

May 24, 2024

Application Narrative Report – Westport Village 7-lot Land Division – PA2024-00039

Proposal

Review for a 7-Lot Land Division.

- Site address is unassigned with access from SW Watershed Lane, south of 14830 SW Farmington Road and 14852 SW Farmington Road
- Legal description is 1S1-17AD, TL 600
- Size is 0.49 acre (approx. 21,226 square feet)
- Current zoning is RMA (Residential Mixed A)
- Comp Plan designation is *Neighborhoods Residential Low Density*
- Proposed subdivision name: *Westport Village*

Background

The owner/applicant, Westport Village, LLC/Kim-Hien Nguyen, is submitting a land use application for a Land Division since LD2020-0011 and SDM2021-0002 have expired. Only minor changes are proposed to the plat to include the addition of a 7th lot since the land use designation has changed, and the right-of-way is widened on the east side of the proposed public road due to revisions in lot size standards. This application also includes a Sidewalk Design Modification similar to the request made previously. This applies to the west side of the site made necessary by the water quality facility size requirements.

Previous approved applications include a Legal Lot Determination and two Property Line Adjustments. Those applications were submitted and approved. The LLD2020-003 Notice of Decision was issued January 29, 2021. The PLA2020-003 & PLA2020-004 Notice of Decision was issued on February 1, 2021. Deeds for these two Property Line Adjustments have been recorded (doc 2021-049286 & 2021-049287 dated 4/22/21).

A 'completeness' letter dated May 4, 2024 was received from staff and all required items have been addressed, along with many of the 'not completeness items'. Specifically, the plans have been updated to provide a back-out easement for the benefit of Lot 2 over Tax Lot 601, and the PUE is now shown with 8-ft. along the frontage of Lots 1-7. Additionally, the lighting plan has been updated, the Geotech Report engineer's stamp has been updated, and the TVFR & Beaverton School District service letters have been revised. Finally, this narrative has been revised to address the 'not completeness items' including net density and sidewalk design modification. The storm drainage report is also included.

20.05 Residential Land Uses

20.05.10 – Purpose

2. RMA Residential Mixed A

The RMA District is intended to allow a mix of housing types, including detached and attached housing at the second-highest number of units per acre of Beaverton's residential zones. [ORD 4584; June 2012] [ORD 4822; June 2022]

COMMENT:

Tax Lot 600, a 0.49-acre property adjusted through PLA2020-003 & PLA2020-004 (doc 2021-049286 & 2021-049287 dated 4/22/21), is zoned RMA.

LLD2020-003 has been issued providing the Legal Lot Determination.

20.05.15 Site Development Standards

Site Development Standards support implementing development consistent with the corresponding zoning district. All superscript notations refer to applicable regulations or clarifications as noted in footnotes below. [ORD 4697; December2016]

20.05.15 Residential Site Development Standards

| Superscript Refers to Footnotes | RMA |
|---|-------------------|
| A. Minimum Land Area (1) (square feet) | 2,000/unit |
| B. Minimum Lot Area (2, 3) (square feet) | |
| Single-Detached and Duplex | 1,500 |

COMMENT:

The proposal is for 7 lots. All exceed the minimum 1,500 sq. ft. lot size.

| | |
|--|------------|
| C. Maximum Residential Density | N/A |
| D. Minimum Residential Density (units per acre) (4) | 17 |

COMMENT:

Minimum density for the 14,321 sq. ft. (net) parcel is 5.59 or 6 units. A 7-lot subdivision is proposed.

E. Minimum Lot Width (3, 6) 14

COMMENT:

All lots exceed the minimum 14-ft. lot width.

F. Minimum Yard Setbacks (3, 18)

1. Front 10
2. Side 0, 3 or 5 (7)
3. Rear 15 (8)
4. Garage (9) 5 or 18.5 (10)
5. Garage Door to Rear (11) 22
6. Minimum Between Buildings (12) 6

COMMENT:

Although only lots are proposed with this application, all future dwellings will comply with the above standards with 5-ft. exterior side yard setbacks for Lots 1, 2 & 7, and 3-ft. interior side yard setbacks for Lots 2-7 (6-ft. between buildings).

G. Building Height

1. Maximum (13) 40

COMMENT:

All future dwellings will comply with the maximum height standards of the RMA zone.

H. Maximum Floor Area Ratio (FAR) (3, 15, 16, 17)

Refer to Sections 20.25.10 and 20.25.15.

1. Single-Detached Dwelling 1.40

COMMENT:

The maximum floor area for the future dwellings (including garage) for each lot is as follows:

| | |
|-------|---------------|
| Lot 1 | 3,587 sq. ft. |
| Lot 2 | 2,770 sq. ft. |
| Lot 3 | 2,365 sq. ft. |
| Lot 4 | 2,355 sq. ft. |
| Lot 5 | 2,345 sq. ft. |
| Lot 6 | 2,335 sq. ft. |
| Lot 7 | 2,521 sq. ft. |

20.25.05. Minimum Residential Density.

- A. New residential development in all Residential, Commercial, and Multiple Use districts which permit residential development must achieve at least the minimum density for the zoning district in which they are located.

Except for projects in the Downtown Design District, projects proposed at less than the minimum density must demonstrate on a site plan or other means, how, in all aspects, future intensification of the site to the minimum density or greater can be achieved without an adjustment or variance. If meeting the minimum density will require the submission and approval of an adjustment or variance application(s) above and beyond application(s) for adding new primary dwellings or land division of property, meeting minimum density shall not be required. [ORD 4799; January 2021]

For the purposes of this section, new residential development in all zones shall mean intensification of the site by adding new primary dwelling(s) or land division of the property. New residential development is not intended to refer to additions to existing structures, rehabilitation, renovation, remodeling, or other building modifications or reconstruction of existing structures. [ORD 4799; January 2021]

Minimum residential density is calculated as follows: [ORD 4822; June 2022]

1. For zoning districts and uses that regulate residential density by minimum land area required per dwelling: [ORD 4799; January 2021]
 - a. Refer to the definition of Acreage, Net. Multiply the net acreage by 0.80.
 - b. Divide the resulting number in step a by the minimum land area required per dwelling for the applicable zoning district to determine the minimum number of dwellings that must be built on the site.

2. For the RMA, RMB, and RMC zoning districts, except for multi-dwellings:
 - a. Refer to the definition of Acreage, Net.
 - b. Multiple the net acreage by the minimum residential density provided in Section 20.05.15. to determine the minimum number of dwellings that must be built on the site.
3. If the resulting number in step 1.b or 2.b is not a whole number, the number is rounded to the nearest whole number as follows: If the decimal is equal to or greater than 0.5, then the number is rounded up to the nearest whole number. If the decimal is less than 0.5, then the number is rounded down to the nearest whole number.

COMMENT:

The net lot area of the site is 14,321 sq. ft. ((21,226 sq. ft. – (row) 6,905 sq. ft.) = 14,321 sq. ft.).
 Minimum Density – $14,321/43,560 = 5.58$ or 6 units.

20.25.10. Floor Area Ratio

- A. Floor Area. Mixed Use Development, non-residential development, and residential development in certain zones are governed by minimum and maximum Floor Area Ratios. Generally, Floor Area Ratio (FAR) is the ratio of gross floor area to net acreage on a site. In the RMA, RMB and RMC zones, FAR is the ratio of gross floor area to net acreage on a lot. Residential-only development is also governed by minimum densities, and in some zones, maximum densities. For Mixed Use Developments, no maximum limitation shall be placed on the number of dwelling units permitted. Multiple Use Developments with single-use residential buildings are governed by residential density and FAR provisions, as calculated by 20.25.10.C, below. [ORD 4584; June 2012] [ORD 4799; January 2021] [ORD 4822; June 2022]

COMMENT:

Maximum floor area ratios for each lot is 1.4 x lot size as noted above.

Chapter 40 – Permits and Applications

40.03. Facilities Review Committee

Consistent with Section 10.95.3. (Facilities Review Committee) of this Code, the Facilities Review Committee shall review the following land use applications: all Conditional Use, Design Review Two, Design Review Three, Downtown Design Review Two, Downtown Design Review Three, Single-Detached and Middle Housing Design Review Two, Single-Detached and Middle Housing Design Review Three, Public Transportation Facility Reviews, Street Vacations, and applicable

Land Divisions. Applicable land division applications are Replats, Partitions, Subdivisions, Fee Ownership Partitions, and Fee Ownership Subdivisions. In making a recommendation on an application to the decision making authority, the Facilities Review Committee shall base its recommendation on a determination of whether the application satisfies all the following technical criteria. The applicant for development must establish that the application complies with all relevant standards in conformance with Section 50.25.1.B., and all the following criteria have been met, as applicable: [ORD 4265; October 2003] [ORD 4404; October 2006] [ORD 4487; August 2008] [ORD 4697; December 2016] [ORD 4799; January 2021] [ORD 4822; June 2022]

1. All Conditional Use, Design Review Two, Design Review Three, Downtown Design Review Two, Downtown Design Review Three, Single-Detached and Middle Housing Design Review Two, Single-Detached and Middle Housing Design Review Three, and applicable Land Division applications: [ORD 4799; January 2021] [ORD 4822; June 2022]
 - A. All critical facilities and services related to the proposed development have, or can be improved to have, adequate capacity to serve the proposed development at the time of its completion.

COMMENT:

All services are available to serve the site. Sanitary, storm and water lines located in SW Watershed Lane are all stubbed to the site. A new fire hydrant will need to be provided at the entrance. A water service letter provider is attached. A water quality and detention facility is proposed on the southwest corner of the site with sufficient capacity to meet CWS standards.

- B. Essential facilities and services related to the proposed development are available, or can be made available, with adequate capacity to serve the development prior to its occupancy. In lieu of providing essential facilities and services, a specific plan may be approved if it adequately demonstrates that essential facilities, services, or both will be provided to serve the proposed development within five (5) years of occupancy.

COMMENT:

All essential facilities and services are available to serve the development.

- C. The proposed development is consistent with all applicable provisions of CHAPTER 20 (Land Uses), or Sections 20.25 and 70.15 if located within the Downtown Design District, unless the applicable provisions are modified by means of one or more applications which shall be already approved or which shall be considered concurrently with the subject application; provided, however, if the approval of the proposed development is contingent upon one or more additional applications, and the same is not approved, then the proposed development must comply with all applicable provisions of CHAPTER 20 (Land Uses) or Sections 20.25 and 70.15 if located within the Downtown Design District. [ORD 4799; January 2021]

COMMENT:

The proposal has been designed in accordance with the RMA standards found in Chapter 20, including density, lot size/dimensions, and future building setbacks.

- D. The proposed development is consistent with all applicable provisions of CHAPTER 60 (Special Requirements) and all improvements, dedications, or both, as required by the applicable provisions of CHAPTER 60 (Special Requirements), are provided or can be provided in rough proportion to the identified impact(s) of the proposed development.**

COMMENT:

All public improvements – utilities and transportation (extension/terminus of SW Watershed Lane) are designed and will be constructed in accordance city standards. This includes a hammerhead turn-around. The application also includes a request for sidewalk design modification for curb-tight sidewalk matching the existing sidewalk. All other improvements are in accordance with city design standards.

- E. Adequate means are provided or can be provided to ensure continued periodic maintenance and necessary normal replacement of the following private common facilities and areas, as applicable: drainage facilities, roads and other improved rights-of-way, structures, recreation facilities, landscaping, fill and excavation areas, screening and fencing, ground cover, garbage and recycling storage areas, and other facilities not subject to maintenance by the City or other public agency.**

COMMENT:

All public facilities are designed for long-term maintenance, including the public street, utilities and water quality facility.

- F. There are safe and efficient vehicular and pedestrian circulation patterns within the boundaries of the development.**

COMMENT:

SW Watershed Lane and its sidewalks are designed safe and efficient vehicular and pedestrian access.

- G. The development's on-site vehicular and pedestrian circulation systems connect to the surrounding circulation systems in a safe, efficient, and direct manner.**

COMMENT:

Due to existing development to the east and west, and SW Farmington Road to the north, SW Watershed Lane terminates on the property. However, it is stubbed to the properties to the north allowing access upon redevelopment of those properties in a safe and efficient manner.

- H. **Structures and public facilities serving the development site are designed in accordance with adopted City codes and standards and provide adequate fire protection, including, but not limited to, fire flow.**

COMMENT:

Public facilities serving the site (street and utilities) are designed in accordance with city standards. Adequate fire flow exists which will be verified at the time the fire hydrant is installed.

- I. **Structures and public facilities serving the development site are designed in accordance with adopted City codes and standards and provide adequate protection from crime and accident, as well as protection from hazardous conditions due to inadequate, substandard or ill-designed development.**

COMMENT:

The development is designed with a highly visible, defensible space at the terminus of SW Watershed Lane. No access from SW Farmington Road is proposed from this development.

- J. **Grading and contouring of the development site is designed to accommodate the proposed use and to mitigate adverse effect(s) on neighboring properties, public right-of-way, surface drainage, water storage facilities, and the public storm drainage system.**

COMMENT:

The development site is mostly flat but has been graded for adequate drainage to the proposed water quality facility. No drainage impact to surrounding properties is anticipated – the hammerhead also drains to the water quality facility.

- K. **Access and facilities for physically handicapped people are incorporated into the development site and building design, with particular attention to providing continuous, uninterrupted access routes.**

COMMENT:

A continuous access route meeting ADA standards is provided with the extension of the public sidewalk along the frontage of SW Watershed Lane.

- L. **The application includes all required submittal materials as specified in Section 50.25.1 of the Development Code. [ORD 4265; October 2003]**

COMMENT:

All required materials have been submitted.

40.45 Land Division and Reconfiguration

40.45.15 Application

There are nine (9) types of applications under this Section, as follows: Property Line Adjustment; Replat One; Replat Two; Preliminary Partition; Preliminary Subdivision; Preliminary Fee Ownership Partition; Preliminary Fee Ownership Subdivision; Final Land Division; and Expedited Land Division. [ORD 4584; June 2012]

COMMENT:

The proposal is for a 7-lot Land Division on Tax Lot 600. PLA2020-003 & PLA2020-004 previously involving the subject property and the two adjacent tax lots to the north, Tax Lots 601 & 602, have been separated from the development with the recordation of the property line adjustments (deed doc #2021-049286 & 2021-049287). No right-of-way dedication along the SW Farmington Road frontage of those tax lots is required. Internal dedication of the SW Watershed Lane frontage to include an extension with a 'stub' to Tax Lots 601 & 602, will be provided with this development.

5. Preliminary Subdivision.

A. Threshold. An application for Preliminary Subdivision shall be required when the following threshold applies:

1. The creation of four (4) or more new lots from at least one (1) lot of record in one (1) calendar year.

COMMENT:

This project proposes a total of seven new lots on Tax Lot 600. As such, the project meets this threshold.

B. Procedure Type. The Type 2 procedure, as described in Section 50.40. of this Code, shall apply to an application for Preliminary Subdivision. The decision making authority is the Director.

COMMENT:

The applicant understands that this review is a Type 2 procedure, with the decision being made by the Director.

C. Approval Criteria. In order to approve a Preliminary Subdivision application, the decision making authority shall make findings of fact based on evidence provided by the applicant demonstrating that all the following criteria are satisfied:

- 1. The application satisfies the threshold requirements for a Preliminary Subdivision application. If the parent parcel is subject to a pending Legal Lot Determination under Section 40.47, further division of the parent parcel shall not proceed until all of the provisions of Section 40.47.15.1.C. have been met.**

COMMENT:

Because the proposed subdivision will have 7 lots, it meets the stated Threshold for a Preliminary Subdivision application. LLD2020-003 has been approved. Therefore, this criterion has been, and will be met.

- 2. All City application fees related to the application under consideration by the decision making authority have been submitted.**

COMMENT:

The required fee for the Preliminary Subdivision has been submitted as part of the total application package for the subject site will satisfy this criterion.

- 3. The application is consistent with applicable requirements of CHAPTER 20 and CHAPTER 60, unless the applicable provisions are modified by means of one or more applications which shall be already approved or which shall be considered concurrently with the subject application. [ORD 4822; June 2022]**

COMMENT:

The application is consistent with the applicable sections of Chapter's 20 and 60 as evidenced by the attached plan submittal, documents and this narrative.

- 4. The proposed development does not conflict with any existing City approval, except the City may modify prior approvals through the subdivision process to comply with current Code standards and requirements.**

COMMENT:

As noted, LLD2020-003, PLA2020-003 & PLA2020-004 have been approved on the subject property, along with LD2020-0011 and SDM2021-0002 (expired). As such, no modification of those applications is necessary.

- 5. Oversized lots resulting from the subdivision shall have a size and shape which will facilitate the future potential partitioning or subdividing of such oversized lots in accordance with the requirements of the Development Code. In addition, streets, driveways, and utilities shall be sufficient to serve the proposed subdivision and future potential development on oversized lots. Easements and rights-of-way shall**

either exist or be proposed to be created such that future partitioning or subdividing is not precluded or hindered, for either the oversized lot or any affected adjacent lot. [ORD 4584; June 2012]

COMMENT:

No oversized lots are proposed with this 7-lot subdivision.

6. If phasing is requested by the applicant, the requested phasing plan meets all applicable City standards and provides for necessary public improvements for each phase as the project develops.

COMMENT:

No phasing is requested by the applicant as part of this application for Preliminary Subdivision. Therefore, this criterion does not apply.

7. For proposals which create a parcel with more than one zoning designation the portion of the lot within each zoning district shall meet the minimum lot size and dimensional requirements of that zoning district. [ORD 4584; June 2012] [ORD 4782; April 2020]

COMMENT:

The entire site is within the RMA zoning district, therefore, this section is not applicable.

8. Applications and documents related to the request requiring further City approval shall be submitted to the City in the proper sequence.

COMMENT:

All applications and required documents seeking City approval for a Preliminary Subdivision, and Final Land Division (Subdivision) will be submitted in the proper sequence to the City as required.

D. Submission Requirements

1. An application for a Preliminary Subdivision shall be made by the owner of the subject property, or the owner's authorized agent, on a form provided by the Director and shall be filed with the Director. Provided, however, where the application is made in conjunction with a Legal Lot Determination under Section 40.47., the City may consider the application even if fewer than all the owners of the existing legal lot or parcel have applied for the approval. The Preliminary Subdivision application shall be accompanied by the information required by the application form, and by Section 50.25. (Application Completeness), and any other information identified through a Pre-Application Conference.

COMMENT:

This application “package” contains the required materials for Preliminary Subdivision. The application is filed by the property owners and the proposed developer. Final Land Division application for the Subdivision will be filed at the appropriate time, thus fulfilling this criterion.

- 2. The Director may consider and act upon a request to develop a subdivision in phases. If the subdivision is to be phased, the applicant shall propose a phasing program in writing at the time of Preliminary Subdivision application submittal. The applicant is responsible for providing a time schedule for the final platting of the various phases. In no case shall the total time period for the final platting of all stages be greater than five (5) years without filing a new Preliminary Subdivision application.**

COMMENT:

The applicant has not made any request by the City to review and/or approve this project in stages. Therefore, this standard does not apply to this project.

- E. Conditions of Approval. The decision making authority may impose conditions on the approval of a Preliminary Subdivision application to ensure compliance with the approval criteria.**

COMMENT:

The applicant understands that the decision-making authority (in this case, the Director) may impose reasonable conditions in order to ensure compliance with the approval criteria.

- F. Appeal of a Decision. Refer to Section 50.65.**

COMMENT:

The applicant understands that a party with proper standing may appeal the decision maker’s decision of this Type 2 application process under the terms of this subsection of the Code.

- G. Expiration of a Decision. Refer to Section 50.90. Except where a phasing program is approved under Section 40.45.15.4.C.7., the filing of a Final Land Division application in accordance with Section 40.45.15.7. shall occur within two (2) years of the date of Preliminary Subdivision approval. For a phased project, the total time period for the filing of a final plat, shall not exceed five (5) years from the date of the City’s final Preliminary Subdivision Approval decision. After five (5) years, unless otherwise vested, the preliminary approval shall expire. [ORD 4265; October 2003] [ORD 4487; August 2008]**

H. Extension of a Decision. Refer to Section 50.93.

COMMENT:

The applicant understands the two-year deadline for filing a Final Land Division application. The applicant also understands that a Decision may be extended through the provisions of Section 50.93.

40.58. Sidewalk Design Modification

40.58.05. Purpose.

The purpose of the Sidewalk Design Modification application is to provide a mechanism whereby the City's street design standards relating to the locations and dimensions of sidewalks or required street landscaping can be modified to address existing conditions and constraints as a specific application. For purposes of this section, sidewalk ramps constructed with or without contiguous sidewalk panels leading to and away from the ramp shall be considered sidewalks. This section is implemented by the approval criteria listed herein.

40.58.10. Applicability.

The Sidewalk Design Modification application shall be applicable to all streets in the City.

40.58.15. Application.

There is a single Sidewalk Design Modification application which is subject to the following requirements.

- A. Threshold.** An application for Sidewalk Design Modification shall be required when one of the following thresholds applies:
- 1.** The sidewalk width, planter strip width, or both minimum standards specified in the Engineering Design Manual are proposed to be modified.
 - 2.** The dimensions or locations of street tree wells specified in the Engineering Design Manual are proposed to be modified.

COMMENT:

Subsection 1 is applicable to this request. The applicant is proposing curb-tight sidewalks on the west side of the site without the planter due to several site constraints with the project. A separated sidewalk with planter is proposed on the east side of the site in accordance with design standards.

- B. Procedure Type.** The Type 1 procedure, as described in Section 50.35. of this Code, shall apply to an application for Sidewalk Design Modification. The decision making authority is the Director.

COMMENT:

This application is being reviewed through a Type I Procedure as part of this Type II Subdivision application.

- C. Approval Criteria.** In order to approve a Sidewalk Design Modification application, the decision making authority shall make findings of fact based on evidence provided by the applicant demonstrating that the following criteria are satisfied:

1. The proposal satisfies the threshold requirements for a Sidewalk Design Modification application.

COMMENT:

This application for a Sidewalk Design Modification satisfied the threshold criteria.

2. All City application fees related to the application under consideration by the decision making authority have been submitted.

COMMENT:

Required fees have been paid.

3. One or more of the following criteria are satisfied:
 - a. That there exist local topographic conditions, which would result in any of the following:
 - i. A sidewalk that is located above or below the top surface of a finished curb.
 - ii. A situation in which construction of the Engineering Design Manual standard street cross-section would require a steep slope or retaining wall that would prevent vehicular access to the adjoining property.
 - b. That there exist local physical conditions such as:
 - i. An existing structure prevents the construction of a standard sidewalk.
 - ii. An existing utility device prevents the construction of a standard sidewalk.

- iii. **Rock outcroppings prevent the construction of a standard sidewalk without blasting.**
- c. **That there exist environmental conditions such as a Significant Natural Resource Area, Jurisdictional Wetland, Clean Water Services Water Quality Sensitive Area, Clean Water Services required Vegetative Corridor, or Significant Tree Grove.**
- d. **That additional right of way is required to construct the Engineering Design Manual standard and the adjoining property is not controlled by the applicant.**

COMMENT:

Subsection (b) is applicable to this application. The need for the modification is due to the narrow width of Tax Lot 600 (150-ft.) with respect to the alignment of the SW Watershed Lane street stub. As shown on the submitted plans, the street stub is not centered on the lot, but rather stubs approximately 41-ft. from the west boundary of the property. A planter strip on the west side of the street would limit the use of the property on the west portion of the property.

- 4. **The proposal complies with provisions of Section 60.55.25. (Street and Bicycle and Pedestrian Connection Requirements) and 60.55.30 (Minimum Street Widths).**

COMMENT:

In order to accommodate vehicular, pedestrian, bicycle and emergency services with the street stub restrictions mentioned in #3 above, the applicant is proposing a hybrid of the Engineering Design Manual's Local Street L2 and L3 standard cross sections. As proposed, a 28-ft. street narrowing to 26-ft. north of the hammerhead provides the minimum necessary width required by Tualatin Valley Fire & Rescue Oregon Fire Code standards. This width exceeds the minimum standard for an L3 street, but the proposed right-of-way width of 41-ft. narrowing to 39-ft. on the north terminus of the hammerhead is less than the standard 44-ft. The right-of-way centerline is off set with 13 feet on the west side of the centerline, and 29 feet on the east side of the right-of-way centerline. Therefore, the pavement exceeds the 20-ft. width standard for the L3 cross section, but it is substandard to the 44-ft. right-of-way width. This hybrid design meets or exceeds the requirements on the east side of the right-of-way and provides curb-tight sidewalks on the west side where there is insufficient area for the planter strip. Pedestrian and bicycle pedestrian connections are met. Following are the findings for Section 60.55

Chapter 60 – Special Requirements

60.55 Transportation Facilities

60.55.05. Purpose and Intent.

It is the purpose and intent of this chapter to establish design standards and performance requirements for all streets and other transportation facilities constructed or reconstructed within the City of Beaverton.

60.55.25. Street and Bicycle and Pedestrian Connection Requirements. [ORD 4302; June 2004]

- 1. All streets shall provide for safe and efficient circulation and access for motor vehicles, bicycles, pedestrians, and transit. Bicycle and pedestrian connections shall provide for safe and efficient circulation and access for bicycles and pedestrians.**

COMMENT:

The proposal is for an extension of SW Watershed Lane through the subdivision site, with a stub to Tax Lots 601 & 602. Future redevelopment of those properties may require closure of their existing accesses from SW Farmington Road, redirecting traffic through SW Watershed Lane. The road is designed for safe and efficient circulation.

- 2. The Comprehensive Plan Transportation Element Figures 6.1 through 6.23 and Tables 6.1 through 6.6 shall be used to identify ultimate right-of-way width and future potential street, bicycle, and pedestrian connections in order to provide adequate multi-modal access to land uses, improve area circulation, and reduce out-of-direction travel. For properties within the South Cooper Mountain Community Plan area, Figure 10: Community Plan Street Framework and Figure 11: Community Plan Bicycle & Pedestrian Framework of the South Cooper Mountain Community Plan shall be used to identify functional classifications of streets, future streets, bicycle, and pedestrian connections. Streets and bicycle and pedestrian connections shall extend to the boundary of the parcel under development and shall be designed to connect the proposed development's streets, bicycle connections, and pedestrian connections to existing and future streets, bicycle connections, and pedestrian connections. Trails identified in Figure 11: Community Plan Bicycle & Pedestrian Framework shall be designed to meet applicable Tualatin Hills Parks & Recreation (THPRD) District trail design standards, unless otherwise approved by THPRD. Deviations from Figure 10: Community Street Framework or Figure 11: Community Plan Bicycle & Pedestrian Framework shall be reviewed through the Planned Unit Development application. [ORD 4822; June 2022]**

COMMENT:

Based on meetings with staff, the extension of SW Watershed Lane may be designed with a 26-ft paved width. Curbs, sidewalks on both sides of the street, and a planter on the east side of the street. Additionally, a permanent hammerhead terminus is provided to accommodate emergency vehicles. No new access from SW Farmington Road is proposed,

- 3. Where a future street or bicycle and pedestrian connection location is not identified in the Comprehensive Plan Transportation Element, where abutting properties are undeveloped or can be expected to be redeveloped in the near term, and where a street or bicycle and**

pedestrian connection is necessary to enable reasonably direct access between and among neighboring properties, the applicant shall submit as part of a complete application, a future connections plan showing the potential arrangement of streets and bicycle and pedestrian connections that shall provide for the continuation or appropriate projection of these connections into surrounding areas.

COMMENT:

There is no potential for additional development on surrounding properties with the exception of Tax Lots 601 & 602 (to the north). At such time as development on those parcels take place, access from SW Farmington Road will likely be closed. It is unlikely that a pedestrian connection to SW Farmington Road will be necessary.

4. **Streets and bicycle and pedestrian connections shall extend to the boundary of the parcel under development and shall be designed to connect the proposed development's streets, bicycle connections, and pedestrian connections to existing and future streets, bicycle connections, and pedestrian connections. A closed-end street, bicycle connection, or pedestrian connection may be approved with a temporary design.**

COMMENT:

SW Watershed Lane is stubbed to the north boundary line as required.

5. **Whenever existing streets and bicycle and pedestrian connections adjacent to or within a parcel of land are of inadequate width, additional right-of-way may be required by the decision-making authority.**

COMMENT:

The applicant will dedicate right-of-way for the proposed subdivision as required.

6. **Where possible, bicycle and pedestrian connections shall converge with streets at traffic-controlled intersections for safe crossing.**

COMMENT:

No new pedestrian or bicycle connections are proposed. A sidewalk is provided along both sides of the interior street.

7. **Bicycle and pedestrian connections shall connect the on-site circulation system to existing or proposed streets, to adjacent bicycle and pedestrian connections, and to driveways open to the public that abut the property. Connections may approach parking lots on adjoining properties if the adjoining property used for such connection is open to public pedestrian and bicycle use, is paved, and is unobstructed.**

COMMENT:

No new pedestrian or bicycle connections are proposed. A sidewalk is provided along both sides of the interior street.

8. To preserve the ability to provide transportation capacity, safety, and improvements, a special setback line may be established by the City for existing and future streets, street widths, and bicycle and pedestrian connections for which an alignment, improvement, or standard has been defined by the City. The special setback area shall be recorded on the plat.

COMMENT:

A special setback line is not required.

9. Accessways are one or more connections that provide bicycle and pedestrian passage between streets or a street and a destination. Accessways shall be provided as required by this code and where full street connections are not possible due to the conditions described in Section 60.55.25.14. [ORD 4397; August 2006] [ORD 4697, December 2016]

An accessway will not be required where the impacts from development, redevelopment, or both are low and do not provide reasonable justification for the estimated costs of such accessway.

COMMENT:

No new pedestrian or bicycle accessways are proposed since the block width between SW 149th Avenue and the site is 180-ft. A sidewalk is provided along both sides of the interior street.

10. Pedestrian Circulation. [ORD 4487; August 2008]

A. Standards for Single-Detached Dwellings and Middle Housing.

1. A pedestrian way is required to connect at least one main entrance of each residential structure to at least one adjacent public street.
2. The pedestrian way required in subsection 1 shall be hard-surfaced and a minimum of five (5) feet wide. Any hard-surface path connecting entrances to the street (including a driveway) could meet this standard.
3. In lieu of meeting the standards above, cottage clusters are subject to the pedestrian access standards in Section 60.05.60.3. [ORD 4822; June 2022]

COMMENT:

This section will be addressed in a subsequent application for the housing.

- A. Walkways are required between parts of a development where the public is invited or allowed to walk.
- B. A walkway into the development shall be provided for every 300 feet of street frontage. A walkway shall also be provided to any accessway abutting the development.
- C. Walkways shall connect building entrances to one another and from building entrances to adjacent public streets and existing or planned transit stops. Walkways shall connect the development to walkways, sidewalks, bicycle facilities, alleyways and other bicycle or pedestrian connections on adjacent properties used or planned for commercial, multi-dwelling, institution or park use. The City may require connections to be constructed and extended to the property line at the time of development. [ORD 4822; June 2022]
- D. Walkways shall be reasonably direct between pedestrian destinations and minimize crossings where vehicles operate.
- E. Walkways shall be paved and shall maintain at least five (5) feet of unobstructed width. Walkways bordering parking spaces shall be at least seven feet wide unless concrete wheel stops, bollards, curbing, landscaping, or other similar improvements are provided which prevent parked vehicles from obstructing the walkway. Stairs or ramps shall be provided where necessary to provide a reasonably direct route. The slope of walkways without stairs shall conform to City standards. [ORD 4782; April 2020]
- F. The Americans with Disabilities Act (ADA) contains different and stricter standards for some walkways. The ADA applies to the walkway that is the principal building entrance and walkways that connect transit stops and parking areas to building entrances. Where the ADA applies to a walkway, the stricter standards of ADA shall apply.
- G. On-site walkways shall be lighted to 0.5 foot-candle level at initial luminance. Lighting shall have cut-off fixtures so that illumination does not exceed 0.5 foot-candle more than five (5) feet beyond the property line.

COMMENT:

No new walkways are required or proposed. Sidewalks are proposed along both sides of the interior public street.

- 11. Pedestrian Connections at Major Transit Stops. Commercial and institution buildings at or near major transit stops shall provide for pedestrian access to transit through the following measures:**

COMMENT:

There are no Major Transit Stops in the vicinity of the subject site.

60.55.30 Minimum Street Widths. ORD4302; June2004]

Minimum street widths are depicted in the Engineering Design Manual. [ORD 4418; February2007

1. Any project-specific modifications of the standards contained in the Engineering Design Manual regarding the widths of features relating to the movement of vehicles, including but not limited to rights of way, travel lanes, parking lanes, bike lanes, driveway aprons, curb radii, or other such features shall be processed in accordance with the provisions contained in the Section 145 Design Modifications of the Engineering Design Manual. [ORD 4418; February 2007]
2. Any project-specific modifications of the standards of the Engineering Design Manual relating to the location and dimensions of required street landscaping and pedestrian features including, but not limited to, sidewalks, planter strips, street trees, street tree wells, street tree easements, or street furniture are subject to the procedures contained in Chapter 40 (Applications). The required application will depend on the scope of the proposed project and the type of application filed with the City. [ORD 4418; February 2007]

COMMENT:

The proposal is for a hybrid of an L2 & L3 street with minimum 26-ft. paved street and curb-tight sidewalks on the west side of the street and a separated sidewalk with planter on the east side of the street. The street will be stubbed to the north boundary with Tax Lots 601 & 602. Additionally, the design includes a permanent public hammerhead to Fire District standards.

3. Street trees shall be planted at a maximum linear spacing of 30 feet along street frontages or in accordance with an approved street tree plan approved by the City Arborist. Proposed tree wells shall be designed to meet standards in the City Engineering Design Manual. [ORD 4782; April 2020]

COMMENT:

Street trees will be planted where possible, avoiding utilities and other facilities.

60.55.35 Access Standards

1. The development plan shall include street plans that demonstrate how safe access to and from the proposed development and the street system will be provided. The applicant shall also show how public and private access to, from, and within the proposed development will be preserved.

COMMENT:

The proposed development plan is designed to provide safe access to vehicles, bicyclists and pedestrians with sidewalks on both sides of the street and good visibility.

2. No more than 25 dwelling units may have access onto a **closed-end street** system unless the decision-making authority finds that identified physical constraints preclude compliance with the standard and the proposed development is still found to be in compliance with the Facilities Review criteria of Section **40.03**. [ORD 4584; June 2012]

COMMENT:

The proposal added 7 lots to the existing closed end street. There is no alternative design for another street connection due to access restrictions on SW Farmington Road.

3. Intersection Standards.
 - A. Visibility at Intersections. All work adjacent to public streets and accessways shall comply with the standards of the Engineering Design Manual except in Regional and Town Centers. [ORD 4462; January 2008]

COMMENT:

Sight distance is maintained at the extension of SW Watershed Lane.

- C. Driveways.
 1. Corner Clearance for Driveways. Corner clearance at signalized intersections and stop-controlled intersections, and spacing between driveways shall meet the standards of the Engineering Design Manual and Standard Drawings.
 2. Shared Driveway Access. Whenever practical, access to Arterials and Collectors shall serve more than one site through the use of driveways common to more than one development or to an on-site private circulation design that furthers this requirement. Consideration of shared access shall take into account at a minimum property ownership, surrounding land uses, and physical characteristics of the area. Where two or more lots share a common driveway, reciprocal access easements between adjacent lots may be required.
 3. No new driveways for detached dwellings shall be permitted to have direct access onto an Arterial or Collector street except in unusual circumstances where emergency access or an alternative access does not exist. Where detached dwelling access to a local residential street or Neighborhood Route is not practicable, the decision-making authority may approve access from a detached dwelling to an Arterial or Collector.

COMMENT:

An individual driveway is proposed for Lot 1 but shared driveways are proposed for Lots 2-7. They are spaced more than 10-ft. apart and designed with adequate sight distance since the sidewalk with planter strip is proposed on the east side of the site. No new driveways are proposed on SW Farmington Road and no changes to the existing driveways on Tax Lots 601 & 602 are required.

40.58.15. Application (continued).

- 5. Applications and documents related to the request, which will require further City approval, have been submitted to the City in the proper sequence.**

COMMENT:

The applications have been submitted in the proper sequence.

- 6. The proposed Sidewalk Design Modification provides safe and efficient pedestrian circulation in the site vicinity.**

COMMENT:

Pedestrian safety will be maintained with the elimination of the planter since this section of SW Watershed Lane is the terminus of the street with only 7 lots.

- D. Submission Requirements. An application for a Sidewalk Design Modification shall be made by the owner of the subject property, or the owner's authorized agent, on a form provided by the Director and shall be filed with the Director. The Sidewalk Design Modification application shall be accompanied by the information required by the application form, and by Section 50.25. (Application Completeness), and any other information identified through a Pre-Application Conference.**

COMMENT:

All required materials have been submitted.

- E. Conditions of Approval. The decision making authority may impose conditions on the approval of a Sidewalk Design Modification application to ensure compliance with the approval criteria.**
- F. Appeal of a Decision. Refer to Section 50.65.**
- G. Expiration of a Decision. Refer to Section 50.90.**

COMMENT:

The applicant is aware that the city may impose conditions of approval.

Chapter 50 – Procedures

50.05 – Initiation of an Application:

1. An application subject to a Type 1, Type 2, or Type 3 procedure may be filed by:
 - A. The owner or the contract purchaser of the subject property, or any person authorized in writing to act as agent of the owner or contract purchaser.
 - B. The City Council, City Manager, or Director, as to property owned by the City, including public right of way and easements, or which the City intends to acquire. [ORD 4809; September 2021]
 - C. Public agencies that own the property or have passed a resolution declaring that they intend to exercise their statutory authority to condemn the property.

COMMENT:

In accordance with subsection 1., an application subject to a Type 1, Type 2, or Type 3 procedure may be filed by “A. *The owner or the contract purchaser of the subject property, or any person authorized in writing to act as agent of the owner or contract purchaser*” may initiate and submit the application. In the case of this application for the 7-lot subdivision development on the subject site, the application is filed by the property owner. Thus, the requirement of this standard is met.

50.15 – Classification of Applications:

An application shall be subject to the procedure type specified in the Code, if any. If the Code does not specify a procedure type for a given application and another procedure is not required by law, the Director shall determine the appropriate procedure based on the following guidelines. Where two or more procedure types could be applied to a particular application, the selected procedure will be the type providing the broadest notice and opportunity to participate.

- A. A Type 1 procedure typically involves an application that is subject to nondiscretionary criteria or criteria that require the exercise of professional judgment only about technical issues.
- B. A Type 2 procedure typically involves an application that is subject to criteria that require the exercise of limited discretion about non-technical issues and about which there may be limited public interest.
- C. A Type 3 procedure typically involves an application that is subject to criteria that require the exercise of substantial discretion and about which there may be broad public interest, although the application applies to a limited number of land owners and properties.

- D. A Type 4 procedure typically involves the legislative adoption, implementation or amendment of policy or law by ordinance. This includes amendments to the text of the zoning ordinance or the comprehensive plan. Large scale changes in planning and development maps also may be characterized as legislative where a large number of property owners are directly affected. [ORD 4809; September 2021]

COMMENT:

The Preliminary Subdivision application is a Type 2 procedure, as identified in 50.15.1.A and B of this subsection. There are no Type 3 or Type 4 procedures as part of this application package.

50.20 – Pre-Application Conference:

1. With the exception of City initiated or Wireless Facility applications, a pre-application conference shall be required for all proposals which require Type 2 or Type 3 applications. An applicant may choose to forgo the required pre-application conference for a Type 2 application upon completion of a form for that purpose provided by the Director. A pre-application conference is optional for an applicant for proposals which require only Type 1 applications. [ORD 4365; October 2005] [ORD 4702; January 2017] [ORD 4809; September 2021]

COMMENT:

A pre-application conference regarding this proposal was held on January 31, 2024.

50.25 – Application Completeness:

1. A complete application is one which contains the information required by the Director to address the relevant criteria, development requirements, and procedures of this Code. Non-Discretionary Annexation Related Zoning Map Amendment and Discretionary Annexation Zoning Map Amendment applications processed by the City shall be determined to be complete upon submittal of a valid annexation petition or executed annexation agreement. All other complete application shall consist of the requisite number of copies of the following:
 - A. A completed original application form provided by the Director and application checklist provided by the Director, signed by:
 1. The applicant.
 - B. A written statement, supported by substantial evidence, that identifies the criteria and development regulations considered relevant to the application, states the facts alleged to show that the application complies with applicable criteria and development regulations, and explains why the application should be approved based on the criteria and development regulations and facts set forth in the application. In addition to addressing applicable criteria and development regulations relevant to the application

type, the written statement shall address all the applicable technical criteria specified in Section 40.03. (Facilities Review Committee) of the Code.[ORD 4265; October2003] [ORD 4404; October2006] [ORD 4487; August2008] [ORD 4584; June 2012]

- C. The Director may require an applicant to submit information in addition to that required on the form to aid in deciding whether an application satisfies applicable criteria and development regulations. The Director shall attempt to identify additional necessary information in the pre-application conference.
- D. The information required by Section 50.30.4. regarding Neighborhood Meeting requirements, if applicable.
- E. For a Type 2 or Type 3 application, a copy of the pre-application conference summary. [ORD 4809; September 2021]
- F. Documentation from service providers, as determined by the Director, stating that essential and critical facilities are available or can be made available or will not be adversely affected by the proposal. [ORD 4782; April 2020]
- G. The applicable fee in effect at the date of submittal.

COMMENT:

Based on the listing of items required for a complete application (50.25.1.A. through G.), this application package is complete.

- 2. To enable the Director to determine whether an application is complete, an applicant shall submit the requisite number of copies, as determined by the Director.
- 3. The Director may defer collection of application fees during review of the application for completeness; provided, an application shall not be deemed complete until the City has received all required fees.
- 4. The Director shall advise the applicant in writing whether an application is complete by providing a completeness notice within thirty (30) calendar days after the City receives an application. To comply with this completeness notice requirement, the completeness notice must be sent by the thirtieth day. [ORD 4782; April 2020]
 - A. If an application is incomplete, the completeness notice shall list what information is missing.
- 5. Incompleteness shall be based solely on failure to pay required fees, failure to address the relevant criteria or development regulations, or failure to supply required information and shall not be based on differences of opinion as to quality or accuracy. Determination that an application is complete indicates only that the application is ready for review on its merits, not that the City will make a favorable decision on the application.

6. The Director may waive application requirements that in the Director's opinion are not necessary to show an application complies with relevant criteria and development regulations and may modify application requirements based on the nature of the proposed application, development, site, or other factors. The City shall specifically identify any such waiver in the pre-application conference written summary or other written correspondence.
7. The application will be deemed complete for the purpose of this section upon receipt by the Community Development Department of:
 - a. All missing information;
 - b. Some of the missing information and written notice from the applicant that no other information will be provided; or
 - c. Written notice from the applicant that none of the missing information will be provided.
8. Pursuant to ORS 227.178, the City will reach a final decision on an application within 120 calendar days from the date that the application was determined to be complete or deemed complete unless the applicant agrees to extend the 120 calendar day time line pursuant to subsection 9 or unless State law provides otherwise. [ORD 4282; February2004] [ORD 4498; January 2009]
9. The 120-calendar-day timeline specified in Section 50.25.8 may be extended for a specific amount of time at the written request of the applicant. The total time to extend the final decision, may not exceed 245 calendar days from the date of the original 120-day period. [ORD 4282; February 2004] [ORD 4782; April 2020]
10. The applicant may amend the application up to and including fourteen (14) calendar days after the application has been deemed complete. Amendments to an application submitted more than fourteen (14) calendar days after the application is deemed complete may be determined by the Director to be so substantial that the application should be treated as having been refiled. In such a case, the Director shall provide the applicant with the following options: provide the City with a waiver of the 120-day timeframe set forth in ORS 227.178 for a minimum of fourteen (14) calendar days from the date the amendment was submitted; treat the application as having been refiled as of the date the amendment was submitted; or, decide the application on the basis of the applicant's materials without the amendment. [ORD 4809; September 2021]
11. For any application which has been on file with the City for more than 180 calendar days and the applicant has not met the obligations of Section 50.25.7., the application will be deemed withdrawn.

COMMENT:

It is incumbent upon the City to fulfill items 2. through 8, and the applicant will participate with the city on items 9, 10 and 11. The applicant will submit any missing information.

50.30 – Neighborhood Review Meeting

COMMENT:

In accordance with this subsection, a Neighborhood Review Meeting for these Type 2 applications is optional, rather than being required as it would for any Type 3 procedure(s). As such, no neighborhood review meeting was held, at the discretion of the applicant.

50.40 – Type 2:

1. The decision making authority for a Type 2 application shall be the Director.
2. Once an application has been determined or deemed complete, the Director shall provide written notice a minimum of twenty (20) calendar days before the decision making authority's decision to: [ORD 4782; April 2020]
 - A. The applicant and the property owner.
 - B. The Chair of the NAC in which the subject property is located and the Chair of any other NAC's whose boundaries are within three hundred (300) feet of the subject property. [ORD 4397; August 2006]
 - C. Washington County Department of Land Use and Transportation. [ORD 4782; April 2020]
 - D. The Chair of Washington County's Community Participation Organizations (CPO) in which the subject property is located and the Chair of any other CPO's whose boundaries are within three hundred (300) feet of the subject property. [ORD 4782; April 2020]
 - E. Owners of property within three hundred (300) feet of any property line that is the subject of the application. The most recent property tax assessment roll of the Washington County Department of Assessment and Taxation shall be used for determining the property owner of record. The failure of a property owner to receive notice does not invalidate the decision.
3. The written notice of the pending application shall include the following information:
 - A. The case file number for the application.
 - B. A description of the site reasonably sufficient to inform the reader of its location including map and tax lot number, and if available, site address, site zoning, and name of the NAC in which the proposal is located.
 - C. A map showing the subject property in relation to other properties.
 - D. A summary of the application.

- E. A listing of the applicable approval criteria by Development Code section number.
 - F. When and where information about the application may be examined and the name and telephone number of the City representative to contact about the application.
 - G. A statement that a meeting of the Facilities Review Committee will occur on a specified date with the applicant to discuss technical issues associated with the application and the date of such meeting.
 - H. A statement that interested parties can submit written comments, but, to be considered, the City must receive those comments no later than the comment closing date, which is a specific date established by the Director and which is approximately twenty eight (28) calendar days from the date the application is determined to be or deemed complete. The comment closing date shall be listed in boldface type.
 - I. A statement that the decision shall be made after the comment closing date.
4. Within approximately seven (7) calendar days after the application has been determined to be or deemed complete and in no case less than twenty (20) calendar days before the decision making authority's decision, the Director shall publish in a newspaper of general circulation in the City of Beaverton a summary of the application, the comment closing date on the application, the date of the Facilities Review Committee meeting with the applicant, and the date on which a decision will be made on the application. [ORD 4404; October 2006]
 5. Not more than ten (10) calendar days after the application has been determined to be or deemed complete, the applicant shall post on the site at least one (1) notice signboard provided by the Director for that purpose. The signboard shall be posted in a conspicuous place visible to the public on or in the vicinity of the property subject to the application. The signboard shall state with minimum two (2)-inch high letters the case file number and the telephone number where City staff can be contacted for more information.
 6. Subject to the limitations set forth in Section 50.25.10., the applicant may amend the application during a period of time of up to and including fourteen (14) days after the application has been determined to be or deemed complete.
 7. Approximately twenty eight (28) calendar days after the application has been determined to be or deemed complete, the Director shall convene the Facilities Review Committee to review the application with the applicant. [ORD 4404; October2006]
 8. Within approximately thirty five (35) calendar days after the application has been determined to be or deemed complete, the applicant shall submit to the Director an affidavit certifying where and when the notices referred to in Section 50.40.5. were posted.
 9. Within approximately seven (7) calendar days after the Facilities Review Committee meeting, the Facilities Review Committee shall forward a written report to the Director. [ORD 4404; October2006]
 10. Within approximately fourteen (14) calendar days after the Facilities Review Committee meeting, the Director shall issue a written decision on the application to the applicant, the property owner, the NAC in which the subject property is located, and interested parties that

submitted written comments prior to or on the comment closing date; provided, [ORD 4265; October2003] [ORD 4404; October 2006]

- A. The decision making authority shall consider the application, the applicant's supplement to or amendment of the application, if any, and the timely and relevant comments on the application. The decision making authority may consider comments and responses received from the applicant, the public, or both after the comment closing period on the proposal; and
- B. The 120-calendar-day timeline specified in Section 50.25.8 may be extended for a specific amount of time at the written request of the applicant. The total time to extend the final decision, may not exceed 245 calendar days from the date of the original 120-day period. [ORD 4365; October 2005] [ORD 4782; April 2020]

11. A decision shall include:

- A. A brief summary of the proposal and the application which is the subject of the decision, the decision, and any conditions of approval.
- B. A description of the site reasonably sufficient to inform the reader of its location including site address, and if available, map and tax lot number, site zoning, and the NAC in which the proposal is located.
- C. A statement of the facts upon which the decision making authority relied to determine whether the application satisfied or failed to satisfy each applicable approval criterion and assurance of compliance with the approval criteria.
- D. The decision to approve or deny the application and, if approved, any conditions of approval necessary to ensure compliance with applicable criteria.
- E. A statement that the decision is final, unless appealed as provided in Section 50.65. within twelve (12) calendar days after the date of the decision or may be modified pursuant to Section 50.95. The notice shall state in boldface type the date and time by which an appeal must be filed. The statement shall describe the requirements for filing an appeal of the decision.
- F. A statement that the complete case file, including findings, conclusions and conditions of approval, if any, is available for review. The notice shall list when and where the case file is available and the name and telephone number of the City representative to contact about reviewing the case file.

COMMENT:

Recognizing this will be a Type 2 process for the application, the applicant understands the process for a Type 2 consideration and decision as set forth in this subsection (50.40.1. through 11, inclusive).

50.65 – Appeal of a Type 2 Decision

1. The Director's decision on a Type 2 application may be appealed only by the applicant or by any other person who submitted written evidence prior to the decision of the Director. The appeal must be on an Appeal Form provided by the Director and must be received within twelve (12) calendar days after written notice of the decision was dated and mailed. [ORD 4312; July 2004] [ORD 4809; September 2021]
2. For a project that contains multiple applications approved concurrently, a separate appeal application is required to address each decision being appealed. [ORD 4782; April 2020]
3. Within seven (7) calendar days after an appeal has been filed, the Director shall determine whether an appeal contains at least the following information:
 - A. The case file number designated by the City.
 - B. The name and signature of each appellant.
 - C. Reference to the written evidence provided to the decision making authority by the appellant that is contrary to the decision.
 - D. If multiple people sign and file a single appeal, the appeal shall include verifiable evidence that each appellant provided written testimony to the decision making authority and that the decision being appealed was contrary to such testimony. The appeal shall designate one person as the contact representative for all pre-appeal hearing contact with the City. All contact with the City regarding the appeal, including notice, shall be through this contact representative.
 - E. The specific approval criteria, condition, or both being appealed, the reasons why a finding, condition, or both is in error as a matter of fact, law or both, and the evidence relied on to allege the error.
 - F. The appeal fee, as established by resolution of the City Council.
4. Failure to comply with the requirements of Sections 50.65.1 and 50.65.2 is jurisdictional and deprives the appellant of an opportunity for the appellate decision making authority to hear an appeal.
5. Except for the appeals of Director's Interpretation (Section 40.25.) and Mass Shelter applications (Section 40.65), the appellate decision making authority on appeal of Type 2 decisions shall be the Planning Commission. The appeal hearing for Type 2 decisions shall be de novo, which means new evidence and argument can be introduced in writing, orally, or both. The hearing of the appeal shall be conducted in the manner specified in Sections 50.80. through 50.83. The decision of the Planning Commission for appeals of Type 2 decisions shall be the final decision and shall not be subject to further appeal to the City Council. [ORD 4532; April 2010] [ORD 4809; September 2021] [ORD 4838; March 2023]
6. The appellate decision making authority for Director's Interpretation (Section 40.25) and Mass Shelter applications (Section 40.65) shall be the City Council. The appeal hearing for Director's Interpretation and Mass Shelter applications shall be de novo, which means new evidence and argument can be introduced in writing, orally, or both. The hearing of the

appeal shall be conducted in accordance with Sections 50.85. through 50.88. except as otherwise required by statute. If a Mass Shelter application was approved concurrently with another application, the appellate decision making authority for all the concurrent applications shall be City Council. [ORD 4838; March 2023]

7. For appeals of Type 2 decisions filed under Section 50.65., the Director shall mail written notice of an appeal hearing to parties listed in Section 50.65.1. not less than twenty (20) calendar days prior to the appeal hearing, but need not post or publish the notice in a newspaper.
8. Not less than seven (7) calendar days before the date of the appeal hearing, the Director shall prepare and make available to the public, for review and inspection, a copy of the staff report and shall provide a copy of the staff report to the appellate decision making authority and to the appellant. The Director shall provide a copy of the staff report to members of the public at reasonable cost upon request.
9. Appeal hearings before the Planning Commission shall be conducted in accordance with Sections 50.80. through 50.83. of this Code. Appeal hearings shall be recorded on audio only or audio and video tape.
10. At the conclusion of the hearing on the appeal, the appellate decision making authority shall take one of the following actions:
 - A. Continue the hearing to a date, time, and location certain, which shall be announced by the Chair. Notice of the date, time, and location certain of the continued hearing is not required to be mailed, published, or posted, unless the hearing is continued without announcing a date, time, and location certain, in which case notice of the continued hearing shall be given as though it was the initial hearing.
 - B. Reverse or affirm the decision under appeal, with or without conditions or changes.
 1. If the decision making authority takes action pursuant to Section 50.65.9.B., the decision making authority shall announce a brief summary of the basis for the decision, and that a land use order will be issued as provided in Section 50.65.10.; provided, the proceedings may be continued for the purpose of considering such land use order without taking new testimony or evidence.
 2. Provisions for holding a record open or continuing a hearing set forth in ORS 197.763 (6) shall apply under this Ordinance in a manner consistent with state law.
11. After the public record on the appeal closes, a written decision in the form of a land use order regarding the application shall be prepared and contain, at a minimum, the following:
 - A. A statement of the facts that the appellate decision making authority has relied on which demonstrate the decision under appeal is reversed or affirmed based on the criteria relevant to the appeal.
 - B. A statement of conclusions based on the findings.

- C. If the appellate decision making authority changes conditions of approval, changes denial to approval, changes denial to approval subject to conditions, or changes approval to denial, the order shall include findings explaining the basis for such change and condition.
12. Within approximately seven (7) calendar days from the date that the appellate decision making authority adopts a land use order, the Director shall cause the order to be signed, dated, and mailed to the appellant and other persons who appeared orally or in writing before the public record closed.
 13. A decision on an appeal is final on the date the signed land use order is dated and mailed.
 14. Only one appeal of a Type 2 decision is permitted before the City. Therefore the notice of a Type 2 decision on appeal shall indicate the decision may be appealed to the Land Use Board of Appeals as provided in ORS 197.805 through ORS 197.860.
 15. If a decision of the appellate decision making authority is remanded to the City by the State of Oregon Land Use Board of Appeals (LUBA), the appellate decision making authority shall either:
 - A. Hold a hearing on the issue upon which LUBA remanded the decision without opening the record for additional evidence. Notice thereof shall be given to all persons who testified either orally or in writing before the appellate decision making authority at the hearing that led to the decision remanded by LUBA. The notice shall set forth issues on remand that will be considered by the appellate decision making authority. Testimony shall be allowed at the hearing before the appellate decision making authority, except that testimony shall be limited to the issues upon which LUBA remanded the decision to the City. If the application on remand is amended in a manner which changes the applicable criteria or the factual basis on which LUBA or the appellate decision making authority based its decision regarding an issue or issues not remanded, testimony may be provided on the full scope of the amended application. At the conclusion of the hearing, the appellate decision making authority shall render a written decision; or
 - B. Hold a hearing on the issue upon which LUBA remanded the decision and open the record for additional evidence. Notice of the hearing on remand shall be given in the same manner in which the appeal hearing notice was provided. The notice shall list the applicable approval criteria and state that testimony will be limited to the criteria or the issues upon which LUBA remanded the decision to the City. If the application on remand is amended in a manner which changes the applicable criteria or the factual basis on which LUBA or the appellate decision making authority based its decision regarding an issue or issues not remanded, the notice shall list the applicable approval criteria and state that testimony may be provided on the full scope of the amended application. At the conclusion of the hearing, the appellate decision making authority shall render a written decision.

COMMENT:

The applicant recognizes that an appeal of the Type 2 decision for this application package is possible. An appeal of the decision maker's decision may be filed by another party with proper standing. Any such appeal, whether by the applicant, opponent, or other involved party, must follow the guidelines set forth in this subsection.

50.90 – Expiration of a Decision

COMMENT:

As noted under 40.45.15.5, Preliminary Subdivision approval will expire two (2) years from the effective date of decision. As noted under 50.90.2., *“The effective date of the decision for Type 1, Type 2, or Type 3 applications shall be the date that the signed land use order is dated and mailed, unless appealed. If a Type 1, Type 2, or Type 3 application is appealed, the effective date of the decision shall be the date of the appellate decision making authority's signed land use order is dated and mailed.”*

50.93 – Extension of a Decision

COMMENT:

The applicant recognizes and understands that a decision may be extended under the terms and conditions set forth in this subsection, and that a land use decision may be extended no more than two (2) times.

Chapter 60 – Special Requirements

60.15 Land Division Standards

60.15.05 Purpose. It is the purpose of this section to establish uniform design and development standards and requirements for all land division applications in Section 40.45 of this Code.

COMMENT:

This project has been designed using the applicable and appropriate standards contained in this Section. As such, use of these standards and requirements will achieve the Purpose of this Section.

60.15.10 Grading Standards

- 1. Applicability.** The on-site surface contour grading standards specified in Section 60.15.10.3. are applicable to all land use proposals where grading is proposed, including land division proposals and design review proposals, as applicable. This Section does not supersede

Section 60.05.25. (Design Review) and the exemptions listed in Section 60.15.10.2. will apply equally to design review proposals.

COMMENT:

Much of the site will be graded to make way for residential development, utilities, water quality facility and the public hammerhead/street stub access. No grading is proposed on the back (east side) of Lots 2-7 with the development. Some of this area is within the root zones for trees on the adjacent property to the east. The future buildings on Lots 2-7 will be a minimum 15-ft. from the east property, ensuring that no significant impact to the root zones will occur. Grading is proposed on the southwest portion of the site for construction of the water quality facility.

- 3. On-site surface contouring. When grading a site within twenty-five (25) feet of a property line within or abutting any residentially zoned property, the on-site surface contours shall observe the following:**
 - A. 0 to 5 feet from property line: Maximum of two (2) foot slope differential from the existing or finished elevation of the abutting property, whichever is applicable. [ORD 4584; June 2012]**

COMMENT:

The site very level with only a 2-3-ft. grade change across the site (east-west), with the low point on the west side. Development will require some on-site grading, especially in the southwest and central portion of the site where the water quality facility and public street hammerhead/stub will be developed. As noted, no grading is proposed on the east side of the site within the tree protection zone. Grading on the west side of the site will closely match the existing grade (less than 2-ft. cut/fill within 5-ft. of the property line), except for the necessary cut behind the wall for the water quality facility. The wall will be set 1-ft. from the property line.

- 4. Significant Trees and Groves. Notwithstanding the requirements of Section 60.15.10.3, above, grading within 25 feet of a significant tree or grove, where the tree is located on- or off-site, shall observe the following:**

COMMENT:

Because there are no “significant trees or groves” on the subject site, this subsection will not apply. Only one tree on the site that is 10 inches or larger, and it is not a “community tree.” The only other trees are located off-site to the east. Tree protection fencing will be installed where necessary at the Lot 2-7 building setback line 15-ft. from the east property line. This will ensure root protection for those off-site trees during site development.

60.30 Off-Street Parking.

60.30.05 Off-Street Parking Requirements.

When provided, parking spaces shall be designed and maintained by the owner of the property in accordance with the requirements of Sections 60.30.05 to 60.30.20. [ORD 4844; August 2023]

1. Open Air Beaverton. Businesses that are approved pursuant to the Open Air Beaverton program and are not located in RC-MU, RC-BC, RC-DT, nor RC-OT may utilize a minimum of two off-street parking spaces, or up to one off-street parking space per 1,000 square feet of interior floor area occupied by the business, whichever is greater, for the program. In calculating the number of parking spaces, fractions equal to or more than 0.5 shall be rounded up to the nearest whole number. Businesses that are approved pursuant to the Open Air Beaverton program and are located in RC-MU, RC-BC, RC-DT or RC-OT may utilize an unlimited number of off-street parking spaces for the program, with the parking lot owner's permission. [ORD 4819; January 2022] [ORD 4844; August 2023]
2. Bicycle Parking. [ORD 3965; November 1996] Bicycle parking shall be required for quadplexes, townhouses (with 4 or more units), cottage clusters, multi-dwellings, all retail, office and institution developments, and at all transit stations and park and ride lots which are proposed for approval after November 6, 1996. The number of required bicycle parking spaces shall be provided according to Section 60.30.10.5. All bike parking facilities shall meet the specifications, design and locational criteria as delineated in this section and the Engineering Design Manual. [ORD 4397; August 2006] [ORD 4822; June 2022]

COMMENT:

These sections are not applicable.

60.30.10. Number of Parking Spaces.

Except as otherwise provided under Section 60.30.10.11., off-street vehicle, bicycle, or both parking spaces shall be provided as follows:

1. Parking Calculation for Maximum Parking. Parking ratios are based on spaces per 1,000 square feet of gross floor area, unless otherwise noted. Non-surface parking, such as tuck-under parking, underground and subsurface parking, and parking structures shall be exempted from the calculations in this section. [ORD 4844; August 2023]
2. Climate-Friendly and Equitable Communities (CFEC) Parking Maximums. For developments on parcels where any part of the parcel is within a Metro Title 6 Regional Center, within a Metro Title 6 Town Center, within three-quarters mile of a rail transit stop, or within one-half mile of the centerline of a frequent transit corridor shall comply with the applicable limits in Section 60.30.10.2.A through D. A frequent transit corridor is

a corridor with bus service, considering all bus routes that travel along that corridor, arriving with a scheduled frequency of at least four times an hour during peak service. If Table 60.30.10.5.A and Section 60.30.10.2.A through D have different parking maximums, the stricter, lower number of maximum permitted vehicle parking spaces allowed shall apply.

- A. Parking maximums shall be no higher than 1.2 off-street parking spaces per studio dwelling unit and two off-street parking spaces per non-studio dwelling unit in a multi-dwelling development. These maximums shall include visitor parking; and
- B. Parking maximums for the following commercial and retail uses listed in Sections 20.05.20, 20.10.20, 20.15.20, 20.20.20, and 70.15.20, regardless of the use categories listed in Table 60.30.10.5.A, shall be no higher than 5 spaces per 1,000 square feet of floor area: Animal Care; Care, except for Residential Care Facilities; Financial Institutions; Marijuana uses, except Marijuana Processing; Meeting Facilities; Office; Retail, except for Eating and Drinking Establishments; Rental Business; Personal Service Business; Service Business/Professional Services; Vehicles, except major Automotive Service, Minor Automotive Service, Heavy Equipment Sales, Sales or Lease, Trailer, Recreational Vehicle or Boat Storage, Trailer Sales or Repair, and Vehicle Storage Yard; and
- C. For each individual lot with a building or buildings totaling more than 65,000 square feet of floor area, surface parking shall not consist of more area than the floor area of the building or buildings. For the purposes of this standard, the surface parking area shall include parking spaces, drive aisles, drive-through lanes, and maneuvering areas for passenger vehicles but shall not include paved areas not for use by passenger vehicles, such as loading areas or outdoor storage of goods and materials. [ORD 4844; August 2023]

COMMENT:

These sections are not applicable.

3. Parking Categories.

- A. Vehicle Categories. Contained in the table at Section 60.30.10.5. are vehicle parking ratios for maximum permitted number of vehicle parking spaces that may be provided for each land use. [ORD 4471; February 2008] [ORD 4584; June 2012] [ORD 4686; July 2016] [ORD 4844; August 2023]
 - 1. Minimum number of required parking spaces. No minimum parking is required for any use. [ORD 4844; August 2023]
 - 2. Parking Zone A. Parking Zone A reflects the maximum number of permitted vehicle parking spaces allowed for each listed land use. Parking Zone A areas

include those parcels that are located within one-quarter mile walking distance of bus transit stops that have 20-minute peak hour transit service or one-half mile walking distance of light rail station platforms that have 20-minute peak hour transit service.

3. Parking Zone B. Parking Zone B reflects the maximum number of permitted vehicle parking spaces allowed for each listed land use. Parking Zone B areas include those parcels that are located within one-quarter mile walking distance of bus transit stops, one-half mile walking distance of light rail station platforms, or both, or that have a greater than 20 minute peak hour transit service. Parking Zone B areas also include those parcels that are located at a distance greater than one-quarter mile walking distance of bus transit stops, one-half mile walking distance of light rail station platforms, or both.
4. Dual parking zones. If a parcel is partially located within Parking Zone A, then the use(s) located on the entire parcel shall observe the Parking Zone A parking ratios. Specifically exempted from this requirement are parcels located within the Regional Center - East zoning district. In the cases in the Regional Center - East zoning district where parcels are bisected by the boundary of Parking Zones A and B, the applicable maximum parking ratios may be averaged, and that average may be applied over the whole parcel. [ORD 4107; May 2000]

COMMENT:

As noted in subsection (1) above, there is no minimum parking standard for the proposed development. That said, the applicant proposes a minimum one parking space per lot and likely two spaces will be provided (one in the driveway since the garage door is 18.5-ft. behind the sidewalk), and one in the garage. This will be reviewed at the time homes are proposed. Only two parking spaces/dwelling are proposed which is well below the parking maximum standard.

- B. Bicycle Categories. The required minimum number of short-term and long-term bicycle parking spaces for each land use is listed in Section 60.30.10.5.
 1. Short-Term parking. Short-term bicycle parking spaces accommodate persons that can be expected to depart within two hours. Short-term bicycle parking shall be located on site within 50 feet of a primary entrance, or if there are site, setback, building design, or other constraints, bicycle parking shall be located no more than 100 feet from a primary entrance in the closest available area to the primary entrance as determined by the decision-making authority. [ORD 4844; August 2023]
 2. Long-Term parking. Long-term bicycle parking spaces accommodate persons that can be expected to leave their bicycle parked longer than two hours. Cover or shelter for long-term bicycle parking shall be provided. School buildings are exempted from the requirement to cover long-term bicycle parking.

3. Bicycle parking shall be designed, covered, located, and lighted to the standards of the Engineering Design Manual and Standard Drawings. [ORD 4302; June 2004]
4. Ratios. In calculating the required number of bicycle parking spaces or maximum number of vehicle parking spaces, fractions equal to or more than 0.5 shall be rounded up to the nearest whole number and fractions less than 0.5 shall be rounded down to the nearest whole number. [ORD 3965; November 1996] [ORD 4844; August 2023]
5. Uses Not Listed. For uses not specifically mentioned in this section, the requirements for off-street parking facilities for vehicles and bicycles shall be determined with a Parking Requirement Determination (Section 40.55.15.1). [ORD 4224; August 2002] [ORD 4844; August 2023]
6. Parking Tables. The following tables list the maximum permitted vehicle (Table 60.30.10.5.A) and required minimum bicycle parking requirements (Table 60.30.10.5.B) for listed land use types. [ORD 4584; June 2012] [ORD 4782; April 2020] [ORD 4844; August 2023]

COMMENT:

One bicycle parking space is required for detached homes. It will be provided within each dwelling.

Table 60.30.10.5.A. - PARKING RATIO REQUIREMENTS FOR MOTOR VEHICLES

Land Use Category

Maximum Permitted Parking Spaces

Residential Uses

Single-Detached Dwellings, Duplex, or Townhouse in RMA, RMB or RMC Zone (per unit)

N/A

COMMENT:

As noted, vehicle parking will be provided with this development, but it is not required.

Table 60.30.10.5.B. - PARKING RATIO REQUIREMENTS FOR BICYCLES

Land Use Category

Minimum Required Bicycle Parking Spaces

Short Term

Long Term

Residential Uses

Single-Detached Dwellings and Middle Housing

1 space per unit

1 space per unit

7. **Residential Parking Dimensions.** For all residential uses, any provided parking space shall not be less than 8 1/2 feet wide and 18 1/2 feet long. In RMA, RMB and RMC, parallel parking spaces may also be used to meet minimum required parking spaces and shall not be less than 8 feet wide and 20 feet long. (See also Section 60.30.15. (Off-Street Parking Lot Design) for other standards.) [ORD 4312; July 2004] [ORD 4822; June 2022] [ORD 4844; August 2023]

COMMENT:

This project does not contain any common parking area, parallel parking spaces, or parking lot. Therefore, these standards do not apply.

60.55 Transportation Facilities

COMMENT:

This section was addressed as part of the Sidewalk Design Modification findings addressed previously in this report.

60.60 Trees and Vegetation

60.60.05. Purpose.

Healthy trees and urban forests provide a variety of natural resource and community benefits for the City of Beaverton. Primary among those benefits is the aesthetic contribution to the increasingly urban landscape. Tree resource protection focuses on the aesthetic benefits of the resource. In conjunction with processes set forth in Section 40.90.of this Code, this section is

intended to help manage changes to the City's urban forest by establishing regulations and standards for the protection, pruning, removal, replacement, and mitigation for removal of Protected Trees (Significant Individual Trees, Historic Trees, Mitigation Trees and trees within a Significant Natural Resource Area (SNRA) or Significant Grove), Landscape Trees, and Community Trees.[ORD 4584; June 2012]

60.60.10. Types of Trees and Vegetation Regulated.

Actions regarding trees and regulations established herein and in Section 40.90.of this Code. The City finds that the following types of trees and vegetation are worthy of special protection:

1. Significant Individual Trees.
2. Historic Tree.
3. Trees within Significant Natural Resource Areas.
4. Trees within Significant Groves.
5. Landscape Trees.
6. Community Trees.
7. Mitigation Trees.

COMMENT:

There are none of the above-listed trees on-site including "Landscape Trees," Significant Groves," Historic Trees" nor "Mitigation Trees". Additionally, the site is not designated as containing a "Significant Natural Resource Area." There are several smaller cedar trees on the adjacent property to the east that are proposed to be protected with a tree-protection fence on the back of Lots 2-5. Since the largest of the trees are only 15-inches, the fence is shown approximately 12-ft. from the east property line to ensure root protection.

60.60.15 – Pruning, Removal, and Preservation Standards

COMMENT:

As noted, there are no protected trees located on-site.

60.60.20 Tree Protection Standards during Development

1. Trees classified as Protected Trees under this Code shall be protected during development in compliance with the following:
 - A. A construction fence must be placed around a tree or grove beyond the edge of the root zone. The fence shall be placed before physical development starts and remain in place until physical development is complete. The fence shall meet the following:
 1. The fence shall be a four foot (4') tall orange plastic or snow fence, secured to six foot (6') tall metal posts, driven two feet (2') into the ground. Heavy12 gauge wire shall be strung between each post and attached to the top and midpoint of each

post. Colored tree flagging indicating that this area is a tree protection zone is to be placed every five (5) linear feet on the fence to alert construction crews of the sensitive nature of the area.

2. Other City approved protection measures that provide equal or greater protection may be permitted, and may be required as a condition of approval.

COMMENT:

Although there are no on-site protected trees, the small cedar trees located off-site to the east will be protected with fencing as noted above and shown on the submitted grading sheet.

60.60.25 Mitigation Requirements

1. The following standards shall apply to mitigation for the removal of Significant Individual Trees or trees within Significant Groves or SNRAs.
 - A. All mitigation tree planting shall take place in conformance with accepted arboricultural practices and shall be spaced a minimum of ten (10) feet apart.
 - B. As of May 19, 2005, all trees planted for the purpose of tree removal mitigation shall be maintained in accordance with the approved mitigation plan. Monitoring of mitigation planting shall be the ongoing responsibility of the property owner where mitigation trees are located, unless otherwise approved through Development Review. Monitoring shall take place for a period of two (2) years. Trees that die shall be replaced in accordance with the tree replacement standards of this section.
 - C. As of May 19, 2005, all trees planted for the purpose of tree removal mitigation shall be set aside in a conservation easement or a separate tract and shall be designated as "Mitigation Trees" and recorded with a deed restriction identifying the trees as "Mitigation Trees".
 - D. Each Mitigation Tree planted shall be insured through a performance security, equal to 110 percent of the cost of the landscaping, filed with the City for a period of two (2) years to ensure establishment of the mitigation planting.
 - E. Street trees shall not be counted as providing mitigation of a SNRA or Significant Grove.
 - F. Transplanting trees within the project site is not subject to mitigation. However, a performance security is required for transplanted tree(s) to insure that the tree(s) will be replaced if the tree(s) is dead or dying at the end of two (2) years.

COMMENT:

Mitigation requirements will follow those set forth in 60.60.25.1. It should be noted that because there is no SNRA on the subject site, nor any Significant Grove, the standards of 60.60.25.2., 60.60.25.3., 60.60.25.4., 60.60.25.5., or 60.60.25.6 do not apply to this project. No mitigation is

anticipated. However, under 60.60.25.1.A., all tree planting will be in conformance with accepted arboricultural practices and will be monitored and reviewed during the planting process. Further, the property owner recognizes the responsibility for maintaining the trees that are planted for a period of two (2) years. Monitoring during this two-year period shall be the responsibility of the property owners, as required in 60.60.25.1.B.

60.65 Utility Undergrounding

60.65.05. Purpose.

The purposes and objectives of locating existing and proposed private utilities underground are to:

- 1. Implement the policies, goals, and standards of the City Council and the adopted Comprehensive Plan of the City of Beaverton.**
- 2. Improve aesthetics of the community by reducing the number of utility poles and above ground wires.**
- 3. Provide consistency in management of the City's rights-of-way.**
- 4. Protect essential public services from natural and manmade accidental disruptions.**
- 5. Improve public safety by reducing the possibility for injury from downed lines.**
- 6. Allow fewer fixed obstructions in the public right-of-way.**

COMMENT:

All new utilities serving the development site will be placed underground as required. This does not apply to the off-site tax lots which are not a part of this development (Tax Lots 601 & 602).

60.65.10. Authority.

The provisions of private utility undergrounding shall pertain to all activities subject to Design Review (Section 40.20.), as well as Land Divisions (Section 40.45.).

60.65.15. Regulation.

All existing and proposed utility lines within and contiguous to the subject property, including, but not limited to, those required for electric, communication, and cable television services and related facilities shall be placed underground as specified herein. The utilities required to be placed underground shall be those existing overhead utilities which are impacted by the proposed development and those utilities that are required to be installed as a result of the proposed development.

COMMENT:

There are no overhead power or utility lines impacted by this development.

April 24, 2021

Steve Regner – Senior Planner

City of Beaverton Community Development Department

12725 SW Millikan Way

Beaverton, OR 97076

Re: Trip Generation memo for Westport Village (LD 2020-011)

Dear Steve:

This letter provides the requested traffic profile assessment for the proposed six lot single family subdivision located south of SW Farmington Road and accessed via SW Watershed Lane in Beaverton, Oregon. As indicated below the net trips generated by the proposed residential development is 57 weekday trips, which is below the 300-daily trip threshold cited in section 60.55.20 of the Beaverton development code for requiring a formal TIA. Therefore, based on trip generation estimate, a formal TIA should not be required for this land use application.

Trip Generation

Estimates of daily, weekday a.m. and p.m. peak hour vehicular trip end for the land uses were calculated from empirical observations at other similar development.

These observations were obtained from the standard reference manual, *Trip Generation, 10th Edition*, published by the Institute of Transportation Engineers. Trip generation for the single-family home was estimated using land use code 210. Table below shows the net traffic impact of the proposed development on the transportation network.

NET PEAK HOUR AND DAILY TRIP GENERATION FROM THE PROPOSED DEVELOPMENT

| Land use | ITE land use code | Size | Trip Generation Rate | | | Weekday | | | | | | |
|---------------------------|-------------------|--------|----------------------|------|------|-----------|--------------|----------|----------|--------------|----------|----------|
| | | | Daily | AM | PM | ADT | AM Peak Hour | | | PM Peak Hour | | |
| | | | | | | Total | Total | Enter | Exit | Total | Enter | Exit |
| Single-family residential | 210 | 6 Unit | 9.44 | 0.74 | 0.99 | 57 | 4 | 1 | 3 | 6 | 4 | 2 |
| Net Trips | | | | | | 57 | 4 | 1 | 3 | 6 | 4 | 2 |

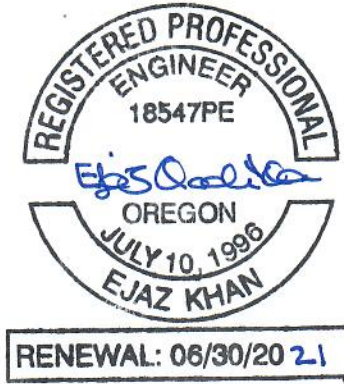
If you have any question please contact me at Trafficconsultnw@gmail.com.

Sincerely;



Ejaz Khan, P.E.
Innovative Traffic Consulting, PLLC

Attachments: Development site plan



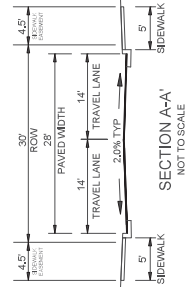
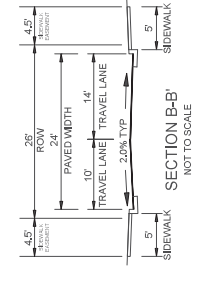
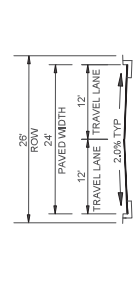
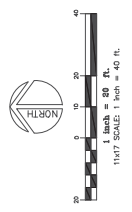
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WESTPORT VILLAGE
6-LOT SUBDIVISION
N0696
DIMENSIONED SITE PLAN

FOR: KIM-HIEN NGUYEN, GEORGE WEINHOLZ
SAN RAMON, CA 94583
CITY OF BEAVERTON, OREGON

ENGINEERS
Civil Engineering & Land Use Planning
4000 NE 28th Avenue
Hillsboro, OR 97124
503.601.4421



MIN. SETBACK REQUIREMENTS: R-2

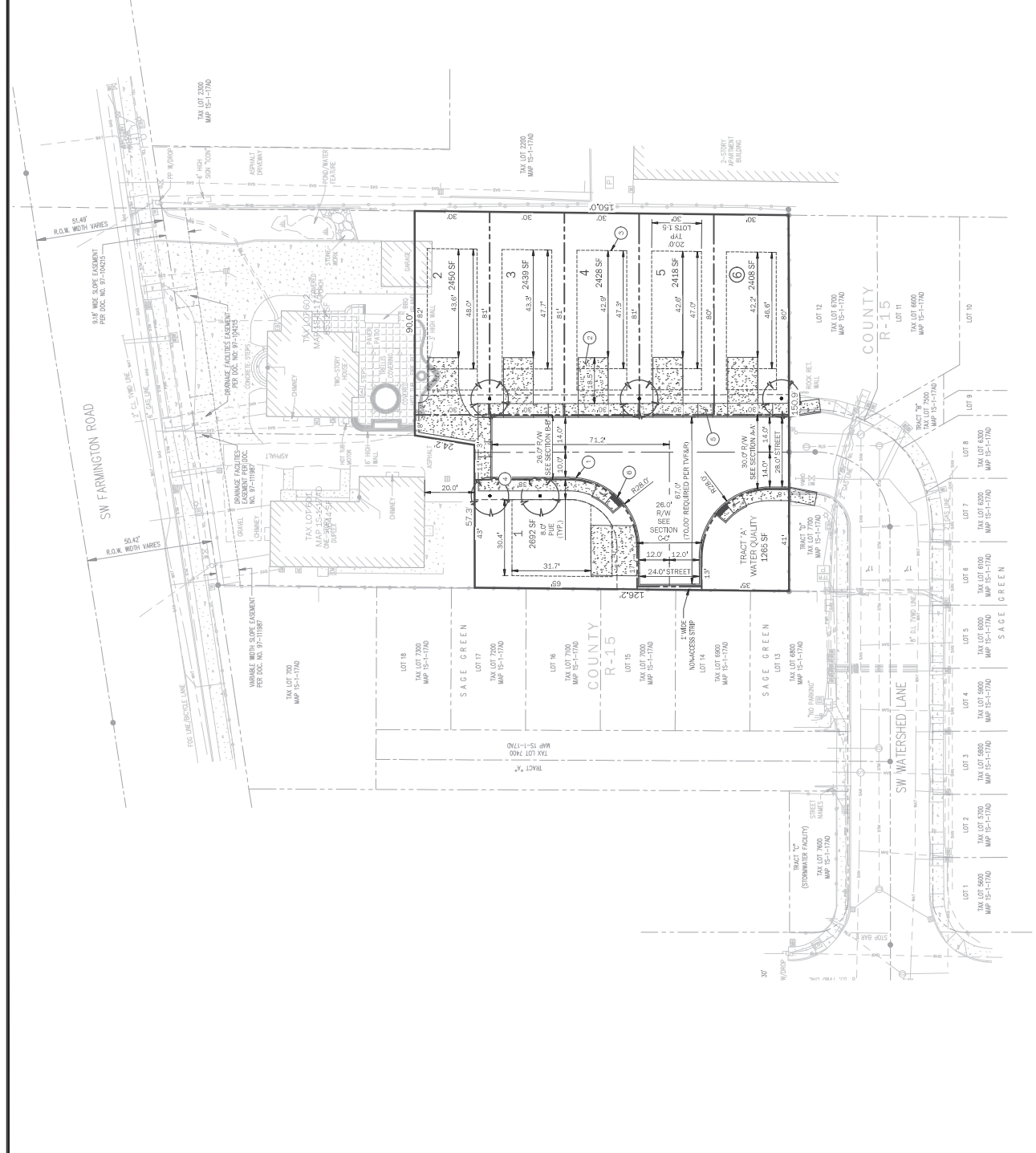
FRONT: 10 FT
SIDE: 5 FT (OR 10 FT IF ADJACENT TO A LOWER DENSITY RESIDENTIAL ZONE)
REAR: 10 FT
GARAGE: 15 FT

NOTE: SETBACKS MEASURED FROM PROPERTY LINE

GENERAL NOTE:
SEE SHEET'S EXISTING CONDITIONS FOR EXISTING FEATURES & LEGEND.

KEY NOTES

- PROPOSED CURB
- PROPOSED 12" x 18" x 18" DEEP DRAINWAY
- BUILDING SETBACK
- PROPOSED STREET TREE
- PROPOSED 5" x 4" CURB TIGHT SIDEWALK
- PROPOSED ADA RAMP





Received
Planning Division
5/24/24

Westport Village 7-Lot Subdivision

Drainage Report

April 5, 2024



EXPIRES: *06/30/2024*

Prepared For: Kim-Hien Nguyen
15 Duberstein Drive
San Ramon, CA 94583

Prepared By: NW Engineers
3409 NE John Olsen Avenue
Hillsboro, OR 97124

Submitted To: City of Beaverton

NW Engineers Project No. N0696

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| Appendix B - | NRCS Soil Report Geotechnical Report |
| Appendix C - | Stormwater Plan and Profile Detention & Water Quality Facility Details |
| Appendix D - | Pre-Developed Basin Exhibit Post-Developed Basin Exhibit New Impervious Area Plan HydroCAD Hydrology Calculations |

STORM DRAINAGE REPORT

Westport Village 7-Lot Subdivision Tax Map 1S117AD Tax Lots 600, 601 & 602

Introduction

The proposed Westport Village 7-Lot Subdivision is located north of the existing terminus of SW Watershed Lane east of its intersection with SW 149th. Refer to Appendix A for a Location Map and Existing Conditions Plan.

The purpose of this report is to address how water quality and quantity requirements for City of Beaverton and Clean Water Services are proposed to be met for this project. Included herein are calculations for sizing of the water quality and quantity facility.

Existing Conditions

The properties currently consist of three tax lots totaling 36,256 SF (0.83 Acres) of previously developed land. The properties contain one single family residence and a duplex both of which are to remain by means of property line adjustments. After the property line adjustments, the subdivision site will have an area of 21,225 SF (0.49 Acres). Two garages, two sheds and a barn/shop building will be removed from the south section of the lot in order to develop the subdivision. The existing structures in the north section of the lot will remain with minor modifications to accommodate the new development. The site slopes moderately at an approximate 1.5% grade from east to west. The south section then flows to area drains in the north section of the lot. The drains collect stormwater runoff and discharge to the existing storm system which serves SW Farmington Road.

The United States Department of Agriculture Soil Conservation Service Soil Survey of Washington County, Oregon classifies the existing soil as Aloha silt loam (1). This soil type is further classified as being in hydrologic groups C/D. Refer to Appendix B for soil classification information. Existing runoff volumes are shown in the table below.

| Existing Areas | |
|-------------------------|------------------------|
| Roofs, Driveway & Walks | 4,081 ft ² |
| Grass | 17,144 ft ² |
| | |
| Total | 21,225 ft ² |

| Existing Runoff Flow Rate | | | | |
|---------------------------|----------|----------|----------|----------|
| 2 year | 5 year | 10 year | 25 year | 100 year |
| 0.05 cfs | 0.10 cfs | 0.12 cfs | 0.16 cfs | 0.22 |

Runoff volumes were calculated using the Santa Barbara Urban Hydrograph based on a Type 1A 24-hr storm event. See table below for 24-hr rainfall depths.

| | 24-Hour Rainfall Depths (inches) | | |
|--------|---|---------|---------|
| 2 year | 5 year | 10 year | 25 year |
| 2.50 | 3.10 | 3.45 | 3.90 |

Proposed Conditions

On-site improvements include a 7-lot subdivision with public streets and utilities. A proposed storm sewer system will collect stormwater runoff from the proposed lots as well as the new streets (See Appendix C for Preliminary Utility Plan) to a flow control manhole and extended dry basin designed per CWS 4.09.1 and CWS 4.09.5, respectively, near the southwest corner of the property. According to CWS Table 4-3, an extended dry basin is approved for hydromodification and water quality treatment. See table below and Appendix D, New Impervious Area Plan, for post-developed impervious area totals.

| Post-Developed Areas | |
|-----------------------------|------------------------|
| Roofs, Driveway & Walks | 8,668 ft ² |
| Public Street | 4,692 ft ² |
| Collected Pervious Area | 5,974 ft ² |
| Uncollected Pervious Area | 1,891 ft ² |
| | |
| Total | 21,225 ft ² |

Water Quality Sizing Calculations

According to CWS R&O 19-5 4.08.1(c), the area requiring treatment is the total public and private post-developed area 13,360 sf. The lots are all less than 3,000 sf so the maximum allowed impervious areas per lot were used in the calculation.

Water Quality Manhole Sizing Calculations

Per section 4.09.1.c.5, the volume of the sump shall be 20 cubic feet/ 1.0 cfs of flow into the water quality manhole, up to the 25-year flow. Therefore, the sump would be calculated as follows:

$$\text{Sump Volume} = 20 \text{ ft}^3/\text{ft}^3/\text{s} \times 0.28 \text{ ft}^3/\text{s} = 5.6 \text{ ft}^3$$

A 60" manhole with a 3 ft. sump provides 58.9 ft³ which is more than required.

Stormwater Treatment Extended Dry Basin:

Stormwater runoff will discharge to an Extended Dry Basin designed per CWS R&O 19-5 4.09.5. City of Beaverton Engineering Design Manual has modified the CWS standard for water quality flow (chapter, 5 page 10).

$$\begin{aligned} \text{Water Quality Volume (WQV)} &= (0.36 \text{ in.} \times \text{Area}) / 12 \text{ in./ft.} \\ &= (0.36 \text{ in.} \times 13,360 \text{ sf}) / 12 \text{ in./ft.} = \underline{400 \text{ ft}^3} \end{aligned}$$

$$\text{Water Quality Flow (Q)} = \text{WQV} / 10,800 \text{ sec.} = \underline{0.037 \text{ ft}^3/\text{sec.}}$$

Draw Down Time Calculation:

Per section 4.09.5.b.4, water quality drawdown time shall not exceed 48 hours. The hydrograph provided in Appendix D shows that the water quality drawdown time is approximately 25 hours.

Hydromodification Assessment Requirement per CWS R&O 19-5 4.03.2

A Site area of 21,225 SF (0.49 Acres) with a proposed impervious area of 13,360 sf and treatment area of 13,360 sf are per the following:

- a. Risk Level: Moderate
- b. Development Class: Developed Area
- c. Project Size Category: Medium
- d. Project Category: Category 2

Peak-Flow Matching Detention per CWS R&O 4.08.6(c.) City of Beaverton also requires the post-developed runoff rate be less than or equal to the pre-developed rate for the 25-yr storm event. See table below for post-developed runoff flows.

| Table 4-7 | |
|--|--|
| Post-Development Peak Runoff Rate | Pre-Development Peak Runoff Rate Target |
| 2-year, 24-hour | 50% of 2-year, 24-hour |
| 5-year, 24-hour | 5-year, 24-hour |
| 10-year, 24-hour | 10-year, 24 hour |

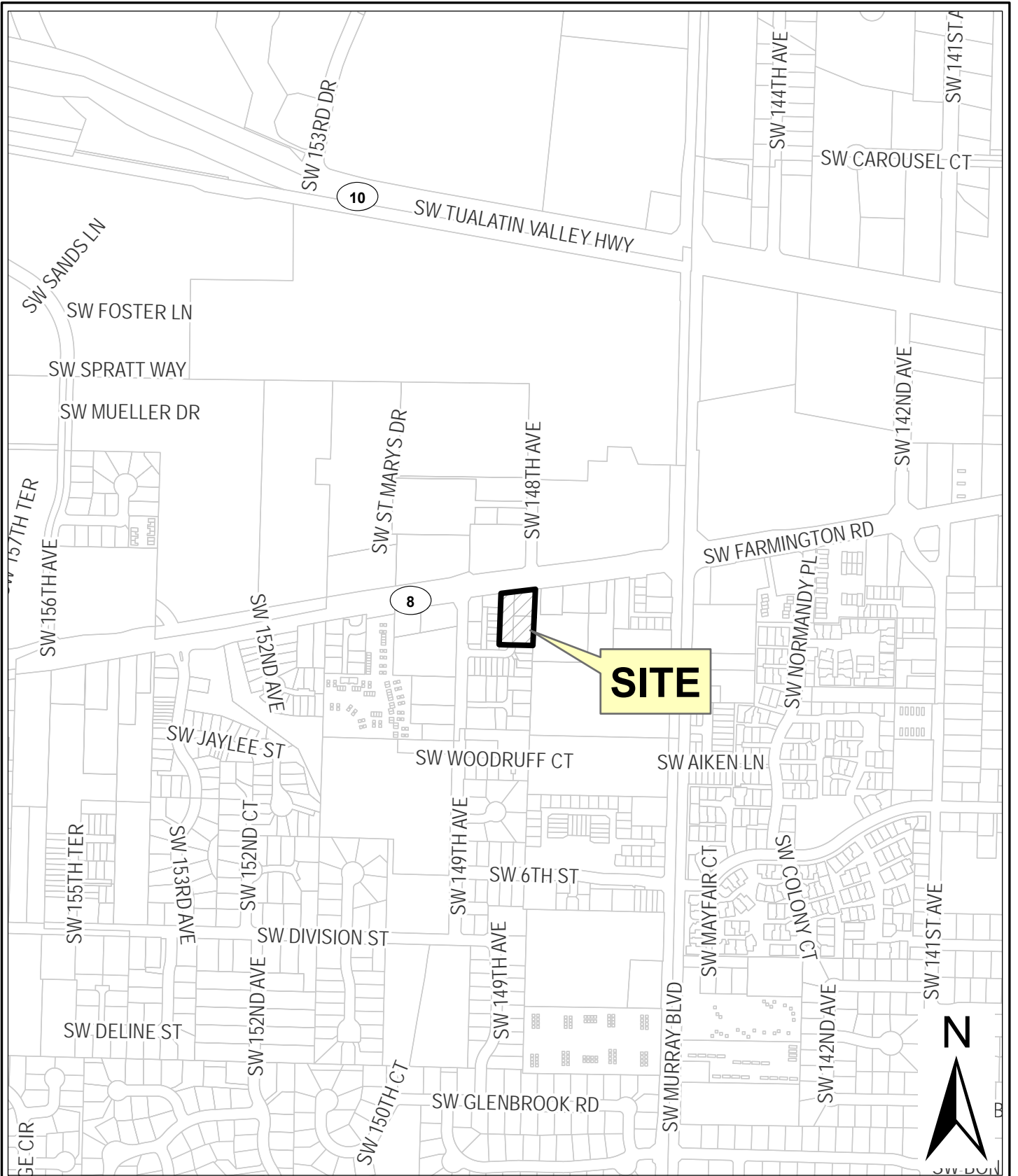
| Proposed Runoff Rates | | | | | |
|------------------------------|----------|----------|----------|----------|----------|
| Storm Event | WQ | 2 year | 5 year | 10 year | 25 year |
| Peak Qin | 0.04 cfs | 0.18 cfs | 0.22 cfs | 0.25 cfs | 0.28 cfs |
| Peak Qout | 0.00 cfs | 0.03 cfs | 0.07 cfs | 0.10 cfs | 0.16 cfs |

Conclusions

Based on our analysis it has been determined that the proposed storm sewer system has been adequately designed for treatment, quantity control and conveyance. Stormwater management methods have been designed in accordance with CWS and the City of Beaverton standards. The downstream drainage system will not be negatively impacted as a result of this development.

Appendix A:

Location Map
Existing Conditions Plan



NW ENGINEERS
 Engineering & Planning
 3409 NE JOHN OLSEN AVENUE
 HILLSBORO, OREGON 97124
 T: 503.601.4401
 F: 503.601.4402
 W: www.nw-eng.com

Location Map
14830 SW Farmington Road
City of Beaverton, Oregon

Source:
 Metro Data Resource Center's, RLIS Live, August, 2020

| |
|---------------------------|
| Date: 08/17/2020 |
| Scale: 1 in. = 600 ft. |
| Project #: N0696 |
| Drawn By: CEB |

| REVISION | BY | DATE |
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| DESIGNED | DRAWN | REVIEWED | SUBMITTAL |
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| | | | |

SITE SHOWN PER SURVEY PRIOR TO PROPERTY LINE ADJUSTMENT

NOTES

- 1) THE FIELD SURVEY FOR THIS MAP WAS COMPLETED ON MARCH 19, 2020.
- 2) ELEVATIONS AND CONTOURS ARE BASED ON WASHINGTON COUNTY BENCHMARK NUMBER 43. THE BENCHMARK IS A BRASS DISK SET IN THE WEST CURB LINE OF SW 152ND AVENUE, 50 FEET SOUTH OF THE CENTERLINE OF SW DIVISION STREET; 31 FEET SOUTH OF PGE POLE #215. IT HAS AN ELEVATION OF 206.20 FEET ON THE NVD 1929 VERTICAL DATUM.
- 3) THE BASIS OF BEARINGS IS THE EAST LINE OF LOT 366, "JOHNSON ESTATE ADDITION TO BEAVERTON REEDVILLE ACRES" SUBDIVISION PER WASHINGTON COUNTY SURVEY NO. 30,461.
- 4) EASEMENTS SHOWN AS ENCUMBERING TAX LOTS 600 AND 602 ARE PER A OWNER'S POLICY OF TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY DATED JANUARY 8, 2020 WITH POLICY NO. 3335397. EASEMENTS SHOWN AS ENCUMBERING TAX LOT 601 IS PER A OWNER'S POLICY OF TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY DATED JANUARY 8, 2020 WITH POLICY NO. 3333909.
- 5) THE UNDERGROUND UTILITIES ALONG SW FARMINGTON ROAD WERE MARKED PER LOCATE TICKET NO. 20055963 AND 20067663. ALONG SW WATERSHED LANE THEY ARE PER TICKET NO. 20055986 AND 20067665.

UTILITY STATEMENT

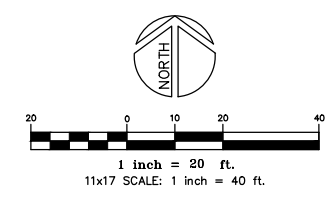
THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

STORM & SANITARY SEWER INFORMATION

| MANHOLE | INLET | OUTLET |
|-------------------------------|--------------------|---------------------|
| SAN-1 MANHOLE RIM 197.48' | 4" IN (E) 190.2' | 8" IN (N) 190.2' |
| SAN-2 MANHOLE RIM 194.92' | 4" IN (S) 187.9' | 8" IN (E) 187.9' |
| SAN-3 MANHOLE RIM 195.11' | 8" IN (N) 185.1' | 8" IN (E) 185.4' |
| SAN-4 MANHOLE RIM 198.34' | 10" IN (NW) 191.4' | 10" OUT (SW) 191.4' |
| SAN-5 MANHOLE RIM 200.66' | 10" OUT (SE) | 10" OUT (SE) |
| SAN-6 MANHOLE RIM 198.12' | 12" IN (NE) 189.6' | 12" OUT (S) 189.5' |
| SAN-7 MANHOLE RIM 197.32' | 12" IN (SE) 192.1' | 12" IN (N) 192.1' |
| SAN-8 MANHOLE RIM 195.29' | 12" IN (E) 191.0' | 12" IN (W) 191.0' |
| SAN-9 MANHOLE RIM 194.36' | 10" IN (NW) 191.4' | 10" OUT (SW) 191.4' |
| SAN-10 MANHOLE RIM 193.88' | 10" OUT (NE) | 10" OUT (NE) |
| SAN-11 MANHOLE RIM 193.91' | 10" OUT (SE) | 10" OUT (SE) |
| SAN-12 MANHOLE RIM 194.67' | 12" IN (NE) 189.6' | 12" OUT (S) 189.5' |

KEY NOTES:

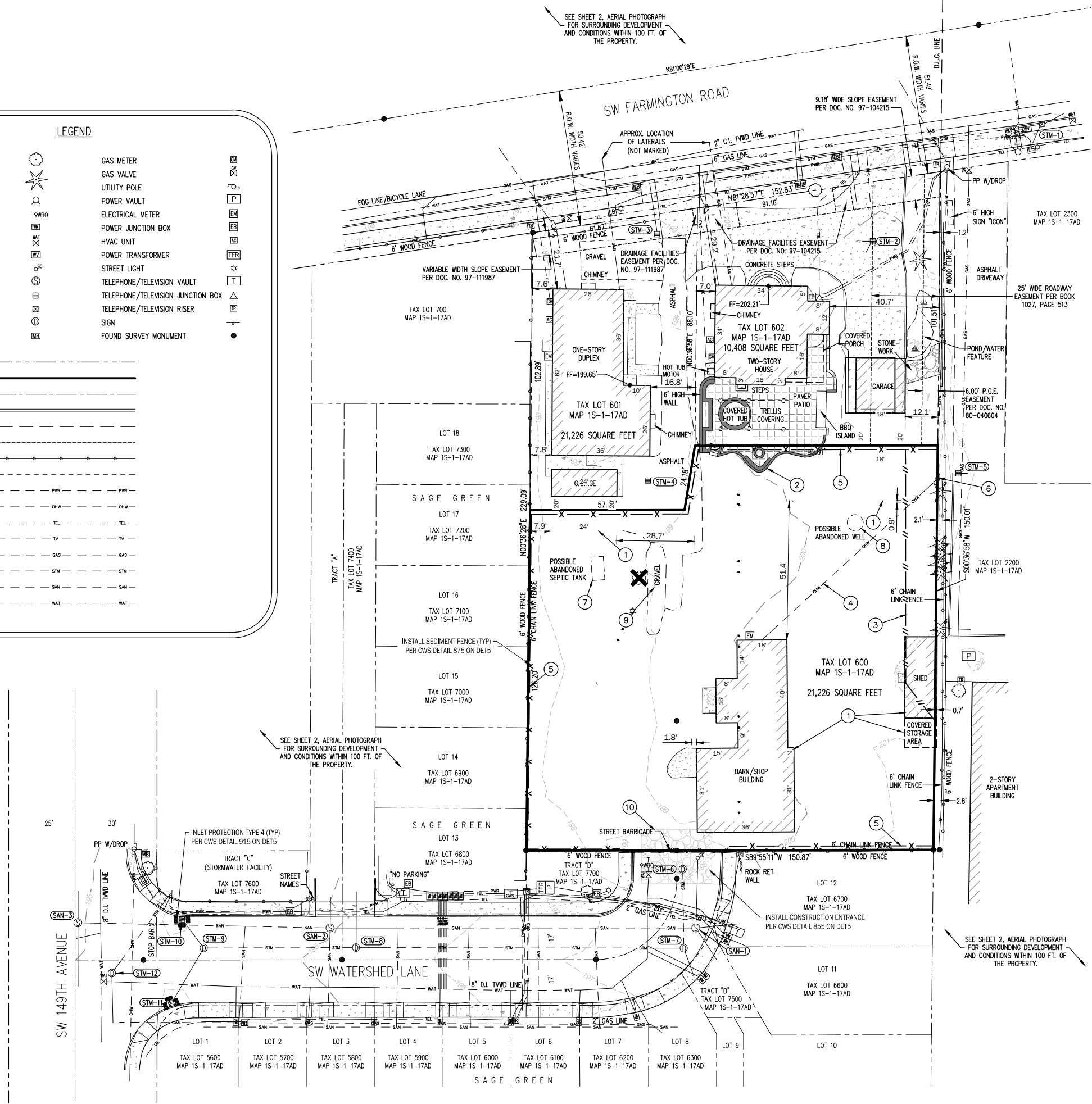
- 1) EXISTING BUILDING TO BE REMOVED
- 2) COORDINATE WITH LANDOWNER ON REMOVAL OF 3' HIGH WALL
- 3) ORANGE TREE PROTECTION FENCE TO BE INSTALLED
- 4) EXISTING OVERHEAD WIRE TO BE REMOVED
- 5) EROSION CONTROL FENCE (TYP) TO BE INSTALLED
- 6) PROTECT EXISTING UTILITY POLE
- 7) EXISTING ABANDONED SEPTIC TANK TO BE REMOVED. STATE PERMIT DOCUMENTATION WILL NEED TO BE PROVIDED SHOWING PROPER DECOMMISSIONING OF THIS FACILITY.
- 8) EXISTING ABANDONED WELL TO BE DECOMMISSIONED (CONTRACTOR TO COORDINATE WITH OREGON WATER RESOURCES DEPARTMENT). STATE PERMIT DOCUMENTATION WILL NEED TO BE PROVIDED SHOWING PROPER DECOMMISSIONING OF THIS FACILITY.
- 9) EXISTING GRAVEL TO BE REMOVED
- 10) CONSTRUCTION ENTRANCE TO BE INSTALLED



LEGEND

| | | | |
|--------------------------|--|-----------------------------------|--|
| DECIDUOUS TREE | | GAS METER | |
| CONIFEROUS TREE | | GAS VALVE | |
| FIRE HYDRANT | | UTILITY POLE | |
| WATER BLOWOFF | | POWER VAULT | |
| WATER METER | | ELECTRICAL METER | |
| WATER VALVE | | POWER JUNCTION BOX | |
| WATER VAULT | | HVAC UNIT | |
| SANITARY SEWER CLEAN OUT | | POWER TRANSFORMER | |
| SANITARY SEWER MANHOLE | | STREET LIGHT | |
| STORM SEWER CATCH BASIN | | TELEPHONE/TELEVISION VAULT | |
| STORM SEWER CURB INLET | | TELEPHONE/TELEVISION JUNCTION BOX | |
| STORM SEWER MANHOLE | | TELEPHONE/TELEVISION RISER | |
| MAILBOX | | SIGN | |
| | | FOUND SURVEY MONUMENT | |

| | |
|---------------------|--|
| RIGHT-OF-WAY LINE | |
| PROPERTY LINE | |
| CENTERLINE | |
| CURB | |
| EDGE OF PAVEMENT | |
| EASEMENT | |
| FENCE LINE | |
| GRAVEL EDGE | |
| POWER LINE | |
| OVERHEAD WIRE | |
| TELEPHONE LINE | |
| TELEVISION LINE | |
| GAS LINE | |
| STORM SEWER LINE | |
| SANITARY SEWER LINE | |
| WATER LINE | |



SEE SHEET 2, AERIAL PHOTOGRAPH FOR SURROUNDING DEVELOPMENT AND CONDITIONS WITHIN 100 FT. OF THE PROPERTY.

SEE SHEET 2, AERIAL PHOTOGRAPH FOR SURROUNDING DEVELOPMENT AND CONDITIONS WITHIN 100 FT. OF THE PROPERTY.

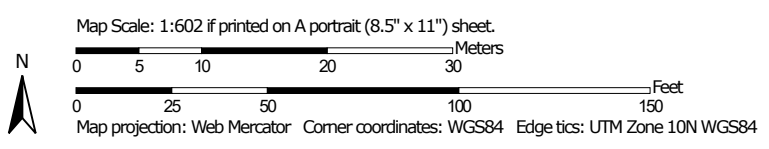
Appendix B:

NRCS Soil Report

Soil Map—Washington County, Oregon



Soil Map may not be valid at this scale.



MAP LEGEND

- Area of Interest (AOI)
- Area of Interest (AOI)
- Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points
- Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features
- Water Features**
- Streams and Canals
- Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads
- Background**
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Oregon
 Survey Area Data: Version 18, Jun 11, 2020

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

Date(s) aerial images were photographed: Sep 19, 2018—Oct 20, 2018

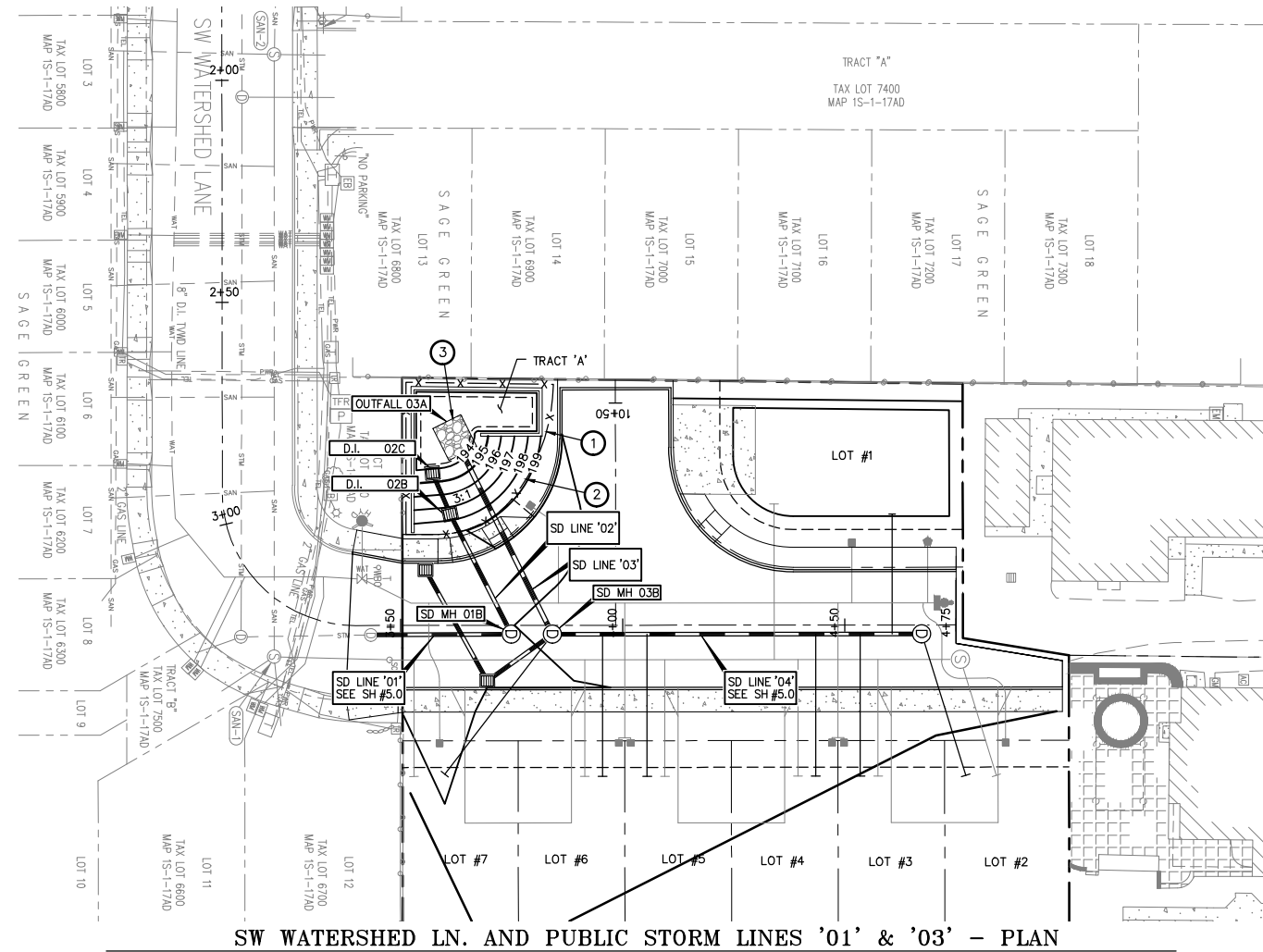
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|------------------------------------|-----------------|--------------|----------------|
| 1 | Aloha silt loam | 1.6 | 100.0% |
| Totals for Area of Interest | | 1.6 | 100.0% |

Appendix C:

Stormwater Plan and Profile
Detention & Water Quality Facility Details



SW WATERSHED LN. AND PUBLIC STORM LINES '01' & '03' - PLAN

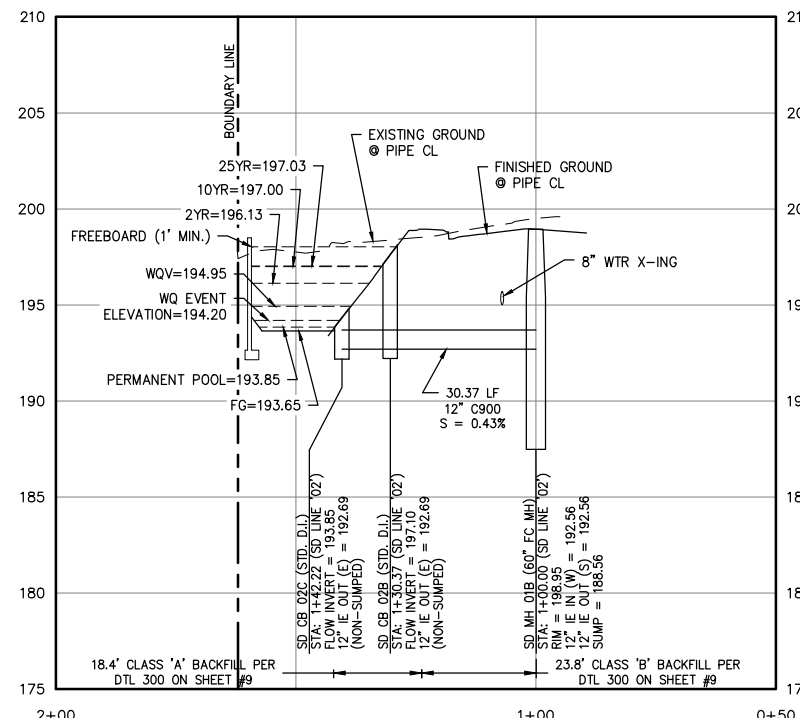
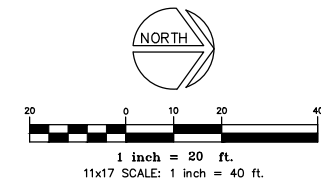
BACKFILL NOTE:
 PER DTL NO. 300 ON SHEET #9, PIPES UNDER PAVED SURFACES REQUIRE GRANULAR BACKFILL. FOR PIPES OUTSIDE PAVEMENT, NATIVE BACKFILL IS PERMITTED, UNLESS OTHERWISE NOTED

THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, LOCATION & DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION

CONSTRUCTION NOTES:

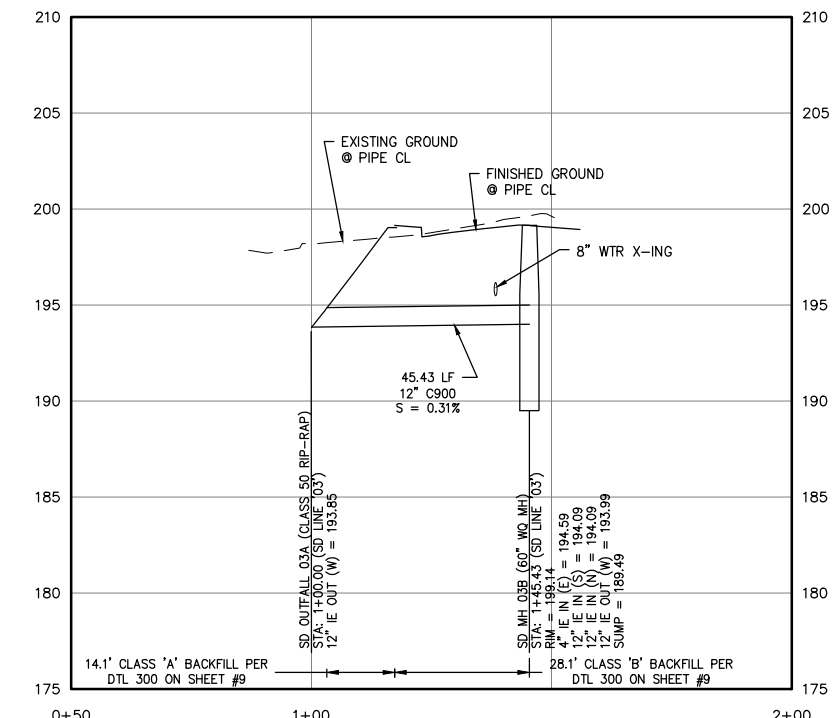
- 1 INSTALL 4' HIGH CHAIN LINK FENCE PER DETAIL #740 ON SHEET #9.4.
- 2 INSTALL 12' WIDE, 4' HIGH CHAIN LINK GATE PER DETAIL #740 ON SHEET #9.4.
- 3 INSTALL 8' LONG, 7' WIDE, 1.5' DEEP CLASS 50 RIP RAP AT OUTFALL.

STRUCTURE CONNECTIONS--CONNECTIONS TO ANY STRUCTURE MUST USE AN APPROVED WATER TIGHT SEAL. THIS INCLUDES MANHOLES, CATCH BASINS, VAULTS, AREA DRAINS, DITCH INLETS OR OTHERS REFERENCE DETAIL 331. ANY VARIATIONS MUST BE PRE-APPROVED BY THE CITY OF BEAVERTON ENGINEER. GLUE AND SAND ARE NOT ACCEPTABLE.



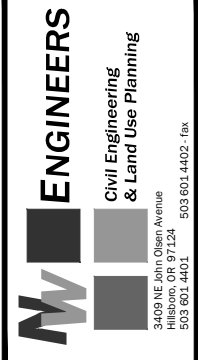
PUBLIC STORM LINE '02' - PROFILE

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



PUBLIC STORM LINE '03' - PROFILE

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



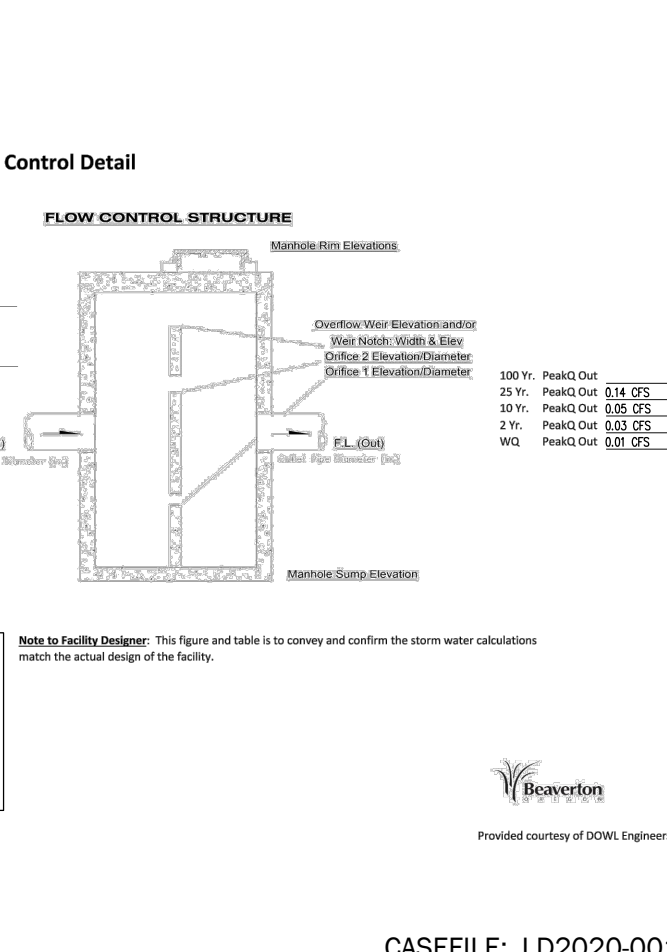
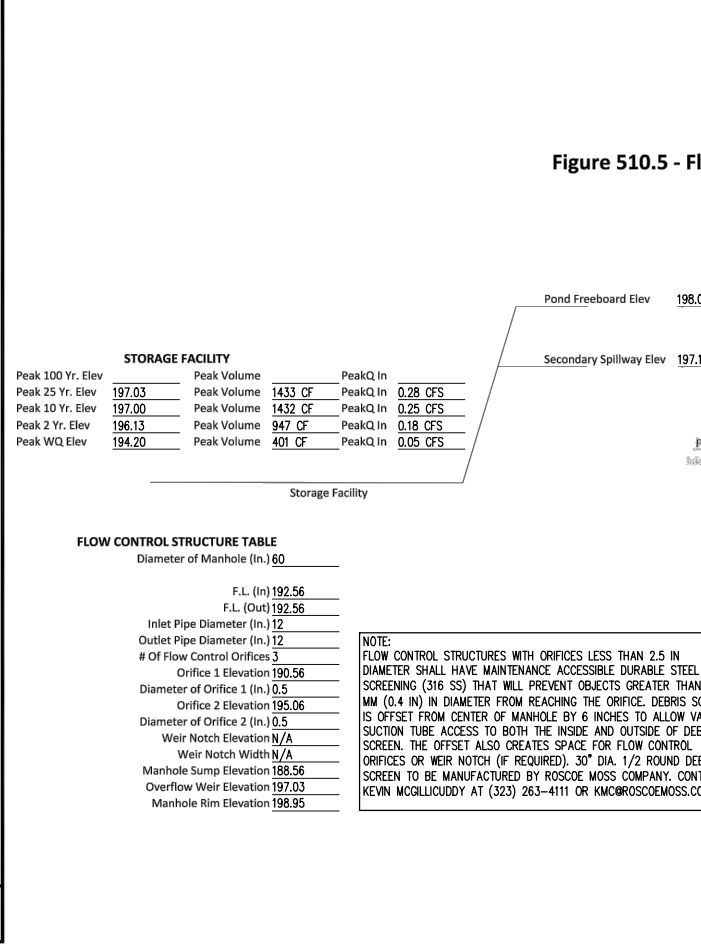
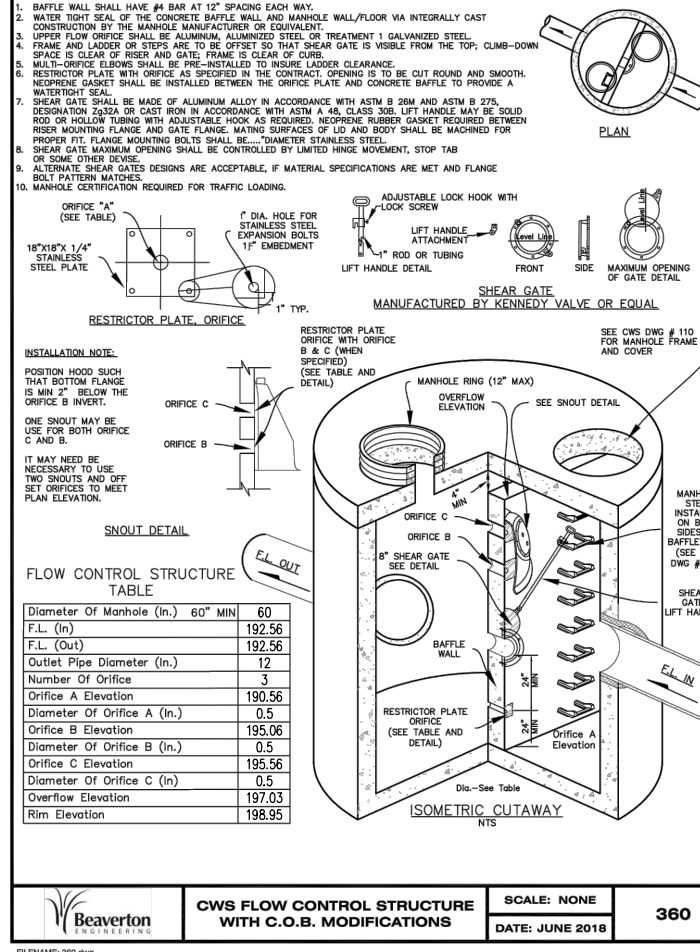
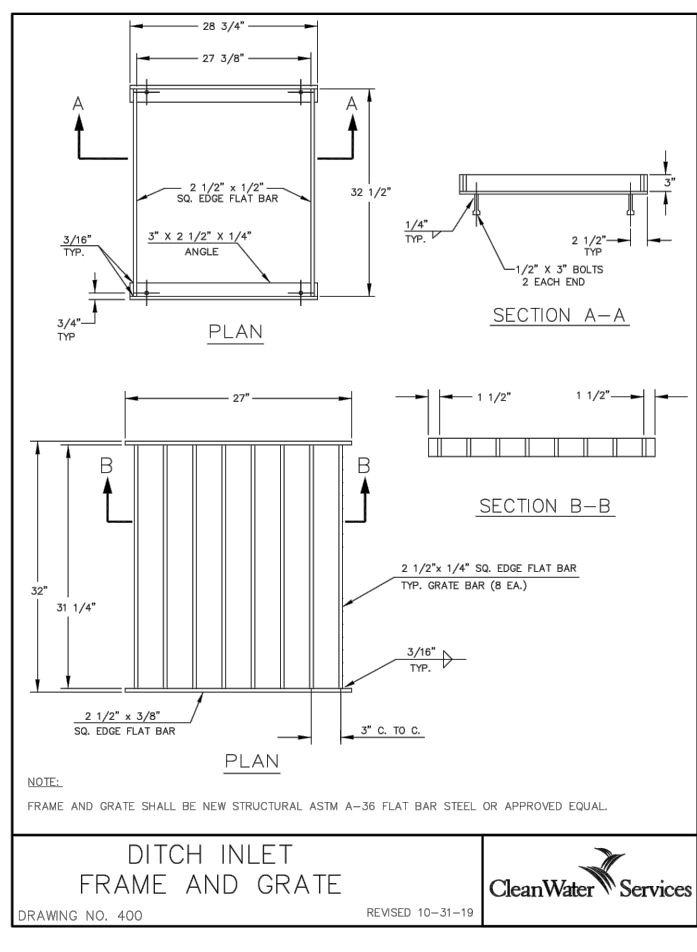
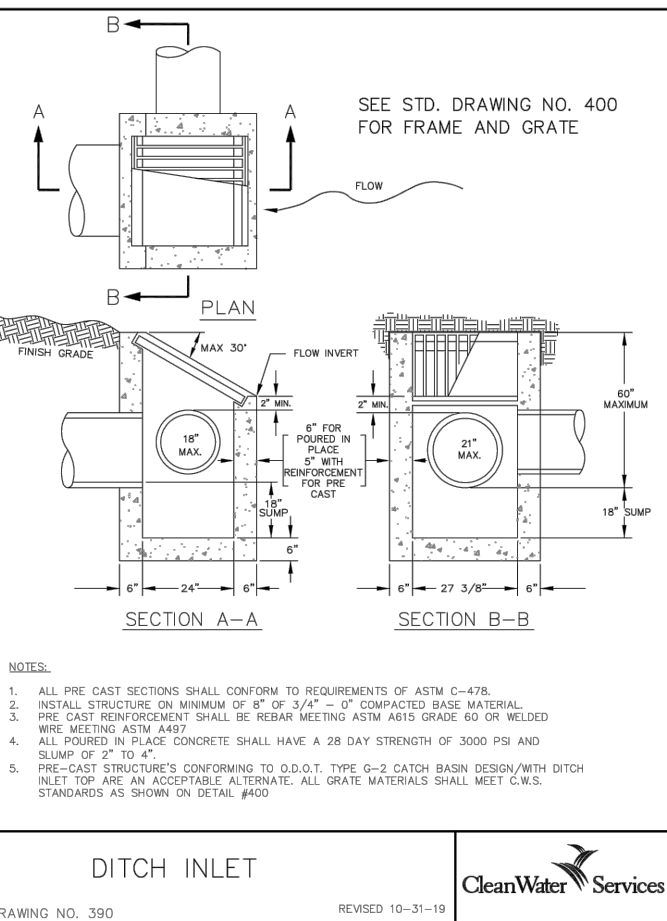
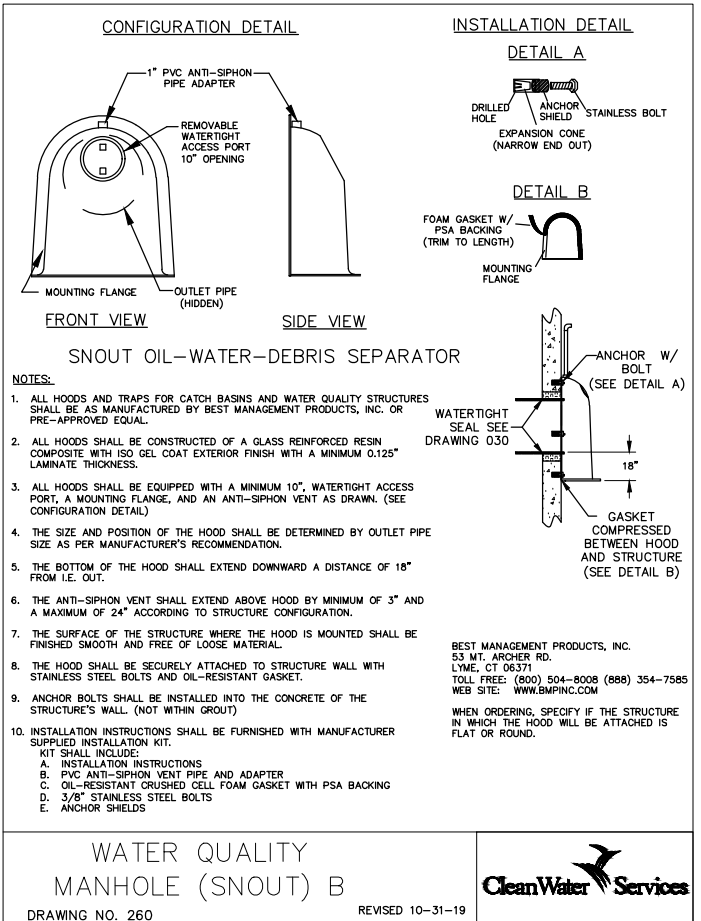
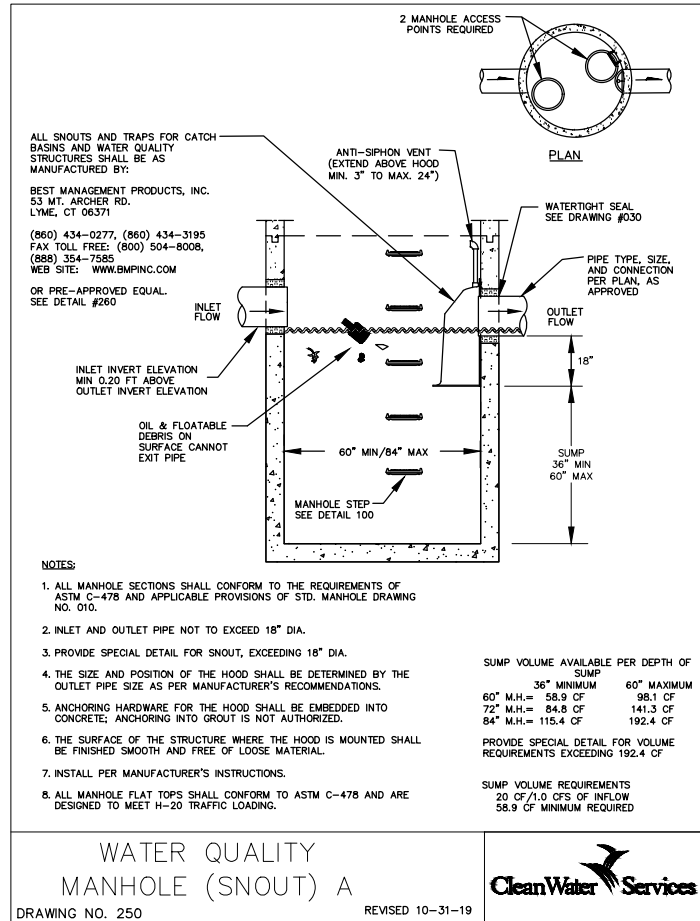
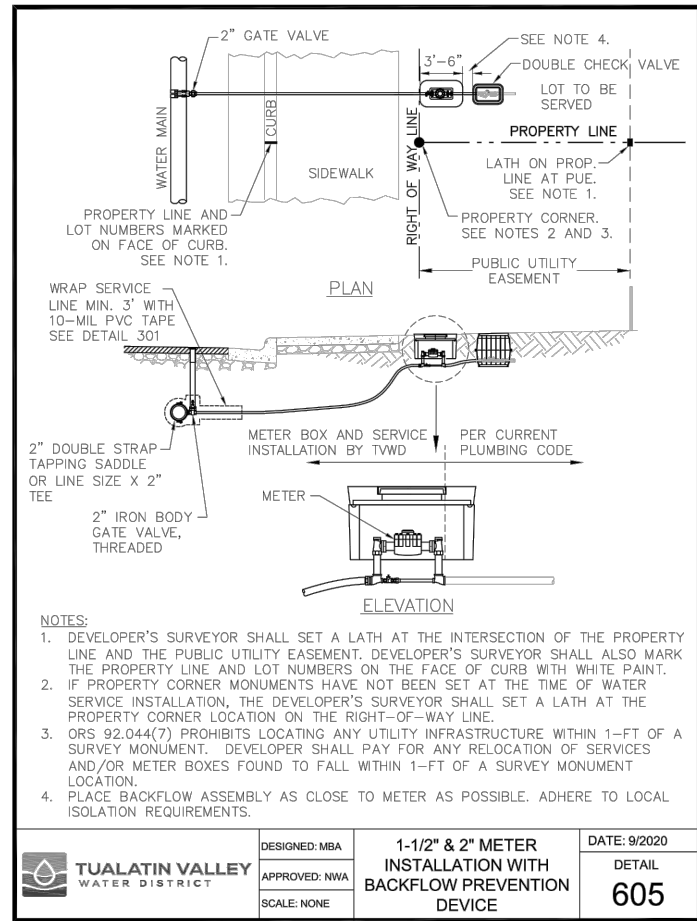
FOR: KIM-HIEN NGUYEN; GEORGE WIENHOLZ
 15 DUBERSTEIN DRIVE
 SAN RAMON, CA 94583
 SITE: TAX MAP 1S1117AD
 TAX LOT 600
 CITY OF BEAVERTON, OREGON

WESTPORT VILLAGE
 7-LOT SUBDIVISION
 N0696
 STORMWATER
 PLAN & PROFILE

| REVISION | BY | DATE |
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| DESIGNED | DRAWN | REVIEWED | SUBMITTAL |
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| | | | |

WTQ1
 7.0
 of 9



ENGINEERS
Civil Engineering & Land Use Planning
3409 NE John Olson Avenue
Hillsboro, OR 97124
503.601.4402

FOR: KIM-HIEN NGUYEN; GEORGE WIENHOLZ
15 DUBERSTEIN DRIVE
SAN RAMON, CA 94583

SITE: TAX MAP 15117AD
TAX LOT 600
CITY OF BEAVERTON, OREGON

WESTPORT VILLAGE
7-LOT SUBDIVISION
N0696
STANDARD DETAILS 4

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DATE

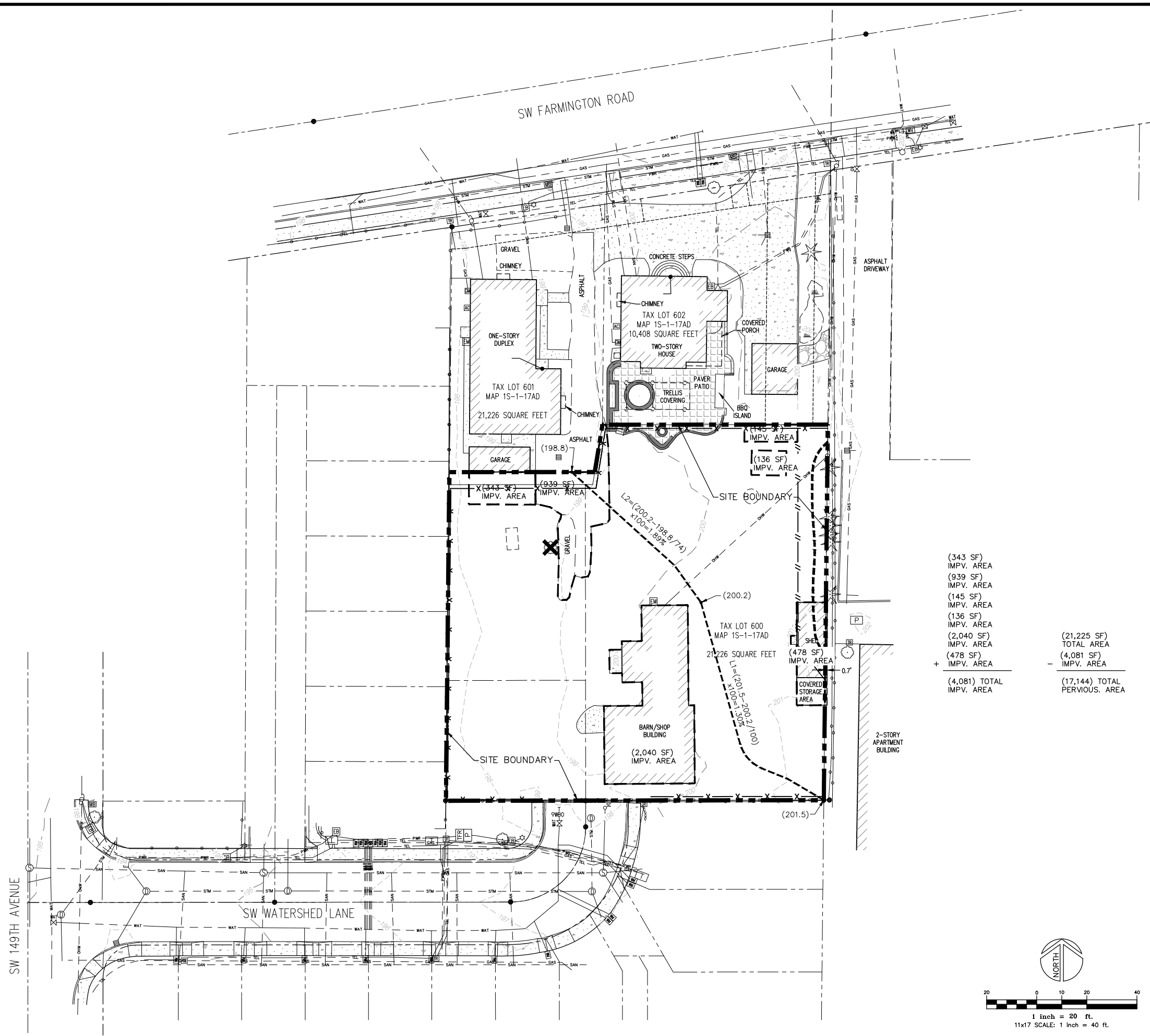
| REVISION | BY | DATE |
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DESIGNED: DET4
DRAWN: 9.3
REVIEWED: of 9
SUBMITTAL: of 9

FILENAME: 360.dwg
P: \\N0696\dwg\Eng\Ph1\N0696-09.3-DET4.dwg
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Appendix D:

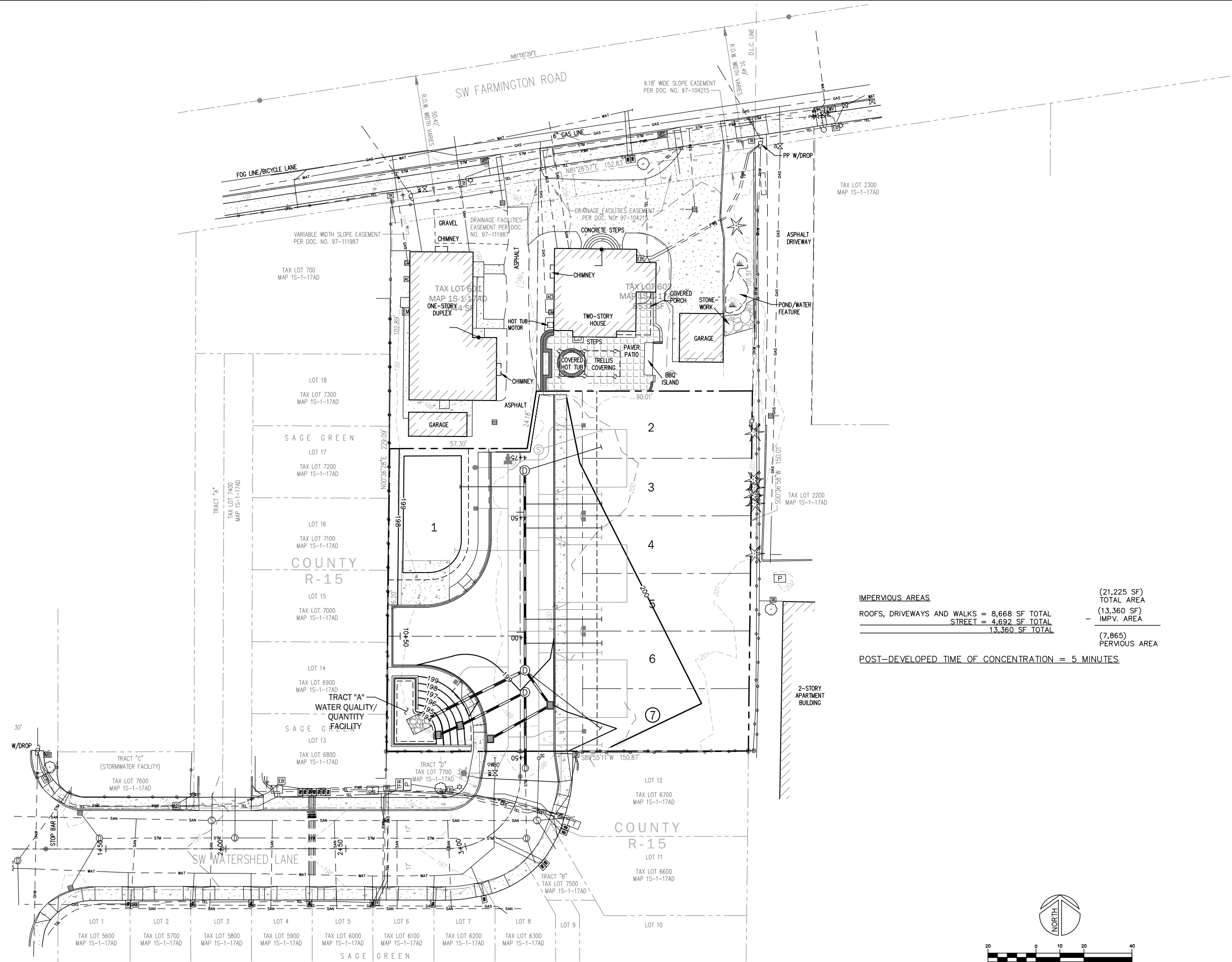
Pre-developed Basin Exhibit
Post-developed Basin Exhibit
Hydraulic/Hydrologic Calculations



| | |
|-------------------------------|------------------------------------|
| (343 SF) IMPV. AREA | (21,225 SF) TOTAL AREA |
| (939 SF) IMPV. AREA | (4,081 SF) IMPV. AREA |
| (145 SF) IMPV. AREA | |
| (136 SF) IMPV. AREA | |
| (2,040 SF) IMPV. AREA | |
| (478 SF) IMPV. AREA | |
| + (4,081) TOTAL IMPV. AREA | - (17,144) TOTAL PREVIOUS. AREA |

| REVISION | BY | DATE |
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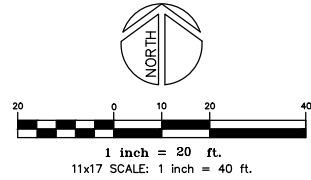
| DESIGNED | DRAWN | REVIEWED | SUBMITTAL |
|----------|-------|----------|-----------|
| | | | |



IMPERVIOUS AREAS

| | |
|---|---------------|
| ROOFS, DRIVEWAYS AND WALKS = 8,668 SF TOTAL | (21,225 SF) |
| STREET = 4,692 SF TOTAL | TOTAL AREA |
| 13,360 SF TOTAL | (13,360 SF) |
| | IMPV. AREA |
| | (7,865) |
| | PERVIOUS AREA |

POST-DEVELOPED TIME OF CONCENTRATION = 5 MINUTES

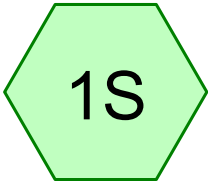


FOR: KIM-HIEN NGUYEN; GEORGE WIENHOLZ
 15 DUBERSTEIN DRIVE
 SAN RAMON, CA 94583
 SITE: TAX MAP 1S1117AD
 TAX LOTS 600, 601 & 602
 CITY OF BEAVERTON, OREGON

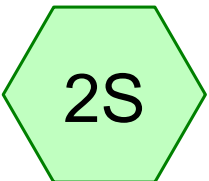
WESTPORT VILLAGE
 7-LOT SUBDIVISION
 N0696
 POST-DEVELOPED
 BASIN EXHIBIT

| REVISION | BY | DATE |
|----------|----|------|
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| 2 | | |
| 3 | | |
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| DESIGNED | DRAWN | REVIEWED | SUBMITTAL |
|----------|-------|----------|-----------|
| | | | |



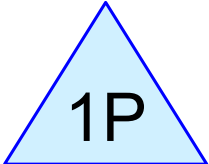
Pre-Developed Basin



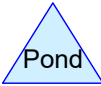
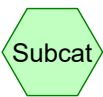
WQ Treatment Area



Outfall to Pond



Extended Dry Basin



Routing Diagram for Westport Village (N0696)
Prepared by {enter your company name here}, Printed 4/29/2022
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Westport Village (N0696)

Type IA 24-hr 2-year Rainfall=2.50"

Prepared by {enter your company name here}

Printed 4/29/2022

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Summary for Subcatchment 1S: Pre-Developed Basin

CN = Average of hydrologic group C&D.

Runoff = 0.05 cfs @ 8.05 hrs, Volume= 0.030 af, Depth= 0.74"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2-year Rainfall=2.50"

| | Area (sf) | CN | Description |
|---|-----------|----|-------------------------------|
| * | 4,081 | 75 | Roofs, HSG D |
| * | 17,144 | 77 | >75% Grass cover, Good, HSG D |
| | 21,225 | 77 | Weighted Average |
| | 21,225 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 13.2 | 100 | 0.0130 | 0.13 | | Sheet Flow, L1 Grass: Short n= 0.150 P2= 2.50" |
| 1.3 | 74 | 0.0189 | 0.96 | | Shallow Concentrated Flow, L2 Short Grass Pasture Kv= 7.0 fps |
| 14.5 | 174 | Total | | | |

Westport Village (N0696)

Type IA 24-hr 5-year Rainfall=3.10"

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Summary for Subcatchment 1S: Pre-Developed Basin

CN = Average of hydrologic group C&D.

Runoff = 0.10 cfs @ 8.03 hrs, Volume= 0.046 af, Depth= 1.14"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 5-year Rainfall=3.10"

| | Area (sf) | CN | Description |
|---|-----------|----|-------------------------------|
| * | 4,081 | 75 | Roofs, HSG D |
| * | 17,144 | 77 | >75% Grass cover, Good, HSG D |
| | 21,225 | 77 | Weighted Average |
| | 21,225 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 13.2 | 100 | 0.0130 | 0.13 | | Sheet Flow, L1 Grass: Short n= 0.150 P2= 2.50" |
| 1.3 | 74 | 0.0189 | 0.96 | | Shallow Concentrated Flow, L2 Short Grass Pasture Kv= 7.0 fps |
| 14.5 | 174 | Total | | | |

Westport Village (N0696)

Type IA 24-hr 10-year Rainfall=3.45"

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Summary for Subcatchment 1S: Pre-Developed Basin

CN = Average of hydrologic group C&D.

Runoff = 0.12 cfs @ 8.03 hrs, Volume= 0.057 af, Depth= 1.39"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-year Rainfall=3.45"

| | Area (sf) | CN | Description |
|---|-----------|----|-------------------------------|
| * | 4,081 | 75 | Roofs, HSG D |
| * | 17,144 | 77 | >75% Grass cover, Good, HSG D |
| | 21,225 | 77 | Weighted Average |
| | 21,225 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 13.2 | 100 | 0.0130 | 0.13 | | Sheet Flow, L1 Grass: Short n= 0.150 P2= 2.50" |
| 1.3 | 74 | 0.0189 | 0.96 | | Shallow Concentrated Flow, L2 Short Grass Pasture Kv= 7.0 fps |
| 14.5 | 174 | Total | | | |

Westport Village (N0696)

Type IA 24-hr 25-year Rainfall=3.90"

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Summary for Subcatchment 1S: Pre-Developed Basin

CN = Average of hydrologic group C&D.

Runoff = 0.16 cfs @ 8.02 hrs, Volume= 0.070 af, Depth= 1.73"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25-year Rainfall=3.90"

| | Area (sf) | CN | Description |
|---|-----------|----|-------------------------------|
| * | 4,081 | 75 | Roofs, HSG D |
| * | 17,144 | 77 | >75% Grass cover, Good, HSG D |
| | 21,225 | 77 | Weighted Average |
| | 21,225 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 13.2 | 100 | 0.0130 | 0.13 | | Sheet Flow, L1 Grass: Short n= 0.150 P2= 2.50" |
| 1.3 | 74 | 0.0189 | 0.96 | | Shallow Concentrated Flow, L2 Short Grass Pasture Kv= 7.0 fps |
| 14.5 | 174 | Total | | | |

Westport Village (N0696)

Type IA 24-hr 2-year Rainfall=2.50"

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Summary for Subcatchment 2S: WQ Treatment Area

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.18 cfs @ 7.90 hrs, Volume= 0.058 af, Depth= 2.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2-year Rainfall=2.50"

| | Area (sf) | CN | Description |
|---|-----------|----|-------------------------|
| * | 13,360 | 98 | treatment area |
| | 13,360 | | 100.00% Impervious Area |

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

Westport Village (N0696)

Type IA 24-hr 5-year Rainfall=3.10"

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Summary for Subcatchment 2S: WQ Treatment Area

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.22 cfs @ 7.90 hrs, Volume= 0.073 af, Depth= 2.87"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 5-year Rainfall=3.10"

| | Area (sf) | CN | Description |
|---|-----------|----|-------------------------|
| * | 13,360 | 98 | treatment area |
| | 13,360 | | 100.00% Impervious Area |

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

Westport Village (N0696)

Type IA 24-hr 10-year Rainfall=3.45"

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Summary for Subcatchment 2S: WQ Treatment Area

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.25 cfs @ 7.90 hrs, Volume= 0.082 af, Depth= 3.22"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-year Rainfall=3.45"

| | Area (sf) | CN | Description |
|---|-----------|----|-------------------------|
| * | 13,360 | 98 | treatment area |
| | 13,360 | | 100.00% Impervious Area |

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

Westport Village (N0696)

Type IA 24-hr 25-year Rainfall=3.90"

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Summary for Subcatchment 2S: WQ Treatment Area

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.28 cfs @ 7.90 hrs, Volume= 0.094 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25-year Rainfall=3.90"

| | Area (sf) | CN | Description |
|---|-----------|----|-------------------------|
| * | 13,360 | 98 | treatment area |
| | 13,360 | | 100.00% Impervious Area |

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

Westport Village (N0696)

Type IA 24-hr 25-year Rainfall=3.90"

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Summary for Reach 1R: Outfall to Pond

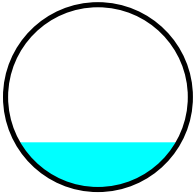
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.307 ac, 100.00% Impervious, Inflow Depth = 3.67" for 25-year event
Inflow = 0.28 cfs @ 7.90 hrs, Volume= 0.094 af
Outflow = 0.28 cfs @ 7.91 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.78 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.00 fps, Avg. Travel Time= 0.8 min

Peak Storage= 7 cf @ 7.90 hrs
Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 1.98 cfs

12.0" Round Pipe
n= 0.013
Length= 45.4' Slope= 0.0031 '/
Inlet Invert= 193.99', Outlet Invert= 193.85'



Westport Village (N0696)

Type IA 24-hr 2-year Rainfall=2.50"

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Summary for Pond 1P: Extended Dry Basin

[63] Warning: Exceeded Reach 1R INLET depth by 2.06' @ 13.65 hrs

Inflow Area = 0.307 ac, 100.00% Impervious, Inflow Depth = 2.27" for 2-year event
 Inflow = 0.18 cfs @ 7.91 hrs, Volume= 0.058 af
 Outflow = 0.03 cfs @ 13.48 hrs, Volume= 0.058 af, Atten= 85%, Lag= 334.1 min
 Primary = 0.03 cfs @ 13.48 hrs, Volume= 0.058 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 196.13' @ 13.48 hrs Surf.Area= 513 sf Storage= 947 cf

Plug-Flow detention time= 471.9 min calculated for 0.058 af (100% of inflow)
 Center-of-Mass det. time= 471.8 min (1,146.9 - 675.1)

| Volume | Invert | Avail.Storage | Storage Description |
|---------------------|----------------------|---------------------------|--|
| #1 | 193.85' | 1,433 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
| 193.85 | 315 | 0 | 0 |
| 195.00 | 420 | 423 | 423 |
| 196.00 | 500 | 460 | 883 |
| 197.00 | 600 | 550 | 1,433 |

| Device | Routing | Invert | Outlet Devices |
|--------|---------|---------|--|
| #1 | Primary | 196.99' | 5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32 |
| #2 | Primary | 195.56' | 0.5" Vert. Orifice/Grate C= 0.600 |
| #3 | Primary | 195.06' | 0.5" Vert. Orifice/Grate C= 0.600 |
| #4 | Primary | 190.56' | 0.5" Vert. Orifice/Grate C= 0.600 |

Primary OutFlow Max=0.03 cfs @ 13.48 hrs HW=196.13' (Free Discharge)

- 1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 2=Orifice/Grate (Orifice Controls 0.00 cfs @ 3.56 fps)
- 3=Orifice/Grate (Orifice Controls 0.01 cfs @ 4.92 fps)
- 4=Orifice/Grate (Orifice Controls 0.02 cfs @ 11.34 fps)

Westport Village (N0696)

Type IA 24-hr 5-year Rainfall=3.10"

Prepared by {enter your company name here}

Printed 4/29/2022

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Summary for Pond 1P: Extended Dry Basin

[63] Warning: Exceeded Reach 1R INLET depth by 2.68' @ 14.65 hrs

Inflow Area = 0.307 ac, 100.00% Impervious, Inflow Depth = 2.87" for 5-year event
 Inflow = 0.22 cfs @ 7.91 hrs, Volume= 0.073 af
 Outflow = 0.03 cfs @ 14.40 hrs, Volume= 0.073 af, Atten= 86%, Lag= 389.6 min
 Primary = 0.03 cfs @ 14.40 hrs, Volume= 0.073 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 196.76' @ 14.40 hrs Surf.Area= 576 sf Storage= 1,292 cf

Plug-Flow detention time= 543.3 min calculated for 0.073 af (100% of inflow)
 Center-of-Mass det. time= 543.8 min (1,212.3 - 668.5)

| Volume | Invert | Avail.Storage | Storage Description |
|---------------------|----------------------|---------------------------|--|
| #1 | 193.85' | 1,433 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
| 193.85 | 315 | 0 | 0 |
| 195.00 | 420 | 423 | 423 |
| 196.00 | 500 | 460 | 883 |
| 197.00 | 600 | 550 | 1,433 |

| Device | Routing | Invert | Outlet Devices |
|--------|---------|---------|--|
| #1 | Primary | 196.99' | 5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32 |
| #2 | Primary | 195.56' | 0.5" Vert. Orifice/Grate C= 0.600 |
| #3 | Primary | 195.06' | 0.5" Vert. Orifice/Grate C= 0.600 |
| #4 | Primary | 190.56' | 0.5" Vert. Orifice/Grate C= 0.600 |

Primary OutFlow Max=0.03 cfs @ 14.40 hrs HW=196.76' (Free Discharge)

- 1=**Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
- 2=**Orifice/Grate** (Orifice Controls 0.01 cfs @ 5.23 fps)
- 3=**Orifice/Grate** (Orifice Controls 0.01 cfs @ 6.24 fps)
- 4=**Orifice/Grate** (Orifice Controls 0.02 cfs @ 11.97 fps)

Westport Village (N0696)

Type IA 24-hr 10-year Rainfall=3.45"

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Summary for Pond 1P: Extended Dry Basin

[63] Warning: Exceeded Reach 1R INLET depth by 2.91' @ 15.95 hrs

Inflow Area = 0.307 ac, 100.00% Impervious, Inflow Depth = 3.22" for 10-year event
 Inflow = 0.25 cfs @ 7.91 hrs, Volume= 0.082 af
 Outflow = 0.05 cfs @ 11.06 hrs, Volume= 0.082 af, Atten= 81%, Lag= 188.8 min
 Primary = 0.05 cfs @ 11.06 hrs, Volume= 0.082 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 197.00' @ 11.06 hrs Surf.Area= 600 sf Storage= 1,432 cf

Plug-Flow detention time= 561.1 min calculated for 0.082 af (100% of inflow)
 Center-of-Mass det. time= 561.8 min (1,227.3 - 665.6)

| Volume | Invert | Avail.Storage | Storage Description |
|---------------------|----------------------|---------------------------|--|
| #1 | 193.85' | 1,433 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
| 193.85 | 315 | 0 | 0 |
| 195.00 | 420 | 423 | 423 |
| 196.00 | 500 | 460 | 883 |
| 197.00 | 600 | 550 | 1,433 |

| Device | Routing | Invert | Outlet Devices |
|--------|---------|---------|--|
| #1 | Primary | 196.99' | 5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32 |
| #2 | Primary | 195.56' | 0.5" Vert. Orifice/Grate C= 0.600 |
| #3 | Primary | 195.06' | 0.5" Vert. Orifice/Grate C= 0.600 |
| #4 | Primary | 190.56' | 0.5" Vert. Orifice/Grate C= 0.600 |

Primary OutFlow Max=0.05 cfs @ 11.06 hrs HW=197.00' (Free Discharge)

- 1=**Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.28 fps)
- 2=**Orifice/Grate** (Orifice Controls 0.01 cfs @ 5.74 fps)
- 3=**Orifice/Grate** (Orifice Controls 0.01 cfs @ 6.67 fps)
- 4=**Orifice/Grate** (Orifice Controls 0.02 cfs @ 12.20 fps)

Westport Village (N0696)

Type IA 24-hr 25-year Rainfall=3.90"

Prepared by {enter your company name here}

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Summary for Pond 1P: Extended Dry Basin

[93] Warning: Storage range exceeded by 0.03'

[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=26)

[63] Warning: Exceeded Reach 1R INLET depth by 2.91' @ 18.40 hrs

Inflow Area = 0.307 ac, 100.00% Impervious, Inflow Depth = 3.67" for 25-year event
 Inflow = 0.28 cfs @ 7.91 hrs, Volume= 0.094 af
 Outflow = 0.15 cfs @ 8.80 hrs, Volume= 0.094 af, Atten= 46%, Lag= 53.5 min
 Primary = 0.15 cfs @ 8.80 hrs, Volume= 0.094 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 197.03' @ 8.80 hrs Surf.Area= 600 sf Storage= 1,433 cf

Plug-Flow detention time= 519.8 min calculated for 0.094 af (100% of inflow)
 Center-of-Mass det. time= 520.5 min (1,183.0 - 662.5)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1 | 193.85' | 1,433 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|------------------|-------------------|------------------------|------------------------|
| 193.85 | 315 | 0 | 0 |
| 195.00 | 420 | 423 | 423 |
| 196.00 | 500 | 460 | 883 |
| 197.00 | 600 | 550 | 1,433 |

| Device | Routing | Invert | Outlet Devices |
|--------|---------|---------|--|
| #1 | Primary | 196.99' | 5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32 |
| #2 | Primary | 195.56' | 0.5" Vert. Orifice/Grate C= 0.600 |
| #3 | Primary | 195.06' | 0.5" Vert. Orifice/Grate C= 0.600 |
| #4 | Primary | 190.56' | 0.5" Vert. Orifice/Grate C= 0.600 |

Primary OutFlow Max=0.15 cfs @ 8.80 hrs HW=197.03' (Free Discharge)

- 1=Broad-Crested Rectangular Weir (Weir Controls 0.12 cfs @ 0.57 fps)
- 2=Orifice/Grate (Orifice Controls 0.01 cfs @ 5.80 fps)
- 3=Orifice/Grate (Orifice Controls 0.01 cfs @ 6.72 fps)
- 4=Orifice/Grate (Orifice Controls 0.02 cfs @ 12.23 fps)

Westport Village (N0696)

Type IA 24-hr WQ Rainfall=0.83"

Prepared by {enter your company name here}

Printed 4/29/2022

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Summary for Pond 1P: Extended Dry Basin

[63] Warning: Exceeded Reach 1R INLET depth by 0.15' @ 10.10 hrs

Inflow Area = 0.307 ac, 100.00% Impervious, Inflow Depth = 0.63" for WQ event
 Inflow = 0.05 cfs @ 7.95 hrs, Volume= 0.016 af
 Outflow = 0.01 cfs @ 9.85 hrs, Volume= 0.016 af, Atten= 75%, Lag= 114.1 min
 Primary = 0.01 cfs @ 9.85 hrs, Volume= 0.016 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 194.20' @ 9.85 hrs Surf.Area= 347 sf Storage= 114 cf

Plug-Flow detention time= 71.6 min calculated for 0.016 af (100% of inflow)
 Center-of-Mass det. time= 71.5 min (798.3 - 726.7)

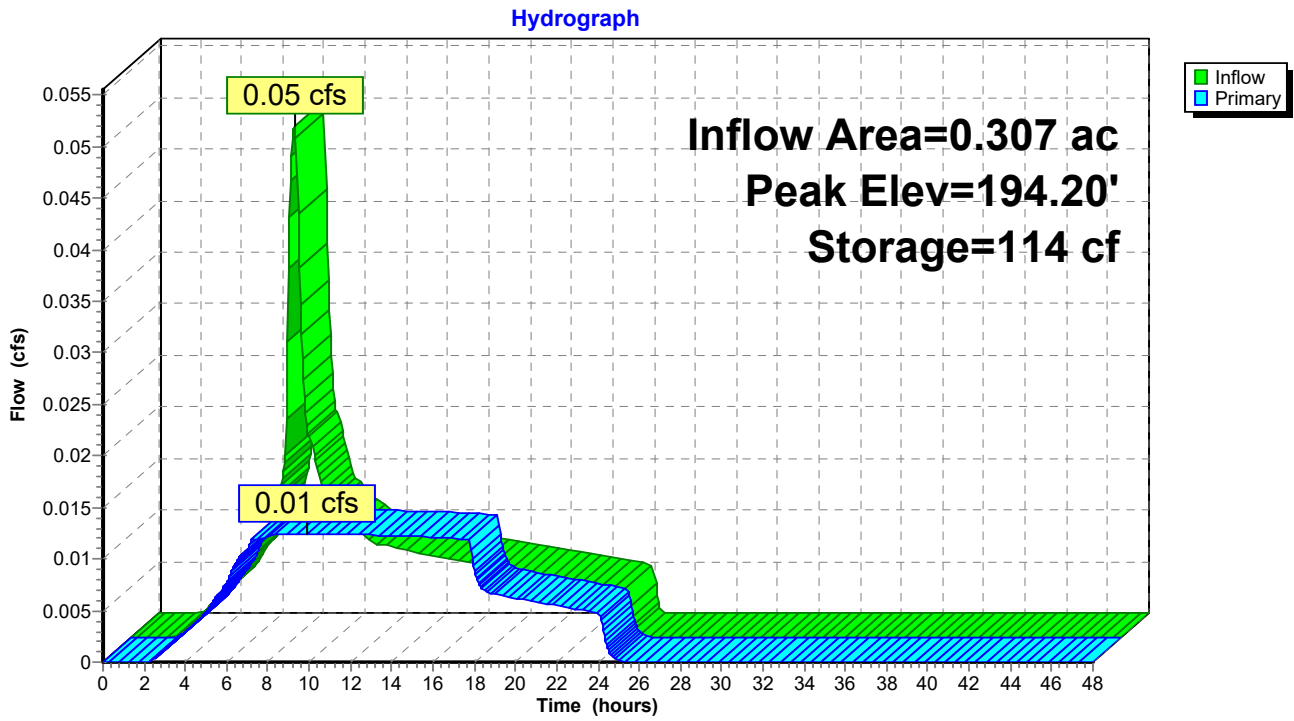
| Volume | Invert | Avail.Storage | Storage Description |
|---------------------|----------------------|---------------------------|--|
| #1 | 193.85' | 1,433 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
| 193.85 | 315 | 0 | 0 |
| 195.00 | 420 | 423 | 423 |
| 196.00 | 500 | 460 | 883 |
| 197.00 | 600 | 550 | 1,433 |

| Device | Routing | Invert | Outlet Devices |
|--------|---------|---------|--|
| #1 | Primary | 196.99' | 5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32 |
| #2 | Primary | 195.56' | 0.5" Vert. Orifice/Grate C= 0.600 |
| #3 | Primary | 195.06' | 0.5" Vert. Orifice/Grate C= 0.600 |
| #4 | Primary | 190.56' | 0.5" Vert. Orifice/Grate C= 0.600 |

Primary OutFlow Max=0.01 cfs @ 9.85 hrs HW=194.20' (Free Discharge)

- 1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 2=Orifice/Grate (Controls 0.00 cfs)
- 3=Orifice/Grate (Controls 0.00 cfs)
- 4=Orifice/Grate (Orifice Controls 0.01 cfs @ 9.15 fps)

Pond 1P: Extended Dry Basin



Received
Planning Division
5/24/24

Geotechnical Investigation & Infiltration testing

14830 SW Farmington Road
Beaverton, Oregon

Prepared for:
Kim- Hien Nguyen
17 August 2020
Updated 15 May 2024



EXPIRES:
12/31/2024



3915 SW Plum Street
Portland, OR 97219
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1.0 PROJECT AND SITE DESCRIPTIONS

Rapid Soil Solutions Inc (RSS) has prepared this geotechnical report, as requested, for the proposed property line adjustments and 6-lot subdivision involving the three Washington County parcels assigned the state tax lot identification numbers of 1S117AD-00602, 1S117AD-00601, and 1S117AD-00600. The northern two parcels currently contain residential structures (one duplex, one single-family residential) assigned the street addresses of 14830 & 14852 SW Farmington Road (Beaverton, OR 97007). RSS understands that these structures will remain and their property lines will be adjusted to include a smaller area. The third tax parcel (1S117AD-00600) is not currently assigned a street address; RSS understands that this tax parcel will be expanded then subdivided and developed into six buildable lots (2200 square feet to 3630 square feet in size), a short extension to SW Watershed Ln, and a small quarter quality/stormwater management tract.

The subject site is positioned along the southern side of SW Farmington Road roughly 160 feet east of SW 149th Ave and 620 feet west of SW Murry Blvd. The site extends southwards from the angled roadway, with a 251-foot-long eastern margin and a 207-foot-long western margin. The southern and western edges of the site are bordered by the 2009, Sage Green plat (Document No. 2009108292) and the abrupt terminus of a short section of SW Watershed Ln. Adjacent properties include 14860 SW Farmington Rd (west), 4810-4870 SW 148th Terrace (west), 14738 SW Watershed Ln (south), and 14630 SW Farmington Road (east). The site is situated on the western edge of the city of Beaverton, in urban unincorporated Washington County (eastern margin abuts incorporated boundary). The subject site can be found in the southeast quarter of the northeast quarter of Section 17, Township 2-South, Range 1-West (W.M.) in Washington County and can be distinguished by the lot numbers 600, 601, and 602. The site is within the Johnson Estates Addition to Beaverton-Reedville and occupies a portion of the northeastern corner of lot 366; the abbreviated legal description of all three tax parcels reflect this. The latitude and longitude of the site are 45.484898 and -122.829038 (45°29'05.6"N, 122°49'44.5"W). The site can be found in the northwestern quarter of the Beaverton, OR 7.5-minute quadrangle (NE ¼ of the Tualatin 15' Quad).

2.0 SITE CONDITIONS

This subject site is situated in an urban residential neighborhood located relatively centrally within the Tualatin Basin. The site is generally situated within the West Beaverton neighborhood in unincorporated Washington County. RSS understands that the jurisdictional boundary between Washington County and the City of Beaverton is generally positioned along the eastern margin of the subject site. The local neighborhood is generally comprised of apartment complexes and clusters of semi-detached dwellings interspersed with older single-family dwellings on slightly larger parcels (0.3-1.3 acres). Along the northern side of SW Farmington Road, across from the subject site, larger properties contain medical and outreach facilities. Roughly 0.15 miles south of the subject site, the land use transitions to a typical low-density residential neighborhood.

The subject site, and adjacent parcels within the jurisdiction of Washington County, are all part of a relatively high-density residential development district. The local zoning is R-15, a residential district intended to implement the policies of the Comprehensive Plan for areas designated for residential development at no more than 15 units per acre and no less than 12

units per acre. The adjacent parcels within the jurisdiction of the City of Beaverton are zoned R2, an urban medium density district intended to established residential developments with a minimum land area of 2,000 square feet per dwelling unit.

The local slope morphology is heavily influenced by its position within the Tualatin Basin. Locally this low-relief structural and topographic basin contains broad surfaces and meandering streams. A thick blanket of unconsolidated sediments is draped across the basin, forming a relatively relief surface; modern waterways have cut into these sediments through erosion, forming the local drainages and incised streams. The site is positioned slightly east of Johnston Creek, a north flowing tributary to Beaverton Creek. Slopes on site gently descend westwards to Johnston Creek; 0.18 miles west of the subject site.



Figure 1: Subject site with approximate proposed new property lines (dashed white) from Washington County Intermap.

2.1 Surface Conditions

The subject site is comprised of three parcels along the southern side of SW Farmington Road. The northeastern parcel currently contains one single-family residential dwelling originally constructed in 1945 and a detached garage. The western parcel currently contains one dwelling structure originally constructed in 1961 with one detached two-car garage. The third parcel, currently occupying the southeastern corner of the subject site, contains two accessory structures which appear to have originally been constructed for agricultural purposes. The western structure may have been constructed and expanded intermittently, as the architecture suggests two structures with a shared wall. RSS understands that the proposed property line adjustments will shrink the parcels containing the two dwelling structures and both garages will be removed. This allows for the expansion of the third parcel

(1S117AD-00600) and subsequent development of a six-lot subdivision.

A driveway accessing the garage at 14852 SW Farmington Road extends between the two dwelling structures on the site and is paved with AC. This driveway extends into the proposed new subdivision. The 80 feet between the end of the asphalt driveway and the southern property line, contains an overgrown gravel driveway. Gravel also extends westward from this driveway, into the proposed stormwater tract. Short cropped grasses obscure much of this gravel area. Outside the driveway and building footprints, the site contains short-cropped grasses.

Historic Site Conditions

Historic aerial imagery dating back to 1952 was referenced as part of this investigation. The image from 1952 indicates that the dwelling in the northeastern quadrants of the site as well as both agricultural structures in the southeastern quadrant of the site were both constructed prior to 1952. The land at and surrounding the subject site contains a generally agricultural appearance in 1952; the majority of the surrounding land contains large fields or small orchards. Some of the surrounding plots appear forested. Both SW Farmington Road and SW 149th Ave are visible in this early image.

The image collected in 1960 depicts minimal changes, but by 1970 multiple new structures were constructed across the local slopes. These generally contain the appearance of small apartment complexes and single-family residences. Developments of the local slopes can be seen occurring slowly in images collected in 1981 and 1994.

Images from 1994 through 2008 depict very little change on the subject site and surrounding slopes. Between 2008 and 2009, the properties adjacent to the west and south of the subject site were cleared. By 2010, SW Watershed Ln and SW 148th Terrace were constructed and the townhomes at 14860-14780 SW Watershed Ln were completed. The semi-detached dwellings at the eastern end of SW Watershed Ln and along SW 148th Terrace were constructed between 2011 and 2013.

Aerial imagery collected during and after 1981 yield no observation of substantial changes to the subject site.

Slopes

The subject site is situated within the Tualatin Basin, along slopes descending generally westwards toward Johnston Creek. This local waterway is positioned roughly 0.18 miles west of the subject stie and about 30 feet lower in elevation. Two thirds of this grade change occur within the first 300 feet of the waterway. Johnston Creek is a tributary to Beaverton Creek and is subsequently part of the Tualatin River watershed.

Two-foot contours of the slopes at and around the subject site, as presented by Metro Map, indicate that there is around four feet of elevation change across the site. The highest elevation on the subject site can be found along the eastern edge of the parcel, with an elevation between 204' above sea level and 206' above sea level. The lowest elevation on the subject site can be found in the southwestern corner of the site, with an elevation slightly less than 202' above sea level.

A five-foot digital elevation model of Portland, Oregon and the surrounding area includes the slopes below the subject site. This slope model is presented by Portland Maps. The model indicates that the majority of the slopes on the subject site are less than 5% (blue) with small areas along property boundaries containing slopes of 5-10% (green). Some areas, particularly those surrounding buildings, contain slopes modeled as falling within the categories of 10-15% (yellow), 15-20% (orange), and greater than 20% (red). These appear to mostly be a product of the model and data collection methods rather than a reflection of true slope.

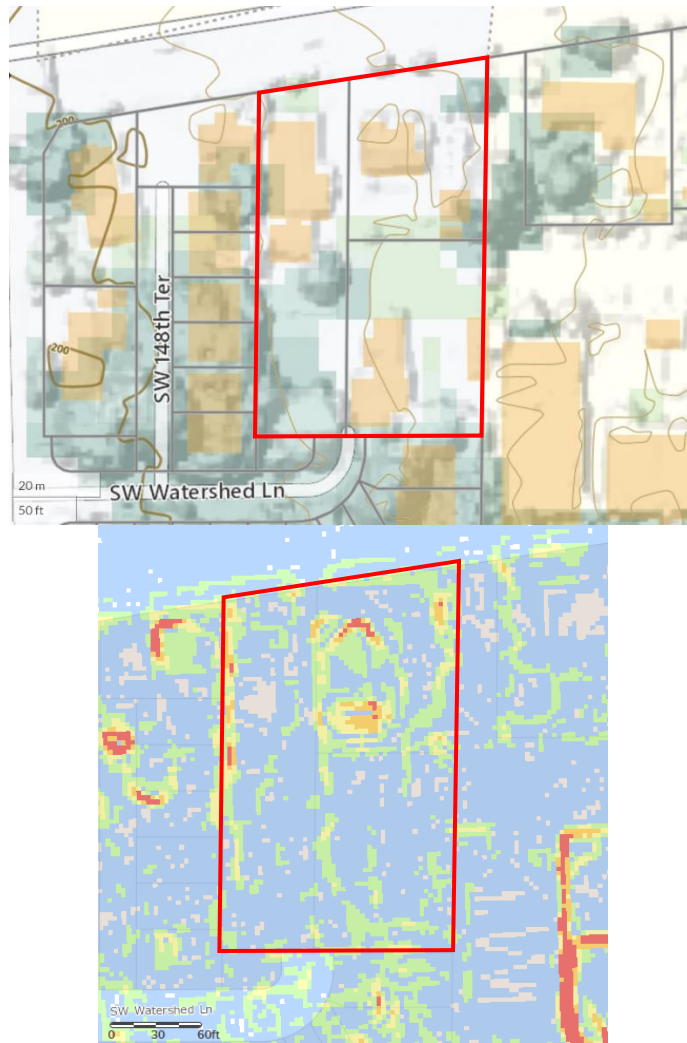


Figure 2: slopes on the subject site. LEFT: two-foot contours from Metro Map. RIGHT: 5-ft DEM slope model from Portland Maps.

Recently collected lidar imagery indicates that the local slopes are relatively smooth. Lidar imagery indicates that minor grading had been conducted on the site and surrounding slopes.



Figure 3: Lidar imagery depicting slopes within and adjacent to the subject site.

2.2 Regional Geology

The subject site is situated in the eastern end of the Tualatin Basin. Recent geologic literature classifies the slopes underlying the subject site as fine-grained Missoula Floods deposits, also referred to as fine grained Catastrophic flood deposits and the silt and sand dominated facies of the Missoula Floods deposits.

Geologic History

The subject site is generally situated within the forearc basin of the Cascadia subduction system between the Cascade Range (volcanic arc) and the Coastal Range (accretionary/subduction complex). The site is part of the Tualatin Basin, which is one of several topographic and structural depressions that collectively constitute the Puget-Willamette forearc trough. This topographic and structural basin generally has low relief. The basin formed due to tectonic compressional stress that both initiated the basin's formation and produced prolonged the enlargement of the basin. As the Tualatin Basin continued to subside during the late Miocene and Pliocene, it filled with continental fluvial and lacustrine sediments that were transported long distances by the ancestral version of modern rivers, as well as with locally derived detritus carried in by tributaries draining the surrounding highlands. This resulted in a thick accumulation of material preserving a complex record of deposition and erosion (aggradation and incision). Deposits laid down by ancient rivers are buried beneath the thick deposit of catastrophic flood deposits.

At the end of the last glacial maximum, an ice dam in western Montana began to melt. The periodic failure of the ice dam retaining Glacial Lake Missoula resulted in dozens of gigantic floods that stretched from their origin in Montana generally following the Columbia River and eventually reaching the Pacific Ocean. The hydraulically restrictive Oregon Coast Range causes the sediment filled waters to temporarily pond across much of the Willamette forearc trough including the Portland, Tualatin and Willamette basins. The floodwaters, which reached an elevation of 400 feet above sea level, soured many areas down to bedrock and buried others beneath thick layers of gravel, sand and silt that can be divided into a fine-

grained unit and a coarse-grained unit. Dramatic scour features and giant bars can be seen within the Portland Basin, and demonstrate the great influence the floodwaters had on shaping the Quaternary geomorphology of the region. The sediments are generally comprised of unconsolidated silt, sand, and gravels and were emplaced between about 21,000 to 12,000 years ago.

Site Geology

The sediments brought into the lowlands by the Missoula Floods were deposited when the waters slowed down, blanketing older fluvial and igneous deposits with swaths of rhythmic sedimentary beds. Various studies have divided the Missoula Floods deposits into distinct facies defined by grain size.

The fine-grained facies of the Missoula Floods are described as an unconsolidated light-brown to light-gray silt, clay and fine to medium sand. The sediments are deposited in a series of distinct layers, a few inches to a few feet thick, each of which represents a single flood. The finer sediments are predominantly quartz and feldspar and also contain white mica. The coarser sediments can be comprised of Columbia River Basalt fragments. Poorly defined beds of 1- to 3-feet thickness are observed in outcrops, and complex layering has been recorded in boreholes. These deposited have been interested as slack-water sediments settling from the slowing floodwaters. In some areas of this unit, it can include sediments compositionally similar to loess. Soil development commonly introduces significant clay and iron oxides into the upper 6-10 feet of the deposit.

2.3 Field Exploration and Subsurface Conditions

2.3.1 Field Explorations

RSS conducted field explorations at the subject site on 5 August 2020. RSS viewed all exterior areas of the subject site and viewed adjacent slopes from the site and nearby roadways. The conditions on site were observed to be constant with the conditions described above. Surficial conditions were found to contain very dry, hard packed soils and thin grasses. No substantial slopes or irregular morphology was observed. RSS visited the site unaccompanied.

2.3.2 Subsurface Conditions

A total of five (5) shallow hand auger borings were advanced to depths ranging from 2' bgs to 4' bgs. All five borings identified very dry, light brown fine-grained soils underlain by mottled orange-tan and grey silty CLAY to clayey SILT. Micaceous were observed in the subgrade at depths below 2'. Observed soils are consistent with those typically seen in areas directly impacted by catastrophic flooding at the end of the last glacial maximum.

The location of the boring is shown on Figure 3 in the Appendix. A Geologist in Training (GIT) observed the borings and logged the subsurface materials. The soil

descriptions were reviewed by a Professional Engineer (PE, GE). The logs were created using the Unified Soil Classification and Visual Manual Procedure (ASTM-D 2488). Samples were transported to the lab in sealed plastic bags. Moisture content for the soils ranged from 11.7% to 30.5%. The soils are classified as silty CLAY's to CLAY's.

The USDA National Resource Conservation Service Web Soil Survey classifies the soils within the subject site as Aloha silt loam. Aloha silt loam forms on terraces from old loamy alluvium. It is classified as somewhat poorly drained with a water table often found at a depth of 18 to 24 inches. The typical profile is comprised of silt loam (H1: 0"-8", H2: 8"-46", H3: 46"-65").

2.3.3 Groundwater

Shallow groundwater was not encountered.

3.0 GEOTECHNICAL DESIGN RECOMMENDATIONS

3.1 Foundation Design

The building foundations may be installed on either engineered fill or firm native sub-grade that is found at a depth of about 1ft. This depth may be locally variable and should be confirmed by a geotechnical engineer or their representative at the time of construction. ***Please allow 24-hour notice for foundation inspections.***

Continuous wall and isolated spread footings should be at least 16 and 24 inches wide, respectively. The bottom of exterior footings should be at least 16 inches below the lowest adjacent exterior grade. The bottom of interior footings should be at least 12 inches below the base of the floor slab.

Footings placed on engineered fill or firm native sub-grade should be designed for an allowable bearing capacity of *1,500 pounds per square foot (psf)*. The recommended allowable bearing pressure can be doubled for short-term loads such as those resulting from wind or seismic forces.

Lateral loads on footings can be resisted by passive earth pressure on the sides of the structures and by friction at the base of the footings. An allowable lateral bearing pressure of *150 pounds per cubic foot (psf/ft)* below grade may be used. Adjacent floor slabs, pavements or the upper 12-inch depth of adjacent, unpaved areas should not be considered when calculating passive resistance.

If construction is undertaken during periods of rain, then I recommend a 2-inch (or greater) layer of compacted, crushed rock be placed over the native soil. The clayey soil is moisture sensitive. Meaning when dry it is firm and non-yielding but exposed to season rains it will lose its strength and need to be excavated and replaced with rock. See section 4.1.2 for wet weather conditions.

Engineering values summary

| | |
|------------------------------|----------|
| Bearing capacity soil | 1,500psf |
| Bearing capacity rock | 2,500psf |
| Coefficient of friction soil | 0.30 |
| Coefficient of friction rock | 0.45 |
| Active pressure | 40pcf |
| Passive pressure | 300pcf |

A safety factor of 1.5 is included in the above values.

3.2 Infiltration testing

Infiltration testing was performed as per the Clean Water Services Manual. Testing took place in a sleeve hand auger boring. The test was run a total of three times. The rates are shown on the following spread sheet with the site plan. RSS found the rate at **HA#6 was 268.7min/in and 3.8min/in at HA#7**

3.3 Seismic Design Criteria

We understand that the seismic design criteria for this project is based on the 2015 IBC, Section 1615 and the USGS web site using a Lat of 45.484898 and a Long of -122.829038, soil site class D, where null= see section 11.4.8

| | Short Period | 1 Second |
|---|----------------------------|--------------------------|
| Maximum Credible Earthquake Spectral Acceleration | S _S = 0.878 g | S ₁ = 0.407 g |
| Adjusted Spectral Acceleration | S _{MS} = 1.1009 g | S _{MI} = null |
| Design Spectral Response Acceleration Perimeters | S _{DS} = 0.673 g | S _{D1} = null |

3.4 Geohazard Review

The Oregon HazVu: Statewide Geohazard Viewer and Metro Map were reviewed 06 August 2020 to investigate mapped geological hazards. The subject site is located outside the 100-year floodplain, as mapped by FEMA.

The expected earthquake-shaking hazard is classified as ‘very strong’. The mapped earthquake liquefaction hazard classification is ‘high’. An east-west trending fault, mapped as active by DOGAMI, passes roughly 0.7 miles south of the subject site. Older faults may be present, buried beneath thick basin fill and unconsolidated sedimentary deposits. There are no landslides mapped on the subject site. The nearest mapped landslides are very small (0.03 acres) and located over a mile south of the subject site. The landslide hazard across the site is classified as ‘low’.

3.5 Street Design

The future interior driveway within the sub-division should have a section shall be 3in AC with 8in of rock below it. The 8in rock section shall be 6” of 1 ½” minus and then 2in of 3/8”

minus. A wet weather section would be increased to 15in of rock with a 6in over excavated sub-grade in lieu of compacting native sub-grade to 92% of an AASHTO D1557 standard proctor. So, the rock would be 13” of 1 ½” minus and 2” of ¾” minus rock. Geotextile fabric will be required if building during the wet season. RSS shall be given up to 48hours notice to proof roll streets and parking areas.

As part of the project development we are required to check the existing street section on SW Watershed Lane. See calculations in the appendix that demonstrate the existing street meets 25 year projected vehicle loading. No additional work is required on SW Watershed Lane. See calculations, street core and lab values in the appendix.

4.0 CONSTRUCTION RECOMMENDATIONS

4.1 Site Preparation

On this site only disturb the area in which can be covered with rock during the day. The moisture sensitive clay soil when exposed to wet weather becomes soft and yielding. See wet weather conditions below.

4.1.1 Proof Rolling

Following stripping and prior to placing aggregate base course, pavement the exposed sub-grade should be evaluated by proof rolling. The sub-grade should be proof rolled to identify soft, loose, or unsuitable areas. ***Please give 24-hour notice to observe the proof rolling.*** Soft or loose zones identified during the field evaluation should be compacted to an unyielding condition or be excavated and replaced with structural fill, as discussed in the *Structural Fill* section of this report.

4.1.2 Wet Weather Conditions

The near-surface soils will be difficult during or after extended wet periods or when the moisture content of the surface soil is more than a few percentage points above optimum. Soils that have been disturbed during site preparation activities, or soft or loose zones identified during probing or proof rolling, should be removed and replaced with compacted structural fill. Track-mounted excavating equipment will be required during wet weather. The imported granular material should be placed in one lift over the prepared, undisturbed sub-grade and compacted using a smooth drum, non-vibratory roller. Additionally, a geo-textile fabric should be placed as a barrier between the sub-grade and imported granular material in areas of repeated traffic.

4.2 Excavation

Subsurface conditions of accessible cleared areas of the project site show predominately CLAY to the depth explored (4.0 feet). Excavations in the upper soils may be readily accomplished with conventional earthwork equipment with smooth faced bucket.

4.3 Structural Fills

Fills should be placed over sub-grade prepared in compliance with Section 4.1 of this report. Material used, as structural fill should be free of organic matter or other unsuitable

materials and should meet specifications provided in OSSC, depending upon the application. A discussion of these materials is in the following sections.

4.3.1 Native Soils

Laboratory testing indicates that the moisture content of the near-surface is greater than the optimum moisture content of the soil required for satisfactory compaction. This is depending on the weather conditions at the time of excavation. See section 4.3.2 for imported granular fill.

4.3.2 Imported Granular Fill

The imported granular material must be reasonably well graded to between coarse and fine material and have less than 5% by weight passing the US Standard No.200 Sieve. Imported granular material should be placed in lifts 8 to 12 inches and be compacted to at least 95% of the maximum dry density, as determined by ASTM D 698. Where imported granular material is placed over wet or soft soil sub-grades, we recommend that a geo-textile serve as a barrier between the sub-grade and imported granular material.

4.4 Drainage Considerations

The Contractor shall be made responsible for temporary drainage of surface water and groundwater as necessary to prevent standing water and/or erosion at the working surface. We recommend removing only the foliage necessary for construction to help minimize erosion. Slope the ground surface around the structures to create a minimum gradient of 2% away from the building foundations for a distance of at least 5 feet. Surface water should be directed away from all buildings into drainage swales or into a storm drainage system. *Foundation drains are required.*

5.0 CONSTRUCTION OBSERVATIONS

Satisfactory pavement and earthwork performance depends on the quality of construction. Sufficient monitoring of the activities of the contractor is a key part of determining that the work is completed in accordance with the construction drawings and specifications. I recommend that a geotechnical engineer observe general excavation, stripping, fill placement, and sub-grades in addition to base. Subsurface conditions observed during construction should be compared with those encountered during the subsurface explorations. Recognition of changed conditions requires experience. Therefore, qualified personnel should visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those anticipated.

6.0 LIMITATIONS

This report has been prepared for the exclusive use of the addressee, and their architects and engineers for aiding in the design and construction of the proposed development. It is the addressee's responsibility to provide this report to the appropriate design professionals, building

officials, and contractors to ensure correct implementation of the recommendations. The opinions, comments and conclusions presented in this report were based upon information derived from our literature review, field investigation, and laboratory testing. Conditions between, or beyond, our exploratory borings may vary from those encountered. Unanticipated soil conditions and seasonal soil moisture variations are commonly encountered and cannot be fully determined by merely taking soil samples or soil borings. Such variations may result in changes to our recommendations and may require that additional expenditures be made to attain a properly constructed project. Therefore, some contingency fund is recommended to accommodate such potential extra costs.

If there is a substantial lapse of time between the submission of this report and the start of work at the site; if conditions have changed due to natural causes or construction operations at, or adjacent to, the site; or, if the basic project scheme is significantly modified from that assumed, it is recommended this report be reviewed to determine the applicability of the conclusions and recommendations.

The work has been conducted in general conformance with the standard of care in the field of geotechnical engineering currently in practice in the Pacific Northwest for projects of this nature and magnitude. No warranty, express or implied, exists on the information presented in this report. By utilizing the design recommendations within this report, the addressee acknowledges and accepts the risks and limitations of development at the site, as outlined within the report.

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Google Maps <https://www.google.com/maps>
Google Earth 2019
Washington County GIS interactive maps <http://gisims.co.washington.or.us/gis/>
Portland Maps <https://www.portlandmaps.com/>
USGS TopoView <https://ngmdb.usgs.gov/topoview/>
DOGAMI Oregon State Wide Geohazard Viewer (HazVu)
<https://gis.dogami.oregon.gov/maps/hazvu/>
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APPENDIX

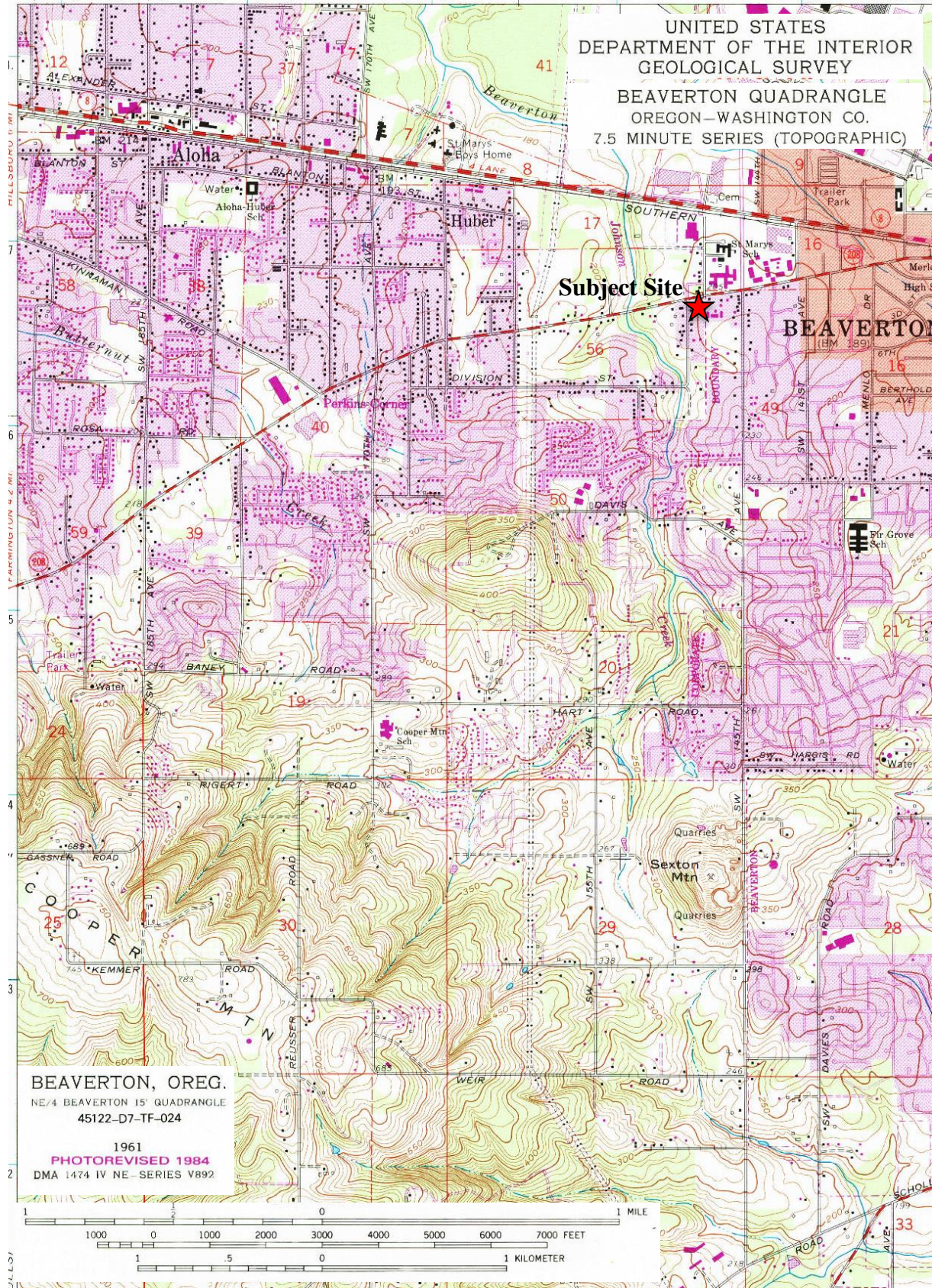


Figure 1: Subject site location on the NW quarter of the Beaverton Quadrangle



Figure 3: Subject site with approximate boring locations and proposed new property lines (dashed white).

Moisture

| | Sample number | HA#1 | HA#2 | HA#3 | HA#4 | HA#5 |
|----|---------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1 | Date and time in oven | 8/5/20 1:10 PM | 8/5/20 1:10 PM | 8/5/20 1:10 PM | 8/5/20 1:10 PM | 8/5/20 1:10 PM |
| 2 | Date and time out of oven | 8/7/20 11:45 AM | 8/7/20 11:45 AM | 8/7/20 11:45 AM | 8/7/20 11:45 AM | 8/7/20 11:45 AM |
| 3 | Depth (ft) | 2 | 4 | 4 | 2 | 2 |
| 4 | Tare No. | 1 | 2 | 3 | 4 | 5 |
| 5 | Tare Mass | 234 | 234 | 234 | 231 | 234 |
| 6 | Tare plus sample moist | 1099 | 958 | 1047 | 1088 | 939 |
| 7 | Tare plus sample dry | 1006 | 789 | 859 | 999 | 865 |
| 8 | Mass of water (g) | 93 | 169 | 188 | 89 | 74 |
| 9 | Mass of soil (g) | 772 | 555 | 625 | 768 | 631 |
| 10 | Water Content (%) | 12.0 | 30.5 | 30.1 | 11.6 | 11.7 |

Atterberg Limit Test

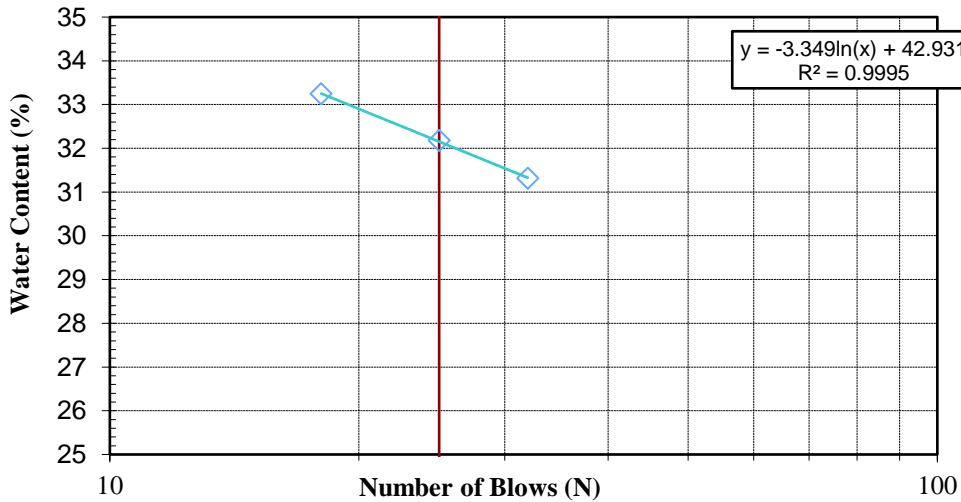
Sample Number: HA#5

Depth: 2'

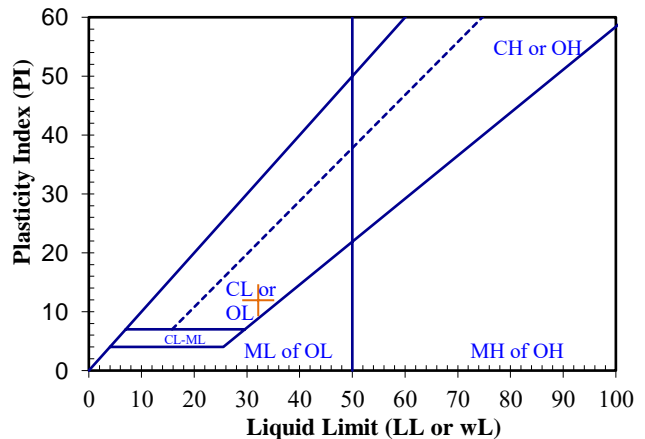
Liquid Limit

Plastic Limit

| | Tare No. | D#1.1 | D#1.2 | D#1.3 | R#1.1 | R#1.2 |
|---|------------------------|-------|-------|-------|-------|-------|
| 1 | Tare No. | | | | | |
| 2 | Tare Mass (g) | 39.24 | 39.66 | 40.26 | 39.39 | 40.16 |
| 3 | Tare Plus Wet Soil (g) | 73.46 | 68.96 | 72.26 | 51.39 | 52.27 |
| 4 | Tare Plus Dry Soil (g) | 65.30 | 61.65 | 64.47 | 49.38 | 50.23 |
| 5 | Mass of Water (g) | 8.16 | 7.31 | 7.79 | 2.01 | 2.04 |
| 6 | Mass of Soil (g) | 26.06 | 21.99 | 24.21 | 9.99 | 10.07 |
| 7 | Water Content (%) | 31.31 | 33.24 | 32.18 | 20.12 | 20.26 |
| 8 | No. Blows | 32 | 18 | 25 | | |



Liquid Limit (%) 32.2
 Plastic Limit (%) 20.2
 Plasticity Index (%) 12.0
 USCS Classification of fines: CL



HA#1

Surface Elevation:
 Boring Date: 05 August 2020
 Boring Location: Beaverton, OR
 Drilling Method: Hand Auger

| Depth | Remarks | Moisture (%) | Dry Density | Blow Counts | Sample Type | Water Table |
|-------|---------|--------------|-------------|-------------|-------------|---|
| 0 | | | | | ML-TP | Dry, stiff, light brown, SILT with grass roots. |
| 1 | | | | | ML-CL | Dry, stiff, mottled orange-tan and grey, clayey SILT to silty CLAY. |
| 2 | 12.0 | | | | | Boring completed at depth of 2 feet. |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

LOG OF BORING

HA#2

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Users\Owner\Documents\In Progress Files\14830 SW Farmington Rd Geotech 05Aug20\SW Farmington Logs.log Date: 8/7/2020

Surface Elevation:
 Boring Date: 05 August 2020
 Boring Location: Beaverton, OR
 Drilling Method: Hand Auger

| Depth | Remarks | Moisture (%) | Dry Density | Blow Counts | Sample Type | Water Table |
|-------|---------|--------------|-------------|-------------|-------------|--|
| 0 | | | | | GP | Dry, dense, light brownish grey, poorly sorted angular GRAVEL with grass roots and silt. Imported gravels. |
| 1 | | | | | ML | Dry, stiff, light brown, SILT. |
| 2 | | | | | CL | Dry, stiff, mottled orange-tan and grey, clayey SILT to silty CLAY. |
| 3 | | | | | CL | Damp-dry, mottled orange-tan and grey, clayey SILT to silty CLAY. |
| 4 | 30.5 | | | | ML | Damp-dry, tan-brown, clayey SILT to SILT, with micas. |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

LOG OF BORING

Boring completed at depth of 4 feet.

HA#3

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Users\Owner\Documents\In Progress Files\14830 SW Farmington Rd Geotech 05Aug20\SW Farmington Logs.log Date: 8/7/2020

Surface Elevation:
 Boring Date: 05 August 2020
 Boring Location: Beaverton, OR
 Drilling Method: Hand Auger

| Depth | Remarks | Moisture (%) | Dry Density | Blow Counts | Sample Type | Water Table |
|-------|---------|--------------|-------------|-------------|-------------|---|
| 0 | | | | | ML-TP | Dry, stiff, light brown, SILT with grass roots. |
| | | | | | ML | Dry, stiff, light brown, SILT to clayey SILT. |
| 1 | | | | | | |
| 2 | | | | | CL | Dry, stiff, mottled orange-tan and grey, clayey SILT to silty CLAY. |
| 3 | | | | | CL | Damp-dry, mottled orange-tan and grey, clayey SILT to silty CLAY. |
| 4 | 30.5 | | | | ML | Damp-dry, tan-brown, clayey SILT to SILT, with micas. |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

LOG OF BORING

Boring completed at depth of 4 feet.

HA#4

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Users\Owner\Documents\In Progress Files\14830 SW Farmington Rd Geotech 05Aug20\SW Farmington Logs.log Date: 8/7/2020

Surface Elevation:
 Boring Date: 05 August 2020
 Boring Location: Beaverton, OR
 Drilling Method: Hand Auger

| Depth | Remarks | Moisture (%) | Dry Density | Blow Counts | Sample Type | Water Table |
|-------|---------|--------------|-------------|-------------|-------------|---|
| 0 | | | | | ML-TP | Dry, stiff, light brown, SILT with grass roots. |
| 0 - 1 | | | | | ML-CL | Dry, stiff, mottled orange-tan and grey, clayey SILT to silty CLAY. |
| 2 | 11.6 | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

GWT not encountered

Boring completed at depth of 2 feet.

LOG OF BORING

RAPID SOIL SOLUTIONS

14830 SW Farmington Road
 Kim-Hien Nguyn; George Wienholz

Plate 4

HA#5

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Users\Owner\Documents\In Progress Files\14830 SW Farmington Rd Geotech 05Aug20\SW Farmington Logs.log Date: 8/7/2020

Surface Elevation:
 Boring Date: 05 August 2020
 Boring Location: Beaverton, OR
 Drilling Method: Hand Auger

| Depth | Remarks | Moisture (%) | Dry Density | Blow Counts | Sample Type | Water Table |
|-------|--------------|--------------|-------------|-------------|-------------|---|
| 0 | | | | | ML-TP | Dry, stiff, light brown, SILT with grass roots. |
| | | | | | ML-CL | Dry, stiff, mottled orange-tan and grey, clayey SILT to silty CLAY. |
| 2 | LL=32, PI=12 | 11.6 | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

GWT not encountered

Boring completed at depth of 2 feet.

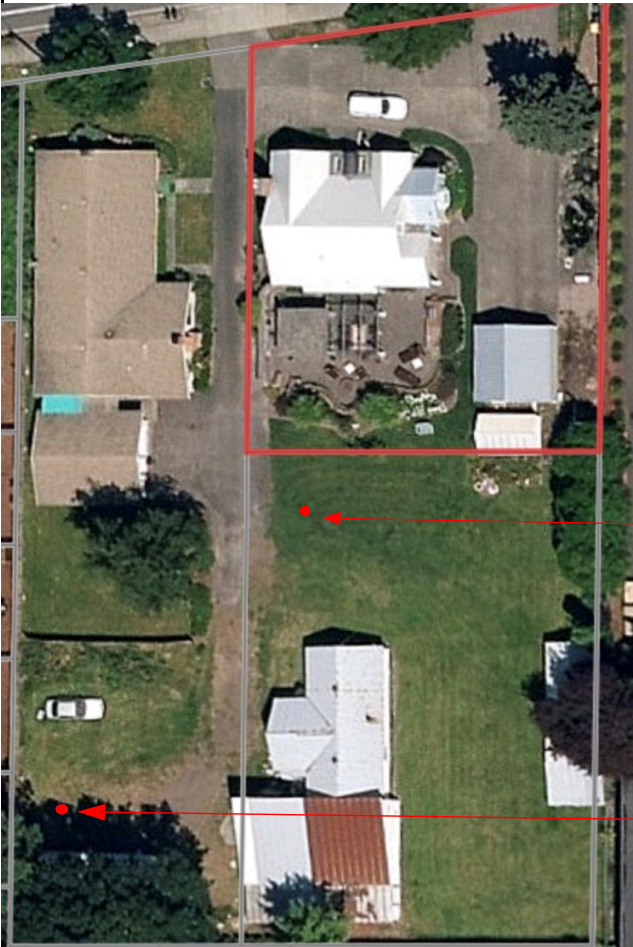
LOG OF BORING

RAPID SOIL SOLUTIONS

14830 SW Farmington Road
 Kim-Hien Nguyn; George Wienholz

Plate 5

Rapid Soil Solutions Infiltration Test Results



HA #6

HA #7

Preliminary Information

Location 14830 SW Farmington Road, Beaverton

Tester's name: Wilton Roberts, PE, retired

Tester's Company: Rapid Soil Solutions

Date & Time:

8/5/2020 11:10

Instrument Used:

4" hand auger, 2" pipe

Weather:

Light rain, 60 deg.

Depth:

4'

Test Hole Number 6

Presoak 12"@11:10 8/5/20. 2.2"@9:34 8/6/20 end presoak.

Soil Profile Detail

| Depth (ft) | Soil Texture |
|------------|------------------|
| 0-3" | Topsoil |
| 3"-4' | Stiff silty CLAY |

No water found

| Time: | Time Interval (minutes): | Measurement, (inches): | Drop in water level, (Inches): | Percolation rate, (minutes per inch): | Remarks: |
|-------|--------------------------|------------------------|--------------------------------|---------------------------------------|----------|
| 9:34 | | 42.6 | | | |
| 10:04 | 30 | 42.5 | 0.1 | 375.0 | |
| 10:34 | 30 | 42.4 | 0.1 | 250.0 | |
| 11:04 | 30 | 42.3 | 0.1 | 272.7 | |
| 11:34 | 30 | 42.2 | 0.1 | 250.0 | |
| 12:04 | 30 | 42.1 | 0.1 | 250.0 | |
| 12:34 | 30 | 41.9 | 0.1 | 250.0 | |
| | | | | 268.7 | |



| 503-816-3689

| mia@rapidsoilsolutions.com

| Rapid Soil Solutions Infiltration Test Results | | | | | |
|---|---------------------------------|-------------------------------|---------------------------------------|--|-----------------|
| Date & Time: | | 8/5/2020 11:19 | | Instrument Used: 4" hand auger, 2" pipe | |
| Weather: | | Light rain, 60 deg. | | Depth: 4' | |
| Test Hole Number 7 | | | | | |
| Presoak 12" @ 11:19 8/5/20. 2.7" @ 9:37 8/6/20 end presoak. | | | | | |
| Soil Profile Detail | | | | | |
| Depth (ft) | Soil Texture | | | | |
| 0-3" | Topsoil | | | | |
| 3"-4' | Silty SAND | | | | |
| No water found | | | | | |
| Time: | Time Interval (minutes): | Measurement, (inches): | Drop in water level, (Inches): | Percolation rate, (minutes per inch): | Remarks: |
| 9:37 | | 19.1 | | | |
| 10:07 | 30 | 11.0 | 8.0 | 3.7 | |
| 10:07 | 0 | 17.6 | | Added water | |
| 10:37 | 30 | 9.7 | 7.9 | 3.8 | |
| 10:37 | 0 | 20.3 | | Added water | |
| 11:07 | 30 | 12.4 | 7.9 | 3.8 | |
| 11:07 | 0 | 18.8 | | Added water | |
| 11:37 | 30 | 10.9 | 7.9 | 3.8 | |
| 11:37 | 0 | 34.2 | | Added water | |
| 12:07 | 30 | 26.3 | 7.9 | 3.8 | |
| 12:37 | 30 | 18.5 | 7.8 | 3.9 | |
| | | | | 3.8 | |



Street Design for SW Watershed Lane, OR

There will be a total of 6 plus existing 9 lots that will use this street. Each house can generate up to 15 trips per day so the ADT = 225

n=25 years

$M_R=12,655$

$W_{18} = \text{ESAL's} = 84,805$

$S_0=0.5$

$D_d=1$

$g=.5\%$

$P_o=4.2$

$P_t=2.5$

Design reliability= 90%

$Z_R= -1.282$ (FHWA NHI -05-037)

$D_i=1$

Using the AASHTO flexible design equation

$$\log_{10}(W_{18}) = Z_R \times S_o + 9.36 \times \log_{10}(SN+1) - 0.20 + \frac{\log_{10}\left(\frac{\Delta PSI}{4.2-1.5}\right)}{0.40 + \frac{1094}{(SN+1)^{5.19}}} + 2.32 \times \log_{10}(M_R) - 8.07$$

Where $M_R = 1000 + 555(R) = 12655$ where $R=2$ see lab results

Existing street section from coring of roadway by ACS Testing. AC=6" and Aggregate Base=12"

$S_n = 6(.42) + 12(.10) = 3.72$

Results of inserting all the above values in the AASHTO equation come up with:

$4.93 < 6.62$ This works and is greater than what is required for a street section for the next 25 years.



Mia Mahedy, PE GE



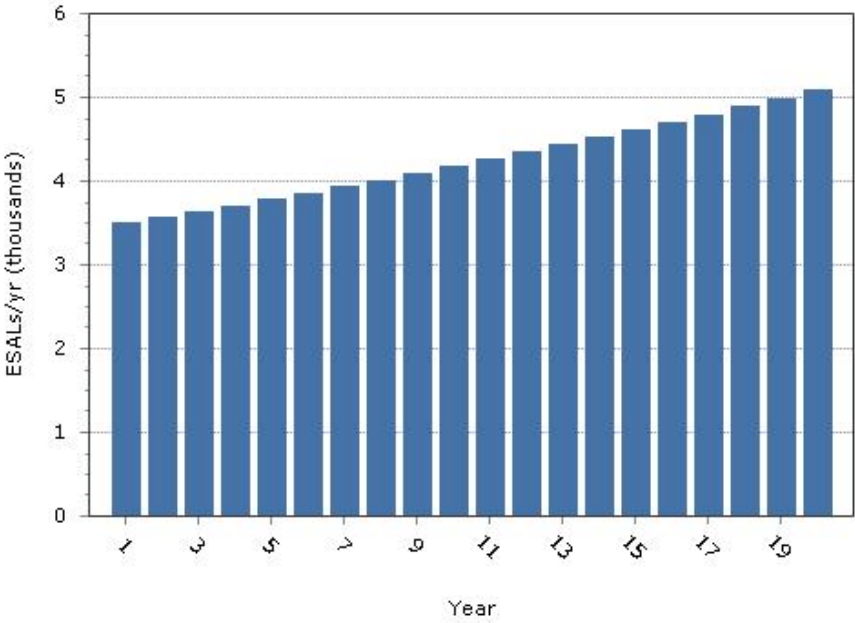
Traffic Calculation

No. of Years to Project Traffic (yrs): [Help](#)
 Determine Past and Future ESALs

Two-Way Average Daily Traffic (ADT): [Help](#)
 Directional Distribution Factor (%): [Help](#)
 Design Lane Distribution Factor (%): [Help](#)
 Growth Rate (%): [Help](#)
 Percent Trucks (%): [Help](#)
 Truck Factor (ESALs/Truck): [Help](#)

ESAL Calculation

Total ESALs: 84,805



RAPID SOIL SOLUTIONS
3915 SW PLUM STREET
PORTLAND, OR 97219-6018

ACS Testing, Inc
 7409 SW Tech Center Dr Ste 145
 Tigard, OR 97223
 PH: 503-443-3799 F: 503-620-2748

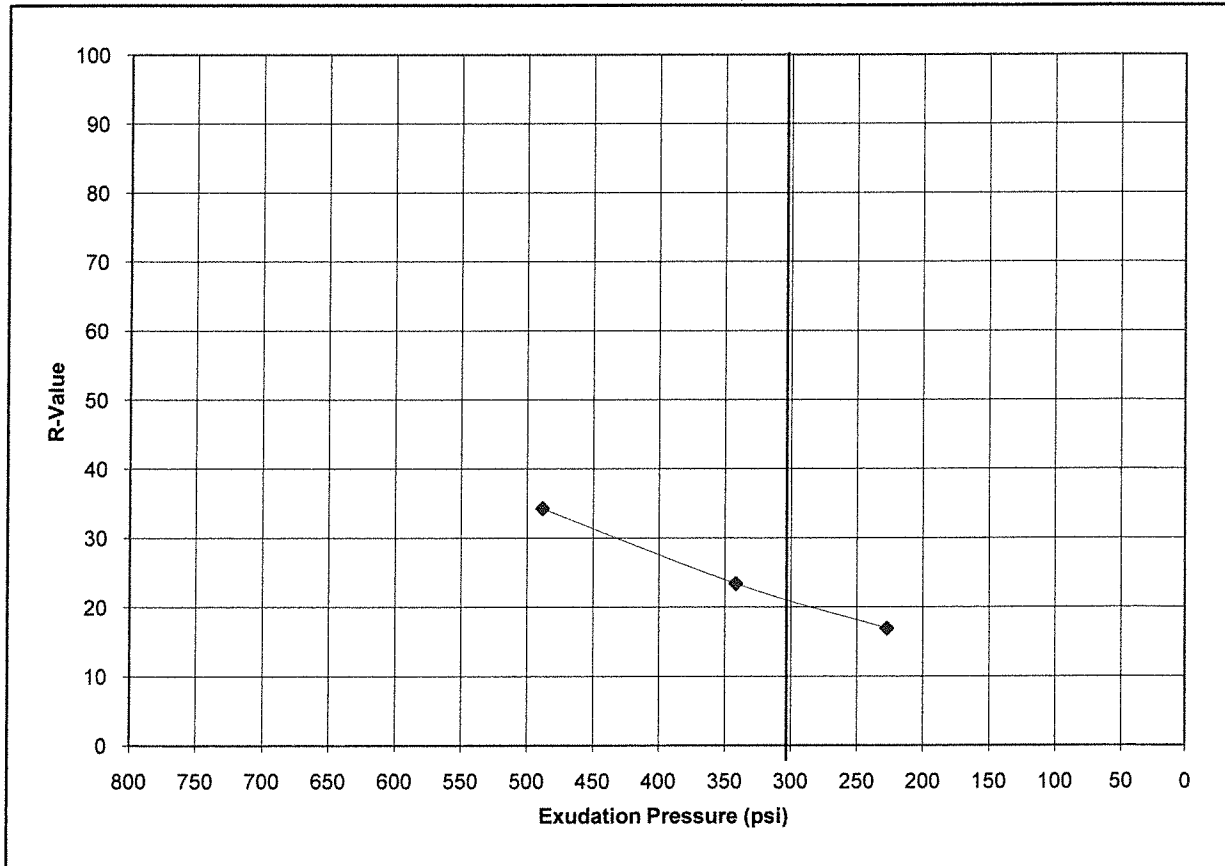


PROJECT: 14830 SW Farmington Road
LOCATION:
MATERIAL: Brown clay Silt
SAMPLE SOURCE: Site

JOB NO: 20-9976
SAMPLE NO: 1
LAB NO: 12740
DATE SAMPLED: 8/5/2020

RESISTANCE R-VALUE AND EXPANSION PRESSURE OF COMPACTED SOILS (ASTM D2844)

| SPECIMEN I. D. | A | B | C |
|------------------------------|-------|-------|-------|
| Moisture Content | 18.1% | 19.2% | 20.8% |
| Compaction Pressure (psi) | 350 | 230 | 160 |
| Specimen Height (inches) | 2.55 | 2.55 | 2.50 |
| Dry Density (pcf) | 103.0 | 96.2 | 95.5 |
| Horiz. Pres. @ 1000lbs (psi) | 48.0 | 58.0 | 65.0 |
| Horiz. Pres. @ 2000lbs (psi) | 100.0 | 116.0 | 125.0 |
| Displacement | 2.88 | 3.11 | 3.44 |
| Expansion Pressure (psi) | 0.9 | 0.5 | 0.1 |
| Exudation Pressure (psi) | 488 | 342 | 228 |
| R Value | 34 | 23 | 17 |



R Value at 300 PSI = 21

REVIEWED BY:



DAILY SOILS REPORT

Job # 20-9657-42

Date: 8-7-2020

Permit # N/A

Mail To :

RAPID SOIL SOLUTIONS
3915 SW PLUM STREET
PORTLAND, OR 97219-6018

Project :

14830 SW FARMINGTON RD
14830 SW FARMINGTON RD
BEAVERTON, OR 97007

Inspector: Jesse Byrd

Weather: Sunny

Contractor: Rapid Soil Solutions

Temperature: 78 °

Field Inspection:

ACS representative arrived on site to take a core sample from roadway in cul-de-sac. Drilled a 6" hole, asphalt measured at 4" in depth with aggregate below measuring at 12" in depth.

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Reviewed  Date: 8-10-2020

CC: Mia Mahedy

DE/LK Doug Esquivel, VP

