



PLANNING COMMISSION

AGENDA

Monday, August 3, 2020

This meeting will be conducted remotely.

At 5:15 p.m., join the meeting from your computer, tablet, or smartphone,
by clicking the link below:

<https://www.gotomeet.me/CommunityDevelopmentCityofAlbany/pc>

You can use your microphone or dial in using your phone.

Call: 1-571-317-3122 (long distance charges may apply)

Access code/Meeting Id: 498-239-709

1. Call to order and pledge of allegiance
2. Roll call
3. Approval of Minutes
 - July 13, 2020
4. Business from the public

Microphones will be muted and webcams will be turned off for presenters and members of the public unless called upon to speak.

If participant(s) disrupt the meeting, the participant(s) microphone and webcam will be turned off.

If disruption continues, the participant(s) will be removed from the meeting.

Persons wanting to address the commission during “business from the public” must send their written comments by email to CDA@cityofalbany.net. Please limit comments to one page and include your name and address. Emails received before 3:00 p.m. on the day of the meeting will be read aloud during “business from the public.”

5. Public hearing, Type III – Quasi-judicial review process

Persons wanting to address the commission during public hearings have two options:

1. *Mail or email your comments to the planner in charge of the project (see projects and planners listed below). Please include your name, address, and subject of the public hearing. Written comments will be received by City staff until 5:00 p.m. on Friday, July 31, 2020, in order to be considered by the commission.*
2. *To testify virtually during a public hearing, register by emailing cdaa@cityofalbany.net before 3:00 p.m. on the day of the meeting with your name and if you are speaking for, against, or neutral on the project. During the public testimony, the chair will call upon those who have registered to speak first, followed by any others.*

- PD-01-20; Request for a Planned Development with Land Division and Tree Felling application. The applicant is proposing a total of 55 residential units: 44 multi-family senior housing units and 11 single-family homes on individual lots.
- CU-03-20; Conditional Use to utilize an existing building, construct a covered outdoor play area, and change use from counseling center to an early learning center. Site Plan Review for tree felling to remove 23 trees.

6. Business from the commission

7. Next meeting dates

Monday, August 17, 2020

Monday, August 31, 2020 (tentative)

8. Adjournment

Due to Governor Brown's Executive Order No. 20-12, prohibiting public gatherings during the COVID-19 pandemic, this meeting is accessible to the public only via phone and video connection.

Remote access information is listed at the top of this agenda.



CITY OF ALBANY
PLANNING COMMISSION

MINUTES

Monday, July 13, 2020

Virtual Meeting

Approved: DRAFT

CALL TO ORDER

5:18 p.m.

Vice-Chair Dala Rouse called the meeting to order at 5:18 p.m.

ROLL CALL

Commissioners Present

Dala Rouse, JoAnn Miller, Diane Hunsaker, Ann Ketter, Ralph Menweg, Cordell Post, Therese Waterhous

Commissioners Absent

Kenny Larson (resigned), Larry Tomlin, (excused)

Staff Present

David Martineau, Planning Manager; Laura LaRoque, Planner III; Anne Catlin, Planner III; Rob Emmons, Assistant City Engineer; Shelley Shultz, Contracting Assistant.

APPROVAL OF MINUTES

5:18 p.m.

Commissioner Post motioned to approve the minutes from the March 16, 2020 Planning Commission Meeting. Commissioner Menweg seconded. A vote was taken and the motion to approve passed 7 - 0.

Business from the Public

5:20 p.m.

None.

Public Hearings - Type IV Legislative Review Process

5:21 p.m.

Land Use File CP-03-20

CP-03-20, Proposed text amendments of Appendices VI Public Facility Plans: Albany and Millersburg Water System Facility Plan and Albany Transportation Facility Plan of the Albany Comprehensive Plan to be amended in accordance to OAR 660-011-0045.

Vice-Chair Rouse opened the public hearing at 5:21 p.m.

Declarations by the Commission

5:21 p.m.

None

Staff Report

5:23 p.m.

Planner III Laura LaRoque presented staff report and pointed out the revised staff report was sent out today, in response to comments received from the Department of Land Conservation and Development (DLCD); these comments were specific to an Oregon Administrative Rule (OAR) that provides a review and adoption process for facility plans. Rather than follow our original proposal to amend solely by resolution, we will be following the process that is provided in OAR 660-011-0045. Assistant City Engineer Rob Emmons explained the purpose of the amendments and provided an overview of the proposed amendments.

Questions from the Commission

5:29 p.m.

Rouse asked if the City of Millersburg was included in noticing. Emmons stated that we have an intergovernmental agreement with Millersburg and said we do coordinate with Millersburg on funding for Capital Improvement Projects (CIP). LaRoque clarified that we did notify Millersburg, and they are given an opportunity to respond. We also notify Linn County and other pertinent agencies. Hunsaker wanted to confirm that we are just updating the Comprehensive Plan to bring into alignment with OAR. LaRoque confirmed, adding that it also brings clarity to the plan.

Applicant Testimony

5:32 p.m.

None

Public Testimony

5:32 p.m.

LaRoque said no one has responded by the 3:00 deadline to testify but said we could take testimony from the audience at this time. Scott Lepman, 100 Ferry St. NW, Albany, OR, asked for clarification on multi-unit properties and sewer laterals. Martineau said these amendments do not apply to individual projects like this. Emmons stated they are Capital Improvement Projects to apply city-wide, not development projects. Lepman asked if this would be addressed in the future. LaRoque said they are not proposing changes at this time, but staff can look into his specific development concern.

Procedural Questions

5:36 p.m.

None.

Vice-Chair Rouse closed the public hearing at 5:37 p.m.

Discussion

5:37 p.m.

None.

Motion

5:37 p.m.

Commissioner Post moved that the Planning Commission recommend that the City Council approve the proposed Comprehensive Plan amendments under planning file CP-03-20. This motion is based on the findings and conclusions in the July 13, 2020, staff report, and the findings in support of the application made by the Planning Commission during deliberations on this matter. Commissioner Miller seconded. A vote was taken, motion passed 7 – 0.

Land Use File CP-01-20 / DC-01-20

Comprehensive Plan Amendment regarding the title of the Landmarks Commission; Albany Development Code Amendment (IV-Legislative) regarding historic review of demolitions and title of the Landmarks Commission.

Vice-Chair Rouse opened the public hearing at 5:39 p.m.

Declarations by the Commission

5:40 p.m.

None

Staff Report

5:41 p.m.

Laura LaRoque, planner III, noted the removal of land use case CP-02-20 from tonight's agenda; it will be presented to the Planning Commission on September 28, 2020.

LaRoque presented the staff report for CP-01-20/DC-01-20 and gave overview of the review criteria and the history of this review. At this time there is a conflict in the language between the Albany Municipal Code (AMC) and the Albany Development Code (ADC) – the AMC describes the Landmarks Commission (LC) as an “advisory” role, while the ADC describes them as a “decision-maker”. Through Council review and amendment, the AMC was revised, giving the LC decision-making authority, as they have been operating for several years. The intention of this amendment is to make the ADC language match, removing the term “advisory” from the title of the Landmarks Commission.

The remaining ADC amendments are due to a change in the OAR. In 2018, ORS-660-023-0200 became effective, adding clear, distinctive steps in terms of surveying and designating historic resources, and also set forth a “shall protect” administrative order that relates specifically to demolitions. This requires that local governments must amend their development codes to protect historic resources.

Questions from the Commission

5:49 p.m.

None.

Applicant Testimony

5:34 p.m.

None.

Public Testimony

5:50 p.m.

No one signed up in advance to speak, so Vice-Chair Rouse asked if anyone in the audience wished to speak. Chet Houser, Montieth Historical Society, 35296 Riverside Drive, Albany, OR, 97321, asked what impact the removal of “advisory” will have on the Landmarks Commission. LaRoque said it is just a removal of the term “advisory”; two ordinances were already passed in 2019 that address the issue, ordinance 5928 and ordinance 5931, amending the AMC. Dala asked if the Landmarks Commission has the final say on a decision unless it is appealed; LaRoque said that for most types of reviews, this is the case. Council also approved a change in the LC commissioner appointment process back in 2019.

Procedural Questions

5:54 p.m.

None.

Vice-Chair Rouse closed the public hearing at 5:54 p.m.

Discussion

5:41 p.m.

None.

Motion

5:43 p.m.

Commissioner Post moved that the Planning Commission recommend that the City Council approve the proposed Comprehensive Plan and Development Code text amendments under planning files CP-01-20 and DC-01-20. This motion is based on the findings and conclusions in the July 6, 2020 staff report, and the findings in support of the application made by the Planning Commission during deliberations on this matter. Commissioner Hunsaker seconded. A vote was taken, motion passed 7 – 0. Vice-Chair Rouse declared that the Albany City Council will hold a public hearing for this case on Wednesday, August 26, 2020.

BUSINESS FROM THE COMMISSION

5:55 p.m.

None.

NEXT MEETING DATE

5:56 p.m.

At this time, there are meetings scheduled for July 27, 2020, August 3, 2020, and August 17, 2020, with the possibility of an additional meeting on August 31, 2020. Martineau reminded the commission to be sure they received the ADC packet that was emailed from City Manager Peter Troedsson last week. He also shared that virtual meetings will continue for the immediate future.

ADJOURNMENT

6:00 p.m.

Hearing no further business, Vice-Chair Rouse adjourned the meeting at 6:00 p.m.

Respectfully submitted,

Reviewed by,

Shelley Shultz
Contracting Assistant

David Martineau
Planning Manager



COMMUNITY DEVELOPMENT

333 Broadalbin Street SW, PO Box 490, Albany, Oregon 97321-0144 | BUILDING 541-917-7553 | PLANNING 541-917-7550

Staff Report

Planned Development Review, Tentative Plat Review and Tree Felling Review

Files: PD-01-20, SD-02-20, and SP-08-20

July 27, 2020

PLANNING COMMISSION: Planning Commission (Type III process)

HEARING DATE: Monday, August 3, 2020

HEARING TIME: 5:15 p.m.

HEARING LOCATION: Due to Governor Brown's Executive Orders limiting public gatherings during the COVID-19 pandemic, this meeting is accessible to the public via phone and video connection.

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Access Code: 498-239-709

Summary

The proposed development is for the phased construction of a Planned Development that will result in 11 single family lots and 44 apartment units. The development will be constructed over five phases. The site is currently vacant, 6.46 acres in size, and located at 840 Airport Road. A location map is included in Attachment A.

The site is located in a RS-5 – Residential Single-Family zoning district that includes wetlands and several white oak trees. The applicant plans to use the flexibility of the planned development standards to preserve these areas as much as possible, resulting in an improved development for the residents of the new development and the surrounding neighborhood. A site plan is included in Attachment Q.5, Sheet C3.

A total of 2.7 acres of natural open space area is proposed to be preserved, which includes a 0.93-acre grove of white oak trees on the east side of the property and 1.75 acres of grassy meadow wetland. Other common areas include a recreation building with deck and barbeque, and outdoor picnic and landscaped areas. The Common



Area Plan (Attachment Q.12, Sheet C10) shows the proposed common areas that total 3.2 acres of the 6.46-acre site. conditions

The surrounding area has single-family residences to the north and west. Single-family residences are planned on the north and west side of the development to keep the visual impact on the surrounding area to a minimum while maintaining the look and feel of the existing residential neighborhood. A multi-family residential apartment complex is located at the center of the development to minimize visual impacts.

Planned Development Review criteria under ADC 11.240-11.330, Tentative Plat Review criteria under ADC 11.180, Tree Felling criteria under ADC 9.208(2), and Multi-Family Residential Design Standards under ADC 8.200-8.305 are addressed in this report. These criteria must be satisfied to grant approval for this application.

Application Information

Proposal:	Request for a Planned Development with Land Division and Tree Felling application. The applicant is proposing a total of 55 residential units: 44 multi-family residential units and 11 single-family homes on individual lots.
Staff Report Prepared By:	Melissa Anderson, Project Planner
Property Owners:	Victor M. Shults (Mike) and Susan Y. Willis PO Box 41, St. Paul, OR 97137
Applicant:	Well Built Homes Attn: Mike Shults PO Box 41 St. Paul, OR 97137
Applicant's Engineer:	Andrey Chernishov HBH Consulting Engineers 501 E. First Street Newberg, OR 97132
Address/Location:	840 Airport Road
Map/Tax Lot:	Linn County Assessor's Map No. 11S-03W-09BB Tax Lots 2700 and 2701
Zoning District:	RS-5 (Residential Single Family)
Comprehensive Plan Land Use Map Designation	Residential Low Density
Total Land Area	6.46 acres
Existing Land Use:	Vacant
Neighborhood:	Santiam
Surrounding Zoning:	North: RS-6.5 (Residential Single Family) South: RS-6.5, OP (Office Professional) & RM (Residential Medium Density)

	East: Right-of-Way
	West: RS-6.5
Surrounding Uses:	North: Residential
	South: Residential
	East: Airport Road and Interstate 5
	West: Residential
Prior History:	ZC-03-19: Rezone from RS-6.5 to RS-5 was approved September 25, 2019 (Ordinance 5933). Lot Line Adjustment file LA-03-16 to reorient a property line on site was approved in 2017.

Notice Information

A Notice of Public Hearing was mailed to property owners located within 500 feet of the subject property on July 13, 2020. The Notice of Public Hearing was posted on the subject property by July 24, 2020. The staff report was posted on the City's website July 27, 2020. At the time this staff report was completed, no comments had been received.

Appeals

Within five days of the Planning Commission's final decision on this application, the Community Development Director will provide written notice of decision to the applicant and any other parties entitled to notice. A decision of the Planning Commission may be appealed to the City Council if a person with standing files a Notice of Appeal and associated filing fee with the City within 10 days of the date the City mails the notice of decision.

Staff Analysis

The Albany Development Code (ADC) includes the following review criteria for a conditional use review, which must be met for the applications to be approved. Code criteria are written in *bold italics* and are followed by findings and conclusions.

PLANNED DEVELOPMENT REVIEW CRITERIA (ADC 11.240-11.330)

Definition (ADC 11.240)

A planned development is a master planned environment intended for a variety of related activities. It promotes an integrated, coordinated development of land, normally involving increased flexibility in use and design standards, with special incentives or restrictions on development. A planned development may be primarily residential uses with associated commercial uses, a mixed-use development, or it may be a commercial or industrial development.

Finding of Fact

The proposal is for an integrated and coordinated development of land for residential use, consistent with the definition stated above.

Purposes (ADC 11.250)

The purposes of a Planned Development are to:

- (1) **Encourage more innovative planning that results in more desirable or sustainable environments or neighborhoods, improved protection of open spaces, transportation options, and site phasing of developments through the application of flexible and diversified land development standards than would otherwise occur under conventional land development procedures; and**

- (2) **Facilitate the efficient use of land and resources in regard to land uses, buildings, circulation systems, natural features, energy conservations, open space and utilities.**

Finding of Fact

The application proposes an integrated planned development for residential uses. The planned development proposes efficient use of land and protection of open spaces. Flexibility in standards are described under Criterion ADC 11.280 (below). These criteria are met.

Procedure (ADC 11.260)

A planned development is processed in two steps. The first step is review of the planned development project design and land uses by the Planning Commission under the Type III procedure. The final approval is reviewed by the director through the Type I procedure.

Finding of Fact

Through this land use review process, the subject application for a planned development is processed in accordance with a two-step process. The planned development project design and land uses are reviewed by the Planning Commission through a Type III procedure, in accordance with ADC 1.360. The final approval would be reviewed by the Community Development Director through a Type I procedure, in accordance with ADC 1.320. This criterion is met.

Permitted Buildings and Uses (ADC 11.270)

The following buildings and uses are permitted individually or in combination in a planned development:

- (1) **Residential areas:**
- (a) **Accessory buildings and uses (permitted in combination with principal uses only);**
 - (b) **Duplexes;**
 - (c) **Dwellings, multiple-family;**
 - (d) **Dwellings, single-family;**
 - (e) **Open space;**
 - (f) **Parks, playgrounds, golf courses, driving ranges, community centers, or recreation facilities supported by the planned development; and**
 - (g) **Commercial services to primarily serve the Residential Planned Development.**

Finding of Fact

The subject planned development proposes single-family and multi-family residential land uses, in combination with recreational uses and open space areas. This criterion is met.

Standards That May Be Modified (ADC 11.280)

The following standards may be modified in order to create developments that are superior to those that could be developed through the conventional development standards:

Criterion 1

Development Standards. Minimum lot area, width and frontage, height and yard requirements will not be used to dictate the development but will act as general guidelines that may be adjusted to provide for a higher quality development.

Finding of Fact

- 1.1 The subject property is located in the RS-5 – Single Family Residential zoning district. The development standards of the RS-5 zone are presented under ADC 3.390, Table 1. In the RS-5 zone, the minimum lot size is 5,000 square feet, and the minimum lot width and depth is 40 feet and 70 feet, respectively.

- 1.2 The applicant addresses this criterion on Attachment E.18. Those findings are included here by reference.
- 1.3 The development proposes 12 parcels; one parcel is over five acres and 11 parcels are proposed for single-family dwellings. All of the proposed parcels meet the minimum lot width and depth standards; however, two of the proposed single-family home parcels are less than 5,000 square feet in area. The Preliminary Plat shows Lot 4 is proposed to be 4,774 square feet and Lot 11 is proposed to be 4,615 square feet in size (Attachment Q.4). The criterion above allows for a modification in the lot area. In addition, ADC 3.200 allows for lot size variation within subdivisions. Therefore, the minimum lot area standards are met.
- 1.4 Similar to planned developments, which permit modification to development standards, cluster development standards permit modifications to front yard setbacks and lot coverage. ADC 11.495, Table 11-2 states the RS-5 zone is allowed a 10-foot front yard setback (vs. 15 feet) and a 70 percent lot coverage (vs. 60 percent). Using this standard that is otherwise permitted outright in cluster developments, this modification to the front yard setback and lot coverage may be applied to future single-family home Lots 1-11. A condition of approval is included to permit a 10-foot front yard setback and a 70 percent lot coverage for Lots 1-11. Note: the minimum driveway length from the front property line is 20 feet; the modification to the front yard setback for the house does not apply to the minimum 20-foot setback for garages.
- 1.5 The planned development does not propose modifications to the lot frontage or height requirements.

Conclusions

- 1.1 The proposal does not request modifications to the lot area, frontage or height requirements through this planned development process.
- 1.2 A modification to the front yard setback and lot coverage for proposed single-family Lots 1-11 is permitted through this planned development process; this is consistent with developments in the RS-5 zone per ADC 11.495, Table 11-2.
- 1.3 This criterion can be met with the following condition.

Condition of Approval

- Condition 1 Lots 1-11 are permitted to have a 10-foot front yard setback and a 70 percent lot coverage. Notwithstanding this modification, the minimum driveway length from the garage to the front property line is 20 feet, in accordance with ADC 3.190, Table 1.

Criterion 2

Minimum Parking. Where the development provides common parking areas for adjacent uses, no minimum number of parking spaces will be required. It is the developer's responsibility to provide adequate off-street parking and loading areas. In proposing the parking areas, the developer shall provide the City with information on expected demand for parking, including trip generation for the uses that share the parking area.

Finding of Fact

- 2.1 The minimum parking requirements are listed under ADC 9.020, Table 9-1. Two on-site parking spaces are required and can be provided on each of the proposed single-family parcels. A total of 60 on-site parking spaces is required for a multi-family development with eight two-bedroom units and 36 one-bedroom units. A total of 81 parking spaces are proposed for the multi-family apartment complex (50 spaces and 31 garages). Therefore, the subject planned development does not propose modifications to the parking requirements.
- 2.2 The applicant addresses this criterion on Attachment E.18.
- 2.3 This criterion is met.

Criterion 3

Streets. Private streets may be constructed in a planned development. These streets may be narrower than usual where on-street parking is prohibited and where access is limited to pre-approved locations. Any private street in an industrial planned development must be constructed to public standards. All lots must be provided with direct access to a public or private street.

Finding of Fact

- 3.1 The planned development for residential use proposes on-site private streets with a reduced road width. Findings for the proposed private streets and access is addressed in full, later in this report, under Tentative Plat Review Criterion Four (ADC 11.180) and Site Plan Review Criterion Four, (ADC 2.450(4)). Those findings are included here by reference.
- 3.2 All of the lots are provided with direct access to a public or private street. Lots 1-7 and Lot 12 have access to private streets and Lots 8-11 have access to Franklin Avenue.
- 3.3 The applicant addresses this criterion on Attachment E.18. Staff concurs with the applicant's findings for the modification to the street standards.
- 3.4 This criterion is met.

Professional Design Team Required (ADC 11.290)

An applicant for a planned development approval must certify in writing that a member of each of the following professions will be used in the planning and design process for the proposed development:

- (1) A licensed architect or professional designer;
- (2) A certified nurseryman, landscape architect, or landscape designer approved by the director; and
- (3) A registered engineer or land surveyor.

Finding of Fact

The subject planned development includes a professional design team that includes a professional designer, certified nurseryman, a registered engineer, landscape designer and transportation engineer. The design team is presented in the application material on Attachment E.2. This criterion is met.

Preliminary Plan Submittal Review Criteria (ADC 11.310)

A planned development request will be granted interim approval by the review body if the development meets the Site Plan Review criteria of Section 2.450 and all of the following applicable criteria:

Finding of Fact

The Site Plan Review criteria of Section 2.450 are addressed later in this report. Those findings and conclusions are included here by reference. Criteria one through six of ADC 11.310 are address below.

Criterion 1

The increased flexibility in Code standards and permitted uses will result in an improved development for the City, the surrounding area, and users of the development as compared to strict compliance with Code provisions.

Findings of Fact

- 1.1 The subject property is located in the RS-5 zoning district, where a standard single-family residential subdivision is permitted outright with clear and objective criteria, in accordance with state law requirements for "needed housing." As such, the 6.46-acre site could be developed as a standard residential subdivision with approximately 45 single-family dwellings with an average lot size of 5,000 square feet. A standard subdivision could be developed without community open space areas, tree preservation, or wetland preservation (with a wetland fill permit from the Department of State Lands).

- 1.2 A planned development allows a variety of land uses (per ADC 11.270), including multi-family residential development in the RS-5 zone. Through this planned development, the proposed apartment complex may be permitted in combination with single-family residential homes on the same site.
- 1.3 The planned development allows eight units per acre or 51 (51.68) units on the subject 6.46-acre site. The applicant proposes a total of 55 residential units with the use of density bonuses under ADC 3.220(2) and ADC 3.220(5). Flexibility allowed through this planned development allows a similar density to a standard subdivision, while preserving almost half of the site as natural open space, landscaping or recreation amenities.
- 1.4 A total of 2.7 acres of natural open space area is proposed to be preserved, which includes a 0.93-acre grove of white oak trees on the east side of the property and 1.75 acres of grassy meadow wetland. Other common areas include a recreation building with deck and barbeque, and outdoor picnic and landscaped areas. The Common Area Plan (Attachment Q.12, Sheet C10) shows the proposed common areas total 3.2 acres of the 6.46-acre site.
- 1.5 The planned development standards allow flexibility in code standards, of which, the applicant proposes private streets with reduced road width. The minimum right-of-way for a local public street is 52 feet (per ADC 12.120, Table 12-1). This planned development proposes to have several interconnected private roads that will be 24- to 26-feet wide. This allows for more landscaped area, pedestrian paths, open space and landscaped areas.

Conclusions

- 1.1 Compared to a standard single-family residential subdivision developed in strict compliance with the underlying zoning district, the proposed planned development will result in an integrated community with both single- and multi-family residential uses, natural open space and recreational amenities.
- 1.2 Reduced road width and a smaller footprint for buildings allow for a planned development that accommodates more open spaces, preservation of oak trees and a wetland meadow.
- 1.3 The proposed planned development will result in an improved development for the City, the surrounding area, and users of the development as compared to strict compliance with Code provisions
- 1.4 This criterion is met without conditions.

Criterion 2

The project design results in a more efficient provision of open space or utilization of the natural features of the site.

Findings of Fact

- 2.1 Smaller private roads combined with compact building design will result in less land impacted by development. As proposed, the planned development preserves almost half of the site as open natural areas, landscaping or as a recreational amenity.
- 2.2 A total of 2.7 acres of natural open space area is proposed to be preserved, which includes a 0.93-acre grove of white oak trees on the east side of the property and 1.75 acres of grassy meadow wetland. Other common areas include a recreation building with deck and barbeque, and outdoor picnic and landscaped areas. The Common Area Plan (Attachment Q.12, Sheet C10) shows the proposed common areas total 3.2 acres of the 6.46-acre site.

Conclusions

- 2.1 Smaller private roads combined with compact building design will result in preservation of almost half the site as natural open space or recreation amenities.
- 2.2 The proposed planned development results in more efficient provision of open space or utilization of the natural features of the site.

2.3 This criterion is met without conditions.

Criterion 3

The project design results in a more efficient utilization of materials and public resources including streets, utilities, and energy supplies.

Findings of Fact

- 3.1 All on-site streets and utilities of the planned development will be private. The on-site private streets and utilities result in no impact to public resources.
- 3.2 The planned development allows for smaller private roads, which results in less impervious surfaces and less impact on storm water facilities.
- 3.3 Findings for public infrastructure improvements within the Franklin Avenue right-of-way are addressed in detail later in this report under Tentative Plat Review Criterion Four and Five (ADC 11.180). Those findings and conclusions are included here by reference.

Conclusions

- 3.1 All on-site streets and utilities of the planned development will be private, which result in no impact to public resources.
- 3.2 The existing and proposed public street, stormwater, sanitary, and water infrastructure can support the proposed improvements and will result in efficient new upgraded system.
- 3.3 The project design results in a more efficient utilization of materials and public resources including streets, utilities, and energy supplies.
- 3.4 This criterion is met without conditions.

Criterion 4

Provisions will be established to ensure the continued maintenance of any common areas.

Findings of Fact

- 4.1 The applicant states that a Homeowners Association (HOA) will be created, which will establish maintenance of the common areas (Attachment E.6). The details of the maintenance responsibilities will be reviewed at the time of Final Planned Development Review. The applicant describes maintenance responsibilities to be as follows:
 - a. Outdoor common areas, such as the wetland meadow and oak grove will be maintained by the property owner of Lot 12 (apartment complex). The property owner and residents of the apartment complex, and the property owners and/or residents of Lots 1-11 (single-family lots) will have access to the common open space areas, including the wetland meadow and oak grove.
 - b. The Apartment Complex Recreation Building, and the attached decks and patio will be maintained by the property owner of Lot 12 (apartment complex). Access to the Recreation Building will be for the residents of the apartment complex only.
 - c. The property owner of Lot 12 (apartment complex), and the property owners of Lots 1-7 (single-family lots) will have shared maintenance responsibility of the private street cul-de-sac.
 - i. Remaining private streets, driveways, and parking areas on Lot 12 (apartment complex) will be maintained by the property owner of Lot 12.
 - d. The property owners of Lots 5, 6 & 7 will have shared maintenance responsibility of the shared driveway that leads to Lots 5, 6 & 7.

Conclusions

- 4.1 An HOA will be established to ensure the continued maintenance of all common areas.
- 4.2 This criterion can be met with the following condition.

Condition of Approval

Condition 2 Prior to Final Plat approval of Phase One, the applicant shall establish a Homeowners Association (HOA) and submit a Declaration of Covenants, Conditions, and Restrictions (CC&R) to the Community Development Department for review and approval. The CC&Rs shall specify the access and maintenance responsibilities of outdoor common areas, indoor recreation areas, private streets, driveways, and parking areas.

Criterion 5

More usable and suitable recreational facilities and other common areas are provided than would normally be provided under conventional development standards.

Findings of Fact

- 5.1 The planned development allows for a condensed footprint of roads and buildings, which results in less use of land than a conventional single-family residential subdivision.
- 5.2 Approximately half of the site is proposed for common areas and recreational amenities. A total of 2.7 acres of natural open space area is proposed to be preserved, which includes a 0.93-acre grove of white oak trees on the east side of the property and 1.75 acres of grassy meadow wetland. Other common areas include a recreation building with deck and barbeque, and outdoor picnic and landscaped areas. The Common Area Plan (Attachment Q.12, Sheet C10) shows the proposed common areas total 3.2 acres of the 6.46-acre site.
- 5.3 The applicant states that the oak grove on the east side will have walking paths, a gazebo, horseshoe pit, and picnic table. The meadow will remain open and allow for pathways and outside recreation as well as open space. The indoor recreation building will have a kitchen with eating area, fireplace with seating and tables for games and gathering, restrooms, workout room with equipment, an office, and a large outdoor deck with BBQ area and tables. The common areas are illustrated on the Site Plan (Attachment Q.5, Sheet C3) and Landscaping Plan (Attachment P, Sheet L.10).

Conclusions

- 5.1 Compared to a conventional development, the proposed planned development will result in more common open space and recreation amenities. Almost half of the site will be preserved as natural open space, landscaped areas or recreation amenities.
- 5.2 The proposed planned development will result in more usable and suitable recreational facilities and other common areas than would normally be provided under conventional development standards.
- 5.3 This criterion is met without conditions.

Criterion 6

The planned development satisfies the development standards in Section 11.330.

Finding of Fact & Conclusion

- 6.1 The criteria for ADC 11.330 are addressed in the section immediately below. The findings and conclusions for Section 11.330 are included here by reference.
- 6.2 The planned development satisfies the development standards in Section 11.330. This criterion is met.

Planned Development Standards (ADC 11.330)

In conjunction with standard requirements for setbacks and landscaped areas, the following standards apply to planned developments:

Criterion 1

Open Space and Common Areas in Residential, Mixed-Use, and other Non-Industrial Planned Developments. Open space or common areas shall be provided for common enjoyment. In all

residential developments and mixed-use developments, 25 percent of the gross land area shall be devoted to open space, outdoor living area or common areas as follows.

- (a) Land that may be counted towards the open space requirement includes:
- Natural resources accessible to the public;
 - Common recreational space or commonly enjoyed amenities accessible to residents, including indoor or rooftop amenities – the total square footage of indoor amenities will be subtracted from the total land area; and
 - Common landscaped areas and paths but excluding sidewalks and planter strips in the right-of-way.

Findings of Fact & Conclusion

- 1a.1 Approximately half of the 6.46-acre site is proposed for common open space areas and recreational amenities. A total of 2.7 acres of natural open space area is proposed to be preserved, which includes a 0.93-acre grove of white oak trees on the east side of the property and 1.75 acres of grassy meadow wetland. Other common areas include a recreation building with deck and barbeque, and outdoor picnic and landscaped areas. The Common Area Plan (Attachment Q.12, Sheet C10) shows the proposed common areas total 3.2 acres of the 6.46-acre site.
- 1a.2 The applicant states that the oak grove on the east side will have walking paths, a gazebo, horseshoe pit, and picnic table. The meadow will remain open and allow for pathways and outside recreation as well as open space. The indoor recreation building will have a kitchen with eating area, fireplace with seating and tables for games and gathering, restrooms, workout room with equipment, an office, and a large outdoor deck with BBQ area and tables. The common areas and recreational amenities are illustrated on the Site Plan (Attachment Q.5, Sheet C3) and Landscaping Plan (Attachment P, Sheet L.10).
- 1a.3 Open space and common areas are greater than 25 percent of the gross land area of the site. The common areas are devoted to natural open space areas, landscaping and recreational amenities. This criterion is met.
- (b) **Locations, shapes, sizes and other characteristics of open spaces shall be consistent with their proposed uses and the purposes of the planned development.**

Findings of Fact & Conclusion

- 1b.1 The Common Area Plan (Attachment Q.12, Sheet C10) shows the location, size and shapes of the proposed open space areas. The common areas and recreational amenities are also illustrated on the Site Plan (Attachment Q.5, Sheet C3) and Landscaping Plan (Attachment P, Sheet L.10).
- 1b.2 As described in the findings under Criterion 1a (above), the locations, shapes, sizes and other characteristics of open spaces are consistent with their proposed uses and the purposes of the planned development. This criterion is met.
- (c) **Land in the right-of-way may not count towards the open space requirement unless designed with larger planter strips to allow for mature trees, a multi-use path, or a landscaped median.**

Findings of Fact & Conclusion

- 1c.1 As shown on the Common Area Plan (Attachment Q.12, Sheet C10), none of the open space and common areas are located within the private street right-of-way. This criterion is met.
- (d) **Side and rear yards may not count towards the minimum open space requirements.**

Findings of Fact & Conclusion

- 1d.1 As shown on the Common Area Plan (Attachment Q.12, Sheet C10), none of the open space and common areas are located within the side and rear yards. This criterion is met.

- (e) **Outdoor open space or living areas required by this Article may be dedicated to the City provided the size and amount of the proposed dedication meets the criteria of the City for neighborhood parks by one-half and if the City agrees to accept the dedication. The square footage of land dedicated for public parks shall be deemed a part of the development site for the purpose of computing density.**

Findings of Fact & Conclusion

1e.1 None of the open space and common areas are proposed to be dedicated to the City. This criterion does not apply.

- (f) **Approved vegetated post-construction stormwater quality facilities are allowed in open space, outdoor living area, and common areas.**

Findings of Fact & Conclusion

1f.1 As shown on the Common Area Plan (Attachment Q.12, Sheet C10), vegetated post-construction stormwater quality facilities are located in common open space areas. Area number five of the Common Area Plan shows stormwater quality facilities within the landscaped areas. The stormwater quality facilities are also illustrated on the Landscaping Plan (Attachment P, Sheet L.10). This criterion is met.

Criterion 2

Natural Resources. The planned development shall provide for the protection of significant landscape features including oak groves, heritage trees as defined by the Albany Municipal Code, and land located within Albany's natural resource overlay districts and any historic sites and landmarks. Natural and cultural resources shall integrate the proposed development with the environmental characteristics of the site and adjacent uses.

Findings of Fact

- 2.1 The 6.46-acre site is not located in a natural resource overlay district, per Article 6 of the ADC.
- 2.2 There are no historic sites, landmarks, or known cultural resources on the development site.
- 2.3 The site includes a number of white oak trees. The planned development proposes to preserve 0.97 acres of the oak grove on the east side of the site. This oak grove is proposed to be preserved as a natural open space area.
- A concurrent application for Tree Felling is included with this planned development application. The criterion for the Tree Felling permit is addressed later in this report. Those findings and conclusions are included here by reference.
- 2.4 There are 1.75-acres of wetlands located on the development site. These wetlands are regulated by the Oregon Department of State Lands (DSL). A wetland delineation has been approved by the DSL (Attachment K). No impacts to the wetlands are proposed. As shown on the Site Plan (Attachment Q.5, Sheet C3), the wetland is proposed to be preserved as a natural open space meadow.

Conclusions

- 2.1 The site has natural resources that includes white oak trees and wetlands.
- 2.2 No impacts to the wetlands are proposed. The wetland is proposed to be preserved as a natural open space meadow.
- 2.3 A 0.97-acre oak grove is proposed to be preserved as a natural open space area.
- 2.4 This criterion is met.

Criterion 3

Underground Utilities. *In any planned development, all electric and telephone facilities, fire alarm conduits, streetlight wiring, and other wiring, conduits and similar facilities shall be placed underground by the developer, unless allowed above ground by the review body.*

Finding of Fact & Conclusion

- 3.1 All utilities, including electric and telephone facilities, fire alarm conduits, streetlight wiring, and other wiring, conduits and similar facilities are proposed to be underground. This criterion is met.

Criterion 4

Density. *When calculating density of a proposed planned development, the gross area including streets and park land dedications shall be included, except for land in the Significant Wetland and Waterway overlay district. The maximum density permitted in the RS-5 zoning district is eight units per acre.*

Findings of Fact

- 4.1 The subject property is not located in a Significant Wetland and Waterway overlay district, as defined by Article Six of the ADC. The subject property does have 1.75 acres of wetlands that are regulated by DSL, but those wetlands are not within the Significant Wetland and Waterway overlay district. Therefore, the entire development site may be considered for density purposes.
- 4.2 The gross area of the development site is 6.46-acres. The subject property is located in the RS-5 zoning district. ADC 11.330(4), Table 11-1, states that the planned development is allowed a density of eight units per acre or a total of 51.68 units.
- 4.3 The applicant proposes a total of 55 residential units by applying the Transportation density bonus under ADC 3.220(2), and the Solar Access Protection density bonus under ADC 3.220(5).
- 4.4 Density Bonuses are provided under ADC 3.220, which states: *“The following standards may be applied to development sites resulting in allowed reductions in the average minimum lot size and area per unit requirements as indicated. In no instance shall the combined total of all bonus provisions applied to a development result in an overall reduction of more than 30 percent in the standard site size or lot area per unit requirements, or result in a density that exceeds the allowed density in the zone by more than 20 percent. Some bonuses are available for lot design only, with additional bonuses available due to building design or construction.”*
- 4.5 The density bonus provisions under ADC 3.220 are applied to the planned development as a whole, which includes 11 single-family home lots and 44 apartment units. The applicant is not requesting a reduction in the standard site size or lot area. The maximum density bonus allowed is 20 percent of the total 51.68 units, which is an additional 10.33 units. The applicant is proposing a total of 55 units or 3.32 additional units. Therefore, the proposed planned development meets the standards of ADC 3.220. Detailed calculations for the transportation and solar protection density bonuses are provided below.

Transportation Bonus Provisions (ADC 3.220(2))

For multi-family developments, condominiums, and townhouses; when any portion of a building is located within 200 feet of a designated arterial, the area per unit requirements in those buildings can be reduced by 10 percent.

- 4.6 As shown on Attachment Q.13, Sheet C11, portions of Buildings Three and Four are within 200 feet of Airport Road. The area of Buildings Three and Four, as well as the area between the buildings and the Airport Road right-of-way is 1.43 acres. Therefore, 1.43 acres qualify for the density bonus. With an underlying density of eight units per acre, and a density bonus of 10 percent, the planned development is eligible for a total of 1.14 additional units. This calculation is presented below:

$$1.43 \text{ (acres)} \times 8 \text{ (units per acre)} = 11.44 \text{ units}$$

$$10\% \times 11.44 \text{ units} = 1.14 \text{ units}$$

Solar Access Protection (ADC 3.220(5))

If buildings are sited (either by site design or defining buildable areas) and covenants or other mechanisms are established that protect solar access of south building walls from shading by structures and vegetation, a bonus of 10 percent may be allowed. The amount of bonus depends on the restrictiveness of the covenant and the percentage of units affected. In subdivisions, a covenant or other mechanism that provides and protects solar access for the southerly building area of 80 percent or more of the lots from 9:30 a.m. to 2:30 p.m. on December 21 shall be given the full 10 percent bonus. In multiple unit developments, if 80 percent or more of the units receive this same protection for south facing walls, and south facing glass of those units totals at least 7 percent of the conditioned area, the full bonus may be allowed. (South facing is defined as being within 25 degrees of true south.)

- 4.7 The applicant proposes buildings that are sited with covenants to protect solar access of south building walls from shading by structures and vegetation. As shown on Attachments G and Q.13 (Sheet C11), the planned development will provide solar access for the southerly building area of a portion of the lots and buildings from 9:30 a.m. to 2:30 p.m. on December 21.
- 4.8 Solar access bonus provision allows up to a 10 percent density increase if at least 80 percent of the proposed units have the applicable solar access protection. The applicant proposes a total of 21 dwelling units (three single-family units plus 18 apartment units) that will benefit from the solar access protection. As shown on the Housing Bonus Plan (Attachment Q.13, Sheet C11), the southern portion of single-family Lots 8-10, and apartment buildings one, two and four qualify for solar protection bonuses.

With 21 units out of the proposed 55 units, only 38 percent of the units qualify for the solar protection bonus. This does not meet the 80 percent required to qualify for the maximum 10 percent density bonus allowed by ADC 3.220(5). Since the 38 percent is 47 percent of the required 80 percent, the applicant qualifies for 47 percent of the maximum bonus. Thus, the solar bonus for the proposed development is 4.7 percent (rather than 10 percent). The calculation for the solar preservation bonus is provided below:

$$\begin{aligned} 21 \text{ (units)} / 55 \text{ (units)} &= 38\% \\ 38\% / 80\% &= 47\% \text{ [or } 0.47\text{]} \\ 0.47 / 0.10 &= 4.7 \text{ [or } 47\%\text{]} \\ 4.7 \times 51.68 \text{ units} &= 2.42 \text{ units.} \end{aligned}$$

Total Density

- 4.9 The proposed development qualifies for the Transportation density bonus under ADC 3.220(2), and the Solar Access Protection density bonus under ADC 3.220(5). The permitted density of eight units per acre is a total of 51.68 units. The transportation bonus is a total of 1.14 units, and the solar bonus is a total of 2.42 units. Therefore, a total of 55 dwelling units is allowed with the density bonuses. The calculation for the combined density bonuses is provided below:

$$51.68 + 2.42 + 1.14 = 55.24 \text{ or } 55 \text{ Total Units}$$

Conclusions

- 4.1 The 6.46-acre site is allowed a density of eight units per acre or a total of 51.68 units.
- 4.2 The proposed development qualifies for the Transportation density bonus under ADC 3.220(2), and the Solar Access Protection density bonus under ADC 3.220(5), for a total permitted density of 55 units.
- 4.3 The applicant is not requesting a reduction in the standard site size or lot area, or a density bonus that is more than 20 percent of the total allowed density.
- 4.4 The solar access protection is noted on the Preliminary Plat (Attachment Q.4, Sheet C2) and will need to be memorialized in the HOA CC&Rs for long-term implementation.

4.5 This criterion can be met with the following condition.

Condition of Approval

Condition 3 Solar Access Protection shall be preserved through the following mechanisms:

- a. The Final Plat shall include a note regarding the Solar Access Protection, as proposed on the Preliminary Plat (Sheet C2).
- b. The Homeowners Association (HOA) Declaration of Covenants, Conditions, and Restrictions (CC&R) shall specify the provisions for Solar Access Protection, as proposed for the Planned Development and described on the Housing Bonus Plan (Sheet C11).

Criterion 5

Building Spacing and Yard Requirements. The plan shall provide adequate building separation to allow for light, ventilation, and visual and acoustic privacy for residences and other structures. Fences, insulation, walks, barriers, and landscaping shall be used, as appropriate, for the protection and aesthetic enhancement of property and the privacy of its occupants, screening of objectionable views, and reduction of noise.

Findings of Fact

- 5.1 As shown on the Site Plan (Attachment Q.5, Sheet C3), buildings will be separated from each other by at least 20 Feet and in some case by 30 feet.
- 5.2 A six-foot fence will be installed along the rear yard property line of the west side homes (Lots 1-7) for visual and acoustic privacy.
- 5.3 Residential units are setback 200 feet from the eastern property line to provide a separation buffer from Airport Road. Garages and the Oak Grove are located on the east side of the site (towards I-5), which will provide sound mediation as well as visual barrier to Airport Road and I-5.
- 5.4 As shown on the Landscape Plan (Attachment P, Sheet L1.0) The applicant proposes to plant English Laurels along the eastern perimeter property line to provide a visual barrier to Airport Road and I-5. The applicant states they prefer to not install a fence along the Airport Road property line and prefer to use the landscaped vegetation as a visual barrier rather than a fence.
- 5.5 There is an existing chain link fence along the southern property line at the base of the wetland meadow. The Landscape Plan (Attachment P, Sheet L1.0) does not show additional landscaping along the southern portion of the wetland meadow, but rather keeps that area as natural open space.

Conclusions

- 5.1 The buildings in the development are laid out in a manner adequate for light, ventilation, visual and acoustic privacy for the residents.
- 5.2 This criterion is met.

Criterion 6

Building Locations. Taller buildings shall be located within the planned development in such a way as to avoid adverse impact on neighboring lower buildings and shall not invade the privacy of the occupants of adjacent lower buildings.

Findings of Fact

- 6.1 The planned development is designed with single-family homes around the perimeter of the site. This provides a compatible transition between the existing single-family homes to the north and west and the proposed apartment buildings.
- 6.2 The apartment buildings are taller, but they are limited to two stories and located on the interior of the site to protect the privacy of the existing homes in the area, as well as the proposed new homes in the development.

- 6.3 To ensure privacy for the existing homes on the west side of the development, the applicant proposes to install a six-foot perimeter fence and limit new homes on Lots 1-7 from having second story windows facing the west into back yards. This can be accomplished by avoiding windows on the second story west wall or by installing sight-obscuring windows to protect the privacy of neighboring homes. This is included as a condition of approval.

Conclusions

- 6.1 The development is designed mitigate adverse impacts and protect the privacy of the existing neighborhood.
- 6.2 Taller buildings are only two stories tall and located in the center of the property.
- 6.3 Single-family homes are located around the perimeter, adjacent to existing single-family homes, to protect the privacy of the abutting properties.
- 6.4 This criterion is met with the following condition.

Condition of Approval

- Condition 4 New dwelling on Lots 1-7 shall avoid second story, west-facing windows. Alternatively, new dwellings on Lots 1-7 may install second story west-facing windows if they are constructed of sight-obscuring material (i.e. textured or frosted privacy glass). At the time of building permit, the building plans shall be submitted to the Community Development Department for review and approval to ensure compliance with this standard.

Criterion 7

Perimeter Compatibility. The plan shall minimize adverse impacts of proposed uses and structures in the planned development on existing and anticipated uses and structures on adjacent properties and neighborhoods. The buffering and screening standards in Sections 9.210-9270 apply. If topographical or other physical barriers do not provide reasonable privacy and mitigation of potential adverse impacts on existing uses adjacent to the development, the development shall provide additional setbacks, buffering or screening between residential and non-residential uses.

Findings of Fact

- 7.1 The planned development is designed to avoid impacts on neighboring properties.
- 7.2 As described under Criterion Five and Six above, taller buildings are located in the center of the property and they are only two stories tall. Single-family homes are located around the perimeter of the site to effectively create a visual barrier and preserve the quality and feeling of the existing single-family residential neighborhood.
- 7.3 Lots 1-7 are designed to protect the privacy of abutting properties to the west. Fencing is proposed and if western facing windows are installed on the second floor of the new homes, sight-obscuring privacy windows will be used to protect the privacy of abutting properties to the west.
- 7.4 Based on the Buffer and Screening Matrix (ADC 9.330, Table 9-4), 10 feet of buffering is required along the eastern property line at Airport Road.
- As shown on the Landscape Plan (Attachment P, Sheet L1.0), buildings are set back more than 10 feet from the property line and English Laurels are proposed to be planted along the eastern property line to provide a vegetative buffer.

Conclusions

- 7.1 The site focuses taller buildings in the middle of the development, far away from property lines and neighbors. The outer edges of the development are planned to have residential single-family homes, similar to the nearby residential neighborhood. This configuration is intended to keep impact on the surrounding area at a minimum while maintaining the feel and look of the neighboring communities.

7.2 This criterion is met without further mitigation.

TENTATIVE PLAT REVIEW (ADC 11.180)

Criterion 1

The proposal meets the development standards of the underlying zoning district, and applicable lot and block standards of this section.

Findings of Fact

- 1.1 The subject property is located at 840 Airport Road (Attachment A). These parcels are also identified as Linn County Tax Assessor's Map No. 11S-03W-09BB Tax Lots 2700 and 2701.
- 1.2 As presented on the Preliminary Plat (Attachment Q.4, Sheet C2), the proposal is to divide the 6.46-acre site into 12 lots: Lots 1-11 are proposed for single-family detached dwellings and Lot 12 is a 5-acre lot that is proposed to be developed for a multi-family residential complex.
- 1.3 The subject property is located in the RS-5 – Single Family Residential zoning district. The development standards for the RS-5 zone are listed under ADC 3.190, Table 1. In the RS-5 zone, the minimum lot size is 5,000 square feet, and the minimum lot width and depth is 40 feet and 70 feet, respectively.
- 1.4 All of the proposed parcels meet the minimum lot width and depth standards; however, two of the proposed single-family home parcels are slightly less than 5,000 square feet in area. The Preliminary Plat shows Lot 4 is proposed to be 4,774 square feet and Lot 11 is proposed to be 4,615 square feet in size (Attachment Q.4, Sheet C2). ADC 3.200 allows for lot size variation within subdivisions. Therefore, the minimum lot area and dimension standards are met.
- 1.5 The block standards under ADC 11.090 are not applicable because the preliminary plat does not propose public streets or new blocks. Private streets may be considered through this planned development review process.

Conclusions

- 1.1 As shown on the Preliminary Plat (Attachment Q.4, Sheet C2), the proposal meets the development standards of the RS-5 zoning district.
- 1.2 The proposal does not propose public streets or new blocks.
- 1.3 This criterion is met without conditions.

Criterion 2

Development of any remainder of property under the same ownership can be accomplished in accordance with this Code.

Findings of Fact

- 2.1 The property is owned by Victor M. Shults (Mike) and Susan Y. Willis. There is no other remainder of property under the same ownership to consider with this application.
- 2.2 Development of the entire site is being considered through this planned development review process.

Conclusions

- 2.1 There is no remainder of property to consider with the proposed Tentative Plat.
- 2.2 This criterion is met without conditions.

Criterion 3

Adjoining land can be developed or is provided access that will allow its development in accordance with this Code.

Findings of Fact

- 3.1 This review criterion has been interpreted by the city council to require only that adjoining land either have access, or be provided access, to public streets.
- 3.2 ADC 12.060 requires that development must have frontage on or approved access to a public street currently open to traffic.
- 3.3 Adjoining land is located on the west and south side of the site. The properties to the west are single-family residential lots with frontage on Cox Street SE. The properties to the south have frontage on Airport Road. The proposed land division will not impact adjoining land's access to those public streets.

Conclusions

- 3.1 All of the adjoining land has frontage on public streets, and the proposed land division will not impact adjoining land's access to those public streets.
- 3.2 This criterion is met without conditions.

Criterion 4

The proposed street plan affords the best economic, safe, and efficient circulation of traffic possible under the circumstances.

Findings of Fact

- 4.1 The proposed development is for the phased construction of a Planned Development that will result in 11 single family lots and 44 apartment units. The development will be constructed over five phases and is located on the southwest corner Franklin Avenue and Airport Road.
- 4.2 The first phase of the development will create seven single family lots along the site's west boundary. The parcels will be provided access via a private cul-de-sac. Phase 2 of the development will create four single family lots just east of the private cul-de-sac along the south side of Franklin Avenue. Phases 3-5 of the development will together result in construction of 44 apartment units.
- 4.3 Airport Road is classified as a major collector street, is under the jurisdiction of the Oregon Department of Transportation (ODOT), and is not improved to city standards. The street lacks curb, gutter, and sidewalk. No direct driveway access is proposed from the site to Airport Road. ODOT has developed preliminary plans for the future widening of I-5, and those improvements will impact the alignment and improvements needed along Airport Road.
- 4.4 Franklin Avenue is classified as a local street and is not improved to city standards. The street lacks curb, gutter, and sidewalk. The right of way width is 50 feet, and the pavement width is approximately 14 feet. The development will have two connection points to Franklin Avenue, and lots 8 through 11 will have direct driveway access to the street.
- 4.5 ADC 12.122 is the design standard for local streets and calls for a right of way width of 54 feet and a curb to curb width of 30 feet.
- 4.6 ADC 12.060 requires that all public streets within and adjacent to a new development be improved to city standards. The City Engineer may choose to accept a Petition for Improvement/Waiver of Remonstrance if a determination is made that the construction of an otherwise required improvement is not timely.

- 4.7 The applicant did not submit a traffic impact analysis (TIA) with the application. City guidelines require submittal of traffic analysis for development's that generate 50 or more peak hour trips to the public street system.
- 4.8 Staff estimated project trip generation using ITE trip generation rates for single family homes and low-rise apartment units. When completed the development is expected to generate a total of 426 daily trips. Of those, 36 are expected to occur during the peak PM traffic hour.
- 4.9 Albany's TSP assumed that this site would develop with residential land uses and did not identify any capacity or safety issues occurring along the boundary of the site or within the existing neighborhood to the west.
- 4.10 The intersection of Franklin Avenue and South Shore Drive is located approximately 100 feet west of this development. The intersection is a tee-intersection with no stop control of right of way assignment on the westbound Franklin Avenue approach to the intersection.
- 4.11 In order to provide for the safe and efficient circulation of traffic during night-time conditions, the installation of streetlights is needed along the Franklin Avenue frontage of the proposed development.

Conclusions

- 4.1 The development will be constructed in five phases resulting in 11 single family lots and 44 low-rise apartment units.
- 4.2 The development adjoins Airport Road. The road is under ODOT's jurisdiction and is not improved to city standards. ADC 12.040 requires that all roads abutting new development be improved to city standards. If the City Engineer determines that the improvement is not timely the City can accept a Petition and Waiver in lieu of the improvements. Because ODOT has future plans to improve I-5 that will impact the alignment and improvements needed on Airport Road the City Engineer has determined that requiring improvements to Airport Road with this development is not timely.
- 4.3 The development adjoins Franklin Avenue. ADC 12.040 requires that all roads abutting new development be improved to city standards. The development will take direct access from Franklin Avenue, and the City Engineer has determined that the improvement of the road is timely with this development. Construction of the improvements to city standards will require 2 feet of right of way dedication along the development's frontage on the street.
- 4.4 The applicant did not submit a traffic study with the application. Staff estimated trip generation using ITE trip rates for single family homes and low-rise apartments. The 426 daily and 36 PM peak hour trips anticipated from the development fall below the city's threshold for submittal of a traffic analysis with an application.
- 4.5 The city's TSP assumed residential development on this site and did not identify any congestion or safety issues occurring next to the development or within the adjoining neighborhood to the west.
- 4.6 All streets and travel aisles interior to the development will be private.
- 4.7 The development will add trips to the South Shore Drive/Franklin Avenue intersection. The addition of a stop sign is needed on the Franklin Avenue approach to the intersection to assign right of way.
- 4.8 The installation of streetlights is needed along the development's frontage on Franklin Avenue in order to provide for the safe and efficient circulation of traffic.
- 4.9 This criterion can be met with the following conditions.

Conditions of Approval

All Phases

- Condition 5 Prior to or with recordation of a final plat map, the applicant shall dedicate two feet of public right of way along the development's frontage on Franklin Avenue.
- Condition 6 The applicant shall install public sidewalk with the construction of street improvements along the portion of Franklin Avenue being improved with each phase of the development.
- Condition 7 The applicant shall install street lighting to city standards along the portion of Franklin Avenue being improved with each phase of the development.

Phase One

- Condition 8 Prior to recordation of the final plat map the applicant shall, or financially assure, the construction of public street improvements on Franklin Avenue from the east side of the proposed private cul-de-sac to existing improvements at the South Shore Drive/Franklin Avenue intersection. Improvements shall include:
- a. Construction of curb and gutter along the south side of the road. The face of curb shall be aligned for an ultimate curb to curb width of 30 feet.
 - b. Installation of new pavement with a width of 24 feet as measured from the new face of curb.
 - c. A pavement transition approved by the City Engineer shall be installed at the east end of the new street improvement.
 - d. Installation of a stop sign and stop bar shall be installed on the Franklin Avenue approach to South Shore Drive.

Phase Two

- Condition 9 Prior to recordation of the final plat map the applicant shall, or financially assure, the construction of public street improvements on Franklin Avenue from the east side of the proposed private cul-de-sac across the frontage of lots 8 through 11. Improvements shall include:
- a. Construction of curb and gutter along the south side of the road. The face of curb shall be aligned for an ultimate curb to curb width of 30 feet.
 - b. Installation of new pavement with a width of 24 feet as measured from the new face of curb.
 - c. A pavement transition approved by the City Engineer shall be installed at the east end of the new street improvement.

Phase Three

- Condition 10 Prior to recordation of the final plat map the applicant shall, or financially assure, the construction of public street improvements on Franklin Avenue from the east side of lot 11 to Airport Road. Improvements shall include:
- a. Construction of curb and gutter along the south side of the road. The face of curb shall be aligned for an ultimate curb to curb width of 30 feet.
 - b. Installation of new pavement with a width of 24 feet as measured from the new face of curb.
 - c. Installation of a curb return on the southwest corner of Franklin Street and Airport Road. The design of the curb return shall be approved by ODOT, and any necessary permits and approvals shall be secured prior to performing any work within ODOT right of way.

Criterion 5

The location and design allow development to be conveniently served by various public utilities.

Findings of Fact

Sanitary Sewer

- 5.1 City utility maps show an 8-inch public sanitary sewer main along the west boundary of the subject property, and an 8-inch main in Franklin Avenue along the westernmost 75 feet of the subject property's frontage.
- 5.2 ORS 92.090 states that no subdivision plat shall be approved unless sanitary sewer service from an approved sewage disposal system is available to the lot line of each and every lot depicted in the proposed subdivision plat.
- 5.3 AMC 10.01.010 (1) states that the objective of the Albany Municipal Code requirements pertaining to public sanitary sewers is to facilitate the orderly development and extension of the wastewater collection and treatment system, and to allow the use of fees and charges to recover the costs of construction, operation, maintenance, and administration of the wastewater collection and treatment system.
- 5.4 ADC 12.470 requires all new development to extend and/or connect to the public sanitary sewer system if the property is within 300 feet of a public sewer line.
- 5.5 ADC 12.490 states that sewer collection mains must be extended along the full length of a property's frontage(s) along the right(s)-of-way or to a point identified by the City Engineer as necessary to accommodate likely system expansion. ADC 12.510 requires main extensions through the interior of a property to be developed where the City Engineer determines that the extension is needed to provide access to the public system for current or future service to upstream properties. Extension of the sewer across the frontage and/or through the interior of a property makes the system available to adjacent properties. Then, when the adjoining property connects, that property owner must extend the sewer in a similar manner, making the sewer available to the next properties. In this way, each property owner shares proportionately in the cost of extending sewer mains.
- 5.6 Where a property abuts more than one street or right-of-way, sewer mains shall be extended for the full length of the property frontages along the rights-of-way for all frontages, unless it is determined that the extensions on the frontages from which service is not being taken are not currently needed to provide service to other properties, and that those sewer mains may be completed at a future time.
- 5.7 It has been determined by the City Engineer that no public sanitary sewer is needed in Airport Road. However, in order to provide direct access to the public sewer system for all of the lots in the proposed subdivision, the applicant must extend a public sewer main in Franklin Avenue to the east boundary of Lot 11.
- 5.8 All public sanitary sewer mains must be installed in accordance with the City's Standard Construction Specifications. If being constructed under a private contract, the developer must obtain a Permit for Private Construction of Public Improvements through the City's Engineering Division.
- 5.9 The City has sole authority in determining the conditions necessary for providing service to a property (AMC 10.01.100 (5)(e)).
- 5.10 AMC 15.30.010 states that a Connection Charge shall be due and payable when accessing the City's sanitary sewers from or for the benefit of any real property against which no assessment has previously been levied or for which the cost of constructing the sanitary sewer has not been paid by the property owner or predecessor thereof.

- 5.11 City records indicate that the subject property has never been assessed for the cost of the public sanitary sewer mains along its west boundary and a portion of its Franklin Avenue frontage. Therefore, connection charges for these sewer mains will be due before the City will approve the final plat for this project.

Water

- 5.12 City utility maps show a 12-inch public water main in Airport Road, and a 2-inch water line in Franklin Avenue running east from South Shore Drive approximately 450 feet.
- 5.13 ORS 92.090 states that no subdivision plat shall be approved unless water service from an approved water supply system is available to the lot line of each and every lot depicted in the proposed subdivision plat.
- 5.14 ADC 12.410 requires all new development to extend and/or connect to the public water system if the property is within 150 feet of an adequate public main.
- 5.15 ADC 12.450 requires that all new development within the City, where appropriate, provide for the extension of existing water lines serving surrounding areas.
- 5.16 AMC 11.01.120 (2)(e) states that all required public water main extensions must extend to the furthest property line(s) of the development or parcel. Main extensions may be required through the interior of a property to be developed where the City Engineer determines that the extension is needed to provide current or future looping of water mains, or to provide current or future service to adjacent properties. When the owner of a property is required to connect to the public water system, the water main must be extended across the property's entire frontage and/or through the interior of the property. Extension of the water across the property's frontage and through the interior of the property makes the system available to adjacent properties. Then, when the adjoining property connects, that property owner must extend the water mains in a similar manner, making the water available to the next properties. In this way, each property owner shares proportionately in the cost of extending water mains.
- 5.17 AMC 11.01.120 (2)(c) states that the City shall have the sole right to determine size, location, and type of facility to be constructed. All engineering of public water facilities shall be based on both domestic and fire protection design criteria, and in accordance with the City's water facility plan. All public water system improvements to be built under a private contract require that the developer obtain a Permit for Private Construction of Public Improvements.
- 5.18 AMC 11.01.120 (2)(h) states that all public main extensions must include fire hydrants and other appurtenances in a manner consistent with the recommendations of the water system facility plan, the Standard Construction Specifications, and/or the fire marshal.
- 5.19 AMC 11.01.100(1)(d) states that where a parcel has more than 150 feet of frontage along a right-of-way and the parcel is being developed in phases; and the water line is not currently needed for the full length of the parcel to facilitate service to other properties, to provide fire protection, or to meet other utility system needs, the requirement of Section 11.01.100(1)(c) of this code may be reduced, where approved, by delaying the requirement for a water main adjacent to that portion of the parcel which remains as an undeveloped portion of a future phase. Such delay, if authorized, is contingent upon the signing of a waiver of remonstrance agreement which commits the parcel to participate in a future local improvement (assessment) district for the extension of water main(s).
- 5.20 The existing 2-inch water line in Franklin Avenue is not adequate to provide for domestic or fire service to the proposed development. Therefore, the applicant must extend a public water main in Franklin Avenue from the existing main in South Shore Drive to the main in Airport Road.
- 5.21 All public water facilities must be installed in accordance with the City's Standard Construction Specifications. If being constructed under a private contract, the developer must obtain a Permit for

Private Construction of Public Improvements (Site Improvement Permit) through the City's Engineering Division.

- 5.22 Because proposed Lots 2-7 will not have frontage on Franklin Avenue, and therefore will not have direct access to the public water main in Franklin Avenue, the applicant must extend a public water main into the site to provide public water services to those lots. This public main will not be within a public right-of-way so a public utility easement must be granted over the main.

Storm Drainage

- 5.23 City utility maps show no piped public storm drainage facilities in either Airport Road or Franklin Avenue along the subject property's frontages. Neither of these streets are improved to City standards as they lack curb and gutter, sidewalks, and storm drainage facilities.
- 5.24 As part of the required public street improvement to Franklin Avenue the applicant must include public storm drainage facilities in the street design.
- 5.25 It is the property owner's responsibility to ensure that any proposed grading, fill, excavation, or other site work does not negatively impact drainage patterns to, or from, adjacent properties. In some situations, the applicant may propose private drainage systems to address potential negative impacts to surrounding properties. Private drainage systems that include piping will require the applicant to obtain a plumbing permit from the Building Division prior to construction. In addition, any proposed drainage systems must be shown on the construction drawings. The type of private drainage system, as well as the location and method of connection to the public system must be reviewed and approved by the City Engineer and Building Official.
- 5.26 ADC 12.530 states that a development will be approved only where adequate provisions for storm and flood water run-off have been made, as determined by the City Engineer.
- 5.27 ADC 12.580 states that all new development within the City must, where appropriate, provide for the extension of existing storm sewer lines or drainageways serving surrounding areas. Extensions may be required along all frontages and/or through the interior of a property to be developed where the City Engineer determines that the extension is needed to provide service to upstream properties.
- 5.28 ADC 12.550 states that any public drainage facility proposed for a development must be designed large enough to accommodate the maximum potential run-off from its entire upstream drainage area, whether inside or outside of the development, as specified in the City's storm drainage facility plan or separate storm drainage studies.
- 5.29 ADC 12.560 states that where it is anticipated by the City Engineer that the additional run-off resulting from the development will overload an existing drainage facility, the review body will not approve the development until provisions have been made for improvement of the potential problem.
- 5.30 The City Engineer has determined that the downstream facilities are undersized, and detention will be required. The applicant has submitted a preliminary storm drainage report for the proposed development that includes on-site detention and stormwater quality facilities.
- 5.31 AMC 12.45.030 states that a post-construction stormwater quality permit shall be obtained for all new development and/or redevelopment projects on a parcel(s) equal to or greater than one acre, including all phases of the development. (Ord. 5841 § 3, 2014).
- 5.32 The subject property has an area of approximately 6.5 acres; therefore, a stormwater quality permit will be required for this development.

Fire Safety

- 5.33 New development must meet fire safety standards for access and water supply, in accordance with the 2019 Oregon Fire Code (OFC). The Albany Fire Department has reviewed the development plans and found the proposal can feasibly meet fire safety standards if the minimum standards for access and water supply are met; those standards and conditions of approval are outlined in the memo from

Albany Fire Marshal Lora Ratcliff (Attachment R), which include fire sprinklered buildings, wayfinding signage, and alternatives for water supply.

Conclusions

- 5.1 The Fire Department has reviewed the plans and found the proposal can feasibly meet fire safety standards with conditions of approval, as outlined in the memo from the Albany Fire Marshal. Those requirements are included as a condition of approval.
- 5.2 A public sanitary sewer main exists along the west boundary of the property, and along a portion of the site's Franklin Avenue frontage. The subject property has never been assessed for these public sewer mains, so there will be connection charges due before the City will approve the final subdivision plat for any phase of the project or issue a building permit.
- 5.3 A public sanitary sewer main must be extended in Franklin Avenue from the existing main near the northwest corner of the property to the east boundary of proposed Lot 11 before the City will approve the creation of Lots 8-12, or issue a building permit for any portion of the property beyond Lots 1-7.
- 5.4 The existing 2-inch water line in Franklin Avenue is inadequate to serve the proposed development. In order to provide water for domestic and fire service a public water main must be looped between the main in South Shore Drive and the main in Airport Road.
- 5.5 Because proposed Lots 2-7 will not have direct access to the public water main to be constructed in Franklin Avenue, a public water main must be constructed along the east boundary of those lots within the proposed private street to provide for services to each individual lot. A public utility easement must be granted over this public water main.
- 5.6 Public storm drainage system improvements must be included in the required street improvements to Franklin Avenue.
- 5.7 Due to downstream deficiencies in the public storm drainage system the applicant must provide on-site stormwater detention for the project.
- 5.8 Because the site area exceeds one acre the applicant must provide stormwater quality facilities for the project. In addition to the private stormwater quality facilities for the development, the required street improvements must also include public stormwater quality facilities in Franklin Avenue.
- 5.9 The applicant submitted a storm drainage report for the proposed development. While the report appears to be generally acceptable the final design details will be reviewed as part of the required permits (Stormwater Quality Permit and Site Improvement Permit).
- 5.10 Final design details for all public infrastructure improvements and on-site detention and stormwater quality facilities must be reviewed in conjunction with the required permits associated with those improvements.
- 5.11 This review criterion is met with the following conditions of approval.

Conditions of Approval

- Condition 11 Prior to issuance of building permits, the applicant shall submit final plans for review and approval by the Albany Fire Department to ensure standards of the Oregon Fire Code are met.
- Condition 12 Before the City will sign the final plat creating Lots 1-7, or issue a building permit for construction on the property, the applicant must pay connection charges for the existing public sanitary sewer mains along the property's west boundary and a portion of the Franklin Avenue frontage.

- Condition 13 Before the City will sign the final plat creating Lots 1-7, the applicant must construct a public sanitary sewer main in Franklin Avenue, from the existing main near the northwest corner of the site to the east boundary of proposed private street (“Franklin Court”).
- Condition 14 Before the City will sign the final plat creating Lots 8-12, the applicant must construct a public sanitary sewer main in Franklin Avenue, to the east boundary of proposed Lot 11.
- Condition 15 Before the City will sign the final plat creating Lots 1-7, the applicant must extend a public water main in Franklin Avenue from the existing main in South Shore Drive to the east boundary of Lot 1, and a public water main to the south terminus of the private street (“Franklin Court”).
- Condition 16 Before the City will sign the final plat creating Lots 8-12 or issue a building permit for construction on this portion of the property, the applicant must construct a public water main in Franklin Avenue easterly to the existing main in Airport Road. This main will complete the connection of the public water system from South Shore Drive to Airport Road.
- Condition 17 Before the City will sign the final plat, the applicant must construct public storm drainage improvements in Franklin Avenue in conjunction with the required public street improvements.
- Condition 18 Before the City will sign the final plat for any phase of the proposed development, the applicant must construct stormwater collection facilities for that portion of the development. Any phase of the development must include storm drainage facilities capable of serving that phase as a stand-alone development. These storm drainage facilities must include on-site detention and stormwater quality facilities. The facilities must be designed and constructed to accommodate any future runoff that may discharge into those facilities.

NOTE: Alternatively, the applicant may provide financial assurances for the required public infrastructure in order to obtain City approval for the final plat(s) or building permits.

Criterion 6

Activities and developments within special purpose districts must comply with the regulations described in Articles 4 (Airport Approach), 6 (Natural Resources), and 7 (Historic), as applicable.

Findings of Fact

- 6.1 Article 4: Airport Approach. Figure 4-1 of ADC Article 4 shows that the subject property is located in the Airport Approach District. This district is comprised of several imaginary surfaces above which aircraft are allowed to operate.

The proposed development will be under the outermost surface called the Conical Surface. The Conical Surface begins at the outer boundary of the Horizontal Surface, at an elevation of 372 feet (NGVD 1929) above the airport elevation. The existing ground elevation is approximately 220 feet (NGVD 1929), and the maximum height limit of the RS-5 zone is 30 feet above grade for a total elevation of 250 feet which is 122 feet below the maximum height (372') established by the Conical Surface.

There are no design features of the proposed development with navigational signals or radio communications, or that would induce confusing light patterns, or create bird-strike hazards that would endanger or interfere with aircraft intending to use the airport.

The subject property is located within the airport noise sensitivity area defined by 55 and 60 ldn noise contours. ADC 4.440 states that when a property is “in the 55 to 60 Day-Night Sound Level (ldn) area, a declaration of anticipated noise levels shall be attached to any land use application and recording of

such declaration may be required for approval on each parcel within such area.” A declaration of anticipated noise levels is included as a condition of approval for the tentative plat.

- 6.2 Article 6 Steep Slopes, Comprehensive Plan Plate 7: There are not areas of steep slopes on the subject property.
- 6.3 Article 6: Floodplains, Comprehensive Plan Plate 5 shows the property is shown on Flood Insurance Rate Map (FIRM) #41043C0214H. The subject property is located outside of the Special Flood Hazard Area (SFHA), otherwise known as the 100-year floodplain.
- 6.4 Article 6: Wetlands, Comprehensive Plan Plate 6: There are 1.75-acres of wetlands located on the development site. A wetland delineation has been approved by the DSL (Attachment K). No impacts to the wetlands are proposed. As shown on the Site Plan (Attachment Q.5, Sheet C3), the wetland is proposed to be preserved as a natural open space meadow.
- Any impacts to wetlands are regulated by the Oregon Department of State Lands (DSL) and the U.S. Army Corps of Engineers (ACOE). The Community Development Department sent a wetland land use notice to DSL regarding the proposed development. DSL responded and noted that the proposal appears to avoid impacts to the wetlands located on-site (Attachment S).
- 6.5 Article 6 Natural Resource Overlays: The site is not located in a Significant Wetland Overlay (/SW) or a Riparian Corridor Overlay (/RC) district.
- 6.6 Historic and Archaeological Resources, Comprehensive Plan, Plate 9: The property is not located in a Historic District and there are no known archeological resources on-site.
- 6.7 There are a number of White Oak Trees on-site. The applicant has submitted an application for a Tree Felling. The Tree Felling Criterion under ADC 9.208(2) are addressed later in this report.

Conclusion

- 6.1 The site is located in the airport overlay district, but the proposed development does not exceed the height limit or cause interference with the aircraft using the airport.
- 6.2 The subject property is not located in any other special purpose overlay district.
- 6.3 This criterion is met without conditions.

Condition of Approval

Condition 19 The final plat for each phase shall include a declaration of anticipated airport noise levels between 55 to 60 Day-Night Sound Level (ldn).

SITE PLAN REVIEW CRITERIA (ADC 2.450)

Criterion 1

Public utilities can accommodate the proposed development.

Finding of Fact & Conclusion

- 1.1 Findings for utility infrastructure are addressed in detail earlier in this report under Tentative Plat Review Criterion Five (ADC 11.180(5)). Those findings and conclusions are included here by reference.
- 1.2 This criterion is met with the conditions of approval under Tentative Plat Review Criterion Five.

Criterion 2

The proposed post-construction stormwater quality facilities (private and/or public) can accommodate the proposed development, consistent with Title 12 of the Albany Municipal Code.

Finding of Fact & Conclusion

- 2.1 Findings for stormwater quality are addressed in detail earlier in this report under Tentative Plat Review Criterion Five (ADC 11.180(5)). Those findings and conclusions are included here by reference.
- 2.2 This criterion is met with the conditions of approval under Tentative Plat Review Criterion Five.

Criterion 3

The transportation system can safely and adequately accommodate the proposed development.

Finding of Fact & Conclusion

- 3.1 The ability of the transportation system to accommodate the proposed development is discussed in detail earlier in this report under Tentative Plat Review Criterion Four (ADC 11.180(4)). Those findings and conclusions are included here by reference.
- 3.2 This criterion is met with the conditions of approval under Tentative Plat Review Criterion Four.

Criterion 4

Parking areas and entrance-exit points are designed to facilitate traffic and pedestrian safety and avoid congestion.

Findings of Fact

Access

- 4.1 The access points for the proposed development will all be from Franklin Avenue. They consist of two private shared driveways that benefit lots 1 through 7 and the 44 apartment units being constructed with the development.
- 4.2 The design and location of all site driveways comply with the driveway design and spacing standards contained in ADC 12.100.
- 4.3 The street improvement proposed for the development's frontage on Franklin Avenue consists of a partial width improvement with a paved width of 24 feet. That width is sufficient to allow for two-way vehicle travel but does not provide sufficient room for on street parking.
- 4.4 In an email dated March 31, 2020, ODOT staff noted that the development site had several existing driveway connections to Airport Road and that none of them were being proposed for use by the project. ODOT asked that those existing driveways be removed as part of the development.
- 4.5 Pedestrian access improvements include an ADA compliant sidewalk along the Franklin Avenue frontage. The private interior roads are also connected to the development via an ADA sidewalk that runs from Franklin Avenue through the development. Pedestrian paths connect the residences to common open space areas such as the oak grove and wetland meadow.
- 4.6 Public Comment: Mr. Mark Leonard submitted an email concerning the proposed development on March 31, 2020 (Attachment C). In that email Mr. Leonard expressed concerns about the existing geometry of the South Shore Drive/Franklin Avenue intersection, expressed a preference that Franklin Street not be connected to South Shore Drive, and asked if other street patterns had been looked at as part of the development's review.

Response: Staff contacted Mr. Leonard by phone to discuss his concerns regarding the development. The somewhat unusual geometry of the intersection is due to the two streets intersecting on a curve,

at something other than 90 degrees, and the use of large radius returns when the neighborhood was originally developed. There is no stop control on the Franklin Avenue approach to the intersection, which is unique among the other local street intersections along South Shore Drive. Some of Mr. Leonard's concerns regarding the operation of the intersection will be addressed with the widening of the street and the addition of stop control on the Franklin Avenue approach with this development. In regard to whether or not Franklin Avenue should remain connected to South Shore Drive, staff explained that the initial project review relied on the sections of the ADC that limit block lengths and require connectivity in the street system. Those code sections include ADC 11.090(5) and ADC 12.060.

Parking

4.7 Vehicle Parking: Table 9-1 of the ADC identifies the minimum parking requirements. The planned development proposes 11 single-family home lots. The single-family homes require two on-site parking spaces for each home. Lots 1-11 will have standard 20-foot driveways and garages, which meet the standard for two on-site parking spaces.

The planned development proposes 44 multifamily housing units. A total of 60 on-site parking spaces is required for a multi-family development with 8 two-bedroom units and 36 one-bedroom units. A total of 81 parking spaces are proposed for the multi-family apartment complex. There are 50 on-site parking stalls, eight of which are ADA and nine of which are compact stalls. In addition to the 50 parking stalls, there are 31 detached garages to serve as additional parking and storage. As proposed, the vehicle parking standards are met.

4.8 Bicycle Parking: The bicycle parking requirement is identified under ADC 9.120(13). The minimum bike parking requirement for multi-family development is one bike parking space for every four dwelling units. With a total of 44 multi-family dwelling units proposed, a minimum of 11 bike parking spaces are required. The planned development proposes two outdoor bike racks, one of which is covered, for a total of 12 on-site bike parking spaces for the apartment complex. This meets the minimum number of required bicycle parking spaces.

At the time of building permit, the applicant will need to show details for the bicycle parking to show it meets the minimum design standards of ADC 9.120(13)(e-h), such as 50 percent sheltered, being secured to the ground, meeting all clearance standards, etc. This is included as a condition of approval.

4.9 ADC 9.120(14) requires on-site lighting to be directed down and contained on-site to meet code requirements. The applicant states that lighting is planned to be provided on the apartment complex buildings, as shown in the Site Lighting plans (Attachment H). The Plan shows that the lighting will be located away from any abutting or adjacent properties.

Conclusions

4.1 The proposed individual and shared private driveways proposed with the development comply with the design and spacing standards contained in ADC 12.100.

4.2 On street parking will need to be restricted along the development's frontage on Franklin Avenue in order to maintain two lanes of traffic on the street and provide sufficient operating space for access by emergency vehicles.

4.3 ODOT has requested that several unused site driveways to Airport Road be removed with the development.

4.4 A total of 60 vehicle parking spaces are required for the apartment complex and 81 parking spaces are being provided. At the time of building permit, the parking plan will be reviewed again for consistency with the parking lot design standards of Article 9.

4.5 A total of 11 bicycle parking spaces are required and 12 bicycle parking spaces are being provided. At the time of building permit, the applicant will need to show details for the bicycle parking to show it meets the minimum design standards of ADC 9.120(13)(e-h).

4.6 The lighting plan shows the lighting will be contained on-site.

4.7 This criterion is met with the following conditions.

Conditions of Approval

- Condition 20 The applicant shall install “no parking” signs on the south side of Franklin Avenue with the construction of street improvements. The signs shall be placed at a spacing of no more than 200 feet.
- Condition 21 Prior to recordation of the plat map for Phase 1, all existing site driveways to Airport Road shall be removed. The applicant shall secure all necessary permits and approvals from ODOT prior to performing any work within ODOT right of way.
- Condition 22 Prior to issuance of a building permit, the applicant shall submit a site plan to the Community Development Department for review and approval to ensure consistency with the standards of Table 9-2: Parking Lot Design and Supplemental Drawings.
- Condition 23 Prior to issuance of a building permit, the applicant shall provide detailed plans to show how the bicycle parking meets the standards of ADC 9.120(13)(e-h).
- Condition 24 Site lighting must be directed down, contained on site, and shielded, full cut-off design.

Criterion 5

The design and operating characteristics of the proposed development are reasonably compatible with surrounding development and land uses, and any negative impacts have been sufficiently minimized.

Findings of Fact

- 5.1 Site Plan Review is intended to promote functional, safe, and attractive developments that maximize compatibility with surrounding developments and uses and with the natural environment. Site Plan Review is not intended to evaluate the proposed use or structural design of the proposal. Rather, the review focuses on the layout of a proposed development, including building placement, setbacks, parking areas, external storage areas, open areas, and landscaping. Where conflicts are identified, mitigation can be required through conditions of approval.
- 5.2 The site is located in a RS-5 – Residential Single-Family zoning district that includes wetlands and several white oak trees. The site is currently vacant, 6.46 acres in size, and located at 840 Airport Road. A location map is included in Attachment A.
- 5.3 The adjacent properties to the west, south, and north are zoned as RS-6.5. The adjacent properties to the southwest are zoned Office Professional. The area directly to the east is Airport Road and I-5. The other side of I-5 is zoned as Light Industrial and is part of the Airport. A zoning map is included in Attachment B.
- 5.4 The proposed development is for the phased construction of a Planned Development that will result in 11 single family lots and 44 apartment units. Single family dwellings are permitted outright in the RS-5 zone and multi-family residential development is allowed in the RS-5 zone through this planned development review process. The development will be constructed over five phases. A site plan is included in Attachment Q.5, Sheet C3, and the phasing plan is included in Attachment Q.12, Sheet C10.
- 5.5 The surrounding area has single-family residences to the north and west. Single-family residences are planned on the north and west side of the site to maintain the look and feel of the existing residential neighborhood. A multi-family residential apartment complex is located at the center of the development for compatibility with the surrounding land uses and to minimize visual impacts.

5.6 A total of 2.7 acres of natural open space area is proposed to be preserved, which includes a 0.93-acre grove of white oak trees on the east side of the property and 1.75 acres of grassy meadow wetland. Other common areas include a recreation building with deck and barbeque, and outdoor picnic and landscaped areas. The Common Area Plan (Attachment Q.12, Sheet C10) shows the proposed common areas total 3.2 acres of the 6.46-acre site.

5.7 Setbacks, Building Height and Lot Coverage. ADC 3.190, Table 1, shows the development standards for residential districts.

Building Height. The maximum height in the RS-5 zoning district is 30 feet. The building elevations for the proposed apartment buildings show building height is less than 30 feet in height.

Lot Coverage. Application of the planned development review standards permits a maximum lot coverage of 70 percent in the RS-5 zoning district. At the time of building permit, each of the new single-family homes on Lots 1-11 will need to be reviewed for lot coverage.

Lot 12 is five acres in size and proposed for a multi-family apartment complex. Over half of Lot 12 will be preserved as natural open space area, which includes a 0.93-acre grove of white oak trees on the east side of the property and 1.75 acres of grassy meadow wetland. The Common Area Plan (Attachment Q.12, Sheet C10) shows the proposed natural open space areas on Lot 12.

Setbacks. Application of the planned development review standards permits a front yard setback of 10 feet and a garage setback of 20 feet. Interior setbacks are 5 to 6 feet for single-family homes. Lots 8-10 have a 20-foot rear yard solar access protection setback. At the time of building permit, each of the new single-family homes on Lots 1-11 will be reviewed for compliance with setback standards.

The proposed apartment buildings, garages and parking areas are located on the interior of the site (Lot 12), more than 20 feet from any front or interior property line.

In addition to the minimum setbacks, a “Special Noise Corridor Setback” is required along Airport Road. ADC 3.320 requires residential developments adjacent to Interstate 5 to maintain a 50-foot setback from the designated right-of-way in addition to the required setbacks for the Zoning District. The standard minimum front setback in the RS-5 zone is 15 feet and the I-5 right-of-way includes Airport Road. Therefore, the minimum setback for the apartment buildings is 65 feet from the eastern property line. As shown on the Site Plan (Attachment Q.5, Sheet C3), all habitable structures are more than 65 feet from the eastern property line.

The “Special Noise Corridor Setback” (ADC 3.320) also states that “the review body may require additional noise mitigating features such as berms, landscaping, fences, or walls within the above described setback areas.” As proposed, the site is designed to mitigate noise from the I-5 corridor by a) locating the apartment buildings approximately 200 feet away from Airport Road, b) locating garage structures between the apartment buildings and the eastern property line, c) retaining a grove of oak trees on the eastern portion of the site, and d) planting a solid hedge of English Laurels along the eastern property line. As proposed, the special noise corridor standards are met; no additional noise mitigation features are recommended.

5.8 Density. The permitted density of a planned development in the RS-5 zone is eight units per acre or a total of 51.68 units on this 6.46-acre site. The application qualifies for the Transportation density bonus under ADC 3.220(2), and the Solar Access Protection density bonus under ADC 3.220(5). With these density bonuses, the proposal may develop a total of 55 units. The proposed development will result in a total of 55 units: 11 single family lots and 44 apartment units.

Detailed findings for the density calculation are addressed earlier in this report under Planned Development Criterion Four (ADC 11.330). Those findings and conclusions are included here by reference

- 5.9 Landscaping. In the RS-5 zone, 100 percent of the yard adjacent to the street is required to be landscaped, in accordance with ADC 9.140(1), which states:

The minimum landscaping for every 50 lineal feet of street frontage (or portion thereof, deducting the width of the driveway) is:

- *One tree at least 6 feet tall.*
- *Four 1-gallon shrubs or accent plants.*
- *The remaining area treated with attractive ground cover (e.g., lawn, bark, rock, ivy, and evergreen shrubs).*

At the time of building permit and before issuance of a certificate of occupancy, the single-family home Lots 1-11 will be required to install front yard landscaping in accordance with ADC 9.140(1).

The Landscape Plans (Attachment P, Sheets L1.0 & L2.0) show landscaping in the front yard and throughout the apartment complex on Lot 12. A final landscape plan consistent with the standards of ADC 9.140 will need to be submitted for review and approval by the Community Development Department before building permits can be issued.

- 5.10 Landscaping Around and Within Parking Areas. Landscaping in parking lots is required to provide shade, reduce stormwater runoff, and direct traffic. Parking lots must be landscaped in accordance with the minimum standards of ADC 9.150, which are:

- (1) Planter Bays. *Parking areas shall be divided into bays of not more than 12 parking spaces. At both ends of each parking bay there shall be curbed planters at least 5 feet wide, excluding the curb. Each planter shall contain one canopy tree at least 10 feet high and decorative ground cover containing at least two shrubs for every 100 square feet of landscape area. Neither planter bays nor their contents may impede access on required public sidewalks or paths, or handicapped-accessible parking spaces.*
- (2) Entryway Landscaping. *Both sides of a parking lot entrance shall be bordered by a minimum 5-foot-wide landscape planter strip meeting the same landscaping provisions as planter bays, except that no sight-obscuring trees or shrubs are permitted.*
- (3) Parking Space Buffers. *Parking areas shall be separated from the exterior wall of a structure by pedestrian walkways or loading areas or by a 5-foot strip of landscaping materials*

The Landscape Plans (Attachment P, Sheets L1.0 & L2.0) show landscaping throughout the parking lot for the apartment complex on Lot 12. A final landscape plan consistent with the standards of ADC 9.150 will need to be submitted for review and approval by the Community Development Department before building permits can be issued.

- 5.11 Irrigation System. ADC 9.160 requires that all required landscape areas be provided with a piped underground irrigation system. The Landscape Plans (Attachment P, Sheets L1.0 & L2.0) do not include irrigation plans; therefore, an irrigation plan consistent with the standards of ADC 9.160 will need to be provided prior to issuance of a building permit, unless a licensed landscape architect or certified nurseryman submits written verification that the proposed plant materials do not require irrigation.

- 5.12 Buffering and Screening: To reduce the impacts on adjacent uses of a different type, buffering and screening are required in accordance with the matrix in ADC 9.300. When Buffering is required, ADC 9.240 states the minimum improvements are:

- a) *At least one row of trees. These trees will be not less than 10 feet high at the time of planting for deciduous trees and spaced not more than 30 feet apart and 5 feet high at the time of planting for evergreen trees and spaced not more than 15 feet apart.*
- b) *At least five 5-gallon shrubs or ten 1-gallon shrubs for each 1,000 square feet of required buffer area.*
- c) *The remaining area treated with attractive ground cover (e.g., lawn, bark, rock, ivy, evergreen shrubs).*

When Screening is required, ADC 9.250 states that the minimum screening standards are:

- a) *One row of evergreen shrubs that will grow to form a continuous hedge at least 4 feet tall within two years of*

- planting, or*
- b) *A fence or masonry wall at least 5 feet tall constructed to provide a uniform sight-obscuring screen, or*
 - c) *An earth berm combined with evergreen plantings or a fence that forms a sight and noise buffer at least 6 feet tall within two years of installation.*

Based on the Buffer and Screening Matrix (ADC 9.330, Table 9-4), 10 feet of buffering is required along the eastern property line at Airport Road. As shown on the Landscape Plan (Attachment P, Sheet L1.0), buildings are setback more than 10 feet from the property line and English Laurels are proposed to be planted along the eastern property line to provide a vegetative buffer. A final landscape plan will need to be submitted for review and approval by the Community Development Department to ensure the standards of ADC 9.240 are incorporated into these plans.

- 5.13 Environmental Standards. ADC 9.440 - 9.500 include environmental standards related to noise, visible emissions, vibrations, odors, glare, heat, insects, rodents, and hazardous waste. The design and operating characteristics of the proposed residential planned development is like other residential uses in the area.

Noise: Noise generated in association to the proposed use will include standard residential mechanical equipment and daytime on-site parking lot traffic. No noise is anticipated to exceed the noise source standards of ADC 9.440.

Visible Emissions: There will be no emissions or discharge from the development.

Vibrations: Vibrations that exceed 0.002g peak are not expected to be produced in association to the proposed use.

Odors: The proposed use is not anticipated to produce continuous, frequent, or repetitive odors or emissions.

Heat: This is not applicable to the operations on this site.

Insects and Rodents: The proposed residential uses do not attract insects or rodents.

Lighting and Glare: ADC 9.480 states that no direct or sky reflecting glare in excess of 0.5-foot candles of light be visible at the lot line shall be permitted. In addition, ADC 9.120(14) requires on-site lighting to be directed down and contained on site to meet code requirements.

- 5.14 Refuse Containers. ADC 3.390 requires that any refuse container or disposal area that would otherwise be visible from a public street, customer, resident parking area, public facility, or any residential area must be screened from view by placement of a sight-obscuring fence, wall, or hedge at least six feet tall. All refuse materials must be contained within the screened area and must be located at least 15 feet of a dwelling window.

As shown on the Site Plan (Attachment Q.5, Sheet C3), the applicant proposes to locate two refuse container areas near the garages on the eastern side of the site, at least 15 feet from a dwelling window. The screening around the trash enclosures is proposed to be a six-foot high solid wood fence (Attachment F).

- 5.15 Fences. ADC 9.370 lists the standards for fences. A six-foot fence will be installed along the rear yard property line of the west side homes (Lots 1-7). There is an existing chain link fence along the southern property line at the base of the wetland meadow. The applicant does not propose to install a fence along the Airport Road property line and prefers to use the landscaped vegetation as a visual barrier rather than a fence.
- 5.16 The multi-family design standards in Article Eight are addressed later in this report. Those findings and conclusions are included here by reference.

Conclusions

- 5.1 The proposed development is for the phased construction of a Planned Development that will result in 11 single family lots and 44 apartment units.
- 5.2 The planned development is designed to integrate into the existing residential neighborhood by locating the single-family homes around the perimeter and the multi-family residential apartment complex in the center of the development.
- 5.3 Open space and common areas are provided to minimize impacts to the existing natural features and to provide noise and visual buffers from surrounding uses.
- 5.4 The proposal meets the standards for density, building height, lot coverage, setbacks, and the environmental standards.
- 5.5 Any adverse impacts associated with the use of the property can be mitigated through such means as shielded lighting and landscaping.
- 5.6 Condition of Approval #23 (above), will ensure that all exterior lighting fixtures shall be of a shielded, full cut-off design.
- 5.7 A final landscape and irrigation plan will need to be submitted and approved prior to site improvements. The plan shall be in substantial conformance with the preliminary plans, as shown on Landscape Plan Sheets L1.0 & L2.0.
- 5.8 As shown on the site plan, the applicant proposes to locate refuse container areas within trash enclosures designed to meet the code.
- 5.9 Based on the observations above, the site plan will be compatible with existing or anticipated uses in terms of size, intensity, setbacks, lighting, screening and landscaping with conditions of approval.

Conditions of Approval

- Condition 25 Prior to issuance of a building permit, a final landscape and irrigation plan shall be submitted for review and approval by the Community Development Department. The plan shall be in substantial conformance with the preliminary plans, as shown on Landscape Plan Sheets L1.0 & L2.0. The plans shall also meet the minimum standards for landscaping under ADC 9.140, landscape parking lot standards of ADC 9.150, buffering standards of ADC 9.240 and irrigation standards of ADC 9.160.
- Condition 26 Prior to issuance of a certificate of occupancy for the multi-family development on Lot 12, all proposed and required site improvements for each phase (e.g. vehicle and bicycle parking, landscaping, community amenities, refuse screening, lighting, etc.), shall be constructed and completed in accordance with approved plans. Landscaping may be financially secured through a completion guarantee, per ADC 9.190.

Criterion 6

Activities and developments within special purpose districts must comply with the regulations described in Articles 4 (Airport Approach), 6 (Natural Resources), and 7 (Historic), as applicable.

Findings of Fact

- 2.1 Findings for activities and development in special purpose districts is addressed in detail earlier in this report under Tentative Plat Review Criterion Six (ADC 11.180(6)). Those findings and conclusions are included here by reference.
- 2.2 This criterion is met without conditions.

Criterion 7

The site is in compliance with prior land use approvals.

Findings of Fact and Conclusion

7.1 In 2019, the Albany City Council approved the subject property to be rezoned from RS-6.5 to RS-5, under planning file ZC-03-19. The rezone was approved without conditions. There are no other previous development approvals to consider with this application. This criterion is met.

Criterion 8

Sites that have lost their nonconforming status must be brought into compliance and may be brought into compliance incrementally in accordance with Section 2.370.

Findings of Fact and Conclusion

8.1 The site is vacant and is not a nonconforming site. This criterion is not applicable

MULTIPLE FAMILY DEVELOPMENT DESIGN STANDARDS (ADC 8.200 to 8.300)

In addition to the review criteria above, the following Design Standards must be met. **Note:** If there is a checked box symbol () preceding a standard, it means staff has compared the applicant's findings and plans to the standard(s) and find the standard(s) is met without comment. If the box is unchecked (), staff has provided findings and conclusions as to the reason(s) why the standard is not met and has added a condition. "**NA**" preceding the standard means it is not applicable to this particular development

N/A 8.210 Relationship to Historic Overlay Districts. For residential property inside the Historic Overlay Districts, see Article 7 for additional historic review criteria.

8.220 Recreation and Open Space Areas. In multi-family developments, a portion of the land not covered by buildings and parking shall be of adequate size and shape and in the proper location to be functional for outdoor recreation and relaxation. The standards are also intended to ensure that project open space is an integral part of the overall development design, not merely leftover space. In larger developments, there should be a variety of open space activities.

1) Common Open Space. For projects of 10 or more units, common open space shall be required at a ratio of 0.25 square feet for each 1.0 square feet of living space.

- a) Areas designated as common open space shall be at least 500 square feet in size with no horizontal dimension less than 20 feet. The open space shall be functional and shall include one or more of the following types of uses:
- swimming pools, spas, and adjacent patios and decks
 - developed and equipped adult recreation areas
 - sports courts (tennis, handball, volleyball, etc.)
 - community centers
 - food and ornamental gardens
 - lawn or hard surface areas in which user amenities such as trees, shrubs, pathways, covered picnic tables, benches, and drinking fountains have been placed
 - natural areas
- b) Developments shall provide a mix of passive and active recreational uses from the above list if the open space can accommodate more than one use.
- c) Indoor or covered recreational space may count towards 50 percent of the common open space requirement.
- d) No more than 20 percent of the common open space requirement shall be on land with slopes greater than 20 percent.
- e) Areas Excluded. Streets and parking areas, including areas required to satisfy parking lot landscape standards, shall not be applied toward the minimum useable open space requirement. Required

setback areas may be applied toward the minimum useable open space requirement, with the exception of active, noise-generating activities.

- f) *Designated on Site Plan. Areas provided to satisfy the minimum useable open space requirement shall be so designated on the development site plan and shall be reserved as open space. Adult recreation areas shall not be allowed in any required setback and shall be centrally located.*
- g) *Open Space and Recreation Area Credit. An open space credit, not to exceed 25 percent of the common open space requirements, may be granted if there is direct access by a pedestrian path, not exceeding 1/4 mile, from the proposed multiple family development to an improved public park and recreation area or public school playground.*
- h) *Approved vegetated post-construction stormwater quality facilities are allowed in common open space areas*

Findings of Fact

The applicant proposes 44 apartment units, which total 30,704 square feet of living space (Attachment E.5). Based on a ratio 0.25 square feet for each 1.0 square foot of living space, a total of 7,676 square feet of common open space is required.

The Phasing and Common Area Plan (Attachment Q.12, Sheet C10) shows the common areas provided. A total of 2.7 acres of natural open space area is proposed to be preserved, which includes a 0.93-acre grove of white oak trees on the east side of the property and 1.75 acres of grassy meadow wetland. Other common areas include a recreation building with deck and barbeque, and outdoor picnic and landscaped areas. Calculations are provided below, which shows 3.2 acres (142,276 s.f.) of the 6.46-acre site is proposed as open space and common areas.

COMMON AREAS		
#	COMMON AREA	AREA (SF)
1	RECREATION BUILDING, DECKS AND BBQ	2,975
2	OAK PRESERVE	40,946
3	MEADOW	76,230
4	SOUTH PICNIC AREA	6,300
5	STORM WATER FACILITIES/LANDSCAPING	15,825
	TOTAL AREA	142,276

The common open space areas are at least 500 square feet in size with no horizontal dimension less than 20 feet. As required by code, the indoor recreation center accounts for less than 50 percent of the common open space provided on site. Therefore, the planned development meets these criteria as proposed.

- 2) *Children’s Play Areas. Multiple family developments larger than 10 units (excluding 1-bedroom and studio units) shall designate one or more children’s play areas.*
 - a) *Children’s play areas shall be placed within 300 feet of the units they are intended to serve. More than one play area may be needed in larger developments.*
 - b) *No horizontal dimension of a children’s play area shall be less than 20 feet.*
 - c) *Placement of children’s play areas shall not be allowed in any required setback and shall be centrally located.*
 - d) *Children’s play areas may be part of the common open space area but do not count toward the use requirement as outlined in Section 8.220(1)(a).*

Findings of Fact

Approximately half of the 6.46-acre site is proposed for natural open space and common areas, which far exceeds the minimum amount of common areas required per this code. Within the three acres of open space areas, there is adequate space for children’s play areas that meet the size and dimensions of

these standards. Fencing around children's play areas and children's play equipment is not proposed and is not required per these criteria.

- 8.230 *Private Open Space. In all newly constructed multiple family developments except in the CB, HD and LE zoning districts and assisted-living and nursing home developments, private open space shall be provided as follows:*
- 1) *At-Grade Dwellings. Dwellings located at finished grade, or within 5 feet of finished grade, shall provide at least 96 square feet of private open space per unit, with no dimension less than 8 feet. Private open space for at-grade dwellings may be provided within interior courtyards created within a single building or cluster of buildings. Private open space for at-grade dwellings shall be screened from view from public streets.*
 - 2) *Above-Grade Dwellings. Dwellings located more than 5 feet from finished grade shall provide a minimum of 80 square feet of private open space per dwelling unit (such as a yard, deck or porch), with no dimension less than 6 feet. Private open space for units located more than 5 feet above grade may be provided individually, as with a balcony or collectively by combining into a larger area that serves multiple units.*
 - 3) *Access to Private Open Space. All private open space shall be directly accessible from the dwelling unit through a doorway.*
 - 4) *Privacy Requirements. Private open space, excluding front porches, shall be physically and visually separated from common open space.*

Findings of Fact

The site plan application includes building plans for the multi-family apartment buildings (Attachment O). These plans show that all of the private open space is accessible through the back door of each apartment unit. The lower floor of each building includes private concrete patios that appear to meet the minimum size standard. Private open space for at-grade apartment units all face the interior of the development and are not visible from public streets; therefore, the private open space for at-grade apartment are not required to be screened from view.

The private open space areas located above grade, on the second floor, are balconies that appear to meet the minimum size standard. At the time of building permit, all private open space patios and balconies will be reviewed to ensure compliance with the minimum standards of the above criteria.

- N/A** 8.240 *Maximum Setbacks for Street Orientation.*
- 1) *On sites with 100 feet or more of frontage on a collector or local public street, at least 50 percent of the site width shall be occupied by a building(s) placed no further than 25 feet from the front lot line.*
 - 2) *On sites with less than 100 feet of frontage on a collector or local public street, at least 40 percent of the site width shall be occupied by a building(s) placed no further than 25 feet from the front lot line.*
 - 3) *As used in these standards, "site width" does not include significant natural resources as mapped by the City, delineated wetlands, slopes greater than 20 percent, recorded easements, required fire lanes and other similar non-buildable areas as determined by the City.*

Findings of Fact

The subject property has more than 100 feet of frontage on a major collector public street at Airport Road; however, the noise corridor setback requires buildings to be setback at least 65 feet from the property line. Therefore, this criterion is not applicable.

- 8.250 *Functional Design and Building Details. These standards are intended to promote functional design and building details in new construction that contribute to a high-quality living environment for residents and enhance compatibility with the neighborhood.*
- 1) *The design of new buildings shall avoid long, flat, uninterrupted walls or roof planes. Changes in wall plane and height, and inclusion of elements such as balconies, porches, arbors, dormers, gables and other human-scale design elements such as landscaping should be used to achieve building articulation.*

- 2) *Buildings shall be massed so individual units or the common main entrance is clearly identifiable from the private or public street that provides access unless the units are located on upper floors above non-residential uses.*
- 3) *Stairways shall be incorporated into the building design. External stairways, when necessary, should be recessed into the building, sided using the same siding materials as the building, or otherwise incorporated into the building architecture.*
- 4) *Building facades shall be broken up to give the appearance of a collection of smaller buildings.*

Findings of Fact

Architectural building plans and elevations for the apartment complex are shown on Attachments N and O. The plans show the required building articulation is provided with balconies, porches, dormers, offsets, and landscape features to avoid long, flat, uninterrupted walls and roof planes. All external stairways are physically and visually incorporating stairways into the building design. The building facades are further broken up with elements such as gable roofs, porches, and breezeways shown in the architectural drawings. Various materials, textures, and earth-toned colors are used to create attractive building design.

- 8.260 *Building Orientation and Entries. These standards are intended to promote building and site design that contributes positively to a sense of neighborhood and to the overall streetscape by carefully relating building mass, entries and yards to public streets.*
- 1) *As many of the dwelling unit entries as possible shall face public local residential streets and along the internal street system of larger scale developments. Internal units may face a courtyard or plaza, but not a parking lot. The use of front porches or entry patios and terraces is encouraged.*
 - 2) *Building entries and entries to individual units shall be clearly defined, visible for safety purposes, and easily accessible. Arches, gateways, entry courts, and awnings are encouraged to shelter entries.*
 - 3) *Individual entries are encouraged; the use of long access balconies and/or corridors that are monotonous and impersonal are discouraged.*
 - 4) *The primary entrance(s) of ground floor units of residential building(s) located within 25 feet of a local street may face the street. Primary entrances may provide access to individual units, clusters of units, courtyard dwellings, or common lobbies. No off-street parking or circulation shall be located between the front of the building and the street. The following exceptions to this standard are allowed:*
 - *On corner lots, the main building entrance(s) may face either of the streets or be oriented to the corner.*
 - *For buildings that have more than one entrance serving multiple units, only one entrance must meet this requirement.*

Findings of Fact

As this is a planned development, single-family residences are planned around the perimeter of the site, and the apartment complex is located at the center of the development to maintain the look and feel of the existing residential neighborhood.

Off-street parking is located between the apartment buildings and Airport Road; however, with the noise corridor setback from Airport Road and the grove of oak trees on the east side of the site, the apartment buildings are best located further away from Airport Road.

The circulation system on-site is a combination of private streets. All of the apartment building entries are clearly defined and easily accessible from the private streets. There are no long balconies or monotonous corridors.

- 8.270 *Transition to Lower Density Uses. The following design standards shall be incorporated into the design of multiple-family housing to create transitions between multiple-family developments and nearby, lower-density residential development, in order to reduce the impacts of building mass and scale.*

- 1) *When abutting single-family homes, buildings shall be set back at least one foot for each foot in building height from the property line. Building height is measured from the average grade to the top of the wall facing the property line or to the top of the highest window or door, whichever is higher.*
- 2) *Smaller-scale buildings should be sited in the area immediately adjacent to single-family zoning districts, and larger-scale buildings sited at the interior of the development or adjacent to other multiple-family developments.*
- 3) *Parking and maneuvering areas, driveways, active recreation areas, loading areas and dumpsters should not be located between multiple family buildings and abutting single family homes.*

Findings of Fact

The surrounding area has single-family residences to the north and west. Single-family residences are planned on the north and west side of the development to keep the visual impact on the surrounding area to a minimum while maintaining the look and feel of the existing residential neighborhood. The apartment complex is located at the center of the development to minimize visual impacts. There are no parking areas, driveways, active recreation areas, loading areas or dumpsters located between the multiple family buildings and abutting single family homes.

- 8.280 *Pedestrian Connections. Pedestrian circulation systems shall be designed to provide clear and identifiable connections within the multiple-family development and to adjacent uses and public streets/ sidewalks.*
 - 1) *Each multiple family development shall contain an internal pedestrian circulation system that makes clear, easily identifiable and safe connections between individual units and parking and shared open space areas. All pedestrian ways shall comply with the requirements of the Americans with Disabilities Act.*
 - 2) *The pedestrian circulation system shall be designed to provide safe crossings of streets and driveways. Reflective striping should be used at crossings to emphasize the crossing under low light and inclement weather conditions.*
 - 3) *Safe, convenient, and attractive pedestrian connections shall be provided between the multiple family development and adjacent uses such as parks, schools, retail areas, bus stops, and other pedestrian ways. Connections shall be made to all adjacent streets and sidewalks at 200-300 foot intervals.*

Findings of Fact

Pedestrian connections are shown on the Landscape Plan and Site Plan (Attachments P and Q.5). The internal pedestrian circulation system consists of hard surface sidewalks, five to seven and one-half-foot wide, for safe connections between the residential units, parking, recreation areas, trash disposal area, and the public sidewalks. The accessways shown are intended to comply with the provisions of the Americans with Disabilities Act. Pedestrian connections to adjacent public sidewalks are provided at Franklin Avenue at reasonable intervals.

- 8.290 *Vehicle Circulation System. On-site circulation shall be clearly identifiable, safe, pedestrian friendly and interconnected.*
 - 1) *Internal vehicle circulation system of a multiple family development shall be a continuation of the adjacent public street pattern wherever possible and promote street connectivity. Elements of the public street system that shall be emphasized in the internal circulation system include the block pattern, sidewalks, street trees, on-street parking and planter strips.*
 - 2) *The vehicle circulation system and building pattern shall mimic a traditional local street network and break the development into numerous smaller blocks with all of the public street system elements highlighted above. Private streets are acceptable, unless a public street is needed to extend the public street grid. The connectivity and block length standards in Articles 11 and 12 apply to all public and private streets.*
 - 3) *The streets that form the primary internal circulation system may include parallel parking and accessways to parking bays or courts, but should not be lined with head-in parking spaces.*

- 4) *Interior roadways shall be designed to slow traffic speeds. This can be achieved by meandering the roadway, keeping road widths to a minimum, allowing parallel parking, and planting street trees to visually narrow the road.*

Findings of Fact

The project site is located at the southwest corner of Franklin Avenue and Airport Road. There is a street stub at Cox Street SE that would have continued through the property, but it terminates at the wetland meadow, which is proposed to be preserved in its natural state and not developed.

Private streets are planned for the development and designed to promote connectivity throughout the development. Street connectivity is provided via two access points at Franklin Avenue. Public street improvements on Franklin Avenue will include sidewalks and street trees, per engineering standards.

- 8.300 *Parking. Multiple-family development shall provide attractive street frontages and visual compatibility with neighborhoods by minimizing the placement of parking lots along public streets. See Article 9 for additional parking lot standards.*
- 1) *Parking lots, carports, and garages shall not be sited between multiple-family buildings and the public local street unless site size and configuration make this impossible. Where available, private access to parking is encouraged.*
- 2) *Parking areas shall be broken into numerous small parking bays and landscaped to minimize their visual impact. Large, uninterrupted rows of parking are prohibited. Required parking must be located within 100 feet of the building entrance for each unit. The integration of garages into residential buildings is encouraged.*

Findings of Fact

Access to the site and parking lot is provided via private streets from Franklin Avenue. The apartment complex is located at the center of the development to maintain the look and feel of the existing residential neighborhood.

Off-street parking is located between the apartment buildings and Airport Road; however, with the noise corridor setback from Airport Road and the grove of oak trees on the east side of the site, the apartment buildings are best located further away from Airport Road.

The parking lot is broken up into smaller bays with landscaped parking islands throughout the development, in accordance with the standards of ADC 9.150. All of the parking spaces are located within 100 feet of the building entrance for each unit.

Conclusions

- DS.1 The recreation and open space standards are met with large areas reserved for common natural open space and indoor recreation uses and features.
- DS.2 Private open space is provided for each apartment through concrete at-grade patios and balconies on the upper levels of the buildings. At the time of building permit, the private open space will be reviewed to ensure compliance with the minimum standards.
- DS.3 The buildings are located on the site to effectively meet the maximum setback requirement from public streets, as well as the minimum setback requirement from property lines.
- DS.4 The architectural design of the proposed apartment buildings meets the functional design and building detail standards.
- DS.5 The design of the overall development meets the standards for Building Orientation and Entries, Pedestrian Connections, Vehicle Circulation System, and Parking.
- DS.6 The planned development can meet the Multi-Family Design Standards with the following condition.

Condition of Approval

Condition 27 Prior to issuance of a building permit, the applicant shall submit a site plan and building plans to the Community Development Department for review and approval that shows the standards for private open space per ADC 8.230 are met. Outdoor storage closets on decks and balconies may not be included in the dimension and area requirements of the private open space decks and patios.

TREE FELLING CONCURRENT WITH DEVELOPMENT (ADC 9.208(2))

ADC 9.207 states that Site Plan Review approval is required for the felling of five or more trees larger than 25 inches in circumference (approximately eight inches in diameter) on a lot or property in contiguous, single ownership in excess of 20,000 square feet in any zone. According to ADC Section 9.208, Tree Felling criteria replace the Site Plan Review criteria found in Article 2 of the ADC for the purpose of reviewing tree felling.

The applicant proposes to remove 258 trees from the site that are greater than 25 inches in circumference. As illustrated on the Tree Removal Plan (Attachment F), the trees identified for removal are all located in areas where construction is proposed. The applicant submitted an application for tree felling concurrent with the planned development review application. As such, the tree felling criteria under ADC 9.208(2)(a-c) are applicable and addressed below.

Criterion 2(a) *It is necessary to fell tree(s) in order to construct proposed improvements in accordance with an approved site plan review or conditional use review, or to otherwise utilize the applicant’s property in a manner consistent with its zoning, this code, applicable plans adopted by the City Council, or a logging permit issued by the Oregon Department of Forestry.*

Findings of Fact & Conclusion

2a.1 Based on the Arborist Report (Attachment J), and a site survey shown on the Existing Conditions Plan (Attachment Q.2, Sheet G2), there are a total of 329 trees on the property. Of these, 309 are Oregon White Oak trees. The Arborist Report states: “A majority of this sites grade is flat, surrounded by groves of Oak trees located along the East, North, Northwest, as well as some scattered along the West side of the property. The most prominent grove would be located along the North and Northeast side of this lot. This site hosts mostly all native trees. The predominant species is Oregon White Oak (*Quercus garryana*), with a few Green Ash trees, Plum trees and Hawthorns (Attachment J.2).”

The applicant proposes to remove 258 trees from the site that are greater than 25 inches in circumference. A total of 71 trees are proposed to be preserved; 58 of the 71 trees are Oregon White Oak trees. The number and type of tree proposed for removal is presented below.

Common Name	Botanical Name	Total	Retain
Oregon White Oak	<i>Quercus garryana</i>	309	
Green Ash	<i>Fraxinus pennsylvanica</i>	13	11
Hawthorn	<i>Crataegus sp.</i>	2	
Plum	<i>Prunus subg.</i>	5	2
Total		329	
Removal	Diameter		
Oregon White Oak	6-36”	251	
Oregon White Oak	6-39”		58

2a.2 As shown on the Demolition Plan and the Site Grading Plan (Attachments Q.3 & Q.10), the trees proposed for removal are located in the areas proposed for development. Thus, it is necessary to fell 258 trees in order to construct the proposed planned development.

2a.3 The Arborist Report includes tree protection measures for the project, and the Site Grading Plan notes that tree protection fencing is to be located a minimum of 15 feet from the center of the tree. A condition of approval is included to ensure the trees proposed for preservation are protected during construction of the planned development.

2a.4 This criterion can be met with the following conditions.

Conditions of Approval

Condition 28 Prior to issuance of an Erosion Prevention Sediment Control (EPSC) permit for each phase of development, tree protection measures shall be implemented in accordance with the Arborist Report. At a minimum, tree protection measures shall include installation of a tree protection fence located a minimum of 15 feet from the center of the tree.

Condition 29 In the event additional trees need to be removed to accommodate the proposed development, a new tree felling application shall be submitted to the Community Development Department for review and processing, in accordance with ADC 9.208(2).

Criterion 2(b) The proposed felling is consistent with state standards, city ordinances, and the proposed felling does not negatively impact the environmental quality of the area, including but not limited to: the protection of nearby trees and windbreaks; wildlife; erosion; soil retention and stability; volume of surface runoff and water quality of streams; scenic quality, and geological sites.

Findings of Fact & Conclusion

2b.1 The proposed tree felling does not violate any state standards. The proposed tree felling is reviewed through this land use process, consistent with the ADC.

2b.2 The proposed tree felling does not unreasonably impact the environmental quality of the area for the following reasons:

- a. The site is zoned RS-5, which is intended for residential development.
- b. Prior to initiating development of the site, an Erosion Prevention Sediment Control (EPSC) permit is required to ensure soil retention and stability.
- c. Trees proposed for removal are all located on the development site. The grove of oak trees proposed to be protected on the east side of the site will continue to act as a windbreak for the proposed new residential development.
- d. The property is not designated as sensitive habitat area.
- e. Surface water runoff and water quality of streams is addressed through the stormwater drainage and water quality management plans, in accordance with the City's engineering standards.
- f. The planned development is designed to preserve the scenic quality of the oak trees. Natural open space areas are proposed, including a 0.93-acre grove of white oak trees on the east side of the property.
- g. There are no geologic sites on the property protected by the trees.

2b.3 This criterion is met without conditions.

Criterion 2(c) The uniqueness, size, maturity, structure, and historic value of the trees have been considered and all other options for tree preservation have been exhausted. The director may require that trees determined to be unique in species, size, maturity, structure, or historic values are preserved.

Findings of Fact & Conclusion

- 2c.1 The proposed tree felling plan has been reviewed the City Forrester Rick Barnett. Mr. Barnett states that the applicant has done a very good job of trying to work to save the natural resources that he can, (primarily trees), on this hard-to-develop piece of land.
- 2c.2 A total of 2.7 acres of natural open space area is proposed to be preserved on this 6.46-acre site. These natural open space areas include a 0.93-acre grove of white oak trees on the east side of the property and 1.75 acres of grassy meadow wetland.
- 2c.3 The uniqueness, size, maturity, structure, and historic value of the trees have been considered. The proposed planned development includes a balance of residential development at a density appropriate for the zone, while preserving a significant portion of the site as natural open space.

Criterion 2(d) Tree felling in Significant Natural Resource Overlay Districts meets the applicable requirements in Article 6.

Findings of Fact & Conclusion

- 2d.1 The Property is not located within a Significant Natural Resource Overlay District. This criterion does not apply.

Tree Felling Criteria Conclusion

For the reasons stated above, the request for Tree Felling concurrent with Planned Development Review meets all applicable review criteria with the conditions stated in this section.

Overall Conclusion

As proposed and conditioned, the application for a Planned Development Review, Tentative Plat Review and Tree Felling satisfy all applicable review criteria as outlined in this report.

Conditions of Approval

Planned Development

- Condition 1 Lots 1-11 are permitted to have a 10-foot front yard setback and a 70 percent lot coverage. Notwithstanding this modification, the minimum driveway length from the garage to the front property line is 20 feet, in accordance with ADC 3.190, Table 1.
- Condition 2 Prior to Final Plat approval of Phase One, the applicant shall establish a Homeowners Association (HOA) and submit a Declaration of Covenants, Conditions, and Restrictions (CC&R) to the Community Development Department for review and approval. The CC&Rs shall specify the access and maintenance responsibilities of outdoor common areas, indoor recreation areas, private streets, driveways, and parking areas.
- Condition 3 Solar Access Protection shall be preserved through the following mechanisms:
- a. The Final Plat shall include a note regarding the Solar Access Protection, as proposed on the Preliminary Plat (Sheet C2).
 - b. The Homeowners Association (HOA) Declaration of Covenants, Conditions, and Restrictions (CC&R) shall specify the provisions for Solar Access Protection, as proposed for the Planned Development and described on the Housing Bonus Plan (Sheet C11).
- Condition 4 New dwelling on Lots 1-7 shall avoid second story, west-facing windows. Alternatively, new dwellings on Lots 1-7 may install second story west-facing windows if they are constructed of sight-obscuring material (i.e. textured or frosted privacy glass). At the time of building permit, the building plans shall be submitted to the Community Development Department for review and approval to ensure compliance with this standard.

Transportation

All Phases

- Condition 5 Prior to or with recordation of a final plat map, the applicant shall dedicate two feet of public right of way along the development's frontage on Franklin Avenue.
- Condition 6 The applicant shall install public sidewalk with the construction of street improvements along the portion of Franklin Avenue being improved with each phase of the development.
- Condition 7 The applicant shall install street lighting to city standards along the portion of Franklin Avenue being improved with each phase of the development.

Phase One

- Condition 8 Prior to recordation of the final plat map the applicant shall, or financially assure, the construction of public street improvements on Franklin Avenue from the east side of the proposed private cul-de-sac to existing improvements at the South Shore Street/Franklin Avenue intersection. Improvements shall include:
- a. Construction of curb and gutter along the south side of the road. The face of curb shall be aligned for an ultimate curb to curb width of 30 feet.
 - b. Installation of new pavement with a width of 24 feet as measured from the new face of curb.
 - c. A pavement transition approved by the City Engineer shall be installed at the east end of the new street improvement.
 - d. Installation of a stop sign and stop bar shall be installed on the Franklin Avenue approach to South Shore Drive.

Phase Two

- Condition 9 Prior to recordation of the final plat map the applicant shall, or financially assure, the construction of public street improvements on Franklin Avenue from the east side of the proposed private cul-de-sac across the frontage of lots 8 through 11. Improvements shall include:
- a. Construction of curb and gutter along the south side of the road. The face of curb shall be aligned for an ultimate curb to curb width of 30 feet.
 - b. Installation of new pavement with a width of 24 feet as measured from the new face of curb.
 - c. A pavement transition approved by the City Engineer shall be installed at the east end of the new street improvement.

Phase Three

- Condition 10 Prior to recordation of the final plat map the applicant shall, or financially assure, the construction of public street improvements on Franklin Avenue from the east side lot 11 to Airport Road. Improvements shall include:
- a. Construction of curb and gutter along the south side of the road. The face of curb shall be aligned for an ultimate curb to curb width of 30 feet.
 - b. Installation of new pavement with a width of 24 feet as measured from the new face of curb.
 - c. Installation of a curb return on the southwest corner of Franklin Street and Airport Road. The design of the curb return shall be approved by ODOT, and any necessary permits and approvals shall be secured prior to performing any work within ODOT right of way.

Utilities

- Condition 11 Prior to issuance of building permits, the applicant shall submit final plans for review and approval by the Albany Fire Department to ensure standards of the Oregon Fire Code are met.

- Condition 12 Before the City will sign the final plat creating Lots 1-7, or issue a building permit for construction on the property, the applicant must pay connection charges for the existing public sanitary sewer mains along the property's west boundary and a portion of the Franklin Avenue frontage.
- Condition 13 Before the City will sign the final plat creating Lots 1-7, the applicant must construct a public sanitary sewer main in Franklin Avenue, from the existing main near the northwest corner of the site to the east boundary of proposed private street ("Franklin Court").
- Condition 14 Before the City will sign the final plat creating Lots 8-12, the applicant must construct a public sanitary sewer main in Franklin Avenue, to the east boundary of proposed Lot 11.
- Condition 15 Before the City will sign the final plat creating Lots 1-7, the applicant must extend a public water main in Franklin Avenue from the existing main in South Shore Drive to the east boundary of Lot 1, and a public water main to the south terminus of the private street ("Franklin Court").
- Condition 16 Before the City will sign the final plat creating Lots 8-12 or issue a building permit for construction on this portion of the property, the applicant must construct a public water main in Franklin Avenue easterly to the existing main in Airport Road. This main will complete the connection of the public water system from South Shore Drive to Airport Road.
- Condition 17 Before the City will sign the final plat, the applicant must construct public storm drainage improvements in Franklin Avenue in conjunction with the required public street improvements.
- Condition 18 Before the City will sign the final plat for any phase of the proposed development, the applicant must construct stormwater collection facilities for that portion of the development. Any phase of the development must include storm drainage facilities capable of serving that phase as a stand-alone development. These storm drainage facilities must include on-site detention and stormwater quality facilities. The facilities must be designed and constructed to accommodate any future runoff that may discharge into those facilities.

NOTE: Alternatively, the applicant may provide financial assurances for the required public infrastructure in order to obtain City approval for the final plat(s) or building permits.

Airport Overlay

- Condition 19 The final plat for each phase shall include a declaration of anticipated airport noise levels between 55 to 60 Day-Night Sound Level (ldn).

Parking & Access

- Condition 20 The applicant shall install "no parking" signs on the south side of Franklin Avenue with the construction of street improvements. The signs shall be placed at a spacing of no more than 200 feet.
- Condition 21 Prior to recordation of the plat map for Phase 1, all existing site driveways to Airport Road shall be removed. The applicant shall secure all necessary permits and approvals from ODOT prior to performing any work within ODOT right of way.
- Condition 22 Prior to issuance of a building permit, the applicant shall submit a site plan to the Community Development Department for review and approval to ensure consistency with the standards of Table 9-2: Parking Lot Design and Supplemental Drawings.
- Condition 23 Prior to issuance of a building permit, the applicant shall provide detailed plans to show how the bicycle parking meets the standards of ADC 9.120(13)(e-h).
- Condition 24 Site lighting must be directed down, contained on site, and shielded, full cut-off design.

Compatibility

- Condition 25 Prior to issuance of a building permit, a final landscape and irrigation plan shall be submitted for review and approval by the Community Development Department. The plan shall be in substantial conformance with the preliminary plans, as shown on Landscape Plan Sheets L1.0 & L2.0. The plans shall also meet the minimum standards for landscaping under ADC 9.140, landscape parking lot standards of ADC 9.150, buffering standards of ADC 9.240 and irrigation standards of ADC 9.160.
- Condition 26 Prior to issuance of a certificate of occupancy for the multi-family development on Lot 12, all proposed and required site improvements for each phase (e.g. vehicle and bicycle parking, landscaping, community amenities, refuse screening, lighting, etc.), shall be constructed and completed in accordance with approved plans. Landscaping may be financially secured through a completion guarantee, per ADC 9.190.

Design Standards

- Condition 27 Prior to issuance of a building permit, the applicant shall submit a site plan and building plans to the Community Development Department for review and approval that shows the standards for private open space per ADC 8.230 are met. Outdoor storage closets on decks and balconies may not be included in the dimension and area requirements of the private open space decks and patios.

Tree Felling

- Condition 28 Prior to issuance of an Erosion Prevention Sediment Control (EPSC) permit for each phase of development, tree protection measures shall be implemented in accordance with the Arborist Report. At a minimum, tree protection measures shall include installation of a tree protection fence located a minimum of 15 feet from the center of the tree.
- Condition 29 In the event additional trees need to be removed to accommodate the proposed development, a new tree felling application shall be submitted to the Community Development Department for review and processing, in accordance with ADC 9.208(2).

Options for the Planning Commission

The Planning Commission has three options with respect to the proposed development:

- Option 1: Approve the request as proposed and conditioned; or
Option 2: Approve the request with amendments; or
Option 3: Deny the request.

Staff Recommendation

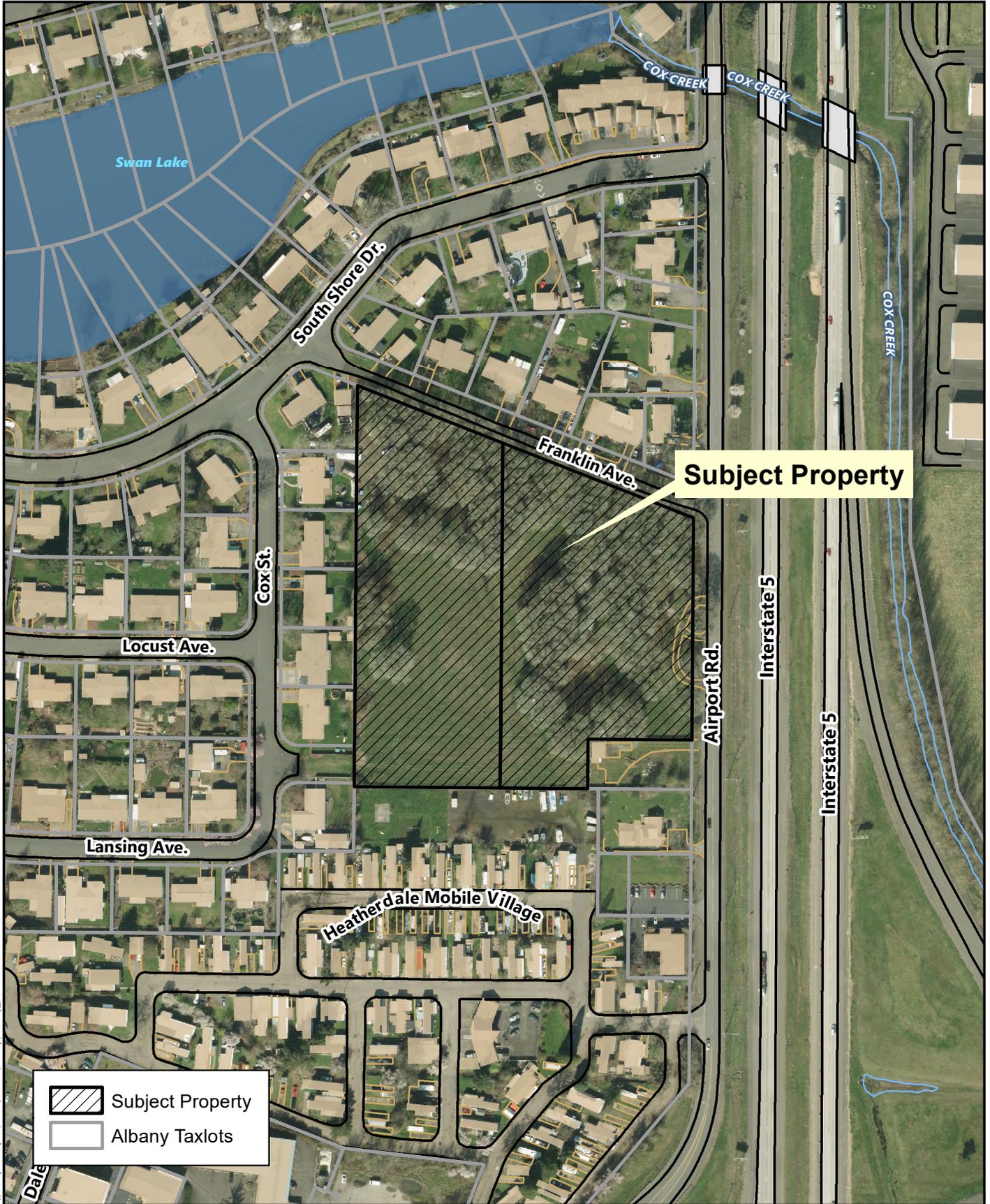
Based on the analysis provided in this report, staff recommends the Planning Commission pursue Option 1 and approve the proposed phased planned development.

If the Planning Commission follows this recommendation, the following motion is suggested:

I move to approve the proposed expansion the application for Planned Development Review, Tentative Plat Review and Tree Felling under planning files PD-01-20, SD-02-20, and SP-08-20. This motion is based on the findings and conclusions in the staff report, and the findings in support of the application made by the Planning Commission during deliberations on this matter.

Attachments

- A. Location Map
- B. Zoning Map
- C. Comment from Mr. Mark Leonard (dated July 15, 2020)
- Applicant's Submittal:*
- D. Trip Generation Evaluation by Sandow Engineering (dated June 20, 2019)
- E. Applicant's Finding of Fact
- F. Trash Enclosure Fencing
- G. Solar Access Protection Information
- H. Lighting Plans
- I. Tree Felling Application
- J. Arborist Report by Jeremy Saucedo, Monarch Tree Service (dated March 6, 2020)
- K. Department of State Lands Wetland Concurrence and Wetland Delineation
- L. Stormwater Report by Andrey Chernishov, PE, of HBH Consulting Engineers (dated March 15, 2020)
- M. Single Family Home Designs
- N. Multi-Family Residential Design Renderings
- O. Multi-Family Residential Building Plans and Elevations
- P. Landscape Plans (Sheets L1.0 & L2.0)
- Q. Civil Plan Set:
 - Q.1 Cover (Sheet G1)
 - Q.2 Existing Conditions (Sheet G2)
 - Q.3 Demolition Plan (Sheet C1)
 - Q.4 Preliminary Plat (Sheet C2)
 - Q.5 Site Plan (Sheet C3)
 - Q.6 Franklin Road & Storm Plan (Sheet C4)
 - Q.7 Franklin Water & Sanitary Sewer Plan (Sheet C5)
 - Q.8 On-Site Road & Storm Plan (Sheet C6)
 - Q.9 On-Site Water & Sanitary Sewer Plan (Sheet C6)
 - Q.10 Site Grading Plan (Sheet C7)
 - Q.11 Grading Cross Sections (Sheet C8)
 - Q.12 Phasing and Common Area Plan (Sheet C9)
 - Q.13 Housing Bonuses (Sheet C10)
 - Q.14 Housing Bonus Plan (Sheet C11)
 - Q.15 Fire Plan (Sheet F1)
- R. Comment from Fire Marshal Lora Ratcliff (dated June 17, 2020)
- S. Response to Wetland Notice from the Oregon Department of State Lands (dated April 16, 2020)



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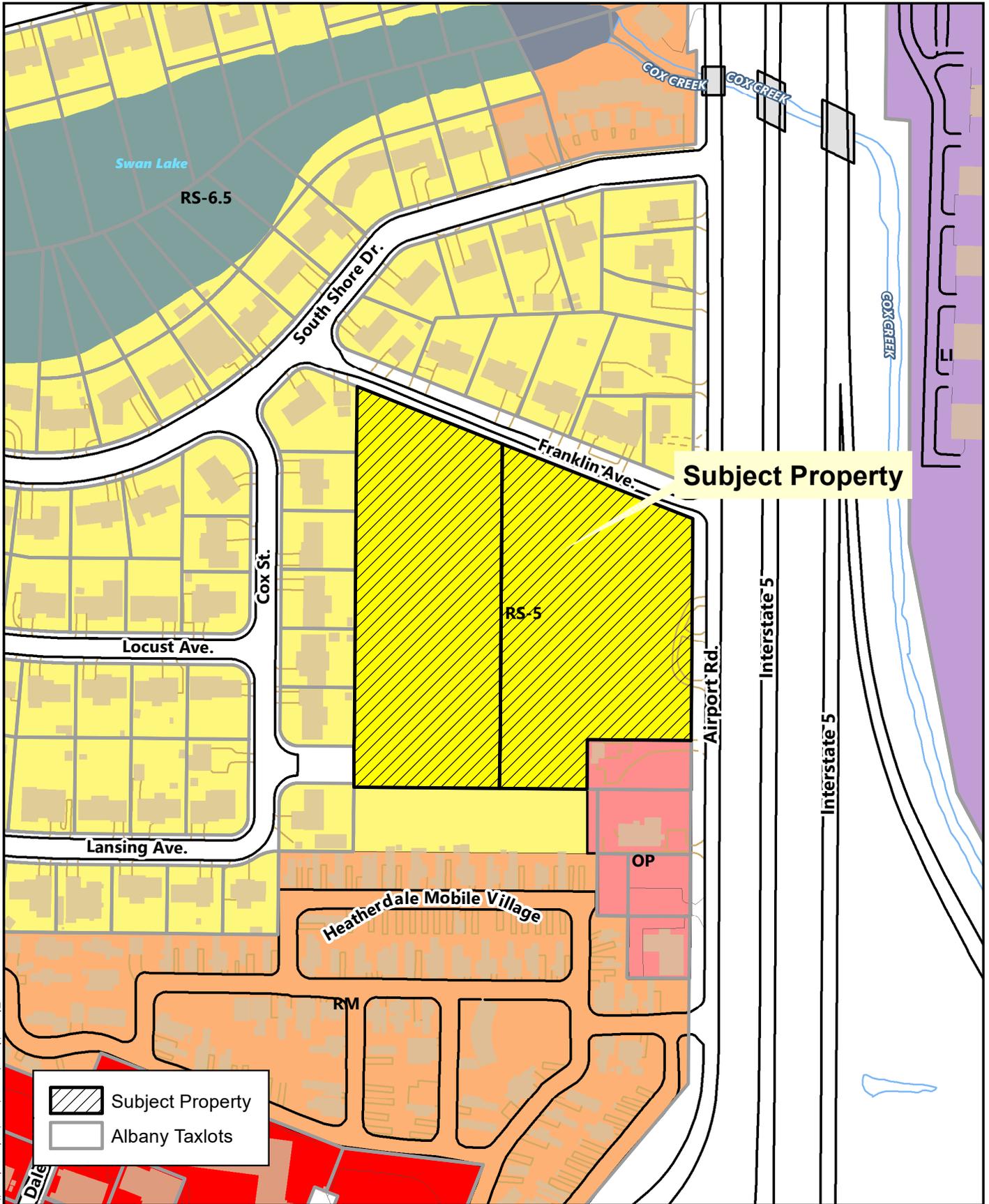


N 02550 Feet

Location Map: 840 Airport Road SE

Date: 3/27/2020 Map Source: City of Albany

City of Albany, OR



	Subject Property
	Albany Taxlots

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N 02250 Feet

Location Map: 840 Airport Road SE

Date: 3/27/2020 Map Source: City of Albany

City of Albany, OR

Anderson, Melissa

From: mark leonard <fred_fl1nst0ne@outlook.com>
Sent: Wednesday, July 15, 2020 2:37 PM
To: Anderson, Melissa
Subject: Linn County Assessor's Map 228-03W-09BB Tax Lots 2700 & 2701 Location Map 840 Airport Road SE

[External Email Notice: Avoid unknown attachments or links, especially from unexpected mail.]

Melissa

I left a voice mail for you to call; but you might want to come out and look at the intersection going from Franklin onto South Shore to better understand the problem. Your map doesn't accurately portray the issue; but, the property on that borders Cox Street, South Shore Drive, and Franklin Avenue sticks out further than the property on the opposite side that borders both Franklin and South Shore. Also, my property is on the lake side of South Shore Drive, facing the Franklin Avenue intersection if someone were to hit the gas instead of the brake pedal, like this elderly woman did at Fred Meyers killing that one women who was at the hair salon in the east corner of the building, the driver could end up in my front room. Personally, I would feel better if Franklin were a dead end where the street intersects with South Shore Drive. Much like this did when Costco was built and they made Bain Street a dead end where it came out on Pacific.

In the Approval Standards for this application, item 4, it says that two entry exits on Franklin were the best economic, safe, and efficient circulation of traffic under the circumstances. Is there some documentation you can send me that mentions other options considered and the reasons why they were ruled out?

Thanks

DISCLAIMER: This email may be considered a public record of the City of Albany and subject to the State of Oregon Retention Schedule. This email also may be subject to public disclosure under the Oregon Public Records Law. This email, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you have received this communication in error, please notify the sender immediately and destroy all copies of the original message.

June 20th, 2019

Mike Shults
PO BOX 41
St Paul Oregon 97137



RE: Franklin Reserve Trip Generation Evaluation

RENEWAL 06/30/20

Sandow Engineering has prepared a Traffic evaluation for the proposed zone change of Tax Lots 2700 and 2701 adjacent to Airport Road in Albany, Oregon. The site is currently zoned RS 6.5, and the applicant is requesting a zone change RS 5.0 to support the proposed development. As the applicant is proposing a zone change, transportation planning rule (TPR) compliance needs to be demonstrated. The following provides a TPR evaluation and a trip generation estimation.

TRANSPORTATION PLANNING RULE EVALUATION

To be consistent with TPR findings, the traffic generated by the proposed zoning needs to be found to not have a significant effect on the adjacent transportation system. This is achieved by determining if the proposed zoning will generate more trips or have a higher impact on the surrounding transportation system than the existing zoning. This is done by evaluating a reasonable "worst-case" development scenario for both the existing and proposed zoning

The existing zoning, RS 6.5, has a maximum density of 6 units per acre. The site is 6.5 acres resulting in a maximum density of 39 homes. Under the existing zoning the residential units are all assumed to be single family detached housing. The proposed zoning, RS 5.0, has a maximum density of 13 units per acre (attached homes) resulting in 85 units. All units under the proposed zoning are assumed to be attached family housing.

To determine the level of traffic generated by the site, the trip generation rates from the Institute of Transportation Engineers Trip Generation Manuals 10th edition were used. The trip generation rate for the existing zoning was completed using the ITE Land Use Code 210 Single-Family Detached Housing. The trip generation estimate for the proposed zoning was completed using the ITE Land Use Code 220-Multifamily Housing (low-rise). The 10th edition of the ITE Trip Generation Manual provides rates for single-family detached as a separate land use (Land Use 210), and all attached housing up to two stories has been lumped into a single land use 220-Multifamily Housing (low-rise).

Additionally, the trip generation rates for the PM peak hour were used as the vehicle trips for the PM peak hour are higher than the trips for the AM peak hour. Table 1 provides the trip generation estimate for the proposed and existing zoning "worst-case" development scenario.

From: Kelly Sandow PE Sandow Engineering
 RE: Franklin Reserve Trip Generation Evaluation
 Date: 6.20.19
 Page 2

TABLE 1: WORST CASE-TRIP GENERATION-PM PEAK HOUR

ITE Land Use	Size	Trip Generation	
		Rate	Trips
	Existing Zoning		
210 Single-Family Detached Housing	39 Units	0.99 x units	39
	Proposed Zoning		
220 Multi-Family Housing (low-rise)	85 Units	0.56 x units	48
	Change in Vehicles Trips		9

As illustrated, the proposed zoning has the potential to generate 9 additional PM peak hour trips. The City of Albany Traffic Impact Analysis requirements demonstrates that an increase in traffic of less than 50 to a development site is considered insignificant as it is not required to provide further evaluation. The proposed zoning will only increase the development level traffic by 9 PM peak hour trips. Therefore the increase in traffic resulting from the proposed zoning is considered insignificant.

TPR FINDINGS

Consistent with the Transportations Rule the following elaborates on how this development meets the TPR requirements.

Goal 12, (OAR) 660-12-0060 (1) requires that a local government ensures that an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) does not significantly affect a transportation facility if it would:

- “(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

The proposed zone change will not cause traffic levels or patterns that would change the functional classification of an existing or planned transportation facility.

- (b) Change standards implementing a functional classification system; or

The proposed zone change will not cause traffic levels or patterns that would change the standards implementing a functional classification system.

- (c) Result in any of the effects listed in paragraphs (A) through (C) of this subsection based on projected conditions measured at the end of the planning period identified in the adopted TSP. As part of evaluating projected conditions, the amount of traffic projected to be an enforceable,

From: Kelly Sandow PE Sandow Engineering
RE: Franklin Reserve Trip Generation Evaluation
Date: 6.20.19
Page 3

ongoing requirement that would demonstrably limit traffic generation, including, but not limited to, transportation demand management. This education may diminish or completely eliminate the significant effect of the amendment.

(A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility.

The proposed zone change will not cause traffic levels or patterns that are inconsistent with the functional classification of an existing or planned transportation facility.

(B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or

The proposed zone change will not cause traffic levels or patterns that would degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards.

(C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan." OAR 660-12-0060(1)

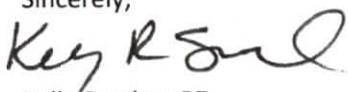
The proposed zone change will not cause traffic levels or patterns that would further degrade the performance of an existing or planned transportation facility that does not meet the performance standards.

CONCLUSION

As illustrated, the proposed zoning has the potential to generate 9 additional PM peak hour trips. The City of Albany Traffic Impact Analysis requirements demonstrates that an increase in traffic of less than 50 to a development site is considered insignificant as it is not required to provide further evaluation. The proposed zoning will only increase the development level traffic by 9 PM peak hour trips. Therefore the increase in traffic resulting from the proposed zoning is considered insignificant.

Please feel free to contact me if you have any questions or if you need any additional information.

Sincerely,


Kelly Sandow PE

Franklin Reserve

Planned Development Submittal
Submitted to City of Albany, Oregon

Applicant:

Well Built Homes
PO Box 41
Saint Paul, OR 97137

Owners:

Victor M. Shults
Susan Y. Willis

**EXHIBIT 1
CONTACTS**

Applicant:

Well Built Homes
e-mail – WellBuiltHomes@yahoo.com
phone – 503-572-8068

Owners:

Victor M. Shults (Mike) and Susan Y. Willis
e-mail – WillisShults@yahoo.com
phone – 503-572-8068 – Mike
phone – 971-400-1225 – Susan

Engineering:

HBH Consulting Engineers
Andrey Chernishov – ACHernishov@HBH-Consulting.com
Phone – 503-537-9554

Design:

Candid Design
Kymber Kincanon
e-mail – Kymber@CandidHomeDesign.com
phone – 503-432-1358

Landscape:

Otten and Associates Landscape Design
Erin Holsonback
e-mail – Erin@OttenLA.com
phone – 503-972-0311

Traffic Analysis:

Sandow Engineering
Kelly Sandow
e-mail - KellySandow@SandowEngineering.com
phone – 541-513-3376

Arborist:

Monarch Landscape
Jerreme Saucedo
e-mail – BeauSancedo@MonarchLandscape.com
phone – 503-593-7087

Wetland Delineation:

Turnstone Environmental Consultants
Jeff Reams
e-mail – Jeff@TurnstoneEnvironmental.com
phone – 503-510-3630

Concurrence Approval Wetland Delineation:

Department of State Lands
Lauren Brown
e-mail
phone – 503-986-5200

ATTACHMENT E.3**EXHIBIT 3****PROPOSED SUMMARY AND TAX LOT INFORMATION**

TAX ID	OWNER	ZONED	LOCATION
2700	Victor M Shults and Susan Y Willis	R-5	840 Airport Road Albany, OR
2701	Victor M Shults and Susan Y Willis	R-5	840 Airport Road Albany, OR

**EXHIBIT 4
PROPERTY DESCRIPTION AND INFORMATION OF SITE USE**

Proposal for a Planned Development
at
840 Airport Road, Albany, Oregon

11 one or two story single family detached homes
and

A total of 44 apartments (for seniors age 55+)
8 two bedroom units
36 one bedroom units

1 recreation building for apartment residents

50 open parking spaces for residents

31 garages along the east side of apartments for noise and visual barrier from Interstate 5 freeway

Approximately 1.75 acres of 6.5 acres, or 27%, to remain as a neighborhood green space, open to residents and neighbors for recreation and enjoyment. A large grove of white oak trees on the east side of development (almost 1 acre) will be preserved in their natural setting and will add to the neighborhood parklike setting of trees and open meadow along with approximately ½ acre of common areas for walking paths and recreation for a total of 3+ acres of undeveloped open space for all to enjoy and will be left in an open and undeveloped state.

We have an opportunity to create and achieve a landmark development. Our plan to utilize this overlooked and heavily burdened, difficult piece of property, is to build 11 new single family affordable homes and a 44 unit senior housing project. Homes that reflect the pride and respect that they deserve by creating a neighborhood in a park-like setting. A place where kids can play and seniors can walk safely and enjoy their time with the neighbors. A place they want and choose to live. A real home that makes you feel good and one that has open spaces and is still close to all shopping, restaurants, and amenities. Easy access to roads and freeways. A place to come home, sit on your patio, enjoy the views, the open field, the natural trees, gather with friends by the fireplace in the recreation center, use the kitchen for informal gatherings, or just reconnect with your new friends. Let's preserve some beautiful trees in their natural setting. Let's use this plan development to accomplish the best overall use of this overlooked piece of land. This planned development will be an asset to the community, neighbors and City of Albany. An opportunity to show the forward thinking of city officials, while keeping an almost forgotten priority of privacy and space. All this can be done while preserving our natural wet lands and native oak trees with no negative impact on surrounding homes or neighbors and not overburdening our local schools.

SDC info:

44 one bathroom units

Maximum 2 occupants per unit, 55 years old or older

11 single family homes

Three bedroom, two bathroom homes

APARTMENTS

A Unit	799	8	2 bedroom - 1 bathroom
B Unit	664	28	1 bedroom - 1 bathroom
C Unit	715	8	1 bedroom - 1 bathroom

44

44 units

Building I	5,582 sq ft.	8 units	2 - 2 bedroom units and 6 - 1 bedroom units
Building II	5,582 sq ft.	8 units	2 - 2 bedroom units and 6 - 1 bedroom units
Building III	11,098 sq. ft.	16 units	2 - 2 bedroom units and 14 - 1 bedroom units
Building IV	8,442 sq. ft.	12 units	2 - 2 bedroom units and 10 - 1 bedroom units
Rec. Bldg.	1,225 sq. ft.	Rec. Bldg	

Entire Apartment Project - 31,929 sq. ft.

GARAGES

10 x 20 Garages	6,200 sq. ft.	31	200 sq. ft. each
-----------------	---------------	----	------------------

This is a senior only (55+) apartment building. We will supply the following:

- Walking paths
- Picnic area
- BBQ and tables
- Horseshoe area
- Gazebo with tables

Also....a dedicated recreation building will have a kitchen with eating area, fireplace with seating and tables for games and gathering, restrooms, workout room with equipment, an office with staff available for help and support, and a large outdoor deck with BBQ area and tables.

There is an elementary school west of property, less than ¼ mile, with easy walking or bike access with play area and equipment.

Homeowners Association Access and Access Easement

All homeowners within planned development will have access to all exterior common areas as shown on map of common area.

The Recreation Building and the attached decks and patio will be for residents of the apartment units only.

The civil drawings will show an easement to allow access for

There will be a homeowners association with covenants and restrictions clearly stating in the title and sales documents relating to the single home lots 1-11

The maintenance and upkeep of all common areas will be the responsibility of the owner of the apartment units.

Road maintenance will also be the responsibility of owner of apartment units.



501 E First Street
Newberg, Oregon 97132
503/554-9553 · Fax 503/537-9554

Date: **5/9/2020**

Project Number: **2020-001**

To: **To Whom It May Concern, PE**

From: **Andrey Chernishov, PE**

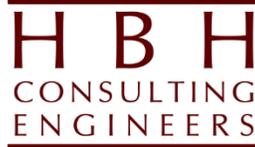
RE: **Written Statement**

The applicant is proposing the development of an RS-5 zoned area that includes a wetland and a white oak grove, both significant natural resources. The applicant plans to use the lessened restrictions of a planned development to preserve these areas as much as possible, resulting in an improved development for the City, surrounding area, and the residents of the new neighborhood. The property is currently zoned as RS-5. The site was zoned as residential before trees, open space, wetlands, and noise reduction were considered a priority; the applicant is providing mitigation for each of these site constraints while developing the property such that these important spaces can be utilized by the community.

The applicant is proposing 55 units, 44 multi-residential senior housing units and 11 single-family lots. This layout results in 52.5% of open space and common area provided. The buildings are laid out in a manner adequate for light, ventilation, visual and acoustic privacy for both the residences therein and the surrounding buildings. These are interconnected via aesthetic multimodal paths and with noise reducing landscaping. The lighting plan will meet city requirements (provided by others). The private property will be maintained by an HOA group of the western lots and the property owner of the senior living units.

The surrounding area has single-family residences to the north and west. Single-family residences are planned in the development on the north and west sides to keep the visual impact on the surrounding area to a minimum while maintaining the look and feel of the neighboring communities. The two-story multi-residential units of the development are located at the center of the development to keep them away from neighbors and to minimize visual impacts. There are a total of 50 private parking spaces provided, eight of which are ADA and nine are compact, as well as 31 private garages for the multi-story residences. Twelve bike parking spaces are provided for the multi-story residences: half uncovered & half covered. One bike parking space is required for every four multi-family units. Since 44 units are proposed, 11 bike spaces are required.

The existing public infrastructure has capacity to support the development. There are existing water mains on SE Shore Drive and Airport Road which will be connected via a new 8" main to support the development. There is an existing sanitary sewer system on SE Franklin Ave which can support an extension and connection to the development. Currently there is only a single existing storm catch basin at the west end of Franklin Ave and a series of unconnected ditches running down the length of the street. The applicant is proposing public storm water quality improvements for Franklin Avenue and private storm water quality/quantity treatment facilities onsite. These improvements will reduce post-developed peak runoff rates to below pre-developed conditions.



501 E First Street
Newberg, Oregon 97132
503/554-9553 · Fax 503/537-9554

Date: **3/22/2020**

Project Number: **2020-001**

To: **To Whom It May Concern, PE**

From: **Andrey Chernishov, PE**

RE: **Type III Planned Development Written Responses**

Planned Development-Preliminary Submittal Review Criteria (ADC 11.310)

Criterion (1) *The increased flexibility in Code standards and permitted uses will result in an improved development for the City, the surrounding area, and the users of the development as compared to strict compliance with Code provision.*

Fact: There are approximately 1.76 acres of open grassy meadow wetland on the site. The project would result in zero disturbance to these lands. The project also contains a grove of white oak trees on the east side of the property, of which .94 acres will be preserved. A total of 2.73 acres of natural open space will be preserved along with approximately ½ acre of common area, for a total of 3+ acres of open, useable recreation area.

Fact: Under RS-5 the maximum dwelling units per acre is 8. This planned development will have density of 8.51 dwelling units per acre by utilizing City of Albany builder density bonus incentives for passive solar and proximity to arterial roads.

Fact: The minimum right of way for a local public city street is 52'. This PUD will have several interconnected private roads that will be 24' to 26' wide. This allows for more landscaped area, pedestrian pathways and vegetation.

Conclusion: Compared to a single-family residential subdivision developed in strict compliance with underlying zoning for the site, the proposed planned development will result in a community that is an improved development for the City, surrounding area, and the residents of the new neighborhood filling the need for senior housing and affordable homes. Reduced road width and a smaller footprint for buildings allowed for a planned development will create more open spaces allowing for preservation of oak trees and a wetland meadow creating a peaceful and beautiful development.

Criterion (2) *The project design results in a more efficient provision of open space or utilization of the natural features of the site.*

Fact: There are approximately 1.76 acres of existing wetlands on the site. The project would result in zero disturbance to these wetlands. The project also contains a grove of white oak trees on the east side of the property, of which 0.97 acres will be preserved along with approximately ½ acre of common area for a total of 3+ acres of natural open space that will be preserved.

Fact: Smaller private roads along with building density allowed with a PUD will result in less land impacted by development.

Fact: This planned development combined with senior housing will fill a much needed demand for housing and allow neighbors and the community to enjoy the resulting open park like setting.

Conclusion: This is a beautiful 6.5 acre piece of undeveloped ground that was zoned in a time when trees and open space were not a priority as they are now, a time before noise regulations and before wetland were recognized as important and vital to the overall health and well-being of the land. This is a step forward to allow this type of utilization for the enjoyment and use of all in our community.

Criterion (3) *The project design results in a more efficient utilization of materials and public resources including streets, utilities, and energy supplies.*

Fact: Upgrade of water system 8" line South Shore to Airport Road.

Fact: Upgrade to Franklin with a much needed storm water control and containment.

Fact: Sidewalks and a paved 24' wide street. This improves multimobile access.

Fact: The applicant is proposing a public storm water quality treatment planter facilities along Franklin Avenue, previously non-existent.

Fact: The PUD allows for private roads. No city maintenance or expense to the tax payers or local residents and the smaller private roads allow for less impervious surfaces and create less impact on storm water facilities.

Fact: Senior housing has zero impact on local schools.

Fact: Senior housing has less traffic impact.

Conclusion: The existing and proposed public storm, sanitary, and water infrastructure can support the proposed improvements and will result in efficient new upgraded system.

Criterion (4) *Provisions will be established to ensure the continued maintenance of any common area.*

Fact: Common area, wetland meadow and oak grove will be maintained by owner of senior housing units, a permanent and transferable agreement.

Fact: A HOA will be created to maintain the west side road and will include 7 lots/homes on the west side.

Conclusion: This criterion will be met by the property owner of senior living units and a HOA that involves 7 homes at west side.

Criterion (5) *More usable and suitable recreational facilities and other common areas are provided than would normally be provided under conventional development standards.*

Fact: A condensed footprint of roads and buildings allow for less use of land and results in more open and common areas.

Fact: The approximately 1 acre oak grove on the east side will have walking paths, a gazebo, horseshoe pit, and picnic table.

Fact: The meadow will remain open and allow for pathways and outside recreation as well as open space.

Fact: An indoor recreation building will have a kitchen with eating area, fireplace with seating and tables for games and gathering, restrooms, workout room with equipment, an office, and a large outdoor deck with BBQ area and tables.

Conclusion: Because space saved through utilization of planned development, we will be able to have a great deal of recreation space and amenities.

Criterion (6) *The planned development satisfies the development standards in Section 11.330*

Fact: The applicant demonstrates satisfaction of the development standards in Section 11.330. See the Planned Development Standards section of this document below.

Conclusion: The applicant demonstrates satisfaction of the development standards in Section 11.330. See the Planned Development Standards section of this document below.

Planned Development Standards (ADC 11.330)

Criterion (1) Open Space and Common Areas in Residential, Mixed-use, and other Non-Industrial Planned Developments. Open space or common areas shall be provided for common enjoyment. In all residential developments and mixed-use developments, 25 percent of the gross land area shall be devoted to open space, outdoor living area or common areas as follows.

- a. *Land that may be counted towards the open space requirement includes:
 - i. *Natural resources accessible to the public;*
 - ii. *Common recreational space or commonly enjoyed amenities accessible to residents, including indoor or rooftop amenities – the total square footage of indoor amenities will be subtracted from the total land area; and*
 - iii. *Common landscaped areas and paths but excluding sidewalks and planter strips in the right-of-way.**
- b. *Locations, shapes, sizes and other characteristics of open spaces shall be consistent with their proposed uses and the purposes of the planned development.*
- c. *Land in the right-of-way may not count towards the open space requirement unless designed with larger planter strips to allow for mature trees, a multi-use path, or a landscaped median.*
- d. *Side and rear yards may not count towards the minimum open space requirements.*
- e. *Outdoor open space or living areas required by this Article may be dedicated to the City provided the size and amount of the proposed dedication meets the criteria of the City for neighborhood parks by one-half and if the City agrees to accept the dedication. The square footage of land dedicated for public parks shall be deemed a part of the development site for the purpose of computing density.*
- f. *Approved vegetated post-construction stormwater quality facilities are allowed in open space, outdoor living area and common areas.*

Fact: Combining the preserved wetlands (1.76 acres), preserved oak grove common area (0.97 acres), the common recreational building, common open landscaped areas and stormwater facilities (0.65 acres) totals to 3.38 acres or 52.5% of gross land area.

Conclusion: 52.5% open space and common area is provided, which exceeds the 25% required.

Criterion (2) Natural Resources. The planned development shall provide for the protection of significant landscape features including Oak groves, heritage trees as defined by the Albany Municipal Code and land located within Albany's natural resource overlay districts and any historic sites and landmarks. Natural and cultural resources shall integrate the proposed development with the environmental characteristics of the site and adjacent uses.

Fact: With help from the city forester and a certified arborist (see report) we will be preserving approximately 1/3 of all the oak trees on site.

Fact: We will be preserving a large grove .97 acres of land and oak trees which will aid in the tree health and natural setting for residents of community to enjoy

Fact: There are no historic sites, landmarks, or cultural resources on the development site.

Fact: We are not in a natural resource overlay district.

Conclusion: With our retention of wetland meadow and oak grove and no impact to natural resource overlay or cultural resources, we meet these requirements.

Criterion (3) Underground Utilities. In any planned development, all electric and telephone facilities, fire alarm conduits, street light wiring, and other wiring, conduits and similar facilities shall be placed underground by the developer, unless allowed above ground by the review body.

Fact: All utilities will be underground.

Conclusion: We do not plan to vary from this plan.

Criterion (4) Density. When calculating density of a proposed planned development, the gross area including streets and park land dedications shall be included, except for land in the Significant Wetland and Waterway overlay district. The maximum density permitted per acre for RS-5 zone is 8.

Fact: We do not have land that is in a waterway overlay district or any land considered significant wetland.

Fact: 6.46 acres x 8 units/acre = 51.68 units total.

Fact: Solar Bonus: 18 apartments and 4 homes meet the solar bonus requirements. 22 units x 10% bonus = 2.2 bonus units.

Fact: Transportation Bonus: A portion of Buildings 3 & 4 are within 200 ft of Airport Road. The area of Buildings 3 & 4, as well as the area between the buildings and the Airport Rd ROW is 1.43 acres. 1.43 acres x 8 units/acre = 11.44 units. 10% x 11.44 units = 1.14 units.

Fact: There is a total of 11 lots and 44 apartment units spread across the site for a total of 55 units total. This results in a density of 8.51 dwelling units per acre.

Fact: Total units allowed is 51.68 units + 2.2 solar bonus units + 1.14 transportation bonus units = 55.02 units.

Conclusion: While using city bonus incentives of passive solar and transportations proximity the implementation of a planned development allows the site to achieve a slightly higher density while creating more recreational resources for the community.

Criterion (5) Building Spacing & Yard Requirements. The plan shall provide adequate building separation to allow for light, ventilation, and visual and acoustic privacy for residences and other structures. Fences, insulation, walks, barriers, and landscaping shall be used, as appropriate, for the protection and aesthetic enhancement of property and the privacy of its occupants, screening of objectionable views, and reduction of noise.

Fact: Buildings will be separated by at least 20' and in some case 30'.

Fact: Fencing will be used on west side homes for visual and acoustic privacy. Garages to the east (towards I5) will provide much needed sound mediation as well as much needed visual barrier to I5.

Fact: We will also fence along Airport Road as and added noise and visual barrier, along with tree planting to add in recreational usage.

Conclusion: The buildings in the development are laid out in a manner adequate for light, ventilation, visual and acoustic privacy for both the residences therein and the surrounding buildings. These areas are connected with appropriate aesthetic multimodal paths and landscaping that provides significant enhancement to the occupants while providing privacy and a reduction of noise.

Criterion (6) Building Locations. Taller buildings shall be located within the planned development in such a way as to avoid adverse impact on neighboring lower buildings and shall not invade the privacy of the occupants of adjacent lower buildings.

Fact: The tallest buildings is two story and those building are from 150/300' from existing neighbor homes.

Fact: Building orientation are of such to prevent invasion of privacy of existing homes as well as new homes being built.

Fact: Homes that back to west side of existing homes will not have any second story windows facing west or into back yards.

Fact: New home to west side of property will also at as a visual mitigation and will have 6' back yard fencing to add to privacy.

Conclusion: The design and development is so to purposefully not have an adverse impact on the neighbors. The taller buildings are only two stories tall and located in the center of the property and buildings are orientated to provide privacy.

Criterion (7) Perimeter Capability. The plan shall minimize adverse impacts of proposed uses and structures in the planned development on existing and anticipated uses and structures on adjacent properties and neighborhoods. The buffering and screening standards in Sections 9.210-9.270 apply. If topographical or other physical barriers do not provide reasonable privacy and mitigation of potential adverse impacts on existing uses adjacent to the development, the development shall provide additional setbacks, buffering or screening between residential and non-residential uses.

Fact: This planned development was designed to have zero impact on neighbors with homes backing up to existing west side homes.

Fact: Homes facing existing homes on Franklin.

Fact: No second story window on west side homes facing to west/neighbors back yards.

Fact: 6' fences alone meet required standard for buffering and will be along west side and Airport Rd.

Fact: The private homes will effectively create a visual barrier and preserve the neighborhood quality and feeling.

Fact: The planned development meets the buffering and screening standards of Section 9.210-9.270 by installing a 6' fence around the perimeter of the 6.46 acre property. In addition, landscaping on the south and east side of the property will have vegetation to act a screening. An approximate 300' buffer exists between building 3 & 4 and west property line.

Conclusion: The site focuses taller buildings in the middle of the development, far away from property lines and neighbors. The outer edges of the development are planned to have residential single-family units, similar to the zones those areas border. This configuration is intended to keep impact on the surrounding area at a minimum while maintaining the feel and look of the neighboring communities.

Site Plan Review Criteria (ADC 2.450)

Criterion (1) Public utilities can accommodate the proposed development.

Fact: City maps show an 8-inch public sanitary sewer main along the west boundary of Tax Lot 2701, and an 8-inch sanitary sewer main along the westernmost 75 feet of the Franklin Avenue frontage of Tax Lot 2701. Tax lot 2700 currently does not have direct access to a public sanitary sewer main.

Fact: Future development of the site under the proposed plan would not be expected to overload the existing public sanitary sewer system downstream of the subject properties.

Fact: City utility maps show a 12-inch public water main in Airport Road, and a 2-inch water line in Franklin Avenue. The 2-inch line is not available for any additional connections due to its age

and size. Tax lot 2701 does not currently have direct access to an adequate public water main. The proposed plan adds a new 8" water main extended from SE Shore Drive to SE Airport Rd. Construction of such a line would provide adequate flows for domestic and firefighting purposes for the development and the other residences located on Franklin Avenue.

Fact: City utility maps show no piped public storm drainage facilities adjacent to the subject properties. Airport road is an ODOT right-of-way with shallow ditches along the roadway and Franklin Avenue has shallow ditching along a small portion of the south side of the street and no ditching along the western portion of the south side of the street.

Fact: There is an existing sanitary sewer main along the westernmost 75 feet of Franklin Avenue frontage of Tax Lot 2701. This is proposed to be extended east, spanning the majority of Franklin Avenue.

Fact: The applicant is proposing storm water quality treatment facilities along Franklin Avenue, previously non-existent.

Fact: The applicant is proposing storm water quality/quantity facilities onsite which treat and detain runoff from the site to predeveloped conditions. The storm water will be conveyed via 12" pipes from these facilities to the existing public system.

Conclusion: The existing public storm, sanitary, and water infrastructure in addition to the proposed public utility improvements are capable of supporting the proposed development.

Criterion (2) The proposed post-construction stormwater quality facilities (private and/or public) can accommodate the proposed development, consistent with Title 12 of the Albany Municipal Code.

Fact: As seen in the submitted storm report, post-developed peak runoff from the site is less than the pre-developed condition. This is done to the effect that the onsite facilities compensate for the lack of detention and increase in impervious area resulting from the improvements in the public ROW.

Conclusion: The post-developed flow from the entire project will be less than the predeveloped flow from the entire project.

Criterion (3) The transportation system can safely and adequately accommodate the proposed development.

Fact: Albany's Transportation System Plan includes improvements necessary to accommodate anticipated development through the year 2030. The TSP does include sidewalk improvements along Airport Road and an Environmental Impact Study (EIS) for Santiam interchange options and area management. That interchange is part of the state highway system under ODOT jurisdiction.

Fact: The subject application includes a Trip Generation study and TPR Assessment. The analysis was performed by Sandow Engineering and is dated June 20, 2019. The analysis compared the number of PM peak hour vehicle trips that could be generated by development of the site under the previous zoning of RS-6.5 to the current zoning of RS-5.

The trip generation estimated developed conditions for the existing RS-6.5 zone designation used ITE code 210, "Single Family Homes" and was based on a development potential of 39 possible lots. The trip generation was 39 PM peak hour traffic trips.

The trip generation estimate for the proposed RS-5 zone designation used ITE code 220, "Multi-Family Housing (low-rise)" and was based on a development potential of 85 units. The trip generation estimate was for 48 PM peak hour trips.

Based on the study results, as a fully developed RS-5 zone designation with 88 units only an additional 9 trips would be generated for a site with 88 units compared to a site of 39 possible units under RS-6.5 designation. The proposed development would have 55 units, a combination of "Multi-Family Housing (low-rise)" and "Single Family Homes". This suggests that the actual number of trips generated by the development will be less than a fully developed RS-5 zone with 88 units.

Per the City of Albany Division 1.3: a Traffic Impact Analysis that demonstrates an increase in traffic of less than 50 to a development site is considered insignificant and does not require further evaluation. Since the development contains less units than "Multi-Family Housing (low-rise)" and "Single Family Homes" at the full build out condition, a worst-case scenario of which is 48 additional generated trips, further analyses is not warranted.

Conclusion: As a planned development, the proposed conditions are predicted to contribute a lesser effect than if the lots were developed solely as RS-5 multifamily residential. Regardless if the land was developed to that extreme condition, further traffic analyses would not be warranted based on the conclusions of the attached traffic study.

Criterion (4) Parking areas and entrance-exit points are designed to facilitate traffic and pedestrian safety and avoid congestion.

Fact: The development plans 11 single-family home lots. The 11 lots will have standard 20' driveways and garages. There will be significant parking available for the residences of each lot, as well as some additional street parking.

Fact: The development plans 44 units of low-rise two story multifamily housing. The development has a proposed 50 parking stalls, 8 of which are ADA and 9 of which are compact stalls. In addition to the 50 parking stalls, there are also 31 detached garages from the units to serve as additional parking and storage. This almost doubles the required parking for senior apartments.

Fact: There are two entrances to the development on Franklin Avenue that connect to interior private road improvements the applicant is proposing. These improvements include an ADA compliant sidewalk along the Franklin Avenue frontage. The private interior roads are also connected to the development via an ADA sidewalk that runs from Franklin Avenue through the development.

Fact: As stated previously, the traffic impact analyses found that in a worst case developed scenario this land could be developed to generate an additional 48 PM peak hour trips. The area is being developed to less than the worst-case scenario, meaning less peak hour trips will be generated than estimated in the analyses. The number of trips predicted do not warrant further traffic analyses under Albany city code.

Fact: ODOT is not allowing this property to access from Airport Rd. The City of Albany is agreement with this.

Conclusion: Parking and access points for the proposed development have been designed to facilitate traffic and pedestrian safety, while avoiding congestion. The driveways will be designed to City of Albany standards. All areas of the development are linked to the public right-of-way via an ADA travel path.

Criterion (5) The design and operating characteristics of the proposed development are reasonably compatible with surrounding development and land uses, and any negative impacts have been sufficiently minimized.

Fact: The adjacent properties to the west, south, and north are zoned as RS-6.5. The adjacent properties to the southwest are zoned as Office Professional. The area directly to the east is I-5. The other side of I-5 is zoned as Light Industrial and is part of the Airport. The proposed use is compatible with the surrounding area and land uses.

Conclusion: The proposed planned development is compatible with the surrounding development and land uses. The new community will be less dense than the surrounding neighborhoods because it takes advantage of the flexibility encouraged by planned development via a combination of multi-type housing in order to promote traditional neighborhood design and preserve greater amounts of space. It should be noted that the 55 proposed units is less than the 88 units that could be added under RS-5.

The applicant's proposal would preserve over 42% of the natural features of the site for open space. In addition, 10.5% of the total of 3+ acres, or 52% of the site will be improved common open areas that will be landscaped. The majority of open space is preserved for wetlands with other parts of the site dedicated for parks and multiuse paths that will provide recreational opportunities for residents in the surrounding neighborhoods. The applicant's traffic impact analysis recommends that no traffic mitigation measures are necessary, as traffic generated by the proposed development will not result in any significant adverse impacts. In summary, the proposed development is compatible with the surrounding development and land uses and all potential negative impacts have been minimized.

Criterion (6) Activities and developments within special purpose districts must comply with the regulations described in Articles 4 (Airport Approach), 6 (Natural Resources), and 7 (Historic), as applicable.

Fact: This development complies with the regulations in Article 4.400-4.440.

Fact: The applicant is leaving the existing wetland undisturbed.

Fact: The applicant is preserving approximately 1/3 of all the oak trees.

Fact: The development is not disturbing any historical sites.

Fact: The development is creating over 1/2 of all space to open area usable for recreation.

Conclusion: The development is within the Airport Approach district. The proposed development is well within height restrictions set forth in ADC and does not include anything that could interfere with communication or navigation between airport and the aircraft.

Criterion (7) The site is in compliance with prior land use approvals.

Fact: The site was originally zoned as RS-6.5 and was recently rezoned to RS-5. The site complies and is compliance with current and past land use approvals.

Conclusion: The site was previously zoned as residential and is currently zoned as residential. Implementation of the proposed plan complies with current and past land use approvals.

Criterion (8) Sites that have lost their nonconforming status must be brought into compliance, and may be brought into compliance incrementally in accordance with Section 2.370

Fact: The applicant is aware of this requirement.

Conclusion: The applicant will not purposefully or maliciously bring the site out of nonconforming status. If such an event is reached, the applicant will remedy the situation by all means available to bring the site to conformance, whether incrementally or instantaneously.

June 7, 2020

STANDARDS THAT MAY BE MODIFIED

1. **Development Standards:** Two of the 11 single family lots will be less than 5,000 sq. ft. in an R-5 zone. The flexibility of a planned development guidelines, rather than a ridged standard, will allow the rear yards to accommodate solar easement protection while allowing a comfortable setting and privacy. The planned development allows for multi-family units in an R-5 zone. This will be the largest contributing factor that makes it possible to create a development that has 50% or more of all land left as common area to be enjoyed by all. The preservation of natural features and oak trees with trails, outside seating and recreation areas, is only possible with a smaller footprint of multi-family residences allowable within a planned development. The building placement will contribute to the privacy and little or no visible impact on the neighboring homes. This flexibility is only attainable through the use of a planned development.
2. **Minimum Parking:** The city requirement for parking has been met. The use of covered garages will be used to mitigate the noise and visual impact of I-5 freeway. By creating a barrier between the multi-family living space and I-5 will allow for the preservation of a large grove of natural oak trees, approx. 1 acre of land and trees, due to the smaller footprint.
3. **Streets:** The use of smaller private streets in this planned development contribute greatly to less impact on a piece of already burdened property, but one that has great natural features that will be preserved and enjoyed. Creating open space and privacy for the new and existing residents, this planned development will allow for the best use of this property while enhancing and complimenting the neighborhood feeling. Adding permanent, dedicated open meadows and natural oak groves in a ratio of open space to developed area not commonly seen or practical unless utilizing the flexibility of a planned development.

SUMMARY:

Utilizing a planned development will allow for smaller private streets, and a few smaller single family home lots. The planned development will allow multi-family units, which will result less land being developed and less impact on natural resources.

By allowing the planned development flexibility through design and planning we can mitigate the negative effects of the I5 freeway while saving a large grove of native oak trees and keeping an environmentally important wet land meadow. With our placement of new homes at the perimeter of the property the location of the 2 story only, senior living space in the center, surrounded by trees and meadows we will create a great asset and contribution to the City of Albany. With housing needs at an all-time high this development will fill the need and supply a great and comfortable open place to live for young families and seniors in the community.

CRITERION 1: The proposal meets the development standards of the underlying zoning district, and applicable lot and block standards of this Section.

FACT: The proposed land division will be in accordance with the planned development guidelines and regulations and meet development standards of a planned development.

FACT: The requirements of a planned development allow for a different set of guidelines for lot and street block development.

FACT: The proposal meets the development standards of the underlying zone district by utilizing the flexibility of a planned development allowed in this RS-5 zone

CONCLUSION: The proposed planned development is acceptable with underlying zoning and will meet the planned development requirements for design and development standards.

CRITERION 2: Development of any remainder of property under the same ownership can be accomplished in accordance with the Code.

FACT: The proposed land division divides all of the land area within the subdivision boundaries into 12 lots. All of the proposed lots will be utilized per planned development requirements and the proposed use in order to be granted the approval for the planned development. The developer does not own any of the adjacent properties.

FACT: None of the proposed lots will be developed in any way other than what is approved by the planning department.

CONCLUSION: There is no remainder of land to consider with the application.

CRITERION 3: Adjoining land can be developed or is provided access that will allow its development in accordance with the Code.

FACT: All adjoining property have access to streets.

FACT: No adjoining lot or parcel of property will require or depend on this property for access.

CONCLUSION: No access through this parcel is required for development of adjoining property.

CRITERION 4: The proposed street plan affords the best economic, safe, and efficient circulation of traffic possible under the circumstances.

FACT: Developer will be improving Franklin Avenue to a 24' wide street with 5' sidewalk and storm water containment. Safe use for bicycles and pedestrians.

FACT: The State of Oregon O.D.T. does not want added access from planned development to Airport Road. The City of Albany agrees with this recommendation.

FACT: Franklin Ave. with improvements and strict adherences to development standards will allow the two access points to be safe and efficient.

CONCLUSION: With no access to Airport Road, Franklin Ave. is the only access to parcel. With two access points, one at each end of Franklin Ave, this will minimize impact.

CRITERION 5: The location and design allow for development to be conveniently served by various public utilities.

FACT: See civil drawing Exhibit 16 and supplemental utility map Exhibit 21.

FACT: The new planned development will add an 8" water line from existing South Shore Blvd., run East on Franklin Ave. to Airport Road where it will turn into an existing 12" line.

FACT: The new planned development will tie into 8" sewer line that currently runs east 80' on Franklin Ave. The lot with single family homes at west side of property will utilize existing 8" sewer line at west property line.

FACT: Storm water will be accessed on South Shore Blvd and come east on Franklin Ave to project.

FACT: All public utilities (water, sewer, storm water) are available to this planned development. Please see Exhibit 16 and Exhibit 21

CONCLUSION: All public utilities are either close to parcel or are more than capable of serving the proposed development. See Exhibit 16.

CRITERION 6: Activities and developments within special purpose districts must comply with the regulations described in Articles 4 (Airport Approach), 6 (Natural Resources), and 7 (Historic) as applicable.

FACT: Planned development is not within natural resource overlay.

FACT: There are no historic building or resources within the 6.45 acre property.

FACT: We will comply with airport approach height regulations. No building will be over 30' high.

CONCLUSION: Planned development is not in a natural resource overlay development and not in a historic area or has no historic structures. The height of buildings do not conflict with airport approach.

8.220

1. Common Space Requirements – We have 30,120 sq. ft. of living space in 44 units. Please see description sheet UNIT AND BUILDING TYPES AND SIZES for apartment types, square footage, and number of units. The required space of .25 sq. ft. per 1.00 sq. ft. of living space dictates that 7,520 sq. ft. is required. We have provided 142,276 sq. ft. of common space, or 3.26 acres. Please see PHASING AND COMMON AREA PLAN map.

a. Recreation Building (Community Center) 35' x 35' = 1,225 sq. ft. enclosed space with exercise room, gathering room with fire place and full kitchen with tables, sofas and chairs for relaxing and gathering . Outside decks 10' x 20' = 200 sq. ft. and 10' x 15' sq. ft. = 150 sq. ft. for a total of 350 outside decks at the Recreation Building with tables and chairs. BBQ area with picnic tables 35' x 40' = 1,400 sq. ft. of gathering space with Oak trees.

Inside recreation building - 1,225 sq. ft.

Decks - 350 sq. ft. at recreation building

BBQ and gathering area – 1,400 sq. ft. at recreation building

Total of 2,975 feet of common area at the recreation building

The protected natural features preserved oak grove will be to the east of garages and have walking paths, tables, gazebo, and horseshoe pit with lawn and a mix of shrubs and paths.

Covered picnic tables (gazebo) benches .94 of an acre = 40,946 sq. ft.

Natural area will be the wetland (meadow) area of 1.75 acres, or 76,230 sq. ft. This will be mowed and cared for so it is usable and accessible. We can use as walking and recreation but no removal or fill is allowed. It's a great open meadow/dog park gathering area.

To the south of building 4 is a large area approx. 70' x 90' 6,300 sq. ft. that will make a great outdoor area. It will have lawn, shrubs, trees, tables and pathways.

That is 142,276 sq. ft. of common space, or 3.26 acres.

There is additional area to the west of building 3 and 4 between the building and the wetland meadow (approx. .36 acres) that will be maintained and could be used as a golf putting area. The storm water areas are included as open space. There are a lot of trees and space dedicated to this project.

g. The 25% credit of common space requirements will not be needed. From my property to Cox, then down Locust Ave. (all city streets) there is an elementary school playground, 400 yards (less than ¼ mile to the school).

8.220

2. N/A We are less than 10 units. 8 two bedroom units only

8.225

Recreation building 1,225 sq. ft. with patio, decks and outside tables

8.230

1. At grade dwellings. All bottom units shall have 96 sq. f.t of patio.

2. Above grade dwellings shall have 80 sq. ft. decks.

3. Yes, deck to rear of building accessible by a door.

4. Not sure if the openness and view of the meadow would want to be eliminated. I guess some bushes could be a separation if necessary.

8.240

This is a planned development and development standards will not be used to dictate the development. (see Article 11.280-1).

1. N/A this is a planned development (see Article 11.280-1)
2. N/A this is a planned development (see Article 11.280-1)
3. N/A this is a planned development (see Article 11.280-1)

8.250

1. Building meet this requirement by using dormers on roof and entry way roofs, steps in building in front of patio and steps in building at rear.
2. Entry ways are clearly identifiable by entry way roofs that extend beyond building.
3. Stairways are recessed into building.
4. Buildings are small and have steps and roof design to break up building elevation.

8.255

This is a planned development and is not in the HD, DMU, CB and WF zoning districts.

8.260

1. These streets are private and the entryways face those private streets.
2. See building elevations covered entryway and roof designed to clearly define entry and accentuate design and provide sheltered entries.
3. Each unit has a private exterior entry door and a covered entry that is central and identifiable as a building entry.
4. No units are located within 25 feet of a local street.

8.265

The planned development is not located in one of these zoning districts.

8.270

1. These design standards are not applicable to this planned development, however the building set-backs meet this requirement.
2. The buildings are located to meet this requirement.

8.280

1. Our parking crossing and access to gazebo and handicap parking garage will be ADA.
2. At entrance (two on Franklin) will be striped with cross walk
3. Yes. We have access to local streets, between 200/300 feet.

8.290

1. Street connectivity is accomplished with two access points and design elements such as sidewalks and street trees are provided.
2. Private streets and in a planned development are designed to promote connectivity.
3. These are private streets in a planned development and are not through streets. They are for residents only.

4. These are access roads to units and not through streets.

8.300

1. Parking will not be visible from local streets.
2. The site has planting areas and trees and numerous small bays of parking.

UNIT AND BUILDING TYPES AND SIZES

BUILDING 1

2 - A units

6 - B units

BUILDING 2

2 - A units

6 - B units

BUILDING 3

2 - A units

10 - B units

4 - C units

BUILDING 4

2 - A units

6 - B units

4 - C units

A unit - 2 Bedroom = 790 sq. ft.

B unit - 1 Bedroom = 640 sq. ft. - 656 sq. ft.

C unit - 1 Bedroom = 707 sq. ft.

TOTAL UNITS - 44

8 - 2 Bedroom (A units)

36 - 1 Bedroom (B and C units)

Building 1 - 5,452

Building 2 - 5,452

Building 3 - 10,939

Building 4 - 8,280

TOTAL SQ. FT. PER BUILDING - 30,120 sq. ft.

11.330 Planned Development Standards

1. Open Space – see civil drawings from HBH page C-10. It shows approx. 50% common area.
 - A. Common recreational space and amenities accessible to residents.
 - B. The common area is consistent with the intended use.
 - C. No right of way area was or is part of the common area.
 - D. No side yard or rear yards were in common area.
 - E. City of Albany has indicated they are not interested in the land for a park.
 - F. The post-construction storm water facilities are included in common area calculations.
See page C-10 from civil drawings from HBH for more information.

2. Natural Resources – We have provided for the protection of a large grove of oak trees and mandate the upkeep and care of these trees to owner of senior housing units.

3. Underground Utilities – Yes, all utilities will be underground.

4. Density – Density has been calculated based on gross area.

5. Building spacing and yard requirements – Buildings are spaced to allow light, ventilations, and privacy for residents. Landscaping has been used along with additional parking structures to screen noise and adverse views.
See page 1 of color landscape drawing from Otten & Assoc., and page C-3 from civil drawings from HBH.

6. Building Locations – The two-story buildings are located in the center of the property where they will not invade privacy of existing homes.

7. Perimeter Compatibility – Existing homes on the west side of Cox Street that have rear yards that back up to planned development property will have single family homes that have their rear yards to west or abutting those homes and we will be providing a fence at the rear of these yards as well. The homes on the north side of Franklin Ave. will have an improved street, planter strip and 5' sidewalk then will have new single family homes that face north

Solar Access Protection ADC 3.220 (5)

See HBH civil drawings plan sheet C-2 and C11.

The Solar Access Protection easement to enforce solar access will be to the south of the 4 homes on Franklin Ave..

All 16 apartment units in building 1 and 2.

1 unit on the 1st floor and 1 unit on the 2nd floor located at the south end of building 4.

The Solar Access Protection easement will read that no fences, bushes or trees will be over 5' in height, closer than 20' of said buildings described above. This Solar Access Protection is enforceable for a minimum of 25 years from date of completion and occupancy.

This Solar Access Protection easement will be attached to Deed of Sale and be shown in title report for the sale of 4 homes on Franklin Ave.

The apartments will be protected in the same manner in case of change of ownership.

Restrictions will be in the tile report and on an easement of conveyance.

c. Airport Overlay ADC 4.420-4.440 – Airport noise and building height.

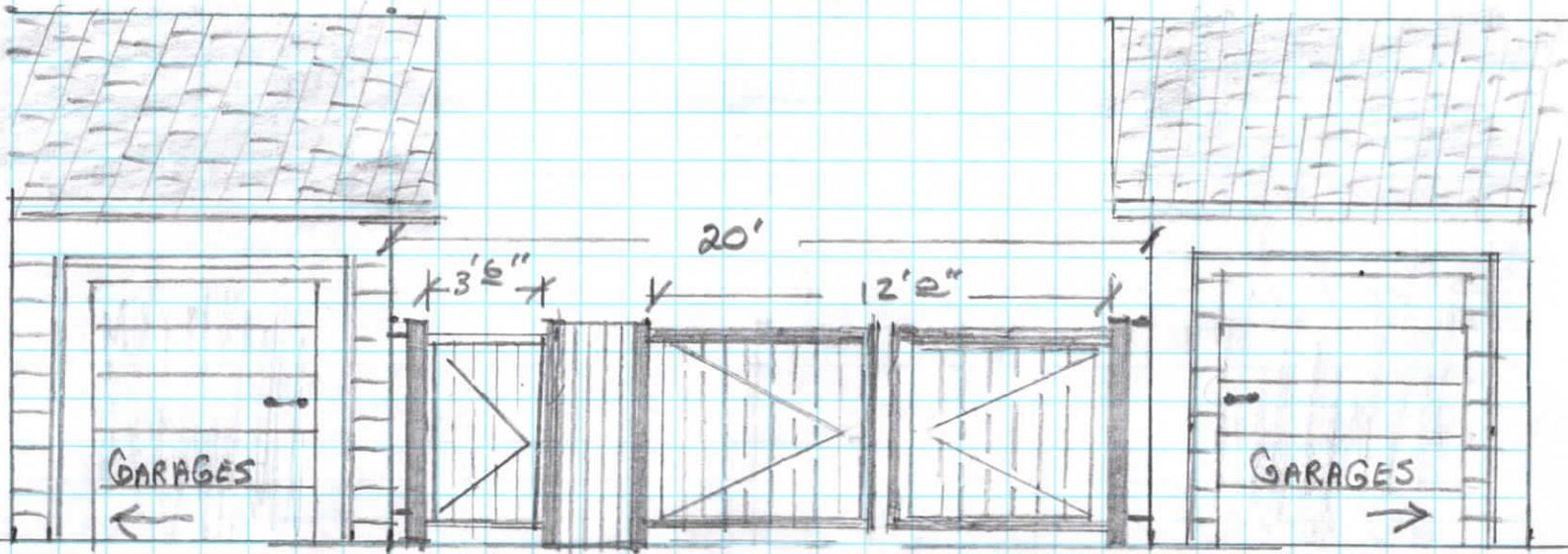
With our 400+ feet of laurel hedge along I5/Airport Road and our garages, the noise from I5 and the airport is mitigated to a level of almost 20' high. Then all of the oak trees with heavy foliage and tree canopies we have preserved along the I5 corridor extend to 60+ feet create a great noise barrier. The apartments all utilize a living area with decks and patios facing to the west and south away from the airport and I5 noise. Please see site plan showing our 50' required set back from east property line and additional 15' required by City of Albany for living space (habitable) structures. In fact, you will see we are almost 200' to the entry of the apartments. With the above buffers between I5 and apartment we have exceeded the required noise buffering as far as height requirements of buildings. We will be 30' or less, well below existing trees and height requirements.

g. Special Noise Corridor Setback ADC 3.320

see response "c" (below) as well as attached map with written responses.

c. Airport Overlay ADC 4.420-4.440 – Airport noise and building height.

With our 400+ feet of laurel hedge along I5/Airport Road and our garages, the noise from I5 and the airport is mitigated to a level of almost 20' high. Then all of the oak trees with heavy foliage and tree canopies we have preserved along the I5 corridor extend to 60+ feet create a great noise barrier. The apartments all utilize a living area with decks and patios facing to the west and south away from the airport and I5 noise. Please see site plan showing our 50' required set back from east property line and additional 15' required by City of Albany for living space (habitable) structures. In fact, you will see we are almost 200' to the entry of the apartments. With the above buffers between I5 and apartment we have exceeded the required noise buffering as far as height requirements of buildings. We will be 30' or less, well below existing trees and height requirements.



6' High TRASH ENCLOSURE
WOOD/GATES

Solar Access Protection ADC 3.220 (5)

See HBH civil drawings plan sheet C-2 and C11.

The Solar Access Protection easement to enforce solar access will be to the south of the 4 homes on Franklin Ave..

All 16 apartment units in building 1 and 2.

1 unit on the 1st floor and 1 unit on the 2nd floor located at the south end of building 4.

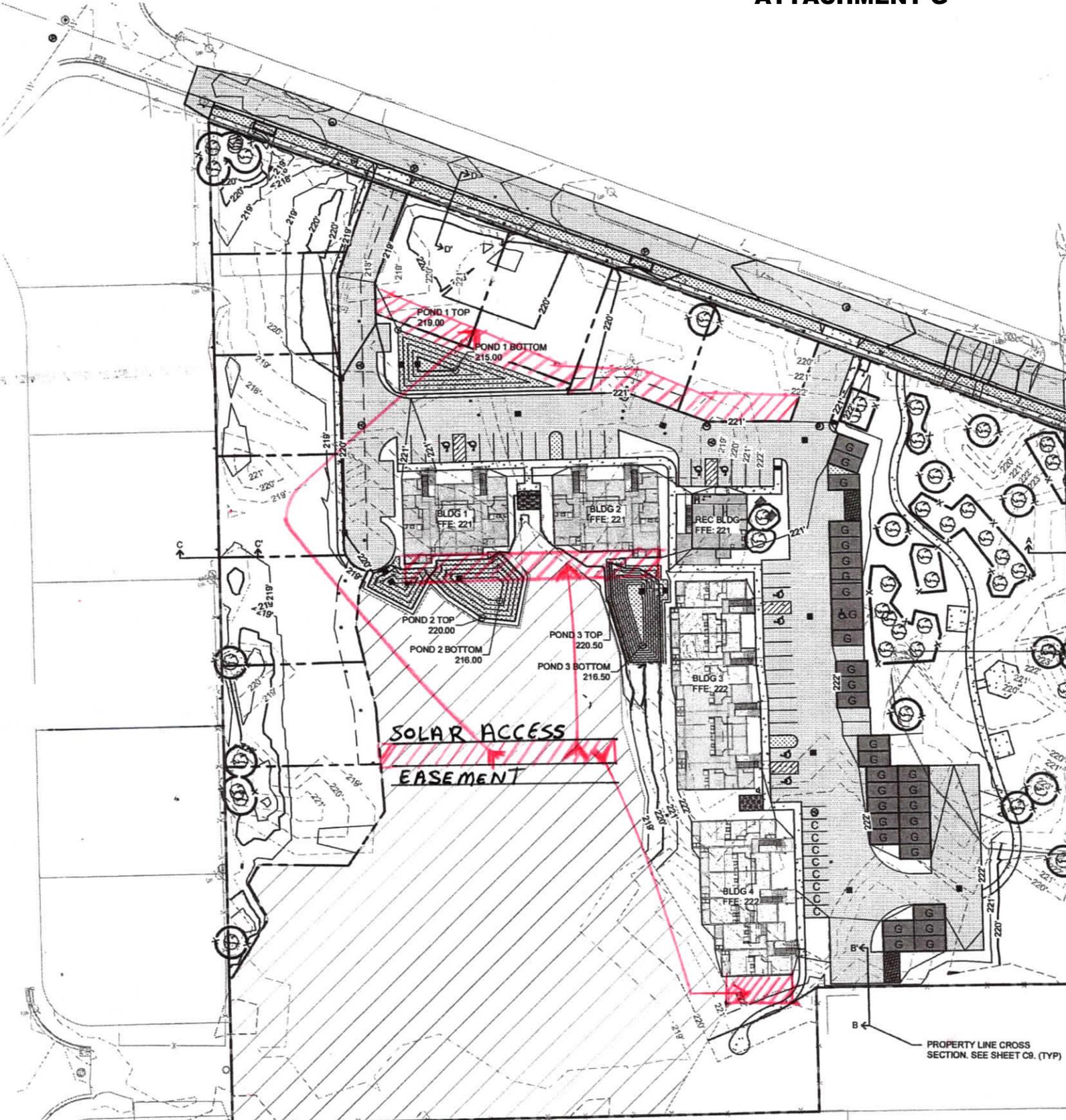
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This Solar Access Protection easement will be attached to Deed of Sale and be shown in title report for the sale of 4 homes on Franklin Ave.

The apartments will be protected in the same manner in case of change of ownership.

Restrictions will be in the tile report and on an easement of conveyance.

ATTACHMENT G



**SOLAR ACCESS
EASEMENT**

PROPERTY LINE CROSS SECTION. SEE SHEET C9. (TYP)

ATTACHMENT G

SOLAR ACCESS

ALL UNITS: EXACT EXTERIOR REAR ELEVATION

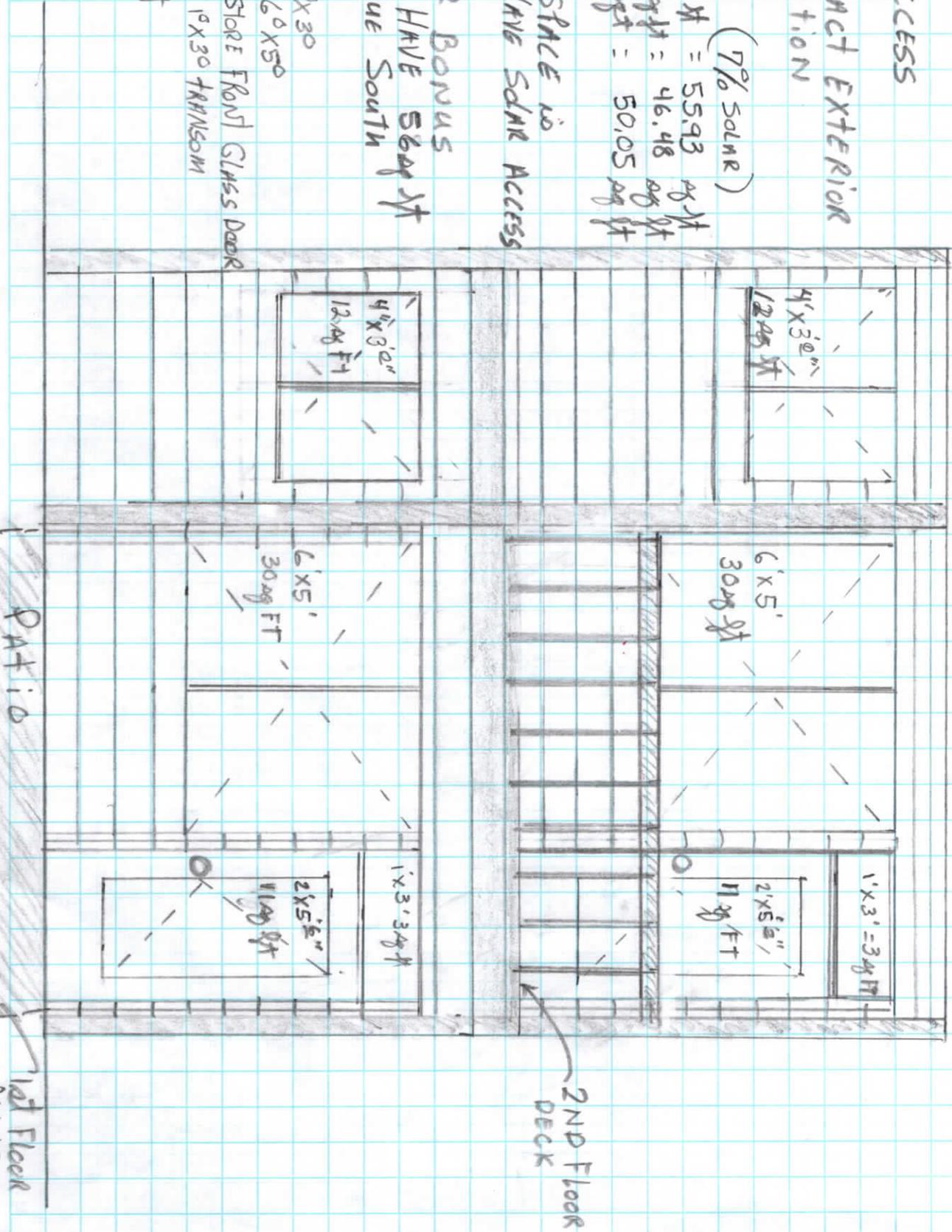
- Sized UNITS (7% SOLAR)
- A unit : 799 sq ft = 55.93 sq ft
 - B unit : 664 sq ft = 46.48 sq ft
 - C unit : 715 sq ft = 50.05 sq ft

7% of living space is reserved to have solar access

* FOR SOLAR BONUS ALL UNITS WILL HAVE 56 sq ft of GLASS TO FACE SOUTH

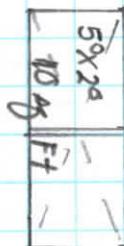
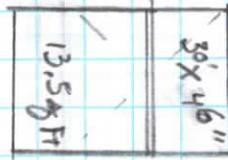
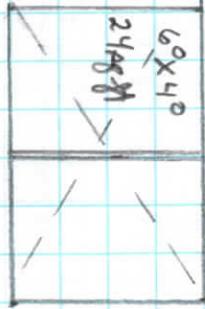
- 12 sq ft 4' x 3'
- 30 sq ft 6' x 5'
- 11 sq ft STORE FRONT GLASS DOOR
- 3 sq ft 1' x 3' TRANSOM
- 56 sq ft

REAR/SOUTH ELEV. 1st & 2ND FLOOR



ATTACHMENT G

DECK

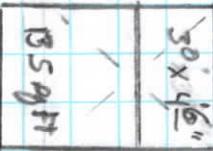


* BLD 4 South WALL

SOLAR ACCESS

UNIT B = 664 sq ft @ 7% = 46.5 GLASS SAFT

UNIT B = 664 sq ft @ 7% = 46.5 GLASS SAFT



TOTAL GLASS 24.0

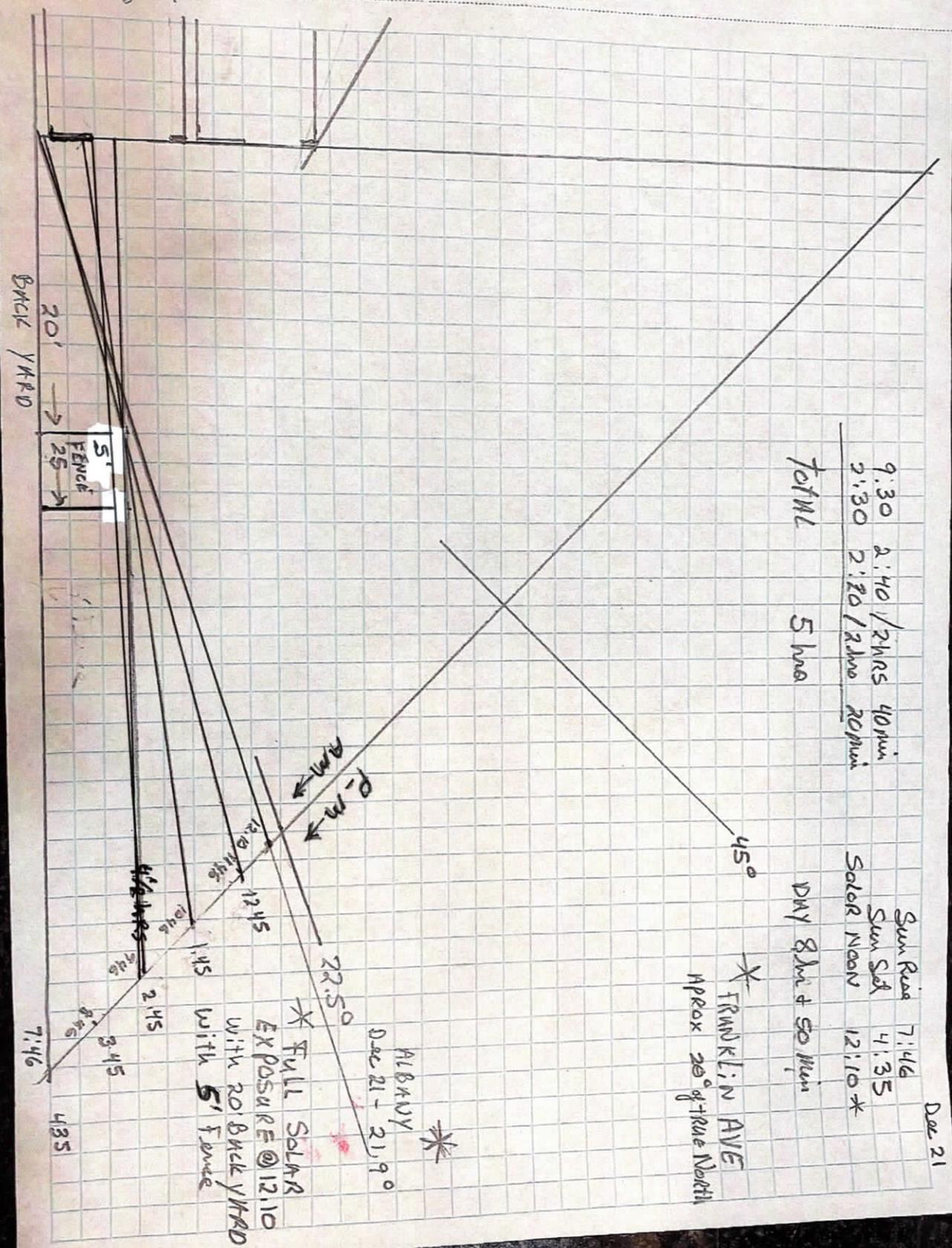
13.5

10.0

47.5 GLASS ENCH UNIT

Patio

FRONT OF BLD-4 →



9:30 2:10 / 2 hrs 40 min
 2:30 2:20 / 2 hrs 20 min
TOTAL 5 hrs

Sun Rise 7:46
 Sun Set 4:35
 Solar Noon 12:10 *
 DAY 8 hrs + 50 min
 Dec 21



FRANKLIN RESERVE
 Sign with light for apartments

* = EXTERIOR LIGHTING

APARTMENT COMPLEX CON UNIT'S ACCESSIBILITY	
TOTAL NUMBER OF UNITS	48
BUILDING 1	12
BUILDING 2	12
BUILDING 3	12
BUILDING 4	12
BUILDING OCCUPANCY	GROUP A, B
SECTION 2 ACCESSIBLE UNITS	
MINIMUM REQUIRED (%)	2
PROVIDED	2

EXTERIOR LIGHTING PLAN – TYPES AND EXAMPLES

NEW CONSTRUCTION

A0.0

COVER SHEET

3/25/2020
 132420 PM
 20' x 30'

NEW APARTMENTS
 PRELIMINARY - NOT FOR CONSTRUCTION

FRANKLIN AVE
 ALBANY, OR



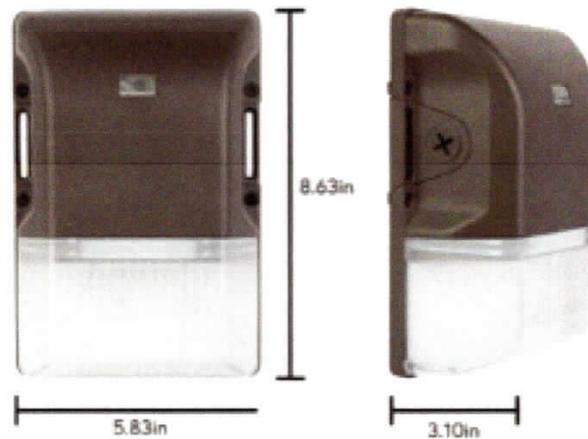




Warranties & Certifications



LED MINI WALL PACK DIMENSIONS



Applications

- Parking Lots
- Loading Bay Lights
- Commercial And Industrial Exterior
- Parking Garages
- Gas Stations
- Security
- Commercial Entryways
- Metal Building Lighting
- Commercial Complex
- Industrial Facilities
- Commercial Lighting

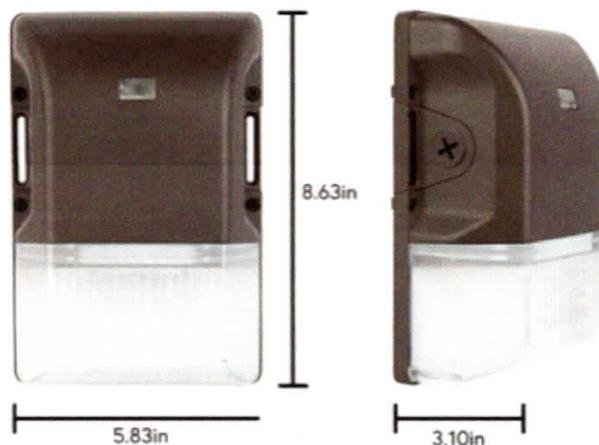


Increase visibility and security with this mini photocontrol LED wall pack. It emits 3,750 lumens of natural white light, and its integrated dusk-to-dawn photocell allows for effortless operation and energy savings. The 30-watt LED wall pack replaces 100-watt metal-halide (MH) fixtures while lasting at least 3 times longer. Construction consists of a weatherproof powder coated aluminum housing with wiring and conduit knockouts and a polycarbonate lens. Easily mount the wall pack on a recessed junction box. Installation hardware and a foam mounting pad are included. The LED wall pack operates on 120-277 VAC. It's great for entryways, walkways, security lighting, and more.

Warranties & Certifications



LED MINI WALL PACK DIMENSIONS



Applications



COMMUNITY DEVELOPMENT DEPARTMENT

Planning Division
P.O. Box 490
333 Broadalbin Street SW
Albany, OR 97321
Phone 541-917-7550
Fax 541-791-0150
www.cityofalbany.net

Site Plan Review -Tree Felling Application Supplement

Checklist & Review Criteria

INFORMATION AND INSTRUCTIONS:

- See fee schedule for filing fee (*subject to change every July 1*): staff will contact you for payment after submittal.
 - Concurrent with a Development Proposal:
 - Not Concurrent with a Development Proposal:
 - All plans and drawings must be to scale, and review criteria responses should be provided as specified in this checklist.
 - Email all materials to eplans@cityofalbany.net. Please call 541-917-7550 if you need assistance.
 - Depending on the complexity of the project, paper copies of the application may be required.
 - Before submitting your application, please check the following list to verify you are not missing essential information. An incomplete application will delay the review process.
-

SITE PLAN REVIEW – TREE FELLING CHECKLIST

- PLANNING APPLICATION FORM WITH AUTHORIZING SIGNATURES**
- SUPPLEMENTAL APPLICATION INFORMATION** (see below)
- REVIEW CRITERIA** (see below)
- SITE PLAN AND TREE INVENTORY** (see below)
- TREE PRESERVATION PLAN** (see below)

SITE PLAN REVIEW - TREE FELLING OVERVIEW

ALBANY DEVELOPMENT CODE SECTIONS 9.205-9.208

Trees of significant size represent a visual and aesthetic resource to the community. Trees provide benefits including shading, reduction in excess stormwater runoff, erosion control, and wildlife habitat. These standards are intended to balance the preservation of significant trees as a benefit to the community with the individual right to use and enjoy property. When Tree Felling Approval is Required: In any zoning district to fell five or more trees that have a trunk that is larger than 25 inches in circumference when measured 54 inches from the base of the tree and that are located on a property (or properties under single ownership) that are larger than 20,000 square feet in area.

Definitions: or the purposes of this application, these definitions apply:

1. Fell: To remove or sever a tree or the intentional use of any procedure the natural result of which is to causes the death or substantial destruction of the tree. Fell does not in any context include normal pruning of trees.
2. Tree: A living, standing, woody plant.
3. Tree Circumference: The circumference of a tree is measured at 4-1/2 feet above mean ground level from the base of the trunk. To obtain the circumference of a tree with multiple trunks, add the individual trunk circumferences, which are greater than 6 inches in circumference.

Exemptions: The following activities are exempt from site plan review:

1. The action of any City official or of any public utility necessary to remove or alleviate an immediate danger to life or property; to restore utility service, or to reopen a public street to traffic.
2. Felling of any tree that is defined as a nuisance under the Albany Municipal Code.
3. Felling necessary to maintain streets or utilities within a public right-of-way or utility easement, provided the Tree Commission or City Forester approved the proposed tree felling.
4. Felling of trees planted as Christmas trees.
5. Felling of trees on property under a Forest Stewardship Plan approved by the Oregon Department of Forestry.

A pre-application meeting is held for all applications, unless the Director determines one is not necessary. The meeting provides for an exchange of information about Development Code and Comprehensive Plan requirements and provides technical and design assistance to the applicant.

The Director acts as the review body for a Tree Felling application (Type IL procedure) unless it is filed with a concurrent application that has a higher review level. In that case all concurrent applications are reviewed together at the highest level. Notice of the application is sent to neighbors, residents, and neighborhood associations, if applicable, within a 100 foot boundary of the subject properties where the trees are located. The Director may increase the notice area. Written comments from affected parties are considered when making the decision.

Oregon statutes require that land-use decisions be made within 120 days from the date the application is deemed complete. However, unless the project is complex, or a large number of applications have been submitted for review before your application is submitted, the City typically is able to issue a decision within a shorter time.

Persons with standing may appeal the City's decision filing a Notice of Intent to Appeal to the State Land Use Board of Appeals (LUBA) not later than 21 days after the date of the decision is mailed. In order to be able to appeal to LUBA, an affected party must have raised an issue in writing before the date given in the Notice of Filing.

Note: Some properties may have covenants or restrictions, which are private contracts between neighboring landowners. These frequently relate to density, minimum setbacks, or size and heights of structures. While these covenants and restrictions do not constitute a criterion for a City land use decision, they may raise a significant issue with regard to the City's land use criteria. It is the responsibility of the applicant to investigate private covenants or restrictions.

SUPPLEMENTAL APPLICATION INFORMATION

Describe in detail, here or on a separate sheet of paper, the proposed tree felling project. Include the total number of existing regulated trees on the site, and of those, the total number proposed for removal.

Remove trees to allow construction of 11 single family homes and 44 senior only apartments. Remove trees determined by arborist that are in road, parking, building site, or within zone of destruction. Remove 251 Oak trees, Retain 58 (see PDF 1 D. Monarch Arborist Report and Maps)

Which type of situation is applicable to this request: ADC 9.208 (1), (2) or (3)? (2)

Size of the subject properties 6.5 acres

Does the site contain any existing structures, private wells, septic tanks, drain fields? NO

If yes, describe: N/A

(Show the location of these features on the accompanying site plan, and if they are to be removed.)

Current use of the subject property Vacant undeveloped

Existing uses and zoning of properties adjacent to the site (including across the street, if applicable):

	<u>Current Uses</u>	<u>Zoning</u>
North	<u>Homes</u>	<u>R-6.5</u>
South	<u>unauthorized storage for old cars and broken down RV's & trailers</u>	<u>R-6.5</u>
East	<u>I-5 Freeway, East of freeway is airport</u>	
West	<u>Homes</u>	<u>R-6.5</u>

Is there a phasing plan? YES If yes, describe here and show the phase lines on the site plan. refer to PDF 1 B HBH Civil Eng page C10

To assess whether the City will need additional information and/or whether you must obtain additional permits or applications from other agencies or departments, please answer the following questions.

Will the tree removal:

- a) Require removal or demolition of any existing structure(s)? Yes ___ No ✓
- b) Affect historic structures or historically significant features? Yes ___ No ✓
- c) Be located within a 100-year floodplain? Yes ___ No ✓
- d) Be located within the designated Willamette Greenway? Yes ___ No ✓
- e) Affect an identified wetland? Yes ___ No ✓
- f) Require a Variance or Adjustment from a development standard? Yes ✓ No ___
- g) Involve fill or removal of contaminated soils or hazardous material? Yes ___ No ✓

- h) Involve grading/fill: within the 100-year floodplain or a watercourse, as shown on the City's Drainage Master Plan; over an existing public storm drain, sanitary sewer or waterline; or more than 50 cubic yards in areas that have an average slope of 12% or greater? Yes No
- i) Involve land that has a current average slope of 12% to 25%? Yes No
- j) Involve removal of vegetation or trees? Yes No

If you answered yes to any of the above, contact the Planning Division before submitting your application.

TREE FELLING REVIEW CRITERIA (ADC 9.208)

Requests for tree felling will be approved if the review body finds that the application meets all of the criteria applicable to this application either outright or with conditions that bring the proposal into compliance with the criteria.

This application either falls under Situation A, B and/or C as outlined below. Identify which is applicable to your situation and on a separate sheet of paper, prepare a detailed written response using factual statements (called findings of fact) to explain how the proposed Tree Felling complies with each of the review criteria that are applicable to this application. Each criterion must have at least one finding of fact and conclusion statement.

Situation A: The Community Development Director shall approve a Site Plan Review for tree felling when the applicant demonstrates that the felling of the tree(s) is warranted because of the condition of the tree(s) with respect to disease, hazardous or unsafe conditions, danger of falling, proximity to existing structures or proposed construction, or interference with utility services or pedestrian or vehicular safety. The Director may require the applicant to provide a Certified Arborist's report.

Situation B: For property where a Site Plan Review, Conditional Use, or Land Division application has been approved or is currently under review, the Community Development Director or City Forester shall approve a Site Plan Review for tree felling when the applicant demonstrates that all of the following review criteria are met: *Refer to attached Tree Felling Review Criteria responses*

1. It is necessary to fell tree(s) in order to construct proposed improvements in accordance with an approved site plan review or conditional use review, or to otherwise utilize the applicant's property in a manner consistent with its zoning, this Code, applicable plans adopted by the City Council, or a logging permit issued by the Oregon Department of Forestry.
2. The proposed felling is consistent with State standards and City ordinances, and does not negatively impact the environmental quality of the area, including but not limited to: the protection of nearby trees and windbreaks; wildlife; erosion; soil retention and stability; volume of surface runoff and water quality of streams; scenic quality, and geological sites.
3. The uniqueness, size, maturity, structure, and historic value of the trees have been considered and all other options for tree preservation have been exhausted. The Director may require that trees determined to be unique in species, size, maturity, structure, or historic value, are preserved.
4. Tree felling in Significant Natural Resource Overlay Districts meets the applicable requirements in Article 6.

TREE FELLING REVIEW CRITERIA (ADC 9.208)

SITUATION B: For property where a Site Plan Review, Conditional Use, or Land Division application has been approved or is currently under review, the Community Development Director or City Forester shall approve a Site Plan Review for tree felling when the applicant demonstrates that all of the following review criteria are met:

Statement:

1. It is necessary to fell trees(s) in order to construct proposed improvements in accordance with an approved site plan review or conditional use review, or to otherwise utilize the applicant's property in a manner consistent with its zoning, this Code, applicable plans adopted by the City Council, or a logging permit issued by the Oregon Department of Forestry.

Response:

We will need to cut and remove trees to allow roadway access, required parking spaces, home sites and multi-family units. This will be necessary to allow use of property in a manner consistent with zoning.

Statement:

2. The proposed felling is consistent with State standards and City ordinances, and does not negatively impact the environmental quality of the area including but not limited to: the protection of nearby trees and windbreaks; wildlife; corrosion; soil retention and stability; volume of surface runoff and water quality of streams; scenic quality, and geological sites.

Response:

This will be consistent with state and city ordinances. Tree felling on this property will not have impact on environmental quality or adversely affect nearby trees or windbreaks or cause soil erosion as all areas will be replanted with shrubs and landscape trees, grass and bark dust to protect water quality, enhance scenic quality.

Statement:

3. The uniqueness, size, maturity, structure, and historic value of the trees have been considered and all other options for tree preservation have been exhausted. The Director may require that trees determined to be unique in species, size, maturity, structure, or historic value, are preserved.

Response:

The site has been looked at by city forester and by utilizing the planned development as planned it will allow for a greater number of trees to be preserved, because of a smaller building footprint, private roads that are smaller, and careful placement of structures. We have presented the best possible plan to retain as many trees and natural area as possible and have exhausted all options and possibilities.

Statement:

4. Tree felling in Significant Natural Resource Overlay Districts meets the applicable requirements in Article 6.

Response:

We are not in a significant natural resource overlay district.

Situation C: For property where tree felling has not been approved as part of a Site Plan Review, Conditional Use, or Land Division application, the Community Development Director shall approve a site plan review application for tree felling, if the review criteria above in Situation B are met, AND the following criteria are met:

1. Trees shall be retained in significantly large areas and dense stands so as to ensure against wind throw.
2. Wooded areas that will likely provide an attractive on-site amenity to occupants of future developments shall be retained.
3. Wooded areas associated with natural drainage ways and water areas will be maintained to preserve riparian habitat and minimize erosion. The wooded area to be retained shall be at least 10 feet in width or as required elsewhere in this Code.
4. Wooded areas along ridges and hilltops will be retained for their scenic and wildlife value.
5. Tree felling on developable areas will be avoided to retain the wooded character of future building sites and so preserve housing and design options for future City residents.
6. Wooded areas along property lines shall be retained at a minimum width of 10 feet to provide buffers from adjacent properties.
7. The plan for tree felling shall be consistent with the preservation of the site's future development potential and zoning.

The Director may attach conditions to the approval to ensure the replacement of trees and landscape or otherwise reduce the effects of the felling, and may require an improvement assurance to ensure that all conditions are met.

SITE AND TREE INVENTORY PLAN REQUIREMENTS

The map must include all of the following.

- Existing address (if any), section, township, range, and legal description sufficient to define the location and boundaries of the proposed tree felling site. *Refer to PDF 1B - HBH Civil Eng*
- Names and addresses of the owner(s), developer(s), surveyor and engineer, as applicable. *Refer to attached contact page.*
- Date map was drafted and north arrow. *Refer to PDF 1B - HCH Civil Engineer - page G2*
- Scale of map. (Use 1 inch = 20 feet, unless otherwise approved by Planning staff. For parcels over 100 acres, use 1 inch = 100 feet.) Map must be clearly readable and measurable and fully dimensioned.
- Total land area of the entire site. *Refer to attached tax lot information sheet*
- Show the location of all existing structures, infrastructure, property lines, public and private easements, existing contours, and if applicable, proposed grading.
- If there is a concurrent development plan, in addition, show all proposed structures, public and private easements, and proposed contours after grading.* *Refer to PDF 1B, HBH Civil Engineer - page C3, C6, C8.*
- Tree Location/Identification. For each tree on the property that has a trunk larger than 25 inches in circumference: assign it an identification number, and show its location on the property, trunk dimension, species, drip line of its canopy and the square footage of the canopy. (For a tree with multiple trunks, to arrive at total trunk circumference, add together the individual trunks that have a circumference larger than six inches.) *Refer to PDF 1D Monarch Arborist Report and maps*

Optional: You may find it helpful to provide the inventory information in table form.

Example:

Tree ID Number	Species	Trunk circumference*	Canopy (sq. ft.)	Retain/Remove
1	Cottonwood	12	400	Remove
2	Oregon White Oak	15	600	Retain

* Measured 4.5 feet above mean ground level of the tree.

- Identify any "significant" trees located on the site. A significant tree is a tree with a trunk diameter of 25 inches or greater, measured four and one-half feet above the base of the tree.
- Identify which trees are proposed for removal. (It is assumed all others will remain.)

Refer to PDF DI Monarch Arborist report and maps

TREE PRESERVATION PLAN FOR REMAINING TREES [ADC 9.208(5)]

Precautions shall be made to protect the residual trees and tree roots from damaging agents during and after the removal process. **In addition to the above plans**, using the following tree protection specifications to the maximum extent feasible, provide a plan that shows how the remaining existing trees will be protected. *Refer to PDF-DI Monarch Arborist tree protection plan.*

1. Within the drip line of any protected existing tree, there shall be no cut or fill over a four-inch depth unless a qualified arborist or forester has evaluated and approved the disturbance.
2. Prior to and during construction, an orange fence shall be erected around all protected existing trees that is a minimum of 4 feet tall, secured with metal T-posts, no closer than 6 feet from the trunk or within the drip line, whichever is greater. There shall be no storage or movement of equipment, material, debris or fill within the fenced tree protection zone. [Ord. 5764, 12/1/11]
3. During the construction stage of development, the applicant shall prevent the cleaning of equipment or material or the storage and disposal of waste material such as paints, oils, solvents, asphalt, concrete, motor oil or any other material harmful to the life of a tree within the drip line of any protected tree or group of trees.
4. No damaging attachment, wires, signs or permits may be fastened to any protected tree.
5. Large property areas containing protected trees and separated from construction or land clearing areas, road rights-of-way and utility easements may be "ribboned off," rather than erecting protective fencing around each tree as required in subsection (5)(b) above. This may be accomplished by placing metal t-post stakes a maximum of 50 feet apart and tying ribbon or rope from stake-to-stake along the outside perimeters of such areas being cleared.
6. The installation of utilities, irrigation lines or any underground fixture requiring excavation deeper than 6 inches shall be accomplished by boring under the root system of protected existing trees at a minimum depth of 24 inches. The auger distance is established from the face of the tree (outer bark) and is scaled from tree diameter at breast height as described in the table below.

Tree Diameter at Breast Height (inches)	Auger Distance from Face of Tree (feet)
8-9	5
10-14	10
15-19	12
Over 19	15

Additional plans. The following may not apply to every site. If an item does apply, show the information on the proposed site plan map and check the box. Write "NA" in the box if the item does not apply to this proposal, and attach a short explanation.

- N/A Label and show the width, direction, and flow of all watercourses on the site.
- N/A Label and show areas within the 100-year floodplain and other areas subject to inundation or storm water overflow, with approximate high-water elevation. State the base flood elevation (BFE); label and show the floodplain boundary on the map.
- N/A Label and show the boundaries of all jurisdictional wetlands. Sources: Plate 6 of the Comprehensive Plan, the National Wetland Inventory, and Local Wetland Inventory maps. Land not on these maps still may contain wetlands. Refer to PDF 1B HBH Eng Civil drawing page C3
- Label and show the locations of all natural features, such as rock outcroppings, marshes, wooded areas, and trees that are 8 inches in diameter measured 54 inches above the tree base.
Refer to PDF 1B HBH eng civil drawings pages G2 + C1



Jeremy (Beau) Saucedo
ISA Certified Arborist PN-6893-A
Monarch Tree Service

3/6/2020

Monarch Tree Service

15021 SW Millikin Way, Beaverton Oregon

(503) 593-7087

The Franklin Reserve – 840 Airport Road Albany Oregon – Arborist Report

Introduction

A pre-construction inspection of 49 (*Quercus garryana*) - Oregon white oak trees that were in or near the (CRZ) Critical Root Zones being impacted, this was carried out on March 3rd, 2020 at approximately 9:30am with Mike Shults to assess the impact of the proposed construction and the trees that are at the most impacted due to the construction and the trees that are in (CRZ) Critical Root Zone will be removed. Trees that will need (RZP) Root Zone Protection will remain, see map and protection plan, at 840 Airport Road, Albany. The trees were assessed from ground level to assess the potential impact related to the construction and the health and structure of these trees.

These were assessed using a Level 1 (visual limited tree assessment) and a Level 2 (basic assessment). As used by ISA International Society of Arboriculture in assessing trees across the country.

A level 1 visual limited tree assessment involves an assessment of a single tree or a population of trees near potential targets. Looking for obvious defects such as, but not limited to, dead trees, large cavities, large dead and or broken branches, fruiting bodies (fungal structures), severe leans and large cracks.

A Level 2 basic tree assessment is a standard assessment performed in response to most private clients for tree risk assessments. Which entails a complete walkaround the tree, looking at the trunk, buttress roots, and branches. Looking from a distance as well as closeup, to take in consideration of the crown shape and surroundings. Utilizing tools in this case DBH Tape, measuring tape and measuring roller.

A Level 3 advanced assessment was not used in this Pre-construction inspection arborist report. No use of specialized equipment such as tests, samples, climbing, boring, Etc.

A site plan has been supplied identifying the trees and area for the impact assessment. This was the primary documentation used to determine the trees locations and the nature of the tree protection zone required for this project. These details can be found at the end of this document.



Jeremy (Beau) Saucedo
 ISA Certified Arborist PN-6893-A
 Monarch Tree Service

3/6/2020

Site Description

A majority of this sites grade is flat, surrounded by groves of Oak trees located along the East, North, Northwest, as well as some scattered along the West side of the property. The most prominent grove would be located along the North and Northeast side of this lot.

This site host mostly all native trees. The predominant species is Oregon white oak (*Quercus garryana*), with a few Green Ash trees, Plum trees and Hawthorns.

Common Name	Botanical Name	Total	Retain
Oregon White Oak	Quercus garryana	309	
Green Ash	Fraxinus pennsylvania	13	11
Hawthorn	Crataegus sp.	2	
Plum	Prunus subg.	5	2
Total		329	
Removal	Diameter		
Oregon White Oak	6-36"	251	
Oregon White Oak	6-39"		58

- **Tree Protection measures for this project**
- On site arborist to assess tree root excavation, project arborist contract, and final arborist report at the completion of construction are all included in the tree protection for this project.
- Standard tree protection 4' orange fence this should be installed and erected and follow the tree protection plan, per (DBH) Diameter at Breast Height and ISA tree protection guidelines. Absolutely NO encroachment beyond this area is permitting and no access into this area is allowed without permission from the project arborist.
- Included in the standard tree protection (RPZ) Root Protection Zone warning signs at regular intervals along the entire length or sections of the fenced tree protection area. These signs shall be clearly visible from all areas surrounding the trees' tree protection zone.
- Tree protection fencing is the most common method for setting up a (RPZ) Root Protection Zone and is designed to act as physically barrier of protective fencing at the edge of any construction activities which include the follow, soil disturbance, storage of any material of any and all kind, preparation of materials, pedestrian or vehicle access.
- Trees in the RPZ Root Protection Zone will need periodic deep watering and fertilization of the trees root zone. Recommended to lay some woodchips for the benefit of the tree's continuous health and longevity.



Jeremy (Beau) Saucedo
ISA Certified Arborist PN-6893-A
Monarch Tree Service

3/6/2020

In Conclusion it's my recommendation to remove the 49 Oregon white oak (*Quercus garryana*) that are within in the (CRZ) Critical Root Zone, along with the other trees that would be removed due to construction. The (RPZ) Root Zone Protection shall be set up in accordance to ISA International Society of Arboriculture and their (DBH) Diameter of Breast Height for the trees that are near the construction as shown on the map above.

If you have any questions regarding my finding and recommendations, please call me or email me at the information below.

A handwritten signature in blue ink, consisting of several loops and a long horizontal stroke, representing the name Jeremy (Beau) Saucedo.

Jeremy (Beau) Saucedo

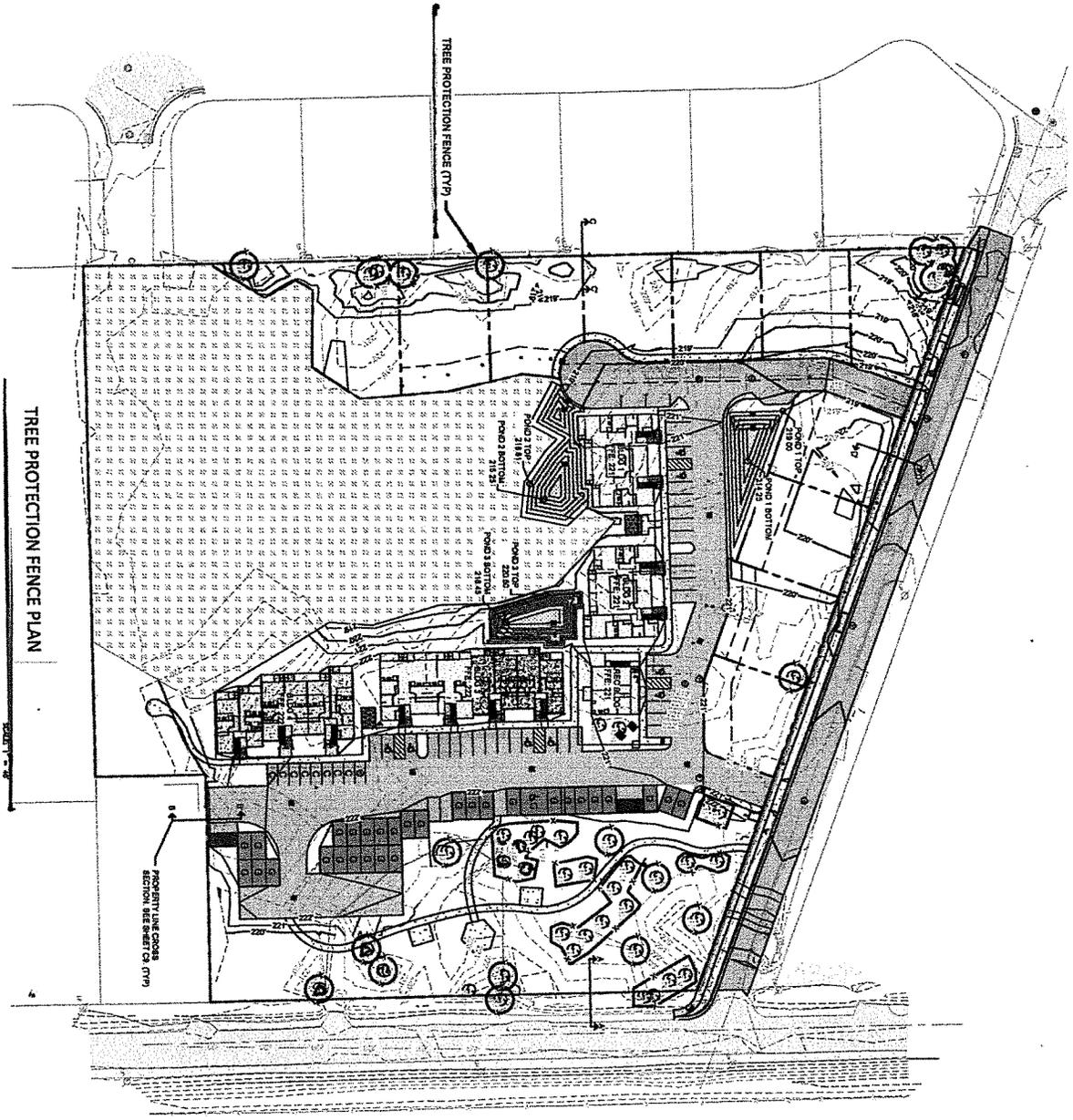
ISA Certified Arborist PN-6893-A

Arbor Branch Manager

Monarch Tree Service

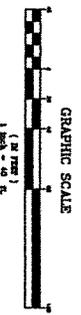
Beau.Saucedo@monarchlandscape.com

Phone: (503) 593-7087



TREE PROTECTION FENCE PLAN

SCALE 1" = 20'



GRAPHIC SCALE
(20 FEET)
1" = 20' FT.

NOTES
1. TREE PROTECTION FENCE TO BE LOCATED MIN. 10' FROM CENTER OF TREE PER AMERICAN

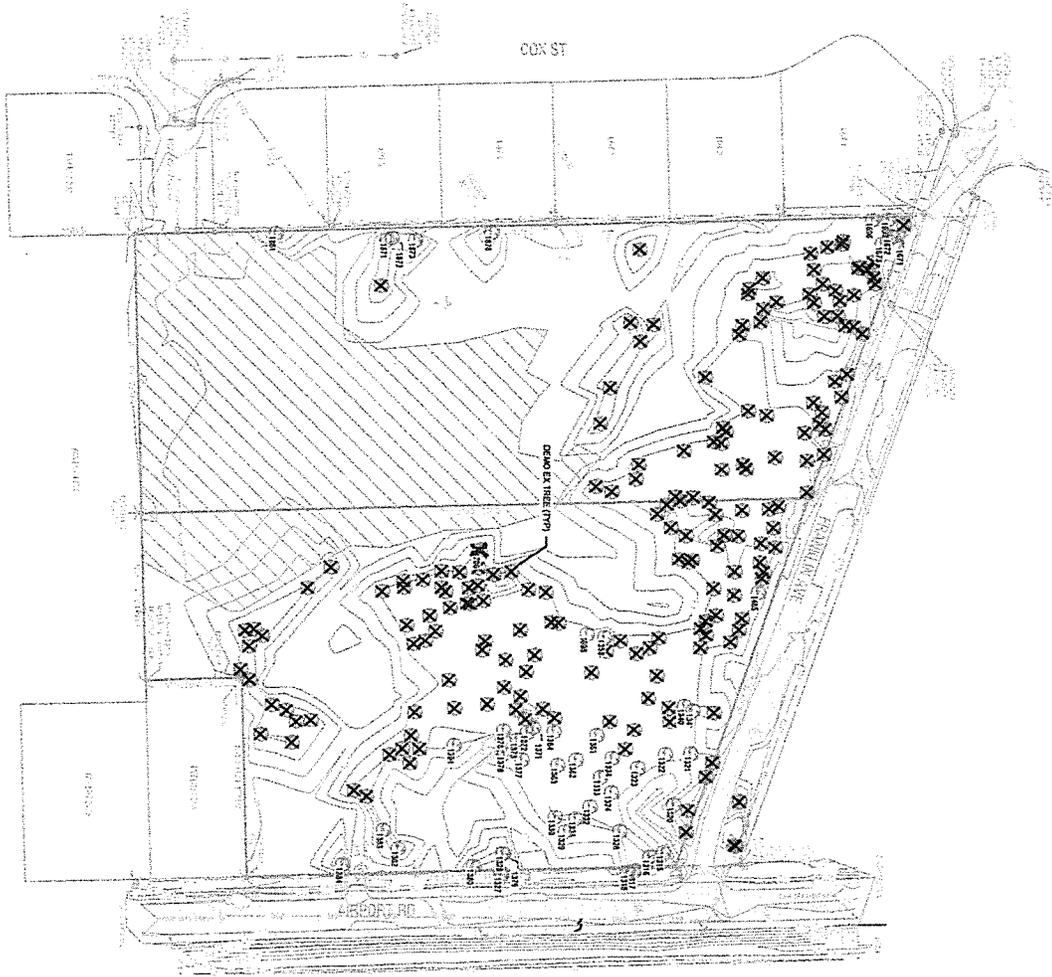
Date: 03/20/20
Sheet No: 2020-D-001

MIKE SKALTS
PO BOX 44 ST. PAUL, OR 97137
THE FRANKLIN RESERVE
840 SE AIRPORT RD, ALBANY OR 97222
SITE GRADING PLAN

REV	DATE	DESCRIPTION	BY

H B H 501 E First Street
Newberg, Oregon 97132
CONSULTING 503/554-9553 • fax 503/537-9554
ENGINEERS email: mail@hbh-consulting.com

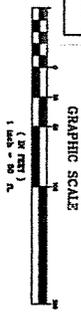




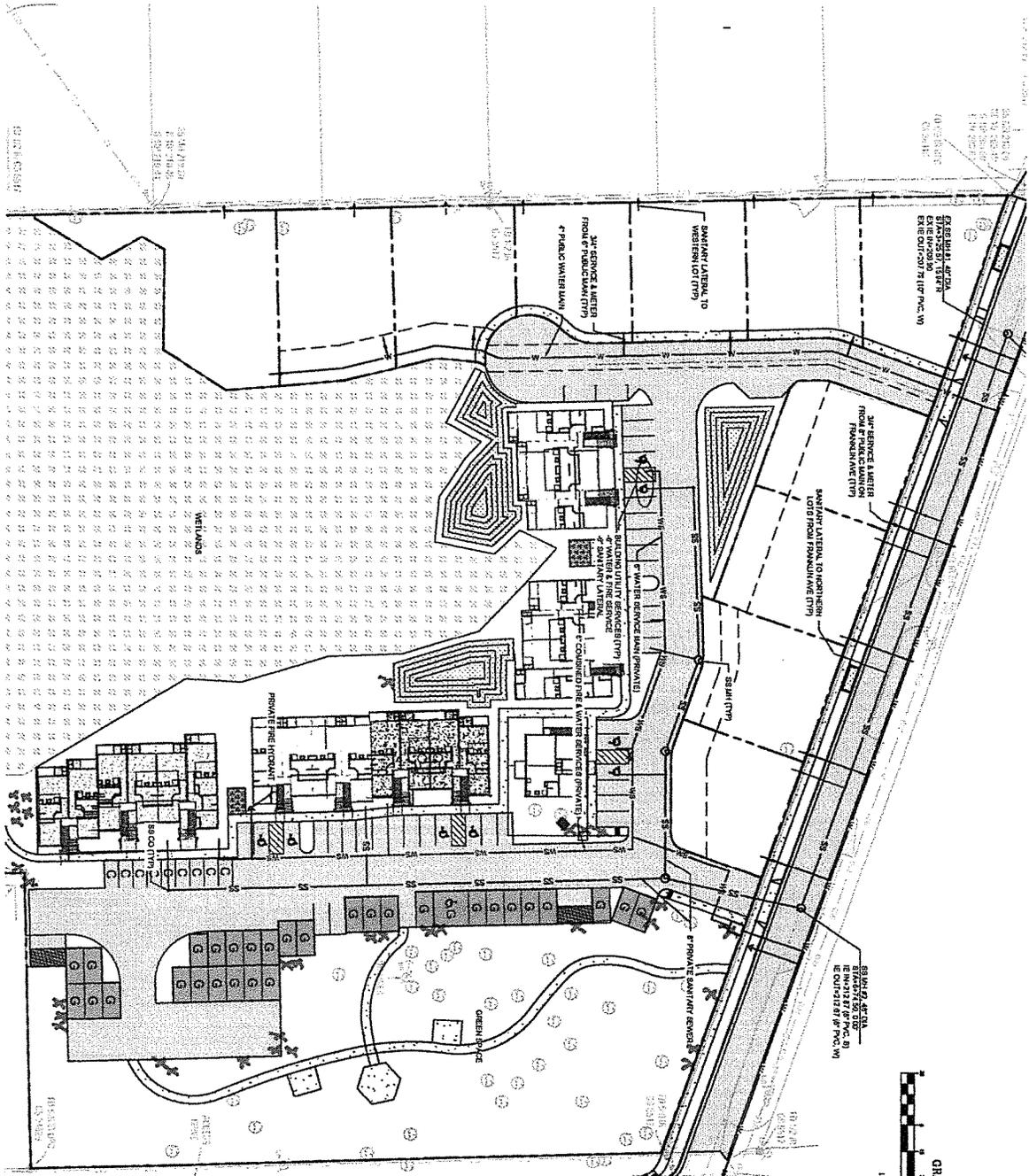
DEMOLITION PLAN X
SCALE 1" = 20'

TREES TO BE SAVED
NOTE: SURVEYED POINTS CAN CORRESPOND TO MULTIPLE TREES. THE DIAMETER AT BREAST HEIGHT (DBH) FOR EACH TREE IN THE CLUSTER IS LISTED.

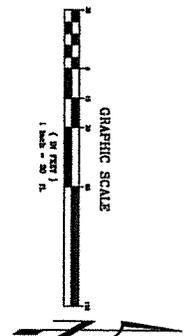
Point Number	Spec. Street (DBH)
1315	OAK 32
1316	OAK 26
1317	OAK 21
1318	OAK 22 17
1320	OAK 21
1321	OAK 19
1322	OAK 16
1323	OAK 22
1324	OAK 19
1325	OAK 15
1326	OAK 26
1327	OAK 31
1328	OAK 25
1329	OAK 19
1331	OAK 21
1332	OAK 16
1333	OAK 15
1334	OAK 15
1340	OAK 11
1341	OAK 15
1356	OAK 8
1361	OAK 24
1362	OAK 10 12 17
1363	OAK 19
1364	OAK 12
1371	OAK 6
1372	OAK 13
1373	OAK 16
1376	OAK 16 16
1377	OAK 8 14 20
1378	OAK 20
1379	OAK 24
1380	OAK 18 21 22
1382	OAK 23
1383	OAK 44 19
1384	OAK 35
1384	OAK 8 8 7 13 15 22
1462	OAK 11
1671	PLUM 8
1672	PLUM 8
1673	OAK 16
1686	ASH 7
1697	ASH 6 7 8
1698	OAK 21
1861	OAK 18
1871	ASH 6 7 7 8
1872	ASH 8 9 17
1873	ASH 8
1876	OAK 10 23 26



Date: 01/20/01 Draw No.: 2020-001	THE FRANKLIN RESERVE 840 SE AIRPORT RD, ALBANY OR 97322 DEMOLITION PLAN	H B H CONSULTING ENGINEERS 501 E First Street Newberg, Oregon 97132 503/554-9553 fax 503/537-9554 email: mail@huh-consulting.com	



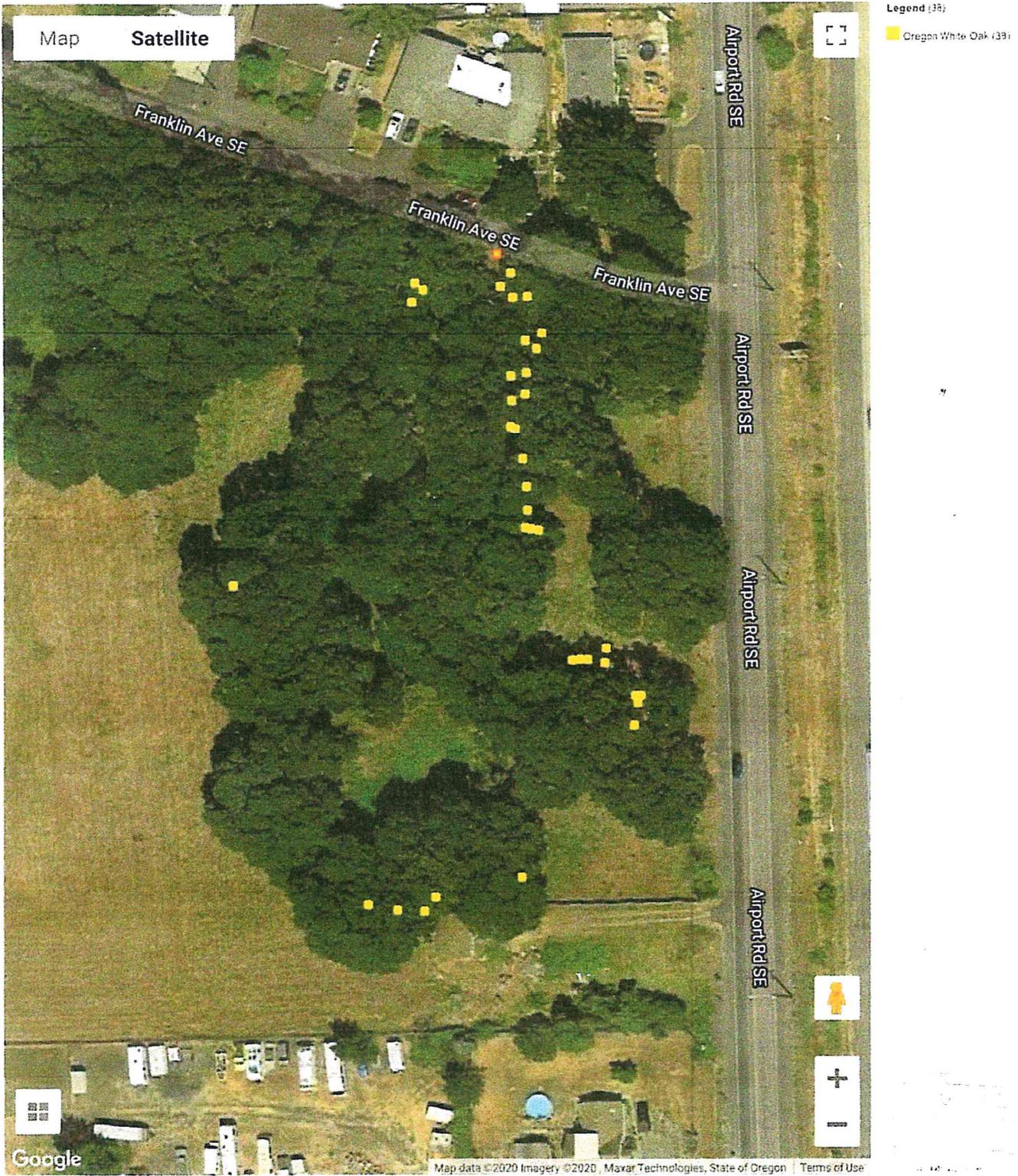
TREES TO BE REMOVED IN CRITICAL ROOT ZONE (CRZ)



Date: 0/2/2020 Sheet No: C7 2020-001	MINE SHAFTS PO BOX 44, ST. PAUL, OR 97137 THE FRANKLIN RESERVE 840 BE AIRPORT RD, ALBANY OR 97132 ONSITE WATER + SANITARY	REV DATE DESCRIPTION BY	H B H 501 E First Street Newberg, Oregon 97132 CONSULTING 503/554-9553 • fax 503/537-9554 ENGINEERS email: mail@hbh-consulting.com	Described By: aob Drawn By: aob Checked By: aob Date: 06/20/20
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Mike Schultz Oak Tree Project 3-3-2020

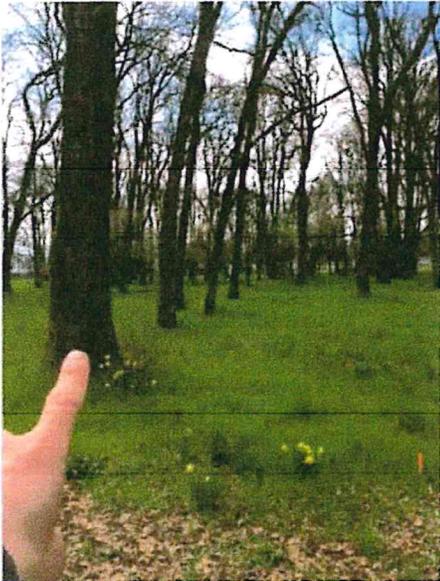


TREES IN CRZ TO BE REMOVED



Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



March 9, 2020

Quercus garryana ID# 1
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 31"-36"



March 9, 2020

Quercus garryana ID# 1
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 31"-36"



March 9, 2020

Quercus garryana ID# 2
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 13"-18"



Removal



Removal



Retain not in the CRZ



Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



March 9, 2020

Quercus garryana ID# 2
Oregon White Oak
Height: 60'+ DBH: 13"-18"
Health: 80% - Good



March 9, 2020

Quercus garryana ID# 3
Oregon White Oak
Height: 60'+ DBH: 13"-18"
Health: 80% - Good



March 9, 2020

Quercus garryana ID# 4
Oregon White Oak
Height: 60'+ DBH: 7"-12"
Health: 80% - Good



Retain not in the CRZ



heavy lean / In the CRZ / Removal



In the CRZ / Removal



Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



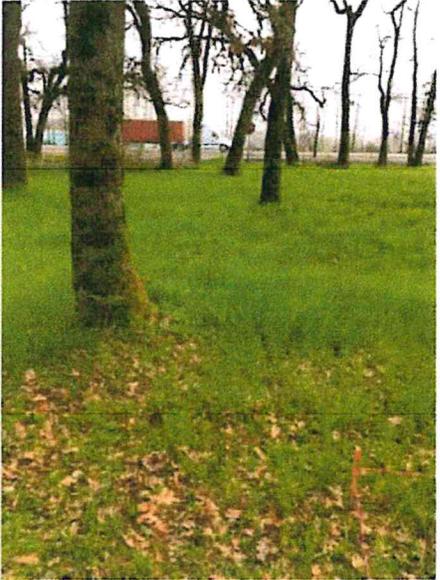
March 9, 2020

Quercus garryana ID# 4
Oregon White Oak
Height: 60'+
DBH: 7"-12"
Health: 80% - Good



March 9, 2020

Quercus garryana ID# 5
Oregon White Oak
Height: 60'+
DBH: 13"-18"
Health: 80% - Good



March 9, 2020

Quercus garryana ID# 5
Oregon White Oak
Height: 60'+
DBH: 13"-18"
Health: 80% - Good



In the CRZ / Removal



In the CRZ / Removal



In the CRZ / Removal

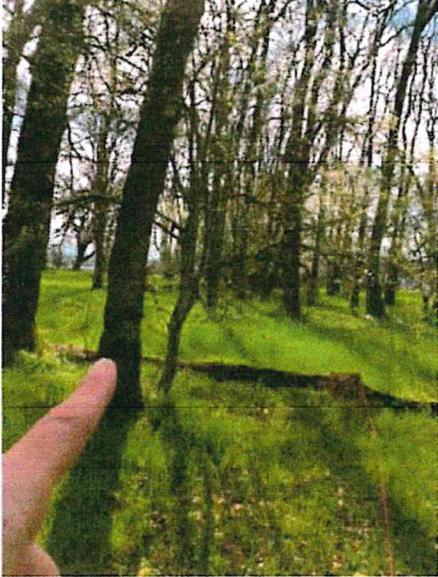


Mike Schultz Oak Tree Project 3-3-2020

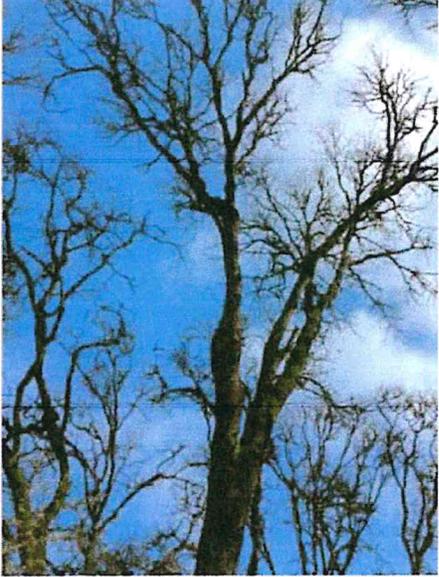
Proposal 03-10-2020



March 9, 2020



March 9, 2020



March 9, 2020

Quercus garryana ID# 7
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 7"-12"

Quercus garryana ID# 7
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 7"-12"

Quercus garryana ID# 8
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 19"-24"



heavy lean / In the CRZ / Removal



heavy lean / In the CRZ / Removal

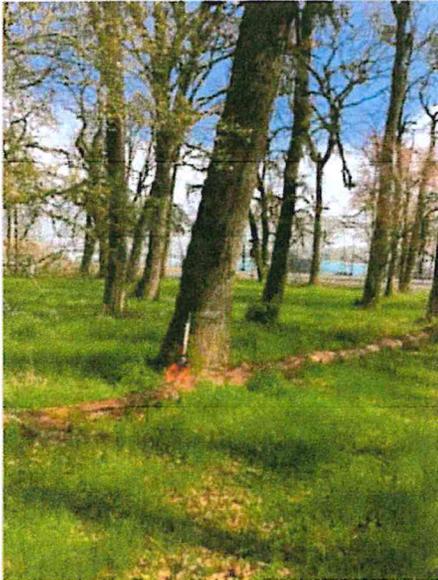


heavy lean / In the CRZ / Removal



Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



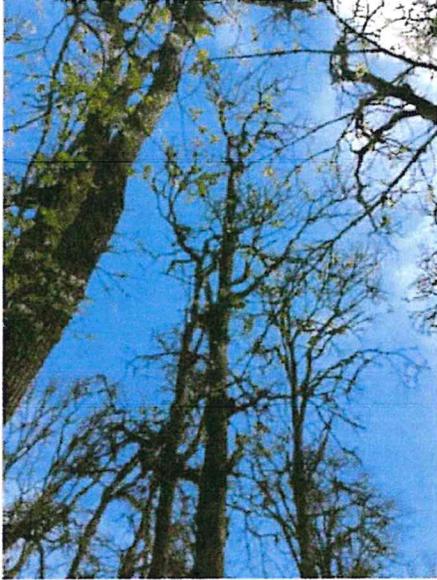
March 9, 2020

Quercus garryana ID# 8
Oregon White Oak
Height: 60'+
DBH: 19"-24"
Health: 80% - Good



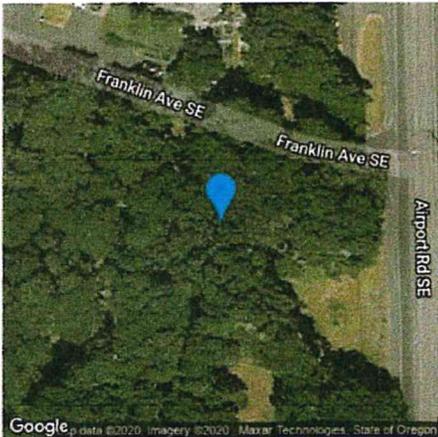
March 9, 2020

Quercus garryana ID# 9
Oregon White Oak
Height: 60'+
DBH: 19"-24"
Health: 80% - Good

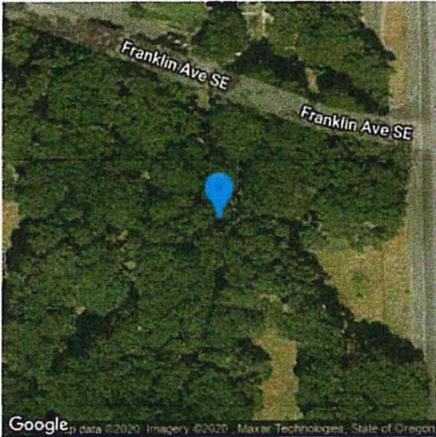


March 9, 2020

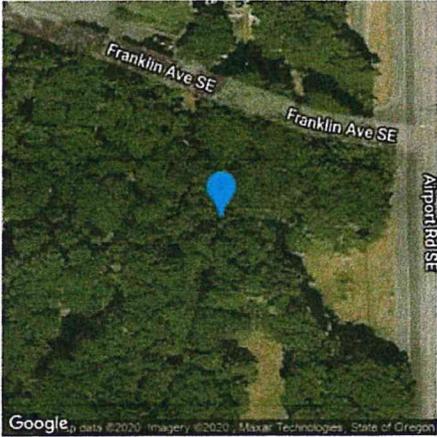
Quercus garryana ID# 10
Oregon White Oak
Height: 60'+
DBH: 19"-24"
Health: 80% - Good



heavy lean / In the CRZ / Removal



heavy lean / In the CRZ / Removal



Retain not in the CRZ

20"

12"



Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



March 9, 2020



March 9, 2020

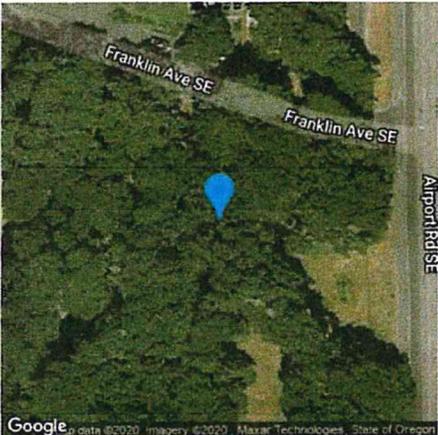


March 9, 2020

Quercus garryana ID# 10
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 19"-24"

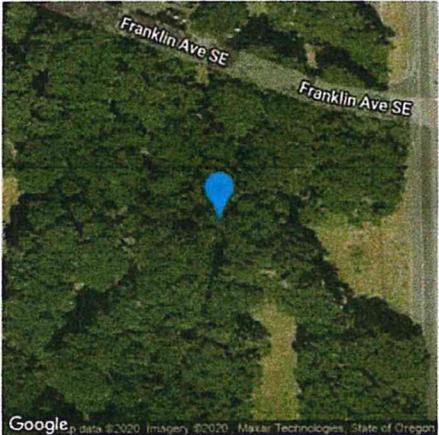
Quercus garryana ID# 11
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 19"-24"

Quercus garryana ID# 11
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 19"-24"



Retain not in the CRZ

12"



In the CRZ / Removal

14"



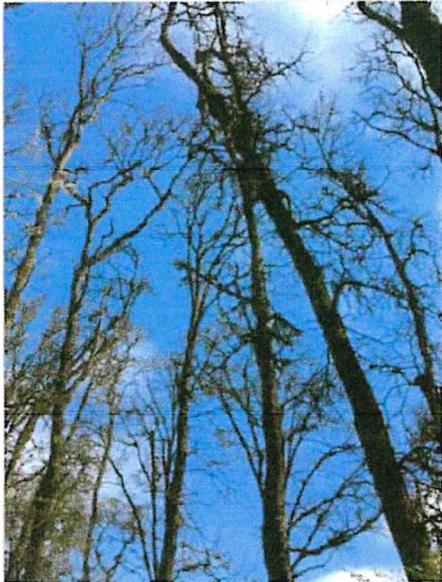
In the CRZ / Removal

14"

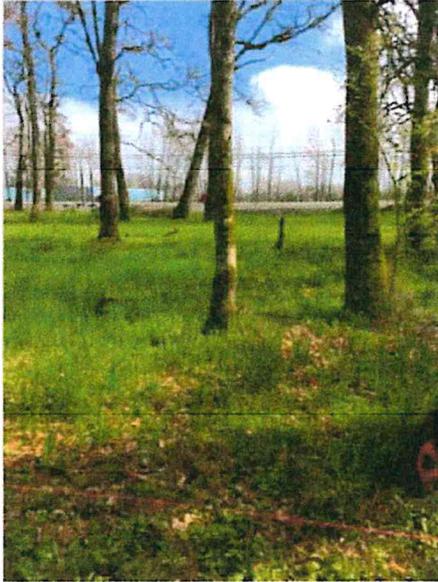


Mike Schultz Oak Tree Project 3-3-2020

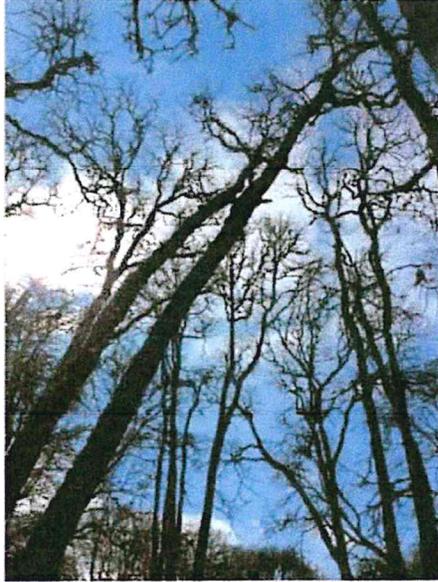
Proposal 03-10-2020



March 9, 2020



March 9, 2020

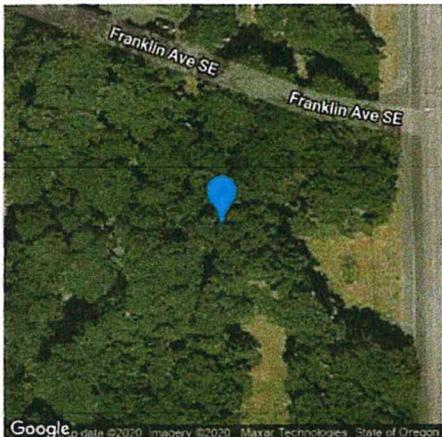


March 9, 2020

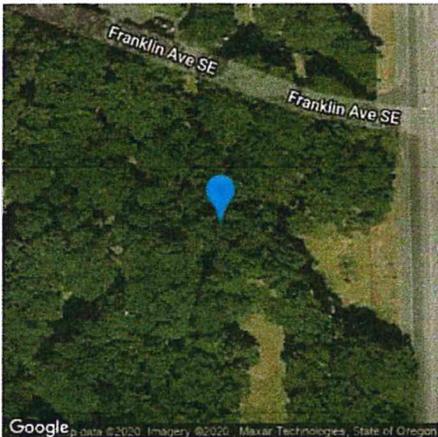
Quercus garryana ID# 12
Oregon White Oak
Height: 60'+ DBH: 19"-24"
Health: 80% - Good

Quercus garryana ID# 12
Oregon White Oak
Height: 60'+ DBH: 19"-24"
Health: 80% - Good

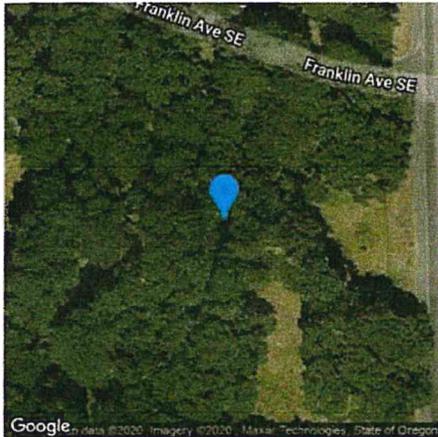
Quercus garryana ID# 13
Oregon White Oak
Height: 60'+ DBH: 19"-24"
Health: 80% - Good



Retain not in the CRZ



Retain not in the CRZ



heavy lean / In the CRZ / Removal

6"

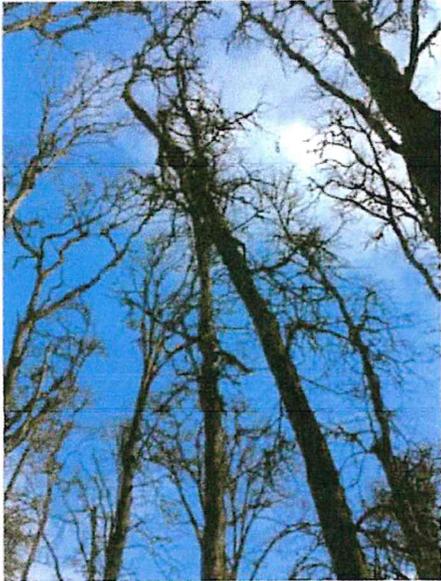
6"

16"



Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



March 9, 2020



March 9, 2020

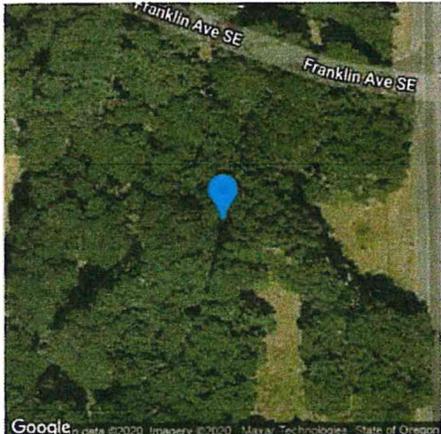


March 9, 2020

Quercus garryana ID# 13
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 19"-24"

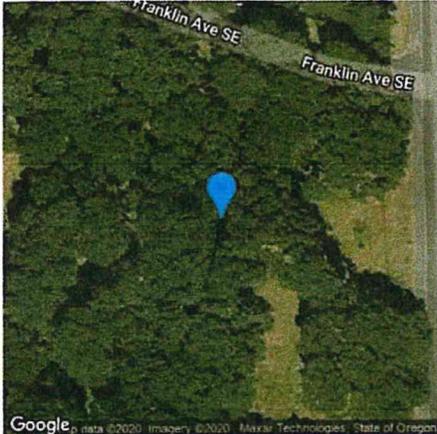
Quercus garryana ID# 13
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 19"-24"

Quercus garryana ID# 14
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 19"-24"



heavy lean / In the CRZ / Removal

16"



heavy lean / In the CRZ / Removal

16"



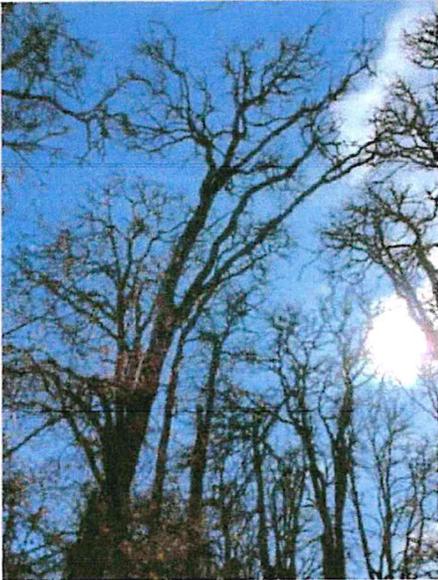
heavy lean / In the CRZ / Removal

16"



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Proposal 03-10-2020



March 9, 2020



March 9, 2020

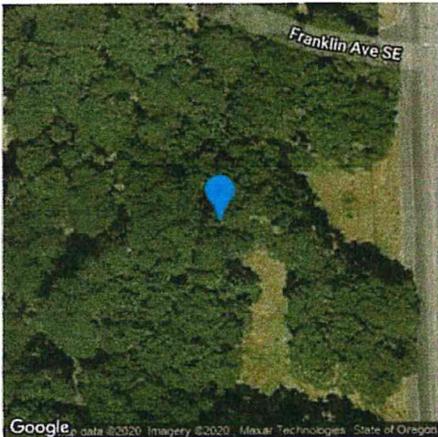


March 9, 2020

Quercus garryana ID# 15
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 19"-24"

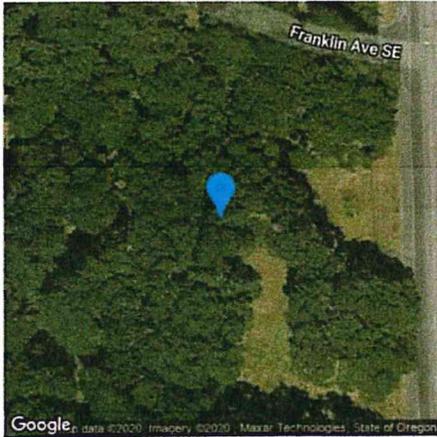
Quercus garryana ID# 15
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 19"-24"

Quercus garryana ID# 16
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 19"-24"



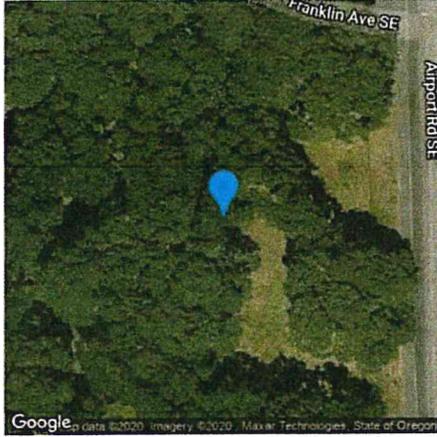
In the CRZ / Removal

22"



In the CRZ / Removal

22"



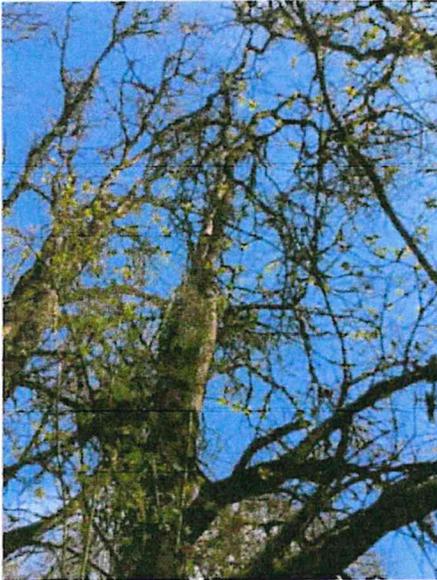
In the CRZ / Removal

15"



Mike Schultz Oak Tree Project 3-3-2020

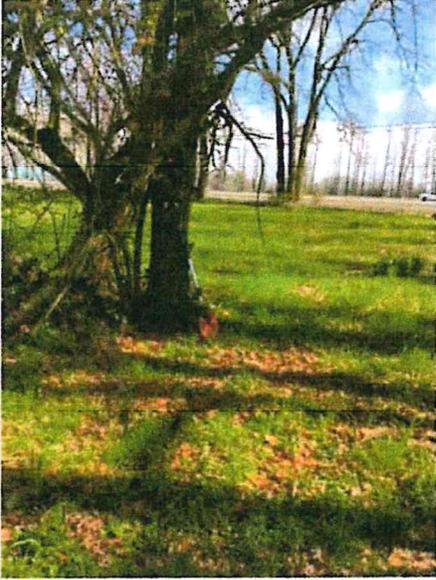
Proposal 03-10-2020



March 9, 2020



March 9, 2020

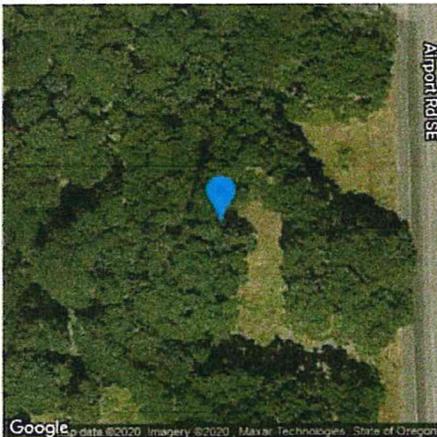


March 9, 2020

Quercus garryana ID# 17
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 19"-24"

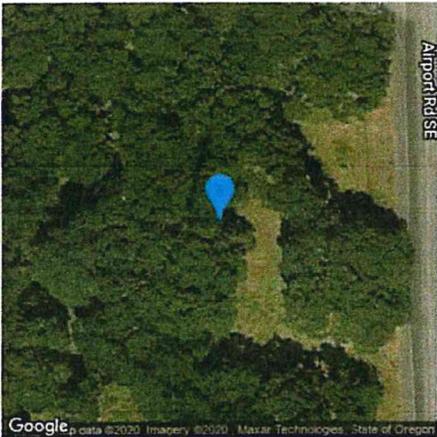
Quercus garryana ID# 17
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 19"-24"

Quercus garryana ID# 17
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 19"-24"



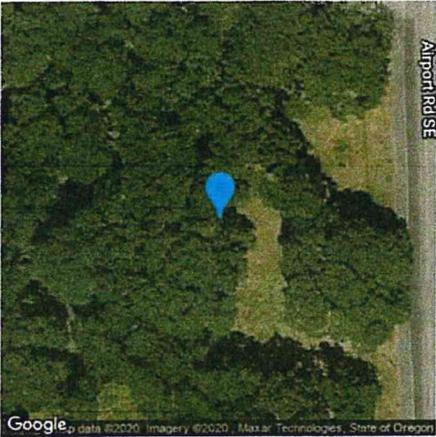
In the CRZ / Removal

13"



In the CRZ / Removal

13"



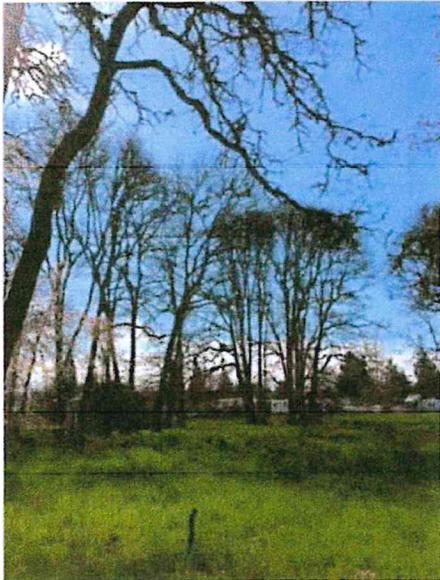
In the CRZ / Removal

13"



Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



March 9, 2020



March 9, 2020

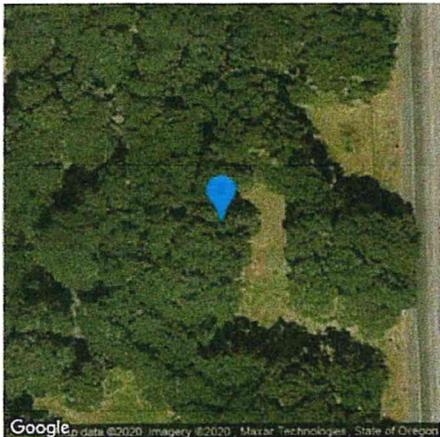


March 9, 2020

Quercus garryana ID# 18
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 7"-12"

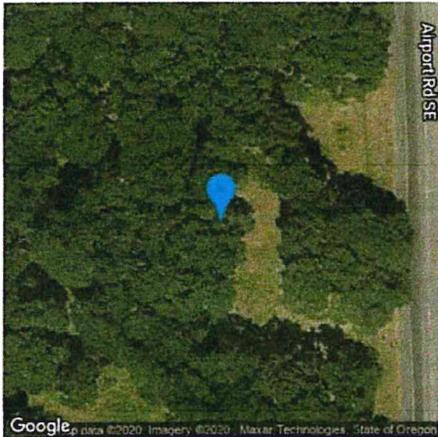
Quercus garryana ID# 19
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 13"-18"

Quercus garryana ID# 19
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 13"-18"



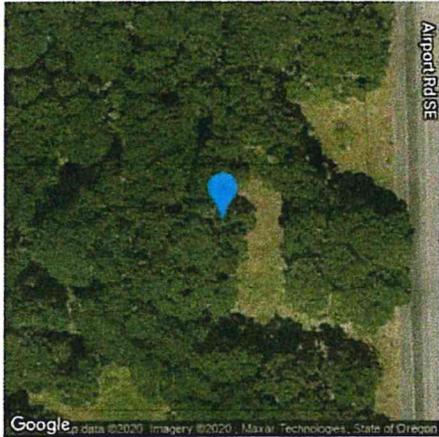
In the CRZ / Removal

7"



In the CRZ / Removal

17"



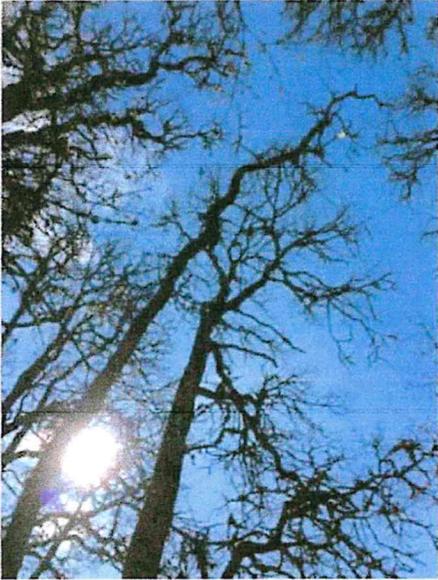
In the CRZ / Removal

17"



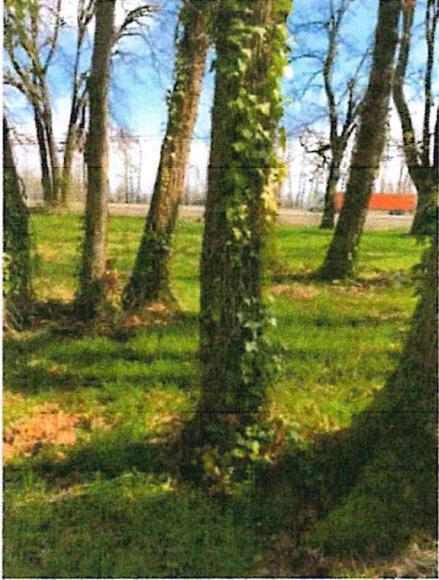
Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



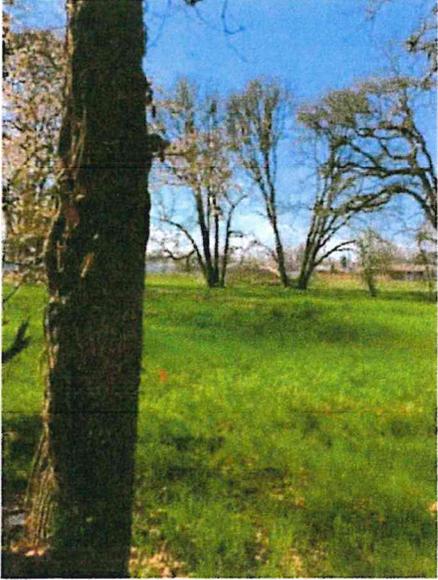
March 9, 2020

Quercus garryana ID# 20
Oregon White Oak
Height: 60'+ DBH: 13"-18"
Health: 80% - Good



March 9, 2020

Quercus garryana ID# 20
Oregon White Oak
Height: 60'+ DBH: 13"-18"
Health: 80% - Good



March 9, 2020

Quercus garryana ID# 21
Oregon White Oak
Height: 60'+ DBH: 13"-18"
Health: 80% - Good



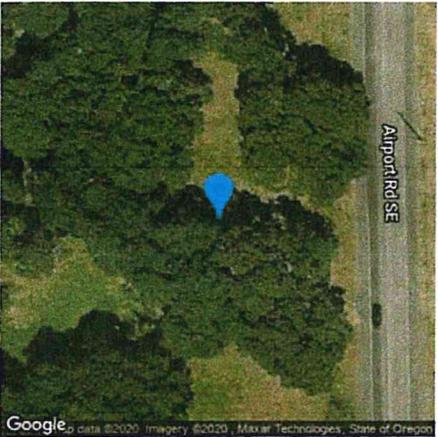
heavy lean / In the CRZ / Removal

12"



heavy lean / In the CRZ / Removal

12"



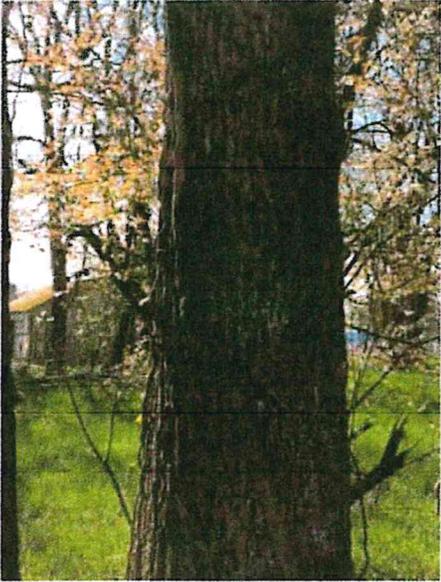
heavy lean / In the CRZ / Removal

11"

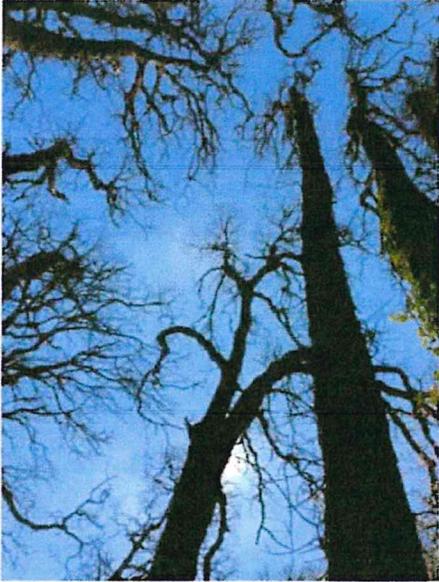


Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



March 9, 2020



March 9, 2020



March 9, 2020

Quercus garryana ID# 22
Oregon White Oak
Height: 60'+
DBH: 13"-18"
Health: 80% - Good

Quercus garryana ID# 23
Oregon White Oak
Height: 60'+
DBH: 13"-18"
Health: 80% - Good

Quercus garryana ID# 23
Oregon White Oak
Height: 60'+
DBH: 13"-18"
Health: 80% - Good



heavy lean / In the CRZ / Removal

16"



In the CRZ / Removal

13"



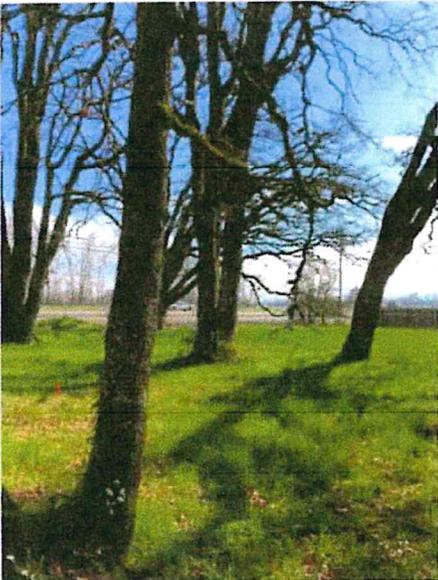
In the CRZ / Removal

13"



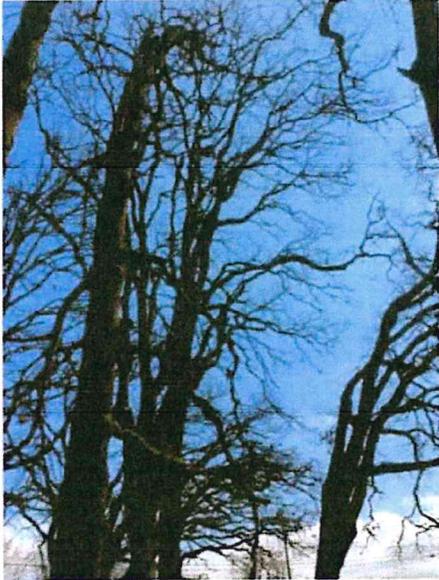
Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



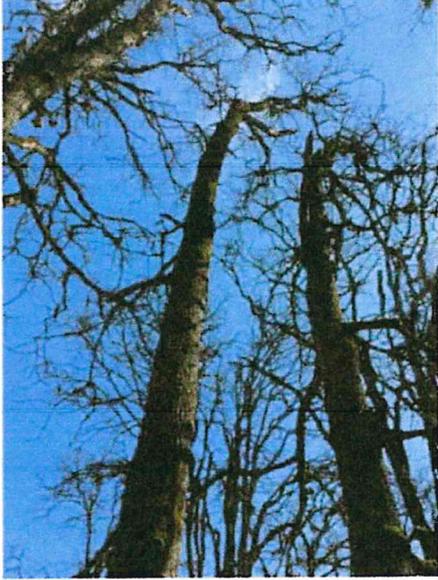
March 9, 2020

Quercus garryana ID# 24
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 13"-18"



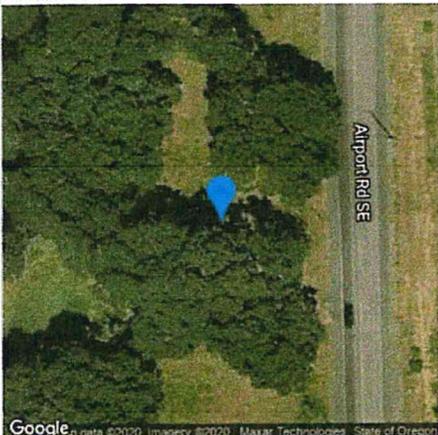
March 9, 2020

Quercus garryana ID# 24
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 13"-18"

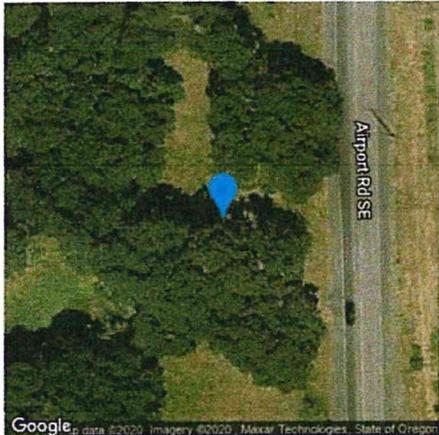


March 9, 2020

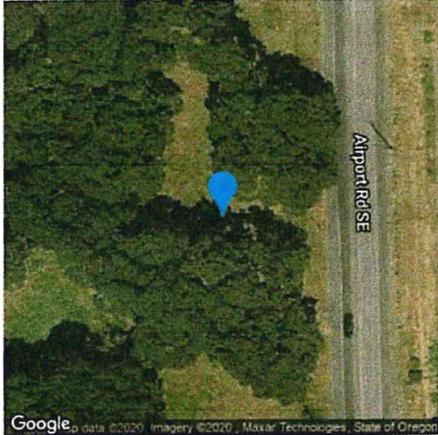
Quercus garryana ID# 25
Oregon White Oak
Height: 60'+
Health: 80% - Good
DBH: 13"-18"



heavy lean / In the CRZ / Removal



heavy lean / In the CRZ / Removal



heavy lean / In the CRZ / Removal

16"

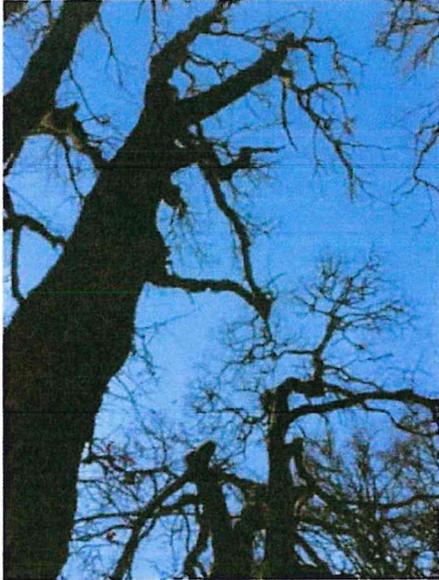


Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



March 9, 2020



March 9, 2020



March 9, 2020

Quercus garryana ID# 25
Oregon White Oak
Height: 60'+ DBH: 13"-18"
Health: 80% - Good

Quercus garryana ID# 26
Oregon White Oak
Height: 60'+ DBH: 13"-18"
Health: 80% - Good

Quercus garryana ID# 27
Oregon White Oak
Height: 60'+ DBH: 19"-24"
Health: 80% - Good



heavy lean / In the CRZ / Removal

16"



heavy lean / In the CRZ / Removal

18"



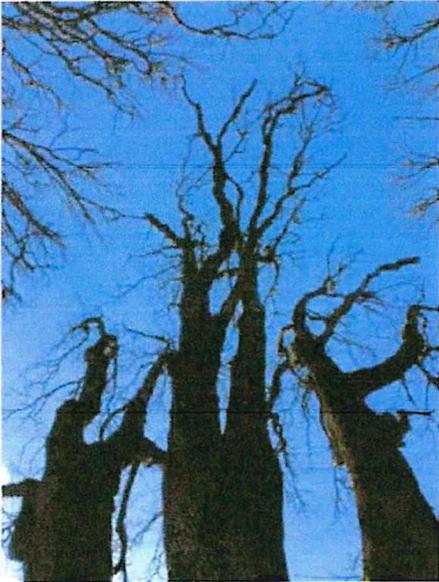
heavy lean / In the CRZ / Removal

20"



Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



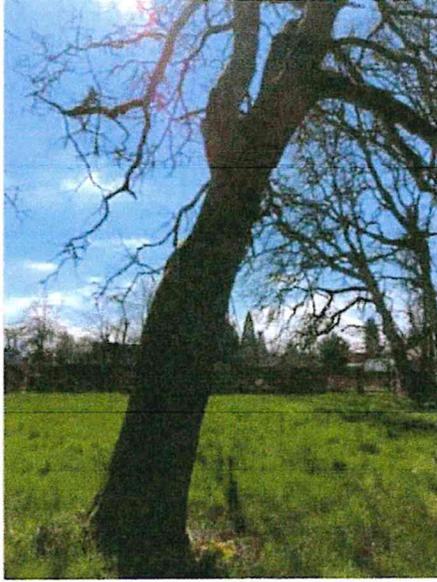
March 9, 2020

Quercus garryana ID# 28
Oregon White Oak
Height: 60'+
DBH: 19"-24"
Health: 80% - Good



March 9, 2020

Quercus garryana ID# 29
Oregon White Oak
Height: 60'+
DBH: 19"-24"
Health: 80% - Good



March 9, 2020

Quercus garryana ID# 29
Oregon White Oak
Height: 60'+
DBH: 19"-24"
Health: 80% - Good



heavy lean / In the CRZ / Removal

23"



heavy lean / In the CRZ / Removal

23"



heavy lean / In the CRZ / Removal

23"



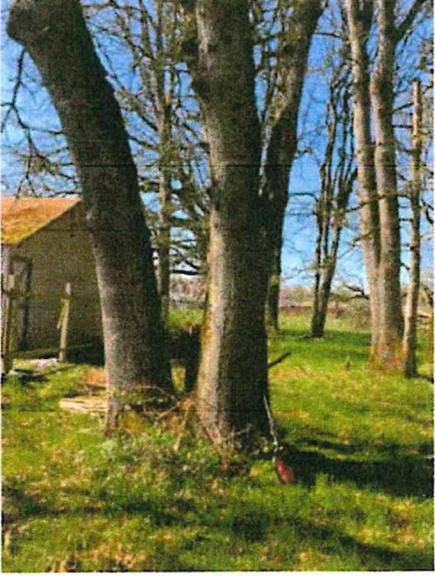
Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



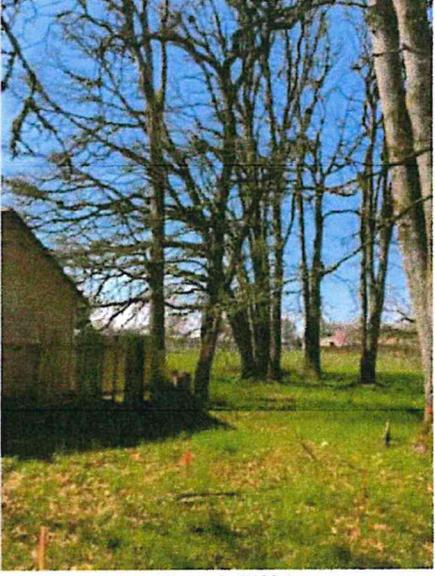
March 9, 2020

Quercus garryana ID# 30
Oregon White Oak
Height: 60'+ DBH: 19"-24"
Health: 80% - Good



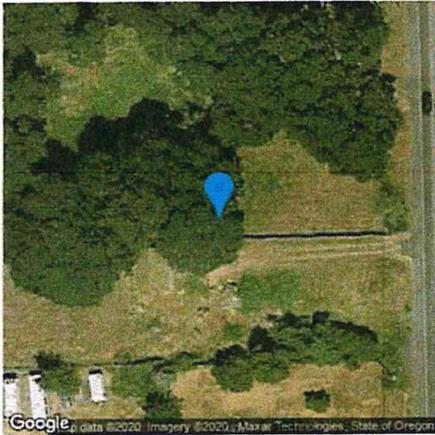
March 9, 2020

Quercus garryana ID# 30
Oregon White Oak
Height: 60'+ DBH: 19"-24"
Health: 80% - Good



March 9, 2020

Quercus garryana ID# 31
Oregon White Oak
Height: 60'+ DBH: 13"-18"
Health: 80% - Good



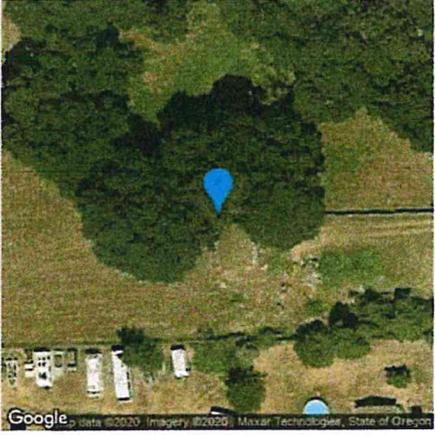
heavy lean / In the CRZ / Removal

12,14,22,23"



heavy lean / In the CRZ / Removal

12,14,22,23"

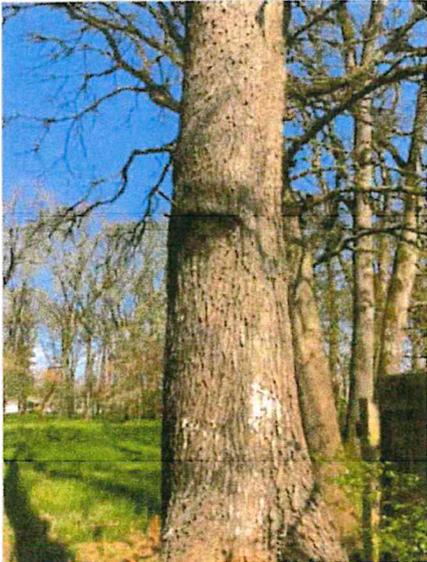


In the CRZ / Removal



Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



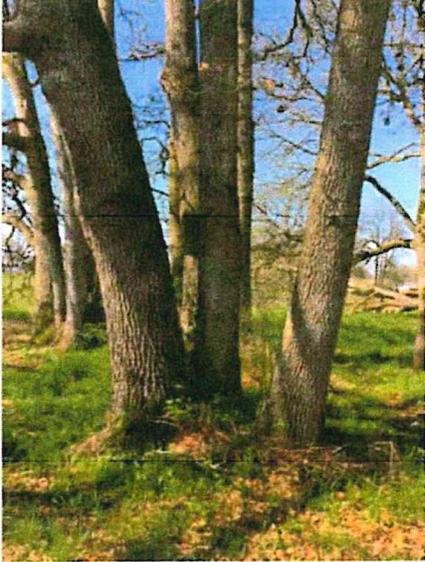
March 9, 2020

Quercus garryana ID# 32
Oregon White Oak
Height: 60'+ DBH: 19"-24"
Health: 80% - Good



March 9, 2020

Quercus garryana ID# 32
Oregon White Oak
Height: 60'+ DBH: 19"-24"
Health: 80% - Good



March 9, 2020

Quercus garryana ID# 33
Oregon White Oak
Height: 60'+ DBH: 19"-24"
Health: 80% - Good



In the CRZ / Removal



In the CRZ / Removal



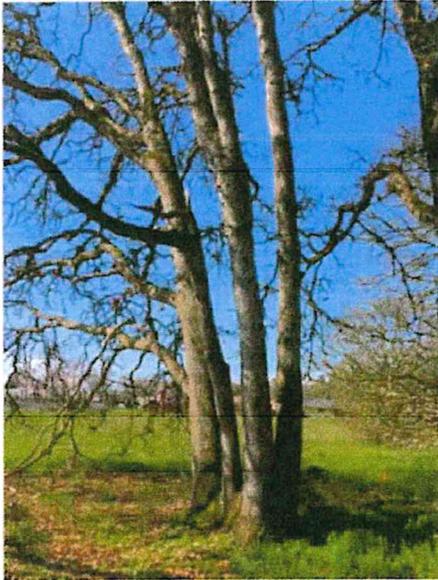
In the CRZ / Removal

6,12,13,15,20"



Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



March 9, 2020

Quercus garryana ID# 34
Oregon White Oak
Height: 60'+ DBH: 19"-24"
Health: 80% - Good



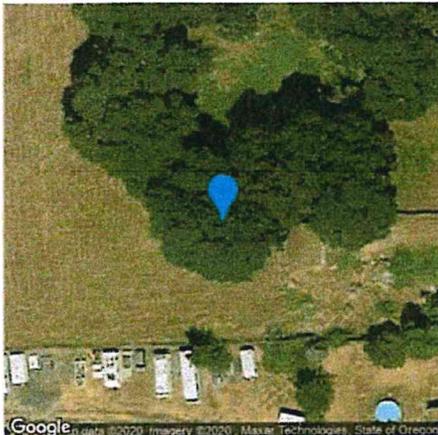
March 9, 2020

Quercus garryana ID# 35
Oregon White Oak
Height: 60'+ DBH: 19"-24"
Health: 80% - Good



March 9, 2020

Quercus garryana ID# 46
Oregon White Oak
Height: 60'+ DBH: 19"-24"
Health: 60% - Fair



Retain not in the CRZ

9,13,14,16,18"



heavy lean / In the CRZ / Removal

31"



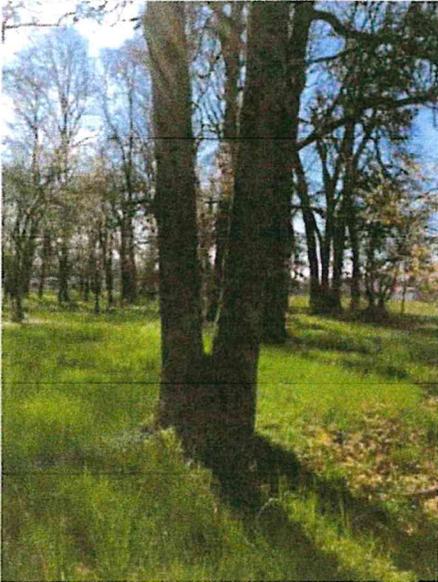
In the CRZ / Removal

22"



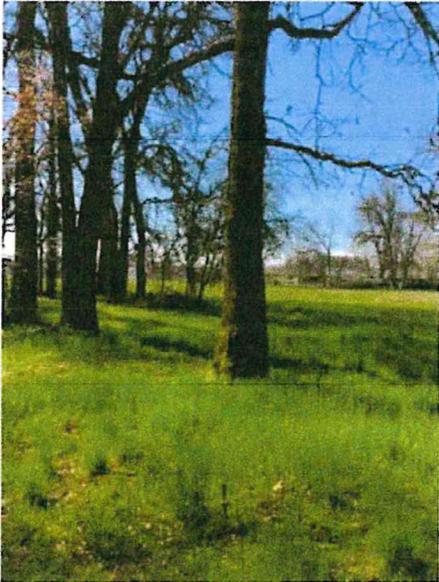
Mike Schultz Oak Tree Project 3-3-2020

Proposal 03-10-2020



March 9, 2020

Quercus garryana ID# 47
Oregon White Oak
Height: 60'+ DBH: 19"-24"
Health: 60% - Fair



March 9, 2020

Quercus garryana ID# 48
Oregon White Oak
Height: 60'+ DBH: 19"-24"
Health: 60% - Fair



In the CRZ / Removal

16.18"



In the CRZ / Removal

21"



Oregon

Kate Brown, Governor

Department of State Lands

775 Summer Street NE, Suite 100

Salem, OR 97301-1279

(503) 986-5200

FAX (503) 378-4844

www.oregon.gov/dsl

State Land Board

Kate Brown

Governor

November 5, 2018

Well Built Homes
Attn: Mike Shults
P.O. Box 41
St. Paul, OR 97137

Re: WD #2018-0425 Wetland Delineation Report for Residential
Development; Linn County;
T 11S R 3W S 9BB TL 2700 and 2701;

Dennis Richardson
Secretary of State

Tobias Read

State Treasurer

Dear Mr. Shults:

The Department of State Lands has reviewed the wetland delineation report prepared by Turnstone Environmental for the site referenced above. Based upon the information presented in the report, a site visit on May 8, 2018 we concur with the wetland boundaries as mapped in revised Figure 6 of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map.

Within the study area, one wetland (Wetland 1 totaling approximately 1.759 acres), was identified. Wetland 1 is subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in the wetland or below the ordinary high-water line (OHWL) of the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will determine jurisdiction for purposes of the Clean Water Act. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the

Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5218 if you have any questions.

Sincerely,


Lauren Brown
Jurisdiction Coordinator

Approved by 
Peter Ryan, PWS
Aquatic Resource Specialist

Enclosures

ec: Joe Bettis, Turnstone Environmental
Albany Planning Department (Maps enclosed for updating LWI)
Andrea Wagner, Corps of Engineers
Carrie Landrum, DSL

ONSITE WETLAND DETERMINATION REPORT
OREGON DEPARTMENT OF STATE LANDS
 775 Summer Street NE, Suite 100, Salem OR 97301-1279 (503) 986-5200

BATCH
WD#2018-0282

An onsite wetland determination has been conducted on the property described below.

County: Linn

City: Albany

Owner Name & Address: Mike Shults Well Built Homes

Township: 11S

Range: 03W

Section: 09

Q/Q: BB

Tax Lot(s): 2700

Project Name: Duplex

Date of Site Visit 05/08/2018

Site Address/Location: Vacant lot on the corner of Franklin and Airport Rd

- There are no jurisdictional wetlands or waterways on the property. Therefore, no state removal-fill permit is required.
Notes: _____
- There are wetlands or waterways on the property that are subject to the state Removal-Fill Law.
 - A state permit is required for ≥ 50 cubic yards of fill, removal, or ground alteration in the wetlands or waterways.
 - A state permit may be required for any amount of fill, removal, or ground alteration in the Essential Salmonid Habitat and hydrologically associated wetlands.
- A wetland determination or delineation is needed. If site development is planned, the delineation report should be submitted to the Department for review and approval.
- Within the tax lot, a state permit will not be required for any work within the area marked upland. A wetland delineation is recommended for the remainder of the tax lot prior to development.
- A permit may be required by the Army Corps of Engineers: (503) 808-4373

Note: This report is for the state Removal-Fill Law only. City or County permits may be required for the proposed activity.

Comments: The enclosed map shows the area of upland. Please call Lauren Brown at 503-986-5218 if you have any questions.

Determination by: Lauren Brown J. Noble Date 05/16/2018

- This jurisdictional determination is valid for five years from the above date, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months from the above date.
- This is a preliminary jurisdictional determination and is advisory only

Copy To: Owner: wellbuilt homes@yahoo.com Enclosures: MAP

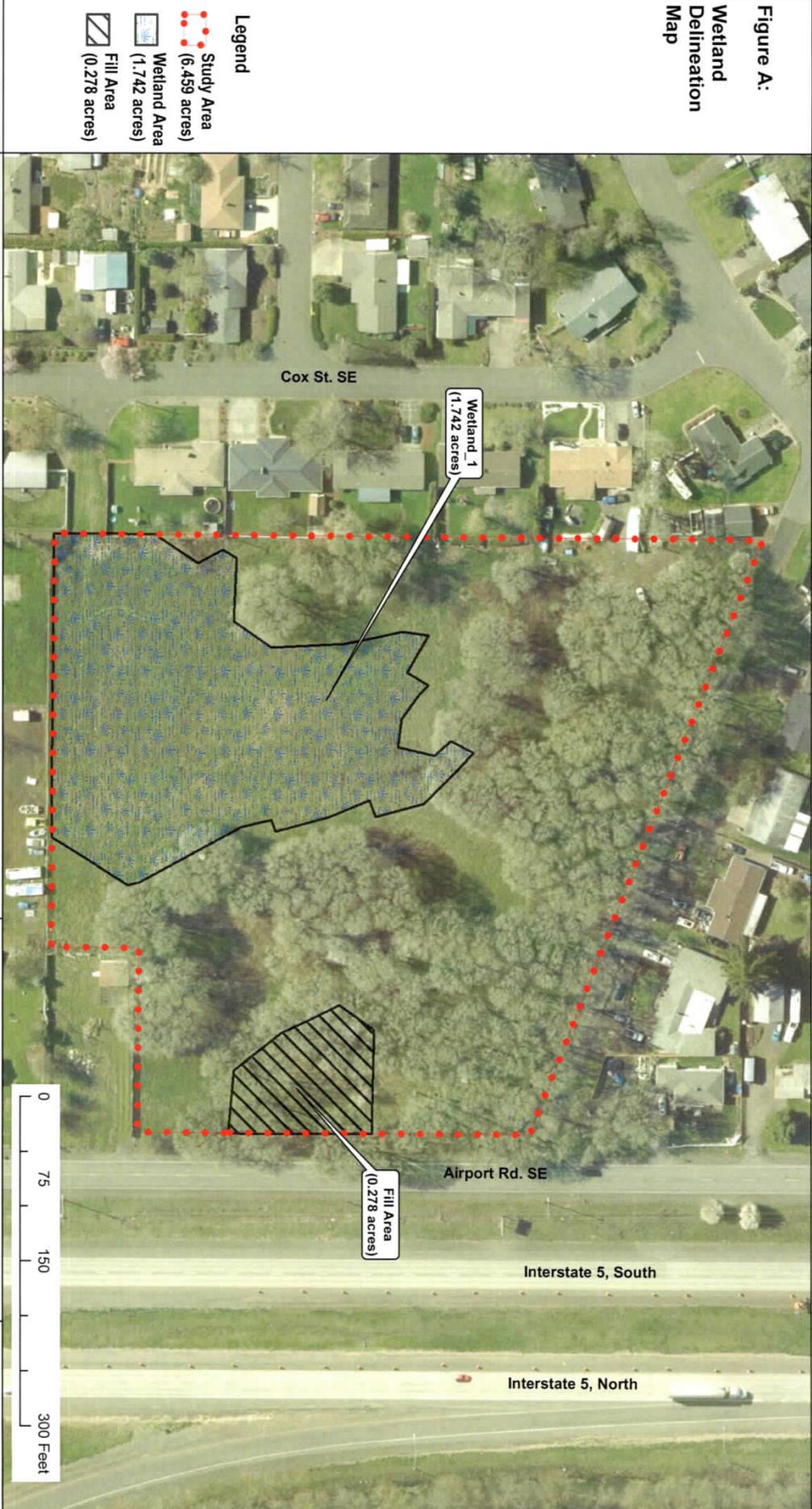
Albany, Planning Department

Andrea Wagner, USACE

FOR OFFICE USE ONLY

Entire Lot(s) Checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Waters Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Maybe	Request Received: <u>04/25/2018</u>	<input type="checkbox"/> For ENF.
LWI Area: <u>n/a</u> LWI Code: <u>n/a</u>	Latitude: <u>44.633193</u> Longitude: <u>-123.064916</u>	Related DSL File #:	
Has Wetlands? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Unk	ESH? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Wild & Scenic? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	State Scenic? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Adjacent Waterbody: _____	NWI Quad: _____	<input type="checkbox"/> Mailings Completed	<input checked="" type="checkbox"/> Data Entry Completed
Coast Zone? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unk			

Figure A:
Wetland
Delineation
Map



Linn County, Or.

**Airport Rd, SE
Wetland Delineation**

6/7/2018

Notes:

1. All wetland points and boundary features were collected with a resource grade GPS and have an accuracy of 1 meter or less.
2. Study Area boundary created from Linn County parcel data, spatial accuracy is unknown but assumed to be 1 meter or less.
3. Aerial photo source: DigitalGlobe
Photo Date: 8/15/2016





Prepared for:
Mike Shults
PO Box 41
Saint Paul, Oregon 97137

Prepared by:
Turnstone Environmental
PO Box 816
Philomath, Oregon 97370

July 17, 2018



Wetland Delineation Report

for

Tax Lots 2700 & 2701

Airport Road Southeast
Albany, Oregon

PREFACE

Turnstone Environmental Consultants, Inc. (Turnstone) prepared this wetland delineation report for a 6.5-acre Study Area located in Albany, Linn County, Oregon. The findings of this report are based upon information gathered during the field investigation and upon state and federal laws regulating wetland areas. Turnstone staff utilized the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) along with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, Version 2* (USACE 2010) to conduct wetland delineations.

The wetland boundaries and classifications described in this document represent the best professional judgment of Turnstone staff. The decisions were based on the environmental circumstances and site conditions at the time of the field visit. Final verification of this wetland delineation is to be made by the appropriate federal, state, and local jurisdictions. Prior to final design or any construction activity on the site is to take place, all appropriate regulatory agencies should be contacted to verify the findings of this report and to obtain appropriate approvals and permits.

ACRONYMS

DSL	Department of State Lands
HGM	Hydrogeomorphic
LWI	Local Wetland Inventory
NWI	National Wetland Inventory
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
PEM	Palustrine Emergent
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey

TABLE OF CONTENTS

Preface	i
Acronyms	i
List of Tables	ii
List of Appendices	ii
A. Landscape Setting and Land use	1
B. Site Alterations	2
C. Precipitation Data	2
D. Methods	4
Preliminary Resource Review	4
Site Specific Methods.....	5
E. Description of Wetlands and Non-Wetland Waters	5
Wetlands	5
Non-wetland Waters	6
F. Deviation from NWI or LWI	6
G. Mapping Method	7
H. Results and Conclusions	7
I. Disclaimer	7

LIST OF TABLES

Table 1-Percent of normal rainfall for the 2017 water year	2
Table 2-Percent of normal rainfall for the 2018 water year through the last full month prior to field investigation (10/1/17 to 4/30/18).....	3
Table 3-Rainfall assessment for the preceding 3-month period.....	3
Table 4-Study Area soil mapping.....	5
Table 5-Summary of wetland and non-wetland waters.....	7

LIST OF APPENDICES

Appendix A: Figures

- Figure 1-Vicinity Map
- Figure 2-Tax Lot Map
- Figure 3A-LWI Map
- Figure 3B-NWI Map
- Figure 4-Soil Survey Map
- Figure 5-Recent Aerial Photo Map
- Figure 6-Wetland Delineation Map

Appendix B: WD2018-0282

Appendix C: Wetland Delineation Data Forms and Ground-Level Photographs

Appendix D: Literature Citations

A. LANDSCAPE SETTING AND LAND USE

The Study Area totals 6.5-acres and includes the entirety of tax lots 2700 & 2701 in Albany, Linn County, Oregon (Appendix A-Figures 1, 2 & 5). The Study Area is located approximately 2-miles east of downtown Albany, just west of Interstate 5. The eastern property line is about 75 feet from the southbound lanes of Interstate 5. The centroid coordinates for the Study Area are 44.6339665°, -123.0640257°. The legal description of the Study Area is Willamette Meridian, Township 11 South, Range 3 West, Section 9 NW 1/16 NW 1/4. The Study Area is within the Upper Willamette catchment area (HUC8: 17090003). Land use surrounding the Study Area is dedicated primarily to residential and commercial retail purposes.

The Study Area is situated on a mostly flat, valley bottom terrace. Much of the northern and eastern portions of the Study Area host an upland woodland dominated by Oregon white oak (*Quercus garryana*). Woodland understories are shrubby and host common snowberry (*Symphoricarpos albus*), Himalayan blackberry (*Rubus armeniacus*) and poison oak (*Toxicodendron diversilobum*). Herbaceous species common to Study Area woodlands include soft brome (*Bromus hordeaceus*), quackgrass (*Elymus repens*), Siberian miner's lettuce (*Claytonia sibirica*), nipplewort (*Lapsana communis*) and weedy geranium species (*Geranium dissectum*, *G. lucidum*). The southwest corner of the Study Area is an emergent wetland area dominated by meadow foxtail (*Alopecurus pratensis*).

Figure 1-Looking north from the center portion of the Study Area.



B. SITE ALTERATIONS

No recent alterations of the parcel were observed during field investigation. Evidence of an old home site is present in the eastern portion of the Study Area, along Airport Road Southeast. The old home site includes a disconnected utility pole, a driveway, rubble from an old concrete foundation as well as an apron of gravel fill surrounding the old home site. The total area of fill occupied by the old home site totals about 0.3 acres. A review of historic aerial photographs illustrates very little change in tree cover (Oregon white oak) over the succeeding decades. Drainage patterns in the vicinity of the Study Area have presumably been impacted by the construction of local roads, residential developments and the construction of Interstate 5, built during the mid-twentieth century.

C. PRECIPITATION DATA

The site was investigated on May 30, 2018. Precipitation data is derived from the weather station at Salem Airport (Mc Nary Field) (NOAA 2018, GHCND: USW00024232). The station is located approximately 19-miles north of the Study Area.

Table 1-Percent of normal rainfall for the 2017 water year

Month	Actual	Average	Percent of Normal
	(in)	(in)	
October (2016)	11.3	3.51	322%
November	6.9	5.89	117%
December	5.15	7.15	72%
January (2017)	5.4	5.81	93%
February	13.4	4.01	334%
March	7.69	4.58	168%
April	4.42	2.88	153%
May	1.64	2.02	81%
June	0.74	1.16	64%
July	0	0.20	0%
August	0.15	0.36	42%
September	2.36	1.57	150%
TOTAL:	59.15	39.14	151%

Source: National Climate Data Center, NOAA

Table 2-Percent of normal rainfall for the 2018 water year through the last full month prior to field investigation (10/1/17 to 4/30/18)

Month	Actual (in)	Average (in)	Percent of Normal
October (2017)	5.45	3.51	155%
November	6.57	5.89	112%
December	3.08	7.15	43%
January (2018)	7.33	5.81	126%
February	2.21	4.01	55%
March	3.21	4.58	70%
April	5.28	2.88	183%
TOTAL:	33.13	33.83	98%

Source: National Climate Data Center, NOAA

Table 3-Rainfall assessment for the preceding 3-month period

Prior Month	WETS Rainfall Percentile (in)		Measured Rainfall (in)	Condition (Dry, Wet, Normal)	Condition Value (1=dry, 2=normal, or 3= wet)	Month Weight	Multiply (previous two columns)	
	30th	70th						
1st (most recent)	April	1.88	3.29	5.28	Wet	3	3	9
2nd	March	3.02	4.92	3.21	Normal	2	2	4
3rd	February	3.35	6.11	2.21	Dry	1	1	1
							Sum	14
Rainfall of prior period was:								Normal
drier than normal (sum is 6-9), normal (sum is 10-14), wetter than normal (sum is 15-18)								
WETS Station: Salem Airport (McNary Field) OR 357500 (1971-2000)								
Measured Rainfall: NOAA GHCN:USW00024232								

Source: National Climate Data Center, NOAA

D. METHODS

Preliminary Resource Review

Prior to the field investigation, reference materials were compiled and reviewed to aid in the detection of wetlands and non-wetland waters. The materials reviewed included:

- 7.5 Minute Quadrangles United States Geologic Survey (USGS 2011)
- Custom Hydric Soils List: Study Area Shape file (NRCS 2018)
- Custom Soil Resource Report for Study Area (NRCS 2018)
- National Climate Data Center precipitation data (NOAA 2018)
- National Wetland Inventory United States Fish and Wildlife Service (USFWS 2018)
- Oregon 8 Digit Hydrologic Unit Code Map (USGS 2007)
- Western Regional Climate Center WETS tables 1971-2000 (NRCS 2018)

Precipitation Analysis

In order to inform field wetland delineation methods and procedures, climate data were analyzed to determine whether recent rainfall was sufficient to expect normal hydrology indicators be present at wetland sampling locations. Precipitation was analyzed by comparing rainfall amounts to historical averages for the complete 2017 water year and the 2018 water year to the last full month prior to field investigation. Recent precipitation was also analyzed using a weighted scoring that compares historical averages to rainfall measured the three months prior to field investigation (Sumner et. al 2009). The 2017 water year ended September 30, 2017 at 151% of normal (Table 1). Precipitation for the 2018 water year through April totaled 98% of normal (**Error! Reference source not found.**). Analysis of precipitation over the preceding three months (February-April) determined however that recent conditions were "normal" (**Error! Reference source not found.**). Given that May was nearly over on the date of field investigation, an analysis of recent precipitation was alternatively calculated for March-May, and recent precipitation was also determined to be "normal". Considering the late-May timing of the field investigation it is presumed that water tables would be at a seasonal low, and positive hydrology determinations would be assumed for plots lacking sufficient hydrology indicators in areas exhibiting hydric soils and hydrophytic vegetation. Wetland sample plots presented in this report were placed in locations where direct observation of hydrology was absent, however oxidized rhizospheres or algal mats served as positive primary hydrology indicators.

National Wetland Inventory (NWI) and Local Wetlands Inventory (LWI)

NWI data and LWIs for Albany were reviewed prior to field investigation. Although four LWI reports exist for Albany, none of the reports covers the Study Area. No NWI features are included in the Study Area. The nearest NWI features include the channel of Cox Creek and Swan Lake.

Previous Wetland Delineations

DSL Jurisdiction Coordinator Lauren Brown performed a wetland determination (WD2018-0282) in the northwest corner of the Study Area on May 8, 2018 (Appendix B). The area is highlighted in the wetland delineation figure (Appendix A-Figures 6) for this report and was determined by DSL to be upland. The conclusions of WD2018-0282 are consistent with alignment of upland areas determined by this report.

Soil Survey Analysis

NRCS soil map units contained in the Study Area are illustrated in **Error! Reference source not found.** (USDA NRCS 2018). A single maps unit occurs in the Study Area, Malabon Silty Clay Loam (Appendix A-

Figure 4). Malabon soils are formed on alluvial terraces and generally occupy convex surfaces. Malabon soils are considered to be well-drained and are not rated as hydric.

Table 4–Study Area soil mapping

Map Unit Symbol	Map Unit Name	Major Component Hydric?	Acres in AOI	Percent of AOI
63	Malabon silty clay loam	No	6.5	100.00%
Totals			6.5	100.00%

Source: USDA NRCS, Web Soil Survey

Site Specific Methods

The field investigation utilized the “Routine Onsite” method from the *Corps Wetland Delineation Manual* (USACE 1987) as guidance. The Study Area was traversed by foot and a visual assessment was conducted of hydrophytic vegetation, suspect topographical features and wetland hydrology indicators. 20 sample plots, including 10 plots paired along wetland boundaries, 8 stand-alone upland plots and 2 stand-alone wetland plots were established to characterize the extent of Study Area wetlands and uplands (Appendix A-Figure 6). Sample plot soil pits were dug to a depth of 20”. Absolute aerial cover of plant species was reported for tree, shrub and herb layers, utilizing 10-, 5-, 1-meter square plots respectively. Numerous, unrecorded soil pits and probes were utilized to preliminarily “rough-in” the wetland boundaries prior to mapping and recording formal plot data. Wetland data forms are included in Appendix C. Soil colors (moistened) were determined using Munsell Soil Color Charts (Gretag Macbeth 2000). Photo points were established near each sample point to document site conditions at the time of field investigation and are included with the wetland data forms in Appendix C. While no drainages are contained in the Study Area, searches for channels and ordinary high-water mark (OHWM) signatures were based upon the physical and biological characteristics outlined in Army Corps of Engineers Regulatory Guidance Letter 05-05 (USACE 2005).

E. DESCRIPTION OF WETLANDS AND NON-WETLAND WATERS

Wetlands

Wetland 1 (1.76 acres /76,609 square feet)

Wetland 1 is an HGM Flats, Cowardin Palustrine Emergent feature. The wetland is located in southwest corner of the Study Area. The wetland directly abuts the lot lines in the southwest and southern portions of the Study Area. The wetland appears to continue out of the Study Area in these areas but is likely impacted by fill. Vegetation of the wetland is a near monoculture of meadow foxtail. Adjacent uplands host a woodland of Oregon white oak with a shrubby understory. The northeast portion of the wetland contains a subtle swale that appears to host shallow surface water during the wet season, as evidenced by the presence of algal mats. Soils sampled just inside wetland boundaries were silty clay loams and generally very dark gray (10YR 3/1) to dark gray (10YR 4/1). Lower portions of the soil profile and interior portions of the wetland occasionally hosted clay soil textures. Wetland soils either met the Redox Dark Surface (F6) or Depleted Matrix (F3) soil indicators with qualifying redox features as pore linings or matrix concentrations. Oxidized root linings were present from near the soil surface to up to 11” deep. An although the timing of the field investigation is assumed to have precluded direct observation of wetland hydrology, primary hydrology indicators were present including oxidized rhizospheres (C3) and algal mats (B4).

Figure 2-Looking south along the western boundary of Wetland 1



Non-wetland Waters

There are no non-wetland waters including natural drainages or created ditches contained in the Study Area.

F. DEVIATION FROM NWI OR LWI

Wetland areas identified in the Study Area are not contained in the NWI. No local wetland inventory covers the Study Area.

G. MAPPING METHOD

Sample Points and wetland boundaries were collected using a Trimble Pro 6H GPS receiver paired with a Trimble mobile computer equipped with ArcPad software. Points and wetland boundaries are accurate to within 1-meter. GPS data was collected in a WGS84 geographic coordinate system and later transformed into a local coordinate system, NAD 1983 State Plane Oregon North FIPS3601 Feet, to calculate areas and create associated figures.

H. RESULTS AND CONCLUSIONS

One wetland area totaling 1.76 acres was identified in the Study Area. No non-wetland waters are contained in the Study Area.

Table 5-Summary of wetland and non-wetland waters

Wetland Name	HGM	Cowardin	Area Acres	Area Square Feet
Wetland 1	Flats	PEM	1.76	76,609

I. DISCLAIMER

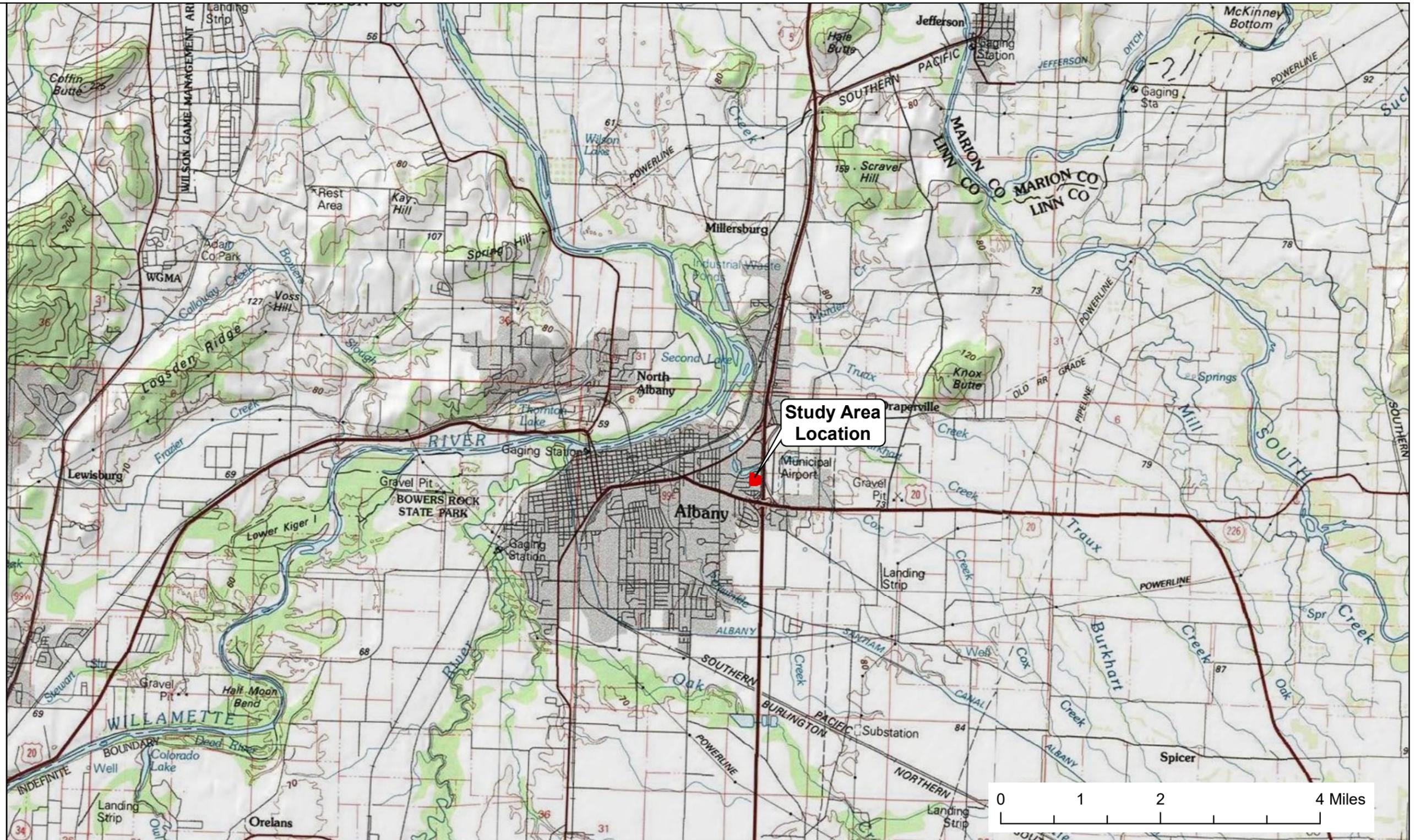
This report documents the investigation, best professional judgment and conclusions of the investigator. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-005 through OAR 141-090- 0055.

Appendix A

Figures

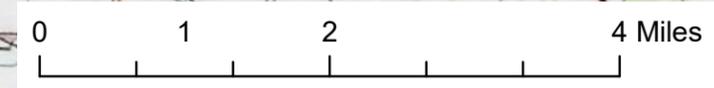
- **Figure 1-Vicinity Map**
- **Figure 2-Tax Lot Map**
- **Figure 3A-LWI Map**
- **Figure 3B-NWI Map**
- **Figure 4-Soil Survey Map**
- **Figure 5-Recent Aerial Photo Map**
- **Figure 6-Wetland Delineation Map**

Figure 1:
Vicinity
Map



Legend

 Study Area
(6.459 acres)



Shults Airport Road SE Wetland Delineation

Linn County, Or.

6/7/2018

Notes:

- 1. Basemap provided by USGS
- 2. Study Area boundary created from Linn County parcel data, spatial accuracy is unknown but assumed to be 1 meter or less.



Figure 2:
Tax Lot
Map



Legend

□ Tax Lot Boundary

⋯ Study Area (6.459 acres)



Shults Airport Road SE Wetland Delineation

Linn County, Or.

6/7/2018

Notes:

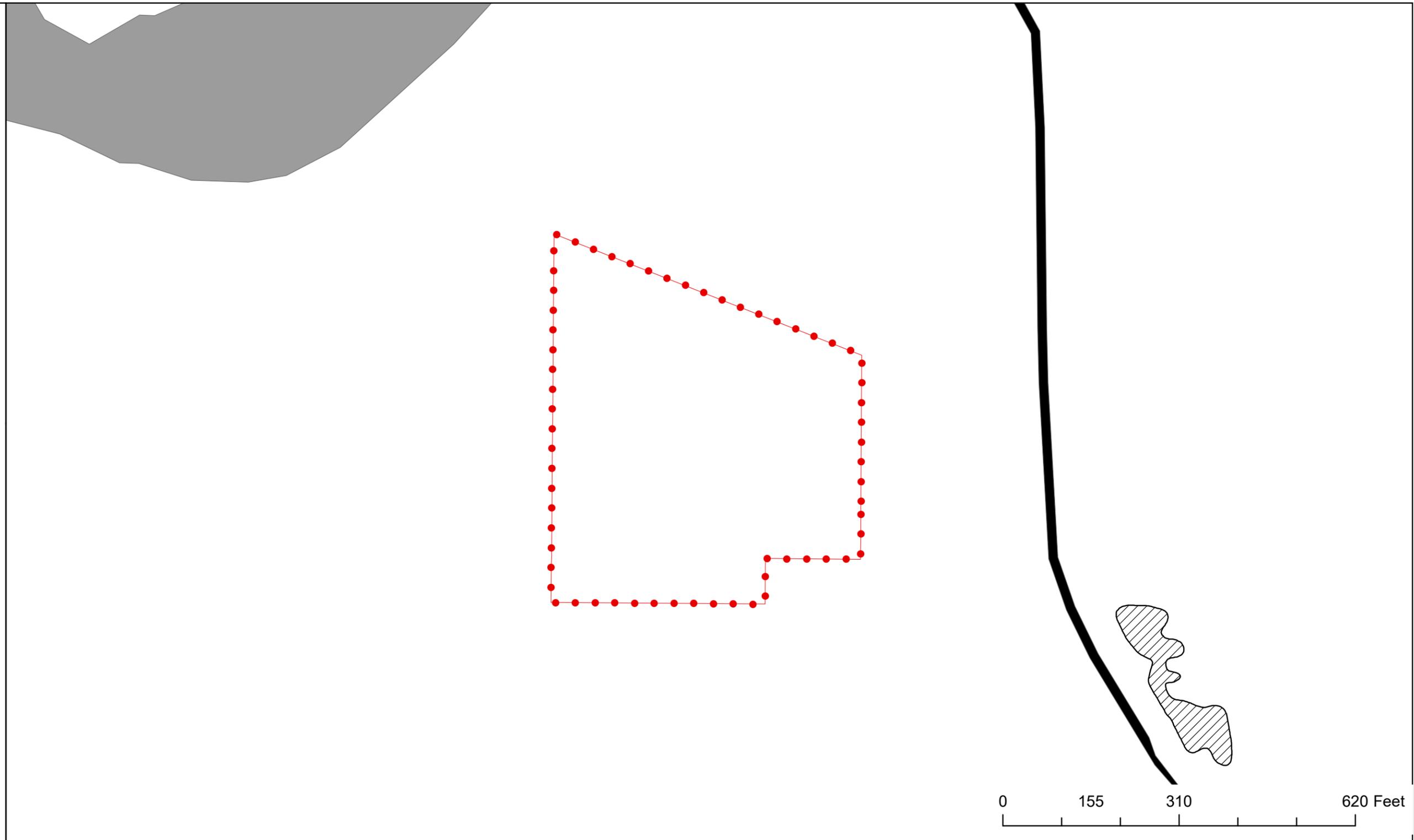
1. Study Area boundary created from Linn County parcel data, spatial accuracy is unknown but assumed to be 1 meter or less.
2. Tax Lot Boundaries provided by Linn County, spatial accuracy is unknown but assumed to be 1 meter or less.
3. Aerial photo source: DigitalGlobe
Photo Date: 10/31/2017



Figure 3:
NWI/LWI
Map

Legend

-  Study Area
(6.459 acres)
-  LWI, PEM
-  NWI, PUBHh
-  NWI, R4SBCx



Shults Airport Road SE Wetland Delineation

Linn County, Or.

6/7/2018

Notes:

1. Study Area boundary created from Linn County parcel data, spatial accuracy is unknown but assumed to be 1 meter or less.
2. NWI data provided by USFWS.
3. LWI data provide by Oregon Department of State Lands.
4. No NWI or LWI features mapped within study area boundary.



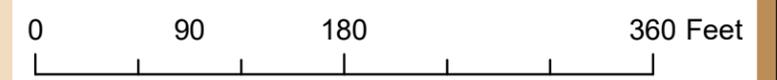
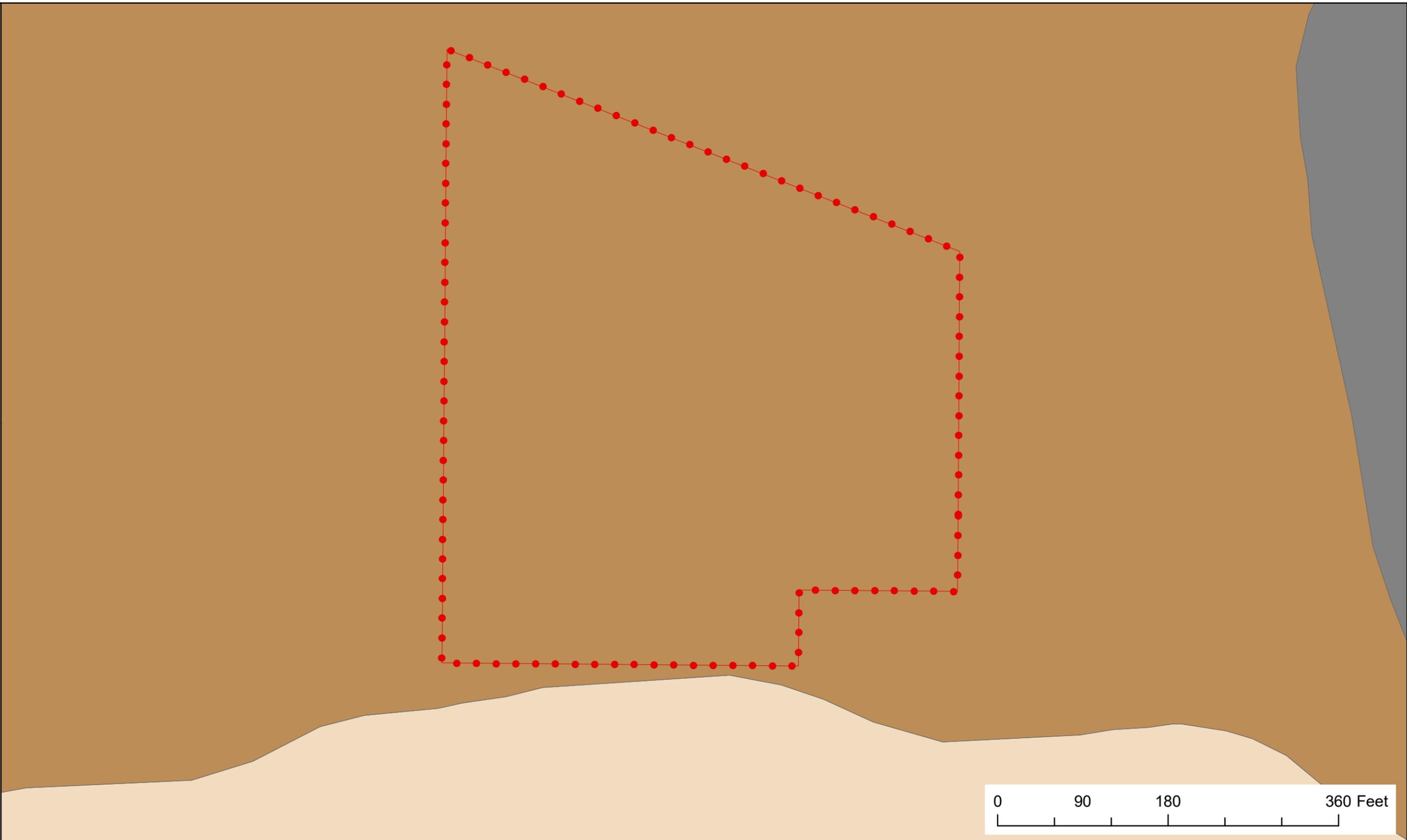
Figure 4:
Soil Survey
Map

Legend

 Study Area
(6.459 acres)

Soil Survey Data

-  Clackamas gravelly silt loam
-  Malabon silty clay loam
-  Woodburn silt loam, 0 to 3% slopes



Shults Airport Road SE Wetland Delineation

Linn County, Or.

6/7/2018

Notes:

1. Soil Survey data provided by NRCS.



Figure 5:
Recent Aerial
Photo



Legend

 Study Area
(6.459 acres)



Shults Airport Road SE Wetland Delineation

Linn County, Or.

6/7/2018

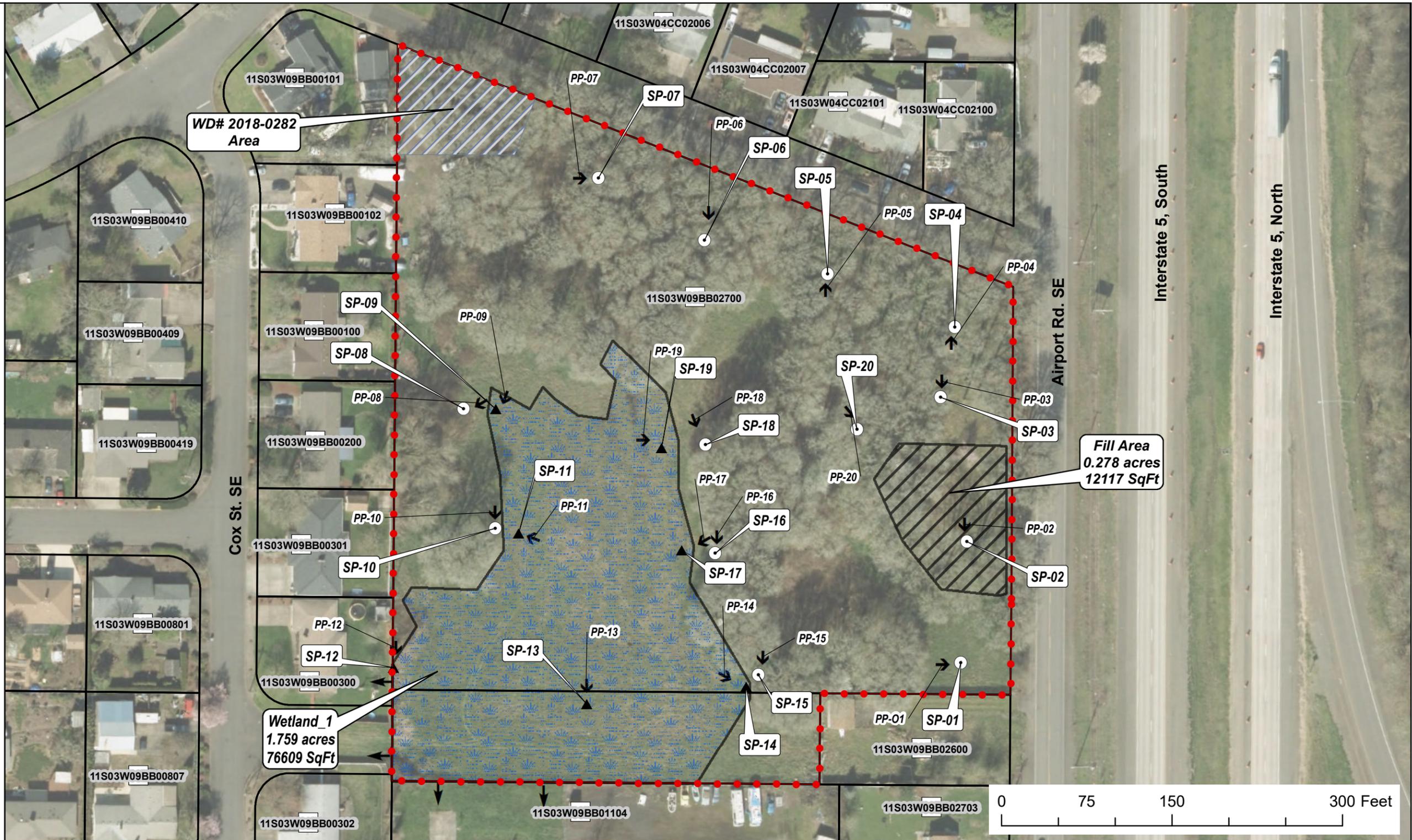
Notes:

1. Aerial photo source; DigitalGlobe
Photo Date: 10/31/2017



Figure 6:
Wetland Delineation Map

- Legend**
- ↑ Wetland Extends Outside Study Area
 - ↑ Photo Points
 - Sample Points**
 - UPL
 - ▲ WET
 - Tax Lot Boundary
 - Study Area (6.459 acres)
 - WD# 2018-0282 Area (all upland)
 - Wetland Area (1.759 acres)
 - Fill Area (0.278 acres)



**Shults Airport Road SE
Wetland Delineation**

Linn County, Or.

6/7/2018

Notes:

1. Study Area boundary created from Linn County parcel data, spatial accuracy is unknown but assumed to be 1 meter or less.
2. Tax Lot Boundaries provided by Linn County, spatial accuracy is unknown but assumed to be 1 meter or less.
3. Aerial photo source; DigitalGlobe
Photo Date: 10/31/2017



Appendix B

WD2018-0282

**ONSITE WETLAND DETERMINATION REPORT
OREGON DEPARTMENT OF STATE LANDS**

BATCH
WD#2018- **0282**

775 Summer Street NE, Suite 100, Salem OR 97301-1279 (503) 986-5200

An onsite wetland determination has been conducted on the property described below.

County: Linn

City: Albany

Owner Name & Address: Mike Shults Well Built Homes

Township: 11S Range: 03W Section: 09 Q/Q: BB Tax Lot(s): 2700

Project Name: Duplex Date of Site Visit 05/08/2018

Site Address/Location: Vacant lot on the corner of Franklin and Airport Rd

- There are no jurisdictional wetlands or waterways on the property. Therefore, no state removal-fill permit is required.
Notes: _____
- There are wetlands or waterways on the property that are subject to the state Removal-Fill Law.
 - A state permit is required for ≥ 50 cubic yards of fill, removal, or ground alteration in the wetlands or waterways.
 - A state permit may be required for any amount of fill, removal, or ground alteration in the Essential Salmonid Habitat and hydrologically associated wetlands.
- A wetland determination or delineation is needed. If site development is planned, the delineation report should be submitted to the Department for review and approval.
- Within the tax lot, a state permit will not be required for any work within the area marked upland. A wetland delineation is recommended for the remainder of the tax lot prior to development.
- A permit may be required by the Army Corps of Engineers: (503) 808-4373

Note: This report is for the state Removal-Fill Law only. City or County permits may be required for the proposed activity.

Comments: The enclosed map shows the area of upland. Please call Lauren Brown at 503-986-5218 if you have any questions.

Determination by: Lauren Brown A. Suble Date 05/16/2018

This jurisdictional determination is valid for five years from the above date, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months from the above date.

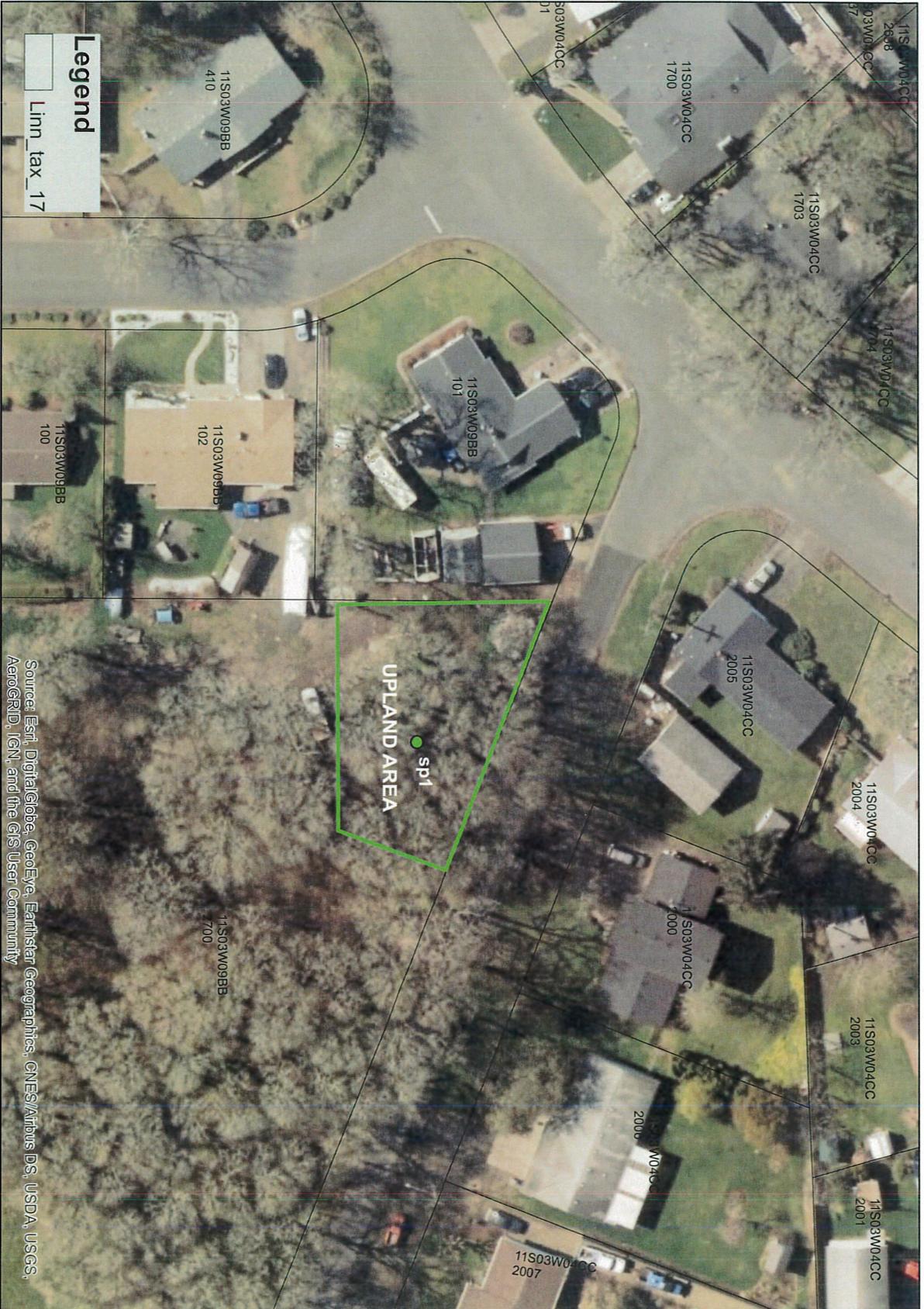
This is a preliminary jurisdictional determination and is advisory only

Copy To: Owner: wellbuilt homes@yahoo.com Enclosures: MAP
 Albany, Planning Department
 Andrea Wagner, USACE

FOR OFFICE USE ONLY

Entire Lot(s) Checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Waters Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Maybe	Request Received: <u>04/25/2018</u>	<input type="checkbox"/> For ENF.
LWI Area: <u>n/a</u> LWI Code: <u>n/a</u>	Latitude: <u>44.633193</u> Longitude: <u>-123.064916</u>	Related DSL File #:	
Has Wetlands? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Unk	ESH? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Wild & Scenic? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	State Scenic? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Adjacent Waterbody: _____	NWI Quad: _____	<input type="checkbox"/> Mailings Completed <input checked="" type="checkbox"/> Data Entry Completed	

MAP:
tax lot 2700



Legend
Linn_tax_17

90 45 0 90 Feet



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Appendix C

Wetland Delineation Data Forms & Ground-Level Photographs

ATTACHMENT K.26

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_01
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.633408 **Long.:** -123.063047 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:** _____

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: 	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: <u>10 m</u>)				
1. <u>Quercus garryana</u>	0	<input type="checkbox"/> 0.0%	FACU	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
= Total Cover	0			
Sapling/Shrub Stratum (Plot size: <u>5 m</u>)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>3</u> x 5 = <u>15</u> Column Totals: <u>103</u> (A) <u>355</u> (B) Prevalence Index = B/A = <u>3.447</u>
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
= Total Cover	0			
Herb Stratum (Plot size: <u>1 m</u>)				
1. <u>Alopecurus pratensis</u>	50	<input checked="" type="checkbox"/> 48.5%	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Galium aparine</u>	15	<input checked="" type="checkbox"/> 14.6%	FACU	
3. <u>Cirsium vulgare</u>	10	<input type="checkbox"/> 9.7%	FACU	
4. <u>Sonchus asper</u>	10	<input type="checkbox"/> 9.7%	FACU	
5. <u>Myosotis discolor</u>	5	<input type="checkbox"/> 4.9%	FAC	
6. <u>Poa trivialis</u>	5	<input type="checkbox"/> 4.9%	FAC	
7. <u>Bromus hordeaceus</u>	5	<input type="checkbox"/> 4.9%	FACU	
8. <u>Geranium dissectum</u>	3	<input type="checkbox"/> 2.9%	UPL	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
= Total Cover	103			
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%	_____	
= Total Cover	0			
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks: 				

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Plot ID: **SP_01**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6904.JPG** Orientation: East -facing

Lat/Long or UTM : Long/Easting: **44.633408** Lat/Northing: **-123.063047**

Description: **PP_01**

No Photo

Photo File: **None.bmp** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

ATTACHMENT K.29

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_02
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.6337 **Long.:** -123.063039 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Plot located in on former home site.	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status		
Tree Stratum (Plot size: 10 m)					
1. Quercus garryana	50	<input checked="" type="checkbox"/> 100.0%	FACU	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species Across All Strata: 5 (B) Percent of dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)	
2.	0	<input type="checkbox"/> 0.0%			
3.	0	<input type="checkbox"/> 0.0%			
4.	0	<input type="checkbox"/> 0.0%			
	50	= Total Cover		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 25 x 3 = 75 FACU species 65 x 4 = 260 UPL species 26 x 5 = 130 Column Totals: 116 (A) 465 (B) Prevalence Index = B/A = 4.009	
Sapling/Shrub Stratum (Plot size: 5 m)					
1. Prunus domestica	10	<input checked="" type="checkbox"/> 100.0%	FACU		
2.	0	<input type="checkbox"/> 0.0%			
3.	0	<input type="checkbox"/> 0.0%			
4.	0	<input type="checkbox"/> 0.0%			
5.	0	<input type="checkbox"/> 0.0%			
	10	= Total Cover			
Herb Stratum (Plot size: 1 m)					
1. Elymus repens	25	<input checked="" type="checkbox"/> 44.6%	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. Bromus diandrus	10	<input checked="" type="checkbox"/> 17.9%	UPL		
3. Vicia hirsuta	10	<input checked="" type="checkbox"/> 17.9%	UPL		
4. Bromus hordeaceus	5	<input type="checkbox"/> 8.9%	FACU		
5. Geranium dissectum	5	<input type="checkbox"/> 8.9%	UPL		
6. Geranium molle	1	<input type="checkbox"/> 1.8%	UPL		
7.	0	<input type="checkbox"/> 0.0%			
8.	0	<input type="checkbox"/> 0.0%			
9.	0	<input type="checkbox"/> 0.0%			
10.	0	<input type="checkbox"/> 0.0%			
11.	0	<input type="checkbox"/> 0.0%			
	56	= Total Cover			
Woody Vine Stratum (Plot size:)					
1.	0	<input type="checkbox"/> 0.0%			
2.	0	<input type="checkbox"/> 0.0%			
	0	= Total Cover			
% Bare Ground in Herb Stratum: 45					

Remarks:

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Plot ID:

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: Orientation: South -facing
Lat/Long or UTM : Long/Easting: **44.6337** Lat/Northing: **-123.063039**
Description:

No Photo

Photo File: Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

ATTACHMENT K.32

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_03
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.634045 **Long.:** -123.063143 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: 10 m)				
1. Quercus garryana	40	<input checked="" type="checkbox"/> 100.0%	FACU	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	40	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5 m)				
1. Symphoricarpos albus	10	<input checked="" type="checkbox"/> 66.7%	FACU	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>8</u> x 2 = <u>16</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>60</u> x 4 = <u>240</u> UPL species <u>24</u> x 5 = <u>120</u> Column Totals: <u>152</u> (A) <u>556</u> (B) Prevalence Index = B/A = <u>3.658</u>
2. Malus pumila	5	<input checked="" type="checkbox"/> 33.3%	UPL	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	15	= Total Cover		
Herb Stratum (Plot size: 1 m)				
1. Alopecurus pratensis	60	<input checked="" type="checkbox"/> 61.9%	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. Lamium purpureum	5	<input type="checkbox"/> 5.2%	UPL	
3. Bromus hordeaceus	5	<input type="checkbox"/> 5.2%	FACU	
4. Galium aparine	5	<input type="checkbox"/> 5.2%	FACU	
5. Vicia hirsuta	5	<input type="checkbox"/> 5.2%	UPL	
6. Camassia leichtlinii	5	<input type="checkbox"/> 5.2%	FACW	
7. Geranium lucidum	5	<input type="checkbox"/> 5.2%	UPL	
8. Geranium dissectum	3	<input type="checkbox"/> 3.1%	UPL	
9. Juncus patens	3	<input type="checkbox"/> 3.1%	FACW	
10. Geranium molle	1	<input type="checkbox"/> 1.0%	UPL	
11. _____	0	<input type="checkbox"/> 0.0%		
	97	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>5</u>				
Remarks:				

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 03

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

Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)	3/1	%	Color (moist)	%	Type ¹	Loc ²			
0-3	10YR	3/1	100						Silty Clay Loam	
3-13	10YR	3/1	97	7.5YR	2.5/2	3	C	M	Silty Clay Loam	(faint redox)
13-20	10YR	4/1	95	7.5YR	2.5/2	3	C	M	Silty Clay Loam	
13-20				10YR	5/4	2	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.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

Indicators for Problematic Hydric Soils³:

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

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

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

Remarks:

Plot ID: **SP_03**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6907.JPG** Orientation: South -facing

Lat/Long or UTM : Long/Easting: **44.634045** Lat/Northing: **-123.063143**

Description: **PP_03**

No Photo

Photo File: **None.bmp** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

ATTACHMENT K.35

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_04
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.634216 **Long.:** -123.063103 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation , Soil , or Hydrology 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: 10 m)				
1. Quercus garryana	60	<input checked="" type="checkbox"/> 100.0%	FACU	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: 40.0% (A/B)
2.	0	<input type="checkbox"/> 0.0%		
3.	0	<input type="checkbox"/> 0.0%		
4.	0	<input type="checkbox"/> 0.0%		
	60	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5 m)				
1. Symphoricarpos albus	30	<input checked="" type="checkbox"/> 85.7%	FACU	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 55 x 3 = 165 FACU species 115 x 4 = 460 UPL species 11 x 5 = 55 Column Totals: 181 (A) 680 (B) Prevalence Index = B/A = 3.757
2. Toxicodendron diversilobum	5	<input type="checkbox"/> 14.3%	FAC	
3.	0	<input type="checkbox"/> 0.0%		
4.	0	<input type="checkbox"/> 0.0%		
5.	0	<input type="checkbox"/> 0.0%		
	35	= Total Cover		
Herb Stratum (Plot size: 1 m)				
1. Alopecurus pratensis	30	<input checked="" type="checkbox"/> 34.9%	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. Bromus hordeaceus	15	<input checked="" type="checkbox"/> 17.4%	FACU	
3. Claytonia sibirica	15	<input checked="" type="checkbox"/> 17.4%	FAC	
4. Geranium dissectum	5	<input type="checkbox"/> 5.8%	UPL	
5. Lapsana communis	5	<input type="checkbox"/> 5.8%	FACU	
6. Galium aparine	5	<input type="checkbox"/> 5.8%	FACU	
7. Anthriscus caucalis	5	<input type="checkbox"/> 5.8%	UPL	
8. Elymus repens	5	<input type="checkbox"/> 5.8%	FAC	
9. Vicia hirsuta	1	<input type="checkbox"/> 1.2%	UPL	
10.	0	<input type="checkbox"/> 0.0%		
11.	0	<input type="checkbox"/> 0.0%		
	86	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	<input type="checkbox"/> 0.0%		Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
2.	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: 15				
Remarks:				

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 04

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

Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)	3/1	%	Color (moist)	%	Tvpe ¹	Loc ²			
0-7	10YR	3/1	100						Silty Clay Loam	
7-9	10YR	3/1	97	7.5YR	2.5/2	3	C	M	Silty Clay Loam	(faint redox)
9-20	10YR	4/1	97	10YR	5/4	3	C	M	Silty Clay Loam	

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.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

Indicators for Problematic Hydric Soils³:

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

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Frost Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>
Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>

Wetland Hydrology Present? Yes No

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

Remarks:

Plot ID: **SP_04**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6908.JPG** Orientation: North -facing

Lat/Long or UTM : Long/Easting: **44.634216** Lat/Northing: **-123.063103**

Description: **PP_04**

No Photo

Photo File: **None.bmp** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

ATTACHMENT K.38

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_05
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.634333 **Long.:** -123.063538 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: 10 m)				
1. Quercus garryana	70	<input checked="" type="checkbox"/> 100.0%	FACU	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
2.	0	<input type="checkbox"/> 0.0%		
3.	0	<input type="checkbox"/> 0.0%		
4.	0	<input type="checkbox"/> 0.0%		
	70	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5 m)				
1. Symphoricarpos albus	30	<input checked="" type="checkbox"/> 100.0%	FACU	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>55</u> x 3 = <u>165</u> FACU species <u>120</u> x 4 = <u>480</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>180</u> (A) <u>670</u> (B) Prevalence Index = B/A = <u>3.722</u>
2.	0	<input type="checkbox"/> 0.0%		
3.	0	<input type="checkbox"/> 0.0%		
4.	0	<input type="checkbox"/> 0.0%		
5.	0	<input type="checkbox"/> 0.0%		
	30	= Total Cover		
Herb Stratum (Plot size: 1 m)				
1. Claytonia sibirica	25	<input checked="" type="checkbox"/> 31.3%	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. Alopecurus pratensis	25	<input checked="" type="checkbox"/> 31.3%	FAC	
3. Galium aparine	10	<input type="checkbox"/> 12.5%	FACU	
4. Lapsana communis	5	<input type="checkbox"/> 6.3%	FACU	
5. Elymus repens	5	<input type="checkbox"/> 6.3%	FAC	
6. Bromus hordeaceus	5	<input type="checkbox"/> 6.3%	FACU	
7. Lamium purpureum	5	<input type="checkbox"/> 6.3%	UPL	
8. Geranium dissectum	0	<input type="checkbox"/> 0.0%	UPL	
9.	0	<input type="checkbox"/> 0.0%		
10.	0	<input type="checkbox"/> 0.0%		
11.	0	<input type="checkbox"/> 0.0%		
	80	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	<input type="checkbox"/> 0.0%		Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
2.	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>20</u>				
Remarks:				

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type ¹	Loc ²			
0-14	10YR	4/1	95	7.5YR	2.5/2	3	C	M	Silty Clay Loam	
0-14				10YR	5/4	2	C	M		
14-20	10YR	5/1	95	7.5YR	2.5/2	3	C	M	Silty Clay Loam	
14-20				10YR	5/4	2	C	M		

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

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox depressions (F8)	<p>Indicators for Problematic Hydric Soils³:</p> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks) <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>
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Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Hydrology

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost Heave Hummocks (D7)
<p>Field Observations:</p> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): <input type="text"/> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): <input type="text"/> Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): <input type="text"/>	
<p>Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p>	
<p>Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:</p>	
<p>Remarks:</p>	

ATTACHMENT K.40

Plot ID: **SP_05**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6909.JPG** Orientation: North -facing
Lat/Long or UTM : Long/Easting: **44.634333** Lat/Northing: **-123.063538**
Description: **PP_05**

No Photo

Photo File: **None.bmp** Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

ATTACHMENT K.41

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_06
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.634405 **Long.:** -123.063958 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation , Soil , or Hydrology 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: 10 m)				
1. Quercus garryana	75	<input checked="" type="checkbox"/> 100.0%	FACU	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: 2 (A) Total Number of Dominant Species Across All Strata: 6 (B) Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)
2.	0	<input type="checkbox"/> 0.0%		
3.	0	<input type="checkbox"/> 0.0%		
4.	0	<input type="checkbox"/> 0.0%		
	75	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5 m)				
1. Symphoricarpos albus	5	<input type="checkbox"/> 16.7%	FACU	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 45 x 3 = 135 FACU species 145 x 4 = 580 UPL species 13 x 5 = 65 Column Totals: 203 (A) 780 (B) Prevalence Index = B/A = 3.842
2. Prunus domestica	15	<input checked="" type="checkbox"/> 50.0%	FACU	
3. Toxicodendron diversilobum	10	<input checked="" type="checkbox"/> 33.3%	FAC	
4.	0	<input type="checkbox"/> 0.0%		
5.	0	<input type="checkbox"/> 0.0%		
	30	= Total Cover		
Herb Stratum (Plot size: 1 m)				
1. Lapsana communis	30	<input checked="" type="checkbox"/> 30.6%	FACU	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. Galium aparine	20	<input checked="" type="checkbox"/> 20.4%	FACU	
3. Claytonia sibirica	20	<input checked="" type="checkbox"/> 20.4%	FAC	
4. Elymus repens	15	<input type="checkbox"/> 15.3%	FAC	
5. Bromus diandrus	5	<input type="checkbox"/> 5.1%	UPL	
6. Vicia sativa	5	<input type="checkbox"/> 5.1%	UPL	
7. Torilis arvensis	3	<input type="checkbox"/> 3.1%	UPL	
8. Sanicula crassicaulis	0	<input type="checkbox"/> 0.0%	UPL	
9.	0	<input type="checkbox"/> 0.0%		
10.	0	<input type="checkbox"/> 0.0%		
11.	0	<input type="checkbox"/> 0.0%		
	98	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	<input type="checkbox"/> 0.0%		Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
2.	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: _____				
Remarks:				

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Tvpe ¹	Loc ²		
0-4	10YR	3/1	100						Silty Clay Loam
4-7	10YR	4/1	97	10YR	5/3	3	C	M	Silty Clay Loam
7-20	10YR	4/1	97	10YR	4/3	3	C	M	Silty Clay Loam

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

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox depressions (F8)	<p>Indicators for Problematic Hydric Soils³:</p> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks) <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>
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Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Hydrology

Wetland Hydrology Indicators:	
<p>Primary Indicators (minimum of one required; check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<p>Secondary Indicators (minimum of two required)</p> <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost Heave Hummocks (D7)
<p>Field Observations:</p> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): <input type="text"/> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): <input type="text"/> Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): <input type="text"/>	
<p>Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p>	
<p>Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:</p>	
<p>Remarks:</p>	

Plot ID: **SP_06**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6910.JPG** Orientation: South -facing
Lat/Long or UTM : Long/Easting: **44.634405** Lat/Northing: **-123.063958**
Description: **PP_06**

No Photo

Photo File: **None.bmp** Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

ATTACHMENT K.44

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_07
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.634547 **Long.:** -123.064324 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: 10 m)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)
1. Quercus garryana	75	<input checked="" type="checkbox"/> 100.0%	FACU	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
75 = Total Cover				
Sapling/Shrub Stratum (Plot size: 5 m)				
1. Rubus armeniacus	30	<input checked="" type="checkbox"/> 50.0%	FACU	
2. Symphoricarpos albus	20	<input checked="" type="checkbox"/> 33.3%	FACU	
3. Rosa nutkana	10	<input type="checkbox"/> 16.7%	FAC	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
60 = Total Cover				
Herb Stratum (Plot size: 1 m)				
1. Lapsana communis	25	<input checked="" type="checkbox"/> 37.9%	FACU	
2. Bromus hordeaceus	25	<input checked="" type="checkbox"/> 37.9%	FACU	
3. Galium aparine	10	<input type="checkbox"/> 15.2%	FACU	
4. Hedera helix	5	<input type="checkbox"/> 7.6%	FACU	
5. Torilis arvensis	1	<input type="checkbox"/> 1.5%	UPL	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
66 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
% Bare Ground in Herb Stratum: <u>40</u>				
Remarks:				

Prevalence Index worksheet:		
Total % Cover of:	Multiply by:	
OBL species <u>0</u>	x 1 =	<u>0</u>
FACW species <u>0</u>	x 2 =	<u>0</u>
FAC species <u>40</u>	x 3 =	<u>120</u>
FACU species <u>160</u>	x 4 =	<u>640</u>
UPL species <u>1</u>	x 5 =	<u>5</u>
Column Totals: <u>201</u>	(A)	<u>765</u> (B)
Prevalence Index = B/A = <u>3.806</u>		

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrologic Vegetation
 2 - Dominance Test is > 50%
 3 - Prevalence Index is ≤ 3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 5 - Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 07

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

Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)	3/1	%	Color (moist)	%	Tvpe ¹	Loc ²			
0-3	10YR	3/1	100						Silty Clay Loam	
3-7	10YR	3/1	97	7.5YR	2.5/2	3	C	M	Silty Clay Loam	(faint redox)
7-20	10YR	3/1	95	10YR	4/4	5	C	M	Silty Clay Loam	

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.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

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

Remarks:

Plot ID:

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: Orientation: East -facing
Lat/Long or UTM : Long/Easting: **44.634547** Lat/Northing: **-123.064324**
Description:

No Photo

Photo File: Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

ATTACHMENT K.47

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_08
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.633981 **Long.:** -123.064754 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: 10 m)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: 3 (B) Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)
1. Fraxinus latifolia	15	<input checked="" type="checkbox"/> 100.0%	FACW	
2.	0	<input type="checkbox"/> 0.0%		
3.	0	<input type="checkbox"/> 0.0%		
4.	0	<input type="checkbox"/> 0.0%		
15 = Total Cover				
Sapling/Shrub Stratum (Plot size: 5 m)				
1. Rubus armeniacus	65	<input checked="" type="checkbox"/> 100.0%	FACU	
2.	0	<input type="checkbox"/> 0.0%		
3.	0	<input type="checkbox"/> 0.0%		
4.	0	<input type="checkbox"/> 0.0%		
5.	0	<input type="checkbox"/> 0.0%		
65 = Total Cover				
Herb Stratum (Plot size: 1 m)				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 15 x 2 = 30 FAC species 125 x 3 = 375 FACU species 0 x 4 = 0 UPL species 0 x 5 = 0 Column Totals: 140 (A) 405 (B) Prevalence Index = B/A = 2.893
1. Alopecurus pratensis	50	<input checked="" type="checkbox"/> 83.3%	FAC	
2. Cirsium arvense	10	<input type="checkbox"/> 16.7%	FAC	
3.	0	<input type="checkbox"/> 0.0%		
4.	0	<input type="checkbox"/> 0.0%		
5.	0	<input type="checkbox"/> 0.0%		
6.	0	<input type="checkbox"/> 0.0%		
7.	0	<input type="checkbox"/> 0.0%		
8.	0	<input type="checkbox"/> 0.0%		
9.	0	<input type="checkbox"/> 0.0%		
10.	0	<input type="checkbox"/> 0.0%		
11.	0	<input type="checkbox"/> 0.0%		
60 = Total Cover				
Woody Vine Stratum (Plot size:)				
1.	0	<input type="checkbox"/> 0.0%		
2.	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
% Bare Ground in Herb Stratum: 40				
Remarks:				

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrologic Vegetation
 2 - Dominance Test is > 50%
 3 - Prevalence Index is ≤ 3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 5 - Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 08

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

Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)	%		Color (moist)	%	Tvpe ¹	Loc ²			
0-11	10YR	3/1	100						Silty Clay Loam	
11-20	10YR	3/1	97	10YR	4/3	3	C	M	Silty Clay Loam	

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.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

Indicators for Problematic Hydric Soils³:

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

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, monitor well, aerial photos, previous inspections), if available:

Remarks:

Plot ID: **SP_08**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6912.JPG** Orientation: Southwest -facing
Lat/Long or UTM : Long/Easting: **44.633981** Lat/Northing: **-123.064754**
Description: **PP_08**

No Photo

Photo File: **None.bmp** Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

ATTACHMENT K.50

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_09
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.633983 **Long.:** -123.064645 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:** _____

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Wetland 1	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: <u>10 m</u>)				
1. <u>Fraxinus latifolia</u>	15	<input checked="" type="checkbox"/> 100.0%	FACW	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
	15	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>5 m</u>)				
1. <u>Rubus armeniacus</u>	5	<input checked="" type="checkbox"/> 100.0%	FACU	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>75</u> x 3 = <u>225</u> FACU species <u>1</u> x 4 = <u>4</u> UPL species <u>3</u> x 5 = <u>15</u> Column Totals: <u>94</u> (A) <u>274</u> (B) Prevalence Index = B/A = <u>2.915</u>
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
	5	= Total Cover		
Herb Stratum (Plot size: <u>1 m</u>)				
1. <u>Alopecurus pratensis</u>	70	<input checked="" type="checkbox"/> 94.6%	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Geranium dissectum</u>	3	<input type="checkbox"/> 4.1%	UPL	
3. <u>Sonchus asper</u>	1	<input type="checkbox"/> 1.4%	FACU	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
	74	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>30</u>				
Remarks:				

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

ATTACHMENT K.52

Plot ID: **SP_09**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6913.JPG** Orientation: South -facing

Lat/Long or UTM : Long/Easting: **44.633983** Lat/Northing: **-123.064645**

Description: **PP_09**

No Photo

Photo File: **None.bmp** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

ATTACHMENT K.53

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_10
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.633695 **Long.:** -123.064635 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:** _____

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: 	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status		
Tree Stratum (Plot size: <u>10 m</u>)					
1. <u>Quercus garryana</u>	25	<input checked="" type="checkbox"/> 100.0%	FACU	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)	
2. _____	0	<input type="checkbox"/> 0.0%	_____		
3. _____	0	<input type="checkbox"/> 0.0%	_____		
4. _____	0	<input type="checkbox"/> 0.0%	_____		
= Total Cover					
Sapling/Shrub Stratum (Plot size: <u>5 m</u>)					
1. <u>Alopecurus pratensis</u>	75	<input checked="" type="checkbox"/> 75.0%	FAC	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>125</u> (A) <u>410</u> (B) Prevalence Index = B/A = <u>3.280</u>	
2. <u>Cirsium arvense</u>	10	<input type="checkbox"/> 10.0%	FAC		
3. <u>Galium aparine</u>	10	<input type="checkbox"/> 10.0%	FACU		
4. <u>Poa trivialis</u>	5	<input type="checkbox"/> 5.0%	FAC		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
= Total Cover					
Herb Stratum (Plot size: <u>1 m</u>)					
1. _____	0	<input type="checkbox"/> 0.0%	_____		
2. _____	0	<input type="checkbox"/> 0.0%	_____		
3. _____	0	<input type="checkbox"/> 0.0%	_____		
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
11. _____	0	<input type="checkbox"/> 0.0%	_____		
= Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	0	<input type="checkbox"/> 0.0%	_____		
2. _____	0	<input type="checkbox"/> 0.0%	_____		
= Total Cover					
% Bare Ground in Herb Stratum: <u>0</u>					
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.					
Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>					
Remarks: 					

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 10

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

Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)	%		Color (moist)	%	Tvpe ¹	Loc ²			
0-10	10YR	3/1	100						Silty Clay Loam	
10-17	10YR	3/1	99	10YR	5/4	1	C	M	Silty Clay Loam	
17-20	10YR	4/1	97	10YR	5/4	3	C	M	Silty Clay Loam	

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.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

Indicators for Problematic Hydric Soils³:

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

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

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

Remarks:

ATTACHMENT K.55

Plot ID: **SP_10**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6914.JPG** Orientation: South -facing
Lat/Long or UTM : Long/Easting: **44.633695** Lat/Northing: **-123.064635**
Description: **PP_10**

No Photo

Photo File: **None.bmp** Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

ATTACHMENT K.56

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_11
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.633684 **Long.:** -123.064555 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:** _____

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Wetland 1	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: <u>10 m</u>)				
1. _____		<input type="checkbox"/> 0.0%		Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>5 m</u>)				
1. _____	0	<input type="checkbox"/> 0.0%		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>80</u> x 3 = <u>240</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>6</u> x 5 = <u>30</u> Column Totals: <u>86</u> (A) <u>270</u> (B) Prevalence Index = B/A = <u>3.140</u>
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
Herb Stratum (Plot size: <u>1 m</u>)				
1. <u>Alopecurus pratensis</u>	80	<input checked="" type="checkbox"/> 93.0%	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Geranium dissectum</u>	5	<input type="checkbox"/> 5.8%	UPL	
3. <u>Vicia hirsuta</u>	1	<input type="checkbox"/> 1.2%	UPL	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	86	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>15</u>				
Remarks:				

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 11

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

Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)	%	%	Color (moist)	%	Type ¹	Loc ²			
0-6	10YR	3/1	91	10YR	5/4	3	C	PL	Silty Clay Loam	
0-6				7.5YR	2.5/2	3	C	M		(faint redox)
0-6				10YR	4/4	3	C	M		
6-15	10YR	3/1	97	10YR	4/4	3	C	M	Silty Clay Loam	
15-20	10YR	2/1	97	10YR	3/4	3	C	M	Clay	

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.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

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

Remarks:

ATTACHMENT K.58

Plot ID: **SP_11**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6915.JPG** Orientation: West-facing
Lat/Long or UTM : Long/Easting: **44.633684** Lat/Northing: **-123.064555**
Description: **PP_11**

No Photo

Photo File: **None.bmp** Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

ATTACHMENT K.59

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_12
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.633353 **Long.:** -123.064963 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:** _____

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Wetland 1 (unpaired plot)	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: <u>10 m</u>)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>5 m</u>)				
1. <u>Rubus armeniacus</u>	20	<input checked="" type="checkbox"/> 100.0%	FACU	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	20	= Total Cover		
Herb Stratum (Plot size: <u>1 m</u>)				
1. <u>Alopecurus pratensis</u>	80	<input checked="" type="checkbox"/> 93.0%	FAC	
2. <u>Geranium dissectum</u>	5	<input type="checkbox"/> 5.8%	UPL	
3. <u>Vicia hirsuta</u>	1	<input type="checkbox"/> 1.2%	UPL	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	86	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>15</u>				

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: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>100</u>	x 3 =	<u>300</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>6</u>	x 5 =	<u>30</u>
Column Totals:	<u>106</u> (A)		<u>330</u> (B)

Prevalence Index = B/A = 3.113

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrologic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants¹

Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No

Remarks:

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Plot ID: **SP_12**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6918.JPG** Orientation: South -facing

Lat/Long or UTM : Long/Easting: **44.633353** Lat/Northing: **-123.064963**

Description: **PP_12**

No Photo

Photo File: **None.bmp** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

ATTACHMENT K.62

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_13
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.63328 **Long.:** -123.064307 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:** _____

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Wetland 1 (unpaired plot)	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: <u>10 m</u>)				
1. _____	0	<input type="checkbox"/>	0.0%	_____
2. _____	0	<input type="checkbox"/>	0.0%	_____
3. _____	0	<input type="checkbox"/>	0.0%	_____
4. _____	0	<input type="checkbox"/>	0.0%	_____
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>5 m</u>)				
1. _____	0	<input type="checkbox"/>	0.0%	_____
2. _____	0	<input type="checkbox"/>	0.0%	_____
3. _____	0	<input type="checkbox"/>	0.0%	_____
4. _____	0	<input type="checkbox"/>	0.0%	_____
5. _____	0	<input type="checkbox"/>	0.0%	_____
	0	= Total Cover		
Herb Stratum (Plot size: <u>1 m</u>)				
1. <u>Alopecurus pratensis</u>	75	<input checked="" type="checkbox"/>	92.6%	FAC
2. <u>Epilobium ciliatum</u>	5	<input type="checkbox"/>	6.2%	FACW
3. <u>Galium aparine</u>	1	<input type="checkbox"/>	1.2%	FACU
4. _____	0	<input type="checkbox"/>	0.0%	_____
5. _____	0	<input type="checkbox"/>	0.0%	_____
6. _____	0	<input type="checkbox"/>	0.0%	_____
7. _____	0	<input type="checkbox"/>	0.0%	_____
8. _____	0	<input type="checkbox"/>	0.0%	_____
9. _____	0	<input type="checkbox"/>	0.0%	_____
10. _____	0	<input type="checkbox"/>	0.0%	_____
11. _____	0	<input type="checkbox"/>	0.0%	_____
	81	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/>	0.0%	_____
2. _____	0	<input type="checkbox"/>	0.0%	_____
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>20</u>				

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species <u>0</u>	x 1 =	<u>0</u>
FACW species <u>5</u>	x 2 =	<u>10</u>
FAC species <u>75</u>	x 3 =	<u>225</u>
FACU species <u>1</u>	x 4 =	<u>4</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column Totals: <u>81</u> (A)		<u>239</u> (B)

Prevalence Index = B/A = 2.951

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrologic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants¹

Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No

Remarks:

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 13

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

Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)	%	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR	4/1	94	7.5YR	2.5/2	3	C	M	Silty Clay Loam (faint redox)
0-5				10YR	5/4	2	C	PL	
0-5				10YR	5/4	1	C	M	
5-13	10YR	4/1	95	10YR	5/4	3	C	M	Silty Clay Loam
5-13				7.5YR	2.5/2	2	C	M	(faint redox)
13-20	10YR	4/1	97	10YR	5/4	3	C	M	Silty Clay Loam 5% charcoal by volume

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.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

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

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

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

Remarks:

Plot ID: **SP_13**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6919.JPG** Orientation: South -facing
Lat/Long or UTM : Long/Easting: **44.63328** Lat/Northing: **-123.064307**
Description: **PP_13**

No Photo

Photo File: **None.bmp** Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

ATTACHMENT K.65

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_14
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.633333 **Long.:** -123.063769 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:** _____

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Wetland 1	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: <u>10 m</u>)				
1. <u>Quercus garryana</u>	60	<input checked="" type="checkbox"/> 100.0%	FACU	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	60	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>5 m</u>)				
1. _____	0	<input type="checkbox"/> 0.0%		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>100</u> x 3 = <u>300</u> FACU species <u>64</u> x 4 = <u>256</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>164</u> (A) <u>556</u> (B) Prevalence Index = B/A = <u>3.390</u>
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
Herb Stratum (Plot size: <u>1 m</u>)				
1. <u>Alopecurus pratensis</u>	75	<input checked="" type="checkbox"/> 72.1%	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Poa trivialis</u>	25	<input checked="" type="checkbox"/> 24.0%	FAC	
3. <u>Bromus hordeaceus</u>	3	<input type="checkbox"/> 2.9%	FACU	
4. <u>Galium aparine</u>	1	<input type="checkbox"/> 1.0%	FACU	
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	104	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>0</u>				
Remarks:				

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)	3/1	%	Color (moist)	%	Type ¹	Loc ²			
0-2	10YR	3/1	100						Silty Clay Loam	
2-7	10YR	3/1	95	7.5YR	2.5/2	3	C	M	Silty Clay Loam	(faint redox)
2-7				10YR	5/4	2	C	PL		
7-15	10YR	3/1	95	10YR	4/4	3	C	M	Silty Clay Loam	
7-15				7.5YR	2.5/2	2	C	M		(faint redox)
15-20	10YR	4/1	90	10YR	5/4	10	C	M	Silty Clay Loam	

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.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)
---	--

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
--	---

Remarks: _____

Hydrology

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)
Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost Heave Hummocks (D7)	
Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): <input type="text"/> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): <input type="text"/> Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): <input type="text"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:	
Remarks: _____	

Plot ID: **SP_14**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6920.JPG** Orientation: Southeast -facing
Lat/Long or UTM : Long/Easting: **44.633333** Lat/Northing: **-123.063769**
Description: **PP_14**

No Photo

Photo File: **None.bmp** Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

ATTACHMENT K.68

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_15
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.633363 **Long.:** -123.063729 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: 	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: 10 m)				
1. Quercus garryana	75	<input checked="" type="checkbox"/> 100.0%	FACU	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: 5 (B) Percent of dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)
2.	0	<input type="checkbox"/> 0.0%		
3.	0	<input type="checkbox"/> 0.0%		
4.	0	<input type="checkbox"/> 0.0%		
	75	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5 m)				
1. Symphoricarpos albus	20	<input checked="" type="checkbox"/> 66.7%	FACU	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 60 x 3 = 180 FACU species 115 x 4 = 460 UPL species 0 x 5 = 0 Column Totals: 175 (A) 640 (B) Prevalence Index = B/A = 3.657
2. Rubus armeniacus	10	<input checked="" type="checkbox"/> 33.3%	FACU	
3.	0	<input type="checkbox"/> 0.0%		
4.	0	<input type="checkbox"/> 0.0%		
5.	0	<input type="checkbox"/> 0.0%		
	30	= Total Cover		
Herb Stratum (Plot size: 1 m)				
1. Alopecurus pratensis	30	<input checked="" type="checkbox"/> 42.9%	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. Poa trivialis	20	<input checked="" type="checkbox"/> 28.6%	FAC	
3. Galium aparine	10	<input type="checkbox"/> 14.3%	FACU	
4. Bromus hordeaceus	10	<input type="checkbox"/> 14.3%	FACU	
5.	0	<input type="checkbox"/> 0.0%		
6.	0	<input type="checkbox"/> 0.0%		
7.	0	<input type="checkbox"/> 0.0%		
8.	0	<input type="checkbox"/> 0.0%		
9.	0	<input type="checkbox"/> 0.0%		
10.	0	<input type="checkbox"/> 0.0%		
11.	0	<input type="checkbox"/> 0.0%		
	70	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	<input type="checkbox"/> 0.0%		Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
2.	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: 30				
Remarks: 				

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Plot ID: **SP_15**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6921.JPG** Orientation: South -facing
Lat/Long or UTM : Long/Easting: **44.633363** Lat/Northing: **-123.063729**
Description: **PP_15**

No Photo

Photo File: **None.bmp** Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

ATTACHMENT K.71

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_16
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.633652 **Long.:** -123.063888 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation , Soil , or Hydrology 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status		
Tree Stratum (Plot size: 10 m)					
1. Quercus garryana	75	<input checked="" type="checkbox"/> 100.0%	FACU	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B)	
2.	0	<input type="checkbox"/> 0.0%			
3.	0	<input type="checkbox"/> 0.0%			
4.	0	<input type="checkbox"/> 0.0%			
	75	= Total Cover		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>45</u> x 3 = <u>135</u> FACU species <u>125</u> x 4 = <u>500</u> UPL species <u>15</u> x 5 = <u>75</u> Column Totals: <u>185</u> (A) <u>710</u> (B) Prevalence Index = B/A = <u>3.838</u>	
Sapling/Shrub Stratum (Plot size: 5 m)					
1. Rubus armeniacus	35	<input checked="" type="checkbox"/> 87.5%	FACU		
2. Crataegus douglasii	5	<input type="checkbox"/> 12.5%	FAC		
3.	0	<input type="checkbox"/> 0.0%			
4.	0	<input type="checkbox"/> 0.0%			
5.	0	<input type="checkbox"/> 0.0%			
	40	= Total Cover			
Herb Stratum (Plot size: 1 m)					
1. Bromus hordeaceus	30	<input checked="" type="checkbox"/> 42.9%	FACU	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. Galium aparine	20	<input checked="" type="checkbox"/> 28.6%	FACU		
3. Geranium dissectum	10	<input type="checkbox"/> 14.3%	UPL		
4. Poa trivialis	5	<input type="checkbox"/> 7.1%	FAC		
5. Avena sativa	5	<input type="checkbox"/> 7.1%	UPL		
6.	0	<input type="checkbox"/> 0.0%			
7.	0	<input type="checkbox"/> 0.0%			
8.	0	<input type="checkbox"/> 0.0%			
9.	0	<input type="checkbox"/> 0.0%			
10.	0	<input type="checkbox"/> 0.0%			
11.	0	<input type="checkbox"/> 0.0%			
	70	= Total Cover			
Woody Vine Stratum (Plot size:)					
1.	0	<input type="checkbox"/> 0.0%			
2.	0	<input type="checkbox"/> 0.0%			
	0	= Total Cover			
% Bare Ground in Herb Stratum: <u>30</u>					
Remarks:					

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Plot ID: **SP_16**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6922.JPG** Orientation: South -facing
Lat/Long or UTM : Long/Easting: **44.633652** Lat/Northing: **-123.063888**
Description: **PP_16**

No Photo

Photo File: **None.bmp** Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

ATTACHMENT K.74

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_17
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.633658 **Long.:** -123.064002 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation , Soil , or Hydrology 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Wetland 1	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: 10 m)				
1. Quercus garryana	30	<input checked="" type="checkbox"/> 100.0%	FACU	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2.	0	<input type="checkbox"/> 0.0%		
3.	0	<input type="checkbox"/> 0.0%		
4.	0	<input type="checkbox"/> 0.0%		
	30	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5 m)				
1. Fraxinus latifolia	5	<input checked="" type="checkbox"/> 100.0%	FACW	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>80</u> x 3 = <u>240</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>1</u> x 5 = <u>5</u> Column Totals: <u>121</u> (A) <u>385</u> (B) Prevalence Index = B/A = <u>3.182</u>
2.	0	<input type="checkbox"/> 0.0%		
3.	0	<input type="checkbox"/> 0.0%		
4.	0	<input type="checkbox"/> 0.0%		
5.	0	<input type="checkbox"/> 0.0%		
	5	= Total Cover		
Herb Stratum (Plot size: 1 m)				
1. Alopecurus pratensis	80	<input checked="" type="checkbox"/> 93.0%	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. Epilobium ciliatum	5	<input type="checkbox"/> 5.8%	FACW	
3. Geranium dissectum	1	<input type="checkbox"/> 1.2%	UPL	
4.	0	<input type="checkbox"/> 0.0%		
5.	0	<input type="checkbox"/> 0.0%		
6.	0	<input type="checkbox"/> 0.0%		
7.	0	<input type="checkbox"/> 0.0%		
8.	0	<input type="checkbox"/> 0.0%		
9.	0	<input type="checkbox"/> 0.0%		
10.	0	<input type="checkbox"/> 0.0%		
11.	0	<input type="checkbox"/> 0.0%		
	86	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	<input type="checkbox"/> 0.0%		Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
2.	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>15</u>				
Remarks:				

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

ATTACHMENT K.76

Plot ID: **SP_17**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6923.JPG** Orientation: Southwest -facing
Lat/Long or UTM : Long/Easting: **44.633658** Lat/Northing: **-123.064002**
Description: **PP_17**

No Photo

Photo File: **None.bmp** Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

ATTACHMENT K.77

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_18
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.633913 **Long.:** -123.063932 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:** _____

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: 	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status		
Tree Stratum (Plot size: <u>10 m</u>)					
1. <u>Quercus garryana</u>	70	<input checked="" type="checkbox"/> 87.5%	FACU	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)	
2. <u>Fraxinus latifolia</u>	10	<input type="checkbox"/> 12.5%	FACW		
3. _____	0	<input type="checkbox"/> 0.0%	_____		
4. _____	0	<input type="checkbox"/> 0.0%	_____		
80 = Total Cover					
Sapling/Shrub Stratum (Plot size: <u>5 m</u>)					
1. <u>Rubus armeniacus</u>	30	<input checked="" type="checkbox"/> 37.5%	FACU	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>145</u> x 4 = <u>580</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>225</u> (A) <u>830</u> (B) Prevalence Index = B/A = <u>3.689</u>	
2. <u>Symphoricarpos albus</u>	30	<input checked="" type="checkbox"/> 37.5%	FACU		
3. <u>Toxicodendron diversilobum</u>	15	<input type="checkbox"/> 18.8%	FAC		
4. <u>Rosa nutkana</u>	5	<input type="checkbox"/> 6.3%	FAC		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
80 = Total Cover					
Herb Stratum (Plot size: <u>1 m</u>)					
1. <u>Bromus hordeaceus</u>	30	<input checked="" type="checkbox"/> 46.2%	FACU		
2. <u>Hedera helix</u>	10	<input checked="" type="checkbox"/> 15.4%	FACU		
3. <u>Claytonia sibirica</u>	10	<input checked="" type="checkbox"/> 15.4%	FAC		
4. <u>Vicia sativa</u>	5	<input type="checkbox"/> 7.7%	UPL		
5. <u>Bromus diandrus</u>	5	<input type="checkbox"/> 7.7%	UPL		
6. <u>Galium aparine</u>	5	<input type="checkbox"/> 7.7%	FACU		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
11. _____	0	<input type="checkbox"/> 0.0%	_____		
65 = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	0	<input type="checkbox"/> 0.0%	_____		
2. _____	0	<input type="checkbox"/> 0.0%	_____		
0 = Total Cover					
% Bare Ground in Herb Stratum: <u>35</u>					

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Plot ID: **SP_18**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6924.JPG** Orientation: South-facing
Lat/Long or UTM : Long/Easting: **44.633913** Lat/Northing: **-123.063932**
Description: **PP_18**

No Photo

Photo File: **None.bmp** Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

ATTACHMENT K.80

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_19
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.633902 **Long.:** -123.064081 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Wetland 1; plot located in shallow swale with dried algal mat	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: 10 m)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5 m)				
1. Fraxinus latifolia	5	<input checked="" type="checkbox"/> 100.0%	FACW	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	5	= Total Cover		
Herb Stratum (Plot size: 1 m)				
1. Alopecurus pratensis	80	<input checked="" type="checkbox"/> 94.1%	FAC	
2. Epilobium ciliatum	5	<input type="checkbox"/> 5.9%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
	85	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
% Bare Ground in Herb Stratum: 15				

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: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90	(A)	260 (B)
Prevalence Index = B/A = 2.889			

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrologic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants¹

Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No

Remarks:

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Plot ID:

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: Orientation: West-facing
Lat/Long or UTM : Long/Easting: **44.633902** Lat/Northing: **-123.064081**
Description:

No Photo

Photo File: Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

ATTACHMENT K.83

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

Project/Site: Tax Lot 2700-Airport Road SE **City/County:** Albany **Sampling Date:** 30-May-18
Applicant/Owner: Mike Shults **State:** OR **Sampling Point:** SP_20
Investigator(s): Joe Bettis & Justin Votos **Section, Township, Range:** S 09 T 11 S R 3 W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR): MLRA 2 **Lat.:** 44.633961 **Long.:** -123.063423 **Datum:** WGS 84
Soil Map Unit Name: Malabon Silty Clay Loam **NWI classification:** _____

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: 	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: <u>10 m</u>)				
1. <u>Quercus garryana</u>	70	<input checked="" type="checkbox"/> 100.0%	FACU	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
	70	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>5 m</u>)				
1. <u>Symphoricarpos albus</u>	40	<input checked="" type="checkbox"/> 61.5%	FACU	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>3</u> x 2 = <u>6</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>160</u> x 4 = <u>640</u> UPL species <u>15</u> x 5 = <u>75</u> Column Totals: <u>203</u> (A) <u>796</u> (B) Prevalence Index = B/A = <u>3.921</u>
2. <u>Prunus domestica</u>	25	<input checked="" type="checkbox"/> 38.5%	FACU	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
	65	= Total Cover		
Herb Stratum (Plot size: <u>1 m</u>)				
1. <u>Claytonia sibirica</u>	20	<input checked="" type="checkbox"/> 29.4%	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrologic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Galium aparine</u>	20	<input checked="" type="checkbox"/> 29.4%	FACU	
3. <u>Bromus diandrus</u>	5	<input type="checkbox"/> 7.4%	UPL	
4. <u>Elymus repens</u>	5	<input type="checkbox"/> 7.4%	FAC	
5. <u>Torilis arvensis</u>	5	<input type="checkbox"/> 7.4%	UPL	
6. <u>Vicia hirsuta</u>	5	<input type="checkbox"/> 7.4%	UPL	
7. <u>Lapsana communis</u>	5	<input type="checkbox"/> 7.4%	FACU	
8. <u>Camassia leichtlinii</u>	3	<input type="checkbox"/> 4.4%	FACW	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
	68	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	= Total Cover		
% Bare Ground in Herb Stratum: <u>35</u>				
Remarks: 				

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 20

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

Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)	%		Color (moist)	%	Tvpe ¹	Loc ²			
0-14	10YR	3/1	100						Silty Clay Loam	
14-20	10YR	4/1	95	10YR	5/4	5	C	M	Silty Clay Loam	

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.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except in MLRA 1)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox depressions (F8)	

Indicators for Problematic Hydric Soils³:

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

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): <input type="text"/>	

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

Remarks:

Plot ID: **SP_20**

Photo Path: C:\Users\Sedge\Documents\Projects\Shults_SE Airport Road Alb



Photo File: **IMG_6926.JPG** Orientation: Northeast -facing
Lat/Long or UTM : Long/Easting: **44.633961** Lat/Northing: **-123.063423**
Description: **PP_20**

No Photo

Photo File: **None.bmp** Orientation: -facing
Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**
Description:

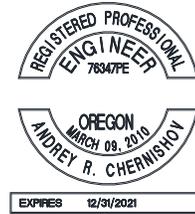
Appendix D

Literature Citations

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe, 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service.
- DOGAMI (Department of Geology and Mineral Industries). April 2010. Lidar data for Linn County, Oregon. Accessed online April-May 2018.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Gretag Macbeth. 2000. Munsell Soil Color Charts, 2000 Edition. Baltimore, MD.
- Hitchcock, C. L., A. Cronquist. 1973. Flora of the Pacific Northwest. University of Washington.
- Myers, S.C., T. Jaster, K.E. Mitchell, and L.K. Hardison. 2015. Flora of Oregon. Volume 1: Pteridophytes, Gymnosperms, and Monocots. Botanical Research Institute of Texas, Fort Worth, Texas. 608 pp.
- National Oceanic and Atmospheric Administration. 2018. National Climate Data Center. Accessed online May 2018. Salem, Oregon US GHCND: USW00024232.
- Seaber, P.R., Kapinos, F.P., and Knapp, G.L., 1987, Hydrologic Unit Maps: U.S. Geological Survey Water-Supply Paper 2294, 63 p
- Soil Conservation Service. 1988. Hydric Soils of the State of Oregon. In cooperation with The National Technical Committee for Hydric Soils.
- Sumner JP, MJ Vepraskis, and RK Kolka. 2009. Methods to Evaluate Normal Rainfall for Short Term Wetland Hydrology Assessment. *Wetlands*. 29(3):1049-1062.
- U.S. Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- USACE. 2005. Regulatory Guidance Letter 05-05: Guidance on Ordinary High Water Mark Identification.
- USACE. 2016. State of Oregon-NWPL Final Draft Ratings.
- U.S. Department of Agriculture (USDA), 2007. Natural Resources Conservation Service (NRCS). Part 630 Hydrology National Engineering Handbook.
- USDA, NRCS. 2018. The PLANTS Database (<http://plants.usda.gov>, May 2018). National Plant Data Team, Greensboro, NC 27401-4901 USA.
- USDA, NRCS. 2018. Web Soil Survey. Soil Survey Staff, Available online at <http://websoilsurvey.nrcs.usda.gov/>. Accessed May 2018 (Microsoft Access Database).
- USDA, NRCS. 2002. WETS Tables for Salem, Oregon (Station ID 357500). Accessed online May 2018.
- U. S. Fish and Wildlife Service (USFWS). May 2018. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. <http://www.fws.gov/wetlands/>
- USGS. 2011. Oregon 7.5 minute Quadrangles.
- USGS. 2007. Oregon 8 Digit Hydrologic Unit Code Map.



501 E First Street
Newberg, Oregon 97132
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Date: **3/15/2020**
To: **To Whom It May Concern**
From: **Andrey Chernishov, PE**
RE: **Franklin Reserve – Stormwater Report**

Project Number: **2020-001**

Overview

The proposed project is located southwest of the intersection of Franklin Avenue SE & Airport Road SE on Tax Lots 2700 & 2701. The improvements involve a $\frac{3}{4}$ street improvement along the frontage of Franklin Avenue SE and a planned development of the tax lots that incorporates multi-story residential housing, single family housing lots, several private streets, a wetland, and a white oak grove. The size and nature of this development triggers the need for onsite quality and quantity treatment as well as quality treatment in the public ROW. Two water quality planters were selected to handle quality treatment in the ROW of Franklin Avenue and three extended dry basins were selected to handle quality and quantity treatment for the development. Analyses were performed using HydroCAD software to model the proposed development (See Attachments A & B).

The development will take place in five phases (See Attachment C): Phases 1 & 2 will entail the development of the single-family residential lots, as well as majority of the $\frac{3}{4}$ street frontage improvements for Franklin Avenue SE. Water Quality Facility 1 (Catchment 2P) and Water Quality/Detention Facility 1 (Catchment 4P) will be constructed during Phase 1 and Water Quality Facility 2 (Catchment 3P) will be constructed during Phase 2 (See Attachment D). Phase 3 includes the developing first part of the multi-story residential units, a recreational building, and the remainder of the $\frac{3}{4}$ street frontage improvements along Franklin Avenue SE. Stormwater from this part will be handled by construction of Water Quality/Detention Facility 2 (Catchment 5P) on the private side and by the already constructed Water Quality Facility 2 (Catchment 3P). Phases 4 & 5 involves the development of two additional multi-family, multi-story residential units as well a series of garage units. Stormwater from this portion of construction will be handled by Water Quality/Detention Facility 3 (Catchment 6P).

Stormwater is collected and held in the facilities, allowing pollutants to filter out and settle into vegetated bottom of the basins. Runoff from the proposed development does not exceed pre-developed conditions. Peak flow rates will be reduced as result of this project.

Applicable Rules and Standards

The City of Albany requires any pipe/ditch that serves a single private development or subdivision equal to or greater than 5 acres with the same drainage sub-basin to be designed to convey the 25-year storm event. City of Albany is requiring quality treatment in the ROW and in the private development. City of Albany also requires that new developments do not contribute peak runoff rates to the existing storm system that exceed pre-developed peak runoff rates for the 2, 5, 10, and 25-year events. The City of Albany allows for overflowing of facilities at the 50-year event.

The SCS TR-20 was used to analyze stormwater runoff for the site per City of Albany design standards. This method utilizes the SCS Type 1A 24-hour design storm. HydroCAD 10 computer software was used

in the analysis. The HydroCAD model utilized the 24-hour storm rainfall intensities listed in the City of Albany design standards, shown in Table 1 below:

Table 1 – Storm Event Rainfall Intensities

<i>Recurrence Interval (years)</i>	<i>Total Precipitation Depth (inches)</i>
Water Quality	1.00
2	2.47
5	2.86
10	3.37
25	3.94
50	4.38

Existing Conditions

Catchment (1S) represents the existing site (See Attachment D). Per USDA NRCS WSS records, the soil underlying the project site is 100% Malabon Silty Clay Loam (Hydrological Soil Group (HSG) C). Based on areas interpreted from survey and USDA NRCS WSS records: the existing catchment consists of approximately 68% HSG C Paved Roads with Open Ditches (CN=92), 25% HSG C Brush (CN=70), and 7% HSG C Woods/Grass Combination (CN=76). This corresponds to a weighted CN of 76. The site gently slopes around the existing oak grove (2-4%) into the wetland and the south side of the property. A simplified infiltration rate of 0.20 in/hr, typical for Silty Clay Loams, was used in this design.

Proposed Conditions

Fill will retain the same soil characteristics as what is currently on site. The proposed site (Attachment D) will be constructed in five phases. Each phase is planned to have stormwater facilities constructed to handle the improvements and associated water quality/detention standards for that portion of the development. Once completed, the facilities will work in unison to provide quality treatment for the development while reducing peak-runoff rates to below pre-developed conditions. The post developed condition will consist of impervious areas, brush for the wetland, and grass cover for landscaping. The 1/8 acre lots were modeled as 80% impervious. Table 2 below summarizes the conditions for the post-developed site

Table 2. Post-Developed Conditions

<i>Area Type</i>	<i>Area (SF)</i>	<i>CN</i>
Impervious (Paved Roads, Roofs, Pond Surface, etc.)	96,095	98
Grass Cover	66,807	74
Brush	76,610	65
1/8 Acre Lots	61,755	90
Total	301,267	83

These conditions correspond to a weighted CN of 83.

Hydrology

Analyses were performed using HydroCAD software (Attachment A and B) to show the proposed system is meeting water quantity and quality requirements. Table 3 below shows a comparison between the peak runoff rates for pre-developed and post-developed storm events.

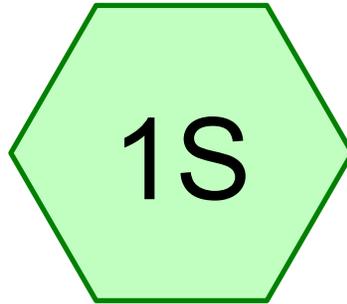
Table 3: Comparison of Storm Events

<i>Event</i>	<i>Pre-Developed (1S)</i>	<i>Franklin Ave 1 (2S)</i>	<i>Franklin Avenue 2 (3S)</i>	<i>Phase 1 & 2 (4S)</i>	<i>Phase 3 (5S)</i>	<i>Phase 4 & 5 (6S)</i>	<i>Wetland (7s)</i>	<i>Total (2S-7S)</i>
<i>WQ</i>	0.03 cfs	0.00 cfs	0.00 cfs	0.12 cfs	0.04 cfs	0.02 cfs	0.00 cfs	0.16 cfs
<i>2-year</i>	0.59 cfs	0.06 cfs	0.06 cfs	0.27 cfs	0.05 cfs	0.14 cfs	0.04 cfs	0.58 cfs
<i>5-year</i>	0.94 cfs	0.14 cfs	0.13 cfs	0.44 cfs	0.07 cfs	0.26 cfs	0.05 cfs	0.81 cfs
<i>10-year</i>	1.46 cfs	0.17 cfs	0.17 cfs	0.66 cfs	0.08 cfs	0.41 cfs	0.10 cfs	1.39 cfs
<i>25-year</i>	2.11 cfs	0.21 cfs	0.20 cfs	0.82 cfs	0.09 cfs	0.55 cfs	0.21 cfs	1.90 cfs
<i>50-year</i>	2.64 cfs	0.23 cfs	0.23 cfs	0.93 cfs	0.14 cfs	1.04 cfs	0.31 cfs	2.63 cfs

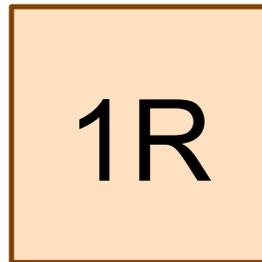
As seen in the above table and attached storm report, peak flows leaving the site post-development are less than peak flows for the pre-developed condition. Water quality is provided via full infiltration of the water quality event for Water Quality Facilities 1 & 2. Treatment will occur onsite via the permanent pools of the extended dry basins that are Water Quality/Detention Facilities 1-3. This pool collects the water quality event and allows for pollutants to filter out and settle into the vegetated floor of the basin.

Construction of this system will reduce peak flows leaving the site and provide quality treatment previously nonexistent for the area.

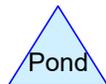
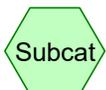
ATTACHMENT A



Pre-Developed Site



EX SE Shore Drive



Franklin Reserve Pre-Developed

Type IA 24-hr 2-Year Rainfall=2.47"

Prepared by HBH Consulting Engineers

Printed 3/15/2020

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Page 2

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-Developed Site Runoff Area=301,267 sf 3.43% Impervious Runoff Depth=0.68"
Flow Length=565' Slope=0.0200 '/' Tc=32.6 min CN=76 Runoff=0.59 cfs 0.390 af

Reach 1R: EX SE Shore Drive Avg. Flow Depth=0.35' Max Vel=2.40 fps Inflow=0.59 cfs 0.390 af
12.0" Round Pipe n=0.012 L=161.8' S=0.0033 '/' Capacity=2.23 cfs Outflow=0.59 cfs 0.390 af

Franklin Reserve Pre-Developed

Type IA 24-hr 2-Year Rainfall=2.47"

Prepared by HBH Consulting Engineers

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Page 3

Summary for Subcatchment 1S: Pre-Developed Site

Runoff = 0.59 cfs @ 8.37 hrs, Volume= 0.390 af, Depth= 0.68"

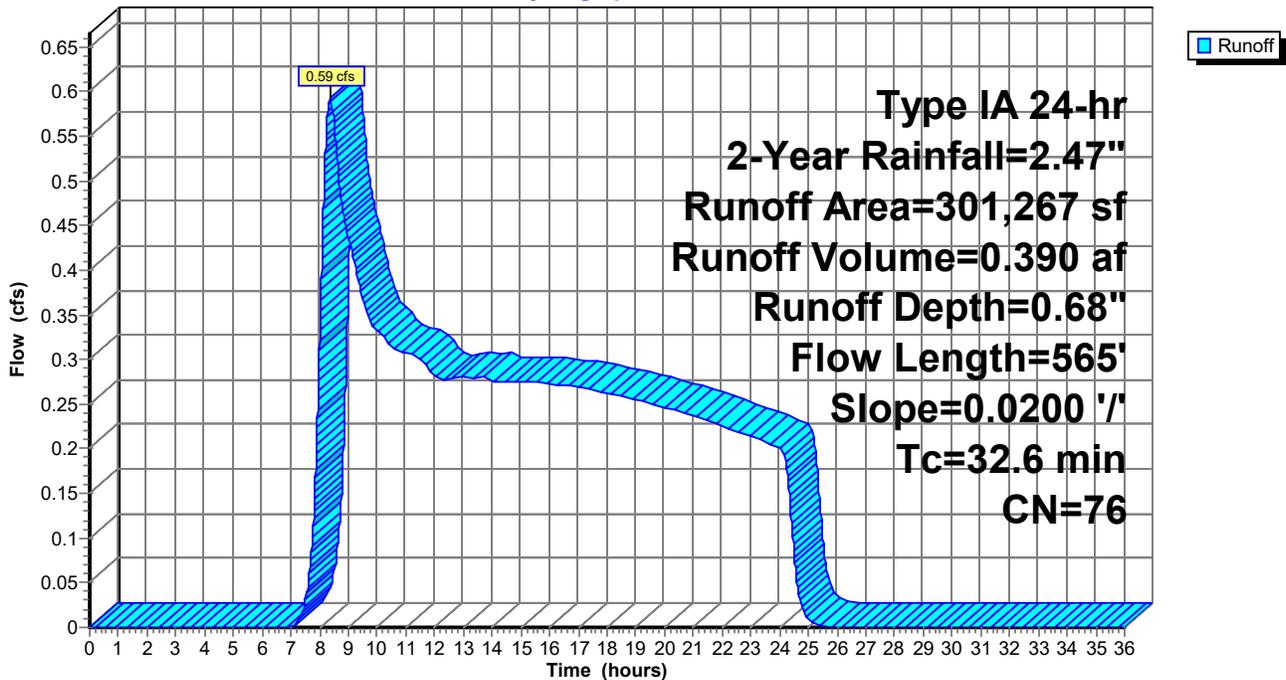
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-Year Rainfall=2.47"

Area (sf)	CN	Description
20,655	92	Paved roads w/open ditches, 50% imp, HSG C
76,610	70	Brush, Fair, HSG C
204,002	76	Woods/grass comb., Fair, HSG C
301,267	76	Weighted Average
290,940	75	96.57% Pervious Area
10,328	98	3.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	150	0.0200	0.11		Sheet Flow, Sheet
					Grass: Dense n= 0.240 P2= 2.40"
9.8	415	0.0200	0.71		Shallow Concentrated Flow, SCF
					Woodland Kv= 5.0 fps
32.6	565	Total			

Subcatchment 1S: Pre-Developed Site

Hydrograph



Franklin Reserve Pre-Developed

Prepared by HBH Consulting Engineers

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Type IA 24-hr 2-Year Rainfall=2.47"

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Page 4

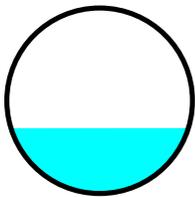
Summary for Reach 1R: EX SE Shore Drive

Inflow Area = 6.916 ac, 3.43% Impervious, Inflow Depth = 0.68" for 2-Year event
 Inflow = 0.59 cfs @ 8.37 hrs, Volume= 0.390 af
 Outflow = 0.59 cfs @ 8.40 hrs, Volume= 0.390 af, Atten= 0%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.40 fps, Min. Travel Time= 1.1 min
 Avg. Velocity = 1.76 fps, Avg. Travel Time= 1.5 min

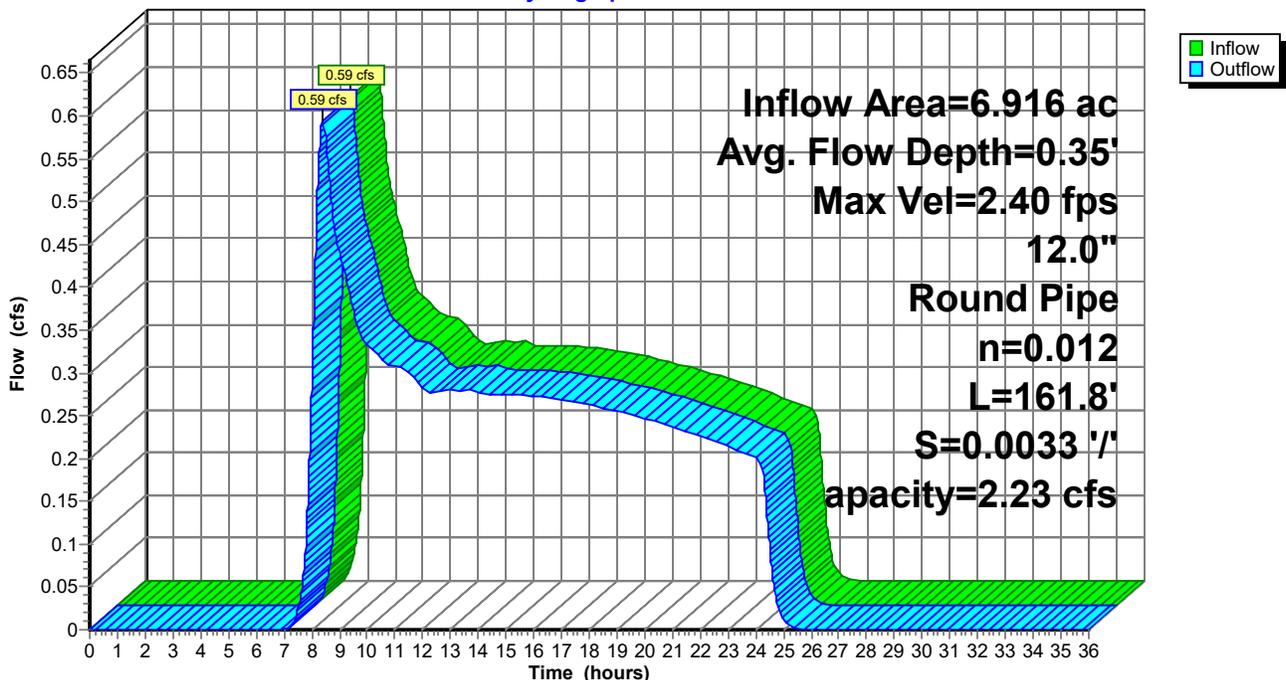
Peak Storage= 40 cf @ 8.38 hrs
 Average Depth at Peak Storage= 0.35'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.23 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 161.8' Slope= 0.0033 '/'
 Inlet Invert= 210.64', Outlet Invert= 210.10'



Reach 1R: EX SE Shore Drive

Hydrograph



Franklin Reserve Pre-Developed

Type IA 24-hr 5-Year Rainfall=2.86"

Prepared by HBH Consulting Engineers

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Page 5

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-Developed Site Runoff Area=301,267 sf 3.43% Impervious Runoff Depth=0.92"
Flow Length=565' Slope=0.0200 '/' Tc=32.6 min CN=76 Runoff=0.94 cfs 0.531 af

Reach 1R: EX SE Shore Drive Avg. Flow Depth=0.45' Max Vel=2.72 fps Inflow=0.94 cfs 0.531 af
12.0" Round Pipe n=0.012 L=161.8' S=0.0033 '/' Capacity=2.23 cfs Outflow=0.94 cfs 0.531 af

Franklin Reserve Pre-Developed

Prepared by HBH Consulting Engineers

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Type IA 24-hr 5-Year Rainfall=2.86"

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Page 6

Summary for Subcatchment 1S: Pre-Developed Site

Runoff = 0.94 cfs @ 8.33 hrs, Volume= 0.531 af, Depth= 0.92"

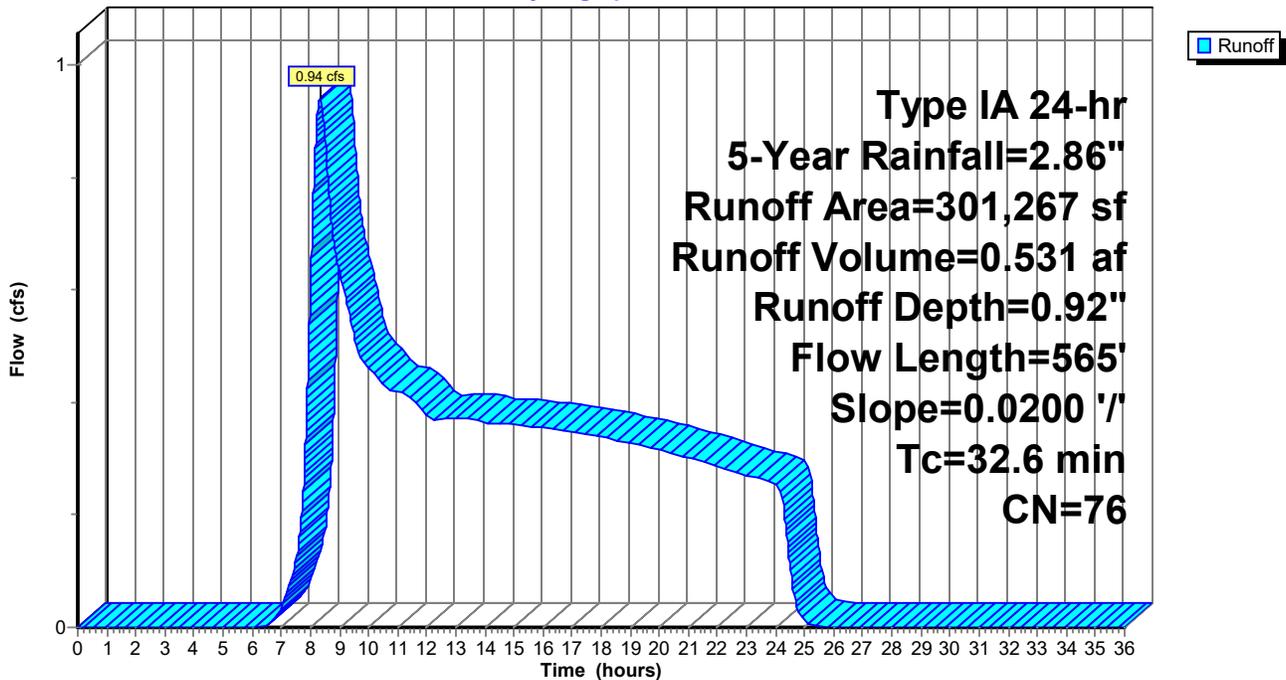
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-Year Rainfall=2.86"

Area (sf)	CN	Description
20,655	92	Paved roads w/open ditches, 50% imp, HSG C
76,610	70	Brush, Fair, HSG C
204,002	76	Woods/grass comb., Fair, HSG C
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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	150	0.0200	0.11		Sheet Flow, Sheet
					Grass: Dense n= 0.240 P2= 2.40"
9.8	415	0.0200	0.71		Shallow Concentrated Flow, SCF
					Woodland Kv= 5.0 fps
32.6	565	Total			

Subcatchment 1S: Pre-Developed Site

Hydrograph



Franklin Reserve Pre-Developed

Type IA 24-hr 5-Year Rainfall=2.86"

Prepared by HBH Consulting Engineers

Printed 3/15/2020

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Page 7

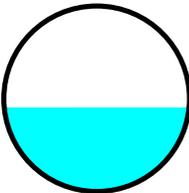
Summary for Reach 1R: EX SE Shore Drive

Inflow Area = 6.916 ac, 3.43% Impervious, Inflow Depth = 0.92" for 5-Year event
Inflow = 0.94 cfs @ 8.33 hrs, Volume= 0.531 af
Outflow = 0.94 cfs @ 8.36 hrs, Volume= 0.531 af, Atten= 0%, Lag= 1.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.72 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 1.89 fps, Avg. Travel Time= 1.4 min

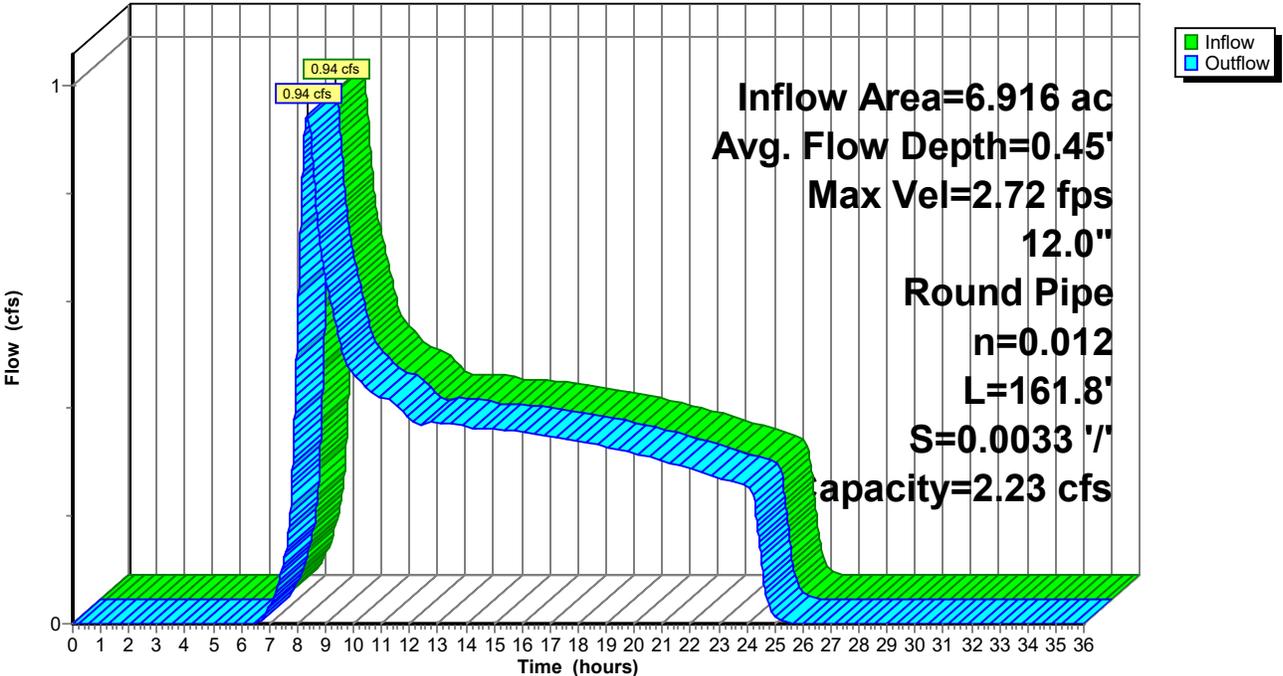
Peak Storage= 56 cf @ 8.34 hrs
Average Depth at Peak Storage= 0.45'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.23 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 161.8' Slope= 0.0033 '/'
Inlet Invert= 210.64', Outlet Invert= 210.10'



Reach 1R: EX SE Shore Drive

Hydrograph



Franklin Reserve Pre-Developed

Type IA 24-hr 10-Year Rainfall=3.37"

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Page 8

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-Developed Site Runoff Area=301,267 sf 3.43% Impervious Runoff Depth=1.27"
Flow Length=565' Slope=0.0200 '/' Tc=32.6 min CN=76 Runoff=1.46 cfs 0.733 af

Reach 1R: EX SE Shore Drive Avg. Flow Depth=0.59' Max Vel=3.03 fps Inflow=1.46 cfs 0.733 af
12.0" Round Pipe n=0.012 L=161.8' S=0.0033 '/' Capacity=2.23 cfs Outflow=1.46 cfs 0.733 af

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Type IA 24-hr 10-Year Rainfall=3.37"

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Page 9

Summary for Subcatchment 1S: Pre-Developed Site

Runoff = 1.46 cfs @ 8.30 hrs, Volume= 0.733 af, Depth= 1.27"

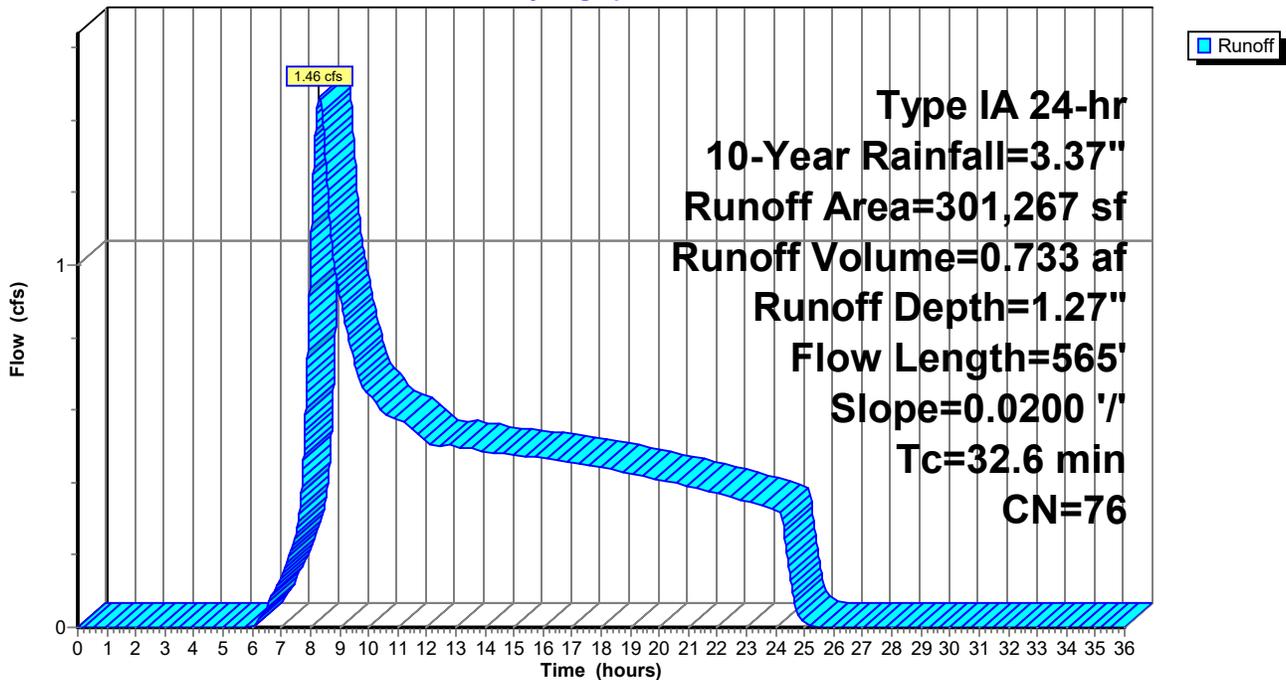
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-Year Rainfall=3.37"

Area (sf)	CN	Description
20,655	92	Paved roads w/open ditches, 50% imp, HSG C
76,610	70	Brush, Fair, HSG C
204,002	76	Woods/grass comb., Fair, HSG C
301,267	76	Weighted Average
290,940	75	96.57% Pervious Area
10,328	98	3.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	150	0.0200	0.11		Sheet Flow, Sheet
					Grass: Dense n= 0.240 P2= 2.40"
9.8	415	0.0200	0.71		Shallow Concentrated Flow, SCF
					Woodland Kv= 5.0 fps
32.6	565	Total			

Subcatchment 1S: Pre-Developed Site

Hydrograph



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Type IA 24-hr 10-Year Rainfall=3.37"

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Page 10

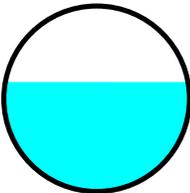
Summary for Reach 1R: EX SE Shore Drive

Inflow Area = 6.916 ac, 3.43% Impervious, Inflow Depth = 1.27" for 10-Year event
Inflow = 1.46 cfs @ 8.30 hrs, Volume= 0.733 af
Outflow = 1.46 cfs @ 8.33 hrs, Volume= 0.733 af, Atten= 0%, Lag= 1.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.03 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 2.05 fps, Avg. Travel Time= 1.3 min

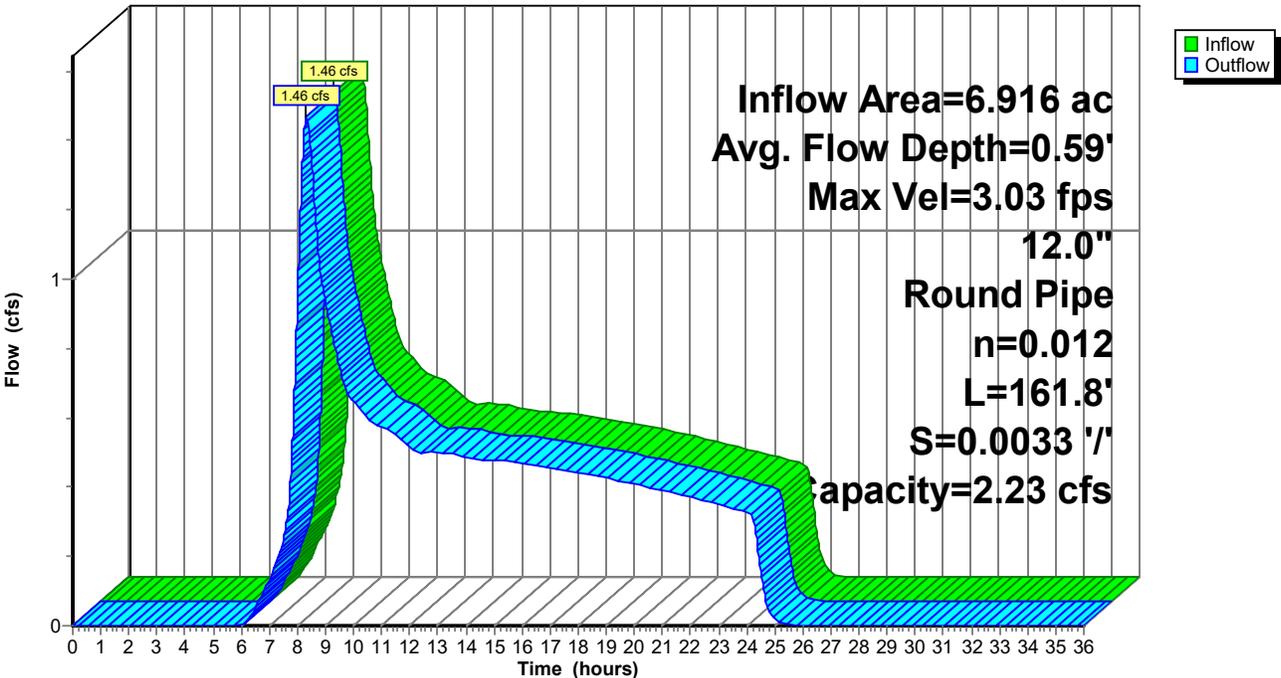
Peak Storage= 78 cf @ 8.31 hrs
Average Depth at Peak Storage= 0.59'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.23 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 161.8' Slope= 0.0033 '/'
Inlet Invert= 210.64', Outlet Invert= 210.10'



Reach 1R: EX SE Shore Drive

Hydrograph



Franklin Reserve Pre-Developed

Type IA 24-hr 25-Year Rainfall=3.94"

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Page 11

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-Developed Site Runoff Area=301,267 sf 3.43% Impervious Runoff Depth=1.69"
Flow Length=565' Slope=0.0200 '/' Tc=32.6 min CN=76 Runoff=2.11 cfs 0.976 af

Reach 1R: EX SE Shore Drive Avg. Flow Depth=0.77' Max Vel=3.23 fps Inflow=2.11 cfs 0.976 af
12.0" Round Pipe n=0.012 L=161.8' S=0.0033 '/' Capacity=2.23 cfs Outflow=2.10 cfs 0.976 af

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Type IA 24-hr 25-Year Rainfall=3.94"

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Page 12

Summary for Subcatchment 1S: Pre-Developed Site

Runoff = 2.11 cfs @ 8.29 hrs, Volume= 0.976 af, Depth= 1.69"

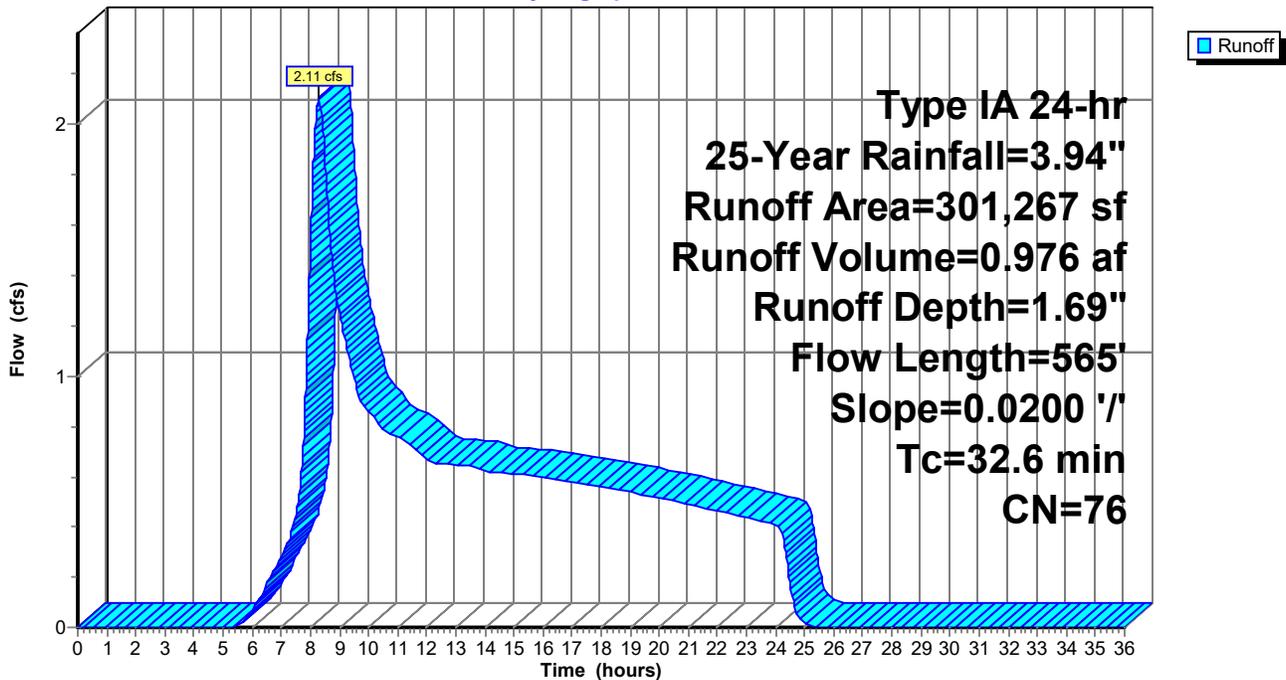
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-Year Rainfall=3.94"

Area (sf)	CN	Description
20,655	92	Paved roads w/open ditches, 50% imp, HSG C
76,610	70	Brush, Fair, HSG C
204,002	76	Woods/grass comb., Fair, HSG C
301,267	76	Weighted Average
290,940	75	96.57% Pervious Area
10,328	98	3.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	150	0.0200	0.11		Sheet Flow, Sheet
					Grass: Dense n= 0.240 P2= 2.40"
9.8	415	0.0200	0.71		Shallow Concentrated Flow, SCF
					Woodland Kv= 5.0 fps
32.6	565	Total			

Subcatchment 1S: Pre-Developed Site

Hydrograph



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Type IA 24-hr 25-Year Rainfall=3.94"

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Page 13

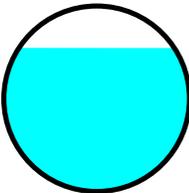
Summary for Reach 1R: EX SE Shore Drive

Inflow Area = 6.916 ac, 3.43% Impervious, Inflow Depth = 1.69" for 25-Year event
Inflow = 2.11 cfs @ 8.29 hrs, Volume= 0.976 af
Outflow = 2.10 cfs @ 8.32 hrs, Volume= 0.976 af, Atten= 0%, Lag= 1.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.23 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.18 fps, Avg. Travel Time= 1.2 min

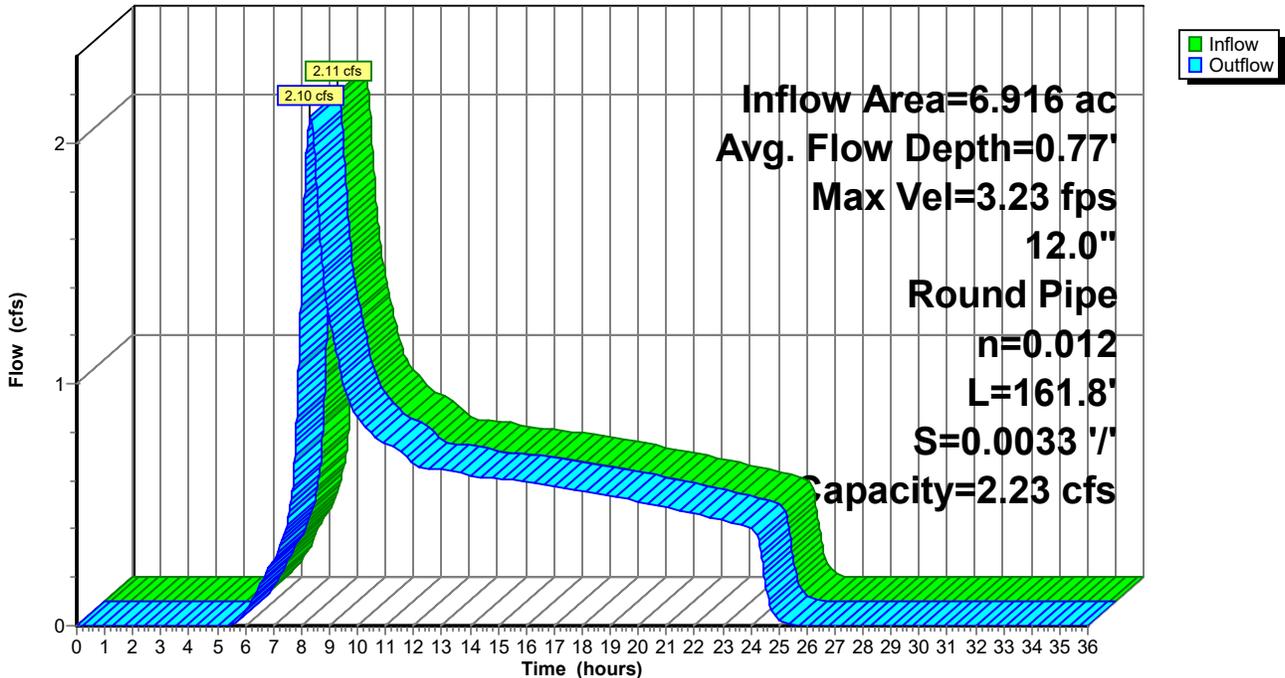
Peak Storage= 105 cf @ 8.30 hrs
Average Depth at Peak Storage= 0.77'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.23 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 161.8' Slope= 0.0033 '/
Inlet Invert= 210.64', Outlet Invert= 210.10'



Reach 1R: EX SE Shore Drive

Hydrograph



Franklin Reserve Pre-Developed

Type IA 24-hr 50-Year Rainfall=4.38"

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Page 14

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-Developed Site Runoff Area=301,267 sf 3.43% Impervious Runoff Depth=2.03"
Flow Length=565' Slope=0.0200 '/' Tc=32.6 min CN=76 Runoff=2.64 cfs 1.173 af

Reach 1R: EX SE Shore Drive Avg. Flow Depth=1.00' Max Vel=3.24 fps Inflow=2.64 cfs 1.173 af
12.0" Round Pipe n=0.012 L=161.8' S=0.0033 '/' Capacity=2.23 cfs Outflow=2.40 cfs 1.173 af

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Type IA 24-hr 50-Year Rainfall=4.38"

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Page 15

Summary for Subcatchment 1S: Pre-Developed Site

Runoff = 2.64 cfs @ 8.29 hrs, Volume= 1.173 af, Depth= 2.03"

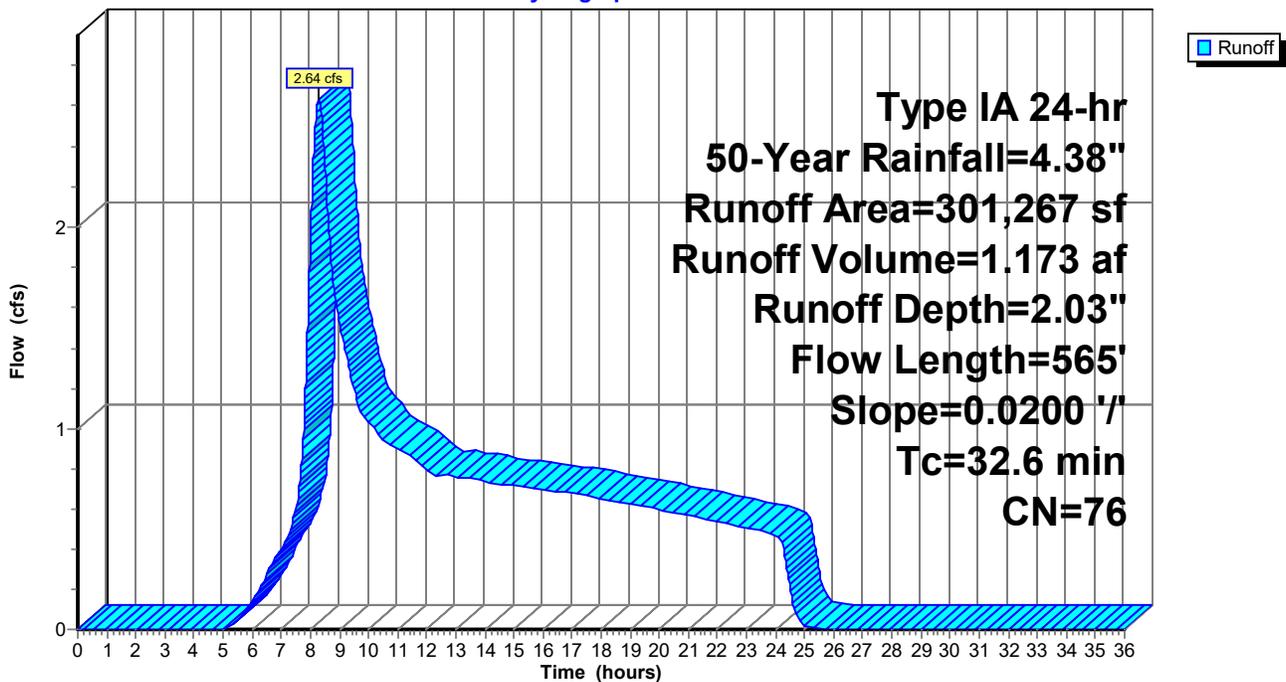
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-Year Rainfall=4.38"

Area (sf)	CN	Description
20,655	92	Paved roads w/open ditches, 50% imp, HSG C
76,610	70	Brush, Fair, HSG C
204,002	76	Woods/grass comb., Fair, HSG C
301,267	76	Weighted Average
290,940	75	96.57% Pervious Area
10,328	98	3.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	150	0.0200	0.11		Sheet Flow, Sheet
					Grass: Dense n= 0.240 P2= 2.40"
9.8	415	0.0200	0.71		Shallow Concentrated Flow, SCF
					Woodland Kv= 5.0 fps
32.6	565	Total			

Subcatchment 1S: Pre-Developed Site

Hydrograph



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Type IA 24-hr 50-Year Rainfall=4.38"

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Page 16

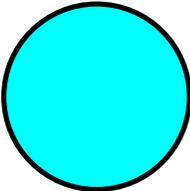
Summary for Reach 1R: EX SE Shore Drive

Inflow Area = 6.916 ac, 3.43% Impervious, Inflow Depth = 2.03" for 50-Year event
Inflow = 2.64 cfs @ 8.29 hrs, Volume= 1.173 af
Outflow = 2.40 cfs @ 8.17 hrs, Volume= 1.173 af, Atten= 9%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.24 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.26 fps, Avg. Travel Time= 1.2 min

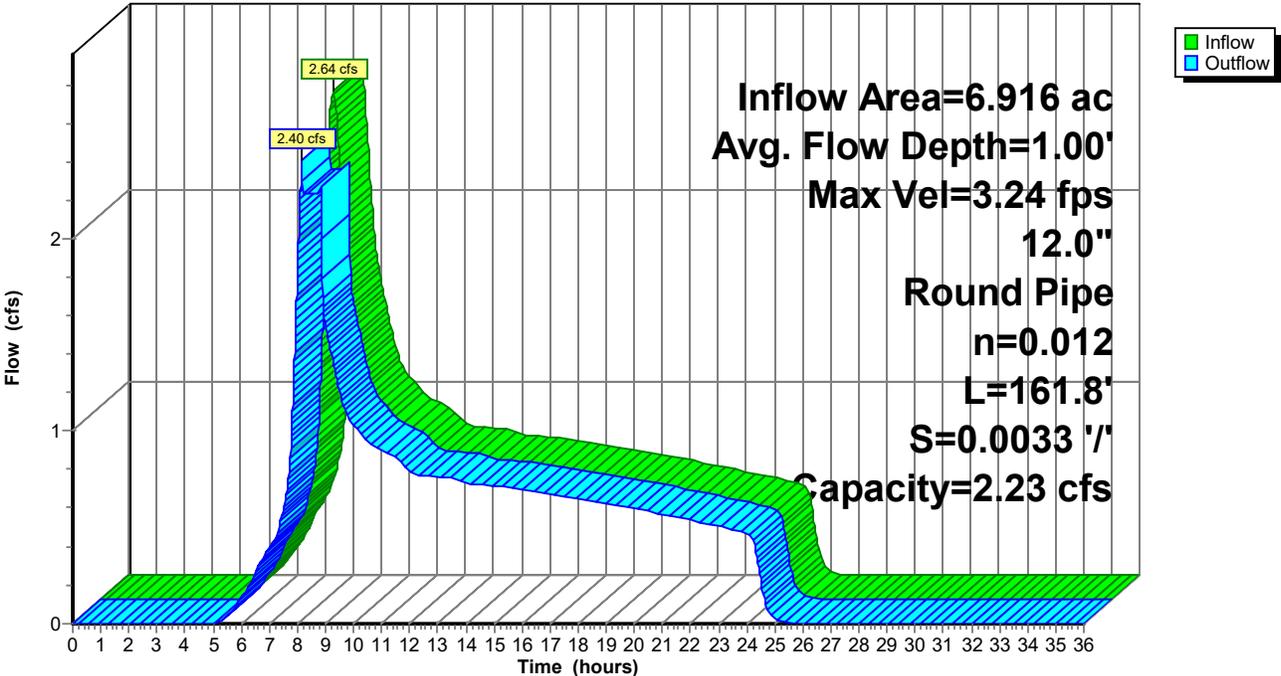
Peak Storage= 127 cf @ 8.17 hrs
Average Depth at Peak Storage= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.23 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 161.8' Slope= 0.0033 '/'
Inlet Invert= 210.64', Outlet Invert= 210.10'



Reach 1R: EX SE Shore Drive

Hydrograph



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Type IA 24-hr WQ Rainfall=1.00"

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Page 17

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-Developed Site Runoff Area=301,267 sf 3.43% Impervious Runoff Depth=0.04"
Flow Length=565' Slope=0.0200 '/' Tc=32.6 min CN=76 Runoff=0.03 cfs 0.022 af

Reach 1R: EX SE Shore Drive Avg. Flow Depth=0.08' Max Vel=0.97 fps Inflow=0.03 cfs 0.022 af
12.0" Round Pipe n=0.012 L=161.8' S=0.0033 '/' Capacity=2.23 cfs Outflow=0.03 cfs 0.022 af

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Type IA 24-hr WQ Rainfall=1.00"

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Page 18

Summary for Subcatchment 1S: Pre-Developed Site

Runoff = 0.03 cfs @ 21.55 hrs, Volume= 0.022 af, Depth= 0.04"

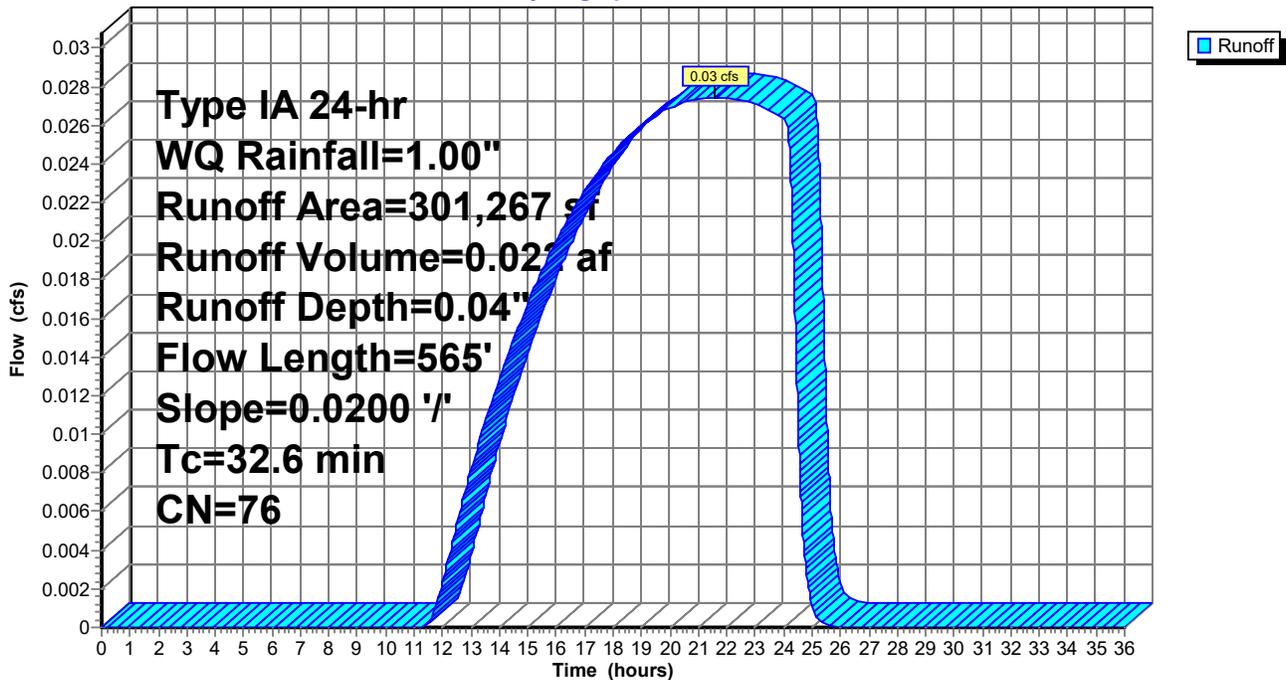
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
20,655	92	Paved roads w/open ditches, 50% imp, HSG C
76,610	70	Brush, Fair, HSG C
204,002	76	Woods/grass comb., Fair, HSG C
301,267	76	Weighted Average
290,940	75	96.57% Pervious Area
10,328	98	3.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	150	0.0200	0.11		Sheet Flow, Sheet
					Grass: Dense n= 0.240 P2= 2.40"
9.8	415	0.0200	0.71		Shallow Concentrated Flow, SCF
					Woodland Kv= 5.0 fps
32.6	565	Total			

Subcatchment 1S: Pre-Developed Site

Hydrograph



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Type IA 24-hr WQ Rainfall=1.00"

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Page 19

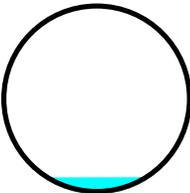
Summary for Reach 1R: EX SE Shore Drive

Inflow Area = 6.916 ac, 3.43% Impervious, Inflow Depth = 0.04" for WQ event
Inflow = 0.03 cfs @ 21.55 hrs, Volume= 0.022 af
Outflow = 0.03 cfs @ 21.69 hrs, Volume= 0.022 af, Atten= 0%, Lag= 8.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.97 fps, Min. Travel Time= 2.8 min
Avg. Velocity = 0.81 fps, Avg. Travel Time= 3.3 min

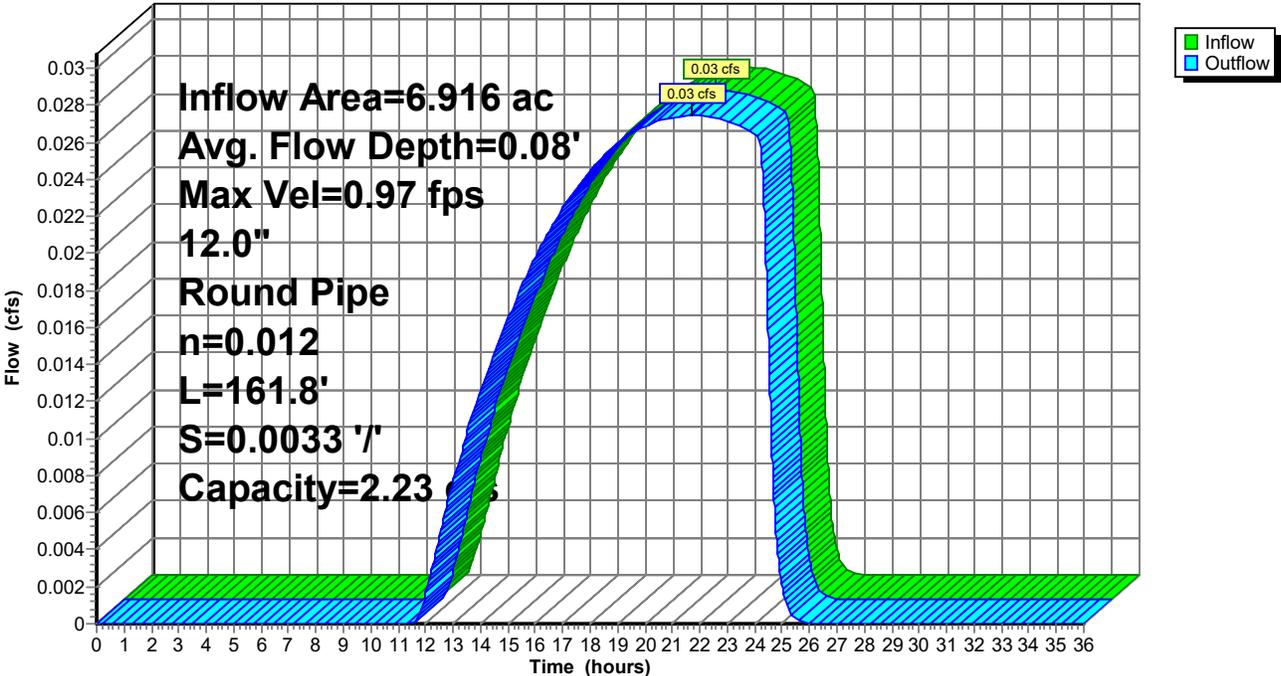
Peak Storage= 5 cf @ 21.64 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.23 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 161.8' Slope= 0.0033 '/'
Inlet Invert= 210.64', Outlet Invert= 210.10'

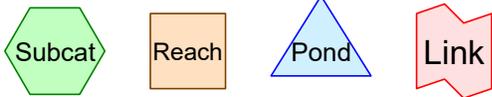
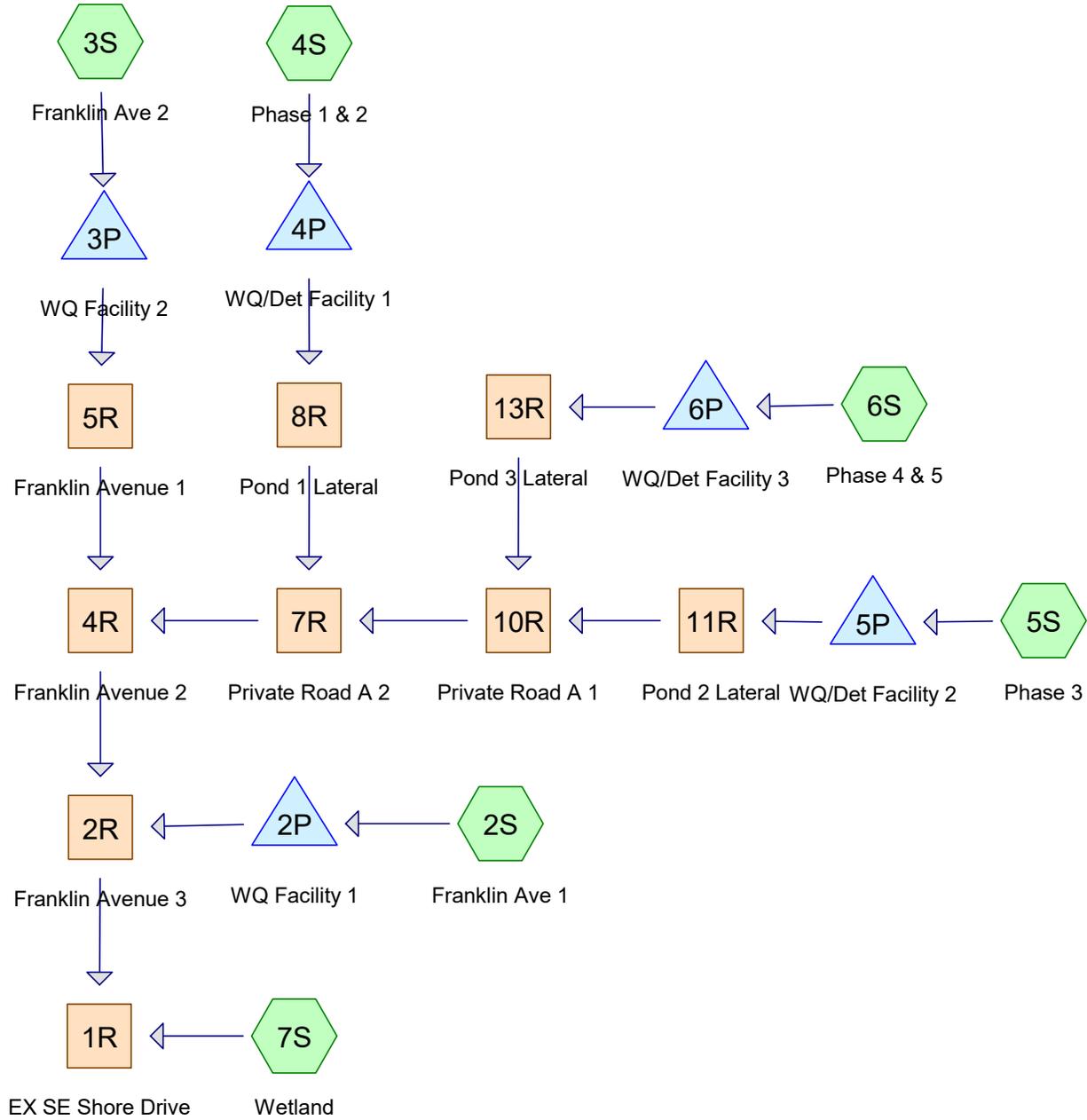


Reach 1R: EX SE Shore Drive

Hydrograph



ATTACHMENT B



Franklin Reserve Post-Developed

Type IA 24-hr 2-Year Rainfall=2.47"

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Page 2

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: Franklin Ave 1	Runoff Area=10,733 sf 84.20% Impervious Runoff Depth=1.84" Flow Length=242' Slope=0.0200 '/' Tc=10.0 min CN=94 Runoff=0.12 cfs 0.038 af
Subcatchment 3S: Franklin Ave 2	Runoff Area=10,498 sf 81.80% Impervious Runoff Depth=1.84" Flow Length=274' Slope=0.0200 '/' Tc=10.0 min CN=94 Runoff=0.12 cfs 0.037 af
Subcatchment 4S: Phase 1 & 2	Runoff Area=73,511 sf 65.62% Impervious Runoff Depth=1.58" Flow Length=500' Tc=10.2 min CN=91 Runoff=0.67 cfs 0.223 af
Subcatchment 5S: Phase 3	Runoff Area=31,101 sf 71.57% Impervious Runoff Depth=1.75" Flow Length=360' Tc=10.0 min CN=93 Runoff=0.32 cfs 0.104 af
Subcatchment 6S: Phase 4 & 5	Runoff Area=98,814 sf 42.16% Impervious Runoff Depth=1.03" Flow Length=422' Tc=10.0 min CN=83 Runoff=0.51 cfs 0.195 af
Subcatchment 7S: Wetland	Runoff Area=76,610 sf 0.00% Impervious Runoff Depth=0.29" Flow Length=365' Slope=0.0200 '/' Tc=27.9 min CN=65 Runoff=0.04 cfs 0.042 af
Reach 1R: EX SE Shore Drive	Avg. Flow Depth=0.35' Max Vel=2.38 fps Inflow=0.58 cfs 0.603 af 12.0" Round Pipe n=0.012 L=161.8' S=0.0033 '/' Capacity=2.23 cfs Outflow=0.58 cfs 0.603 af
Reach 2R: Franklin Avenue 3	Avg. Flow Depth=0.31' Max Vel=2.75 fps Inflow=0.57 cfs 0.561 af 12.0" Round Pipe n=0.012 L=147.0' S=0.0050 '/' Capacity=2.74 cfs Outflow=0.57 cfs 0.561 af
Reach 4R: Franklin Avenue 2	Avg. Flow Depth=0.29' Max Vel=2.65 fps Inflow=0.51 cfs 0.534 af 12.0" Round Pipe n=0.012 L=98.9' S=0.0050 '/' Capacity=2.72 cfs Outflow=0.51 cfs 0.534 af
Reach 5R: Franklin Avenue 1	Avg. Flow Depth=0.10' Max Vel=1.41 fps Inflow=0.06 cfs 0.026 af 12.0" Round Pipe n=0.012 L=157.1' S=0.0050 '/' Capacity=2.74 cfs Outflow=0.06 cfs 0.026 af
Reach 7R: Private Road A 2	Avg. Flow Depth=0.28' Max Vel=2.57 fps Inflow=0.46 cfs 0.508 af 12.0" Round Pipe n=0.012 L=132.9' S=0.0050 '/' Capacity=2.72 cfs Outflow=0.46 cfs 0.508 af
Reach 8R: Pond 1 Lateral	Avg. Flow Depth=0.21' Max Vel=2.21 fps Inflow=0.27 cfs 0.221 af 12.0" Round Pipe n=0.012 L=26.1' S=0.0050 '/' Capacity=2.72 cfs Outflow=0.27 cfs 0.221 af
Reach 10R: Private Road A 1	Avg. Flow Depth=0.18' Max Vel=2.00 fps Inflow=0.19 cfs 0.287 af 12.0" Round Pipe n=0.012 L=38.5' S=0.0049 '/' Capacity=2.71 cfs Outflow=0.19 cfs 0.287 af
Reach 11R: Pond 2 Lateral	Avg. Flow Depth=0.10' Max Vel=1.36 fps Inflow=0.05 cfs 0.097 af 12.0" Round Pipe n=0.012 L=98.2' S=0.0050 '/' Capacity=2.73 cfs Outflow=0.05 cfs 0.097 af
Reach 13R: Pond 3 Lateral	Avg. Flow Depth=0.15' Max Vel=1.83 fps Inflow=0.14 cfs 0.190 af 12.0" Round Pipe n=0.012 L=297.0' S=0.0050 '/' Capacity=2.73 cfs Outflow=0.14 cfs 0.190 af
Pond 2P: WQ Facility 1	Peak Elev=214.88' Storage=0.009 af Inflow=0.12 cfs 0.038 af Discarded=0.00 cfs 0.007 af Primary=0.06 cfs 0.027 af Outflow=0.07 cfs 0.034 af

Franklin Reserve Post-Developed

Type IA 24-hr 2-Year Rainfall=2.47"

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Page 3

Pond 3P: WQ Facility 2 Peak Elev=216.35' Storage=0.009 af Inflow=0.12 cfs 0.037 af
Discarded=0.00 cfs 0.007 af Primary=0.06 cfs 0.026 af Outflow=0.06 cfs 0.033 af

Pond 4P: WQ/Det Facility 1 Peak Elev=217.13' Storage=875 cf Inflow=0.67 cfs 0.223 af
Discarded=0.00 cfs 0.001 af Primary=0.27 cfs 0.221 af Outflow=0.27 cfs 0.223 af

Pond 5P: WQ/Det Facility 2 Peak Elev=218.00' Storage=1,190 cf Inflow=0.32 cfs 0.104 af
Discarded=0.00 cfs 0.007 af Primary=0.05 cfs 0.097 af Outflow=0.06 cfs 0.104 af

Pond 6P: WQ/Det Facility 3 Peak Elev=218.55' Storage=1,176 cf Inflow=0.51 cfs 0.195 af
Discarded=0.00 cfs 0.005 af Primary=0.14 cfs 0.190 af Outflow=0.15 cfs 0.195 af

Franklin Reserve Post-Developed

Type IA 24-hr 2-Year Rainfall=2.47"

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Page 4

Summary for Subcatchment 2S: Franklin Ave 1

Runoff = 0.12 cfs @ 7.97 hrs, Volume= 0.038 af, Depth= 1.84"

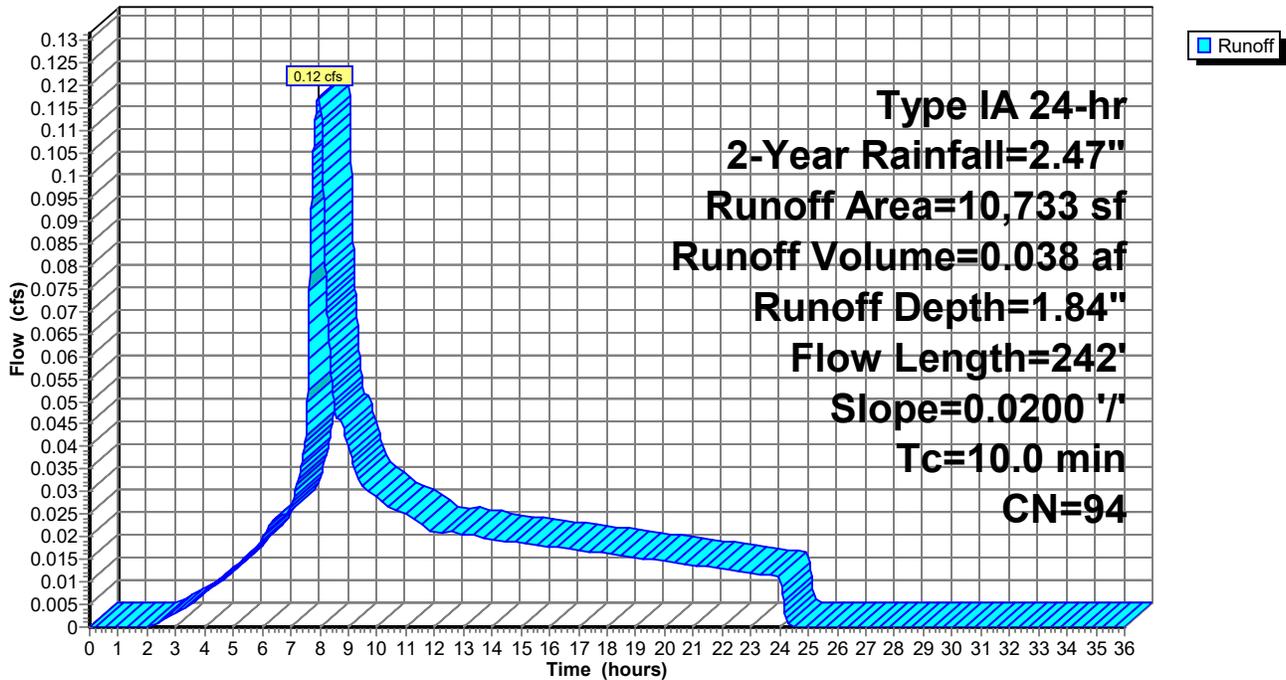
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-Year Rainfall=2.47"

Area (sf)	CN	Description
9,037	98	Paved roads w/curbs & sewers, HSG C
1,696	74	>75% Grass cover, Good, HSG C
10,733	94	Weighted Average
1,696	74	15.80% Pervious Area
9,037	98	84.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.0200	0.99		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
1.2	202	0.0200	2.87		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
1.9	242	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 2S: Franklin Ave 1

Hydrograph



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Type IA 24-hr 2-Year Rainfall=2.47"

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Page 5

Summary for Subcatchment 3S: Franklin Ave 2

Runoff = 0.12 cfs @ 7.97 hrs, Volume= 0.037 af, Depth= 1.84"

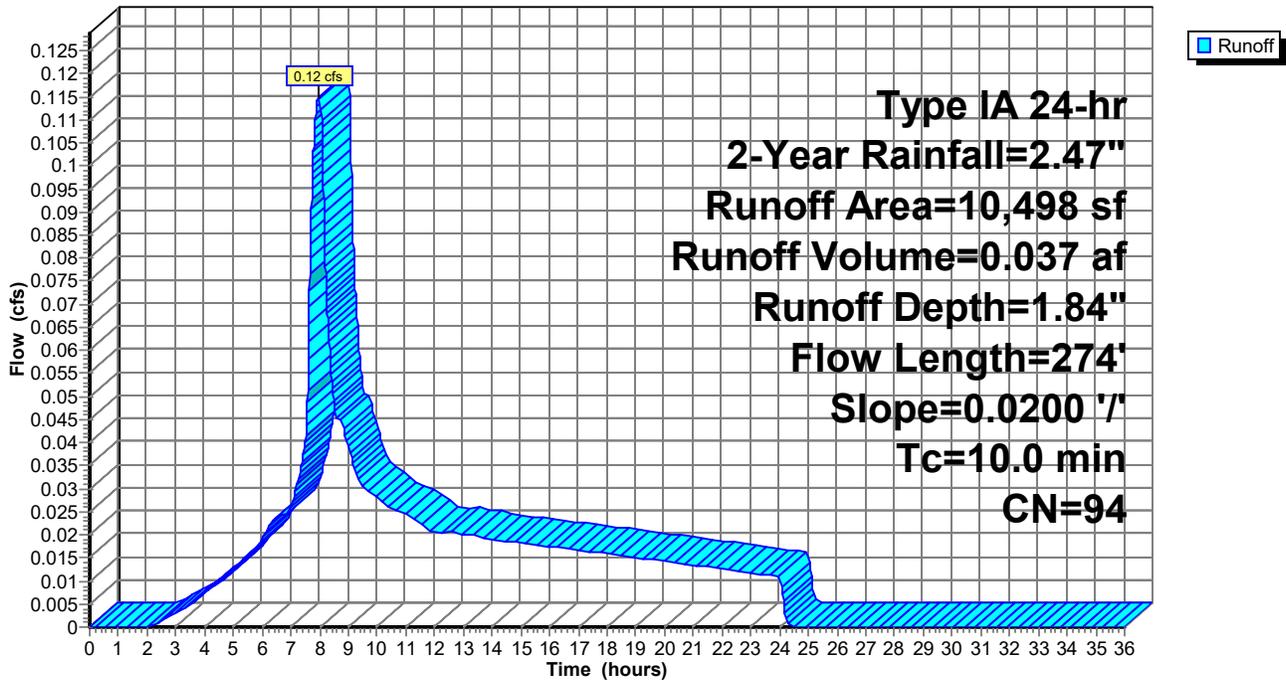
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-Year Rainfall=2.47"

Area (sf)	CN	Description
8,587	98	Paved roads w/curbs & sewers, HSG C
1,911	74	>75% Grass cover, Good, HSG C
10,498	94	Weighted Average
1,911	74	18.20% Pervious Area
8,587	98	81.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.0200	0.99		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
1.4	234	0.0200	2.87		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
2.1	274	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 3S: Franklin Ave 2

Hydrograph



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Summary for Subcatchment 4S: Phase 1 & 2

Runoff = 0.67 cfs @ 8.01 hrs, Volume= 0.223 af, Depth= 1.58"

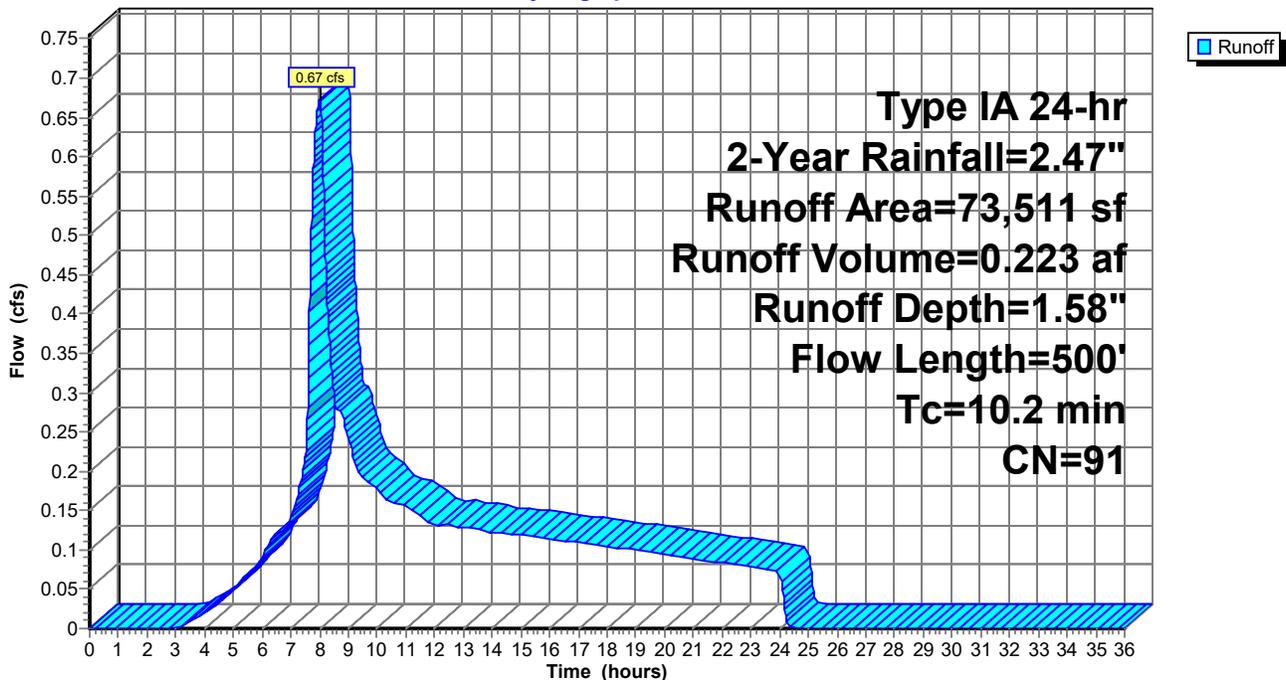
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-Year Rainfall=2.47"

Area (sf)	CN	Description
8,098	98	Paved parking, HSG C
1,945	98	Water Surface, 0% imp, HSG C
61,755	90	1/8 acre lots, 65% imp, HSG C
1,713	74	>75% Grass cover, Good, HSG C
73,511	91	Weighted Average
25,272	77	34.38% Pervious Area
48,239	98	65.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	20	0.0200	0.05		Sheet Flow, Sheet
					Grass: Bermuda n= 0.410 P2= 2.40"
1.3	80	0.0200	0.99		Shallow Concentrated Flow, SCF
					Short Grass Pasture Kv= 7.0 fps
1.9	400	0.0050	3.47	2.73	Pipe Channel, To Pond
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
10.2	500	Total			

Subcatchment 4S: Phase 1 & 2

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Summary for Subcatchment 5S: Phase 3

Runoff = 0.32 cfs @ 7.99 hrs, Volume= 0.104 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-Year Rainfall=2.47"

Area (sf)	CN	Description
11,947	98	Paved parking, HSG C
2,490	98	Water Surface, 0% imp, HSG C
2,227	98	Unconnected pavement, HSG C
8,084	98	Roofs, HSG C
6,353	74	>75% Grass cover, Good, HSG C
31,101	93	Weighted Average
8,843	81	28.43% Pervious Area
22,258	98	71.57% Impervious Area
2,227		10.01% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	20	0.0200	0.86		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
0.3	60	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	280	0.0050	3.47	2.73	Pipe Channel, Pipe 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.0	360	Total, Increased to minimum Tc = 10.0 min			

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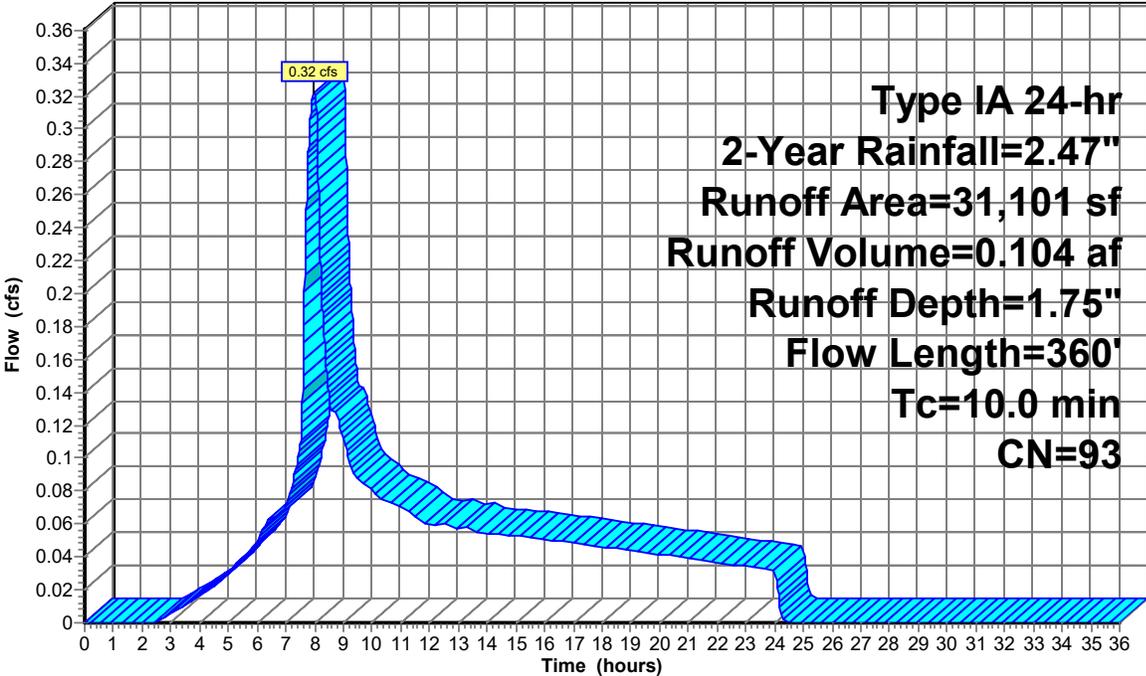
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Page 8

Subcatchment 5S: Phase 3

Hydrograph



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Page 9

Summary for Subcatchment 6S: Phase 4 & 5

Runoff = 0.51 cfs @ 8.03 hrs, Volume= 0.195 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-Year Rainfall=2.47"

Area (sf)	CN	Description
2,019	98	Water Surface, 0% imp, HSG C
11,637	98	Roofs, HSG C
* 30,024	98	Parking Lot, Sidewalk, Unconnected Roofs
55,134	72	Woods/grass comb., Good, HSG C
98,814	83	Weighted Average
57,153	73	57.84% Pervious Area
41,661	98	42.16% Impervious Area
30,024		72.07% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	20	0.0200	0.05		Sheet Flow, Sheet Grass: Bermuda n= 0.410 P2= 2.40"
1.3	80	0.0200	0.99		Shallow Concentrated Flow, SCF Short Grass Pasture Kv= 7.0 fps
1.5	322	0.0050	3.47	2.73	Pipe Channel, To Pond 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
9.8	422	Total, Increased to minimum Tc = 10.0 min			

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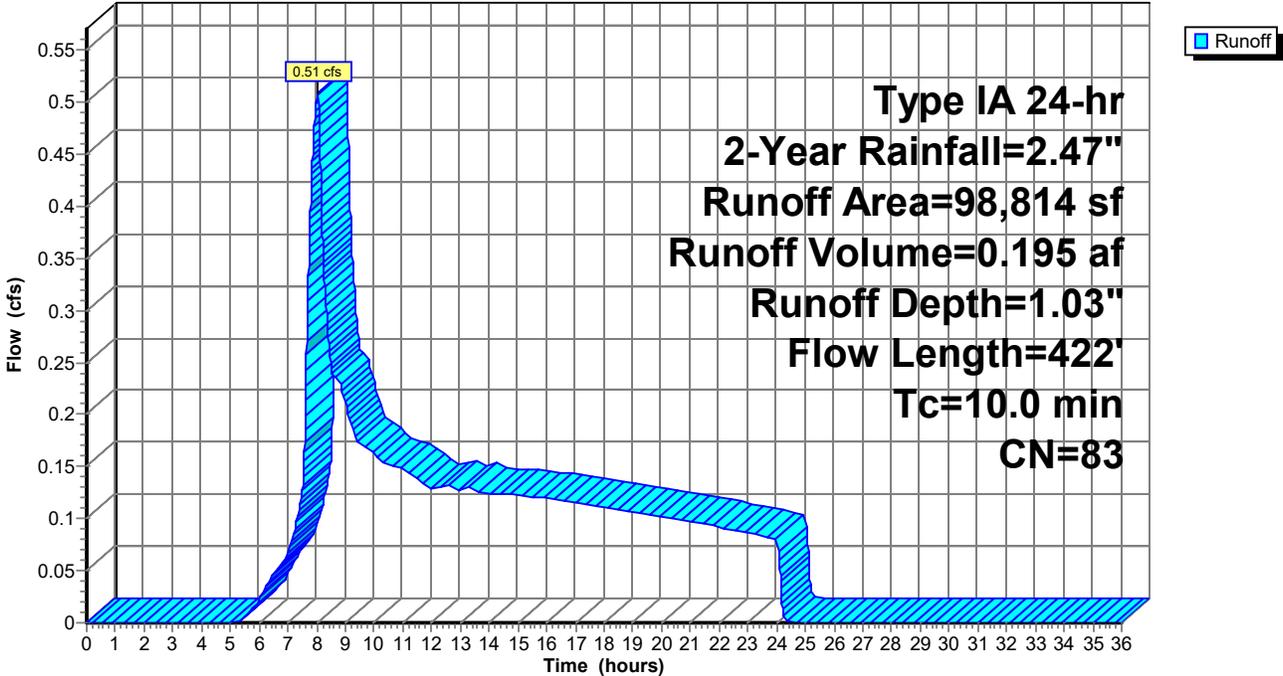
Type IA 24-hr 2-Year Rainfall=2.47"

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Page 10

Subcatchment 6S: Phase 4 & 5

Hydrograph



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Page 11

Summary for Subcatchment 7S: Wetland

Runoff = 0.04 cfs @ 18.01 hrs, Volume= 0.042 af, Depth= 0.29"

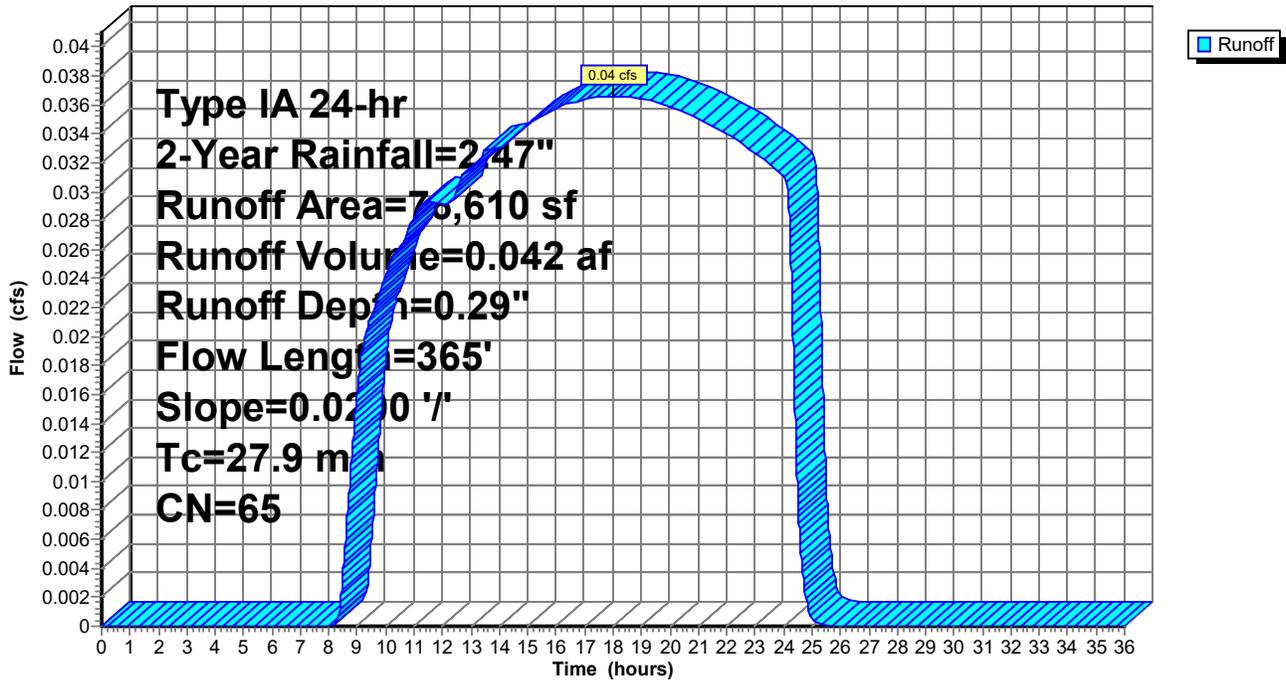
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-Year Rainfall=2.47"

Area (sf)	CN	Description
76,610	65	Brush, Good, HSG C
76,610	65	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	150	0.0200	0.11		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 2.40"
5.1	215	0.0200	0.71		Shallow Concentrated Flow, SCF Woodland Kv= 5.0 fps
27.9	365	Total			

Subcatchment 7S: Wetland

Hydrograph



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Page 12

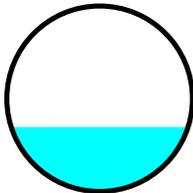
Summary for Reach 1R: EX SE Shore Drive

Inflow Area = 6.916 ac, 43.08% Impervious, Inflow Depth = 1.05" for 2-Year event
Inflow = 0.58 cfs @ 8.89 hrs, Volume= 0.603 af
Outflow = 0.58 cfs @ 8.91 hrs, Volume= 0.603 af, Atten= 0%, Lag= 1.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.38 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.73 fps, Avg. Travel Time= 1.6 min

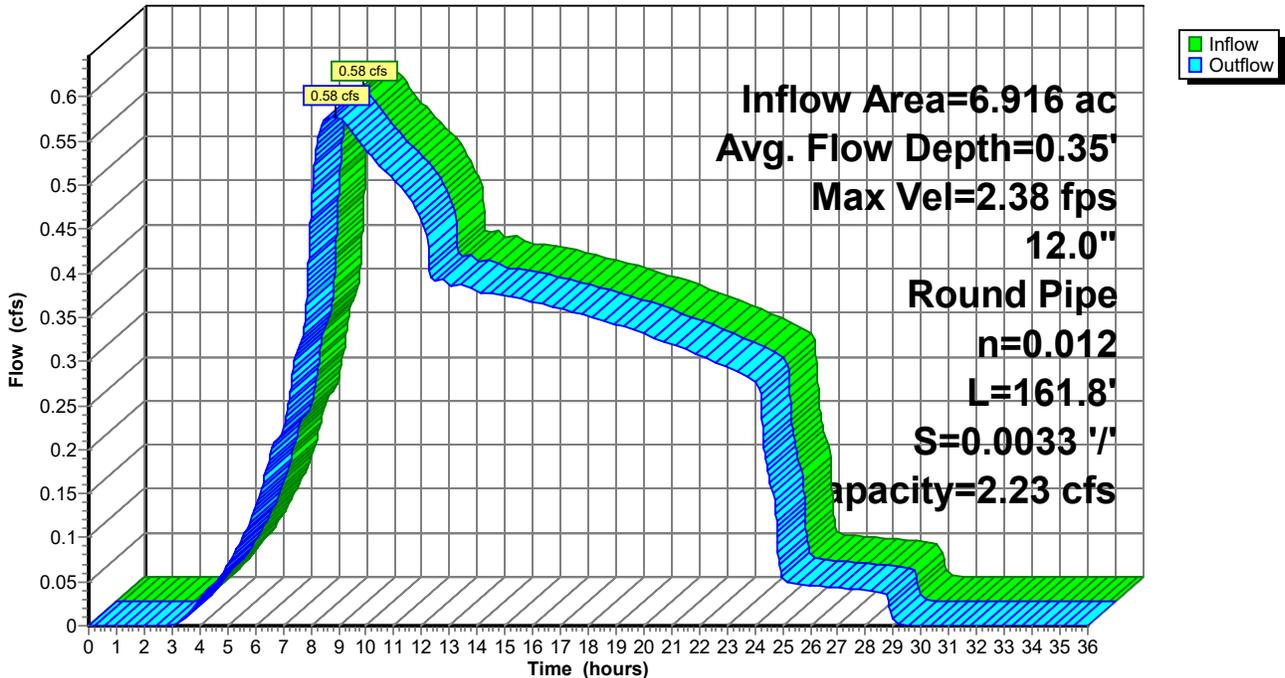
Peak Storage= 39 cf @ 8.90 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.23 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 161.8' Slope= 0.0033 '/
Inlet Invert= 210.64', Outlet Invert= 210.10'



Reach 1R: EX SE Shore Drive

Hydrograph



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Page 13

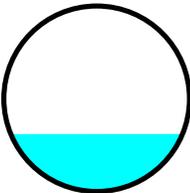
Summary for Reach 2R: Franklin Avenue 3

Inflow Area = 5.157 ac, 57.77% Impervious, Inflow Depth = 1.30" for 2-Year event
Inflow = 0.57 cfs @ 8.49 hrs, Volume= 0.561 af
Outflow = 0.57 cfs @ 8.51 hrs, Volume= 0.561 af, Atten= 0%, Lag= 1.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.75 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.98 fps, Avg. Travel Time= 1.2 min

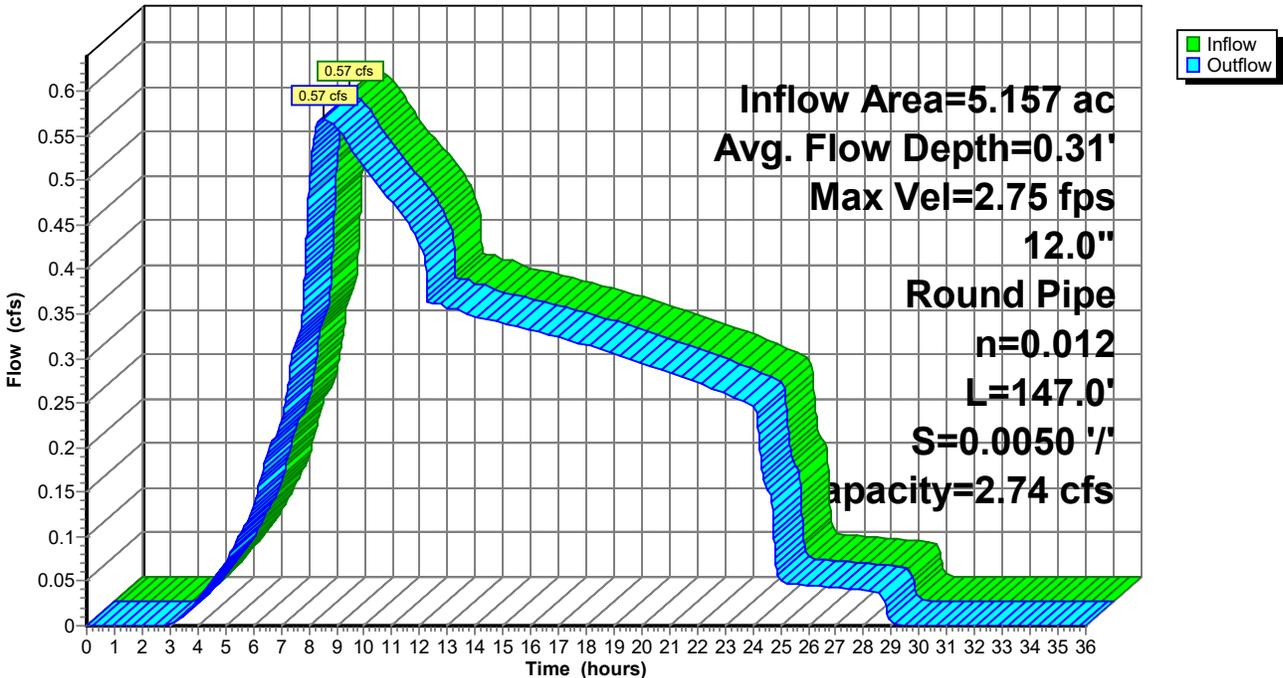
Peak Storage= 30 cf @ 8.50 hrs
Average Depth at Peak Storage= 0.31'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.74 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 147.0' Slope= 0.0050 '/'
Inlet Invert= 211.38', Outlet Invert= 210.64'



Reach 2R: Franklin Avenue 3

Hydrograph



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Page 14

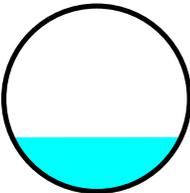
Summary for Reach 4R: Franklin Avenue 2

Inflow Area = 4.911 ac, 56.44% Impervious, Inflow Depth = 1.31" for 2-Year event
Inflow = 0.51 cfs @ 8.59 hrs, Volume= 0.534 af
Outflow = 0.51 cfs @ 8.61 hrs, Volume= 0.534 af, Atten= 0%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.65 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.96 fps, Avg. Travel Time= 0.8 min

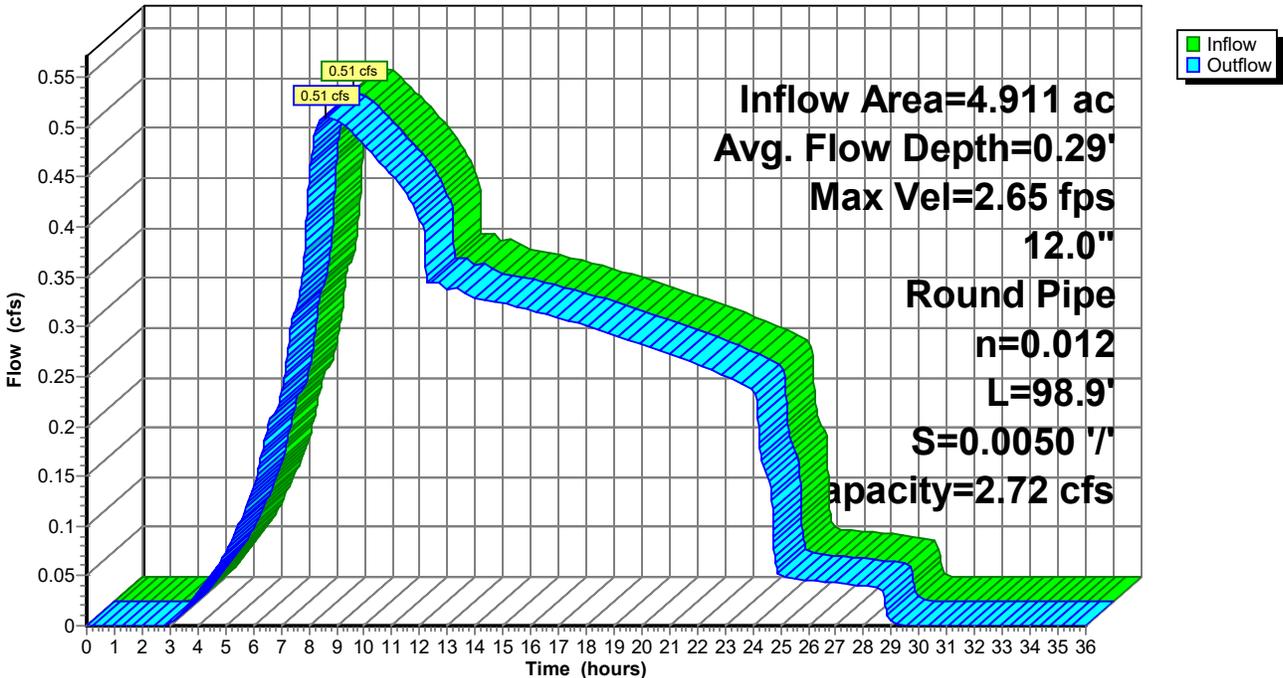
Peak Storage= 19 cf @ 8.59 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 98.9' Slope= 0.0050 '/'
Inlet Invert= 211.87', Outlet Invert= 211.38'



Reach 4R: Franklin Avenue 2

Hydrograph



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Page 15

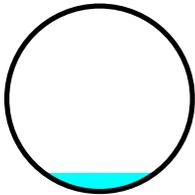
Summary for Reach 5R: Franklin Avenue 1

Inflow Area = 0.241 ac, 81.80% Impervious, Inflow Depth = 1.29" for 2-Year event
Inflow = 0.06 cfs @ 8.33 hrs, Volume= 0.026 af
Outflow = 0.06 cfs @ 8.38 hrs, Volume= 0.026 af, Atten= 0%, Lag= 3.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.41 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.94 fps, Avg. Travel Time= 2.8 min

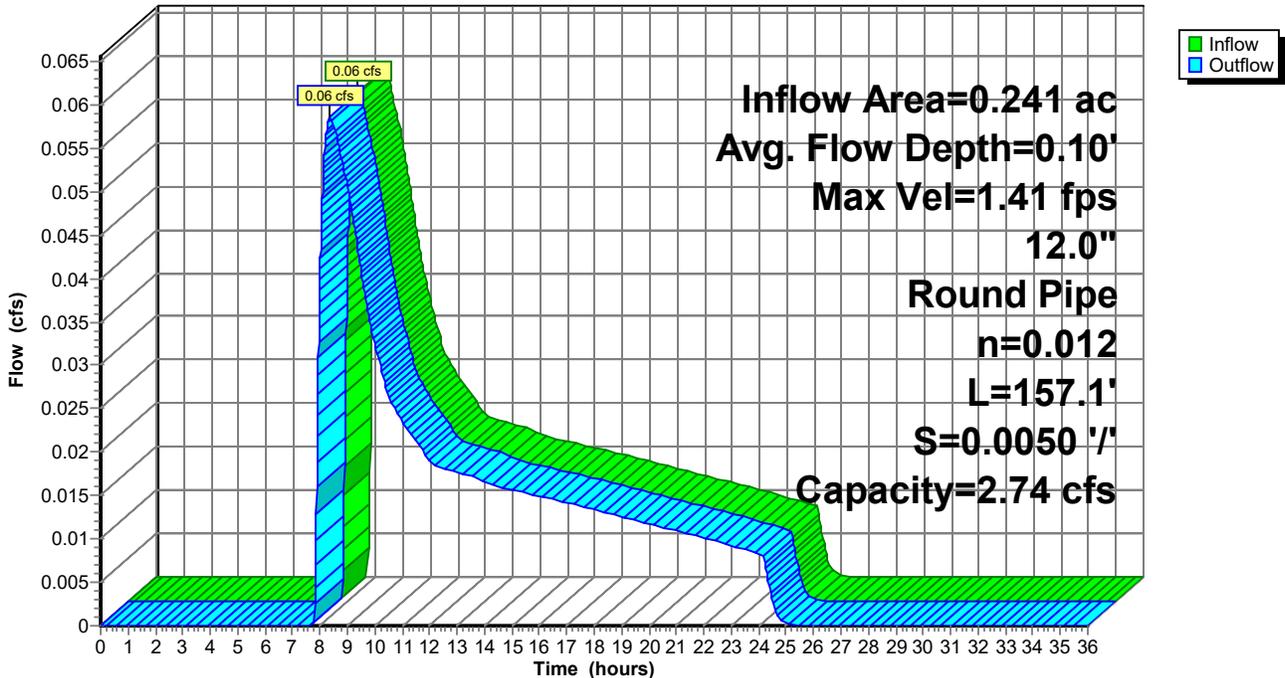
Peak Storage= 7 cf @ 8.35 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.74 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 157.1' Slope= 0.0050 '/'
Inlet Invert= 212.86', Outlet Invert= 212.07'



Reach 5R: Franklin Avenue 1

Hydrograph



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Page 16

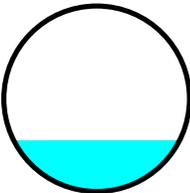
Summary for Reach 7R: Private Road A 2

Inflow Area = 4.670 ac, 55.13% Impervious, Inflow Depth = 1.31" for 2-Year event
Inflow = 0.46 cfs @ 9.11 hrs, Volume= 0.508 af
Outflow = 0.46 cfs @ 9.13 hrs, Volume= 0.508 af, Atten= 0%, Lag= 1.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.57 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.94 fps, Avg. Travel Time= 1.1 min

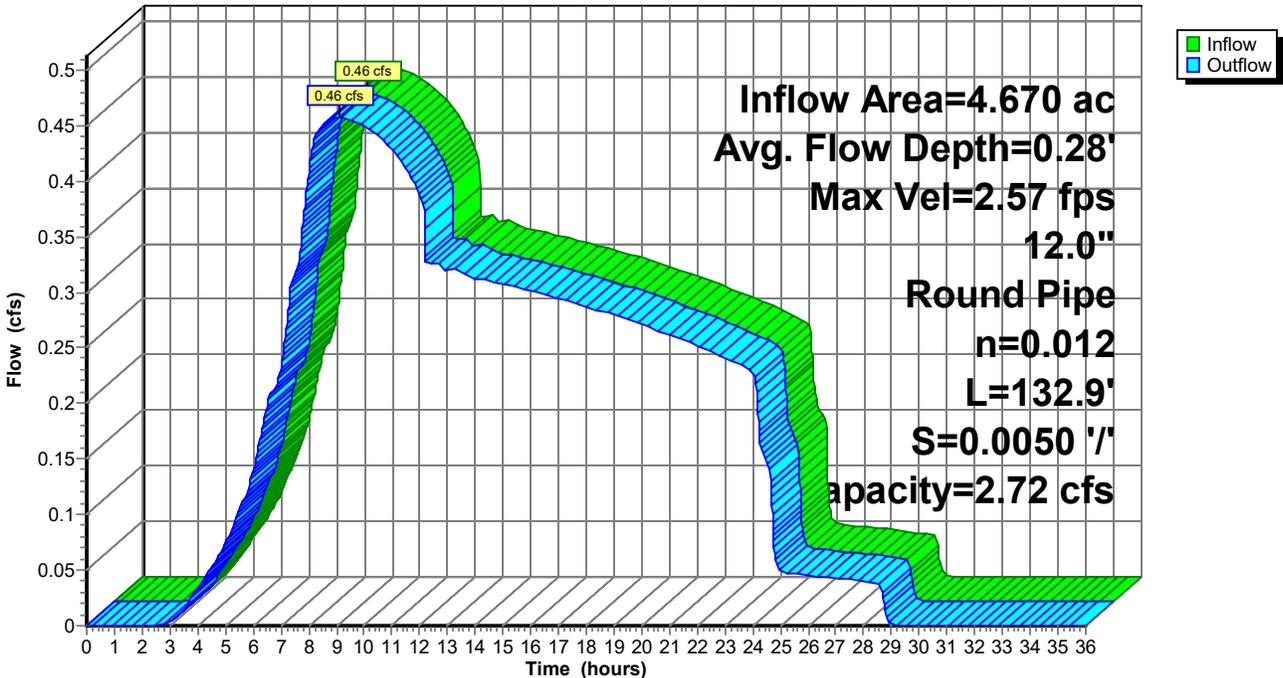
Peak Storage= 24 cf @ 9.12 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 132.9' Slope= 0.0050 '/'
Inlet Invert= 212.73', Outlet Invert= 212.07'



Reach 7R: Private Road A 2

Hydrograph



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Page 17

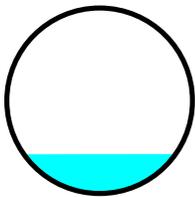
Summary for Reach 8R: Pond 1 Lateral

Inflow Area = 1.688 ac, 65.62% Impervious, Inflow Depth = 1.57" for 2-Year event
 Inflow = 0.27 cfs @ 8.76 hrs, Volume= 0.221 af
 Outflow = 0.27 cfs @ 8.77 hrs, Volume= 0.221 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.21 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.68 fps, Avg. Travel Time= 0.3 min

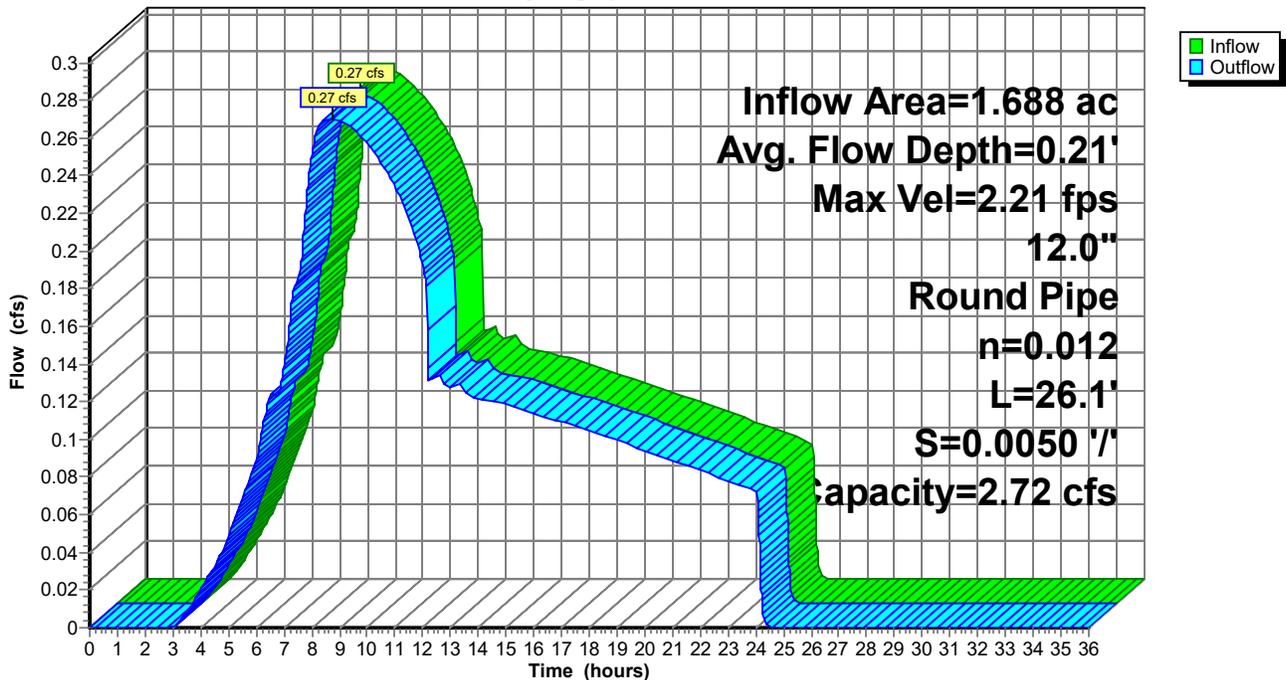
Peak Storage= 3 cf @ 8.77 hrs
 Average Depth at Peak Storage= 0.21'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 26.1' Slope= 0.0050 '/'
 Inlet Invert= 213.06', Outlet Invert= 212.93'



Reach 8R: Pond 1 Lateral

Hydrograph



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Page 18

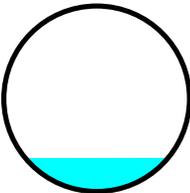
Summary for Reach 10R: Private Road A 1

Inflow Area = 2.982 ac, 49.20% Impervious, Inflow Depth = 1.16" for 2-Year event
Inflow = 0.19 cfs @ 11.36 hrs, Volume= 0.287 af
Outflow = 0.19 cfs @ 11.37 hrs, Volume= 0.287 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.00 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.67 fps, Avg. Travel Time= 0.4 min

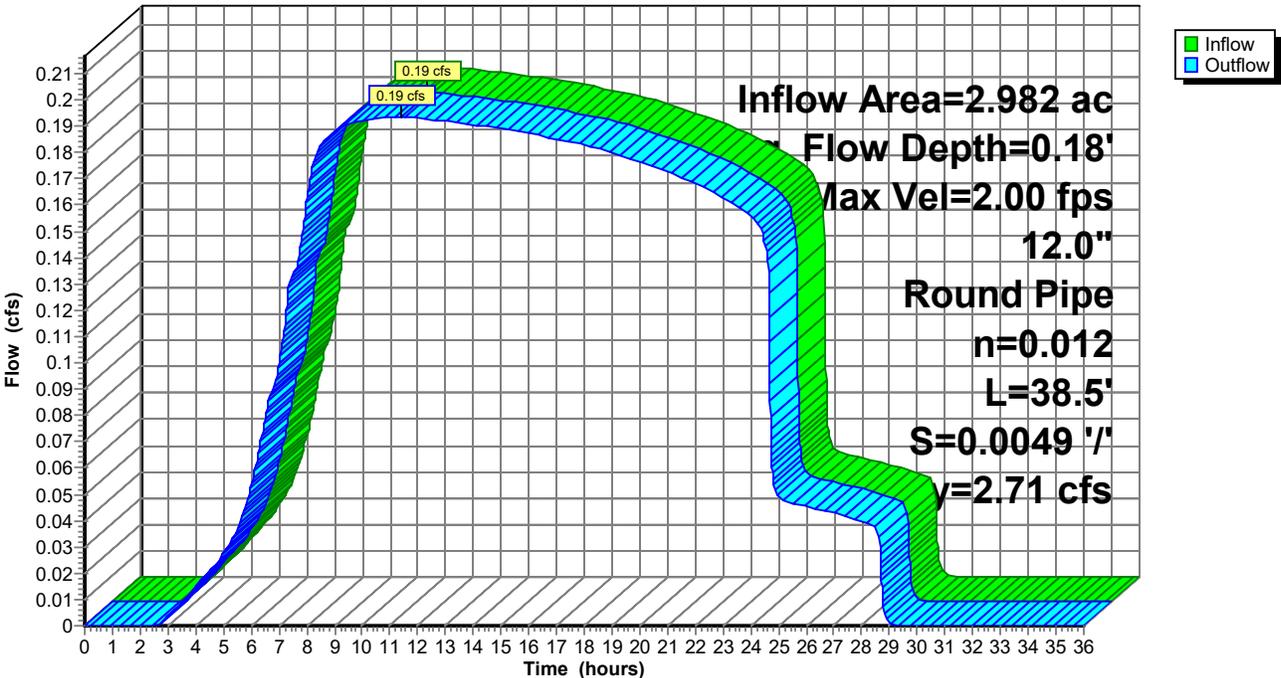
Peak Storage= 4 cf @ 11.37 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.71 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 38.5' Slope= 0.0049 '/
Inlet Invert= 213.12', Outlet Invert= 212.93'



Reach 10R: Private Road A 1

Hydrograph



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Page 19

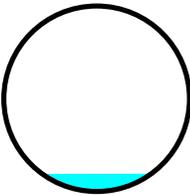
Summary for Reach 11R: Pond 2 Lateral

Inflow Area = 0.714 ac, 71.57% Impervious, Inflow Depth = 1.63" for 2-Year event
Inflow = 0.05 cfs @ 13.45 hrs, Volume= 0.097 af
Outflow = 0.05 cfs @ 13.49 hrs, Volume= 0.097 af, Atten= 0%, Lag= 2.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.36 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 1.26 fps, Avg. Travel Time= 1.3 min

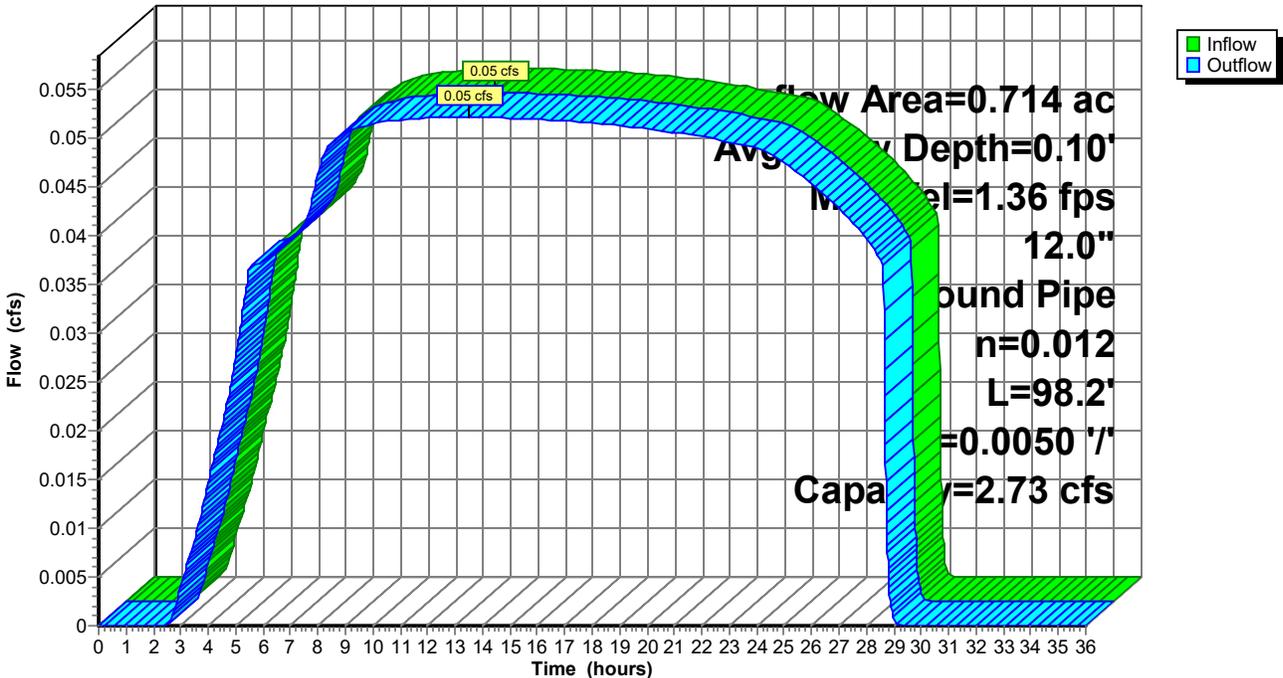
Peak Storage= 4 cf @ 13.47 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 98.2' Slope= 0.0050 '/
Inlet Invert= 213.81', Outlet Invert= 213.32'



Reach 11R: Pond 2 Lateral

Hydrograph



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Page 20

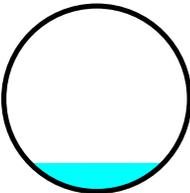
Summary for Reach 13R: Pond 3 Lateral

Inflow Area = 2.268 ac, 42.16% Impervious, Inflow Depth = 1.01" for 2-Year event
Inflow = 0.14 cfs @ 11.13 hrs, Volume= 0.190 af
Outflow = 0.14 cfs @ 11.21 hrs, Volume= 0.190 af, Atten= 0%, Lag= 4.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.83 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 1.64 fps, Avg. Travel Time= 3.0 min

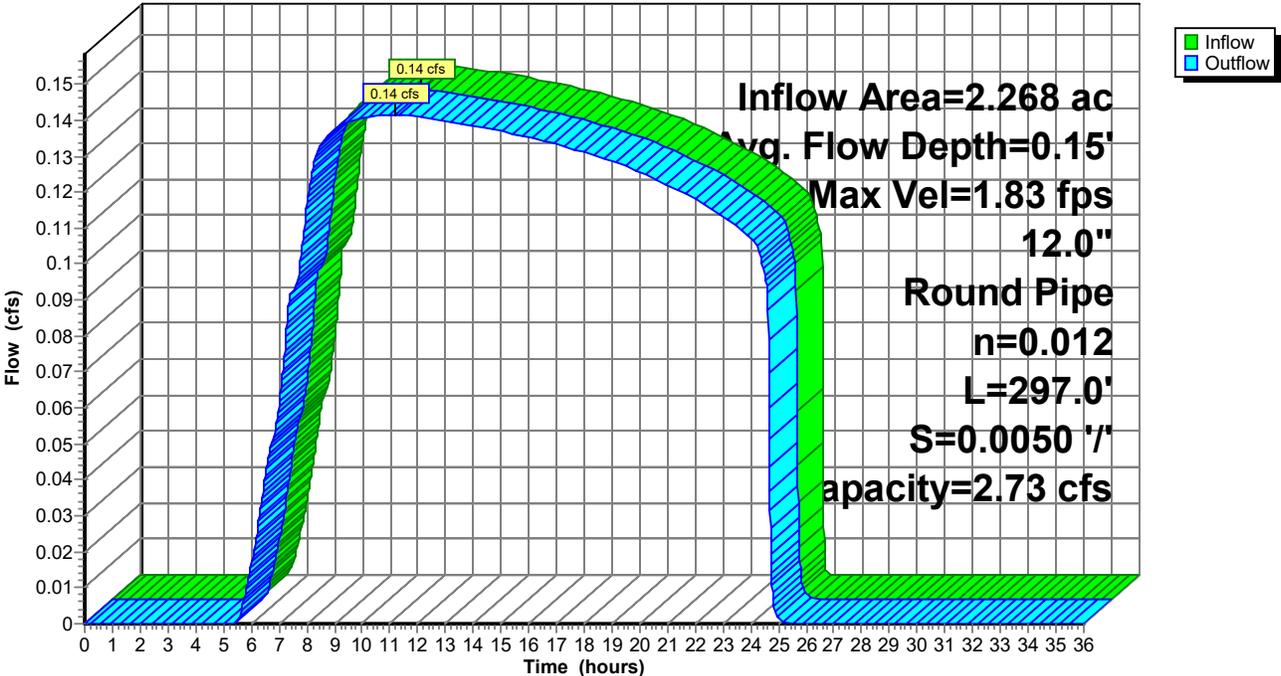
Peak Storage= 23 cf @ 11.16 hrs
Average Depth at Peak Storage= 0.15'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 297.0' Slope= 0.0050 '/
Inlet Invert= 214.81', Outlet Invert= 213.32'



Reach 13R: Pond 3 Lateral

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Page 21

Summary for Pond 2P: WQ Facility 1

Inflow Area = 0.246 ac, 84.20% Impervious, Inflow Depth = 1.84" for 2-Year event
 Inflow = 0.12 cfs @ 7.97 hrs, Volume= 0.038 af
 Outflow = 0.07 cfs @ 8.29 hrs, Volume= 0.034 af, Atten= 43%, Lag= 19.2 min
 Discarded = 0.00 cfs @ 5.86 hrs, Volume= 0.007 af
 Primary = 0.06 cfs @ 8.29 hrs, Volume= 0.027 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 214.88' @ 8.29 hrs Surf.Area= 0.014 ac Storage= 0.009 af

Plug-Flow detention time= 243.3 min calculated for 0.034 af (89% of inflow)
 Center-of-Mass det. time= 171.0 min (901.8 - 730.8)

Volume	Invert	Avail.Storage	Storage Description
#1	210.88'	0.002 af	4.00'W x 50.00'L x 1.00'H Gravel Storage 0.005 af Overall x 40.0% Voids
#2	211.88'	0.000 af	4.00'W x 50.00'L x 1.50'H Growing Medium 0.007 af Overall x 5.0% Voids
#3	213.38'	0.009 af	4.00'W x 50.00'L x 2.00'H Open Storage
		0.011 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	214.88'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	210.88'	0.200 in/hr Exfiltration over Surface area
#3	Primary	214.35'	1.9" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.00 cfs @ 5.86 hrs HW=213.38' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.06 cfs @ 8.29 hrs HW=214.88' (Free Discharge)
 ↑**1=Orifice/Grate** (Weir Controls 0.00 cfs @ 0.08 fps)
 ↓**3=Orifice/Grate** (Orifice Controls 0.06 cfs @ 3.24 fps)

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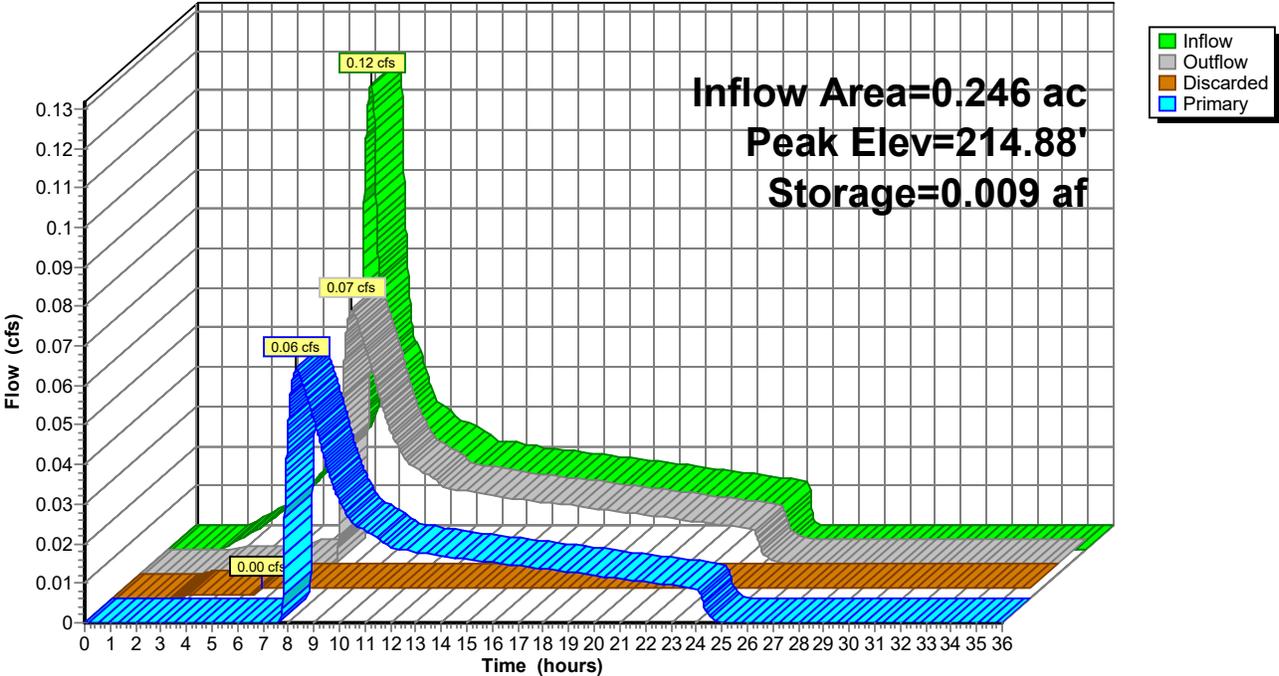
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Page 22

Pond 2P: WQ Facility 1

Hydrograph



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Page 23

Summary for Pond 3P: WQ Facility 2

Inflow Area = 0.241 ac, 81.80% Impervious, Inflow Depth = 1.84" for 2-Year event
 Inflow = 0.12 cfs @ 7.97 hrs, Volume= 0.037 af
 Outflow = 0.06 cfs @ 8.33 hrs, Volume= 0.033 af, Atten= 47%, Lag= 21.5 min
 Discarded = 0.00 cfs @ 5.90 hrs, Volume= 0.007 af
 Primary = 0.06 cfs @ 8.33 hrs, Volume= 0.026 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 216.35' @ 8.33 hrs Surf.Area= 0.014 ac Storage= 0.009 af

Plug-Flow detention time= 245.5 min calculated for 0.033 af (89% of inflow)
 Center-of-Mass det. time= 173.8 min (904.5 - 730.8)

Volume	Invert	Avail.Storage	Storage Description
#1	212.36'	0.002 af	4.00'W x 50.00'L x 1.00'H Gravel Storage 0.005 af Overall x 40.0% Voids
#2	213.36'	0.000 af	4.00'W x 50.00'L x 1.50'H Growing Medium 0.007 af Overall x 5.0% Voids
#3	214.86'	0.009 af	4.00'W x 50.00'L x 2.00'H Open Storage
		0.011 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	216.36'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	212.36'	0.200 in/hr Exfiltration over Surface area
#3	Primary	215.80'	1.8" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.00 cfs @ 5.90 hrs HW=214.86' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.06 cfs @ 8.33 hrs HW=216.35' (Free Discharge)
 ↑**1=Orifice/Grate** (Controls 0.00 cfs)
 ↓**3=Orifice/Grate** (Orifice Controls 0.06 cfs @ 3.32 fps)

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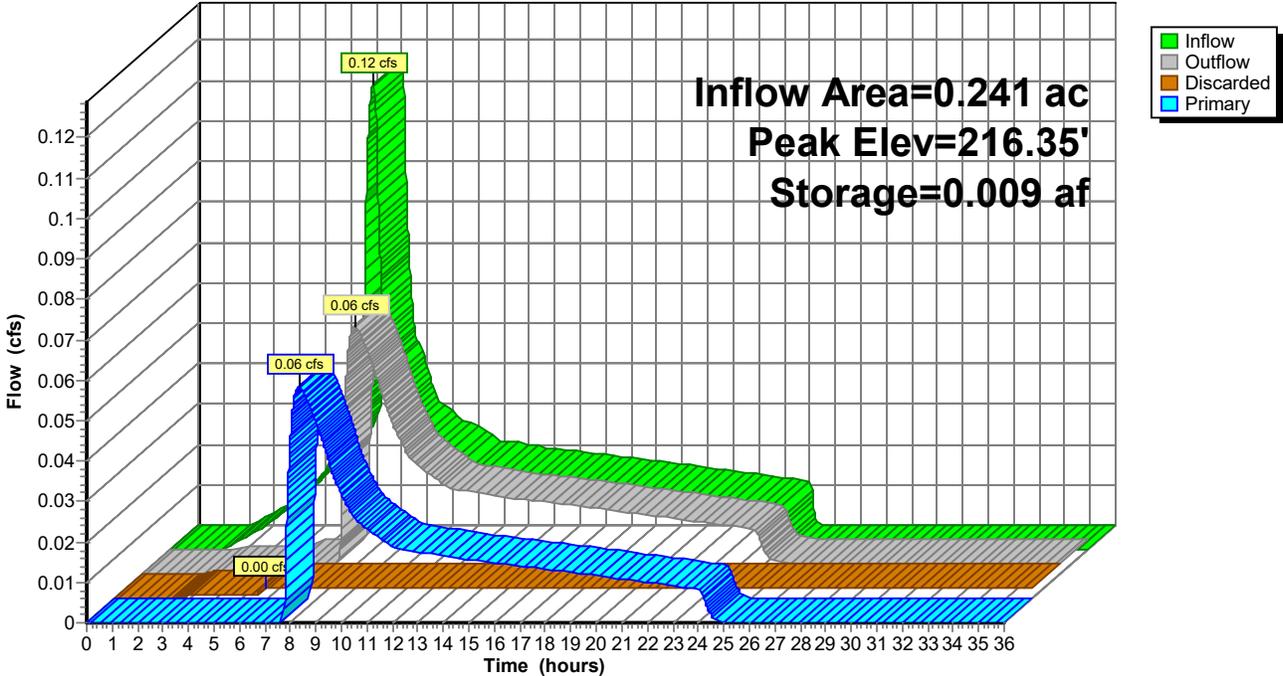
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Page 24

Pond 3P: WQ Facility 2

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Page 25

Summary for Pond 4P: WQ/Det Facility 1

Inflow Area = 1.688 ac, 65.62% Impervious, Inflow Depth = 1.58" for 2-Year event
 Inflow = 0.67 cfs @ 8.01 hrs, Volume= 0.223 af
 Outflow = 0.27 cfs @ 8.76 hrs, Volume= 0.223 af, Atten= 59%, Lag= 45.3 min
 Discarded = 0.00 cfs @ 8.76 hrs, Volume= 0.001 af
 Primary = 0.27 cfs @ 8.76 hrs, Volume= 0.221 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 217.13' @ 8.76 hrs Surf.Area= 812 sf Storage= 875 cf

Plug-Flow detention time= 14.5 min calculated for 0.223 af (100% of inflow)
 Center-of-Mass det. time= 14.5 min (776.6 - 762.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	215.00'	3,375 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
215.00	115	0	0	115	
216.00	363	227	227	370	
217.00	751	545	773	769	
218.00	1,278	1,003	1,776	1,311	
219.00	1,944	1,599	3,375	1,996	

Device	Routing	Invert	Outlet Devices	
#1	Primary	213.26'	2.3" Vert. Orifice/Grate C= 0.600	
#2	Primary	218.25'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	215.00'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	217.15'	5.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.00 cfs @ 8.76 hrs HW=217.13' (Free Discharge)
 ↑**3=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.27 cfs @ 8.76 hrs HW=217.13' (Free Discharge)
 ↑**1=Orifice/Grate** (Orifice Controls 0.27 cfs @ 9.36 fps)
 ↓**2=Orifice/Grate** (Controls 0.00 cfs)
 ↓**4=Orifice/Grate** (Controls 0.00 cfs)

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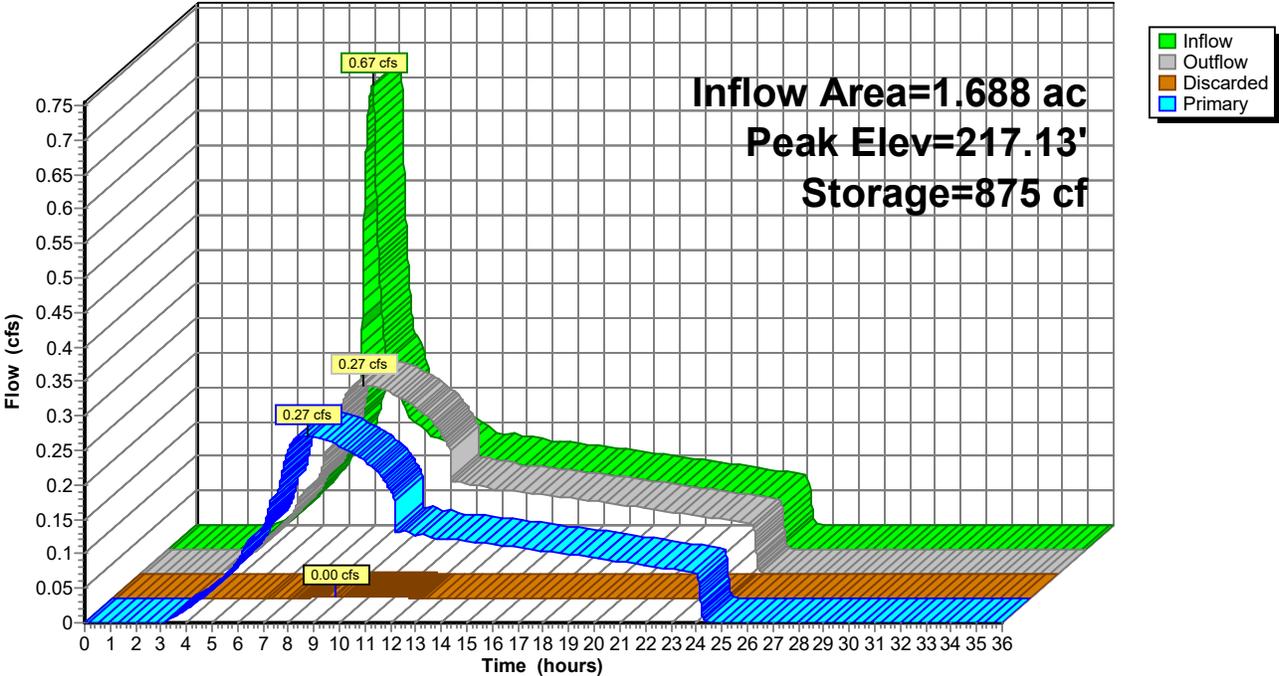
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Page 26

Pond 4P: WQ/Det Facility 1

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Page 27

Summary for Pond 5P: WQ/Det Facility 2

Inflow Area = 0.714 ac, 71.57% Impervious, Inflow Depth = 1.75" for 2-Year event
 Inflow = 0.32 cfs @ 7.99 hrs, Volume= 0.104 af
 Outflow = 0.06 cfs @ 13.45 hrs, Volume= 0.104 af, Atten= 82%, Lag= 327.8 min
 Discarded = 0.00 cfs @ 13.45 hrs, Volume= 0.007 af
 Primary = 0.05 cfs @ 13.45 hrs, Volume= 0.097 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 218.00' @ 13.45 hrs Surf.Area= 1,031 sf Storage= 1,190 cf

Plug-Flow detention time= 249.6 min calculated for 0.104 af (100% of inflow)
 Center-of-Mass det. time= 249.7 min (991.4 - 741.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	216.00'	4,610 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
216.00	268	0	0	268	
217.00	561	406	406	572	
218.00	1,031	784	1,190	1,055	
219.00	1,686	1,345	2,535	1,726	
220.00	2,491	2,075	4,610	2,551	

Device	Routing	Invert	Outlet Devices	
#1	Primary	214.01'	1.0" Vert. Orifice/Grate C= 0.600	
#2	Primary	219.25'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	216.00'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	218.05'	1.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.00 cfs @ 13.45 hrs HW=218.00' (Free Discharge)

↑ **3=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.05 cfs @ 13.45 hrs HW=218.00' (Free Discharge)

↑ **1=Orifice/Grate** (Orifice Controls 0.05 cfs @ 9.57 fps)

↑ **2=Orifice/Grate** (Controls 0.00 cfs)

↑ **4=Orifice/Grate** (Controls 0.00 cfs)

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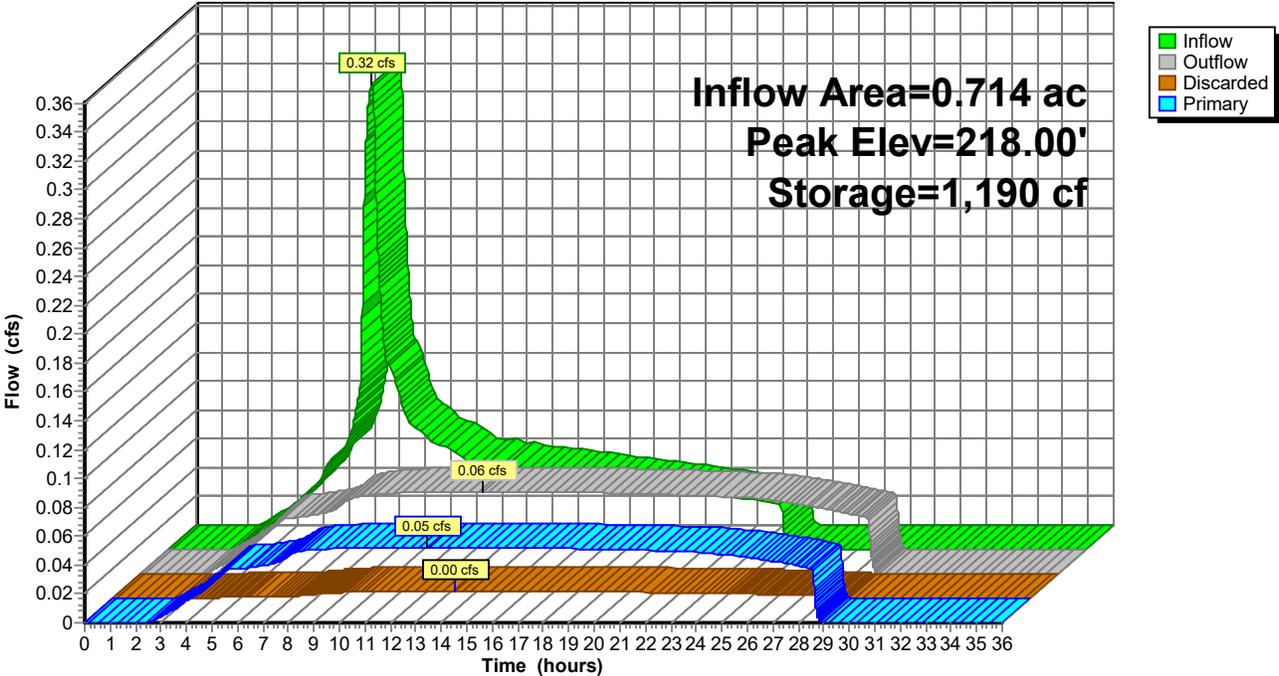
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Page 28

Pond 5P: WQ/Det Facility 2

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Page 29

Summary for Pond 6P: WQ/Det Facility 3

Inflow Area = 2.268 ac, 42.16% Impervious, Inflow Depth = 1.03" for 2-Year event
 Inflow = 0.51 cfs @ 8.03 hrs, Volume= 0.195 af
 Outflow = 0.15 cfs @ 11.13 hrs, Volume= 0.195 af, Atten= 71%, Lag= 186.0 min
 Discarded = 0.00 cfs @ 11.13 hrs, Volume= 0.005 af
 Primary = 0.14 cfs @ 11.13 hrs, Volume= 0.190 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 218.55' @ 11.13 hrs Surf.Area= 964 sf Storage= 1,176 cf

Plug-Flow detention time= 92.1 min calculated for 0.195 af (100% of inflow)
 Center-of-Mass det. time= 92.1 min (923.6 - 831.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	216.50'	4,035 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
216.50	244	0	0	244	
217.50	554	389	389	564	
218.50	941	739	1,128	966	
219.50	1,444	1,184	2,311	1,487	
220.50	2,019	1,723	4,035	2,086	

Device	Routing	Invert	Outlet Devices	
#1	Primary	215.01'	1.7" Vert. Orifice/Grate C= 0.600	
#2	Primary	219.75'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	216.50'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	218.60'	4.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.00 cfs @ 11.13 hrs HW=218.55' (Free Discharge)

↑ **3=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.14 cfs @ 11.13 hrs HW=218.55' (Free Discharge)

↑ **1=Orifice/Grate** (Orifice Controls 0.14 cfs @ 8.97 fps)

↑ **2=Orifice/Grate** (Controls 0.00 cfs)

↑ **4=Orifice/Grate** (Controls 0.00 cfs)

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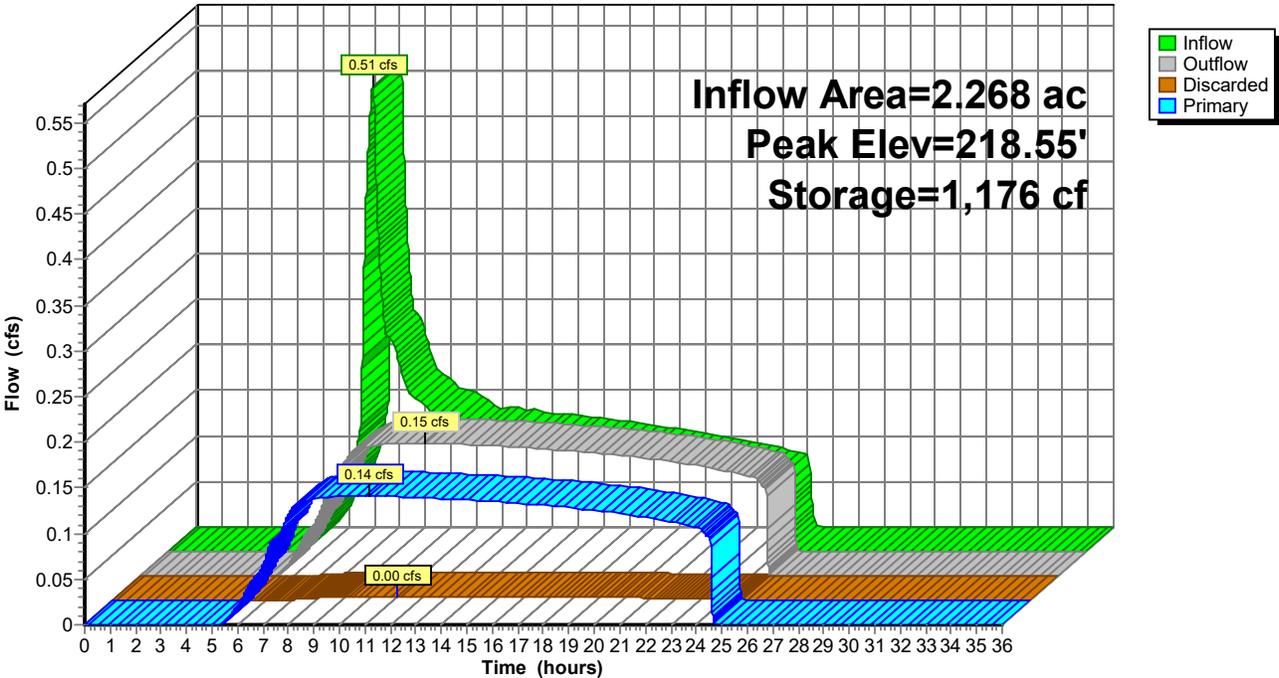
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Page 30

Pond 6P: WQ/Det Facility 3

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Page 31

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: Franklin Ave 1	Runoff Area=10,733 sf 84.20% Impervious Runoff Depth=2.21" Flow Length=242' Slope=0.0200 '/' Tc=10.0 min CN=94 Runoff=0.14 cfs 0.045 af
Subcatchment 3S: Franklin Ave 2	Runoff Area=10,498 sf 81.80% Impervious Runoff Depth=2.21" Flow Length=274' Slope=0.0200 '/' Tc=10.0 min CN=94 Runoff=0.14 cfs 0.044 af
Subcatchment 4S: Phase 1 & 2	Runoff Area=73,511 sf 65.62% Impervious Runoff Depth=1.94" Flow Length=500' Tc=10.2 min CN=91 Runoff=0.84 cfs 0.273 af
Subcatchment 5S: Phase 3	Runoff Area=31,101 sf 71.57% Impervious Runoff Depth=2.12" Flow Length=360' Tc=10.0 min CN=93 Runoff=0.39 cfs 0.126 af
Subcatchment 6S: Phase 4 & 5	Runoff Area=98,814 sf 42.16% Impervious Runoff Depth=1.33" Flow Length=422' Tc=10.0 min CN=83 Runoff=0.69 cfs 0.252 af
Subcatchment 7S: Wetland	Runoff Area=76,610 sf 0.00% Impervious Runoff Depth=0.44" Flow Length=365' Slope=0.0200 '/' Tc=27.9 min CN=65 Runoff=0.05 cfs 0.065 af
Reach 1R: EX SE Shore Drive	Avg. Flow Depth=0.42' Max Vel=2.61 fps Inflow=0.81 cfs 0.766 af 12.0" Round Pipe n=0.012 L=161.8' S=0.0033 '/' Capacity=2.23 cfs Outflow=0.81 cfs 0.766 af
Reach 2R: Franklin Avenue 3	Avg. Flow Depth=0.37' Max Vel=3.00 fps Inflow=0.78 cfs 0.701 af 12.0" Round Pipe n=0.012 L=147.0' S=0.0050 '/' Capacity=2.74 cfs Outflow=0.78 cfs 0.701 af
Reach 4R: Franklin Avenue 2	Avg. Flow Depth=0.35' Max Vel=2.91 fps Inflow=0.71 cfs 0.667 af 12.0" Round Pipe n=0.012 L=98.9' S=0.0050 '/' Capacity=2.72 cfs Outflow=0.71 cfs 0.667 af
Reach 5R: Franklin Avenue 1	Avg. Flow Depth=0.15' Max Vel=1.80 fps Inflow=0.13 cfs 0.033 af 12.0" Round Pipe n=0.012 L=157.1' S=0.0050 '/' Capacity=2.74 cfs Outflow=0.13 cfs 0.033 af
Reach 7R: Private Road A 2	Avg. Flow Depth=0.33' Max Vel=2.84 fps Inflow=0.65 cfs 0.634 af 12.0" Round Pipe n=0.012 L=132.9' S=0.0050 '/' Capacity=2.72 cfs Outflow=0.65 cfs 0.634 af
Reach 8R: Pond 1 Lateral	Avg. Flow Depth=0.27' Max Vel=2.54 fps Inflow=0.44 cfs 0.271 af 12.0" Round Pipe n=0.012 L=26.1' S=0.0050 '/' Capacity=2.72 cfs Outflow=0.44 cfs 0.271 af
Reach 10R: Private Road A 1	Avg. Flow Depth=0.23' Max Vel=2.31 fps Inflow=0.32 cfs 0.363 af 12.0" Round Pipe n=0.012 L=38.5' S=0.0049 '/' Capacity=2.71 cfs Outflow=0.32 cfs 0.363 af
Reach 11R: Pond 2 Lateral	Avg. Flow Depth=0.11' Max Vel=1.46 fps Inflow=0.07 cfs 0.117 af 12.0" Round Pipe n=0.012 L=98.2' S=0.0050 '/' Capacity=2.73 cfs Outflow=0.07 cfs 0.117 af
Reach 13R: Pond 3 Lateral	Avg. Flow Depth=0.21' Max Vel=2.19 fps Inflow=0.26 cfs 0.246 af 12.0" Round Pipe n=0.012 L=297.0' S=0.0050 '/' Capacity=2.73 cfs Outflow=0.26 cfs 0.246 af
Pond 2P: WQ Facility 1	Peak Elev=214.91' Storage=0.009 af Inflow=0.14 cfs 0.045 af Discarded=0.00 cfs 0.007 af Primary=0.14 cfs 0.034 af Outflow=0.14 cfs 0.041 af

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Page 32

Pond 3P: WQ Facility 2Peak Elev=216.39' Storage=0.009 af Inflow=0.14 cfs 0.044 af
Discarded=0.00 cfs 0.007 af Primary=0.13 cfs 0.033 af Outflow=0.14 cfs 0.041 af**Pond 4P: WQ/Det Facility 1**Peak Elev=217.41' Storage=1,123 cf Inflow=0.84 cfs 0.273 af
Discarded=0.00 cfs 0.002 af Primary=0.44 cfs 0.271 af Outflow=0.44 cfs 0.273 af**Pond 5P: WQ/Det Facility 2**Peak Elev=218.31' Storage=1,535 cf Inflow=0.39 cfs 0.126 af
Discarded=0.01 cfs 0.009 af Primary=0.07 cfs 0.117 af Outflow=0.07 cfs 0.126 af**Pond 6P: WQ/Det Facility 3**Peak Elev=218.84' Storage=1,475 cf Inflow=0.69 cfs 0.252 af
Discarded=0.01 cfs 0.007 af Primary=0.26 cfs 0.246 af Outflow=0.26 cfs 0.252 af

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Page 33

Summary for Subcatchment 2S: Franklin Ave 1

Runoff = 0.14 cfs @ 7.97 hrs, Volume= 0.045 af, Depth= 2.21"

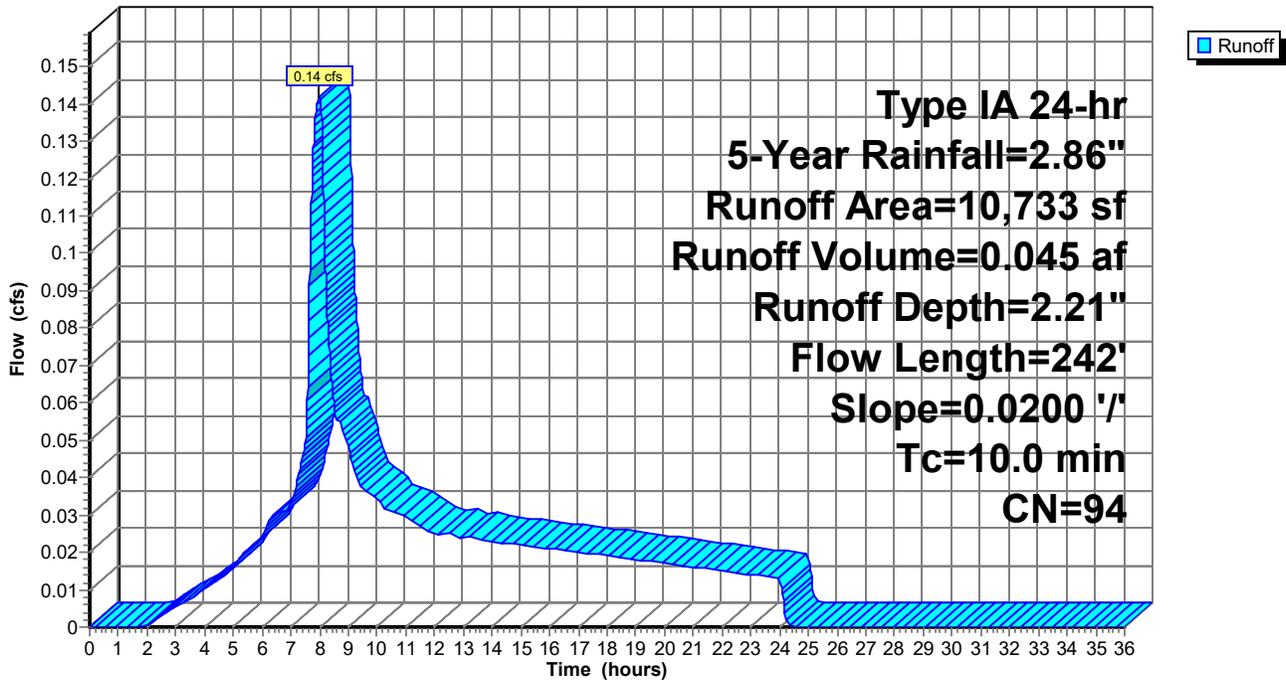
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-Year Rainfall=2.86"

Area (sf)	CN	Description
9,037	98	Paved roads w/curbs & sewers, HSG C
1,696	74	>75% Grass cover, Good, HSG C
10,733	94	Weighted Average
1,696	74	15.80% Pervious Area
9,037	98	84.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.0200	0.99		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
1.2	202	0.0200	2.87		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
1.9	242	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 2S: Franklin Ave 1

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Page 34

Summary for Subcatchment 3S: Franklin Ave 2

Runoff = 0.14 cfs @ 7.97 hrs, Volume= 0.044 af, Depth= 2.21"

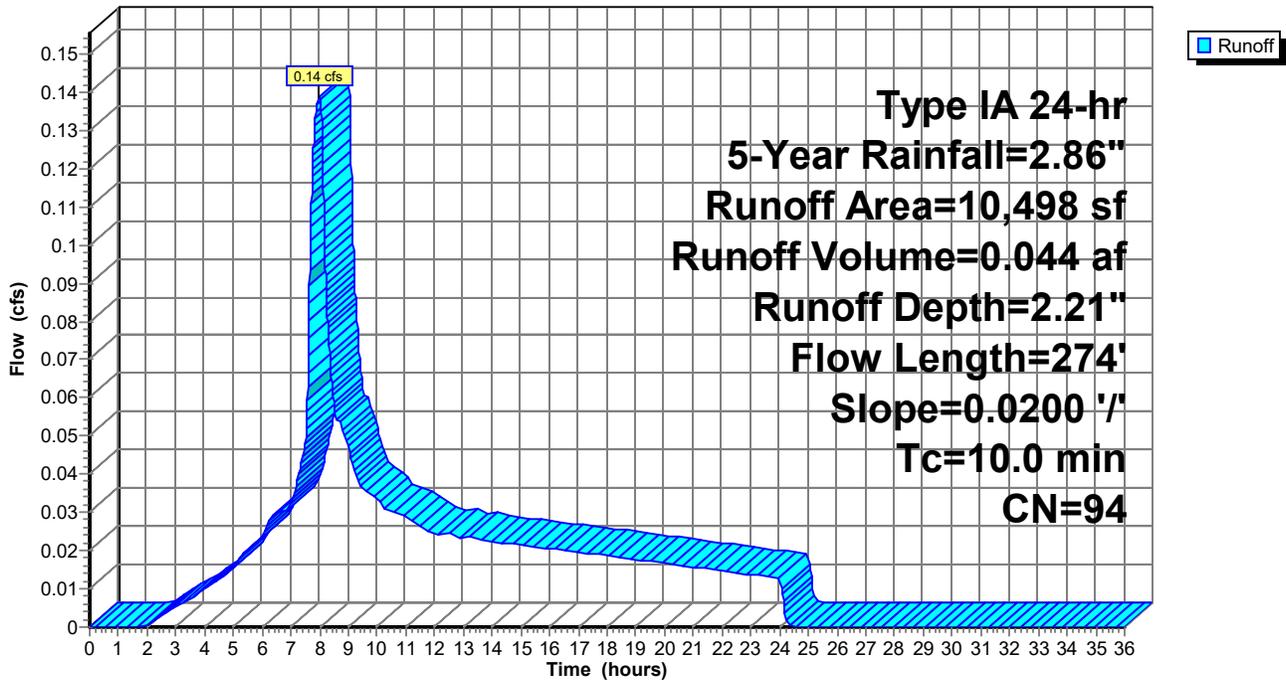
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-Year Rainfall=2.86"

Area (sf)	CN	Description
8,587	98	Paved roads w/curbs & sewers, HSG C
1,911	74	>75% Grass cover, Good, HSG C
10,498	94	Weighted Average
1,911	74	18.20% Pervious Area
8,587	98	81.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.0200	0.99		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
1.4	234	0.0200	2.87		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
2.1	274	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 3S: Franklin Ave 2

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Page 35

Summary for Subcatchment 4S: Phase 1 & 2

Runoff = 0.84 cfs @ 7.99 hrs, Volume= 0.273 af, Depth= 1.94"

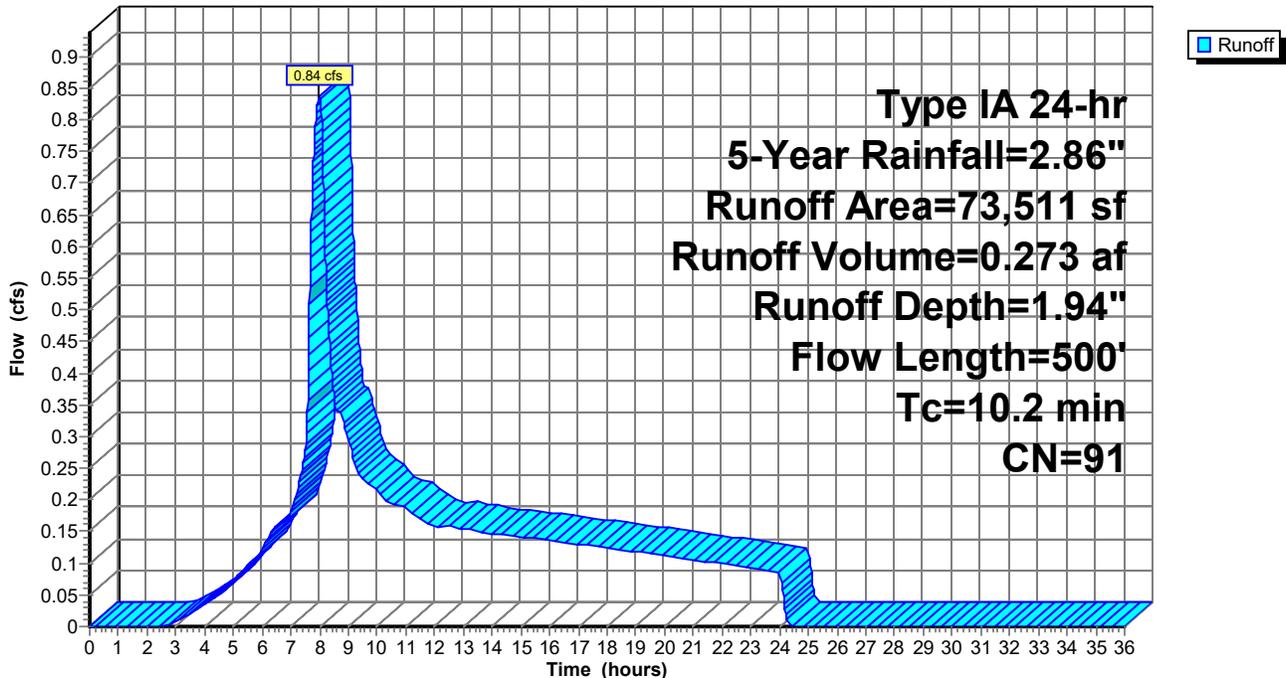
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-Year Rainfall=2.86"

Area (sf)	CN	Description
8,098	98	Paved parking, HSG C
1,945	98	Water Surface, 0% imp, HSG C
61,755	90	1/8 acre lots, 65% imp, HSG C
1,713	74	>75% Grass cover, Good, HSG C
73,511	91	Weighted Average
25,272	77	34.38% Pervious Area
48,239	98	65.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	20	0.0200	0.05		Sheet Flow, Sheet
					Grass: Bermuda n= 0.410 P2= 2.40"
1.3	80	0.0200	0.99		Shallow Concentrated Flow, SCF
					Short Grass Pasture Kv= 7.0 fps
1.9	400	0.0050	3.47	2.73	Pipe Channel, To Pond
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
10.2	500	Total			

Subcatchment 4S: Phase 1 & 2

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Page 36

Summary for Subcatchment 5S: Phase 3

Runoff = 0.39 cfs @ 7.97 hrs, Volume= 0.126 af, Depth= 2.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-Year Rainfall=2.86"

Area (sf)	CN	Description
11,947	98	Paved parking, HSG C
2,490	98	Water Surface, 0% imp, HSG C
2,227	98	Unconnected pavement, HSG C
8,084	98	Roofs, HSG C
6,353	74	>75% Grass cover, Good, HSG C
31,101	93	Weighted Average
8,843	81	28.43% Pervious Area
22,258	98	71.57% Impervious Area
2,227		10.01% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	20	0.0200	0.86		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
0.3	60	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	280	0.0050	3.47	2.73	Pipe Channel, Pipe 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.0	360	Total, Increased to minimum Tc = 10.0 min			

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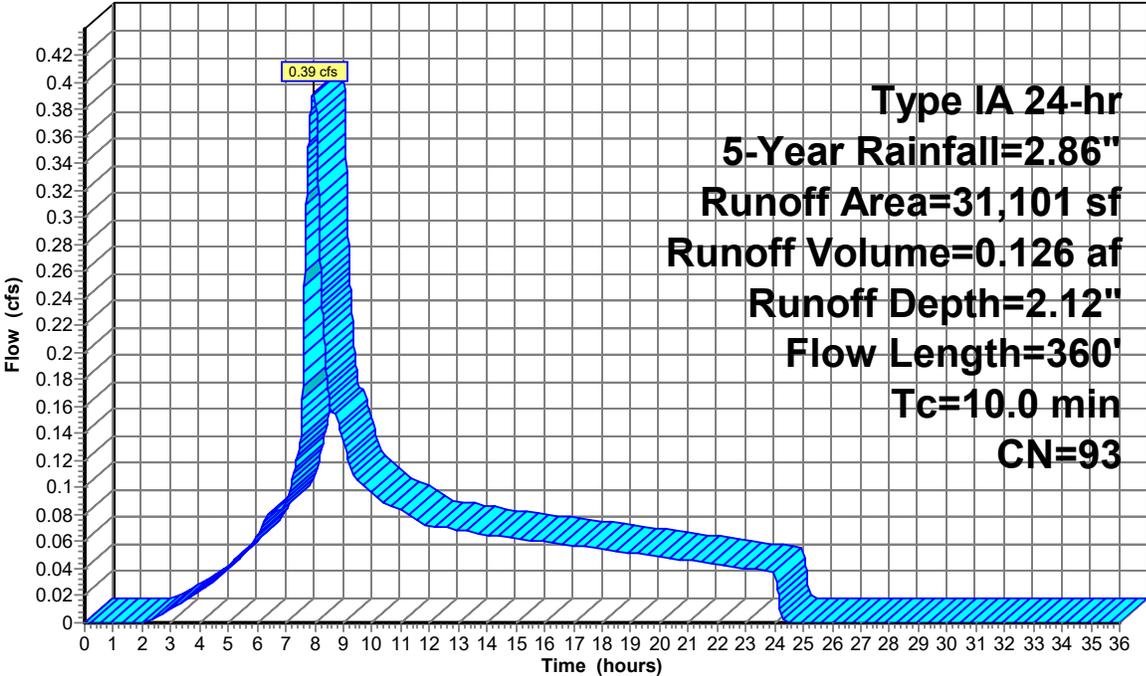
Type IA 24-hr 5-Year Rainfall=2.86"

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Page 37

Subcatchment 5S: Phase 3

Hydrograph



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Type IA 24-hr 5-Year Rainfall=2.86"

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Page 38

Summary for Subcatchment 6S: Phase 4 & 5

Runoff = 0.69 cfs @ 8.03 hrs, Volume= 0.252 af, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-Year Rainfall=2.86"

Area (sf)	CN	Description
2,019	98	Water Surface, 0% imp, HSG C
11,637	98	Roofs, HSG C
* 30,024	98	Parking Lot, Sidewalk, Unconnected Roofs
55,134	72	Woods/grass comb., Good, HSG C
98,814	83	Weighted Average
57,153	73	57.84% Pervious Area
41,661	98	42.16% Impervious Area
30,024		72.07% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	20	0.0200	0.05		Sheet Flow, Sheet Grass: Bermuda n= 0.410 P2= 2.40"
1.3	80	0.0200	0.99		Shallow Concentrated Flow, SCF Short Grass Pasture Kv= 7.0 fps
1.5	322	0.0050	3.47	2.73	Pipe Channel, To Pond 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
9.8	422	Total, Increased to minimum Tc = 10.0 min			

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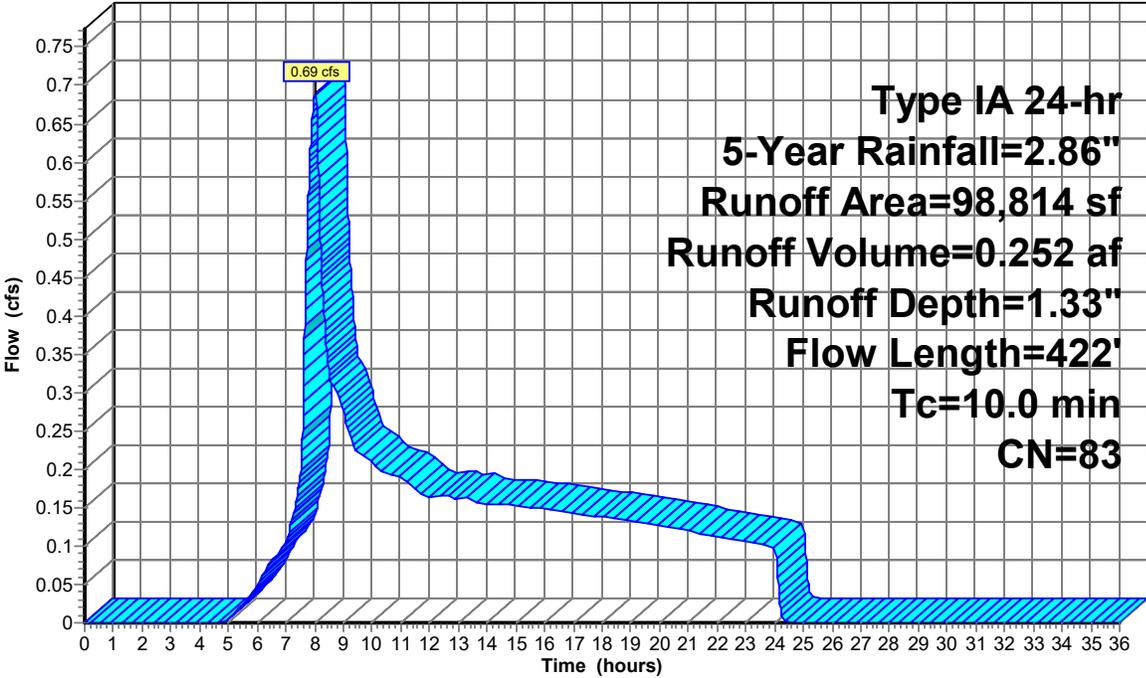
Type IA 24-hr 5-Year Rainfall=2.86"

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Page 39

Subcatchment 6S: Phase 4 & 5

Hydrograph



Type IA 24-hr
5-Year Rainfall=2.86"
Runoff Area=98,814 sf
Runoff Volume=0.252 af
Runoff Depth=1.33"
Flow Length=422'
Tc=10.0 min
CN=83

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Type IA 24-hr 5-Year Rainfall=2.86"

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Page 40

Summary for Subcatchment 7S: Wetland

Runoff = 0.05 cfs @ 16.83 hrs, Volume= 0.065 af, Depth= 0.44"

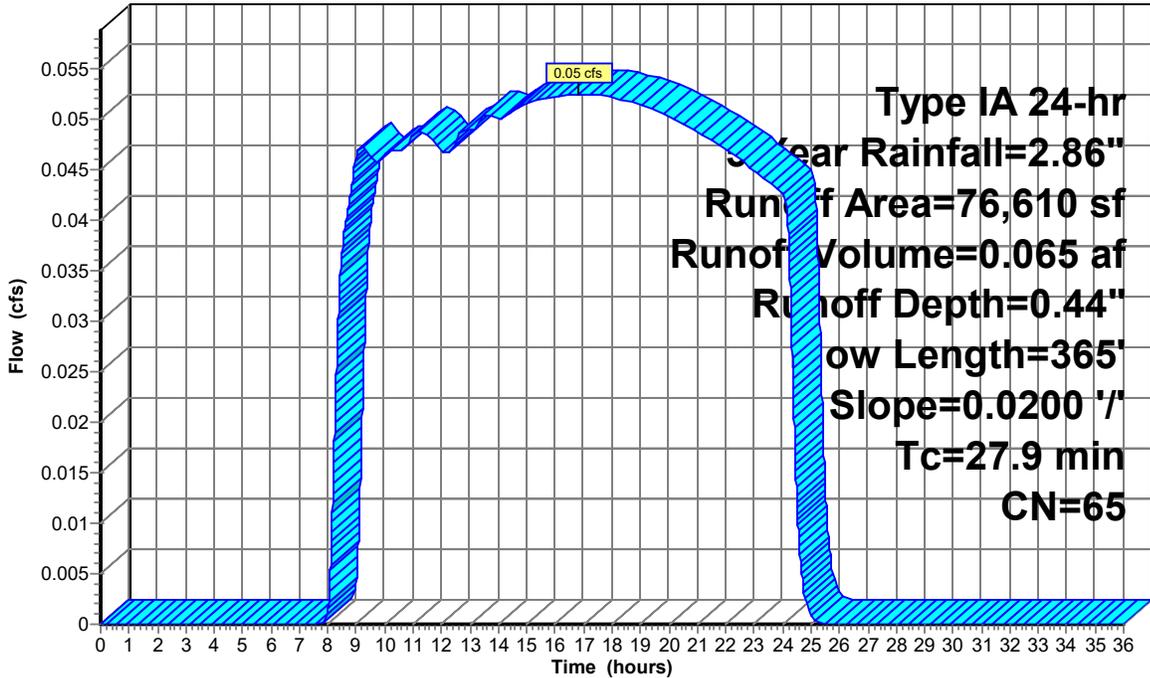
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Type IA 24-hr 5-Year Rainfall=2.86"

Area (sf)	CN	Description
76,610	65	Brush, Good, HSG C
76,610	65	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	150	0.0200	0.11		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 2.40"
5.1	215	0.0200	0.71		Shallow Concentrated Flow, SCF Woodland Kv= 5.0 fps
27.9	365	Total			

Subcatchment 7S: Wetland

Hydrograph



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Type IA 24-hr 5-Year Rainfall=2.86"

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Page 41

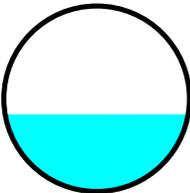
Summary for Reach 1R: EX SE Shore Drive

Inflow Area = 6.916 ac, 43.08% Impervious, Inflow Depth = 1.33" for 5-Year event
Inflow = 0.81 cfs @ 8.94 hrs, Volume= 0.766 af
Outflow = 0.81 cfs @ 8.97 hrs, Volume= 0.766 af, Atten= 0%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.61 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 1.81 fps, Avg. Travel Time= 1.5 min

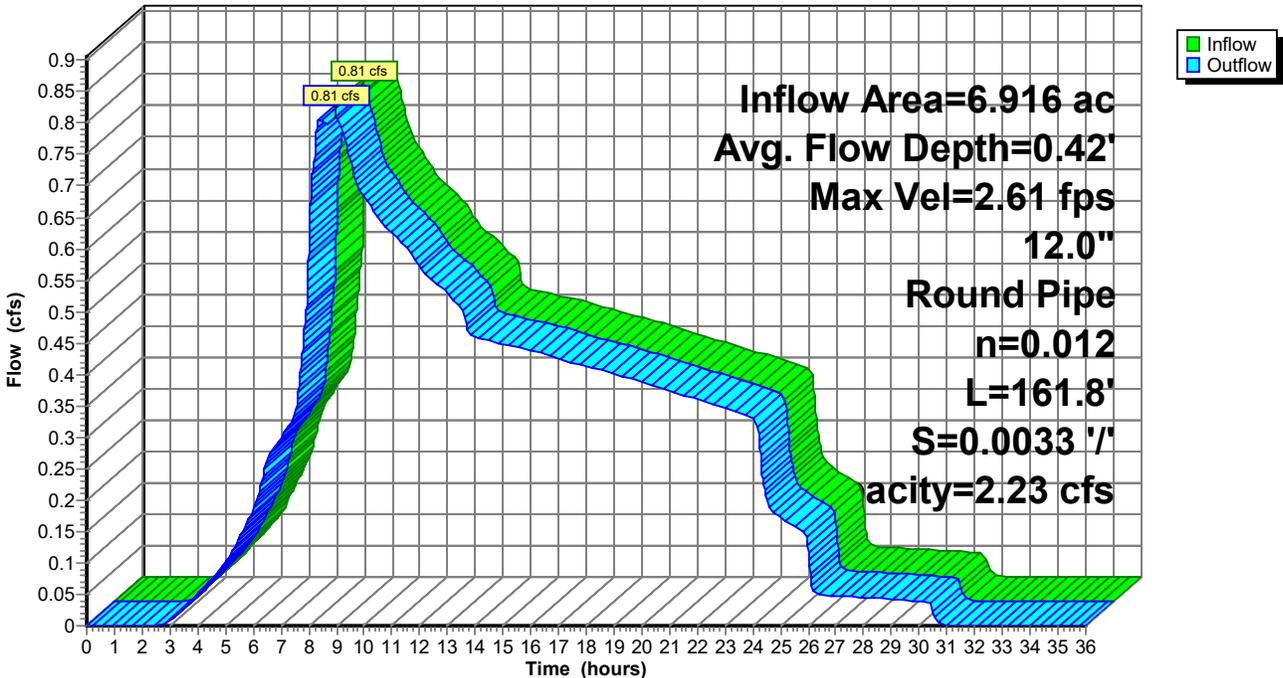
Peak Storage= 50 cf @ 8.95 hrs
Average Depth at Peak Storage= 0.42'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.23 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 161.8' Slope= 0.0033 '/
Inlet Invert= 210.64', Outlet Invert= 210.10'



Reach 1R: EX SE Shore Drive

Hydrograph



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Page 42

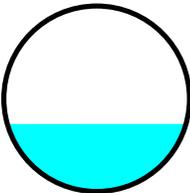
Summary for Reach 2R: Franklin Avenue 3

Inflow Area = 5.157 ac, 57.77% Impervious, Inflow Depth = 1.63" for 5-Year event
Inflow = 0.78 cfs @ 8.31 hrs, Volume= 0.701 af
Outflow = 0.78 cfs @ 8.34 hrs, Volume= 0.701 af, Atten= 0%, Lag= 1.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.00 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.07 fps, Avg. Travel Time= 1.2 min

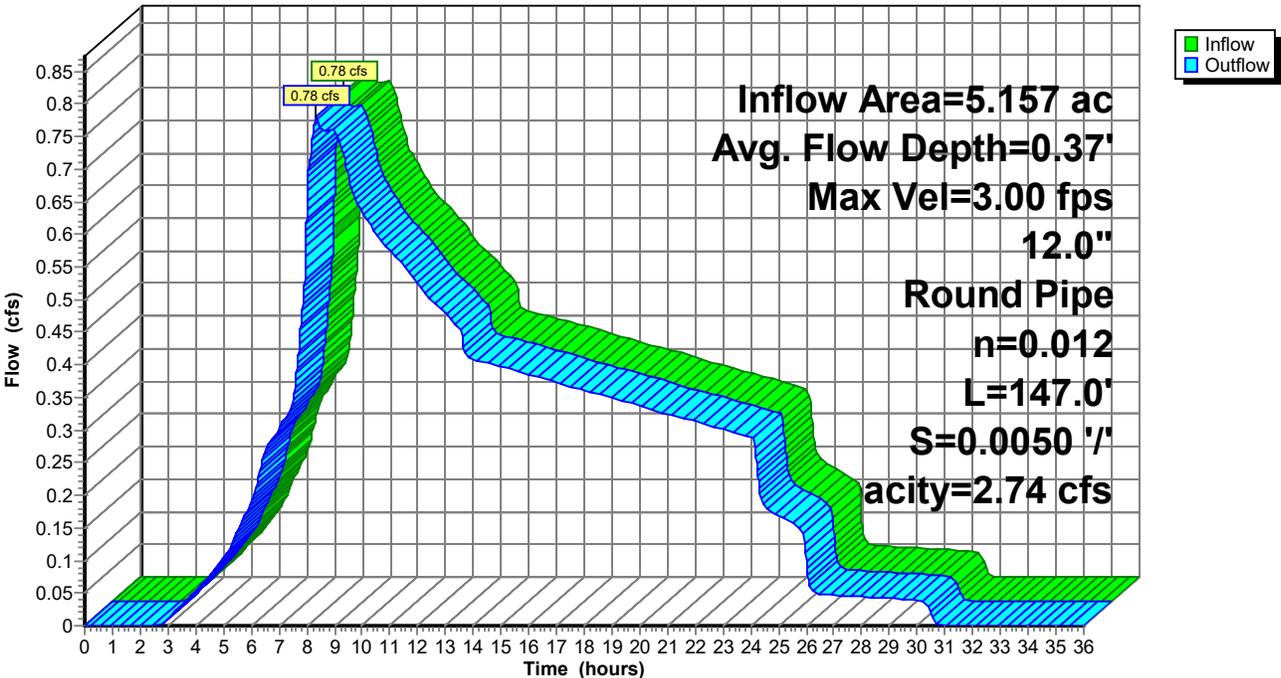
Peak Storage= 38 cf @ 8.32 hrs
Average Depth at Peak Storage= 0.37'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.74 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 147.0' Slope= 0.0050 '/'
Inlet Invert= 211.38', Outlet Invert= 210.64'



Reach 2R: Franklin Avenue 3

Hydrograph



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Page 43

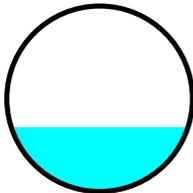
Summary for Reach 4R: Franklin Avenue 2

Inflow Area = 4.911 ac, 56.44% Impervious, Inflow Depth = 1.63" for 5-Year event
Inflow = 0.71 cfs @ 8.89 hrs, Volume= 0.667 af
Outflow = 0.71 cfs @ 8.91 hrs, Volume= 0.667 af, Atten= 0%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.91 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 2.04 fps, Avg. Travel Time= 0.8 min

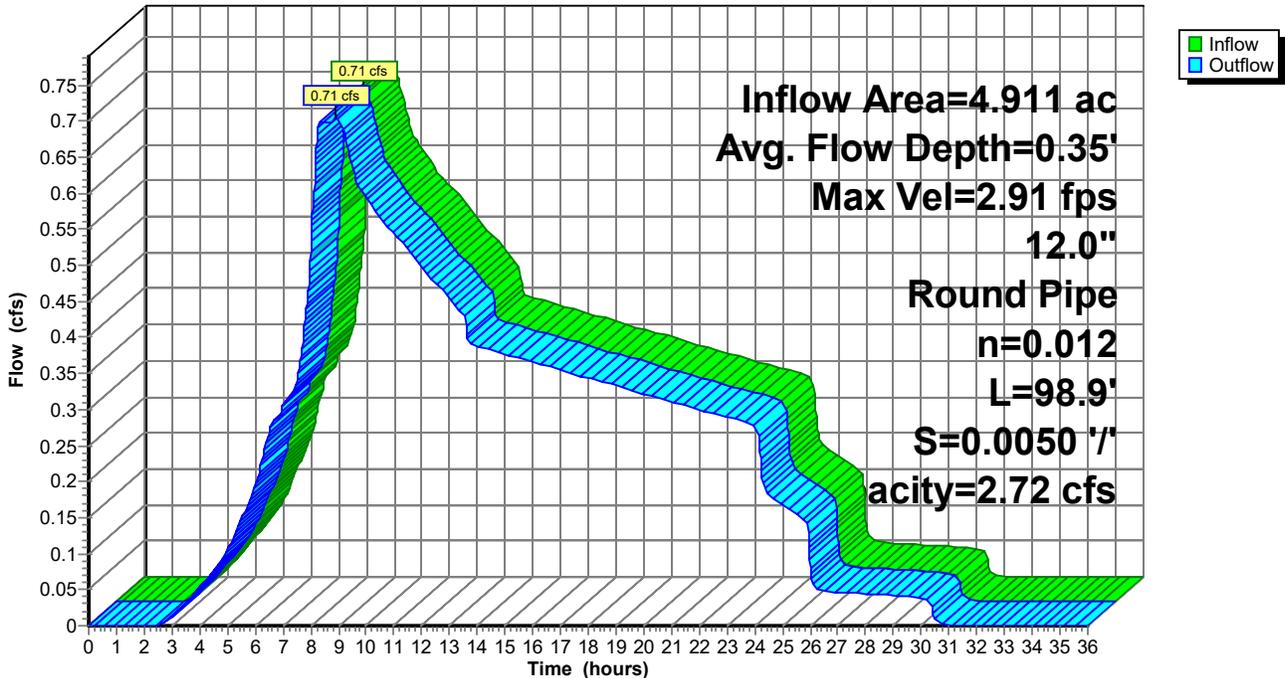
Peak Storage= 24 cf @ 8.90 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 98.9' Slope= 0.0050 '/'
Inlet Invert= 211.87', Outlet Invert= 211.38'



Reach 4R: Franklin Avenue 2

Hydrograph



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Page 44

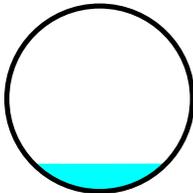
Summary for Reach 5R: Franklin Avenue 1

Inflow Area = 0.241 ac, 81.80% Impervious, Inflow Depth = 1.65" for 5-Year event
Inflow = 0.13 cfs @ 8.03 hrs, Volume= 0.033 af
Outflow = 0.13 cfs @ 8.08 hrs, Volume= 0.033 af, Atten= 1%, Lag= 2.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.80 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 1.00 fps, Avg. Travel Time= 2.6 min

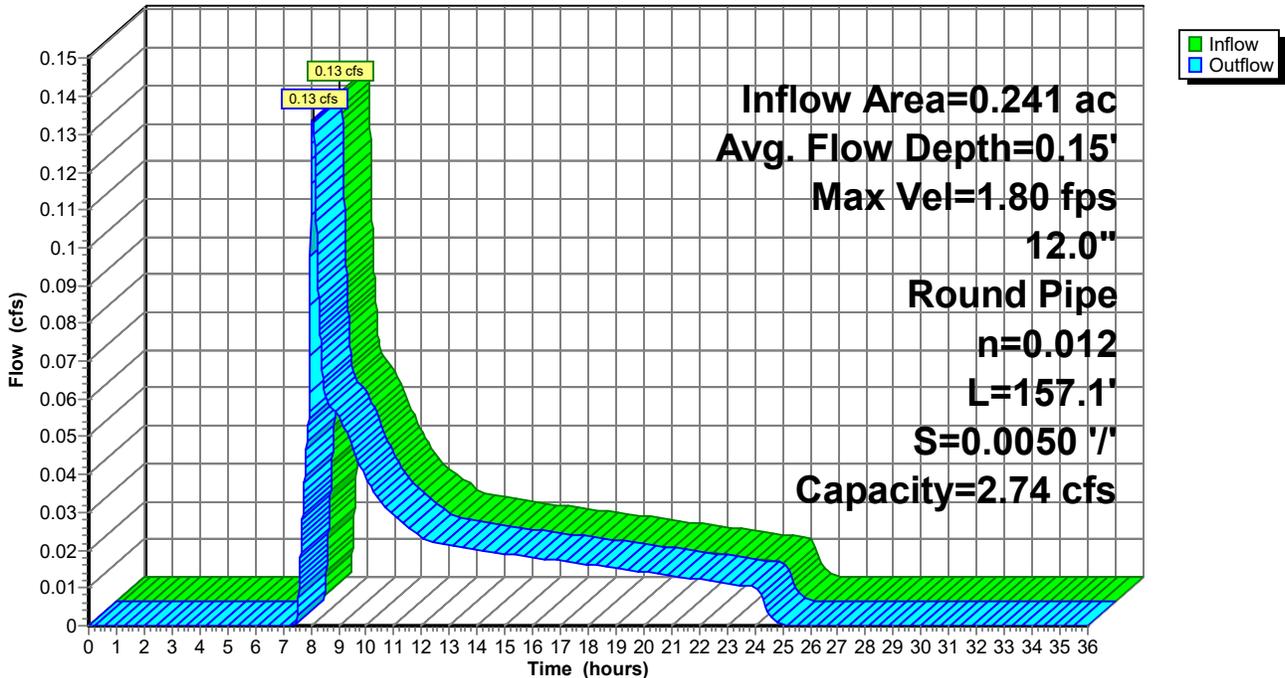
Peak Storage= 12 cf @ 8.05 hrs
Average Depth at Peak Storage= 0.15'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.74 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 157.1' Slope= 0.0050 '/'
Inlet Invert= 212.86', Outlet Invert= 212.07'



Reach 5R: Franklin Avenue 1

Hydrograph



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Page 45

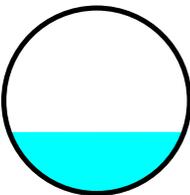
Summary for Reach 7R: Private Road A 2

Inflow Area = 4.670 ac, 55.13% Impervious, Inflow Depth = 1.63" for 5-Year event
Inflow = 0.65 cfs @ 8.88 hrs, Volume= 0.634 af
Outflow = 0.65 cfs @ 8.92 hrs, Volume= 0.634 af, Atten= 0%, Lag= 2.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.84 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.02 fps, Avg. Travel Time= 1.1 min

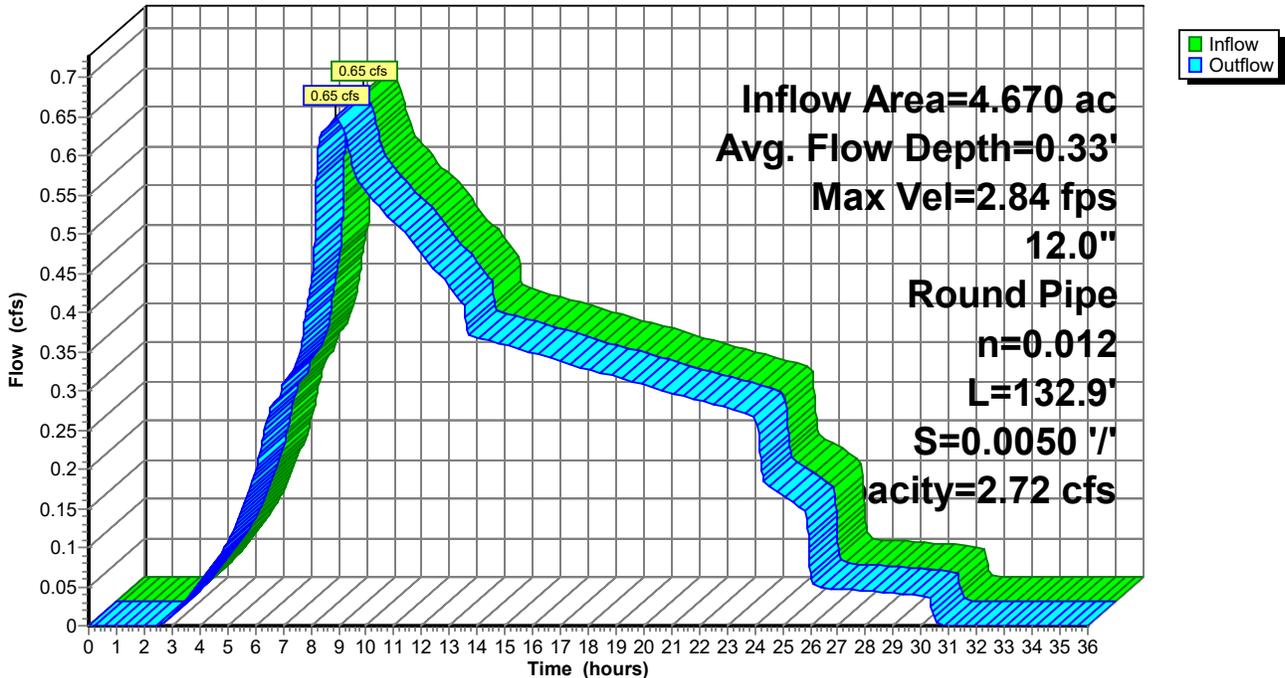
Peak Storage= 30 cf @ 8.91 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 132.9' Slope= 0.0050 '/'
Inlet Invert= 212.73', Outlet Invert= 212.07'



Reach 7R: Private Road A 2

Hydrograph



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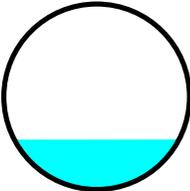
Summary for Reach 8R: Pond 1 Lateral

Inflow Area = 1.688 ac, 65.62% Impervious, Inflow Depth = 1.93" for 5-Year event
Inflow = 0.44 cfs @ 8.35 hrs, Volume= 0.271 af
Outflow = 0.44 cfs @ 8.36 hrs, Volume= 0.271 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.54 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.77 fps, Avg. Travel Time= 0.2 min

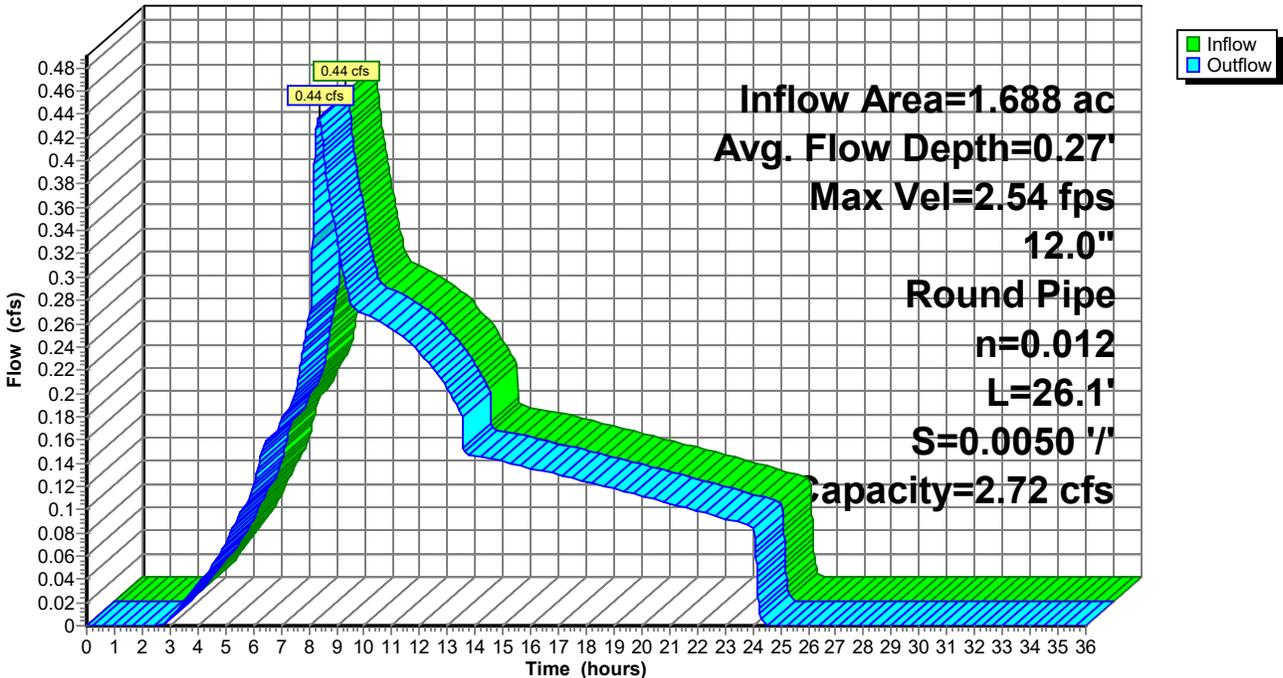
Peak Storage= 4 cf @ 8.35 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 26.1' Slope= 0.0050 '/'
Inlet Invert= 213.06', Outlet Invert= 212.93'



Reach 8R: Pond 1 Lateral

Hydrograph



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Page 47

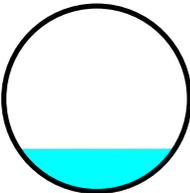
Summary for Reach 10R: Private Road A 1

Inflow Area = 2.982 ac, 49.20% Impervious, Inflow Depth = 1.46" for 5-Year event
Inflow = 0.32 cfs @ 9.18 hrs, Volume= 0.363 af
Outflow = 0.32 cfs @ 9.19 hrs, Volume= 0.363 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.31 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.74 fps, Avg. Travel Time= 0.4 min

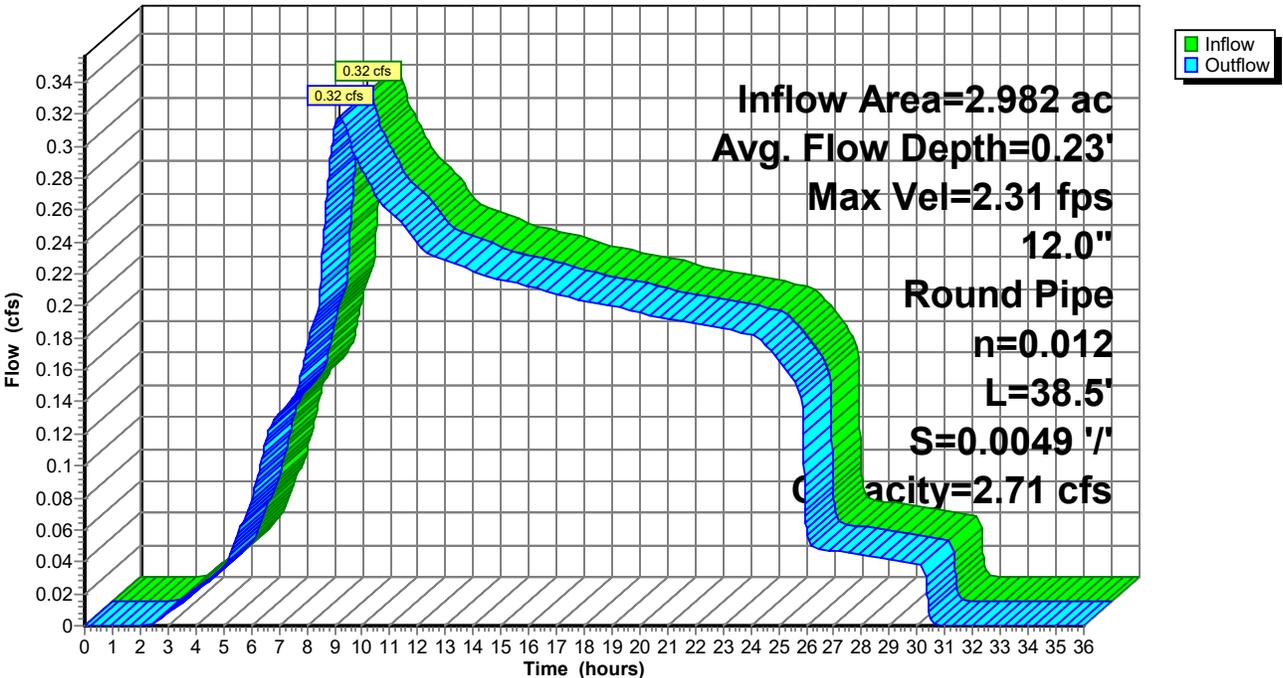
Peak Storage= 5 cf @ 9.18 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.71 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 38.5' Slope= 0.0049 '/'
Inlet Invert= 213.12', Outlet Invert= 212.93'



Reach 10R: Private Road A 1

Hydrograph



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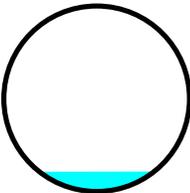
Summary for Reach 11R: Pond 2 Lateral

Inflow Area = 0.714 ac, 71.57% Impervious, Inflow Depth = 1.97" for 5-Year event
Inflow = 0.07 cfs @ 11.77 hrs, Volume= 0.117 af
Outflow = 0.07 cfs @ 11.81 hrs, Volume= 0.117 af, Atten= 0%, Lag= 2.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.46 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.30 fps, Avg. Travel Time= 1.3 min

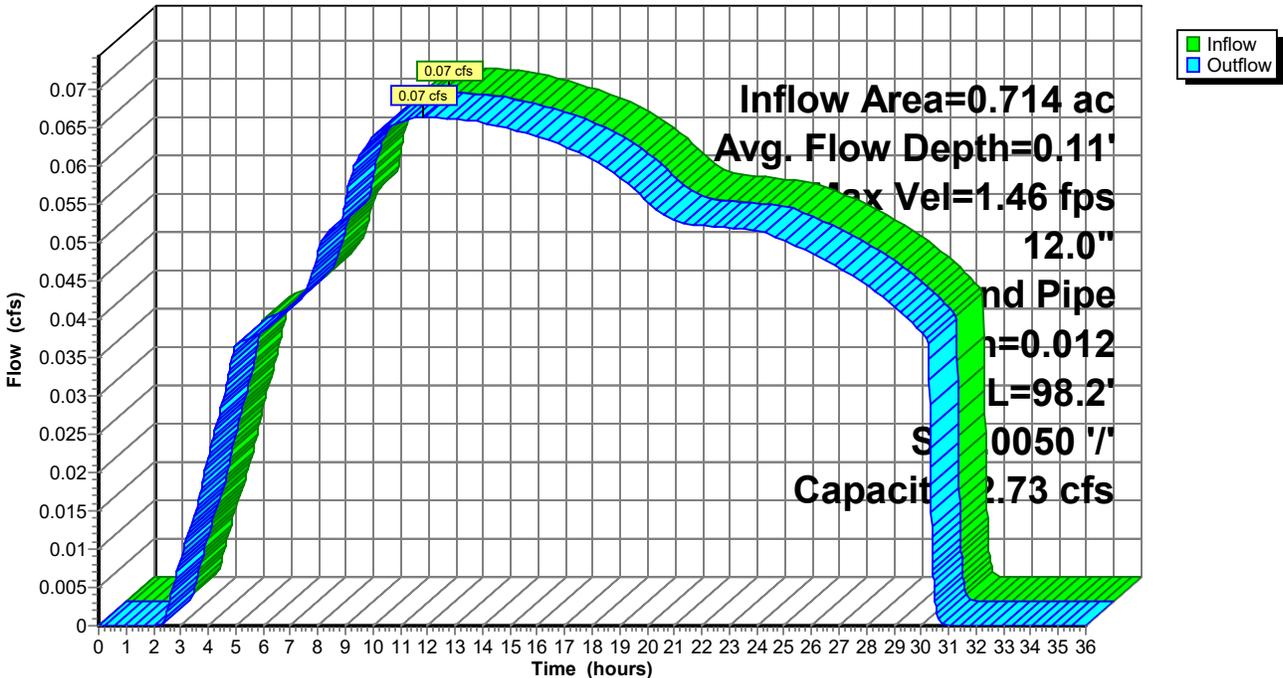
Peak Storage= 4 cf @ 11.79 hrs
Average Depth at Peak Storage= 0.11'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 98.2' Slope= 0.0050 '/
Inlet Invert= 213.81', Outlet Invert= 213.32'



Reach 11R: Pond 2 Lateral

Hydrograph



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Page 49

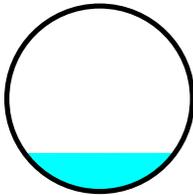
Summary for Reach 13R: Pond 3 Lateral

Inflow Area = 2.268 ac, 42.16% Impervious, Inflow Depth = 1.30" for 5-Year event
Inflow = 0.26 cfs @ 9.08 hrs, Volume= 0.246 af
Outflow = 0.26 cfs @ 9.14 hrs, Volume= 0.246 af, Atten= 0%, Lag= 3.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.19 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 1.72 fps, Avg. Travel Time= 2.9 min

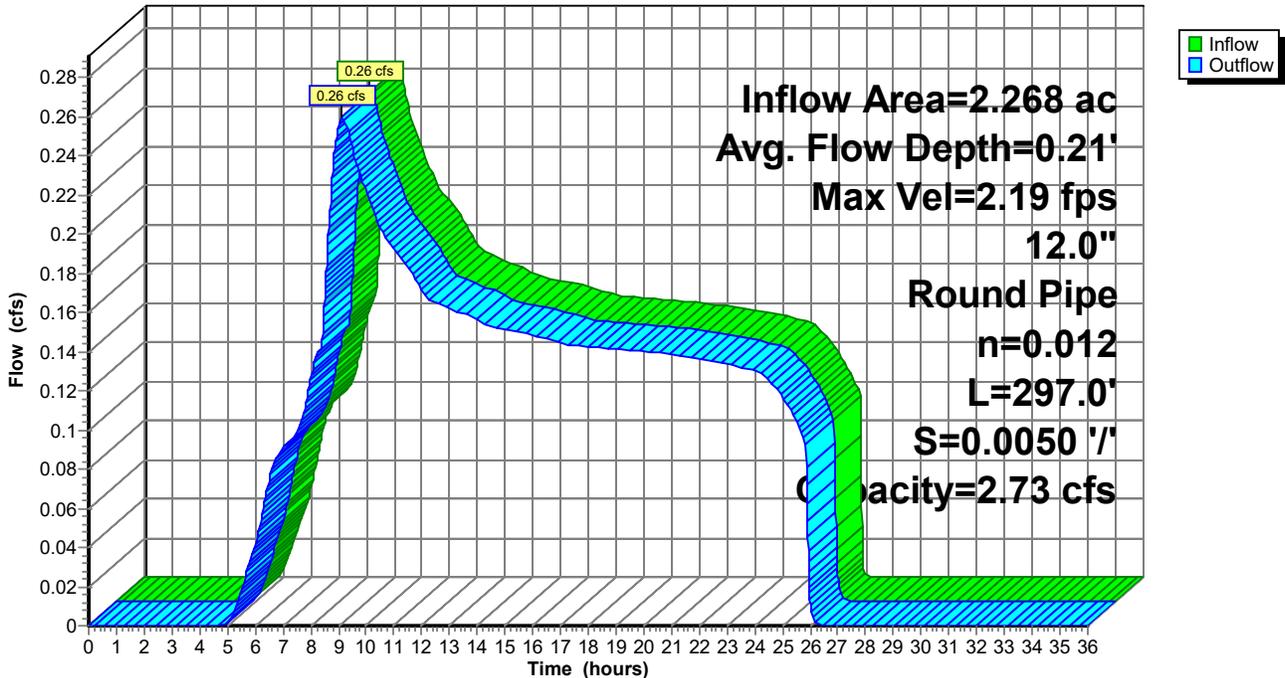
Peak Storage= 35 cf @ 9.11 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 297.0' Slope= 0.0050 '/'
Inlet Invert= 214.81', Outlet Invert= 213.32'



Reach 13R: Pond 3 Lateral

Hydrograph



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Page 50

Summary for Pond 2P: WQ Facility 1

Inflow Area = 0.246 ac, 84.20% Impervious, Inflow Depth = 2.21" for 5-Year event
 Inflow = 0.14 cfs @ 7.97 hrs, Volume= 0.045 af
 Outflow = 0.14 cfs @ 8.02 hrs, Volume= 0.041 af, Atten= 1%, Lag= 3.1 min
 Discarded = 0.00 cfs @ 5.32 hrs, Volume= 0.007 af
 Primary = 0.14 cfs @ 8.02 hrs, Volume= 0.034 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 214.91' @ 8.02 hrs Surf.Area= 0.014 ac Storage= 0.009 af

Plug-Flow detention time= 207.7 min calculated for 0.041 af (91% of inflow)
 Center-of-Mass det. time= 146.2 min (868.0 - 721.8)

Volume	Invert	Avail.Storage	Storage Description
#1	210.88'	0.002 af	4.00'W x 50.00'L x 1.00'H Gravel Storage 0.005 af Overall x 40.0% Voids
#2	211.88'	0.000 af	4.00'W x 50.00'L x 1.50'H Growing Medium 0.007 af Overall x 5.0% Voids
#3	213.38'	0.009 af	4.00'W x 50.00'L x 2.00'H Open Storage
		0.011 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	214.88'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	210.88'	0.200 in/hr Exfiltration over Surface area
#3	Primary	214.35'	1.9" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.00 cfs @ 5.32 hrs HW=213.38' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.13 cfs @ 8.02 hrs HW=214.91' (Free Discharge)

↑**1=Orifice/Grate** (Weir Controls 0.06 cfs @ 0.59 fps)

↑**3=Orifice/Grate** (Orifice Controls 0.07 cfs @ 3.35 fps)

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Type IA 24-hr 5-Year Rainfall=2.86"

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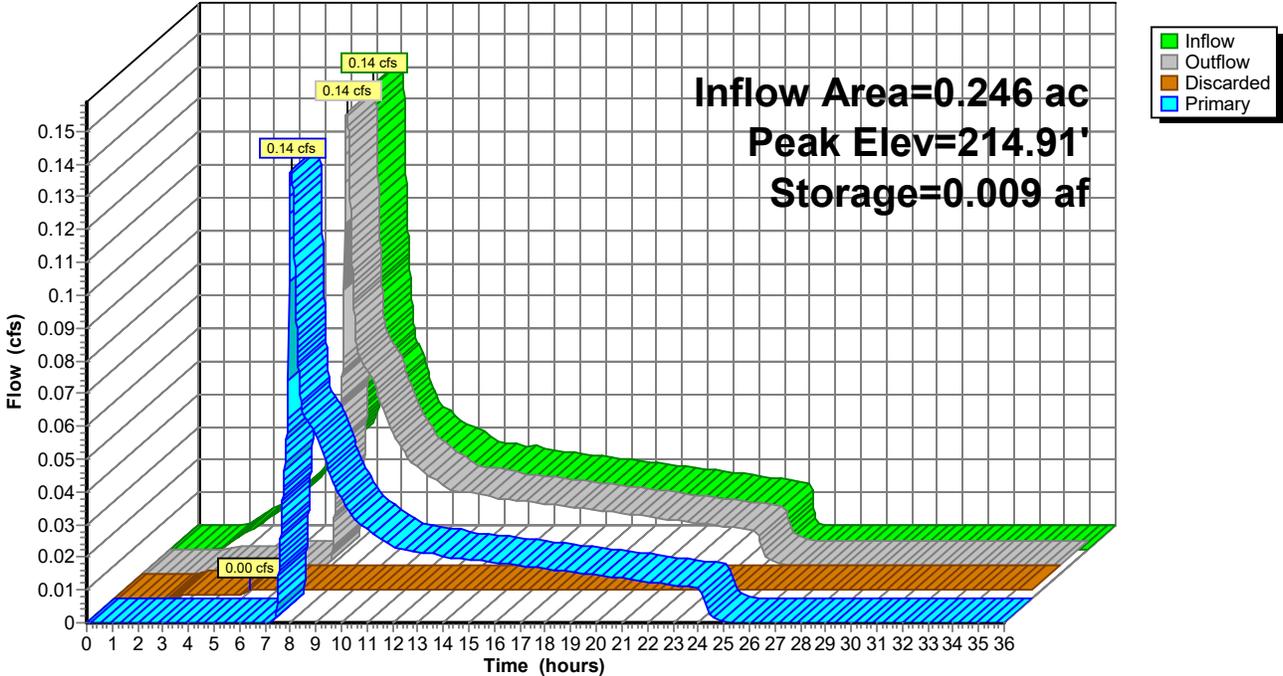
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Page 51

Pond 2P: WQ Facility 1

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Page 52

Summary for Pond 3P: WQ Facility 2

Inflow Area = 0.241 ac, 81.80% Impervious, Inflow Depth = 2.21" for 5-Year event
 Inflow = 0.14 cfs @ 7.97 hrs, Volume= 0.044 af
 Outflow = 0.14 cfs @ 8.03 hrs, Volume= 0.041 af, Atten= 1%, Lag= 3.7 min
 Discarded = 0.00 cfs @ 5.36 hrs, Volume= 0.007 af
 Primary = 0.13 cfs @ 8.03 hrs, Volume= 0.033 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 216.39' @ 8.03 hrs Surf.Area= 0.014 ac Storage= 0.009 af

Plug-Flow detention time= 210.0 min calculated for 0.040 af (91% of inflow)
 Center-of-Mass det. time= 149.0 min (870.8 - 721.8)

Volume	Invert	Avail.Storage	Storage Description
#1	212.36'	0.002 af	4.00'W x 50.00'L x 1.00'H Gravel Storage 0.005 af Overall x 40.0% Voids
#2	213.36'	0.000 af	4.00'W x 50.00'L x 1.50'H Growing Medium 0.007 af Overall x 5.0% Voids
#3	214.86'	0.009 af	4.00'W x 50.00'L x 2.00'H Open Storage
		0.011 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	216.36'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	212.36'	0.200 in/hr Exfiltration over Surface area
#3	Primary	215.80'	1.8" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.00 cfs @ 5.36 hrs HW=214.86' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.12 cfs @ 8.03 hrs HW=216.39' (Free Discharge)

↑**1=Orifice/Grate** (Weir Controls 0.06 cfs @ 0.60 fps)

↑**3=Orifice/Grate** (Orifice Controls 0.06 cfs @ 3.47 fps)

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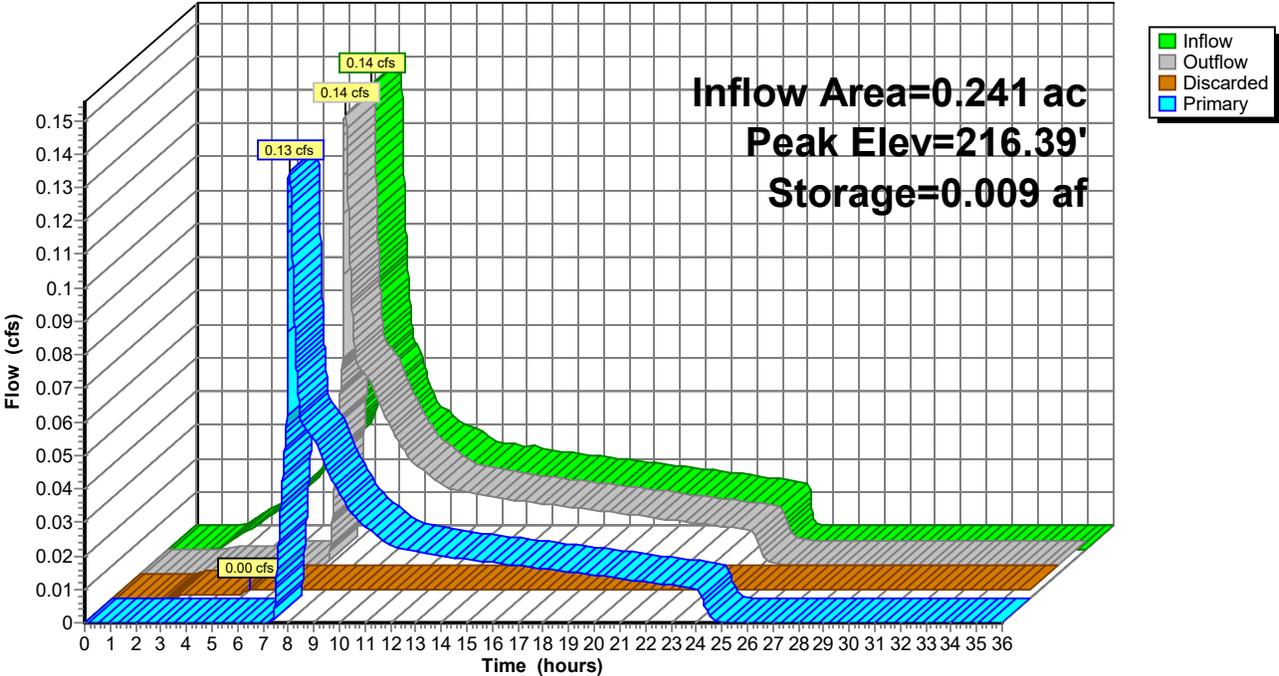
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Page 53

Pond 3P: WQ Facility 2

Hydrograph



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Page 54

Summary for Pond 4P: WQ/Det Facility 1

Inflow Area = 1.688 ac, 65.62% Impervious, Inflow Depth = 1.94" for 5-Year event
 Inflow = 0.84 cfs @ 7.99 hrs, Volume= 0.273 af
 Outflow = 0.44 cfs @ 8.35 hrs, Volume= 0.273 af, Atten= 47%, Lag= 21.7 min
 Discarded = 0.00 cfs @ 8.35 hrs, Volume= 0.002 af
 Primary = 0.44 cfs @ 8.35 hrs, Volume= 0.271 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 217.41' @ 8.35 hrs Surf.Area= 951 sf Storage= 1,123 cf

Plug-Flow detention time= 18.1 min calculated for 0.273 af (100% of inflow)
 Center-of-Mass det. time= 18.1 min (769.0 - 750.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	215.00'	3,375 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
215.00	115	0	0	115	
216.00	363	227	227	370	
217.00	751	545	773	769	
218.00	1,278	1,003	1,776	1,311	
219.00	1,944	1,599	3,375	1,996	

Device	Routing	Invert	Outlet Devices	
#1	Primary	213.26'	2.3" Vert. Orifice/Grate C= 0.600	
#2	Primary	218.25'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	215.00'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	217.15'	5.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.00 cfs @ 8.35 hrs HW=217.41' (Free Discharge)
 ↑ **3=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.44 cfs @ 8.35 hrs HW=217.41' (Free Discharge)
 ↑ **1=Orifice/Grate** (Orifice Controls 0.28 cfs @ 9.70 fps)
 ↓ **2=Orifice/Grate** (Controls 0.00 cfs)
 ↓ **4=Orifice/Grate** (Orifice Controls 0.16 cfs @ 1.74 fps)

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Type IA 24-hr 5-Year Rainfall=2.86"

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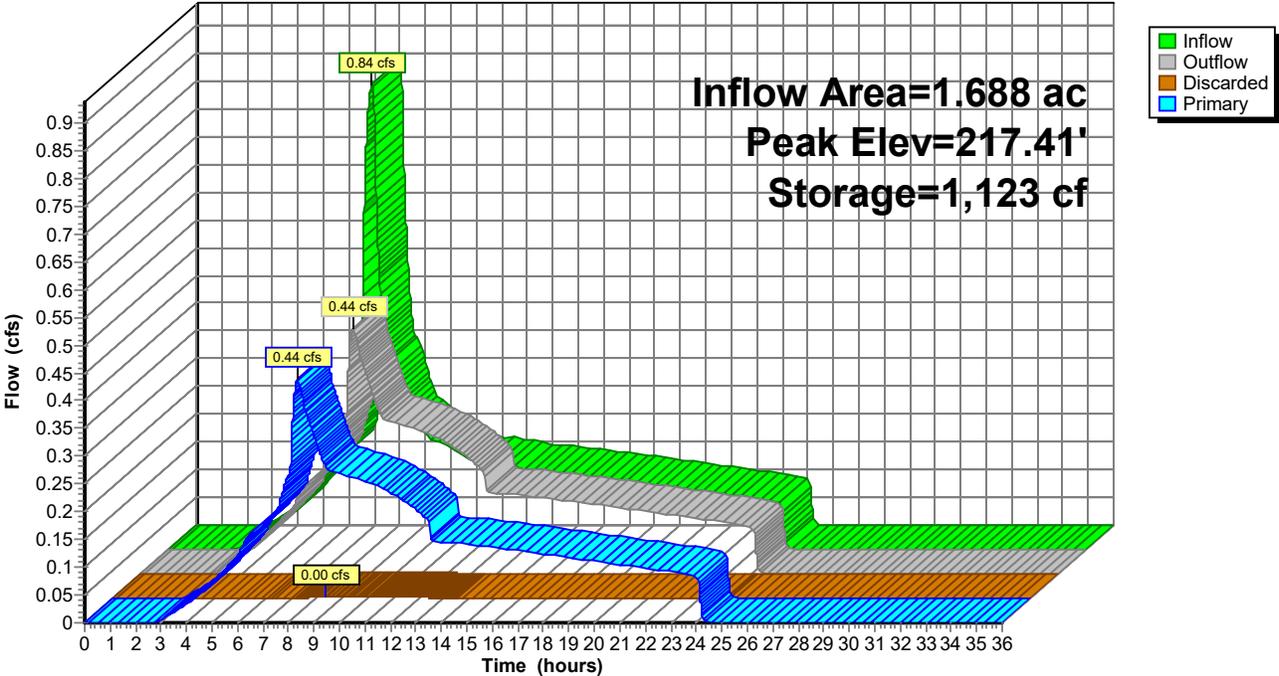
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Page 55

Pond 4P: WQ/Det Facility 1

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Page 56

Summary for Pond 5P: WQ/Det Facility 2

Inflow Area = 0.714 ac, 71.57% Impervious, Inflow Depth = 2.12" for 5-Year event
 Inflow = 0.39 cfs @ 7.97 hrs, Volume= 0.126 af
 Outflow = 0.07 cfs @ 11.77 hrs, Volume= 0.126 af, Atten= 82%, Lag= 228.1 min
 Discarded = 0.01 cfs @ 11.77 hrs, Volume= 0.009 af
 Primary = 0.07 cfs @ 11.77 hrs, Volume= 0.117 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 218.31' @ 11.77 hrs Surf.Area= 1,215 sf Storage= 1,535 cf

Plug-Flow detention time= 280.2 min calculated for 0.126 af (100% of inflow)
 Center-of-Mass det. time= 280.2 min (1,012.1 - 731.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	216.00'	4,610 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
216.00	268	0	0	268	
217.00	561	406	406	572	
218.00	1,031	784	1,190	1,055	
219.00	1,686	1,345	2,535	1,726	
220.00	2,491	2,075	4,610	2,551	

Device	Routing	Invert	Outlet Devices	
#1	Primary	214.01'	1.0" Vert. Orifice/Grate C= 0.600	
#2	Primary	219.25'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	216.00'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	218.05'	1.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.01 cfs @ 11.77 hrs HW=218.31' (Free Discharge)
 ↑**3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.07 cfs @ 11.77 hrs HW=218.31' (Free Discharge)
 ↑**1=Orifice/Grate** (Orifice Controls 0.05 cfs @ 9.93 fps)
 ↓**2=Orifice/Grate** (Controls 0.00 cfs)
 ↓**4=Orifice/Grate** (Orifice Controls 0.01 cfs @ 2.24 fps)

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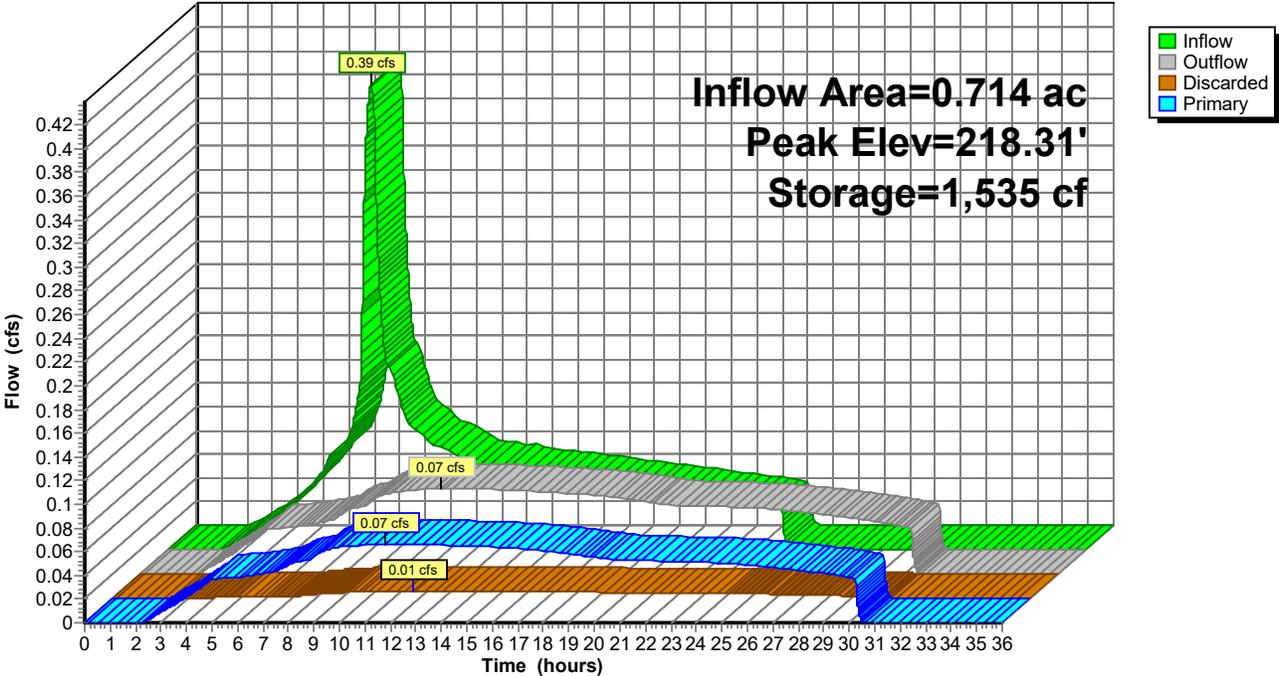
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Page 57

Pond 5P: WQ/Det Facility 2

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Page 58

Summary for Pond 6P: WQ/Det Facility 3

Inflow Area = 2.268 ac, 42.16% Impervious, Inflow Depth = 1.33" for 5-Year event
 Inflow = 0.69 cfs @ 8.03 hrs, Volume= 0.252 af
 Outflow = 0.26 cfs @ 9.08 hrs, Volume= 0.252 af, Atten= 62%, Lag= 62.9 min
 Discarded = 0.01 cfs @ 9.08 hrs, Volume= 0.007 af
 Primary = 0.26 cfs @ 9.08 hrs, Volume= 0.246 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 218.84' @ 9.08 hrs Surf.Area= 1,100 sf Storage= 1,475 cf

Plug-Flow detention time= 109.9 min calculated for 0.252 af (100% of inflow)
 Center-of-Mass det. time= 109.9 min (925.2 - 815.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	216.50'	4,035 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
216.50	244	0	0	244	
217.50	554	389	389	564	
218.50	941	739	1,128	966	
219.50	1,444	1,184	2,311	1,487	
220.50	2,019	1,723	4,035	2,086	

Device	Routing	Invert	Outlet Devices	
#1	Primary	215.01'	1.7" Vert. Orifice/Grate C= 0.600	
#2	Primary	219.75'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	216.50'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	218.60'	4.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.01 cfs @ 9.08 hrs HW=218.84' (Free Discharge)
 ↑ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.26 cfs @ 9.08 hrs HW=218.84' (Free Discharge)
 ↑ **1=Orifice/Grate** (Orifice Controls 0.15 cfs @ 9.34 fps)
 ↓ **2=Orifice/Grate** (Controls 0.00 cfs)
 ↓ **4=Orifice/Grate** (Orifice Controls 0.11 cfs @ 1.67 fps)

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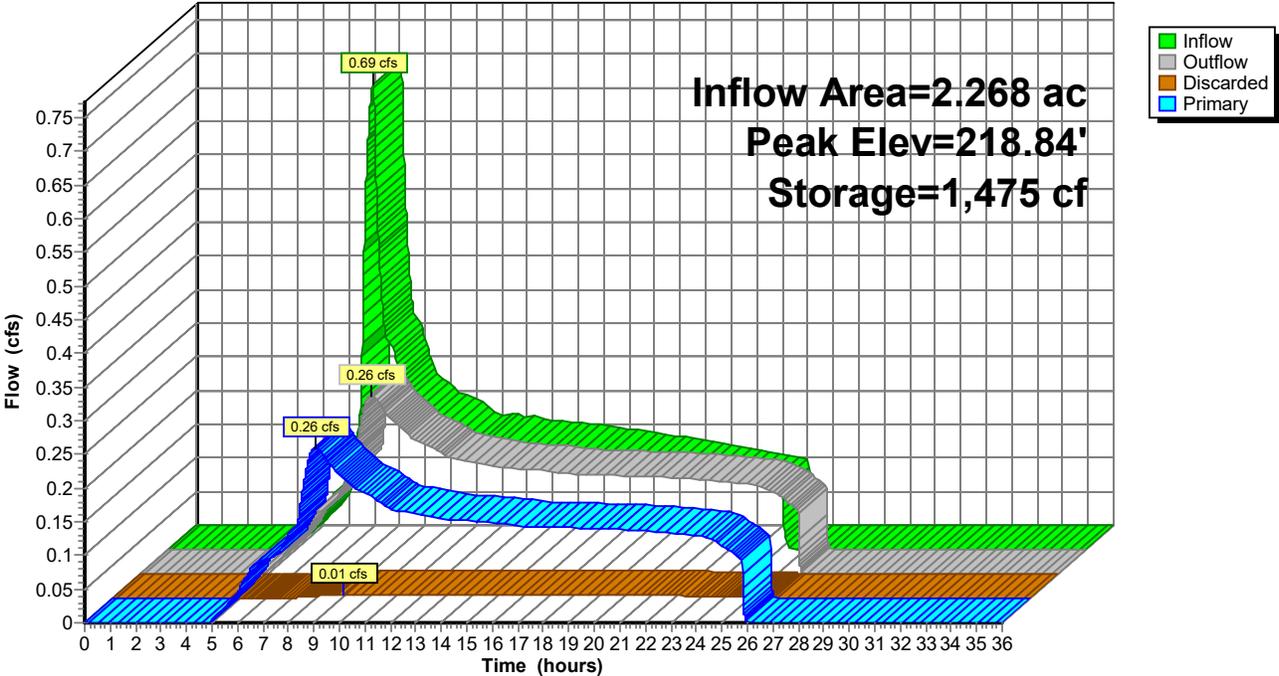
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Page 59

Pond 6P: WQ/Det Facility 3

Hydrograph



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Page 60

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: Franklin Ave 1	Runoff Area=10,733 sf 84.20% Impervious Runoff Depth=2.71" Flow Length=242' Slope=0.0200 '/' Tc=10.0 min CN=94 Runoff=0.17 cfs 0.056 af
Subcatchment 3S: Franklin Ave 2	Runoff Area=10,498 sf 81.80% Impervious Runoff Depth=2.71" Flow Length=274' Slope=0.0200 '/' Tc=10.0 min CN=94 Runoff=0.17 cfs 0.054 af
Subcatchment 4S: Phase 1 & 2	Runoff Area=73,511 sf 65.62% Impervious Runoff Depth=2.42" Flow Length=500' Tc=10.2 min CN=91 Runoff=1.05 cfs 0.340 af
Subcatchment 5S: Phase 3	Runoff Area=31,101 sf 71.57% Impervious Runoff Depth=2.61" Flow Length=360' Tc=10.0 min CN=93 Runoff=0.48 cfs 0.155 af
Subcatchment 6S: Phase 4 & 5	Runoff Area=98,814 sf 42.16% Impervious Runoff Depth=1.75" Flow Length=422' Tc=10.0 min CN=83 Runoff=0.94 cfs 0.331 af
Subcatchment 7S: Wetland	Runoff Area=76,610 sf 0.00% Impervious Runoff Depth=0.68" Flow Length=365' Slope=0.0200 '/' Tc=27.9 min CN=65 Runoff=0.10 cfs 0.100 af
Reach 1R: EX SE Shore Drive	Avg. Flow Depth=0.57' Max Vel=2.99 fps Inflow=1.39 cfs 0.992 af 12.0" Round Pipe n=0.012 L=161.8' S=0.0033 '/' Capacity=2.23 cfs Outflow=1.39 cfs 0.992 af
Reach 2R: Franklin Avenue 3	Avg. Flow Depth=0.48' Max Vel=3.43 fps Inflow=1.28 cfs 0.892 af 12.0" Round Pipe n=0.012 L=147.0' S=0.0050 '/' Capacity=2.74 cfs Outflow=1.28 cfs 0.892 af
Reach 4R: Franklin Avenue 2	Avg. Flow Depth=0.46' Max Vel=3.34 fps Inflow=1.19 cfs 0.848 af 12.0" Round Pipe n=0.012 L=98.9' S=0.0050 '/' Capacity=2.72 cfs Outflow=1.19 cfs 0.848 af
Reach 5R: Franklin Avenue 1	Avg. Flow Depth=0.17' Max Vel=1.93 fps Inflow=0.17 cfs 0.043 af 12.0" Round Pipe n=0.012 L=157.1' S=0.0050 '/' Capacity=2.74 cfs Outflow=0.17 cfs 0.043 af
Reach 7R: Private Road A 2	Avg. Flow Depth=0.44' Max Vel=3.28 fps Inflow=1.10 cfs 0.805 af 12.0" Round Pipe n=0.012 L=132.9' S=0.0050 '/' Capacity=2.72 cfs Outflow=1.10 cfs 0.805 af
Reach 8R: Pond 1 Lateral	Avg. Flow Depth=0.33' Max Vel=2.86 fps Inflow=0.66 cfs 0.338 af 12.0" Round Pipe n=0.012 L=26.1' S=0.0050 '/' Capacity=2.72 cfs Outflow=0.66 cfs 0.338 af
Reach 10R: Private Road A 1	Avg. Flow Depth=0.28' Max Vel=2.60 fps Inflow=0.48 cfs 0.467 af 12.0" Round Pipe n=0.012 L=38.5' S=0.0049 '/' Capacity=2.71 cfs Outflow=0.48 cfs 0.467 af
Reach 11R: Pond 2 Lateral	Avg. Flow Depth=0.12' Max Vel=1.53 fps Inflow=0.08 cfs 0.144 af 12.0" Round Pipe n=0.012 L=98.2' S=0.0050 '/' Capacity=2.73 cfs Outflow=0.08 cfs 0.144 af
Reach 13R: Pond 3 Lateral	Avg. Flow Depth=0.26' Max Vel=2.50 fps Inflow=0.41 cfs 0.323 af 12.0" Round Pipe n=0.012 L=297.0' S=0.0050 '/' Capacity=2.73 cfs Outflow=0.41 cfs 0.323 af
Pond 2P: WQ Facility 1	Peak Elev=214.93' Storage=0.009 af Inflow=0.17 cfs 0.056 af Discarded=0.00 cfs 0.007 af Primary=0.17 cfs 0.044 af Outflow=0.17 cfs 0.052 af

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Page 61

Pond 3P: WQ Facility 2 Peak Elev=216.41' Storage=0.009 af Inflow=0.17 cfs 0.054 af
Discarded=0.00 cfs 0.007 af Primary=0.17 cfs 0.043 af Outflow=0.17 cfs 0.050 af

Pond 4P: WQ/Det Facility 1 Peak Elev=217.68' Storage=1,393 cf Inflow=1.05 cfs 0.340 af
Discarded=0.01 cfs 0.002 af Primary=0.66 cfs 0.338 af Outflow=0.66 cfs 0.340 af

Pond 5P: WQ/Det Facility 2 Peak Elev=218.69' Storage=2,052 cf Inflow=0.48 cfs 0.155 af
Discarded=0.01 cfs 0.011 af Primary=0.08 cfs 0.144 af Outflow=0.08 cfs 0.155 af

Pond 6P: WQ/Det Facility 3 Peak Elev=219.14' Storage=1,824 cf Inflow=0.94 cfs 0.331 af
Discarded=0.01 cfs 0.008 af Primary=0.41 cfs 0.323 af Outflow=0.41 cfs 0.331 af

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Page 62

Summary for Subcatchment 2S: Franklin Ave 1

Runoff = 0.17 cfs @ 7.97 hrs, Volume= 0.056 af, Depth= 2.71"

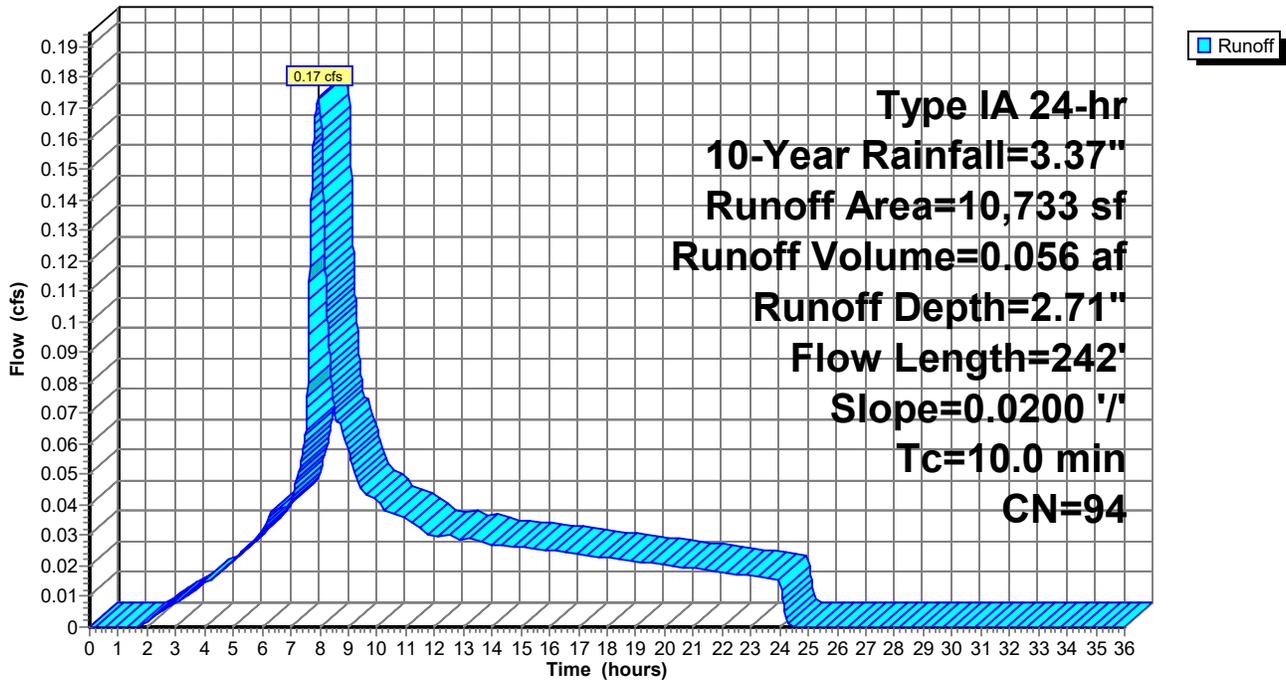
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-Year Rainfall=3.37"

Area (sf)	CN	Description
9,037	98	Paved roads w/curbs & sewers, HSG C
1,696	74	>75% Grass cover, Good, HSG C
10,733	94	Weighted Average
1,696	74	15.80% Pervious Area
9,037	98	84.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.0200	0.99		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
1.2	202	0.0200	2.87		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
1.9	242	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 2S: Franklin Ave 1

Hydrograph



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Page 63

Summary for Subcatchment 3S: Franklin Ave 2

Runoff = 0.17 cfs @ 7.97 hrs, Volume= 0.054 af, Depth= 2.71"

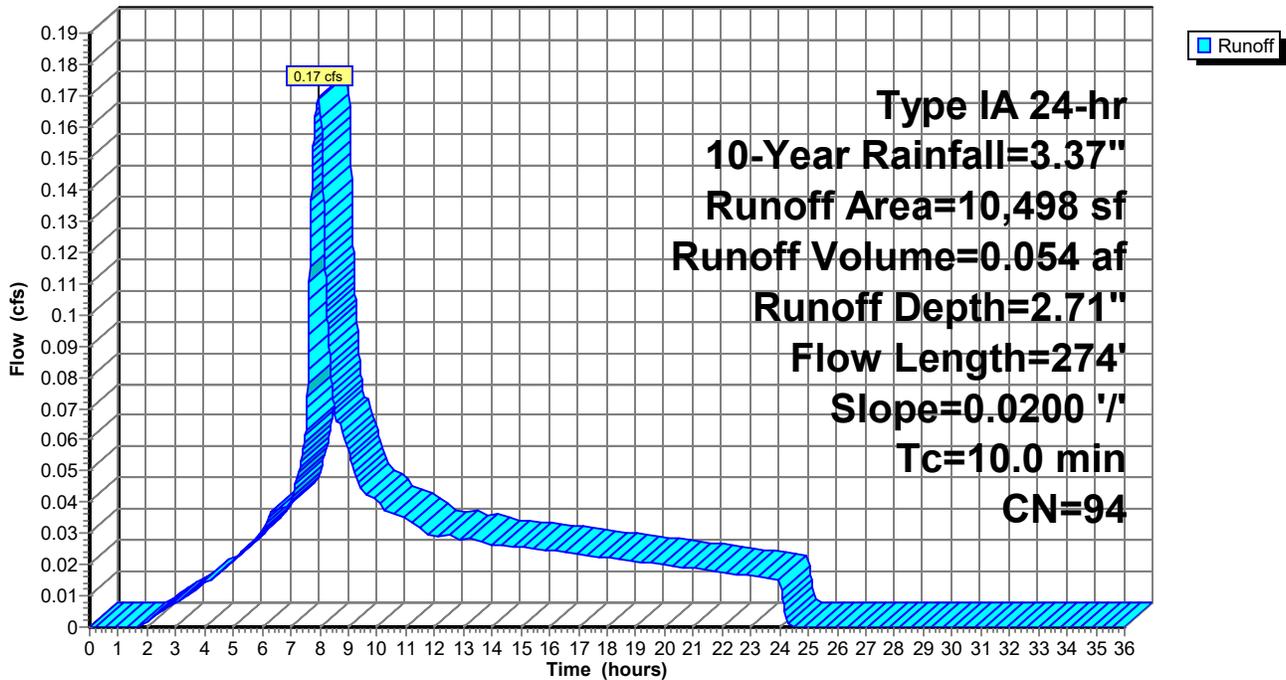
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-Year Rainfall=3.37"

Area (sf)	CN	Description
8,587	98	Paved roads w/curbs & sewers, HSG C
1,911	74	>75% Grass cover, Good, HSG C
10,498	94	Weighted Average
1,911	74	18.20% Pervious Area
8,587	98	81.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.0200	0.99		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
1.4	234	0.0200	2.87		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
2.1	274	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 3S: Franklin Ave 2

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Page 64

Summary for Subcatchment 4S: Phase 1 & 2

Runoff = 1.05 cfs @ 7.99 hrs, Volume= 0.340 af, Depth= 2.42"

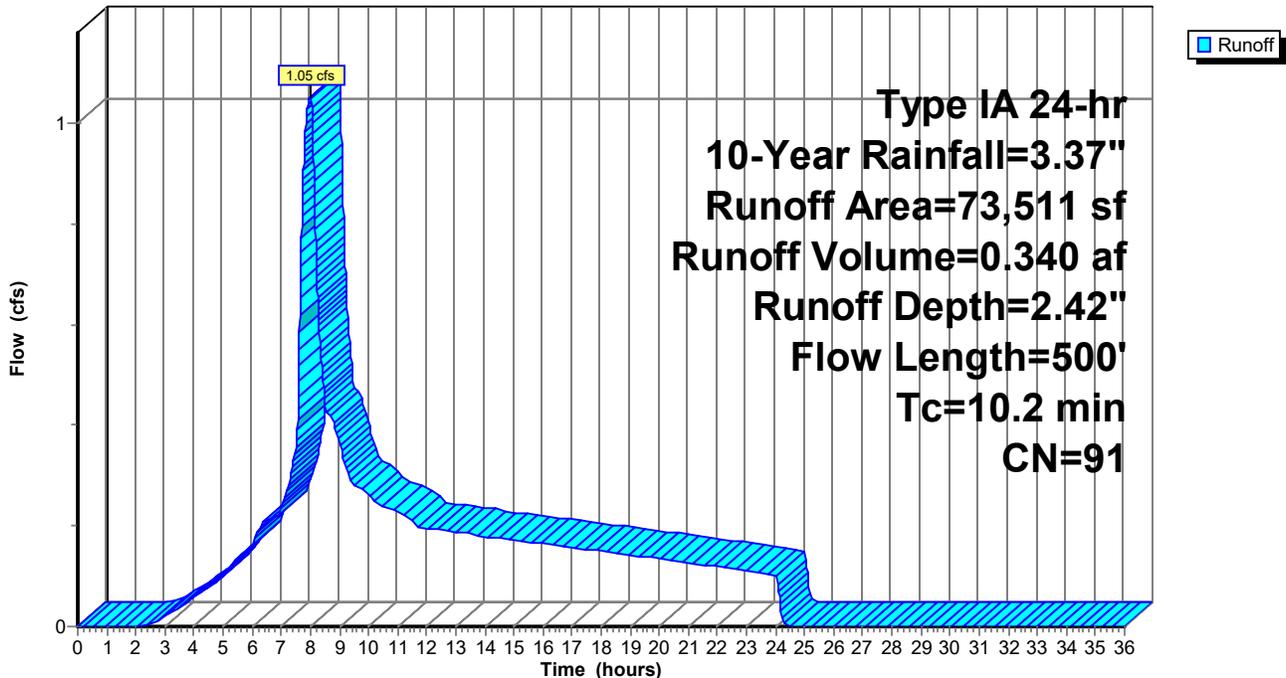
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-Year Rainfall=3.37"

Area (sf)	CN	Description
8,098	98	Paved parking, HSG C
1,945	98	Water Surface, 0% imp, HSG C
61,755	90	1/8 acre lots, 65% imp, HSG C
1,713	74	>75% Grass cover, Good, HSG C
73,511	91	Weighted Average
25,272	77	34.38% Pervious Area
48,239	98	65.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	20	0.0200	0.05		Sheet Flow, Sheet Grass: Bermuda n= 0.410 P2= 2.40"
1.3	80	0.0200	0.99		Shallow Concentrated Flow, SCF Short Grass Pasture Kv= 7.0 fps
1.9	400	0.0050	3.47	2.73	Pipe Channel, To Pond 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
10.2	500	Total			

Subcatchment 4S: Phase 1 & 2

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Summary for Subcatchment 5S: Phase 3

Runoff = 0.48 cfs @ 7.97 hrs, Volume= 0.155 af, Depth= 2.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-Year Rainfall=3.37"

Area (sf)	CN	Description
11,947	98	Paved parking, HSG C
2,490	98	Water Surface, 0% imp, HSG C
2,227	98	Unconnected pavement, HSG C
8,084	98	Roofs, HSG C
6,353	74	>75% Grass cover, Good, HSG C
31,101	93	Weighted Average
8,843	81	28.43% Pervious Area
22,258	98	71.57% Impervious Area
2,227		10.01% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	20	0.0200	0.86		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
0.3	60	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	280	0.0050	3.47	2.73	Pipe Channel, Pipe 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.0	360	Total, Increased to minimum Tc = 10.0 min			

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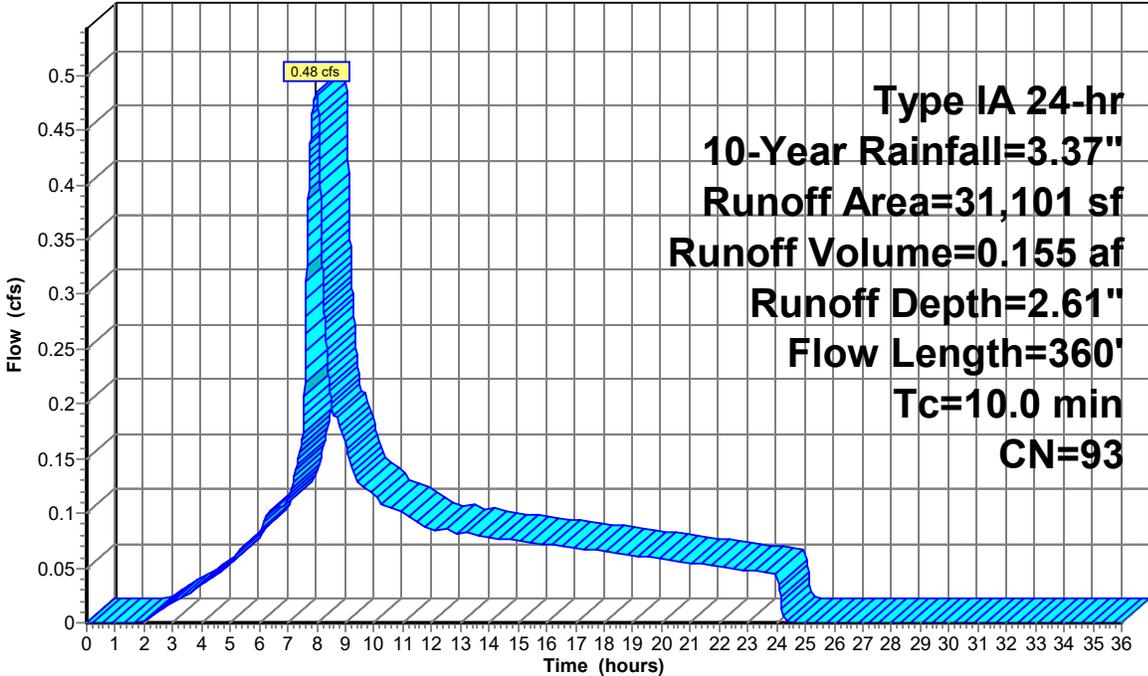
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Page 66

Subcatchment 5S: Phase 3

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Page 67

Summary for Subcatchment 6S: Phase 4 & 5

Runoff = 0.94 cfs @ 8.03 hrs, Volume= 0.331 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-Year Rainfall=3.37"

Area (sf)	CN	Description
2,019	98	Water Surface, 0% imp, HSG C
11,637	98	Roofs, HSG C
* 30,024	98	Parking Lot, Sidewalk, Unconnected Roofs
55,134	72	Woods/grass comb., Good, HSG C
98,814	83	Weighted Average
57,153	73	57.84% Pervious Area
41,661	98	42.16% Impervious Area
30,024		72.07% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	20	0.0200	0.05		Sheet Flow, Sheet Grass: Bermuda n= 0.410 P2= 2.40"
1.3	80	0.0200	0.99		Shallow Concentrated Flow, SCF Short Grass Pasture Kv= 7.0 fps
1.5	322	0.0050	3.47	2.73	Pipe Channel, To Pond 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
9.8	422	Total, Increased to minimum Tc = 10.0 min			

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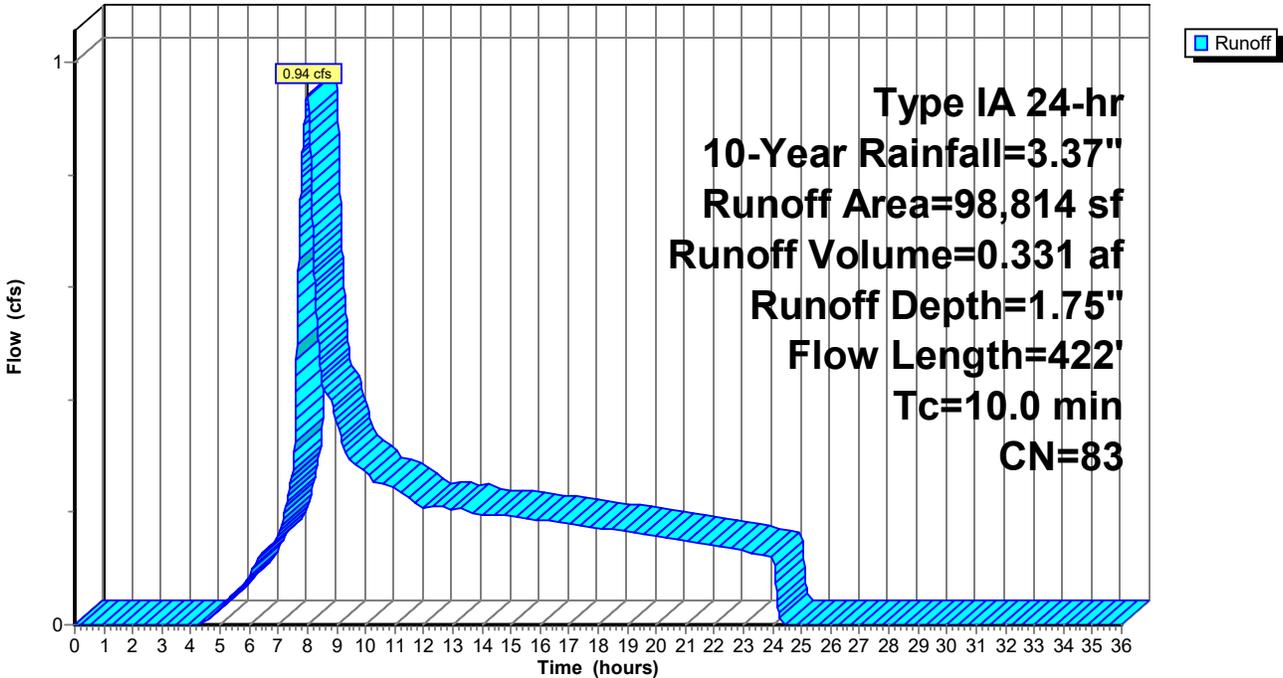
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Page 68

Subcatchment 6S: Phase 4 & 5

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Page 69

Summary for Subcatchment 7S: Wetland

Runoff = 0.10 cfs @ 8.40 hrs, Volume= 0.100 af, Depth= 0.68"

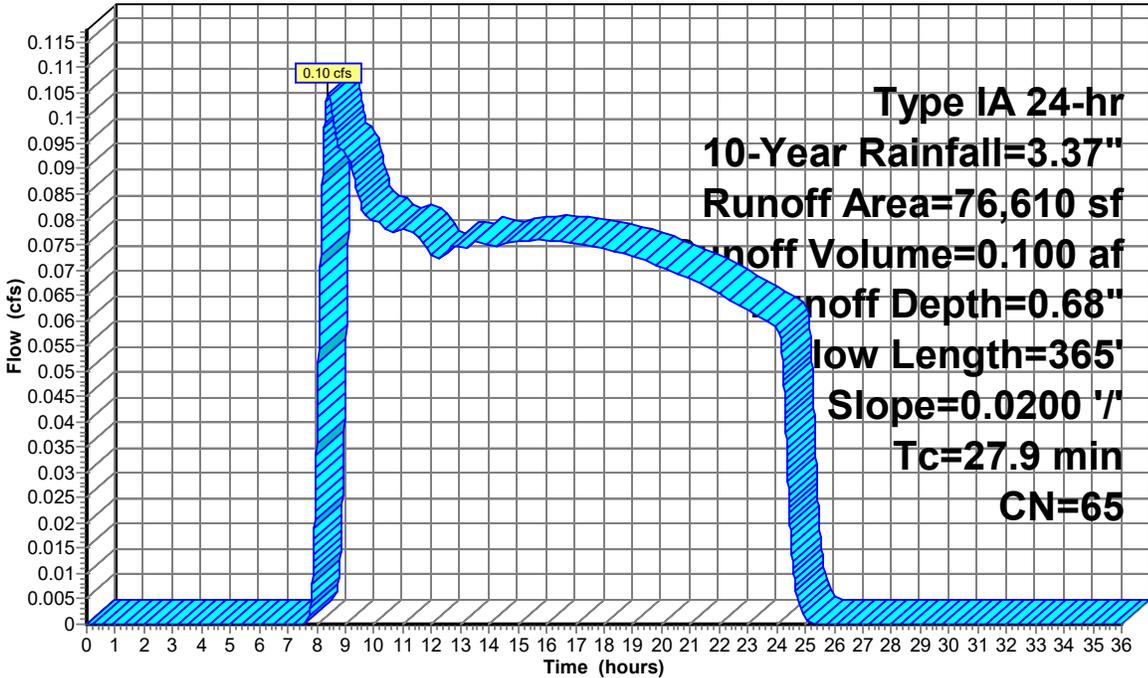
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-Year Rainfall=3.37"

Area (sf)	CN	Description
76,610	65	Brush, Good, HSG C
76,610	65	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	150	0.0200	0.11		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 2.40"
5.1	215	0.0200	0.71		Shallow Concentrated Flow, SCF Woodland Kv= 5.0 fps
27.9	365	Total			

Subcatchment 7S: Wetland

Hydrograph



Runoff

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Page 70

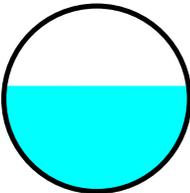
Summary for Reach 1R: EX SE Shore Drive

Inflow Area = 6.916 ac, 43.08% Impervious, Inflow Depth = 1.72" for 10-Year event
Inflow = 1.39 cfs @ 8.34 hrs, Volume= 0.992 af
Outflow = 1.39 cfs @ 8.36 hrs, Volume= 0.992 af, Atten= 0%, Lag= 1.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.99 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.89 fps, Avg. Travel Time= 1.4 min

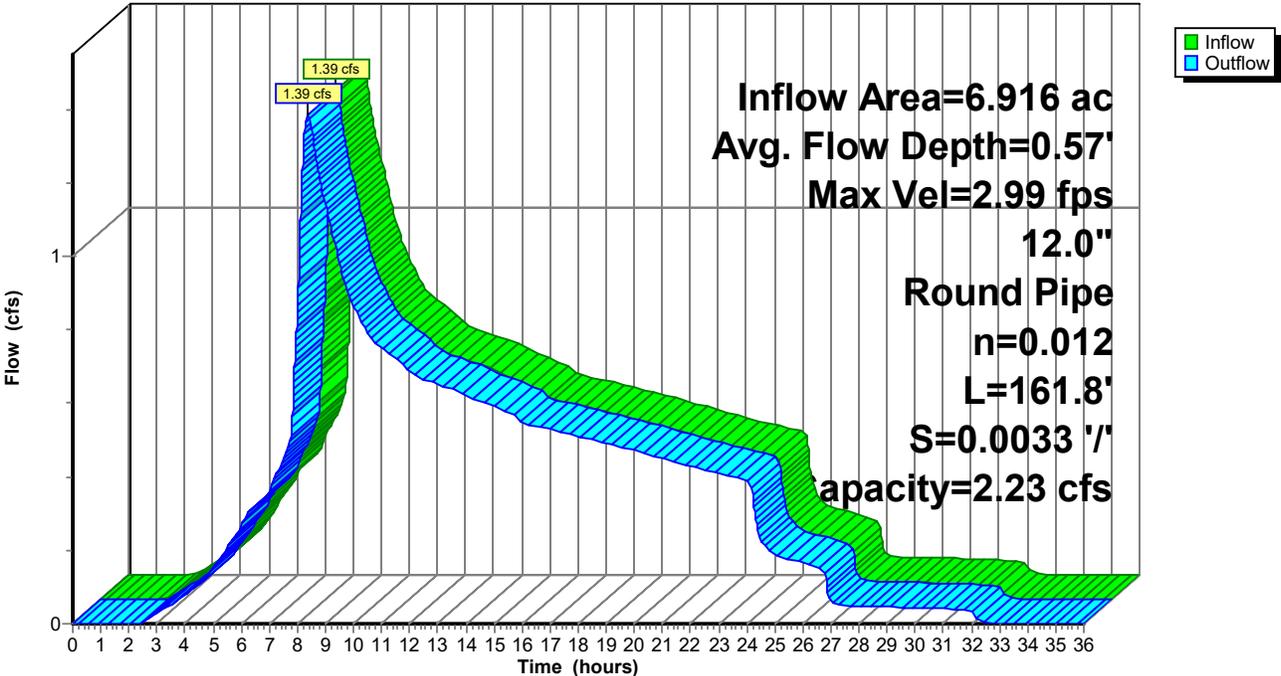
Peak Storage= 75 cf @ 8.35 hrs
Average Depth at Peak Storage= 0.57'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.23 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 161.8' Slope= 0.0033 '/'
Inlet Invert= 210.64', Outlet Invert= 210.10'



Reach 1R: EX SE Shore Drive

Hydrograph



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Page 71

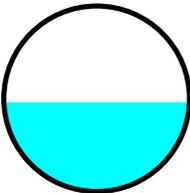
Summary for Reach 2R: Franklin Avenue 3

Inflow Area = 5.157 ac, 57.77% Impervious, Inflow Depth = 2.08" for 10-Year event
Inflow = 1.28 cfs @ 8.30 hrs, Volume= 0.892 af
Outflow = 1.28 cfs @ 8.32 hrs, Volume= 0.892 af, Atten= 0%, Lag= 1.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.43 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 2.15 fps, Avg. Travel Time= 1.1 min

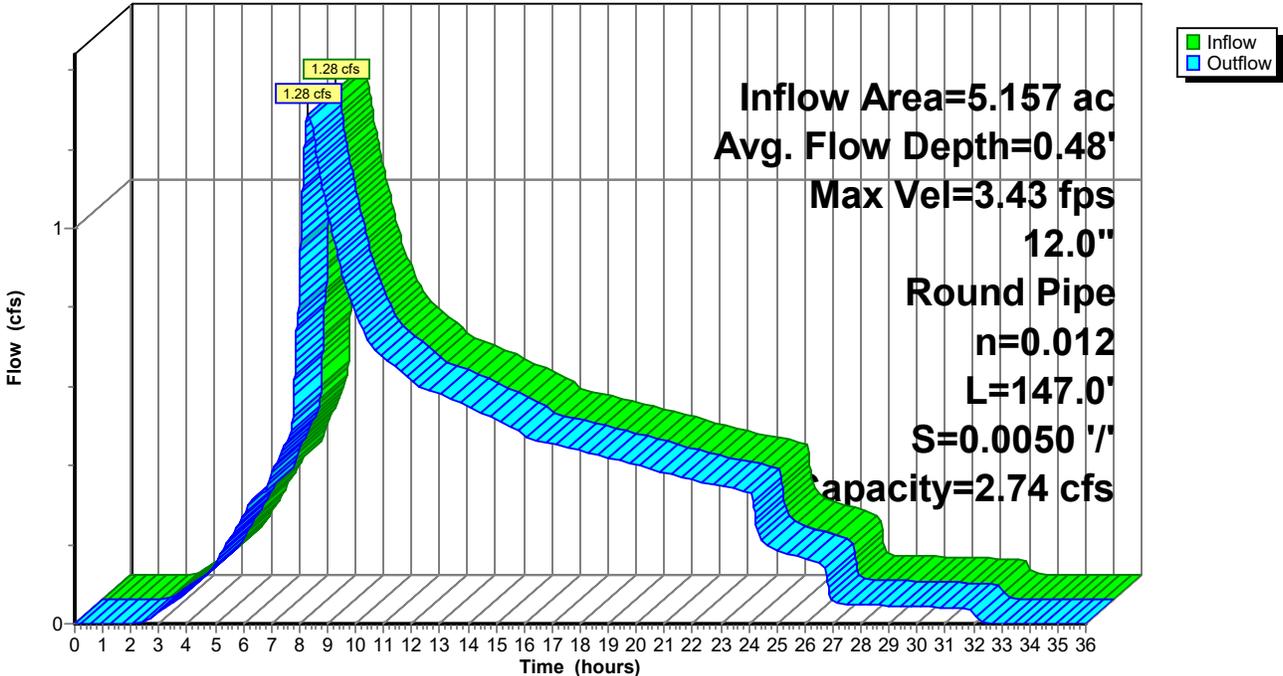
Peak Storage= 55 cf @ 8.31 hrs
Average Depth at Peak Storage= 0.48'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.74 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 147.0' Slope= 0.0050 '/'
Inlet Invert= 211.38', Outlet Invert= 210.64'



Reach 2R: Franklin Avenue 3

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Page 72

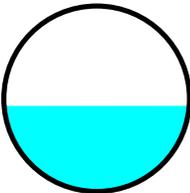
Summary for Reach 4R: Franklin Avenue 2

Inflow Area = 4.911 ac, 56.44% Impervious, Inflow Depth = 2.07" for 10-Year event
Inflow = 1.19 cfs @ 8.33 hrs, Volume= 0.848 af
Outflow = 1.19 cfs @ 8.34 hrs, Volume= 0.848 af, Atten= 0%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.34 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 2.12 fps, Avg. Travel Time= 0.8 min

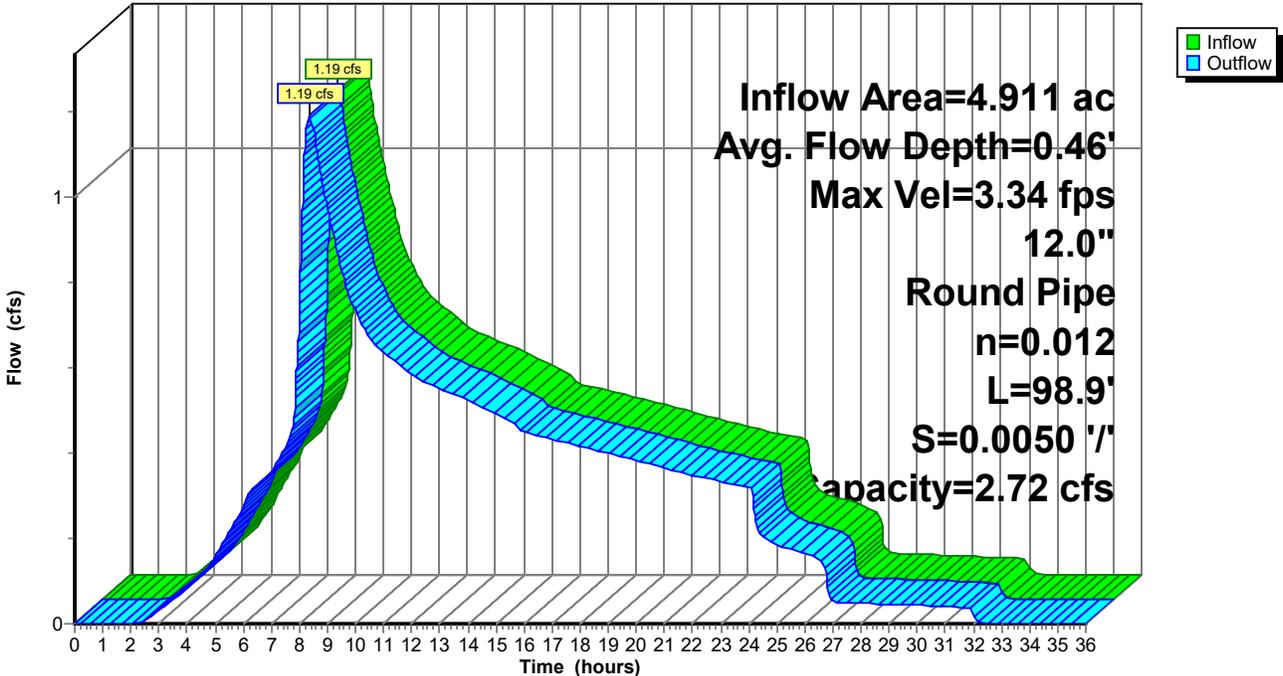
Peak Storage= 35 cf @ 8.34 hrs
Average Depth at Peak Storage= 0.46'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 98.9' Slope= 0.0050 '/'
Inlet Invert= 211.87', Outlet Invert= 211.38'



Reach 4R: Franklin Avenue 2

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Page 73

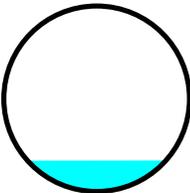
Summary for Reach 5R: Franklin Avenue 1

Inflow Area = 0.241 ac, 81.80% Impervious, Inflow Depth = 2.14" for 10-Year event
Inflow = 0.17 cfs @ 7.99 hrs, Volume= 0.043 af
Outflow = 0.17 cfs @ 8.02 hrs, Volume= 0.043 af, Atten= 0%, Lag= 2.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.93 fps, Min. Travel Time= 1.4 min
Avg. Velocity = 1.06 fps, Avg. Travel Time= 2.5 min

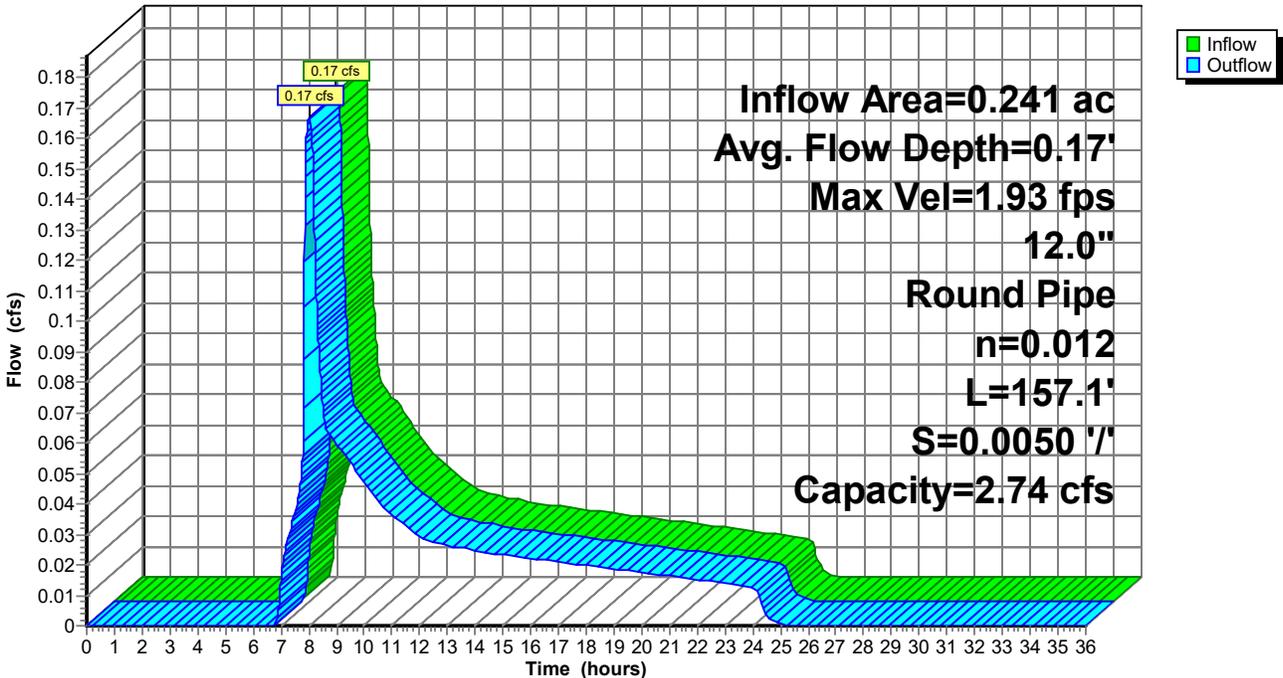
Peak Storage= 14 cf @ 8.00 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.74 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 157.1' Slope= 0.0050 '/'
Inlet Invert= 212.86', Outlet Invert= 212.07'



Reach 5R: Franklin Avenue 1

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Page 74

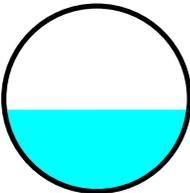
Summary for Reach 7R: Private Road A 2

Inflow Area = 4.670 ac, 55.13% Impervious, Inflow Depth = 2.07" for 10-Year event
Inflow = 1.10 cfs @ 8.36 hrs, Volume= 0.805 af
Outflow = 1.10 cfs @ 8.38 hrs, Volume= 0.805 af, Atten= 0%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.28 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 2.11 fps, Avg. Travel Time= 1.1 min

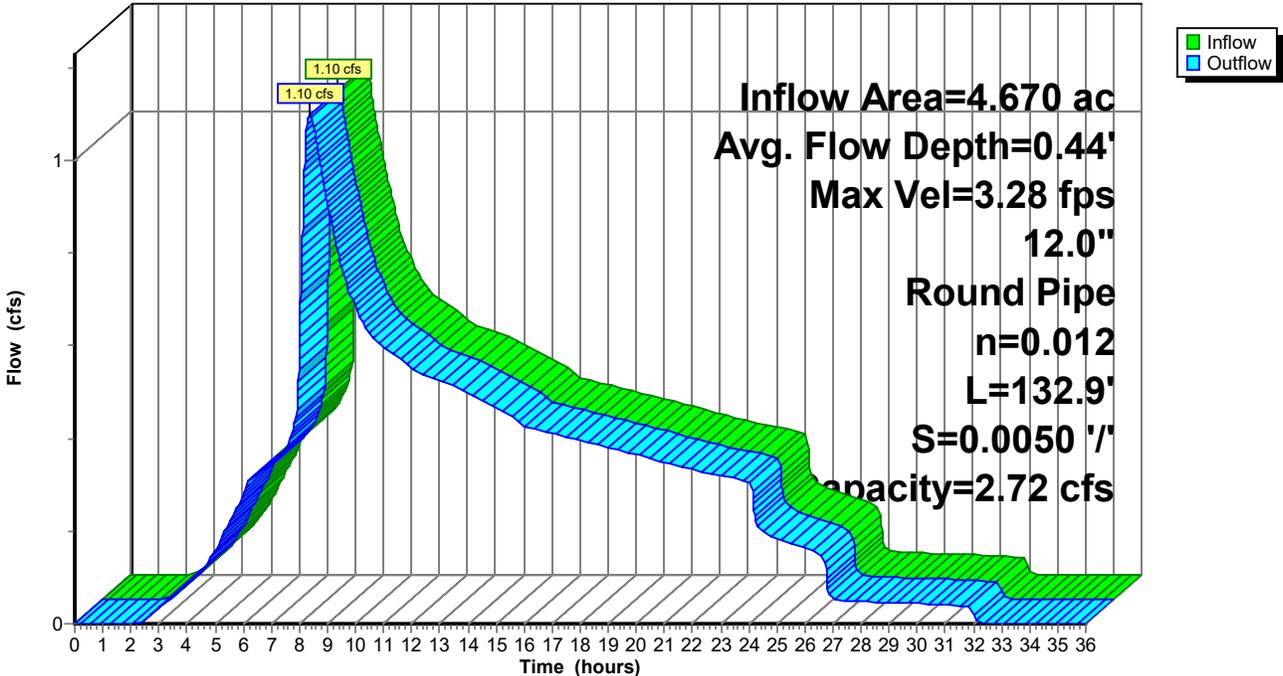
Peak Storage= 45 cf @ 8.37 hrs
Average Depth at Peak Storage= 0.44'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 132.9' Slope= 0.0050 '/'
Inlet Invert= 212.73', Outlet Invert= 212.07'



Reach 7R: Private Road A 2

Hydrograph



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Page 75

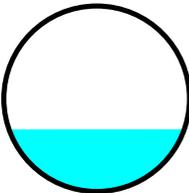
Summary for Reach 8R: Pond 1 Lateral

Inflow Area = 1.688 ac, 65.62% Impervious, Inflow Depth = 2.40" for 10-Year event
Inflow = 0.66 cfs @ 8.24 hrs, Volume= 0.338 af
Outflow = 0.66 cfs @ 8.25 hrs, Volume= 0.338 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.86 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.88 fps, Avg. Travel Time= 0.2 min

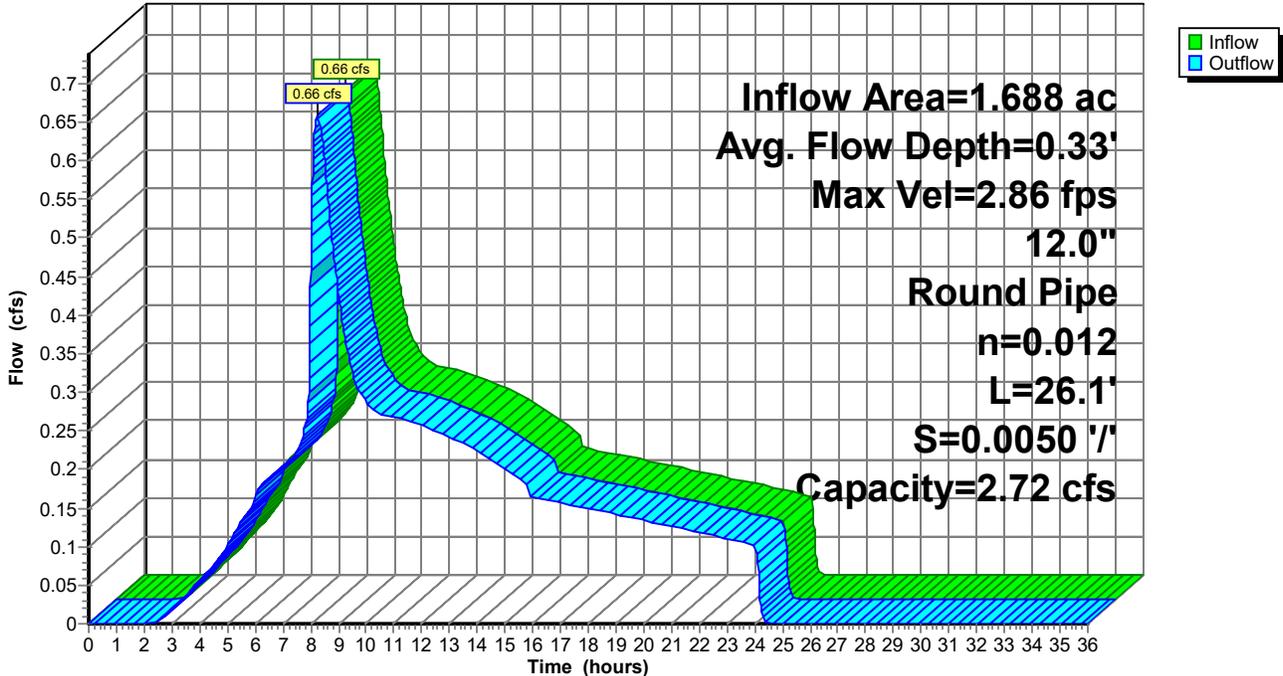
Peak Storage= 6 cf @ 8.24 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 26.1' Slope= 0.0050 '/'
Inlet Invert= 213.06', Outlet Invert= 212.93'



Reach 8R: Pond 1 Lateral

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Page 76

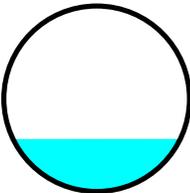
Summary for Reach 10R: Private Road A 1

Inflow Area = 2.982 ac, 49.20% Impervious, Inflow Depth = 1.88" for 10-Year event
Inflow = 0.48 cfs @ 8.82 hrs, Volume= 0.467 af
Outflow = 0.48 cfs @ 8.83 hrs, Volume= 0.467 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.60 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.83 fps, Avg. Travel Time= 0.4 min

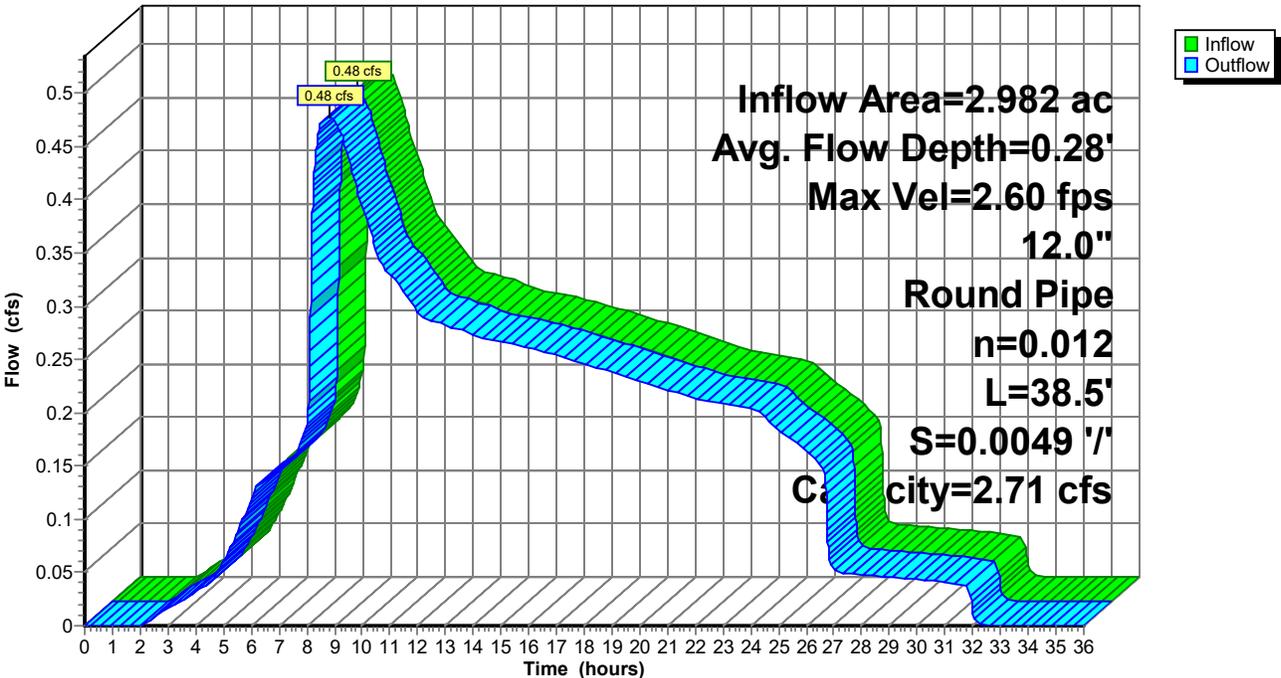
Peak Storage= 7 cf @ 8.83 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.71 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 38.5' Slope= 0.0049 '/'
Inlet Invert= 213.12', Outlet Invert= 212.93'



Reach 10R: Private Road A 1

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Page 77

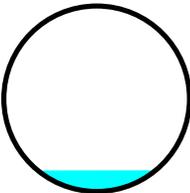
Summary for Reach 11R: Pond 2 Lateral

Inflow Area = 0.714 ac, 71.57% Impervious, Inflow Depth = 2.42" for 10-Year event
Inflow = 0.08 cfs @ 12.70 hrs, Volume= 0.144 af
Outflow = 0.08 cfs @ 12.73 hrs, Volume= 0.144 af, Atten= 0%, Lag= 1.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.53 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.36 fps, Avg. Travel Time= 1.2 min

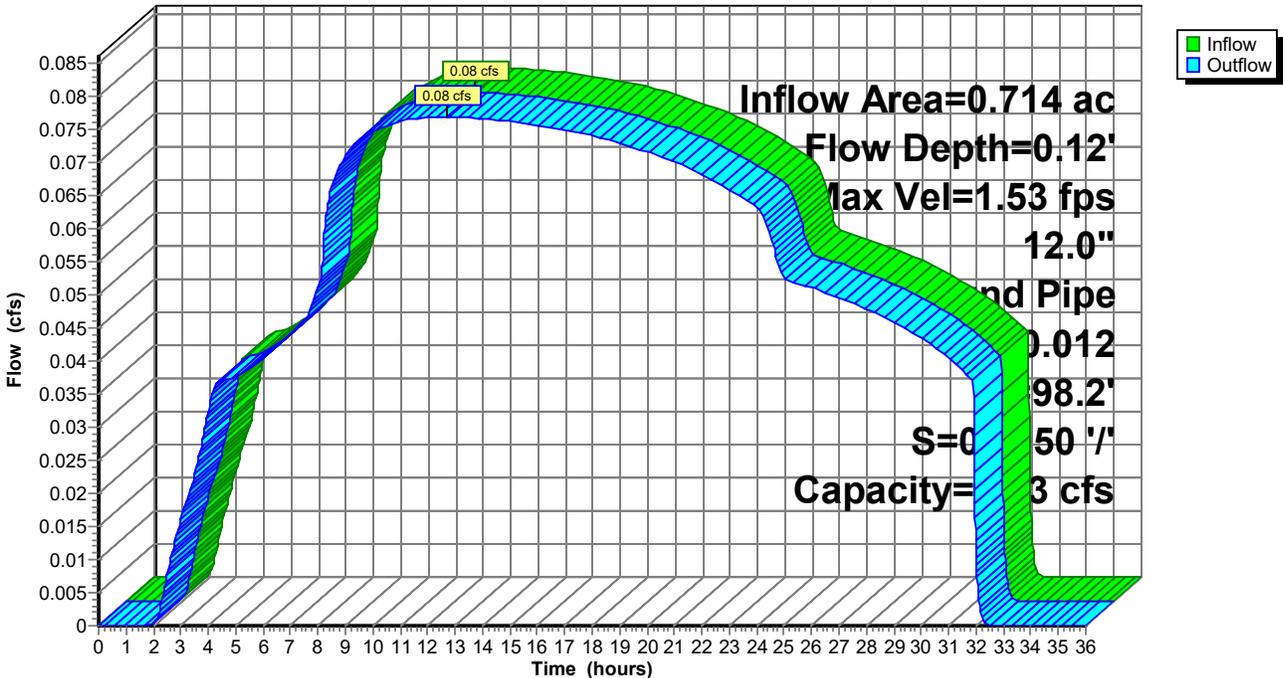
Peak Storage= 5 cf @ 12.71 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012 PVC, smooth interior
Length= 98.2' Slope= 0.0050 '/'
Inlet Invert= 213.81', Outlet Invert= 213.32'



Reach 11R: Pond 2 Lateral

Hydrograph



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Page 78

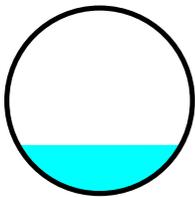
Summary for Reach 13R: Pond 3 Lateral

Inflow Area = 2.268 ac, 42.16% Impervious, Inflow Depth = 1.71" for 10-Year event
 Inflow = 0.41 cfs @ 8.54 hrs, Volume= 0.323 af
 Outflow = 0.41 cfs @ 8.60 hrs, Volume= 0.323 af, Atten= 0%, Lag= 3.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.50 fps, Min. Travel Time= 2.0 min
 Avg. Velocity = 1.82 fps, Avg. Travel Time= 2.7 min

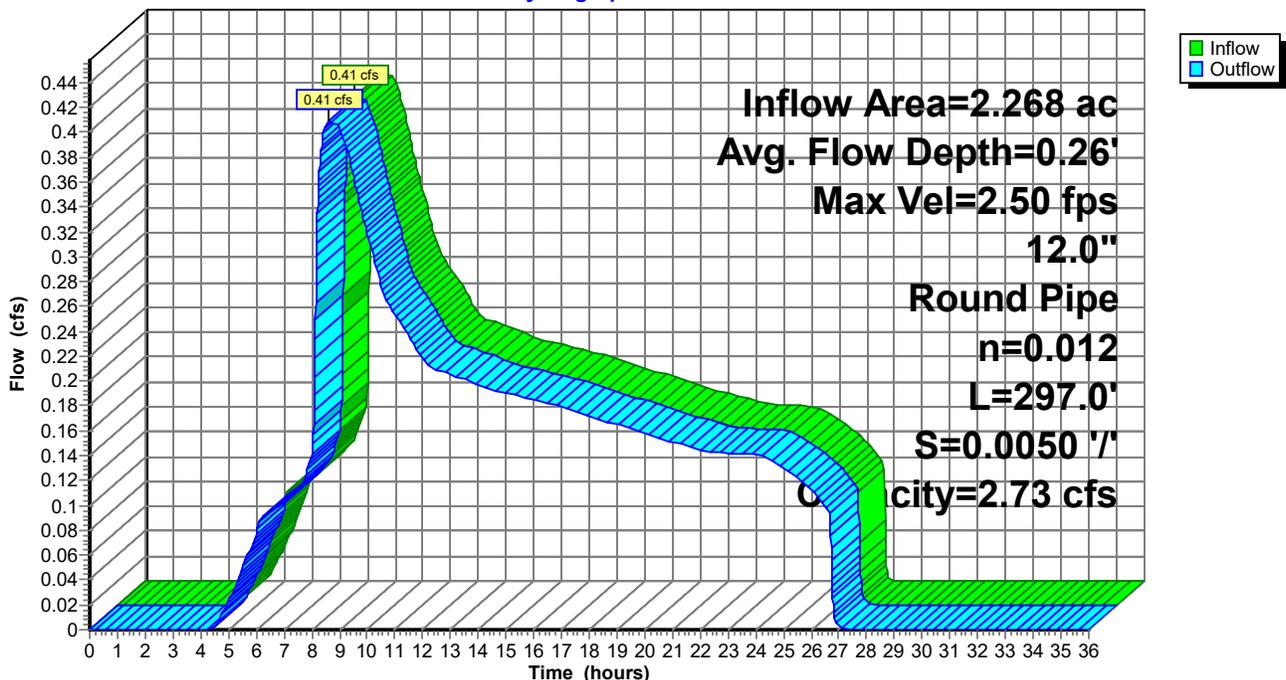
Peak Storage= 49 cf @ 8.57 hrs
 Average Depth at Peak Storage= 0.26'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 297.0' Slope= 0.0050 '/'
 Inlet Invert= 214.81', Outlet Invert= 213.32'



Reach 13R: Pond 3 Lateral

Hydrograph



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Page 79

Summary for Pond 2P: WQ Facility 1

Inflow Area = 0.246 ac, 84.20% Impervious, Inflow Depth = 2.71" for 10-Year event
 Inflow = 0.17 cfs @ 7.97 hrs, Volume= 0.056 af
 Outflow = 0.17 cfs @ 7.99 hrs, Volume= 0.052 af, Atten= 0%, Lag= 1.1 min
 Discarded = 0.00 cfs @ 4.74 hrs, Volume= 0.007 af
 Primary = 0.17 cfs @ 7.99 hrs, Volume= 0.044 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 214.93' @ 7.99 hrs Surf.Area= 0.014 ac Storage= 0.009 af

Plug-Flow detention time= 175.8 min calculated for 0.051 af (93% of inflow)
 Center-of-Mass det. time= 124.4 min (836.9 - 712.5)

Volume	Invert	Avail.Storage	Storage Description
#1	210.88'	0.002 af	4.00'W x 50.00'L x 1.00'H Gravel Storage 0.005 af Overall x 40.0% Voids
#2	211.88'	0.000 af	4.00'W x 50.00'L x 1.50'H Growing Medium 0.007 af Overall x 5.0% Voids
#3	213.38'	0.009 af	4.00'W x 50.00'L x 2.00'H Open Storage
		0.011 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	214.88'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	210.88'	0.200 in/hr Exfiltration over Surface area
#3	Primary	214.35'	1.9" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.00 cfs @ 4.74 hrs HW=213.38' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.17 cfs @ 7.99 hrs HW=214.93' (Free Discharge)

↑**1=Orifice/Grate** (Weir Controls 0.10 cfs @ 0.70 fps)

↑**3=Orifice/Grate** (Orifice Controls 0.07 cfs @ 3.39 fps)

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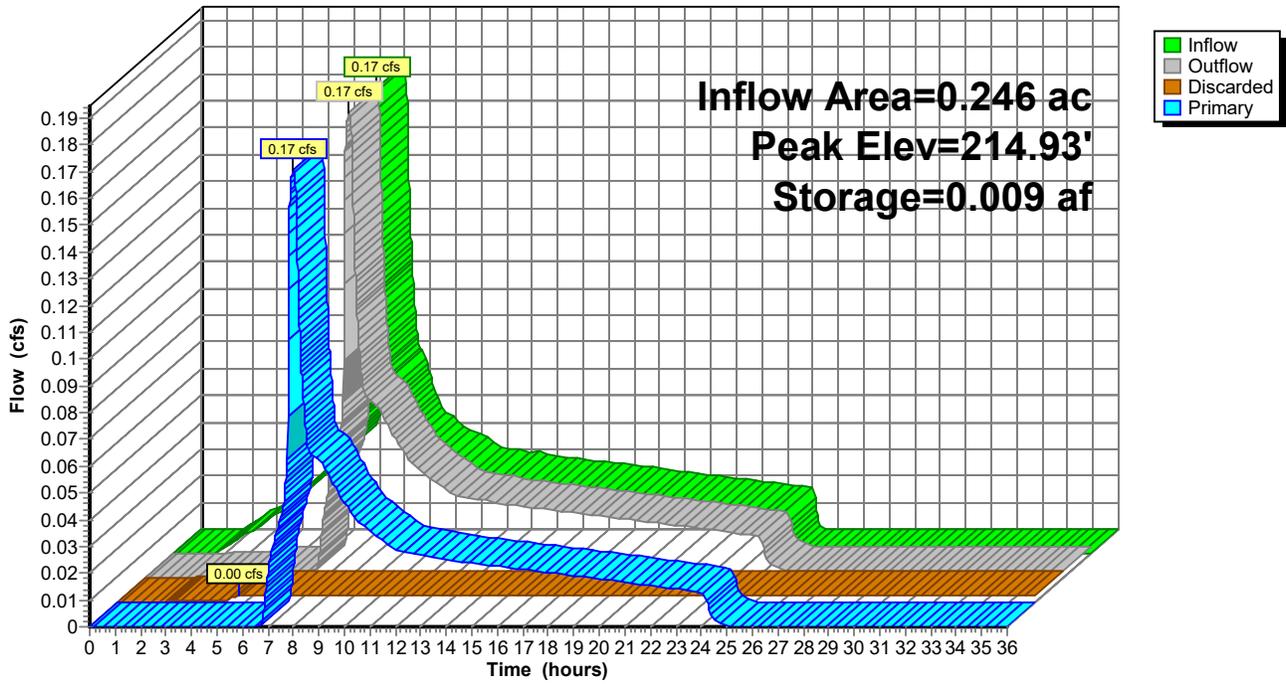
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Page 80

Pond 2P: WQ Facility 1

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Page 81

Summary for Pond 3P: WQ Facility 2

Inflow Area = 0.241 ac, 81.80% Impervious, Inflow Depth = 2.71" for 10-Year event
 Inflow = 0.17 cfs @ 7.97 hrs, Volume= 0.054 af
 Outflow = 0.17 cfs @ 7.99 hrs, Volume= 0.050 af, Atten= 0%, Lag= 1.1 min
 Discarded = 0.00 cfs @ 4.77 hrs, Volume= 0.007 af
 Primary = 0.17 cfs @ 7.99 hrs, Volume= 0.043 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 216.41' @ 7.99 hrs Surf.Area= 0.014 ac Storage= 0.009 af

Plug-Flow detention time= 178.0 min calculated for 0.050 af (93% of inflow)
 Center-of-Mass det. time= 127.0 min (839.5 - 712.5)

Volume	Invert	Avail.Storage	Storage Description
#1	212.36'	0.002 af	4.00'W x 50.00'L x 1.00'H Gravel Storage 0.005 af Overall x 40.0% Voids
#2	213.36'	0.000 af	4.00'W x 50.00'L x 1.50'H Growing Medium 0.007 af Overall x 5.0% Voids
#3	214.86'	0.009 af	4.00'W x 50.00'L x 2.00'H Open Storage
		0.011 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	216.36'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	212.36'	0.200 in/hr Exfiltration over Surface area
#3	Primary	215.80'	1.8" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.00 cfs @ 4.77 hrs HW=214.86' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.16 cfs @ 7.99 hrs HW=216.41' (Free Discharge)
 ↑**1=Orifice/Grate** (Weir Controls 0.10 cfs @ 0.70 fps)
 ↓**3=Orifice/Grate** (Orifice Controls 0.06 cfs @ 3.51 fps)

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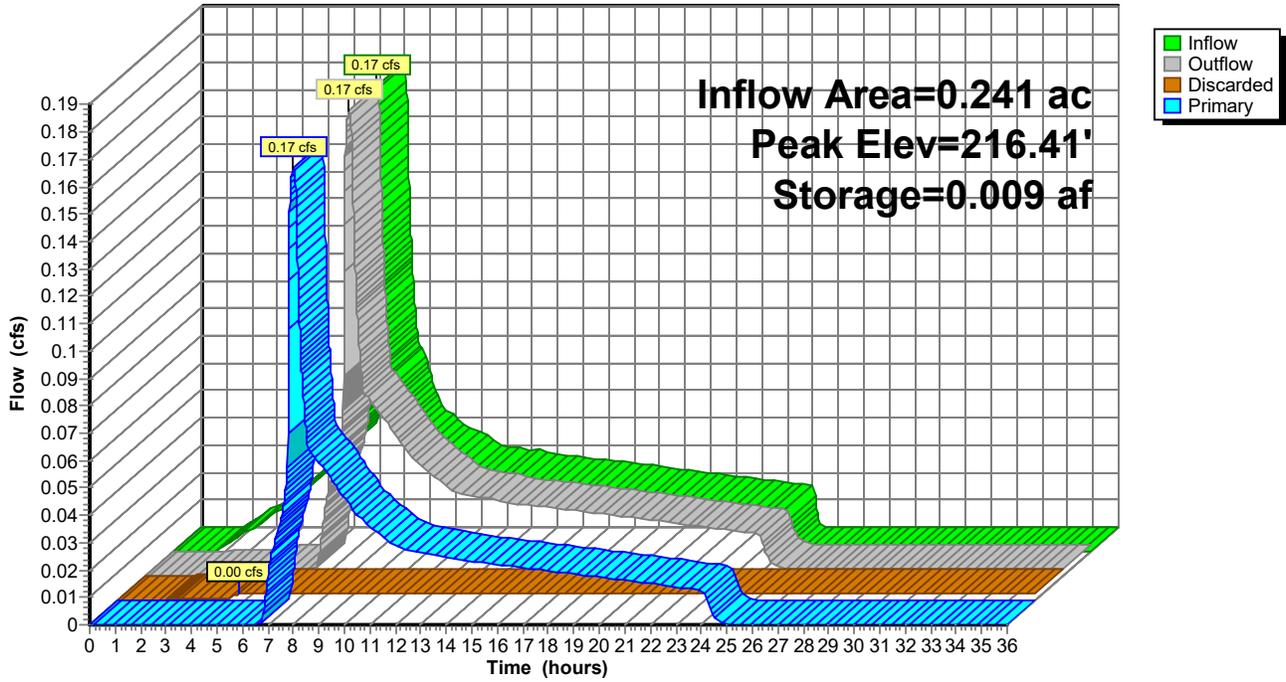
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Page 82

Pond 3P: WQ Facility 2

Hydrograph



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Page 83

Summary for Pond 4P: WQ/Det Facility 1

Inflow Area = 1.688 ac, 65.62% Impervious, Inflow Depth = 2.42" for 10-Year event
 Inflow = 1.05 cfs @ 7.99 hrs, Volume= 0.340 af
 Outflow = 0.66 cfs @ 8.24 hrs, Volume= 0.340 af, Atten= 37%, Lag= 15.2 min
 Discarded = 0.01 cfs @ 8.24 hrs, Volume= 0.002 af
 Primary = 0.66 cfs @ 8.24 hrs, Volume= 0.338 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 217.68' @ 8.24 hrs Surf.Area= 1,092 sf Storage= 1,393 cf

Plug-Flow detention time= 21.4 min calculated for 0.340 af (100% of inflow)
 Center-of-Mass det. time= 21.4 min (760.7 - 739.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	215.00'	3,375 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
215.00	115	0	0	115	
216.00	363	227	227	370	
217.00	751	545	773	769	
218.00	1,278	1,003	1,776	1,311	
219.00	1,944	1,599	3,375	1,996	

Device	Routing	Invert	Outlet Devices	
#1	Primary	213.26'	2.3" Vert. Orifice/Grate C= 0.600	
#2	Primary	218.25'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	215.00'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	217.15'	5.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.01 cfs @ 8.24 hrs HW=217.68' (Free Discharge)
 ↑**3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.66 cfs @ 8.24 hrs HW=217.68' (Free Discharge)
 ↑**1=Orifice/Grate** (Orifice Controls 0.29 cfs @ 10.01 fps)
 ↓**2=Orifice/Grate** (Controls 0.00 cfs)
 ↓**4=Orifice/Grate** (Orifice Controls 0.37 cfs @ 2.72 fps)

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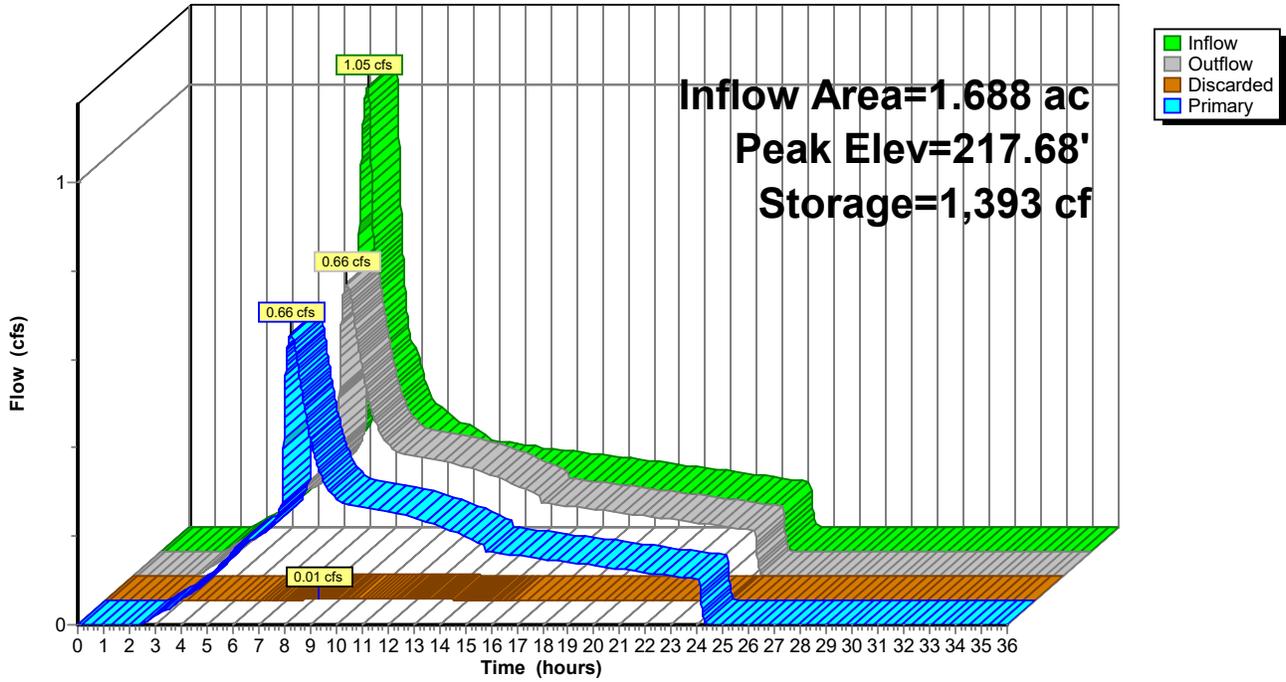
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Page 84

Pond 4P: WQ/Det Facility 1

Hydrograph



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Page 85

Summary for Pond 5P: WQ/Det Facility 2

Inflow Area = 0.714 ac, 71.57% Impervious, Inflow Depth = 2.61" for 10-Year event
 Inflow = 0.48 cfs @ 7.97 hrs, Volume= 0.155 af
 Outflow = 0.08 cfs @ 12.70 hrs, Volume= 0.155 af, Atten= 83%, Lag= 283.6 min
 Discarded = 0.01 cfs @ 12.70 hrs, Volume= 0.011 af
 Primary = 0.08 cfs @ 12.70 hrs, Volume= 0.144 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 218.69' @ 12.70 hrs Surf.Area= 1,468 sf Storage= 2,052 cf

Plug-Flow detention time= 316.7 min calculated for 0.155 af (100% of inflow)
 Center-of-Mass det. time= 316.7 min (1,038.5 - 721.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	216.00'	4,610 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
216.00	268	0	0	268	
217.00	561	406	406	572	
218.00	1,031	784	1,190	1,055	
219.00	1,686	1,345	2,535	1,726	
220.00	2,491	2,075	4,610	2,551	

Device	Routing	Invert	Outlet Devices	
#1	Primary	214.01'	1.0" Vert. Orifice/Grate C= 0.600	
#2	Primary	219.25'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	216.00'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	218.05'	1.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.01 cfs @ 12.70 hrs HW=218.69' (Free Discharge)

↑ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.08 cfs @ 12.70 hrs HW=218.69' (Free Discharge)

↑ **1=Orifice/Grate** (Orifice Controls 0.06 cfs @ 10.37 fps)

↑ **2=Orifice/Grate** (Controls 0.00 cfs)

↑ **4=Orifice/Grate** (Orifice Controls 0.02 cfs @ 3.73 fps)

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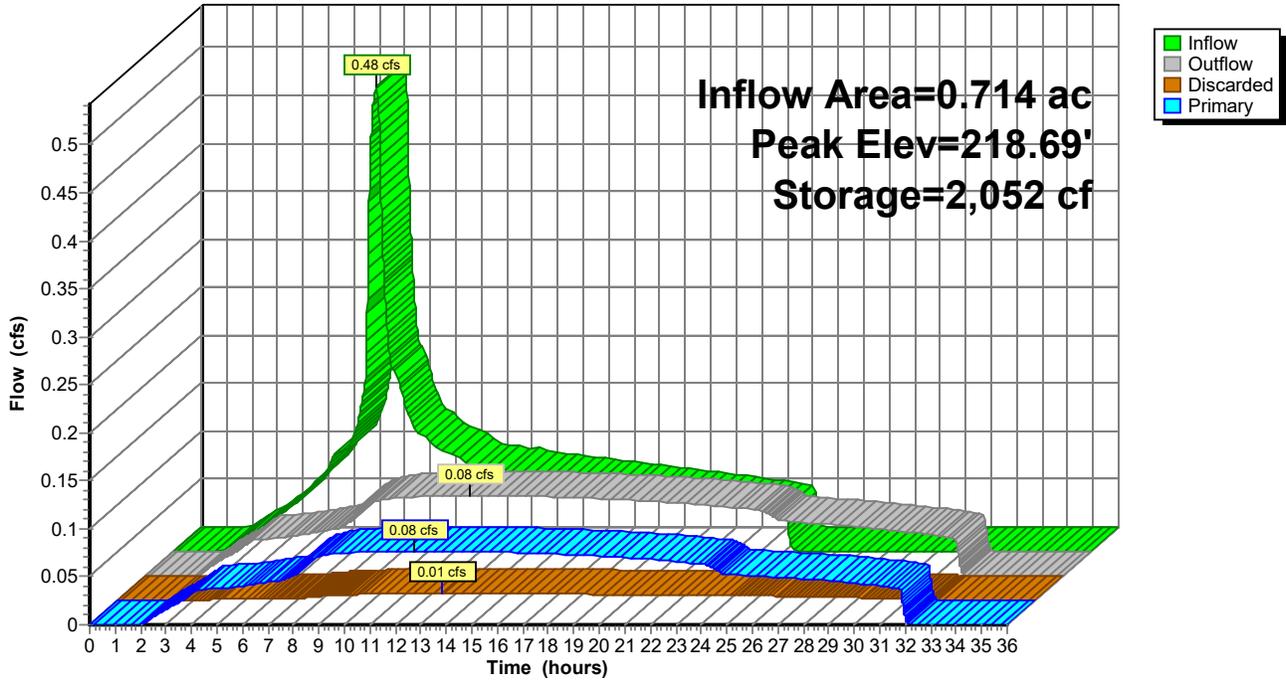
Type IA 24-hr 10-Year Rainfall=3.37"

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Page 86

Pond 5P: WQ/Det Facility 2

Hydrograph



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Page 87

Summary for Pond 6P: WQ/Det Facility 3

Inflow Area = 2.268 ac, 42.16% Impervious, Inflow Depth = 1.75" for 10-Year event
 Inflow = 0.94 cfs @ 8.03 hrs, Volume= 0.331 af
 Outflow = 0.41 cfs @ 8.54 hrs, Volume= 0.331 af, Atten= 56%, Lag= 30.9 min
 Discarded = 0.01 cfs @ 8.54 hrs, Volume= 0.008 af
 Primary = 0.41 cfs @ 8.54 hrs, Volume= 0.323 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 219.14' @ 8.54 hrs Surf.Area= 1,250 sf Storage= 1,824 cf

Plug-Flow detention time= 100.5 min calculated for 0.331 af (100% of inflow)
 Center-of-Mass det. time= 100.5 min (899.1 - 798.6)

Volume	Invert	Avail.Storage	Storage Description		
#1	216.50'	4,035 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
216.50	244	0	0	244	
217.50	554	389	389	564	
218.50	941	739	1,128	966	
219.50	1,444	1,184	2,311	1,487	
220.50	2,019	1,723	4,035	2,086	

Device	Routing	Invert	Outlet Devices	
#1	Primary	215.01'	1.7" Vert. Orifice/Grate C= 0.600	
#2	Primary	219.75'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	216.50'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	218.60'	4.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.01 cfs @ 8.54 hrs HW=219.14' (Free Discharge)
 ↑ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.41 cfs @ 8.54 hrs HW=219.14' (Free Discharge)
 ↑ **1=Orifice/Grate** (Orifice Controls 0.15 cfs @ 9.70 fps)
 ↓ **2=Orifice/Grate** (Controls 0.00 cfs)
 ↓ **4=Orifice/Grate** (Orifice Controls 0.26 cfs @ 2.93 fps)

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Type IA 24-hr 10-Year Rainfall=3.37"

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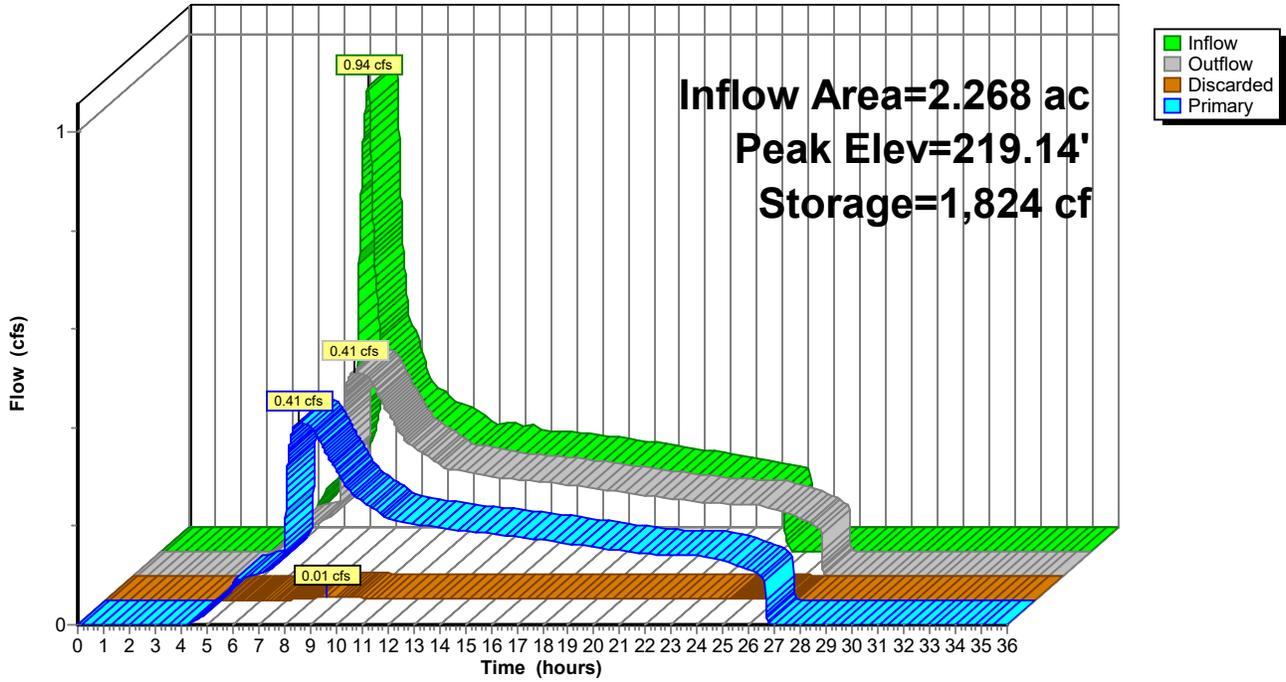
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Page 88

Pond 6P: WQ/Det Facility 3

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Page 89

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: Franklin Ave 1	Runoff Area=10,733 sf 84.20% Impervious Runoff Depth=3.27" Flow Length=242' Slope=0.0200 '/' Tc=10.0 min CN=94 Runoff=0.21 cfs 0.067 af
Subcatchment 3S: Franklin Ave 2	Runoff Area=10,498 sf 81.80% Impervious Runoff Depth=3.27" Flow Length=274' Slope=0.0200 '/' Tc=10.0 min CN=94 Runoff=0.20 cfs 0.066 af
Subcatchment 4S: Phase 1 & 2	Runoff Area=73,511 sf 65.62% Impervious Runoff Depth=2.96" Flow Length=500' Tc=10.2 min CN=91 Runoff=1.30 cfs 0.416 af
Subcatchment 5S: Phase 3	Runoff Area=31,101 sf 71.57% Impervious Runoff Depth=3.16" Flow Length=360' Tc=10.0 min CN=93 Runoff=0.59 cfs 0.188 af
Subcatchment 6S: Phase 4 & 5	Runoff Area=98,814 sf 42.16% Impervious Runoff Depth=2.23" Flow Length=422' Tc=10.0 min CN=83 Runoff=1.24 cfs 0.422 af
Subcatchment 7S: Wetland	Runoff Area=76,610 sf 0.00% Impervious Runoff Depth=0.99" Flow Length=365' Slope=0.0200 '/' Tc=27.9 min CN=65 Runoff=0.21 cfs 0.146 af
Reach 1R: EX SE Shore Drive	Avg. Flow Depth=0.71' Max Vel=3.19 fps Inflow=1.90 cfs 1.256 af 12.0" Round Pipe n=0.012 L=161.8' S=0.0033 '/' Capacity=2.23 cfs Outflow=1.90 cfs 1.256 af
Reach 2R: Franklin Avenue 3	Avg. Flow Depth=0.57' Max Vel=3.67 fps Inflow=1.69 cfs 1.110 af 12.0" Round Pipe n=0.012 L=147.0' S=0.0050 '/' Capacity=2.74 cfs Outflow=1.69 cfs 1.110 af
Reach 4R: Franklin Avenue 2	Avg. Flow Depth=0.54' Max Vel=3.57 fps Inflow=1.55 cfs 1.055 af 12.0" Round Pipe n=0.012 L=98.9' S=0.0050 '/' Capacity=2.72 cfs Outflow=1.55 cfs 1.055 af
Reach 5R: Franklin Avenue 1	Avg. Flow Depth=0.18' Max Vel=2.04 fps Inflow=0.20 cfs 0.054 af 12.0" Round Pipe n=0.012 L=157.1' S=0.0050 '/' Capacity=2.74 cfs Outflow=0.20 cfs 0.054 af
Reach 7R: Private Road A 2	Avg. Flow Depth=0.51' Max Vel=3.50 fps Inflow=1.43 cfs 1.001 af 12.0" Round Pipe n=0.012 L=132.9' S=0.0050 '/' Capacity=2.72 cfs Outflow=1.43 cfs 1.001 af
Reach 8R: Pond 1 Lateral	Avg. Flow Depth=0.38' Max Vel=3.04 fps Inflow=0.82 cfs 0.413 af 12.0" Round Pipe n=0.012 L=26.1' S=0.0050 '/' Capacity=2.72 cfs Outflow=0.82 cfs 0.413 af
Reach 10R: Private Road A 1	Avg. Flow Depth=0.33' Max Vel=2.81 fps Inflow=0.63 cfs 0.588 af 12.0" Round Pipe n=0.012 L=38.5' S=0.0049 '/' Capacity=2.71 cfs Outflow=0.63 cfs 0.588 af
Reach 11R: Pond 2 Lateral	Avg. Flow Depth=0.12' Max Vel=1.58 fps Inflow=0.09 cfs 0.174 af 12.0" Round Pipe n=0.012 L=98.2' S=0.0050 '/' Capacity=2.73 cfs Outflow=0.09 cfs 0.174 af
Reach 13R: Pond 3 Lateral	Avg. Flow Depth=0.30' Max Vel=2.72 fps Inflow=0.55 cfs 0.414 af 12.0" Round Pipe n=0.012 L=297.0' S=0.0050 '/' Capacity=2.73 cfs Outflow=0.55 cfs 0.414 af
Pond 2P: WQ Facility 1	Peak Elev=214.94' Storage=0.009 af Inflow=0.21 cfs 0.067 af Discarded=0.00 cfs 0.007 af Primary=0.21 cfs 0.055 af Outflow=0.21 cfs 0.063 af

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Page 90

Pond 3P: WQ Facility 2 Peak Elev=216.42' Storage=0.009 af Inflow=0.20 cfs 0.066 af
Discarded=0.00 cfs 0.007 af Primary=0.20 cfs 0.054 af Outflow=0.20 cfs 0.062 af

Pond 4P: WQ/Det Facility 1 Peak Elev=218.00' Storage=1,774 cf Inflow=1.30 cfs 0.416 af
Discarded=0.01 cfs 0.003 af Primary=0.82 cfs 0.413 af Outflow=0.83 cfs 0.416 af

Pond 5P: WQ/Det Facility 2 Peak Elev=219.12' Storage=2,739 cf Inflow=0.59 cfs 0.188 af
Discarded=0.01 cfs 0.015 af Primary=0.09 cfs 0.174 af Outflow=0.09 cfs 0.188 af

Pond 6P: WQ/Det Facility 3 Peak Elev=219.62' Storage=2,483 cf Inflow=1.24 cfs 0.422 af
Discarded=0.01 cfs 0.008 af Primary=0.55 cfs 0.414 af Outflow=0.56 cfs 0.422 af

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Page 91

Summary for Subcatchment 2S: Franklin Ave 1

Runoff = 0.21 cfs @ 7.97 hrs, Volume= 0.067 af, Depth= 3.27"

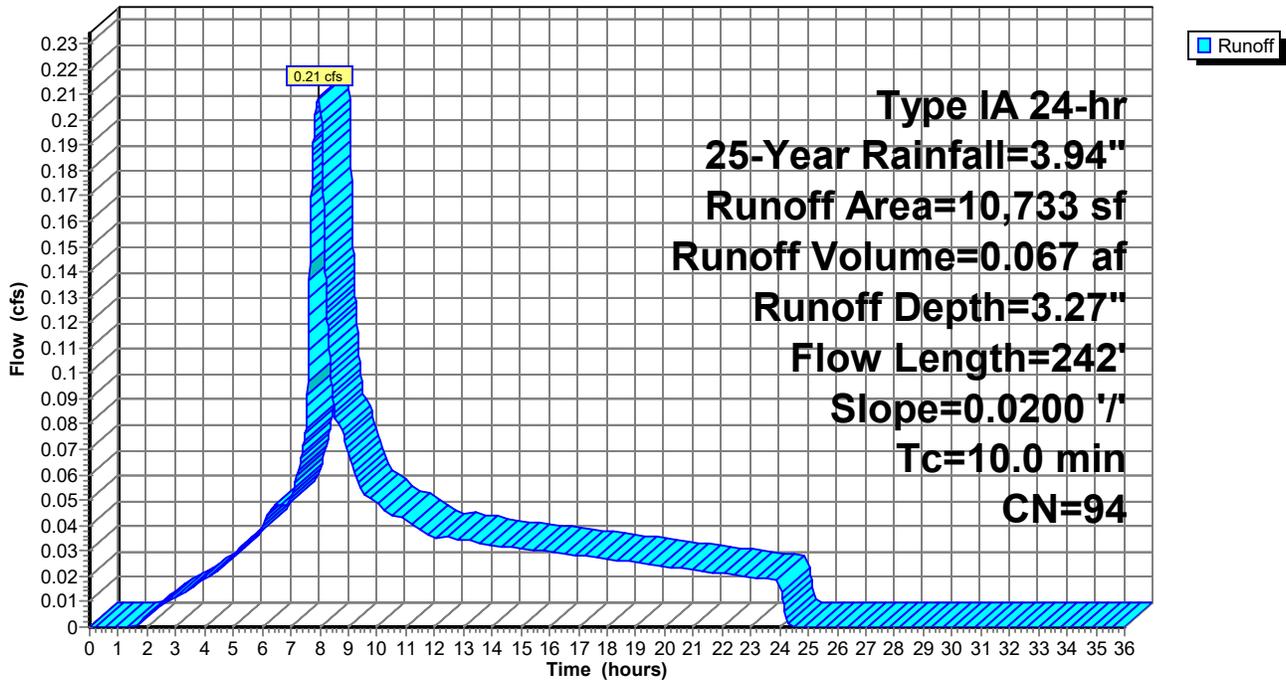
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-Year Rainfall=3.94"

Area (sf)	CN	Description
9,037	98	Paved roads w/curbs & sewers, HSG C
1,696	74	>75% Grass cover, Good, HSG C
10,733	94	Weighted Average
1,696	74	15.80% Pervious Area
9,037	98	84.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.0200	0.99		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
1.2	202	0.0200	2.87		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
1.9	242	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 2S: Franklin Ave 1

Hydrograph



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Page 92

Summary for Subcatchment 3S: Franklin Ave 2

Runoff = 0.20 cfs @ 7.97 hrs, Volume= 0.066 af, Depth= 3.27"

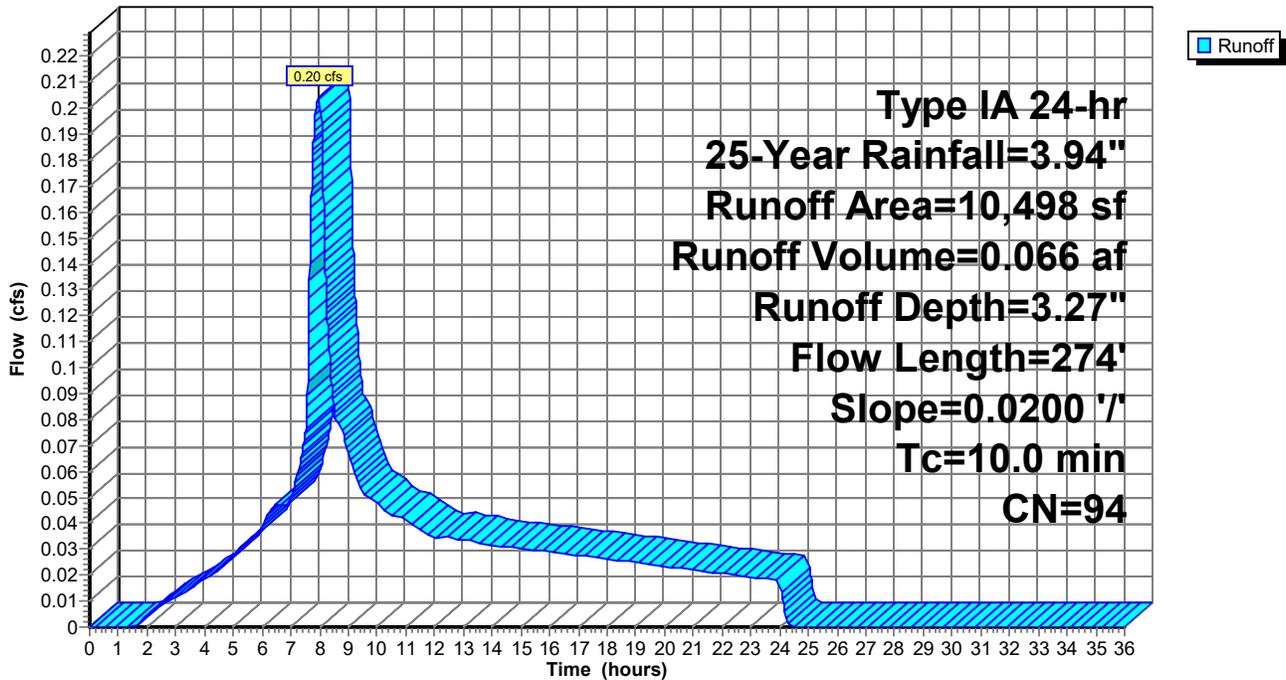
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-Year Rainfall=3.94"

Area (sf)	CN	Description
8,587	98	Paved roads w/curbs & sewers, HSG C
1,911	74	>75% Grass cover, Good, HSG C
10,498	94	Weighted Average
1,911	74	18.20% Pervious Area
8,587	98	81.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.0200	0.99		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
1.4	234	0.0200	2.87		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
2.1	274	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 3S: Franklin Ave 2

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Page 93

Summary for Subcatchment 4S: Phase 1 & 2

Runoff = 1.30 cfs @ 7.97 hrs, Volume= 0.416 af, Depth= 2.96"

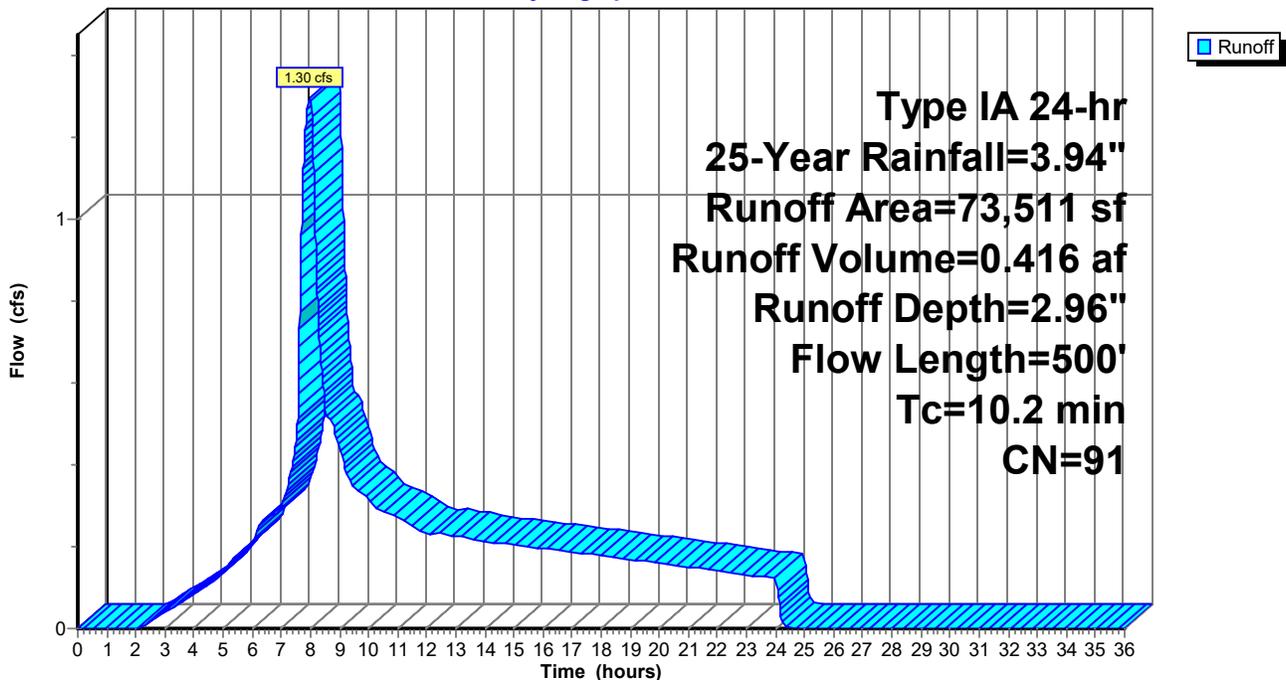
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-Year Rainfall=3.94"

Area (sf)	CN	Description
8,098	98	Paved parking, HSG C
1,945	98	Water Surface, 0% imp, HSG C
61,755	90	1/8 acre lots, 65% imp, HSG C
1,713	74	>75% Grass cover, Good, HSG C
73,511	91	Weighted Average
25,272	77	34.38% Pervious Area
48,239	98	65.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	20	0.0200	0.05		Sheet Flow, Sheet Grass: Bermuda n= 0.410 P2= 2.40"
1.3	80	0.0200	0.99		Shallow Concentrated Flow, SCF Short Grass Pasture Kv= 7.0 fps
1.9	400	0.0050	3.47	2.73	Pipe Channel, To Pond 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
10.2	500	Total			

Subcatchment 4S: Phase 1 & 2

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Page 94

Summary for Subcatchment 5S: Phase 3

Runoff = 0.59 cfs @ 7.97 hrs, Volume= 0.188 af, Depth= 3.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-Year Rainfall=3.94"

Area (sf)	CN	Description
11,947	98	Paved parking, HSG C
2,490	98	Water Surface, 0% imp, HSG C
2,227	98	Unconnected pavement, HSG C
8,084	98	Roofs, HSG C
6,353	74	>75% Grass cover, Good, HSG C
31,101	93	Weighted Average
8,843	81	28.43% Pervious Area
22,258	98	71.57% Impervious Area
2,227		10.01% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	20	0.0200	0.86		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
0.3	60	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	280	0.0050	3.47	2.73	Pipe Channel, Pipe 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.0	360	Total, Increased to minimum Tc = 10.0 min			

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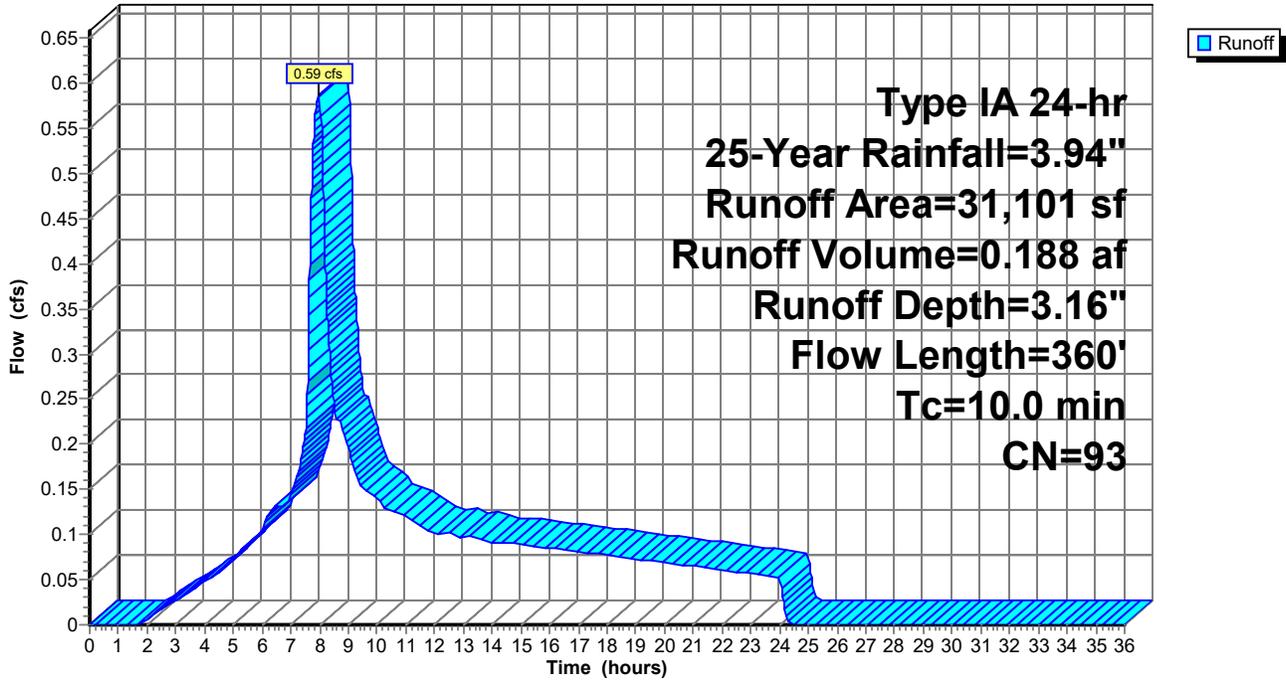
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Page 95

Subcatchment 5S: Phase 3

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Page 96

Summary for Subcatchment 6S: Phase 4 & 5

Runoff = 1.24 cfs @ 8.01 hrs, Volume= 0.422 af, Depth= 2.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-Year Rainfall=3.94"

Area (sf)	CN	Description
2,019	98	Water Surface, 0% imp, HSG C
11,637	98	Roofs, HSG C
* 30,024	98	Parking Lot, Sidewalk, Unconnected Roofs
55,134	72	Woods/grass comb., Good, HSG C
98,814	83	Weighted Average
57,153	73	57.84% Pervious Area
41,661	98	42.16% Impervious Area
30,024		72.07% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	20	0.0200	0.05		Sheet Flow, Sheet Grass: Bermuda n= 0.410 P2= 2.40"
1.3	80	0.0200	0.99		Shallow Concentrated Flow, SCF Short Grass Pasture Kv= 7.0 fps
1.5	322	0.0050	3.47	2.73	Pipe Channel, To Pond 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
9.8	422	Total, Increased to minimum Tc = 10.0 min			

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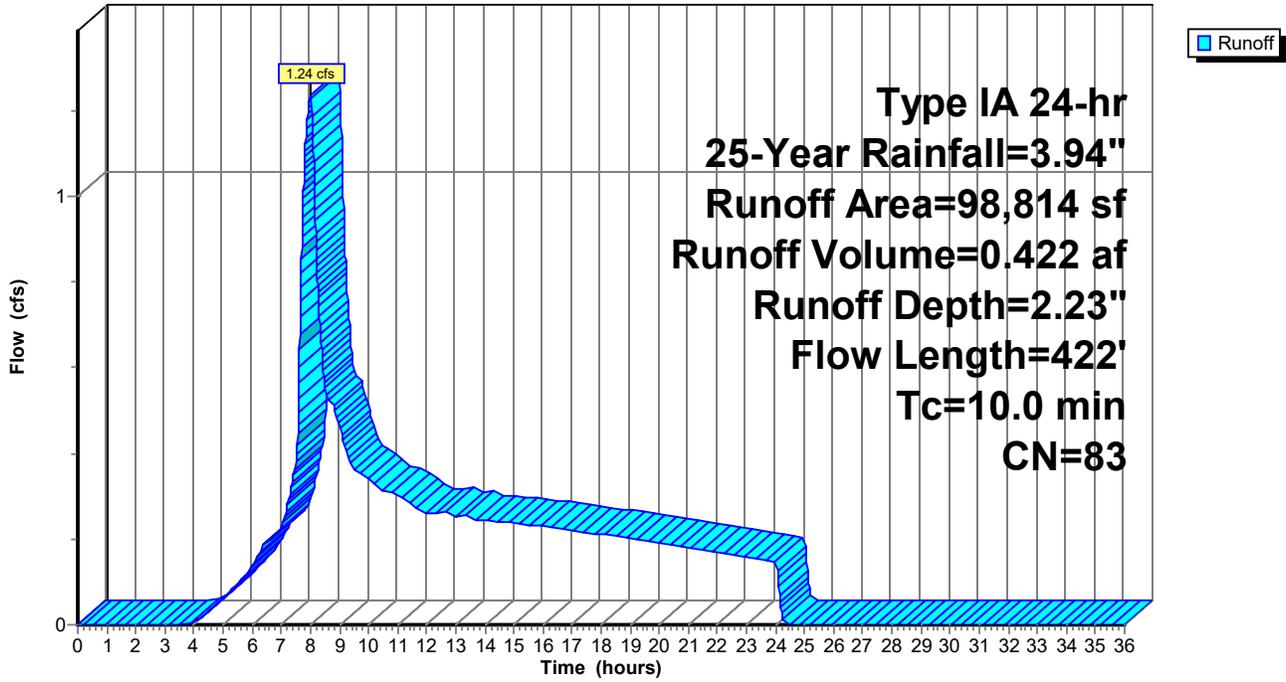
Type IA 24-hr 25-Year Rainfall=3.94"

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Page 97

Subcatchment 6S: Phase 4 & 5

Hydrograph



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Page 98

Summary for Subcatchment 7S: Wetland

Runoff = 0.21 cfs @ 8.31 hrs, Volume= 0.146 af, Depth= 0.99"

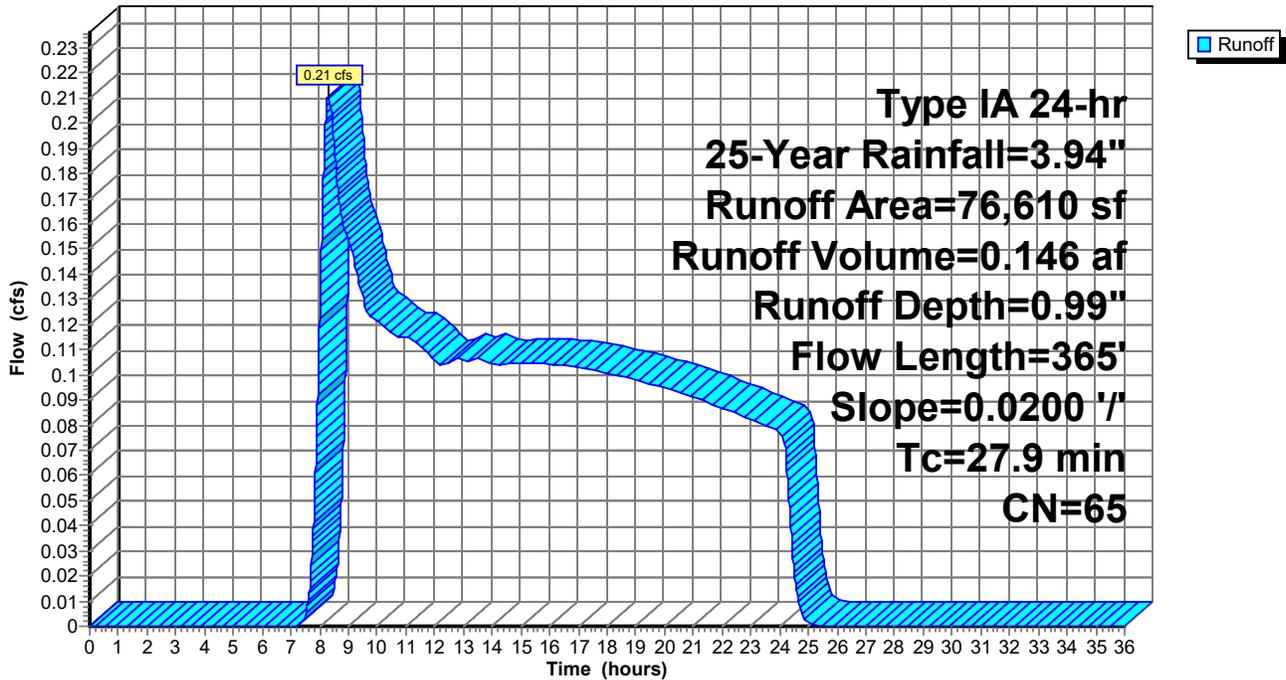
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-Year Rainfall=3.94"

Area (sf)	CN	Description
76,610	65	Brush, Good, HSG C
76,610	65	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	150	0.0200	0.11		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 2.40"
5.1	215	0.0200	0.71		Shallow Concentrated Flow, SCF Woodland Kv= 5.0 fps
27.9	365	Total			

Subcatchment 7S: Wetland

Hydrograph



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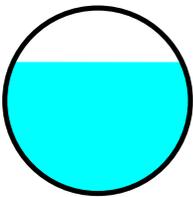
Summary for Reach 1R: EX SE Shore Drive

Inflow Area = 6.916 ac, 43.08% Impervious, Inflow Depth = 2.18" for 25-Year event
 Inflow = 1.90 cfs @ 8.22 hrs, Volume= 1.256 af
 Outflow = 1.90 cfs @ 8.25 hrs, Volume= 1.256 af, Atten= 0%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.19 fps, Min. Travel Time= 0.8 min
 Avg. Velocity = 1.94 fps, Avg. Travel Time= 1.4 min

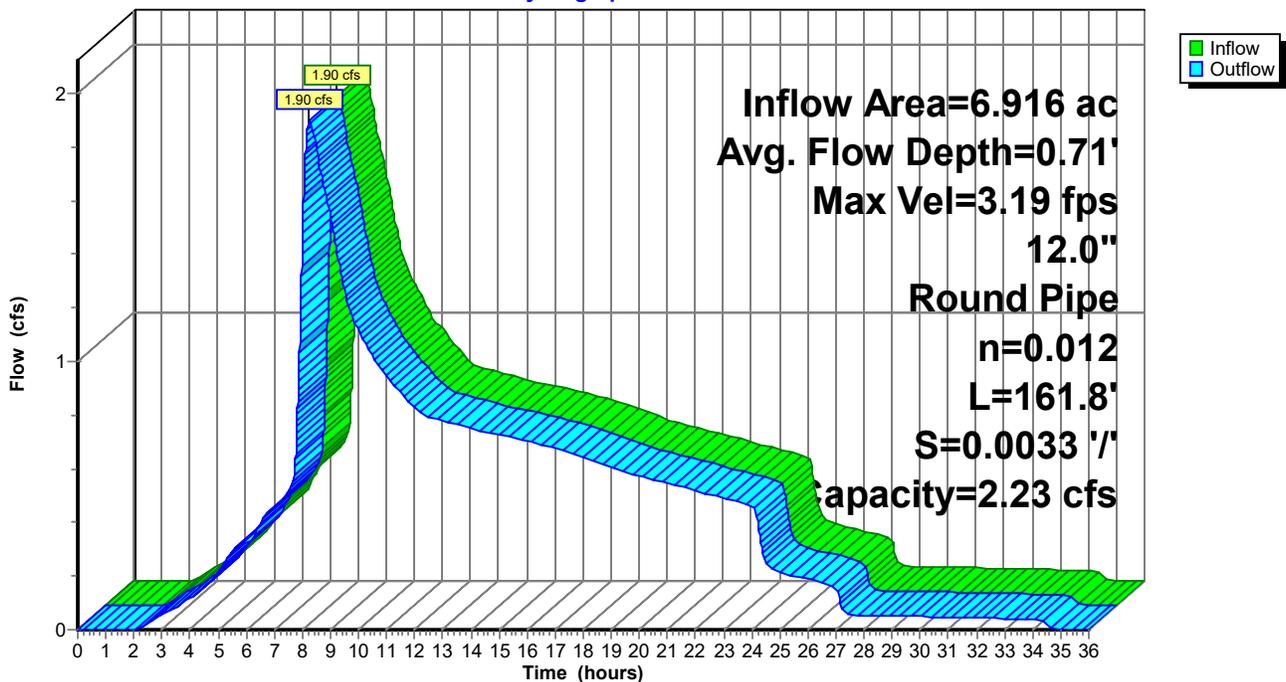
Peak Storage= 96 cf @ 8.24 hrs
 Average Depth at Peak Storage= 0.71'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.23 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 161.8' Slope= 0.0033 '/'
 Inlet Invert= 210.64', Outlet Invert= 210.10'



Reach 1R: EX SE Shore Drive

Hydrograph



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Page 100

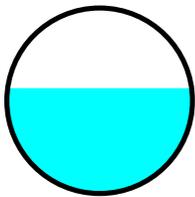
Summary for Reach 2R: Franklin Avenue 3

Inflow Area = 5.157 ac, 57.77% Impervious, Inflow Depth = 2.58" for 25-Year event
 Inflow = 1.69 cfs @ 8.18 hrs, Volume= 1.110 af
 Outflow = 1.69 cfs @ 8.20 hrs, Volume= 1.110 af, Atten= 0%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.67 fps, Min. Travel Time= 0.7 min
 Avg. Velocity = 2.20 fps, Avg. Travel Time= 1.1 min

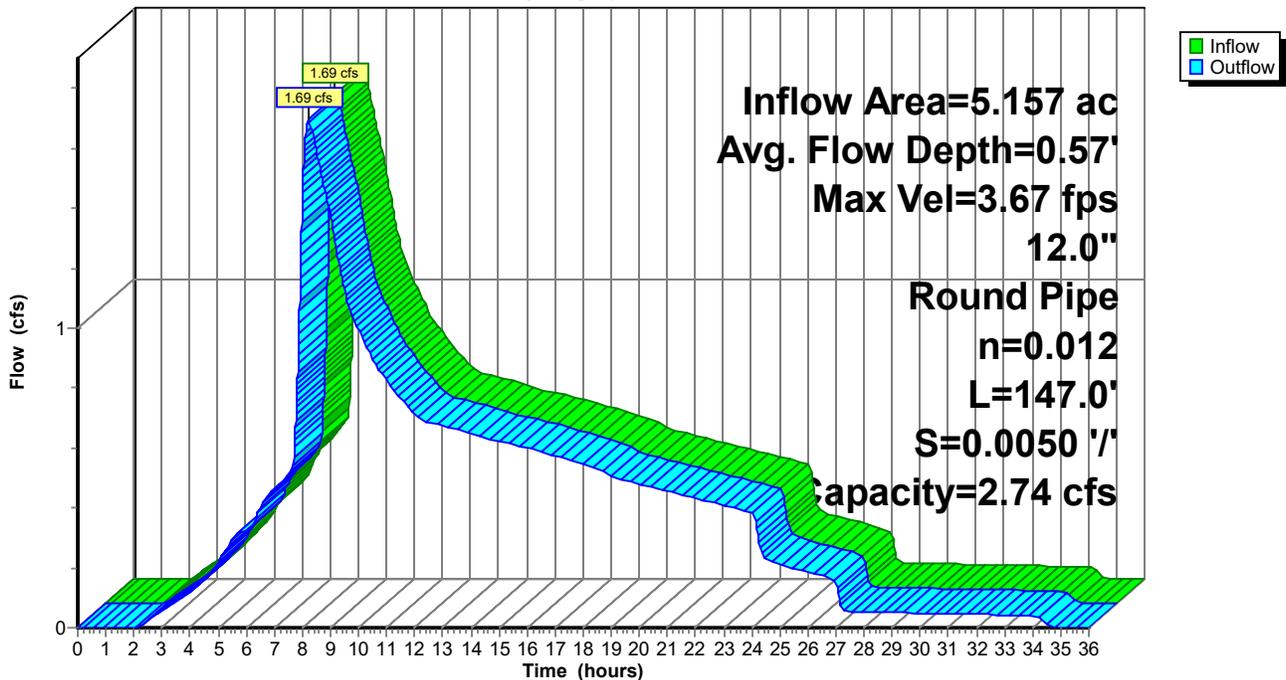
Peak Storage= 68 cf @ 8.19 hrs
 Average Depth at Peak Storage= 0.57'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.74 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 147.0' Slope= 0.0050 '/'
 Inlet Invert= 211.38', Outlet Invert= 210.64'



Reach 2R: Franklin Avenue 3

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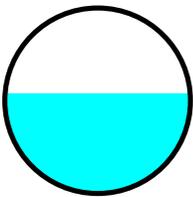
Summary for Reach 4R: Franklin Avenue 2

Inflow Area = 4.911 ac, 56.44% Impervious, Inflow Depth = 2.58" for 25-Year event
 Inflow = 1.55 cfs @ 8.24 hrs, Volume= 1.055 af
 Outflow = 1.55 cfs @ 8.25 hrs, Volume= 1.055 af, Atten= 0%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.57 fps, Min. Travel Time= 0.5 min
 Avg. Velocity = 2.17 fps, Avg. Travel Time= 0.8 min

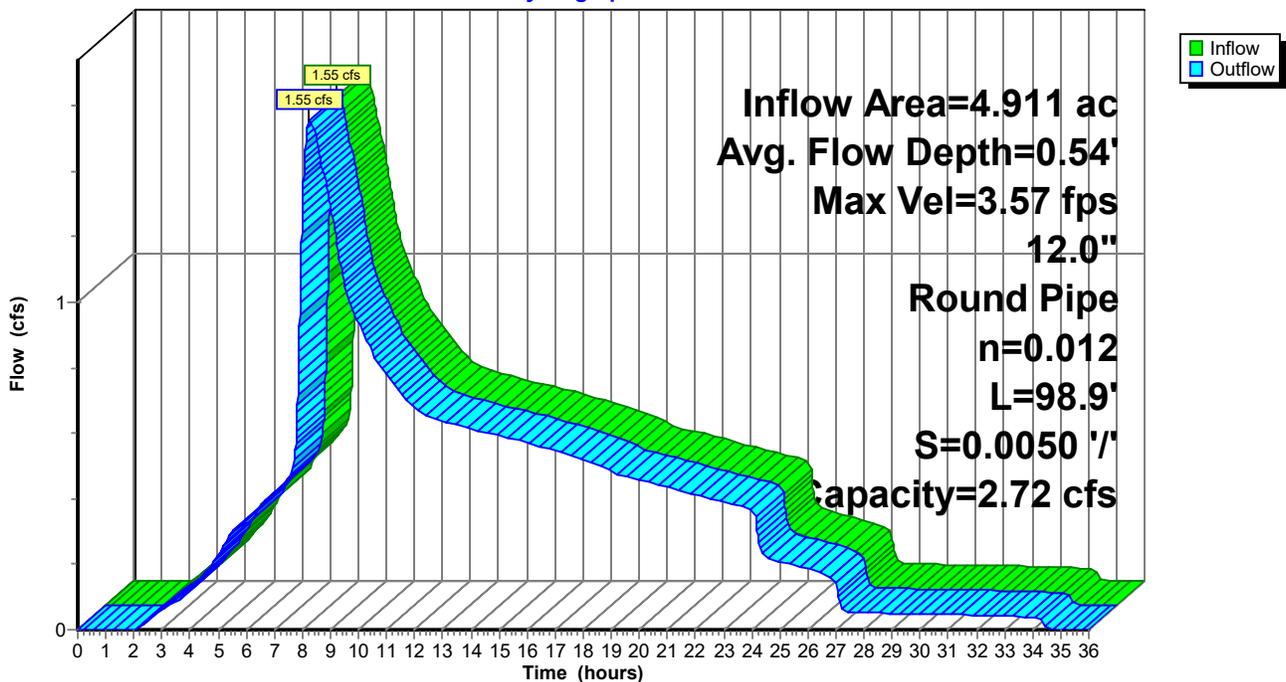
Peak Storage= 43 cf @ 8.24 hrs
 Average Depth at Peak Storage= 0.54'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 98.9' Slope= 0.0050 '/'
 Inlet Invert= 211.87', Outlet Invert= 211.38'



Reach 4R: Franklin Avenue 2

Hydrograph



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Type IA 24-hr 25-Year Rainfall=3.94"

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Page 102

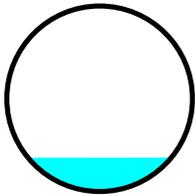
Summary for Reach 5R: Franklin Avenue 1

Inflow Area = 0.241 ac, 81.80% Impervious, Inflow Depth = 2.69" for 25-Year event
 Inflow = 0.20 cfs @ 7.97 hrs, Volume= 0.054 af
 Outflow = 0.20 cfs @ 8.01 hrs, Volume= 0.054 af, Atten= 0%, Lag= 2.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.04 fps, Min. Travel Time= 1.3 min
 Avg. Velocity = 1.13 fps, Avg. Travel Time= 2.3 min

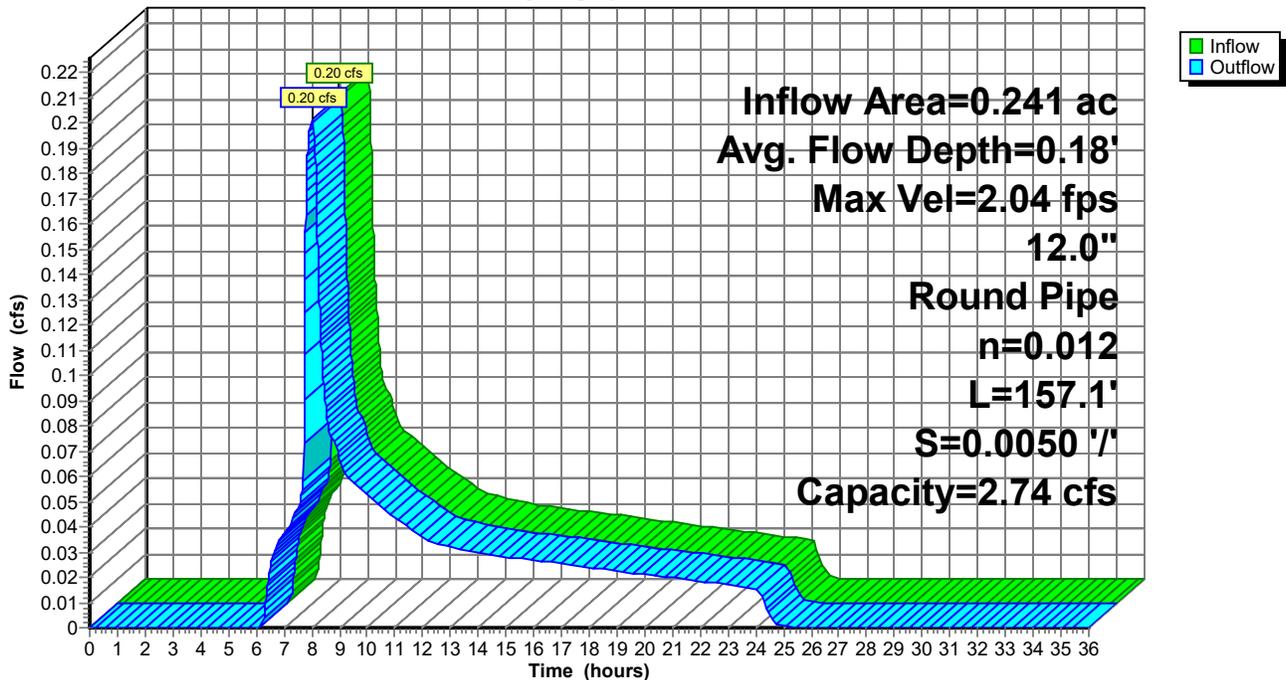
Peak Storage= 16 cf @ 7.99 hrs
 Average Depth at Peak Storage= 0.18'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.74 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 157.1' Slope= 0.0050 '/'
 Inlet Invert= 212.86', Outlet Invert= 212.07'



Reach 5R: Franklin Avenue 1

Hydrograph



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Page 103

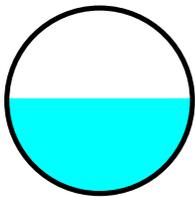
Summary for Reach 7R: Private Road A 2

Inflow Area = 4.670 ac, 55.13% Impervious, Inflow Depth = 2.57" for 25-Year event
 Inflow = 1.43 cfs @ 8.33 hrs, Volume= 1.001 af
 Outflow = 1.43 cfs @ 8.35 hrs, Volume= 1.001 af, Atten= 0%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.50 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 2.16 fps, Avg. Travel Time= 1.0 min

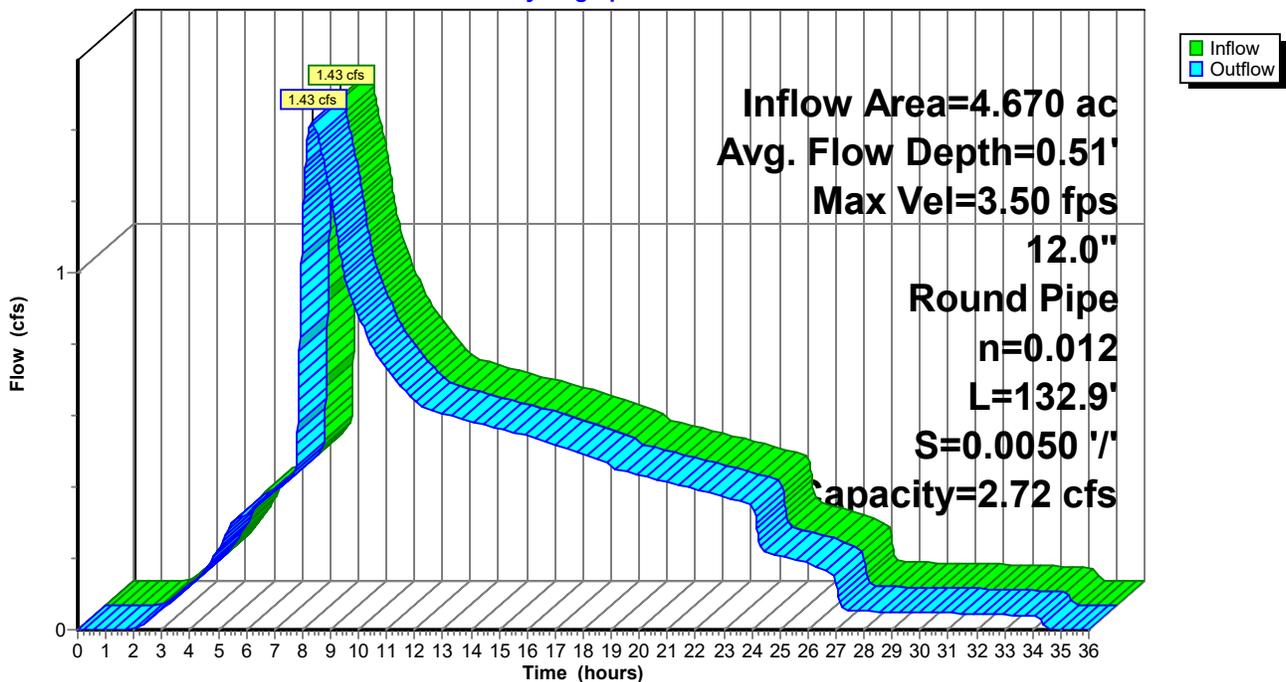
Peak Storage= 54 cf @ 8.34 hrs
 Average Depth at Peak Storage= 0.51'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 132.9' Slope= 0.0050 '/'
 Inlet Invert= 212.73', Outlet Invert= 212.07'



Reach 7R: Private Road A 2

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Page 104

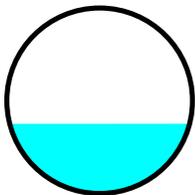
Summary for Reach 8R: Pond 1 Lateral

Inflow Area = 1.688 ac, 65.62% Impervious, Inflow Depth = 2.94" for 25-Year event
 Inflow = 0.82 cfs @ 8.23 hrs, Volume= 0.413 af
 Outflow = 0.82 cfs @ 8.24 hrs, Volume= 0.413 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.04 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 1.99 fps, Avg. Travel Time= 0.2 min

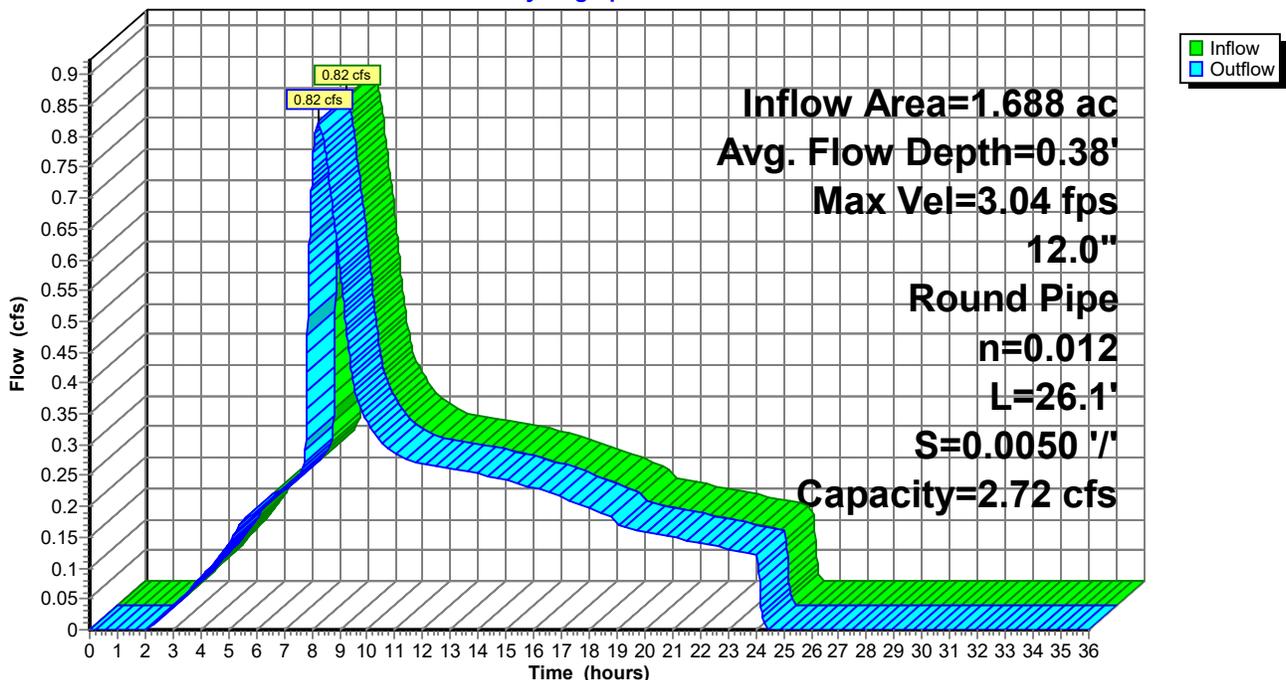
Peak Storage= 7 cf @ 8.23 hrs
 Average Depth at Peak Storage= 0.38'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 26.1' Slope= 0.0050 '/'
 Inlet Invert= 213.06', Outlet Invert= 212.93'



Reach 8R: Pond 1 Lateral

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Page 105

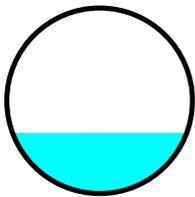
Summary for Reach 10R: Private Road A 1

Inflow Area = 2.982 ac, 49.20% Impervious, Inflow Depth = 2.36" for 25-Year event
 Inflow = 0.63 cfs @ 8.58 hrs, Volume= 0.588 af
 Outflow = 0.63 cfs @ 8.58 hrs, Volume= 0.588 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.81 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.89 fps, Avg. Travel Time= 0.3 min

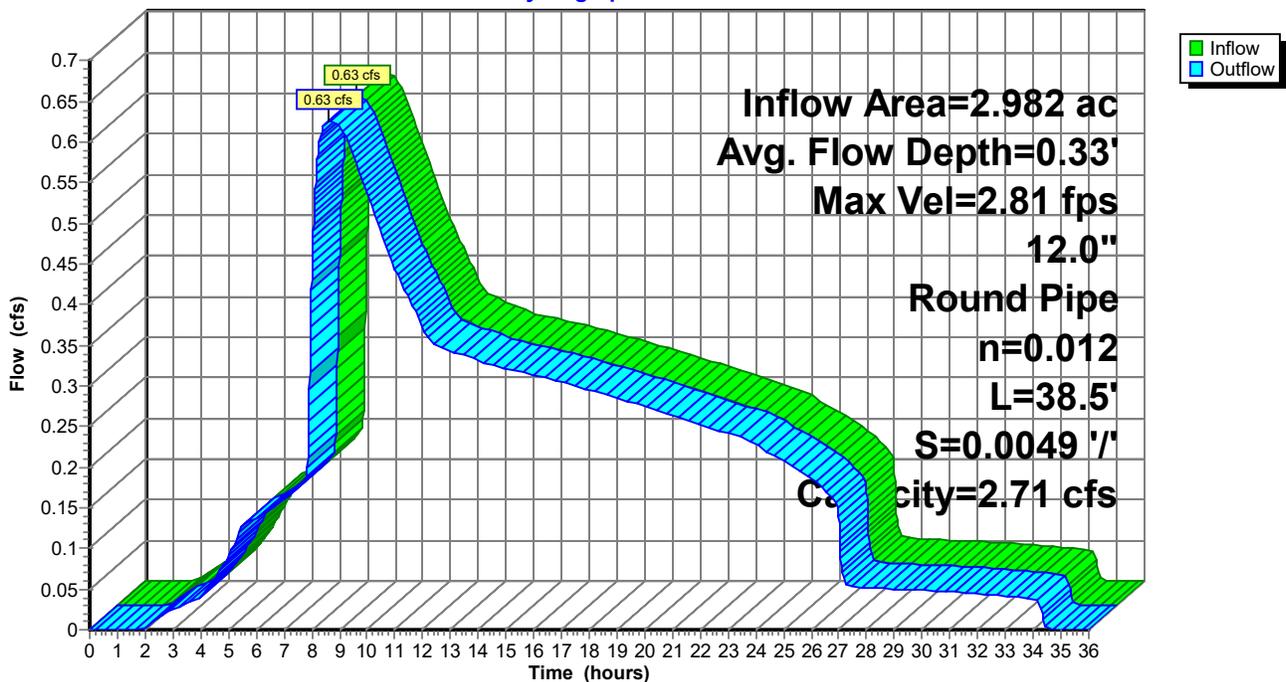
Peak Storage= 9 cf @ 8.58 hrs
 Average Depth at Peak Storage= 0.33'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.71 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 38.5' Slope= 0.0049 '/'
 Inlet Invert= 213.12', Outlet Invert= 212.93'



Reach 10R: Private Road A 1

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Page 106

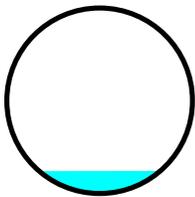
Summary for Reach 11R: Pond 2 Lateral

Inflow Area = 0.714 ac, 71.57% Impervious, Inflow Depth = 2.92" for 25-Year event
 Inflow = 0.09 cfs @ 13.63 hrs, Volume= 0.174 af
 Outflow = 0.09 cfs @ 13.66 hrs, Volume= 0.174 af, Atten= 0%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.58 fps, Min. Travel Time= 1.0 min
 Avg. Velocity = 1.40 fps, Avg. Travel Time= 1.2 min

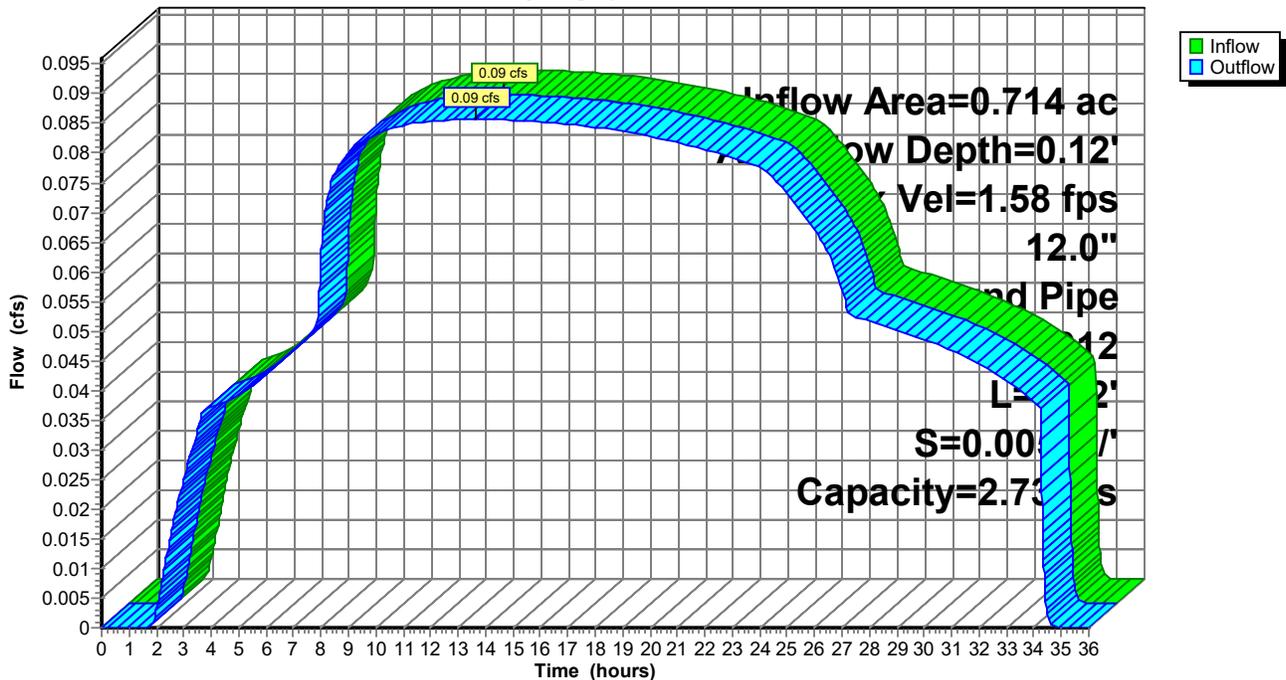
Peak Storage= 5 cf @ 13.64 hrs
 Average Depth at Peak Storage= 0.12'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 98.2' Slope= 0.0050 '/'
 Inlet Invert= 213.81', Outlet Invert= 213.32'



Reach 11R: Pond 2 Lateral

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Page 107

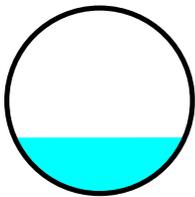
Summary for Reach 13R: Pond 3 Lateral

Inflow Area = 2.268 ac, 42.16% Impervious, Inflow Depth = 2.19" for 25-Year event
 Inflow = 0.55 cfs @ 8.50 hrs, Volume= 0.414 af
 Outflow = 0.55 cfs @ 8.55 hrs, Volume= 0.414 af, Atten= 0%, Lag= 3.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.72 fps, Min. Travel Time= 1.8 min
 Avg. Velocity = 1.92 fps, Avg. Travel Time= 2.6 min

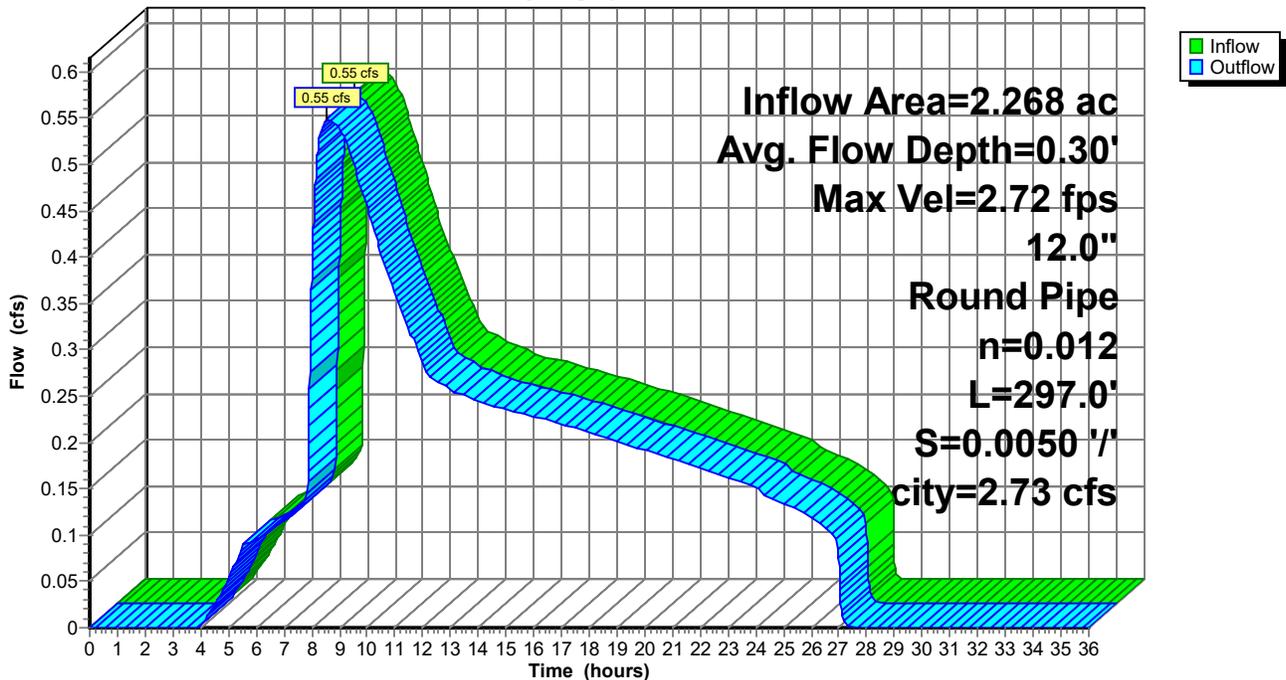
Peak Storage= 60 cf @ 8.52 hrs
 Average Depth at Peak Storage= 0.30'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 297.0' Slope= 0.0050 '/'
 Inlet Invert= 214.81', Outlet Invert= 213.32'



Reach 13R: Pond 3 Lateral

Hydrograph



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Page 108

Summary for Pond 2P: WQ Facility 1

Inflow Area = 0.246 ac, 84.20% Impervious, Inflow Depth = 3.27" for 25-Year event
 Inflow = 0.21 cfs @ 7.97 hrs, Volume= 0.067 af
 Outflow = 0.21 cfs @ 7.97 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.1 min
 Discarded = 0.00 cfs @ 4.20 hrs, Volume= 0.007 af
 Primary = 0.21 cfs @ 7.97 hrs, Volume= 0.055 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 214.94' @ 7.97 hrs Surf.Area= 0.014 ac Storage= 0.009 af

Plug-Flow detention time= 151.1 min calculated for 0.063 af (94% of inflow)
 Center-of-Mass det. time= 107.6 min (812.0 - 704.4)

Volume	Invert	Avail.Storage	Storage Description
#1	210.88'	0.002 af	4.00'W x 50.00'L x 1.00'H Gravel Storage 0.005 af Overall x 40.0% Voids
#2	211.88'	0.000 af	4.00'W x 50.00'L x 1.50'H Growing Medium 0.007 af Overall x 5.0% Voids
#3	213.38'	0.009 af	4.00'W x 50.00'L x 2.00'H Open Storage
		0.011 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	214.88'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	210.88'	0.200 in/hr Exfiltration over Surface area
#3	Primary	214.35'	1.9" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.00 cfs @ 4.20 hrs HW=213.38' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.20 cfs @ 7.97 hrs HW=214.94' (Free Discharge)

↑**1=Orifice/Grate** (Weir Controls 0.14 cfs @ 0.77 fps)

↑**3=Orifice/Grate** (Orifice Controls 0.07 cfs @ 3.43 fps)

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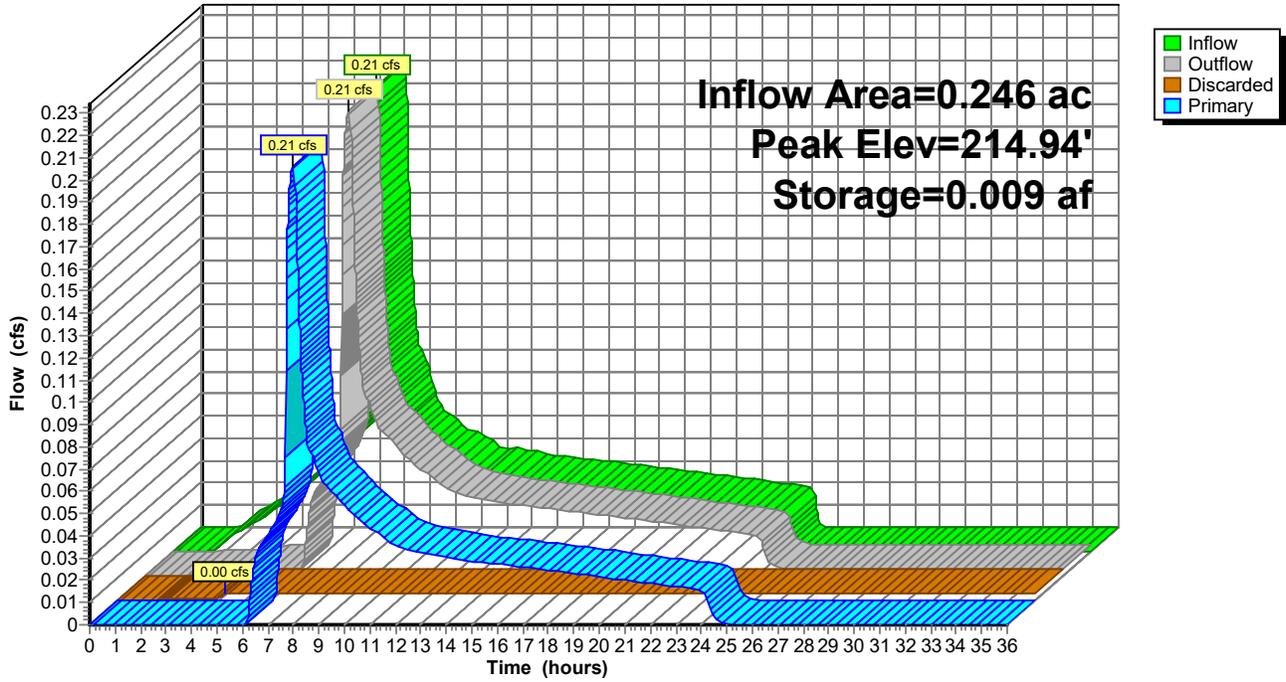
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Page 109

Pond 2P: WQ Facility 1

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Page 110

Summary for Pond 3P: WQ Facility 2

Inflow Area = 0.241 ac, 81.80% Impervious, Inflow Depth = 3.27" for 25-Year event
 Inflow = 0.20 cfs @ 7.97 hrs, Volume= 0.066 af
 Outflow = 0.20 cfs @ 7.97 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.1 min
 Discarded = 0.00 cfs @ 4.24 hrs, Volume= 0.007 af
 Primary = 0.20 cfs @ 7.97 hrs, Volume= 0.054 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 216.42' @ 7.97 hrs Surf.Area= 0.014 ac Storage= 0.009 af

Plug-Flow detention time= 153.4 min calculated for 0.062 af (94% of inflow)
 Center-of-Mass det. time= 110.2 min (814.6 - 704.4)

Volume	Invert	Avail.Storage	Storage Description
#1	212.36'	0.002 af	4.00'W x 50.00'L x 1.00'H Gravel Storage 0.005 af Overall x 40.0% Voids
#2	213.36'	0.000 af	4.00'W x 50.00'L x 1.50'H Growing Medium 0.007 af Overall x 5.0% Voids
#3	214.86'	0.009 af	4.00'W x 50.00'L x 2.00'H Open Storage
		0.011 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	216.36'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	212.36'	0.200 in/hr Exfiltration over Surface area
#3	Primary	215.80'	1.8" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.00 cfs @ 4.24 hrs HW=214.86' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.20 cfs @ 7.97 hrs HW=216.42' (Free Discharge)
 ↑**1=Orifice/Grate** (Weir Controls 0.14 cfs @ 0.77 fps)
 ↓**3=Orifice/Grate** (Orifice Controls 0.06 cfs @ 3.54 fps)

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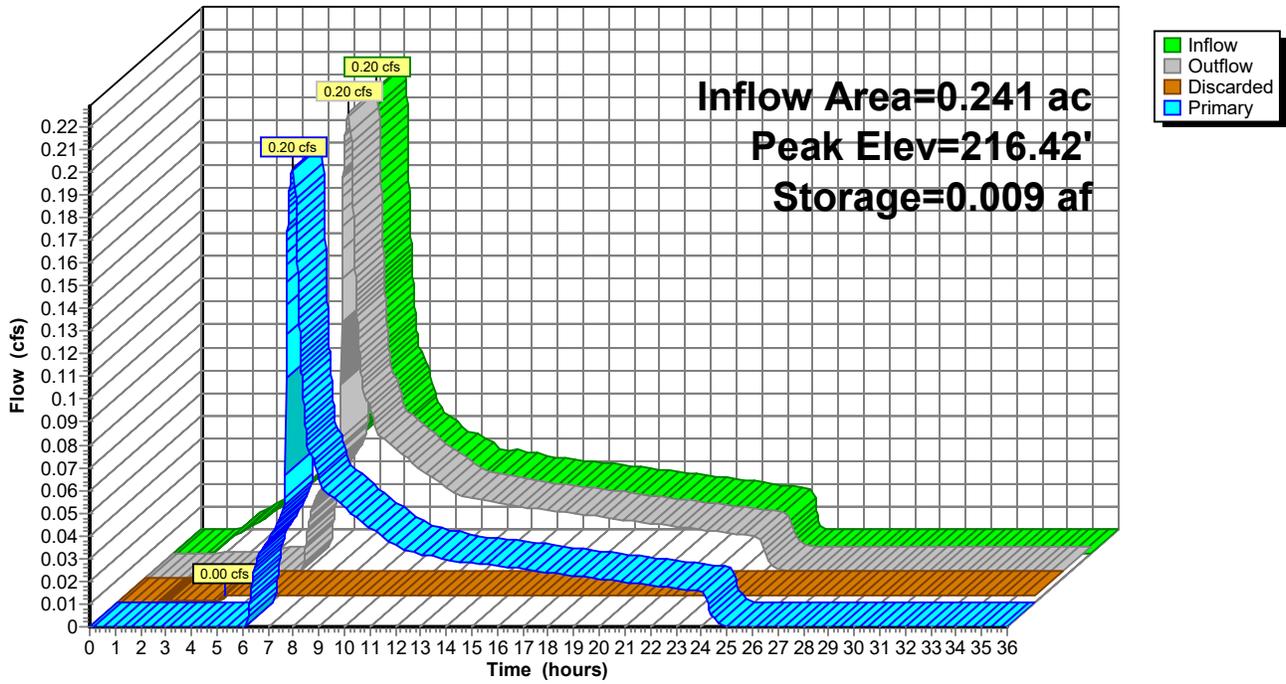
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Page 111

Pond 3P: WQ Facility 2

Hydrograph



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Page 112

Summary for Pond 4P: WQ/Det Facility 1

Inflow Area = 1.688 ac, 65.62% Impervious, Inflow Depth = 2.96" for 25-Year event
 Inflow = 1.30 cfs @ 7.97 hrs, Volume= 0.416 af
 Outflow = 0.83 cfs @ 8.23 hrs, Volume= 0.416 af, Atten= 36%, Lag= 15.6 min
 Discarded = 0.01 cfs @ 8.23 hrs, Volume= 0.003 af
 Primary = 0.82 cfs @ 8.23 hrs, Volume= 0.413 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 218.00' @ 8.23 hrs Surf.Area= 1,277 sf Storage= 1,774 cf

Plug-Flow detention time= 26.1 min calculated for 0.416 af (100% of inflow)
 Center-of-Mass det. time= 26.1 min (755.2 - 729.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	215.00'	3,375 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
215.00	115	0	0	115	
216.00	363	227	227	370	
217.00	751	545	773	769	
218.00	1,278	1,003	1,776	1,311	
219.00	1,944	1,599	3,375	1,996	

Device	Routing	Invert	Outlet Devices	
#1	Primary	213.26'	2.3" Vert. Orifice/Grate C= 0.600	
#2	Primary	218.25'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	215.00'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	217.15'	5.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.01 cfs @ 8.23 hrs HW=218.00' (Free Discharge)
 ↑ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.82 cfs @ 8.23 hrs HW=218.00' (Free Discharge)
 ↑ **1=Orifice/Grate** (Orifice Controls 0.30 cfs @ 10.37 fps)
 ↓ **2=Orifice/Grate** (Controls 0.00 cfs)
 ↓ **4=Orifice/Grate** (Orifice Controls 0.53 cfs @ 3.85 fps)

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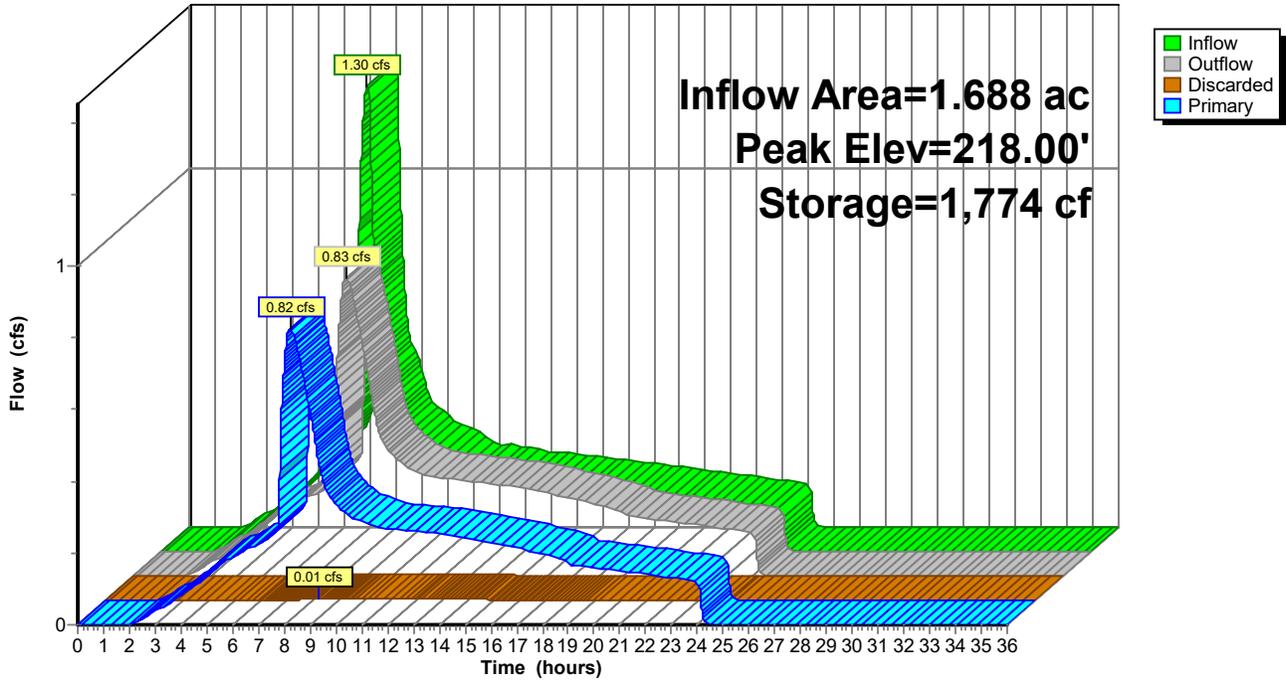
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Page 113

Pond 4P: WQ/Det Facility 1

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Page 114

Summary for Pond 5P: WQ/Det Facility 2

Inflow Area = 0.714 ac, 71.57% Impervious, Inflow Depth = 3.16" for 25-Year event
 Inflow = 0.59 cfs @ 7.97 hrs, Volume= 0.188 af
 Outflow = 0.09 cfs @ 13.63 hrs, Volume= 0.188 af, Atten= 84%, Lag= 339.8 min
 Discarded = 0.01 cfs @ 13.63 hrs, Volume= 0.015 af
 Primary = 0.09 cfs @ 13.63 hrs, Volume= 0.174 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 219.12' @ 13.63 hrs Surf.Area= 1,773 sf Storage= 2,739 cf

Plug-Flow detention time= 375.1 min calculated for 0.188 af (100% of inflow)
 Center-of-Mass det. time= 375.1 min (1,088.1 - 713.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	216.00'	4,610 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
216.00	268	0	0	268	
217.00	561	406	406	572	
218.00	1,031	784	1,190	1,055	
219.00	1,686	1,345	2,535	1,726	
220.00	2,491	2,075	4,610	2,551	

Device	Routing	Invert	Outlet Devices	
#1	Primary	214.01'	1.0" Vert. Orifice/Grate C= 0.600	
#2	Primary	219.25'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	216.00'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	218.05'	1.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.01 cfs @ 13.63 hrs HW=219.12' (Free Discharge)
 ↑ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.09 cfs @ 13.63 hrs HW=219.12' (Free Discharge)
 ↑ **1=Orifice/Grate** (Orifice Controls 0.06 cfs @ 10.84 fps)
 | **2=Orifice/Grate** (Controls 0.00 cfs)
 | **4=Orifice/Grate** (Orifice Controls 0.03 cfs @ 4.88 fps)

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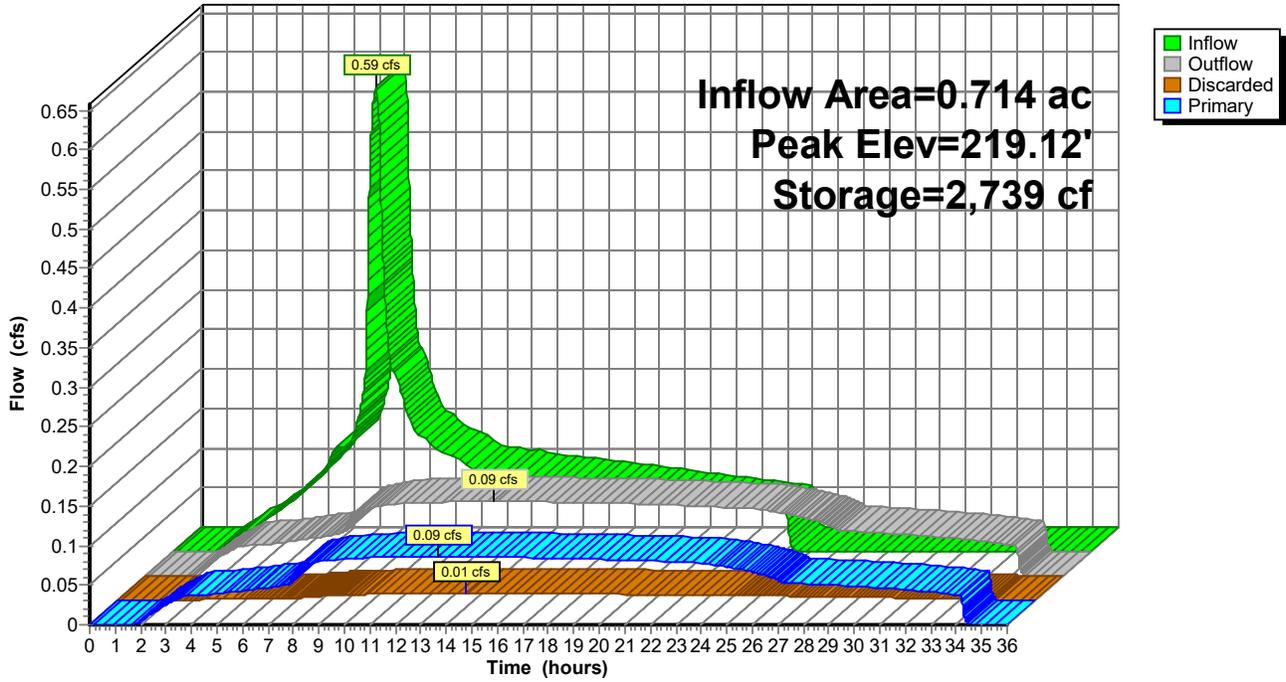
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Page 115

Pond 5P: WQ/Det Facility 2

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Page 116

Summary for Pond 6P: WQ/Det Facility 3

Inflow Area = 2.268 ac, 42.16% Impervious, Inflow Depth = 2.23" for 25-Year event
 Inflow = 1.24 cfs @ 8.01 hrs, Volume= 0.422 af
 Outflow = 0.56 cfs @ 8.50 hrs, Volume= 0.422 af, Atten= 55%, Lag= 29.3 min
 Discarded = 0.01 cfs @ 8.50 hrs, Volume= 0.008 af
 Primary = 0.55 cfs @ 8.50 hrs, Volume= 0.414 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 219.62' @ 8.50 hrs Surf.Area= 1,506 sf Storage= 2,483 cf

Plug-Flow detention time= 89.9 min calculated for 0.422 af (100% of inflow)
 Center-of-Mass det. time= 89.9 min (873.9 - 784.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	216.50'	4,035 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
216.50	244	0	0	244	
217.50	554	389	389	564	
218.50	941	739	1,128	966	
219.50	1,444	1,184	2,311	1,487	
220.50	2,019	1,723	4,035	2,086	

Device	Routing	Invert	Outlet Devices	
#1	Primary	215.01'	1.7" Vert. Orifice/Grate C= 0.600	
#2	Primary	219.75'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	216.50'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	218.60'	4.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.01 cfs @ 8.50 hrs HW=219.62' (Free Discharge)
 ↑ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.55 cfs @ 8.50 hrs HW=219.62' (Free Discharge)
 ↑ **1=Orifice/Grate** (Orifice Controls 0.16 cfs @ 10.25 fps)
 ↓ **2=Orifice/Grate** (Controls 0.00 cfs)
 ↓ **4=Orifice/Grate** (Orifice Controls 0.39 cfs @ 4.44 fps)

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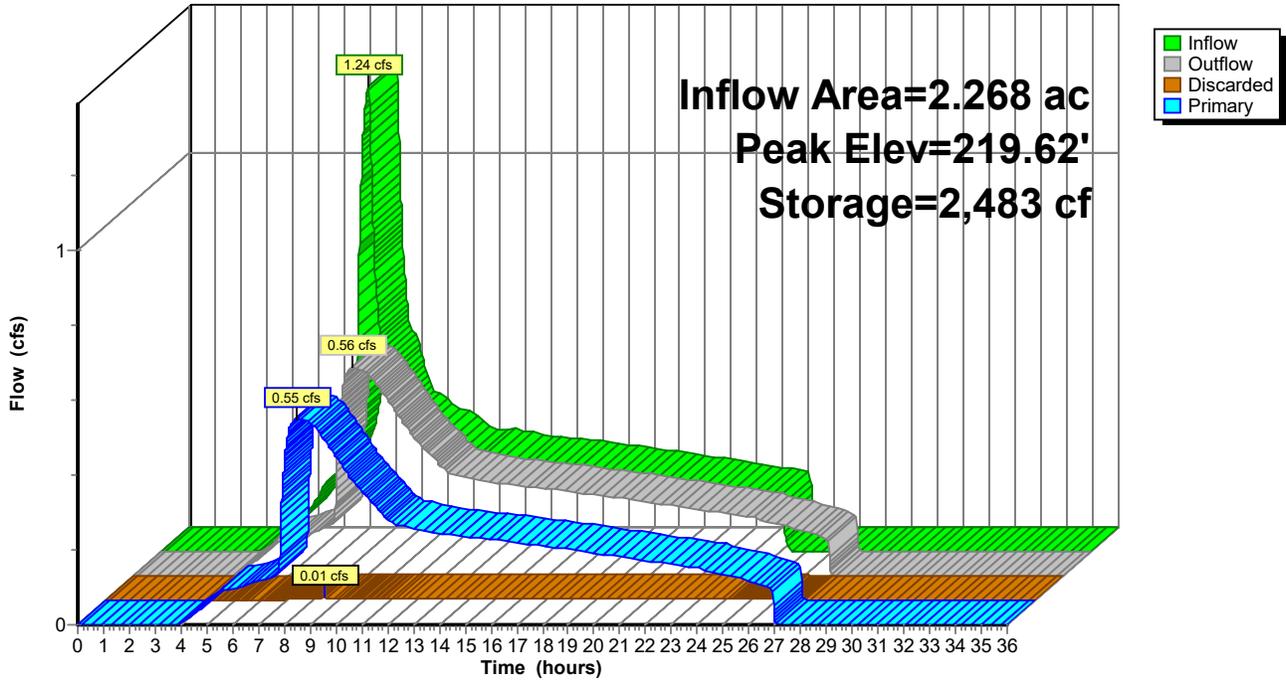
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Page 117

Pond 6P: WQ/Det Facility 3

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Page 118

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: Franklin Ave 1	Runoff Area=10,733 sf 84.20% Impervious Runoff Depth=3.70" Flow Length=242' Slope=0.0200 '/' Tc=10.0 min CN=94 Runoff=0.24 cfs 0.076 af
Subcatchment 3S: Franklin Ave 2	Runoff Area=10,498 sf 81.80% Impervious Runoff Depth=3.70" Flow Length=274' Slope=0.0200 '/' Tc=10.0 min CN=94 Runoff=0.23 cfs 0.074 af
Subcatchment 4S: Phase 1 & 2	Runoff Area=73,511 sf 65.62% Impervious Runoff Depth=3.38" Flow Length=500' Tc=10.2 min CN=91 Runoff=1.48 cfs 0.476 af
Subcatchment 5S: Phase 3	Runoff Area=31,101 sf 71.57% Impervious Runoff Depth=3.59" Flow Length=360' Tc=10.0 min CN=93 Runoff=0.67 cfs 0.214 af
Subcatchment 6S: Phase 4 & 5	Runoff Area=98,814 sf 42.16% Impervious Runoff Depth=2.62" Flow Length=422' Tc=10.0 min CN=83 Runoff=1.48 cfs 0.495 af
Subcatchment 7S: Wetland	Runoff Area=76,610 sf 0.00% Impervious Runoff Depth=1.26" Flow Length=365' Slope=0.0200 '/' Tc=27.9 min CN=65 Runoff=0.31 cfs 0.184 af
Reach 1R: EX SE Shore Drive	Avg. Flow Depth=1.00' Max Vel=3.24 fps Inflow=2.63 cfs 1.466 af 12.0" Round Pipe n=0.012 L=161.8' S=0.0033 '/' Capacity=2.23 cfs Outflow=2.40 cfs 1.466 af
Reach 2R: Franklin Avenue 3	Avg. Flow Depth=0.71' Max Vel=3.91 fps Inflow=2.32 cfs 1.282 af 12.0" Round Pipe n=0.012 L=147.0' S=0.0050 '/' Capacity=2.74 cfs Outflow=2.32 cfs 1.282 af
Reach 4R: Franklin Avenue 2	Avg. Flow Depth=0.68' Max Vel=3.85 fps Inflow=2.18 cfs 1.218 af 12.0" Round Pipe n=0.012 L=98.9' S=0.0050 '/' Capacity=2.72 cfs Outflow=2.18 cfs 1.218 af
Reach 5R: Franklin Avenue 1	Avg. Flow Depth=0.20' Max Vel=2.11 fps Inflow=0.23 cfs 0.063 af 12.0" Round Pipe n=0.012 L=157.1' S=0.0050 '/' Capacity=2.74 cfs Outflow=0.23 cfs 0.063 af
Reach 7R: Private Road A 2	Avg. Flow Depth=0.64' Max Vel=3.80 fps Inflow=2.04 cfs 1.155 af 12.0" Round Pipe n=0.012 L=132.9' S=0.0050 '/' Capacity=2.72 cfs Outflow=2.03 cfs 1.155 af
Reach 8R: Pond 1 Lateral	Avg. Flow Depth=0.40' Max Vel=3.14 fps Inflow=0.93 cfs 0.472 af 12.0" Round Pipe n=0.012 L=26.1' S=0.0050 '/' Capacity=2.72 cfs Outflow=0.93 cfs 0.472 af
Reach 10R: Private Road A 1	Avg. Flow Depth=0.44' Max Vel=3.28 fps Inflow=1.11 cfs 0.684 af 12.0" Round Pipe n=0.012 L=38.5' S=0.0049 '/' Capacity=2.71 cfs Outflow=1.11 cfs 0.684 af
Reach 11R: Pond 2 Lateral	Avg. Flow Depth=0.15' Max Vel=1.83 fps Inflow=0.14 cfs 0.197 af 12.0" Round Pipe n=0.012 L=98.2' S=0.0050 '/' Capacity=2.73 cfs Outflow=0.14 cfs 0.197 af
Reach 13R: Pond 3 Lateral	Avg. Flow Depth=0.43' Max Vel=3.23 fps Inflow=1.04 cfs 0.486 af 12.0" Round Pipe n=0.012 L=297.0' S=0.0050 '/' Capacity=2.73 cfs Outflow=1.03 cfs 0.486 af
Pond 2P: WQ Facility 1	Peak Elev=214.94' Storage=0.009 af Inflow=0.24 cfs 0.076 af Discarded=0.00 cfs 0.008 af Primary=0.23 cfs 0.064 af Outflow=0.24 cfs 0.072 af

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Type IA 24-hr 50-Year Rainfall=4.38"

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Page 119

Pond 3P: WQ Facility 2 Peak Elev=216.42' Storage=0.009 af Inflow=0.23 cfs 0.074 af
Discarded=0.00 cfs 0.008 af Primary=0.23 cfs 0.063 af Outflow=0.23 cfs 0.070 af

Pond 4P: WQ/Det Facility 1 Peak Elev=218.25' Storage=2,115 cf Inflow=1.48 cfs 0.476 af
Discarded=0.01 cfs 0.004 af Primary=0.93 cfs 0.472 af Outflow=0.94 cfs 0.476 af

Pond 5P: WQ/Det Facility 2 Peak Elev=219.26' Storage=3,001 cf Inflow=0.67 cfs 0.214 af
Discarded=0.01 cfs 0.016 af Primary=0.14 cfs 0.197 af Outflow=0.15 cfs 0.214 af

Pond 6P: WQ/Det Facility 3 Peak Elev=219.82' Storage=2,793 cf Inflow=1.48 cfs 0.495 af
Discarded=0.01 cfs 0.009 af Primary=1.04 cfs 0.486 af Outflow=1.05 cfs 0.495 af

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Page 120

Summary for Subcatchment 2S: Franklin Ave 1

Runoff = 0.24 cfs @ 7.95 hrs, Volume= 0.076 af, Depth= 3.70"

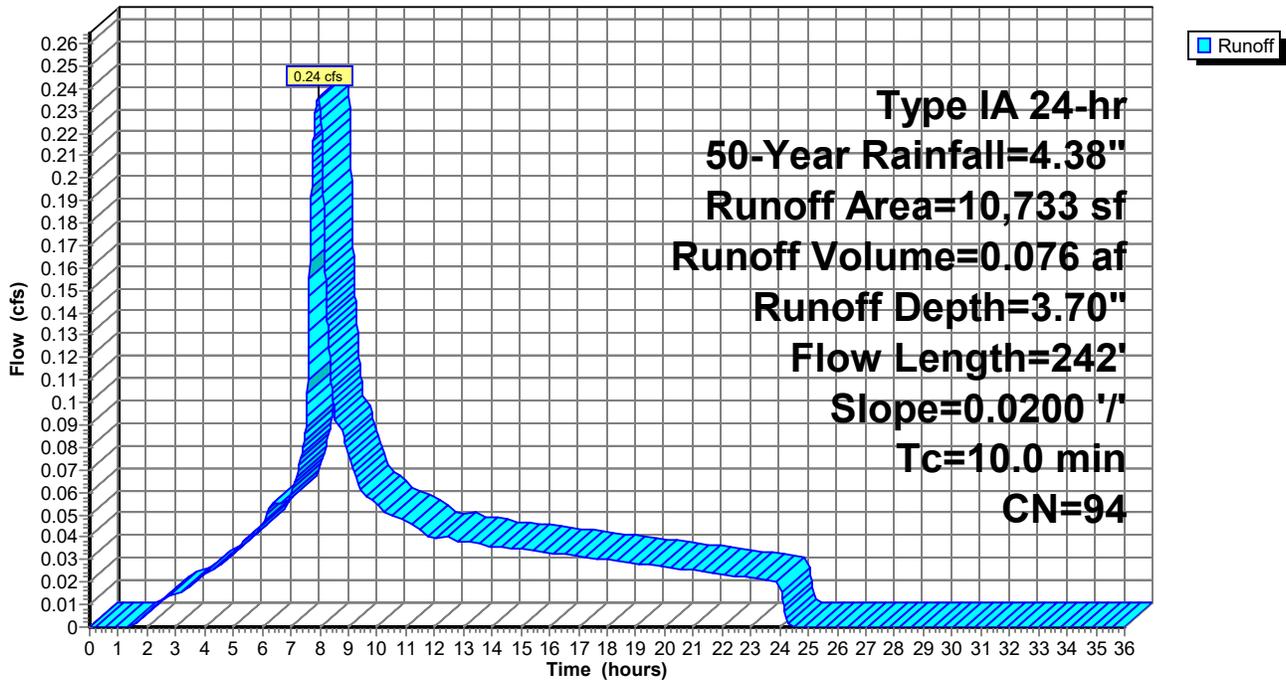
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-Year Rainfall=4.38"

Area (sf)	CN	Description
9,037	98	Paved roads w/curbs & sewers, HSG C
1,696	74	>75% Grass cover, Good, HSG C
10,733	94	Weighted Average
1,696	74	15.80% Pervious Area
9,037	98	84.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.0200	0.99		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
1.2	202	0.0200	2.87		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
1.9	242	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 2S: Franklin Ave 1

Hydrograph



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Page 121

Summary for Subcatchment 3S: Franklin Ave 2

Runoff = 0.23 cfs @ 7.95 hrs, Volume= 0.074 af, Depth= 3.70"

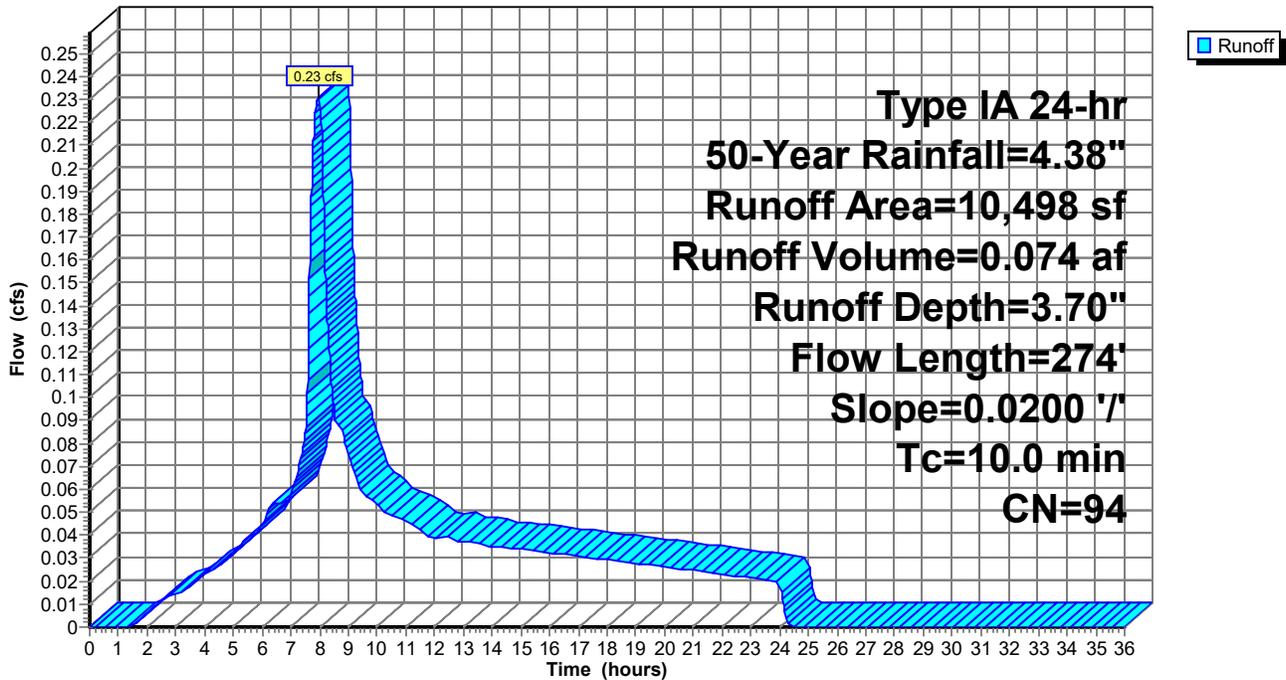
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-Year Rainfall=4.38"

Area (sf)	CN	Description
8,587	98	Paved roads w/curbs & sewers, HSG C
1,911	74	>75% Grass cover, Good, HSG C
10,498	94	Weighted Average
1,911	74	18.20% Pervious Area
8,587	98	81.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.0200	0.99		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
1.4	234	0.0200	2.87		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
2.1	274	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 3S: Franklin Ave 2

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Page 122

Summary for Subcatchment 4S: Phase 1 & 2

Runoff = 1.48 cfs @ 7.97 hrs, Volume= 0.476 af, Depth= 3.38"

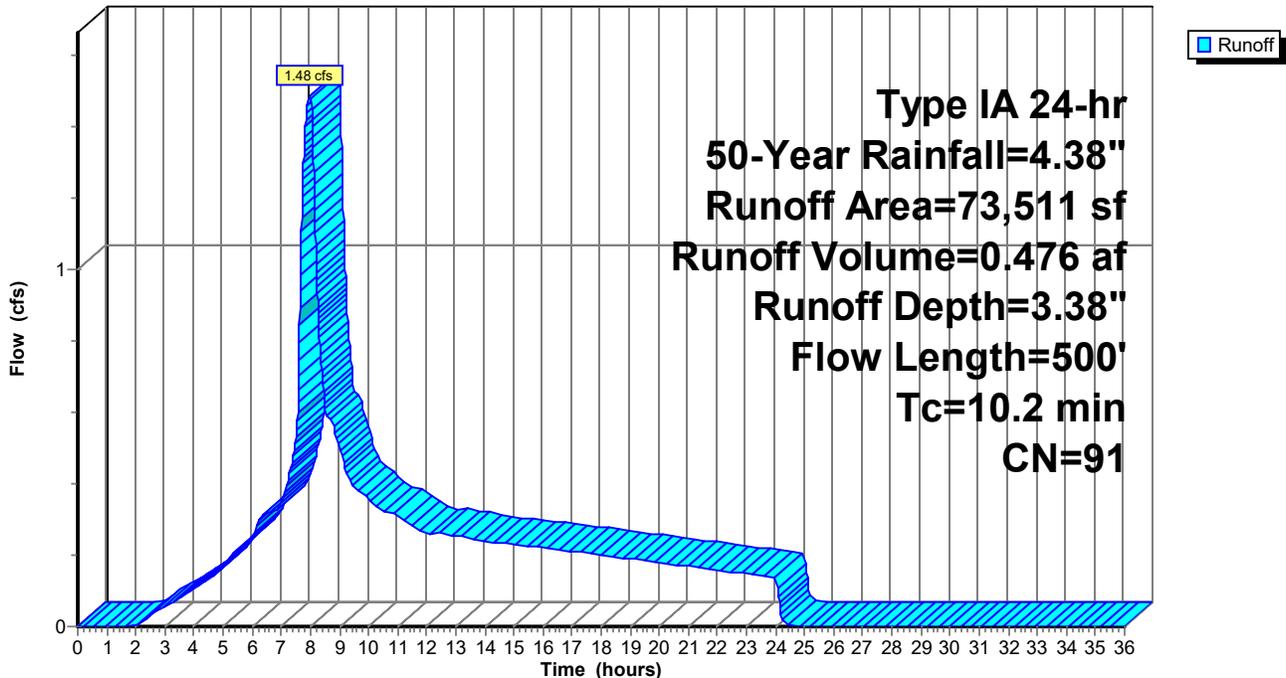
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-Year Rainfall=4.38"

Area (sf)	CN	Description
8,098	98	Paved parking, HSG C
1,945	98	Water Surface, 0% imp, HSG C
61,755	90	1/8 acre lots, 65% imp, HSG C
1,713	74	>75% Grass cover, Good, HSG C
73,511	91	Weighted Average
25,272	77	34.38% Pervious Area
48,239	98	65.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	20	0.0200	0.05		Sheet Flow, Sheet Grass: Bermuda n= 0.410 P2= 2.40"
1.3	80	0.0200	0.99		Shallow Concentrated Flow, SCF Short Grass Pasture Kv= 7.0 fps
1.9	400	0.0050	3.47	2.73	Pipe Channel, To Pond 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
10.2	500	Total			

Subcatchment 4S: Phase 1 & 2

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Page 123

Summary for Subcatchment 5S: Phase 3

Runoff = 0.67 cfs @ 7.97 hrs, Volume= 0.214 af, Depth= 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-Year Rainfall=4.38"

Area (sf)	CN	Description
11,947	98	Paved parking, HSG C
2,490	98	Water Surface, 0% imp, HSG C
2,227	98	Unconnected pavement, HSG C
8,084	98	Roofs, HSG C
6,353	74	>75% Grass cover, Good, HSG C
31,101	93	Weighted Average
8,843	81	28.43% Pervious Area
22,258	98	71.57% Impervious Area
2,227		10.01% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	20	0.0200	0.86		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
0.3	60	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	280	0.0050	3.47	2.73	Pipe Channel, Pipe 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.0	360	Total, Increased to minimum Tc = 10.0 min			

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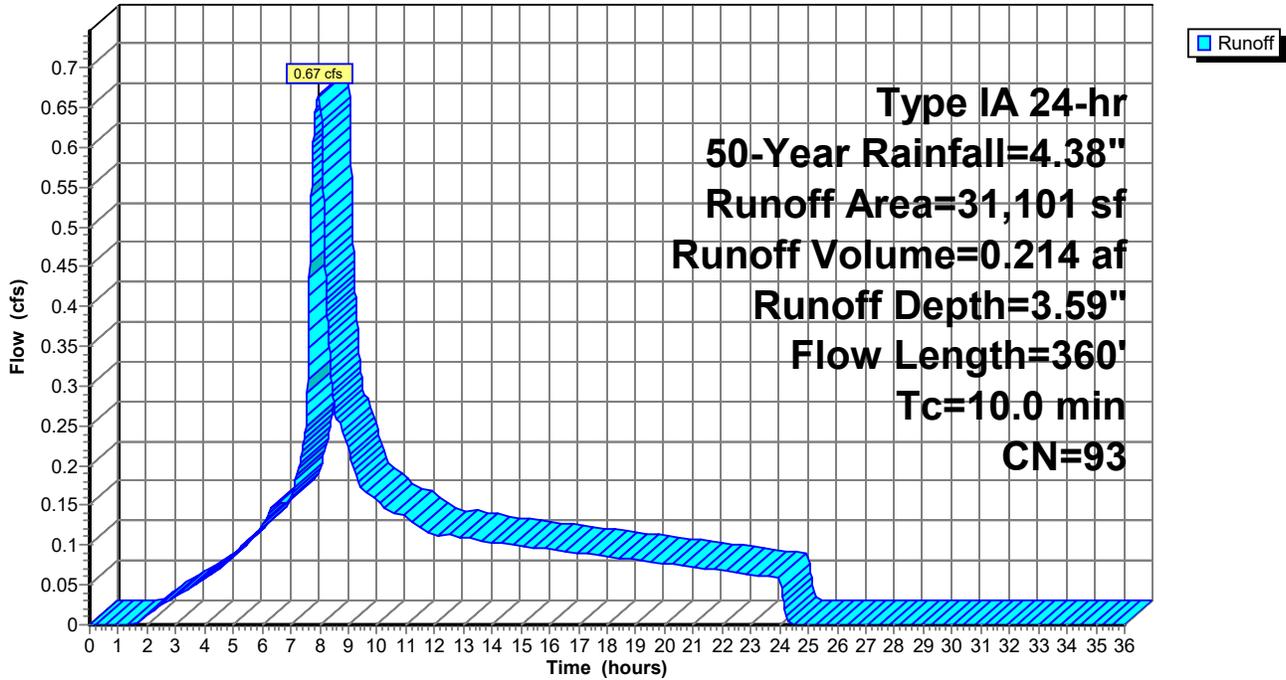
Type IA 24-hr 50-Year Rainfall=4.38"

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Page 124

Subcatchment 5S: Phase 3

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Page 125

Summary for Subcatchment 6S: Phase 4 & 5

Runoff = 1.48 cfs @ 8.01 hrs, Volume= 0.495 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-Year Rainfall=4.38"

Area (sf)	CN	Description
2,019	98	Water Surface, 0% imp, HSG C
11,637	98	Roofs, HSG C
* 30,024	98	Parking Lot, Sidewalk, Unconnected Roofs
55,134	72	Woods/grass comb., Good, HSG C
98,814	83	Weighted Average
57,153	73	57.84% Pervious Area
41,661	98	42.16% Impervious Area
30,024		72.07% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	20	0.0200	0.05		Sheet Flow, Sheet Grass: Bermuda n= 0.410 P2= 2.40"
1.3	80	0.0200	0.99		Shallow Concentrated Flow, SCF Short Grass Pasture Kv= 7.0 fps
1.5	322	0.0050	3.47	2.73	Pipe Channel, To Pond 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
9.8	422	Total, Increased to minimum Tc = 10.0 min			

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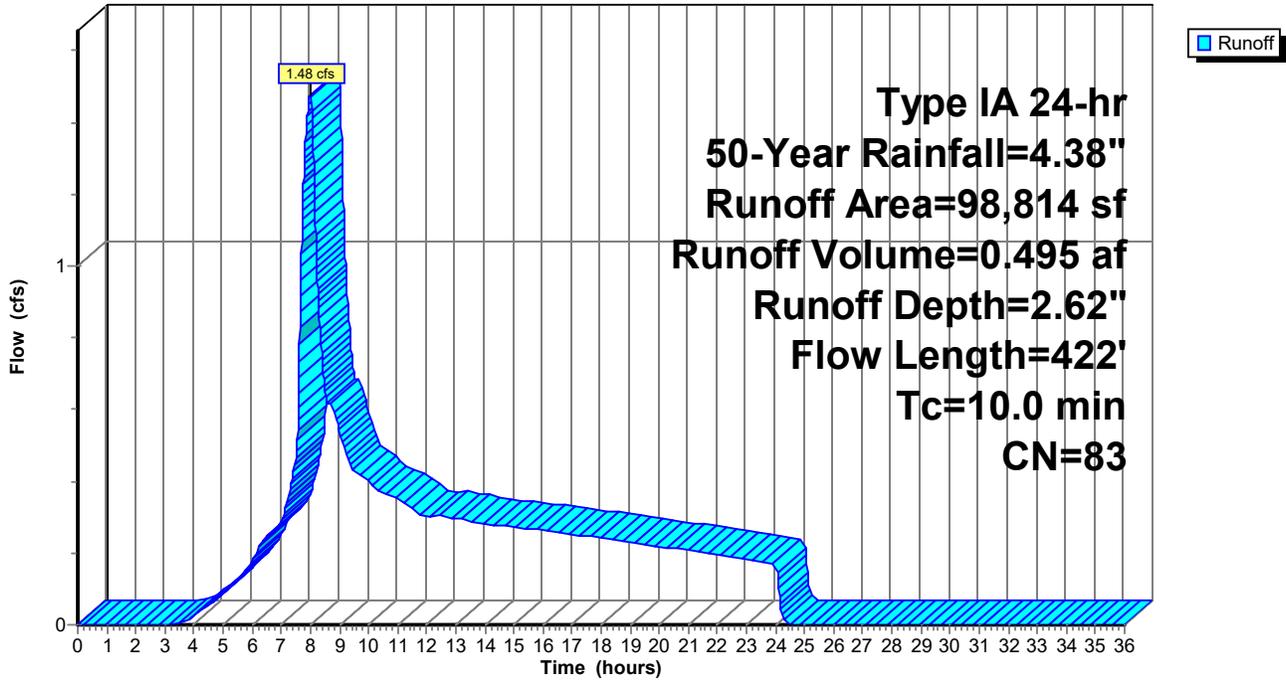
Type IA 24-hr 50-Year Rainfall=4.38"

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Page 126

Subcatchment 6S: Phase 4 & 5

Hydrograph



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Page 127

Summary for Subcatchment 7S: Wetland

Runoff = 0.31 cfs @ 8.28 hrs, Volume= 0.184 af, Depth= 1.26"

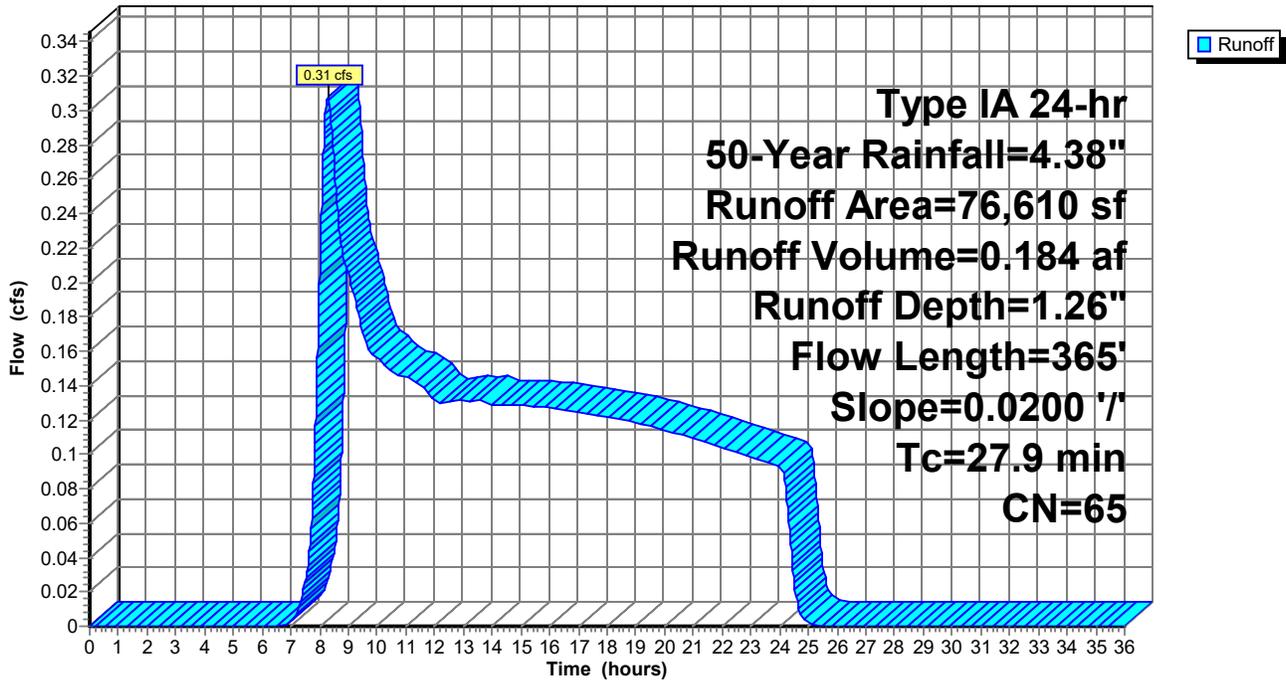
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-Year Rainfall=4.38"

Area (sf)	CN	Description
76,610	65	Brush, Good, HSG C
76,610	65	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	150	0.0200	0.11		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 2.40"
5.1	215	0.0200	0.71		Shallow Concentrated Flow, SCF Woodland Kv= 5.0 fps
27.9	365	Total			

Subcatchment 7S: Wetland

Hydrograph



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Page 128

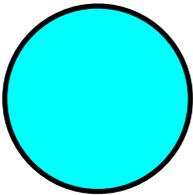
Summary for Reach 1R: EX SE Shore Drive

Inflow Area = 6.916 ac, 43.08% Impervious, Inflow Depth > 2.54" for 50-Year event
 Inflow = 2.63 cfs @ 8.29 hrs, Volume= 1.466 af
 Outflow = 2.40 cfs @ 8.25 hrs, Volume= 1.466 af, Atten= 9%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.24 fps, Min. Travel Time= 0.8 min
 Avg. Velocity = 2.02 fps, Avg. Travel Time= 1.3 min

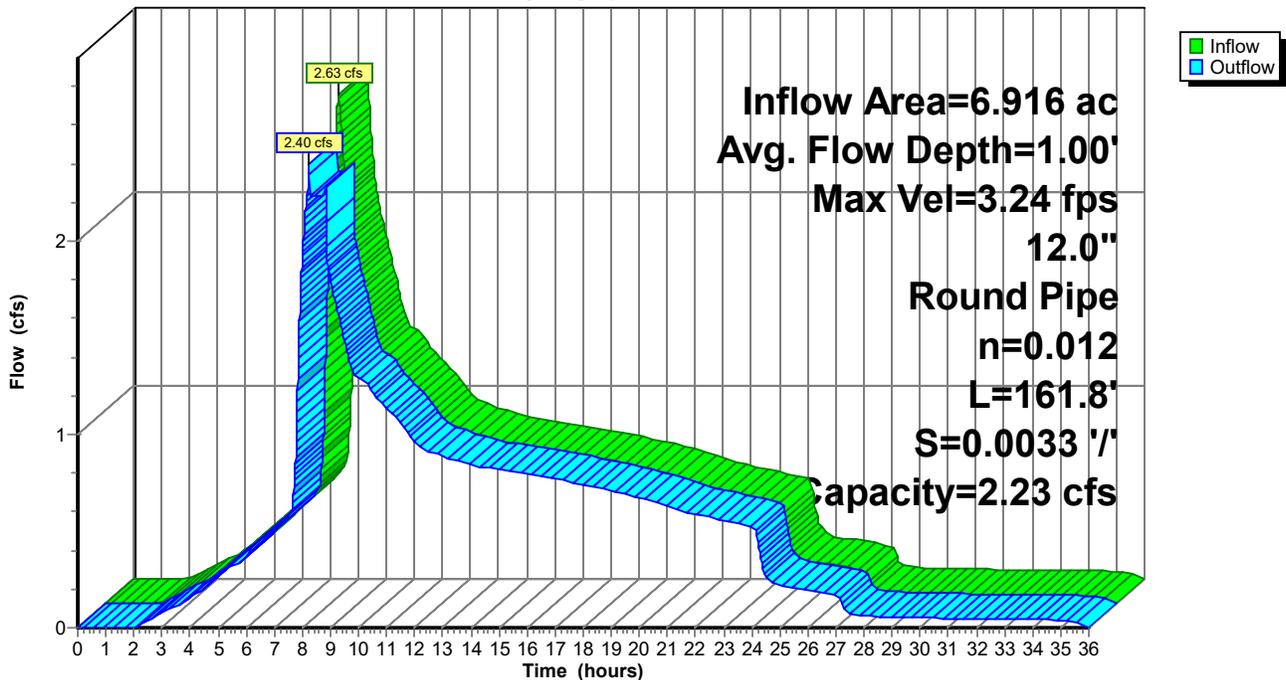
Peak Storage= 127 cf @ 8.25 hrs
 Average Depth at Peak Storage= 1.00'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.23 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 161.8' Slope= 0.0033 '/'
 Inlet Invert= 210.64', Outlet Invert= 210.10'



Reach 1R: EX SE Shore Drive

Hydrograph



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Page 129

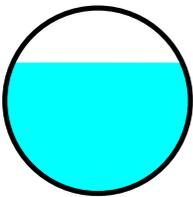
Summary for Reach 2R: Franklin Avenue 3

Inflow Area = 5.157 ac, 57.77% Impervious, Inflow Depth > 2.98" for 50-Year event
 Inflow = 2.32 cfs @ 8.27 hrs, Volume= 1.282 af
 Outflow = 2.32 cfs @ 8.29 hrs, Volume= 1.282 af, Atten= 0%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.91 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 2.29 fps, Avg. Travel Time= 1.1 min

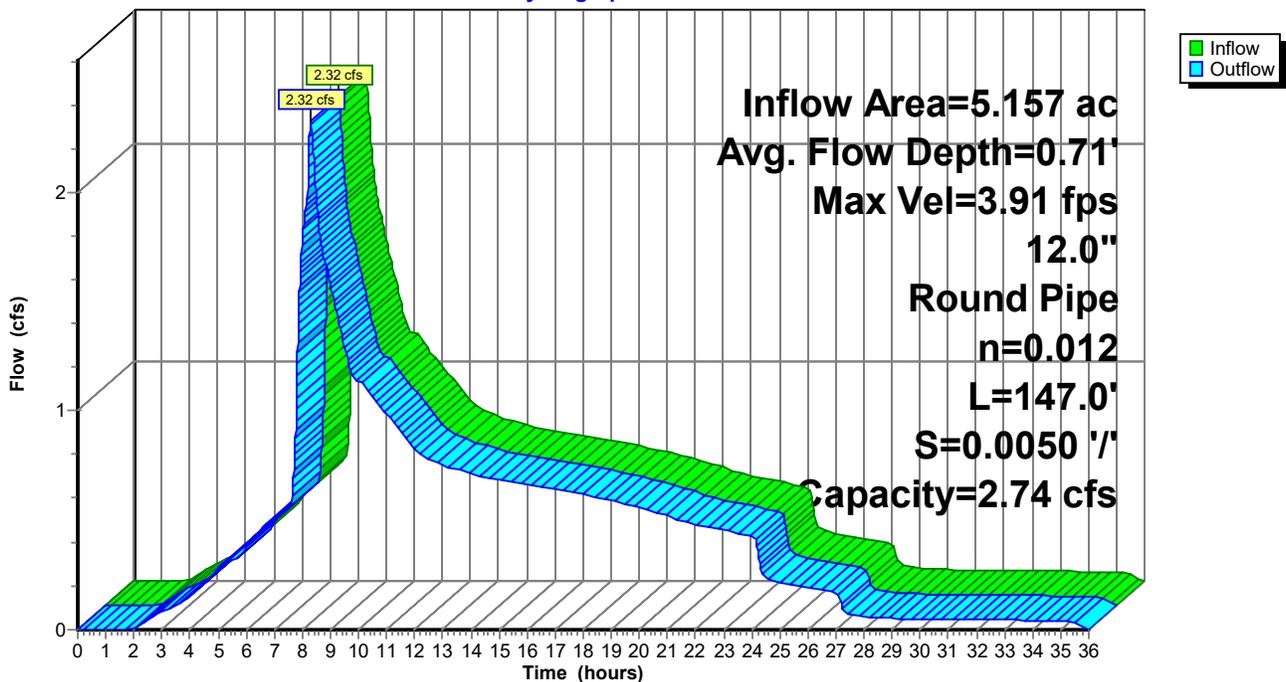
Peak Storage= 87 cf @ 8.28 hrs
 Average Depth at Peak Storage= 0.71'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.74 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 147.0' Slope= 0.0050 '/'
 Inlet Invert= 211.38', Outlet Invert= 210.64'



Reach 2R: Franklin Avenue 3

Hydrograph



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Page 130

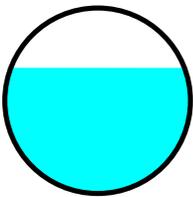
Summary for Reach 4R: Franklin Avenue 2

Inflow Area = 4.911 ac, 56.44% Impervious, Inflow Depth > 2.98" for 50-Year event
 Inflow = 2.18 cfs @ 8.26 hrs, Volume= 1.218 af
 Outflow = 2.18 cfs @ 8.28 hrs, Volume= 1.218 af, Atten= 0%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.85 fps, Min. Travel Time= 0.4 min
 Avg. Velocity = 2.25 fps, Avg. Travel Time= 0.7 min

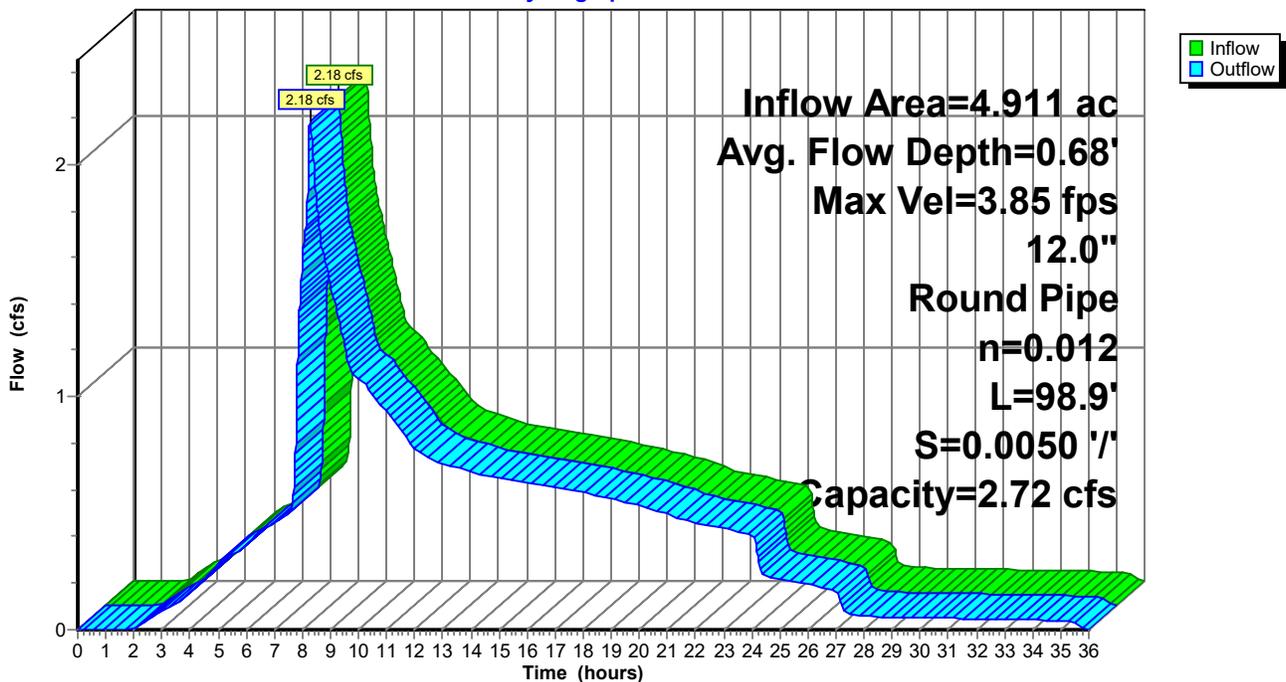
Peak Storage= 56 cf @ 8.27 hrs
 Average Depth at Peak Storage= 0.68'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 98.9' Slope= 0.0050 '/'
 Inlet Invert= 211.87', Outlet Invert= 211.38'



Reach 4R: Franklin Avenue 2

Hydrograph



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Page 131

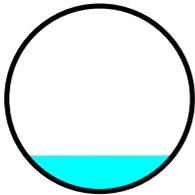
Summary for Reach 5R: Franklin Avenue 1

Inflow Area = 0.241 ac, 81.80% Impervious, Inflow Depth = 3.12" for 50-Year event
 Inflow = 0.23 cfs @ 7.97 hrs, Volume= 0.063 af
 Outflow = 0.23 cfs @ 8.00 hrs, Volume= 0.063 af, Atten= 0%, Lag= 2.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.11 fps, Min. Travel Time= 1.2 min
 Avg. Velocity = 1.17 fps, Avg. Travel Time= 2.2 min

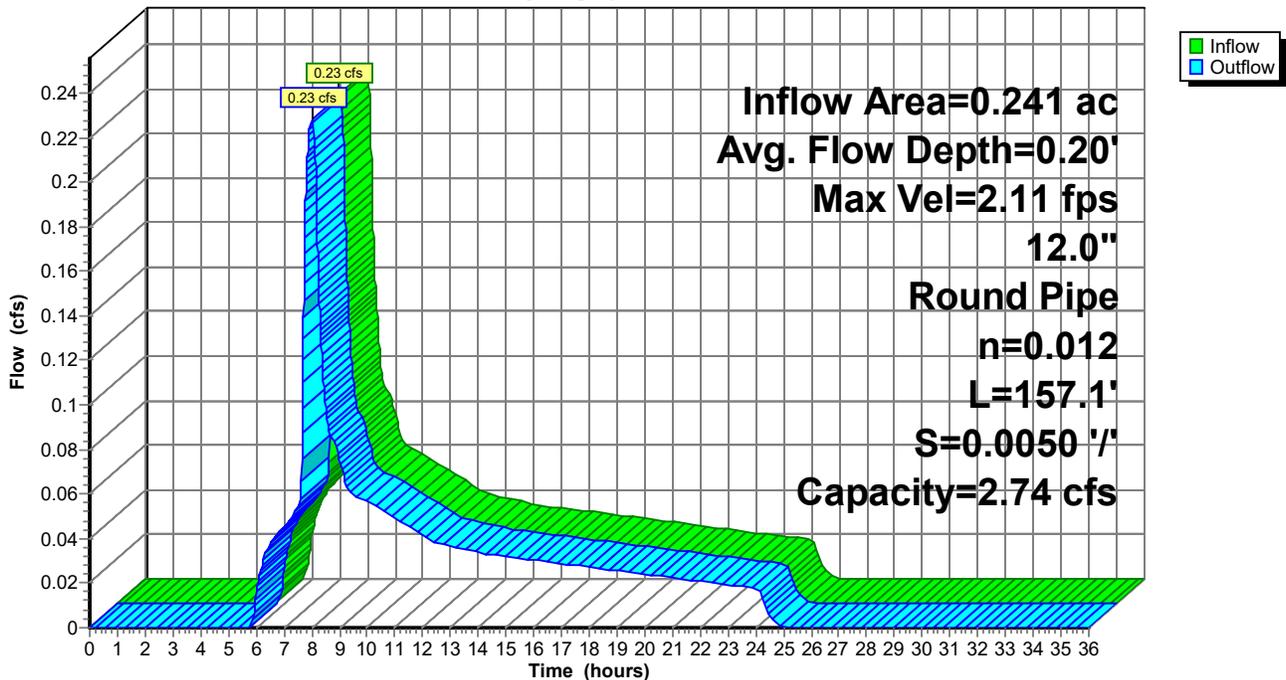
Peak Storage= 17 cf @ 7.98 hrs
 Average Depth at Peak Storage= 0.20'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.74 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 157.1' Slope= 0.0050 '/'
 Inlet Invert= 212.86', Outlet Invert= 212.07'



Reach 5R: Franklin Avenue 1

Hydrograph



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Type IA 24-hr 50-Year Rainfall=4.38"

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Page 132

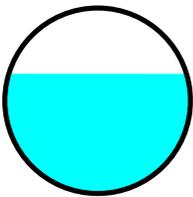
Summary for Reach 7R: Private Road A 2

Inflow Area = 4.670 ac, 55.13% Impervious, Inflow Depth > 2.97" for 50-Year event
 Inflow = 2.04 cfs @ 8.25 hrs, Volume= 1.155 af
 Outflow = 2.03 cfs @ 8.27 hrs, Volume= 1.155 af, Atten= 0%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.80 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 2.22 fps, Avg. Travel Time= 1.0 min

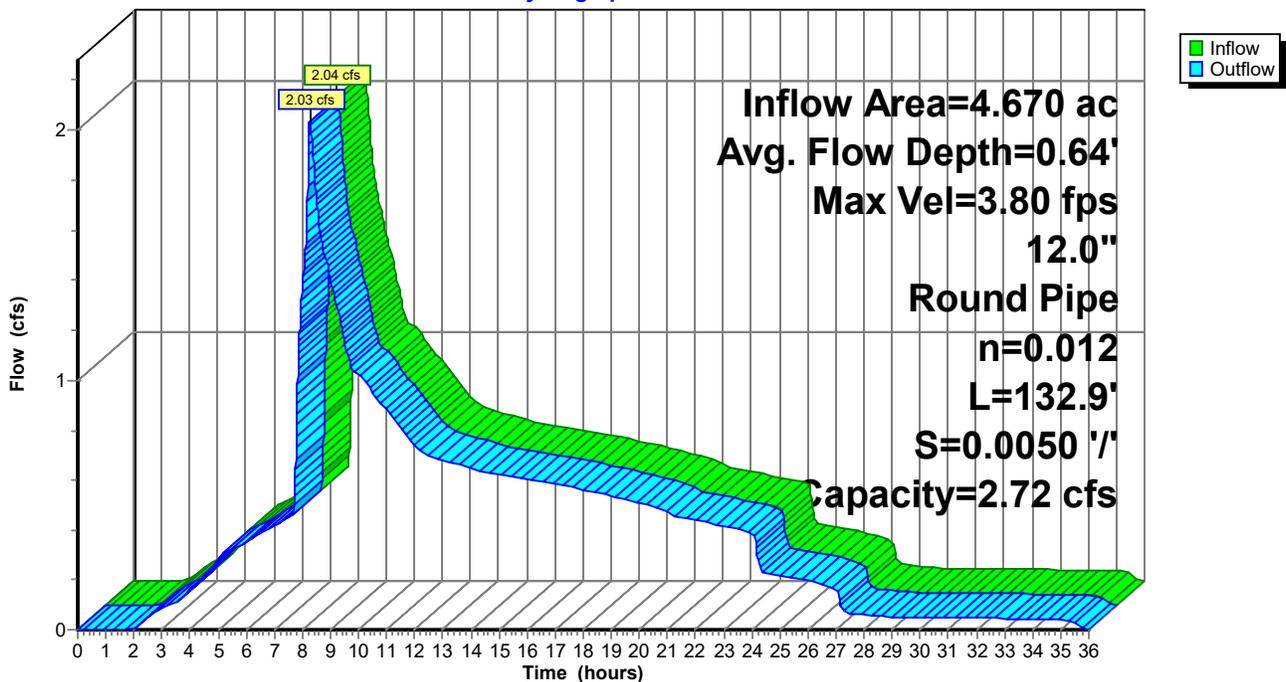
Peak Storage= 71 cf @ 8.26 hrs
 Average Depth at Peak Storage= 0.64'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 132.9' Slope= 0.0050 '/'
 Inlet Invert= 212.73', Outlet Invert= 212.07'



Reach 7R: Private Road A 2

Hydrograph



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Page 133

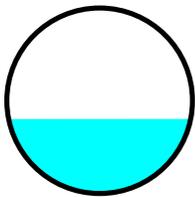
Summary for Reach 8R: Pond 1 Lateral

Inflow Area = 1.688 ac, 65.62% Impervious, Inflow Depth = 3.35" for 50-Year event
 Inflow = 0.93 cfs @ 8.24 hrs, Volume= 0.472 af
 Outflow = 0.93 cfs @ 8.24 hrs, Volume= 0.472 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.14 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.06 fps, Avg. Travel Time= 0.2 min

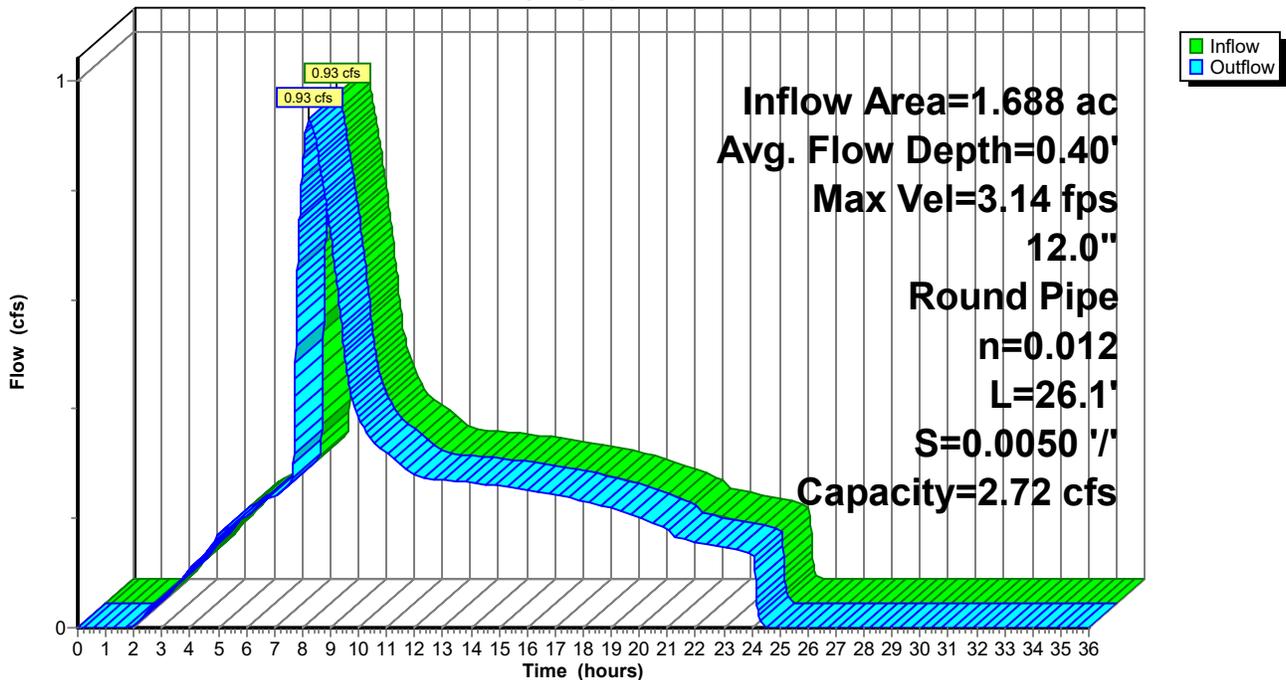
Peak Storage= 8 cf @ 8.24 hrs
 Average Depth at Peak Storage= 0.40'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 26.1' Slope= 0.0050 '/'
 Inlet Invert= 213.06', Outlet Invert= 212.93'



Reach 8R: Pond 1 Lateral

Hydrograph



Franklin Reserve Post-Developed

Type IA 24-hr 50-Year Rainfall=4.38"

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Page 134

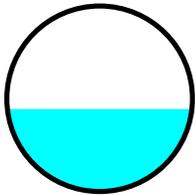
Summary for Reach 10R: Private Road A 1

Inflow Area = 2.982 ac, 49.20% Impervious, Inflow Depth > 2.75" for 50-Year event
 Inflow = 1.11 cfs @ 8.25 hrs, Volume= 0.684 af
 Outflow = 1.11 cfs @ 8.25 hrs, Volume= 0.684 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.28 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.94 fps, Avg. Travel Time= 0.3 min

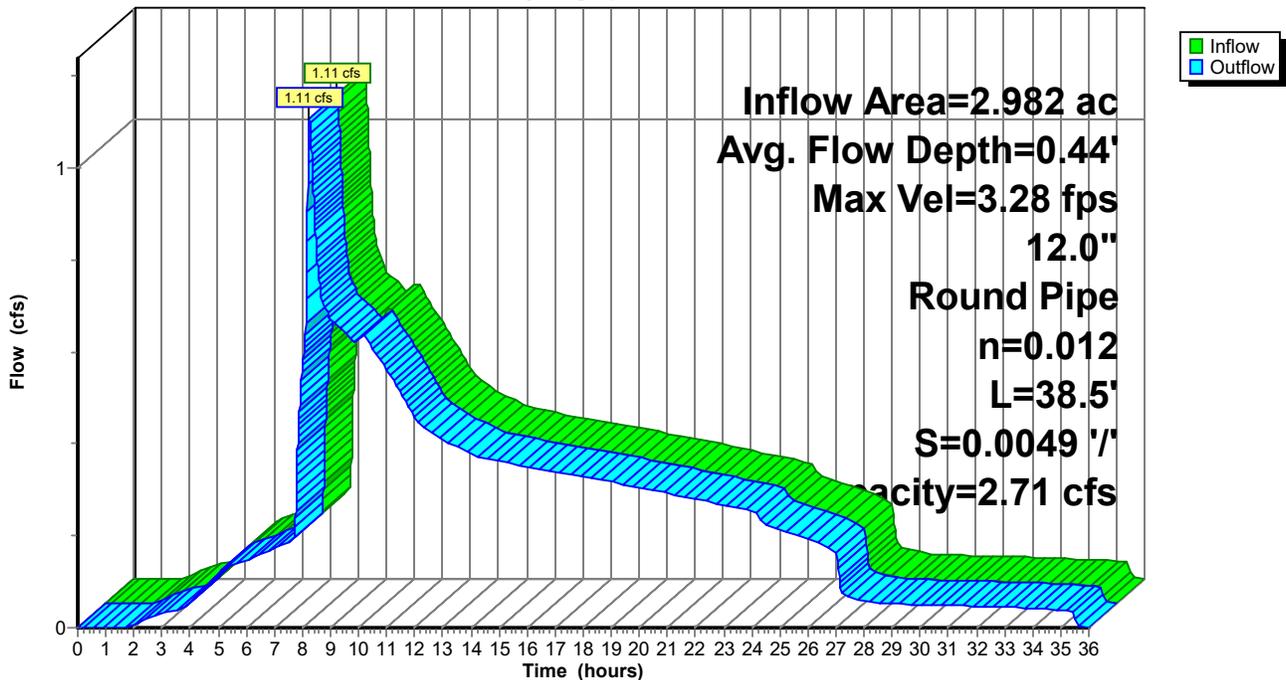
Peak Storage= 13 cf @ 8.25 hrs
 Average Depth at Peak Storage= 0.44'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.71 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 38.5' Slope= 0.0049 '/'
 Inlet Invert= 213.12', Outlet Invert= 212.93'



Reach 10R: Private Road A 1

Hydrograph



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Page 135

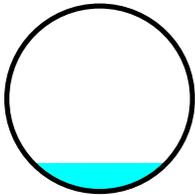
Summary for Reach 11R: Pond 2 Lateral

Inflow Area = 0.714 ac, 71.57% Impervious, Inflow Depth > 3.32" for 50-Year event
 Inflow = 0.14 cfs @ 10.19 hrs, Volume= 0.197 af
 Outflow = 0.14 cfs @ 10.21 hrs, Volume= 0.197 af, Atten= 0%, Lag= 1.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.83 fps, Min. Travel Time= 0.9 min
 Avg. Velocity = 1.44 fps, Avg. Travel Time= 1.1 min

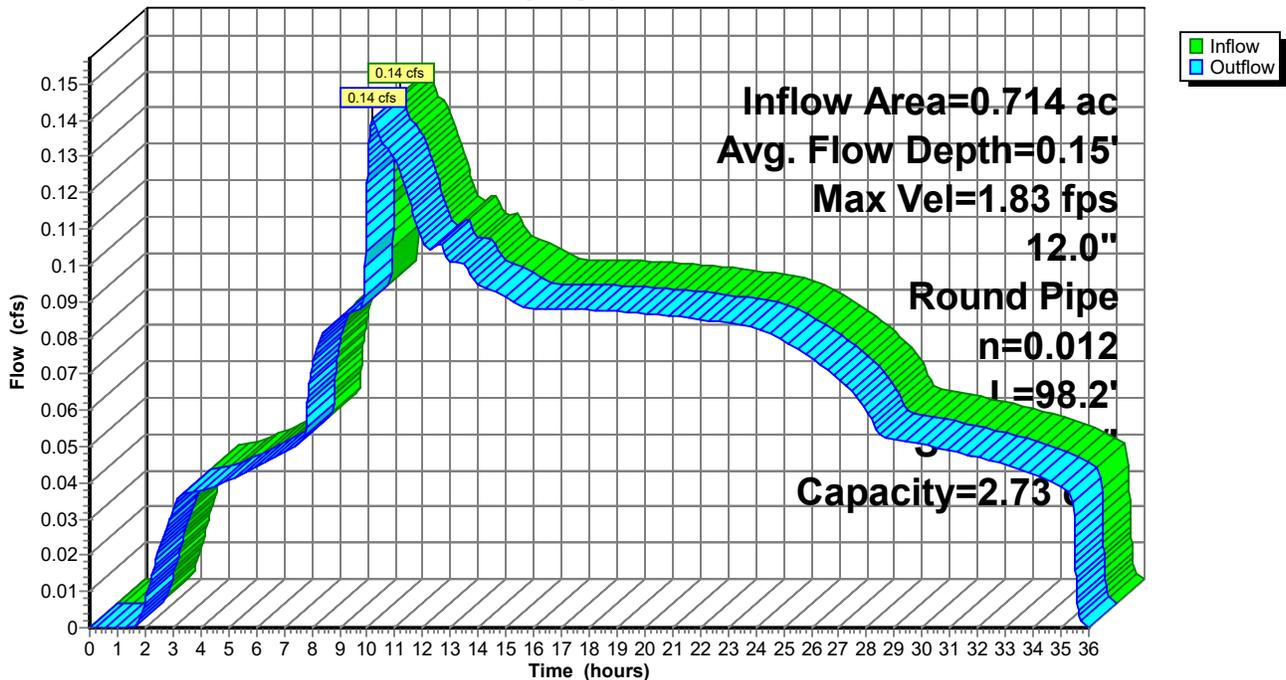
Peak Storage= 8 cf @ 10.20 hrs
 Average Depth at Peak Storage= 0.15'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 98.2' Slope= 0.0050 '/'
 Inlet Invert= 213.81', Outlet Invert= 213.32'



Reach 11R: Pond 2 Lateral

Hydrograph



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Page 136

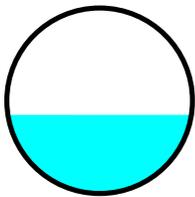
Summary for Reach 13R: Pond 3 Lateral

Inflow Area = 2.268 ac, 42.16% Impervious, Inflow Depth = 2.57" for 50-Year event
 Inflow = 1.04 cfs @ 8.19 hrs, Volume= 0.486 af
 Outflow = 1.03 cfs @ 8.25 hrs, Volume= 0.486 af, Atten= 1%, Lag= 3.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.23 fps, Min. Travel Time= 1.5 min
 Avg. Velocity = 1.99 fps, Avg. Travel Time= 2.5 min

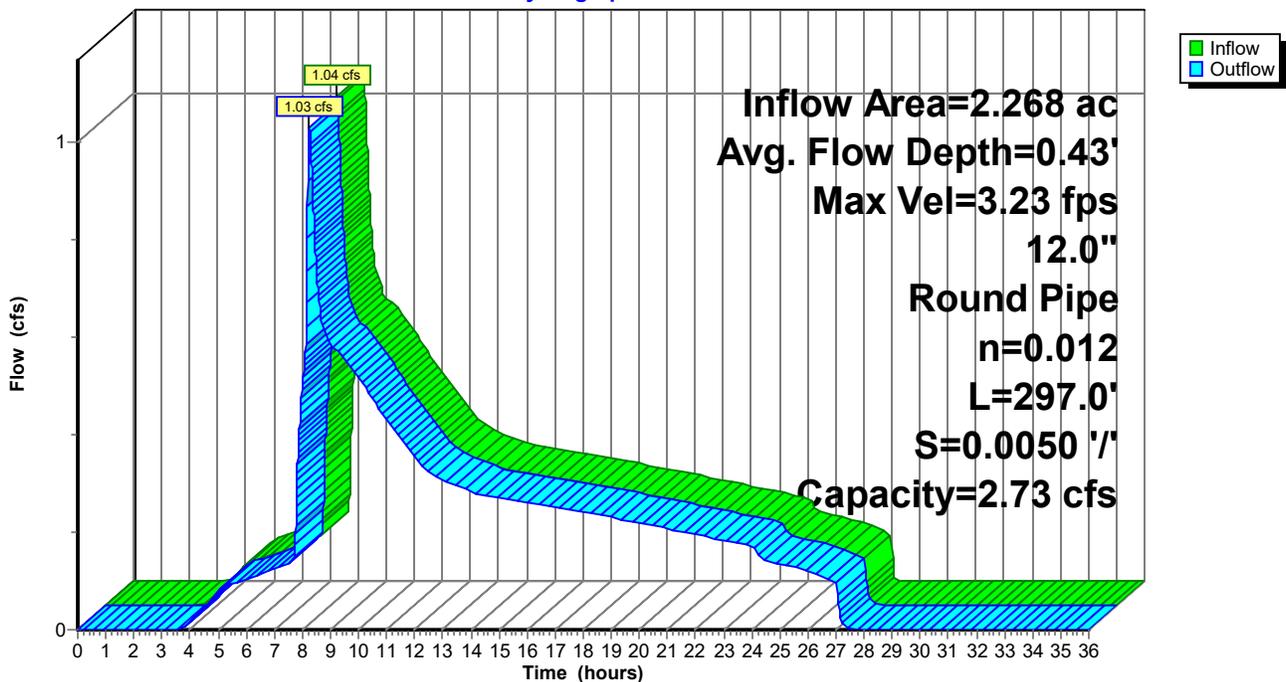
Peak Storage= 94 cf @ 8.22 hrs
 Average Depth at Peak Storage= 0.43'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 297.0' Slope= 0.0050 '/'
 Inlet Invert= 214.81', Outlet Invert= 213.32'



Reach 13R: Pond 3 Lateral

Hydrograph



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Page 137

Summary for Pond 2P: WQ Facility 1

Inflow Area = 0.246 ac, 84.20% Impervious, Inflow Depth = 3.70" for 50-Year event
 Inflow = 0.24 cfs @ 7.95 hrs, Volume= 0.076 af
 Outflow = 0.24 cfs @ 7.97 hrs, Volume= 0.072 af, Atten= 0%, Lag= 1.0 min
 Discarded = 0.00 cfs @ 3.87 hrs, Volume= 0.008 af
 Primary = 0.23 cfs @ 7.97 hrs, Volume= 0.064 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 214.94' @ 7.97 hrs Surf.Area= 0.014 ac Storage= 0.009 af

Plug-Flow detention time= 137.0 min calculated for 0.072 af (95% of inflow)
 Center-of-Mass det. time= 98.1 min (797.4 - 699.3)

Volume	Invert	Avail.Storage	Storage Description
#1	210.88'	0.002 af	4.00'W x 50.00'L x 1.00'H Gravel Storage 0.005 af Overall x 40.0% Voids
#2	211.88'	0.000 af	4.00'W x 50.00'L x 1.50'H Growing Medium 0.007 af Overall x 5.0% Voids
#3	213.38'	0.009 af	4.00'W x 50.00'L x 2.00'H Open Storage
		0.011 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	214.88'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	210.88'	0.200 in/hr Exfiltration over Surface area
#3	Primary	214.35'	1.9" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.00 cfs @ 3.87 hrs HW=213.38' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.23 cfs @ 7.97 hrs HW=214.94' (Free Discharge)

↑**1=Orifice/Grate** (Weir Controls 0.16 cfs @ 0.82 fps)

↑**3=Orifice/Grate** (Orifice Controls 0.07 cfs @ 3.45 fps)

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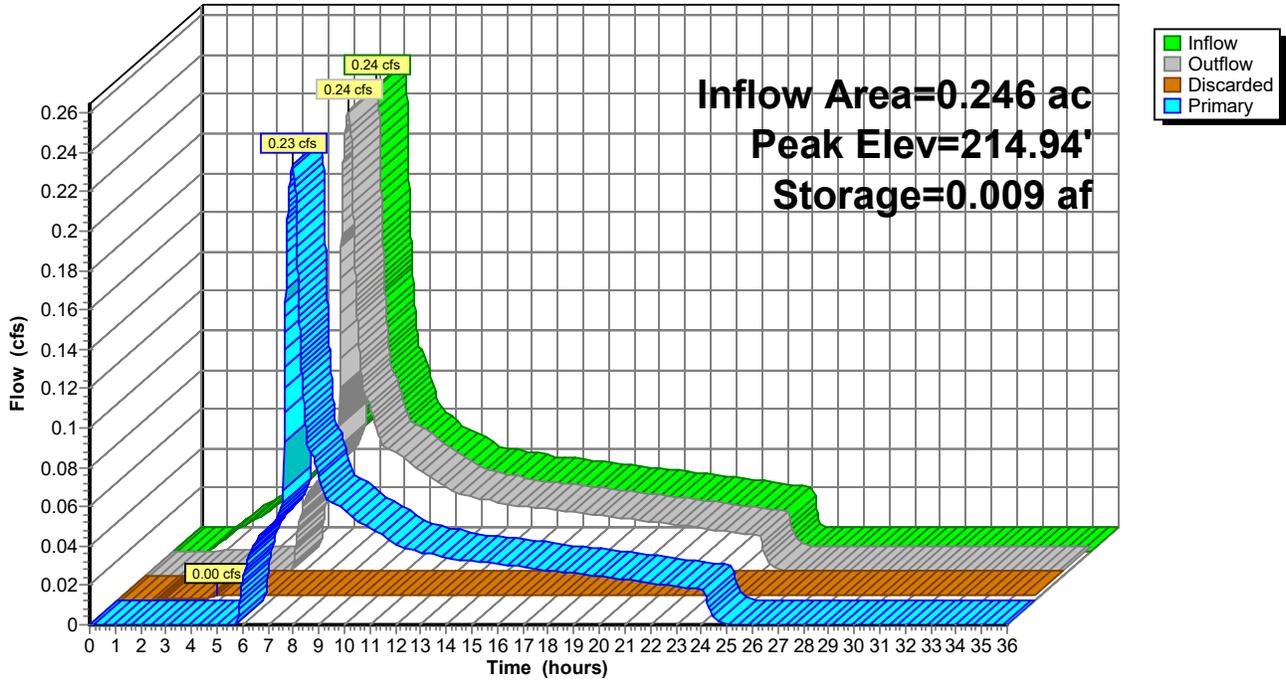
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Page 138

Pond 2P: WQ Facility 1

Hydrograph



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Page 139

Summary for Pond 3P: WQ Facility 2

Inflow Area = 0.241 ac, 81.80% Impervious, Inflow Depth = 3.70" for 50-Year event
 Inflow = 0.23 cfs @ 7.95 hrs, Volume= 0.074 af
 Outflow = 0.23 cfs @ 7.97 hrs, Volume= 0.070 af, Atten= 0%, Lag= 1.0 min
 Discarded = 0.00 cfs @ 3.90 hrs, Volume= 0.008 af
 Primary = 0.23 cfs @ 7.97 hrs, Volume= 0.063 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 216.42' @ 7.97 hrs Surf.Area= 0.014 ac Storage= 0.009 af

Plug-Flow detention time= 139.3 min calculated for 0.070 af (95% of inflow)
 Center-of-Mass det. time= 100.7 min (800.1 - 699.3)

Volume	Invert	Avail.Storage	Storage Description
#1	212.36'	0.002 af	4.00'W x 50.00'L x 1.00'H Gravel Storage 0.005 af Overall x 40.0% Voids
#2	213.36'	0.000 af	4.00'W x 50.00'L x 1.50'H Growing Medium 0.007 af Overall x 5.0% Voids
#3	214.86'	0.009 af	4.00'W x 50.00'L x 2.00'H Open Storage
		0.011 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	216.36'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	212.36'	0.200 in/hr Exfiltration over Surface area
#3	Primary	215.80'	1.8" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.00 cfs @ 3.90 hrs HW=214.86' (Free Discharge)

↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.22 cfs @ 7.97 hrs HW=216.42' (Free Discharge)

↑ **1=Orifice/Grate** (Weir Controls 0.16 cfs @ 0.82 fps)

↑ **3=Orifice/Grate** (Orifice Controls 0.06 cfs @ 3.56 fps)

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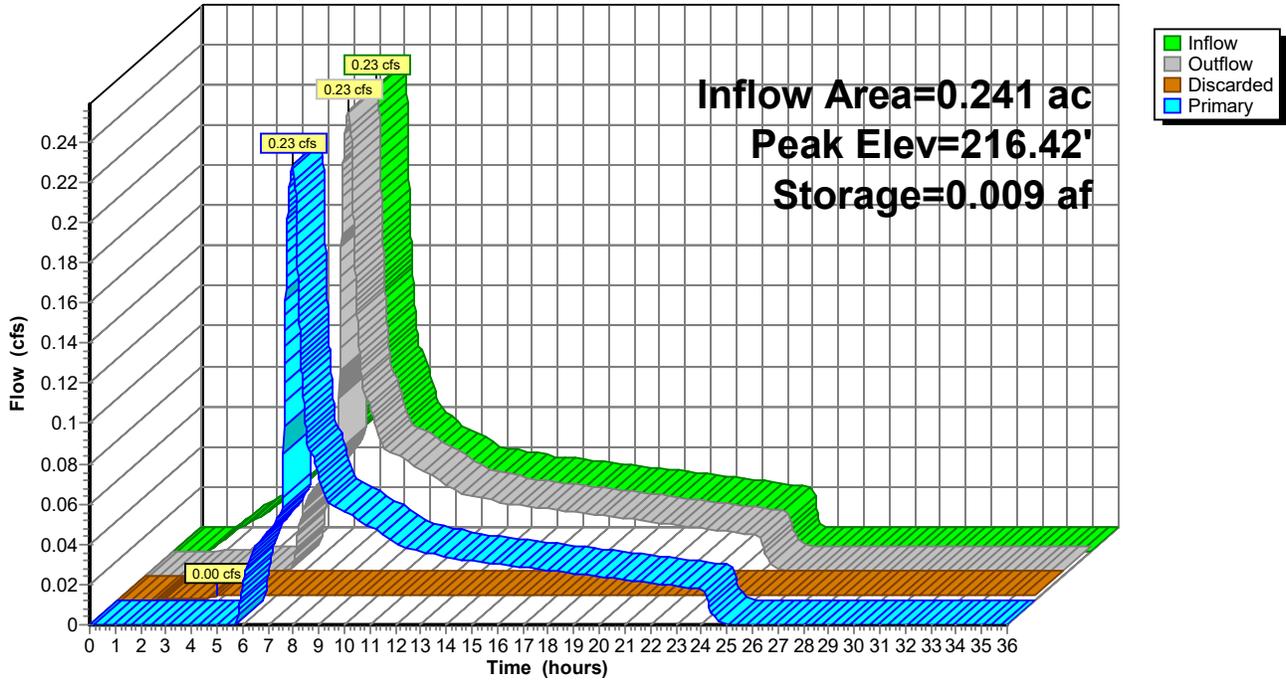
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Page 140

Pond 3P: WQ Facility 2

Hydrograph



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Page 141

Summary for Pond 4P: WQ/Det Facility 1

Inflow Area = 1.688 ac, 65.62% Impervious, Inflow Depth = 3.38" for 50-Year event
 Inflow = 1.48 cfs @ 7.97 hrs, Volume= 0.476 af
 Outflow = 0.94 cfs @ 8.24 hrs, Volume= 0.476 af, Atten= 37%, Lag= 16.0 min
 Discarded = 0.01 cfs @ 8.24 hrs, Volume= 0.004 af
 Primary = 0.93 cfs @ 8.24 hrs, Volume= 0.472 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 218.25' @ 8.24 hrs Surf.Area= 1,432 sf Storage= 2,115 cf

Plug-Flow detention time= 30.4 min calculated for 0.476 af (100% of inflow)
 Center-of-Mass det. time= 30.4 min (753.1 - 722.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	215.00'	3,375 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
215.00	115	0	0	115	
216.00	363	227	227	370	
217.00	751	545	773	769	
218.00	1,278	1,003	1,776	1,311	
219.00	1,944	1,599	3,375	1,996	

Device	Routing	Invert	Outlet Devices	
#1	Primary	213.26'	2.3" Vert. Orifice/Grate C= 0.600	
#2	Primary	218.25'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	215.00'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	217.15'	5.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.01 cfs @ 8.24 hrs HW=218.25' (Free Discharge)
 ↑ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.93 cfs @ 8.24 hrs HW=218.25' (Free Discharge)
 ↑ **1=Orifice/Grate** (Orifice Controls 0.31 cfs @ 10.65 fps)
 ↓ **2=Orifice/Grate** (Weir Controls 0.00 cfs @ 0.08 fps)
 ↓ **4=Orifice/Grate** (Orifice Controls 0.62 cfs @ 4.55 fps)

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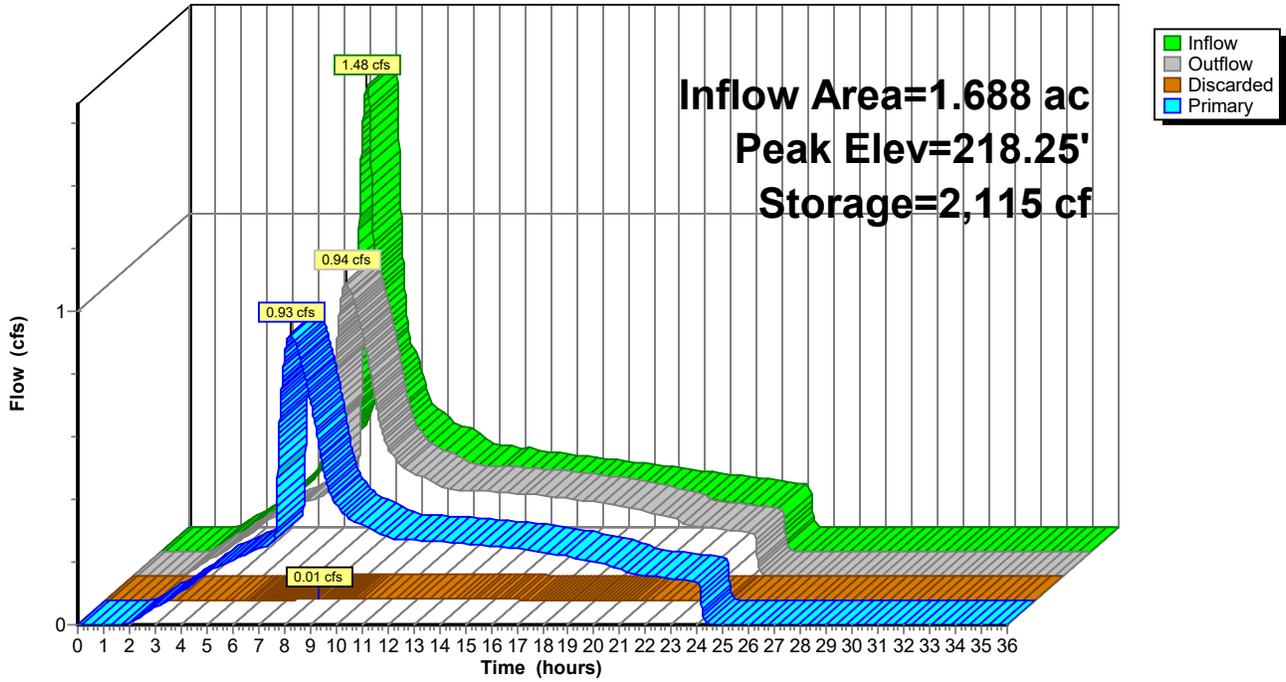
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Page 142

Pond 4P: WQ/Det Facility 1

Hydrograph



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Page 143

Summary for Pond 5P: WQ/Det Facility 2

Inflow Area = 0.714 ac, 71.57% Impervious, Inflow Depth = 3.59" for 50-Year event
 Inflow = 0.67 cfs @ 7.97 hrs, Volume= 0.214 af
 Outflow = 0.15 cfs @ 10.19 hrs, Volume= 0.214 af, Atten= 78%, Lag= 133.3 min
 Discarded = 0.01 cfs @ 10.19 hrs, Volume= 0.016 af
 Primary = 0.14 cfs @ 10.19 hrs, Volume= 0.197 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 219.26' @ 10.19 hrs Surf.Area= 1,881 sf Storage= 3,001 cf

Plug-Flow detention time= 386.0 min calculated for 0.214 af (100% of inflow)
 Center-of-Mass det. time= 386.0 min (1,093.4 - 707.4)

Volume	Invert	Avail.Storage	Storage Description
#1	216.00'	4,610 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
216.00	268	0	0	268
217.00	561	406	406	572
218.00	1,031	784	1,190	1,055
219.00	1,686	1,345	2,535	1,726
220.00	2,491	2,075	4,610	2,551

Device	Routing	Invert	Outlet Devices
#1	Primary	214.01'	1.0" Vert. Orifice/Grate C= 0.600
#2	Primary	219.25'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Discarded	216.00'	0.200 in/hr Exfiltration over Surface area
#4	Primary	218.05'	1.0" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.01 cfs @ 10.19 hrs HW=219.26' (Free Discharge)
 ↑**3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.12 cfs @ 10.19 hrs HW=219.26' (Free Discharge)
 ↑**1=Orifice/Grate** (Orifice Controls 0.06 cfs @ 10.99 fps)
 ↓**2=Orifice/Grate** (Weir Controls 0.03 cfs @ 0.35 fps)
 ↓**4=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.21 fps)

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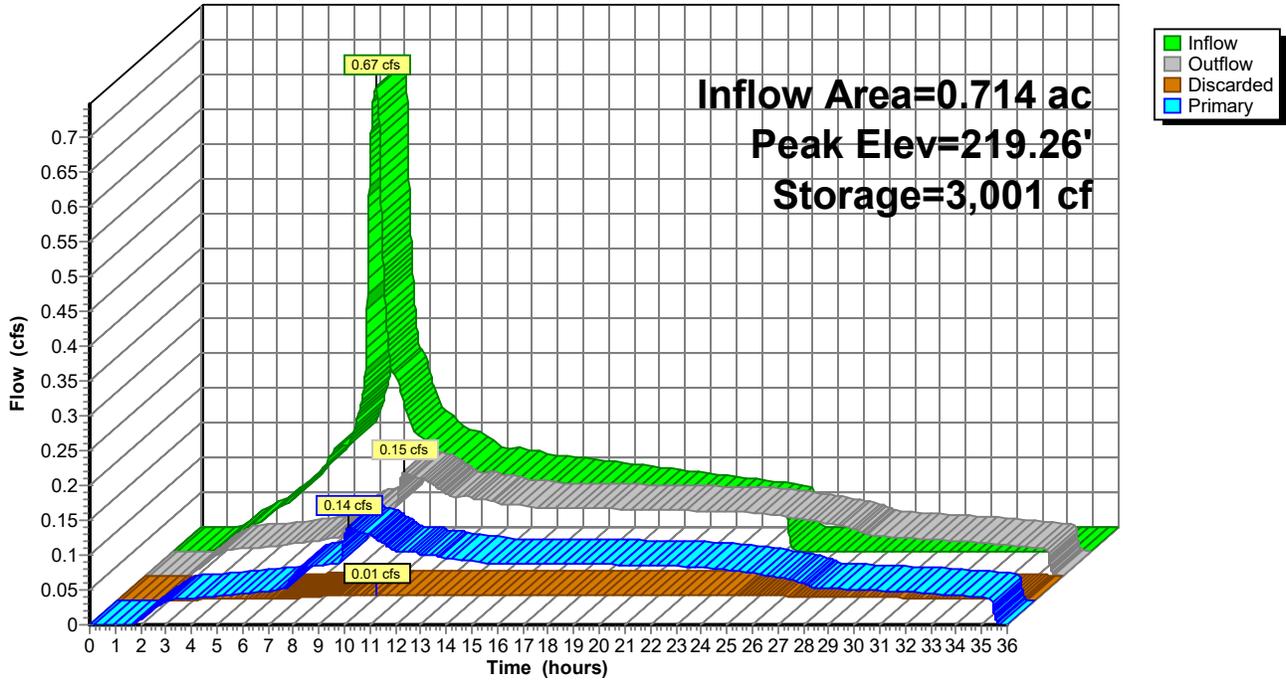
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Page 144

Pond 5P: WQ/Det Facility 2

Hydrograph



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Page 145

Summary for Pond 6P: WQ/Det Facility 3

Inflow Area = 2.268 ac, 42.16% Impervious, Inflow Depth = 2.62" for 50-Year event
 Inflow = 1.48 cfs @ 8.01 hrs, Volume= 0.495 af
 Outflow = 1.05 cfs @ 8.19 hrs, Volume= 0.495 af, Atten= 29%, Lag= 11.1 min
 Discarded = 0.01 cfs @ 8.19 hrs, Volume= 0.009 af
 Primary = 1.04 cfs @ 8.19 hrs, Volume= 0.486 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 219.82' @ 8.19 hrs Surf.Area= 1,615 sf Storage= 2,793 cf

Plug-Flow detention time= 83.3 min calculated for 0.495 af (100% of inflow)
 Center-of-Mass det. time= 83.3 min (858.0 - 774.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	216.50'	4,035 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
216.50	244	0	0	244	
217.50	554	389	389	564	
218.50	941	739	1,128	966	
219.50	1,444	1,184	2,311	1,487	
220.50	2,019	1,723	4,035	2,086	

Device	Routing	Invert	Outlet Devices	
#1	Primary	215.01'	1.7" Vert. Orifice/Grate C= 0.600	
#2	Primary	219.75'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	216.50'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	218.60'	4.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.01 cfs @ 8.19 hrs HW=219.82' (Free Discharge)
 ↑ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=1.03 cfs @ 8.19 hrs HW=219.82' (Free Discharge)
 ↑ **1=Orifice/Grate** (Orifice Controls 0.17 cfs @ 10.48 fps)
 | **2=Orifice/Grate** (Weir Controls 0.44 cfs @ 0.84 fps)
 | **4=Orifice/Grate** (Orifice Controls 0.43 cfs @ 4.93 fps)

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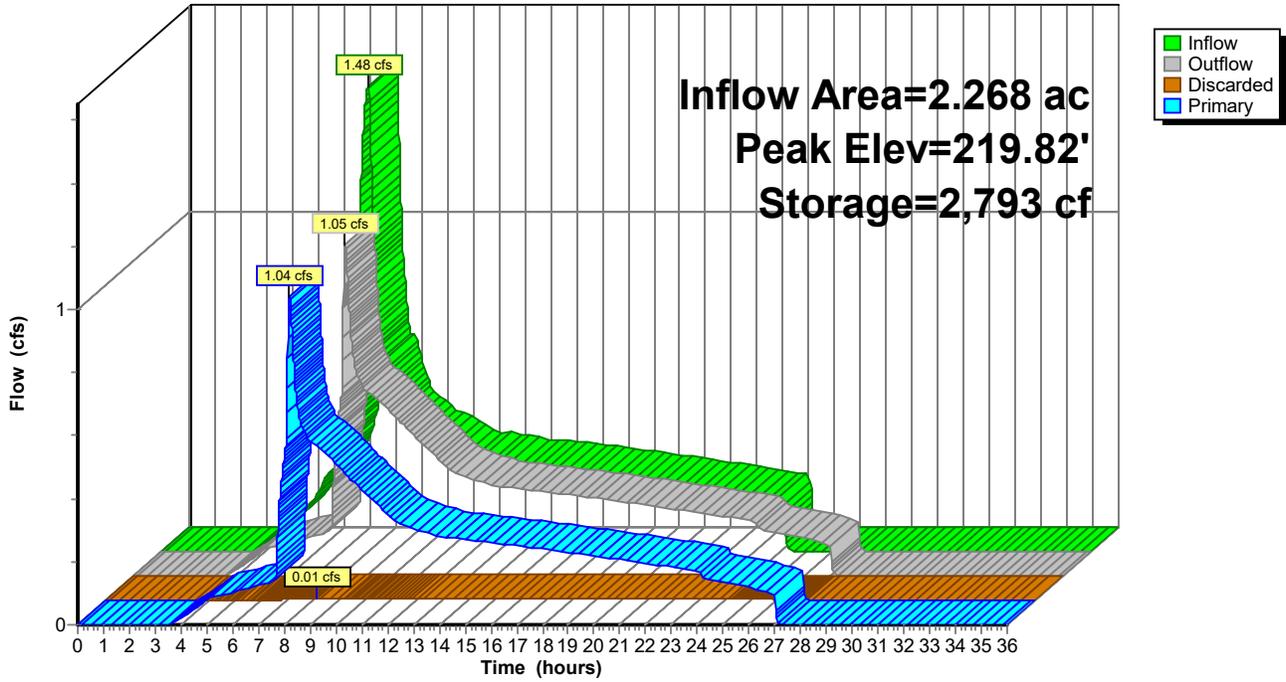
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Page 146

Pond 6P: WQ/Det Facility 3

Hydrograph



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Page 147

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: Franklin Ave 1	Runoff Area=10,733 sf 84.20% Impervious Runoff Depth=0.50" Flow Length=242' Slope=0.0200 '/' Tc=10.0 min CN=94 Runoff=0.03 cfs 0.010 af
Subcatchment 3S: Franklin Ave 2	Runoff Area=10,498 sf 81.80% Impervious Runoff Depth=0.50" Flow Length=274' Slope=0.0200 '/' Tc=10.0 min CN=94 Runoff=0.03 cfs 0.010 af
Subcatchment 4S: Phase 1 & 2	Runoff Area=73,511 sf 65.62% Impervious Runoff Depth=0.36" Flow Length=500' Tc=10.2 min CN=91 Runoff=0.12 cfs 0.051 af
Subcatchment 5S: Phase 3	Runoff Area=31,101 sf 71.57% Impervious Runoff Depth=0.45" Flow Length=360' Tc=10.0 min CN=93 Runoff=0.07 cfs 0.027 af
Subcatchment 6S: Phase 4 & 5	Runoff Area=98,814 sf 42.16% Impervious Runoff Depth=0.13" Flow Length=422' Tc=10.0 min CN=83 Runoff=0.02 cfs 0.025 af
Subcatchment 7S: Wetland	Runoff Area=76,610 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=365' Slope=0.0200 '/' Tc=27.9 min CN=65 Runoff=0.00 cfs 0.000 af
Reach 1R: EX SE Shore Drive	Avg. Flow Depth=0.18' Max Vel=1.64 fps Inflow=0.16 cfs 0.101 af 12.0" Round Pipe n=0.012 L=161.8' S=0.0033 '/' Capacity=2.23 cfs Outflow=0.16 cfs 0.101 af
Reach 2R: Franklin Avenue 3	Avg. Flow Depth=0.16' Max Vel=1.90 fps Inflow=0.16 cfs 0.101 af 12.0" Round Pipe n=0.012 L=147.0' S=0.0050 '/' Capacity=2.74 cfs Outflow=0.16 cfs 0.101 af
Reach 4R: Franklin Avenue 2	Avg. Flow Depth=0.16' Max Vel=1.89 fps Inflow=0.16 cfs 0.101 af 12.0" Round Pipe n=0.012 L=98.9' S=0.0050 '/' Capacity=2.72 cfs Outflow=0.16 cfs 0.101 af
Reach 5R: Franklin Avenue 1	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af 12.0" Round Pipe n=0.012 L=157.1' S=0.0050 '/' Capacity=2.74 cfs Outflow=0.00 cfs 0.000 af
Reach 7R: Private Road A 2	Avg. Flow Depth=0.16' Max Vel=1.89 fps Inflow=0.16 cfs 0.101 af 12.0" Round Pipe n=0.012 L=132.9' S=0.0050 '/' Capacity=2.72 cfs Outflow=0.16 cfs 0.101 af
Reach 8R: Pond 1 Lateral	Avg. Flow Depth=0.14' Max Vel=1.74 fps Inflow=0.12 cfs 0.050 af 12.0" Round Pipe n=0.012 L=26.1' S=0.0050 '/' Capacity=2.72 cfs Outflow=0.12 cfs 0.050 af
Reach 10R: Private Road A 1	Avg. Flow Depth=0.10' Max Vel=1.36 fps Inflow=0.05 cfs 0.051 af 12.0" Round Pipe n=0.012 L=38.5' S=0.0049 '/' Capacity=2.71 cfs Outflow=0.05 cfs 0.051 af
Reach 11R: Pond 2 Lateral	Avg. Flow Depth=0.08' Max Vel=1.24 fps Inflow=0.04 cfs 0.026 af 12.0" Round Pipe n=0.012 L=98.2' S=0.0050 '/' Capacity=2.73 cfs Outflow=0.04 cfs 0.026 af
Reach 13R: Pond 3 Lateral	Avg. Flow Depth=0.06' Max Vel=1.03 fps Inflow=0.02 cfs 0.025 af 12.0" Round Pipe n=0.012 L=297.0' S=0.0050 '/' Capacity=2.73 cfs Outflow=0.02 cfs 0.025 af
Pond 2P: WQ Facility 1	Peak Elev=214.32' Storage=0.006 af Inflow=0.03 cfs 0.010 af Discarded=0.00 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.007 af

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Page 148

Pond 3P: WQ Facility 2 Peak Elev=215.75' Storage=0.006 af Inflow=0.03 cfs 0.010 af
Discarded=0.00 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.007 af

Pond 4P: WQ/Det Facility 1 Peak Elev=215.03' Storage=3 cf Inflow=0.12 cfs 0.051 af
Discarded=0.00 cfs 0.000 af Primary=0.12 cfs 0.050 af Outflow=0.12 cfs 0.051 af

Pond 5P: WQ/Det Facility 2 Peak Elev=216.20' Storage=58 cf Inflow=0.07 cfs 0.027 af
Discarded=0.00 cfs 0.001 af Primary=0.04 cfs 0.026 af Outflow=0.04 cfs 0.027 af

Pond 6P: WQ/Det Facility 3 Peak Elev=216.51' Storage=2 cf Inflow=0.02 cfs 0.025 af
Discarded=0.00 cfs 0.000 af Primary=0.02 cfs 0.025 af Outflow=0.02 cfs 0.025 af

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Type IA 24-hr WQ Rainfall=1.00"

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Page 149

Summary for Subcatchment 2S: Franklin Ave 1

Runoff = 0.03 cfs @ 8.03 hrs, Volume= 0.010 af, Depth= 0.50"

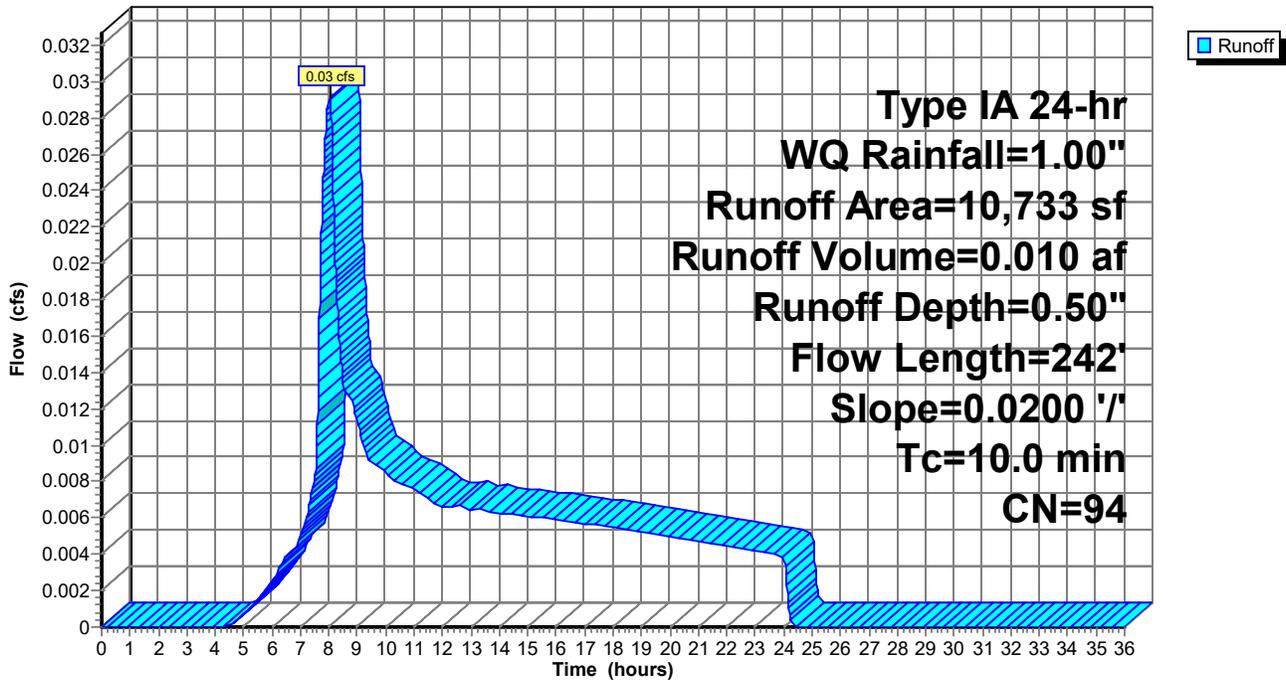
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
9,037	98	Paved roads w/curbs & sewers, HSG C
1,696	74	>75% Grass cover, Good, HSG C
10,733	94	Weighted Average
1,696	74	15.80% Pervious Area
9,037	98	84.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.0200	0.99		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
1.2	202	0.0200	2.87		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
1.9	242	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 2S: Franklin Ave 1

Hydrograph



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Type IA 24-hr WQ Rainfall=1.00"

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Page 150

Summary for Subcatchment 3S: Franklin Ave 2

Runoff = 0.03 cfs @ 8.03 hrs, Volume= 0.010 af, Depth= 0.50"

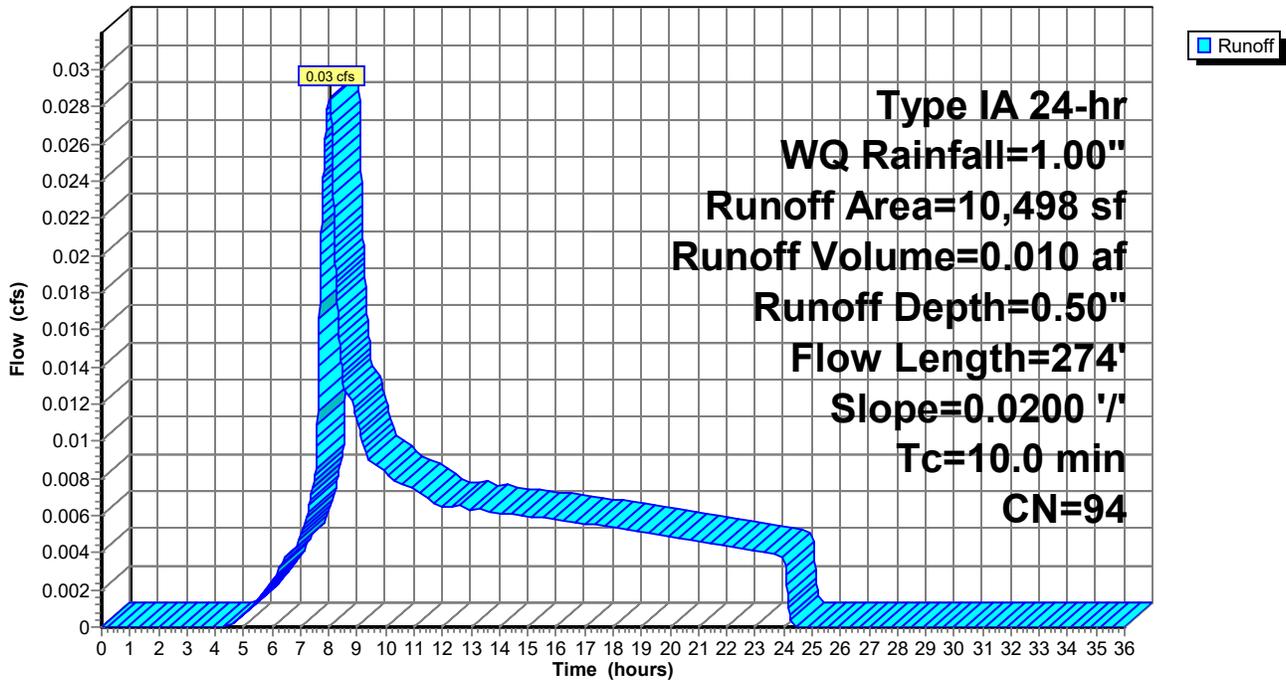
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
8,587	98	Paved roads w/curbs & sewers, HSG C
1,911	74	>75% Grass cover, Good, HSG C
10,498	94	Weighted Average
1,911	74	18.20% Pervious Area
8,587	98	81.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.0200	0.99		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
1.4	234	0.0200	2.87		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
2.1	274	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 3S: Franklin Ave 2

Hydrograph



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Page 151

Summary for Subcatchment 4S: Phase 1 & 2

Runoff = 0.12 cfs @ 8.04 hrs, Volume= 0.051 af, Depth= 0.36"

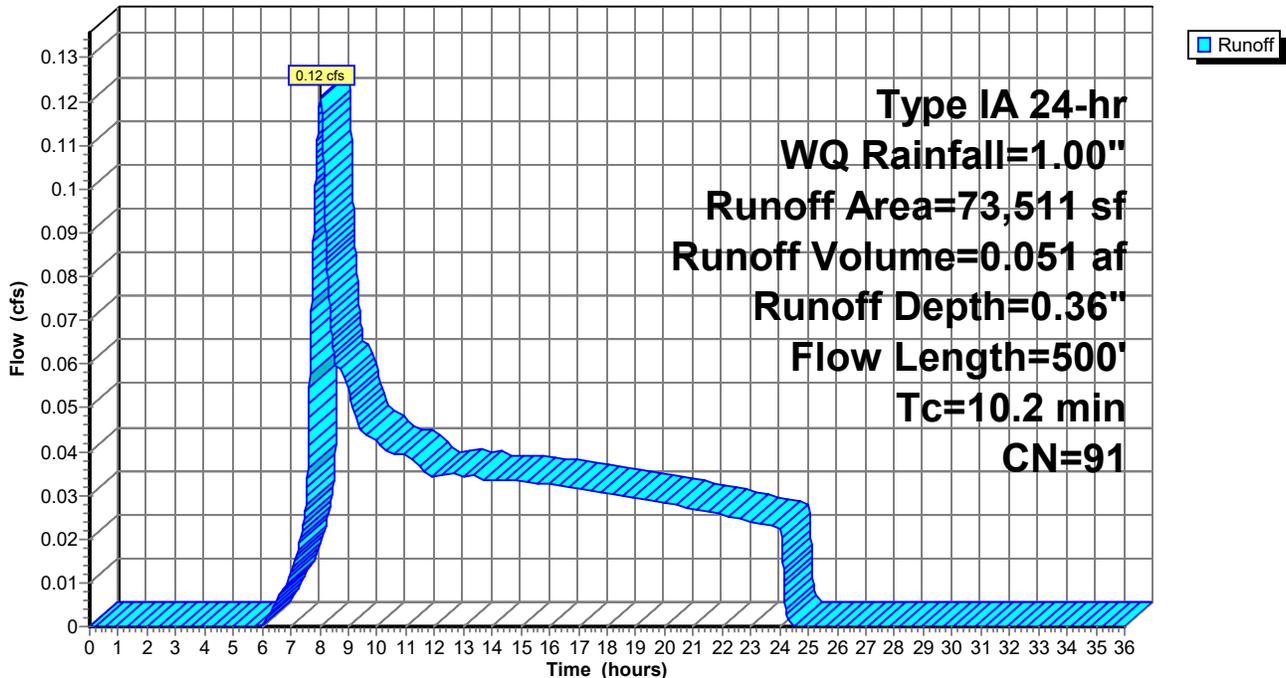
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
8,098	98	Paved parking, HSG C
1,945	98	Water Surface, 0% imp, HSG C
61,755	90	1/8 acre lots, 65% imp, HSG C
1,713	74	>75% Grass cover, Good, HSG C
73,511	91	Weighted Average
25,272	77	34.38% Pervious Area
48,239	98	65.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	20	0.0200	0.05		Sheet Flow, Sheet Grass: Bermuda n= 0.410 P2= 2.40"
1.3	80	0.0200	0.99		Shallow Concentrated Flow, SCF Short Grass Pasture Kv= 7.0 fps
1.9	400	0.0050	3.47	2.73	Pipe Channel, To Pond 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
10.2	500	Total			

Subcatchment 4S: Phase 1 & 2

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Type IA 24-hr WQ Rainfall=1.00"

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Page 152

Summary for Subcatchment 5S: Phase 3

Runoff = 0.07 cfs @ 8.03 hrs, Volume= 0.027 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
11,947	98	Paved parking, HSG C
2,490	98	Water Surface, 0% imp, HSG C
2,227	98	Unconnected pavement, HSG C
8,084	98	Roofs, HSG C
6,353	74	>75% Grass cover, Good, HSG C
31,101	93	Weighted Average
8,843	81	28.43% Pervious Area
22,258	98	71.57% Impervious Area
2,227		10.01% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	20	0.0200	0.86		Sheet Flow, Sheet Smooth surfaces n= 0.011 P2= 2.40"
0.3	60	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	280	0.0050	3.47	2.73	Pipe Channel, Pipe 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.0	360	Total, Increased to minimum Tc = 10.0 min			

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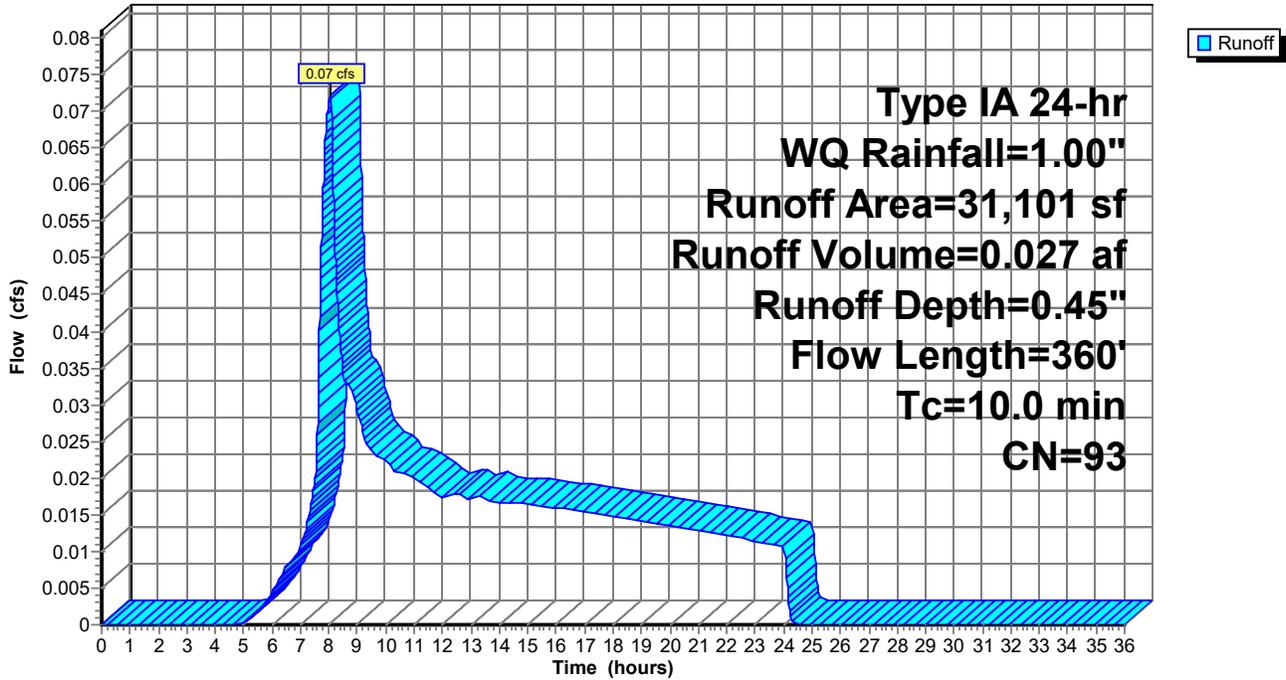
Type IA 24-hr WQ Rainfall=1.00"

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Page 153

Subcatchment 5S: Phase 3

Hydrograph



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Type IA 24-hr WQ Rainfall=1.00"

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Page 154

Summary for Subcatchment 6S: Phase 4 & 5

Runoff = 0.02 cfs @ 17.30 hrs, Volume= 0.025 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
2,019	98	Water Surface, 0% imp, HSG C
11,637	98	Roofs, HSG C
* 30,024	98	Parking Lot, Sidewalk, Unconnected Roofs
55,134	72	Woods/grass comb., Good, HSG C
98,814	83	Weighted Average
57,153	73	57.84% Pervious Area
41,661	98	42.16% Impervious Area
30,024		72.07% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	20	0.0200	0.05		Sheet Flow, Sheet Grass: Bermuda n= 0.410 P2= 2.40"
1.3	80	0.0200	0.99		Shallow Concentrated Flow, SCF Short Grass Pasture Kv= 7.0 fps
1.5	322	0.0050	3.47	2.73	Pipe Channel, To Pond 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
9.8	422	Total, Increased to minimum Tc = 10.0 min			

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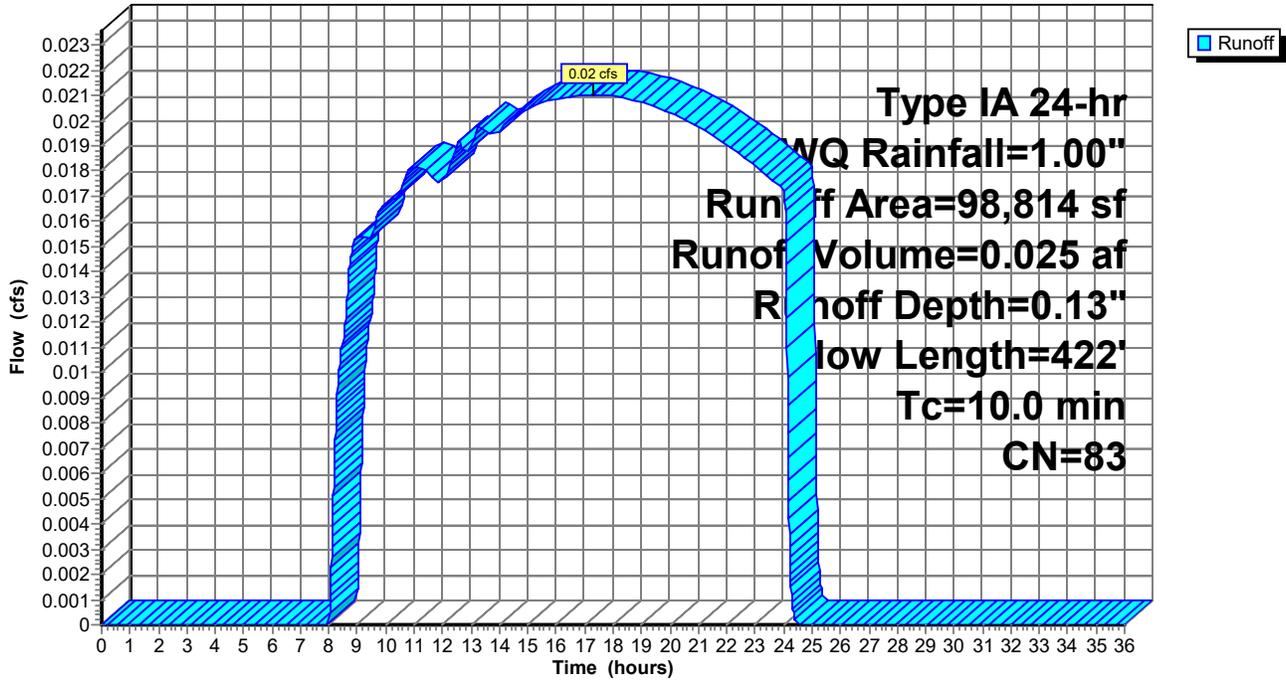
Type IA 24-hr WQ Rainfall=1.00"

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Page 155

Subcatchment 6S: Phase 4 & 5

Hydrograph



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Page 156

Summary for Subcatchment 7S: Wetland

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

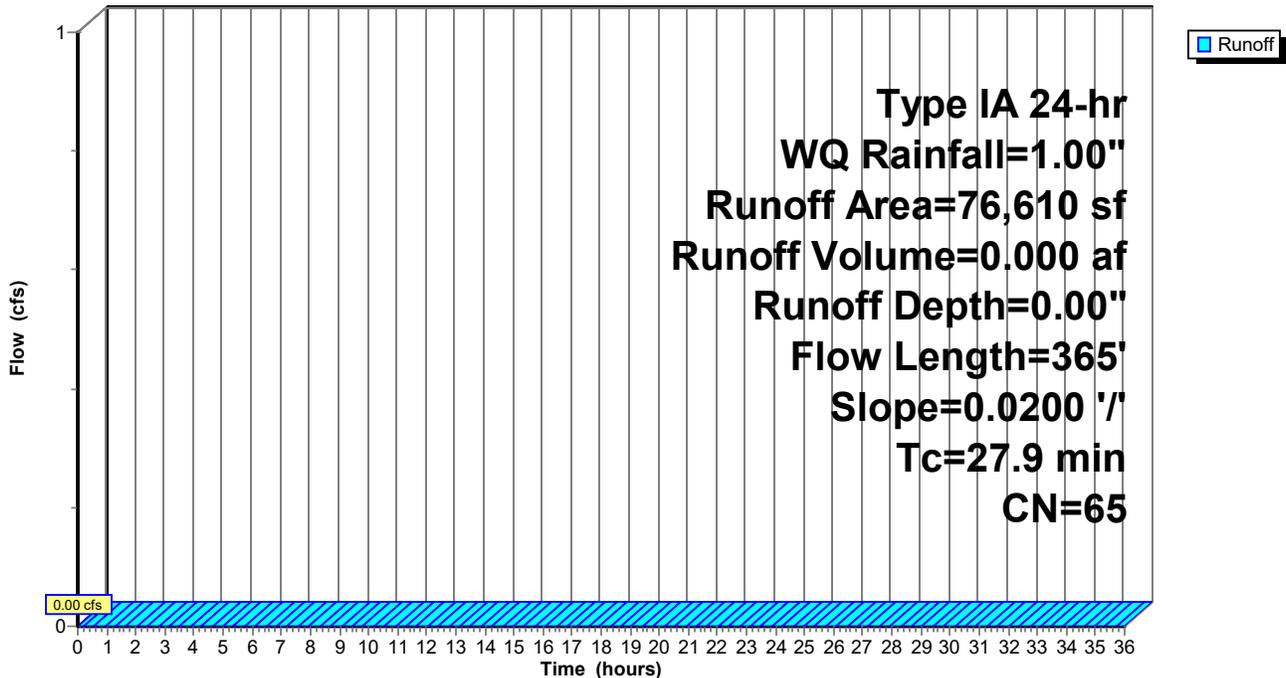
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
76,610	65	Brush, Good, HSG C
76,610	65	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	150	0.0200	0.11		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 2.40"
5.1	215	0.0200	0.71		Shallow Concentrated Flow, SCF Woodland Kv= 5.0 fps
27.9	365	Total			

Subcatchment 7S: Wetland

Hydrograph



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Page 157

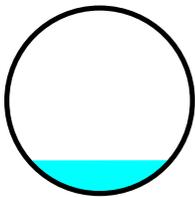
Summary for Reach 1R: EX SE Shore Drive

Inflow Area = 6.916 ac, 43.08% Impervious, Inflow Depth = 0.18" for WQ event
 Inflow = 0.16 cfs @ 8.15 hrs, Volume= 0.101 af
 Outflow = 0.16 cfs @ 8.19 hrs, Volume= 0.101 af, Atten= 0%, Lag= 2.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.64 fps, Min. Travel Time= 1.6 min
 Avg. Velocity = 1.14 fps, Avg. Travel Time= 2.4 min

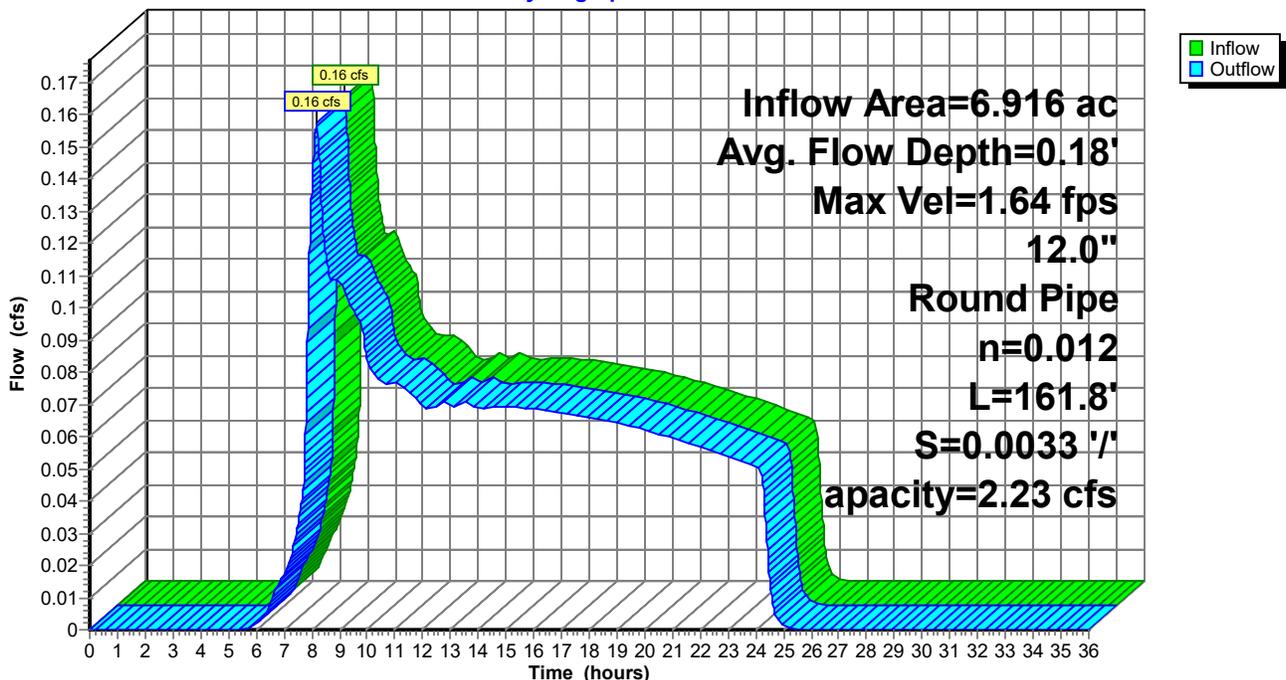
Peak Storage= 16 cf @ 8.17 hrs
 Average Depth at Peak Storage= 0.18'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.23 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 161.8' Slope= 0.0033 '/'
 Inlet Invert= 210.64', Outlet Invert= 210.10'



Reach 1R: EX SE Shore Drive

Hydrograph



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Page 158

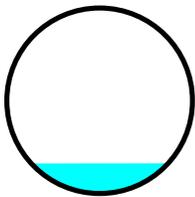
Summary for Reach 2R: Franklin Avenue 3

Inflow Area = 5.157 ac, 57.77% Impervious, Inflow Depth = 0.23" for WQ event
 Inflow = 0.16 cfs @ 8.11 hrs, Volume= 0.101 af
 Outflow = 0.16 cfs @ 8.15 hrs, Volume= 0.101 af, Atten= 0%, Lag= 2.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.90 fps, Min. Travel Time= 1.3 min
 Avg. Velocity = 1.33 fps, Avg. Travel Time= 1.8 min

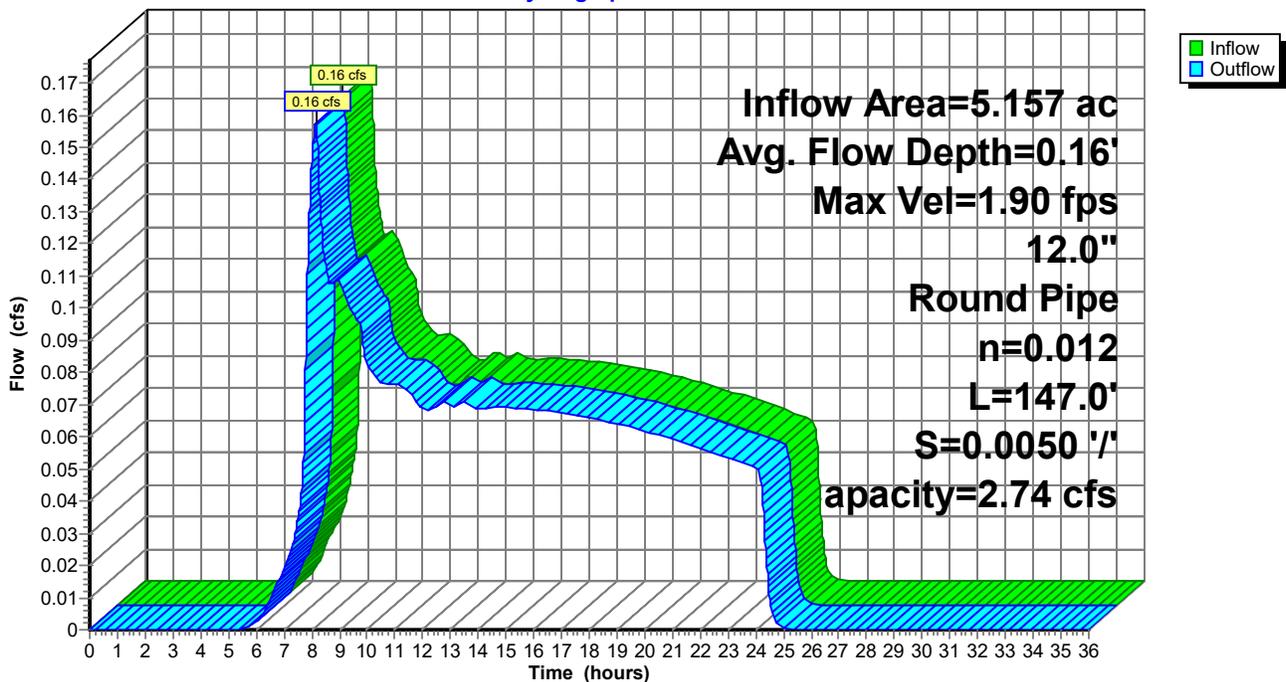
Peak Storage= 12 cf @ 8.13 hrs
 Average Depth at Peak Storage= 0.16'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.74 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 147.0' Slope= 0.0050 '/'
 Inlet Invert= 211.38', Outlet Invert= 210.64'



Reach 2R: Franklin Avenue 3

Hydrograph



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Type IA 24-hr WQ Rainfall=1.00"

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Page 159

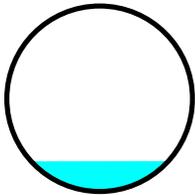
Summary for Reach 4R: Franklin Avenue 2

Inflow Area = 4.911 ac, 56.44% Impervious, Inflow Depth = 0.25" for WQ event
 Inflow = 0.16 cfs @ 8.09 hrs, Volume= 0.101 af
 Outflow = 0.16 cfs @ 8.11 hrs, Volume= 0.101 af, Atten= 0%, Lag= 1.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.89 fps, Min. Travel Time= 0.9 min
 Avg. Velocity = 1.32 fps, Avg. Travel Time= 1.2 min

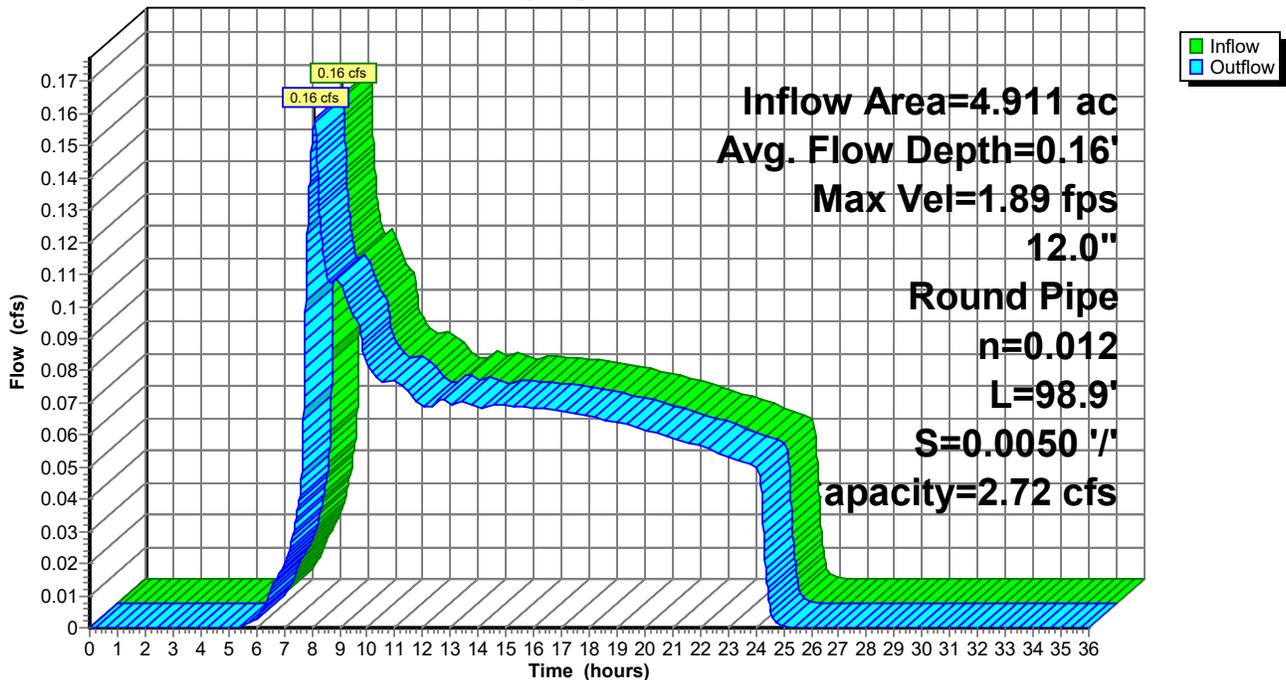
Peak Storage= 8 cf @ 8.10 hrs
 Average Depth at Peak Storage= 0.16'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 98.9' Slope= 0.0050 '/'
 Inlet Invert= 211.87', Outlet Invert= 211.38'



Reach 4R: Franklin Avenue 2

Hydrograph



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Type IA 24-hr WQ Rainfall=1.00"

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Page 160

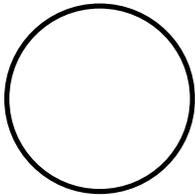
Summary for Reach 5R: Franklin Avenue 1

Inflow Area = 0.241 ac, 81.80% Impervious, Inflow Depth = 0.00" for WQ event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

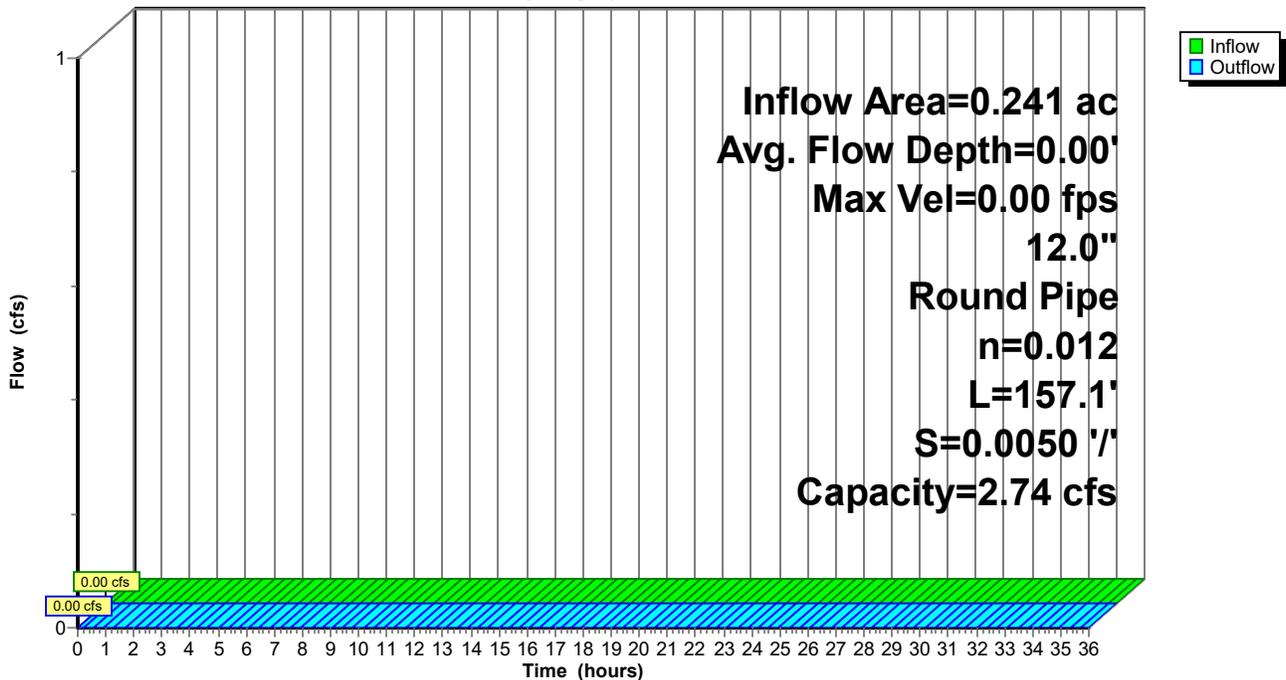
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.74 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 157.1' Slope= 0.0050 '/'
 Inlet Invert= 212.86', Outlet Invert= 212.07'



Reach 5R: Franklin Avenue 1

Hydrograph



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Page 161

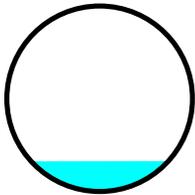
Summary for Reach 7R: Private Road A 2

Inflow Area = 4.670 ac, 55.13% Impervious, Inflow Depth = 0.26" for WQ event
 Inflow = 0.16 cfs @ 8.06 hrs, Volume= 0.101 af
 Outflow = 0.16 cfs @ 8.09 hrs, Volume= 0.101 af, Atten= 0%, Lag= 1.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.89 fps, Min. Travel Time= 1.2 min
 Avg. Velocity = 1.33 fps, Avg. Travel Time= 1.7 min

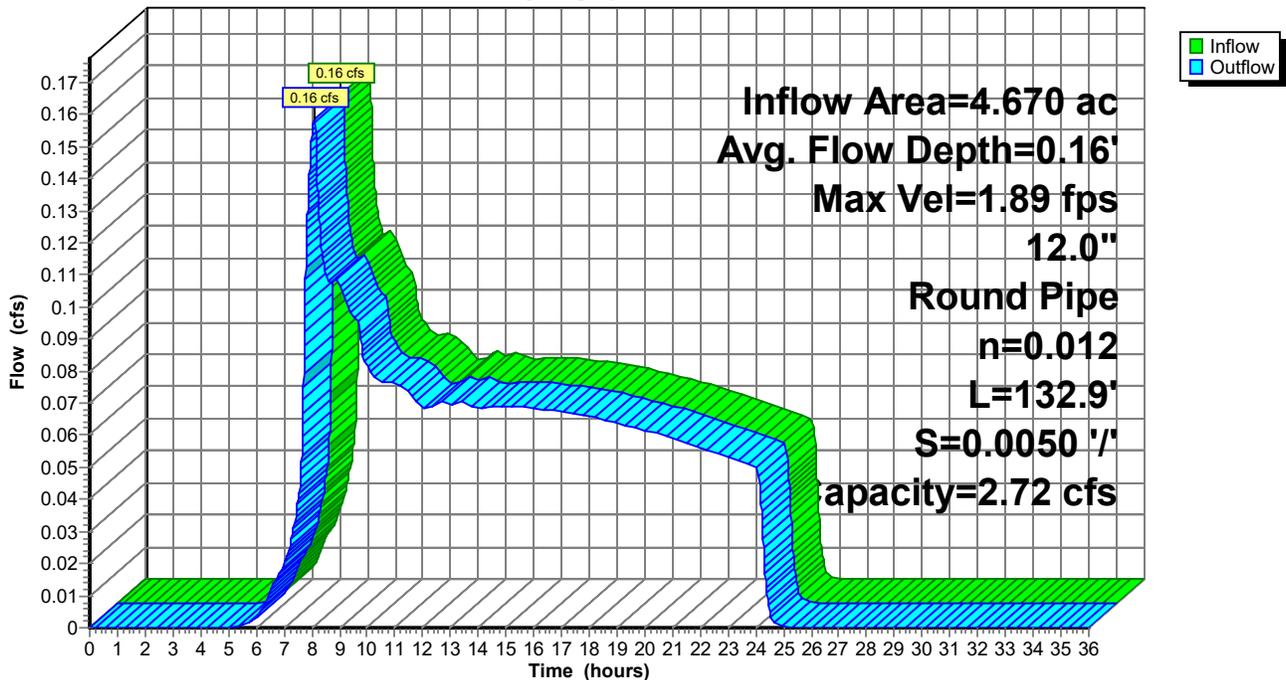
Peak Storage= 11 cf @ 8.07 hrs
 Average Depth at Peak Storage= 0.16'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 132.9' Slope= 0.0050 '/'
 Inlet Invert= 212.73', Outlet Invert= 212.07'



Reach 7R: Private Road A 2

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Page 162

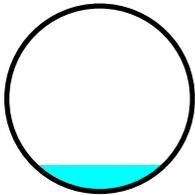
Summary for Reach 8R: Pond 1 Lateral

Inflow Area = 1.688 ac, 65.62% Impervious, Inflow Depth = 0.36" for WQ event
 Inflow = 0.12 cfs @ 8.05 hrs, Volume= 0.050 af
 Outflow = 0.12 cfs @ 8.06 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.74 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.14 fps, Avg. Travel Time= 0.4 min

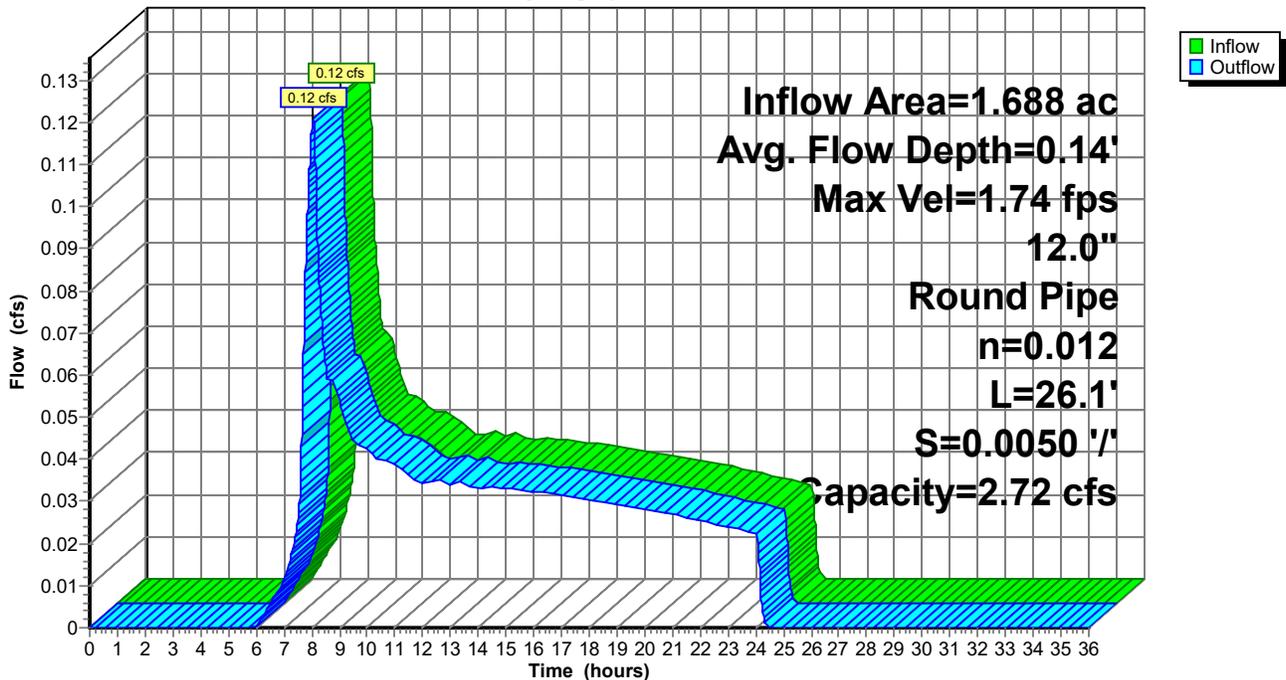
Peak Storage= 2 cf @ 8.05 hrs
 Average Depth at Peak Storage= 0.14'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.72 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 26.1' Slope= 0.0050 '/'
 Inlet Invert= 213.06', Outlet Invert= 212.93'



Reach 8R: Pond 1 Lateral

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Page 163

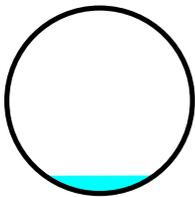
Summary for Reach 10R: Private Road A 1

Inflow Area = 2.982 ac, 49.20% Impervious, Inflow Depth = 0.20" for WQ event
 Inflow = 0.05 cfs @ 9.18 hrs, Volume= 0.051 af
 Outflow = 0.05 cfs @ 9.19 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.36 fps, Min. Travel Time= 0.5 min
 Avg. Velocity = 1.09 fps, Avg. Travel Time= 0.6 min

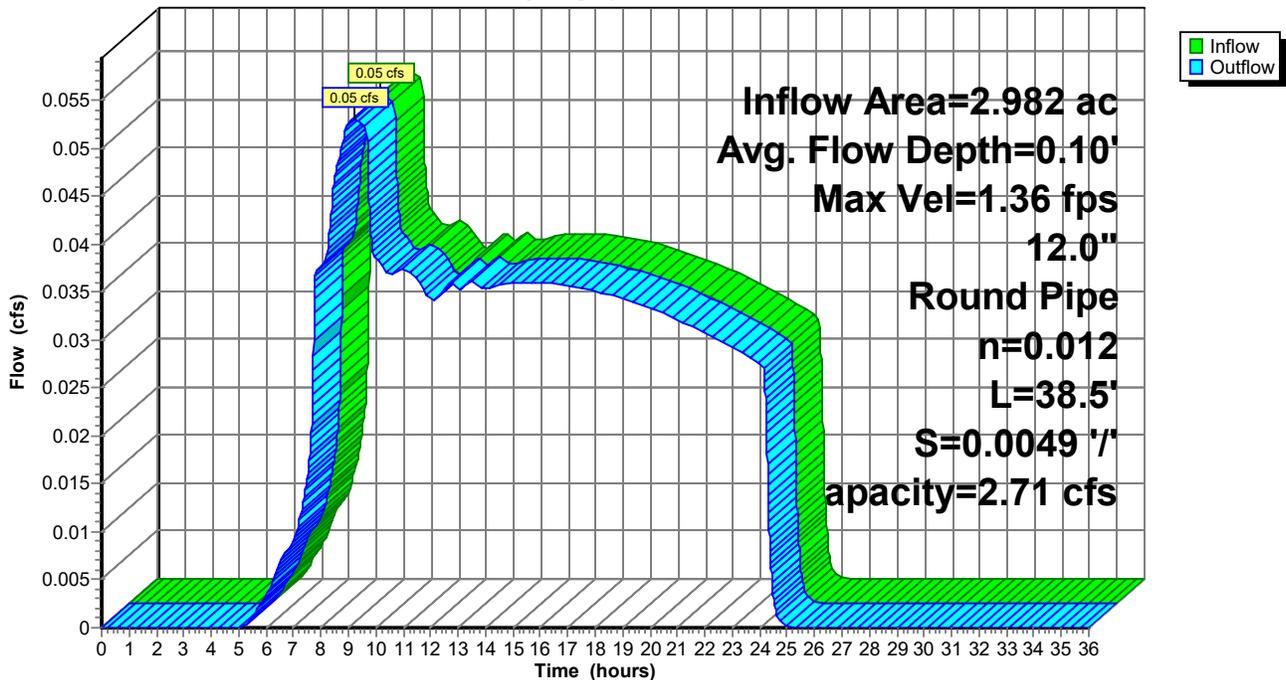
Peak Storage= 2 cf @ 9.19 hrs
 Average Depth at Peak Storage= 0.10'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.71 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 38.5' Slope= 0.0049 '/'
 Inlet Invert= 213.12', Outlet Invert= 212.93'



Reach 10R: Private Road A 1

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Page 164

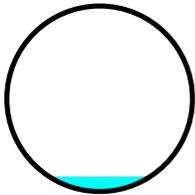
Summary for Reach 11R: Pond 2 Lateral

Inflow Area = 0.714 ac, 71.57% Impervious, Inflow Depth = 0.44" for WQ event
 Inflow = 0.04 cfs @ 8.37 hrs, Volume= 0.026 af
 Outflow = 0.04 cfs @ 8.41 hrs, Volume= 0.026 af, Atten= 0%, Lag= 2.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.24 fps, Min. Travel Time= 1.3 min
 Avg. Velocity = 0.91 fps, Avg. Travel Time= 1.8 min

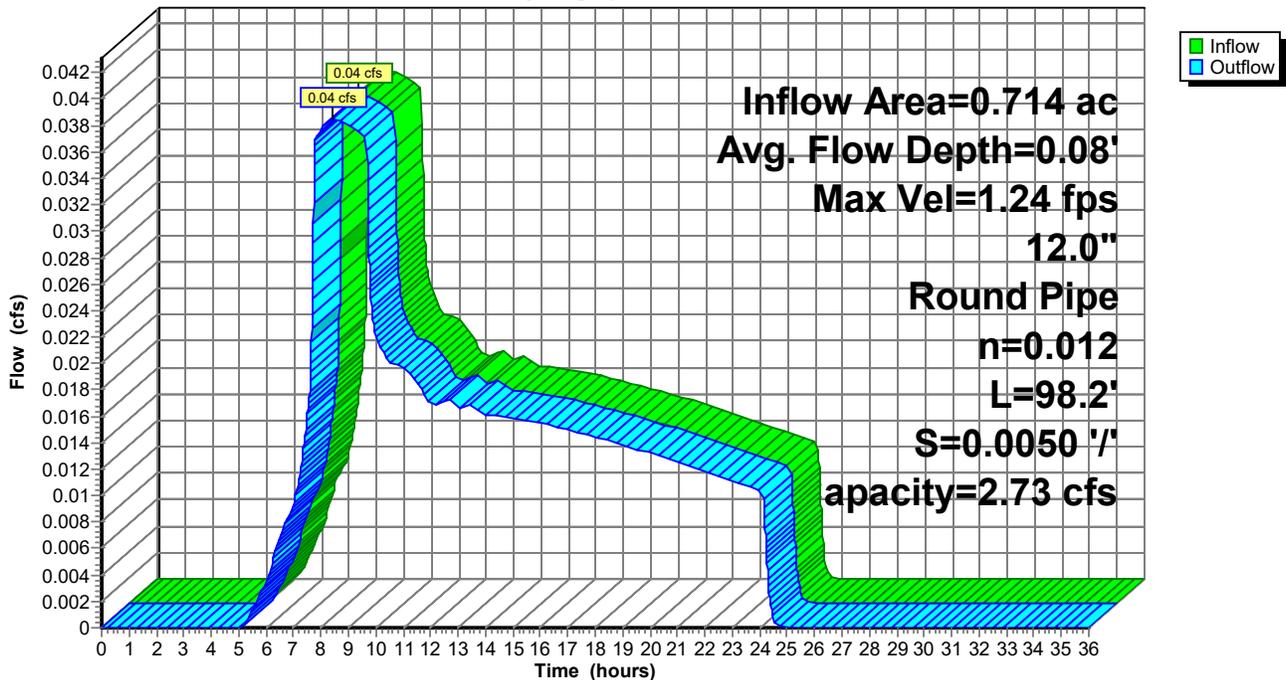
Peak Storage= 3 cf @ 8.39 hrs
 Average Depth at Peak Storage= 0.08'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 98.2' Slope= 0.0050 '/'
 Inlet Invert= 213.81', Outlet Invert= 213.32'



Reach 11R: Pond 2 Lateral

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Page 165

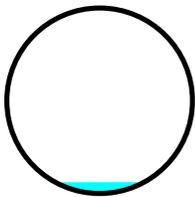
Summary for Reach 13R: Pond 3 Lateral

Inflow Area = 2.268 ac, 42.16% Impervious, Inflow Depth = 0.13" for WQ event
 Inflow = 0.02 cfs @ 17.26 hrs, Volume= 0.025 af
 Outflow = 0.02 cfs @ 17.41 hrs, Volume= 0.025 af, Atten= 0%, Lag= 8.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.03 fps, Min. Travel Time= 4.8 min
 Avg. Velocity = 0.95 fps, Avg. Travel Time= 5.2 min

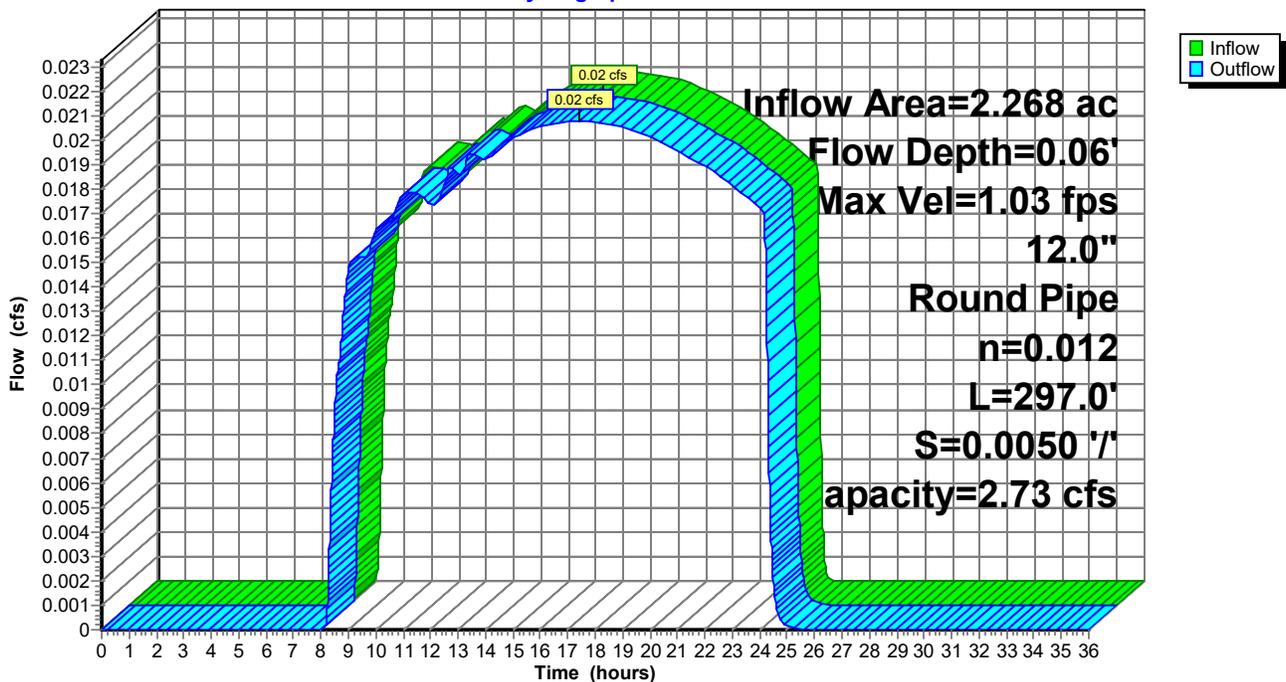
Peak Storage= 6 cf @ 17.33 hrs
 Average Depth at Peak Storage= 0.06'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
 n= 0.012 PVC, smooth interior
 Length= 297.0' Slope= 0.0050 '/'
 Inlet Invert= 214.81', Outlet Invert= 213.32'



Reach 13R: Pond 3 Lateral

Hydrograph



Franklin Reserve Post-Developed

Type IA 24-hr WQ Rainfall=1.00"

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Page 166

Summary for Pond 2P: WQ Facility 1

Inflow Area = 0.246 ac, 84.20% Impervious, Inflow Depth = 0.50" for WQ event
 Inflow = 0.03 cfs @ 8.03 hrs, Volume= 0.010 af
 Outflow = 0.00 cfs @ 8.54 hrs, Volume= 0.007 af, Atten= 90%, Lag= 30.8 min
 Discarded = 0.00 cfs @ 8.54 hrs, Volume= 0.007 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 214.32' @ 24.11 hrs Surf.Area= 0.014 ac Storage= 0.006 af

Plug-Flow detention time= 698.9 min calculated for 0.007 af (64% of inflow)
 Center-of-Mass det. time= 496.1 min (1,299.5 - 803.4)

Volume	Invert	Avail.Storage	Storage Description
#1	210.88'	0.002 af	4.00'W x 50.00'L x 1.00'H Gravel Storage 0.005 af Overall x 40.0% Voids
#2	211.88'	0.000 af	4.00'W x 50.00'L x 1.50'H Growing Medium 0.007 af Overall x 5.0% Voids
#3	213.38'	0.009 af	4.00'W x 50.00'L x 2.00'H Open Storage
		0.011 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	214.88'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	210.88'	0.200 in/hr Exfiltration over Surface area
#3	Primary	214.35'	1.9" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.00 cfs @ 8.54 hrs HW=213.38' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=210.88' (Free Discharge)

↑**1=Orifice/Grate** (Controls 0.00 cfs)

↑**3=Orifice/Grate** (Controls 0.00 cfs)

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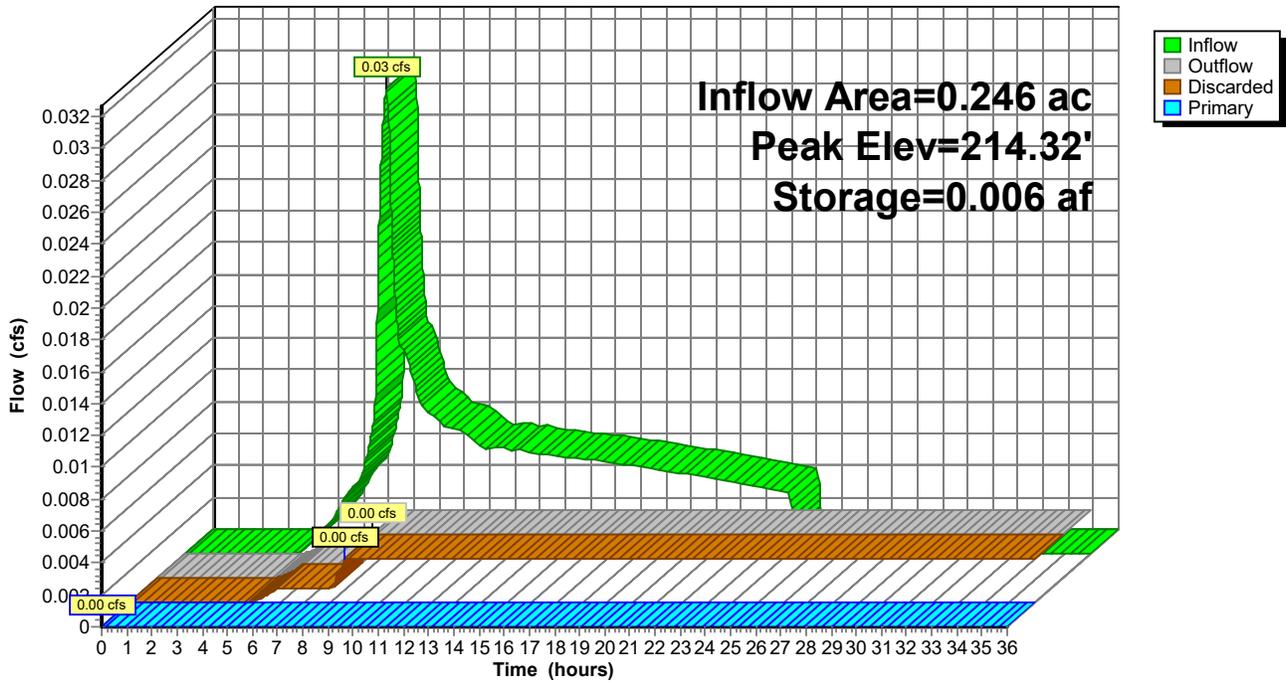
Type IA 24-hr WQ Rainfall=1.00"

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Page 167

Pond 2P: WQ Facility 1

Hydrograph



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Type IA 24-hr WQ Rainfall=1.00"

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Page 168

Summary for Pond 3P: WQ Facility 2

Inflow Area = 0.241 ac, 81.80% Impervious, Inflow Depth = 0.50" for WQ event
 Inflow = 0.03 cfs @ 8.03 hrs, Volume= 0.010 af
 Outflow = 0.00 cfs @ 8.59 hrs, Volume= 0.007 af, Atten= 90%, Lag= 33.8 min
 Discarded = 0.00 cfs @ 8.59 hrs, Volume= 0.007 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 215.75' @ 24.11 hrs Surf.Area= 0.014 ac Storage= 0.006 af

Plug-Flow detention time= 693.3 min calculated for 0.007 af (65% of inflow)
 Center-of-Mass det. time= 497.0 min (1,300.4 - 803.4)

Volume	Invert	Avail.Storage	Storage Description
#1	212.36'	0.002 af	4.00'W x 50.00'L x 1.00'H Gravel Storage 0.005 af Overall x 40.0% Voids
#2	213.36'	0.000 af	4.00'W x 50.00'L x 1.50'H Growing Medium 0.007 af Overall x 5.0% Voids
#3	214.86'	0.009 af	4.00'W x 50.00'L x 2.00'H Open Storage
		0.011 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	216.36'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	212.36'	0.200 in/hr Exfiltration over Surface area
#3	Primary	215.80'	1.8" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.00 cfs @ 8.59 hrs HW=214.86' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=212.36' (Free Discharge)

↑**1=Orifice/Grate** (Controls 0.00 cfs)

↑**3=Orifice/Grate** (Controls 0.00 cfs)

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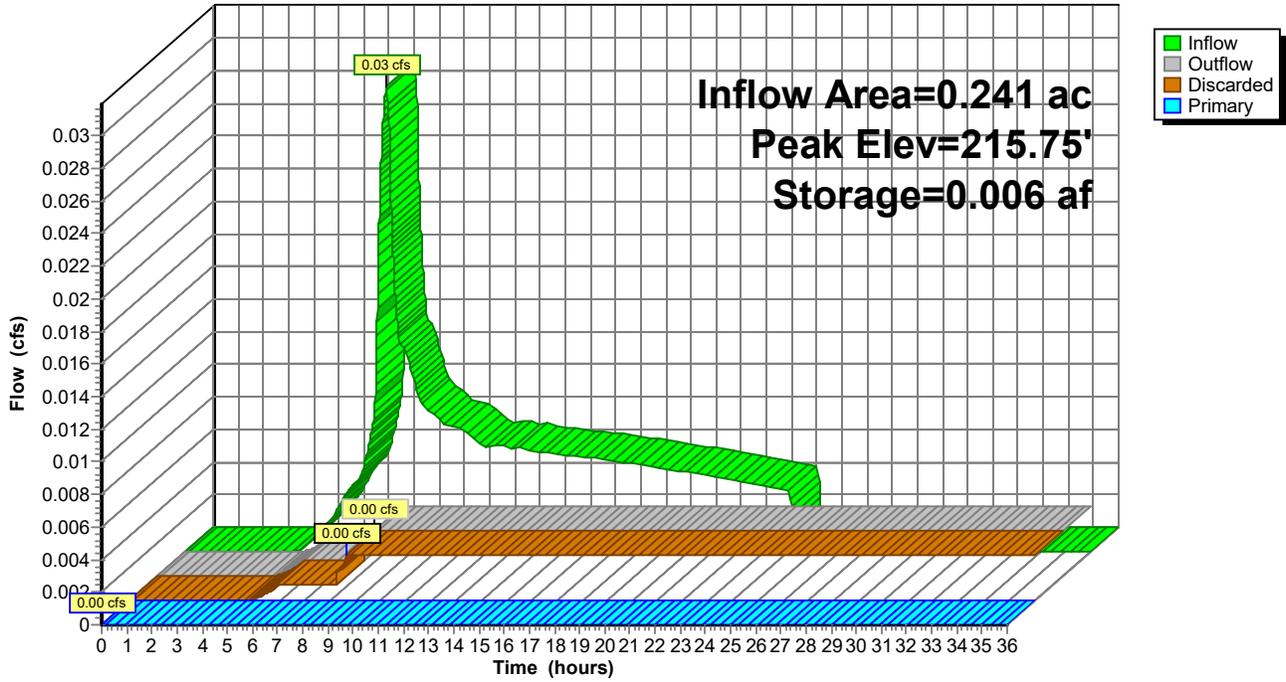
Type IA 24-hr WQ Rainfall=1.00"

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Page 169

Pond 3P: WQ Facility 2

Hydrograph



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Page 170

Summary for Pond 4P: WQ/Det Facility 1

Inflow Area = 1.688 ac, 65.62% Impervious, Inflow Depth = 0.36" for WQ event
 Inflow = 0.12 cfs @ 8.04 hrs, Volume= 0.051 af
 Outflow = 0.12 cfs @ 8.05 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.5 min
 Discarded = 0.00 cfs @ 8.05 hrs, Volume= 0.000 af
 Primary = 0.12 cfs @ 8.05 hrs, Volume= 0.050 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 215.03' @ 8.05 hrs Surf.Area= 120 sf Storage= 3 cf

Plug-Flow detention time= 0.4 min calculated for 0.051 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (853.7 - 853.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	215.00'	3,375 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
215.00	115	0	0	115	
216.00	363	227	227	370	
217.00	751	545	773	769	
218.00	1,278	1,003	1,776	1,311	
219.00	1,944	1,599	3,375	1,996	

Device	Routing	Invert	Outlet Devices	
#1	Primary	213.26'	2.3" Vert. Orifice/Grate C= 0.600	
#2	Primary	218.25'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Discarded	215.00'	0.200 in/hr Exfiltration over Surface area	
#4	Primary	217.15'	5.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=0.00 cfs @ 8.05 hrs HW=215.03' (Free Discharge)
 ↑**3=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.18 cfs @ 8.05 hrs HW=215.03' (Free Discharge)
 ↑**1=Orifice/Grate** (Orifice Controls 0.18 cfs @ 6.22 fps)
 |**2=Orifice/Grate** (Controls 0.00 cfs)
 |**4=Orifice/Grate** (Controls 0.00 cfs)

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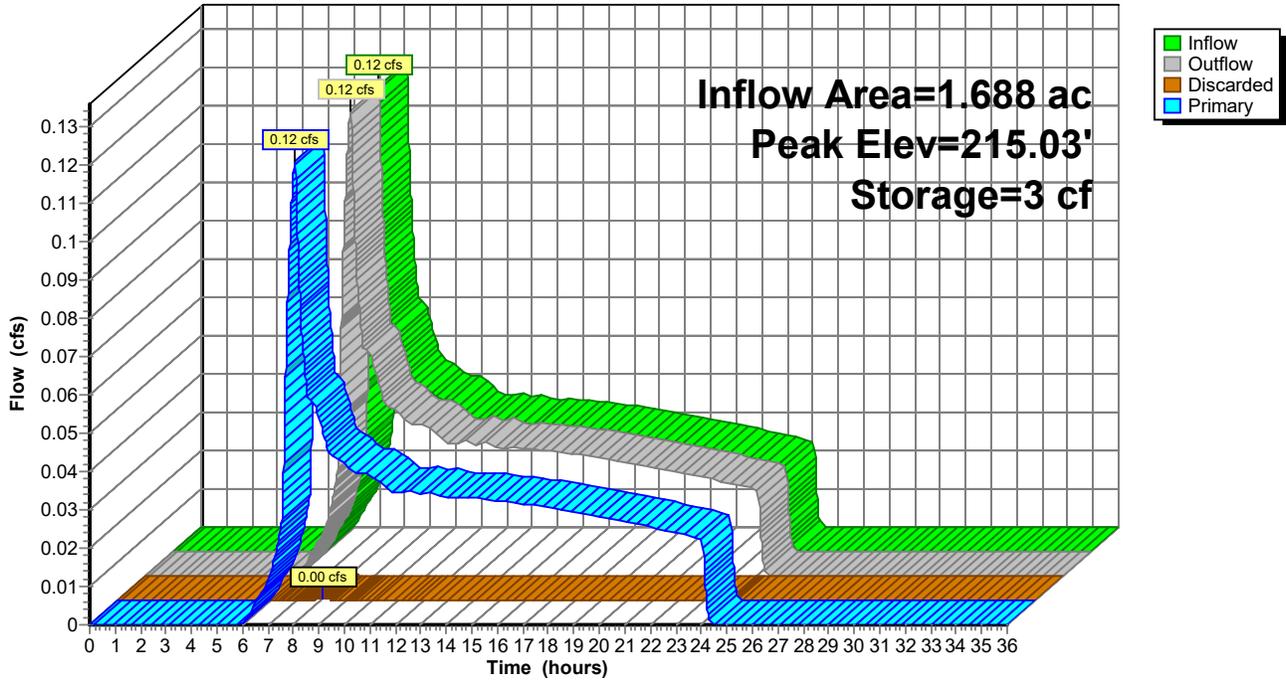
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Page 171

Pond 4P: WQ/Det Facility 1

Hydrograph



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Summary for Pond 5P: WQ/Det Facility 2

Inflow Area = 0.714 ac, 71.57% Impervious, Inflow Depth = 0.45" for WQ event
 Inflow = 0.07 cfs @ 8.03 hrs, Volume= 0.027 af
 Outflow = 0.04 cfs @ 8.37 hrs, Volume= 0.027 af, Atten= 45%, Lag= 20.5 min
 Discarded = 0.00 cfs @ 8.37 hrs, Volume= 0.001 af
 Primary = 0.04 cfs @ 8.37 hrs, Volume= 0.026 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 216.20' @ 8.37 hrs Surf.Area= 317 sf Storage= 58 cf

Plug-Flow detention time= 7.5 min calculated for 0.027 af (100% of inflow)
 Center-of-Mass det. time= 7.5 min (828.2 - 820.7)

Volume	Invert	Avail.Storage	Storage Description
#1	216.00'	4,610 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
216.00	268	0	0	268
217.00	561	406	406	572
218.00	1,031	784	1,190	1,055
219.00	1,686	1,345	2,535	1,726
220.00	2,491	2,075	4,610	2,551

Device	Routing	Invert	Outlet Devices
#1	Primary	214.01'	1.0" Vert. Orifice/Grate C= 0.600
#2	Primary	219.25'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Discarded	216.00'	0.200 in/hr Exfiltration over Surface area
#4	Primary	218.05'	1.0" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.00 cfs @ 8.37 hrs HW=216.20' (Free Discharge)
 ↑**3=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.04 cfs @ 8.37 hrs HW=216.20' (Free Discharge)
 ↑**1=Orifice/Grate** (Orifice Controls 0.04 cfs @ 7.05 fps)
 ↓**2=Orifice/Grate** (Controls 0.00 cfs)
 ↓**4=Orifice/Grate** (Controls 0.00 cfs)

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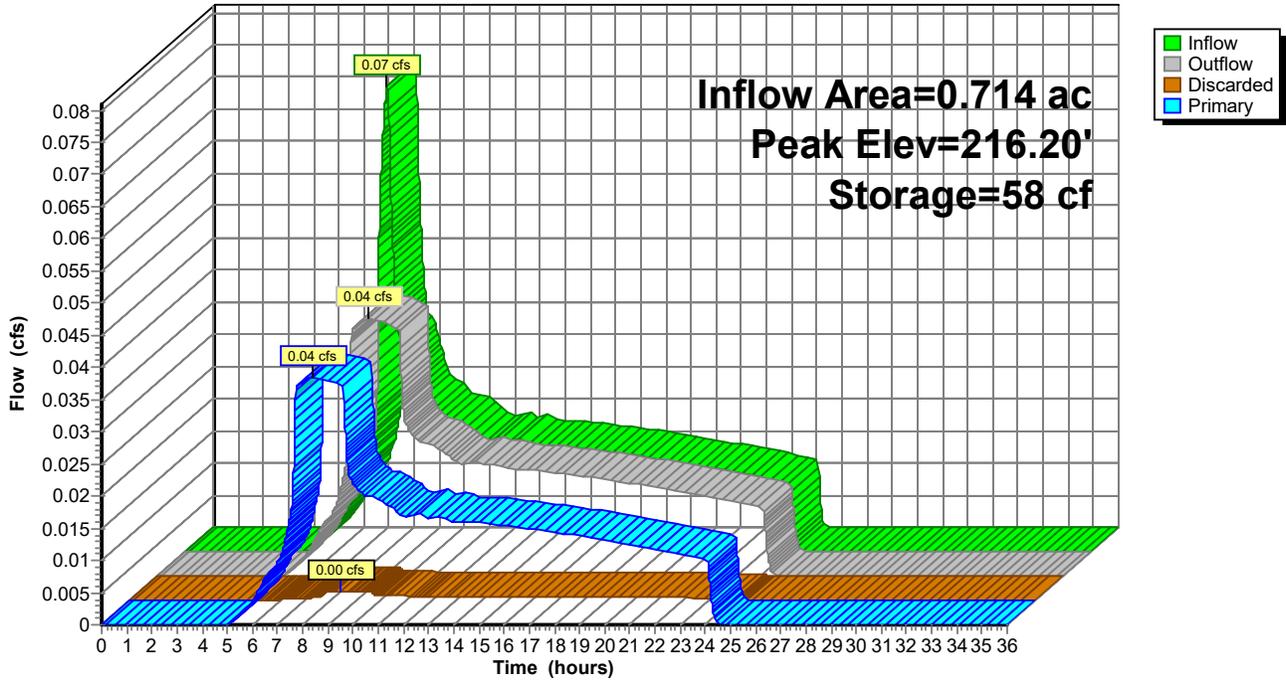
Type IA 24-hr WQ Rainfall=1.00"

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Page 173

Pond 5P: WQ/Det Facility 2

Hydrograph



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Type IA 24-hr WQ Rainfall=1.00"

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Summary for Pond 6P: WQ/Det Facility 3

Inflow Area = 2.268 ac, 42.16% Impervious, Inflow Depth = 0.13" for WQ event
 Inflow = 0.02 cfs @ 17.30 hrs, Volume= 0.025 af
 Outflow = 0.02 cfs @ 17.26 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 17.26 hrs, Volume= 0.000 af
 Primary = 0.02 cfs @ 17.26 hrs, Volume= 0.025 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 216.51' @ 17.26 hrs Surf.Area= 246 sf Storage= 2 cf

Plug-Flow detention time= 1.8 min calculated for 0.025 af (100% of inflow)
 Center-of-Mass det. time= 1.8 min (987.2 - 985.4)

Volume	Invert	Avail.Storage	Storage Description
#1	216.50'	4,035 cf	Custom Stage Data (Pyramidal) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
216.50	244	0	0	244
217.50	554	389	389	564
218.50	941	739	1,128	966
219.50	1,444	1,184	2,311	1,487
220.50	2,019	1,723	4,035	2,086

Device	Routing	Invert	Outlet Devices
#1	Primary	215.01'	1.7" Vert. Orifice/Grate C= 0.600
#2	Primary	219.75'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Discarded	216.50'	0.200 in/hr Exfiltration over Surface area
#4	Primary	218.60'	4.0" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.00 cfs @ 17.26 hrs HW=216.51' (Free Discharge)

↑ **3=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.09 cfs @ 17.26 hrs HW=216.51' (Free Discharge)

↑ **1=Orifice/Grate** (Orifice Controls 0.09 cfs @ 5.75 fps)

↑ **2=Orifice/Grate** (Controls 0.00 cfs)

↑ **4=Orifice/Grate** (Controls 0.00 cfs)

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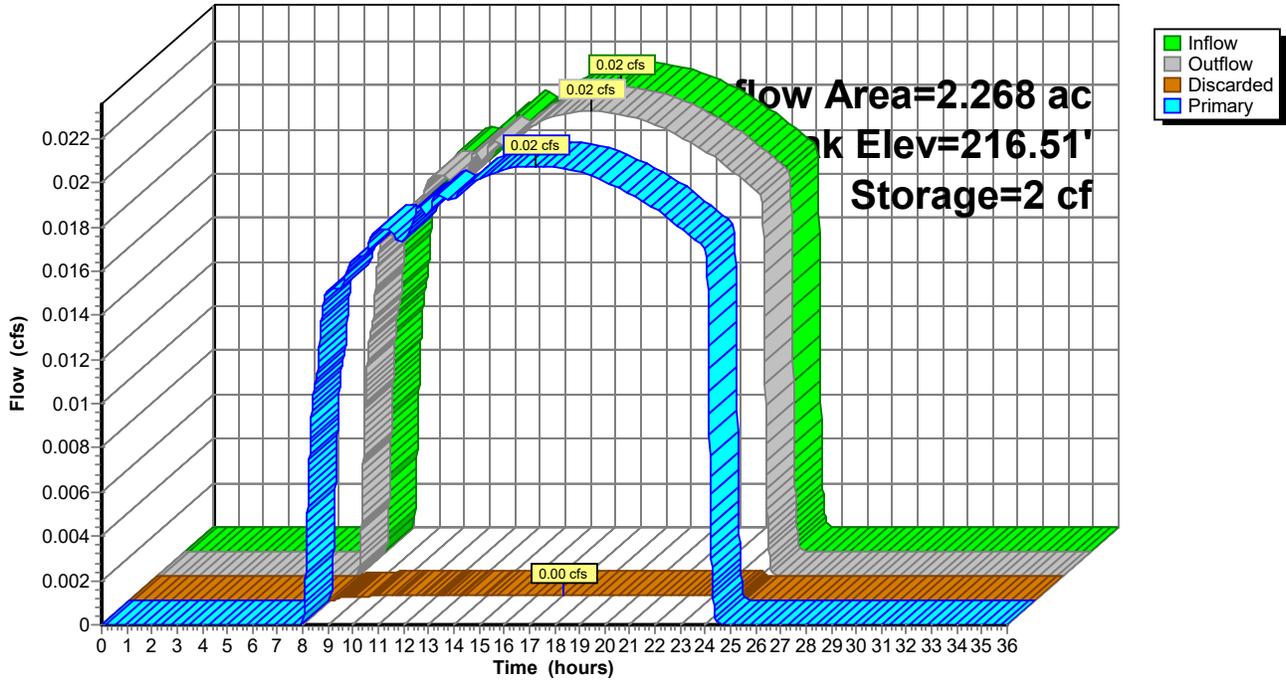
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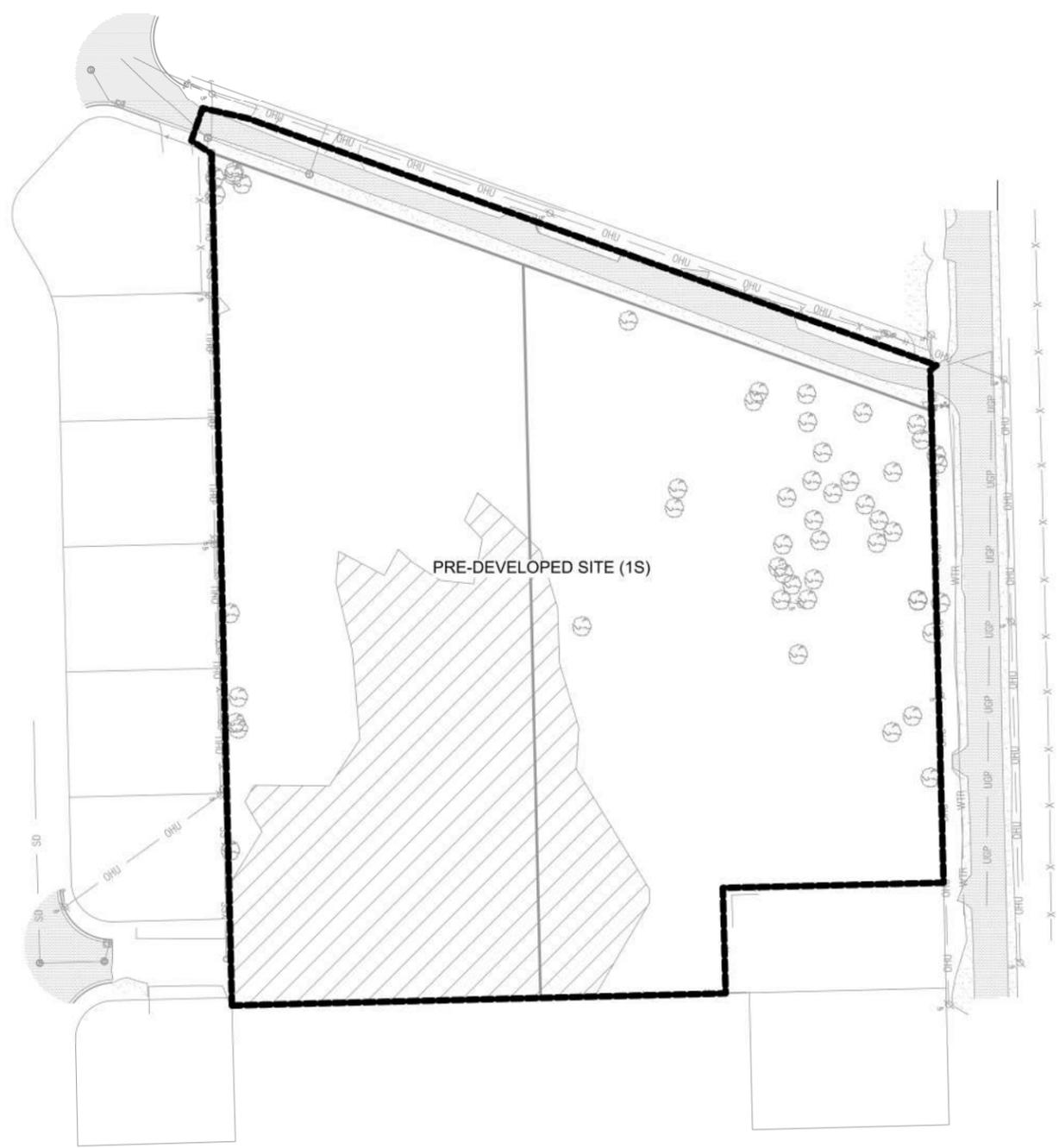
Page 175

Pond 6P: WQ/Det Facility 3

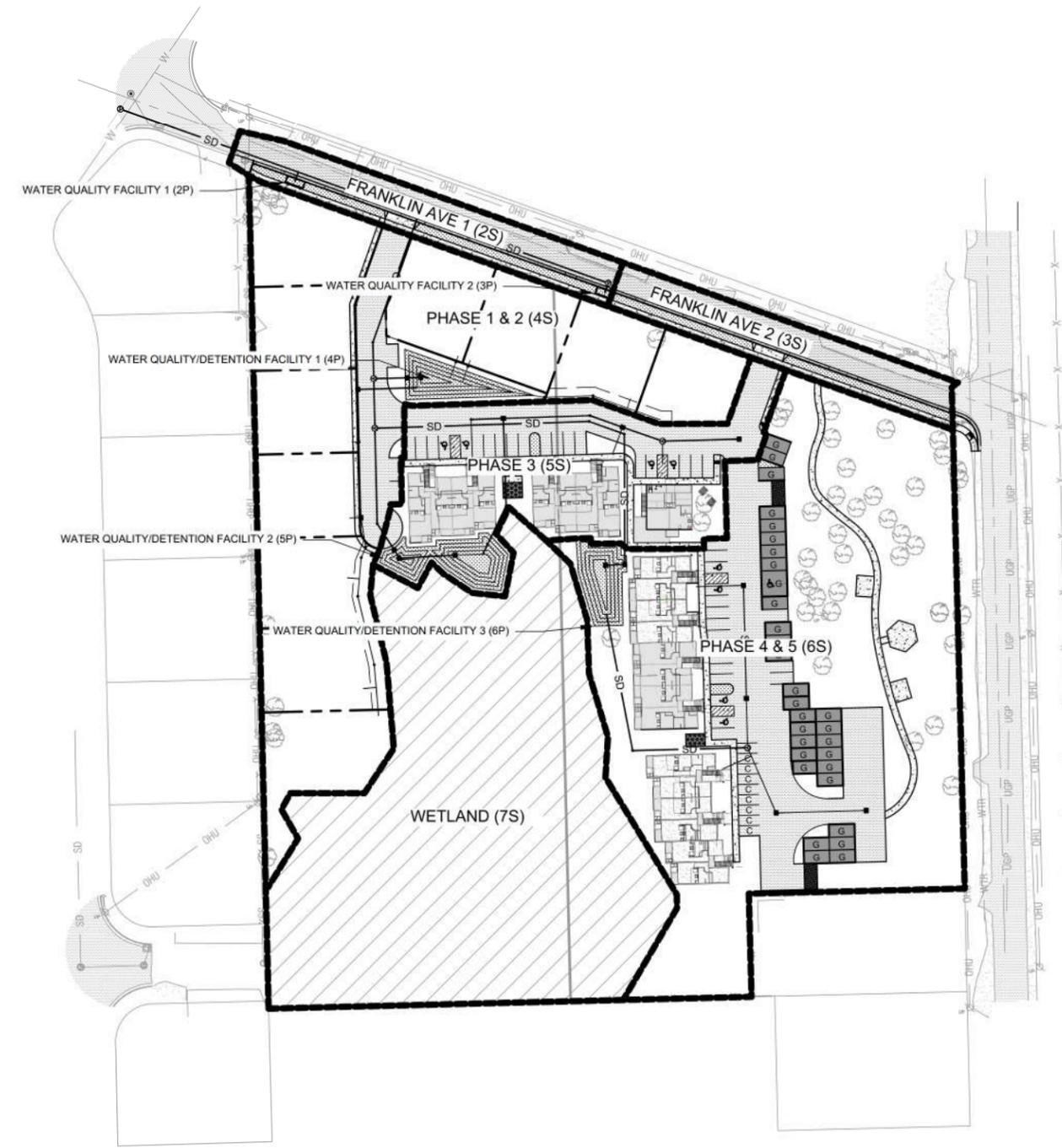
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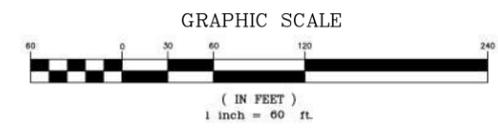
ATTACHMENT D



PRE-DEVELOPED CATCHMENTS
SCALE: 1" = 60'



POST-DEVELOPED CATCHMENTS
SCALE: 1" = 60'



H B H
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CONSULTING

501 E First Street
Newberg, Oregon 97132
503/554-9553 fax 503/537-9554
email: mail@hbh-engineers.com

Designed By: ARB | Drawn By: ARB | Checked By: ARC | Submittal No.: L:2020-0014-DesignDWG3 - UTILITIES.dwg | File: 30%

REV.	DATE	DESCRIPTION	BY

IF THIS LINE IS NOT 1 INCH SCALE IS NOT AS SHOWN

MIKE SHULTS
PO BOX 41, ST. PAUL, OR 97137

THE FRANKLIN RESERVE
840 SE AIRPORT RD, ALBANY OR 97322

ONSITE ROAD + STORM

Sheet No. **8** of **16**

3/15/2020
2020-001

Home Designs and Elevations

MATERIALS:

Apartments

Light gray or tan to light brown for siding

Accent color at gables

White trim

1 x 8 or 1 x 12 Hardy Plank exterior siding

1 x 4 corner board trim

1 x 10 or 1 x 12 belly band

Hardy Plank or shingles for gable accent or vertical board and bat

1 x 4 trim around all windows

Architectural style asphalt roofing

MATERIALS:

Houses

Earth tone colors for siding

White or accent color trim

1 x 8 or 1 x 12 Hardy Plank exterior siding

1 x 4 trim around all windows

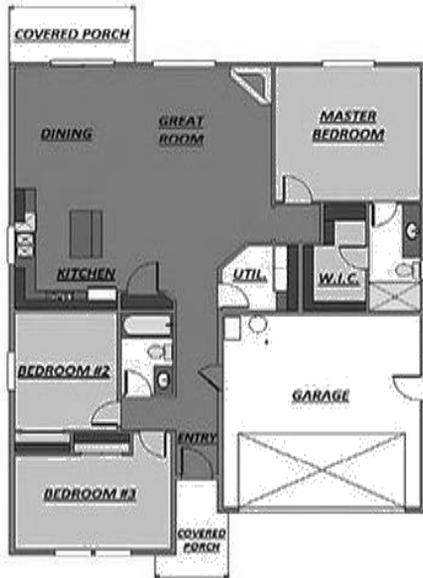
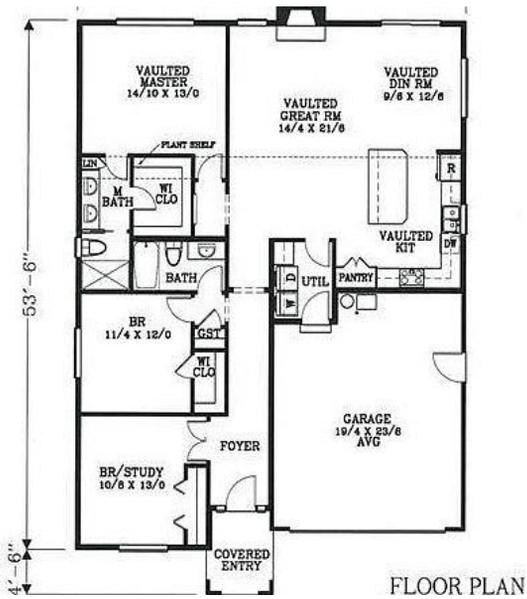
1 x 10 or 1 x 12 siding/vertical board and bat

Hardy Plank or shingles for gable accent or vertical board and bat

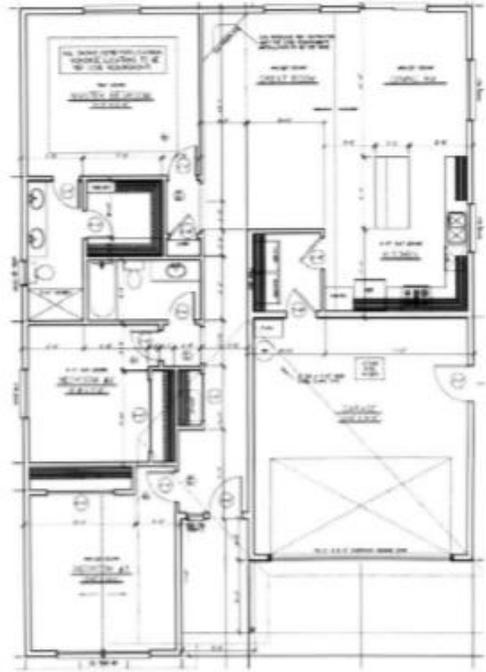
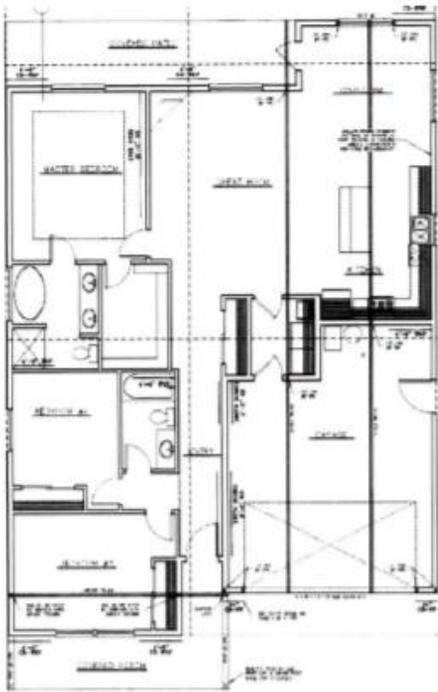
Pre-painted steel garage doors- raised panel – window option for accent style



ATTACHMENT M.3



ATTACHMENT M.4

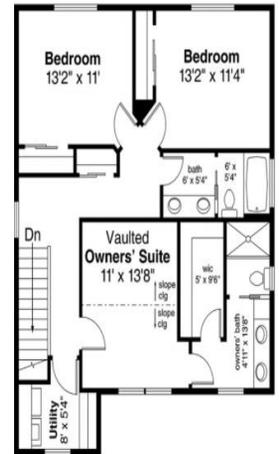
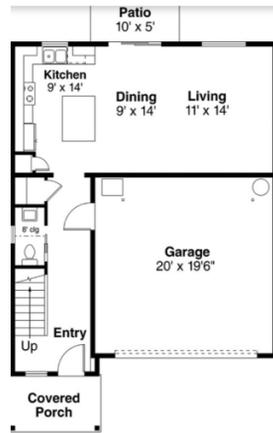


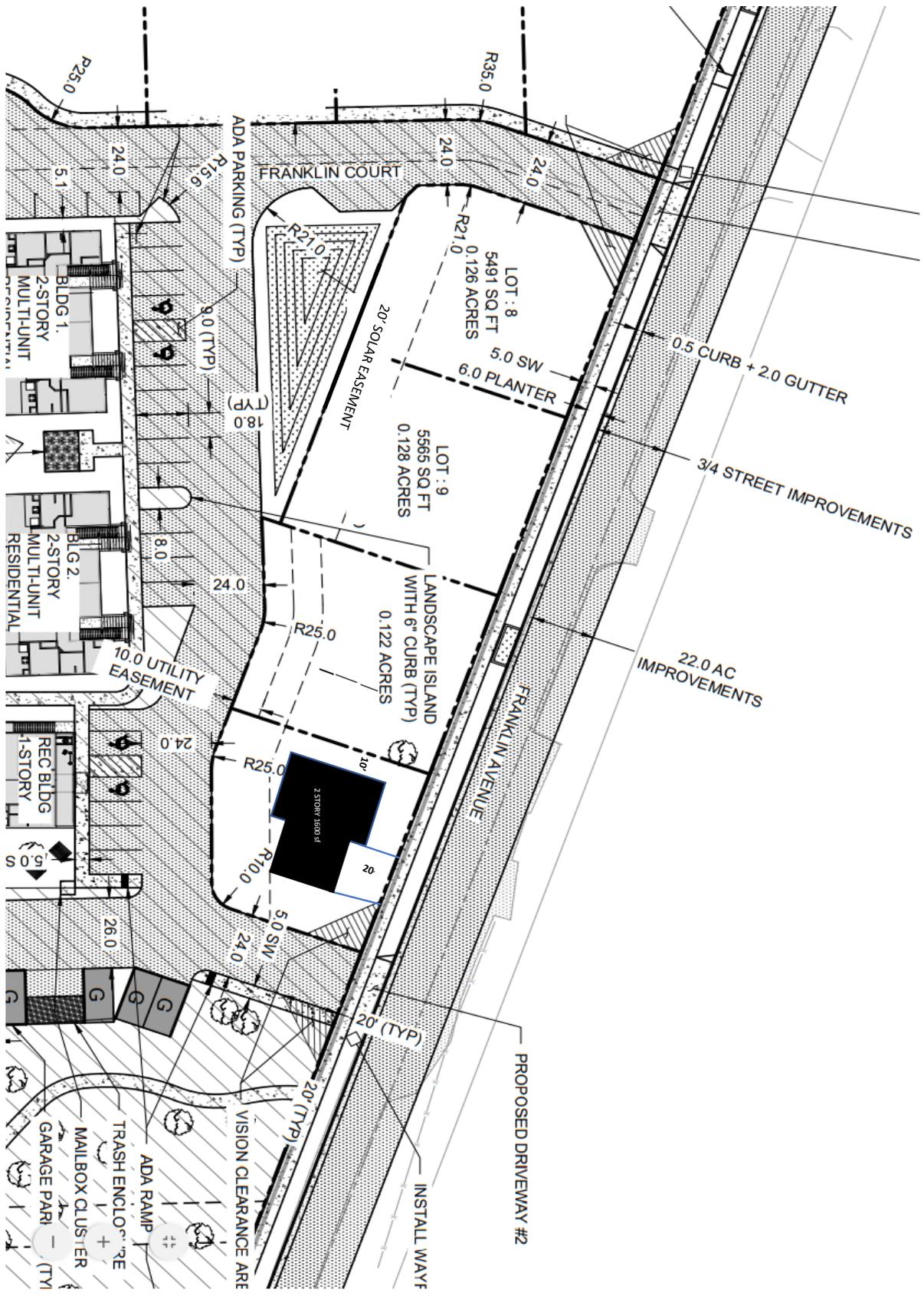


ATTACHMENT M.6



ATTACHMENT M.7















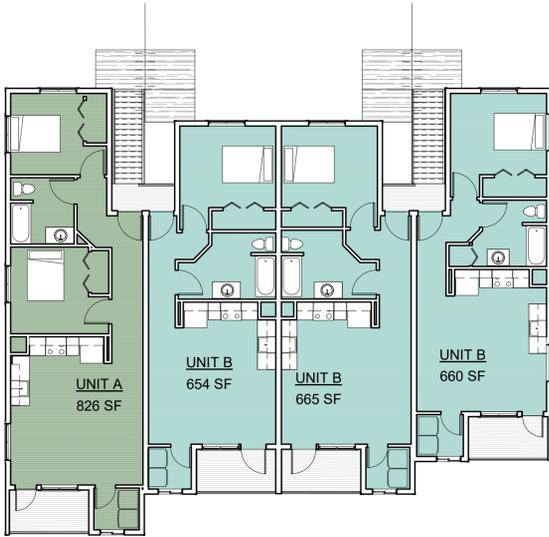






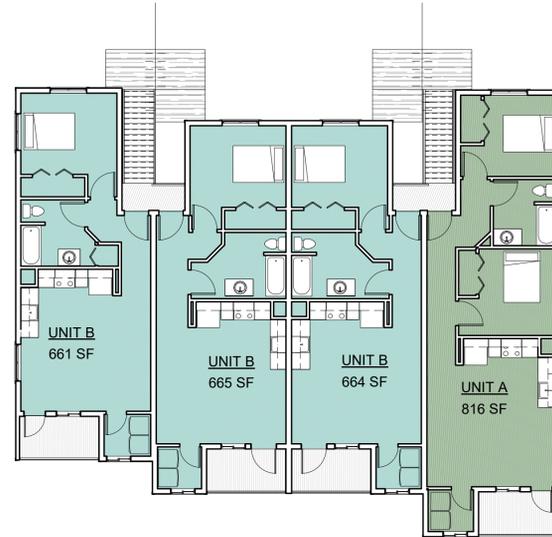
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 kymber@candidhomedesign.com
 www.candidhomedesign.com

Sheet Number	Sheet Name
A1.0	COVER SHEET
A1.1	FLOOR PLANS - PROPOSED
A3.0	EXTERIOR ELEVATIONS - PROPOSED
A3.1	EXTERIOR ELEVATIONS - PROPOSED

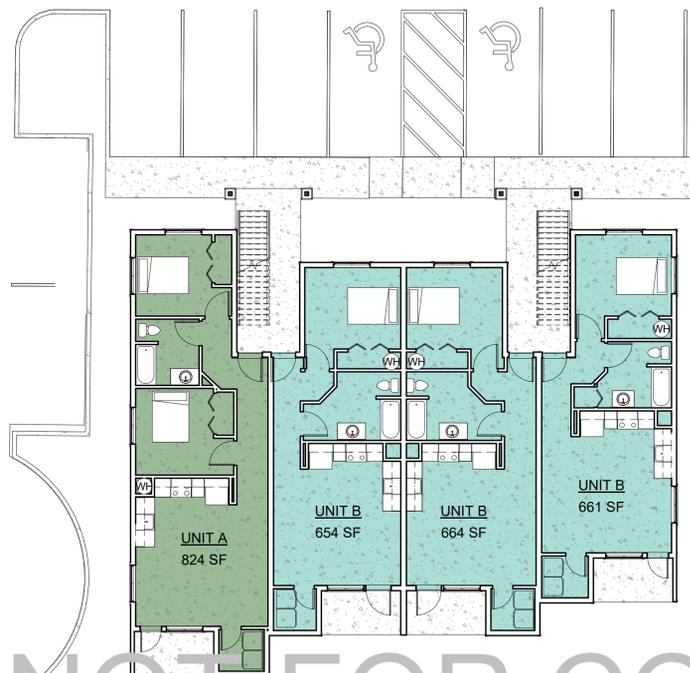


Building Area Legend
 UNIT A
 UNIT B

3 BUILDING 1 - SECOND FLOOR Copy 1
 1" = 10'-0"

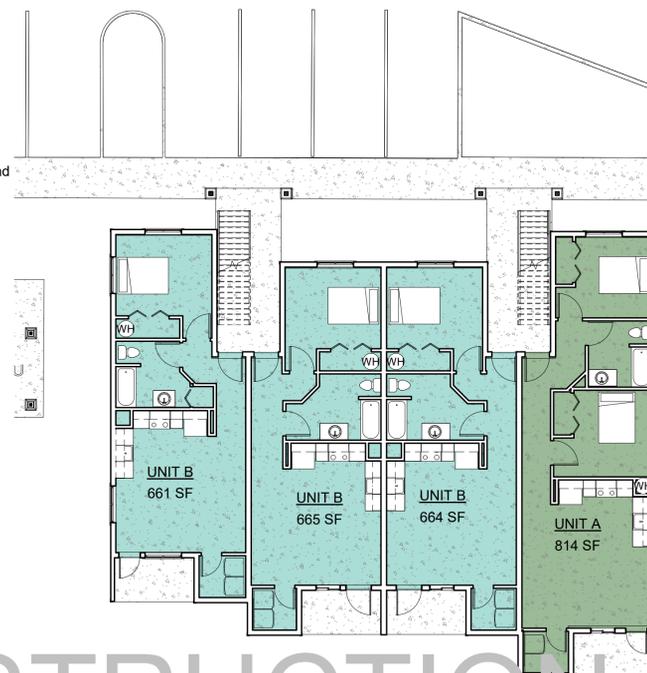


5 BUILDING 2 - SECOND FLOOR Copy 1
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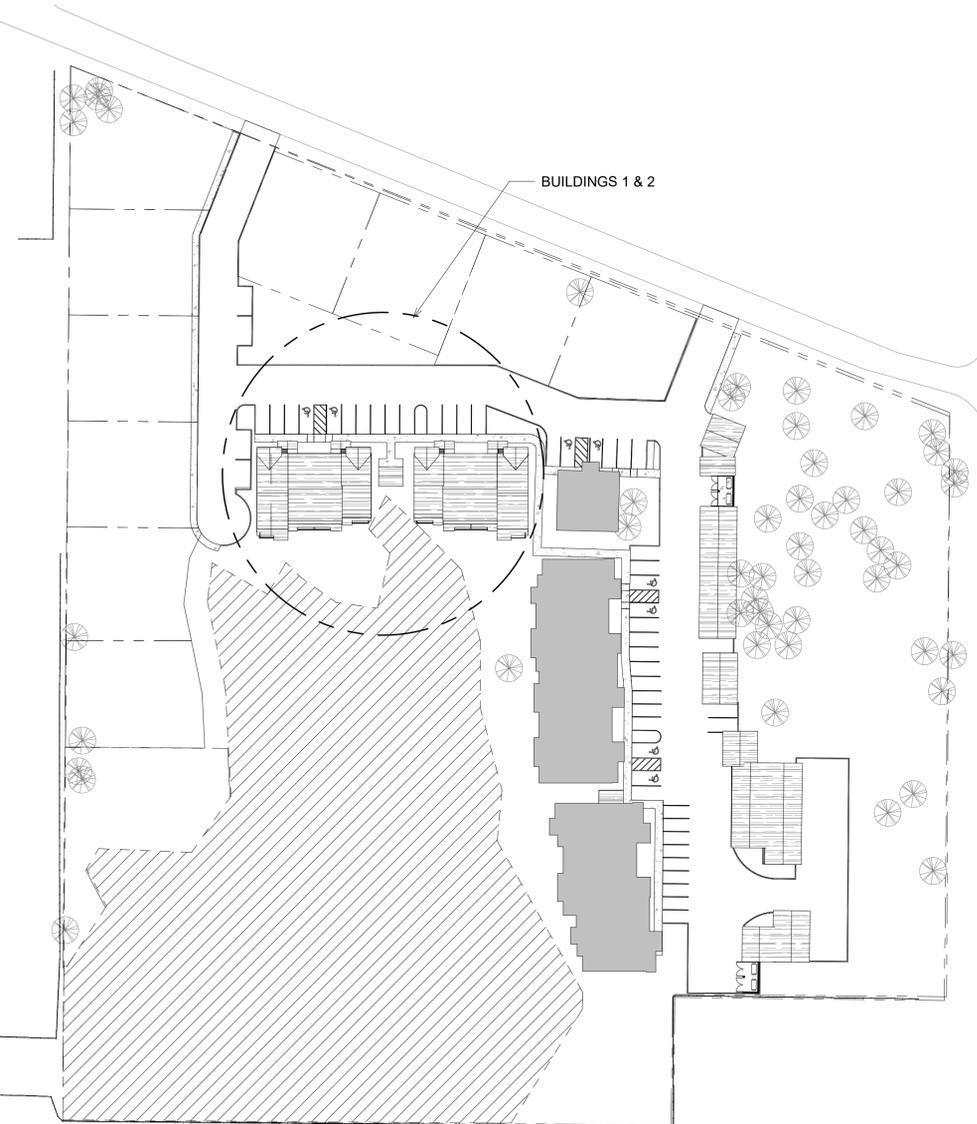


Building Area Legend
 UNIT A
 UNIT B

2 BUILDING 1 - GROUND FLOOR Copy 1
 1" = 10'-0"



4 BUILDING 2 - GROUND FLOOR Copy 1
 1" = 10'-0"



1 SITE KEY PLAN - COVER
 1" = 50'-0"

NOT FOR CONSTRUCTION

NEW APARTMENTS
 PRELIMINARY - NOT FOR CONSTRUCTION
 FRANKLIN AVE
 ALBANY, OR

REVISION	DATE	DESCRIPTION

ISSUE DATE: 3/19/2020
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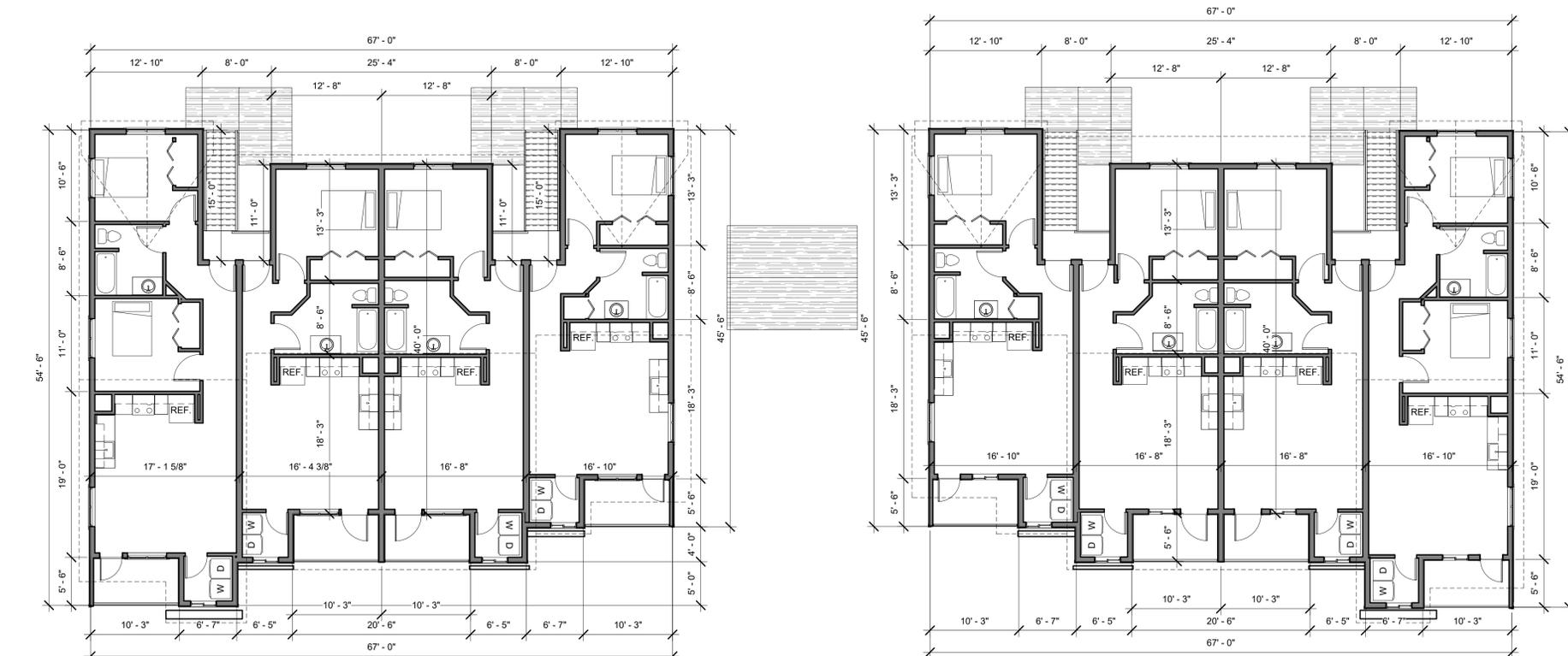
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COVER SHEET

SHEET NUMBER:
A1.0

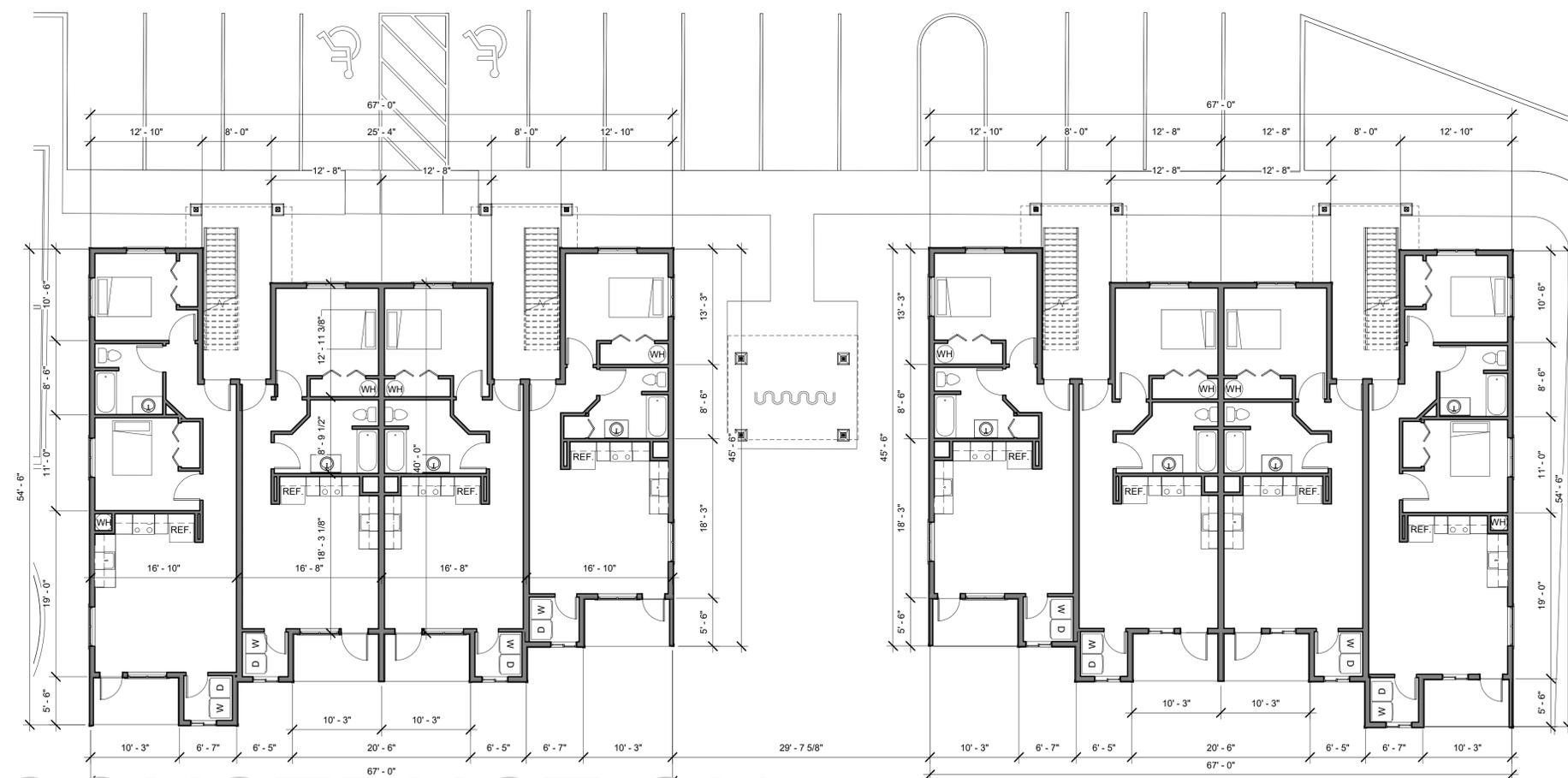


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3 Level 2 - NEW - BUILDING 1 & 2
1/8" = 1'-0"



1 Level 1 - NEW - BUILDING 1 & 2
1/8" = 1'-0"

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FLOOR PLANS - PROPOSED

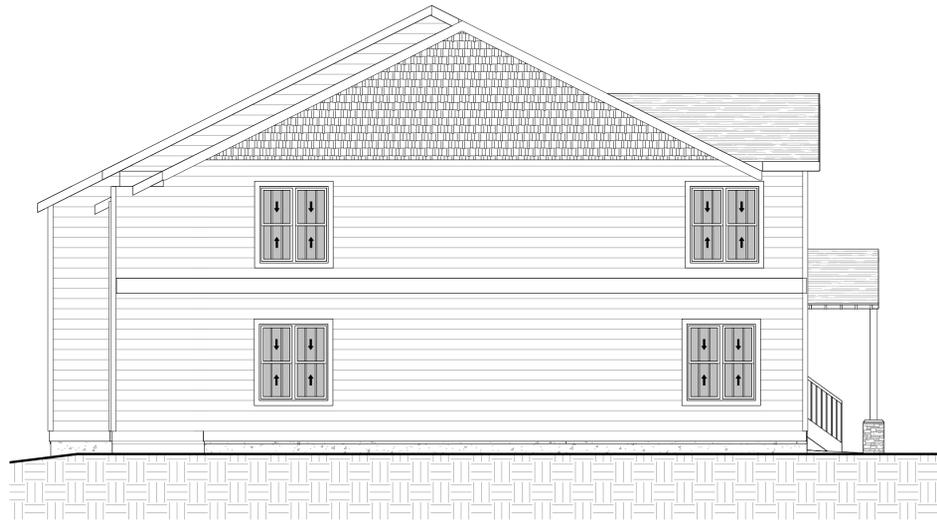
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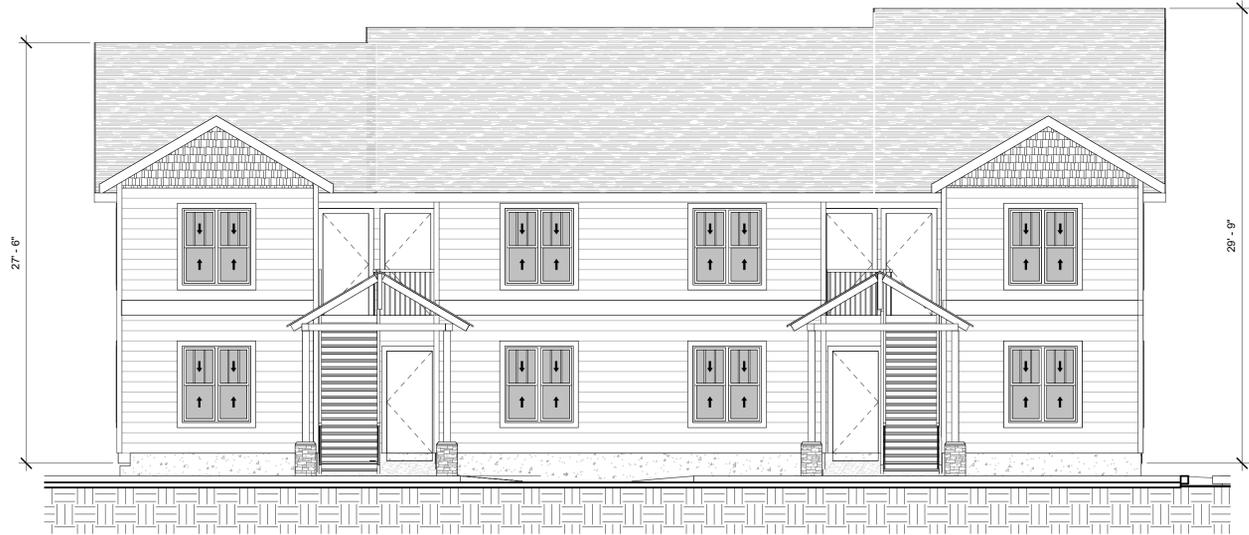
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① EAST ELEVATION - BUILDING I
3/16" = 1'-0"



② NORTH ELEVATION - BUILDING I
3/16" = 1'-0"



④ WEST ELEVATION - BUILDING I
3/16" = 1'-0"



③ SOUTH ELEVATION - BUILDING I
3/16" = 1'-0"

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EXTERIOR
ELEVATIONS -
PROPOSED

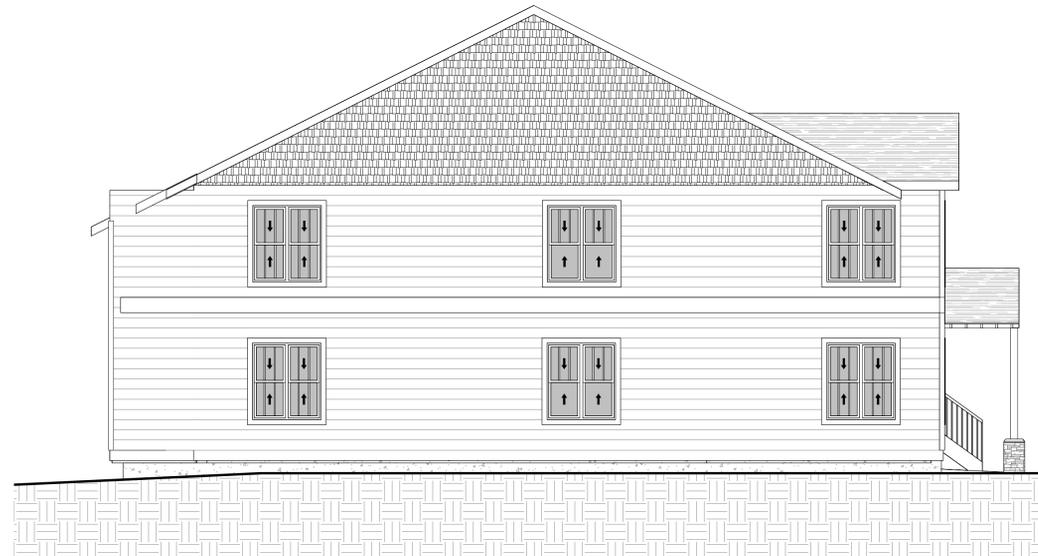
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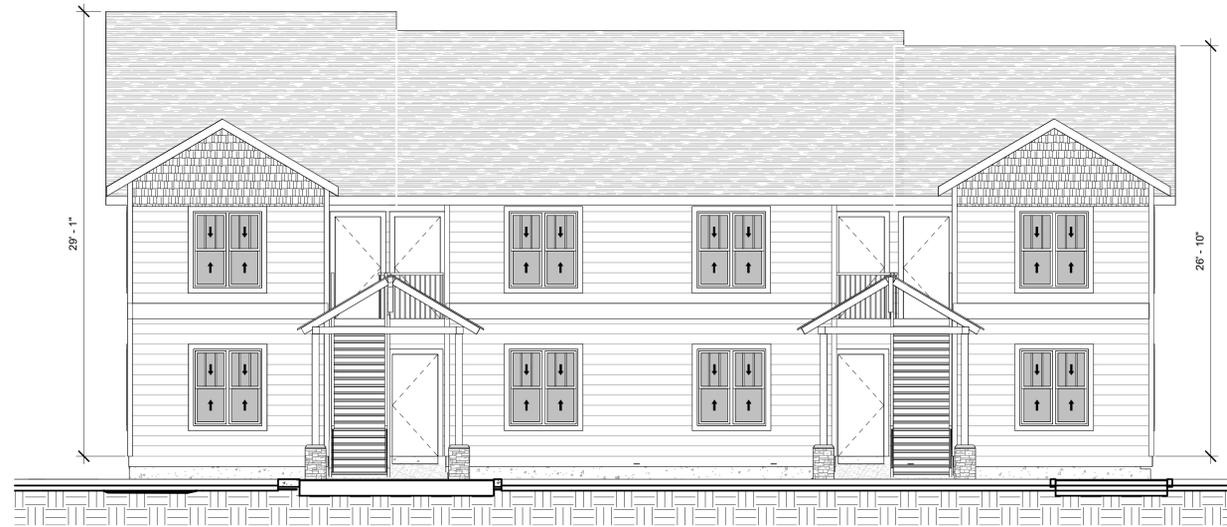
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① EAST ELEVATION - BUILDING II
 3/16" = 1'-0"



② NORTH ELEVATION - BUILDING II
 3/16" = 1'-0"



④ WEST ELEVATION - BUILDING II
 3/16" = 1'-0"



③ SOUTH ELEVATION - BUILDING II
 3/16" = 1'-0"

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NEW APARTMENTS
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REVISOR	DATE	DESCRIPTION

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 PROJECT NUMBER: 20 - 003
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SHEET NAME:
 EXTERIOR ELEVATIONS - PROPOSED

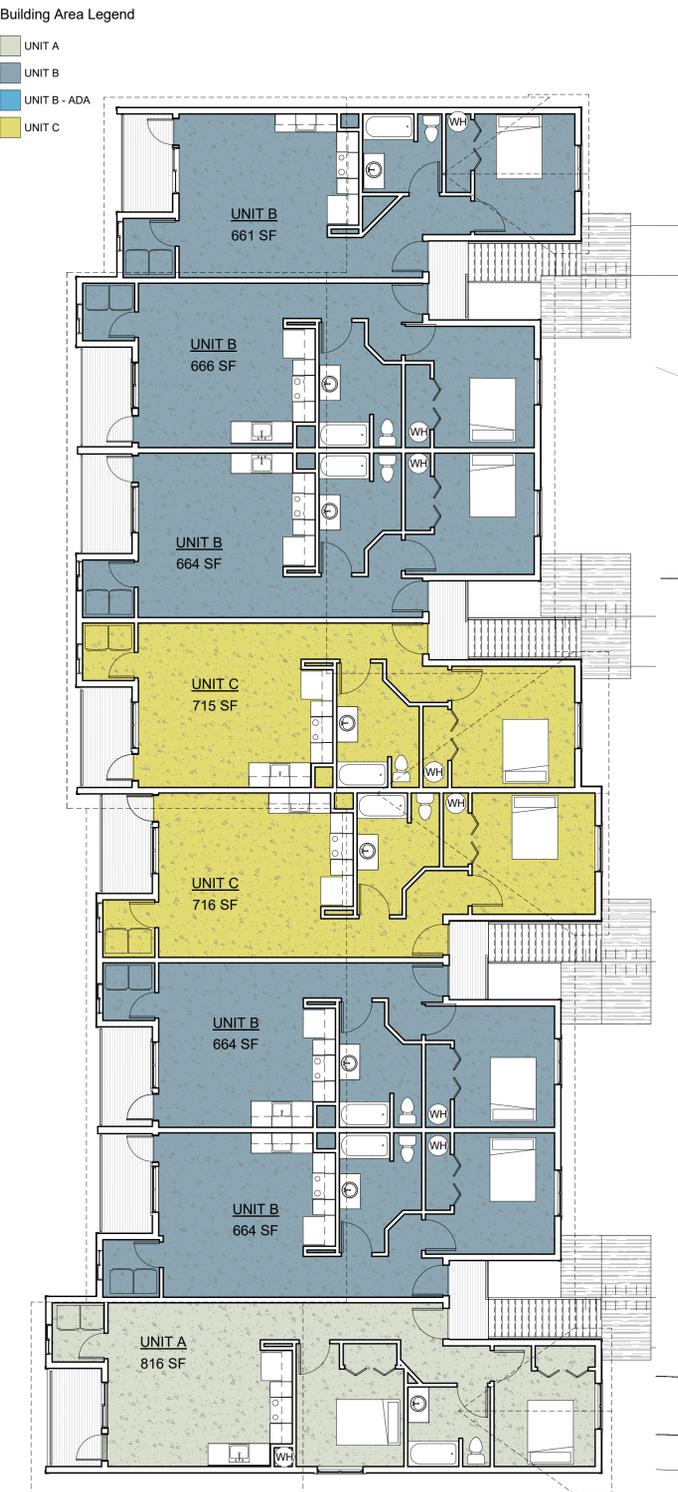
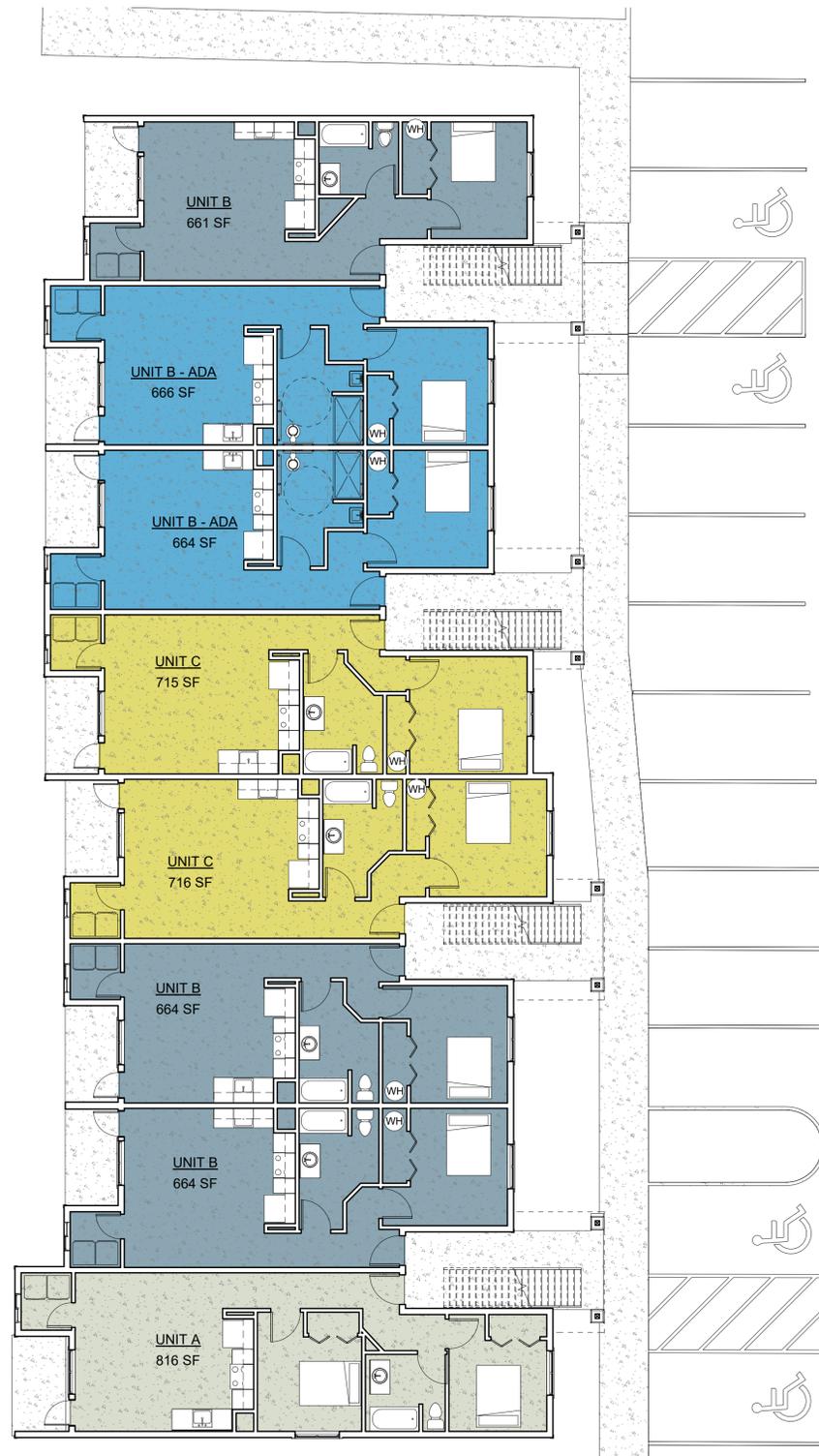
SHEET NUMBER:

A3.1



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 Vernonia, OR 97064
 503-432-1338
 kymber@candidhomedesign.com
 www.candidhomedesign.com

Sheet Number	Sheet Name
A3.0	COVER SHEET
A3.1	FLOOR PLANS - PROPOSED
A3.2	FLOOR PLANS - PROPOSED
A3.3	EXTERIOR ELEVATIONS - PROPOSED
A3.4	EXTERIOR ELEVATIONS - PROPOSED



1 BUILDING MAP - GROUND FLOOR
 1/8" = 1'-0"

2 BUILDING MAP - SECOND FLOOR
 1/8" = 1'-0"

3 SITE KEY PLAN - new
 1" = 50'-0"

NOT FOR CONSTRUCTION

NEW APARTMENTS
 PRELIMINARY - NOT FOR CONSTRUCTION
 FRANKLIN AVE.
 ALBANY, OR

REVISION	DATE	DESCRIPTION

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SHEET NAME:
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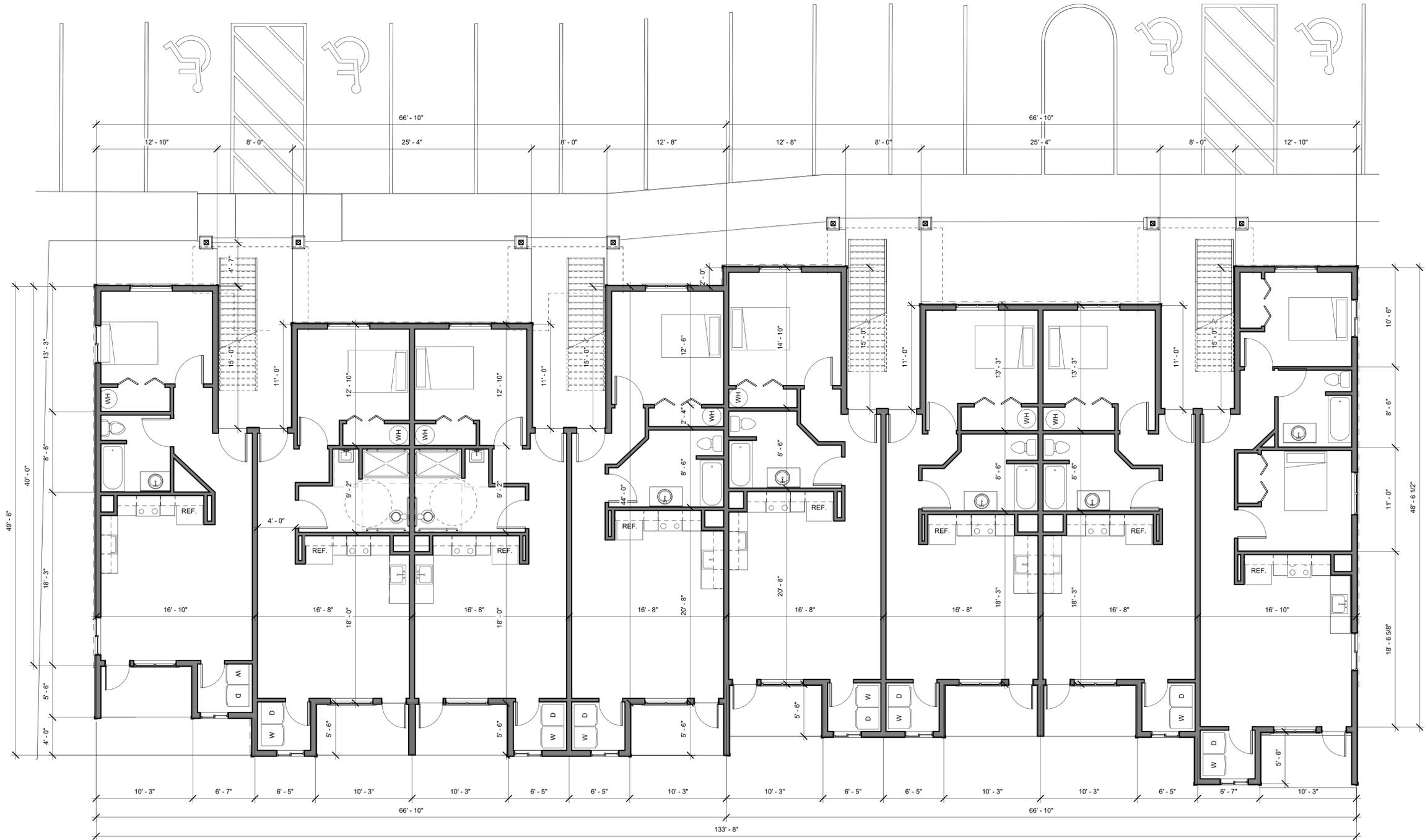
SHEET NUMBER:
A3.0



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1 Level 1 - NEW - BUILDING III
3/16" = 1'-0"

REVISION DATE DESCRIPTION

ISSUE DATE: 3/19/2020

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SHEET NAME:

FLOOR PLANS -
PROPOSED

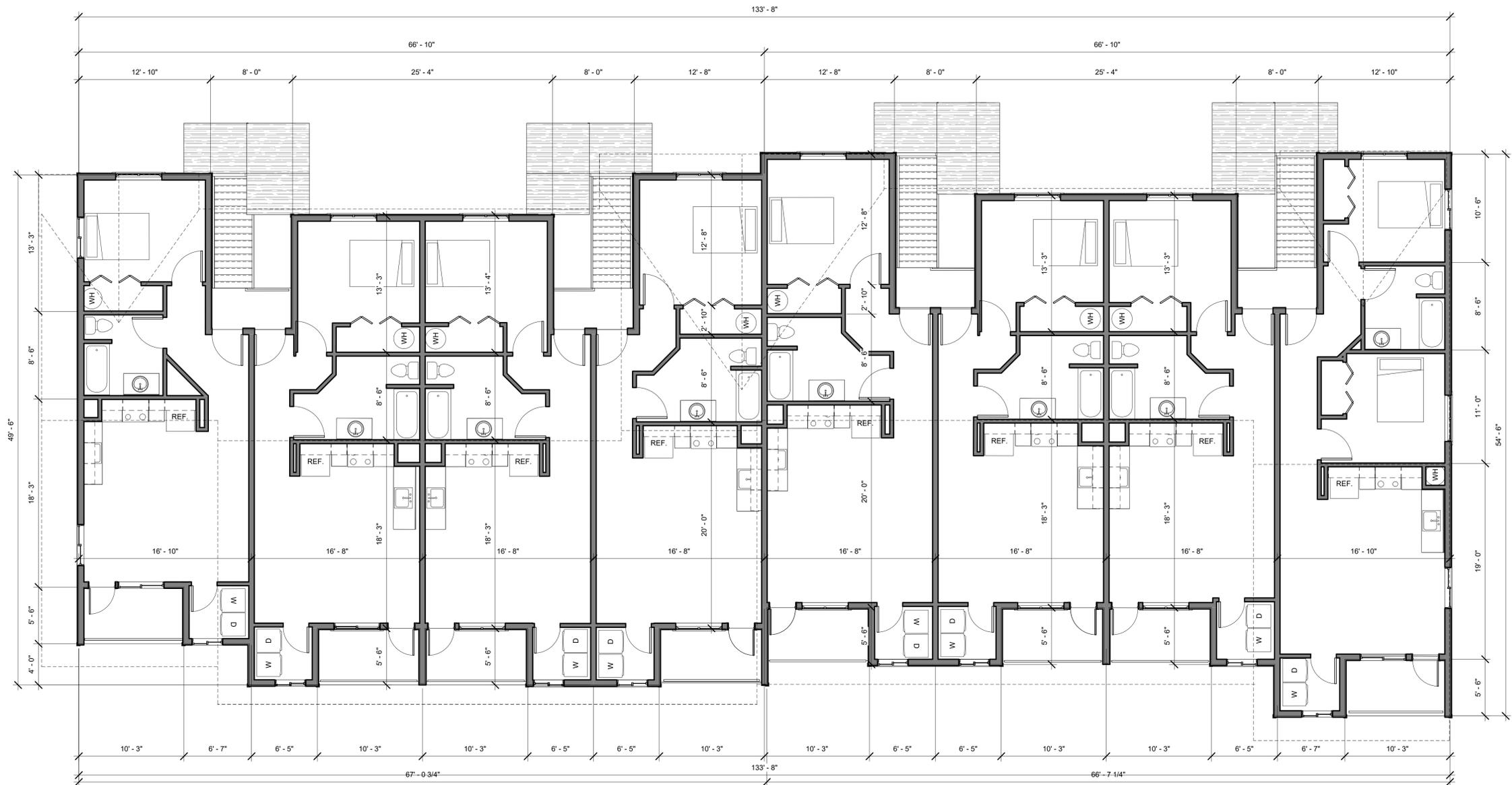
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A3.1



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NEW APARTMENTS
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1 Level 2 - NEW - BUILDING III
 3/16" = 1'-0"

REVISION	DATE	DESCRIPTION

ISSUE DATE: 3/19/2020
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SHEET NAME:
FLOOR PLANS - PROPOSED

SHEET NUMBER:
A3.2

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① EAST ELEVATION - BUILDING III
3/16" = 1'-0"



② WEST ELEVATION - BUILDING III
3/16" = 1'-0"

NEW APARTMENTS
PRELIMINARY - NOT FOR CONSTRUCTION
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REVISION DATE DESCRIPTION

ISSUE DATE: 3/19/2020
1:18:53 PM
PROJECT NUMBER: 20 - 003
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SHEET NAME:
EXTERIOR ELEVATIONS - PROPOSED

SHEET NUMBER:

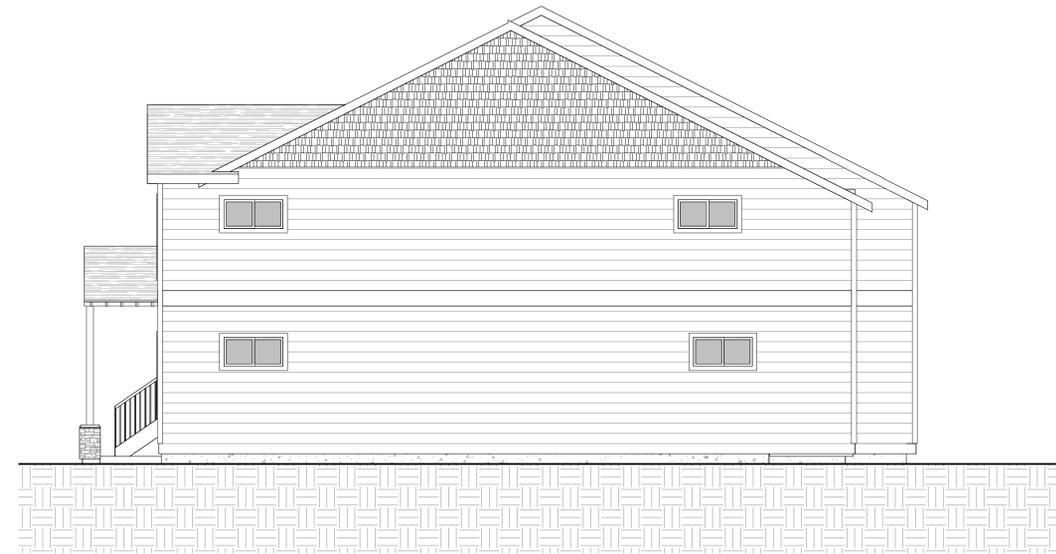
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NOT FOR CONSTRUCTION

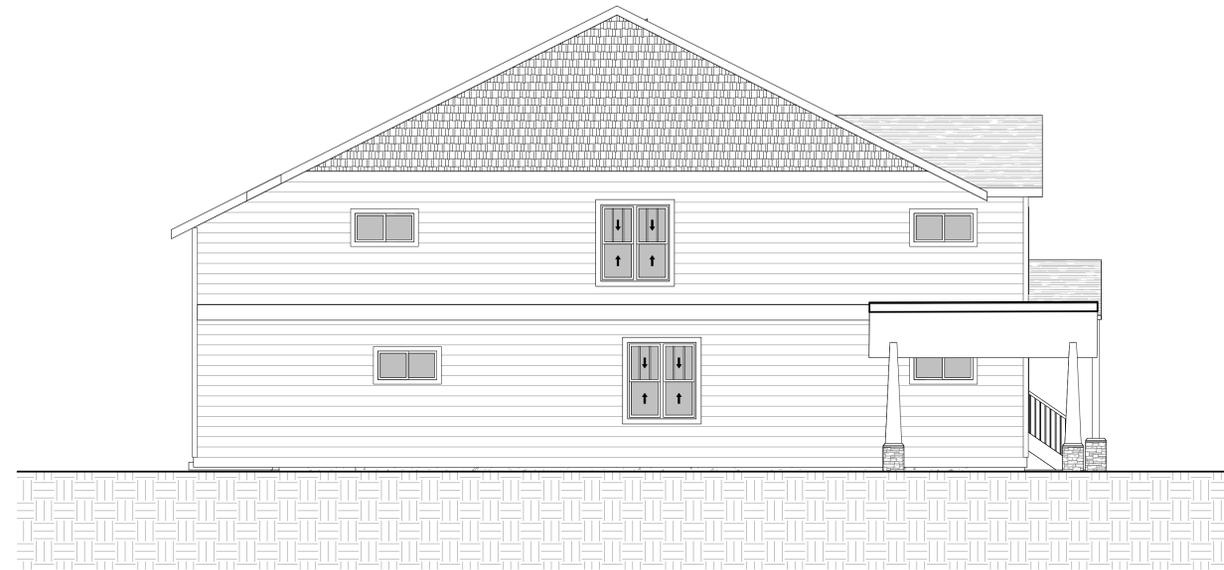


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① NORTH ELEVATION - BUILDING III
3/16" = 1'-0"



② SOUTH ELEVATION - BUILDING III
3/16" = 1'-0"

NEW APARTMENTS
PRELIMINARY - NOT FOR CONSTRUCTION
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REVISION DATE DESCRIPTION

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SHEET NAME:
EXTERIOR
ELEVATIONS -
PROPOSED

SHEET NUMBER

A3.4

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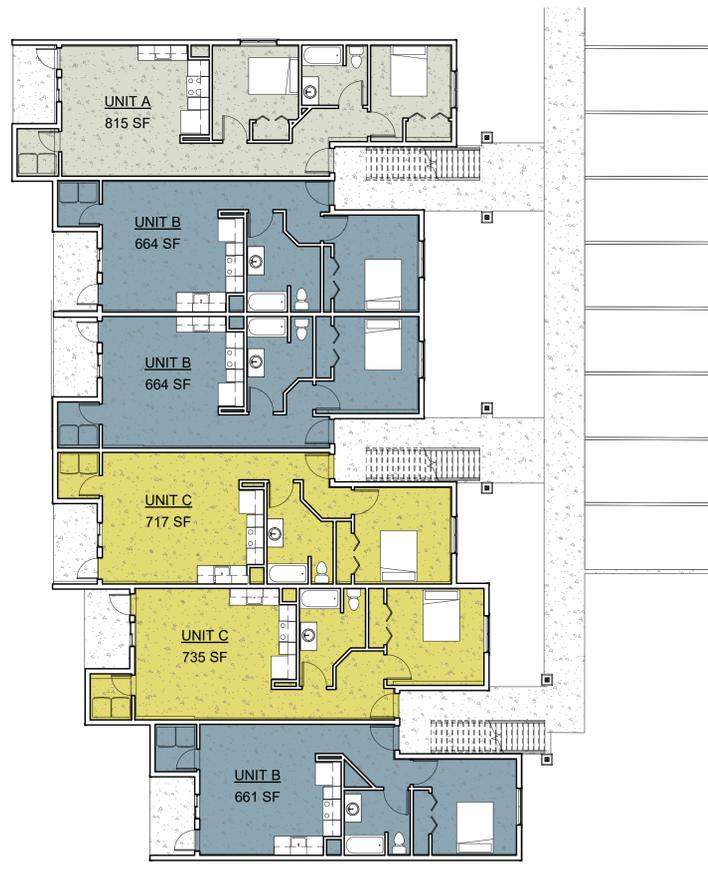


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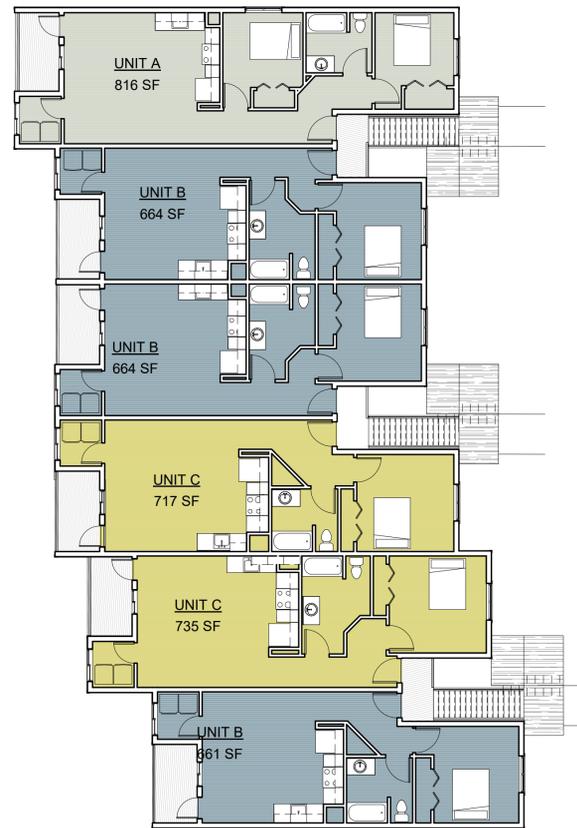
INDEX OF DRAWINGS	
Sheet Number	Sheet Name
A4.0	COVER SHEET
A4.1	FLOOR PLANS - PROPOSED
A4.2	FLOOR PLANS - PROPOSED
A4.3	EXTERIOR ELEVATIONS - PROPOSED
A34.4	EXTERIOR ELEVATIONS - PROPOSED

Building Area Legend

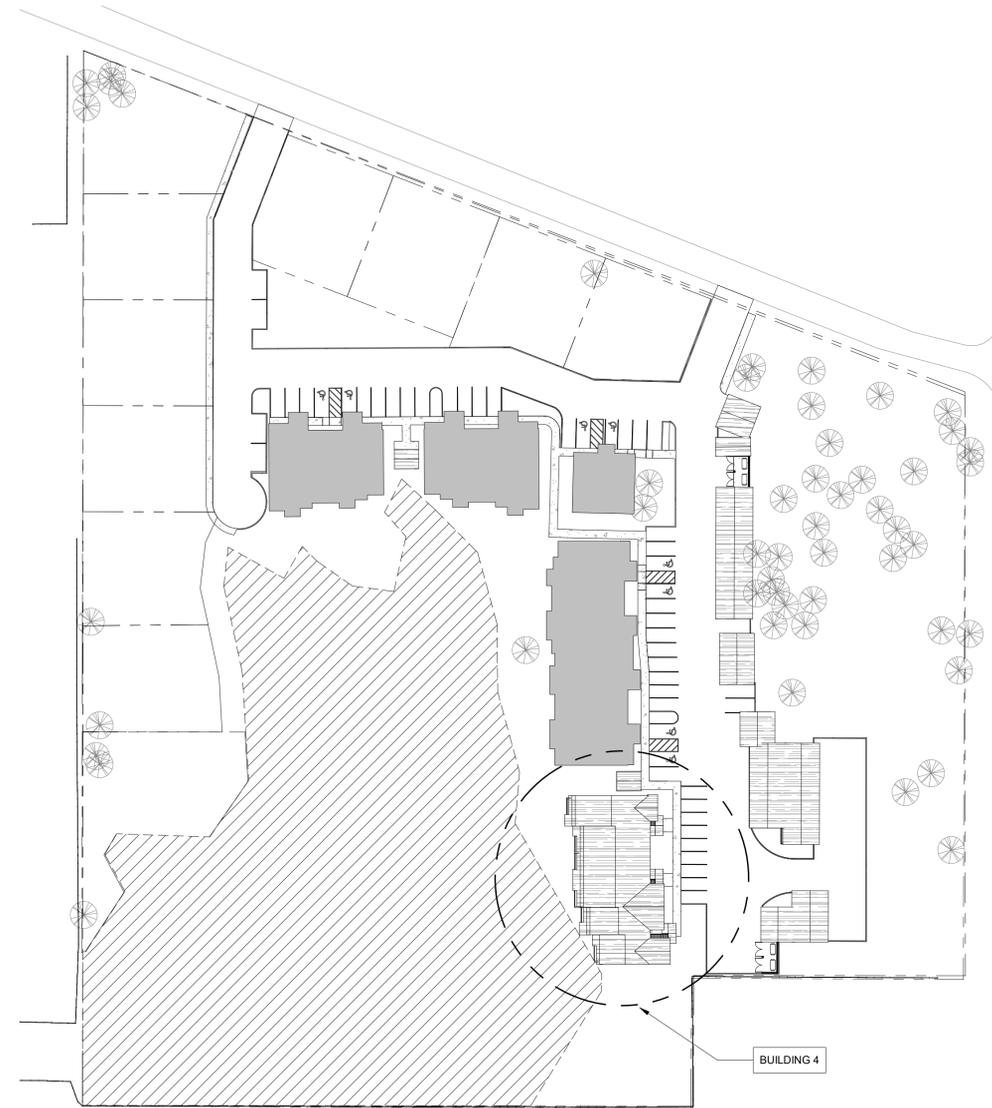
 UNIT A
 UNIT B
 UNIT C



1 BUILDING MAP - GROUND FLOOR Copy 1
 1" = 10'-0"



2 BUILDING MAP - SECOND FLOOR Copy 1
 1" = 10'-0"



3 SITE KEY PLAN Copy 1
 1" = 50'-0"

NEW APARTMENTS
 PRELIMINARY - NOT FOR CONSTRUCTION
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REVISION	DATE	DESCRIPTION

ISSUE DATE: 3/19/2020
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SHEET NAME:
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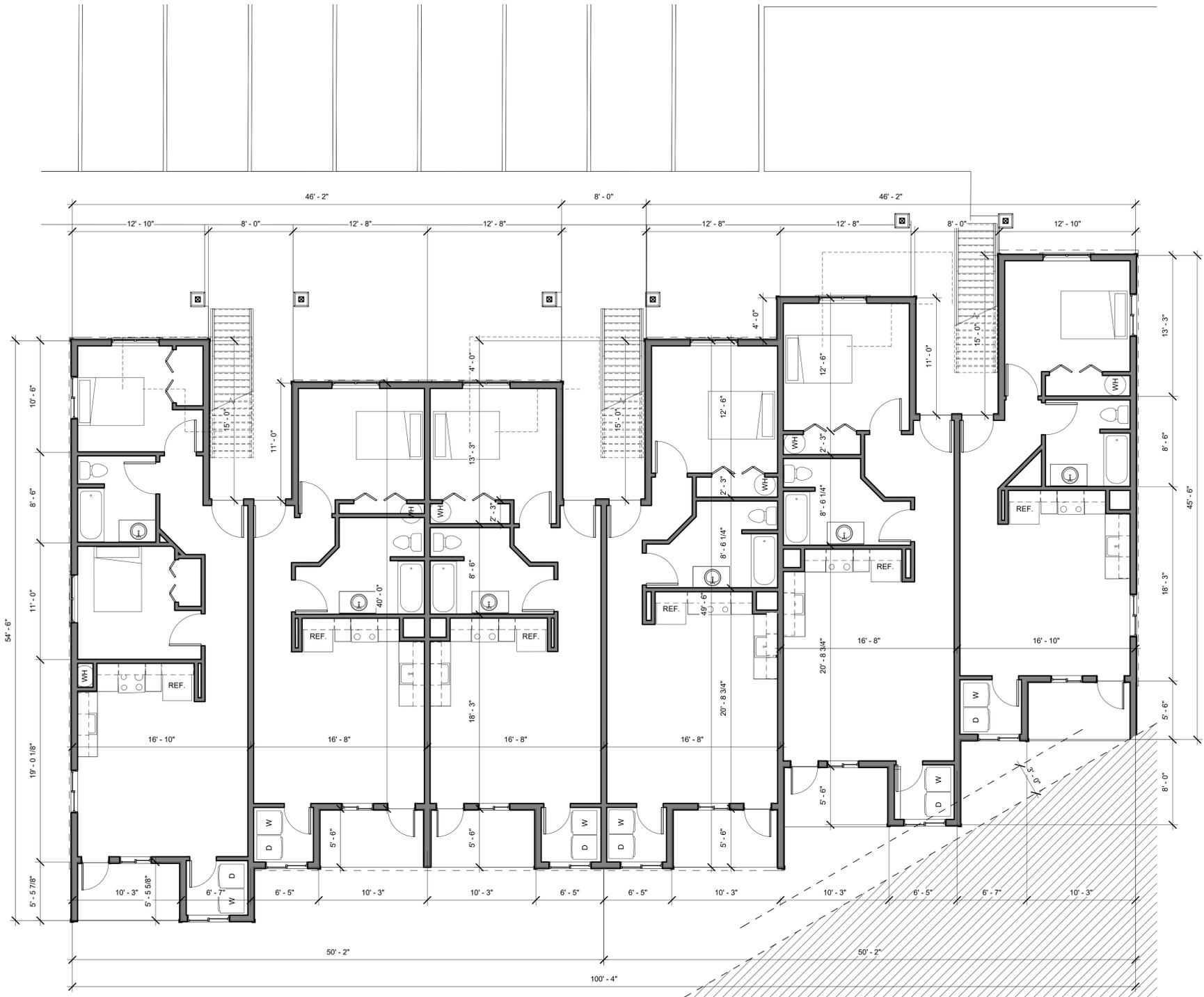
SHEET NUMBER:
A4.0

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NEW APARTMENTS
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Level 1 - BUILDING IV
3/16" = 1'-0"

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SHEET NAME:
FLOOR PLANS -
PROPOSED

SHEET NUMBER:

A4.1



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1 Level 2 - BUILDING IV
3/16" = 1'-0"

NEW APARTMENTS
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REVISION	DATE	DESCRIPTION

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SHEET NAME:
FLOOR PLANS - PROPOSED

SHEET NUMBER:
A4.2

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① EAST ELEVATION - BUILDING IV
3/16" = 1'-0"



② WEST ELEVATION - BUILDING IV
3/16" = 1'-0"

NEW APARTMENTS
PRELIMINARY - NOT FOR CONSTRUCTION
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SHEET NAME:
EXTERIOR
ELEVATIONS -
PROPOSED

SHEET NUMBER:

A4.3

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① NORTH ELEVATION - BUILDING IV
3/16" = 1'-0"



② SOUTH ELEVATION - BUILDING IV
3/16" = 1'-0"

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SHEET NAME:

EXTERIOR
ELEVATIONS -
PROPOSED

SHEET NUMBER

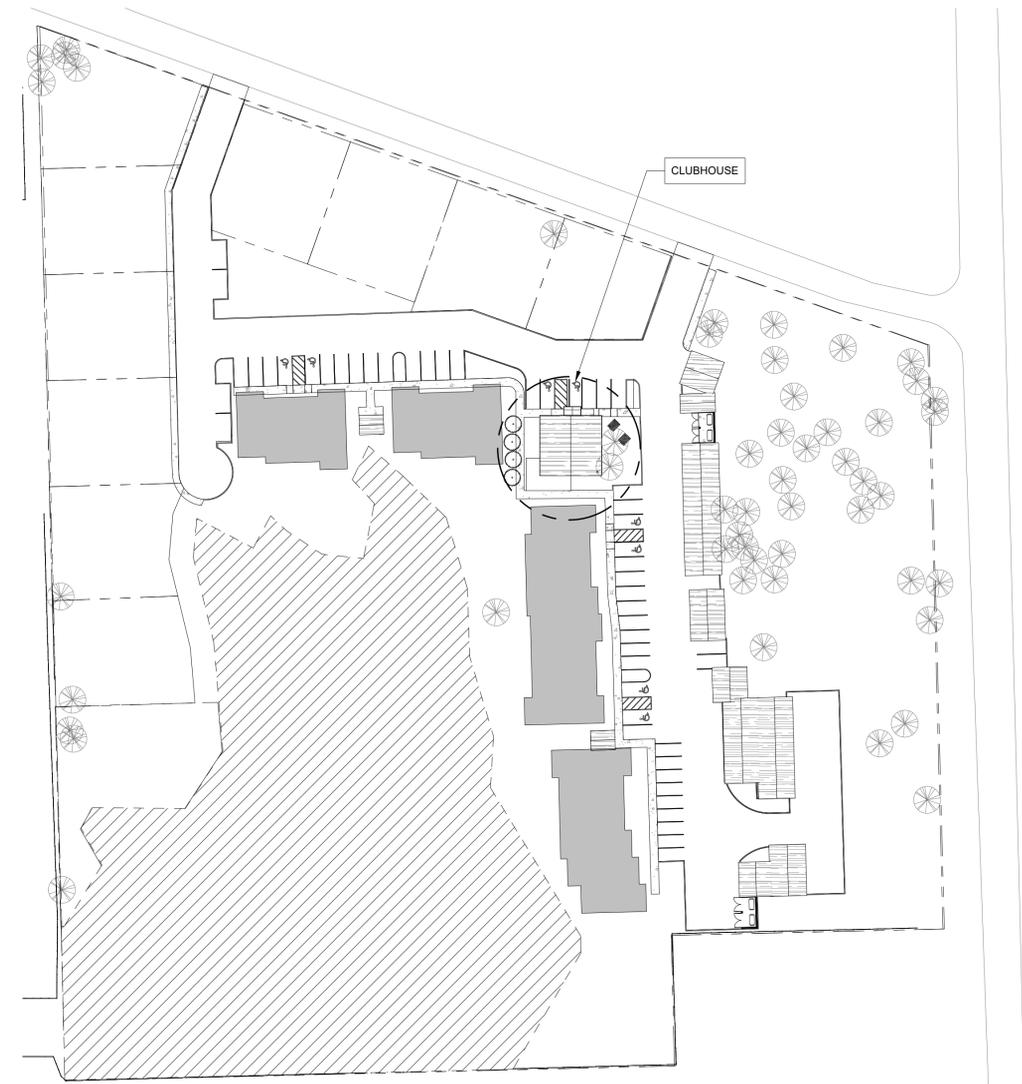
A34.4

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INDEX OF DRAWINGS	
Sheet Number	Sheet Name
A5.0	COVER SHEET
A5.1	FLOOR PLANS - PROPOSED
A5.2	EXTERIOR ELEVATIONS - PROPOSED



1 SITE KEY PLAN Copy 1
1" = 50'-0"

NEW APARTMENTS
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REVISION	DATE	DESCRIPTION

ISSUE DATE: 3/19/2020 2:40:58 PM
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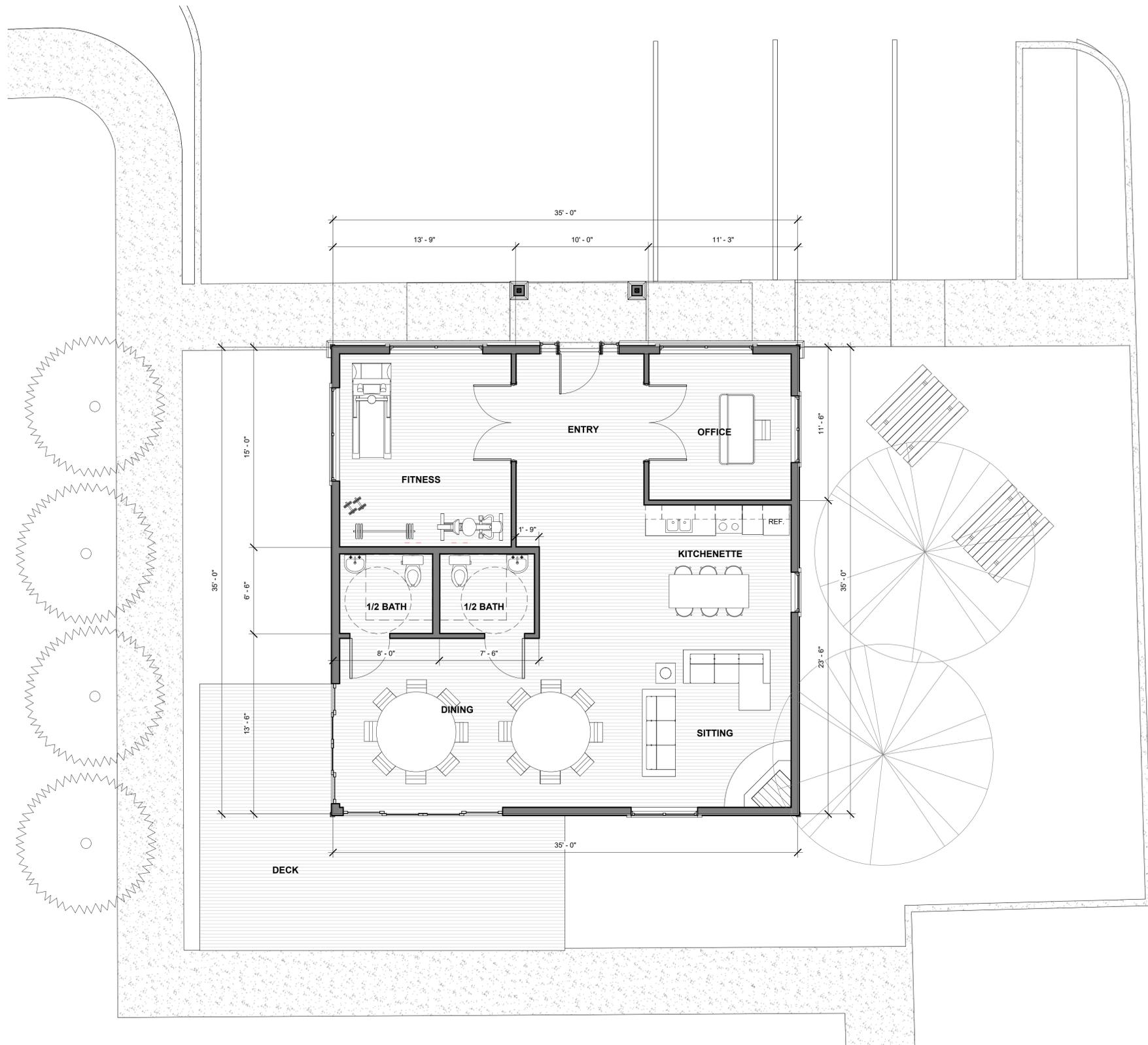
SHEET NAME:
COVER SHEET

SHEET NUMBER:
A5.0

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SHEET NAME:
FLOOR PLANS - PROPOSED

SHEET NUMBER:
A5.1

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① Level 1 - NEW - CLUBHOUSE
1/4" = 1'-0"



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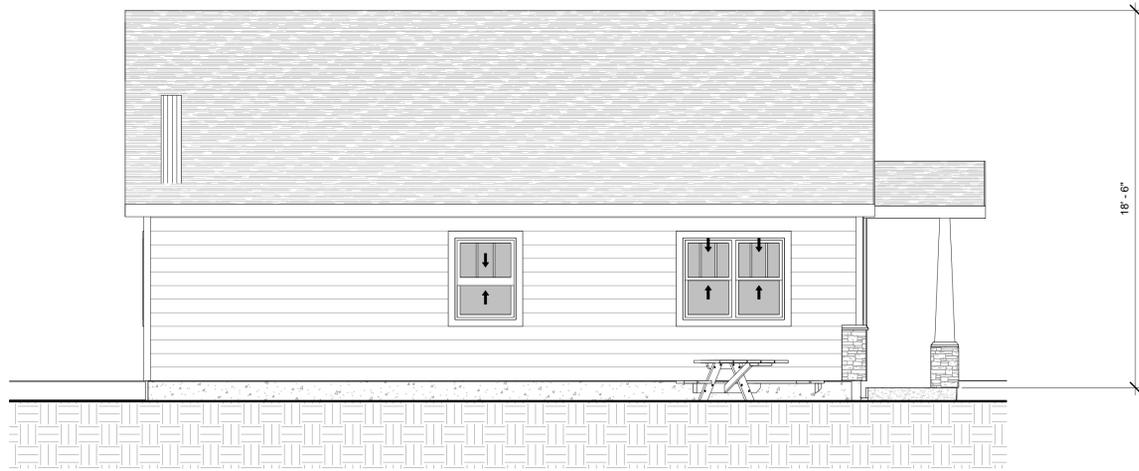
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REVISION DATE DESCRIPTION

ISSUE DATE: 3/19/2020
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SHEET NAME:
EXTERIOR ELEVATIONS - PROPOSED

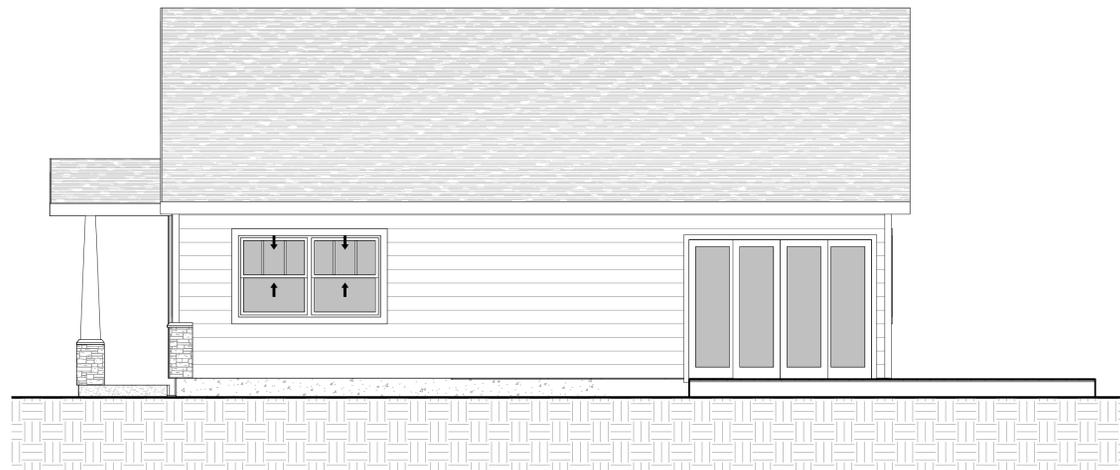
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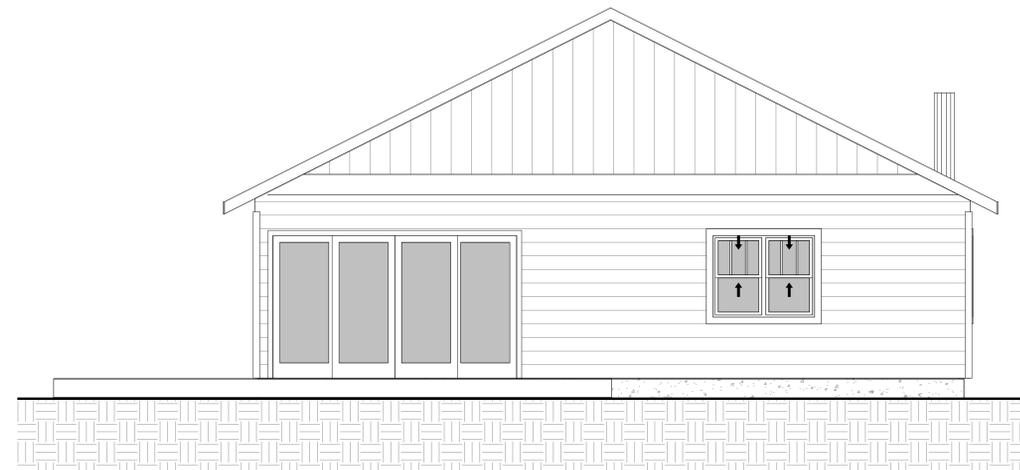
① EAST ELEVATION Copy 1
1/4" = 1'-0"



② NORTH ELEVATION Copy 1
1/4" = 1'-0"



④ WEST ELEVATION Copy 1
1/4" = 1'-0"



③ SOUTH ELEVATION Copy 1
1/4" = 1'-0"

NOT FOR CONSTRUCTION



PLANT LIST: GENERAL LANDSCAPING			
SYMBOL	LATIN/COMMON NAME	SIZE	SPACING
TREES			
8	ACER TRUNCATUM 'A. PLATANOIDES' Pacific Sunset Maple	2" cal	As shown
16	PARROTTIA PERSCICA Persian Parrotia	2" cal	As shown
10	CERCIS CANADENSIS Eastern Redbud	2" cal	As shown
11	RHAMNUS PURSHIANA CASCARA	1.5" cal.	As shown
19	PINUS PONDEROSA VAR. BENTHAMINIANA Williamette Valley Ponderosa Pine	5' ht.	As shown
EXISTING TREES TO REMAIN			
SHRUBS			
68	ABELIA GRANDIFLORA 'FRANCIS MASON' Francis Mason Glossy Abelia	5 gal.	3' o.c.
60	GARDENIA JASMINEOS 'FROSTPROOF' Frostproof Gardenia	5 gal.	4' o.c.
63	MYRTICA CALIFORNICA Pacific Wax Myrtle	5 gal.	5' o.c.
135	NANDINA DOMESTICA 'HARBOUR DWARF' HEAVENLY BAMBUS	2 gal.	30" o.c.
9	JUNIPERUS SCOPULORUM 'SKYROCKET' Skyrocket Juniper	2 gal.	3' o.c.
140	YUCCA FOLIATA David Yucca	5 gal.	3' o.c.
PERENNIALS			
13	CAREX OSHIMENSIS 'EVEGOLD' Everest Sedge	1 gal.	18" o.c.
197	HELICTROICHON SEMPERVIRENS Blue Dot Grass	1 gal.	2' o.c.
25	HEMIPHYLLIS 'STELLA D'ORO' Stella D' Oro Daylily	1 gal.	2' o.c.
GROUNDCOVER			
5936 SF	ARCTOSTAPHYLOS UVA-URSI 'MASS.' Massachusetts Kalmuck	1 gal.	3' o.c.
145 SF	ROSA 'FLOWER CARPET AMBER' Flower Carpet Amber Rose	2 gal.	3' o.c.
9654 SF	FINE LAWN SEED MIX		
7999 SF	STORMWATER PLANTING		
WOODLAND MIX SHRUBS			
13,733 SF	Mahonia Aquifolium Philadelphus Lewisii Ribes Sarcocolla Vaccinium Ovatum	5 gal.	3'-5' o.c.

GENERAL NOTES:

- Contractor is to verify all plant quantities.
- Adjust plantings in the field as necessary.
- Project is to be irrigated by an automatic, underground system, which will provide full coverage for all plant material. System is to be design/ build by Landscape Contractor. Guarantee system for a minimum one year. Show drip systems as alternate bid only.
- All plants are to be fully foliated, well branched and true to form.
- Contractor is to notify Landscape Architect or Owner's Representative of any site changes or unforeseen conditions that may be detrimental to plant health, or cause future problems to any structural elements of the project.
- Contractor shall notify the Landscape Architect if specified materials or methods are not consistent with local climate and/or practices.
- New trees shall not be planted within solar access easements.

LANDSCAPE PLAN
SCALE 1" = 30'-0"



NO.	DATE	REVISIONS



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LANDSCAPE ARCHITECTURE
3933 South Kelly Avenue, Suite B - Portland, OR 97239
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FRANKLIN RESERVE
ALBANY, OREGON
LANDSCAPE PLAN

DATE	6-16-2020
SCALE	NOTED
DRAWN	CHECKED
MPL	EH
SHEET NO	L1.0 1 OF 2



PLANT LIST: GENERAL LANDSCAPING

SYMBOL	#	LATIN/COMMON NAME TREES	SIZE	SPACING
TREES				
	8	ACER TRUNCATUM 'A. PLATANOIDES' Pacific Sunset Maple	2" cal	As shown
	16	PARROTIA PERSICA Persian Parrotia	2" cal	As shown
	10	CERCIS CANADENSIS Eastern Redbud	2" cal	As shown
	11	RHAMNUS PURSHIANA CASCARA	1.5" cal.	As shown
	19	PINUS PONDEROSA VAR. BENTHAMIANA Willamette Valley Ponderosa Pine	5' ht.	As shown
		EXISTING TREES TO REMAIN		
SHRUBS				
	68	ABELIA GRANDIFLORA 'FRANCIS MASON' Francis Mason Grassy Abelia	5 gal.	3' o.c.
	60	GARDENIA JASMINOIDES 'FROSTPROOF' Frostproof Gardenia	5 gal.	4' o.c.
	63	MIRBIA CALIFORNICA Pacific Star Myrtle	5 gal.	5' o.c.
	135	NANONA DOMESTICA 'HARBOUR DWARF' HEAVENLY BAMBOO	2 gal.	30" o.c.
	9	JUNIPERUS SCOPULORUM 'SKYROCKET' Skyrocket Juniper	2 gal.	3' o.c.
	140	YUQUENIA DAVIDII David Yucca	5 gal.	3' o.c.
PERENNIALS				
	13	CAREX OSHIMENSIS 'EVEGOLD' Everest Sedge	1 gal.	18" o.c.
	197	HELICTOTRICHON SEMPERVIRENS Blue Oat Grass	1 gal.	2' o.c.
	25	HEMEROCALLIS 'STELLA D' OR' Stella D' Oro Daylily	1 gal.	2' o.c.
GROUNDCOVER				
	5936 SF	ARCTOSTAPHYLOS UVA-URSI 'MASS.' Massachusetts Kinnikinnick	1 gal.	3' o.c.
	145 SF	ROSA 'FLOWER CARPET AMBER' Flower Carpet Amber Rose	2 gal.	3' o.c.
	9654 SF	FINE LAWN SEED MIX		
	7999 SF	STORMWATER PLANTING		
WOODLAND MIX SHRUBS				
	13,733 SF	Malva Aquilinum Philadelphus Lewisii Ribes Sanguineum Vaccinium Ovatum	5 gal.	3'-5" o.c.

GENERAL NOTES:

- Contractor is to verify all plant quantities.
- Adjust plantings in the field as necessary.
- Project is to be irrigated by an automatic, underground system, which will provide full coverage for all plant material. System is to be design/ build by Landscape Contractor. Guarantee system for a minimum one year. Show drip systems as alternate bid only.
- All plants are to be fully foliated, well branched and true to form.
- Contractor is to notify Landscape Architect or Owner's Representative of any site changes or unforeseen conditions that may be detrimental to plant health, or cause future problems to any structural elements of the project.
- Contractor shall notify the Landscape Architect if specified materials or methods are not consistent with local climate and/or practices.
- New trees shall not be planted within solar access easements,

LANDSCAPE PLAN
SCALE 1" = 30'-0"



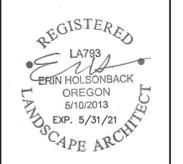
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FRANKLIN RESERVE
ALBANY, OREGON
LANDSCAPE PLAN

DATE	6-10-2020
SCALE	NOTED
DRAWN	CHECKED
MPL	EH
SHEET NO	L1.0
	1 OF 2

NO.	DATE	REVISIONS

NO.	DATE	REVISIONS



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FRANKLIN RESERVE
ALBANY, OREGON

DETAILS & SPECS

DATE	6-10-2020
SCALE	AS SHOWN
DRAWN	CHECKED
EH	EH
SHEET NO	L2.0
2 OF 2	

OUTLINE SPECIFICATIONS PLANTING AND SEEDING:

GENERAL: All plants shall conform to all applicable standards of the latest edition of the "American Association of Nurserymen Standards", A.N.S.I. Z60.1 – 1973. Meet or exceed the regulations and laws of Federal, State, and County regulations, regarding the inspection of plant materials, certified as free from hazardous insects, disease, and noxious weeds, and certified fit for sale in Oregon.

The apparent silence of the Specifications and Plans as to any detail, or the apparent omission from them of a detailed description concerning any point, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of first quality are to be used. All interpretations of these Specifications shall be made upon the basis above stated.

Landscape contractor shall perform a site visit prior to bidding to view existing conditions.

PERFORMANCE QUALITY ASSURANCE: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary horticultural practices and who are completely familiar with the specified requirements and methods needed for the proper performance of the work of this section.

NOTIFICATION: Give Landscape Architect minimum of 2 days advance notice of times for inspections. Inspections at growing site does not preclude Landscape Architect's right of rejection of deficient materials at project site. Each plant failing to meet the above mentioned "Standards" or otherwise failing to meet the specified requirements as set forth shall be rejected and removed immediately from the premises by the Contractor and at his expense, and replaced with satisfactory plants or trees conforming to the specified requirements.

SUBSTITUTIONS: Only as approved by the Landscape Architect or the Owner's Representative.

GUARANTEE AND REPLACEMENT: All plant material shall be guaranteed from final acceptance for one full growing season or one year, whichever is longer. During this period the Contractor shall replace any plant material that is not in good condition and producing new growth (except that material damaged by severe weather conditions, due to Owner's negligence, normally unforeseen peculiarities of the planting site, or lost due to vandalism). Guarantee to replace, at no cost to Owner, unacceptable plant materials with plants of same variety, age, size and quality as plant originally specified. Conditions of guarantee on replacement plant shall be same as for original plant.

Landscape Contractor shall keep on site for Owner's Representative's inspection, all receipts for soil amendment and topsoil deliveries.

PROTECTION: Protect existing roads, sidewalks, and curbs, landscaping, and other features remaining as final work. Verify location of underground utilities prior to doing work. Repair and make good any damage to service lines, existing features, etc. caused by landscaping installation.

PLANT QUALITY ASSURANCE: Deliver direct from nursery. Maintain and protect roots of plant material from drying or other possible injury. Store plants in shade and protect them from weather immediately upon delivery, if not to be planted within four hours.

Nursery stock shall be healthy, well branched and rooted, formed true to variety and species, full foliaged, free of disease, injury, defects, insects, weeds, and weed roots. Trees shall have straight trunks, symmetrical tips, and have an intact single leader. Any trees with double leaders will be rejected upon inspection. All Plants: True to name, with one of each bundle or lot tagged with the common and botanical name and size of the plants in accordance with standards of practice of the American Association of Nurserymen, and shall conform to the Standardized Plant Names, 1942 Edition.

Container grown stock: Small container-grown plants, furnished in removable containers, shall be well rooted to ensure healthy growth. **Grow container plants in containers a minimum of one year** prior to delivery, with roots filling container but not root bound. Bare root stock: Roots well-branched and fibrous. Balled and burlapped (B&B): Ball shall be of natural size to ensure healthy growth. Ball shall be firm and the burlap sound. No loose or made ball will be acceptable.

TOPSOIL AND FINAL GRADES: Landscape Contractor is to supply and place 12" of topsoil in planting beds and 6" in lawn areas. Landscape Contractor is to verify with the General Contractor if the on-site topsoil is or is not conducive to proper plant growth. The topsoil shall be a sandy loam, free of all weeds and debris inimical to lawn or plant growth. Furnish soil analysis by a qualified soil testing laboratory stating percentages of organic matter; gradation of sand, silt and clay content; cation exchange capacity; deleterious material; pH; and plant nutrient content of the topsoil. Report suitability of topsoil for plant growth and recommended quantities of nitrogen, phosphorus and potash nutrients and soil amendments (including compost) to be added to produce satisfactory topsoil. If stockpiled topsoil on site is not conducive to proper plant growth, the Landscape Contractor shall import the required amount.

Landscape shall include finished grades and even distribution of topsoil to meet planting requirements. Grades and slopes shall be as indicated. Planting bed grades shall be approximately 3" below adjacent walks, paving, finished grade lines, etc., to allow for bark application. Finish grading shall remove all depressions or low areas to provide positive drainage throughout the area.

PLANTING SPECIFICATIONS:

HERBICIDES: Prior to soil preparation, all areas showing any undesirable weed or grass growth shall be treated with Round-up in strict accordance with the manufacturer's instructions.

SOIL PREPARATION: Work all areas by rototilling to a minimum depth of 8". Remove all stones (over 1 1/2" size), sticks, mortar, large clumps of vegetation, roots, debris, or extraneous matter turned up in working. Soil shall be of a homogeneous fine texture. Level, smooth and lightly compact area to plus or minus .10 of required grades.

In groundcover areas add 2" of compost (or as approved) and till in to the top 6" of soil.

PLANTING HOLE: Lay out all plant locations and excavate all soils from planting holes to 2 1/2 times the root ball or root system width. Loosen soil inside bottom of plant hole. Dispose of any "subsoil" or debris from excavation. Check drainage of planting hole with water, and adjust any area showing drainage problems.

SOIL MIX: Prepare soil mix in each planting hole by mixing:
2 part native topsoil (no subsoil)
1 part compost (as approved)

Thoroughly mix in planting hole and add fertilizers at the following rates:
Small shrubs - 1/8 lb./ plant
Shrubs - 1/3 to 1/2 lb./ plant
Trees - 1/3 to 1 lb./ plant

FERTILIZER: For trees and shrubs use Commercial Fertilizer "A" Inorganic (5-4-3) with micro-nutrients and 50% slow releasing nitrogen. For initial application in fine seed lawn areas use Commercial Fertilizer "B" (8-16-8) with micro-nutrients and 50% slow-releasing nitrogen. For lawn maintenance use Commercial Fertilizer "C" (22-16-8) with micro-nutrients and 50% slow-releasing nitrogen. DO NOT apply fertilizer to Water Quality Swale.

PLANTING TREES AND SHRUBS: Plant upright and face to give best appearance or relationship to adjacent plants and structures. Place 6" minimum, lightly compacted layer of prepared planting soil under root system. Loosen and remove twine binding and burlap from top 1/2 of root balls. Cut off cleanly all broken or frayed roots, and spread roots out. Stagger Plants in rows. Backfill planting hole with soil mix while working each layer to eliminate voids.

When approximately 2/3 full, water thoroughly, then allow water to soak away. Place remaining backfill and dish surface around plant to hold water. Final grade should keep root ball slightly above surrounding grade, not to exceed 1". Water again until no more water is absorbed. Initial watering by irrigation system is not allowed.

STAKING OF TREES: Stake or guy all trees. Stakes shall be 2" X 2" (nom.) quality tree stakes with point. They shall be of Douglas Fir, clear and sturdy. Stake to be minimum 2/3 the height of the tree, not to exceed 8'-0". Drive stake firmly 1'-6" below the planting hole. Tree ties for deciduous trees shall be "Chainlock" (or better). For Evergreen trees use "Gro-Strait" Tree Ties (or a reinforced rubber hose and guy wires) with guy wires of a minimum 2 strand twisted 12 ga. wire. Staking and guying shall be loose enough to allow movement of tree while holding tree upright.

MULCHING OF PLANTINGS: Mulch planting areas with dark, aged, medium grind fir or hemlock bark (aged at least 6 months) to a depth of 2" in ground cover areas and 2 1/2" in shrub beds. Apply evenly, not higher than grade of plant as it came from the nursery, and rake to a smooth finish. Water thoroughly, then hose down planting area with fine spray to wash leaves of plants.

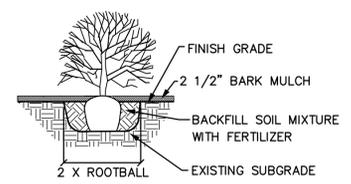
FINE LAWN AREAS: In fine lawn area apply Commercial Fertilizer Mix "B" at 4.5 lbs. Per 1,000 sq.ft. and rake into soil surface. Establish an even, fine textured seedbed meeting grades, surfaces and texture. Sow seed with a mechanical spreader at the uniform rates as noted below. Rake seed lightly to provide cover.

SEED: Bluetag grass seed conforming to applicable State laws. No noxious weed seeds. Submit Guaranteed analysis.
Fine Lawn Seed Mix: To contain 50% Top Hat Perennial Ryegrass, 30% Derby Supreme Ryegrass, 20% Longfellow Chewings Fescue (Hobbs and Hopkins Pro-Time 303 Lawn Mix or as approved) Sow Seed at 5 lbs. / 1000 sq. ft.

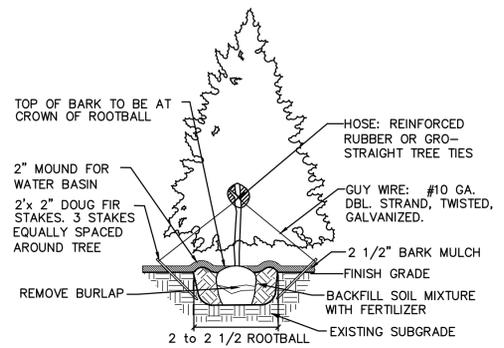
MAINTENANCE OF SEEDED AREAS:
Fine Lawn Areas: The lawn areas shall be maintained by watering, mowing, reseeding, and weeding for a minimum of 60 days after seeding. After 30 days, or after the second mowing, apply Commercial Fertilizer Mix "C" at 5 lbs. per 1,000 sq. ft. Mow and keep at 1 1/2" to 2" in height. Remove clippings and dispose of off site.

GENERAL MAINTENANCE: Protect and maintain work described in these specifications against all defects of materials and workmanship, through final acceptance. Replace plants not in normal healthy condition at the end of this period. Water, weed, cultivate, mulch, reset plants to proper grade or upright position, remove dead wood and do necessary standard maintenance operations. Irrigate when necessary to avoid drying out of plant materials, and to promote healthy growth.

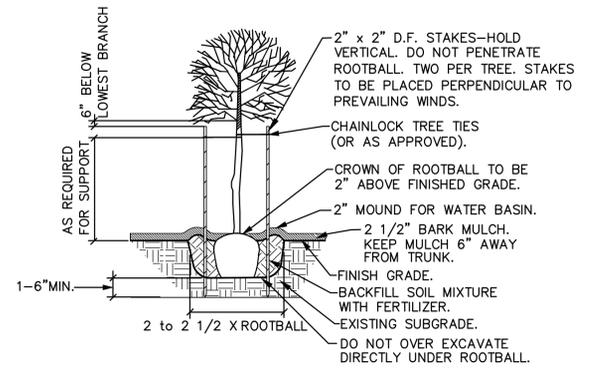
CLEAN-UP: At completion of each division of work all extra material, supplies, equipment, etc., shall be removed from the site. All walks, paving, or other surfaces shall be swept clean, mulch areas shall have debris removed and any soil cleared from surface. All areas of the project shall be kept clean, orderly and complete.



SHRUB PLANTING DETAIL
NOT TO SCALE



EVERGREEN TREE STAKING DETAIL
NOT TO SCALE



NOTE: ANY PROPOSED CHANGES TO OUR SPECIFICATION OR DETAIL SHOULD BE APPROVED BY THE LANDSCAPE ARCHITECT. LIKEWISE, IN ACCORDANCE WITH BEST PRACTICES OF LOCAL LANDSCAPE INSTALLATION, SHOULD THE LANDSCAPE CONTRACTOR FIND A PREFERRED ALTERNATE METHOD, THE LANDSCAPE ARCHITECT MAY BE SO ADVISED.

GENERAL DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE

WATER QUALITY SPECIFICATIONS:

SOIL PREPARATION: Remove all nonnative plant materials, including plants, roots, and seeds prior to adding topsoils. Till the sub-grade in these areas to a depth of at least 4" and add at least 8" of clean compost-amended topsoil.

Bioretention soil may be provided by either amending native soil with compost, or importing bioretention soil to meet required soil quality guidelines .

Bioretention soil shall be a well-blended mixture of mineral aggregate and compost measured on a volume basis. Bioretention soil shall consist of approximately two parts fine compost (approximately 35 to 40 percent) by volume and three parts mineral aggregate (approximately 60 to 65 percent), by volume . The mixture shall be well blended to produce a homogeneous mix, and have an organic matter content of 4% to 8% determined using the loss on ignition method.

After soil placement and preparation is completed, no other construction traffic shall be allowed in the area, except for planting and related work. The landscape contractor is responsible for final grading and for ensuring that surface and stormwater runoff flows are functioning as designed.

TIME: Grading, soil preparation, and planting shall be performed during optimal weather conditions and at low flow levels to minimize sediment impacts. Optimum planting time is fall beginning mid-october). Winter planting is acceptable, however extended freezing temperatures shortly after installation can increase plant mortality. Spring is also acceptable, but requires more summer watering than fall plantings. Summer planting is the least desirable time period and requires regular watering for the dry months immediately following installation.

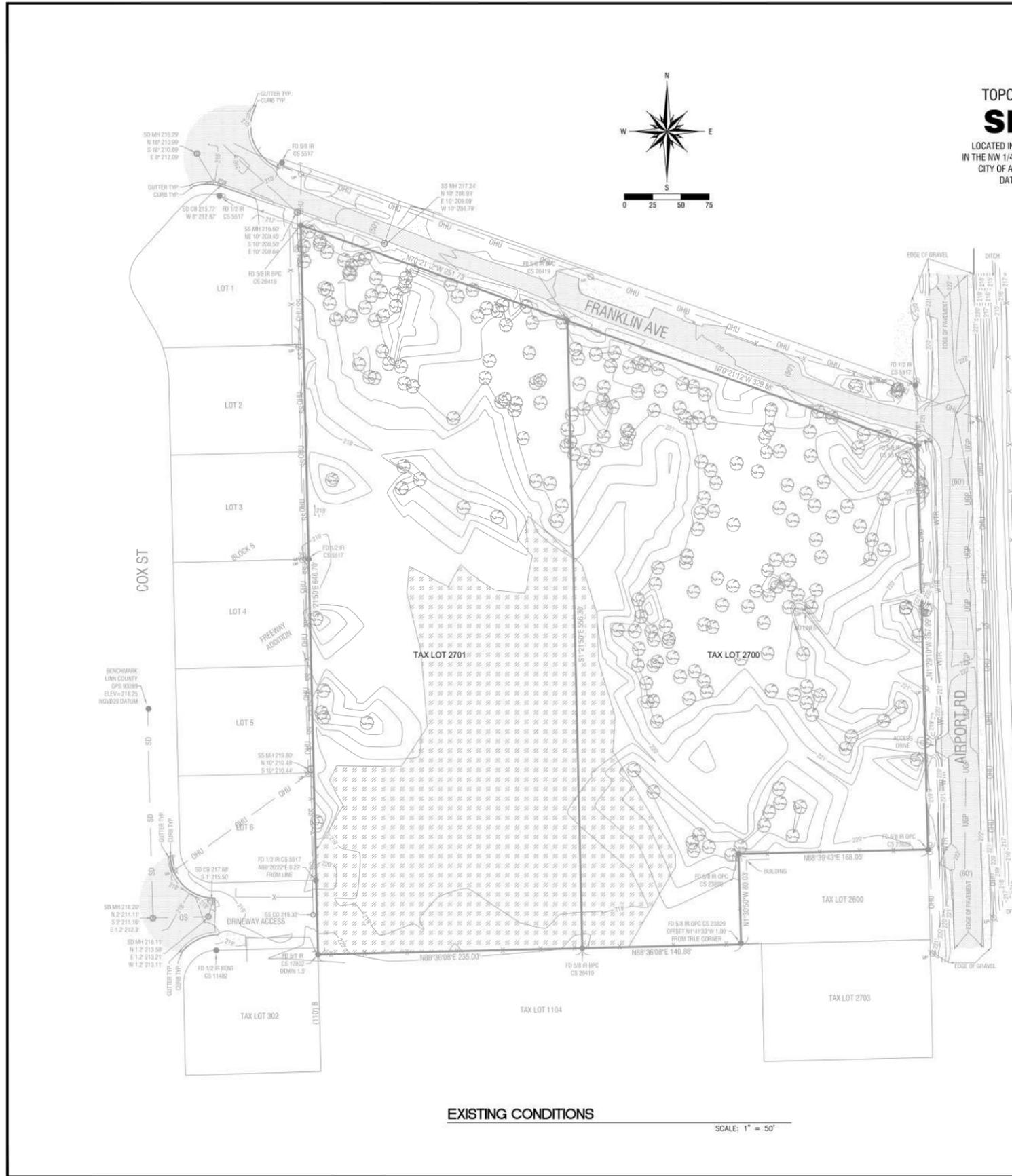
FERTILIZER: If after soil test, it is determined that fertilizer is needed, only organic fertilizer shall be used. Recommended organic fertilizer is biosol 7-2-3.

MULCHING: Two inches of compost shall be installed on the side slopes of the facility. Mulch shall be free of weeds and weed seeds, roots and mineral aggregate.

IRRIGATION: Stormwater facilities shall be irrigated for a minimum of two growing seasons.

MAINTENANCE: Stormwater management facilities must be properly operated and maintained by the owner for the life of the facility. Periodic inspections and routine maintenance shall be performed to maintain plant density and facility function. Refer to 2012 low impact development technical guidance manual for puget sound.

CLEAN-UP: At completion of each division of work all extra material, supplies, equipment, etc., shall be removed from the site. All walks, paving, or other surfaces shall be swept clean, mulch areas shall have debris removed and any soil cleared from surface. All areas of the project shall be kept clean, orderly and complete.



TOPOGRAPHIC SURVEY
SHULTS
 LOCATED IN THE ANDERSON COX DLC NO.49
 IN THE NW 1/4 OF SECTION 9, T 11 S, R 3 W, W.M.
 CITY OF ALBANY, LINN COUNTY, OREGON
 DATE OF SURVEY: JULY 2018

NOTES

- UNDERGROUND UTILITIES ARE SHOWN FROM LOCATES PERFORMED BY OREGON ONE CALL LOCATE CENTER. CDA, INC. DOES NOT GUARANTEE THE ACCURACY OF THE LOCATES AS MARKED ON THE GROUND. WE RECOMMEND POTHOLING ALL VITAL UTILITIES NECESSARY FOR THE DESIGN AND CONSTRUCTION OF THIS PROJECT.
- SPOT ELEVATIONS HAVE BEEN OMITTED FOR THE FACE OF THIS SURVEY TO ALLOW FOR CLARITY OF THE EXISTING SITE CONDITIONS. REFER TO THE ELECTRONIC VERSION OF THIS SURVEY FOR ADDITIONAL SPOT ELEVATIONS.

- LEGEND**
- MONUMENT FOUND
 - ⊙ DECIDUOUS TREE
 - ⊙ WATER VALVE
 - ⊙ HYDRANT
 - ⊙ SEWER MANHOLE
 - ⊙ CLEAN OUT
 - ⊙ STORM DRAIN MANHOLE
 - ⊙ CATCH BASIN
 - ⊙ UTILITY POLE
 - ⊙ GUY WIRE
 - ⊙ SIGN
 - ⊙ FENCE
 - ⊙ WTR WATER LINE
 - ⊙ SS SAN. SEWER LINE
 - ⊙ SD STORM DRAIN LINE
 - ⊙ UGP UNDERGROUND POWER
 - ⊙ OHU OVERHEAD UTILITY
 - ⊙ GRAVEL
 - ⊙ PAVEMENT
 - ⊙ CONCRETE
 - FD FOUND
 - C.S. COUNTY SURVEY
 - IR IRON ROD
 - IP IRON PIPE
 - C.S. COUNTY SURVEY
 - IR IRON ROD

DATUM
 HORIZONTAL DATUM - ORGN NAD 83(2011) EPOCH 2010.00
 VERTICAL DATUM - NGVD29 (LINN COUNTY GPS 93269)

EXISTING CONDITIONS
 SCALE: 1" = 50'

REGISTERED PROFESSIONAL LAND SURVEYOR
REVIEW
 M. CRAWFORD
 #76980 LS
 EXPIRES: 12-31-2019

1055 AIRWAY ROAD, BLDG B
 PO BOX 2385, LEBANON, OREGON 97355
 PH: (541) 258-8833 FAX: (541) 258-8834
 SHEET 1 OF 1
 JOB: 17-08-078

H B H
 501 E First Street
 Newberg, Oregon 97132
 CONSULTING 503/554-9553 fax 503/537-9554
 ENGINEERS email: mail@hbh-engineers.com

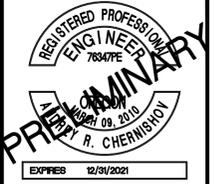
Drawn By: ARB | Checked By: ARC | Submittal No: 30%
 Designed By: ARB | L:\2020-0014-Design\DWG1 - COVER NOTES, EX. DEMO.dwg

REV.	DATE	DESCRIPTION	BY

THE FRANKLIN RESERVE
 840 SE AIRPORT RD, ALBANY OR 97322
EXISTING CONDITIONS

6/3/2020
 2 of 14

2020-001



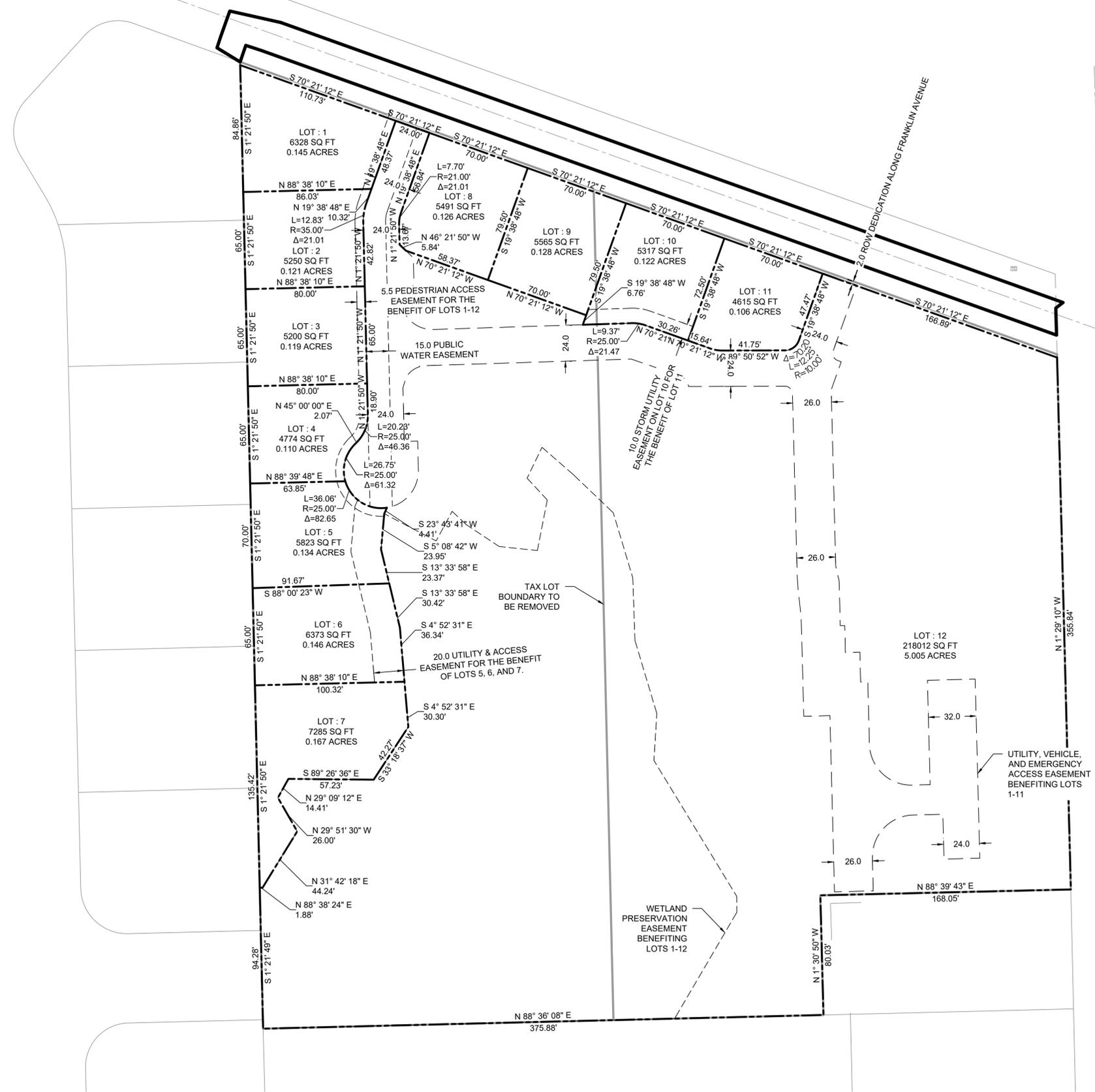
DATE: 12/31/2021

NOTES

1. LOT 12 SHALL BE COVERED BY A BLANKET EASEMENT BENEFITING LOTS 1-11 OVER ALL THE OUTDOOR COMMON AREAS AS SHOWN ON THE APPROVED PLANNED UNIT DEVELOPMENT FOR PEDESTRIAN ACCESS PURPOSES.
2. THE PLANNED UNIT DEVELOPMENT SHALL BE IN COMPLIANCE WITH THE SOLAR ACCESS REQUIREMENTS OF THE APPROVED LAND USE DECISION.

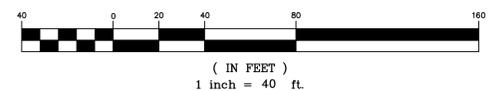
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 email: mail@hbh-engineers.com

Designed By: ARB | Drawn By: ARB | Checked By: ARC | Submitted No.: 30%
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PRELIMINARY PLAT

SCALE: 1" = 40'



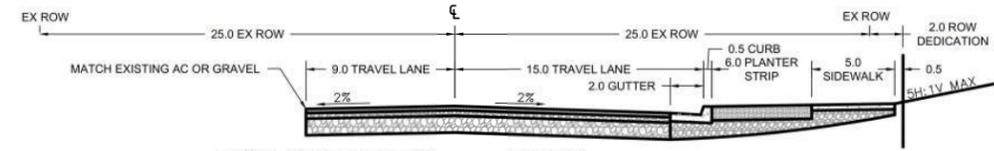
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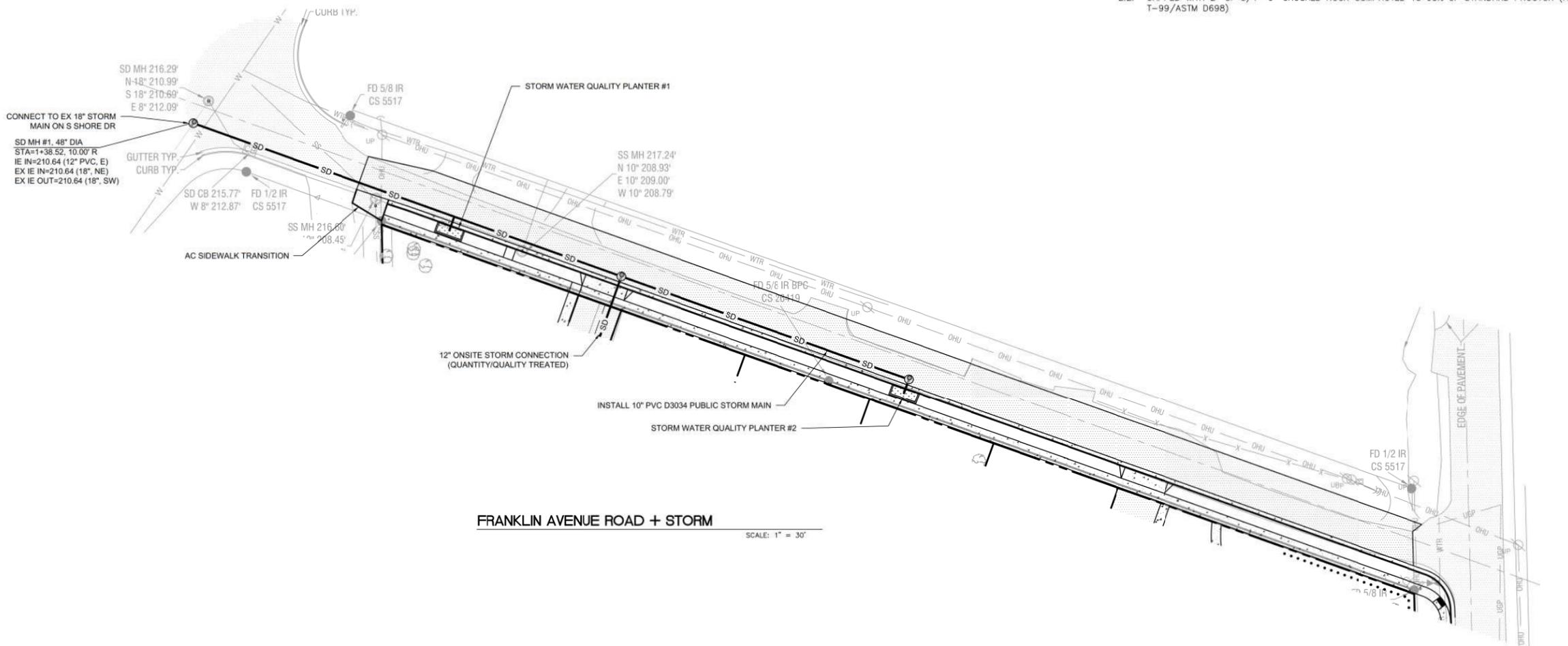
MIKE SHULTS
 PO BOX 411 ST. PAUL OR 97137
THE FRANKLIN RESERVE
 840 SE AIRPORT RD, ALBANY OR 97322
PRELIMINARY PLAT

DATE: 7/20/2020
 SHEET NO. 4 OF 14
 2020-001

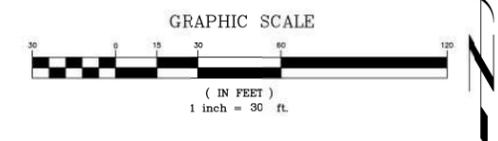




- FRANKLIN AVENUE PAVEMENT NOTES & CROSS SECTION:
1. AC THICKNESS = 5", (2)-2.5" LIFTS
 2. 12" TOTAL SUBBASE
 - 2.1. 10" OF 1.5"-0" CRUSHED ROCK COMPACTED TO 95% OF STANDARD PROCTOR (ASSHTO T-99/ASTM D698)
 - 2.2. CAPPED WITH 2" OF 3/4"-0" CRUSHED ROCK COMPACTED TO 95% OF STANDARD PROCTOR (ASSHTO T-99/ASTM D698)



FRANKLIN AVENUE ROAD + STORM
SCALE: 1" = 30'



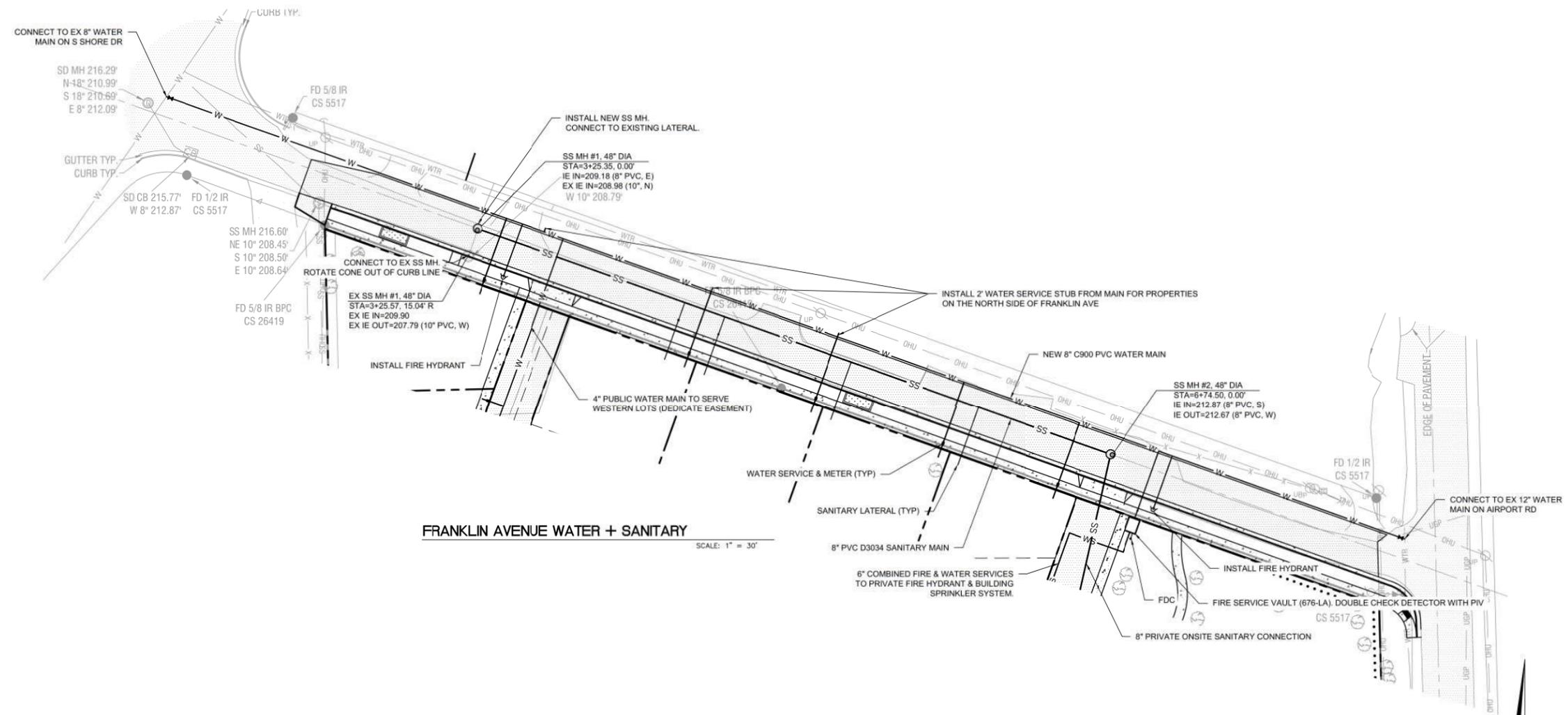
H B H ENGINEERS
 501 E First Street
 Newberg, Oregon 97132
 CONSULTING 503/554-9533 fax 503/537-9554
 ENGINEERS email: mail@hbh-engineers.com

Designed By: ARB | Drawn By: ARB | Checked By: ARB | Submittal No: L:\2020-0014-Design\DWG3 - UTILITIES.dwg | File: 30%

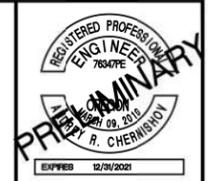
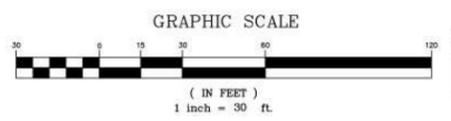
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0" = 1" IF THIS LINE IS NOT 1 INCH SCALE IS NOT AS SHOWN

MIKE SHULTS
 PO BOX 41, ST. PAUL, OR 97137
THE FRANKLIN RESERVE
 840 SE AIRPORT RD, ALBANY OR 97322
FRANKLIN ROAD + STORM



FRANKLIN AVENUE WATER + SANITARY
SCALE: 1" = 30'



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 email: mail@hbh-engineers.com

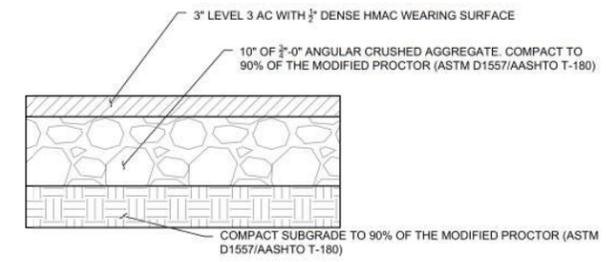
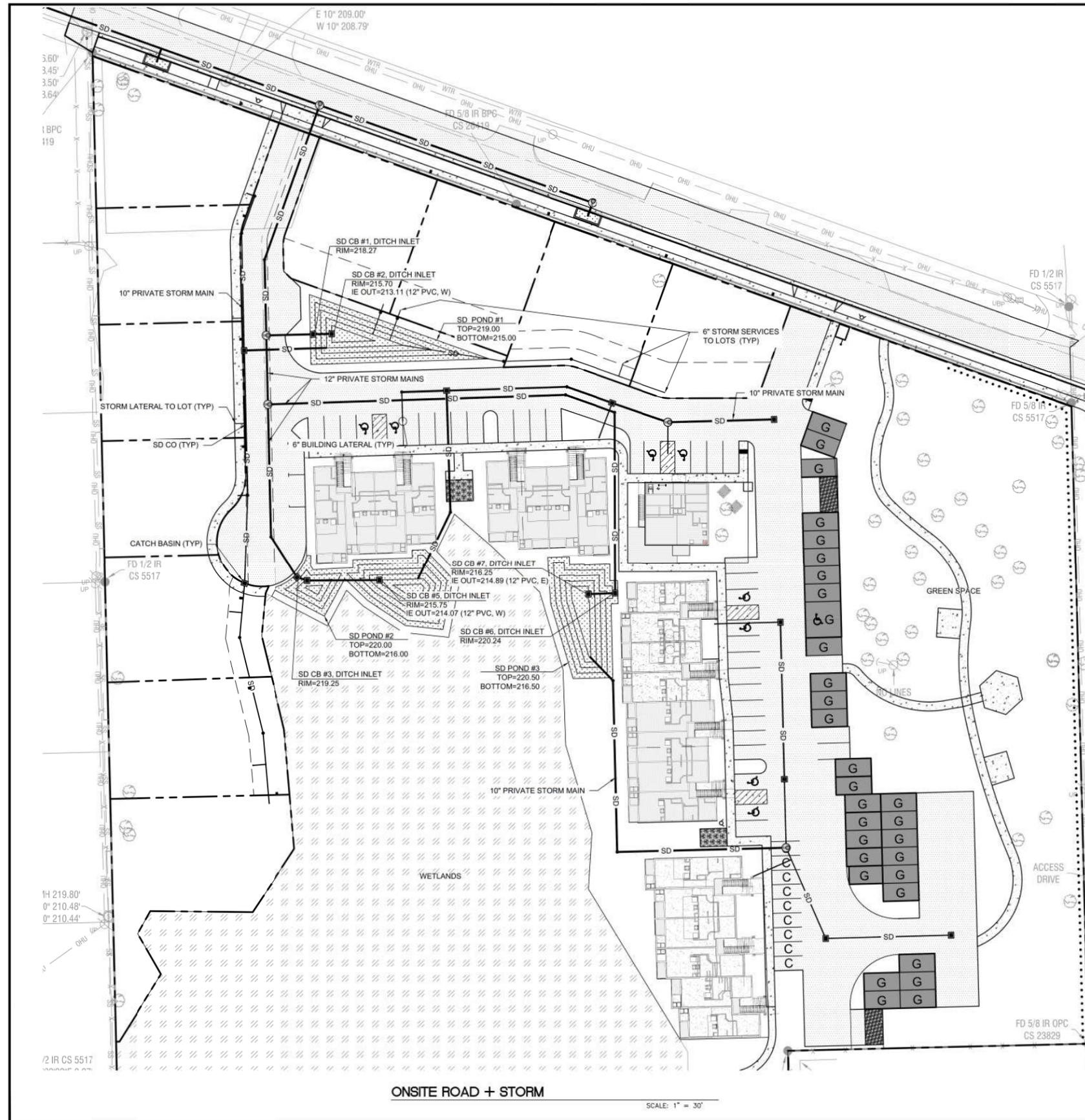
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MIKE SHULTS
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 840 SE AIRPORT RD, ALBANY OR 97322

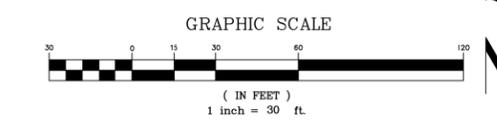
FRANKLIN WATER + SANITARY

Sheet No. **G5** 7 of 14
 Date: **6/8/2020**
 2020-001



PRIVATE PAVEMENT CROSS SECTION

- DESIGNED TO MEET FIRE TRUCK LOAD OF 12,500 POUNDS OF POINT LOAD (WHEEL LOAD) AND 75,000 LB LIVE LOAD (GROSS VEHICLE WEIGHT).



H B H
ENGINEERS

501 E First Street
 Newberg, Oregon 97132
 CONSULTING 503/554-9533 fax 503/537-9554
 email: mail@hbh-engineers.com

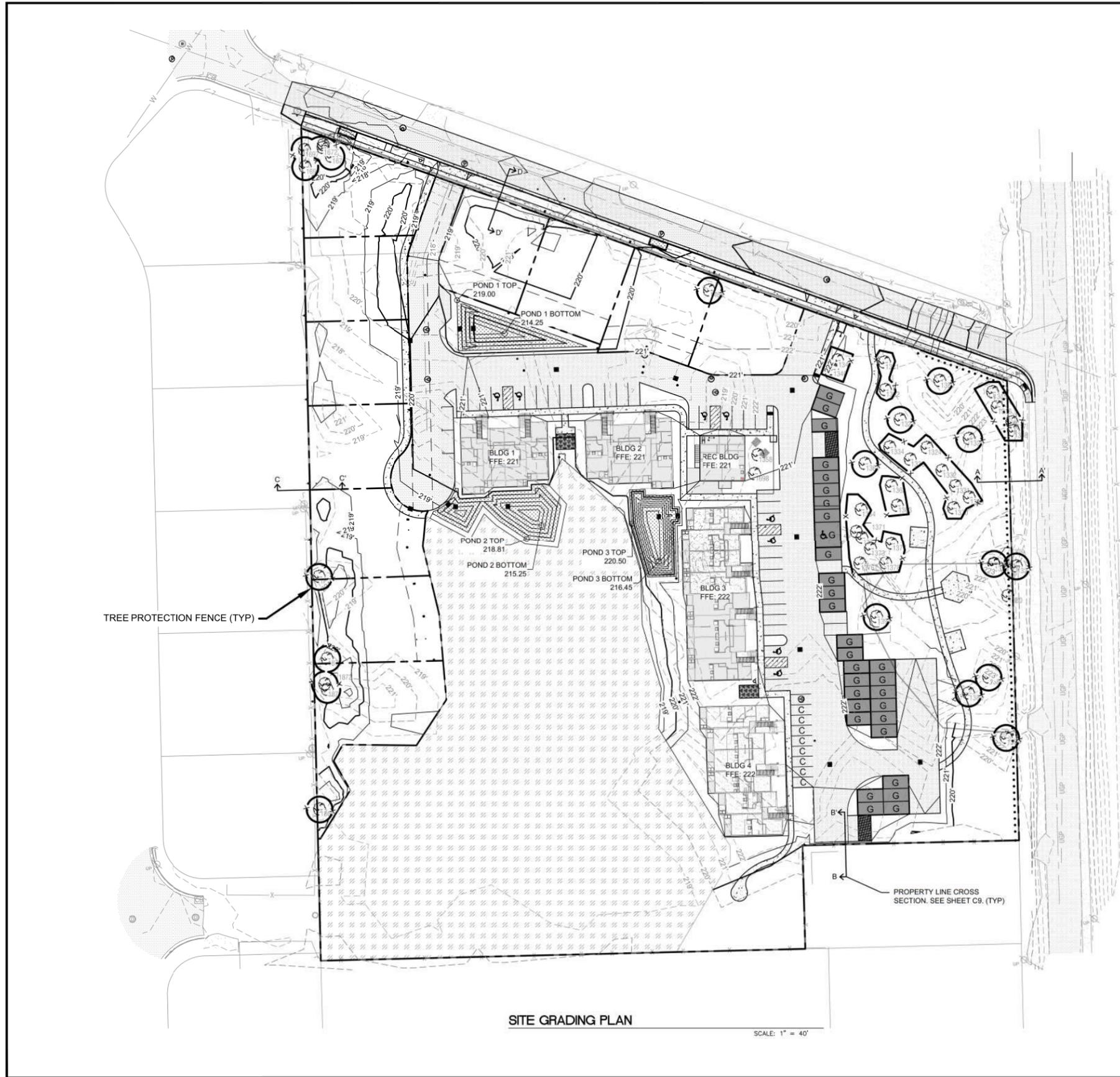
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 Drawn By: ARB | Date: 09/20/20

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0" = 1" IF THIS LINE IS NOT 1/8" INCH SCALE IS NOT AS SHOWN

THE FRANKLIN RESERVE
 840 SE AIRPORT RD, ALBANY OR 97322
ONSITE ROAD + STORM

Sheet No: 8 of 14
 Date: 6/8/2020
 Project No: 2020-001



NOTES:

1. TREE PROTECTION FENCE TO BE LOCATED MIN 15' FROM CENTER OF TREE PER ARBORIST.



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 501 E First Street
 Newberg, Oregon 97132
 CONSULTING 503/554-9553 fax 503/537-9554
 ENGINEERS email: mail@hbh-engineers.com

Designed By: BJC | Checked By: BJC | Submittal No: L:\2020-0014-Design\DWG4 - Grading Plans.dwg
 Drawn By: BJC | Date: 09/20/20
 Scale: 30%

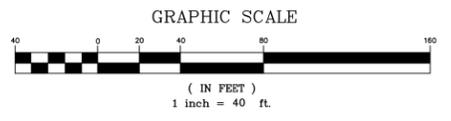
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THE FRANKLIN RESERVE
 840 SE AIRPORT RD, ALBANY OR 97322

SITE GRADING PLAN



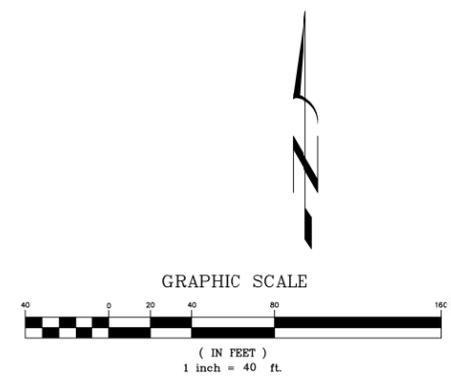
Sheet No: **10** of **14**
 Date: **6/3/2020**
 Project No: **2020-001**

COMMON AREAS

#	COMMON AREA	AREA (SF)	COLOR
1	RECREATION BUILDING, DECKS AND BBQ	2,975	Red
2	OAK PRESERVE	40,946	Yellow
3	MEADOW	76,230	Green
4	SOUTH PICNIC AREA	6,300	Cyan
5	STORM WATER FACILITIES/LANDSCAPING	15,825	Pink
TOTAL AREA		142,276	



PHASING AND COMMON AREA PLAN
SCALE: 1" = 40'



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 501 E First Street
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 503/554-9553 fax 503/537-9554
 email: mail@hbh-engineers.com

REV.	DATE	DESCRIPTION	BY

0" = 1" IF THIS LINE IS NOT 1/4" INCH SCALE IS NOT AS SHOWN

MIKE SHULTS
 PO BOX 41, ST. PAUL, OR 97137
THE FRANKLIN RESERVE
 840 SE AIRPORT RD, ALBANY OR 97322
PHASING AND COMMON AREA PLAN

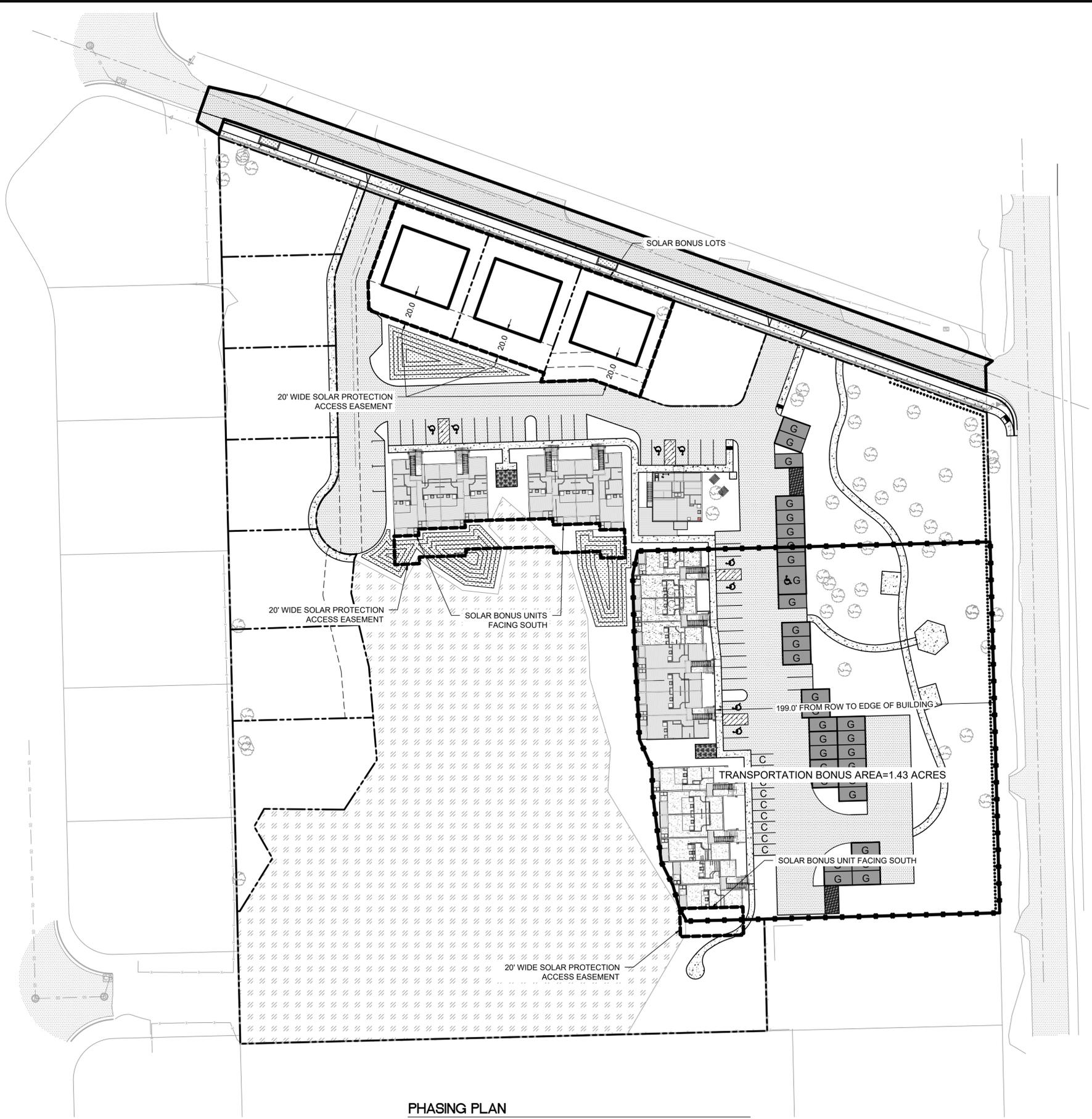
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 Date: **6/8/2020**
 2020-001

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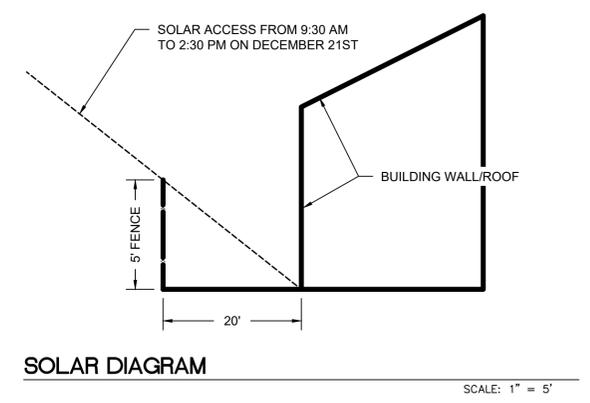


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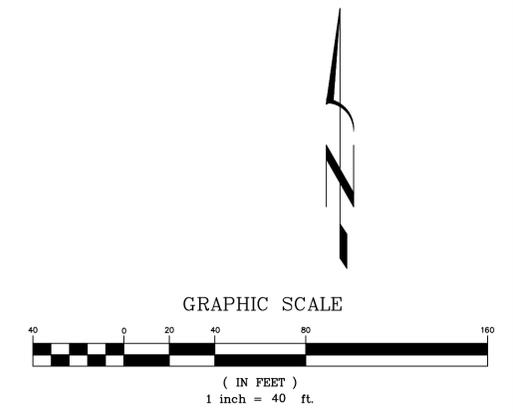
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PHASING PLAN
 SCALE: 1" = 40'

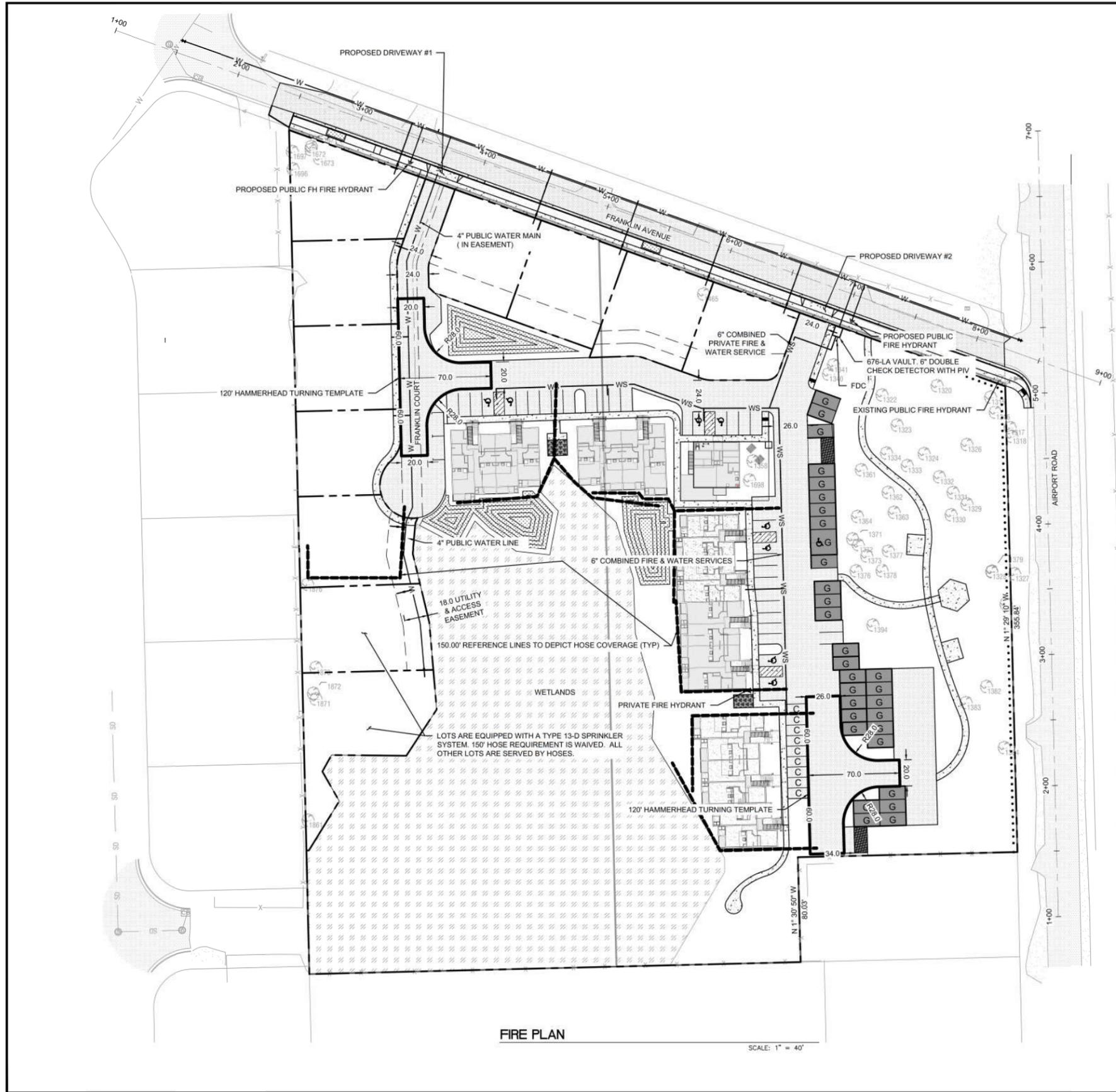


SOLAR DIAGRAM
 SCALE: 1" = 5'



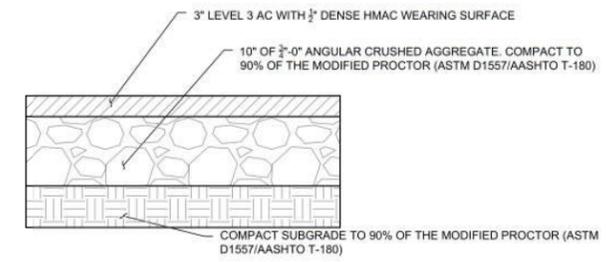
REV.	DATE	DESCRIPTION	BY

MIKE SHULTS
 PO BOX 41, ST. PAUL, OR 97137
THE FRANKLIN RESERVE
 840 SE AIRPORT RD, ALBANY OR 97322
HOUSING BONUSES



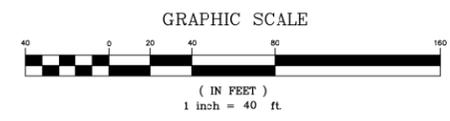
FIRE PLAN

SCALE: 1" = 40'



PRIVATE PAVEMENT CROSS SECTION

- DESIGNED TO MEET FIRE TRUCK LOAD OF 12,500 POUNDS OF POINT LOAD (WHEEL LOAD) AND 75,000 LB LIVE LOAD (GROSS VEHICLE WEIGHT).



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 email: mail@hbh-engineers.com

Designed By: ARB
 Drawn By: ARB
 Checked By: ARC
 Submittal No: LU2020-0014-Design/DWG7 - FIRE PLAN.dwg
 File:

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MIKE SHULTS
 PO BOX 41, ST. PAUL, OR 97137

THE FRANKLIN RESERVE
 840 SE AIRPORT RD, ALBANY OR 97322

FIRE PLAN

Sheet No: **F1**

Date: **6/3/2020**

2020-001

14 of **14**

30%



TO: Melissa Anderson, Planner

From: Lora Ratcliff, Fire Marshal

DATE: June 17, 2020

SUBJECT: PD-01-20 –840 Airport Rd SE – Multi- & Single-Family Development– Fire Department Comments

The fire department has reviewed the above project for conformance to the 2019 Oregon Fire Code (OFC) per your request and has the following comments:

1. The only new street to receive a name will be Franklin Ct (Pvt) which serves the single-family residences. All other internal roads will not be named, and the multi-family buildings will be addressed off Franklin Ave SE with one address number given to the complex and a separate building letter designation for each structure.
2. Approved fire apparatus roadways must extend to within 150 feet of all exterior portions of any structure that will be built on the property as measured by an approved route of travel around the exterior of the structure. (OFC 503.1.1)

The last two single-family lots at the southernmost end of Franklin Court (Pvt) will be fire sprinklered with an NFPA 13D system in lieu of this requirement per approved F1 sheet.

3. Dead-end fire apparatus roads in excess of 150 feet in length shall be provided with an approved area for turning around fire apparatus (OFC 503.2.5 and D103.4)

The last two single-family lots at the southernmost end of Franklin Court (Pvt) will be fire sprinklered with an NFPA 13D system in lieu of this requirement per approved F1 sheet.

4. This proposed project is located within a “Protected Area” as defined by Oregon Fire Code (OFC) Appendix B, Section B102 and this area is currently served by a public water system. The Fire Flow required for shall be as specified in Appendix B of the fire code. (OFC 507.3).
5. Where required by the fire code official, address numbers shall be provided in additional approved locations to facilitate emergency response (OFC 505.1).

Wayfinder signage will be required at each entrance.

6. INADEQUATE FIRE APPROACH & ACCESS TO WATER SUPPLY

If the Fire Official determines that there is an inadequate fire apparatus access condition or an inadequate fire water supply for one or more parcels of the proposed division, in Lieu of providing adequate fire apparatus access or supply and acting in conformance to the standards set forth in **OAR 918-480-0125**, the Uniform Alternate Construction Standard for One and Two Family Dwellings, the Building Official, will select one or more of the following standard(s) to address the inadequacies pertaining to structures built on the affected parcels. The first choice is to have the buildings on the lots affected, protected by a NFPA 13D fire suppression system.

- a. Installation of an NFPA Standard 13D fire suppression system;
- b. Installation of a partial NFPA Standard 13D fire suppression system;
- c. Installation of additional layers of 5/8 inch, Type-X gypsum wallboard;

- d. Installation of fire-resistive compartmentalization of dwellings to limit the spread of fire by use of fire-resistant building elements, components or assemblies. Fire resistance ratings shall be determined in accordance with the Oregon Structural Specialty Code;
- e. Installation of fire-resistive exterior wall covering and roofing components; or
- f. Provide fire separation containment in accordance with the default standards as set forth in the Wildland-Urban Interface rules adopted by the Oregon Department of Forestry (See OAR 629-044-1060).

LAR/lar



Wetland Land Use Notice Response

Response Page

Department of State Lands (DSL) WN#*

WN2020-0240

Responsible Jurisdiction

Staff Contact	Jurisdiction Type	Municipality
Melissa Anderson	City	City of Albany
Local case file #	County	
PD-01-20	Linn	

Activity Location

Township	Range	Section	QQ section	Tax Lot(s)
11S	03W	09	BB	2700,2701

Street Address

840 Airport Rd SE

Address Line 2

City

Albany

Postal / Zip Code

State / Province / Region

OR

Country

Linn

Latitude

44.634

Longitude

-123.064

Wetland/Waterway/Other Water Features

- There are/may be wetlands, waterways or other water features on the property that are subject to the State Removal-Fill Law based upon a review of wetland maps, the county soil survey and other available information.

Your Activity

- A state permit will not be required for the proposed project because, based on the submitted site plan, the project avoids impacts to jurisdictional wetlands, waterways, or other waters.

Applicable Oregon Removal-Fill Permit Requirement(s)

- A state permit is required for 50 cubic yards or more of fill removal or other ground alteration in wetlands, below ordinary high water of waterways, within other waters of the state, or below highest measured tide.

Closing Information



Additional Comments

Based on review of submitted site plan, the proposed project ("Planned development with land division and tree felling") does not appear to impact jurisdictional wetlands, waterways or other waters of the state. As drawn on the site plan, it appears that all construction/site development will avoid impacts to the 1.759 acre wetland mapped on the subject tax lots. Should fill, removal or other ground alteration activities reach or exceed 50 cubic yards within the mapped wetland, a permit will be required.

This is a preliminary jurisdictional determination and is advisory only.

This report is for the State Removal-Fill law only. City or County permits may be required for the proposed activity.

Contact Information

- For information on permitting, use of a state-owned water, wetland determination or delineation report requirements please contact the respective DSL Aquatic Resource, Proprietary or Jurisdiction Coordinator for the site county. The current list is found at: <http://www.oregon.gov/dsl/ww/pages/wwstaff.aspx>
- The current Removal-Fill permit and/or Wetland Delineation report fee schedule is found at: <https://www.oregon.gov/dsl/WW/Documents/Removal-FillFees.pdf>

Response Date

4/16/2020

Response by:

Grey Wolf

Response Phone:

503-986-5321



COMMUNITY DEVELOPMENT

333 Broadalbin Street SW, PO Box 490, Albany, Oregon 97321-0144 | BUILDING 541-917-7553 | PLANNING 541-917-7550

Staff Report

Conditional Use Review & Site Plan Review

CU-03-20 & SP-13-20

July 27, 2020

Summary

The proposal is an application for Conditional Use Review to utilize an existing office building for a daycare facility and for a Site Plan Review to remove 23 trees. The subject property is located at 1054 29th Avenue SW and is zoned Office Professional (OP) (Attachment A). Access to the property is provided via a private easement from 29th Avenue. The proposed use is classified as a “Daycare Facility” in Albany Development Code (ADC) 22.200. Daycare facilities are considered Institutional Uses and are allowed in the OP zoning district with Conditional Use approval. The Conditional Use review criteria contained in ADC 2.250 and Site Plan Review found in ADC 9.208(2) for tree felling are addressed in this report. The criteria must be satisfied to grant approval for this application.

The daycare will be operated by the Mid-Willamette Family YMCA. The existing building is 4,914 square feet. The applicant proposes an additional 1,998 square-foot covered outdoor play area at the southwest corner of the building. The facility is served by an existing parking lot with 21 parking spaces. No changes are proposed to the parking lot. The daycare will be open Monday – Friday between 6:00 a.m. and 7:00 p.m. and will serve up 94 children with approximately eight employees per shift.

In summary, the proposed development application satisfies applicable review criteria; therefore, the staff recommendation is APPROVAL with CONDITIONS of the Conditional Use application.

Application Information

Review Body:	Planning Commission (Type III review)
Staff Report Prepared By:	Travis North, Project Planner
Proposal:	Conditional Use to utilize an existing building, construct a covered outdoor play area, and change use from counseling center to an early learning center. Site Plan Review for tree felling to remove 23 trees.
Property Owner:	Jim Merryman, Merryman Living Trust 4714 Springhill Drive, Albany, OR 97321
Applicant:	Christina M. Larson, Varitone Architecture PO Box 3420, Albany, OR 97321
Representative:	Fred Patterson, YMCA 3201 SW Pacific Boulevard, Albany, OR 97321
Address/Location:	1054 29th Avenue SW
Map/Tax Lot:	Linn County Assessor’s Map No.; 11S-04W-13AC Tax Lot 409
Zoning:	OP (Office Professional) District

cd.cityofalbany.net



Total Land Area	0.55 acres
Existing Land Use:	The existing building is currently vacant. It was previously used as a counseling center.
Neighborhood:	West Albany
Surrounding Zoning:	Abutting properties to the north, south, and west are zoned Office Professional (OP). Property to the east across Pacific Boulevard is zoned Light Industrial (LI).
Surrounding Uses:	South: Medical Office West: Medical Office North: Medical Office East: YMCA
Prior History:	The land use history associated with the subject site is as follows: PD-06-74: Planned Development approval for a professional office complex consisting of four parcels. PD-01-79: Planned Development approval to add two additional parcels to the original four parcels. PA-03-88: Partition approval to divide one parcel into two parcels. LA-12-94: Property Line Adjustment that was withdrawn. LA-08-98: Property Line Adjustment approval that resulted in the subject property. SP-17-98: Site Plan Review for construction of the existing office building.

Notice Information

A Notice of Public Hearing was mailed to property owners located within 300 feet of the subject property on July 14, 2020. The Notice of Public Hearing was posted on the subject property on July 20, 2020. The Conditional Use staff report and Site Plan Review staff report was posted on the City's website July 27, 2020. At the time this staff report was completed, no comments had been received.

Appeals

Within five days of the Planning Commission's final decision on this application, the Community Development Director will provide written notice of decision to the applicant and any other parties entitled to notice. Any person who submitted written comments during a comment period or testified at the public hearing has standing to appeal the Type III decision of the Planning Commission to the City Council by filing a Notice of Appeal and associated filing fee within ten days from the date the City mails the Notice of Decision.

Analysis of Development Code Criteria

The Albany Development Code (ADC) includes the following review criteria for a Conditional Use Review (ADC 2.250), which must be met for these applications to be approved. Code criteria are written in **bold** followed by findings, conclusions, and conditions of approval where conditions are necessary to meet the review criteria.

Conditional Use Review Criteria

Criterion 1

The proposed use is consistent with the intended character of the base zone and the operating characteristics of the neighborhood.

Findings of Fact

- 1.1 Proposed use. The proposed use is a daycare facility operated by the Mid-Willamette Family YMCA, a nonprofit organization with its main campus facilities located across from Pacific Boulevard. The daycare will utilize the existing building. According to the applicant's findings, the only exterior changes to the building will be to add two egress doors and a 1,998 square foot covered play area on the southwest corner of the building. The proposal also includes removal of 23 trees along Pacific Boulevard and replacement of those trees with a landscape buffer and fence. Findings related to the proposed tree removal are addressed below under site plan review criteria.
- 1.2 Land Use Classification. The proposed use is classified as a "Daycare Facility" in ADC 22.200, which states that "A daycare facility is defined in Oregon Revised Statutes (ORS) as a "child care" or "adult care" facility that provides regular care, supervision and guidance in a place other than the child's or adult's home, is operated with or without compensation, and is certified by the state for the care of children, teenagers or adults who need assistance or supervision for a portion of the day." ADC 22.200(2), Use Examples, states that "uses include, but are not limited to: day nurseries or daycare centers, nursery schools, preschools, before- and after-school care facilities, child development centers and adult care programs that do not provide 24-hour care."
- 1.3 Conditional uses. Per ADC 4.050, Table 4-1, a "Daycare Facility" is permitted in the OP zone with Conditional Use approval. According to ADC 2.230, "Certain uses are conditional uses instead of being allowed outright, although they may have beneficial effects and serve important public interests. They are subject to the conditional use regulations because they may have significant adverse effects on the environment, overburden public services, change the desired character of an area, or create major nuisances. A review of these proposed uses is necessary due to the potential individual or cumulative impacts they may have on the surrounding area or neighborhood. The conditional use process provides an opportunity to allow the use when there are minimal impacts, to allow the use but impose conditions to address identified concerns, or to deny the use if the concerns cannot be resolved." The conditional use process provides an opportunity to review projects for potential impacts and impose conditions to address any identified concerns.
- 1.4 Intended character of the base zones. The subject property is located in the OP zoning district. ADC 4.020 states that "the OP district is intended to provide a vertical or horizontal mix of professional offices, personal services, live-work, residential and limited related commercial uses in close proximity to residential and commercial districts. The limited uses allowed in this district are selected for their compatibility with residential uses and the desired character of the neighborhood. OP is typically appropriate along arterial or collector streets as a transitional or buffer zone between residential and more intense commercial or industrial districts."
- 1.5 Operating characteristics of the neighborhood. The subject property is bordered by Pacific Boulevard to the east and is entirely surround by OP zoned property to the south, west, and north. To the west of the OP zoned land is a residential neighborhood comprised of single-family units. As noted above, the OP district is "typically appropriate along arterial or collector streets as a transitional or buffer zone between residential and more intense commercial or industrial districts." In this case, the strip of OP zoned land, that lies to the west of Pacific Boulevard acts as a buffer between Pacific Boulevard and industrially zoned land to the east and the residentially zoned land to the west (Attachment A). Land uses on abutting properties include a variety of medical offices and residential townhouses on the abutting property to the southwest. It is assumed that surrounding medical offices have hours typical of medical offices, approximately 8:00 a.m. to 5:00 p.m., Monday through Saturday. Access to the

surrounding OP zoned property is provided via a private easement to the north and a public street to the south. There is no direct access to Pacific Boulevard and access roads to the surrounding OP zoned property do not require travel through the residential neighborhood to the west.

- 1.6 Operating Hours. The applicant's findings state that the "facility will have a maximum of 18 employees on site at shift change. Typically, a shift of 8 people will be using the building during the business hours. The Daycare program hopes to run between 6:00 am and 7:00 pm. The students will consist of up to 94 mixed aged children that will be arriving by personal vehicle. Pick up and drop off times will be flexible.... It is anticipated that the bulk of the students to be dropped off will arrive between 6:30am and 7:00am and pickup between 5:30pm and 6:00pm."

Conclusions

- 1.1 The proposed development is allowed with Conditional Use Type III Review approval in the OP zoning district per ADC 3.050.
- 1.2 The site is surrounded by a mix of commercial uses, with the exception of townhouse units located on the abutting property to the southwest.
- 1.3 The proposal will not have an impact on the operating characteristics of the neighborhood because the primary use of the property will be consistent with the surrounding area.
- 1.4 As proposed, the use is consistent with the intended character of the base zones and the operating characteristics of the neighborhood.
- 1.5 This criterion is met without conditions.

Criterion 2

The proposed use will be compatible with existing or anticipated uses in terms of size, building scale and style, intensity, setbacks, and landscaping or the proposal calls for mitigation of differences in appearance or scale through such means as setbacks, screening, landscaping, or other design features.

Findings of Fact

- 2.1 Definition of compatible. "Compatible" does not mean "the same." *Merriam Webster's Collegiate Dictionary*, Eleventh Edition, defines "compatible" as "(1) capable of existing together in harmony."
- 2.2 Proposed Use. The proposed use is classified as a "Daycare Facility" in ADC 22.200.
- 2.3 Existing and anticipated uses. The subject site is partially developed with an existing 4,914 square-foot, one-story building and parking lot with 21 parking spaces. According to the applicant, the previous use was a counseling center. However, the building is now vacant. The proposal is to utilize the building for a daycare facility. According to the applicant's findings (Attachment B.3), the daycare will have 18 employees, with a typical shift consisting of 8 employees, and will serve 94 mixed-age children.
- 2.4 Building Size, Scale, and Style. ADC 4.090, Table 4-2, shows that the maximum building height in the OP zoning district is 30 feet. There is no maximum building size for institutional uses, such as daycare facilities. The existing one-story building is about 4,914 square feet, and the applicant proposes to construct a 1,998 square-foot covered outdoor play area located at the southwest corner of the building. The applicant's elevation drawings (Attachment B.5) indicate the building is 18 feet tall, while the applicant's findings state that the height of the proposed covered play area structure will be "shorter than the maximum height that is allowed in the area." The height of the covered play area structure will be assessed for conformance with height restrictions at time of building permit.
- 2.5 Intensity and Lot Coverage of the Proposed Development. The maximum lot coverage in the OP zoning district is 70 percent. According to Linn County Assessor's records, the subject site is 23,958 square feet (0.55 acres) in size. According to the applicant's findings, the proposed covered play area will increase the impervious surface area to 15,654 square feet, which represents approximately

65percent of the total lot area. Access to the site is via a private easement from 29th Avenue and parking is provided via an existing parking lot. No changes or modifications are proposed to the existing parking lot or access.

- 2.6 Building and Parking Lot Setbacks. ADC 4.090, Table 4-2, shows that buildings in the OP zoning district must be set back at least 10 feet from front property lines and 5 feet from interior property lines if not abutting a residential district, which is the case with the subject property. The subject property does not have frontage along 29th Avenue to which it is addressed. Thus, the frontage along Pacific Boulevard qualifies as a front setback. The applicant's site plan demonstrates that both the existing building and the proposed covered play area meet the front and interior setback requirements. No changes are proposed to the existing parking lot.
- 2.7 Vehicle parking – Required number of spaces. ADC 9.020, Table 1, states that daycare facilities require one parking space per employee plus one space per ten persons being cared for. As stated above, a typical shift will include eight employees and the facility will serve up to 94 children. Therefore, the parking requirement is 17 parking spaces. The existing parking lot has 21 parking spaces.
- 2.8 Lighting. The applicant did not provide information pertaining to lighting. ADC 9.120(14) requires on-site lighting to be arranged to reflect the light away from any adjacent or abutting properties. A condition of approval will ensure that if new lighting is installed it will be directed down and contained on site to meet code requirements.
- 2.9 Landscaping, Non-Residential. ADC 9.140(2) says all required front and interior setback yards, exclusive of access ways and other permitted intrusions, must be landscaped before an occupancy permit will be issued. Minimum landscaping acceptable for every 1,000 square feet of required setback yards in all commercial and industrial districts is as follows:
- a) *One tree at least six feet tall for every 30 feet of street frontage.*
 - b) *Five five-gallon or eight one-gallon shrubs, trees, or accent plants.*
 - c) *The remaining area treated with suitable living ground cover, lawn, or decorative treatment of bark, rock, or other attractive ground cover.*

The applicant proposes to remove the existing berm and 23 trees that were required as part of the planned unit development approved in the 1970s. Findings related to the proposed tree removal are discussed below under Site Plan Review criteria. The subject property has 175 feet of frontage along Pacific Boulevard. The OP district has a front setback requirement of 10 feet. Thus, the total required setback area is 1,750 square feet. Therefore, per ADC 9.140(2) the following landscape improvements are required in the front setback: 6 trees at least 6 feet tall; 9, five-gallon shrubs or 14, one-gallon shrubs; and the remaining area treated with attractive landscaping.

The OP zoning district has an interior setback requirement of 5 feet. The applicant's site plan does not indicate landscaping in the interior setback. A condition of approval will require submittal of a landscape plan that meets the standards for landscaping in the interior setback. Because the interior lot lines do not have street frontage, there is no requirement for trees in the interior setback.

- 2.10 Landscaping, Alternate Plan. The landscape plan (Attachment B.1) submitted with this application shows the proposed landscaping in the public right-of-way. Although landscaping is typically not permitted in the public right-of-way, ADC 9.140(3), *Alternate Plan*, allows landscaping in the public right-of-way with director approval when criteria listed in subsection (a)-(e) are met. The Oregon Department of Transportation (ODOT) has jurisdiction of the right-of-way. They have indicated that landscaping is permitted in the right-of-way but will need to run the proposed landscaping through a formal review process. It is the applicant's choice whether to place the landscaping in the front setback or the public right-of-way. A condition of approval will require the applicant to submit a revised landscaping plan that demonstrates compliance with either 9.140(2) or 9.140(3).

- 2.11 Parking Lot Landscaping. Landscaping in parking lots is required to provide shade, reduce stormwater runoff, and direct traffic. No changes are proposed to the existing parking lot that would warrant changes to the parking lot landscaping.
- 2.12 Buffering and Screening. ADC Section 9.210 requires buffering and screening to reduce the impacts on adjacent uses which are of a different type; buffering and screening is required in accordance with a matrix contained within the section (Table 9-4). The Buffer and Screening Matrix does not include a use category for institutional uses. The closest use category is “commercial, professional, or mixed-use,” which requires a 10-foot buffer when abutting an arterial street. Therefore, a 10-foot buffer is required along Pacific Boulevard.

When buffering is required, ADC 9.240 states the minimum improvements are:

- a) *At least one row of trees. Deciduous trees will be not less than ten feet high at time of planting and spaced not more than 30 feet apart; evergreen trees will be five feet high at time of planting and spaced not more than 15 feet apart.*
- b) *At least five five-gallon shrubs or ten one-gallon shrubs for each 1,000 square feet of required buffer area.*
- c) *The remaining area treated with attractive ground cover (e.g., lawn, bark, rock, ivy, evergreen shrubs) (ADC 9.240).*

The subject property has 175 feet of frontage along Pacific Boulevard, making the buffer area a total of 1,750 square feet. Therefore, the following landscape improvements are required: 6 deciduous trees not less than 10 feet high and spaced not more than 30 feet apart or 12 evergreen trees not less than 5 feet high and spaced not more than 15 feet apart; 9, five-gallon shrubs or 18, one-gallon shrubs; the remaining area treated with attractive landscaping. The landscape plan submitted with this application shows the landscaping in the public right-of-way. However, ODOT approval is required. Because the buffering standards of ADC 9.210 are more stringent than the landscape standards of ADC 9.140(2) or 9.140(3), the plant quantities required by ADC 9.240 shall be met, regardless of whether the landscaping is placed within the front setback or in the right-of-way. Condition 2 provided below ensures conformance with landscape and buffer standards.

- 2.13 Irrigation: ADC 9.160 requires that all required landscape areas be provided with a piped underground irrigation system unless a licensed landscape architect or certified nurseryman submits written verification that the proposed plant materials do not require irrigation. Irrigation plans were not submitted with this application. Submittal of final irrigation plan for review and approval by the Community Development Department is required as a condition of approval to ensure the standards of ADC 9.160 are met.
- 2.14 Fences. ADC 9.360-9.390 lists the requirements for fences. The applicant proposes a fence along the perimeter of the property. Details of the fence were not provided. Per ADC 9.380(4) and (6), properties located in commercial zoning districts can have a fence up to six feet tall in the front setback and no taller than eight feet in the interior setback. A condition of approval will require submittal of a design detail that demonstrates the height of the fence.
- 2.15 Outside Storage. No outside storage is proposed with this project.
- 2.16 Signs. The applicant’s site plan indicates that the existing sign base will remain and that the sign will be replaced with an equal sized sign for the YMCA. Per ADC 13.50(4) states that freestanding signs shall not exceed a total face area of $\frac{3}{4}$ square feet for each lineal foot of street frontage with the maximum area per face as specified in Table 13-3, which shows a maximum area per face of 50 square feet in the OP district. Therefore, the maximum allowable size for a freestanding sign on this property is 50 square feet. This requirement will be assessed at time of building permit.
- 2.17 Screening of Refuse Area: ADC 4.300 requires refuse areas to be screened with a wall, fence, or hedge at least 6 feet tall and prohibits refuse containers within a buffer area or within 15 feet of a dwelling window. The applicant’s site plan demonstrates the existing refuse container meets these specifications. No changes are proposed to the existing container.

Conclusions

- 2.1 The proposal shows that the proposed development will meet the minimum development standards of lot coverage, setbacks, and building height.
- 2.2 Any adverse impacts associated with the use of the property can be mitigated through such means as shielded lighting and landscaping.
- 2.3 Lighting specifications were not provided.
- 2.4 A detail of the proposed fence was not provided. A detail of the proposed fence must be provided to ensure it conforms with height standards.
- 2.5 An updated landscape plan shall be submitted to ODOT and the City for approval, if the applicant decides to place required landscaping in the abutting public right-of-way. The applicant shall submit a revised landscaping plan that demonstrates compliance with either ADC 9.140(2) or 9.140(3), buffering standards of ADC 9.240, and irrigation standard of and ADC 9.160.
- 2.6 Based on the observations above, the proposed development will be compatible with existing or anticipated uses in terms of size, intensity, setbacks, lighting, screening, and landscaping when the following conditions are met.

Conditions

- Condition 1 Exterior Lighting.** All exterior lighting fixtures, including pole mounted lights, shall be of a shielded, full cut-off design.
- Condition 2 Final Landscape and Irrigation Plan.** Prior to issuance of a building permit, a final landscape and irrigation plan shall be submitted for review and approval by the Community Development Department. The plan must meet the landscaping standards of either ADC 9.140(2) or 9.140(3), buffering standards of ADC 9.240, and irrigation standards of ADC 9.160.
- Condition 3 Fence Detail.** Prior to issuance of a building permit, the applicant shall provide a detail of the proposed fence.
- Condition 4 Site Improvements.** Prior to issuance of a certificate of occupancy, all proposed and required site improvements (e.g. landscaping, screening, lighting, etc.), shall be constructed and completed in accordance with approved plans. Landscaping may be financially secured through a completion guarantee, per ADC 9.190.

Criterion 3

The transportation system is capable of supporting the proposed use in addition to the existing uses in the area. Evaluation factors include street capacity and level of service, on-street parking impacts, access requirements, neighborhood impacts, and pedestrian safety.

Findings of Fact

- 3.1 The proposal is to utilize an existing small building for a daycare center operated by the YMCA. According to the applicant's findings, the only exterior changes to the building will be to add two egress doors and a 1,998 square foot covered play area on the southwest corner of the building.
- 3.2 ADC 12.060 requires that all street frontages adjoining new development will be improved to City standards.
- 3.3 The subject property has frontage along Pacific Boulevard, an arterial street constructed to City standards. Improvements along the frontage of the site include curb, gutter, and sidewalks; two vehicle travel lanes in each direction; a two-way center left turn lane; and on-street bike lanes. No access is provided directly from Pacific Boulevard and no direct access to Pacific Boulevard is proposed.

- 4.5 Water system development charges are based on the size of water meter serving a property. If the applicant is proposing to continue to use the existing water service/meter, then there would be no additional water system development charges for the proposed project.

Storm Drainage

- 4.6 It is the property owner's responsibility to ensure that any proposed grading, fill, excavation, or other site work does not negatively impact drainage patterns to, or from, adjacent properties. In some situations, the applicant may propose private drainage systems to address potential negative impacts to surrounding properties. Private drainage systems that include piping will require the applicant to obtain a plumbing permit from the Building Division prior to construction.
- 4.7 ADC 12.530 states that a development will be approved only where adequate provisions for storm and flood water run-off have been made, as determined by the City Engineer. Roof drains shall be discharged to a collection system approved by the City Engineer and/or the Building Official. Also, no stormwater may be discharged to the public sanitary sewer system.
- 4.8 Stormwater runoff from any new impervious surfaces created as a result of this project must be collected on-site and connected to the existing private storm drainage system.
- 4.9 AMC 12.45.030 states that a post-construction stormwater quality permit shall be obtained for all new development and/or redevelopment projects on a parcel(s) equal to or greater than one acre, including all phases of the development. (Ord. 5841 § 3, 2014).
- 4.10 Because the subject property is smaller than one acre, no stormwater quality facilities will be required for this project.

Conclusions

- 4.1 Public utilities (sanitary sewer, water, and storm drainage) are available and adequate to serve the proposed use.
- 4.2 The installation of new wastewater plumbing fixtures may result in additional system development charges due at the time of building permit issuance
- 4.3 Stormwater runoff from any new impervious surfaces must be collected on-site and connected to the existing private drainage system.
- 4.4 No permanent structures (e.g., covered play area) are allowed within the existing public utility easement along the westernmost 10 feet of the subject property.
- 4.5 This criterion is met without conditions.

Criterion 5

The proposal will not have significant adverse impacts on the livability of nearby residentially zoned lands due to: (a) Noise, glare, odor, litter, and hours of operation; (b) Privacy and safety issues.

Findings of Fact

- 5.1 The property is surrounded by OP-zoned property to the south, west, and north. It is bordered by Pacific Boulevard to the east. The closest residentially zoned land is approximately 165 feet west of the western-most property boundary. The existing accessway abuts residentially zoned land to the west.
- 5.2 Noise. Potential noise includes vehicle trips to and from the daycare and noise generated from children utilizing the outdoor play area. Daycare activities are proposed to occur throughout the daytime hours (estimated 6:00 a.m. to 7:00 p.m.). As discussed in Criterion 3, the proposed use generates the same level of traffic trips as the previous use. Noise generated within the building would not be audible outside the building. The sounds of the outdoor play area activities may extend beyond the property lines but the intensity (loudness) rapidly diminishes with distance. People on abutting property may hear children playing while outside, but it is unlikely these sounds would be heard from within their buildings.

- 5.3 Glare. Lighting details were not provided. The applicant proposes to illuminate the playground areas. The application states that lighting shields will be placed on fixtures to direct light to the playground areas and not on adjacent properties. Condition 1 stated above will ensure lighting does not trespass onto surrounding property.
- 5.4 Odors. The outdoor play area and associated activities are not expected to generate odors, and no new odor-generating facilities or activities are proposed.
- 5.5 Litter. No new trash facilities are proposed in conjunction with the Conditional Use request.
- 5.6 Hours of operation. According to the applicant, the daycare hopes to operate Monday – Friday between the hours of 6:00 a.m. and 7:00 p.m.
- 5.7 Privacy/Safety. The subject property does not abut residentially zoned land and is separated from surrounding properties by the existing and proposed fencing and vegetation. Outdoor play area activity will be monitored by YMCA staff. The proposed daycare and outdoor play area does not present any safety issues that would require additional measures beyond those that will be addressed through the building permit review process.
- 5.8 Fencing. Findings related to fencing is addressed in Criterion 2 and incorporated here by reference.

Conclusion

- 5.1 The impacts due to glare, litter, noise, odors, hours of operation, and safety are not expected to be significant compared to the previous use and surrounding operations.
- 5.2 The proposal will not have significant adverse impacts on the livability of nearby residentially zoned lands.
- 5.3 This criterion is met without conditions.

Criterion 6

Activities and developments within special purpose districts must comply with the regulations described in Articles 4 (Airport Approach), 6 (Natural Resources), and 7 (Historic), as applicable.

Findings of Fact

- 6.1 Article 6 Significant Natural Vegetation and Wildlife Habitat: *Comprehensive Plan Plate 3: Natural Vegetation and Wildlife Habitat*, does not show any areas of vegetation or wildlife habitat on the property. The applicant proposes removing 23 fir trees. However, those trees do not qualify as significant vegetation. Findings related to the tree felling are addressed below under the site plan review criteria.
- 6.2 Article 6: Floodplains. *Comprehensive Plan Plate 5: Floodplains*, does not show a 100-year floodplain on this property. FEMA/FIRM Community Panel No. 41043C0526G, dated September 29, 2010, shows that this property is in Zone X, an area determined to be outside the 500-year floodplain.
- 6.3 Article 6: Wetlands. *Comprehensive Plan Plate 6: Wetland Sites*, does not show any wetlands on the subject property; and the National Wetlands Inventory does not show any wetlands on the property. There is not a local wetland inventory for this location. The property has been developed for many years.
- 6.4 Article 6: Topography: *Comprehensive Plan, Plate 7: Slopes*, does not show any steep slopes on this property.
- 6.5 Article 7: Historic and Archaeological Resources. *Comprehensive Plan, Plate 9: Historic Districts*, shows the property is not located in a historic district. There are no known archaeological sites on the property.

Conclusions

- 6.1 There are no special purpose districts associated with the subject property; therefore, this criterion is not applicable.

Tree Felling, Concurrent with Site Plan Review (ADC 9.208(2))

Criterion (a)

It is necessary to fell tree(s) in order to construct proposed improvements in accordance with an approved site plan review or conditional use review, or to otherwise utilize the applicant's property in a manner consistent with its zoning, this code, applicable plans adopted by the City Council, or a logging permit issued by the Oregon Department of Forestry.

Findings of Fact

- a.1 ADC 9.207 states that "Site Plan Review approval is required for the felling of 5 or more trees larger than 25 inches in circumference (approximately 8 inches in diameter) on a lot or property in contiguous single ownership in excess of 20,000 square feet in any zone."
- a.2 The proposal is to remove 23 trees from the site in conjunction with a Conditional Use review to utilize the existing building as a daycare. According to the applicant's site plan (Attachment B.2), 22 of the 23 trees are greater than 25 inches in circumference. Of those 22 trees greater than 25 inches in circumference, the applicant states that 21 are in "good" health.
- a.3 The applicant's findings (Attachment B.4) state that "The Oregon Early Learning Requirements requires that 75 sq. ft. of outdoor area is provided for each child that is using the area. The current design of the building will allow 94 students to occupy the building. Having 94 students would require that the facility provides 7,050 sq. ft. of outdoor play area. To reach the required outdoor play area, a fenced-in play area would need to extend out to the property line. The current berm, and evergreen trees would restrict the view to an expanded play area, which could cause safety issues." The applicant concludes that "for this facility to meet current Oregon Early Learning Requirements and provide a safe play area, the existing trees and berm should be removed."
- a.4 Per ADC 4.050, Table 4-1, the proposed use of a daycare facility is allowed in the OP zoning district with Conditional Use approval. Findings related to the conditional use review are addressed above and incorporated here by reference. Because the proposed use is a permitted use in the OP zoning district, the proposal to utilize the property for a daycare is "consistent with its zoning, this code, and applicable plans adopted by City Council..." once all conditions of this review have been met.

Conclusion

- a.1 Removal of the trees is necessary to utilize the property in a manner consistent with the proposed use and zoning.
- a.2 This criterion is met without conditions.

Criterion (b)

The proposed felling is consistent with State standards, City ordinances, and the proposed felling does not negatively impact the environmental quality of the area, including but not limited to: the protection of nearby trees and windbreaks; wildlife; erosion; soil retention and stability; volume of surface runoff and water quality of streams; scenic quality, and geological sites.

Findings of Fact

- b.1 The existing trees were required as part of a prior land use review (PD-06-74). The applicant has proposed planting a mixed border of trees, shrubs, and groundcover in the approximate location of the existing berm and line of trees proposed for removal in accordance with ADC 9.140(2) or (3) and ADC 9.240.
- b.2 The applicant's findings state the following:
Currently, only one row of evergreens is provided in a north to south line on the site. This row of trees extends to the north of the site along Pacific Boulevard. With the annual average winds coming from the south on the site, the removal of the trees on the YMCA – Day Care site would have some

impact on the adjacent trees if they were not protected by an existing structure. The existing structure that is just to the north of the YMCA site would produce more of a wind break than the existing trees would have provided. Runoff on the site should not be negatively impacted by the removal of the trees as well. The area that the trees are being removed will be replanted with grass and other plants to create an attractive play area. The existing berm that segregates the site will be smoothed out to help the site maintain its existing drainage and reduce problem areas to help keep the play areas for the children as clean as possible.

The applicant concludes that:

The removal of the existing trees should have a positive effect on site drainage without increasing erosion. The volume of surface runoff shall not be increased because the areas that are currently planted will continue to be planted areas. The current Albany Development Code will require us to plant new trees that will help to replace any shading affect the existing trees are providing.

Conclusion

- b.1 The applicant proposes to replace the trees with a landscape buffer in accordance with ADC 9.140(2) or (3) and ADC 9.240.
- b.2 The proposed tree felling will not negatively impact the environmental quality of the area.
- b.3 This criterion is met without conditions.

Criterion (c)

The uniqueness, size, maturity, structure, and historic value of the trees have been considered and all other options for tree preservation have been exhausted. The director may require that trees determined to be unique in species, size, maturity, structure, or historic values are preserved.

Findings of Fact

- c.1 According to the applicant's site plan, the existing trees consist of 21 Douglas Fir and 2 Pine trees. These types of trees are ubiquitous throughout North America and nothing about the size, maturity, or structure of the existing trees is unique.
- c.2 The trees were planted in the 1970s as part of a prior land use approval (PD-06-74). There is no historic value associated with the trees.

Conclusion

- c.1 The trees proposed for removal are not unique in size, maturity, structure, or historic value.
- c.2 This criterion is met without conditions.

Criterion (d)

Tree felling in Significant Natural Resource Overlay Districts meets the applicable requirements in Article 6.

Findings of Fact

- d.1 This property is not located in a Significant Natural Resource Overlay District.

Conclusion

- d.1 The standard is not applicable.

Tree Felling Criteria Conclusion

The proposal to remove 23 trees satisfies the Tree Felling review criteria in ADC 9.208(2)(a-d) as conditioned.

Overall Conclusion

As proposed and conditioned, the application for Conditional Use Review and Site Plan Review satisfies all applicable review criteria as outlined in this report.

Conditions of Approval

Condition 1 Exterior Lighting. All exterior lighting fixtures, including pole mounted lights, shall be of a shielded, full cut-off design

Condition 2 Final Landscape and Irrigation Plan. Prior to issuance of a building permit, a final landscape and irrigation plan shall be submitted for review and approval by the Community Development Department. The plan must meet the landscaping standards of either ADC 9.140(2) or 9.140(3), buffering standards of ADC 9.240, and irrigation standards of ADC 9.160.

Condition 3 Fence Detail. Prior to issuance of a building permit, the applicant shall provide a detail of the proposed fence.

Condition 4 Site Improvements. Prior to issuance of a certificate of occupancy, all proposed and required site improvements (e.g. landscaping, screening, lighting, etc.), shall be constructed and completed in accordance with approved plans. Landscaping may be financially secured through a completion guarantee, per ADC 9.190.

Attachments

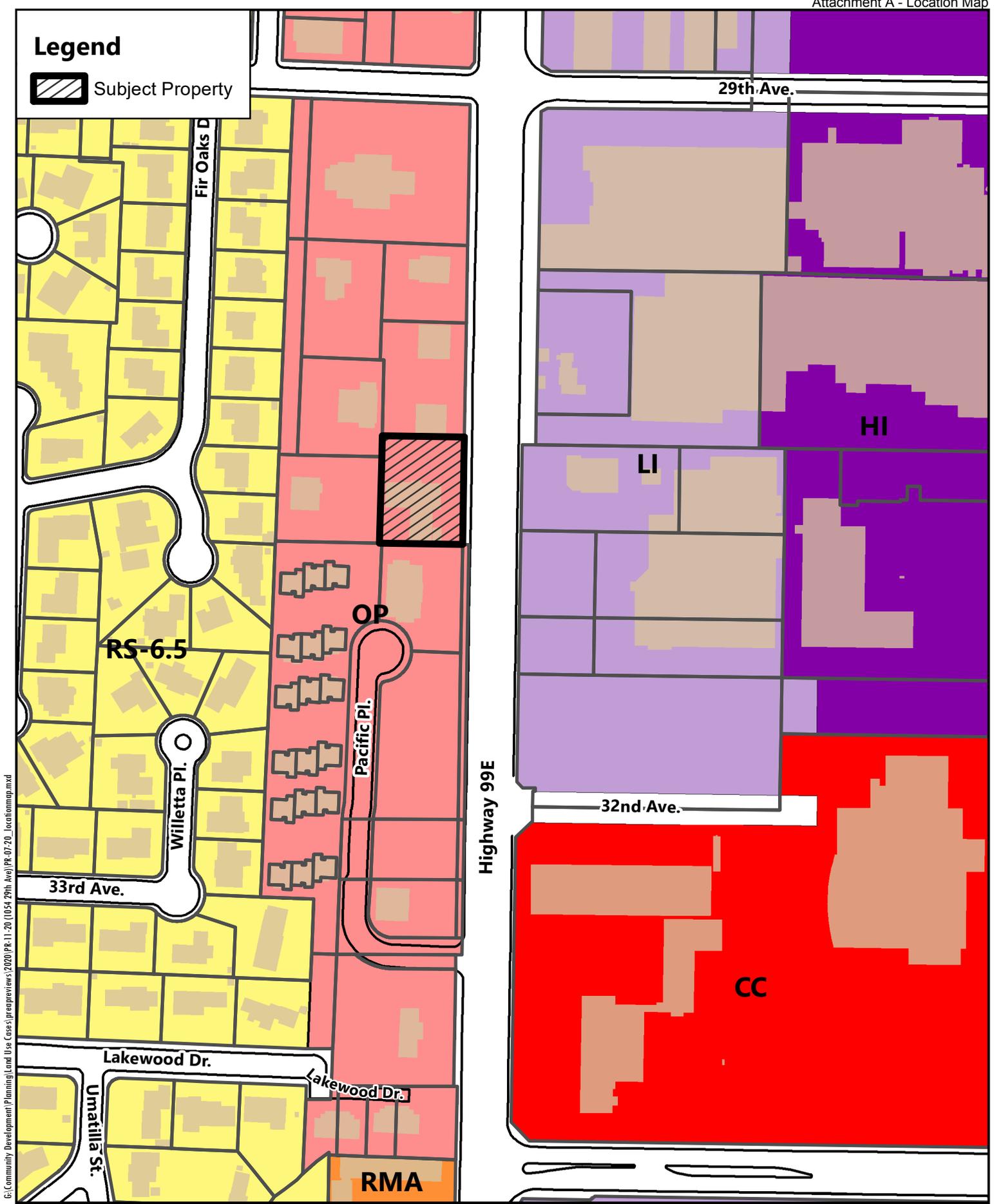
- A. Location Map
- B. Applicant's Submittal
 - 1. Site Plan - Conditional Use
 - 2. Site Plan - Tree Removal
 - 3. Findings of Fact – Conditional Use
 - 4. Findings of Fact – Tree Felling
 - 5. Building Elevations

Acronyms

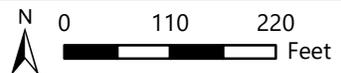
ADC	Albany Development Code
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
LI	Light Industrial Zoning District
ODOT	Oregon Department of Transportation
OP	Office Professional Zoning District
RS-6.5	Residential Single-Family Zoning District
TSP	Transportation Systems Plan

Legend

 Subject Property



G:\Community Development\Planning\Land Use Cases\prepreviews\2020\Pr-11-20 (1054 29th Ave)\PR-07-20_locationmap.mxd



Date: 1/28/2020 Map Source: City of Albany

1054 29th Ave SW

Location / Zoning Map



Contractor
TBD

Tenant:
ALBANY YMCA
3201 SW PACIFIC BLVD
ALBANY, OR 97321
FRED PATTERSON

TENANT IMPROVEMENT
ALBANY YMCA
LEARNING CENTER
1054 SW 29TH AVE. ALBANY, OR 97321

Issue:	COND. USE PERMIT
Date:	06/09/2020
Revision:	Date:

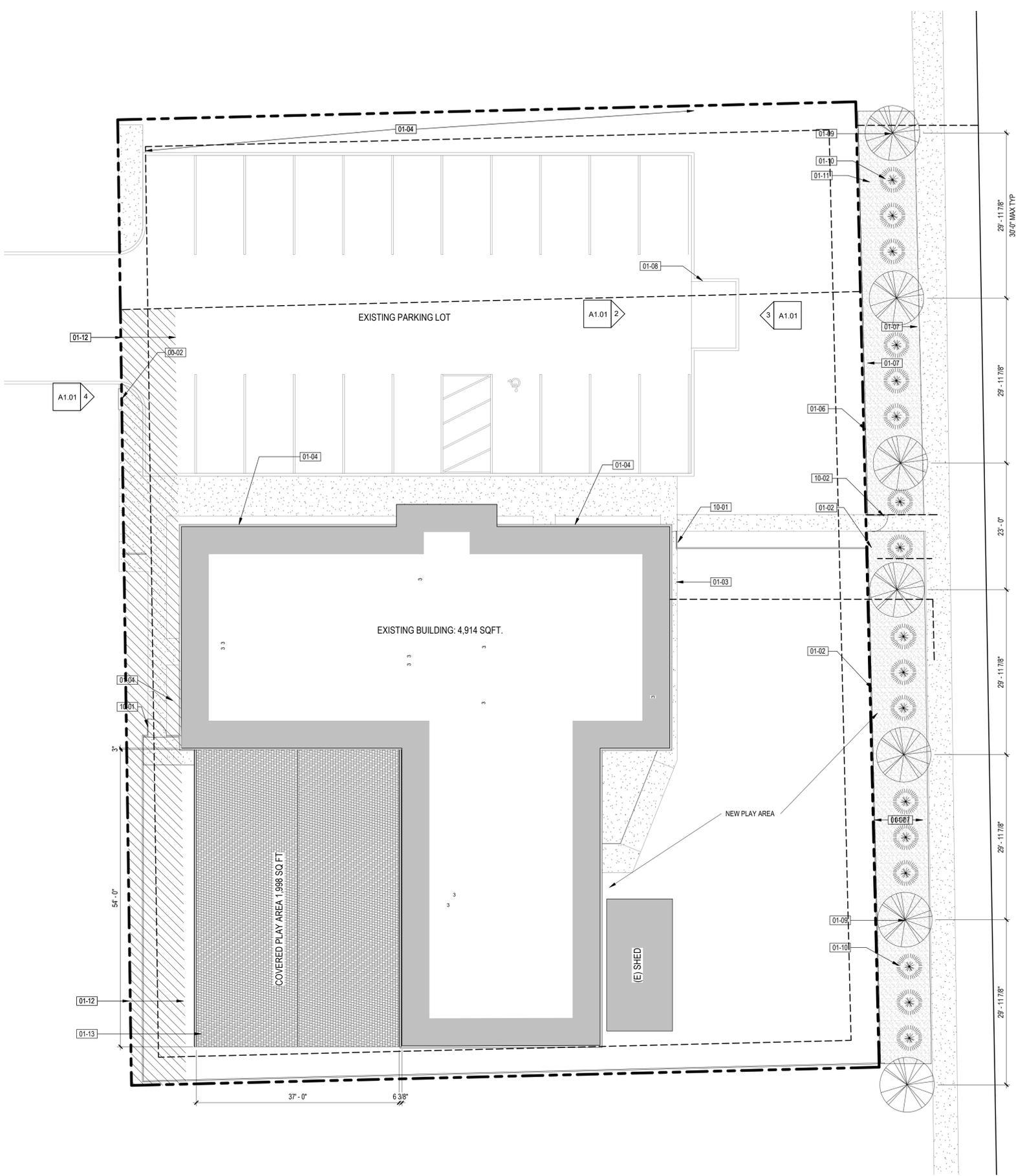
SITE PLAN

A1.01

KEYNOTE LEGEND	
#	Keynote Description
00-02	EXISTING SIGN BASE TO REMAIN. UPPER SIGN TO BE REPLACED WITH EQUAL SIZED SIGN FOR YMCA
01-02	NEW PLAYGROUND FENCE TO BE CONSTRUCTED OF 6'-0" CHAIN LINK WITH SITE OBSCURING SLATS.
01-03	EXISTING GAS METER LOCATION
01-04	EXISTING LANDSCAPING
01-06	NEW FENCE TO MATCH PLAYGROUND FENCE TO BE PLACED ALONG PROPERTY LINE
01-07	PROPOSED LANDSCAPED AREA
01-08	EXISTING TRASH ENCLOSURE TO REMAIN
01-09	ONE OF 6 MINIMUM DECIDUOUS TREES (7) PROVIDED
01-10	ONE OF 14 MINIMUM ONE GALLON SHRUBS (17) PROVIDED
01-11	BARK DUST TO FILL IN BETWEEN PLANTS
01-12	WATERLINE EASEMENT 10'-0" FROM PROPERTY LINE /
01-13	NEW PLAY AREA COVER IS NOT TO ENCR OACH OVER WATER LINE EASEMENT
10-01	GATE WITH EGRESS HARDWARE
10-02	PUBLIC GATE

LEGEND:

- PROPERTY LINE
- SETBACK LINE
- EASEMENT LINE
- PARKING LOT LIGHTING
- 1 GALLON SHRUBS
- DECIDUOUS TREE
- CHAIN LINK FENCE WITH PRIVACY SLATS
- FENCE GATE



2 (E) TRASH ENCLOSURE FRONT
3" = 1'-0"



3 (E) TRASH ENCLOSURE STREET
3/8" = 1'-0"



4 SIGNAGE
3/8" = 1'-0"

1 SITE PLAN_PROJECT NORTH
1" = 10'-0"

EXISTING ADDRESS 1054 29TH AVE SW
ALBANY OREGON 97321

MAP # 11S04W13AC00409

OWNER: MERRYMAN LIVING TRUST
4714 SPRINGHILL DR NW
ALBANY OR 97321
ALL LOTS ARE PART OF OP

ZONING

LOT SIZE: 55 ACR



Contractor
TBD

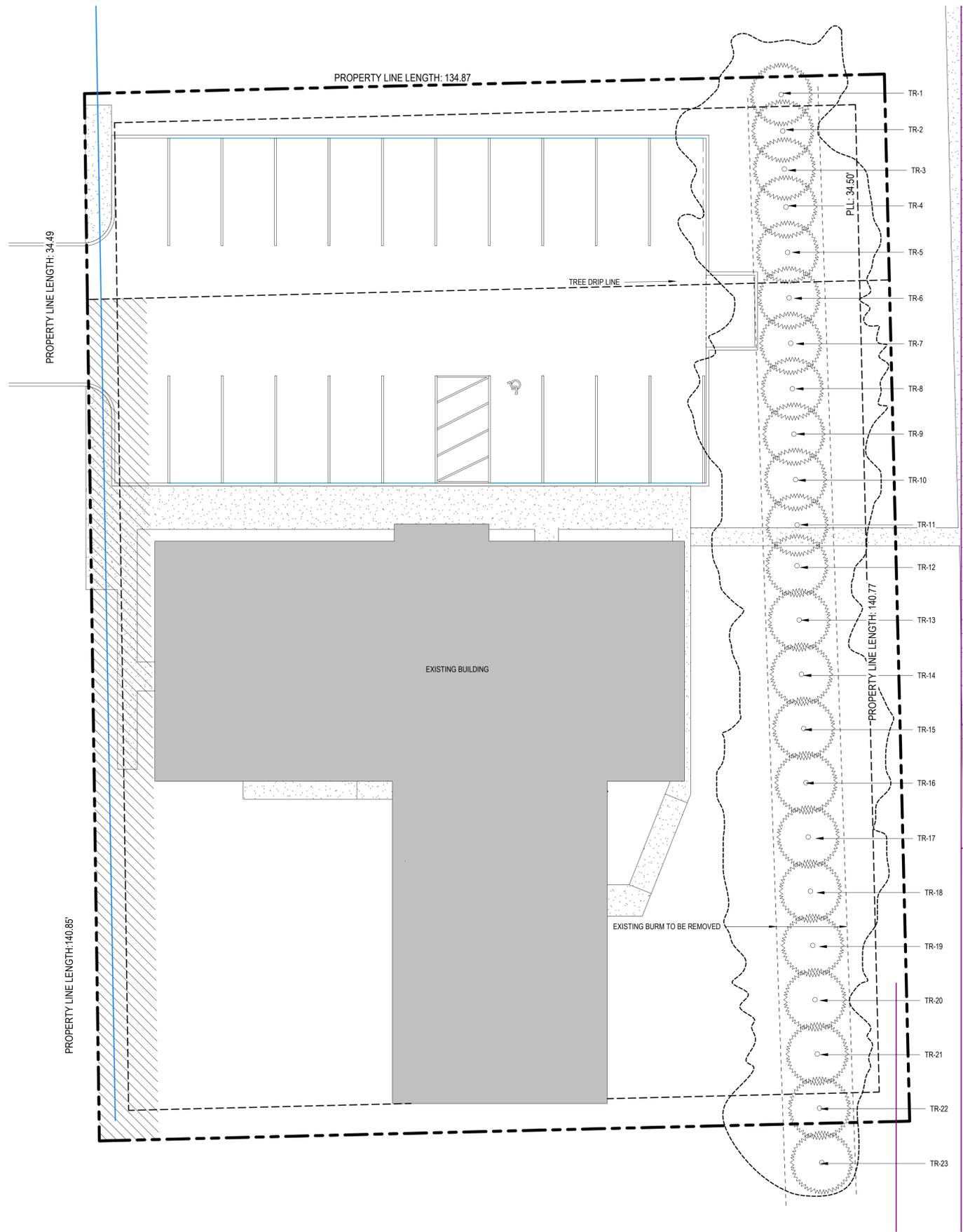
Tenant:
ALBANY YMCA
3201 SW PACIFIC BLVD
ALBANY, OR 97321
FRED PATTERSON

LEGEND:

- PROPERTY LINE
- - - - - SETBACK LINE
- EASEMENT LINE
- Ⓛ PARKING LOT LIGHTING
- NOTE: LOCATIONS OF UTILITIES PROVIDED BY ALBANY INFOHUB
- X" WATER LINE
- X" SEWER LINE
- X" PRIVATE SEWER LINE
- X" STORM WATER DRAIN

TREE IDENTIFICATION

TREE NUMBER	TREE SPECIES	TRUNK CIRCUMFERENCE	CANOPY (SQ.FT.)	STATUS	RETAIN/REMOVE
TR-1	PINE	25 1/8"	-	DEAD	REMOVE
TR-2	PINE	40 13/16"	135	GOOD	REMOVE
TR-3	DOUGLAS FIR	44"	142.5	GOOD	REMOVE
TR-4	DOUGLAS FIR	40 13/16"	142.5	GOOD	REMOVE
TR-5	DOUGLAS FIR	40 13/16"	142.5	GOOD	REMOVE
TR-6	DOUGLAS FIR	59 11/16"	142.5	GOOD	REMOVE
TR-7	DOUGLAS FIR	59 11/16"	142.5	GOOD	REMOVE
TR-8	DOUGLAS FIR	40 13/16"	142.5	GOOD	REMOVE
TR-9	DOUGLAS FIR	44"	142.5	GOOD	REMOVE
TR-10	DOUGLAS FIR	47 1/8"	142.5	GOOD	REMOVE
TR-11	DOUGLAS FIR	40 13/16"	142.5	GOOD	REMOVE
TR-12	DOUGLAS FIR	34 9/16"	152	GOOD	REMOVE
TR-13	DOUGLAS FIR	31 3/8"	152	GOOD	REMOVE
TR-14	DOUGLAS FIR	44"	152	GOOD	REMOVE
TR-15	DOUGLAS FIR	40 13/16"	152	GOOD	REMOVE
TR-16	DOUGLAS FIR	47 1/8"	152	GOOD	REMOVE
TR-17	DOUGLAS FIR	44"	152	GOOD	REMOVE
TR-18	DOUGLAS FIR	34 9/16"	152	GOOD	REMOVE
TR-19	DOUGLAS FIR	40 13/16"	152	GOOD	REMOVE
TR-20	DOUGLAS FIR	47 1/8"	152	GOOD	REMOVE
TR-21	DOUGLAS FIR	22"	-	DEAD	REMOVE
TR-22	DOUGLAS FIR	44"	152	GOOD	REMOVE
TR-23	DOUGLAS FIR	37 9/26"	152	GOOD	REMOVE



1 TREE FELLING PLAN
1" = 10'-0"

TENANT IMPROVEMENT
ALBANY YMCA
LEARNING CENTER
1054 SW 29TH AVE ALBANY, OR 97321

Issue: COND. USE PERMIT
Date: 06/09/2020

Revision:	Date:

TREE FELLING

TF-1

May 12, 2020

Project:

YMCA – Early Learning Center
1054 29th Avenue SW
Albany Oregon 97321

Conditional Use Review Criteria

Criterion 1.

The proposed use is consistent with the intended character of the base zone and operation characteristics of the neighborhood.

Facts

The neighborhood is zoned Office Professional, which is intended to provide a mix of professional services and residential and limited related commercial uses near residential and commercial districts. Providing a daycare is a direct commercial function for a residential neighborhood adjacent to this area. The operational times of the daycare is intended to make the impact of travel of the use fit within the surrounding businesses.

Conclusion

The daycare is a professional service that is specifically aimed at aiding a residential area. The service provide will allow the families in the area to have safe care for children that is available at times that help the families maintain jobs with standard business hours.

Criterion 2.

The proposed use will be compatible with existing or anticipated uses in terms of size, building scale, style, intensity, setbacks, landscaping.

Facts

The Daycare will be moving into an existing facility that was designed to meet the requirements of this of the OP district. The only exterior changes to the building will be to add two egress doors and a play area cover. The covering for the play area will increase the total lot coverage to 15,654 SQ FT or 64% of the lot. The additional coverage of the lot will be necessary to maintain a healthy amount of recreation for the children when the winter weather in Oregon would typically prevent play outside.

Conclusion

The proposed exterior improvements to the existing structure are minimal and only to provide safe egress out of the building. The addition of the covered play area will be under the maximum lot coverage, and shorter than the maximum height that is allowed in the area. The development of the site will not have a detrimental impact on the aesthetic of the area and will not increase the intensity of the site beyond the code maximum allowable area.

Criterion 3.

The transportation system can support the proposed use in addition to the existing use in the area. Evaluation factors include street capacity and level of service, on street parking impacts, access requirements, neighborhood impacts and pedestrian safety.

Facts

This facility will have a maximum of 18 employees on site at shift change. Typically, a shift of 8 people will be using the building during the business hours. The Daycare program hopes to run between 6:00 am and 7:00 pm. The students will consist of up to 94 mixed aged children that will be arriving by personal vehicle. Pick up and drop off

times will be flexible and the parents can drop off at different times during the day. It is anticipated that the bulk of the students to be dropped off will arrive between 6:30am and 7:00am and pickup between 5:30pm and 6:00pm. By having the flexible drop off times, the amount of traffic to the building throughout the day will be regulated through scheduled pick up and drop off.

Conclusion

The business that shares the access road with the daycare maintains a standard 8:00 am to 5:00pm business day. Most of the traffic produced by the daycare will be outside of the current high traffic times for that area. The impact of the daycare will be minimal to the existing traffic patterns.

Criterion 4.

Public services for water, sanitary, storm sewer, water management, and for fire protection and police protection can serve the proposed use.

Facts

The previous use for the building was a counseling center. The 5,000 sq ft building would have a business capacity of 50 people. With the change of use to the day care, we are increasing the number of water closets from three to nine to accommodate the new use. Currently there is a 4" sewer line leaving the building which will have a DFU capacity of 180 DFU. With the current fixture that are proposed the building will be only producing 50 DFU the existing 4" line is adequate to supply the building. The site has access to a 6" sewer line that drains into the cities' 8" sewer line. There is a 24" and an 8" water line along the site that provides access to the drinking water and the fire suppression system. The proposed plan is to add seven water closets to the building. To help the current water line adequate, tank type toilets will be used to help keep the momentary demand lower. A 12" rainwater line is adjacent to the building. The current proposal does not increase the amount of impermeable surface beyond 70% which will keep the amount of water exiting the site within the capacity of the system. I.

Conclusion

The building will use more water and sewer resources than in its previous use. The existing connections to the building will be able to provide adequate service to the building and enough capacity to remove waste from the building. The maximum lot coverage for the area will not be exceeded, thus the storm water system should be able to accommodate the additional amount of rainwater gathered from the outdoor play area.

Criterion 5.

Activities and developments within special purpose districts must comply with the regulations described in article 4 (airport approach), 6 (natural resources), and 7 (historic) as applicable.

Facts

This project is outside of the Airport approach, Natural Resources, and the Historic District.

Conclusion

The special purpose districts are not applicable to this project.

Sincerely,



Christina M. Larson, Principal
AIA, NCIDQ, LEED AP
Varitone Architecture, LLC.



June 9, 2020

Project:

YMCA – Early Learning Center
1054 29th Avenue SW
Albany Oregon 97321

Tree Felling Situation B

Criterion 1.

It is necessary to fell trees in order to construct proposed improvements in accordance with an approve site plan review or conditional use review, or otherwise utilize the applicant's; property in a manner consistent with its zoning, this code, applicable plans adopted by the city council, or a logged permit issued by the Oregon Department of Forestry.

Facts

The Oregon Early Learning Requirements requires that 75 sqft of outdoor area is provided for each child that is using the area. The current design of the building will allow 94 students to occupy the building. Having 94 students would require that the facility provides 7,050 sqft of outdoor play area. To reach the required outdoor play area, a fenced in play area would need to extend out to the property line. The current berm, and evergreen trees would restrict the view to an expanded play area, which could cause safety issues.

Conclusion

For this facility to meet current Oregon Early Learning Requirements and provide a safe play area, the existing trees and berm should be removed.

Criterion 2.

The proposed felling is consistent with state standards and city ordinances, and does not negatively impact the environmental quality of the area, including but not limited to: the protection of nearby trees and windbreaks; wildlife; erosion; soil retention and stability; volume of surface runoff and water quality of streams; scenic quality, and geological sites.

Facts

Currently, only one row of evergreens is provided in a north to south line on the site. This row of trees extends to the north of the site along Pacific Boulevard. With the annual average winds coming from the south on the site, the removal of the trees on the YMCA – Day Care site would have some impact on the adjacent trees if they were not protected by an existing structure. The existing structure that is just to the north of the YMCA site would produce more of a wind break than the existing trees would have provided. Runoff on the site should not be negatively impacted by the removal of the trees as well. The area that the trees are being removed will be replanted with grass and other plants to create an attractive play area. The existing berm that segregates the site will be smoothed out to help the site maintain its existing drainage and reduce problem areas to help keep the play areas for the children as clean as possible.

Conclusion

The removal of the existing trees should have a positive effect on site drainage without increasing erosion. The volume of surface runoff shall not be increased because the areas that are currently planted will continue to be planted areas. The current Albany development code will require us to plant new trees that will help to replace any shading affect the existing trees are providing.



Criterion 3.

The uniqueness, size, maturity, structure, and historic value of the trees have been considered and all other options for tree preservation have been exhausted. The Director may require that trees determined to be unique in species, size, maturity, structure, or historic value, are preserved.

Facts

The trees on site were planted in the 1970's as part of the development code. The trees are not original to the site, nor are they unique in nature. Part of removing the trees and constructing a new fence for the expanded play area is to add new planting to the site. We will be adding 6 deciduous trees at a minimum or 12 evergreen trees.

Conclusion

The removal of the 21 existing evergreen trees is part of the evolving city landscape. By removing the older trees, the site will be better utilized by the building, and new trees will be planted to take their "place" and add to the aesthetic of the drive along Pacific Boulevard.

Criterion 4.

Tree felling in Significant Natural Resource Overlay Districts meets the applicable requirements in Article 6.

Facts

This site is not in a Significant Natural Resource Overlay. This requirement is not applicable.

Conclusion

Article 6 requirements are not relevant to this project.

Sincerely,

A handwritten signature in black ink that reads 'Christina M. Larson'.

Christina M. Larson, Principal
AIA, NCIDQ, LEED AP
Varitone Architecture, LLC.



VARITONE
ARCHITECTURE & INTERIOR DESIGN
A LIMITED LIABILITY COMPANY
231 2nd Avenue SW
Albany, Oregon 97321
Ph: 541.497.2954

Contractor
TBD

TENANT IMPROVEMENT
**ALBANY YMCA
LEARNING CENTER**
1054 SW 29TH AVE. ALBANY, OR 97321

Issue: COND. USE PERMIT
Date: 05/19/2020

Revision: _____ Date: _____

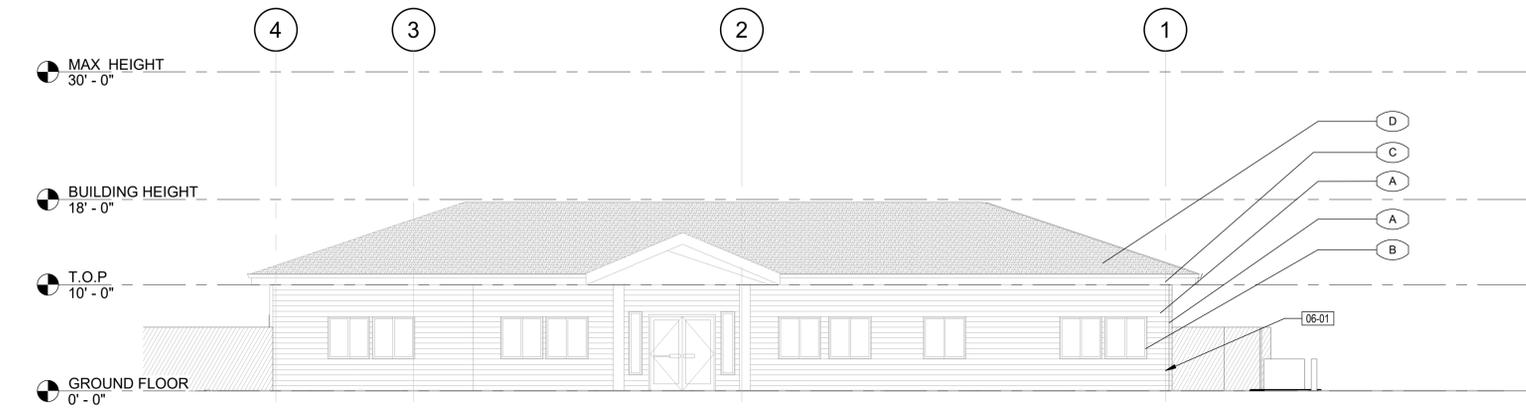
EXTERIOR
ELEVATIONS

A3.00

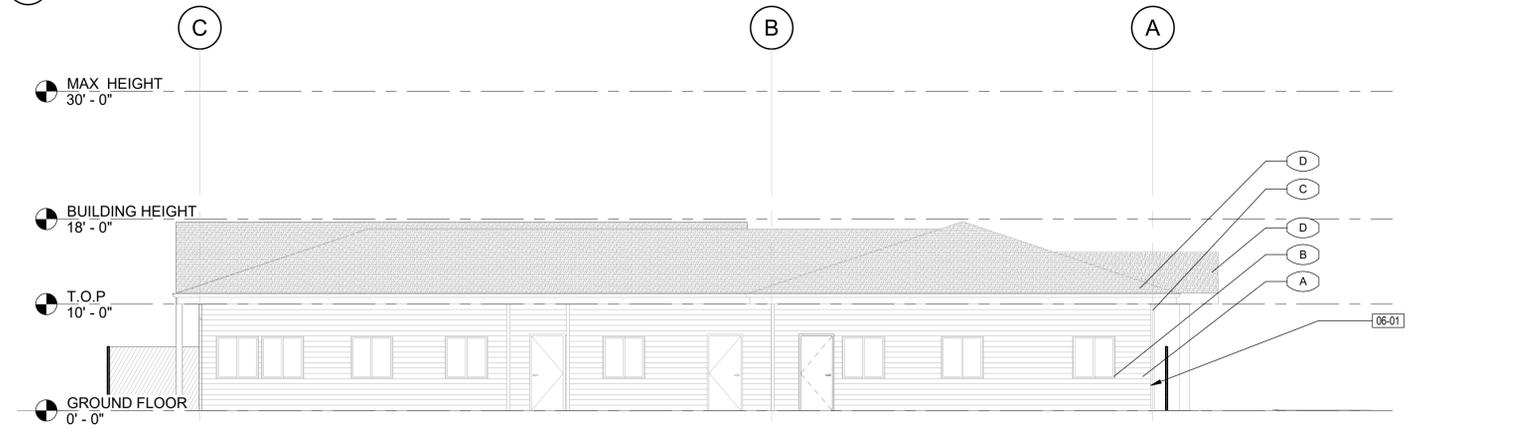
EXTERIOR FINISH LEGEND:

(A)	LOCATION: WALL	FINISH: LAP SIDING	COLOR: GRAY
(B)	LOCATION: WALL	FINISH: TRIM BOARD	COLOR: WHITE
(C)	LOCATION: WALL	FINISH: TRIM BOARD	COLOR: MAROON
(D)	LOCATION: ROOF	FINISH: ASPHALT SHINGLES	COLOR: GRAY

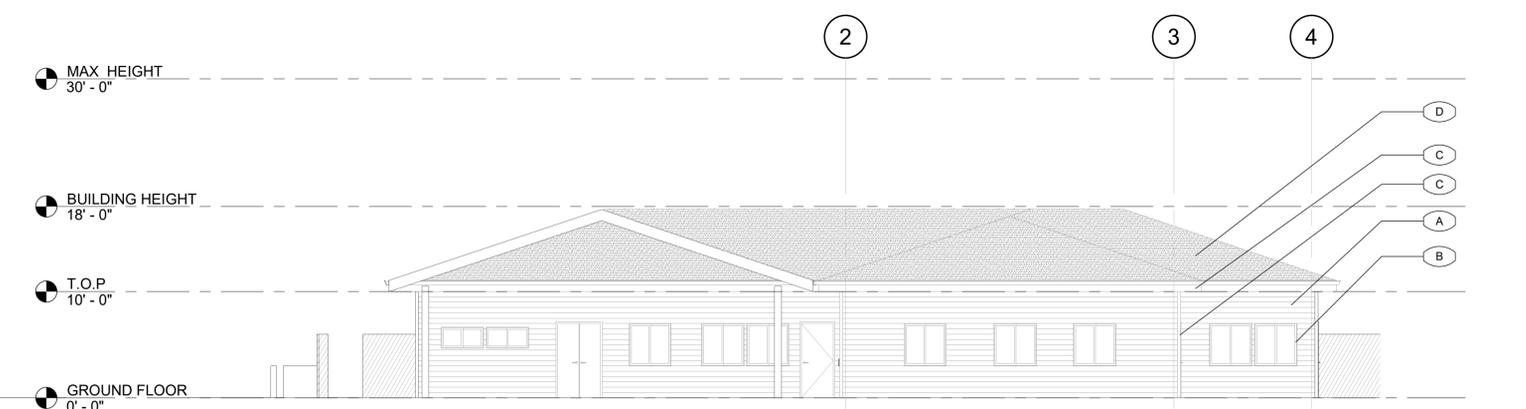
KEYNOTE LEGEND	
#	Keynote Description
06-01	ALL EXISTING SIDING TO REMAIN



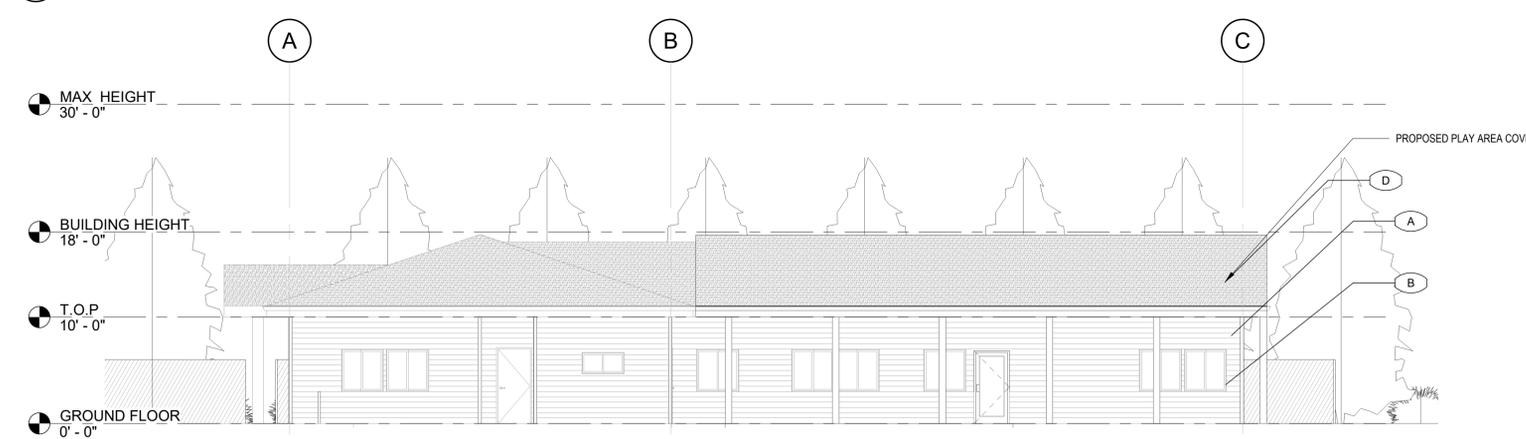
1 North
1/8" = 1'-0"



2 East
1/8" = 1'-0"



3 South
1/8" = 1'-0"



4 West
1/8" = 1'-0"



5 ENTRANCE
3/8" = 1'-0"



6 SIDE ENTRANCE
3/8" = 1'-0"



7 STREET ELEVATION
3/8" = 1'-0"