150		40.54% Pervious Area
	0.220		59.46% Impervious Area

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

Summary for Subcatchment ZL9: ZL9

Runoff = 0.21 cfs @ 7.93 hrs, Volume= 0.070 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.260	98	
*	0.180	72	
	0.440	87	Weighted Average
	0.180		40.91% Pervious Area
	0.260		59.09% Impervious Area

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

Summary for Subcatchment ZR1: ZR1

Runoff = 0.50 cfs @ 7.91 hrs, Volume= 0.163 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 10 yrs Rainfall=3.20"

	Area (ac)	CN	Description
*	0.630	98	
*	0.270	72	
	0.900	90	Weighted Average
	0.270		30.00% Pervious Area
	0.630		70.00% Impervious Area

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

Summary for Pond 1stGR1: 1stGr1

Inflow Area = 0.250 ac, 70.00% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.14 cfs @ 7.91 hrs, Volume= 0.045 af
Outflow = 0.02 cfs @ 18.17 hrs, Volume= 0.015 af, Atten= 85%, Lag= 615.5 min
Discarded = 0.00 cfs @ 18.17 hrs, Volume= 0.005 af
Primary = 0.02 cfs @ 18.17 hrs, Volume= 0.010 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 301.02' @ 18.17 hrs Surf.Area= 1,330 sf Storage= 1,473 cf

Plug-Flow detention time= 962.0 min calculated for 0.015 af (33% of inflow)
Center-of-Mass det. time= 648.1 min (1,394.5 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	296.90'	5,083 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
296.90	660	0.0	0	0
297.00	660	40.0	26	26
298.40	660	40.0	370	396
298.50	660	0.1	0	396
299.90	660	0.1	1	397
300.00	660	100.0	66	463
302.00	1,980	100.0	2,640	3,103
303.00	1,980	100.0	1,980	5,083

Device	Routing	Invert	Outlet Devices
#1	Discarded	296.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	301.00'	**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 @ 18.17 hrs HW=301.02' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.01 cfs @ 18.17 hrs HW=301.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.35 fps)

Summary for Pond 1stGR2: 1stGr2

Inflow Area = 0.740 ac, 43.92% Impervious, Inflow Depth = 1.73" for Salem 10 yrs event
Inflow = 0.30 cfs @ 7.96 hrs, Volume= 0.106 af
Outflow = 0.09 cfs @ 9.42 hrs, Volume= 0.076 af, Atten= 70%, Lag= 87.9 min
Discarded = 0.00 cfs @ 9.42 hrs, Volume= 0.006 af
Primary = 0.09 cfs @ 9.42 hrs, Volume= 0.071 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.06' @ 9.42 hrs Surf.Area= 1,360 sf Storage= 1,534 cf

Plug-Flow detention time= 388.6 min calculated for 0.076 af (72% of inflow)
Center-of-Mass det. time= 220.0 min (991.8 - 771.8)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	5,083 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	660	0.0	0	0
299.00	660	40.0	26	26
300.40	660	40.0	370	396
300.50	660	0.1	0	396
301.90	660	0.1	1	397
302.00	660	100.0	66	463
304.00	1,980	100.0	2,640	3,103
305.00	1,980	100.0	1,980	5,083

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 9.42 hrs HW=303.06' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.08 cfs @ 9.42 hrs HW=303.06' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.08 cfs @ 0.69 fps)

Summary for Pond 1stREG.B: 1st REG.B

Inflow Area = 12.950 ac, 62.36% Impervious, Inflow Depth = 1.11" for Salem 10 yrs event
Inflow = 1.21 cfs @ 7.98 hrs, Volume= 1.195 af
Outflow = 1.05 cfs @ 13.94 hrs, Volume= 0.962 af, Atten= 13%, Lag= 357.4 min
Discarded = 0.01 cfs @ 13.94 hrs, Volume= 0.030 af
Primary = 1.04 cfs @ 13.94 hrs, Volume= 0.932 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.32' @ 13.94 hrs Surf.Area= 7,320 sf Storage= 12,999 cf

Plug-Flow detention time= 260.3 min calculated for 0.962 af (80% of inflow)
Center-of-Mass det. time= 159.7 min (1,121.4 - 961.7)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	26,209 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	6,000	0.0	0	0
299.00	6,000	40.0	240	240
300.40	6,000	40.0	3,360	3,600
300.50	6,000	0.1	1	3,601
301.90	6,000	0.1	8	3,609
302.00	6,000	100.0	600	4,209
304.00	8,000	100.0	14,000	18,209
305.00	8,000	100.0	8,000	26,209

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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=0.01 cfs @ 13.94 hrs HW=303.32' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=1.04 cfs @ 13.94 hrs HW=303.32' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 1.04 cfs @ 1.62 fps)

Summary for Pond QSGR1: QSGR1

Inflow Area = 0.280 ac, 71.43% Impervious, Inflow Depth = 2.26" for Salem 10 yrs event
Inflow = 0.16 cfs @ 7.99 hrs, Volume= 0.053 af
Outflow = 0.01 cfs @ 24.10 hrs, Volume= 0.036 af, Atten= 92%, Lag= 966.7 min
Discarded = 0.01 cfs @ 24.10 hrs, Volume= 0.036 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 308.61' @ 24.10 hrs Surf.Area= 0.049 ac Storage= 0.037 af

Plug-Flow detention time= 1,055.4 min calculated for 0.036 af (68% of inflow)
Center-of-Mass det. time= 865.0 min (1,607.7 - 742.7)

Volume	Invert	Avail.Storage	Storage Description
#1	304.90'	0.125 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
304.90	0.022	0.0	0.000	0.000
305.00	0.022	40.0	0.001	0.001
306.40	0.022	40.0	0.012	0.013
306.50	0.022	0.1	0.000	0.013
307.90	0.022	0.1	0.000	0.013
308.00	0.022	100.0	0.002	0.015
309.00	0.066	100.0	0.044	0.059
310.00	0.066	100.0	0.066	0.125

Device	Routing	Invert	Outlet Devices
#1	Discarded	304.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	308.80'	**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=0.01 cfs @ 24.10 hrs HW=308.61' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=304.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QSGR2: QSGR2

Inflow Area = 0.560 ac, 71.43% Impervious, Inflow Depth = 1.13" for Salem 10 yrs event
Inflow = 0.16 cfs @ 7.99 hrs, Volume= 0.053 af
Outflow = 0.01 cfs @ 24.10 hrs, Volume= 0.036 af, Atten= 92%, Lag= 966.7 min
Discarded = 0.01 cfs @ 24.10 hrs, Volume= 0.036 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 306.61' @ 24.10 hrs Surf.Area= 0.049 ac Storage= 0.037 af

Plug-Flow detention time= 1,055.4 min calculated for 0.036 af (68% of inflow)
Center-of-Mass det. time= 865.0 min (1,607.7 - 742.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.125 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.022	0.0	0.000	0.000
303.00	0.022	40.0	0.001	0.001
304.40	0.022	40.0	0.012	0.013
304.50	0.022	0.1	0.000	0.013
305.90	0.022	0.1	0.000	0.013
306.00	0.022	100.0	0.002	0.015
307.00	0.066	100.0	0.044	0.059
308.00	0.066	100.0	0.066	0.125

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	306.80'	**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=0.01 cfs @ 24.10 hrs HW=306.61' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=302.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond STEGL10: STEGL10

Inflow Area = 0.390 ac, 69.23% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.22 cfs @ 7.91 hrs, Volume= 0.070 af
Outflow = 0.10 cfs @ 8.40 hrs, Volume= 0.053 af, Atten= 56%, Lag= 29.1 min
Discarded = 0.00 cfs @ 3.66 hrs, Volume= 0.004 af
Primary = 0.09 cfs @ 8.40 hrs, Volume= 0.049 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.06' @ 8.40 hrs Surf.Area= 500 sf Storage= 882 cf

Plug-Flow detention time= 341.1 min calculated for 0.053 af (76% of inflow)
Center-of-Mass det. time= 193.5 min (939.9 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,351 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	500	0.0	0	0
303.00	500	40.0	20	20
304.40	500	40.0	280	300
304.50	500	0.1	0	300
305.90	500	0.1	1	301
306.00	500	100.0	50	351
308.00	500	100.0	1,000	1,351

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 3.66 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.09 cfs @ 8.40 hrs HW=307.06' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.70 fps)

Summary for Pond STEGL2: STEGL2

Inflow Area = 0.630 ac, 69.84% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.35 cfs @ 7.91 hrs, Volume= 0.114 af
Outflow = 0.35 cfs @ 8.00 hrs, Volume= 0.107 af, Atten= 2%, Lag= 5.2 min
Discarded = 0.01 cfs @ 3.63 hrs, Volume= 0.022 af
Primary = 0.34 cfs @ 8.00 hrs, Volume= 0.084 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.15' @ 8.00 hrs Surf.Area= 500 sf Storage= 928 cf

Plug-Flow detention time= 281.9 min calculated for 0.107 af (94% of inflow)

Center-of-Mass det. time= 239.4 min (985.8 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,351 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	500	0.0	0	0
303.00	500	40.0	20	20
304.40	500	40.0	280	300
304.50	500	0.1	0	300
305.90	500	0.1	1	301
306.00	500	100.0	50	351
308.00	500	100.0	1,000	1,351

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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=0.01 cfs @ 3.63 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.34 cfs @ 8.00 hrs HW=307.15' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.34 cfs @ 1.10 fps)

Summary for Pond STEGL3: STEGL3

Inflow Area = 0.240 ac, 70.83% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.13 cfs @ 7.91 hrs, Volume= 0.043 af
Outflow = 0.13 cfs @ 7.94 hrs, Volume= 0.036 af, Atten= 0%, Lag= 1.6 min
Discarded = 0.00 cfs @ 3.44 hrs, Volume= 0.001 af
Primary = 0.13 cfs @ 7.94 hrs, Volume= 0.035 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.08' @ 7.94 hrs Surf.Area= 200 sf Storage= 357 cf

Plug-Flow detention time= 207.4 min calculated for 0.036 af (83% of inflow)
Center-of-Mass det. time= 100.6 min (847.0 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	540 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	200	0.0	0	0
303.00	200	40.0	8	8
304.40	200	40.0	112	120
304.50	200	0.1	0	120
305.90	200	0.1	0	120
306.00	200	100.0	20	140
308.00	200	100.0	400	540

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 3.44 hrs HW=302.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.13 cfs @ 7.94 hrs HW=307.08' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.13 cfs @ 0.81 fps)

Summary for Pond STEGL4: STEGL4

Inflow Area = 0.840 ac, 70.24% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.47 cfs @ 7.91 hrs, Volume= 0.152 af
Outflow = 0.42 cfs @ 8.05 hrs, Volume= 0.122 af, Atten= 11%, Lag= 8.3 min
Discarded = 0.00 cfs @ 3.49 hrs, Volume= 0.004 af
Primary = 0.42 cfs @ 8.05 hrs, Volume= 0.119 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.18' @ 8.05 hrs Surf.Area= 800 sf Storage= 1,503 cf

Plug-Flow detention time= 241.4 min calculated for 0.122 af (81% of inflow)
Center-of-Mass det. time= 120.7 min (867.1 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	2,161 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	800	0.0	0	0
303.00	800	40.0	32	32
304.40	800	40.0	448	480
304.50	800	0.1	0	480
305.90	800	0.1	1	481
306.00	800	100.0	80	561
308.00	800	100.0	1,600	2,161

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 3.49 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.42 cfs @ 8.05 hrs HW=307.18' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.42 cfs @ 1.18 fps)

Summary for Pond STEGL5: STEGL5

Inflow Area =	0.150 ac,	66.67% Impervious,	Inflow Depth = 2.08"	for Salem 10 yrs event
Inflow =	0.08 cfs @	7.92 hrs, Volume=	0.026 af	
Outflow =	0.08 cfs @	7.93 hrs, Volume=	0.025 af,	Atten= 0%, Lag= 0.8 min
Discarded =	0.00 cfs @	3.79 hrs, Volume=	0.004 af	
Primary =	0.08 cfs @	7.93 hrs, Volume=	0.020 af	

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.06' @ 7.93 hrs Surf.Area= 100 sf Storage= 176 cf

Plug-Flow detention time= 242.4 min calculated for 0.025 af (94% of inflow)
Center-of-Mass det. time= 205.9 min (960.4 - 754.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 3.79 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.07 cfs @ 7.93 hrs HW=307.06' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.66 fps)

Summary for Pond STEGL7: STEGL7

Inflow Area = 0.138 ac, 71.01% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.08 cfs @ 7.91 hrs, Volume= 0.025 af
Outflow = 0.08 cfs @ 7.93 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.8 min
Discarded = 0.00 cfs @ 3.58 hrs, Volume= 0.004 af
Primary = 0.08 cfs @ 7.93 hrs, Volume= 0.019 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.05' @ 7.93 hrs Surf.Area= 100 sf Storage= 176 cf

Plug-Flow detention time= 254.2 min calculated for 0.024 af (94% of inflow)
Center-of-Mass det. time= 215.8 min (962.2 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 3.58 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.07 cfs @ 7.93 hrs HW=307.05' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.65 fps)

Summary for Pond STEGL8: STEGL8

Inflow Area = 0.130 ac, 69.23% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.07 cfs @ 7.91 hrs, Volume= 0.023 af
Outflow = 0.07 cfs @ 7.93 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.8 min
Discarded = 0.00 cfs @ 3.43 hrs, Volume= 0.001 af
Primary = 0.07 cfs @ 7.93 hrs, Volume= 0.019 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.05' @ 7.93 hrs Surf.Area= 100 sf Storage= 175 cf

Plug-Flow detention time= 201.0 min calculated for 0.020 af (85% of inflow)

Center-of-Mass det. time= 108.2 min (854.6 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 3.43 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.07 cfs @ 7.93 hrs HW=307.05' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.64 fps)

Summary for Pond STEGL9: STEGL9

Inflow Area = 0.100 ac, 70.00% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.06 cfs @ 7.91 hrs, Volume= 0.018 af
Outflow = 0.05 cfs @ 8.01 hrs, Volume= 0.015 af, Atten= 2%, Lag= 5.7 min
Discarded = 0.00 cfs @ 3.61 hrs, Volume= 0.001 af
Primary = 0.05 cfs @ 8.01 hrs, Volume= 0.014 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.04' @ 8.01 hrs Surf.Area= 100 sf Storage= 175 cf

Plug-Flow detention time= 260.1 min calculated for 0.015 af (81% of inflow)
Center-of-Mass det. time= 142.2 min (888.6 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	370 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	100	0.0	0	0
299.00	100	40.0	4	4
300.40	100	40.0	56	60
300.50	100	0.1	0	60
301.90	100	0.1	0	60
302.00	100	100.0	10	70
304.00	100	100.0	200	270
305.00	100	100.0	100	370

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 3.61 hrs HW=298.96' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.05 cfs @ 8.01 hrs HW=303.04' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.59 fps)

Summary for Pond STEGR2: STEGR2

Inflow Area = 1.670 ac, 70.06% Impervious, Inflow Depth = 1.85" for Salem 10 yrs event
Inflow = 0.91 cfs @ 7.97 hrs, Volume= 0.257 af
Outflow = 0.20 cfs @ 10.93 hrs, Volume= 0.236 af, Atten= 78%, Lag= 177.4 min
Discarded = 0.04 cfs @ 10.93 hrs, Volume= 0.115 af
Primary = 0.16 cfs @ 10.93 hrs, Volume= 0.121 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 304.99' @ 10.93 hrs Surf.Area= 3,349 sf Storage= 3,676 cf

Plug-Flow detention time= 494.0 min calculated for 0.236 af (92% of inflow)
Center-of-Mass det. time= 442.4 min (1,230.8 - 788.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	12,939 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
300.90	1,680	0.0	0	0
301.00	1,680	40.0	67	67
302.40	1,680	40.0	941	1,008
302.50	1,680	0.1	0	1,008
303.90	1,680	0.1	2	1,011
304.00	1,680	100.0	168	1,179
306.00	5,040	100.0	6,720	7,899
307.00	5,040	100.0	5,040	12,939

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	304.90'	**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=0.04 cfs @ 10.93 hrs HW=304.99' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.16 cfs @ 10.93 hrs HW=304.99' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.16 cfs @ 0.86 fps)

Summary for Pond STEGR3: STEGR3

Inflow Area = 5.768 ac, 70.09% Impervious, Inflow Depth = 1.10" for Salem 10 yrs event
Inflow = 0.98 cfs @ 8.02 hrs, Volume= 0.529 af
Outflow = 0.44 cfs @ 10.94 hrs, Volume= 0.465 af, Atten= 55%, Lag= 174.8 min
Discarded = 0.00 cfs @ 10.94 hrs, Volume= 0.013 af
Primary = 0.44 cfs @ 10.94 hrs, Volume= 0.452 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.08' @ 10.94 hrs Surf.Area= 3,185 sf Storage= 3,624 cf

Plug-Flow detention time= 171.4 min calculated for 0.465 af (88% of inflow)
Center-of-Mass det. time= 104.6 min (973.1 - 868.4)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	11,783 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	1,530	0.0	0	0
299.00	1,530	40.0	61	61
300.40	1,530	40.0	857	918
300.50	1,530	0.1	0	918
301.90	1,530	0.1	2	920
302.00	1,530	100.0	153	1,073
304.00	4,590	100.0	6,120	7,193
305.00	4,590	100.0	4,590	11,783

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	302.90'	**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 @ 10.94 hrs HW=303.08' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.43 cfs @ 10.94 hrs HW=303.08' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.43 cfs @ 1.19 fps)

Summary for Pond STELG6: STELG6

Inflow Area = 0.310 ac, 70.97% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.17 cfs @ 7.91 hrs, Volume= 0.056 af
Outflow = 0.08 cfs @ 8.39 hrs, Volume= 0.042 af, Atten= 56%, Lag= 28.6 min
Discarded = 0.00 cfs @ 3.74 hrs, Volume= 0.004 af
Primary = 0.08 cfs @ 8.39 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.06' @ 8.39 hrs Surf.Area= 400 sf Storage= 703 cf

Plug-Flow detention time= 341.2 min calculated for 0.042 af (76% of inflow)
Center-of-Mass det. time= 193.1 min (939.5 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	1,481 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	400	0.0	0	0
299.00	400	40.0	16	16
300.40	400	40.0	224	240
300.50	400	0.1	0	240
301.90	400	0.1	1	241
302.00	400	100.0	40	281
304.00	400	100.0	800	1,081
305.00	400	100.0	400	1,481

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 3.74 hrs HW=298.96' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.07 cfs @ 8.39 hrs HW=303.06' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.66 fps)

Summary for Pond UEGL3: UEGL3

Inflow Area = 0.470 ac, 70.21% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.26 cfs @ 7.91 hrs, Volume= 0.085 af
Outflow = 0.10 cfs @ 8.73 hrs, Volume= 0.076 af, Atten= 61%, Lag= 49.2 min
Discarded = 0.01 cfs @ 3.95 hrs, Volume= 0.027 af
Primary = 0.10 cfs @ 8.73 hrs, Volume= 0.050 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Peak Elev= 307.06' @ 8.73 hrs Surf.Area= 600 sf Storage= 1,059 cf

Plug-Flow detention time= 455.3 min calculated for 0.076 af (90% of inflow)
Center-of-Mass det. time= 388.2 min (1,134.6 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,621 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	600	0.0	0	0
303.00	600	40.0	24	24
304.40	600	40.0	336	360
304.50	600	0.1	0	360
305.90	600	0.1	1	361
306.00	600	100.0	60	421
308.00	600	100.0	1,200	1,621

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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=0.01 cfs @ 3.95 hrs HW=302.95' (Free Discharge)
└—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.09 cfs @ 8.73 hrs HW=307.06' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.71 fps)

Summary for Pond UEGL4: UEGL4

Inflow Area = 0.120 ac, 66.67% Impervious, Inflow Depth = 2.08" for Salem 10 yrs event
Inflow = 0.06 cfs @ 7.92 hrs, Volume= 0.021 af
Outflow = 0.06 cfs @ 7.98 hrs, Volume= 0.019 af, Atten= 1%, Lag= 3.7 min
Discarded = 0.00 cfs @ 3.92 hrs, Volume= 0.004 af
Primary = 0.06 cfs @ 7.98 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.05' @ 7.98 hrs Surf.Area= 100 sf Storage= 175 cf

Plug-Flow detention time= 302.8 min calculated for 0.019 af (93% of inflow)
Center-of-Mass det. time= 257.5 min (1,012.0 - 754.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 3.92 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.06 cfs @ 7.98 hrs HW=307.05' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.06 cfs @ 0.61 fps)

Summary for Pond UEGL5: UEGL5

Inflow Area = 0.170 ac, 70.59% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.10 cfs @ 7.91 hrs, Volume= 0.031 af
Outflow = 0.10 cfs @ 7.93 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.8 min
Discarded = 0.00 cfs @ 3.47 hrs, Volume= 0.004 af
Primary = 0.09 cfs @ 7.93 hrs, Volume= 0.025 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.06' @ 7.93 hrs Surf.Area= 100 sf Storage= 176 cf

Plug-Flow detention time= 207.5 min calculated for 0.029 af (95% of inflow)
Center-of-Mass det. time= 175.9 min (922.3 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 3.47 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.09 cfs @ 7.93 hrs HW=307.06' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.70 fps)

Summary for Pond UOC1: UOC1

Inflow Area = 1.750 ac, 65.71% Impervious, Inflow Depth = 1.36" for Salem 10 yrs event
Inflow = 0.60 cfs @ 8.01 hrs, Volume= 0.198 af
Outflow = 0.14 cfs @ 10.82 hrs, Volume= 0.138 af, Atten= 76%, Lag= 169.0 min
Discarded = 0.00 cfs @ 10.82 hrs, Volume= 0.016 af
Primary = 0.14 cfs @ 10.82 hrs, Volume= 0.122 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 305.33' @ 10.82 hrs Surf.Area= 0.093 ac Storage= 0.075 af

Plug-Flow detention time= 457.1 min calculated for 0.138 af (70% of inflow)
Center-of-Mass det. time= 280.4 min (1,046.8 - 766.4)

Volume	Invert	Avail.Storage	Storage Description
#1	301.90'	0.293 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
301.90	0.069	0.0	0.000	0.000
302.00	0.069	40.0	0.003	0.003
303.40	0.069	40.0	0.039	0.041
303.50	0.069	0.1	0.000	0.041
304.90	0.069	0.1	0.000	0.042
305.00	0.069	100.0	0.007	0.048
306.00	0.140	100.0	0.104	0.153
307.00	0.140	100.0	0.140	0.293

Device	Routing	Invert	Outlet Devices
#1	Discarded	301.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	305.25'	**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 @ 10.82 hrs HW=305.33' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.13 cfs @ 10.82 hrs HW=305.33' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.13 cfs @ 0.81 fps)

Summary for Pond UOC2: UOC2

Inflow Area = 7.610 ac, 67.67% Impervious, Inflow Depth = 1.21" for Salem 10 yrs event
Inflow = 0.87 cfs @ 9.89 hrs, Volume= 0.770 af
Outflow = 0.71 cfs @ 11.67 hrs, Volume= 0.628 af, Atten= 19%, Lag= 106.5 min
Discarded = 0.01 cfs @ 8.52 hrs, Volume= 0.020 af
Primary = 0.70 cfs @ 11.67 hrs, Volume= 0.608 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 305.25' @ 11.67 hrs Surf.Area= 0.110 ac Storage= 0.179 af

Plug-Flow detention time= 240.8 min calculated for 0.628 af (82% of inflow)
Center-of-Mass det. time= 142.2 min (1,051.4 - 909.2)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.261 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.055	0.0	0.000	0.000
301.00	0.055	40.0	0.002	0.002
302.40	0.055	40.0	0.031	0.033
302.50	0.055	0.1	0.000	0.033
303.90	0.055	0.1	0.000	0.033
304.00	0.110	100.0	0.008	0.041
306.00	0.110	100.0	0.220	0.261

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 8.52 hrs HW=304.00' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.70 cfs @ 11.67 hrs HW=305.25' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.70 cfs @ 1.41 fps)

Summary for Pond UOC3: UOC3

Inflow Area = 8.820 ac, 67.91% Impervious, Inflow Depth = 1.08" for Salem 10 yrs event
Inflow = 0.83 cfs @ 11.58 hrs, Volume= 0.792 af
Outflow = 0.82 cfs @ 11.93 hrs, Volume= 0.716 af, Atten= 2%, Lag= 20.6 min
Discarded = 0.00 cfs @ 11.93 hrs, Volume= 0.012 af
Primary = 0.81 cfs @ 11.93 hrs, Volume= 0.705 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.27' @ 11.93 hrs Surf.Area= 3,003 sf Storage= 4,319 cf

Plug-Flow detention time= 129.4 min calculated for 0.716 af (90% of inflow)

Center-of-Mass det. time= 79.3 min (1,056.7 - 977.4)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	10,443 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	1,800	0.0	0	0
299.00	1,800	40.0	72	72
300.40	1,800	40.0	1,008	1,080
300.50	1,800	0.1	0	1,080
301.90	1,800	0.1	3	1,083
302.00	1,800	100.0	180	1,263
304.00	3,690	100.0	5,490	6,753
305.00	3,690	100.0	3,690	10,443

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 11.93 hrs HW=303.27' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.81 cfs @ 11.93 hrs HW=303.27' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.81 cfs @ 1.48 fps)

Summary for Pond USGR1: USGR1

Inflow Area = 1.120 ac, 69.64% Impervious, Inflow Depth = 1.65" for Salem 10 yrs event
Inflow = 0.36 cfs @ 7.96 hrs, Volume= 0.154 af
Outflow = 0.10 cfs @ 13.35 hrs, Volume= 0.142 af, Atten= 71%, Lag= 323.1 min
Discarded = 0.03 cfs @ 13.35 hrs, Volume= 0.092 af
Primary = 0.07 cfs @ 13.35 hrs, Volume= 0.050 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 304.95' @ 13.35 hrs Surf.Area= 2,958 sf Storage= 2,604 cf

Plug-Flow detention time= 571.9 min calculated for 0.142 af (92% of inflow)
Center-of-Mass det. time= 521.6 min (1,328.7 - 807.1)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	8,876 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
300.90	1,020	0.0	0	0
301.00	1,020	40.0	41	41
302.40	1,020	40.0	571	612
302.50	1,020	0.1	0	612
303.90	1,020	0.1	1	614
304.00	1,020	100.0	102	716
305.00	3,060	100.0	2,040	2,756
307.00	3,060	100.0	6,120	8,876

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	304.90'	**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=0.03 cfs @ 13.35 hrs HW=304.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.06 cfs @ 13.35 hrs HW=304.95' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.06 cfs @ 0.62 fps)

Summary for Pond VEGL2: VEGL2

Inflow Area = 0.390 ac, 69.23% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.22 cfs @ 7.91 hrs, Volume= 0.070 af
Outflow = 0.09 cfs @ 8.71 hrs, Volume= 0.063 af, Atten= 61%, Lag= 48.1 min
Discarded = 0.01 cfs @ 3.95 hrs, Volume= 0.022 af
Primary = 0.08 cfs @ 8.71 hrs, Volume= 0.041 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.06' @ 8.71 hrs Surf.Area= 500 sf Storage= 879 cf

Plug-Flow detention time= 456.2 min calculated for 0.063 af (90% of inflow)
Center-of-Mass det. time= 389.2 min (1,135.6 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,351 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	500	0.0	0	0
303.00	500	40.0	20	20
304.40	500	40.0	280	300
304.50	500	0.1	0	300
305.90	500	0.1	1	301
306.00	500	100.0	50	351
308.00	500	100.0	1,000	1,351

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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=0.01 cfs @ 3.95 hrs HW=302.95' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.07 cfs @ 8.71 hrs HW=307.06' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.66 fps)

Summary for Pond VSGR2: VSGR2

Inflow Area = 0.700 ac, 70.00% Impervious, Inflow Depth = 1.66" for Salem 10 yrs event
Inflow = 0.17 cfs @ 7.91 hrs, Volume= 0.097 af
Outflow = 0.05 cfs @ 19.05 hrs, Volume= 0.083 af, Atten= 72%, Lag= 668.2 min
Discarded = 0.03 cfs @ 19.05 hrs, Volume= 0.073 af
Primary = 0.02 cfs @ 19.05 hrs, Volume= 0.010 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 304.93' @ 19.05 hrs Surf.Area= 2,196 sf Storage= 2,344 cf

Plug-Flow detention time= 812.4 min calculated for 0.083 af (86% of inflow)
Center-of-Mass det. time= 727.0 min (1,530.4 - 803.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	8,780 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
300.90	1,140	0.0	0	0
301.00	1,140	40.0	46	46
302.40	1,140	40.0	638	684
302.50	1,140	0.1	0	684
303.90	1,140	0.1	2	686
304.00	1,140	100.0	114	800
306.00	3,420	100.0	4,560	5,360
307.00	3,420	100.0	3,420	8,780

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	304.90'	**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=0.03 cfs @ 19.05 hrs HW=304.93' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.02 cfs @ 19.05 hrs HW=304.93' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.45 fps)

Summary for Pond ZGR1: ZGR1

Inflow Area = 4.760 ac, 68.07% Impervious, Inflow Depth = 1.84" for Salem 10 yrs event
Inflow = 2.34 cfs @ 7.97 hrs, Volume= 0.730 af
Outflow = 0.69 cfs @ 9.28 hrs, Volume= 0.656 af, Atten= 70%, Lag= 78.7 min
Discarded = 0.05 cfs @ 8.75 hrs, Volume= 0.150 af
Primary = 0.64 cfs @ 9.28 hrs, Volume= 0.506 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.03' @ 9.28 hrs Surf.Area= 0.200 ac Storage= 0.187 af

Plug-Flow detention time= 337.8 min calculated for 0.656 af (90% of inflow)
Center-of-Mass det. time= 274.4 min (1,061.3 - 786.9)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.381 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.067	0.0	0.000	0.000
303.00	0.067	40.0	0.003	0.003
304.40	0.067	40.0	0.038	0.040
304.50	0.067	0.1	0.000	0.040
305.90	0.067	0.1	0.000	0.040
306.00	0.067	100.0	0.007	0.047
307.00	0.200	100.0	0.134	0.181
308.00	0.200	100.0	0.200	0.381

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	306.80'	**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=0.05 cfs @ 8.75 hrs HW=307.00' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.64 cfs @ 9.28 hrs HW=307.03' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.64 cfs @ 1.37 fps)

Summary for Pond ZLG123: ZLG123

Inflow Area = 1.700 ac, 70.00% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.95 cfs @ 7.91 hrs, Volume= 0.307 af
Outflow = 0.93 cfs @ 8.01 hrs, Volume= 0.275 af, Atten= 2%, Lag= 5.8 min
Discarded = 0.01 cfs @ 3.45 hrs, Volume= 0.027 af
Primary = 0.92 cfs @ 8.01 hrs, Volume= 0.248 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Peak Elev= 308.30' @ 8.01 hrs Surf.Area= 1,200 sf Storage= 2,397 cf

Plug-Flow detention time= 219.4 min calculated for 0.275 af (89% of inflow)
Center-of-Mass det. time= 150.6 min (897.0 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	3,242 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
303.90	1,200	0.0	0	0
304.00	1,200	40.0	48	48
305.40	1,200	40.0	672	720
305.50	1,200	0.1	0	720
306.90	1,200	0.1	2	722
307.00	1,200	100.0	120	842
309.00	1,200	100.0	2,400	3,242

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	308.00'	**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=0.01 cfs @ 3.45 hrs HW=303.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.92 cfs @ 8.01 hrs HW=308.30' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.92 cfs @ 1.55 fps)

Summary for Pond ZLG14: ZLG14

Inflow Area = 0.250 ac, 70.00% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.14 cfs @ 7.91 hrs, Volume= 0.045 af
Outflow = 0.02 cfs @ 14.36 hrs, Volume= 0.020 af, Atten= 83%, Lag= 386.7 min
Discarded = 0.00 cfs @ 4.19 hrs, Volume= 0.003 af
Primary = 0.02 cfs @ 14.36 hrs, Volume= 0.016 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 301.02' @ 14.36 hrs Surf.Area= 700 sf Storage= 1,204 cf

Plug-Flow detention time= 725.0 min calculated for 0.020 af (43% of inflow)
Center-of-Mass det. time= 438.9 min (1,185.3 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	296.90'	2,591 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
296.90	700	0.0	0	0
297.00	700	40.0	28	28
298.40	700	40.0	392	420
298.50	700	0.1	0	420
299.90	700	0.1	1	421
300.00	700	100.0	70	491
302.00	700	100.0	1,400	1,891
303.00	700	100.0	700	2,591

Device	Routing	Invert	Outlet Devices
#1	Discarded	296.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	301.00'	**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 @ 4.19 hrs HW=296.96' (Free Discharge)
└—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.01 cfs @ 14.36 hrs HW=301.02' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.38 fps)

Summary for Pond ZLG4: ZLG4

Inflow Area = 0.440 ac, 59.09% Impervious, Inflow Depth = 1.91" for Salem 10 yrs event
Inflow = 0.21 cfs @ 7.93 hrs, Volume= 0.070 af
Outflow = 0.21 cfs @ 7.95 hrs, Volume= 0.066 af, Atten= 0%, Lag= 1.0 min
Discarded = 0.00 cfs @ 4.02 hrs, Volume= 0.004 af
Primary = 0.21 cfs @ 7.95 hrs, Volume= 0.062 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 308.11' @ 7.95 hrs Surf.Area= 0.004 ac Storage= 0.007 af

Plug-Flow detention time= 133.9 min calculated for 0.066 af (93% of inflow)
Center-of-Mass det. time= 90.8 min (860.7 - 769.9)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	0.011 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
303.90	0.004	0.0	0.000	0.000
304.00	0.004	40.0	0.000	0.000
305.40	0.004	40.0	0.002	0.002
305.50	0.004	0.1	0.000	0.002
306.90	0.004	0.1	0.000	0.002
307.00	0.004	100.0	0.000	0.003
309.00	0.004	100.0	0.008	0.011

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	308.00'	**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 @ 4.02 hrs HW=303.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.21 cfs @ 7.95 hrs HW=308.11' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.21 cfs @ 0.93 fps)

Summary for Pond ZLG5: ZLG5

Inflow Area = 0.950 ac, 69.47% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.53 cfs @ 7.91 hrs, Volume= 0.172 af
Outflow = 0.53 cfs @ 7.98 hrs, Volume= 0.153 af, Atten= 1%, Lag= 4.1 min
Discarded = 0.00 cfs @ 3.47 hrs, Volume= 0.016 af
Primary = 0.52 cfs @ 7.98 hrs, Volume= 0.137 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.20' @ 7.98 hrs Surf.Area= 0.016 ac Storage= 0.030 af

Plug-Flow detention time= 224.9 min calculated for 0.153 af (89% of inflow)
Center-of-Mass det. time= 153.5 min (900.0 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.043 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.016	0.0	0.000	0.000
303.00	0.016	40.0	0.001	0.001
304.40	0.016	40.0	0.009	0.010
304.50	0.016	0.1	0.000	0.010
305.90	0.016	0.1	0.000	0.010
306.00	0.016	100.0	0.002	0.011
308.00	0.016	100.0	0.032	0.043

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 3.47 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.52 cfs @ 7.98 hrs HW=307.20' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.52 cfs @ 1.27 fps)

Summary for Pond ZLG6: ZLG6

Inflow Area = 1.070 ac, 70.09% Impervious, Inflow Depth = 2.17" for Salem 10 yrs event
Inflow = 0.60 cfs @ 7.91 hrs, Volume= 0.193 af
Outflow = 0.60 cfs @ 7.96 hrs, Volume= 0.175 af, Atten= 1%, Lag= 3.1 min
Discarded = 0.00 cfs @ 3.42 hrs, Volume= 0.016 af
Primary = 0.59 cfs @ 7.96 hrs, Volume= 0.159 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.22' @ 7.96 hrs Surf.Area= 700 sf Storage= 1,346 cf

Plug-Flow detention time= 201.3 min calculated for 0.175 af (90% of inflow)
Center-of-Mass det. time= 137.2 min (883.7 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,891 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	700	0.0	0	0
303.00	700	40.0	28	28
304.40	700	40.0	392	420
304.50	700	0.1	0	420
305.90	700	0.1	1	421
306.00	700	100.0	70	491
308.00	700	100.0	1,400	1,891

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 3.42 hrs HW=302.95' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.59 cfs @ 7.96 hrs HW=307.22' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.59 cfs @ 1.33 fps)

Summary for Pond ZLG7: ZLG7

Inflow Area = 0.150 ac, 73.33% Impervious, Inflow Depth = 2.26" for Salem 10 yrs event
Inflow = 0.09 cfs @ 7.91 hrs, Volume= 0.028 af
Outflow = 0.09 cfs @ 7.92 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.8 min
Discarded = 0.00 cfs @ 3.14 hrs, Volume= 0.002 af
Primary = 0.09 cfs @ 7.92 hrs, Volume= 0.023 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.06' @ 7.92 hrs Surf.Area= 100 sf Storage= 176 cf

Plug-Flow detention time= 193.6 min calculated for 0.026 af (91% of inflow)

Center-of-Mass det. time= 130.7 min (868.7 - 738.1)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 3.14 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.08 cfs @ 7.92 hrs HW=307.06' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.08 cfs @ 0.68 fps)

Summary for Pond ZLG9: ZLG9

Inflow Area = 0.440 ac, 59.09% Impervious, Inflow Depth = 1.91" for Salem 10 yrs event
Inflow = 0.21 cfs @ 7.93 hrs, Volume= 0.070 af
Outflow = 0.04 cfs @ 12.58 hrs, Volume= 0.059 af, Atten= 80%, Lag= 279.0 min
Discarded = 0.01 cfs @ 5.04 hrs, Volume= 0.034 af
Primary = 0.03 cfs @ 12.58 hrs, Volume= 0.025 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 308.03' @ 12.58 hrs Surf.Area= 0.018 ac Storage= 0.031 af

Plug-Flow detention time= 715.3 min calculated for 0.059 af (84% of inflow)
Center-of-Mass det. time= 615.4 min (1,385.3 - 769.9)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	0.049 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
303.90	0.018	0.0	0.000	0.000
304.00	0.018	40.0	0.001	0.001
305.40	0.018	40.0	0.010	0.011
305.50	0.018	0.1	0.000	0.011
306.90	0.018	0.1	0.000	0.011
307.00	0.018	100.0	0.002	0.013
309.00	0.018	100.0	0.036	0.049

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	308.00'	**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=0.01 cfs @ 5.04 hrs HW=303.95' (Free Discharge)
└—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.03 cfs @ 12.58 hrs HW=308.03' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.03 cfs @ 0.51 fps)

Summary for Pond ZRG2: ZGR2

Inflow Area = 5.130 ac, 68.03% Impervious, Inflow Depth = 1.34" for Salem 10 yrs event
Inflow = 0.70 cfs @ 9.24 hrs, Volume= 0.571 af
Outflow = 0.69 cfs @ 9.51 hrs, Volume= 0.553 af, Atten= 2%, Lag= 16.4 min
Discarded = 0.01 cfs @ 9.09 hrs, Volume= 0.037 af
Primary = 0.67 cfs @ 9.51 hrs, Volume= 0.516 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 306.04' @ 9.51 hrs Surf.Area= 0.049 ac Storage= 0.047 af

Plug-Flow detention time= 101.2 min calculated for 0.553 af (97% of inflow)
Center-of-Mass det. time= 82.0 min (978.2 - 896.2)

Volume	Invert	Avail.Storage	Storage Description
#1	301.90'	0.094 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
301.90	0.017	0.0	0.000	0.000
302.00	0.017	40.0	0.001	0.001
303.40	0.017	40.0	0.010	0.010
303.50	0.017	0.1	0.000	0.010
304.90	0.017	0.1	0.000	0.010
305.00	0.017	100.0	0.002	0.012
306.00	0.049	100.0	0.033	0.045
307.00	0.049	100.0	0.049	0.094

Device	Routing	Invert	Outlet Devices
#1	Discarded	301.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	305.80'	**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=0.01 cfs @ 9.09 hrs HW=306.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.67 cfs @ 9.51 hrs HW=306.04' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.67 cfs @ 1.39 fps)

Summary for Link STRONG: STRONG

Inflow Area = 19.498 ac, 64.91% Impervious, Inflow Depth = 0.92" for Salem 10 yrs event
Inflow = 1.53 cfs @ 13.66 hrs, Volume= 1.501 af
Primary = 1.53 cfs @ 13.66 hrs, Volume= 1.501 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link Z1st: SA1

Inflow Area = 9.550 ac, 68.06% Impervious, Inflow Depth = 0.97" for Salem 10 yrs event
Inflow = 0.84 cfs @ 11.93 hrs, Volume= 0.772 af
Primary = 0.84 cfs @ 11.93 hrs, Volume= 0.772 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link Z1st2: Z1st2

Inflow Area = 2.510 ac, 62.75% Impervious, Inflow Depth = 1.69" for Salem 10 yrs event
Inflow = 0.99 cfs @ 7.94 hrs, Volume= 0.354 af
Primary = 0.99 cfs @ 7.94 hrs, Volume= 0.354 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link ZL: S

Inflow Area = 6.880 ac, 67.44% Impervious, Inflow Depth = 1.11" for Salem 10 yrs event
Inflow = 0.77 cfs @ 9.95 hrs, Volume= 0.638 af
Primary = 0.77 cfs @ 9.95 hrs, Volume= 0.638 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link ZLL: SA

Inflow Area = 8.820 ac, 67.91% Impervious, Inflow Depth = 1.08" for Salem 10 yrs event
Inflow = 0.83 cfs @ 11.58 hrs, Volume= 0.792 af
Primary = 0.83 cfs @ 11.58 hrs, Volume= 0.792 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A1: 1A1 Runoff Area=0.210 ac 71.43% Impervious Runoff Depth=3.40"
Tc=5.0 min CN=91 Runoff=0.19 cfs 0.060 af

Subcatchment 1A1up: 1A1up Runoff Area=0.280 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=200' Slope=0.1900 '/' Tc=14.6 min CN=72 Runoff=0.10 cfs 0.041 af

Subcatchment 1stR1: 1stR1 Runoff Area=0.250 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.22 cfs 0.069 af

Subcatchment 1stR2: 1stR2 Runoff Area=0.250 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.22 cfs 0.069 af

Subcatchment 1stREGB: 1stREGB Runoff Area=0.890 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=350' Slope=0.0800 '/' Tc=22.4 min CN=72 Runoff=0.29 cfs 0.130 af

Subcatchment QSR1: QSR1 Runoff Area=0.280 ac 71.43% Impervious Runoff Depth=3.40"
Tc=10.0 min CN=91 Runoff=0.25 cfs 0.079 af

Subcatchment QSR2: QSR2 Runoff Area=0.280 ac 71.43% Impervious Runoff Depth=3.40"
Tc=10.0 min CN=91 Runoff=0.25 cfs 0.079 af

Subcatchment SA4: SA2 Runoff Area=0.130 ac 60.00% Impervious Runoff Depth=3.10"
Tc=5.0 min CN=88 Runoff=0.10 cfs 0.034 af

Subcatchment SA5: SA5 Runoff Area=0.120 ac 70.83% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.10 cfs 0.033 af

Subcatchment SA6: SA6 Runoff Area=0.110 ac 72.73% Impervious Runoff Depth=3.40"
Tc=5.0 min CN=91 Runoff=0.10 cfs 0.031 af

Subcatchment SA7: SA7 Runoff Area=0.240 ac 70.83% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.21 cfs 0.066 af

Subcatchment SR2: SR2 Runoff Area=0.190 ac 68.42% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.16 cfs 0.052 af

Subcatchment STEL10: STEL10 Runoff Area=0.390 ac 69.23% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.34 cfs 0.107 af

Subcatchment STEL2: STEL2 Runoff Area=0.630 ac 69.84% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.54 cfs 0.173 af

Subcatchment STEL3: STEL3 Runoff Area=0.240 ac 70.83% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.21 cfs 0.066 af

Subcatchment STEL4: STEL4 Runoff Area=0.840 ac 70.24% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.73 cfs 0.231 af

Subcatchment STEL5: STEL5 Runoff Area=0.150 ac 66.67% Impervious Runoff Depth=3.20"
Tc=5.0 min CN=89 Runoff=0.13 cfs 0.040 af

Subcatchment STEL6: STEL6 Runoff Area=0.310 ac 70.97% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.27 cfs 0.085 af

Subcatchment STEL7: STEL7 Runoff Area=0.138 ac 71.01% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.12 cfs 0.038 af

Subcatchment STEL8: STEL8 Runoff Area=0.130 ac 69.23% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.11 cfs 0.036 af

Subcatchment STEL9: STEL9 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.09 cfs 0.028 af

Subcatchment STER2: STER2 Runoff Area=0.650 ac 70.77% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.56 cfs 0.179 af

Subcatchment STER3: STER3 Runoff Area=0.550 ac 70.91% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.48 cfs 0.151 af

Subcatchment STRONG -PRE: STONG PRE Runoff Area=19.230 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=1,900' Slope=0.0600 '/' Tc=43.9 min CN=72 Runoff=5.24 cfs 2.799 af

Subcatchment UEL3: UEL3 Runoff Area=0.470 ac 70.21% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.41 cfs 0.129 af

Subcatchment UEL4: UEL4 Runoff Area=0.120 ac 66.67% Impervious Runoff Depth=3.20"
Tc=5.0 min CN=89 Runoff=0.10 cfs 0.032 af

Subcatchment UEL5: UEL5 Runoff Area=0.170 ac 70.59% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.15 cfs 0.047 af

Subcatchment USR1: USR1 Runoff Area=0.360 ac 69.44% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.31 cfs 0.099 af

Subcatchment VEL2: VEL2 Runoff Area=0.390 ac 69.23% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.34 cfs 0.107 af

Subcatchment VSR2: VSR2 Runoff Area=0.310 ac 70.97% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.27 cfs 0.085 af

Subcatchment ZA1: ZA1 Runoff Area=0.260 ac 69.23% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.22 cfs 0.072 af

Subcatchment ZA2: ZA2 Runoff Area=0.280 ac 71.43% Impervious Runoff Depth=3.40"
Tc=5.0 min CN=91 Runoff=0.25 cfs 0.079 af

Subcatchment ZA3: ZA3 Runoff Area=0.230 ac 69.57% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.20 cfs 0.063 af

Subcatchment ZA4: ZA4 Runoff Area=0.140 ac 71.43% Impervious Runoff Depth=3.40"
Tc=5.0 min CN=91 Runoff=0.13 cfs 0.040 af

Subcatchment ZA5: ZA5 Runoff Area=0.140 ac 71.43% Impervious Runoff Depth=3.40"
Tc=5.0 min CN=91 Runoff=0.13 cfs 0.040 af

Subcatchment ZA6: ZA6 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.09 cfs 0.028 af

Subcatchment ZA7: ZA7 Runoff Area=0.900 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.78 cfs 0.248 af

Subcatchment ZA8: ZA8 Runoff Area=0.270 ac 70.37% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.23 cfs 0.074 af

Subcatchment ZL10: ZL10 Runoff Area=0.440 ac 59.09% Impervious Runoff Depth=3.01"
Tc=10.0 min CN=87 Runoff=0.34 cfs 0.110 af

Subcatchment ZL11: ZL11 Runoff Area=0.380 ac 71.05% Impervious Runoff Depth=3.30"
Tc=10.0 min CN=90 Runoff=0.33 cfs 0.105 af

Subcatchment ZL12: ZL12 Runoff Area=0.180 ac 66.67% Impervious Runoff Depth=3.20"
Tc=5.0 min CN=89 Runoff=0.15 cfs 0.048 af

Subcatchment ZL123: ZL123 Runoff Area=1.700 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=1.47 cfs 0.468 af

Subcatchment ZL13: ZL13 Runoff Area=0.730 ac 69.86% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.63 cfs 0.201 af

Subcatchment ZL14: ZL14 Runoff Area=0.250 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.22 cfs 0.069 af

Subcatchment ZL4: ZL4 Runoff Area=0.440 ac 59.09% Impervious Runoff Depth=3.01"
Tc=5.0 min CN=87 Runoff=0.34 cfs 0.110 af

Subcatchment ZL5: ZL5 Runoff Area=0.950 ac 69.47% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.82 cfs 0.261 af

Subcatchment ZL6: ZL6 Runoff Area=1.070 ac 70.09% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.93 cfs 0.294 af

Subcatchment ZL7: ZL7 Runoff Area=0.150 ac 73.33% Impervious Runoff Depth=3.40"
Tc=5.0 min CN=91 Runoff=0.13 cfs 0.043 af

Subcatchment ZL8: ZL8 Runoff Area=0.370 ac 59.46% Impervious Runoff Depth=3.01"
Tc=10.0 min CN=87 Runoff=0.28 cfs 0.093 af

Subcatchment ZL9: ZL9 Runoff Area=0.440 ac 59.09% Impervious Runoff Depth=3.01"
Tc=5.0 min CN=87 Runoff=0.34 cfs 0.110 af

Subcatchment ZR1: ZR1 Runoff Area=0.900 ac 70.00% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=90 Runoff=0.78 cfs 0.248 af

Pond 1stGR1: 1stGr1 Peak Elev=301.03' Storage=1,497 cf Inflow=0.22 cfs 0.069 af
Discarded=0.00 cfs 0.006 af Primary=0.04 cfs 0.033 af Outflow=0.04 cfs 0.038 af

Pond 1stGR2: 1stGr2 Peak Elev=303.16' Storage=1,679 cf Inflow=0.49 cfs 0.169 af
Discarded=0.00 cfs 0.006 af Primary=0.38 cfs 0.133 af Outflow=0.38 cfs 0.139 af

Pond 1stREG.B: 1st REG.B Peak Elev=303.59' Storage=15,014 cf Inflow=3.24 cfs 2.339 af
Discarded=0.01 cfs 0.031 af Primary=2.79 cfs 2.074 af Outflow=2.80 cfs 2.105 af

Pond QSGR1: QSGR1 Peak Elev=308.82' Storage=0.048 af Inflow=0.25 cfs 0.079 af
Discarded=0.01 cfs 0.045 af Primary=0.02 cfs 0.011 af Outflow=0.03 cfs 0.056 af

Pond QSGR2: QSGR2 Peak Elev=306.83' Storage=0.049 af Inflow=0.25 cfs 0.091 af
Discarded=0.01 cfs 0.045 af Primary=0.04 cfs 0.022 af Outflow=0.05 cfs 0.067 af

Pond STEGL10: STEGL10 Peak Elev=307.15' Storage=927 cf Inflow=0.34 cfs 0.107 af
Discarded=0.00 cfs 0.005 af Primary=0.33 cfs 0.086 af Outflow=0.34 cfs 0.090 af

Pond STEGL2: STEGL2 Peak Elev=307.21' Storage=955 cf Inflow=0.54 cfs 0.173 af
Discarded=0.01 cfs 0.023 af Primary=0.54 cfs 0.143 af Outflow=0.54 cfs 0.166 af

Pond STEGL3: STEGL3 Peak Elev=307.11' Storage=362 cf Inflow=0.21 cfs 0.066 af
Discarded=0.00 cfs 0.001 af Primary=0.21 cfs 0.058 af Outflow=0.21 cfs 0.059 af

Pond STEGL4: STEGL4 Peak Elev=307.25' Storage=1,563 cf Inflow=0.73 cfs 0.231 af
Discarded=0.00 cfs 0.004 af Primary=0.72 cfs 0.198 af Outflow=0.72 cfs 0.202 af

Pond STEGL5: STEGL5 Peak Elev=307.08' Storage=178 cf Inflow=0.13 cfs 0.040 af
Discarded=0.00 cfs 0.005 af Primary=0.12 cfs 0.034 af Outflow=0.13 cfs 0.039 af

Pond STEGL7: STEGL7 Peak Elev=307.08' Storage=178 cf Inflow=0.12 cfs 0.038 af
Discarded=0.00 cfs 0.005 af Primary=0.12 cfs 0.032 af Outflow=0.12 cfs 0.037 af

Pond STEGL8: STEGL8 Peak Elev=307.07' Storage=177 cf Inflow=0.11 cfs 0.036 af
Discarded=0.00 cfs 0.001 af Primary=0.11 cfs 0.031 af Outflow=0.11 cfs 0.032 af

Pond STEGL9: STEGL9 Peak Elev=303.06' Storage=176 cf Inflow=0.09 cfs 0.028 af
Discarded=0.00 cfs 0.001 af Primary=0.09 cfs 0.023 af Outflow=0.09 cfs 0.024 af

Pond STEGR2: STEGR2 Peak Elev=305.13' Storage=4,133 cf Inflow=1.43 cfs 0.414 af
Discarded=0.04 cfs 0.119 af Primary=0.61 cfs 0.273 af Outflow=0.65 cfs 0.392 af

Pond STEGR3: STEGR3 Peak Elev=303.33' Storage=4,465 cf Inflow=2.06 cfs 1.056 af
Discarded=0.00 cfs 0.013 af Primary=1.67 cfs 0.979 af Outflow=1.67 cfs 0.992 af

Pond STELG6: STELG6 Peak Elev=303.13' Storage=732 cf Inflow=0.27 cfs 0.085 af
Discarded=0.00 cfs 0.004 af Primary=0.27 cfs 0.068 af Outflow=0.27 cfs 0.072 af

Pond UEGL3: UEGL3 Peak Elev=307.17' Storage=1,123 cf Inflow=0.41 cfs 0.129 af
Discarded=0.01 cfs 0.027 af Primary=0.39 cfs 0.093 af Outflow=0.40 cfs 0.121 af

Pond UEGL4: UEGL4 Peak Elev=307.07' Storage=177 cf Inflow=0.10 cfs 0.032 af
Discarded=0.00 cfs 0.005 af Primary=0.10 cfs 0.026 af Outflow=0.10 cfs 0.031 af

Pond UEGL5: UEGL5 Peak Elev=307.09' Storage=179 cf Inflow=0.15 cfs 0.047 af
Discarded=0.00 cfs 0.005 af Primary=0.15 cfs 0.041 af Outflow=0.15 cfs 0.045 af

Pond UOC1: UOC1 Peak Elev=305.43' Storage=0.085 af Inflow=0.95 cfs 0.329 af
Discarded=0.01 cfs 0.017 af Primary=0.43 cfs 0.253 af Outflow=0.43 cfs 0.269 af

Pond UOC2: UOC2 Peak Elev=305.50' Storage=0.207 af Inflow=2.89 cfs 1.442 af
Discarded=0.01 cfs 0.021 af Primary=2.16 cfs 1.279 af Outflow=2.16 cfs 1.300 af

Pond UOC3: UOC3 Peak Elev=303.54' Storage=5,153 cf Inflow=2.48 cfs 1.578 af
Discarded=0.00 cfs 0.012 af Primary=2.40 cfs 1.489 af Outflow=2.41 cfs 1.502 af

Pond USGR1: USGR1 Peak Elev=305.03' Storage=2,860 cf Inflow=0.95 cfs 0.259 af
Discarded=0.04 cfs 0.097 af Primary=0.28 cfs 0.150 af Outflow=0.31 cfs 0.246 af

Pond VEGL2: VEGL2 Peak Elev=307.15' Storage=926 cf Inflow=0.34 cfs 0.107 af
Discarded=0.01 cfs 0.023 af Primary=0.33 cfs 0.077 af Outflow=0.33 cfs 0.100 af

Pond VSGR2: VSGR2 Peak Elev=304.97' Storage=2,432 cf Inflow=0.59 cfs 0.163 af
Discarded=0.03 cfs 0.078 af Primary=0.10 cfs 0.070 af Outflow=0.13 cfs 0.148 af

Pond ZGR1: ZGR1 Peak Elev=307.30' Storage=0.240 af Inflow=3.68 cfs 1.175 af
Discarded=0.05 cfs 0.155 af Primary=2.12 cfs 0.945 af Outflow=2.17 cfs 1.100 af

Pond ZLG123: ZLG123 Peak Elev=308.40' Storage=2,516 cf Inflow=1.47 cfs 0.468 af
Discarded=0.01 cfs 0.027 af Primary=1.45 cfs 0.408 af Outflow=1.46 cfs 0.435 af

Pond ZLG14: ZLG14 Peak Elev=301.04' Storage=1,222 cf Inflow=0.22 cfs 0.069 af
Discarded=0.00 cfs 0.003 af Primary=0.05 cfs 0.040 af Outflow=0.05 cfs 0.043 af

Pond ZLG4: ZLG4 Peak Elev=308.15' Storage=0.007 af Inflow=0.34 cfs 0.110 af
Discarded=0.00 cfs 0.004 af Primary=0.34 cfs 0.102 af Outflow=0.34 cfs 0.106 af

Pond ZLG5: ZLG5 Peak Elev=307.27' Storage=0.032 af Inflow=0.82 cfs 0.261 af
Discarded=0.00 cfs 0.016 af Primary=0.81 cfs 0.227 af Outflow=0.82 cfs 0.243 af

Pond ZLG6: ZLG6 Peak Elev=307.30' Storage=1,398 cf Inflow=0.93 cfs 0.294 af
Discarded=0.00 cfs 0.016 af Primary=0.92 cfs 0.259 af Outflow=0.92 cfs 0.275 af

Pond ZLG7: ZLG7 Peak Elev=307.08' Storage=178 cf Inflow=0.13 cfs 0.043 af
Discarded=0.00 cfs 0.002 af Primary=0.13 cfs 0.038 af Outflow=0.13 cfs 0.040 af

Pond ZLG9: ZLG9 Peak Elev=308.08' Storage=0.032 af Inflow=0.34 cfs 0.110 af
Discarded=0.01 cfs 0.035 af Primary=0.12 cfs 0.064 af Outflow=0.13 cfs 0.099 af

Pond ZRG2: ZGR2 Peak Elev=306.31' Storage=0.060 af Inflow=2.30 cfs 1.045 af
Discarded=0.01 cfs 0.038 af Primary=2.19 cfs 0.988 af Outflow=2.20 cfs 1.026 af

Link STRONG: STRONG Inflow=4.07 cfs 3.243 af
Primary=4.07 cfs 3.243 af

Link Z1st: SA1 Inflow=2.50 cfs 1.626 af
Primary=2.50 cfs 1.626 af

Link Z1st2: Z1st2 Inflow=1.82 cfs 0.584 af
Primary=1.82 cfs 0.584 af

Link ZL: S Inflow=2.60 cfs 1.241 af
Primary=2.60 cfs 1.241 af

Link ZLL: SA Inflow=2.48 cfs 1.578 af
Primary=2.48 cfs 1.578 af

Summary for Subcatchment 1A1: 1A1

Runoff = 0.19 cfs @ 7.89 hrs, Volume= 0.060 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.150	98	
*	0.060	72	
	0.210	91	Weighted Average
	0.060		28.57% Pervious Area
	0.150		71.43% Impervious Area

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

Summary for Subcatchment 1A1up: 1A1up

Runoff = 0.10 cfs @ 8.08 hrs, Volume= 0.041 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.280	72	
	0.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	200	0.1900	0.23		**Sheet Flow, mixed** n= 0.300 P2= 2.20"

Summary for Subcatchment 1stR1: 1stR1

Runoff = 0.22 cfs @ 7.89 hrs, Volume= 0.069 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.175	98	
*	0.075	72	
	0.250	90	Weighted Average
	0.075		30.00% Pervious Area
	0.175		70.00% Impervious Area

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

Summary for Subcatchment 1stR2: 1stR2

Runoff = 0.22 cfs @ 7.89 hrs, Volume= 0.069 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.175	98	
*	0.075	72	
	0.250	90	Weighted Average
	0.075		30.00% Pervious Area
	0.175		70.00% Impervious Area

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

Summary for Subcatchment 1stREGB: 1stREGB

Runoff = 0.29 cfs @ 8.17 hrs, Volume= 0.130 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.890	72	
	0.890		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.6	200	0.0800	0.16		**Sheet Flow, MIXED** n= 0.300 P2= 2.20"
1.8	150	0.0800	1.41		**Shallow Concentrated Flow, MIXED** Kv= 5.0 fps
22.4	350	Total			

Summary for Subcatchment QSR1: QSR1

Runoff = 0.25 cfs @ 7.97 hrs, Volume= 0.079 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.200	98	
*	0.080	72	
	0.280	91	Weighted Average
	0.080		28.57% Pervious Area
	0.200		71.43% Impervious Area

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

Summary for Subcatchment QSR2: QSR2

Runoff = 0.25 cfs @ 7.97 hrs, Volume= 0.079 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.200	98	
*	0.080	72	
	0.280	91	Weighted Average
	0.080		28.57% Pervious Area
	0.200		71.43% Impervious Area

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

Summary for Subcatchment SA4: SA2

Runoff = 0.10 cfs @ 7.91 hrs, Volume= 0.034 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.078	98	
*	0.052	72	
	0.130	88	Weighted Average
	0.052		40.00% Pervious Area
	0.078		60.00% Impervious Area

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

Summary for Subcatchment SA5: SA5

Runoff = 0.10 cfs @ 7.89 hrs, Volume= 0.033 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.085	98	
*	0.035	72	
	0.120	90	Weighted Average
	0.035		29.17% Pervious Area
	0.085		70.83% Impervious Area

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

Summary for Subcatchment SA6: SA6

Runoff = 0.10 cfs @ 7.89 hrs, Volume= 0.031 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.080	98	
*	0.030	72	
	0.110	91	Weighted Average
	0.030		27.27% Pervious Area
	0.080		72.73% Impervious Area

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

Summary for Subcatchment SA7: SA7

Runoff = 0.21 cfs @ 7.89 hrs, Volume= 0.066 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.170	98	
*	0.070	72	
	0.240	90	Weighted Average
	0.070		29.17% Pervious Area
	0.170		70.83% Impervious Area

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

Summary for Subcatchment SR2: SR2

Runoff = 0.16 cfs @ 7.89 hrs, Volume= 0.052 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.130	98	
*	0.060	72	
	0.190	90	Weighted Average
	0.060		31.58% Pervious Area
	0.130		68.42% Impervious Area

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

Summary for Subcatchment STEL10: STEL10

Runoff = 0.34 cfs @ 7.89 hrs, Volume= 0.107 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.270	98	
*	0.120	72	
	0.390	90	Weighted Average
	0.120		30.77% Pervious Area
	0.270		69.23% Impervious Area

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

Summary for Subcatchment STEL2: STEL2

Runoff = 0.54 cfs @ 7.89 hrs, Volume= 0.173 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.440	98	
*	0.190	72	
	0.630	90	Weighted Average
	0.190		30.16% Pervious Area
	0.440		69.84% Impervious Area

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

Summary for Subcatchment STEL3: STEL3

Runoff = 0.21 cfs @ 7.89 hrs, Volume= 0.066 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.170	98	
*	0.070	72	
	0.240	90	Weighted Average
	0.070		29.17% Pervious Area
	0.170		70.83% Impervious Area

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

Summary for Subcatchment STEL4: STEL4

Runoff = 0.73 cfs @ 7.89 hrs, Volume= 0.231 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.590	98	
*	0.250	72	
	0.840	90	Weighted Average
	0.250		29.76% Pervious Area
	0.590		70.24% Impervious Area

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

Summary for Subcatchment STEL5: STEL5

Runoff = 0.13 cfs @ 7.90 hrs, Volume= 0.040 af, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.100	98	
*	0.050	72	
	0.150	89	Weighted Average
	0.050		33.33% Pervious Area
	0.100		66.67% Impervious Area

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

Summary for Subcatchment STEL6: STEL6

Runoff = 0.27 cfs @ 7.89 hrs, Volume= 0.085 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.220	98	
*	0.090	72	
	0.310	90	Weighted Average
	0.090		29.03% Pervious Area
	0.220		70.97% Impervious Area

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

Summary for Subcatchment STEL7: STEL7

Runoff = 0.12 cfs @ 7.89 hrs, Volume= 0.038 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.098	98	
*	0.040	72	
	0.138	90	Weighted Average
	0.040		28.99% Pervious Area
	0.098		71.01% Impervious Area

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

Summary for Subcatchment STEL8: STEL8

Runoff = 0.11 cfs @ 7.89 hrs, Volume= 0.036 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.090	98	
*	0.040	72	
	0.130	90	Weighted Average
	0.040		30.77% Pervious Area
	0.090		69.23% Impervious Area

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

Summary for Subcatchment STEL9: STEL9

Runoff = 0.09 cfs @ 7.89 hrs, Volume= 0.028 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment STER2: STER2

Runoff = 0.56 cfs @ 7.89 hrs, Volume= 0.179 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.460	98	
*	0.190	72	
	0.650	90	Weighted Average
	0.190		29.23% Pervious Area
	0.460		70.77% Impervious Area

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

Summary for Subcatchment STER3: STER3

Runoff = 0.48 cfs @ 7.89 hrs, Volume= 0.151 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.390	98	
*	0.160	72	
	0.550	90	Weighted Average
	0.160		29.09% Pervious Area
	0.390		70.91% Impervious Area

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

Summary for Subcatchment STRONG -PRE: STONG PRE

Runoff = 5.24 cfs @ 8.44 hrs, Volume= 2.799 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	19.230	72	
	19.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.9	300	0.0600	0.16		**Sheet Flow, MIXED** n= 0.300 P2= 2.20"
4.1	300	0.0600	1.22		**Shallow Concentrated Flow, MIXED** Kv= 5.0 fps
7.9	1,300	0.0600	2.75	4.59	**Parabolic Channel,** W=10.00' D=0.25' Area=1.7 sf Perim=10.0' n= 0.040
43.9	1,900	Total			

Summary for Subcatchment UEL3: UEL3

Runoff = 0.41 cfs @ 7.89 hrs, Volume= 0.129 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.330	98	
*	0.140	72	
	0.470	90	Weighted Average
	0.140		29.79% Pervious Area
	0.330		70.21% Impervious Area

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

Summary for Subcatchment UEL4: UEL4

Runoff = 0.10 cfs @ 7.90 hrs, Volume= 0.032 af, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.080	98	
*	0.040	72	
	0.120	89	Weighted Average
	0.040		33.33% Pervious Area
	0.080		66.67% Impervious Area

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

Summary for Subcatchment UEL5: UEL5

Runoff = 0.15 cfs @ 7.89 hrs, Volume= 0.047 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.120	98	
*	0.050	72	
	0.170	90	Weighted Average
	0.050		29.41% Pervious Area
	0.120		70.59% Impervious Area

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

Summary for Subcatchment USR1: USR1

Runoff = 0.31 cfs @ 7.89 hrs, Volume= 0.099 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.250	98	
*	0.110	72	
	0.360	90	Weighted Average
	0.110		30.56% Pervious Area
	0.250		69.44% Impervious Area

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

Summary for Subcatchment VEL2: VEL2

Runoff = 0.34 cfs @ 7.89 hrs, Volume= 0.107 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.270	98	
*	0.120	72	
	0.390	90	Weighted Average
	0.120		30.77% Pervious Area
	0.270		69.23% Impervious Area

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

Summary for Subcatchment VSR2: VSR2

Runoff = 0.27 cfs @ 7.89 hrs, Volume= 0.085 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.220	98	
*	0.090	72	
	0.310	90	Weighted Average
	0.090		29.03% Pervious Area
	0.220		70.97% Impervious Area

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

Summary for Subcatchment ZA1: ZA1

Runoff = 0.22 cfs @ 7.89 hrs, Volume= 0.072 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.180	98	
*	0.080	72	
	0.260	90	Weighted Average
	0.080		30.77% Pervious Area
	0.180		69.23% Impervious Area

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

Summary for Subcatchment ZA2: ZA2

Runoff = 0.25 cfs @ 7.89 hrs, Volume= 0.079 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.200	98	
*	0.080	72	
	0.280	91	Weighted Average
	0.080		28.57% Pervious Area
	0.200		71.43% Impervious Area

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

Summary for Subcatchment ZA3: ZA3

Runoff = 0.20 cfs @ 7.89 hrs, Volume= 0.063 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.160	98	
*	0.070	72	
	0.230	90	Weighted Average
	0.070		30.43% Pervious Area
	0.160		69.57% Impervious Area

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

Summary for Subcatchment ZA4: ZA4

Runoff = 0.13 cfs @ 7.89 hrs, Volume= 0.040 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.100	98	
*	0.040	72	
	0.140	91	Weighted Average
	0.040		28.57% Pervious Area
	0.100		71.43% Impervious Area

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

Summary for Subcatchment ZA5: ZA5

Runoff = 0.13 cfs @ 7.89 hrs, Volume= 0.040 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.100	98	
*	0.040	72	
	0.140	91	Weighted Average
	0.040		28.57% Pervious Area
	0.100		71.43% Impervious Area

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

Summary for Subcatchment ZA6: ZA6

Runoff = 0.09 cfs @ 7.89 hrs, Volume= 0.028 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment ZA7: ZA7

Runoff = 0.78 cfs @ 7.89 hrs, Volume= 0.248 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.630	98	
*	0.270	72	
	0.900	90	Weighted Average
	0.270		30.00% Pervious Area
	0.630		70.00% Impervious Area

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

Summary for Subcatchment ZA8: ZA8

Runoff = 0.23 cfs @ 7.89 hrs, Volume= 0.074 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.190	98	
*	0.080	72	
	0.270	90	Weighted Average
	0.080		29.63% Pervious Area
	0.190		70.37% Impervious Area

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

Summary for Subcatchment ZL10: ZL10

Runoff = 0.34 cfs @ 7.99 hrs, Volume= 0.110 af, Depth= 3.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.260	98	
*	0.180	72	
	0.440	87	Weighted Average
	0.180		40.91% Pervious Area
	0.260		59.09% Impervious Area

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

Summary for Subcatchment ZL11: ZL11

Runoff = 0.33 cfs @ 7.97 hrs, Volume= 0.105 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.270	98	
*	0.110	72	
	0.380	90	Weighted Average
	0.110		28.95% Pervious Area
	0.270		71.05% Impervious Area

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

Summary for Subcatchment ZL12: ZL12

Runoff = 0.15 cfs @ 7.90 hrs, Volume= 0.048 af, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.120	98	
*	0.060	72	
	0.180	89	Weighted Average
	0.060		33.33% Pervious Area
	0.120		66.67% Impervious Area

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

Summary for Subcatchment ZL123: ZL123

Runoff = 1.47 cfs @ 7.89 hrs, Volume= 0.468 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	1.190	98	
*	0.510	72	
	1.700	90	Weighted Average
	0.510		30.00% Pervious Area
	1.190		70.00% Impervious Area

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

Summary for Subcatchment ZL13: ZL13

Runoff = 0.63 cfs @ 7.89 hrs, Volume= 0.201 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.510	98	
*	0.220	72	
	0.730	90	Weighted Average
	0.220		30.14% Pervious Area
	0.510		69.86% Impervious Area

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

Summary for Subcatchment ZL14: ZL14

Runoff = 0.22 cfs @ 7.89 hrs, Volume= 0.069 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.175	98	
*	0.075	72	
	0.250	90	Weighted Average
	0.075		30.00% Pervious Area
	0.175		70.00% Impervious Area

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

Summary for Subcatchment ZL4: ZL4

Runoff = 0.34 cfs @ 7.91 hrs, Volume= 0.110 af, Depth= 3.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.260	98	
*	0.180	72	
	0.440	87	Weighted Average
	0.180		40.91% Pervious Area
	0.260		59.09% Impervious Area

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

Summary for Subcatchment ZL5: ZL5

Runoff = 0.82 cfs @ 7.89 hrs, Volume= 0.261 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.660	98	
*	0.290	72	
	0.950	90	Weighted Average
	0.290		30.53% Pervious Area
	0.660		69.47% Impervious Area

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

Summary for Subcatchment ZL6: ZL6

Runoff = 0.93 cfs @ 7.89 hrs, Volume= 0.294 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.750	98	
*	0.320	72	
	1.070	90	Weighted Average
	0.320		29.91% Pervious Area
	0.750		70.09% Impervious Area

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

Summary for Subcatchment ZL7: ZL7

Runoff = 0.13 cfs @ 7.89 hrs, Volume= 0.043 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.110	98	
*	0.040	72	
	0.150	91	Weighted Average
	0.040		26.67% Pervious Area
	0.110		73.33% Impervious Area

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

Summary for Subcatchment ZL8: ZL8

Runoff = 0.28 cfs @ 7.99 hrs, Volume= 0.093 af, Depth= 3.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.220	98	
*	0.150	72	
	0.370	87	Weighted Average
	0.150		40.54% Pervious Area
	0.220		59.46% Impervious Area

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

Summary for Subcatchment ZL9: ZL9

Runoff = 0.34 cfs @ 7.91 hrs, Volume= 0.110 af, Depth= 3.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.260	98	
*	0.180	72	
	0.440	87	Weighted Average
	0.180		40.91% Pervious Area
	0.260		59.09% Impervious Area

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

Summary for Subcatchment ZR1: ZR1

Runoff = 0.78 cfs @ 7.89 hrs, Volume= 0.248 af, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 100 yrs Rainfall=4.40"

	Area (ac)	CN	Description
*	0.630	98	
*	0.270	72	
	0.900	90	Weighted Average
	0.270		30.00% Pervious Area
	0.630		70.00% Impervious Area

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

Summary for Pond 1stGR1: 1stGr1

Inflow Area = 0.250 ac, 70.00% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.22 cfs @ 7.89 hrs, Volume= 0.069 af
Outflow = 0.04 cfs @ 11.36 hrs, Volume= 0.038 af, Atten= 81%, Lag= 207.7 min
Discarded = 0.00 cfs @ 11.36 hrs, Volume= 0.006 af
Primary = 0.04 cfs @ 11.36 hrs, Volume= 0.033 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 301.03' @ 11.36 hrs Surf.Area= 1,342 sf Storage= 1,497 cf

Plug-Flow detention time= 608.2 min calculated for 0.038 af (56% of inflow)
Center-of-Mass det. time= 366.8 min (1,091.4 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	296.90'	5,083 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
296.90	660	0.0	0	0
297.00	660	40.0	26	26
298.40	660	40.0	370	396
298.50	660	0.1	0	396
299.90	660	0.1	1	397
300.00	660	100.0	66	463
302.00	1,980	100.0	2,640	3,103
303.00	1,980	100.0	1,980	5,083

Device	Routing	Invert	Outlet Devices
#1	Discarded	296.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	301.00'	**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 @ 11.36 hrs HW=301.03' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.03 cfs @ 11.36 hrs HW=301.03' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.03 cfs @ 0.51 fps)

Summary for Pond 1stGR2: 1stGr2

Inflow Area = 0.740 ac, 43.92% Impervious, Inflow Depth = 2.74" for Salem 100 yrs event
Inflow = 0.49 cfs @ 7.95 hrs, Volume= 0.169 af
Outflow = 0.38 cfs @ 8.10 hrs, Volume= 0.139 af, Atten= 23%, Lag= 9.3 min
Discarded = 0.00 cfs @ 8.10 hrs, Volume= 0.006 af
Primary = 0.38 cfs @ 8.10 hrs, Volume= 0.133 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.16' @ 8.10 hrs Surf.Area= 1,429 sf Storage= 1,679 cf

Plug-Flow detention time= 247.4 min calculated for 0.139 af (82% of inflow)
Center-of-Mass det. time= 134.1 min (884.9 - 750.8)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	5,083 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	660	0.0	0	0
299.00	660	40.0	26	26
300.40	660	40.0	370	396
300.50	660	0.1	0	396
301.90	660	0.1	1	397
302.00	660	100.0	66	463
304.00	1,980	100.0	2,640	3,103
305.00	1,980	100.0	1,980	5,083

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 8.10 hrs HW=303.16' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.37 cfs @ 8.10 hrs HW=303.16' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.37 cfs @ 1.14 fps)

Summary for Pond 1stREG.B: 1st REG.B

Inflow Area = 12.950 ac, 62.36% Impervious, Inflow Depth = 2.17" for Salem 100 yrs event
Inflow = 3.24 cfs @ 9.22 hrs, Volume= 2.339 af
Outflow = 2.80 cfs @ 9.84 hrs, Volume= 2.105 af, Atten= 14%, Lag= 37.3 min
Discarded = 0.01 cfs @ 9.84 hrs, Volume= 0.031 af
Primary = 2.79 cfs @ 9.84 hrs, Volume= 2.074 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.59' @ 9.84 hrs Surf.Area= 7,590 sf Storage= 15,014 cf

Plug-Flow detention time= 149.6 min calculated for 2.105 af (90% of inflow)
Center-of-Mass det. time= 89.4 min (967.8 - 878.4)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	26,209 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	6,000	0.0	0	0
299.00	6,000	40.0	240	240
300.40	6,000	40.0	3,360	3,600
300.50	6,000	0.1	1	3,601
301.90	6,000	0.1	8	3,609
302.00	6,000	100.0	600	4,209
304.00	8,000	100.0	14,000	18,209
305.00	8,000	100.0	8,000	26,209

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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=0.01 cfs @ 9.84 hrs HW=303.59' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=2.79 cfs @ 9.84 hrs HW=303.59' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 2.79 cfs @ 2.36 fps)

Summary for Pond QSGR1: QSGR1

Inflow Area = 0.280 ac, 71.43% Impervious, Inflow Depth = 3.40" for Salem 100 yrs event
Inflow = 0.25 cfs @ 7.97 hrs, Volume= 0.079 af
Outflow = 0.03 cfs @ 17.41 hrs, Volume= 0.056 af, Atten= 86%, Lag= 566.6 min
Discarded = 0.01 cfs @ 17.41 hrs, Volume= 0.045 af
Primary = 0.02 cfs @ 17.41 hrs, Volume= 0.011 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 308.82' @ 17.41 hrs Surf.Area= 0.058 ac Storage= 0.048 af

Plug-Flow detention time= 960.1 min calculated for 0.056 af (71% of inflow)
Center-of-Mass det. time= 785.0 min (1,507.1 - 722.2)

Volume	Invert	Avail.Storage	Storage Description
#1	304.90'	0.125 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
304.90	0.022	0.0	0.000	0.000
305.00	0.022	40.0	0.001	0.001
306.40	0.022	40.0	0.012	0.013
306.50	0.022	0.1	0.000	0.013
307.90	0.022	0.1	0.000	0.013
308.00	0.022	100.0	0.002	0.015
309.00	0.066	100.0	0.044	0.059
310.00	0.066	100.0	0.066	0.125

Device	Routing	Invert	Outlet Devices
#1	Discarded	304.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	308.80'	**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=0.01 cfs @ 17.41 hrs HW=308.82' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.02 cfs @ 17.41 hrs HW=308.82' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.41 fps)

Summary for Pond QSGR2: QSGR2

Inflow Area = 0.560 ac, 71.43% Impervious, Inflow Depth = 1.94" for Salem 100 yrs event
Inflow = 0.25 cfs @ 7.97 hrs, Volume= 0.091 af
Outflow = 0.05 cfs @ 17.54 hrs, Volume= 0.067 af, Atten= 78%, Lag= 574.0 min
Discarded = 0.01 cfs @ 17.54 hrs, Volume= 0.045 af
Primary = 0.04 cfs @ 17.54 hrs, Volume= 0.022 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 306.83' @ 17.54 hrs Surf.Area= 0.059 ac Storage= 0.049 af

Plug-Flow detention time= 839.1 min calculated for 0.067 af (74% of inflow)
Center-of-Mass det. time= 680.5 min (1,458.2 - 777.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.125 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.022	0.0	0.000	0.000
303.00	0.022	40.0	0.001	0.001
304.40	0.022	40.0	0.012	0.013
304.50	0.022	0.1	0.000	0.013
305.90	0.022	0.1	0.000	0.013
306.00	0.022	100.0	0.002	0.015
307.00	0.066	100.0	0.044	0.059
308.00	0.066	100.0	0.066	0.125

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	306.80'	**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=0.01 cfs @ 17.54 hrs HW=306.83' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.04 cfs @ 17.54 hrs HW=306.83' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.04 cfs @ 0.52 fps)

Summary for Pond STEGL10: STEGL10

Inflow Area = 0.390 ac, 69.23% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.34 cfs @ 7.89 hrs, Volume= 0.107 af
Outflow = 0.34 cfs @ 7.94 hrs, Volume= 0.090 af, Atten= 1%, Lag= 2.9 min
Discarded = 0.00 cfs @ 2.79 hrs, Volume= 0.005 af
Primary = 0.33 cfs @ 7.94 hrs, Volume= 0.086 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.15' @ 7.94 hrs Surf.Area= 500 sf Storage= 927 cf

Plug-Flow detention time= 228.0 min calculated for 0.090 af (84% of inflow)
Center-of-Mass det. time= 124.5 min (849.2 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,351 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	500	0.0	0	0
303.00	500	40.0	20	20
304.40	500	40.0	280	300
304.50	500	0.1	0	300
305.90	500	0.1	1	301
306.00	500	100.0	50	351
308.00	500	100.0	1,000	1,351

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 2.79 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.33 cfs @ 7.94 hrs HW=307.15' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.33 cfs @ 1.09 fps)

Summary for Pond STEGL2: STEGL2

Inflow Area = 0.630 ac, 69.84% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.54 cfs @ 7.89 hrs, Volume= 0.173 af
Outflow = 0.54 cfs @ 7.93 hrs, Volume= 0.166 af, Atten= 0%, Lag= 2.2 min
Discarded = 0.01 cfs @ 2.73 hrs, Volume= 0.023 af
Primary = 0.54 cfs @ 7.93 hrs, Volume= 0.143 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.21' @ 7.93 hrs Surf.Area= 500 sf Storage= 955 cf

Plug-Flow detention time= 191.2 min calculated for 0.166 af (96% of inflow)

Center-of-Mass det. time= 162.1 min (886.8 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,351 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	500	0.0	0	0
303.00	500	40.0	20	20
304.40	500	40.0	280	300
304.50	500	0.1	0	300
305.90	500	0.1	1	301
306.00	500	100.0	50	351
308.00	500	100.0	1,000	1,351

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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=0.01 cfs @ 2.73 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.53 cfs @ 7.93 hrs HW=307.21' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.53 cfs @ 1.28 fps)

Summary for Pond STEGL3: STEGL3

Inflow Area = 0.240 ac, 70.83% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.21 cfs @ 7.89 hrs, Volume= 0.066 af
Outflow = 0.21 cfs @ 7.91 hrs, Volume= 0.059 af, Atten= 0%, Lag= 1.2 min
Discarded = 0.00 cfs @ 2.64 hrs, Volume= 0.001 af
Primary = 0.21 cfs @ 7.91 hrs, Volume= 0.058 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.11' @ 7.91 hrs Surf.Area= 200 sf Storage= 362 cf

Plug-Flow detention time= 143.1 min calculated for 0.059 af (89% of inflow)
Center-of-Mass det. time= 68.9 min (793.5 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	540 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	200	0.0	0	0
303.00	200	40.0	8	8
304.40	200	40.0	112	120
304.50	200	0.1	0	120
305.90	200	0.1	0	120
306.00	200	100.0	20	140
308.00	200	100.0	400	540

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 2.64 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.20 cfs @ 7.91 hrs HW=307.11' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.20 cfs @ 0.93 fps)

Summary for Pond STEGL4: STEGL4

Inflow Area = 0.840 ac, 70.24% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.73 cfs @ 7.89 hrs, Volume= 0.231 af
Outflow = 0.72 cfs @ 7.95 hrs, Volume= 0.202 af, Atten= 1%, Lag= 3.1 min
Discarded = 0.00 cfs @ 2.68 hrs, Volume= 0.004 af
Primary = 0.72 cfs @ 7.95 hrs, Volume= 0.198 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.25' @ 7.95 hrs Surf.Area= 800 sf Storage= 1,563 cf

Plug-Flow detention time= 166.5 min calculated for 0.202 af (87% of inflow)
Center-of-Mass det. time= 82.4 min (807.0 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	2,161 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	800	0.0	0	0
303.00	800	40.0	32	32
304.40	800	40.0	448	480
304.50	800	0.1	0	480
305.90	800	0.1	1	481
306.00	800	100.0	80	561
308.00	800	100.0	1,600	2,161

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 2.68 hrs HW=302.95' (Free Discharge)
└—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.72 cfs @ 7.95 hrs HW=307.25' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.72 cfs @ 1.42 fps)

Summary for Pond STEGL5: STEGL5

Inflow Area = 0.150 ac, 66.67% Impervious, Inflow Depth = 3.20" for Salem 100 yrs event
Inflow = 0.13 cfs @ 7.90 hrs, Volume= 0.040 af
Outflow = 0.13 cfs @ 7.91 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.9 min
Discarded = 0.00 cfs @ 2.88 hrs, Volume= 0.005 af
Primary = 0.12 cfs @ 7.91 hrs, Volume= 0.034 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.08' @ 7.91 hrs Surf.Area= 100 sf Storage= 178 cf

Plug-Flow detention time= 162.9 min calculated for 0.039 af (96% of inflow)
Center-of-Mass det. time= 137.9 min (869.5 - 731.6)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 2.88 hrs HW=302.95' (Free Discharge)
└—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.12 cfs @ 7.91 hrs HW=307.08' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.12 cfs @ 0.78 fps)

Summary for Pond STEGL7: STEGL7

Inflow Area = 0.138 ac, 71.01% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.12 cfs @ 7.89 hrs, Volume= 0.038 af
Outflow = 0.12 cfs @ 7.91 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.9 min
Discarded = 0.00 cfs @ 2.69 hrs, Volume= 0.005 af
Primary = 0.12 cfs @ 7.91 hrs, Volume= 0.032 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.08' @ 7.91 hrs Surf.Area= 100 sf Storage= 178 cf

Plug-Flow detention time= 172.4 min calculated for 0.037 af (96% of inflow)
Center-of-Mass det. time= 145.9 min (870.6 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 2.69 hrs HW=302.95' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.12 cfs @ 7.91 hrs HW=307.08' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.12 cfs @ 0.77 fps)

Summary for Pond STEGL8: STEGL8

Inflow Area = 0.130 ac, 69.23% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.11 cfs @ 7.89 hrs, Volume= 0.036 af
Outflow = 0.11 cfs @ 7.91 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.9 min
Discarded = 0.00 cfs @ 2.62 hrs, Volume= 0.001 af
Primary = 0.11 cfs @ 7.91 hrs, Volume= 0.031 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.07' @ 7.91 hrs Surf.Area= 100 sf Storage= 177 cf

Plug-Flow detention time= 138.1 min calculated for 0.032 af (90% of inflow)

Center-of-Mass det. time= 73.6 min (798.3 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 2.62 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.11 cfs @ 7.91 hrs HW=307.07' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.11 cfs @ 0.75 fps)

Summary for Pond STEGL9: STEGL9

Inflow Area = 0.100 ac, 70.00% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.09 cfs @ 7.89 hrs, Volume= 0.028 af
Outflow = 0.09 cfs @ 7.91 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.7 min
Discarded = 0.00 cfs @ 2.76 hrs, Volume= 0.001 af
Primary = 0.09 cfs @ 7.91 hrs, Volume= 0.023 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.06' @ 7.91 hrs Surf.Area= 100 sf Storage= 176 cf

Plug-Flow detention time= 176.2 min calculated for 0.024 af (88% of inflow)
Center-of-Mass det. time= 94.2 min (818.9 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	370 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	100	0.0	0	0
299.00	100	40.0	4	4
300.40	100	40.0	56	60
300.50	100	0.1	0	60
301.90	100	0.1	0	60
302.00	100	100.0	10	70
304.00	100	100.0	200	270
305.00	100	100.0	100	370

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 2.76 hrs HW=298.96' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.08 cfs @ 7.91 hrs HW=303.06' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.08 cfs @ 0.68 fps)

Summary for Pond STEGR2: STEGR2

Inflow Area = 1.670 ac, 70.06% Impervious, Inflow Depth = 2.97" for Salem 100 yrs event
Inflow = 1.43 cfs @ 7.91 hrs, Volume= 0.414 af
Outflow = 0.65 cfs @ 8.37 hrs, Volume= 0.392 af, Atten= 55%, Lag= 27.6 min
Discarded = 0.04 cfs @ 8.37 hrs, Volume= 0.119 af
Primary = 0.61 cfs @ 8.37 hrs, Volume= 0.273 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 305.13' @ 8.37 hrs Surf.Area= 3,571 sf Storage= 4,133 cf

Plug-Flow detention time= 318.0 min calculated for 0.392 af (95% of inflow)
Center-of-Mass det. time= 283.6 min (1,038.6 - 755.0)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	12,939 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
300.90	1,680	0.0	0	0
301.00	1,680	40.0	67	67
302.40	1,680	40.0	941	1,008
302.50	1,680	0.1	0	1,008
303.90	1,680	0.1	2	1,011
304.00	1,680	100.0	168	1,179
306.00	5,040	100.0	6,720	7,899
307.00	5,040	100.0	5,040	12,939

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	304.90'	**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=0.04 cfs @ 8.37 hrs HW=305.13' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.60 cfs @ 8.37 hrs HW=305.13' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.60 cfs @ 1.34 fps)

Summary for Pond STEGR3: STEGR3

Inflow Area = 5.768 ac, 70.09% Impervious, Inflow Depth = 2.20" for Salem 100 yrs event
Inflow = 2.06 cfs @ 8.04 hrs, Volume= 1.056 af
Outflow = 1.67 cfs @ 8.23 hrs, Volume= 0.992 af, Atten= 19%, Lag= 11.7 min
Discarded = 0.00 cfs @ 8.23 hrs, Volume= 0.013 af
Primary = 1.67 cfs @ 8.23 hrs, Volume= 0.979 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.33' @ 8.23 hrs Surf.Area= 3,566 sf Storage= 4,465 cf

Plug-Flow detention time= 93.8 min calculated for 0.992 af (94% of inflow)
Center-of-Mass det. time= 56.1 min (867.1 - 811.0)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	11,783 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	1,530	0.0	0	0
299.00	1,530	40.0	61	61
300.40	1,530	40.0	857	918
300.50	1,530	0.1	0	918
301.90	1,530	0.1	2	920
302.00	1,530	100.0	153	1,073
304.00	4,590	100.0	6,120	7,193
305.00	4,590	100.0	4,590	11,783

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	302.90'	**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 @ 8.23 hrs HW=303.33' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=1.67 cfs @ 8.23 hrs HW=303.33' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 1.67 cfs @ 1.93 fps)

Summary for Pond STELG6: STELG6

Inflow Area = 0.310 ac, 70.97% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.27 cfs @ 7.89 hrs, Volume= 0.085 af
Outflow = 0.27 cfs @ 7.93 hrs, Volume= 0.072 af, Atten= 0%, Lag= 2.3 min
Discarded = 0.00 cfs @ 2.86 hrs, Volume= 0.004 af
Primary = 0.27 cfs @ 7.93 hrs, Volume= 0.068 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.13' @ 7.93 hrs Surf.Area= 400 sf Storage= 732 cf

Plug-Flow detention time= 228.0 min calculated for 0.072 af (84% of inflow)
Center-of-Mass det. time= 124.3 min (848.9 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	1,481 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	400	0.0	0	0
299.00	400	40.0	16	16
300.40	400	40.0	224	240
300.50	400	0.1	0	240
301.90	400	0.1	1	241
302.00	400	100.0	40	281
304.00	400	100.0	800	1,081
305.00	400	100.0	400	1,481

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 2.86 hrs HW=298.96' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.26 cfs @ 7.93 hrs HW=303.13' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.26 cfs @ 1.01 fps)

Summary for Pond UEGL3: UEGL3

Inflow Area = 0.470 ac, 70.21% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.41 cfs @ 7.89 hrs, Volume= 0.129 af
Outflow = 0.40 cfs @ 7.97 hrs, Volume= 0.121 af, Atten= 2%, Lag= 4.8 min
Discarded = 0.01 cfs @ 2.97 hrs, Volume= 0.027 af
Primary = 0.39 cfs @ 7.97 hrs, Volume= 0.093 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Peak Elev= 307.17' @ 7.97 hrs   Surf.Area= 600 sf   Storage= 1,123 cf

Plug-Flow detention time= 302.6 min calculated for 0.121 af (93% of inflow)
Center-of-Mass det. time= 256.5 min (981.1 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,621 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	600	0.0	0	0
303.00	600	40.0	24	24
304.40	600	40.0	336	360
304.50	600	0.1	0	360
305.90	600	0.1	1	361
306.00	600	100.0	60	421
308.00	600	100.0	1,200	1,621

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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=0.01 cfs @ 2.97 hrs HW=302.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.39 cfs @ 7.97 hrs HW=307.17' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.39 cfs @ 1.15 fps)

Summary for Pond UEGL4: UEGL4

Inflow Area =	0.120 ac, 66.67% Impervious, Inflow Depth = 3.20" for Salem 100 yrs event			
Inflow =	0.10 cfs @	7.90 hrs, Volume=	0.032 af	
Outflow =	0.10 cfs @	7.91 hrs, Volume=	0.031 af,	Atten= 0%, Lag= 0.9 min
Discarded =	0.00 cfs @	2.97 hrs, Volume=	0.005 af	
Primary =	0.10 cfs @	7.91 hrs, Volume=	0.026 af	

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.07' @ 7.91 hrs   Surf.Area= 100 sf   Storage= 177 cf

Plug-Flow detention time= 202.0 min calculated for 0.031 af (96% of inflow)
Center-of-Mass det. time= 171.0 min (902.5 - 731.6)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 2.97 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.09 cfs @ 7.91 hrs HW=307.07' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.72 fps)

Summary for Pond UEGL5: UEGL5

Inflow Area = 0.170 ac, 70.59% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.15 cfs @ 7.89 hrs, Volume= 0.047 af
Outflow = 0.15 cfs @ 7.90 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.6 min
Discarded = 0.00 cfs @ 2.62 hrs, Volume= 0.005 af
Primary = 0.15 cfs @ 7.90 hrs, Volume= 0.041 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.09' @ 7.90 hrs Surf.Area= 100 sf Storage= 179 cf

Plug-Flow detention time= 141.1 min calculated for 0.045 af (97% of inflow)
Center-of-Mass det. time= 119.5 min (844.1 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 2.62 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.14 cfs @ 7.90 hrs HW=307.09' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.14 cfs @ 0.83 fps)

Summary for Pond UOC1: UOC1

Inflow Area = 1.750 ac, 65.71% Impervious, Inflow Depth = 2.26" for Salem 100 yrs event
Inflow = 0.95 cfs @ 7.99 hrs, Volume= 0.329 af
Outflow = 0.43 cfs @ 8.45 hrs, Volume= 0.269 af, Atten= 54%, Lag= 27.4 min
Discarded = 0.01 cfs @ 8.45 hrs, Volume= 0.017 af
Primary = 0.43 cfs @ 8.45 hrs, Volume= 0.253 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 305.43' @ 8.45 hrs Surf.Area= 0.099 ac Storage= 0.085 af

Plug-Flow detention time= 286.5 min calculated for 0.269 af (82% of inflow)
Center-of-Mass det. time= 172.2 min (944.1 - 771.9)

Volume	Invert	Avail.Storage	Storage Description
#1	301.90'	0.293 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
301.90	0.069	0.0	0.000	0.000
302.00	0.069	40.0	0.003	0.003
303.40	0.069	40.0	0.039	0.041
303.50	0.069	0.1	0.000	0.041
304.90	0.069	0.1	0.000	0.042
305.00	0.069	100.0	0.007	0.048
306.00	0.140	100.0	0.104	0.153
307.00	0.140	100.0	0.140	0.293

Device	Routing	Invert	Outlet Devices
#1	Discarded	301.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	305.25'	**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=0.01 cfs @ 8.45 hrs HW=305.43' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.43 cfs @ 8.45 hrs HW=305.43' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.43 cfs @ 1.19 fps)

Summary for Pond UOC2: UOC2

Inflow Area = 7.610 ac, 67.67% Impervious, Inflow Depth = 2.27" for Salem 100 yrs event
Inflow = 2.89 cfs @ 8.33 hrs, Volume= 1.442 af
Outflow = 2.16 cfs @ 9.11 hrs, Volume= 1.300 af, Atten= 25%, Lag= 46.8 min
Discarded = 0.01 cfs @ 7.74 hrs, Volume= 0.021 af
Primary = 2.16 cfs @ 9.11 hrs, Volume= 1.279 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 305.50' @ 9.11 hrs Surf.Area= 0.110 ac Storage= 0.207 af

Plug-Flow detention time= 141.0 min calculated for 1.300 af (90% of inflow)
Center-of-Mass det. time= 81.0 min (925.4 - 844.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.261 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.055	0.0	0.000	0.000
301.00	0.055	40.0	0.002	0.002
302.40	0.055	40.0	0.031	0.033
302.50	0.055	0.1	0.000	0.033
303.90	0.055	0.1	0.000	0.033
304.00	0.110	100.0	0.008	0.041
306.00	0.110	100.0	0.220	0.261

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 7.74 hrs HW=304.00' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=2.15 cfs @ 9.11 hrs HW=305.50' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 2.15 cfs @ 2.13 fps)

Summary for Pond UOC3: UOC3

Inflow Area = 8.820 ac, 67.91% Impervious, Inflow Depth = 2.15" for Salem 100 yrs event
Inflow = 2.48 cfs @ 9.07 hrs, Volume= 1.578 af
Outflow = 2.41 cfs @ 9.26 hrs, Volume= 1.502 af, Atten= 3%, Lag= 11.2 min
Discarded = 0.00 cfs @ 9.26 hrs, Volume= 0.012 af
Primary = 2.40 cfs @ 9.26 hrs, Volume= 1.489 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.54' @ 9.26 hrs Surf.Area= 3,255 sf Storage= 5,153 cf

Plug-Flow detention time= 73.0 min calculated for 1.501 af (95% of inflow)

Center-of-Mass det. time= 43.3 min (928.8 - 885.5)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	10,443 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	1,800	0.0	0	0
299.00	1,800	40.0	72	72
300.40	1,800	40.0	1,008	1,080
300.50	1,800	0.1	0	1,080
301.90	1,800	0.1	3	1,083
302.00	1,800	100.0	180	1,263
304.00	3,690	100.0	5,490	6,753
305.00	3,690	100.0	3,690	10,443

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 9.26 hrs HW=303.54' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=2.40 cfs @ 9.26 hrs HW=303.54' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 2.40 cfs @ 2.23 fps)

Summary for Pond USGR1: USGR1

Inflow Area = 1.120 ac, 69.64% Impervious, Inflow Depth = 2.78" for Salem 100 yrs event
Inflow = 0.95 cfs @ 7.94 hrs, Volume= 0.259 af
Outflow = 0.31 cfs @ 8.97 hrs, Volume= 0.246 af, Atten= 67%, Lag= 61.4 min
Discarded = 0.04 cfs @ 8.54 hrs, Volume= 0.097 af
Primary = 0.28 cfs @ 8.97 hrs, Volume= 0.150 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 305.03' @ 8.97 hrs Surf.Area= 3,060 sf Storage= 2,860 cf

Plug-Flow detention time= 360.5 min calculated for 0.246 af (95% of inflow)
Center-of-Mass det. time= 327.8 min (1,094.1 - 766.3)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	8,876 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
300.90	1,020	0.0	0	0
301.00	1,020	40.0	41	41
302.40	1,020	40.0	571	612
302.50	1,020	0.1	0	612
303.90	1,020	0.1	1	614
304.00	1,020	100.0	102	716
305.00	3,060	100.0	2,040	2,756
307.00	3,060	100.0	6,120	8,876

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	304.90'	**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=0.04 cfs @ 8.54 hrs HW=305.00' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.28 cfs @ 8.97 hrs HW=305.03' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.28 cfs @ 1.03 fps)

Summary for Pond VEGL2: VEGL2

Inflow Area = 0.390 ac, 69.23% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.34 cfs @ 7.89 hrs, Volume= 0.107 af
Outflow = 0.33 cfs @ 7.96 hrs, Volume= 0.100 af, Atten= 1%, Lag= 4.0 min
Discarded = 0.01 cfs @ 2.97 hrs, Volume= 0.023 af
Primary = 0.33 cfs @ 7.96 hrs, Volume= 0.077 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.15' @ 7.96 hrs Surf.Area= 500 sf Storage= 926 cf

Plug-Flow detention time= 303.2 min calculated for 0.100 af (93% of inflow)
Center-of-Mass det. time= 257.0 min (981.7 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,351 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	500	0.0	0	0
303.00	500	40.0	20	20
304.40	500	40.0	280	300
304.50	500	0.1	0	300
305.90	500	0.1	1	301
306.00	500	100.0	50	351
308.00	500	100.0	1,000	1,351

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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=0.01 cfs @ 2.97 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.32 cfs @ 7.96 hrs HW=307.15' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.32 cfs @ 1.08 fps)

Summary for Pond VSGR2: VSGR2

Inflow Area = 0.700 ac, 70.00% Impervious, Inflow Depth = 2.79" for Salem 100 yrs event
Inflow = 0.59 cfs @ 7.94 hrs, Volume= 0.163 af
Outflow = 0.13 cfs @ 10.40 hrs, Volume= 0.148 af, Atten= 79%, Lag= 147.5 min
Discarded = 0.03 cfs @ 10.40 hrs, Volume= 0.078 af
Primary = 0.10 cfs @ 10.40 hrs, Volume= 0.070 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 304.97' @ 10.40 hrs Surf.Area= 2,241 sf Storage= 2,432 cf

Plug-Flow detention time= 528.4 min calculated for 0.148 af (91% of inflow)
Center-of-Mass det. time= 472.3 min (1,236.0 - 763.7)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	8,780 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
300.90	1,140	0.0	0	0
301.00	1,140	40.0	46	46
302.40	1,140	40.0	638	684
302.50	1,140	0.1	0	684
303.90	1,140	0.1	2	686
304.00	1,140	100.0	114	800
306.00	3,420	100.0	4,560	5,360
307.00	3,420	100.0	3,420	8,780

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	304.90'	**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=0.03 cfs @ 10.40 hrs HW=304.97' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.09 cfs @ 10.40 hrs HW=304.97' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.72 fps)

Summary for Pond ZGR1: ZGR1

Inflow Area = 4.760 ac, 68.07% Impervious, Inflow Depth = 2.96" for Salem 100 yrs event
Inflow = 3.68 cfs @ 7.92 hrs, Volume= 1.175 af
Outflow = 2.17 cfs @ 8.21 hrs, Volume= 1.100 af, Atten= 41%, Lag= 17.3 min
Discarded = 0.05 cfs @ 7.79 hrs, Volume= 0.155 af
Primary = 2.12 cfs @ 8.21 hrs, Volume= 0.945 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.30' @ 8.21 hrs Surf.Area= 0.200 ac Storage= 0.240 af

Plug-Flow detention time= 225.0 min calculated for 1.100 af (94% of inflow)
Center-of-Mass det. time= 182.6 min (938.2 - 755.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.381 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.067	0.0	0.000	0.000
303.00	0.067	40.0	0.003	0.003
304.40	0.067	40.0	0.038	0.040
304.50	0.067	0.1	0.000	0.040
305.90	0.067	0.1	0.000	0.040
306.00	0.067	100.0	0.007	0.047
307.00	0.200	100.0	0.134	0.181
308.00	0.200	100.0	0.200	0.381

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	306.80'	**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=0.05 cfs @ 7.79 hrs HW=307.01' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=2.12 cfs @ 8.21 hrs HW=307.30' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 2.12 cfs @ 2.12 fps)

Summary for Pond ZLG123: ZLG123

Inflow Area = 1.700 ac, 70.00% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 1.47 cfs @ 7.89 hrs, Volume= 0.468 af
Outflow = 1.46 cfs @ 7.95 hrs, Volume= 0.435 af, Atten= 1%, Lag= 3.7 min
Discarded = 0.01 cfs @ 2.63 hrs, Volume= 0.027 af
Primary = 1.45 cfs @ 7.95 hrs, Volume= 0.408 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Peak Elev= 308.40' @ 7.95 hrs Surf.Area= 1,200 sf Storage= 2,516 cf

Plug-Flow detention time= 150.7 min calculated for 0.435 af (93% of inflow)
Center-of-Mass det. time= 103.4 min (828.1 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	3,242 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
303.90	1,200	0.0	0	0
304.00	1,200	40.0	48	48
305.40	1,200	40.0	672	720
305.50	1,200	0.1	0	720
306.90	1,200	0.1	2	722
307.00	1,200	100.0	120	842
309.00	1,200	100.0	2,400	3,242

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	308.00'	**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=0.01 cfs @ 2.63 hrs HW=303.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=1.45 cfs @ 7.95 hrs HW=308.40' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 1.45 cfs @ 1.83 fps)

Summary for Pond ZLG14: ZLG14

Inflow Area =	0.250 ac,	70.00% Impervious,	Inflow Depth = 3.30"	for Salem 100 yrs event
Inflow =	0.22 cfs @	7.89 hrs, Volume=	0.069 af	
Outflow =	0.05 cfs @	9.68 hrs, Volume=	0.043 af,	Atten= 75%, Lag= 107.3 min
Discarded =	0.00 cfs @	3.24 hrs, Volume=	0.003 af	
Primary =	0.05 cfs @	9.68 hrs, Volume=	0.040 af	

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 301.04' @ 9.68 hrs Surf.Area= 700 sf Storage= 1,222 cf

Plug-Flow detention time= 467.0 min calculated for 0.043 af (63% of inflow)
Center-of-Mass det. time= 253.5 min (978.2 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	296.90'	2,591 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
296.90	700	0.0	0	0
297.00	700	40.0	28	28
298.40	700	40.0	392	420
298.50	700	0.1	0	420
299.90	700	0.1	1	421
300.00	700	100.0	70	491
302.00	700	100.0	1,400	1,891
303.00	700	100.0	700	2,591

Device	Routing	Invert	Outlet Devices
#1	Discarded	296.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	301.00'	**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 @ 3.24 hrs HW=296.96' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.05 cfs @ 9.68 hrs HW=301.04' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.59 fps)

Summary for Pond ZLG4: ZLG4

Inflow Area = 0.440 ac, 59.09% Impervious, Inflow Depth = 3.01" for Salem 100 yrs event
Inflow = 0.34 cfs @ 7.91 hrs, Volume= 0.110 af
Outflow = 0.34 cfs @ 7.93 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.9 min
Discarded = 0.00 cfs @ 3.09 hrs, Volume= 0.004 af
Primary = 0.34 cfs @ 7.93 hrs, Volume= 0.102 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 308.15' @ 7.93 hrs Surf.Area= 0.004 ac Storage= 0.007 af

Plug-Flow detention time= 89.1 min calculated for 0.106 af (96% of inflow)
Center-of-Mass det. time= 60.3 min (805.1 - 744.8)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	0.011 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
303.90	0.004	0.0	0.000	0.000
304.00	0.004	40.0	0.000	0.000
305.40	0.004	40.0	0.002	0.002
305.50	0.004	0.1	0.000	0.002
306.90	0.004	0.1	0.000	0.002
307.00	0.004	100.0	0.000	0.003
309.00	0.004	100.0	0.008	0.011

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	308.00'	**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 @ 3.09 hrs HW=303.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.34 cfs @ 7.93 hrs HW=308.15' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.34 cfs @ 1.10 fps)

Summary for Pond ZLG5: ZLG5

Inflow Area = 0.950 ac, 69.47% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.82 cfs @ 7.89 hrs, Volume= 0.261 af
Outflow = 0.82 cfs @ 7.94 hrs, Volume= 0.243 af, Atten= 0%, Lag= 2.7 min
Discarded = 0.00 cfs @ 2.64 hrs, Volume= 0.016 af
Primary = 0.81 cfs @ 7.94 hrs, Volume= 0.227 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.27' @ 7.94 hrs Surf.Area= 0.016 ac Storage= 0.032 af

Plug-Flow detention time= 153.8 min calculated for 0.243 af (93% of inflow)
Center-of-Mass det. time= 104.7 min (829.3 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.043 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.016	0.0	0.000	0.000
303.00	0.016	40.0	0.001	0.001
304.40	0.016	40.0	0.009	0.010
304.50	0.016	0.1	0.000	0.010
305.90	0.016	0.1	0.000	0.010
306.00	0.016	100.0	0.002	0.011
308.00	0.016	100.0	0.032	0.043

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 2.64 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.81 cfs @ 7.94 hrs HW=307.27' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.81 cfs @ 1.49 fps)

Summary for Pond ZLG6: ZLG6

Inflow Area = 1.070 ac, 70.09% Impervious, Inflow Depth = 3.30" for Salem 100 yrs event
Inflow = 0.93 cfs @ 7.89 hrs, Volume= 0.294 af
Outflow = 0.92 cfs @ 7.93 hrs, Volume= 0.275 af, Atten= 0%, Lag= 2.4 min
Discarded = 0.00 cfs @ 2.61 hrs, Volume= 0.016 af
Primary = 0.92 cfs @ 7.93 hrs, Volume= 0.259 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.30' @ 7.93 hrs Surf.Area= 700 sf Storage= 1,398 cf

Plug-Flow detention time= 138.2 min calculated for 0.275 af (94% of inflow)
Center-of-Mass det. time= 94.1 min (818.7 - 724.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,891 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	700	0.0	0	0
303.00	700	40.0	28	28
304.40	700	40.0	392	420
304.50	700	0.1	0	420
305.90	700	0.1	1	421
306.00	700	100.0	70	491
308.00	700	100.0	1,400	1,891

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 2.61 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.92 cfs @ 7.93 hrs HW=307.30' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.92 cfs @ 1.55 fps)

Summary for Pond ZLG7: ZLG7

Inflow Area = 0.150 ac, 73.33% Impervious, Inflow Depth = 3.40" for Salem 100 yrs event
Inflow = 0.13 cfs @ 7.89 hrs, Volume= 0.043 af
Outflow = 0.13 cfs @ 7.90 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.6 min
Discarded = 0.00 cfs @ 2.41 hrs, Volume= 0.002 af
Primary = 0.13 cfs @ 7.90 hrs, Volume= 0.038 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.08' @ 7.90 hrs Surf.Area= 100 sf Storage= 178 cf

Plug-Flow detention time= 133.3 min calculated for 0.040 af (94% of inflow)

Center-of-Mass det. time= 89.6 min (807.2 - 717.6)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 2.41 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.13 cfs @ 7.90 hrs HW=307.08' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.13 cfs @ 0.81 fps)

Summary for Pond ZLG9: ZLG9

Inflow Area = 0.440 ac, 59.09% Impervious, Inflow Depth = 3.01" for Salem 100 yrs event
Inflow = 0.34 cfs @ 7.91 hrs, Volume= 0.110 af
Outflow = 0.13 cfs @ 8.78 hrs, Volume= 0.099 af, Atten= 62%, Lag= 51.9 min
Discarded = 0.01 cfs @ 3.90 hrs, Volume= 0.035 af
Primary = 0.12 cfs @ 8.78 hrs, Volume= 0.064 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 308.08' @ 8.78 hrs Surf.Area= 0.018 ac Storage= 0.032 af

Plug-Flow detention time= 460.1 min calculated for 0.099 af (90% of inflow)
Center-of-Mass det. time= 392.2 min (1,136.9 - 744.8)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	0.049 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
303.90	0.018	0.0	0.000	0.000
304.00	0.018	40.0	0.001	0.001
305.40	0.018	40.0	0.010	0.011
305.50	0.018	0.1	0.000	0.011
306.90	0.018	0.1	0.000	0.011
307.00	0.018	100.0	0.002	0.013
309.00	0.018	100.0	0.036	0.049

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	308.00'	**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=0.01 cfs @ 3.90 hrs HW=303.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.12 cfs @ 8.78 hrs HW=308.08' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.12 cfs @ 0.77 fps)

Summary for Pond ZRG2: ZGR2

Inflow Area = 5.130 ac, 68.03% Impervious, Inflow Depth = 2.45" for Salem 100 yrs event
Inflow = 2.30 cfs @ 8.19 hrs, Volume= 1.045 af
Outflow = 2.20 cfs @ 8.34 hrs, Volume= 1.026 af, Atten= 4%, Lag= 8.9 min
Discarded = 0.01 cfs @ 8.00 hrs, Volume= 0.038 af
Primary = 2.19 cfs @ 8.34 hrs, Volume= 0.988 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 306.31' @ 8.34 hrs Surf.Area= 0.049 ac Storage= 0.060 af

Plug-Flow detention time= 60.8 min calculated for 1.026 af (98% of inflow)
Center-of-Mass det. time= 48.7 min (879.4 - 830.7)

Volume	Invert	Avail.Storage	Storage Description
#1	301.90'	0.094 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
301.90	0.017	0.0	0.000	0.000
302.00	0.017	40.0	0.001	0.001
303.40	0.017	40.0	0.010	0.010
303.50	0.017	0.1	0.000	0.010
304.90	0.017	0.1	0.000	0.010
305.00	0.017	100.0	0.002	0.012
306.00	0.049	100.0	0.033	0.045
307.00	0.049	100.0	0.049	0.094

Device	Routing	Invert	Outlet Devices
#1	Discarded	301.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	305.80'	**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=0.01 cfs @ 8.00 hrs HW=306.02' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=2.18 cfs @ 8.34 hrs HW=306.31' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 2.18 cfs @ 2.15 fps)

Summary for Link STRONG: STRONG

Inflow Area = 19.498 ac, 64.91% Impervious, Inflow Depth = 2.00" for Salem 100 yrs event
Inflow = 4.07 cfs @ 9.79 hrs, Volume= 3.243 af
Primary = 4.07 cfs @ 9.79 hrs, Volume= 3.243 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link Z1st: SA1

Inflow Area = 9.550 ac, 68.06% Impervious, Inflow Depth = 2.04" for Salem 100 yrs event
Inflow = 2.50 cfs @ 9.27 hrs, Volume= 1.626 af
Primary = 2.50 cfs @ 9.27 hrs, Volume= 1.626 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link Z1st2: Z1st2

Inflow Area = 2.510 ac, 62.75% Impervious, Inflow Depth = 2.79" for Salem 100 yrs event
Inflow = 1.82 cfs @ 8.02 hrs, Volume= 0.584 af
Primary = 1.82 cfs @ 8.02 hrs, Volume= 0.584 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link ZL: S

Inflow Area = 6.880 ac, 67.44% Impervious, Inflow Depth = 2.16" for Salem 100 yrs event
Inflow = 2.60 cfs @ 8.35 hrs, Volume= 1.241 af
Primary = 2.60 cfs @ 8.35 hrs, Volume= 1.241 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link ZLL: SA

Inflow Area = 8.820 ac, 67.91% Impervious, Inflow Depth = 2.15" for Salem 100 yrs event
Inflow = 2.48 cfs @ 9.07 hrs, Volume= 1.578 af
Primary = 2.48 cfs @ 9.07 hrs, Volume= 1.578 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A1: 1A1 Runoff Area=0.210 ac 71.43% Impervious Runoff Depth=1.34"
Tc=5.0 min CN=91 Runoff=0.07 cfs 0.023 af

Subcatchment 1A1up: 1A1up Runoff Area=0.280 ac 0.00% Impervious Runoff Depth=0.38"
Flow Length=200' Slope=0.1900 '/' Tc=14.6 min CN=72 Runoff=0.01 cfs 0.009 af

Subcatchment 1stR1: 1stR1 Runoff Area=0.250 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.08 cfs 0.026 af

Subcatchment 1stR2: 1stR2 Runoff Area=0.250 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.08 cfs 0.026 af

Subcatchment 1stREGB: 1stREGB Runoff Area=0.890 ac 0.00% Impervious Runoff Depth=0.38"
Flow Length=350' Slope=0.0800 '/' Tc=22.4 min CN=72 Runoff=0.02 cfs 0.028 af

Subcatchment QSR1: QSR1 Runoff Area=0.280 ac 71.43% Impervious Runoff Depth=1.34"
Tc=10.0 min CN=91 Runoff=0.09 cfs 0.031 af

Subcatchment QSR2: QSR2 Runoff Area=0.280 ac 71.43% Impervious Runoff Depth=1.34"
Tc=10.0 min CN=91 Runoff=0.09 cfs 0.031 af

Subcatchment SA4: SA2 Runoff Area=0.130 ac 60.00% Impervious Runoff Depth=1.13"
Tc=5.0 min CN=88 Runoff=0.04 cfs 0.012 af

Subcatchment SA5: SA5 Runoff Area=0.120 ac 70.83% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.04 cfs 0.013 af

Subcatchment SA6: SA6 Runoff Area=0.110 ac 72.73% Impervious Runoff Depth=1.34"
Tc=5.0 min CN=91 Runoff=0.04 cfs 0.012 af

Subcatchment SA7: SA7 Runoff Area=0.240 ac 70.83% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.08 cfs 0.025 af

Subcatchment SR2: SR2 Runoff Area=0.190 ac 68.42% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.06 cfs 0.020 af

Subcatchment STEL10: STEL10 Runoff Area=0.390 ac 69.23% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.12 cfs 0.041 af

Subcatchment STEL2: STEL2 Runoff Area=0.630 ac 69.84% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.20 cfs 0.066 af

Subcatchment STEL3: STEL3 Runoff Area=0.240 ac 70.83% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.08 cfs 0.025 af

Subcatchment STEL4: STEL4 Runoff Area=0.840 ac 70.24% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.26 cfs 0.089 af

Subcatchment STEL5: STEL5 Runoff Area=0.150 ac 66.67% Impervious Runoff Depth=1.20"
Tc=5.0 min CN=89 Runoff=0.04 cfs 0.015 af

Subcatchment STEL6: STEL6 Runoff Area=0.310 ac 70.97% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.10 cfs 0.033 af

Subcatchment STEL7: STEL7 Runoff Area=0.138 ac 71.01% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.04 cfs 0.015 af

Subcatchment STEL8: STEL8 Runoff Area=0.130 ac 69.23% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.04 cfs 0.014 af

Subcatchment STEL9: STEL9 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.011 af

Subcatchment STER2: STER2 Runoff Area=0.650 ac 70.77% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.20 cfs 0.069 af

Subcatchment STER3: STER3 Runoff Area=0.550 ac 70.91% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.17 cfs 0.058 af

Subcatchment STRONG -PRE: STONG PRE Runoff Area=19.230 ac 0.00% Impervious Runoff Depth=0.38"
Flow Length=1,900' Slope=0.0600 '/' Tc=43.9 min CN=72 Runoff=0.48 cfs 0.610 af

Subcatchment UEL3: UEL3 Runoff Area=0.470 ac 70.21% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.15 cfs 0.050 af

Subcatchment UEL4: UEL4 Runoff Area=0.120 ac 66.67% Impervious Runoff Depth=1.20"
Tc=5.0 min CN=89 Runoff=0.04 cfs 0.012 af

Subcatchment UEL5: UEL5 Runoff Area=0.170 ac 70.59% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.05 cfs 0.018 af

Subcatchment USR1: USR1 Runoff Area=0.360 ac 69.44% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.11 cfs 0.038 af

Subcatchment VEL2: VEL2 Runoff Area=0.390 ac 69.23% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.12 cfs 0.041 af

Subcatchment VSR2: VSR2 Runoff Area=0.310 ac 70.97% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.10 cfs 0.033 af

Subcatchment ZA1: ZA1 Runoff Area=0.260 ac 69.23% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.08 cfs 0.027 af

Subcatchment ZA2: ZA2 Runoff Area=0.280 ac 71.43% Impervious Runoff Depth=1.34"
Tc=5.0 min CN=91 Runoff=0.09 cfs 0.031 af

Subcatchment ZA3: ZA3 Runoff Area=0.230 ac 69.57% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.07 cfs 0.024 af

Subcatchment ZA4: ZA4 Runoff Area=0.140 ac 71.43% Impervious Runoff Depth=1.34"
Tc=5.0 min CN=91 Runoff=0.05 cfs 0.016 af

Subcatchment ZA5: ZA5 Runoff Area=0.140 ac 71.43% Impervious Runoff Depth=1.34"
Tc=5.0 min CN=91 Runoff=0.05 cfs 0.016 af

Subcatchment ZA6: ZA6 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.011 af

Subcatchment ZA7: ZA7 Runoff Area=0.900 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.28 cfs 0.095 af

Subcatchment ZA8: ZA8 Runoff Area=0.270 ac 70.37% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.08 cfs 0.028 af

Subcatchment ZL10: ZL10 Runoff Area=0.440 ac 59.09% Impervious Runoff Depth=1.06"
Tc=10.0 min CN=87 Runoff=0.11 cfs 0.039 af

Subcatchment ZL11: ZL11 Runoff Area=0.380 ac 71.05% Impervious Runoff Depth=1.27"
Tc=10.0 min CN=90 Runoff=0.12 cfs 0.040 af

Subcatchment ZL12: ZL12 Runoff Area=0.180 ac 66.67% Impervious Runoff Depth=1.20"
Tc=5.0 min CN=89 Runoff=0.05 cfs 0.018 af

Subcatchment ZL123: ZL123 Runoff Area=1.700 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.53 cfs 0.179 af

Subcatchment ZL13: ZL13 Runoff Area=0.730 ac 69.86% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.23 cfs 0.077 af

Subcatchment ZL14: ZL14 Runoff Area=0.250 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.08 cfs 0.026 af

Subcatchment ZL4: ZL4 Runoff Area=0.440 ac 59.09% Impervious Runoff Depth=1.06"
Tc=5.0 min CN=87 Runoff=0.11 cfs 0.039 af

Subcatchment ZL5: ZL5 Runoff Area=0.950 ac 69.47% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.30 cfs 0.100 af

Subcatchment ZL6: ZL6 Runoff Area=1.070 ac 70.09% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.34 cfs 0.113 af

Subcatchment ZL7: ZL7 Runoff Area=0.150 ac 73.33% Impervious Runoff Depth=1.34"
Tc=5.0 min CN=91 Runoff=0.05 cfs 0.017 af

Subcatchment ZL8: ZL8 Runoff Area=0.370 ac 59.46% Impervious Runoff Depth=1.06"
Tc=10.0 min CN=87 Runoff=0.09 cfs 0.033 af

Subcatchment ZL9: ZL9 Runoff Area=0.440 ac 59.09% Impervious Runoff Depth=1.06"
Tc=5.0 min CN=87 Runoff=0.11 cfs 0.039 af

Subcatchment ZR1: ZR1 Runoff Area=0.900 ac 70.00% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=90 Runoff=0.28 cfs 0.095 af

Pond 1stGR1: 1stGr1 Peak Elev=300.69' Storage=1,080 cf Inflow=0.08 cfs 0.026 af
Discarded=0.00 cfs 0.004 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.004 af

Pond 1stGR2: 1stGr2 Peak Elev=303.03' Storage=1,488 cf Inflow=0.15 cfs 0.059 af
Discarded=0.00 cfs 0.005 af Primary=0.03 cfs 0.023 af Outflow=0.03 cfs 0.028 af

Pond 1stREG.B: 1st REG.B Peak Elev=303.15' Storage=11,742 cf Inflow=0.41 cfs 0.342 af
Discarded=0.01 cfs 0.029 af Primary=0.32 cfs 0.081 af Outflow=0.33 cfs 0.109 af

Pond QSGR1: QSGR1 Peak Elev=308.22' Storage=0.021 af Inflow=0.09 cfs 0.031 af
Discarded=0.01 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.023 af

Pond QSGR2: QSGR2 Peak Elev=306.22' Storage=0.021 af Inflow=0.09 cfs 0.031 af
Discarded=0.01 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.023 af

Pond STEGL10: STEGL10 Peak Elev=307.03' Storage=863 cf Inflow=0.12 cfs 0.041 af
Discarded=0.00 cfs 0.004 af Primary=0.02 cfs 0.020 af Outflow=0.03 cfs 0.024 af

Pond STEGL2: STEGL2 Peak Elev=307.04' Storage=872 cf Inflow=0.20 cfs 0.066 af
Discarded=0.01 cfs 0.022 af Primary=0.05 cfs 0.037 af Outflow=0.06 cfs 0.059 af

Pond STEGL3: STEGL3 Peak Elev=307.03' Storage=345 cf Inflow=0.08 cfs 0.025 af
Discarded=0.00 cfs 0.001 af Primary=0.03 cfs 0.017 af Outflow=0.03 cfs 0.018 af

Pond STEGL4: STEGL4 Peak Elev=307.05' Storage=1,402 cf Inflow=0.26 cfs 0.089 af
Discarded=0.00 cfs 0.003 af Primary=0.07 cfs 0.056 af Outflow=0.07 cfs 0.059 af

Pond STEGL5: STEGL5 Peak Elev=307.02' Storage=172 cf Inflow=0.04 cfs 0.015 af
Discarded=0.00 cfs 0.004 af Primary=0.02 cfs 0.009 af Outflow=0.02 cfs 0.014 af

Pond STEGL7: STEGL7 Peak Elev=307.02' Storage=172 cf Inflow=0.04 cfs 0.015 af
Discarded=0.00 cfs 0.004 af Primary=0.02 cfs 0.009 af Outflow=0.02 cfs 0.013 af

Pond STEGL8: STEGL8 Peak Elev=307.02' Storage=172 cf Inflow=0.04 cfs 0.014 af
Discarded=0.00 cfs 0.001 af Primary=0.02 cfs 0.009 af Outflow=0.02 cfs 0.010 af

Pond STEGL9: STEGL9 Peak Elev=303.01' Storage=171 cf Inflow=0.03 cfs 0.011 af
Discarded=0.00 cfs 0.001 af Primary=0.01 cfs 0.006 af Outflow=0.01 cfs 0.007 af

Pond STEGR2: STEGR2 Peak Elev=304.93' Storage=3,460 cf Inflow=0.20 cfs 0.132 af
Discarded=0.04 cfs 0.103 af Primary=0.03 cfs 0.008 af Outflow=0.06 cfs 0.112 af

Pond STEGR3: STEGR3 Peak Elev=302.98' Storage=3,305 cf Inflow=0.25 cfs 0.185 af
Discarded=0.00 cfs 0.012 af Primary=0.13 cfs 0.109 af Outflow=0.13 cfs 0.121 af

Pond STELG6: STELG6 Peak Elev=303.02' Storage=687 cf Inflow=0.10 cfs 0.033 af
Discarded=0.00 cfs 0.003 af Primary=0.02 cfs 0.016 af Outflow=0.02 cfs 0.019 af

Pond UEGL3: UEGL3 Peak Elev=307.02' Storage=1,034 cf Inflow=0.15 cfs 0.050 af
Discarded=0.01 cfs 0.026 af Primary=0.02 cfs 0.015 af Outflow=0.03 cfs 0.041 af

Pond UEGL4: UEGL4 Peak Elev=307.01' Storage=171 cf Inflow=0.04 cfs 0.012 af
Discarded=0.00 cfs 0.004 af Primary=0.01 cfs 0.006 af Outflow=0.01 cfs 0.011 af

Pond UEGL5: UEGL5 Peak Elev=307.03' Storage=173 cf Inflow=0.05 cfs 0.018 af
Discarded=0.00 cfs 0.004 af Primary=0.03 cfs 0.012 af Outflow=0.03 cfs 0.017 af

Pond UOC1: UOC1 Peak Elev=305.29' Storage=0.072 af Inflow=0.32 cfs 0.112 af
Discarded=0.00 cfs 0.015 af Primary=0.06 cfs 0.037 af Outflow=0.06 cfs 0.052 af

Pond UOC2: UOC2 Peak Elev=305.12' Storage=0.165 af Inflow=0.29 cfs 0.270 af
Discarded=0.01 cfs 0.019 af Primary=0.24 cfs 0.109 af Outflow=0.24 cfs 0.128 af

Pond UOC3: UOC3 Peak Elev=303.13' Storage=3,913 cf Inflow=0.29 cfs 0.203 af
Discarded=0.00 cfs 0.011 af Primary=0.28 cfs 0.116 af Outflow=0.28 cfs 0.127 af

Pond USGR1: USGR1 Peak Elev=304.66' Storage=1,825 cf Inflow=0.11 cfs 0.071 af
Discarded=0.03 cfs 0.065 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.065 af

Pond VEGL2: VEGL2 Peak Elev=307.02' Storage=860 cf Inflow=0.12 cfs 0.041 af
Discarded=0.01 cfs 0.022 af Primary=0.02 cfs 0.012 af Outflow=0.02 cfs 0.034 af

Pond VSGR2: VSGR2 Peak Elev=304.20' Storage=1,045 cf Inflow=0.10 cfs 0.045 af
Discarded=0.02 cfs 0.045 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.045 af

Pond ZGR1: ZGR1 Peak Elev=306.91' Storage=0.162 af Inflow=0.69 cfs 0.383 af
Discarded=0.05 cfs 0.140 af Primary=0.20 cfs 0.169 af Outflow=0.25 cfs 0.310 af

Pond ZLG123: ZLG123 Peak Elev=308.10' Storage=2,165 cf Inflow=0.53 cfs 0.179 af
Discarded=0.01 cfs 0.026 af Primary=0.19 cfs 0.121 af Outflow=0.20 cfs 0.147 af

Pond ZLG14: ZLG14 Peak Elev=300.86' Storage=1,093 cf Inflow=0.08 cfs 0.026 af
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af

Pond ZLG4: ZLG4 Peak Elev=308.05' Storage=0.007 af Inflow=0.11 cfs 0.039 af
Discarded=0.00 cfs 0.004 af Primary=0.07 cfs 0.031 af Outflow=0.07 cfs 0.034 af

Pond ZLG5: ZLG5 Peak Elev=307.07' Storage=0.028 af Inflow=0.30 cfs 0.100 af
Discarded=0.00 cfs 0.015 af Primary=0.10 cfs 0.066 af Outflow=0.11 cfs 0.082 af

Pond ZLG6: ZLG6 Peak Elev=307.08' Storage=1,249 cf Inflow=0.34 cfs 0.113 af
Discarded=0.00 cfs 0.015 af Primary=0.13 cfs 0.079 af Outflow=0.14 cfs 0.094 af

Pond ZLG7: ZLG7 Peak Elev=307.03' Storage=173 cf Inflow=0.05 cfs 0.017 af
Discarded=0.00 cfs 0.002 af Primary=0.03 cfs 0.012 af Outflow=0.03 cfs 0.014 af

Pond ZLG9: ZLG9 Peak Elev=307.70' Storage=0.025 af Inflow=0.11 cfs 0.039 af
Discarded=0.01 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.033 af

Pond ZRG2: ZGR2 Peak Elev=305.91' Storage=0.041 af Inflow=0.22 cfs 0.207 af
Discarded=0.01 cfs 0.033 af Primary=0.21 cfs 0.156 af Outflow=0.22 cfs 0.189 af

Link STRONG: STRONG Inflow=0.45 cfs 0.249 af
Primary=0.45 cfs 0.249 af

Link Z1st: SA1 Inflow=0.29 cfs 0.141 af
Primary=0.29 cfs 0.141 af

Link Z1st2: Z1st2 Inflow=0.23 cfs 0.174 af
Primary=0.23 cfs 0.174 af

Link ZL: S Inflow=0.25 cfs 0.193 af
Primary=0.25 cfs 0.193 af

Link ZLL: SA Inflow=0.29 cfs 0.203 af
Primary=0.29 cfs 0.203 af

Summary for Subcatchment 1A1: 1A1

Runoff = 0.07 cfs @ 7.93 hrs, Volume= 0.023 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.150	98	
*	0.060	72	
	0.210	91	Weighted Average
	0.060		28.57% Pervious Area
	0.150		71.43% Impervious Area

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

Summary for Subcatchment 1A1up: 1A1up

Runoff = 0.01 cfs @ 8.23 hrs, Volume= 0.009 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.280	72	
	0.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	200	0.1900	0.23		**Sheet Flow, mixed** n= 0.300 P2= 2.20"

Summary for Subcatchment 1stR1: 1stR1

Runoff = 0.08 cfs @ 7.94 hrs, Volume= 0.026 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.175	98	
*	0.075	72	
	0.250	90	Weighted Average
	0.075		30.00% Pervious Area
	0.175		70.00% Impervious Area

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

Summary for Subcatchment 1stR2: 1stR2

Runoff = 0.08 cfs @ 7.94 hrs, Volume= 0.026 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.175	98	
*	0.075	72	
	0.250	90	Weighted Average
	0.075		30.00% Pervious Area
	0.175		70.00% Impervious Area

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

Summary for Subcatchment 1stREGB: 1stREGB

Runoff = 0.02 cfs @ 8.99 hrs, Volume= 0.028 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.890	72	
	0.890		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.6	200	0.0800	0.16		**Sheet Flow, MIXED** n= 0.300 P2= 2.20"
1.8	150	0.0800	1.41		**Shallow Concentrated Flow, MIXED** Kv= 5.0 fps
22.4	350	Total			

Summary for Subcatchment QSR1: QSR1

Runoff = 0.09 cfs @ 8.01 hrs, Volume= 0.031 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.200	98	
*	0.080	72	
	0.280	91	Weighted Average
	0.080		28.57% Pervious Area
	0.200		71.43% Impervious Area

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

Summary for Subcatchment QSR2: QSR2

Runoff = 0.09 cfs @ 8.01 hrs, Volume= 0.031 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.200	98	
*	0.080	72	
	0.280	91	Weighted Average
	0.080		28.57% Pervious Area
	0.200		71.43% Impervious Area

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

Summary for Subcatchment SA4: SA2

Runoff = 0.04 cfs @ 7.96 hrs, Volume= 0.012 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.078	98	
*	0.052	72	
	0.130	88	Weighted Average
	0.052		40.00% Pervious Area
	0.078		60.00% Impervious Area

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

Summary for Subcatchment SA5: SA5

Runoff = 0.04 cfs @ 7.94 hrs, Volume= 0.013 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.085	98	
*	0.035	72	
	0.120	90	Weighted Average
	0.035		29.17% Pervious Area
	0.085		70.83% Impervious Area

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

Summary for Subcatchment SA6: SA6

Runoff = 0.04 cfs @ 7.93 hrs, Volume= 0.012 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.080	98	
*	0.030	72	
	0.110	91	Weighted Average
	0.030		27.27% Pervious Area
	0.080		72.73% Impervious Area

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

Summary for Subcatchment SA7: SA7

Runoff = 0.08 cfs @ 7.94 hrs, Volume= 0.025 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.170	98	
*	0.070	72	
	0.240	90	Weighted Average
	0.070		29.17% Pervious Area
	0.170		70.83% Impervious Area

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

Summary for Subcatchment SR2: SR2

Runoff = 0.06 cfs @ 7.94 hrs, Volume= 0.020 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.130	98	
*	0.060	72	
	0.190	90	Weighted Average
	0.060		31.58% Pervious Area
	0.130		68.42% Impervious Area

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

Summary for Subcatchment STEL10: STEL10

Runoff = 0.12 cfs @ 7.94 hrs, Volume= 0.041 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.270	98	
*	0.120	72	
	0.390	90	Weighted Average
	0.120		30.77% Pervious Area
	0.270		69.23% Impervious Area

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

Summary for Subcatchment STEL2: STEL2

Runoff = 0.20 cfs @ 7.94 hrs, Volume= 0.066 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.440	98	
*	0.190	72	
	0.630	90	Weighted Average
	0.190		30.16% Pervious Area
	0.440		69.84% Impervious Area

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

Summary for Subcatchment STEL3: STEL3

Runoff = 0.08 cfs @ 7.94 hrs, Volume= 0.025 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.170	98	
*	0.070	72	
	0.240	90	Weighted Average
	0.070		29.17% Pervious Area
	0.170		70.83% Impervious Area

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

Summary for Subcatchment STEL4: STEL4

Runoff = 0.26 cfs @ 7.94 hrs, Volume= 0.089 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.590	98	
*	0.250	72	
	0.840	90	Weighted Average
	0.250		29.76% Pervious Area
	0.590		70.24% Impervious Area

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

Summary for Subcatchment STEL5: STEL5

Runoff = 0.04 cfs @ 7.95 hrs, Volume= 0.015 af, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.100	98	
*	0.050	72	
	0.150	89	Weighted Average
	0.050		33.33% Pervious Area
	0.100		66.67% Impervious Area

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

Summary for Subcatchment STEL6: STEL6

Runoff = 0.10 cfs @ 7.94 hrs, Volume= 0.033 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.220	98	
*	0.090	72	
	0.310	90	Weighted Average
	0.090		29.03% Pervious Area
	0.220		70.97% Impervious Area

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

Summary for Subcatchment STEL7: STEL7

Runoff = 0.04 cfs @ 7.94 hrs, Volume= 0.015 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.098	98	
*	0.040	72	
	0.138	90	Weighted Average
	0.040		28.99% Pervious Area
	0.098		71.01% Impervious Area

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

Summary for Subcatchment STEL8: STEL8

Runoff = 0.04 cfs @ 7.94 hrs, Volume= 0.014 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.090	98	
*	0.040	72	
	0.130	90	Weighted Average
	0.040		30.77% Pervious Area
	0.090		69.23% Impervious Area

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

Summary for Subcatchment STEL9: STEL9

Runoff = 0.03 cfs @ 7.94 hrs, Volume= 0.011 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment STER2: STER2

Runoff = 0.20 cfs @ 7.94 hrs, Volume= 0.069 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.460	98	
*	0.190	72	
	0.650	90	Weighted Average
	0.190		29.23% Pervious Area
	0.460		70.77% Impervious Area

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

Summary for Subcatchment STER3: STER3

Runoff = 0.17 cfs @ 7.94 hrs, Volume= 0.058 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.390	98	
*	0.160	72	
	0.550	90	Weighted Average
	0.160		29.09% Pervious Area
	0.390		70.91% Impervious Area

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

Summary for Subcatchment STRONG -PRE: STONG PRE

Runoff = 0.48 cfs @ 9.32 hrs, Volume= 0.610 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	19.230	72	
	19.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.9	300	0.0600	0.16		**Sheet Flow, MIXED** n= 0.300 P2= 2.20"
4.1	300	0.0600	1.22		**Shallow Concentrated Flow, MIXED** Kv= 5.0 fps
7.9	1,300	0.0600	2.75	4.59	**Parabolic Channel,** W=10.00' D=0.25' Area=1.7 sf Perim=10.0' n= 0.040
43.9	1,900	Total			

Summary for Subcatchment UEL3: UEL3

Runoff = 0.15 cfs @ 7.94 hrs, Volume= 0.050 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.330	98	
*	0.140	72	
	0.470	90	Weighted Average
	0.140		29.79% Pervious Area
	0.330		70.21% Impervious Area

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

Summary for Subcatchment UEL4: UEL4

Runoff = 0.04 cfs @ 7.95 hrs, Volume= 0.012 af, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.080	98	
*	0.040	72	
	0.120	89	Weighted Average
	0.040		33.33% Pervious Area
	0.080		66.67% Impervious Area

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

Summary for Subcatchment UEL5: UEL5

Runoff = 0.05 cfs @ 7.94 hrs, Volume= 0.018 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.120	98	
*	0.050	72	
	0.170	90	Weighted Average
	0.050		29.41% Pervious Area
	0.120		70.59% Impervious Area

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

Summary for Subcatchment USR1: USR1

Runoff = 0.11 cfs @ 7.94 hrs, Volume= 0.038 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.250	98	
*	0.110	72	
	0.360	90	Weighted Average
	0.110		30.56% Pervious Area
	0.250		69.44% Impervious Area

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

Summary for Subcatchment VEL2: VEL2

Runoff = 0.12 cfs @ 7.94 hrs, Volume= 0.041 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.270	98	
*	0.120	72	
	0.390	90	Weighted Average
	0.120		30.77% Pervious Area
	0.270		69.23% Impervious Area

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

Summary for Subcatchment VSR2: VSR2

Runoff = 0.10 cfs @ 7.94 hrs, Volume= 0.033 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.220	98	
*	0.090	72	
	0.310	90	Weighted Average
	0.090		29.03% Pervious Area
	0.220		70.97% Impervious Area

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

Summary for Subcatchment ZA1: ZA1

Runoff = 0.08 cfs @ 7.94 hrs, Volume= 0.027 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.180	98	
*	0.080	72	
	0.260	90	Weighted Average
	0.080		30.77% Pervious Area
	0.180		69.23% Impervious Area

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

Summary for Subcatchment ZA2: ZA2

Runoff = 0.09 cfs @ 7.93 hrs, Volume= 0.031 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.200	98	
*	0.080	72	
	0.280	91	Weighted Average
	0.080		28.57% Pervious Area
	0.200		71.43% Impervious Area

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

Summary for Subcatchment ZA3: ZA3

Runoff = 0.07 cfs @ 7.94 hrs, Volume= 0.024 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.160	98	
*	0.070	72	
	0.230	90	Weighted Average
	0.070		30.43% Pervious Area
	0.160		69.57% Impervious Area

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

Summary for Subcatchment ZA4: ZA4

Runoff = 0.05 cfs @ 7.93 hrs, Volume= 0.016 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.100	98	
*	0.040	72	
	0.140	91	Weighted Average
	0.040		28.57% Pervious Area
	0.100		71.43% Impervious Area

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

Summary for Subcatchment ZA5: ZA5

Runoff = 0.05 cfs @ 7.93 hrs, Volume= 0.016 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.100	98	
*	0.040	72	
	0.140	91	Weighted Average
	0.040		28.57% Pervious Area
	0.100		71.43% Impervious Area

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

Summary for Subcatchment ZA6: ZA6

Runoff = 0.03 cfs @ 7.94 hrs, Volume= 0.011 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment ZA7: ZA7

Runoff = 0.28 cfs @ 7.94 hrs, Volume= 0.095 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.630	98	
*	0.270	72	
	0.900	90	Weighted Average
	0.270		30.00% Pervious Area
	0.630		70.00% Impervious Area

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

Summary for Subcatchment ZA8: ZA8

Runoff = 0.08 cfs @ 7.94 hrs, Volume= 0.028 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.190	98	
*	0.080	72	
	0.270	90	Weighted Average
	0.080		29.63% Pervious Area
	0.190		70.37% Impervious Area

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

Summary for Subcatchment ZL10: ZL10

Runoff = 0.11 cfs @ 8.03 hrs, Volume= 0.039 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.260	98	
*	0.180	72	
	0.440	87	Weighted Average
	0.180		40.91% Pervious Area
	0.260		59.09% Impervious Area

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

Summary for Subcatchment ZL11: ZL11

Runoff = 0.12 cfs @ 8.01 hrs, Volume= 0.040 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.270	98	
*	0.110	72	
	0.380	90	Weighted Average
	0.110		28.95% Pervious Area
	0.270		71.05% Impervious Area

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

Summary for Subcatchment ZL12: ZL12

Runoff = 0.05 cfs @ 7.95 hrs, Volume= 0.018 af, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.120	98	
*	0.060	72	
	0.180	89	Weighted Average
	0.060		33.33% Pervious Area
	0.120		66.67% Impervious Area

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

Summary for Subcatchment ZL123: ZL123

Runoff = 0.53 cfs @ 7.94 hrs, Volume= 0.179 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	1.190	98	
*	0.510	72	
	1.700	90	Weighted Average
	0.510		30.00% Pervious Area
	1.190		70.00% Impervious Area

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

Summary for Subcatchment ZL13: ZL13

Runoff = 0.23 cfs @ 7.94 hrs, Volume= 0.077 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.510	98	
*	0.220	72	
	0.730	90	Weighted Average
	0.220		30.14% Pervious Area
	0.510		69.86% Impervious Area

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

Summary for Subcatchment ZL14: ZL14

Runoff = 0.08 cfs @ 7.94 hrs, Volume= 0.026 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.175	98	
*	0.075	72	
	0.250	90	Weighted Average
	0.075		30.00% Pervious Area
	0.175		70.00% Impervious Area

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

Summary for Subcatchment ZL4: ZL4

Runoff = 0.11 cfs @ 7.97 hrs, Volume= 0.039 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.260	98	
*	0.180	72	
	0.440	87	Weighted Average
	0.180		40.91% Pervious Area
	0.260		59.09% Impervious Area

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

Summary for Subcatchment ZL5: ZL5

Runoff = 0.30 cfs @ 7.94 hrs, Volume= 0.100 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.660	98	
*	0.290	72	
	0.950	90	Weighted Average
	0.290		30.53% Pervious Area
	0.660		69.47% Impervious Area

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

Summary for Subcatchment ZL6: ZL6

Runoff = 0.34 cfs @ 7.94 hrs, Volume= 0.113 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.750	98	
*	0.320	72	
	1.070	90	Weighted Average
	0.320		29.91% Pervious Area
	0.750		70.09% Impervious Area

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

Summary for Subcatchment ZL7: ZL7

Runoff = 0.05 cfs @ 7.93 hrs, Volume= 0.017 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.110	98	
*	0.040	72	
	0.150	91	Weighted Average
	0.040		26.67% Pervious Area
	0.110		73.33% Impervious Area

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

Summary for Subcatchment ZL8: ZL8

Runoff = 0.09 cfs @ 8.03 hrs, Volume= 0.033 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.220	98	
*	0.150	72	
	0.370	87	Weighted Average
	0.150		40.54% Pervious Area
	0.220		59.46% Impervious Area

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

Summary for Subcatchment ZL9: ZL9

Runoff = 0.11 cfs @ 7.97 hrs, Volume= 0.039 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.260	98	
*	0.180	72	
	0.440	87	Weighted Average
	0.180		40.91% Pervious Area
	0.260		59.09% Impervious Area

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

Summary for Subcatchment ZR1: ZR1

Runoff = 0.28 cfs @ 7.94 hrs, Volume= 0.095 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem 2 yr Rainfall=2.20"

	Area (ac)	CN	Description
*	0.630	98	
*	0.270	72	
	0.900	90	Weighted Average
	0.270		30.00% Pervious Area
	0.630		70.00% Impervious Area

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

Summary for Pond 1stGR1: 1stGr1

Inflow Area = 0.250 ac, 70.00% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.08 cfs @ 7.94 hrs, Volume= 0.026 af
Outflow = 0.00 cfs @ 24.11 hrs, Volume= 0.004 af, Atten= 98%, Lag= 970.4 min
Discarded = 0.00 cfs @ 24.11 hrs, Volume= 0.004 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 300.69' @ 24.11 hrs Surf.Area= 1,118 sf Storage= 1,080 cf

Plug-Flow detention time= 1,325.3 min calculated for 0.004 af (16% of inflow)
Center-of-Mass det. time= 962.2 min (1,739.0 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	296.90'	5,083 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
296.90	660	0.0	0	0
297.00	660	40.0	26	26
298.40	660	40.0	370	396
298.50	660	0.1	0	396
299.90	660	0.1	1	397
300.00	660	100.0	66	463
302.00	1,980	100.0	2,640	3,103
303.00	1,980	100.0	1,980	5,083

Device	Routing	Invert	Outlet Devices
#1	Discarded	296.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	301.00'	**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 @ 24.11 hrs HW=300.69' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=296.90' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 1stGR2: 1stGr2

Inflow Area = 0.740 ac, 43.92% Impervious, Inflow Depth = 0.95" for Salem 2 yr event
Inflow = 0.15 cfs @ 7.97 hrs, Volume= 0.059 af
Outflow = 0.03 cfs @ 15.50 hrs, Volume= 0.028 af, Atten= 78%, Lag= 452.1 min
Discarded = 0.00 cfs @ 15.50 hrs, Volume= 0.005 af
Primary = 0.03 cfs @ 15.50 hrs, Volume= 0.023 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.03' @ 15.50 hrs Surf.Area= 1,337 sf Storage= 1,488 cf

Plug-Flow detention time= 718.1 min calculated for 0.028 af (48% of inflow)
Center-of-Mass det. time= 443.2 min (1,242.8 - 799.6)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	5,083 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	660	0.0	0	0
299.00	660	40.0	26	26
300.40	660	40.0	370	396
300.50	660	0.1	0	396
301.90	660	0.1	1	397
302.00	660	100.0	66	463
304.00	1,980	100.0	2,640	3,103
305.00	1,980	100.0	1,980	5,083

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 15.50 hrs HW=303.03' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.02 cfs @ 15.50 hrs HW=303.03' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.46 fps)

Summary for Pond 1stREG.B: 1st REG.B

Inflow Area = 12.950 ac, 62.36% Impervious, Inflow Depth = 0.32" for Salem 2 yr event
Inflow = 0.41 cfs @ 20.88 hrs, Volume= 0.342 af
Outflow = 0.33 cfs @ 24.05 hrs, Volume= 0.109 af, Atten= 21%, Lag= 190.6 min
Discarded = 0.01 cfs @ 24.05 hrs, Volume= 0.029 af
Primary = 0.32 cfs @ 24.05 hrs, Volume= 0.081 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.15' @ 24.05 hrs Surf.Area= 7,146 sf Storage= 11,742 cf

Plug-Flow detention time= 921.8 min calculated for 0.109 af (32% of inflow)
Center-of-Mass det. time= 491.6 min (1,535.0 - 1,043.4)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	26,209 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	6,000	0.0	0	0
299.00	6,000	40.0	240	240
300.40	6,000	40.0	3,360	3,600
300.50	6,000	0.1	1	3,601
301.90	6,000	0.1	8	3,609
302.00	6,000	100.0	600	4,209
304.00	8,000	100.0	14,000	18,209
305.00	8,000	100.0	8,000	26,209

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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=0.01 cfs @ 24.05 hrs HW=303.15' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.31 cfs @ 24.05 hrs HW=303.15' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.31 cfs @ 1.07 fps)

Summary for Pond QSGR1: QSGR1

Inflow Area = 0.280 ac, 71.43% Impervious, Inflow Depth = 1.34" for Salem 2 yr event
Inflow = 0.09 cfs @ 8.01 hrs, Volume= 0.031 af
Outflow = 0.01 cfs @ 24.10 hrs, Volume= 0.023 af, Atten= 92%, Lag= 965.6 min
Discarded = 0.01 cfs @ 24.10 hrs, Volume= 0.023 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 308.22' @ 24.10 hrs Surf.Area= 0.031 ac Storage= 0.021 af

Plug-Flow detention time= 1,011.0 min calculated for 0.023 af (73% of inflow)
Center-of-Mass det. time= 853.3 min (1,624.7 - 771.4)

Volume	Invert	Avail.Storage	Storage Description
#1	304.90'	0.125 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
304.90	0.022	0.0	0.000	0.000
305.00	0.022	40.0	0.001	0.001
306.40	0.022	40.0	0.012	0.013
306.50	0.022	0.1	0.000	0.013
307.90	0.022	0.1	0.000	0.013
308.00	0.022	100.0	0.002	0.015
309.00	0.066	100.0	0.044	0.059
310.00	0.066	100.0	0.066	0.125

Device	Routing	Invert	Outlet Devices
#1	Discarded	304.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	308.80'	**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=0.01 cfs @ 24.10 hrs HW=308.22' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=304.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QSGR2: QSGR2

Inflow Area = 0.560 ac, 71.43% Impervious, Inflow Depth = 0.67" for Salem 2 yr event
Inflow = 0.09 cfs @ 8.01 hrs, Volume= 0.031 af
Outflow = 0.01 cfs @ 24.10 hrs, Volume= 0.023 af, Atten= 92%, Lag= 965.6 min
Discarded = 0.01 cfs @ 24.10 hrs, Volume= 0.023 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 306.22' @ 24.10 hrs Surf.Area= 0.031 ac Storage= 0.021 af

Plug-Flow detention time= 1,011.0 min calculated for 0.023 af (73% of inflow)
Center-of-Mass det. time= 853.3 min (1,624.7 - 771.4)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.125 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.022	0.0	0.000	0.000
303.00	0.022	40.0	0.001	0.001
304.40	0.022	40.0	0.012	0.013
304.50	0.022	0.1	0.000	0.013
305.90	0.022	0.1	0.000	0.013
306.00	0.022	100.0	0.002	0.015
307.00	0.066	100.0	0.044	0.059
308.00	0.066	100.0	0.066	0.125

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	306.80'	**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=0.01 cfs @ 24.10 hrs HW=306.22' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=302.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond STEGL10: STEGL10

Inflow Area = 0.390 ac, 69.23% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.12 cfs @ 7.94 hrs, Volume= 0.041 af
Outflow = 0.03 cfs @ 12.56 hrs, Volume= 0.024 af, Atten= 79%, Lag= 277.3 min
Discarded = 0.00 cfs @ 4.87 hrs, Volume= 0.004 af
Primary = 0.02 cfs @ 12.56 hrs, Volume= 0.020 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.03' @ 12.56 hrs Surf.Area= 500 sf Storage= 863 cf

Plug-Flow detention time= 599.2 min calculated for 0.024 af (58% of inflow)
Center-of-Mass det. time= 371.0 min (1,147.7 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,351 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	500	0.0	0	0
303.00	500	40.0	20	20
304.40	500	40.0	280	300
304.50	500	0.1	0	300
305.90	500	0.1	1	301
306.00	500	100.0	50	351
308.00	500	100.0	1,000	1,351

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 4.87 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.02 cfs @ 12.56 hrs HW=307.03' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.44 fps)

Summary for Pond STEGL2: STEGL2

Inflow Area = 0.630 ac, 69.84% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.20 cfs @ 7.94 hrs, Volume= 0.066 af
Outflow = 0.06 cfs @ 9.34 hrs, Volume= 0.059 af, Atten= 70%, Lag= 84.0 min
Discarded = 0.01 cfs @ 4.89 hrs, Volume= 0.022 af
Primary = 0.05 cfs @ 9.34 hrs, Volume= 0.037 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.04' @ 9.34 hrs Surf.Area= 500 sf Storage= 872 cf

Plug-Flow detention time= 478.3 min calculated for 0.059 af (89% of inflow)

Center-of-Mass det. time= 410.0 min (1,186.7 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,351 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	500	0.0	0	0
303.00	500	40.0	20	20
304.40	500	40.0	280	300
304.50	500	0.1	0	300
305.90	500	0.1	1	301
306.00	500	100.0	50	351
308.00	500	100.0	1,000	1,351

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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=0.01 cfs @ 4.89 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.05 cfs @ 9.34 hrs HW=307.04' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.58 fps)

Summary for Pond STEGL3: STEGL3

Inflow Area = 0.240 ac, 70.83% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.08 cfs @ 7.94 hrs, Volume= 0.025 af
Outflow = 0.03 cfs @ 9.07 hrs, Volume= 0.018 af, Atten= 66%, Lag= 67.7 min
Discarded = 0.00 cfs @ 4.61 hrs, Volume= 0.001 af
Primary = 0.03 cfs @ 9.07 hrs, Volume= 0.017 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.03' @ 9.07 hrs Surf.Area= 200 sf Storage= 345 cf

Plug-Flow detention time= 351.1 min calculated for 0.018 af (71% of inflow)
Center-of-Mass det. time= 183.1 min (959.9 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	540 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	200	0.0	0	0
303.00	200	40.0	8	8
304.40	200	40.0	112	120
304.50	200	0.1	0	120
305.90	200	0.1	0	120
306.00	200	100.0	20	140
308.00	200	100.0	400	540

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 4.61 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.02 cfs @ 9.07 hrs HW=307.03' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.45 fps)

Summary for Pond STEGL4: STEGL4

Inflow Area = 0.840 ac, 70.24% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.26 cfs @ 7.94 hrs, Volume= 0.089 af
Outflow = 0.07 cfs @ 9.94 hrs, Volume= 0.059 af, Atten= 73%, Lag= 120.1 min
Discarded = 0.00 cfs @ 4.67 hrs, Volume= 0.003 af
Primary = 0.07 cfs @ 9.94 hrs, Volume= 0.056 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.05' @ 9.94 hrs Surf.Area= 800 sf Storage= 1,402 cf

Plug-Flow detention time= 411.0 min calculated for 0.059 af (67% of inflow)
Center-of-Mass det. time= 222.2 min (998.9 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	2,161 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	800	0.0	0	0
303.00	800	40.0	32	32
304.40	800	40.0	448	480
304.50	800	0.1	0	480
305.90	800	0.1	1	481
306.00	800	100.0	80	561
308.00	800	100.0	1,600	2,161

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 4.67 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.07 cfs @ 9.94 hrs HW=307.05' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.63 fps)

Summary for Pond STEGL5: STEGL5

Inflow Area = 0.150 ac, 66.67% Impervious, Inflow Depth = 1.20" for Salem 2 yr event
Inflow = 0.04 cfs @ 7.95 hrs, Volume= 0.015 af
Outflow = 0.02 cfs @ 8.89 hrs, Volume= 0.014 af, Atten= 62%, Lag= 56.4 min
Discarded = 0.00 cfs @ 5.07 hrs, Volume= 0.004 af
Primary = 0.02 cfs @ 8.89 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.02' @ 8.89 hrs Surf.Area= 100 sf Storage= 172 cf

Plug-Flow detention time= 418.9 min calculated for 0.014 af (90% of inflow)
Center-of-Mass det. time= 358.7 min (1,145.2 - 786.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 5.07 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.01 cfs @ 8.89 hrs HW=307.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.35 fps)

Summary for Pond STEGL7: STEGL7

Inflow Area = 0.138 ac, 71.01% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.04 cfs @ 7.94 hrs, Volume= 0.015 af
Outflow = 0.02 cfs @ 8.83 hrs, Volume= 0.013 af, Atten= 61%, Lag= 53.5 min
Discarded = 0.00 cfs @ 4.82 hrs, Volume= 0.004 af
Primary = 0.02 cfs @ 8.83 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.02' @ 8.83 hrs Surf.Area= 100 sf Storage= 172 cf

Plug-Flow detention time= 431.9 min calculated for 0.013 af (90% of inflow)
Center-of-Mass det. time= 369.6 min (1,146.3 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 4.82 hrs HW=302.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.01 cfs @ 8.83 hrs HW=307.02' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.35 fps)

Summary for Pond STEGL8: STEGL8

Inflow Area = 0.130 ac, 69.23% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.04 cfs @ 7.94 hrs, Volume= 0.014 af
Outflow = 0.02 cfs @ 8.78 hrs, Volume= 0.010 af, Atten= 60%, Lag= 50.2 min
Discarded = 0.00 cfs @ 4.60 hrs, Volume= 0.001 af
Primary = 0.02 cfs @ 8.78 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.02' @ 8.78 hrs Surf.Area= 100 sf Storage= 172 cf

Plug-Flow detention time= 342.3 min calculated for 0.010 af (75% of inflow)

Center-of-Mass det. time= 195.2 min (972.0 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 4.60 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.01 cfs @ 8.78 hrs HW=307.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.36 fps)

Summary for Pond STEGL9: STEGL9

Inflow Area = 0.100 ac, 70.00% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.03 cfs @ 7.94 hrs, Volume= 0.011 af
Outflow = 0.01 cfs @ 9.88 hrs, Volume= 0.007 af, Atten= 73%, Lag= 116.5 min
Discarded = 0.00 cfs @ 4.82 hrs, Volume= 0.001 af
Primary = 0.01 cfs @ 9.88 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.01' @ 9.88 hrs Surf.Area= 100 sf Storage= 171 cf

Plug-Flow detention time= 452.9 min calculated for 0.007 af (68% of inflow)
Center-of-Mass det. time= 267.7 min (1,044.4 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	370 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	100	0.0	0	0
299.00	100	40.0	4	4
300.40	100	40.0	56	60
300.50	100	0.1	0	60
301.90	100	0.1	0	60
302.00	100	100.0	10	70
304.00	100	100.0	200	270
305.00	100	100.0	100	370

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 4.82 hrs HW=298.96' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 9.88 hrs HW=303.01' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.23 fps)

Summary for Pond STEGR2: STEGR2

Inflow Area = 1.670 ac, 70.06% Impervious, Inflow Depth = 0.95" for Salem 2 yr event
Inflow = 0.20 cfs @ 7.94 hrs, Volume= 0.132 af
Outflow = 0.06 cfs @ 21.68 hrs, Volume= 0.112 af, Atten= 68%, Lag= 824.6 min
Discarded = 0.04 cfs @ 21.68 hrs, Volume= 0.103 af
Primary = 0.03 cfs @ 21.68 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 304.93' @ 21.68 hrs Surf.Area= 3,239 sf Storage= 3,460 cf

Plug-Flow detention time= 833.1 min calculated for 0.112 af (84% of inflow)
Center-of-Mass det. time= 744.9 min (1,592.8 - 847.9)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	12,939 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
300.90	1,680	0.0	0	0
301.00	1,680	40.0	67	67
302.40	1,680	40.0	941	1,008
302.50	1,680	0.1	0	1,008
303.90	1,680	0.1	2	1,011
304.00	1,680	100.0	168	1,179
306.00	5,040	100.0	6,720	7,899
307.00	5,040	100.0	5,040	12,939

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	304.90'	**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=0.04 cfs @ 21.68 hrs HW=304.93' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.03 cfs @ 21.68 hrs HW=304.93' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.03 cfs @ 0.47 fps)

Summary for Pond STEGR3: STEGR3

Inflow Area = 5.768 ac, 70.09% Impervious, Inflow Depth = 0.38" for Salem 2 yr event
Inflow = 0.25 cfs @ 7.94 hrs, Volume= 0.185 af
Outflow = 0.13 cfs @ 14.81 hrs, Volume= 0.121 af, Atten= 47%, Lag= 412.2 min
Discarded = 0.00 cfs @ 14.81 hrs, Volume= 0.012 af
Primary = 0.13 cfs @ 14.81 hrs, Volume= 0.109 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 302.98' @ 14.81 hrs Surf.Area= 3,028 sf Storage= 3,305 cf

Plug-Flow detention time= 471.0 min calculated for 0.121 af (65% of inflow)
Center-of-Mass det. time= 285.9 min (1,182.4 - 896.5)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	11,783 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	1,530	0.0	0	0
299.00	1,530	40.0	61	61
300.40	1,530	40.0	857	918
300.50	1,530	0.1	0	918
301.90	1,530	0.1	2	920
302.00	1,530	100.0	153	1,073
304.00	4,590	100.0	6,120	7,193
305.00	4,590	100.0	4,590	11,783

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	302.90'	**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 @ 14.81 hrs HW=302.98' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.12 cfs @ 14.81 hrs HW=302.98' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.12 cfs @ 0.79 fps)

Summary for Pond STELG6: STELG6

Inflow Area = 0.310 ac, 70.97% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.10 cfs @ 7.94 hrs, Volume= 0.033 af
Outflow = 0.02 cfs @ 12.55 hrs, Volume= 0.019 af, Atten= 79%, Lag= 276.9 min
Discarded = 0.00 cfs @ 4.97 hrs, Volume= 0.003 af
Primary = 0.02 cfs @ 12.55 hrs, Volume= 0.016 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.02' @ 12.55 hrs Surf.Area= 400 sf Storage= 687 cf

Plug-Flow detention time= 601.1 min calculated for 0.019 af (58% of inflow)
Center-of-Mass det. time= 371.8 min (1,148.6 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	1,481 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	400	0.0	0	0
299.00	400	40.0	16	16
300.40	400	40.0	224	240
300.50	400	0.1	0	240
301.90	400	0.1	1	241
302.00	400	100.0	40	281
304.00	400	100.0	800	1,081
305.00	400	100.0	400	1,481

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 4.97 hrs HW=298.96' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.01 cfs @ 12.55 hrs HW=303.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.36 fps)

Summary for Pond UEGL3: UEGL3

Inflow Area = 0.470 ac, 70.21% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.15 cfs @ 7.94 hrs, Volume= 0.050 af
Outflow = 0.03 cfs @ 14.26 hrs, Volume= 0.041 af, Atten= 81%, Lag= 379.2 min
Discarded = 0.01 cfs @ 5.28 hrs, Volume= 0.026 af
Primary = 0.02 cfs @ 14.26 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Peak Elev= 307.02' @ 14.26 hrs Surf.Area= 600 sf Storage= 1,034 cf

Plug-Flow detention time= 767.7 min calculated for 0.041 af (83% of inflow)
Center-of-Mass det. time= 661.0 min (1,437.8 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,621 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	600	0.0	0	0
303.00	600	40.0	24	24
304.40	600	40.0	336	360
304.50	600	0.1	0	360
305.90	600	0.1	1	361
306.00	600	100.0	60	421
308.00	600	100.0	1,200	1,621

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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=0.01 cfs @ 5.28 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.02 cfs @ 14.26 hrs HW=307.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.41 fps)

Summary for Pond UEGL4: UEGL4

Inflow Area = 0.120 ac, 66.67% Impervious, Inflow Depth = 1.20" for Salem 2 yr event
Inflow = 0.04 cfs @ 7.95 hrs, Volume= 0.012 af
Outflow = 0.01 cfs @ 9.92 hrs, Volume= 0.011 af, Atten= 72%, Lag= 118.5 min
Discarded = 0.00 cfs @ 5.22 hrs, Volume= 0.004 af
Primary = 0.01 cfs @ 9.92 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.01' @ 9.92 hrs Surf.Area= 100 sf Storage= 171 cf

Plug-Flow detention time= 526.5 min calculated for 0.011 af (88% of inflow)
Center-of-Mass det. time= 452.2 min (1,238.7 - 786.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 5.22 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 9.92 hrs HW=307.01' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.26 fps)

Summary for Pond UEGL5: UEGL5

Inflow Area = 0.170 ac, 70.59% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.05 cfs @ 7.94 hrs, Volume= 0.018 af
Outflow = 0.03 cfs @ 8.29 hrs, Volume= 0.017 af, Atten= 48%, Lag= 21.1 min
Discarded = 0.00 cfs @ 4.68 hrs, Volume= 0.004 af
Primary = 0.03 cfs @ 8.29 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.03' @ 8.29 hrs Surf.Area= 100 sf Storage= 173 cf

Plug-Flow detention time= 348.5 min calculated for 0.017 af (92% of inflow)
Center-of-Mass det. time= 297.6 min (1,074.4 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 4.68 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.02 cfs @ 8.29 hrs HW=307.03' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.46 fps)

Summary for Pond UOC1: UOC1

Inflow Area = 1.750 ac, 65.71% Impervious, Inflow Depth = 0.77" for Salem 2 yr event
Inflow = 0.32 cfs @ 8.03 hrs, Volume= 0.112 af
Outflow = 0.06 cfs @ 17.52 hrs, Volume= 0.052 af, Atten= 81%, Lag= 569.5 min
Discarded = 0.00 cfs @ 17.52 hrs, Volume= 0.015 af
Primary = 0.06 cfs @ 17.52 hrs, Volume= 0.037 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 305.29' @ 17.52 hrs Surf.Area= 0.090 ac Storage= 0.072 af

Plug-Flow detention time= 813.4 min calculated for 0.052 af (47% of inflow)
Center-of-Mass det. time= 536.2 min (1,335.7 - 799.6)

Volume	Invert	Avail.Storage	Storage Description
#1	301.90'	0.293 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
301.90	0.069	0.0	0.000	0.000
302.00	0.069	40.0	0.003	0.003
303.40	0.069	40.0	0.039	0.041
303.50	0.069	0.1	0.000	0.041
304.90	0.069	0.1	0.000	0.042
305.00	0.069	100.0	0.007	0.048
306.00	0.140	100.0	0.104	0.153
307.00	0.140	100.0	0.140	0.293

Device	Routing	Invert	Outlet Devices
#1	Discarded	301.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	305.25'	**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 @ 17.52 hrs HW=305.29' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.05 cfs @ 17.52 hrs HW=305.29' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.57 fps)

Summary for Pond UOC2: UOC2

Inflow Area =	7.610 ac, 67.67% Impervious,	Inflow Depth = 0.43"	for Salem 2 yr event	
Inflow =	0.29 cfs @	16.47 hrs, Volume=	0.270 af	
Outflow =	0.24 cfs @	20.53 hrs, Volume=	0.128 af,	Atten= 17%, Lag= 243.9 min
Discarded =	0.01 cfs @	13.05 hrs, Volume=	0.019 af	
Primary =	0.24 cfs @	20.53 hrs, Volume=	0.109 af	

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 305.12' @ 20.53 hrs Surf.Area= 0.110 ac Storage= 0.165 af

Plug-Flow detention time= 588.6 min calculated for 0.128 af (48% of inflow)
Center-of-Mass det. time= 354.3 min (1,388.7 - 1,034.4)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.261 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.055	0.0	0.000	0.000
301.00	0.055	40.0	0.002	0.002
302.40	0.055	40.0	0.031	0.033
302.50	0.055	0.1	0.000	0.033
303.90	0.055	0.1	0.000	0.033
304.00	0.110	100.0	0.008	0.041
306.00	0.110	100.0	0.220	0.261

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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=0.01 cfs @ 13.05 hrs HW=304.00' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.23 cfs @ 20.53 hrs HW=305.12' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.23 cfs @ 0.97 fps)

Summary for Pond UOC3: UOC3

Inflow Area =	8.820 ac, 67.91% Impervious,	Inflow Depth = 0.28"	for Salem 2 yr event	
Inflow =	0.29 cfs @	20.45 hrs, Volume=	0.203 af	
Outflow =	0.28 cfs @	20.99 hrs, Volume=	0.127 af,	Atten= 1%, Lag= 32.6 min
Discarded =	0.00 cfs @	20.99 hrs, Volume=	0.011 af	
Primary =	0.28 cfs @	20.99 hrs, Volume=	0.116 af	

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.13' @ 20.99 hrs Surf.Area= 2,872 sf Storage= 3,913 cf

Plug-Flow detention time= 440.5 min calculated for 0.127 af (63% of inflow)

Center-of-Mass det. time= 273.7 min (1,390.5 - 1,116.8)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	10,443 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	1,800	0.0	0	0
299.00	1,800	40.0	72	72
300.40	1,800	40.0	1,008	1,080
300.50	1,800	0.1	0	1,080
301.90	1,800	0.1	3	1,083
302.00	1,800	100.0	180	1,263
304.00	3,690	100.0	5,490	6,753
305.00	3,690	100.0	3,690	10,443

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 20.99 hrs HW=303.13' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.28 cfs @ 20.99 hrs HW=303.13' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.28 cfs @ 1.03 fps)

Summary for Pond USGR1: USGR1

Inflow Area = 1.120 ac, 69.64% Impervious, Inflow Depth = 0.76" for Salem 2 yr event
Inflow = 0.11 cfs @ 7.94 hrs, Volume= 0.071 af
Outflow = 0.03 cfs @ 24.05 hrs, Volume= 0.065 af, Atten= 76%, Lag= 966.6 min
Discarded = 0.03 cfs @ 24.05 hrs, Volume= 0.065 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 304.66' @ 24.05 hrs Surf.Area= 2,360 sf Storage= 1,825 cf

Plug-Flow detention time= 767.1 min calculated for 0.065 af (91% of inflow)
Center-of-Mass det. time= 716.4 min (1,590.1 - 873.7)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	8,876 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
300.90	1,020	0.0	0	0
301.00	1,020	40.0	41	41
302.40	1,020	40.0	571	612
302.50	1,020	0.1	0	612
303.90	1,020	0.1	1	614
304.00	1,020	100.0	102	716
305.00	3,060	100.0	2,040	2,756
307.00	3,060	100.0	6,120	8,876

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	304.90'	**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=0.03 cfs @ 24.05 hrs HW=304.66' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VEGL2: VEGL2

Inflow Area = 0.390 ac, 69.23% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.12 cfs @ 7.94 hrs, Volume= 0.041 af
Outflow = 0.02 cfs @ 14.25 hrs, Volume= 0.034 af, Atten= 81%, Lag= 378.3 min
Discarded = 0.01 cfs @ 5.29 hrs, Volume= 0.022 af
Primary = 0.02 cfs @ 14.25 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.02' @ 14.25 hrs Surf.Area= 500 sf Storage= 860 cf

Plug-Flow detention time= 769.8 min calculated for 0.034 af (83% of inflow)
Center-of-Mass det. time= 663.0 min (1,439.8 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,351 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	500	0.0	0	0
303.00	500	40.0	20	20
304.40	500	40.0	280	300
304.50	500	0.1	0	300
305.90	500	0.1	1	301
306.00	500	100.0	50	351
308.00	500	100.0	1,000	1,351

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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=0.01 cfs @ 5.29 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.01 cfs @ 14.25 hrs HW=307.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.38 fps)

Summary for Pond VSGR2: VSGR2

Inflow Area =	0.700 ac,	70.00% Impervious,	Inflow Depth =	0.77"	for Salem 2 yr event
Inflow =	0.10 cfs @	7.94 hrs,	Volume=	0.045 af	
Outflow =	0.02 cfs @	24.06 hrs,	Volume=	0.045 af,	Atten= 84%, Lag= 967.0 min
Discarded =	0.02 cfs @	24.06 hrs,	Volume=	0.045 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 304.20' @ 24.06 hrs Surf.Area= 1,363 sf Storage= 1,045 cf

Plug-Flow detention time= 672.8 min calculated for 0.045 af (100% of inflow)
Center-of-Mass det. time= 672.8 min (1,533.9 - 861.1)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	8,780 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
300.90	1,140	0.0	0	0
301.00	1,140	40.0	46	46
302.40	1,140	40.0	638	684
302.50	1,140	0.1	0	684
303.90	1,140	0.1	2	686
304.00	1,140	100.0	114	800
306.00	3,420	100.0	4,560	5,360
307.00	3,420	100.0	3,420	8,780

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	304.90'	**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=0.02 cfs @ 24.06 hrs HW=304.20' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond ZGR1: ZGR1

Inflow Area = 4.760 ac, 68.07% Impervious, Inflow Depth = 0.97" for Salem 2 yr event
Inflow = 0.69 cfs @ 7.94 hrs, Volume= 0.383 af
Outflow = 0.25 cfs @ 14.79 hrs, Volume= 0.310 af, Atten= 64%, Lag= 411.2 min
Discarded = 0.05 cfs @ 14.79 hrs, Volume= 0.140 af
Primary = 0.20 cfs @ 14.79 hrs, Volume= 0.169 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 306.91' @ 14.79 hrs Surf.Area= 0.188 ac Storage= 0.162 af

Plug-Flow detention time= 603.2 min calculated for 0.310 af (81% of inflow)
Center-of-Mass det. time= 493.3 min (1,319.5 - 826.2)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.381 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.067	0.0	0.000	0.000
303.00	0.067	40.0	0.003	0.003
304.40	0.067	40.0	0.038	0.040
304.50	0.067	0.1	0.000	0.040
305.90	0.067	0.1	0.000	0.040
306.00	0.067	100.0	0.007	0.047
307.00	0.200	100.0	0.134	0.181
308.00	0.200	100.0	0.200	0.381

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	306.80'	**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=0.05 cfs @ 14.79 hrs HW=306.91' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.20 cfs @ 14.79 hrs HW=306.91' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.20 cfs @ 0.91 fps)

Summary for Pond ZLG123: ZLG123

Inflow Area = 1.700 ac, 70.00% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.53 cfs @ 7.94 hrs, Volume= 0.179 af
Outflow = 0.20 cfs @ 8.92 hrs, Volume= 0.147 af, Atten= 63%, Lag= 59.1 min
Discarded = 0.01 cfs @ 4.64 hrs, Volume= 0.026 af
Primary = 0.19 cfs @ 8.92 hrs, Volume= 0.121 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Peak Elev= 308.10' @ 8.92 hrs Surf.Area= 1,200 sf Storage= 2,165 cf

Plug-Flow detention time= 370.6 min calculated for 0.147 af (82% of inflow)
Center-of-Mass det. time= 260.7 min (1,037.5 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	3,242 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
303.90	1,200	0.0	0	0
304.00	1,200	40.0	48	48
305.40	1,200	40.0	672	720
305.50	1,200	0.1	0	720
306.90	1,200	0.1	2	722
307.00	1,200	100.0	120	842
309.00	1,200	100.0	2,400	3,242

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	308.00'	**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=0.01 cfs @ 4.64 hrs HW=303.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.19 cfs @ 8.92 hrs HW=308.10' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.19 cfs @ 0.90 fps)

Summary for Pond ZLG14: ZLG14

Inflow Area =	0.250 ac,	70.00% Impervious,	Inflow Depth = 1.27"	for Salem 2 yr event
Inflow =	0.08 cfs @	7.94 hrs, Volume=	0.026 af	
Outflow =	0.00 cfs @	5.48 hrs, Volume=	0.003 af,	Atten= 99%, Lag= 0.0 min
Discarded =	0.00 cfs @	5.48 hrs, Volume=	0.003 af	
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 300.86' @ 24.13 hrs Surf.Area= 700 sf Storage= 1,093 cf

Plug-Flow detention time= 1,253.5 min calculated for 0.003 af (11% of inflow)
Center-of-Mass det. time= 870.0 min (1,646.8 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	296.90'	2,591 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
296.90	700	0.0	0	0
297.00	700	40.0	28	28
298.40	700	40.0	392	420
298.50	700	0.1	0	420
299.90	700	0.1	1	421
300.00	700	100.0	70	491
302.00	700	100.0	1,400	1,891
303.00	700	100.0	700	2,591

Device	Routing	Invert	Outlet Devices
#1	Discarded	296.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	301.00'	**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 @ 5.48 hrs HW=296.96' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=296.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond ZLG4: ZLG4

Inflow Area = 0.440 ac, 59.09% Impervious, Inflow Depth = 1.06" for Salem 2 yr event
Inflow = 0.11 cfs @ 7.97 hrs, Volume= 0.039 af
Outflow = 0.07 cfs @ 8.19 hrs, Volume= 0.034 af, Atten= 39%, Lag= 13.4 min
Discarded = 0.00 cfs @ 5.29 hrs, Volume= 0.004 af
Primary = 0.07 cfs @ 8.19 hrs, Volume= 0.031 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 308.05' @ 8.19 hrs Surf.Area= 0.004 ac Storage= 0.007 af

Plug-Flow detention time= 235.0 min calculated for 0.034 af (88% of inflow)
Center-of-Mass det. time= 162.7 min (967.8 - 805.1)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	0.011 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
303.90	0.004	0.0	0.000	0.000
304.00	0.004	40.0	0.000	0.000
305.40	0.004	40.0	0.002	0.002
305.50	0.004	0.1	0.000	0.002
306.90	0.004	0.1	0.000	0.002
307.00	0.004	100.0	0.000	0.003
309.00	0.004	100.0	0.008	0.011

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	308.00'	**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 @ 5.29 hrs HW=303.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.06 cfs @ 8.19 hrs HW=308.05' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.06 cfs @ 0.62 fps)

Summary for Pond ZLG5: ZLG5

Inflow Area = 0.950 ac, 69.47% Impervious, Inflow Depth = 1.27" for Salem 2 yr event
Inflow = 0.30 cfs @ 7.94 hrs, Volume= 0.100 af
Outflow = 0.11 cfs @ 8.94 hrs, Volume= 0.082 af, Atten= 64%, Lag= 59.9 min
Discarded = 0.00 cfs @ 4.66 hrs, Volume= 0.015 af
Primary = 0.10 cfs @ 8.94 hrs, Volume= 0.066 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.07' @ 8.94 hrs Surf.Area= 0.016 ac Storage= 0.028 af

Plug-Flow detention time= 382.3 min calculated for 0.082 af (81% of inflow)
Center-of-Mass det. time= 269.0 min (1,045.7 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.043 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.016	0.0	0.000	0.000
303.00	0.016	40.0	0.001	0.001
304.40	0.016	40.0	0.009	0.010
304.50	0.016	0.1	0.000	0.010
305.90	0.016	0.1	0.000	0.010
306.00	0.016	100.0	0.002	0.011
308.00	0.016	100.0	0.032	0.043

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 4.66 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.10 cfs @ 8.94 hrs HW=307.07' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.10 cfs @ 0.73 fps)

Summary for Pond ZLG6: ZLG6

Inflow Area =	1.070 ac, 70.09% Impervious,	Inflow Depth = 1.27"	for Salem 2 yr event	
Inflow =	0.34 cfs @	7.94 hrs, Volume=	0.113 af	
Outflow =	0.14 cfs @	8.71 hrs, Volume=	0.094 af,	Atten= 59%, Lag= 46.3 min
Discarded =	0.00 cfs @	4.60 hrs, Volume=	0.015 af	
Primary =	0.13 cfs @	8.71 hrs, Volume=	0.079 af	

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.08' @ 8.71 hrs Surf.Area= 700 sf Storage= 1,249 cf

Plug-Flow detention time= 339.4 min calculated for 0.094 af (83% of inflow)
Center-of-Mass det. time= 237.1 min (1,013.8 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,891 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	700	0.0	0	0
303.00	700	40.0	28	28
304.40	700	40.0	392	420
304.50	700	0.1	0	420
305.90	700	0.1	1	421
306.00	700	100.0	70	491
308.00	700	100.0	1,400	1,891

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 4.60 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.13 cfs @ 8.71 hrs HW=307.08' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.13 cfs @ 0.81 fps)

Summary for Pond ZLG7: ZLG7

Inflow Area =	0.150 ac, 73.33% Impervious,	Inflow Depth = 1.34"	for Salem 2 yr event	
Inflow =	0.05 cfs @	7.93 hrs, Volume=	0.017 af	
Outflow =	0.03 cfs @	8.23 hrs, Volume=	0.014 af,	Atten= 45%, Lag= 18.2 min
Discarded =	0.00 cfs @	4.27 hrs, Volume=	0.002 af	
Primary =	0.03 cfs @	8.23 hrs, Volume=	0.012 af	

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.03' @ 8.23 hrs Surf.Area= 100 sf Storage= 173 cf

Plug-Flow detention time= 321.6 min calculated for 0.014 af (84% of inflow)

Center-of-Mass det. time= 222.3 min (989.0 - 766.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 4.27 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.03 cfs @ 8.23 hrs HW=307.03' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.03 cfs @ 0.47 fps)

Summary for Pond ZLG9: ZLG9

Inflow Area = 0.440 ac, 59.09% Impervious, Inflow Depth = 1.06" for Salem 2 yr event
Inflow = 0.11 cfs @ 7.97 hrs, Volume= 0.039 af
Outflow = 0.01 cfs @ 6.41 hrs, Volume= 0.033 af, Atten= 92%, Lag= 0.0 min
Discarded = 0.01 cfs @ 6.41 hrs, Volume= 0.033 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.70' @ 24.06 hrs Surf.Area= 0.018 ac Storage= 0.025 af

Plug-Flow detention time= 957.4 min calculated for 0.033 af (85% of inflow)
Center-of-Mass det. time= 867.6 min (1,672.7 - 805.1)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	0.049 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
303.90	0.018	0.0	0.000	0.000
304.00	0.018	40.0	0.001	0.001
305.40	0.018	40.0	0.010	0.011
305.50	0.018	0.1	0.000	0.011
306.90	0.018	0.1	0.000	0.011
307.00	0.018	100.0	0.002	0.013
309.00	0.018	100.0	0.036	0.049

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	308.00'	**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=0.01 cfs @ 6.41 hrs HW=303.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=303.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond ZRG2: ZGR2

Inflow Area = 5.130 ac, 68.03% Impervious, Inflow Depth = 0.49" for Salem 2 yr event
Inflow = 0.22 cfs @ 14.73 hrs, Volume= 0.207 af
Outflow = 0.22 cfs @ 15.03 hrs, Volume= 0.189 af, Atten= 0%, Lag= 17.8 min
Discarded = 0.01 cfs @ 15.03 hrs, Volume= 0.033 af
Primary = 0.21 cfs @ 15.03 hrs, Volume= 0.156 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 305.91' @ 15.03 hrs Surf.Area= 0.046 ac Storage= 0.041 af

Plug-Flow detention time= 235.8 min calculated for 0.189 af (91% of inflow)
Center-of-Mass det. time= 195.3 min (1,218.5 - 1,023.2)

Volume	Invert	Avail.Storage	Storage Description
#1	301.90'	0.094 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
301.90	0.017	0.0	0.000	0.000
302.00	0.017	40.0	0.001	0.001
303.40	0.017	40.0	0.010	0.010
303.50	0.017	0.1	0.000	0.010
304.90	0.017	0.1	0.000	0.010
305.00	0.017	100.0	0.002	0.012
306.00	0.049	100.0	0.033	0.045
307.00	0.049	100.0	0.049	0.094

Device	Routing	Invert	Outlet Devices
#1	Discarded	301.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	305.80'	**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=0.01 cfs @ 15.03 hrs HW=305.91' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.20 cfs @ 15.03 hrs HW=305.91' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.20 cfs @ 0.93 fps)

Summary for Link STRONG: STRONG

Inflow Area = 19.498 ac, 64.91% Impervious, Inflow Depth = 0.15" for Salem 2 yr event
Inflow = 0.45 cfs @ 24.01 hrs, Volume= 0.249 af
Primary = 0.45 cfs @ 24.01 hrs, Volume= 0.249 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link Z1st: SA1

Inflow Area = 9.550 ac, 68.06% Impervious, Inflow Depth = 0.18" for Salem 2 yr event
Inflow = 0.29 cfs @ 20.98 hrs, Volume= 0.141 af
Primary = 0.29 cfs @ 20.98 hrs, Volume= 0.141 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link Z1st2: Z1st2

Inflow Area = 2.510 ac, 62.75% Impervious, Inflow Depth = 0.83" for Salem 2 yr event
Inflow = 0.23 cfs @ 8.68 hrs, Volume= 0.174 af
Primary = 0.23 cfs @ 8.68 hrs, Volume= 0.174 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link ZL: S

Inflow Area = 6.880 ac, 67.44% Impervious, Inflow Depth = 0.34" for Salem 2 yr event
Inflow = 0.25 cfs @ 16.56 hrs, Volume= 0.193 af
Primary = 0.25 cfs @ 16.56 hrs, Volume= 0.193 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link ZLL: SA

Inflow Area = 8.820 ac, 67.91% Impervious, Inflow Depth = 0.28" for Salem 2 yr event
Inflow = 0.29 cfs @ 20.45 hrs, Volume= 0.203 af
Primary = 0.29 cfs @ 20.45 hrs, Volume= 0.203 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A1: 1A1 Runoff Area=0.210 ac 71.43% Impervious Runoff Depth=0.64"
Tc=5.0 min CN=91 Runoff=0.03 cfs 0.011 af

Subcatchment 1A1up: 1A1up Runoff Area=0.280 ac 0.00% Impervious Runoff Depth=0.08"
Flow Length=200' Slope=0.1900 '/' Tc=14.6 min CN=72 Runoff=0.00 cfs 0.002 af

Subcatchment 1stR1: 1stR1 Runoff Area=0.250 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.012 af

Subcatchment 1stR2: 1stR2 Runoff Area=0.250 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.012 af

Subcatchment 1stREGB: 1stREGB Runoff Area=0.890 ac 0.00% Impervious Runoff Depth=0.08"
Flow Length=350' Slope=0.0800 '/' Tc=22.4 min CN=72 Runoff=0.01 cfs 0.006 af

Subcatchment QSR1: QSR1 Runoff Area=0.280 ac 71.43% Impervious Runoff Depth=0.64"
Tc=10.0 min CN=91 Runoff=0.04 cfs 0.015 af

Subcatchment QSR2: QSR2 Runoff Area=0.280 ac 71.43% Impervious Runoff Depth=0.64"
Tc=10.0 min CN=91 Runoff=0.04 cfs 0.015 af

Subcatchment SA4: SA2 Runoff Area=0.130 ac 60.00% Impervious Runoff Depth=0.50"
Tc=5.0 min CN=88 Runoff=0.01 cfs 0.005 af

Subcatchment SA5: SA5 Runoff Area=0.120 ac 70.83% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.02 cfs 0.006 af

Subcatchment SA6: SA6 Runoff Area=0.110 ac 72.73% Impervious Runoff Depth=0.64"
Tc=5.0 min CN=91 Runoff=0.02 cfs 0.006 af

Subcatchment SA7: SA7 Runoff Area=0.240 ac 70.83% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.012 af

Subcatchment SR2: SR2 Runoff Area=0.190 ac 68.42% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.009 af

Subcatchment STEL10: STEL10 Runoff Area=0.390 ac 69.23% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.05 cfs 0.019 af

Subcatchment STEL2: STEL2 Runoff Area=0.630 ac 69.84% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.08 cfs 0.031 af

Subcatchment STEL3: STEL3 Runoff Area=0.240 ac 70.83% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.012 af

Subcatchment STEL4: STEL4 Runoff Area=0.840 ac 70.24% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.11 cfs 0.041 af

Subcatchment STEL5: STEL5 Runoff Area=0.150 ac 66.67% Impervious Runoff Depth=0.54"
Tc=5.0 min CN=89 Runoff=0.02 cfs 0.007 af

Subcatchment STEL6: STEL6 Runoff Area=0.310 ac 70.97% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.04 cfs 0.015 af

Subcatchment STEL7: STEL7 Runoff Area=0.138 ac 71.01% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.02 cfs 0.007 af

Subcatchment STEL8: STEL8 Runoff Area=0.130 ac 69.23% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.02 cfs 0.006 af

Subcatchment STEL9: STEL9 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.01 cfs 0.005 af

Subcatchment STER2: STER2 Runoff Area=0.650 ac 70.77% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.09 cfs 0.032 af

Subcatchment STER3: STER3 Runoff Area=0.550 ac 70.91% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.07 cfs 0.027 af

Subcatchment STRONG -PRE: STONG PRE Runoff Area=19.230 ac 0.00% Impervious Runoff Depth=0.08"
Flow Length=1,900' Slope=0.0600 '/' Tc=43.9 min CN=72 Runoff=0.14 cfs 0.129 af

Subcatchment UEL3: UEL3 Runoff Area=0.470 ac 70.21% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.06 cfs 0.023 af

Subcatchment UEL4: UEL4 Runoff Area=0.120 ac 66.67% Impervious Runoff Depth=0.54"
Tc=5.0 min CN=89 Runoff=0.01 cfs 0.005 af

Subcatchment UEL5: UEL5 Runoff Area=0.170 ac 70.59% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.02 cfs 0.008 af

Subcatchment USR1: USR1 Runoff Area=0.360 ac 69.44% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.05 cfs 0.018 af

Subcatchment VEL2: VEL2 Runoff Area=0.390 ac 69.23% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.05 cfs 0.019 af

Subcatchment VSR2: VSR2 Runoff Area=0.310 ac 70.97% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.04 cfs 0.015 af

Subcatchment ZA1: ZA1 Runoff Area=0.260 ac 69.23% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.013 af

Subcatchment ZA2: ZA2 Runoff Area=0.280 ac 71.43% Impervious Runoff Depth=0.64"
Tc=5.0 min CN=91 Runoff=0.04 cfs 0.015 af

Subcatchment ZA3: ZA3 Runoff Area=0.230 ac 69.57% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.011 af

Subcatchment ZA4: ZA4 Runoff Area=0.140 ac 71.43% Impervious Runoff Depth=0.64"
Tc=5.0 min CN=91 Runoff=0.02 cfs 0.008 af

Subcatchment ZA5: ZA5 Runoff Area=0.140 ac 71.43% Impervious Runoff Depth=0.64"
Tc=5.0 min CN=91 Runoff=0.02 cfs 0.008 af

Subcatchment ZA6: ZA6 Runoff Area=0.100 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.01 cfs 0.005 af

Subcatchment ZA7: ZA7 Runoff Area=0.900 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.12 cfs 0.044 af

Subcatchment ZA8: ZA8 Runoff Area=0.270 ac 70.37% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.04 cfs 0.013 af

Subcatchment ZL10: ZL10 Runoff Area=0.440 ac 59.09% Impervious Runoff Depth=0.45"
Tc=10.0 min CN=87 Runoff=0.04 cfs 0.017 af

Subcatchment ZL11: ZL11 Runoff Area=0.380 ac 71.05% Impervious Runoff Depth=0.59"
Tc=10.0 min CN=90 Runoff=0.05 cfs 0.019 af

Subcatchment ZL12: ZL12 Runoff Area=0.180 ac 66.67% Impervious Runoff Depth=0.54"
Tc=5.0 min CN=89 Runoff=0.02 cfs 0.008 af

Subcatchment ZL123: ZL123 Runoff Area=1.700 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.22 cfs 0.084 af

Subcatchment ZL13: ZL13 Runoff Area=0.730 ac 69.86% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.10 cfs 0.036 af

Subcatchment ZL14: ZL14 Runoff Area=0.250 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.03 cfs 0.012 af

Subcatchment ZL4: ZL4 Runoff Area=0.440 ac 59.09% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=87 Runoff=0.04 cfs 0.017 af

Subcatchment ZL5: ZL5 Runoff Area=0.950 ac 69.47% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.13 cfs 0.047 af

Subcatchment ZL6: ZL6 Runoff Area=1.070 ac 70.09% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.14 cfs 0.053 af

Subcatchment ZL7: ZL7 Runoff Area=0.150 ac 73.33% Impervious Runoff Depth=0.64"
Tc=5.0 min CN=91 Runoff=0.02 cfs 0.008 af

Subcatchment ZL8: ZL8 Runoff Area=0.370 ac 59.46% Impervious Runoff Depth=0.45"
Tc=10.0 min CN=87 Runoff=0.03 cfs 0.014 af

Subcatchment ZL9: ZL9 Runoff Area=0.440 ac 59.09% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=87 Runoff=0.04 cfs 0.017 af

Subcatchment ZR1: ZR1 Runoff Area=0.900 ac 70.00% Impervious Runoff Depth=0.59"
Tc=5.0 min CN=90 Runoff=0.12 cfs 0.044 af

Pond 1stGR1: 1stGr1 Peak Elev=300.04' Storage=487 cf Inflow=0.03 cfs 0.012 af
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af

Pond 1stGR2: 1stGr2 Peak Elev=302.66' Storage=1,045 cf Inflow=0.06 cfs 0.025 af
Discarded=0.00 cfs 0.004 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.004 af

Pond 1stREG.B: 1st REG.B Peak Elev=299.95' Storage=2,531 cf Inflow=0.11 cfs 0.068 af
Discarded=0.01 cfs 0.025 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.025 af

Pond QSGR1: QSGR1 Peak Elev=305.69' Storage=0.007 af Inflow=0.04 cfs 0.015 af
Discarded=0.01 cfs 0.015 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.015 af

Pond QSGR2: QSGR2 Peak Elev=303.69' Storage=0.007 af Inflow=0.04 cfs 0.015 af
Discarded=0.01 cfs 0.015 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.015 af

Pond STEGL10: STEGL10 Peak Elev=306.82' Storage=761 cf Inflow=0.05 cfs 0.019 af
Discarded=0.00 cfs 0.004 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.004 af

Pond STEGL2: STEGL2 Peak Elev=307.01' Storage=856 cf Inflow=0.08 cfs 0.031 af
Discarded=0.01 cfs 0.021 af Primary=0.01 cfs 0.003 af Outflow=0.02 cfs 0.024 af

Pond STEGL3: STEGL3 Peak Elev=307.01' Storage=342 cf Inflow=0.03 cfs 0.012 af
Discarded=0.00 cfs 0.001 af Primary=0.01 cfs 0.004 af Outflow=0.01 cfs 0.004 af

Pond STEGL4: STEGL4 Peak Elev=307.02' Storage=1,378 cf Inflow=0.11 cfs 0.041 af
Discarded=0.00 cfs 0.003 af Primary=0.02 cfs 0.009 af Outflow=0.02 cfs 0.012 af

Pond STEGL5: STEGL5 Peak Elev=307.00' Storage=170 cf Inflow=0.02 cfs 0.007 af
Discarded=0.00 cfs 0.004 af Primary=0.00 cfs 0.001 af Outflow=0.00 cfs 0.005 af

Pond STEGL7: STEGL7 Peak Elev=307.00' Storage=170 cf Inflow=0.02 cfs 0.007 af
Discarded=0.00 cfs 0.004 af Primary=0.00 cfs 0.001 af Outflow=0.00 cfs 0.005 af

Pond STEGL8: STEGL8 Peak Elev=307.00' Storage=171 cf Inflow=0.02 cfs 0.006 af
Discarded=0.00 cfs 0.001 af Primary=0.00 cfs 0.002 af Outflow=0.00 cfs 0.003 af

Pond STEGL9: STEGL9 Peak Elev=303.00' Storage=170 cf Inflow=0.01 cfs 0.005 af
Discarded=0.00 cfs 0.001 af Primary=0.00 cfs 0.001 af Outflow=0.00 cfs 0.002 af

Pond STEGR2: STEGR2 Peak Elev=301.68' Storage=526 cf Inflow=0.09 cfs 0.040 af
Discarded=0.02 cfs 0.040 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.040 af

Pond STEGR3: STEGR3 Peak Elev=302.52' Storage=2,084 cf Inflow=0.10 cfs 0.051 af
Discarded=0.00 cfs 0.008 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.008 af

Pond STELG6: STELG6 Peak Elev=302.81' Storage=605 cf Inflow=0.04 cfs 0.015 af
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af

Pond UEGL3: UEGL3 Peak Elev=306.24' Storage=565 cf Inflow=0.06 cfs 0.023 af
Discarded=0.01 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.023 af

Pond UEGL4: UEGL4 Peak Elev=306.92' Storage=162 cf Inflow=0.01 cfs 0.005 af
Discarded=0.00 cfs 0.004 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.004 af

Pond UEGL5: UEGL5 Peak Elev=307.00' Storage=171 cf Inflow=0.02 cfs 0.008 af
Discarded=0.00 cfs 0.004 af Primary=0.00 cfs 0.003 af Outflow=0.01 cfs 0.007 af

Pond UOC1: UOC1 Peak Elev=304.94' Storage=0.044 af Inflow=0.12 cfs 0.049 af
Discarded=0.00 cfs 0.012 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.012 af

Pond UOC2: UOC2 Peak Elev=302.35' Storage=0.032 af Inflow=0.10 cfs 0.036 af
Discarded=0.00 cfs 0.010 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.010 af

Pond UOC3: UOC3 Peak Elev=300.31' Storage=1,012 cf Inflow=0.03 cfs 0.026 af
Discarded=0.00 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.007 af

Pond USGR1: USGR1 Peak Elev=301.34' Storage=180 cf Inflow=0.05 cfs 0.020 af
Discarded=0.01 cfs 0.020 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.020 af

Pond VEGL2: VEGL2 Peak Elev=306.23' Storage=467 cf Inflow=0.05 cfs 0.019 af
Discarded=0.01 cfs 0.019 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.019 af

Pond VSGR2: VSGR2 Peak Elev=301.08' Storage=83 cf Inflow=0.04 cfs 0.015 af
Discarded=0.01 cfs 0.015 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.015 af

Pond ZGR1: ZGR1 Peak Elev=306.57' Storage=0.107 af Inflow=0.29 cfs 0.143 af
Discarded=0.04 cfs 0.093 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.093 af

Pond ZLG123: ZLG123 Peak Elev=308.04' Storage=2,087 cf Inflow=0.22 cfs 0.084 af
Discarded=0.01 cfs 0.025 af Primary=0.04 cfs 0.026 af Outflow=0.05 cfs 0.051 af

Pond ZLG14: ZLG14 Peak Elev=299.99' Storage=485 cf Inflow=0.03 cfs 0.012 af
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af

Pond ZLG4: ZLG4 Peak Elev=308.01' Storage=0.007 af Inflow=0.04 cfs 0.017 af
Discarded=0.00 cfs 0.004 af Primary=0.01 cfs 0.008 af Outflow=0.01 cfs 0.012 af

Pond ZLG5: ZLG5 Peak Elev=307.02' Storage=0.028 af Inflow=0.13 cfs 0.047 af
Discarded=0.00 cfs 0.015 af Primary=0.02 cfs 0.013 af Outflow=0.03 cfs 0.028 af

Pond ZLG6: ZLG6 Peak Elev=307.03' Storage=1,211 cf Inflow=0.14 cfs 0.053 af
Discarded=0.00 cfs 0.015 af Primary=0.03 cfs 0.019 af Outflow=0.03 cfs 0.034 af

Pond ZLG7: ZLG7 Peak Elev=307.00' Storage=171 cf Inflow=0.02 cfs 0.008 af
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.003 af Outflow=0.01 cfs 0.005 af

Pond ZLG9: ZLG9 Peak Elev=304.49' Storage=0.004 af Inflow=0.04 cfs 0.017 af
Discarded=0.01 cfs 0.017 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.017 af

Pond ZRG2: ZGR2 Peak Elev=304.96' Storage=0.011 af Inflow=0.05 cfs 0.017 af
Discarded=0.00 cfs 0.015 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.015 af

Link STRONG: STRONG Inflow=0.04 cfs 0.018 af
Primary=0.04 cfs 0.018 af

Link Z1st: SA1 Inflow=0.03 cfs 0.011 af
Primary=0.03 cfs 0.011 af

Link Z1st2: Z1st2 Inflow=0.08 cfs 0.051 af
Primary=0.08 cfs 0.051 af

Link ZL: S Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link ZLL: SA Inflow=0.03 cfs 0.026 af
Primary=0.03 cfs 0.026 af

Summary for Subcatchment 1A1: 1A1

Runoff = 0.03 cfs @ 7.97 hrs, Volume= 0.011 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.150	98	
*	0.060	72	
	0.210	91	Weighted Average
	0.060		28.57% Pervious Area
	0.150		71.43% Impervious Area

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

Summary for Subcatchment 1A1up: 1A1up

Runoff = 0.00 cfs @ 20.10 hrs, Volume= 0.002 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.280	72	
	0.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	200	0.1900	0.23		**Sheet Flow, mixed** n= 0.300 P2= 2.20"

Summary for Subcatchment 1stR1: 1stR1

Runoff = 0.03 cfs @ 7.99 hrs, Volume= 0.012 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.175	98	
*	0.075	72	
	0.250	90	Weighted Average
	0.075		30.00% Pervious Area
	0.175		70.00% Impervious Area

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

Summary for Subcatchment 1stR2: 1stR2

Runoff = 0.03 cfs @ 7.99 hrs, Volume= 0.012 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.175	98	
*	0.075	72	
	0.250	90	Weighted Average
	0.075		30.00% Pervious Area
	0.175		70.00% Impervious Area

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

Summary for Subcatchment 1stREGB: 1stREGB

Runoff = 0.01 cfs @ 20.28 hrs, Volume= 0.006 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.890	72	
	0.890		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.6	200	0.0800	0.16		**Sheet Flow, MIXED** n= 0.300 P2= 2.20"
1.8	150	0.0800	1.41		**Shallow Concentrated Flow, MIXED** Kv= 5.0 fps
22.4	350	Total			

Summary for Subcatchment QSR1: QSR1

Runoff = 0.04 cfs @ 8.03 hrs, Volume= 0.015 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.200	98	
*	0.080	72	
	0.280	91	Weighted Average
	0.080		28.57% Pervious Area
	0.200		71.43% Impervious Area

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

Summary for Subcatchment QSR2: QSR2

Runoff = 0.04 cfs @ 8.03 hrs, Volume= 0.015 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.200	98	
*	0.080	72	
	0.280	91	Weighted Average
	0.080		28.57% Pervious Area
	0.200		71.43% Impervious Area

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

Summary for Subcatchment SA4: SA2

Runoff = 0.01 cfs @ 8.01 hrs, Volume= 0.005 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.078	98	
*	0.052	72	
	0.130	88	Weighted Average
	0.052		40.00% Pervious Area
	0.078		60.00% Impervious Area

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

Summary for Subcatchment SA5: SA5

Runoff = 0.02 cfs @ 7.99 hrs, Volume= 0.006 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.085	98	
*	0.035	72	
	0.120	90	Weighted Average
	0.035		29.17% Pervious Area
	0.085		70.83% Impervious Area

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

Summary for Subcatchment SA6: SA6

Runoff = 0.02 cfs @ 7.97 hrs, Volume= 0.006 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.080	98	
*	0.030	72	
	0.110	91	Weighted Average
	0.030		27.27% Pervious Area
	0.080		72.73% Impervious Area

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

Summary for Subcatchment SA7: SA7

Runoff = 0.03 cfs @ 7.99 hrs, Volume= 0.012 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.170	98	
*	0.070	72	
	0.240	90	Weighted Average
	0.070		29.17% Pervious Area
	0.170		70.83% Impervious Area

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

Summary for Subcatchment SR2: SR2

Runoff = 0.03 cfs @ 7.99 hrs, Volume= 0.009 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.130	98	
*	0.060	72	
	0.190	90	Weighted Average
	0.060		31.58% Pervious Area
	0.130		68.42% Impervious Area

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

Summary for Subcatchment STEL10: STEL10

Runoff = 0.05 cfs @ 7.99 hrs, Volume= 0.019 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.270	98	
*	0.120	72	
	0.390	90	Weighted Average
	0.120		30.77% Pervious Area
	0.270		69.23% Impervious Area

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

Summary for Subcatchment STEL2: STEL2

Runoff = 0.08 cfs @ 7.99 hrs, Volume= 0.031 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.440	98	
*	0.190	72	
	0.630	90	Weighted Average
	0.190		30.16% Pervious Area
	0.440		69.84% Impervious Area

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

Summary for Subcatchment STEL3: STEL3

Runoff = 0.03 cfs @ 7.99 hrs, Volume= 0.012 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.170	98	
*	0.070	72	
	0.240	90	Weighted Average
	0.070		29.17% Pervious Area
	0.170		70.83% Impervious Area

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

Summary for Subcatchment STEL4: STEL4

Runoff = 0.11 cfs @ 7.99 hrs, Volume= 0.041 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.590	98	
*	0.250	72	
	0.840	90	Weighted Average
	0.250		29.76% Pervious Area
	0.590		70.24% Impervious Area

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

Summary for Subcatchment STEL5: STEL5

Runoff = 0.02 cfs @ 8.00 hrs, Volume= 0.007 af, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.100	98	
*	0.050	72	
	0.150	89	Weighted Average
	0.050		33.33% Pervious Area
	0.100		66.67% Impervious Area

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

Summary for Subcatchment STEL6: STEL6

Runoff = 0.04 cfs @ 7.99 hrs, Volume= 0.015 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.220	98	
*	0.090	72	
	0.310	90	Weighted Average
	0.090		29.03% Pervious Area
	0.220		70.97% Impervious Area

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

Summary for Subcatchment STEL7: STEL7

Runoff = 0.02 cfs @ 7.99 hrs, Volume= 0.007 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.098	98	
*	0.040	72	
	0.138	90	Weighted Average
	0.040		28.99% Pervious Area
	0.098		71.01% Impervious Area

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

Summary for Subcatchment STEL8: STEL8

Runoff = 0.02 cfs @ 7.99 hrs, Volume= 0.006 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.090	98	
*	0.040	72	
	0.130	90	Weighted Average
	0.040		30.77% Pervious Area
	0.090		69.23% Impervious Area

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

Summary for Subcatchment STEL9: STEL9

Runoff = 0.01 cfs @ 7.99 hrs, Volume= 0.005 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment STER2: STER2

Runoff = 0.09 cfs @ 7.99 hrs, Volume= 0.032 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.460	98	
*	0.190	72	
	0.650	90	Weighted Average
	0.190		29.23% Pervious Area
	0.460		70.77% Impervious Area

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

Summary for Subcatchment STER3: STER3

Runoff = 0.07 cfs @ 7.99 hrs, Volume= 0.027 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.390	98	
*	0.160	72	
	0.550	90	Weighted Average
	0.160		29.09% Pervious Area
	0.390		70.91% Impervious Area

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

Summary for Subcatchment STRONG -PRE: STONG PRE

Runoff = 0.14 cfs @ 20.63 hrs, Volume= 0.129 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	19.230	72	
	19.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.9	300	0.0600	0.16		**Sheet Flow, MIXED** n= 0.300 P2= 2.20"
4.1	300	0.0600	1.22		**Shallow Concentrated Flow, MIXED** Kv= 5.0 fps
7.9	1,300	0.0600	2.75	4.59	**Parabolic Channel,** W=10.00' D=0.25' Area=1.7 sf Perim=10.0' n= 0.040
43.9	1,900	Total			

Summary for Subcatchment UEL3: UEL3

Runoff = 0.06 cfs @ 7.99 hrs, Volume= 0.023 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.330	98	
*	0.140	72	
	0.470	90	Weighted Average
	0.140		29.79% Pervious Area
	0.330		70.21% Impervious Area

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

Summary for Subcatchment UEL4: UEL4

Runoff = 0.01 cfs @ 8.00 hrs, Volume= 0.005 af, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.080	98	
*	0.040	72	
	0.120	89	Weighted Average
	0.040		33.33% Pervious Area
	0.080		66.67% Impervious Area

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

Summary for Subcatchment UEL5: UEL5

Runoff = 0.02 cfs @ 7.99 hrs, Volume= 0.008 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.120	98	
*	0.050	72	
	0.170	90	Weighted Average
	0.050		29.41% Pervious Area
	0.120		70.59% Impervious Area

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

Summary for Subcatchment USR1: USR1

Runoff = 0.05 cfs @ 7.99 hrs, Volume= 0.018 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.250	98	
*	0.110	72	
	0.360	90	Weighted Average
	0.110		30.56% Pervious Area
	0.250		69.44% Impervious Area

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

Summary for Subcatchment VEL2: VEL2

Runoff = 0.05 cfs @ 7.99 hrs, Volume= 0.019 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.270	98	
*	0.120	72	
	0.390	90	Weighted Average
	0.120		30.77% Pervious Area
	0.270		69.23% Impervious Area

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

Summary for Subcatchment VSR2: VSR2

Runoff = 0.04 cfs @ 7.99 hrs, Volume= 0.015 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.220	98	
*	0.090	72	
	0.310	90	Weighted Average
	0.090		29.03% Pervious Area
	0.220		70.97% Impervious Area

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

Summary for Subcatchment ZA1: ZA1

Runoff = 0.03 cfs @ 7.99 hrs, Volume= 0.013 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.180	98	
*	0.080	72	
	0.260	90	Weighted Average
	0.080		30.77% Pervious Area
	0.180		69.23% Impervious Area

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

Summary for Subcatchment ZA2: ZA2

Runoff = 0.04 cfs @ 7.97 hrs, Volume= 0.015 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.200	98	
*	0.080	72	
	0.280	91	Weighted Average
	0.080		28.57% Pervious Area
	0.200		71.43% Impervious Area

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

Summary for Subcatchment ZA3: ZA3

Runoff = 0.03 cfs @ 7.99 hrs, Volume= 0.011 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.160	98	
*	0.070	72	
	0.230	90	Weighted Average
	0.070		30.43% Pervious Area
	0.160		69.57% Impervious Area

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

Summary for Subcatchment ZA4: ZA4

Runoff = 0.02 cfs @ 7.97 hrs, Volume= 0.008 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.100	98	
*	0.040	72	
	0.140	91	Weighted Average
	0.040		28.57% Pervious Area
	0.100		71.43% Impervious Area

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

Summary for Subcatchment ZA5: ZA5

Runoff = 0.02 cfs @ 7.97 hrs, Volume= 0.008 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.100	98	
*	0.040	72	
	0.140	91	Weighted Average
	0.040		28.57% Pervious Area
	0.100		71.43% Impervious Area

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

Summary for Subcatchment ZA6: ZA6

Runoff = 0.01 cfs @ 7.99 hrs, Volume= 0.005 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.070	98	
*	0.030	72	
	0.100	90	Weighted Average
	0.030		30.00% Pervious Area
	0.070		70.00% Impervious Area

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

Summary for Subcatchment ZA7: ZA7

Runoff = 0.12 cfs @ 7.99 hrs, Volume= 0.044 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.630	98	
*	0.270	72	
	0.900	90	Weighted Average
	0.270		30.00% Pervious Area
	0.630		70.00% Impervious Area

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

Summary for Subcatchment ZA8: ZA8

Runoff = 0.04 cfs @ 7.99 hrs, Volume= 0.013 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.190	98	
*	0.080	72	
	0.270	90	Weighted Average
	0.080		29.63% Pervious Area
	0.190		70.37% Impervious Area

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

Summary for Subcatchment ZL10: ZL10

Runoff = 0.04 cfs @ 8.05 hrs, Volume= 0.017 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.260	98	
*	0.180	72	
	0.440	87	Weighted Average
	0.180		40.91% Pervious Area
	0.260		59.09% Impervious Area

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

Summary for Subcatchment ZL11: ZL11

Runoff = 0.05 cfs @ 8.03 hrs, Volume= 0.019 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.270	98	
*	0.110	72	
	0.380	90	Weighted Average
	0.110		28.95% Pervious Area
	0.270		71.05% Impervious Area

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

Summary for Subcatchment ZL12: ZL12

Runoff = 0.02 cfs @ 8.00 hrs, Volume= 0.008 af, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.120	98	
*	0.060	72	
	0.180	89	Weighted Average
	0.060		33.33% Pervious Area
	0.120		66.67% Impervious Area

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

Summary for Subcatchment ZL123: ZL123

Runoff = 0.22 cfs @ 7.99 hrs, Volume= 0.084 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	1.190	98	
*	0.510	72	
	1.700	90	Weighted Average
	0.510		30.00% Pervious Area
	1.190		70.00% Impervious Area

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

Summary for Subcatchment ZL13: ZL13

Runoff = 0.10 cfs @ 7.99 hrs, Volume= 0.036 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.510	98	
*	0.220	72	
	0.730	90	Weighted Average
	0.220		30.14% Pervious Area
	0.510		69.86% Impervious Area

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

Summary for Subcatchment ZL14: ZL14

Runoff = 0.03 cfs @ 7.99 hrs, Volume= 0.012 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.175	98	
*	0.075	72	
	0.250	90	Weighted Average
	0.075		30.00% Pervious Area
	0.175		70.00% Impervious Area

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

Summary for Subcatchment ZL4: ZL4

Runoff = 0.04 cfs @ 8.01 hrs, Volume= 0.017 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.260	98	
*	0.180	72	
	0.440	87	Weighted Average
	0.180		40.91% Pervious Area
	0.260		59.09% Impervious Area

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

Summary for Subcatchment ZL5: ZL5

Runoff = 0.13 cfs @ 7.99 hrs, Volume= 0.047 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.660	98	
*	0.290	72	
	0.950	90	Weighted Average
	0.290		30.53% Pervious Area
	0.660		69.47% Impervious Area

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

Summary for Subcatchment ZL6: ZL6

Runoff = 0.14 cfs @ 7.99 hrs, Volume= 0.053 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.750	98	
*	0.320	72	
	1.070	90	Weighted Average
	0.320		29.91% Pervious Area
	0.750		70.09% Impervious Area

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

Summary for Subcatchment ZL7: ZL7

Runoff = 0.02 cfs @ 7.97 hrs, Volume= 0.008 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.110	98	
*	0.040	72	
	0.150	91	Weighted Average
	0.040		26.67% Pervious Area
	0.110		73.33% Impervious Area

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

Summary for Subcatchment ZL8: ZL8

Runoff = 0.03 cfs @ 8.05 hrs, Volume= 0.014 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.220	98	
*	0.150	72	
	0.370	87	Weighted Average
	0.150		40.54% Pervious Area
	0.220		59.46% Impervious Area

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

Summary for Subcatchment ZL9: ZL9

Runoff = 0.04 cfs @ 8.01 hrs, Volume= 0.017 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.260	98	
*	0.180	72	
	0.440	87	Weighted Average
	0.180		40.91% Pervious Area
	0.260		59.09% Impervious Area

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

Summary for Subcatchment ZR1: ZR1

Runoff = 0.12 cfs @ 7.99 hrs, Volume= 0.044 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type IA 24-hr Salem Water Quality Rainfall=1.38"

	Area (ac)	CN	Description
*	0.630	98	
*	0.270	72	
	0.900	90	Weighted Average
	0.270		30.00% Pervious Area
	0.630		70.00% Impervious Area

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

Summary for Pond 1stGR1: 1stGr1

Inflow Area = 0.250 ac, 70.00% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.03 cfs @ 7.99 hrs, Volume= 0.012 af
Outflow = 0.00 cfs @ 24.11 hrs, Volume= 0.003 af, Atten= 98%, Lag= 967.4 min
Discarded = 0.00 cfs @ 24.11 hrs, Volume= 0.003 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 300.04' @ 24.11 hrs Surf.Area= 684 sf Storage= 487 cf

Plug-Flow detention time= 1,229.0 min calculated for 0.003 af (22% of inflow)
Center-of-Mass det. time= 872.3 min (1,695.8 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	296.90'	5,083 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
296.90	660	0.0	0	0
297.00	660	40.0	26	26
298.40	660	40.0	370	396
298.50	660	0.1	0	396
299.90	660	0.1	1	397
300.00	660	100.0	66	463
302.00	1,980	100.0	2,640	3,103
303.00	1,980	100.0	1,980	5,083

Device	Routing	Invert	Outlet Devices
#1	Discarded	296.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	301.00'	**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 @ 24.11 hrs HW=300.04' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=296.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 1stGR2: 1stGr2

Inflow Area = 0.740 ac, 43.92% Impervious, Inflow Depth = 0.41" for Salem Water Quality event
Inflow = 0.06 cfs @ 7.98 hrs, Volume= 0.025 af
Outflow = 0.00 cfs @ 24.18 hrs, Volume= 0.004 af, Atten= 98%, Lag= 972.2 min
Discarded = 0.00 cfs @ 24.18 hrs, Volume= 0.004 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 302.66' @ 24.18 hrs Surf.Area= 1,097 sf Storage= 1,045 cf

Plug-Flow detention time= 1,322.5 min calculated for 0.004 af (16% of inflow)
Center-of-Mass det. time= 935.2 min (1,773.0 - 837.8)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	5,083 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	660	0.0	0	0
299.00	660	40.0	26	26
300.40	660	40.0	370	396
300.50	660	0.1	0	396
301.90	660	0.1	1	397
302.00	660	100.0	66	463
304.00	1,980	100.0	2,640	3,103
305.00	1,980	100.0	1,980	5,083

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 24.18 hrs HW=302.66' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=298.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 1stREG.B: 1st REG.B

Inflow Area = 12.950 ac, 62.36% Impervious, Inflow Depth = 0.06" for Salem Water Quality event
Inflow = 0.11 cfs @ 7.98 hrs, Volume= 0.068 af
Outflow = 0.01 cfs @ 7.78 hrs, Volume= 0.025 af, Atten= 94%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.78 hrs, Volume= 0.025 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 299.95' @ 24.29 hrs Surf.Area= 6,000 sf Storage= 2,531 cf

Plug-Flow detention time= 1,109.0 min calculated for 0.025 af (36% of inflow)
Center-of-Mass det. time= 768.2 min (1,714.3 - 946.1)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	26,209 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	6,000	0.0	0	0
299.00	6,000	40.0	240	240
300.40	6,000	40.0	3,360	3,600
300.50	6,000	0.1	1	3,601
301.90	6,000	0.1	8	3,609
302.00	6,000	100.0	600	4,209
304.00	8,000	100.0	14,000	18,209
305.00	8,000	100.0	8,000	26,209

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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=0.01 cfs @ 7.78 hrs HW=298.96' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=298.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QSGR1: QSGR1

Inflow Area = 0.280 ac, 71.43% Impervious, Inflow Depth = 0.64" for Salem Water Quality event
Inflow = 0.04 cfs @ 8.03 hrs, Volume= 0.015 af
Outflow = 0.01 cfs @ 7.50 hrs, Volume= 0.015 af, Atten= 87%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.50 hrs, Volume= 0.015 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 305.69' @ 24.06 hrs Surf.Area= 0.022 ac Storage= 0.007 af

Plug-Flow detention time= 565.0 min calculated for 0.015 af (100% of inflow)
Center-of-Mass det. time= 565.1 min (1,380.5 - 815.4)

Volume	Invert	Avail.Storage	Storage Description
#1	304.90'	0.125 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
304.90	0.022	0.0	0.000	0.000
305.00	0.022	40.0	0.001	0.001
306.40	0.022	40.0	0.012	0.013
306.50	0.022	0.1	0.000	0.013
307.90	0.022	0.1	0.000	0.013
308.00	0.022	100.0	0.002	0.015
309.00	0.066	100.0	0.044	0.059
310.00	0.066	100.0	0.066	0.125

Device	Routing	Invert	Outlet Devices
#1	Discarded	304.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	308.80'	**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=0.01 cfs @ 7.50 hrs HW=304.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=304.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond QSGR2: QSGR2

Inflow Area = 0.560 ac, 71.43% Impervious, Inflow Depth = 0.32" for Salem Water Quality event
Inflow = 0.04 cfs @ 8.03 hrs, Volume= 0.015 af
Outflow = 0.01 cfs @ 7.50 hrs, Volume= 0.015 af, Atten= 87%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.50 hrs, Volume= 0.015 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.69' @ 24.06 hrs Surf.Area= 0.022 ac Storage= 0.007 af

Plug-Flow detention time= 565.0 min calculated for 0.015 af (100% of inflow)
Center-of-Mass det. time= 565.1 min (1,380.5 - 815.4)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.125 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.022	0.0	0.000	0.000
303.00	0.022	40.0	0.001	0.001
304.40	0.022	40.0	0.012	0.013
304.50	0.022	0.1	0.000	0.013
305.90	0.022	0.1	0.000	0.013
306.00	0.022	100.0	0.002	0.015
307.00	0.066	100.0	0.044	0.059
308.00	0.066	100.0	0.066	0.125

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	306.80'	**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=0.01 cfs @ 7.50 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=302.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond STEGL10: STEGL10

Inflow Area =	0.390 ac, 69.23% Impervious,	Inflow Depth = 0.59"	for Salem Water Quality event	
Inflow =	0.05 cfs @	7.99 hrs, Volume=	0.019 af	
Outflow =	0.00 cfs @	6.54 hrs, Volume=	0.004 af,	Atten= 98%, Lag= 0.0 min
Discarded =	0.00 cfs @	6.54 hrs, Volume=	0.004 af	
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 306.82' @ 24.11 hrs Surf.Area= 500 sf Storage= 761 cf

Plug-Flow detention time= 1,217.8 min calculated for 0.004 af (22% of inflow)
Center-of-Mass det. time= 859.6 min (1,683.2 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,351 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	500	0.0	0	0
303.00	500	40.0	20	20
304.40	500	40.0	280	300
304.50	500	0.1	0	300
305.90	500	0.1	1	301
306.00	500	100.0	50	351
308.00	500	100.0	1,000	1,351

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 6.54 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=302.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond STEGL2: STEGL2

Inflow Area =	0.630 ac, 69.84% Impervious,	Inflow Depth = 0.59"	for Salem Water Quality event	
Inflow =	0.08 cfs @	7.99 hrs, Volume=	0.031 af	
Outflow =	0.02 cfs @	20.64 hrs, Volume=	0.024 af,	Atten= 81%, Lag= 759.1 min
Discarded =	0.01 cfs @	6.58 hrs, Volume=	0.021 af	
Primary =	0.01 cfs @	20.64 hrs, Volume=	0.003 af	

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.01' @ 20.64 hrs Surf.Area= 500 sf Storage= 856 cf

Plug-Flow detention time= 947.9 min calculated for 0.024 af (77% of inflow)

Center-of-Mass det. time= 815.9 min (1,639.4 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,351 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	500	0.0	0	0
303.00	500	40.0	20	20
304.40	500	40.0	280	300
304.50	500	0.1	0	300
305.90	500	0.1	1	301
306.00	500	100.0	50	351
308.00	500	100.0	1,000	1,351

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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=0.01 cfs @ 6.58 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.01 cfs @ 20.64 hrs HW=307.01' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.28 fps)

Summary for Pond STEGL3: STEGL3

Inflow Area = 0.240 ac, 70.83% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.03 cfs @ 7.99 hrs, Volume= 0.012 af
Outflow = 0.01 cfs @ 16.76 hrs, Volume= 0.004 af, Atten= 78%, Lag= 526.3 min
Discarded = 0.00 cfs @ 6.26 hrs, Volume= 0.001 af
Primary = 0.01 cfs @ 16.76 hrs, Volume= 0.004 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.01' @ 16.76 hrs Surf.Area= 200 sf Storage= 342 cf

Plug-Flow detention time= 777.1 min calculated for 0.004 af (38% of inflow)
Center-of-Mass det. time= 467.9 min (1,291.4 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	540 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	200	0.0	0	0
303.00	200	40.0	8	8
304.40	200	40.0	112	120
304.50	200	0.1	0	120
305.90	200	0.1	0	120
306.00	200	100.0	20	140
308.00	200	100.0	400	540

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 6.26 hrs HW=302.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 16.76 hrs HW=307.01' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.23 fps)

Summary for Pond STEGL4: STEGL4

Inflow Area = 0.840 ac, 70.24% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.11 cfs @ 7.99 hrs, Volume= 0.041 af
Outflow = 0.02 cfs @ 19.55 hrs, Volume= 0.012 af, Atten= 80%, Lag= 694.0 min
Discarded = 0.00 cfs @ 6.33 hrs, Volume= 0.003 af
Primary = 0.02 cfs @ 19.55 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.02' @ 19.55 hrs Surf.Area= 800 sf Storage= 1,378 cf

Plug-Flow detention time= 907.6 min calculated for 0.012 af (29% of inflow)
Center-of-Mass det. time= 569.1 min (1,392.6 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	2,161 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	800	0.0	0	0
303.00	800	40.0	32	32
304.40	800	40.0	448	480
304.50	800	0.1	0	480
305.90	800	0.1	1	481
306.00	800	100.0	80	561
308.00	800	100.0	1,600	2,161

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 6.33 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.02 cfs @ 19.55 hrs HW=307.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.41 fps)

Summary for Pond STEGL5: STEGL5

Inflow Area = 0.150 ac, 66.67% Impervious, Inflow Depth = 0.54" for Salem Water Quality event
Inflow = 0.02 cfs @ 8.00 hrs, Volume= 0.007 af
Outflow = 0.00 cfs @ 18.08 hrs, Volume= 0.005 af, Atten= 77%, Lag= 604.7 min
Discarded = 0.00 cfs @ 6.82 hrs, Volume= 0.004 af
Primary = 0.00 cfs @ 18.08 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.00' @ 18.08 hrs Surf.Area= 100 sf Storage= 170 cf

Plug-Flow detention time= 876.5 min calculated for 0.005 af (79% of inflow)
Center-of-Mass det. time= 757.2 min (1,593.2 - 836.0)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 6.82 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 18.08 hrs HW=307.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.15 fps)

Summary for Pond STEGL7: STEGL7

Inflow Area = 0.138 ac, 71.01% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.02 cfs @ 7.99 hrs, Volume= 0.007 af
Outflow = 0.00 cfs @ 17.84 hrs, Volume= 0.005 af, Atten= 79%, Lag= 590.9 min
Discarded = 0.00 cfs @ 6.51 hrs, Volume= 0.004 af
Primary = 0.00 cfs @ 17.84 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.00' @ 17.84 hrs Surf.Area= 100 sf Storage= 170 cf

Plug-Flow detention time= 882.1 min calculated for 0.005 af (79% of inflow)
Center-of-Mass det. time= 761.5 min (1,585.0 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 6.51 hrs HW=302.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 17.84 hrs HW=307.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.15 fps)

Summary for Pond STEGL8: STEGL8

Inflow Area = 0.130 ac, 69.23% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.02 cfs @ 7.99 hrs, Volume= 0.006 af
Outflow = 0.00 cfs @ 15.83 hrs, Volume= 0.003 af, Atten= 77%, Lag= 470.4 min
Discarded = 0.00 cfs @ 6.26 hrs, Volume= 0.001 af
Primary = 0.00 cfs @ 15.83 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.00' @ 15.83 hrs Surf.Area= 100 sf Storage= 171 cf

Plug-Flow detention time= 768.4 min calculated for 0.003 af (47% of inflow)

Center-of-Mass det. time= 492.7 min (1,316.2 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 6.26 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 15.83 hrs HW=307.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.17 fps)

Summary for Pond STEGL9: STEGL9

Inflow Area = 0.100 ac, 70.00% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.01 cfs @ 7.99 hrs, Volume= 0.005 af
Outflow = 0.00 cfs @ 20.23 hrs, Volume= 0.002 af, Atten= 81%, Lag= 734.8 min
Discarded = 0.00 cfs @ 6.48 hrs, Volume= 0.001 af
Primary = 0.00 cfs @ 20.23 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 303.00' @ 20.23 hrs Surf.Area= 100 sf Storage= 170 cf

Plug-Flow detention time= 1,032.1 min calculated for 0.002 af (31% of inflow)
Center-of-Mass det. time= 698.0 min (1,521.6 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	370 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	100	0.0	0	0
299.00	100	40.0	4	4
300.40	100	40.0	56	60
300.50	100	0.1	0	60
301.90	100	0.1	0	60
302.00	100	100.0	10	70
304.00	100	100.0	200	270
305.00	100	100.0	100	370

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 6.48 hrs HW=298.96' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 20.23 hrs HW=303.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.12 fps)

Summary for Pond STEGR2: STEGR2

Inflow Area = 1.670 ac, 70.06% Impervious, Inflow Depth = 0.28" for Salem Water Quality event
Inflow = 0.09 cfs @ 7.99 hrs, Volume= 0.040 af
Outflow = 0.02 cfs @ 7.64 hrs, Volume= 0.040 af, Atten= 77%, Lag= 0.0 min
Discarded = 0.02 cfs @ 7.64 hrs, Volume= 0.040 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 301.68' @ 24.06 hrs Surf.Area= 1,680 sf Storage= 526 cf

Plug-Flow detention time= 251.5 min calculated for 0.040 af (100% of inflow)
Center-of-Mass det. time= 251.6 min (1,157.7 - 906.1)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	12,939 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
300.90	1,680	0.0	0	0
301.00	1,680	40.0	67	67
302.40	1,680	40.0	941	1,008
302.50	1,680	0.1	0	1,008
303.90	1,680	0.1	2	1,011
304.00	1,680	100.0	168	1,179
306.00	5,040	100.0	6,720	7,899
307.00	5,040	100.0	5,040	12,939

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	304.90'	**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=0.02 cfs @ 7.64 hrs HW=300.96' (Free Discharge)
└—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond STEGR3: STEGR3

Inflow Area = 5.768 ac, 70.09% Impervious, Inflow Depth = 0.11" for Salem Water Quality event
Inflow = 0.10 cfs @ 7.99 hrs, Volume= 0.051 af
Outflow = 0.00 cfs @ 24.43 hrs, Volume= 0.008 af, Atten= 97%, Lag= 986.6 min
Discarded = 0.00 cfs @ 24.43 hrs, Volume= 0.008 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 302.52' @ 24.43 hrs Surf.Area= 2,331 sf Storage= 2,084 cf

Plug-Flow detention time= 1,317.3 min calculated for 0.008 af (17% of inflow)
Center-of-Mass det. time= 856.9 min (1,781.1 - 924.2)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	11,783 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	1,530	0.0	0	0
299.00	1,530	40.0	61	61
300.40	1,530	40.0	857	918
300.50	1,530	0.1	0	918
301.90	1,530	0.1	2	920
302.00	1,530	100.0	153	1,073
304.00	4,590	100.0	6,120	7,193
305.00	4,590	100.0	4,590	11,783

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	302.90'	**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 @ 24.43 hrs HW=302.52' (Free Discharge)
└—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=298.90' (Free Discharge)
└—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond STELG6: STELG6

Inflow Area = 0.310 ac, 70.97% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.04 cfs @ 7.99 hrs, Volume= 0.015 af
Outflow = 0.00 cfs @ 6.66 hrs, Volume= 0.003 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.00 cfs @ 6.66 hrs, Volume= 0.003 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 302.81' @ 24.11 hrs Surf.Area= 400 sf Storage= 605 cf

Plug-Flow detention time= 1,219.5 min calculated for 0.003 af (22% of inflow)
Center-of-Mass det. time= 861.9 min (1,685.4 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	1,481 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	400	0.0	0	0
299.00	400	40.0	16	16
300.40	400	40.0	224	240
300.50	400	0.1	0	240
301.90	400	0.1	1	241
302.00	400	100.0	40	281
304.00	400	100.0	800	1,081
305.00	400	100.0	400	1,481

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.100 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 6.66 hrs HW=298.96' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=298.90' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond UEGL3: UEGL3

Inflow Area = 0.470 ac, 70.21% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.06 cfs @ 7.99 hrs, Volume= 0.023 af
Outflow = 0.01 cfs @ 7.11 hrs, Volume= 0.023 af, Atten= 89%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.11 hrs, Volume= 0.023 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Peak Elev= 306.24' @ 24.05 hrs Surf.Area= 600 sf Storage= 565 cf

Plug-Flow detention time= 768.4 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 768.4 min (1,592.0 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,621 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	600	0.0	0	0
303.00	600	40.0	24	24
304.40	600	40.0	336	360
304.50	600	0.1	0	360
305.90	600	0.1	1	361
306.00	600	100.0	60	421
308.00	600	100.0	1,200	1,621

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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=0.01 cfs @ 7.11 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=302.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond UEGL4: UEGL4

Inflow Area =	0.120 ac,	66.67% Impervious,	Inflow Depth = 0.54"	for Salem Water Quality event
Inflow =	0.01 cfs @	8.00 hrs, Volume=	0.005 af	
Outflow =	0.00 cfs @	7.01 hrs, Volume=	0.004 af,	Atten= 92%, Lag= 0.0 min
Discarded =	0.00 cfs @	7.01 hrs, Volume=	0.004 af	
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 306.92' @ 24.07 hrs Surf.Area= 100 sf Storage= 162 cf

Plug-Flow detention time= 987.5 min calculated for 0.004 af (77% of inflow)
Center-of-Mass det. time= 857.7 min (1,693.7 - 836.0)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 7.01 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=302.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond UEGL5: UEGL5

Inflow Area = 0.170 ac, 70.59% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.02 cfs @ 7.99 hrs, Volume= 0.008 af
Outflow = 0.01 cfs @ 14.28 hrs, Volume= 0.007 af, Atten= 76%, Lag= 377.7 min
Discarded = 0.00 cfs @ 6.36 hrs, Volume= 0.004 af
Primary = 0.00 cfs @ 14.28 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.00' @ 14.28 hrs Surf.Area= 100 sf Storage= 171 cf

Plug-Flow detention time= 733.6 min calculated for 0.007 af (83% of inflow)
Center-of-Mass det. time= 634.2 min (1,457.7 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 6.36 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 14.28 hrs HW=307.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.18 fps)

Summary for Pond UOC1: UOC1

Inflow Area = 1.750 ac, 65.71% Impervious, Inflow Depth = 0.34" for Salem Water Quality event
Inflow = 0.12 cfs @ 8.04 hrs, Volume= 0.049 af
Outflow = 0.00 cfs @ 7.60 hrs, Volume= 0.012 af, Atten= 97%, Lag= 0.0 min
Discarded = 0.00 cfs @ 7.60 hrs, Volume= 0.012 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 304.94' @ 24.22 hrs Surf.Area= 0.069 ac Storage= 0.044 af

Plug-Flow detention time= 1,216.2 min calculated for 0.012 af (25% of inflow)
Center-of-Mass det. time= 859.6 min (1,710.7 - 851.2)

Volume	Invert	Avail.Storage	Storage Description
#1	301.90'	0.293 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
301.90	0.069	0.0	0.000	0.000
302.00	0.069	40.0	0.003	0.003
303.40	0.069	40.0	0.039	0.041
303.50	0.069	0.1	0.000	0.041
304.90	0.069	0.1	0.000	0.042
305.00	0.069	100.0	0.007	0.048
306.00	0.140	100.0	0.104	0.153
307.00	0.140	100.0	0.140	0.293

Device	Routing	Invert	Outlet Devices
#1	Discarded	301.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	305.25'	**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 @ 7.60 hrs HW=301.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=301.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond UOC2: UOC2

Inflow Area = 7.610 ac, 67.67% Impervious, Inflow Depth = 0.06" for Salem Water Quality event
Inflow = 0.10 cfs @ 7.99 hrs, Volume= 0.036 af
Outflow = 0.00 cfs @ 7.24 hrs, Volume= 0.010 af, Atten= 97%, Lag= 0.0 min
Discarded = 0.00 cfs @ 7.24 hrs, Volume= 0.010 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 302.35' @ 24.10 hrs Surf.Area= 0.055 ac Storage= 0.032 af

Plug-Flow detention time= 1,216.5 min calculated for 0.010 af (28% of inflow)
Center-of-Mass det. time= 873.8 min (1,697.3 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	0.261 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
300.90	0.055	0.0	0.000	0.000
301.00	0.055	40.0	0.002	0.002
302.40	0.055	40.0	0.031	0.033
302.50	0.055	0.1	0.000	0.033
303.90	0.055	0.1	0.000	0.033
304.00	0.110	100.0	0.008	0.041
306.00	0.110	100.0	0.220	0.261

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	305.00'	**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 @ 7.24 hrs HW=300.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond UOC3: UOC3

Inflow Area = 8.820 ac, 67.91% Impervious, Inflow Depth = 0.04" for Salem Water Quality event
Inflow = 0.03 cfs @ 7.99 hrs, Volume= 0.026 af
Outflow = 0.00 cfs @ 7.78 hrs, Volume= 0.007 af, Atten= 94%, Lag= 0.0 min
Discarded = 0.00 cfs @ 7.78 hrs, Volume= 0.007 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 300.31' @ 24.31 hrs Surf.Area= 1,800 sf Storage= 1,012 cf

Plug-Flow detention time= 1,119.7 min calculated for 0.007 af (28% of inflow)

Center-of-Mass det. time= 704.6 min (1,715.3 - 1,010.6)

Volume	Invert	Avail.Storage	Storage Description
#1	298.90'	10,443 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.90	1,800	0.0	0	0
299.00	1,800	40.0	72	72
300.40	1,800	40.0	1,008	1,080
300.50	1,800	0.1	0	1,080
301.90	1,800	0.1	3	1,083
302.00	1,800	100.0	180	1,263
304.00	3,690	100.0	5,490	6,753
305.00	3,690	100.0	3,690	10,443

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	303.00'	**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 @ 7.78 hrs HW=298.96' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=298.90' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond USGR1: USGR1

Inflow Area = 1.120 ac, 69.64% Impervious, Inflow Depth = 0.22" for Salem Water Quality event
Inflow = 0.05 cfs @ 7.99 hrs, Volume= 0.020 af
Outflow = 0.01 cfs @ 7.67 hrs, Volume= 0.020 af, Atten= 75%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.67 hrs, Volume= 0.020 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 301.34' @ 20.79 hrs Surf.Area= 1,020 sf Storage= 180 cf

Plug-Flow detention time= 187.6 min calculated for 0.020 af (100% of inflow)
Center-of-Mass det. time= 187.5 min (1,050.0 - 862.5)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	8,876 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
300.90	1,020	0.0	0	0
301.00	1,020	40.0	41	41
302.40	1,020	40.0	571	612
302.50	1,020	0.1	0	612
303.90	1,020	0.1	1	614
304.00	1,020	100.0	102	716
305.00	3,060	100.0	2,040	2,756
307.00	3,060	100.0	6,120	8,876

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	304.90'	**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=0.01 cfs @ 7.67 hrs HW=300.96' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VEGL2: VEGL2

Inflow Area = 0.390 ac, 69.23% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.05 cfs @ 7.99 hrs, Volume= 0.019 af
Outflow = 0.01 cfs @ 7.11 hrs, Volume= 0.019 af, Atten= 89%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.11 hrs, Volume= 0.019 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 306.23' @ 24.05 hrs Surf.Area= 500 sf Storage= 467 cf

Plug-Flow detention time= 763.3 min calculated for 0.019 af (100% of inflow)
Center-of-Mass det. time= 763.5 min (1,587.0 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,351 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	500	0.0	0	0
303.00	500	40.0	20	20
304.40	500	40.0	280	300
304.50	500	0.1	0	300
305.90	500	0.1	1	301
306.00	500	100.0	50	351
308.00	500	100.0	1,000	1,351

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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=0.01 cfs @ 7.11 hrs HW=302.95' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=302.90' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VSGR2: VSGR2

Inflow Area = 0.700 ac, 70.00% Impervious, Inflow Depth = 0.26" for Salem Water Quality event
Inflow = 0.04 cfs @ 7.99 hrs, Volume= 0.015 af
Outflow = 0.01 cfs @ 7.75 hrs, Volume= 0.015 af, Atten= 68%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.75 hrs, Volume= 0.015 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 301.08' @ 9.45 hrs Surf.Area= 1,140 sf Storage= 83 cf

Plug-Flow detention time= 59.5 min calculated for 0.015 af (100% of inflow)
Center-of-Mass det. time= 59.6 min (883.1 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	300.90'	8,780 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
300.90	1,140	0.0	0	0
301.00	1,140	40.0	46	46
302.40	1,140	40.0	638	684
302.50	1,140	0.1	0	684
303.90	1,140	0.1	2	686
304.00	1,140	100.0	114	800
306.00	3,420	100.0	4,560	5,360
307.00	3,420	100.0	3,420	8,780

Device	Routing	Invert	Outlet Devices
#1	Discarded	300.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	304.90'	**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=0.01 cfs @ 7.75 hrs HW=300.96' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=300.90' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond ZGR1: ZGR1

Inflow Area = 4.760 ac, 68.07% Impervious, Inflow Depth = 0.36" for Salem Water Quality event
Inflow = 0.29 cfs @ 7.99 hrs, Volume= 0.143 af
Outflow = 0.04 cfs @ 24.10 hrs, Volume= 0.093 af, Atten= 88%, Lag= 967.1 min
Discarded = 0.04 cfs @ 24.10 hrs, Volume= 0.093 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 306.57' @ 24.10 hrs Surf.Area= 0.143 ac Storage= 0.107 af

Plug-Flow detention time= 991.0 min calculated for 0.093 af (65% of inflow)
Center-of-Mass det. time= 806.4 min (1,708.2 - 901.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.381 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.067	0.0	0.000	0.000
303.00	0.067	40.0	0.003	0.003
304.40	0.067	40.0	0.038	0.040
304.50	0.067	0.1	0.000	0.040
305.90	0.067	0.1	0.000	0.040
306.00	0.067	100.0	0.007	0.047
307.00	0.200	100.0	0.134	0.181
308.00	0.200	100.0	0.200	0.381

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	306.80'	**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=0.04 cfs @ 24.10 hrs HW=306.57' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=302.90' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond ZLG123: ZLG123

Inflow Area = 1.700 ac, 70.00% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.22 cfs @ 7.99 hrs, Volume= 0.084 af
Outflow = 0.05 cfs @ 16.40 hrs, Volume= 0.051 af, Atten= 78%, Lag= 504.7 min
Discarded = 0.01 cfs @ 6.31 hrs, Volume= 0.025 af
Primary = 0.04 cfs @ 16.40 hrs, Volume= 0.026 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Peak Elev= 308.04' @ 16.40 hrs Surf.Area= 1,200 sf Storage= 2,087 cf

Plug-Flow detention time= 809.5 min calculated for 0.051 af (61% of inflow)
Center-of-Mass det. time= 599.5 min (1,423.1 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	3,242 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
303.90	1,200	0.0	0	0
304.00	1,200	40.0	48	48
305.40	1,200	40.0	672	720
305.50	1,200	0.1	0	720
306.90	1,200	0.1	2	722
307.00	1,200	100.0	120	842
309.00	1,200	100.0	2,400	3,242

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	308.00'	**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=0.01 cfs @ 6.31 hrs HW=303.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.04 cfs @ 16.40 hrs HW=308.04' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.04 cfs @ 0.54 fps)

Summary for Pond ZLG14: ZLG14

Inflow Area = 0.250 ac, 70.00% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.03 cfs @ 7.99 hrs, Volume= 0.012 af
Outflow = 0.00 cfs @ 7.24 hrs, Volume= 0.003 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.00 cfs @ 7.24 hrs, Volume= 0.003 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 299.99' @ 24.11 hrs Surf.Area= 700 sf Storage= 485 cf

Plug-Flow detention time= 1,227.5 min calculated for 0.003 af (24% of inflow)
Center-of-Mass det. time= 873.9 min (1,697.4 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	296.90'	2,591 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
296.90	700	0.0	0	0
297.00	700	40.0	28	28
298.40	700	40.0	392	420
298.50	700	0.1	0	420
299.90	700	0.1	1	421
300.00	700	100.0	70	491
302.00	700	100.0	1,400	1,891
303.00	700	100.0	700	2,591

Device	Routing	Invert	Outlet Devices
#1	Discarded	296.90'	**0.050 in/hr Exfiltration over Surface area**
#2	Primary	301.00'	**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 @ 7.24 hrs HW=296.96' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=296.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond ZLG4: ZLG4

Inflow Area = 0.440 ac, 59.09% Impervious, Inflow Depth = 0.45" for Salem Water Quality event
Inflow = 0.04 cfs @ 8.01 hrs, Volume= 0.017 af
Outflow = 0.01 cfs @ 13.20 hrs, Volume= 0.012 af, Atten= 70%, Lag= 311.1 min
Discarded = 0.00 cfs @ 7.04 hrs, Volume= 0.004 af
Primary = 0.01 cfs @ 13.20 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 308.01' @ 13.20 hrs Surf.Area= 0.004 ac Storage= 0.007 af

Plug-Flow detention time= 560.8 min calculated for 0.012 af (72% of inflow)
Center-of-Mass det. time= 409.5 min (1,270.1 - 860.6)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	0.011 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
303.90	0.004	0.0	0.000	0.000
304.00	0.004	40.0	0.000	0.000
305.40	0.004	40.0	0.002	0.002
305.50	0.004	0.1	0.000	0.002
306.90	0.004	0.1	0.000	0.002
307.00	0.004	100.0	0.000	0.003
309.00	0.004	100.0	0.008	0.011

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	308.00'	**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 @ 7.04 hrs HW=303.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.01 cfs @ 13.20 hrs HW=308.01' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.29 fps)

Summary for Pond ZLG5: ZLG5

Inflow Area = 0.950 ac, 69.47% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.13 cfs @ 7.99 hrs, Volume= 0.047 af
Outflow = 0.03 cfs @ 16.87 hrs, Volume= 0.028 af, Atten= 78%, Lag= 532.8 min
Discarded = 0.00 cfs @ 6.33 hrs, Volume= 0.015 af
Primary = 0.02 cfs @ 16.87 hrs, Volume= 0.013 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.02' @ 16.87 hrs Surf.Area= 0.016 ac Storage= 0.028 af

Plug-Flow detention time= 838.0 min calculated for 0.028 af (60% of inflow)
Center-of-Mass det. time= 621.6 min (1,445.1 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	0.043 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
302.90	0.016	0.0	0.000	0.000
303.00	0.016	40.0	0.001	0.001
304.40	0.016	40.0	0.009	0.010
304.50	0.016	0.1	0.000	0.010
305.90	0.016	0.1	0.000	0.010
306.00	0.016	100.0	0.002	0.011
308.00	0.016	100.0	0.032	0.043

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 6.33 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.02 cfs @ 16.87 hrs HW=307.02' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.43 fps)

Summary for Pond ZLG6: ZLG6

Inflow Area = 1.070 ac, 70.09% Impervious, Inflow Depth = 0.59" for Salem Water Quality event
Inflow = 0.14 cfs @ 7.99 hrs, Volume= 0.053 af
Outflow = 0.03 cfs @ 15.36 hrs, Volume= 0.034 af, Atten= 77%, Lag= 442.1 min
Discarded = 0.00 cfs @ 6.27 hrs, Volume= 0.015 af
Primary = 0.03 cfs @ 15.36 hrs, Volume= 0.019 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.03' @ 15.36 hrs Surf.Area= 700 sf Storage= 1,211 cf

Plug-Flow detention time= 744.5 min calculated for 0.034 af (64% of inflow)
Center-of-Mass det. time= 548.9 min (1,372.4 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	1,891 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	700	0.0	0	0
303.00	700	40.0	28	28
304.40	700	40.0	392	420
304.50	700	0.1	0	420
305.90	700	0.1	1	421
306.00	700	100.0	70	491
308.00	700	100.0	1,400	1,891

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 6.27 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.03 cfs @ 15.36 hrs HW=307.03' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.03 cfs @ 0.48 fps)

Summary for Pond ZLG7: ZLG7

Inflow Area = 0.150 ac, 73.33% Impervious, Inflow Depth = 0.64" for Salem Water Quality event
Inflow = 0.02 cfs @ 7.97 hrs, Volume= 0.008 af
Outflow = 0.01 cfs @ 13.38 hrs, Volume= 0.005 af, Atten= 77%, Lag= 324.3 min
Discarded = 0.00 cfs @ 5.93 hrs, Volume= 0.002 af
Primary = 0.00 cfs @ 13.38 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 307.00' @ 13.38 hrs Surf.Area= 100 sf Storage= 171 cf

Plug-Flow detention time= 692.8 min calculated for 0.005 af (67% of inflow)

Center-of-Mass det. time= 507.5 min (1,318.2 - 810.7)

Volume	Invert	Avail.Storage	Storage Description
#1	302.90'	270 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
302.90	100	0.0	0	0
303.00	100	40.0	4	4
304.40	100	40.0	56	60
304.50	100	0.1	0	60
305.90	100	0.1	0	60
306.00	100	100.0	10	70
308.00	100	100.0	200	270

Device	Routing	Invert	Outlet Devices
#1	Discarded	302.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	307.00'	**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 @ 5.93 hrs HW=302.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 13.38 hrs HW=307.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.19 fps)

Summary for Pond ZLG9: ZLG9

Inflow Area = 0.440 ac, 59.09% Impervious, Inflow Depth = 0.45" for Salem Water Quality event
Inflow = 0.04 cfs @ 8.01 hrs, Volume= 0.017 af
Outflow = 0.01 cfs @ 7.71 hrs, Volume= 0.017 af, Atten= 77%, Lag= 0.0 min
Discarded = 0.01 cfs @ 7.71 hrs, Volume= 0.017 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 304.49' @ 21.23 hrs Surf.Area= 0.018 ac Storage= 0.004 af

Plug-Flow detention time= 247.6 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 247.5 min (1,108.1 - 860.6)

Volume	Invert	Avail.Storage	Storage Description
#1	303.90'	0.049 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
303.90	0.018	0.0	0.000	0.000
304.00	0.018	40.0	0.001	0.001
305.40	0.018	40.0	0.010	0.011
305.50	0.018	0.1	0.000	0.011
306.90	0.018	0.1	0.000	0.011
307.00	0.018	100.0	0.002	0.013
309.00	0.018	100.0	0.036	0.049

Device	Routing	Invert	Outlet Devices
#1	Discarded	303.90'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	308.00'	**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=0.01 cfs @ 7.71 hrs HW=303.95' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=303.90' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond ZRG2: ZGR2

Inflow Area = 5.130 ac, 68.03% Impervious, Inflow Depth = 0.04" for Salem Water Quality event
Inflow = 0.05 cfs @ 7.99 hrs, Volume= 0.017 af
Outflow = 0.00 cfs @ 7.30 hrs, Volume= 0.015 af, Atten= 91%, Lag= 0.0 min
Discarded = 0.00 cfs @ 7.30 hrs, Volume= 0.015 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 304.96' @ 24.06 hrs Surf.Area= 0.017 ac Storage= 0.011 af

Plug-Flow detention time= 940.2 min calculated for 0.015 af (88% of inflow)
Center-of-Mass det. time= 869.3 min (1,698.6 - 829.3)

Volume	Invert	Avail.Storage	Storage Description
#1	301.90'	0.094 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
301.90	0.017	0.0	0.000	0.000
302.00	0.017	40.0	0.001	0.001
303.40	0.017	40.0	0.010	0.010
303.50	0.017	0.1	0.000	0.010
304.90	0.017	0.1	0.000	0.010
305.00	0.017	100.0	0.002	0.012
306.00	0.049	100.0	0.033	0.045
307.00	0.049	100.0	0.049	0.094

Device	Routing	Invert	Outlet Devices
#1	Discarded	301.90'	**0.250 in/hr Exfiltration over Surface area**
#2	Primary	305.80'	**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 @ 7.30 hrs HW=301.95' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=301.90' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link STRONG: STRONG

Inflow Area = 19.498 ac, 64.91% Impervious, Inflow Depth = 0.01" for Salem Water Quality event
Inflow = 0.04 cfs @ 8.00 hrs, Volume= 0.018 af
Primary = 0.04 cfs @ 8.00 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link Z1st: SA1

Inflow Area = 9.550 ac, 68.06% Impervious, Inflow Depth = 0.01" for Salem Water Quality event
Inflow = 0.03 cfs @ 7.99 hrs, Volume= 0.011 af
Primary = 0.03 cfs @ 7.99 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link Z1st2: Z1st2

Inflow Area = 2.510 ac, 62.75% Impervious, Inflow Depth = 0.24" for Salem Water Quality event
Inflow = 0.08 cfs @ 7.98 hrs, Volume= 0.051 af
Primary = 0.08 cfs @ 7.98 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link ZL: S

Inflow Area = 6.880 ac, 67.44% Impervious, Inflow Depth = 0.00" for Salem Water Quality event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link ZLL: SA

Inflow Area =	8.820 ac,	67.91% Impervious,	Inflow Depth = 0.04"	for Salem Water Quality event
Inflow =	0.03 cfs @	7.99 hrs, Volume=	0.026 af	
Primary =	0.03 cfs @	7.99 hrs, Volume=	0.026 af,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

APPENDIX I: Inadvertent Discovery Plan

Treatment of Native American Human Remains Discovered Inadvertently or Through Criminal Investigations on Private and Public, State-Owned Lands in Oregon

Native American burial sites are not simply artifacts of the tribe's cultural past, but are considered sacred and represent a continuing connection with their ancestors. Native American ancestral remains, funerary objects, sacred objects and objects of cultural patrimony associated with Oregon Tribes are protected under state law, including criminal penalties (ORS 97.740-.994 and 358.905-.961). The laws recognize and codify the Tribes' rights in the decision-making process regarding ancestral remains and associated objects. Therefore both the discovered ancestral remains and their associated objects should be treated in a sensitive and respectful manner by all parties involved.

Identification of Human Remains

- Oregon laws (ORS 146.090 & .095) outline the types of deaths that require investigation and the accompanying responsibilities for that investigation. The law enforcement official, district medical examiner, and the district attorney for the county where the death occurs are responsible for deaths requiring investigation. Deaths that require investigation include those *occurring under suspicious or unknown circumstances*.
- If human remains that are inadvertently discovered or discovered through criminal investigations **are not clearly modern**, then there is high probability that the remains are Native American and therefore ORS 97.745(4) applies, which requires immediate notification with State Police, State Historic Preservation Office, Commission on Indian Services, and all appropriate Native American Tribes. To determine who the "appropriate Native American Tribe" is, the responsible parties should contact the Legislative Commission on Indian Services (CIS). To determine whether the human remains are Native American, the responsible parties should contact the appropriate Native American Tribes at the initial discovery. It should be noted that there may be more than one appropriate Native American Tribe to be contacted.
- If the human remains are possibly Native American then the area should be secured from further disturbance. The human remains and associated objects **should not be disturbed**, **manipulated, or transported from the original location until a plan is developed in consultation with the above named parties.** These actions will help ensure compliance with Oregon state law that prohibits any person willfully removing human remains and/or objects of cultural significance from its original location (ORS 97.745).
- All parties involved and the appropriate Native American Tribes shall implement a culturally sensitive plan for reburial.

Notification

- State law [ORS 97.745 (4)] requires that any discovered human remains suspected to be Native American shall be reported to -
    1. State Police
        - Sgt. Chris Allori, Office (503) 731-4717, Cell (503) 708-6461,
          Dispatch (503) 731-3030

*Note: This document was created by the Government to Government Cultural Resource Cluster Group in September, 2006. Last updated: August 2014

2. State Historic Preservation Office (SHPO)
   - Primary contact = Dennis Griffin, State Archaeologist, office phone (503) 986-0674, cell phone (503) 881-5038

3. Legislative Commission on Indian Services (LCIS)
   - Contact = Karen Quigley, Director, office phone (503) 986-1067. Karen will provide the list of appropriate Native American Tribes

4. All appropriate Native American Tribes provided by LCIS

   - Burns Paiute Tribe - Agnes Castronuevo (541) 573-8089

   - Confederated Tribes of Coos, Lower Umpqua and Siuslaw - Stacy Scott, M.A. (541) 888-7513, Cell (541) 297-5543

   - Confederated Tribes of Grand Ronde - David Harrelson (503) 879-1630

   - Confederated Tribes of Siletz - Robert Kentta (541) 444-8244

   - Confederated Tribes of the Umatilla Indian Reservation - Teara Farrow Ferman (541) 276-3447; secondary contact Catherine Dickson (541) 966-2338 or (541) 429-7231

   - Confederated Tribes of Warm Springs - Sally Bird (541) 553-3555

   - Coquille Indian Tribe – Bridgette Wheeler (541) 756-0904

   - Cow Creek Band of Umpqua Indians - Jessie Plueard (541) 677-5575 ext. 5577

   - Klamath Tribes - Perry Chocktoot, Culture & Heritage Director (541) 783-2219

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