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CIVIL ENGINEERS & PLANNERS

February 19, 2019

City of West Linn Planning Dept.
ATTN: Jennifer Arnold
22500 Salamo Road
West Linn, OR 97068

SUBJECT: Incomplete Letter – Application No. SUB-18-04 application for 12-lot Subdivision at 22870 Weatherhill Road

Dear Mrs. Arnold:

You provided the applicant with an incomplete letter on January 23, 2019 indicating items that needed to be submitted by the applicant before the City could deem the application complete. Below is the list of incomplete items listed in the City's January 23, 2019 letter, as well as a response from the applicant.

Engineering:

1. The centerline of the road needs to be the true centerline of the road as parking is not prohibited on one side or another.

RESPONSE: The applicant has revised the centerline for Satter St. so that it is a "true" centerline. See submitted revised plan set for more detail.

2. Need to add a turnaround approved by TVF&R at the east end near lot 7 and 12 in case the 22864 Weatherhill Subdivision does not go through.

RESPONSE: The applicant has added a turnaround at the east end near lot 7. The applicant is proposing to use the flag pole for lot 6 as the fire turnaround until Satter St. is extended with the development of the adjacent property to the east (i.e. 22864 Weatherhill Rd.). See sheet 6 of the revised plan set for more detail.

3. Planters are not a good application for this site. Better applications might be: a. A few planters and a small pond.

b. Install the future storm, water and sanitary sewer mains extending across the 22864 Weatherhill Subdivision to the east along with the necessary easements. The storm water would go to the regional

pond at Bland and Salamo. A drainage report would need to show that the pond has capacity for this subdivision.

RESPONSE: The applicant has worked closely with the City's Engineer to design LIDA planters for the project. As a result of working with the City's Engineer, the applicant has revised the LIDA planters to meet the requirements of the City. See revised plan set for more detail.

Planning:

Community Development Code Chapter 32, Water Resource Area Protection: A narrative addressing approval and submittal criteria for Chapter 32 is required.

RESPONSE: The applicant worked closely with Schott & Associates on the Water Resource Area Protection requirements. As a result, the applicant has provided a narrative prepared by Schott & Associates addressing the approval and submittal criteria for Chapter 32. A copy of the narrative has been included with the incomplete items submitted by the applicant.

85.170.B(2)(c) TIA When Required: Preliminary count required to show number of trips generated by this development. A full TIA is not required. Please put preliminary count in the narrative.

RESPONSE: Pursuant to the City requesting a trip generation letter, the applicant hired Global Transportation Engineering to prepare the required letter. A copy of the Global Transportation Engineering trip generation letter has been submitted with the incomplete materials.

85.200.A(17) Planter Strip: Narrative shows the installation of planter strips along the Satter Street extension. The submitted plans show the LIDA planters in place of the planter strip. Plans and narrative must be consistent.

RESPONSE: The applicant has updated the narrative accordingly to address this item. A revised narrative has been submitted with the incomplete response.

85.200.J(4) Street Lighting: A street lighting plan is noted as submitted in the narrative, but does not appear to have been included in the applicant's submitted packet. The LIDA planters do not leave much room (if any) for required street lighting which needs to be addressed in the narrative and on the plans.

RESPONSE: A street lighting plan has been prepared and submitted with the incomplete materials as Sheet 12 of the plan set.

99.038.E(5) Neighborhood Association Meeting Submittal Requirements: Submitting an audiotape of the meeting is an application requirement.

RESPONSE: The applicant contacted the Savana Oaks Neighborhood Association (SONA) to get a copy of the audiotape for the neighborhood meeting the applicant attended to present the proposed subdivision. I was informed by Roberta Schwarz, President Designee, that they do not record their meetings. However, Mrs. Schwarz provided the applicant with the meeting minutes from the meeting and the applicant has submitted those to the City with the application. Since SONA does not record their meeting, the applicant will not be able to provide a recording of the SONA meeting attended for this proposal.

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DATE: 12-27-2018

PROPERTY OWNER/ DEVLOPER:
22870 Weatherhill, LLC
%Partnership Administrator: Rod Friesen
12810 SW Morningstar Dr.
Tigard, OR 97223
Ph.: (971) 235-3314
E-mail: rod.friesen@frontier.com

CIVIL ENGINEER, PLANNING & SURVEYOR:
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REQUEST: Approval of 24-Lot Subdivision in the R-7 zone.

SITE LOCATION: 22870 Weatherhill Rd.

ZONING: Single-Family Residential Detached and attached (R-7)**,** City of West Linn, Oregon

SITE SIZE: 2.57 Acres

LEGAL DESCRIPTION: Tax Map 2S1E35B, Tax Lot 405

LIST OF EXHIBITS:

1 - Detailed Plan Set

2 – Pre-Application Notes

3 – Neighborhood Meeting Notice

4 – Phase I Environmental Report

5 – Geotechnical Report

6 – Stormwater Management Report

7 – Arborist Report

WEST LINN APPLICABLE COMMUNITY DEVELOPMENT CODE (CDC) SECTIONS

CDC Chapter 12: (R-7 Zone)

CDC Chapter 32: Water Resource Area Protection – (Submitted as separate narrative by Schott & Associates)

CDC Chapter 48: Access, Egress and Circulation

CDC Chapter 85: Land Division

CDC Chapter 92: Required Improvements

I. INTRODUCTION

The applicant is applying to subdivide an approximately 2.57 – acre property in a manner that allows the applicant to provide a variety of lot sizes and housing types. The subject property was recently annexed into the City of West Linn pursuant to File No. ANX-17-01 and Ordinance #1671. A pre-application conference was held with the City to discuss the subdivision of this property on September 6, 2018 by the Applicant.

The subject property is located on the south side of Weatherhill Road approximately 180-feet east Satter Street. The property is located on a hill and the site slopes gently downward to the south/southeast. There is one existing single-family residential home on the property, as well as the presence of a headwater to a small ephemeral stream on the southern edge of the property. The home will be removed with the development of the subdivision. There are trees, planted fields and grass, and a defined garden area on the property.

Adjacent properties to the south, east and west are within the West Linn City limits and are zoned R-7. These properties are developed with residential dwellings. There are two (2) properties located immediately to the north and across Weatherhill Road. One is located within the City and is developed with the Tanner Springs Assisted Living facility, while the other is located in unincorporated Clackamas County and is developed with a single-family residence.

II. CONFORMANCE WITH CITY OF WEST LINN CODE APPROVAL CRITERIA

CHAPTER 12 SINGLE-FAMILY RESIDENTIAL DETACHED AND ATTACHED, R-7

12.030 PERMITTED USES

The following uses are permitted outright in this zone.

1. ***Single-family detached residential unit.***

RESPONSE: The proposed use is single-family detached residential units, a use permitted outright in the R-7 zone. The applicant's proposal satisfies the requirements of this section.

12.070 DIMENSIONAL REQUIREMENTS, USES PERMITTED OUTRIGHT AND USES PERMITTED UNDER PRESCRIBED CONDITIONS

Except as may be otherwise provided by the provisions of this code, the following are the requirements for uses within this zone:

A. The minimum lot size shall be:

1. For a single-family detached unit, 7,000 square feet.

B. The minimum front lot line length or the minimum lot width at the front lot line shall be 35 feet.

C. The average minimum lot width shall be 35 feet.

RESPONSE: The sizes of the twelve (12) lots proposed in the subdivision are between 7,004 square feet, and 9,744 square feet, with an average lot size of 7,490 square feet. As such, all twelve (12) lots meet or exceed the 7,000-square foot minimum lot size. All proposed front lot lines will meet or exceed the 35-foot minimum front lot line length, as well as the minimum average lot width of 35 feet. Therefore, all twelve (12) lots comply with the above criteria.

E. The minimum yard dimensions or minimum building setback areas from the lot line shall be:

1. For the front yard, 20 feet, except for steeply sloped lots where the provisions of CDC 41.010 shall apply.

2. For an interior side yard, seven and one-half feet.

3. For a side yard abutting a street, 15 feet.

4. For a rear yard, 20 feet.

F. The maximum building height shall be 35 feet, except for steeply sloped lots in which case the provisions of CDC 41.010 shall apply.

G. The maximum lot coverage shall be 35 percent.

H. The minimum width of an accessway to a lot which does not abut a street or a flag lot shall be 15 feet.

I. The maximum floor area ratio shall be 0.45. Type I and II lands shall not be counted toward lot area when determining allowable floor area ratio, except that a minimum floor area ratio of 0.30 shall be allowed regardless of the classification of lands within the property. That 30 percent shall be based upon the entire property including Type I and II lands. Existing residences in excess of this standard may be replaced to their prior dimensions when damaged without the requirement that the homeowner obtain a non-conforming structures permit under Chapter 66 CDC.

J. The sidewall provisions of Chapter 43 CDC shall apply.

RESPONSE: No homes are being proposed at this time. All Yard dimensions, building height, lot coverage, floor area ratios and sidewall provisions will be verified at time of building permit submittal.

CHAPTER 48 – ACCESS, EGRESS AND CIRCULATION

48.025 ACCESS CONTROL

A. Purpose. The following access control standards apply to public, industrial, commercial and residential developments including land divisions. Access shall be managed to maintain an adequate level of service and to maintain the functional classification of roadways as required by the West Linn Transportation System Plan.

B. Access control standards.

1. Traffic impact analysis requirements. The City or other agency with access jurisdiction may require a traffic study prepared by a qualified professional to determine access, circulation and other transportation requirements.

RESPONSE: The City has not required a traffic impact analysis due to the small size and low impacts of the proposed development.

2. The City or other agency with access permit jurisdiction may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system. Access to and from off-street parking areas shall not permit backing onto a public street.

RESPONSE: Each lot on the property will include a driveway to provide access to/from either Weahterhill Rd. and/or Satter St., which are both public streets adjacent to the site with a local designation. The City's spacing standards for driveways along residential streets has been maintained for all new driveway access locations. The proposed configuration will create a safe and efficient access configuration for each new driveway.

3. <u>Access options.</u> When vehicle access is required for development (i.e., for off-street parking, delivery, service, drive-through facilities, etc.), access shall be provided by one of the following methods (planned access shall be consistent with adopted public works standards and TSP). These methods are "options" as approved by the City Engineer.

a) <u>Option 1.</u> Access is from an existing or proposed alley or mid-block lane. If a property has access to an alley or lane, direct access to a public street is not permitted.

b) Option 2. Access is from a private street or driveway connected to an adjoining property that has direct access to a public street (i.e., "shared driveway"). A public access easement covering the driveway shall be recorded in this case to assure access to the closest public street for all users of the private street/drive.

c) Option 3. Access is from a public street adjacent to the development lot or parcel. If practicable, the owner/developer may be required to close or consolidate an existing access point as a condition of approving a new access. Street accesses shall comply with the access spacing standards in subsection (B)(6) of this section.

RESPONSE: The Applicant is proposing access to the site via Option 3. The proposed design limits curb cuts for access to the new lots proposed within this development. Each lot will take access to either Weatherhill Rd. or Satter St. via individual driveways. The City's spacing standards for driveways along residential streets has been maintained for all new driveway access locations. The proposed configuration will create a safe and efficient access configuration for each new driveway.

4. Subdivisions fronting onto an arterial street. New residential land divisions fronting onto an arterial street shall be required to provide alleys or secondary (local or collector) streets for access to individual lots. When alleys or secondary streets cannot be constructed due to topographic or other physical constraints, access may be provided by consolidating driveways for clusters of two or more lots (e.g., includes flag lots and mid-block lanes).

RESPONSE: The proposed development does not front onto an arterial street. The requirements of this section do not apply.

5. Double-frontage lots. When a lot or parcel has frontage onto two or more streets, access shall be provided first from the street with the lowest classification. For example, access shall be provided from a local street before a collector or arterial street. When a lot or parcel has frontage opposite that of the adjacent lots or parcels, access shall be provided from the street with the lowest classification.

RESPONSE: No double fronted lots will be created as part of this subdivision.

6. Access spacing.

a. The access spacing standards found in the adopted Transportation System Plan (TSP) shall be applicable to all newly established public street intersections and non-traversable medians. Deviation from the access spacing standards may be granted by the City Engineer if conditions are met as described in the access spacing variances section in the adopted TSP.

b. Private drives and other access ways are subject to the requirements of CDC 48.060.

RESPONSE: The Applicant's proposed driveway locations are shown on the site plan (see Sheet 7). The City's access spacing requirements for new driveways onto a residential local street have been maintained.

7. Number of access points. For single-family (detached and attached), two-family, and duplex housing types, one street access point is permitted per lot or parcel, when alley access cannot otherwise be provided; except that two access points may be permitted corner lots (i.e., no more than one access per street), subject to the access spacing standards in subsection (B)(6) of this section. The number of street access points for multiple family, commercial, industrial, and public/institutional

developments shall be minimized to protect the function, safety and operation of the street(s) and sidewalk(s) for all users. Shared access may be required, in conformance with subsection (B)(8) of this section, in order to maintain the required access spacing, and minimize the number of access points.

RESPONSE: The Applicant is proposing only one access point for each single-family lot. New driveways will be created for all 12 lots.

8. Shared driveways. The number of driveway and private street intersections with public streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The City shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes in accordance with the following standards:

a. Shared driveways and frontage streets may be required to consolidate access onto a collector or arterial street. When shared driveways or frontage streets are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway or street temporarily ends at the property line, but may be extended in the future as the adjacent lot or parcel develops. "Developable" means that a lot or parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).

b. Access easements (i.e., for the benefit of affected properties) shall be recorded for all shared driveways, including pathways, at the time of final plat approval or as a condition of site development approval.

c. Exception. Shared driveways are not required when existing development patterns or physical constraints (e.g., topography, lot or parcel configuration, and similar conditions) prevent extending the street/driveway in the future.

RESPONSE: The Applicant is not proposing any shared driveways for the development.

C. Street connectivity and formation of blocks required. In order to promote efficient vehicular and pedestrian circulation throughout the City, land divisions and large site developments shall produce complete blocks bounded by a connecting network of public and/or private streets, in accordance with the following standards:

1. Block length and perimeter. The maximum block length shall not exceed 800 feet or 1,800 feet along an arterial.

2. Street standards. Public and private streets shall also conform to Chapter 92 CDC, Required Improvements, and to any other applicable sections of the West Linn Community Development Code and approved TSP.

3. ***Exception. Exceptions to the above standards may be granted when blocks are divided by one or more pathway(s), in conformance with the provisions of CDC 85.200(C), Pedestrian and Bicycle Trails, or cases where extreme topographic (e.g., slope, creek, wetlands, etc.) conditions or compelling functional limitations preclude***

implementation, not just inconveniences or design challenges.

RESPONSE: No new roads are being proposed as part of the subdivision. Satter Street is currently stubbed at the western boundary of the site. With this proposal the applicant will be extending Satter Street through the site from west to east and stubbing the street at the eastern boundary of the site for future extension.

The existing block length along Weatherhill Rd. between the center-line of Satter Street and De Vries Way is 584 feet. With the extension of Satter Street through the site, it will allow for the future extension of the street through the neighbor's property where it will be connected with the existing Satter Street stub located in the Weahtherhill Estates subdivision. Once Satter Street is connected between the Weatherhill Subdivision and the Weatherhill Estates Subdivision, a block length will be established that is 926 feet in length. When the property to the east of the subject property redevelops, there will be an opportunity to establish a new block length of 800-feet by creating a new street connection with Weatherhill Road.

Existing development patterns and topographic conditions preclude the extension of any new roadways through the site or within close proximity which could logically provide for future connectivity. Furthermore, Figure 12 of the West Linn Transportation System Plan – Recommended Local Street Connectivity Projects – does not identify a new street connection within or adjacent to this site. All street standards will be met as shown in the submitted plan set.

48.030 MINIMUM VEHICULAR REQUIREMENTS FOR RESIDENTIAL USES

A. Direct individual access from single-family dwellings and duplex lots to an arterial street, as designated in the transportation element of the Comprehensive Plan, is prohibited for lots or parcels created after the effective date of this code where an alternate access is either available or is expected to be available by imminent development application. Evidence of alternate or future access may include temporary cul-de-sacs, dedications or stubouts on adjacent lots or parcels, or tentative street layout plans submitted at one time by adjacent property owner/developer or by the owner/developer, or previous owner/developer, of the property in question.

In the event that alternate access is not available as determined by the Planning Director and City Engineer, access may be permitted after review of the following criteria:

1. Topography.

2. Traffic volume to be generated by development (i.e., trips per day).

3. Traffic volume presently carried by the street to be accessed.

4. Projected traffic volumes.

5. Safety considerations such as line of sight, number of accidents at that location, emergency vehicle access, and ability of vehicles to exit the site without backing into traffic.

6. ***The ability to consolidate access through the use of a joint driveway.***

7. ***Additional review and access permits may be required by State or County agencies.***

RESPONSE: The Applicant is not proposing new access to any arterials; therefore, this subsection does not apply.

B. When any portion of any house is less than 150 feet from the adjacent right-of-way, access to the home is as follows:

1. ***One single-family residence, including residences with an accessory dwelling unit as defined in CDC 02.030, shall provide 10 feet of unobstructed horizontal clearance. Dual-track or other driveway designs that minimize the total area of impervious driveway surface are encouraged.***

2. ***Two to four single-family residential homes equals a 14- to 20-foot-wide paved or all weather surface. Width shall depend upon adequacy of line of sight and number of homes.***

3. ***Maximum driveway grade shall be 15 percent. The 15 percent shall be measured along the centerline of the driveway only. Variations require approval of a Class II variance by the Planning Commission pursuant to Chapter 75 CDC. Regardless, the last 18 feet in front of the garage shall be under 12 percent grade as measured along the centerline of the driveway only. Grades elsewhere along the driveway shall not apply.***

4. ***The driveway shall include a minimum of 20 feet in length between the garage door and the back of sidewalk, or, if no sidewalk is proposed, to the paved portion of the right-of-way.***

C. When any portion of one or more homes is more than 150 feet from the adjacent right-of-way, the provisions of subsection B of this section shall apply in addition to the following provisions.

1. ***A turnaround may be required as prescribed by the Fire Chief.***

2. ***Minimum vertical clearance for the driveway shall be 13 feet, six inches.***

3. ***A minimum centerline turning radius of 45 feet is required unless waived by the Fire Chief.***

4. ***There shall be sufficient horizontal clearance on either side of the driveway so that the total horizontal clearance is 20 feet.***

D. Access to five or more single-family homes shall be by a street built to full construction code standards. All streets shall be public. This full street provision may only be waived by variance.

E. Access and/or service drives for multi-family dwellings shall be fully improved with hard surface pavement:

1. ***With a minimum of 24-foot width when accommodating two-way traffic; or***

2. ***With a minimum of 15-foot width when accommodating one-way traffic. Horizontal clearance shall be two and one-half feet wide on either side of the driveway.***

3. ***Minimum vertical clearance of 13 feet, six inches.***

4. ***Appropriate turnaround facilities per Fire Chief's standards for emergency vehicles when the drive is over 150 feet long. Fire Department turnaround areas shall not exceed seven percent grade unless waived by the Fire Chief.***

5. ***The grade shall not exceed 10 percent on average, with a maximum of 15 percent.***

6. ***A minimum centerline turning radius of 45 feet for the curve.***

F. Where on-site maneuvering and/or access drives are necessary to accommodate required parking, in no case shall said maneuvering and/or access drives be less than that required in Chapters 46 and 48 CDC.

G. The number of driveways or curb cuts shall be minimized on arterials or collectors. Consolidation or joint use of existing driveways shall be required when feasible.

H. In order to facilitate through traffic and improve neighborhood connections, it may be necessary to construct a public street through a multi-family site.

I. Gated accessways to residential development other than a single-family home are prohibited.

RESPONSE: Access to each lot will be provided to/from either Weatherhill Rd. or Satter St., which are both local residential streets, and will meet the minimum vehicular requirements of this subsection.

48.060 WIDTH AND LOCATION OF CURB CUTS AND ACCESS SEPARATION REQUIREMENTS

A. Minimum curb cut width shall be 16 feet.

B. Maximum curb cut width shall be 36 feet, except along Highway 43 in which case the maximum curb cut shall be 40 feet. For emergency service providers, including fire stations, the maximum shall be 50 feet.

C. No curb cuts shall be allowed any closer to an intersecting street right-of-way line than the following:

1. ***On an arterial when intersected by another arterial, 150 feet.***

2. ***On an arterial when intersected by a collector, 100 feet.***

3. ***On an arterial when intersected by a local street, 100 feet.***

4. ***On a collector when intersecting an arterial street, 100 feet.***

5. ***On a collector when intersected by another collector or local street, 35 feet.***

6. ***On a local street when intersecting any other street, 35 feet.***

D. ***There shall be a minimum distance between any two adjacent curb cuts on the same side of a public street, except for one-way entrances and exits, as follows:***

1. ***On an arterial street, 150 feet.***

2. ***On a collector street, 75 feet.***

3. ***Between any two curb cuts on the same lot or parcel on a local street, 30 feet.***

E. ***A rolled curb may be installed in lieu of curb cuts and access separation requirements.***

F. ***Curb cuts shall be kept to the minimum, particularly on Highway 43. Consolidation of driveways is preferred. The standard on Highway 43 is one curb cut per business if consolidation of driveways is not possible.***

G. ***Adequate line of sight pursuant to engineering standards should be afforded at each driveway or accessway.***

RESPONSE: All streets serving the subdivision are local residential streets. All proposed curb cuts will meet the spacing requirements of this section and will be confirmed during the construction plan review prior to commencing construction of the subdivision.

CHAPTER 85 GENERAL PROVISIONS

85.170 SUPPLEMENTAL SUBMITTAL REQUIREMENTS FOR TENTATIVE SUBDIVISION OR PARTITION PLAN

B. ***Transportation.***

1. ***Centerline profiles with extensions shall be provided beyond the limits of the proposed subdivision to the point where grades meet, showing the finished grade of streets and the nature and extent of street construction. Where street connections are not proposed within or beyond the limits of the proposed subdivision on blocks exceeding 330 feet, or for cul-de-sacs, the tentative plat or partition shall indicate the location of easements that provide connectivity for bicycle and pedestrian use to accessible public rights-of-way.***

2. ***Traffic Impact Analysis (TIA).***

a. ***Purpose. The purpose of this section of the code is to implement Section 660-012-0045(2)(e) of the State Transportation Planning Rule that requires the City to adopt a process to apply conditions to development proposals in order to minimize adverse impacts to and protect transportation facilities. This section establishes the standards for when a proposal must be reviewed for potential traffic impacts; when a Traffic Impact Analysis must be submitted with a development application in order to***

determine whether conditions are needed to minimize impacts to and protect transportation facilities; what must be in a Traffic Impact Study; and who is qualified to prepare the study.

b. <u>Typical average daily trips.</u> The latest edition of the Trip Generation manual, published by the Institute of Transportation Engineers (ITE) shall be used as the standards by which to gauge average daily vehicle trips.

c. <u>Traffic impact analysis requirements.</u>

1) Preparation. A Traffic Impact Analysis shall be prepared by a professional engineer qualified under OAR 734-051-0040. The City shall commission the traffic analysis and it will be paid for by the applicant.

2) Transportation Planning Rule compliance. See CDC 105.050(D), Transportation Planning Rule Compliance.

3) Pre-application conference. The applicant will meet with West Linn Public Works prior to submitting an application that requires a traffic impact application. This meeting will determine the required elements of the TIA and the level of analysis expected.

RESPONSE: The Applicant is not proposing a change in zoning or a plan amendment designation as a part of this land use application, therefore a Traffic Impact Analysis (TIA) is not required per this subsection.

Nevertheless, at the request of City staff, the applicant has retained a Transportation Engineer, Global Transportation Engineering, and they have prepared a Trip Generation Letter summarizing the trip generation evaluation for the proposed 12-lot subdivision. A copy of the Trip Generation Letter has been submitted as part of the overall application materials.

Per the submitted Trip Generation Letter, the proposed 12-Lot subdivision it is estimated to generate 114 daily trips; including 9 AM peak hour trips, and 12 PM peak hour trips that will be added to the local street network. Based on the low number of trips generated by the proposed 12-Lot subdivision, the applicant is not required to prepare a full TIA for the project. As such, the applicant's proposal satisfies the above criterion.

C. <u>Grading</u>.

1. If areas are to be graded, a plan showing the location of cuts, fill, and retaining walls, and information on the character of soils shall be provided. The grading plan shall show proposed and existing contours at intervals per CDC 85.160(E)(2).

2. The grading plan shall demonstrate that the proposed grading to accommodate roadway standards and create appropriate building sites is the minimum amount necessary.

3. The grading plan must identify proposed building sites and include tables and maps identifying acreage, location and type of development constraints due to site

characteristics such as slope, drainage and geologic hazards. For Type I, II, and III lands (refer to definitions in Chapter 02 CDC), the applicant must provide a geologic report, with text, figures and attachments as needed to meet the industry standard of practice, prepared by a certified engineering geologist and/or a geotechnical professional engineer, that includes:

a. Site characteristics, geologic descriptions and a summary of the site investigation conducted;

b. Assessment of engineering geological conditions and factors;

c. Review of the City of West Linn's Natural Hazard Mitigation Plan and applicability to the site; and

d. Conclusions and recommendations focused on geologic constraints for the proposed land use or development activity, limitations and potential risks of development, recommendations for mitigation approaches and additional work needed at future development stages including further testing and monitoring.

RESPONSE: As part of the application materials, the applicant has provided a grading and erosion control plan (see Sheet 10) showing the locations of cuts, fills, and retaining walls. The Applicant has also provided a detailed Geotechnical report that provides information on the character of the soils. Together, these documents demonstrate that the proposed grading plan to accommodate roadway standards and create appropriate building sites is the minimum amount necessary given the sites topographic and soil conditions. The Applicant's proposal satisfies the above criteria and will be further reviewed with the civil plans prior to commencing any construction.

D. Water.

1. A plan for domestic potable water supply lines and related water service facilities, such as reservoirs, etc., shall be prepared by a licensed engineer consistent with the adopted Comprehensive Water System Plan and most recently adopted updates and amendments.

2. Location and sizing of the water lines within the development and off-site extensions. Show on-site water line extensions in street stubouts to the edge of the site, or as needed to complete a loop in the system.

3. Adequate looping system of water lines to enhance water quality.

4. For all non-single-family developments, calculate fire flow demand of the site and demonstrate to the Fire Chief. Demonstrate to the City Engineer how the system can meet the demand.

RESPONSE: A utility plan has been submitted by the Applicant as part of the overall application materials. The utility plan shows the location and sizing of the water lines, as well as on-site water line extensions in street stubouts to the edge of the site, or as needed to complete a loop in the system. All proposed water improvements are included on the utility plan (see Sheet 11) of the land use application.

E. Sewer.

1. ***A plan prepared by a licensed engineer shall show how the proposal is consistent with the Sanitary Sewer Master Plan and subsequent updates and amendments. Agreement with that plan must demonstrate how the sanitary sewer proposal will be accomplished and how it is efficient. The sewer system must be in the correct zone.***

2. ***Sanitary sewer information will include plan view of the sanitary sewer lines, including manhole locations and depths. Show how each lot or parcel would be sewered.***

3. ***Sanitary sewer lines shall be located in the public right-of-way, particularly the street, unless the applicant can demonstrate why the alternative location is necessary and meets accepted engineering standards.***

4. ***Sanitary sewer line should be at a depth that can facilitate connection with downsystem properties in an efficient manner.***

5. ***The sanitary sewer line should be designed to minimize the amount of lineal feet in the system.***

6. ***The sanitary sewer line shall minimize disturbance of natural areas and, in those cases where that is unavoidable, disturbance shall be mitigated pursuant to the appropriate chapters (e.g., Chapter 32 CDC, Water Resource Area Protection).***

7. ***Sanitary sewer shall be extended or stubbed out to the next developable subdivision or a point in the street that allows for reasonable connection with adjacent or nearby properties.***

8. ***The sanitary sewer system shall be built pursuant to Department of Environmental Quality (DEQ), City, and Tri-City Service District sewer standards. This report should be prepared by a licensed engineer, and the applicant must be able to demonstrate the ability to satisfy these submittal requirements or standards at the pre-construction phase.***

RESPONSE: A utility plan has been submitted by the Applicant as part of the overall application materials. The utility plan shows the location and sizing of the sewer lines. Sanitary sewer will be extended or stubbed out to the next developable subdivision or to a point in the street that allows for reasonable connection with adjacent or nearby properties. The proposed sanitary sewer lines will be located to minimize disturbance of natural areas; however, in those cases where that is unavoidable, disturbances will be kept to a minimum and mitigated pursuant to Chapter 32 of the Community Development Code (CDC), Water Resource Area Protection.

All proposed sewer improvements will be built pursuant to DEQ, City, and Tri-City Service District standards, and those improvements are included on the utility plan (see Sheet 11) of the land use application.

F. <u>Storm</u>. A proposal shall be submitted for storm drainage and flood control including profiles of proposed drainageways with reference to the most recently adopted Storm Drainage Master Plan.

RESPONSE: A utility plan has been submitted by the Applicant as part of the overall application materials. The utility plan shows the location and sizing of the stormwater lines. The public stormwater plan will include LIDA storm planters in the right-of-way for treatment and detention for the street. Individual LIDA planters will also be located on each lot for the treatment/detention of the future homes according to City requirements. All proposed storm drainage improvements are included on the utility plan (see Sheet 11) of the land use application.

85.180 REDIVISION PLAN REQUIREMENT

A redivision plan shall be required for a partition or subdivision, where the property could be developed at a higher density, under existing/proposed zoning, if all services were available and adequate to serve the use.

RESPONSE: The property is being developed at the highest density allowed under applicable zoning, therefore a redivision plan is not required.

85.200 APPROVAL CRITERIA

No tentative subdivision or partition plan shall be approved unless adequate public facilities will be available to provide service to the partition or subdivision area prior to final plat approval and the Planning Commission or Planning Director, as applicable, finds that the following standards have been satisfied, or can be satisfied by condition of approval.

A. Streets.

1. <u>General.</u> The location, width and grade of streets shall be considered in their relation to existing and planned streets, to the generalized or reasonable layout of streets on adjacent undeveloped lots or parcels, to topographical conditions, to public convenience and safety, to accommodate various types of transportation (automobile, bus, pedestrian, bicycle), and to the proposed use of land to be served by the streets. The functional class of a street aids in defining the primary function and associated design standards for the facility. The hierarchy of the facilities within the network in regard to the type of traffic served (through or local trips), balance of function (providing access and/or capacity), and the level of use (generally measured in vehicles per day) are generally dictated by the functional class. The street system shall assure an adequate traffic or circulation system with intersection angles, grades, tangents, and curves appropriate for the traffic to be carried. Streets should provide for the continuation, or the appropriate projection, of existing principal streets in surrounding areas and should not impede or adversely affect development of adjoining lands or access thereto.

To accomplish this, the emphasis should be upon a connected continuous pattern of local, collector, and arterial streets rather than discontinuous curvilinear streets and cul-de-sacs. Deviation from this pattern of connected streets should only be permitted in cases of extreme topographical challenges including excessive slopes (35 percent-plus), hazard

areas, steep drainageways, wetlands, etc. In such cases, deviations may be allowed but the connected continuous pattern must be reestablished once the topographic challenge is passed. Streets should be oriented with consideration of the sun, as site conditions allow, so that over 50 percent of the front building lines of homes are oriented within 30 degrees of an east-west axis.

Internal streets are the responsibility of the developer. All streets bordering the development site are to be developed by the developer with, typically, half-street improvements or to City standards prescribed by the City Engineer. Additional travel lanes may be required to be consistent with adjacent road widths or to be consistent with the adopted Transportation System Plan (TSP) and any adopted updated plans.

An applicant may submit a written request for a waiver of abutting street improvements if the TSP prohibits the street improvement for which the waiver is requested. Those areas with numerous (particularly contiguous) under-developed or undeveloped tracts will be required to install street improvements. When an applicant requests a waiver of street improvements and the waiver is granted, the applicant shall pay an in-lieu fee equal to the estimated cost, accepted by the City Engineer, of the otherwise required street improvements. As a basis for this determination, the City Engineer shall consider the cost of similar improvements in recent development projects and may require up to three estimates from the applicant. The amount of the fee shall be established prior to the Planning Commission's decision on the associated application. The in-lieu fee shall be used for in kind or related improvements.

Streets shall also be laid out to avoid and protect tree clusters and significant trees, but not to the extent that it would compromise connectivity requirements per this subsection (A)(1), or bring the density below 70 percent of the maximum density for the developable net area. The developable net area is calculated by taking the total site acreage and deducting Type I and II lands; then up to 20 percent of the remaining land may be excluded as necessary for the purpose of protecting significant tree clusters or stands as defined in CDC 55.100(B)(2).

RESPONSE: This site is located along Weatherhill Road between Satter Street to the west and De Vries Way to the east. All streets, whether existing or proposed, are designated as local streets. The development of this site will not affect the connectivity of these two streets. Aside from the extension of Satter Street through the site, Figure 12 of the West Linn Transportation System Plan – Recommended Local Street Connectivity Projects – does not identify a new street connection within or adjacent to this site.

2. Right-of-way widths shall depend upon which classification of street is proposed. The right-of-way widths are established in the adopted TSP.

RESPONSE: The site abuts Weatherhill Road along the northern property boundary. Satter Street is stubbed to the sites western property boundary. Both streets are designated as local streets. As part of the proposed development, the Applicant will be dedicating 13-feet of right-of-way for Weatherhill street to make necessary improvements along Weatherhill Road. Satter Street is a local street with a 52-foot right-of-way. In an effort to provide on-street parking on one side of Satter Street, the applicant

will be widening the right-of-way for Satter Street to 58-feet. Right-of-way for both streets meet the width requirements as determined by their functional classifications.

3. ***<u>Street widths</u>. Street widths shall depend upon which classification of street is proposed. The classifications and required cross sections are established in the adopted TSP.***

The following table identifies appropriate street width (curb to curb) in feet for various street classifications. The desirable width shall be required unless the applicant or his or her engineer can demonstrate that site conditions, topography, or site design require the reduced minimum width. For local streets, a 12-foot travel lane may only be used as a shared local street when the available right of-way is too narrow to accommodate bike lanes and sidewalks.

RESPONSE: No new streets or roads are proposed with this land use application. Weatherhill Road and Satter Street will continue to meet street width requirements.

4. ***The decision-making body shall consider the City Engineer's recommendations on the desired right-of-way width, pavement width and street geometry of the various street types within the subdivision after consideration by the City Engineer of the following criteria:***

    a. ***The type of road as set forth in the Transportation Master Plan.***

    b. ***The anticipated traffic generation.***

    c. ***On-street parking requirements.***

    d. ***Sidewalk and bikeway requirements.***

    e. ***Requirements for placement of utilities.***

    f. ***Street lighting.***

    g. ***Drainage and slope impacts.***

    h. ***Street trees.***

    i. ***Planting and landscape areas.***

    j. ***Existing and future driveway grades***

    k. ***Street geometry.***

    l. ***Street furniture needs, hydrants.***

RESPONSE: Aside from the 13-foot right-of-way dedication along Weatherhill Rd. and the associated improvements (i.e. sidewalk, planter strip and paving), the pre-application conference notes do not identify the need for any further improvements along Weatherhill Road. Satter Street has been designed to comply with all City standards and specification.

5. ***Additionally, when determining appropriate street width, the decision-making body shall consider the following criteria:***

    a. ***When a local street is the only street serving a residential area and is expected to carry more than the normal local street traffic load, the designs with two travel and one parking lane are appropriate.***

    b. ***Streets intended to serve as signed but unstriped bike routes should have the travel lane widened by two feet.***

    c. ***Collectors should have two travel lanes and may accommodate some parking. Bike routes are appropriate.***

    d. ***Arterials should have two travel lanes. On-street parking is not allowed unless part of a Street Master Plan. Bike lanes are required as directed by the Parks Master Plan and Transportation Master Plan.***

RESPONSE: The proposed development will result in twelve (12) new homes taking access to the existing surrounding transportation system. No arterial streets are adjacent to this proposal.

6. ***Reserve strips. Reserve strips or street plugs controlling the access to streets are not permitted unless owned by the City.***

RESPONSE: The Applicant does not propose reserve strips or street plugs with this application. All rights-of-way will be dedicated to the edge of the adjoining properties.

7. ***Alignment. All streets other than local streets or cul-de-sacs, as far as practical, shall be in alignment with existing streets by continuations of the centerlines thereof. The staggering of street alignments resulting in "T" intersections shall, wherever practical, leave a minimum distance of 200 feet between the centerlines of streets having approximately the same direction and otherwise shall not be less than 100 feet.***

RESPONSE: Except for extending Satter Street through the site, which will be the continuation of an existing street stub, no new streets or roads are proposed as part of this application.

8. ***Future extension of streets. Where necessary to give access to or permit a satisfactory future subdivision of adjoining land, streets shall be extended to the boundary of the subdivision and the resulting dead-end streets may be approved without turnarounds. (Temporary turnarounds built to Fire Department standards are required when the dead-end street is over 100 feet long.)***

RESPONSE: As noted above, Satter Street will be extended through the site as part of the development and stubbed to the sites eastern property boundary to permit the satisfactory subdivision of adjoining land. The Applicant's proposal satisfies this criterion.

9. ***Intersection angles. Streets shall be laid out to intersect angles as near to right angles as practical, except where topography requires lesser angles, but in no case less than 60***

degrees unless a special intersection design is approved. Intersections which are not at right angles shall have minimum corner radii of 15 feet along right-of-way lines which form acute angles. Right-of-way lines at intersections with arterial streets shall have minimum curb radii of not less than 35 feet. Other street intersections shall have curb radii of not less than 25 feet. All radii shall maintain a uniform width between the roadway and the right-of-way lines. The intersection of more than two streets at any one point will not be allowed unless no alternative design exists.

RESPONSE: No new intersections are being proposed as part of the Applicant's proposal, therefore, the above criterion does not apply to the Applicant's request.

10. ***Additional right-of-way for existing streets. Wherever existing street rights-of-way adjacent to or within a tract are of inadequate widths based upon the standards of this chapter, additional right-of-way shall be provided at the time of subdivision or partition.***

RESPONSE: The applicant will be dedicating 13-feet of right-of-way for Weatherhill Rd. along the sites frontage.

11. ***Cul-de-sacs.***

    a. ***New cul-de-sacs and other closed-end streets (not including stub streets intended to be connected) on sites containing less than five acres, or sites accommodating uses other than residential or mixed use development, are not allowed unless the applicant demonstrates that there is no feasible alternative due to:***

        1) ***Physical constraints (e.g., existing development, the size or shape of the site, steep topography, or a fish bearing stream or wetland protected by Chapter 32 CDC), or***

        2) ***Existing easements or leases.***

    b. ***New cul-de-sacs and other closed-end streets, consistent with subsection (A)(11)(a) of this section, shall not exceed 200 feet in length or serve more than 25 dwelling units unless the design complies with all adopted Tualatin Valley Fire and Rescue (TVFR) access standards and adequately provides for anticipated traffic, consistent with the Transportation System Plan (TSP).***

    c. ***New cul-de-sacs and other closed-end streets (not including stub streets intended to be connected) on sites containing five acres or more that are proposed to accommodate residential or mixed use development are prohibited unless barriers (e.g., existing development, steep topography, or a fish bearing stream or wetland protected by Chapter 32 CDC, or easements, leases or covenants established prior to May 1, 1995) prevent street extensions. In that case, the street shall not exceed 200 feet in length or serve more than 25 dwelling units, and its design shall comply with all adopted TVFR access standards and adequately provide for anticipated traffic, consistent with the TSP.***

    d. ***Applicants for a proposed subdivision, partition or a multifamily, commercial or industrial development accessed by an existing cul-de-sac/closed-end street shall***

demonstrate that the proposal is consistent with all applicable traffic standards and TVFR access standards.

e. All cul-de-sacs and other closed-end streets shall include direct pedestrian and bicycle accessways from the terminus of the street to an adjacent street or pedestrian and bicycle accessways unless the applicant demonstrates that such connections are precluded by physical constraints or that necessary easements cannot be obtained at a reasonable cost.

f. All cul-de-sacs/closed-end streets shall terminate with a turnaround built to one of the following specifications (measurements are for the traveled way and do not include planter strips or sidewalks).

RESPONSE: No cul-de-sacs are proposed as part of this land use application.

12. Street names. No street names shall be used which will duplicate or be confused with the names of existing streets within the City. Street names that involve difficult or unusual spellings are discouraged. Street names shall be subject to the approval of the Planning Commission or Planning Director, as applicable. Continuations of existing streets shall have the name of the existing street. Streets, drives, avenues, ways, boulevards, and lanes shall describe through streets. Place and court shall describe cul-de-sacs. Crescent, terrace, and circle shall describe loop or arcing roads.

RESPONSE: No new streets are proposed as part of this land use application.

13. Grades and curves. Grades and horizontal/vertical curves shall meet the West Linn Public Works Design Standards.

RESPONSE: Any grades and/or horizontal/vertical curves will be designed to meet West Linn Public Works Design Standards.

14. Access to local streets. Intersection of a local residential street with an arterial street may be prohibited by the decision-making authority if suitable alternatives exist for providing interconnection of proposed local residential streets with other local streets. Where a subdivision or partition abuts or contains an existing or proposed major arterial street, the decision-making authority may require marginal access streets, reverse-frontage lots with suitable depth, visual barriers, noise barriers, berms, no-access reservations along side and rear property lines, and/or other measures necessary for adequate protection of residential properties from incompatible land uses, and to ensure separation of through traffic and local traffic.

RESPONSE: The property does not abut nor contain an existing or proposed arterial street.

15. Alleys. Alleys shall be provided in commercial and industrial districts unless other permanent provisions for access to off-street parking and loading facilities are made as approved by the decision-making authority. While alley intersections and sharp changes in alignment should be avoided, the corners of necessary alley intersections shall have radii of not less than 10 feet. Alleys may be provided in residential subdivisions or multi-family

projects. The decision to locate alleys shall consider the relationship and impact of the alley to adjacent land uses. In determining whether it is appropriate to require alleys in a subdivision or partition, the following factors and design criteria should be considered:

a. The alley shall be self-contained within the subdivision. The alley shall not abut undeveloped lots or parcels which are not part of the project proposal. The alley will not stub out to abutting undeveloped parcels which are not part of the project proposal.

b. The alley will be designed to allow unobstructed and easy surveillance by residents and police.

c. The alley should be illuminated. Lighting shall meet the West Linn Public Works Design Standards.

d. The alley should be a semi-private space where strangers are tacitly discouraged.

e. Speed bumps may be installed in sufficient number to provide a safer environment for children at play and to discourage through or speeding traffic.

f. Alleys should be a minimum of 14 feet wide, paved with no curbs.

RESPONSE: No alleys are proposed as part of this land use application.

16. Sidewalks. Sidewalks shall be installed per CDC 92.010(H), Sidewalks. The residential sidewalk width is six feet plus planter strip as specified below. Sidewalks in commercial zones shall be constructed per subsection (A)(3) of this section. See also subsection C of this section. Sidewalk width may be reduced with City Engineer approval to the minimum amount (e.g., four feet wide) necessary to respond to site constraints such as grades, mature trees, rock outcroppings, etc., or to match existing sidewalks or right-of-way limitations.

RESPONSE: The applicant proposes to install a sidewalk along the sites Weatherhill Rd. frontage, as well as provide sidewalks along both sides of Satter St. with the extension of the street through the site.

17. Planter strip. The planter strip is between the curb and sidewalk providing space for a grassed or landscaped area and street trees. The planter strip shall be at least 6 feet wide to accommodate a fully matured tree without the boughs interfering with pedestrians on the sidewalk or vehicles along the curbline. Planter strip width may be reduced or eliminated, with City Engineer approval, when it cannot be corrected by site plan, to the minimum amount necessary to respond to site constraints such as grades, mature trees, rock outcroppings, etc., or in response to right-of-way limitations.

RESPONSE: The applicant proposes to install a planter strip between the curb and sidewalk providing space for a grassed and/or landscaped area along the sites Weatherhill Rd. frontage as part of the proposed development.

However, with the extension of Satter St. through the site, the applicant is proposing to install a "hybrid" planter strip between the curb and sidewalk that will consist of LIDA planters and street trees. The applicant has worked closely with the City's Engineer on the design of the LIDA planter strip to make sure it satisfies the City's requirements.

18. Streets and roads shall be dedicated without any reservations or restrictions.

RESPONSE: No reservations or restrictions are being proposed with the street dedications.

19. All lots in a subdivision shall have access to a public street. Lots created by partition may have access to a public street via an access easement pursuant to the standards and limitations set forth for such accessways in Chapter 48 CDC.

RESPONSE: All proposed lots created by the subdivision in this land use application will have access to a public street per City requirements.

20. Gated streets. Gated streets are prohibited in all residential areas on both public and private streets. A driveway to an individual home may be gated.

RESPONSE: No gated streets are being proposed as part of this land use application.

21. Entryway treatments and street isle design. When the applicant desires to construct certain walls, planters, and other architectural entryway treatments within a subdivision, the following standards shall apply:

a. All entryway treatments except islands shall be located on private property and not in the public right-of-way.

b. Planter islands may be allowed provided there is no structure (i.e., brick, signs, etc.) above the curbline, except for landscaping. Landscaped islands shall be set back a minimum of 24 feet from the curbline of the street to which they are perpendicular.

c. All islands shall be in public ownership. The minimum aisle width between the curb and center island curbs shall be 14 feet. Additional width may be required as determined by the City Engineer.

d. Brick or special material treatments are acceptable at intersections with the understanding that the City will not maintain these sections except with asphalt overlay, and that they must meet the Americans with Disabilities Act (ADA) standards. They shall be laid out to tie into existing sidewalks at intersections.

e. Maintenance for any common areas and entryway treatments (including islands) shall be guaranteed through homeowners association agreements, CC&Rs, etc.

f. Under Chapter 52 CDC, subdivision monument signs shall not exceed 32 square feet in area.

RESPONSE: No entryway treatments are being proposed as part of this land use application; therefore, the above criteria do not apply to the applicant's request.

22. **Based upon the determination of the City Manager or the Manager's designee, the applicant shall construct or cause to be constructed, or contribute a proportionate share of the costs, for all necessary off-site improvements identified by the transportation analysis commissioned to address CDC 85.170(B)(2) that are required to mitigate impacts from the proposed subdivision. The proportionate share of the costs shall be determined by the City Manager or Manager's designee, who shall assume that the proposed subdivision provides improvements in rough proportion to identified impacts of the subdivision. Off-site transportation improvements will include bicycle and pedestrian improvements as identified in the adopted City of West Linn TSP.**

RESPONSE: The City Manager has not identified the need for any off-site improvements related to the development of this property; therefore, the above criterion does not apply to the applicant's proposal.

B. Blocks and lots.

1. ***General. The length, width, and shape of blocks shall be designed with due regard for the provision of adequate building sites for the use contemplated; consideration of the need for traffic safety, convenience, access, circulation, and control; and recognition of limitations and opportunities of topography and solar access.***

RESPONSE: No new roads are proposed as part of this land use application and the block pattern is already established.

2. ***Sizes. The recommended block size is 400 feet in length to encourage greater connectivity within the subdivision. Blocks shall not exceed 800 feet in length between street lines, except for blocks adjacent to arterial streets or unless topographical conditions or the layout of adjacent streets justifies a variation. Designs of proposed intersections shall demonstrate adequate sight distances to the City Engineer's specifications. Block sizes and proposed accesses must be consistent with the adopted TSP. Subdivisions of five or more acres that involve construction of a new street shall have block lengths of no more than 530 feet. If block lengths are greater than 530 feet, accessways on public easements or right-of-way for pedestrians and cyclists shall be provided not more than 330 feet apart. Exceptions can be granted when prevented by barriers such as topography, rail lines, freeways, pre-existing development, leases, easements or covenants that existed prior to May 1, 1995, or by requirements of Titles 3 and 13 of the UGMFP. If streets must cross water features protected pursuant to Title 3 UGMFP, provide a crossing every 800 to 1,200 feet unless habitat quality or the length of the crossing prevents a full street connection.***

RESPONSE: No new roads are proposed as part of this land use application and the block pattern is already established.

3. ***Lot size and shape. Lot or parcel size, width, shape, and orientation shall be appropriate for the location of the subdivision or partition, for the type of use contemplated, for potential utilization of solar access, and for the protection of drainageways, trees, and other natural features. No lot or parcel shall be dimensioned to contain part of an existing***

or proposed street. All lots or parcels shall be buildable. "Buildable" describes lots that are free of constraints such as wetlands, drainageways, etc., that would make home construction impossible. Lot or parcel sizes shall not be less than the size required by the zoning code unless as allowed by planned unit development (PUD).

RESPONSE: The proposed lots created through this subdivision are each a minimum of 7,000 square feet in size to accommodate single family detached dwelling units in the R-7 zone. All proposed lots meet or exceed the minimum requirements for front lot line length, lot width and lot depth.

4. ***Depth and width of properties reserved or laid out for commercial and industrial purposes shall be adequate to provide for the off-street parking and service facilities required by the type of use proposed.***

RESPONSE: The applicant is proposing residential development for this site, so the above criterion is not applicable to the proposal.

5. ***Access. Access to subdivisions, partitions, and lots shall conform to the provisions of Chapter 48 CDC, Access, Egress and Circulation.***

RESPONSE: The subdivision, as proposed, conforms to the provisions of Chapter 48 CDC.

6. ***Double frontage lots and parcels. Double frontage lots and parcels have frontage on a street at the front and rear property lines. Double frontage lots and parcels shall be avoided except where they are essential to provide separation of residential development from arterial streets or adjacent non-residential activities, or to overcome specific disadvantages of topography and orientation. A planting screen or impact mitigation easement at least 10 feet wide, and across which there shall be no right of access, may be required along the line of building sites abutting such a traffic artery or other incompatible use.***

RESPONSE: This land use application does not include double frontage lots.

7. ***Lot and parcel side lines. The lines of lots and parcels, as far as is practicable, should run at right angles to the street upon which they face, except that on curved streets they should be radial to the curve.***

RESPONSE: All proposed lot lines and side parcel lines run at right angles to the street as far as is practicable.

8. ***Flag lots. Flag lots can be created where it can be shown that no other reasonable street access is possible to achieve the requested land division. A single flag lot shall have a minimum street frontage of 15 feet for its accessway. Where two to four flag lots share a common accessway, the minimum street frontage and accessway shall be eight feet in width per lot. Common accessways shall have mutual maintenance agreements and reciprocal access and utility easements. The following dimensional requirements shall apply to flag lots:***

    a. ***Setbacks applicable to the underlying zone shall apply to the flag lot.***

b. Front yard setbacks may be based on the rear property line of the lot or parcel which substantially separates the flag lot from the street from which the flag lot gains access. Alternately, the house and its front yard may be oriented in other directions so long as some measure of privacy is ensured, or it is part of a pattern of development, or it better fits the topography of the site.

c. The lot size shall be calculated exclusive of the accessway; the access strip may not be counted towards the area requirements.

d. The lot depth requirement contained elsewhere in this code shall be measured from the rear property line of the lot or parcel which substantially separates the flag lot from the street from which the flag lot gains access.

e. As per CDC 48.030, the accessway shall have a minimum paved width of 12 feet.

f. If the use of a flag lot stem to access a lot is infeasible because of a lack of adequate existing road frontage, or location of existing structures, the proposed lot(s) may be accessed from the public street by an access easement of a minimum 15-foot width across intervening property.

RESPONSE: The land use application proposed one (1) flag lot as part of the subdivision. Lot 6 will be configured as a flag lot because no other reasonable street access is possible given the irregular shape of the parent parcel. The proposed flag lot will have 19.8-feet of street frontage for its accessway. As proposed the flag lot complies with all city requirements.

9. Large lots or parcels. In dividing tracts into large lots or parcels which, at some future time, are likely to be redivided, the approval authority may:

a. Require that the blocks be of such size and shape, and be so divided into building sites, and contain such easements and site restrictions as will provide for extension and opening of streets at intervals which will permit a subsequent division of any tract into lots or parcels of smaller size; or

b. Alternately, in order to prevent further subdivision or partition of oversized and constrained lots or parcels, restrictions may be imposed on the subdivision or partition plat.

RESPONSE: The proposed lots are not likely to be redivided as the density proposed and the lot sizes proposed are consistent with the maximum allowable density per the site's zoning.

C. Pedestrian and bicycle trails.

1. Trails or multi-use pathways shall be installed, consistent and compatible with federal ADA requirements and with the Oregon Transportation Planning Rule, between subdivisions, cul-de-sacs, and streets that would otherwise not be connected by streets due to excessive grades, significant tree(s), and other constraints natural or manmade. Trails shall also accommodate bicycle or pedestrian traffic between neighborhoods and

activity areas such as schools, libraries, parks, or commercial districts. Trails shall also be required where designated by the Parks Master Plan.

2. ***The all-weather surface (asphalt, etc.) trail should be eight feet wide at minimum for bicycle use and six feet wide at minimum for pedestrian use. Trails within 10 feet of a wetland or natural drainageway shall not have an all-weather surface, but shall have a soft surface as approved by the Parks Director. These trails shall be contained within a corridor dedicated to the City that is wide enough to provide trail users with a sense of defensible space. Corridors that are too narrow, confined, or with vegetative cover may be threatening and discourage use. Consequently, the minimum corridor width shall be 20 feet. Sharp curves, twists, and blind corners on the trail are to be avoided as much as possible to enhance defensible space. Deviations from the corridor and trail width are permitted only where topographic and ownership constraints require it.***

3. ***Defensible space shall also be enhanced by the provision of a three- to four-foot-high matte black chain link fence or acceptable alternative along the edge of the corridor. The fence shall help delineate the public and private spaces.***

4. ***The bicycle or pedestrian trails that traverse multi-family and commercial sites should follow the same defensible space standards but do not need to be defined by a fence unless required by the decision-making authority.***

5. ***Except for trails within 10 feet of a wetland or natural drainageway, soft surface or gravel trails may only be used in place of a paved, all-weather surface where it can be shown to the Planning Director that the principal users of the path will be recreational, non-destination-oriented foot traffic, and that alternate paved routes are nearby and accessible.***

6. ***The trail grade shall not exceed 12 percent except in areas of unavoidable topography, where the trail may be up to a 15 percent grade for short sections no longer than 50 feet. In any location where topography requires steeper trail grades than permitted by this section, the trail shall incorporate a short stair section to traverse the area of steep grades.***

RESPONSE: Sidewalks are provided along the frontages of the property. No pedestrian or bicycle trails are required.

D. Transit facilities.

1. **The applicant shall consult with Tri-Met and the City Engineer to determine the appropriate location of transit stops, bus pullouts, future bus routes, etc., contiguous to or within the development site. If transit service is planned to be provided within the next two years, then facilities such as pullouts shall be constructed per Tri-Met standards at the time of development. More elaborate facilities, like shelters, need only be built when service is existing or imminent. Additional rights-of-way may be required of developers to accommodate buses.**

2. **The applicant shall make all transit-related improvements in the right-of-way or in easements abutting the development site as deemed appropriate by the City Engineer.**

3. **Transit stops shall be served by striped and signed pedestrian crossings of the street within 150 feet of the transit stop where feasible. Illumination of the transit stop and crossing is required to enhance defensible space and safety. ODOT approval may be required.**

4. **Transit stops should include a shelter structure bench plus eight feet of sidewalk to accommodate transit users, non-transit-related pedestrian use, and wheelchair users. Tri-Met must approve the final configuration.**

RESPONSE: No transit facilities have been identified by Tri-Met or the City Development Engineer adjacent to this property. The above criteria do not apply to the Applicant's proposal.

E. Grading. Grading of building sites shall conform to the following standards unless physical conditions demonstrate the propriety of other standards:

1. All cuts and fills shall comply with the excavation and grading provisions of the Uniform Building Code and the following:

a. Cut slopes shall not exceed one and one-half feet horizontally to one foot vertically (i.e., 67 percent grade).

b. Fill slopes shall not exceed two feet horizontally to one foot vertically (i.e., 50 percent grade). Please see the following illustration.

2. The character of soil for fill and the characteristics of lot and parcels made usable by fill shall be suitable for the purpose intended.

3. If areas are to be graded (more than any four-foot cut or fill), compliance with CDC 85.170(C) is required.

4. The proposed grading shall be the minimum grading necessary to meet roadway standards, and to create appropriate building sites, considering maximum allowed driveway grades.

5. Type I lands shall require a report submitted by an engineering geologist, and Type I and Type II lands shall require a geologic hazard report.

6. Repealed by Ord. 1635.

7. On land with slopes in excess of 12 percent, cuts and fills shall be regulated as follows:

a. Toes of cuts and fills shall be set back from the boundaries of separate private ownerships at least three feet, plus one-fifth of the vertical height of the cut or fill. Where an exception is required from that requirement, slope easements shall be provided.

b. Cuts shall not remove the toe of any slope where a severe landslide or erosion hazard exists (as described in subsection (G)(5) of this section).

c. Any structural fill shall be designed by a registered engineer in a manner consistent with the intent of this code and standard engineering practices, and certified by that engineer that the fill was constructed as designed.

d. Retaining walls shall be constructed pursuant to Section 2308(b) of the Oregon State Structural Specialty Code.

e. Roads shall be the minimum width necessary to provide safe vehicle access, minimize cut and fill, and provide positive drainage control.

8. Land over 50 percent slope shall be developed only where density transfer is not feasible. The development will provide that:

a. At least 70 percent of the site will remain free of structures or impervious surfaces.
b. Emergency access can be provided.
c. Design and construction of the project will not cause erosion or land slippage.
d. Grading, stripping of vegetation, and changes in terrain are the minimum necessary to construct the development in accordance with subsection J of this section.

RESPONSE: A geotechnical engineering report is included with this submittal. A grading plan has been included in the submitted plans which complies with all criteria of this subsection.

F. Water.

1. A plan for domestic water supply lines or related water service facilities shall be prepared consistent with the adopted Comprehensive Water System Plan, plan update, March 1987, and subsequent superseding revisions or updates.

2. Adequate location and sizing of the water lines.

3. Adequate looping system of water lines to enhance water quality.

4. For all non-single-family developments, there shall be a demonstration of adequate fire flow to serve the site.

5. A written statement, signed by the City Engineer, that water service can be made available to the site by the construction of on-site and off-site improvements and that such water service has sufficient volume and pressure to serve the proposed development's domestic, commercial, industrial, and fire flows.

RESPONSE: The Applicant proposes new water service connections for all proposed lots off of either Weatherhill Road or Sattter Street, which will be extended through the site as part of this application. This proposal is consistent with the adopted Comprehensive Water System Plan. All proposed water improvements are included on the utility plan of the land use application.

G. Sewer.

1. ***A plan prepared by a licensed engineer shall show how the proposal is consistent with the Sanitary Sewer Master Plan (July 1989). Agreement with that plan must demonstrate how the sanitary sewer proposal will be accomplished and how it is gravity-efficient. The sewer system must be in the correct basin and should allow for full gravity service.***

2. ***Sanitary sewer information will include plan view of the sanitary sewer lines, including manhole locations and depth or invert elevations.***

3. ***Sanitary sewer lines shall be located in the public right-of-way, particularly the street, unless the applicant can demonstrate why the alternative location is necessary and meets accepted engineering standards.***

4. ***Sanitary sewer line should be at a depth that can facilitate connection with downsystem properties in an efficient manner.***

5. ***The sanitary sewer line should be designed to minimize the amount of lineal feet in the system.***

6. ***The sanitary sewer line shall avoid disturbance of wetland and drainageways. In those cases where that is unavoidable, disturbance shall be mitigated pursuant to Chapter 32 CDC, Water Resource Area Protection, all trees replaced, and proper permits obtained. Dual sewer lines may be required so the drainageway is not disturbed.***

7. ***Sanitary sewer shall be extended or stubbed out to the next developable subdivision or a point in the street that allows for reasonable connection with adjacent or nearby properties.***

8. ***The sanitary sewer system shall be built pursuant to DEQ, City, and Tri-City Service District sewer standards. The design of the sewer system should be prepared by a licensed engineer, and the applicant must be able to demonstrate the ability to satisfy these submittal requirements or standards at the pre-construction phase.***

9. ***A written statement, signed by the City Engineer, that sanitary sewers with sufficient capacity to serve the proposed development and that adequate sewage treatment plant capacity is available to the City to serve the proposed development.***

RESPONSE: The Applicant proposes new sewer service connections for all proposed lots off of either Weatherhill Road or Sattter Street, which will be extended through the site as part of this application. All proposed sewer improvements are included on the utility plan of the land use application. The proposed sanitary sewer system is consistent with the Sanitary Sewer Master Plan, is in the correct basin and allows for full gravity service.

H. Storm detention and treatment. All proposed storm detention and treatment facilities comply with the standards for the improvement of public and private drainage systems located in the West Linn Public Works Design Standards, there will be no adverse off-site impacts caused by

the development (including impacts from increased intensity of runoff downstream or constrictions causing ponding upstream), and there is sufficient factual data to support the conclusions of the submitted plan.

RESPONSE: The Applicant's proposed stormwater detention and treatment design will include a public storm treatment/detention system consisting of LIDA storm planters for treatment and detention within the Satter Street right-of-way. The Applicant is also proposing to install individual LIDA planters on each lot for the future homes according to City requirements. All proposed storm drainage improvements are included on the utility plan Sheet 11 of the land use application.

I. Utility easements. Subdivisions and partitions shall establish utility easements to accommodate the required service providers as determined by the City Engineer. The developer of the subdivision shall make accommodation for cable television wire in all utility trenches and easements so that cable can fully serve the subdivision.

RESPONSE: The applicant will establish utility easements as determined by the City Engineer and shown on the preliminary plat. All required easements will be recorded with the recording of the final plat.

J. Supplemental provisions.

1. Wetland and natural drainageways. Wetlands and natural drainageways shall be protected as required by Chapter 32 CDC, Water Resource Area Protection. Utilities may be routed through the protected corridor as a last resort, but impact mitigation is required.

RESPONSE: The proposed subdivision does not impact any wetlands. The site does contain the presence of a headwater to a small ephemeral stream on the southern edge of the property. As part of the submitted application materials, the applicant has provided a Phase I Environmental review for the property, as well as a wetland delineation report. An electronic copy of the wetland delineation report has been sent to Oregon Department of State Lands.

As part of the proposed development, the Applicant is proposing to route some utilities (i.e. stormwater and sewer) through the protected corridor and will provide impact mitigation as required by the City.

2. Willamette and Tualatin Greenways. The Willamette and Tualatin River Greenways shall be protected as required by Chapter 28 CDC, Willamette and Tualatin River Protection.

RESPONSE: No greenways exist on this site or have been identified for dedication on this property. This property is not adjacent to the Willamette or Tualatin River and, therefore, a River Greenway is not feasible on this site.

3. Street trees. Street trees are required as identified in the appropriate section of the municipal code and Chapter 54 CDC.

RESPONSE: There are no existing street trees along the sites frontage of Weatherhill Road. The applicant will install street trees as a component of the frontage improvements on Weatherhill Road, as well as along both sides of Satter Street with the extension of the street through the site.

4. Lighting. All subdivision street or alley lights shall meet West Linn Public Works Design Standards.

RESPONSE: The applicant proposes to install new light fixtures along both the sites Weatherhill Rd. frontage, as well as along Satter St. with the extension of the street through the site. All required street lights will provide adequate lighting per current City standards. A photometric plan has been provided for review (see Sheet 12 of the submitted plan set).

5. ***Dedications and exactions. The City may require an applicant to dedicate land and/or construct a public improvement that provides a benefit to property or persons outside the property that is the subject of the application when the exaction is roughly proportional. No exaction shall be imposed unless supported by a determination that the exaction is roughly proportional to the impact of development.***

RESPONSE: As mentioned previously, the applicant will be dedicating 13-feet of right-of-way along the sites Weatherhill Rd. frontage. Additionally, right-of-way will be dedicated for the extension of Satter St. through the site in accordance with city standards and specifications.

6. ***Underground utilities. All utilities, such as electrical, telephone, and television cable, that may at times be above ground or overhead shall be buried underground in the case of new development. The exception would be in those cases where the area is substantially built out and adjacent properties have above-ground utilities and where the development site's frontage is under 200 feet and the site is less than one acre. High voltage transmission lines, as classified by Portland General Electric or electric service provider, would also be exempted. Where adjacent future development is expected or imminent, conduits may be required at the direction of the City Engineer. All services shall be underground with the exception of standard above-grade equipment such as some meters, etc.***

RESPONSE: The Applicant's proposal complies with the above criterion because all new utility services are proposed to be located underground as part of the subdivision. With the exception of standard above-grade equipment, all services will be located underground pursuant to city standards and specifications.

7. ***Density requirement. Density shall occur at 70 percent or more of the maximum density allowed by the underlying zoning. These provisions would not apply when density is transferred from Type I and II lands as defined in CDC 02.030. Development of Type I or II lands are exempt from these provisions. Land divisions of three lots or less would also be exempt.***

RESPONSE: The R-7 zone permits a maximum density of 6.4 dwelling units per net acre. Net acre is defined as "the total gross acres less the public right-of-way and other acreage deductions, as applicable. The net acreage of this site after removal of dedicated right-of- way is 86,255 sq. ft. or 1.98 acres. At 6.4 dwelling units per net acre, the maximum number of dwelling units on this site is 12.32. This proposal is for a 12-lot subdivision. The proposed density for the site is within 70 percent of the maximum allowable density. The requirements of this section have been satisfied.

8. ***Mix requirement. The "mix" rule means that developers shall have no more than 15 percent of the R-2.1 and R-3 development as single-family residential. The intent is that the majority of the site shall be developed as medium high density multi-family housing.***

RESPONSE: This property is zoned R-7 and, therefore, the use of the parcel as an entirely residential development is permitted.

9. ***Heritage trees/significant tree and tree cluster protection. All heritage trees, as defined in the municipal code, shall be saved. Diseased heritage trees, as determined by the City Arborist, may be removed at his/her direction. All non-heritage trees and clusters of trees (three or more trees with overlapping dripline; however, native oaks need not have an overlapping dripline) that are considered significant by virtue of their size, type, location, health, or numbers shall be saved pursuant to CDC 55.100(B)(2). Trees are defined per the municipal code as having a trunk six inches in diameter or 19 inches in circumference at a point five feet above the mean ground level at the base of the trunk.***

RESPONSE: The applicant has inventoried all trees on site and has consulted with the City's arborist to determine which trees on site are significant. The applicant is proposing tree preservation consistent with these requirements, as detailed in the tree protection plan (Sheet 3). The trees identified as significant on this site will be retained with the development of the subdivision.

CHAPTER 92 REQUIRED IMPROVEMENTS FOR ALL DEVELOPMENT

The following improvements shall be installed at the expense of the developer and meet all City codes and standards:

A. <u>Streets within subdivisions</u>.

1. ***All streets within a subdivision, including alleys, shall be graded for the full right-of-way width and improved to the City's permanent improvement standards and specifications which include sidewalks and bicycle lanes, unless the decision-making authority makes the following findings:***

    a. ***The right-of-way cannot be reasonably improved in a manner consistent with City road standards or City standards for the protection of wetlands and natural drainageways.***

    b. ***The right-of-way does not provide a link in a continuous pattern of connected local streets, or, if it does provide such a link, that an alternative street link already exists or the applicant has proposed an alternative street which provides the necessary connectivity, or the applicant has proven that there is no feasible location on the property for an alternative street providing the link.***

2. ***When the decision-making authority makes these findings, the decision-making authority may impose any of the following conditions of approval:***

    a. ***A condition that the applicant initiate vacation proceedings for all or part of the right-of-way.***

    b. ***A condition that the applicant build a trail, bicycle path, or other appropriate way.***

If the applicant initiates vacation proceedings pursuant to subsection (A)(2)(a) of this section, and the right-of-way cannot be vacated because of opposition from adjacent property owners, the City Council

shall consider and decide whether to process a City-initiated street vacation pursuant to Chapter 271 ORS.

Construction staging area shall be established and approved by the City Engineer. Clearing, grubbing, and grading for a development shall be confined to areas that have been granted approval in the land use approval process only. Clearing, grubbing, and grading outside of land use approved areas can only be approved through a land use approval modification and/or an approved Building Department grading permit for survey purposes. Catch basins shall be installed and connected to pipe lines leading to storm sewers or drainageways.

RESPONSE: No vacation proceedings are being requested by the Applicant, nor are they being required by the City for the proposed 12-lot subdivision. All proposed streets within the subdivision, will be graded for the full right-of-way width and improved to the City's permanent improvement standards and specifications which include sidewalks and bicycle lanes, unless the decision-making authority determines otherwise.

B. Extension of streets to subdivisions. The extension of subdivision streets to the intercepting paving line of existing streets with which subdivision streets intersect shall be graded for the full right-of-way width and improved to a minimum street structural section and width of 24 feet.

RESPONSE:

C. Local and minor collector streets within the rights-of-way abutting a subdivision shall be graded for the full right-of-way width and approved to the City's permanent improvement standards and specifications. The City Engineer shall review the need for street improvements and shall specify whether full street or partial street improvements shall be required. The City Engineer shall also specify the extent of storm drainage improvements required. The City Engineer shall be guided by the purpose of the City's systems development charge program in determining the extent of improvements which are the responsibility of the subdivider.

RESPONSE: There are not collector streets abutting the proposed subdivision, therefore, the above criterion does not apply to the Applicant's request.

D. Monuments. Upon completion of the first pavement lift of all street improvements, monuments shall be installed and/or reestablished at every street intersection and all points of curvature and points of tangency of street centerlines with an iron survey control rod. Elevation benchmarks shall be established at each street intersection monument with a cap (in a monument box) with elevations to a U.S. Geological Survey datum that exceeds a distance of 800 feet from an existing benchmark.

RESPONSE: All required monuments will be installed with the development of the subdivision consistent with the City Standards and Specification pursuant to the above criterion.

E. Storm detention and treatment. For Type I, II and III lands (refer to definitions in Chapter 02 CDC), a registered civil engineer must prepare a storm detention and treatment plan, at a scale sufficient to evaluate all aspects of the proposal, and a statement that demonstrates:

1. ***The location and extent to which grading will take place indicating general contour lines, slope ratios, slope stabilization proposals, and location and height of retaining walls, if proposed.***

2. ***All proposed storm detention and treatment facilities comply with the standards for the improvement of public and private drainage systems located in the West Linn Public Works Design Standards.***

3. ***There will be no adverse off-site impacts, including impacts from increased intensity of runoff downstream or constrictions causing ponding upstream.***

4. ***There is sufficient factual data to support the conclusions of the plan.***

5. ***Per CDC 99.035, the Planning Director may require the information in subsections (E)(1), (2), (3) and (4) of this section for Type IV lands if the information is needed to properly evaluate the proposed site plan.***

RESPONSE: The subject property does not contain any Type I, II, III and/or IV lands per the City's definitions in Chapter 02 of the CDC. As such, the above criteria do not apply to the Applicant's proposal.

F. Sanitary sewers. Sanitary sewers shall be installed to City standards to serve the subdivision and to connect the subdivision to existing mains.

1. ***If the area outside the subdivision to be directly served by the sewer line has reached a state of development to justify sewer installation at the time, the Planning Commission may recommend to the City Council construction as an assessment project with such arrangement with the subdivider as is desirable to assure financing his or her share of the construction.***

2. ***If the installation is not made as an assessment project, the City may reimburse the subdivider an amount estimated to be a proportionate share of the cost for each connection made to the sewer by property owners outside of the subdivision for a period of 10 years from the time of installation of the sewers. The actual amount shall be determined by the City Administrator considering current construction costs.***

RESPONSE: As mentioned previously in this narrative, the sanitary sewer lines will be installed to meet all City Standards and Specifications to serve the subdivision. As part of the submitted application materials, the Applicant has provided a detailed composite utility plan on Sheet 11 of the plan set that shows the line sizing and location for the proposed sewer lines.

G. Water system. Water lines with valves and fire hydrants providing service to each building site in the subdivision and connecting the subdivision to City mains shall be installed. Prior to starting building construction, the design shall take into account provisions for extension beyond the subdivision and to adequately grid the City system. Hydrant spacing is to be based on accessible area served according to the City Engineer's recommendations and City standards. If required water mains will directly serve property outside the subdivision, the City

may reimburse the developer an amount estimated to be the proportionate share of the cost for each connection made to the water mains by property owners outside the subdivision for a period of 10 years from the time of installation of the mains. If oversizing of water mains is required to areas outside the subdivision as a general improvement, but to which no new connections can be identified, the City may reimburse the developer that proportionate share of the cost for oversizing. The actual amount and reimbursement method shall be as determined by the City Administrator considering current or actual construction costs.

RESPONSE: As mentioned previously in this narrative, the water lines will be installed to meet all City Standards and Specifications to serve the subdivision. As part of the submitted application materials, the Applicant has provided a detailed composite utility plan on Sheet 11 of the plan set that shows the line sizing and location for the proposed water lines. Prior to starting building construction, the Applicant will work with the City's Engineering and Fire Departments to assure the design for the water system takes into account provisions for extension beyond the subdivision and to adequately grid the City system. Hydrant spacing will also be addressed at that time to make sure they are located in an accessible area pursuant to City Standards.

H. Sidewalks.

1. ***Sidewalks shall be installed on both sides of a public street and in any special pedestrian way within the subdivision, except that in the case of primary or secondary arterials, or special type industrial districts, or special site conditions, the Planning Commission may approve a subdivision without sidewalks if alternate pedestrian routes are available. In the case of the double-frontage lots, provision of sidewalks along the frontage not used for access shall be the responsibility of the developer. Providing front and side yard sidewalks shall be the responsibility of the land owner at the time a request for a building permit is received. Additionally, deed restrictions and CC&Rs shall reflect that sidewalks are to be installed prior to occupancy and it is the responsibility of the lot or homeowner to provide the sidewalk, except as required above for double-frontage lots.***

2. ***On local streets serving only single-family dwellings, sidewalks may be constructed during home construction, but a letter of credit shall be required from the developer to ensure construction of all missing sidewalk segments within four years of final plat approval pursuant to CDC 91.010(A)(2).***

3. ***The sidewalks shall measure at least six feet in width and be separated from the curb by a six-foot minimum width planter strip. Reductions in widths to preserve trees or other topographic features, inadequate right-of-way, or constraints, may be permitted if approved by the City Engineer in consultation with the Planning Director.***

4. ***Sidewalks should be buffered from the roadway on high volume arterials or collectors by landscape strip or berm of three and one-half-foot minimum width.***

5. ***The City Engineer may allow the installation of sidewalks on one side of any street only if the City Engineer finds that the presence of any of the factors listed below justifies such waiver:***

    a. ***The street has, or is projected to have, very low volume traffic density;***

b. The street is a dead-end street;

c. The housing along the street is very low density; or

d. The street contains exceptional topographic conditions such as steep slopes, unstable soils, or other similar conditions making the location of a sidewalk undesirable.

RESPONSE: The Applicant will be installing a sidewalk along the sites Weahterhill Rd. frontage, as well as along both sides of Satter Street with the extension of the street through the site. All proposed and required sidewalks will be installed pursuant to the City's design standards and specifications. Should the developer choose to install the sidewalks with the construction of the homes, then a letter of credit will be provided to the City to ensure construction of all missing sidewalks within four years of the final plat approval.

I. Bicycle routes. If appropriate to the extension of a system of bicycle routes, existing or planned, the Planning Commission may require the installation of separate bicycle lanes within streets and separate bicycle paths.

RESPONSE: Per the City's Transportation System Plan (TSP) there are no bicycle routes identified, either existing or planned, for the subject property.

J. Street name signs. All street name signs and traffic control devices for the initial signing of the new development shall be installed by the City with sign and installation costs paid by the developer.

RESPONSE: All required street signs, whether street names or traffic control signs, will be installed pursuant to the City's Standards and Specifications as outlined in the above criterion. The Applicant is agreeable to paying the installation costs associated with the installation of the required signage.

K. Dead-end street signs. Signs indicating "future roadway" shall be installed at the end of all discontinued streets. Signs shall be installed by the City per City standards, with sign and installation costs paid by the developer.

RESPONSE: The Applicant is proposing the terminate Weatherhill Rd. in a "stubbed" street design. A barricade will be installed at the end of the street and any required signage will be installed consistent with the City's development codes.

L. Signs indicating future use shall be installed on land dedicated for public facilities (e.g., parks, water reservoir, fire halls, etc.). Sign and installation costs shall be paid by the developer.

RESPONSE: No public facilities are being proposed as part of this development request, therefore, the above criterion does not apply to the Applicant's proposal.

M. Street lights. Street lights shall be installed and shall be served from an underground source of supply. The street lighting shall meet IES lighting standards. The street lights shall be the shoe-box style light (flat lens) with a 30-foot bronze pole in residential (non-intersection) areas. The street light shall be the cobra head style (drop lens) with an approximate 50-foot

(sized for intersection width) bronze pole. The developer shall submit to the City Engineer for approval of any alternate residential, commercial, and industrial lighting, and alternate lighting fixture design. The developer and/or homeowners association is required to pay for all expenses related to street light energy and maintenance costs until annexed into the City.

RESPONSE: All required street lights will be installed and will be served from an underground source of supply. All required street lighting will meet IES lighting standards and the street light will be the "shoe-box" style light (i.e. flat lens).

N. Utilities. The developer shall make necessary arrangements with utility companies or other persons or corporations affected for the installation of underground lines and facilities. Electrical lines and other wires, including but not limited to communication, street lighting, and cable television, shall be placed underground.

RESPONSE: Consistent with the above criterion, the Applicant's developer will make all necessary arrangements with the franchised utility companies or other persons or corporations affected for the installation of underground lines and facilities. Electrical lines and other wires, including but not limited to communication, street lighting, and cable television, will be placed underground as required by the City's Community Development Code (CDC).

O. Curb cuts and driveways. Curb cuts and driveway installations are not required of the subdivider at the time of street construction, but, if installed, shall be according to City standards. Proper curb cuts and hard-surfaced driveways shall be required at the time buildings are constructed.

RESPONSE: All curb cuts and driveway installations will be installed at the time buildings are constructed on the lots. However, should the developer decide to install some curb cuts and driveways at the time of street construction, then, if installed, they will be installed according to City standards.

P. Street trees. Street trees shall be provided by the City Parks and Recreation Department in accordance with standards as adopted by the City in the Municipal Code. The fee charged the subdivider for providing and maintaining these trees shall be set by resolution of the City Council.

RESPONSE: The Applicant agrees to install all required street trees pursuant to the above criterion by working with the City's Parks and Recreation Department to obtain the necessary street trees. Additionally, the Applicant is agreeable to paying the fees set by resolution of the City Council for providing and maintain the requires street trees.

Q. Joint mailbox facilities shall be provided in all residential subdivisions, with each joint mailbox serving at least two, but no more than eight, dwelling units. Joint mailbox structures shall be placed in the street right-of-way adjacent to roadway curbs. Proposed locations of joint mailboxes shall be designated on a copy of the tentative plan of the subdivision, and shall be approved as part of the tentative plan approval. In addition, sketch plans for the joint mailbox structures to be used shall be submitted and approved by the City Engineer prior to final plat approval.

RESPONSE: The Applicant will work with the US Postal Service (USPS) to identify a strategic location for two (2) joint mailbox facilities to serve the proposed 12-lot subdivision. The joint mailbox facilities will be installed in the street right-of-way adjacent to the roadway curbs. As part of the tentative plan approval, the Applicant requests, as a condition of any final approval, that the required sketch plans for the joint mailbox structures to be used shall be submitted and approved by the City Engineer prior to final plat approval.

92.030 IMPROVEMENT PROCEDURES

In addition to other requirements, improvements installed by the developer, either as a requirement of these regulations or at the developer's own option, shall conform to the requirements of this title and permanent improvement standards and specifications adopted by the City and shall be installed in accordance with the following procedure:

A. Improvement work shall not be commenced until plans have been checked for adequacy and approved by the City. To the extent necessary for evaluation of the proposal, the improvement plans may be required before approval of the tentative plan of a subdivision or partition. Plans shall be prepared in accordance with the requirements of the City.

B. Improvement work shall not be commenced until the City has been notified in advance, and if work has been discontinued for any reason, it shall not be resumed until the City has been notified.

C. Improvements shall be constructed under the Engineer. The City may require changes in typical sections and details in the public interest if unusual conditions arise during construction to warrant the change.

D. All underground utilities, sanitary sewers, and storm drains installed in streets by the subdivider or by any utility company shall be constructed prior to the surfacing of the streets. Stubs for service connections for underground utilities and sanitary sewers shall be placed to a length obviating the necessity for disturbing the street improvements when service connections are made.

E. A digital and mylar map showing all public improvements as built shall be filed with the City Engineer upon completion of the improvements.

RESPONSE: All requirements and improvements installed by the developer, either as a requirement of the City's CDC regulations or at the developer's own option, will conform to the requirements of this title and permanent improvement standards and specifications adopted by the City and will be installed in accordance with the above procedures. The Applicant is agreeable, as a condition of any final approval, that all improvements be installed in accordance with all City standards and specifications adopted by the City.

SUMMARY AND CONCLUSION

Based upon the application materials submitted herein, the Applicant respectfully requests approval from the City's Planning Department of this application for a 12-lot residential subdivision.

EMERIO
Design

CIVIL ENGINEERS & PLANNERS

Stormwater Management Report
Weatherhill Road Subdivision
12-Lot Subdivision at
22870 Weatherhill Road
West Linn, Oregon

Emerio Project Number:	463-003
City of West Linn Permit Numbers:	SUB-18-04
Date:	12/19/2018 Rev 1: 02/07/2019

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Table of Contents:

Project Overview and Description:

Size and location of project site (vicinity map):
The current site is located in the south part of West Linn on the south side of Weatherhill Road, approximately 120 feet east of the intersection of Satter Street & Weatherhill Road. One large lot will be divided into 12 lots. The proposed site is 2.57 acres and will encompass roughly 45,105 SF of impervious onsite improvements and 6,560 SF offsite impervious improvement. Reference the vicinity map provided in Appendix A(1).

Property Zoning: The property is zoned R7 (Residential 7,000 SF lots).

Type of Development/Proposed Improvements: The proposed development will consist of a public street, a tract for stormwater, and new homes and driveways will be constructed on each lot.

Existing vs. post-construction conditions: the current (existing) site condition consists of an under-developed forested lot with one house, attached garage, and associated driveway.

Watershed Description: The site drainage area presently sheet flows south toward adjacent lots and into Crestview Drive. There is an existing ephemeral stream/drainage at the south line of the site along the middle of the property line where onsite flows collect and flow south through an existing easement to a culvert routing under Crestview Drive. In the post-developed condition, the site impervious flows will be treated onsite and discharged at the existing ephemeral stream location. Drainage basin areas are shown in Appendix D(2).

Soil Classification:

The NRCS soil survey of Clackamas County, Oregon classifies the onsite soils as Cascade-urban land complex soil. The associated hydrologic group of this soil is C, see Appendix B(1). A curve number of 74 is used for pre-developed pervious surfaces and 98 and 86 are used for impervious and pervious surfaces.

Methodology:

This project proposes on lot LIDA flow-through planter boxes to address private stormwater requirements, and Green Streets flow-through planters to address public ROW stormwater requirements. The proposed grading will retain the general existing drainage pattern for pervious areas of the site. ROW planters and private LIDA planters will all be routed to the same discharge location at the existing southwest ephemeral stream drainage.

Water Quality

Water quality will be achieved by means of city of Portland planter boxes sized using the online Presumptive Approach Calculator (PAC). Stormwater runoff will enter the planter boxes by curb inlets and filter through an 18" layer of amended soil before reaching a 12" section of drain rock and a perf pipe to be routed offsite (see attached detail Appendix D(3). The planter boxes are open bottomed allowing infiltration to native soil; however, for the purposes of analysis, this infiltration amount is omitted. The pollution reduction event (water quality) is shown to be satisfied when using the

online analysis tool provided by the city of Portland. See Quantity Control/Detention and Appendix C(2) for sizing of the planter boxes.

Quantity Control/Detention

As required by the City of West Linn, detention was analyzed for the 2, 5, 10, and 25-year design storms.

Satter St. North ROW LIDA Facilities Area: 650 SF x 1.5 = 975 SF		
Return Period	Pre-Developed (CFS)	Post-Developed Planter Discharge (CFS)
2-Year	½ of 0.016	0.03
5-Year	0.031	0.03
10-Year	0.048	0.03
25-Year	0.067	0.061

Satter St. South ROW LIDA Facilities Area: 526.5 SF x 1.5 = 790 SF		
Return Period	Pre-Developed (CFS)	Post-Developed Planter Discharge (CFS)
2-Year	½ of 0.013	0.024
5-Year	0.025	0.024
10-Year	0.039	0.024
25-Year	0.054	0.05

Note from the table above, that while the 2-year post developed rate exceeds the pre-developed ½ of the 2-year rate shown in the PAC results, it has been determined by BES staff that there is a glitch in the PAC calculator that does not properly analyze the lesser detention storm events and they have reasoned this is acceptable provided that the 10 and 25-year storm events pass requirements. This design passes the 5-year through 25-year events.

The surface area of planter resulting from the PAC analysis was increased by a design factor of 1.5 per city of West Linn staff guidelines. Reference Appendix C(2) for online PAC output results.

Stormwater Conveyance

Onsite conveyance will be by means of 12" storm water pipe from Satter Street routing all the way to the discharge point in the existing utility easement south of this site. For conservatism, the total discharge flow rate from proposed stormwater pipe was used to analyze the lowest potential pipe design slope at 0.5%. See Appendix C(3) for HydroCAD flow rates developed during the 25-year 24-hr conveyance design storm event.

Analysis:

The following design assumptions were utilized in this design.

Design Storm: *Water quality storm = **0.83" in 24 hours**
*2-year 24-hour storm **= 2.4" in 24 hours**
*5-year 24-hour storm **= 2.9" in 24 hours**
*10-year 24-hour storm **= 3.4" in 24 hours**
*25-year 24-hour storm **= 3.9" in 24 hours**
Conveyance: 25-year 24-hour storm **= 3.9" in 24 hours** (West Linn)

*Note that City of Portland design storms are listed since the online PAC was used.

Computation methods and software utilized in the design were from the online PAC and HydroCAD V-10.

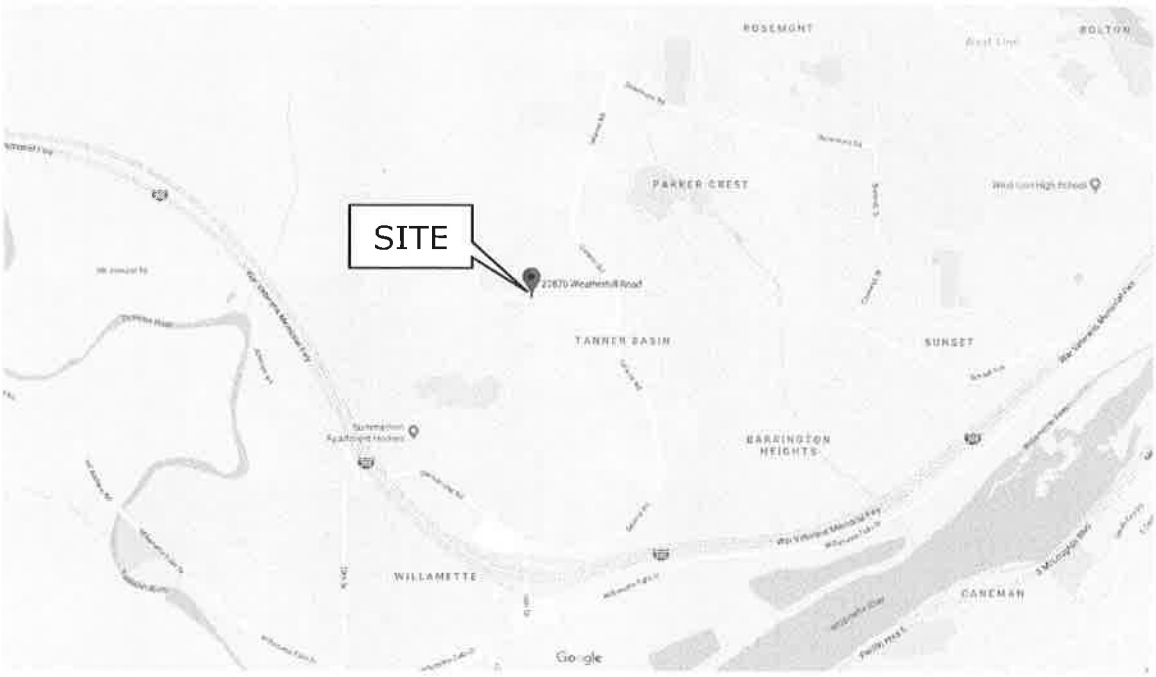
Curve numbers utilized in the design were 98 for impervious areas, 86 for pervious areas, and 74 for predeveloped pervious areas.

Engineering Conclusions:

The design of the proposed stormwater management facilities satisfies the pollution reduction, conveyance and detention standards required by the 2010 City of West Linn Public Works Design Standards.

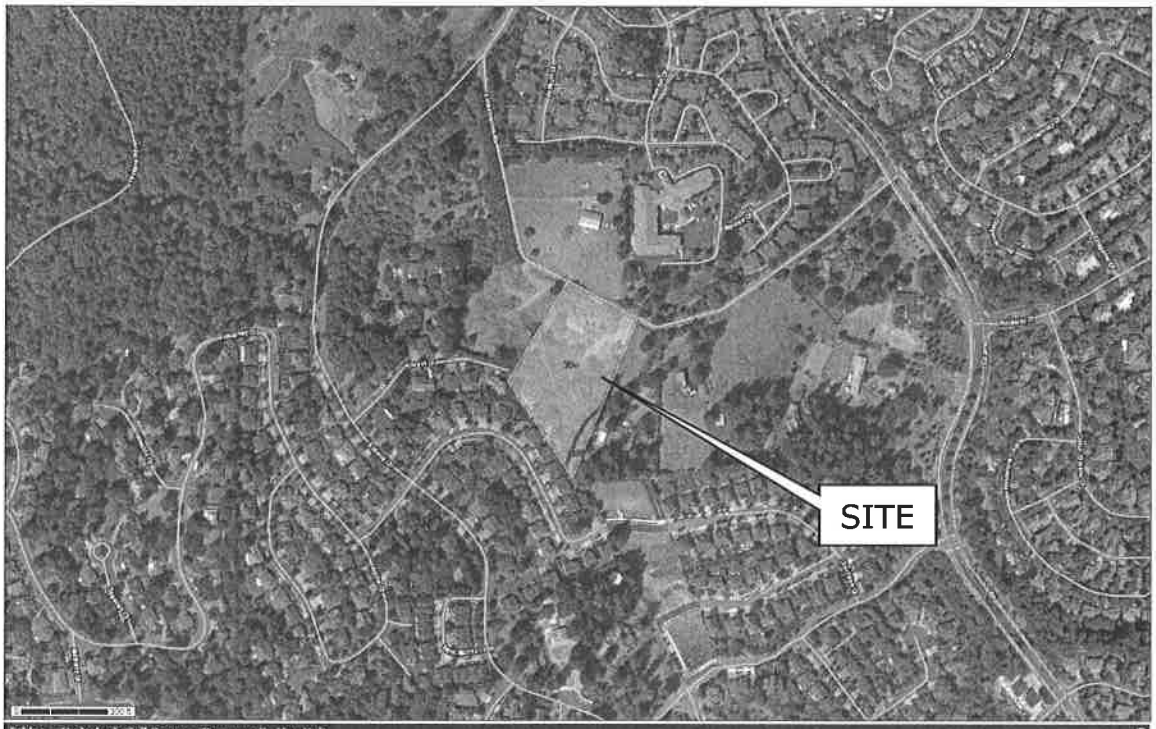
Appendix A:

Appendix A(1)
Vicinity Map



Appendix B:

Appendix B(1)
Soil Classification



Tables — Hydrologic Soil Group — Summary By Map Unit

Summary by Map Unit — Clackamas County Area, Oregon (OR610)

Summary by Map Unit — Clackamas County Area, Oregon (OR610)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
64C	Nekia silty clay loam, 8 to 15 percent slopes	C	0.2	5.0%
78C	Saum silt loam, 8 to 15 percent slopes	C	3.4	95.0%
Totals for Area of Interest			**3.6**	**100.0%**

SITE

Appendix C:

Basin Area Tabulated Data
Weatherhill Road Subdivision

Appendix C(1)

Basin #	Name	Total Area SF	Total Area Acres	Qty of Lots	Lot Impervious SF	ROW/Tract Imp SF	Total Impervious SF	Total Pervious (Calc'd) SF
101	North	8,552	0.20	0	0	8,552	8,552	0
102	South	6,892	0.16	0	0	6,892	6,892	0
103	Lots	60,971	1.40	12	30,000	0	30,000	30,971

APPENDIX C(2)

PAC Report

Project Name Weatherhill Rd	Permit No.	Created 12/3/18 10:48 AM
Project Address 22870 Weatherhill Rd West Linn, OR 97068	Designer Emerio Design	Last Modified 2/1/19 10:34 AM
	Company Emerio Design	Report Generated 2/1/19 10:34 AM

Project Summary

12 Lot Subdivision

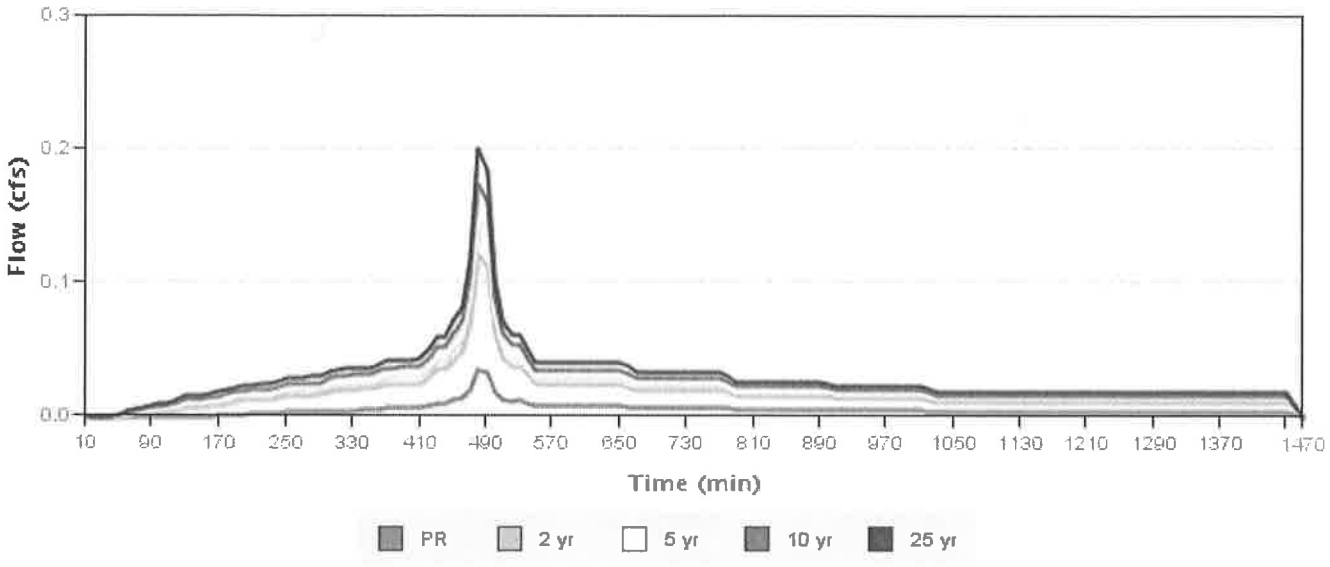
Catchment Name	Impervious Area (sq ft)	Native Soil Design Infiltration Rate	Hierarchy Category	Facility Type	Facility Config	Facility Size (sq ft)	Facility Sizing Ratio	PR Results	Flow Control Results
North	8552	0.01	3	Planter (Sloped)	D		7.6%	Pass	Fail
South	6892	0.10	3	Planter (Sloped)	D		7.6%	Pass	Fail

Catchment North

Site Soils & Infiltration Testing Data	Infiltration Testing Procedure	**Open Pit Falling Head**
	Native Soil Infiltration Rate (I_{test})	**0.01** ⚠
Correction Factor	CF_{test}	**2**
Design Infiltration Rates	Native Soil (I_{dsgn})	**0.01 in/hr** ⚠
	Imported Growing Medium	**2.00 in/hr**
Catchment Information	Hierarchy Category	**3**
	Disposal Point	**B**
	Hierarchy Description	**Off-site flow to drainageway, river, or storm-only pipe system**
	Pollution Reduction Requirement	**Pass**
	10-year Storm Requirement	**N/A**
	Flow Control Requirement	**If discharging to an overland drainage system or to a storm sewer that discharges to an overland drainage system, including streams, drainageways, and ditches, the 2-year post-development peak flow must be equal or less than half of the 2-year pre-development rate and the 5, 10, and 25-year post-development peak rate must be equal or less than the pre-development rates for the corresponding design storms.**
	Impervious Area	**8552 sq ft** **0.196 acre**
	Time of Concentration (Tc)	**5**
	Pre-Development Curve Number (CN_{pre})	**74**
	Post-Development Curve Number (CN_{post})	**98**

⚠ Indicates value is outside of recommended range

SBUH Results



	Pre-Development Rate and Volume		Post-Development Rate and Volume	
	Peak Rate (cfs)	Volume (cf)	Peak Rate (cfs)	Volume (cf)
PR	0	3.172	0.035	446.866
2 yr	0.016	394.001	0.121	1547.449
5 yr	0.031	602.513	0.147	1901.892
10 yr	0.048	834.826	0.174	2256.866
25 yr	0.067	1085.619	0.201	2612.174

Facility North

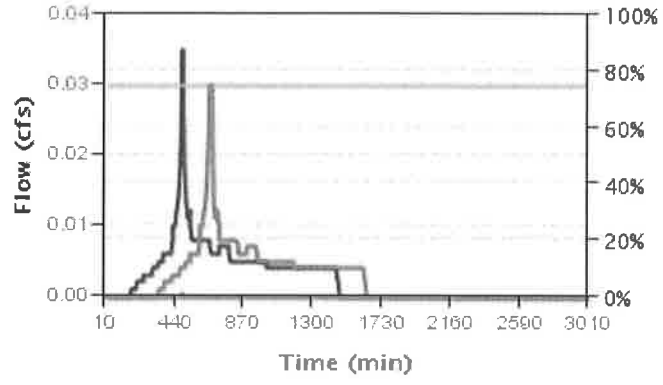
Facility Details	Facility Type	**Planter (Sloped)**
	Facility Configuration	**D: Lined Facility with RS and Ud**
	Facility Shape	**Sloped**
	Above Grade Storage Data	
	Growing Medium Depth	**18 in**
	Surface Capacity at Depth 1	**485.1 cu ft**
	Design Infiltration Rate for Native Soil	**0.000 in/hr**
	Infiltration Capacity	**0.030 cfs**
Facility Facts	Total Facility Area Including Freeboard	**650.00 sq ft**
	Sizing Ratio	**7.6%**
Pollution Reduction Results	Pollution Reduction Score	**Pass**
	Overflow Volume	**448.325 cf**
	Surface Capacity Used	**1%**
Flow Control Results	Flow Control Score	**Fail**
	Overflow Volume	**2250.357 cf**
	Surface Capacity Used	**91%**

	Post-development outflow (cfs)		Pre-development inflow (cfs)	
2 year	0.03	≤ ½ of	0.016	**Fail**
5 year	0.03	≤	0.031	**Pass**
10 year	0.03	≤	0.048	**Pass**
25 year	0.061	≤	0.067	**Pass**

Sloped Facility Worksheet

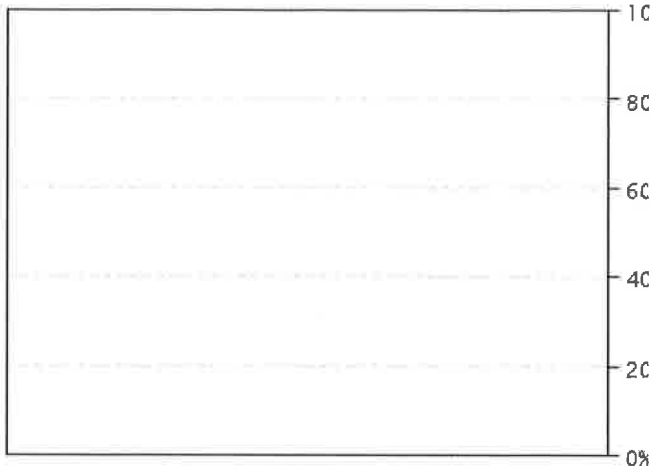
#	Segment Length (ft)	Check Dam Length (ft)	Slope, v/h (ft/ft)	Bottom Width (ft)	Right Side Slope, h/v (ft/ft)	Left Side Slope, h/v (ft/ft)	Downstream Depth (in)	Landscape Width (ft)
1	40.00	0.50	0.0000	6.50	0.0	0.0	9.0	6.50
2	60.00	0.50	0.0000	6.50	0.0	0.0	9.0	6.50

Pollution Reduction Event Surface Facility Modeling

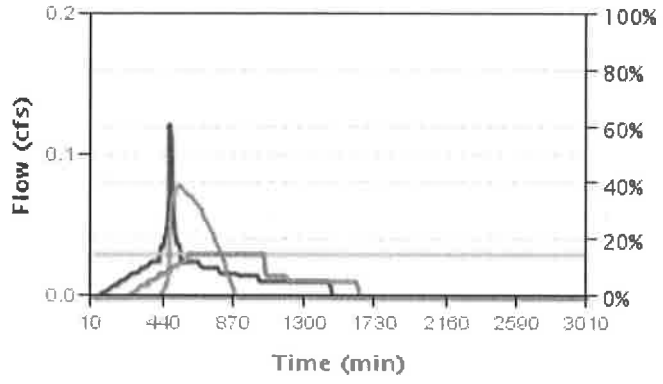


Inflow from rain
Total flow to below grade storage
Percent surface capacity
Infiltration capacity
Flow bypassing growing medium

Pollution Reduction Event Below Grade Modeling

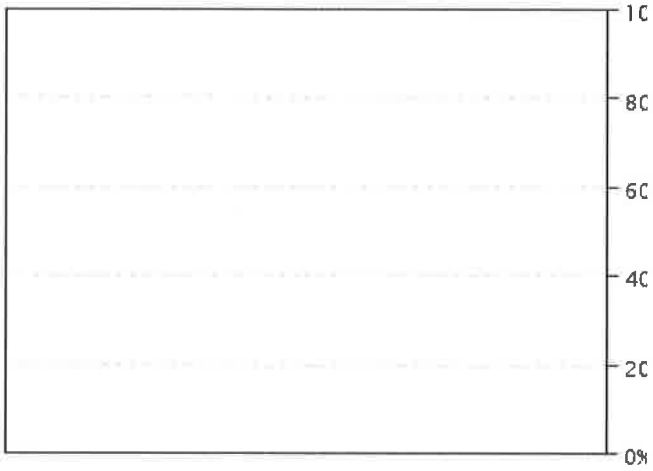


2 Year Event Surface Facility Modeling

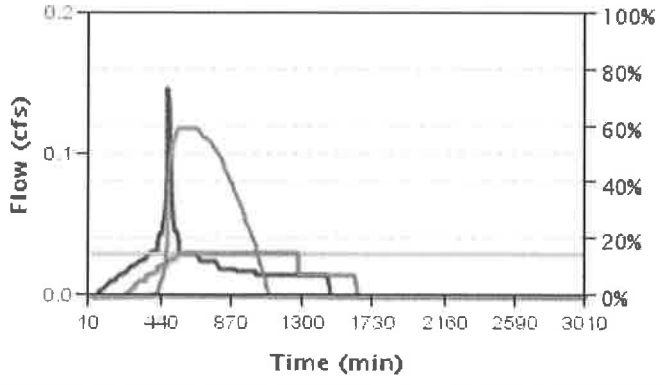


Inflow from rain
Total flow to below grade storage
Percent surface capacity
Infiltration capacity
Flow bypassing growing medium

2 Year Event Below Grade Modeling

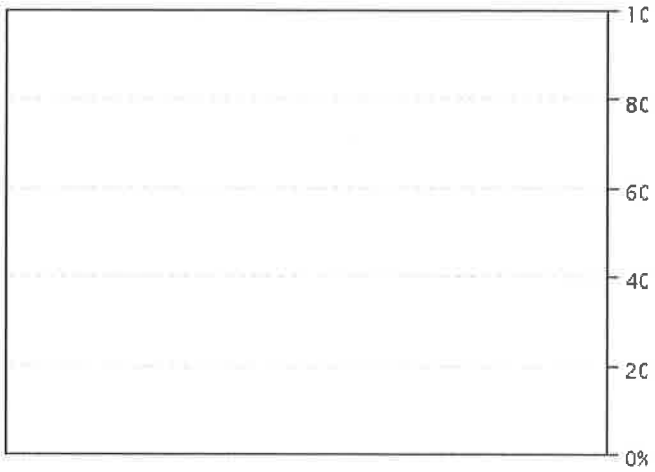


5 Year Event Surface Facility Modeling

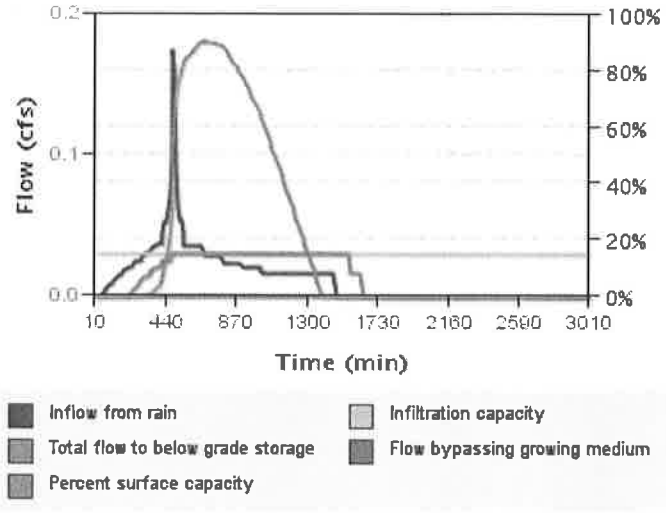


Inflow from rain
Total flow to below grade storage
Percent surface capacity
Infiltration capacity
Flow bypassing growing medium

5 Year Event Below Grade Modeling

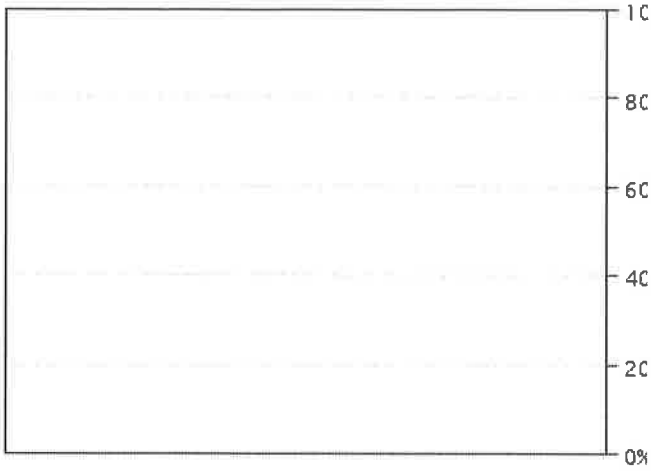


10 Year Event Surface Facility Modeling

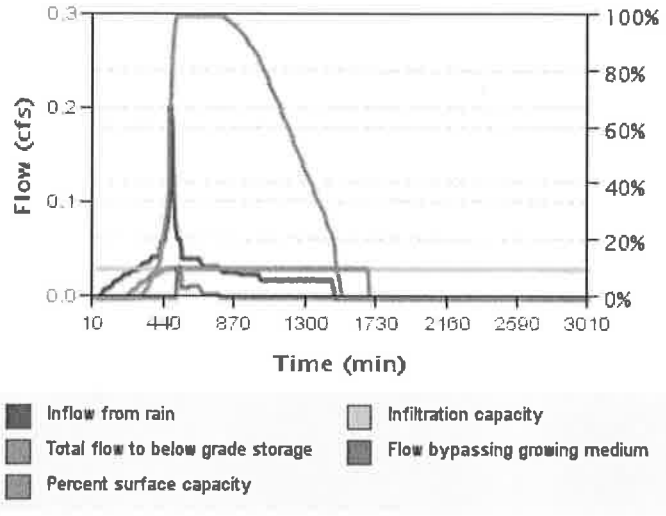


Inflow from rain
Infiltration capacity
Total flow to below grade storage
Flow bypassing growing medium
Percent surface capacity

10 Year Event Below Grade Modeling

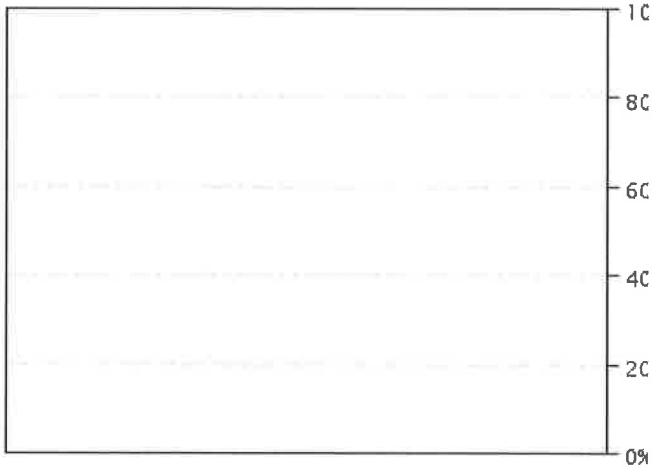


25 Year Event Surface Facility Modeling



Inflow from rain
Infiltration capacity
Total flow to below grade storage
Flow bypassing growing medium
Percent surface capacity

25 Year Event Below Grade Modeling

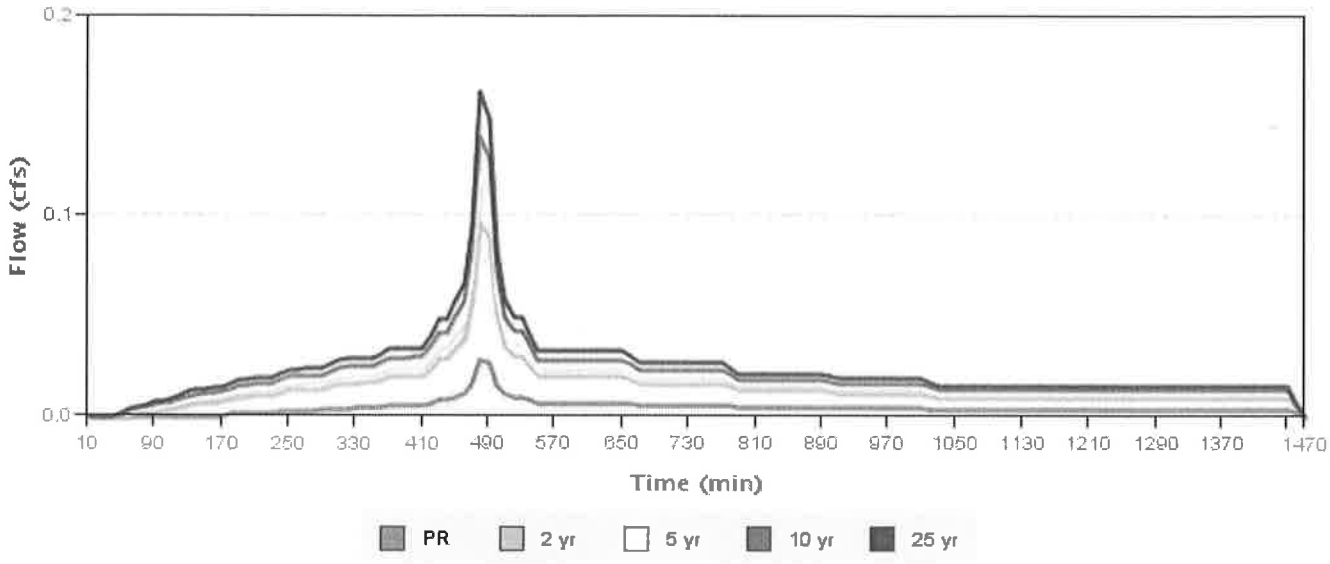


Catchment South

Site Soils & Infiltration Testing Data	Infiltration Testing Procedure	**Encased Falling Head**
	Native Soil Infiltration Rate (I_{test})	**0.10** ⚠
Correction Factor	CF_{test}	**2**
Design Infiltration Rates	Native Soil (I_{dsgn})	**0.05 in/hr** ⚠
	Imported Growing Medium	**2.00 in/hr**
Catchment Information	Hierarchy Category	**3**
	Disposal Point	**B**
	Hierarchy Description	**Off-site flow to drainageway, river, or storm-only pipe system**
	Pollution Reduction Requirement	**Pass**
	10-year Storm Requirement	**N/A**
	Flow Control Requirement	**If discharging to an overland drainage system or to a storm sewer that discharges to an overland drainage system, including streams, drainageways, and ditches, the 2-year post-development peak flow must be equal or less than half of the 2-year pre-development rate and the 5, 10, and 25-year post-development peak rate must be equal or less than the pre-development rates for the corresponding design storms.**
	Impervious Area	**6892 sq ft** **0.158 acre**
	Time of Concentration (Tc)	**5**
	Pre-Development Curve Number (CN_{pre})	**74**
	Post-Development Curve Number (CN_{post})	**98**

⚠ Indicates value is outside of recommended range

SBUH Results



	Pre-Development Rate and Volume		Post-Development Rate and Volume	
	Peak Rate (cfs)	Volume (cf)	Peak Rate (cfs)	Volume (cf)
PR	0	2.556	0.028	360.126
2 yr	0.013	317.523	0.097	1247.079
5 yr	0.025	485.561	0.119	1532.722
10 yr	0.039	672.78	0.14	1818.793
25 yr	0.054	874.893	0.162	2105.134

Facility South

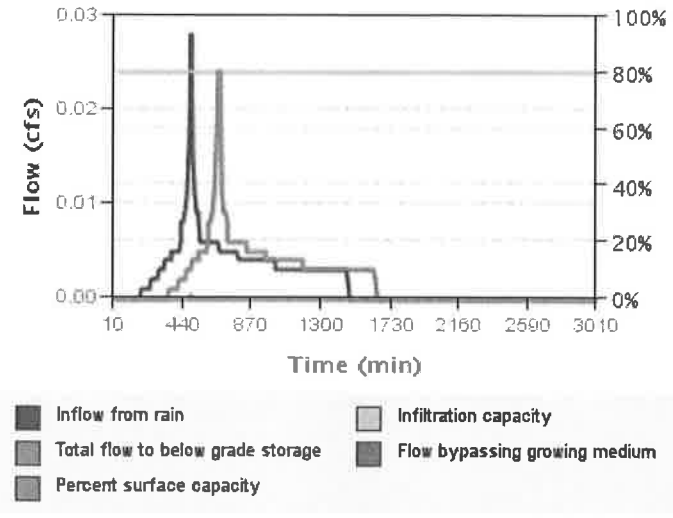
Facility Details	Facility Type	**Planter (Sloped)**
	Facility Configuration	**D: Lined Facility with RS and Ud**
	Facility Shape	**Sloped**
	Above Grade Storage Data	
	Growing Medium Depth	**18 in**
	Surface Capacity at Depth 1	**392.4 cu ft**
	Design Infiltration Rate for Native Soil	**0.000 in/hr**
	Infiltration Capacity	**0.024 cfs**
Facility Facts	Total Facility Area Including Freeboard	**526.50 sq ft**
	Sizing Ratio	**7.6%**
Pollution Reduction Results	Pollution Reduction Score	**Pass**
	Overflow Volume	**361.472 cf**
	Surface Capacity Used	**1%**
Flow Control Results	Flow Control Score	**Fail**
	Overflow Volume	**1826.414 cf**
	Surface Capacity Used	**90%**

	Post-development outflow (cfs)		Pre-development inflow (cfs)	
2 year	0.024	≤ ½ of	0.013	**Fail**
5 year	0.024	≤	0.025	**Pass**
10 year	0.024	≤	0.039	**Pass**
25 year	0.05	≤	0.054	**Pass**

Sloped Facility Worksheet

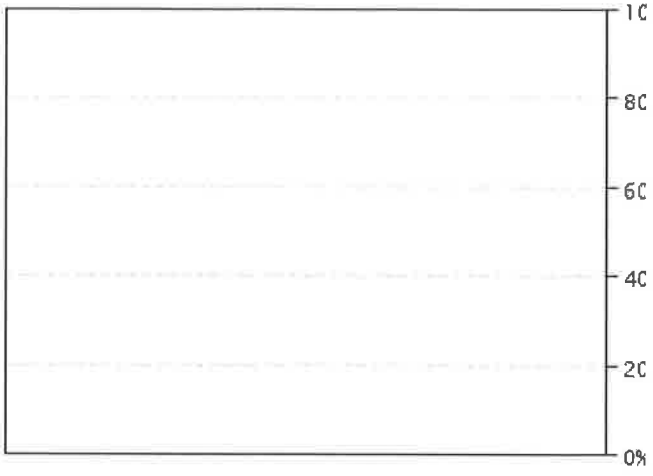
#	Segment Length (ft)	Check Dam Length (ft)	Slope, v/h (ft/ft)	Bottom Width (ft)	Right Side Slope, h/v (ft/ft)	Left Side Slope, h/v (ft/ft)	Downstream Depth (in)	Landscape Width (ft)
1	40.00	0.50	0.0000	6.50	0.0	0.0	9.0	6.50
2	41.00	0.50	0.0000	6.50	0.0	0.0	9.0	6.50

Pollution Reduction Event Surface Facility Modeling

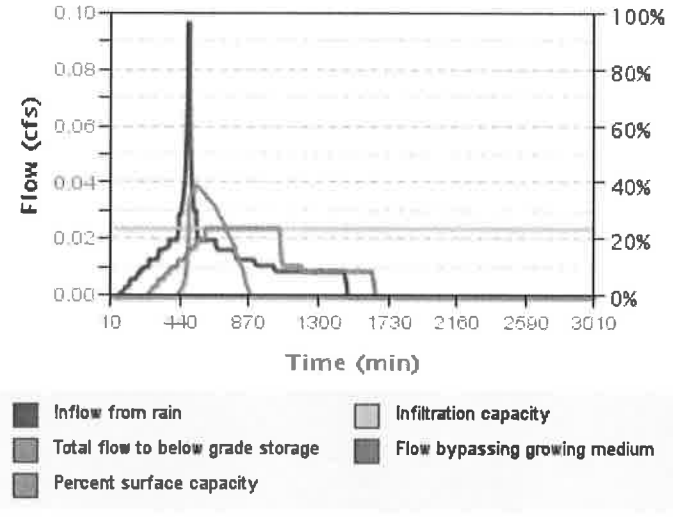


Inflow from rain
Total flow to below grade storage
Percent surface capacity
Infiltration capacity
Flow bypassing growing medium

Pollution Reduction Event Below Grade Modeling

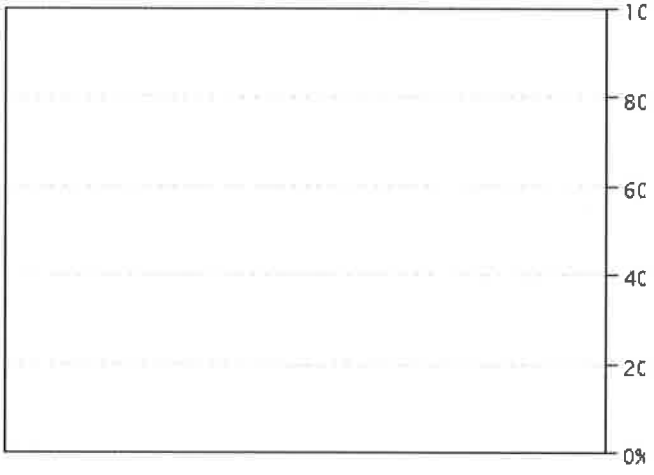


2 Year Event Surface Facility Modeling

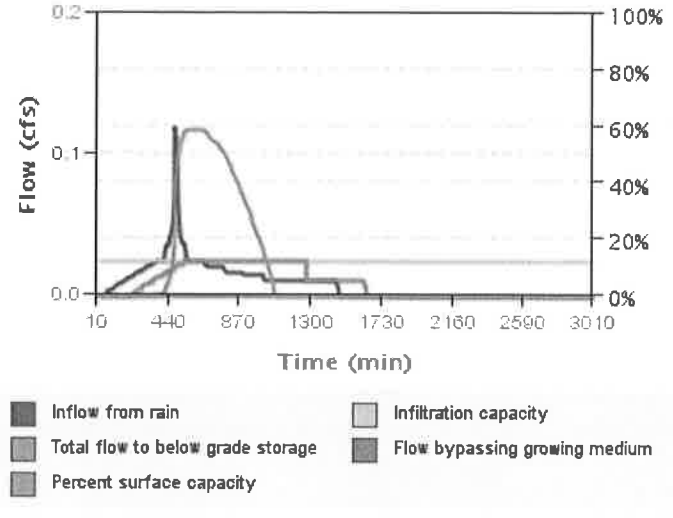


Inflow from rain
Total flow to below grade storage
Percent surface capacity
Infiltration capacity
Flow bypassing growing medium

2 Year Event Below Grade Modeling

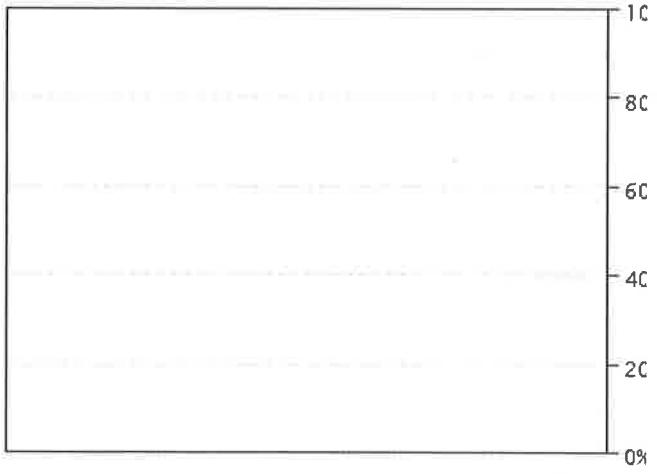


5 Year Event Surface Facility Modeling

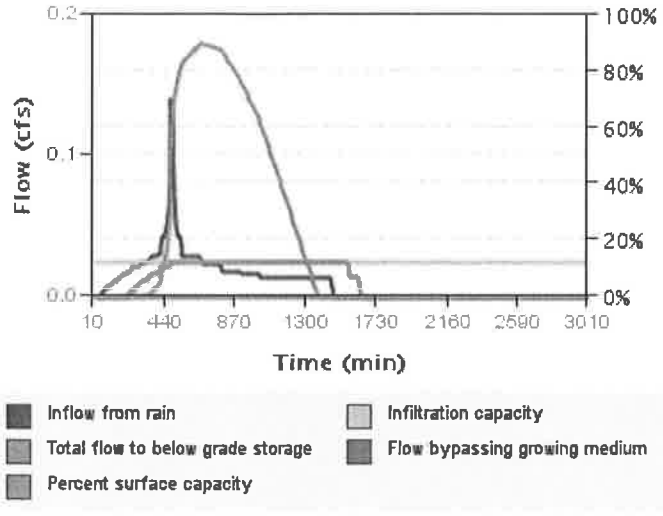


Inflow from rain
Total flow to below grade storage
Percent surface capacity
Infiltration capacity
Flow bypassing growing medium

5 Year Event Below Grade Modeling

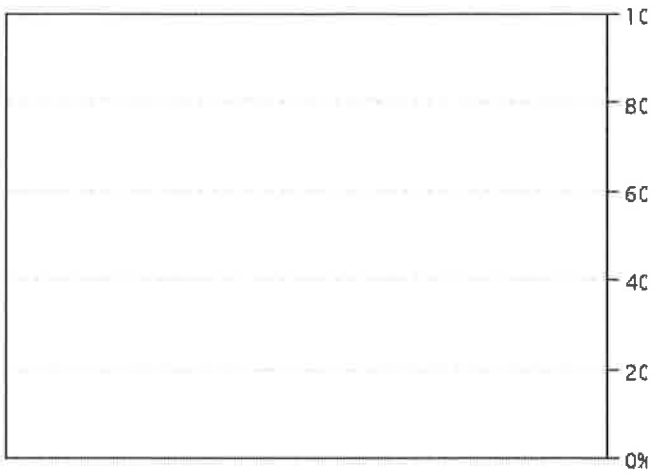


10 Year Event Surface Facility Modeling

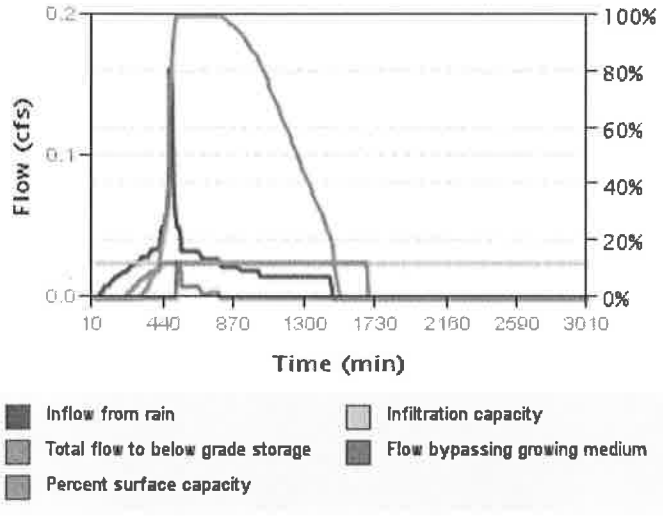


Inflow from rain
Infiltration capacity
Total flow to below grade storage
Flow bypassing growing medium
Percent surface capacity

10 Year Event Below Grade Modeling

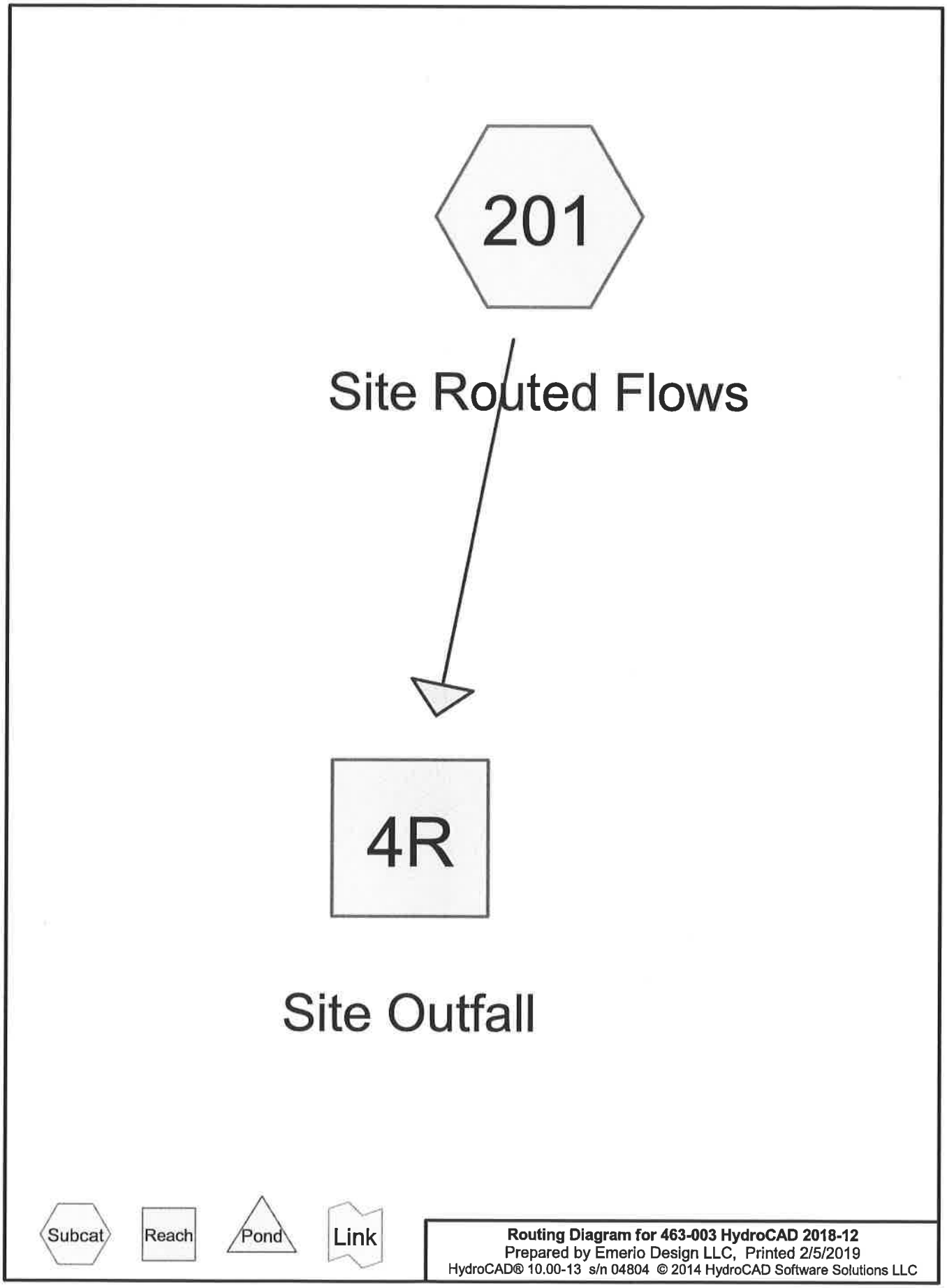


25 Year Event Surface Facility Modeling



Inflow from rain
Infiltration capacity
Total flow to below grade storage
Flow bypassing growing medium
Percent surface capacity

25 Year Event Below Grade Modeling


201
Site Routed Flows
4R
Site Outfall
Subcat
Reach
Pond
Link
Routing Diagram for 463-003 HydroCAD 2018-12
Prepared by Emerio Design LLC, Printed 2/5/2019
HydroCAD® 10.00-13 s/n 04804 © 2014 HydroCAD Software Solutions LLC

Summary for Subcatchment 201: Site Routed Flows

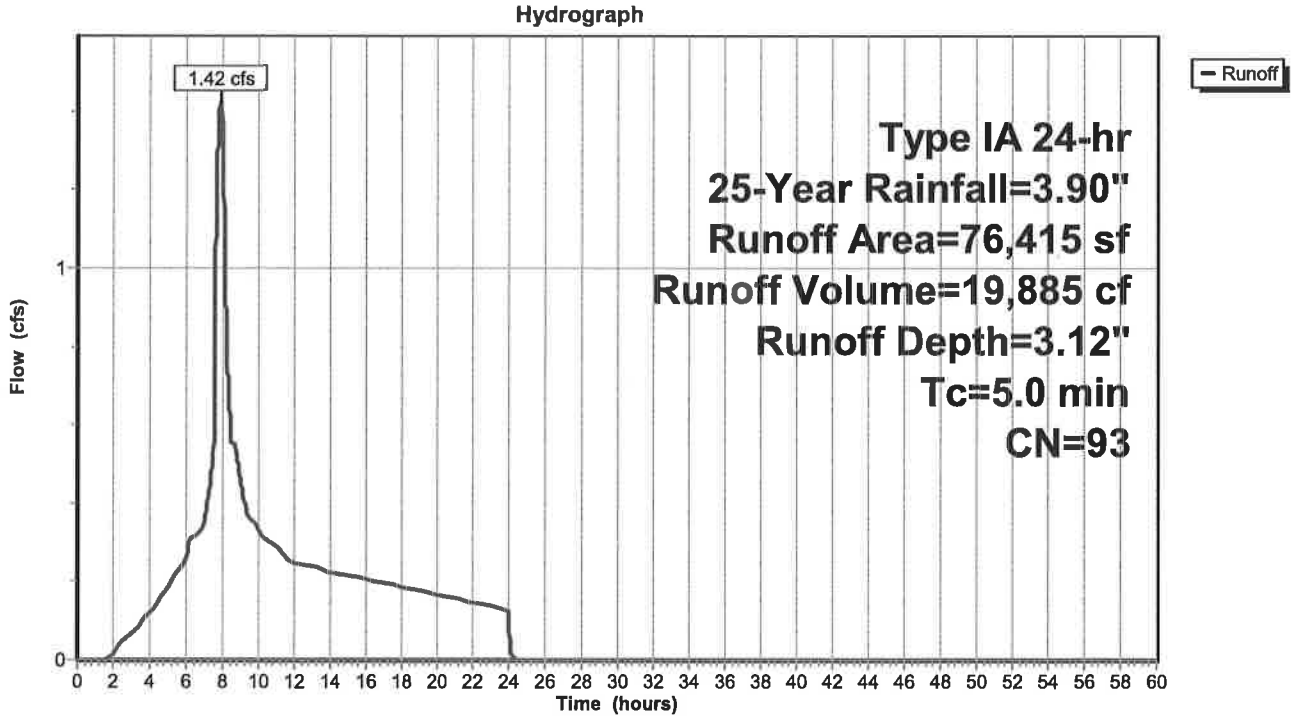
Runoff = 1.42 cfs @ 7.90 hrs, Volume= 19,885 cf, Depth= 3.12"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-Year Rainfall=3.90"

	Area (sf)	CN	Description
*	15,444	98	streets & curb
*	30,000	98	12 lots
	30,971	86	<50% Grass cover, Poor, HSG C
	76,415	93	Weighted Average
	30,971	86	40.53% Pervious Area
	45,444	98	59.47% Impervious Area

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

Subcatchment 201: Site Routed Flows



Summary for Reach 4R: Site Outfall

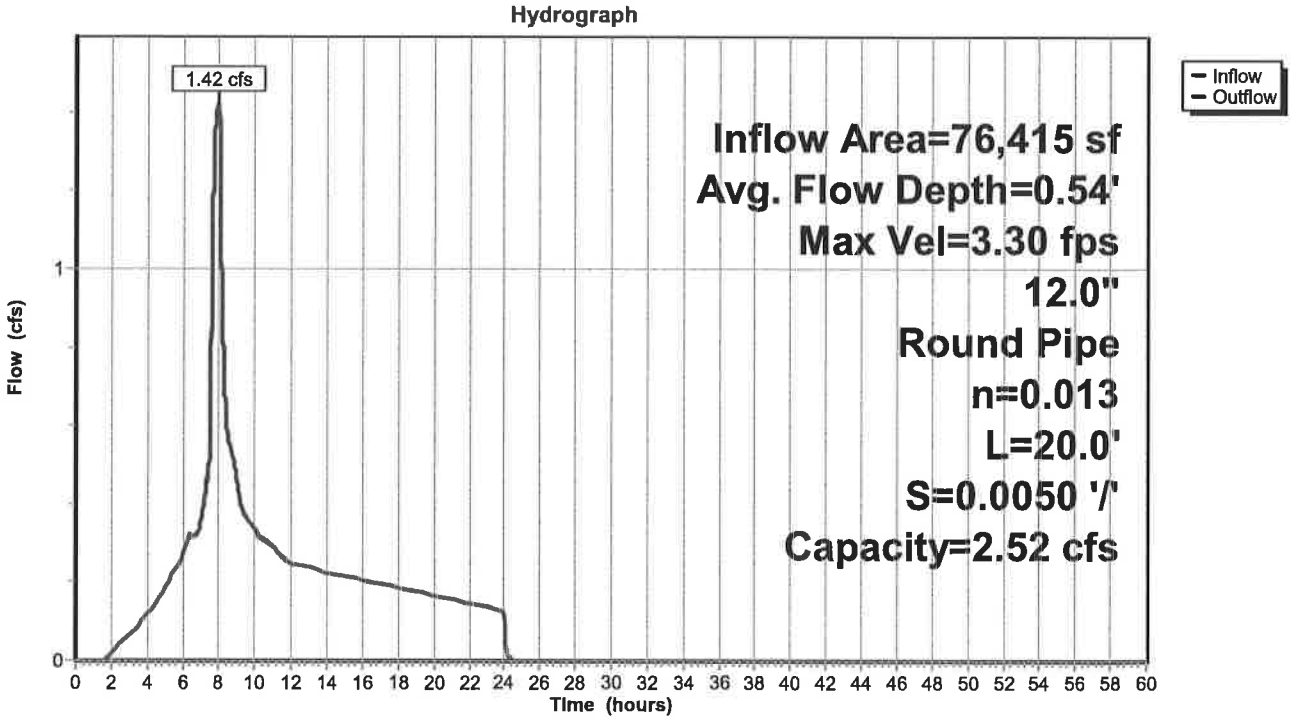
Inflow Area = 76,415 sf, 59.47% Impervious, Inflow Depth = 3.12" for 25-Year event
Inflow = 1.42 cfs @ 7.90 hrs, Volume= 19,885 cf
Outflow = 1.42 cfs @ 7.90 hrs, Volume= 19,885 cf, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.30 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.90 fps, Avg. Travel Time= 0.2 min

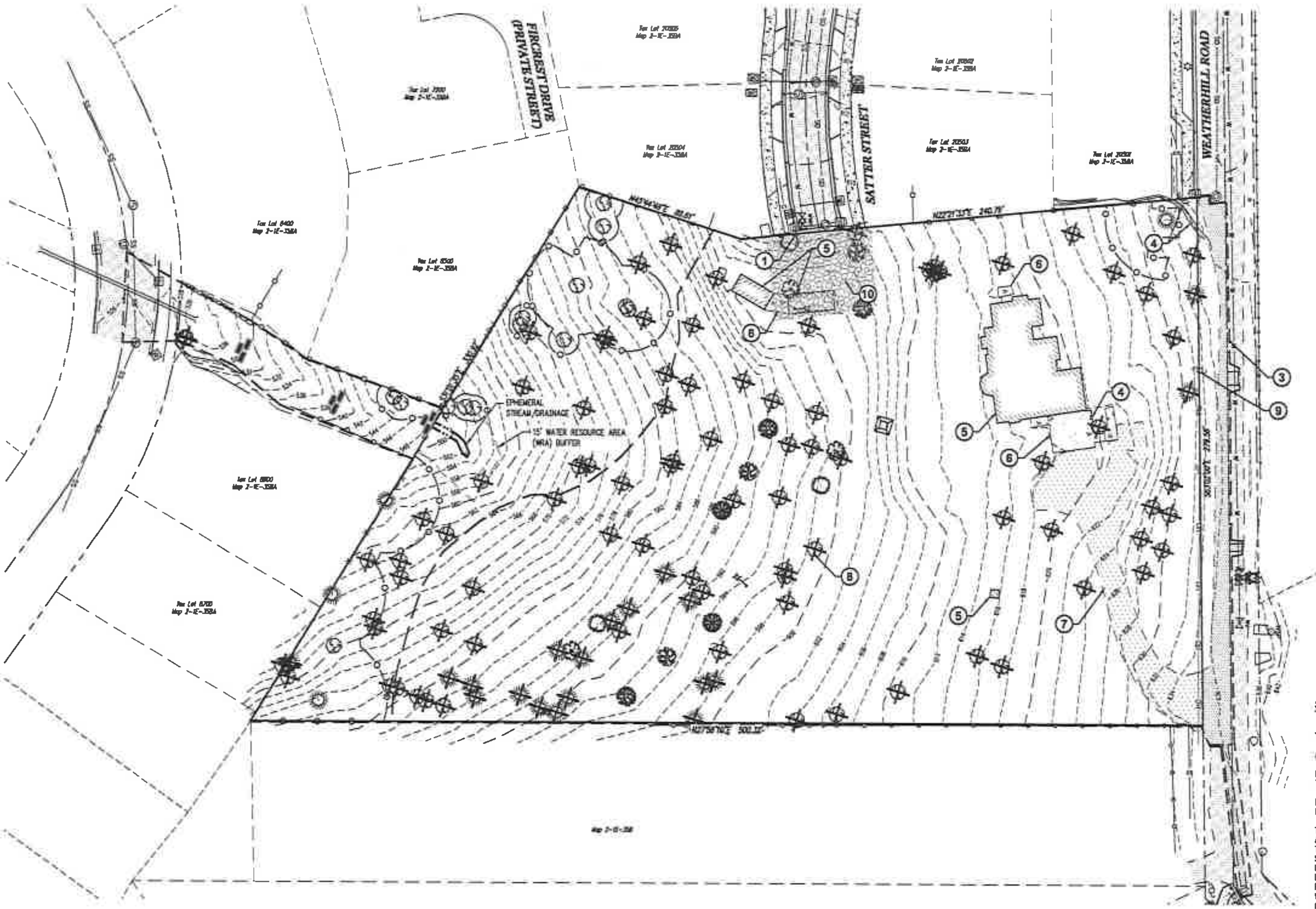
Peak Storage= 9 cf @ 7.90 hrs
Average Depth at Peak Storage= 0.54'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.52 cfs

12.0" Round Pipe
n= 0.013
Length= 20.0' Slope= 0.0050 '/'
Inlet Invert= 100.00', Outlet Invert= 99.90'

Reach 4R: Site Outfall



Appendix D:



SCALE: 1" = 30'

DEMOLITION KEY NOTES

1. REMOVE EXISTING END OF ROAD SIGN.
2. POTHOLE END OF SANITARY LINE AND REMOVE EXISTING PLUG. CONTRACTOR TO NOTIFY ENGINEER IF EXISTING SANITARY INVERT ELEVATION IS DIFFERENT THAN STATED ON THESE PLANS.
3. SAWCUT AND REMOVE EXISTING AC.
4. REMOVED EXISTING WALL
5. REMOVED EXISTING BUILDING/STRUCTURE
6. REMOVE EXISTING CONCRETE AREAS
7. REMOVE EXISTING AC DRIVEWAY
8. REMOVE EXISTING TREE (TYP.). SEE SHEET 3 & 4 FOR DETAILED TREE PLANS
9. REMOVE EXISTING POWER POLE. POWER TO BE UNDERGROUNDED.
10. INSTALL CONSTRUCTION ENTRANCE

GENERAL NOTES:

A. SEE SHEETS 3 AND 4 FOR TREE PRESERVATION PLAN. TREE PROTECTION TO BE INSTALLED BEFORE ANY SITE DEMOLITION, GRUBBING, OR CLEARING.

LEGEND

- BOUNDARY OF SITE
- LIMITS OF CONSTRUCTION
- EXISTING FENCE
- SILT FENCE
- TREE PROTECTION FENCE

SURVEYOR'S NOTE

THE DATUM FOR THIS SURVEY IS BASED UPON OREGON REAL-TIME GNSS NETWORK (ORGN). NAVD88.

A TOPCON PS104B, TRIMBLE R5 INSTRUMENTS WERE USED TO COMPLETE THIS SURVEY.

BOUNDARIES WERE DRAWN PER PLAT AND MONUMENTS FOUND. NO PROPERTY CORNERS WERE SET IN THIS SURVEY.

NO WARRANTIES ARE MADE AS TO MATTERS OF UNWRITTEN TITLE, SUCH AS ADVERSE POSSESSION, ESTOPPEL, ACQUIESCENCE, ETC.

THE UNDERGROUND UTILITIES AS SHOWN ON THIS MAP HAVE BEEN LOCATED FROM FIELD SURVEY OF ABOVE GROUND STRUCTURES AND AS MARKED BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPROMISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES 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. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS TRACT. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY SURVEYOR.

NO TITLE REPORT WAS SUPPLIED OR USED IN THE PREPARATION OF THIS MAP. THERE MAY EXIST EASEMENTS, CONDITIONS, OR RESTRICTIONS THAT COULD AFFECT THE TITLE OF THIS PROPERTY. NO ATTEMPT HAS BEEN MADE IN THIS SURVEY TO SHOW SUCH MATTERS THAT MAY AFFECT TITLE.

REGISTERED PROFESSIONAL LAND SURVEYOR

OREGON

22870 S WEATHERHILL ROAD
TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

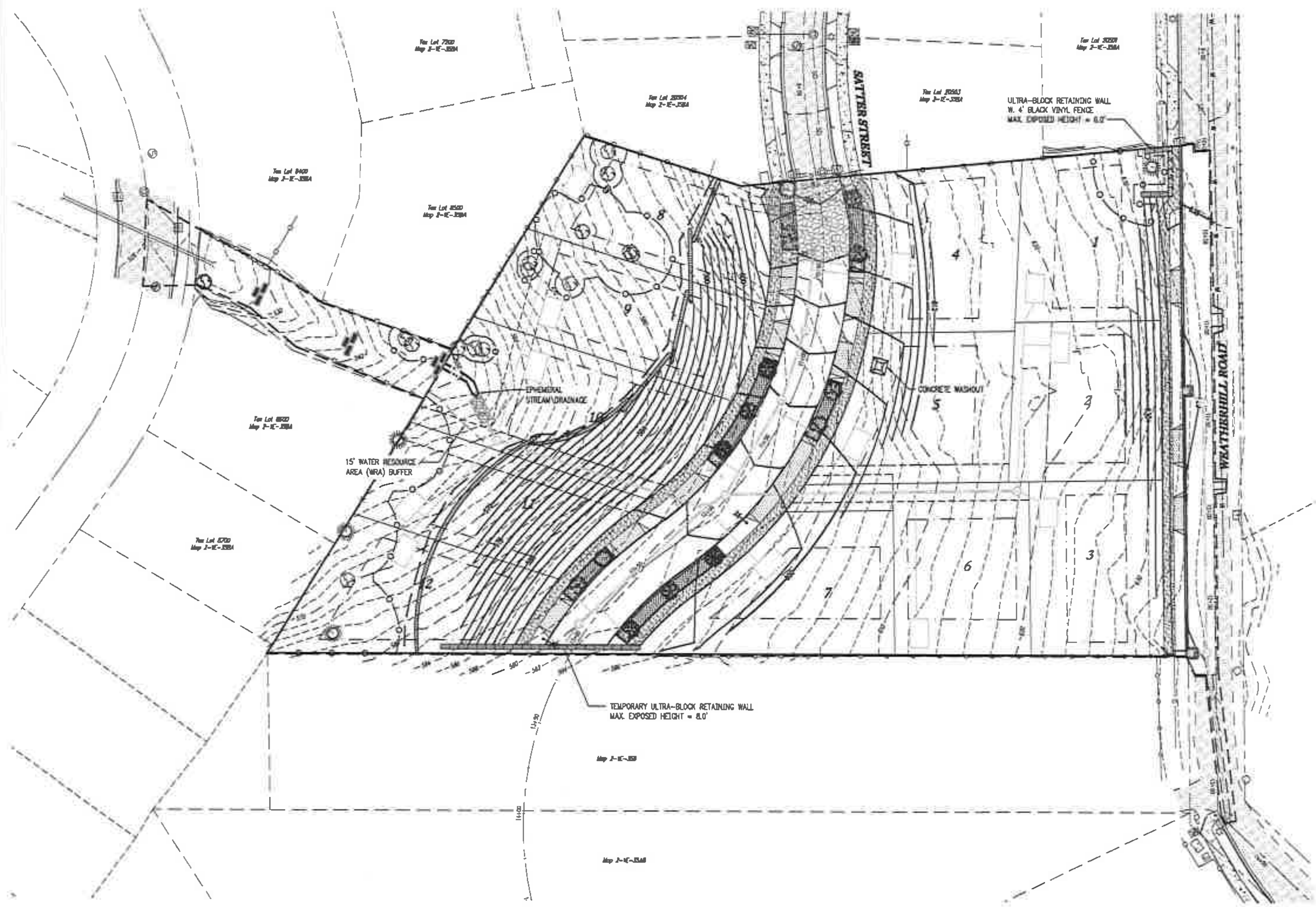
EXISTING CONDITIONS, DEMOLITION, & PH 1 EROSION CONTROL PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

EMERIO Design

SHEET 2 OF 11



SCALE: 1" = 30'

LEGEND

- PROPOSED MAJOR CONTOUR LINE
- PROPOSED MINOR CONTOUR LINE
- EXISTING MAJOR CONTOUR LINE
- EXISTING MINOR CONTOUR LINE
- PROPERTY BOUNDARY LINE
- SIGNIFICANT RESOURCE OVERLAY ZONE (SROZ)
- PROPOSED LOT LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED PUE EASEMENT
- PROPOSED SANITARY SEWER LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED WATER LINE
- CONSTRUCTION TREE PROTECTION FENCE (6' HIGH CHAIN LINK WITH METAL POSTS)
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED CURB INLET CATCH BASIN
- PROPOSED FIRE HYDRANT
- PROPOSED SIDEWALK TO BE INSTALLED AT TIME OF STREET CONSTRUCTION
- PROPOSED LIDA PLANTER

22870 S WEATHERHILL ROAD
TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

PHASE 2 GRADING & EROSION CONTROL PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
FAX: (503) 639-9592
www.emeriodesign.com

SHEET 10 OF 11

WEATHERHILL ROAD SUBDIVISION

12 LOT SUBDIVISION
NW 1/4 SECTION 13, T. 3S, R. 1W, W.M.
CITY OF WEST LINN, OREGON

GENERAL LEGEND

- LANDSCAPE HEDGE
- FLOW LINE
- FENCE
- EXISTING MAJOR CONTOUR LINE
- EXISTING MINOR CONTOUR LINE
- PROPOSED MAJOR CONTOUR LINE
- PROPOSED MINOR CONTOUR LINE
- SIGNIFICANT RESOURCE OVERLAY ZONE (SROZ)
- SANITARY SEWER LINE
- STORM DRAIN LINE
- GAS LINE
- WATER LINE
- OVERHEAD UTILITIES LINE
- UNDERGROUND UTILITIES LINE
- COMMUNICATIONS LINE
- ELECTRIC LINE
- FIRE HYDRANT
- AIR RELEASE
- WATER BLOWOFF
- WATER METER/SERVICE
- WATER VAULT
- IRRIGATION SPRINKLER HEAD
- CULVERT / OUTFALL
- STORM DRAIN MANHOLE
- CATCH BASIN / AREA DRAIN
- SANITARY SEWER MANHOLE
- UTILITY MANHOLE
- UTILITY CLEAN OUT
- UTILITY VALVE
- UTILITY POLE
- UTILITY GUY POLE
- UTILITY GUY WIRE
- UTILITY/LIGHT POLE
- LIGHT POLE
- LIGHT POLE WITH ARM
- LIGHT SIGNAL JUNCTION BOX
- JUNCTION BOX
- ELECTRIC METER/SERVICE
- ELECTRIC PEDESTAL
- ELECTRIC VAULT
- TELEPHONE MANHOLE
- COMMUNICATIONS PEDESTAL
- COMMUNICATIONS VAULT
- GAS METER/SERVICE
- GAS PEDESTAL
- DECIDOUS TREE
- EVERGREEN TREE
- SIGN POST
- MAILBOX
- SIDEWALK TO BE INSTALLED AT TIME OF STREET CONSTRUCTION

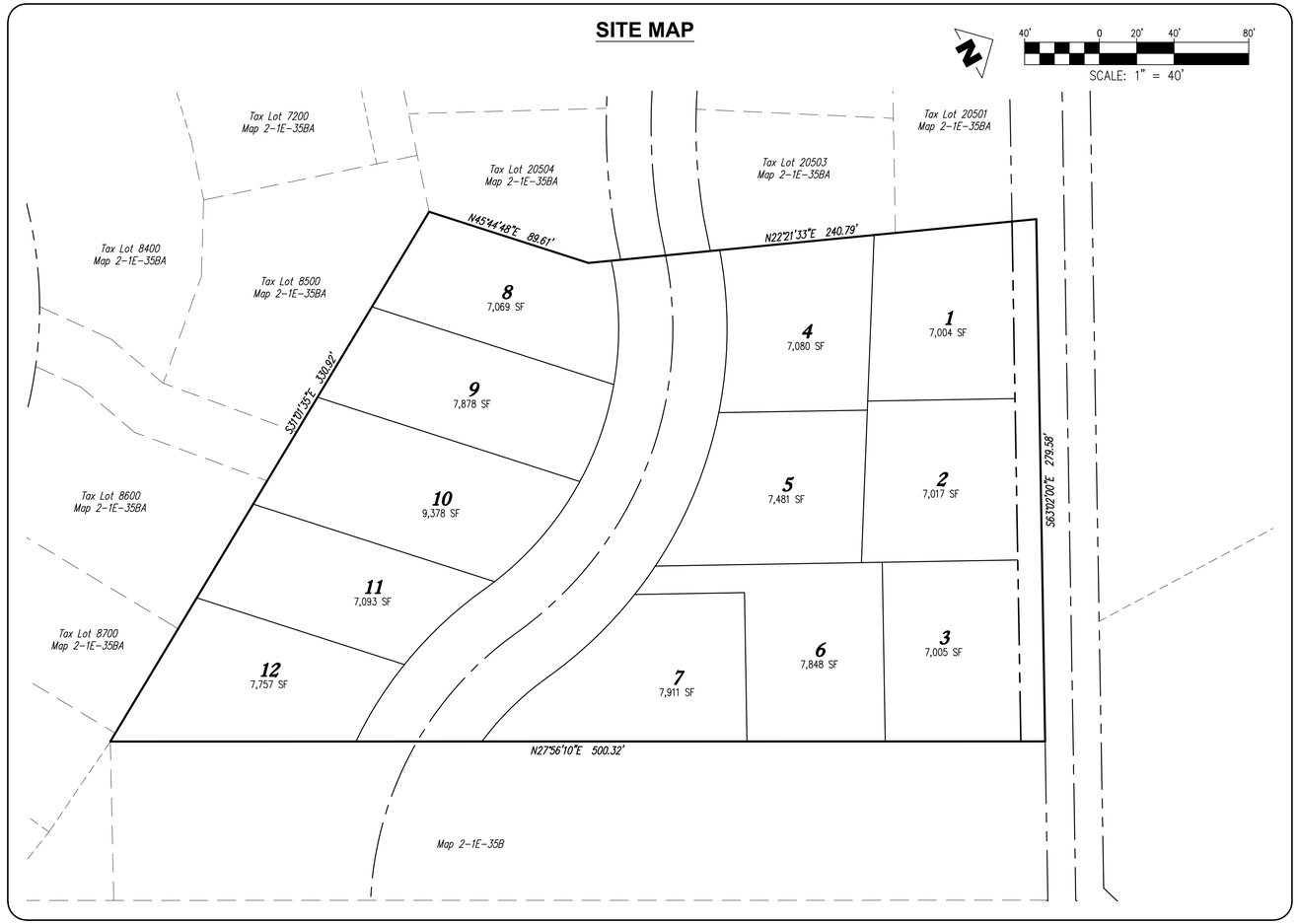
ENGINEER'S NOTE TO CONTRACTOR

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT THOSE SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN ON THESE DRAWINGS. THE CONTRACTOR FURTHER ASSUMES ALL LIABILITY AND RESPONSIBILITY FOR THE UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN OR NOT SHOWN ON THESE DRAWINGS.

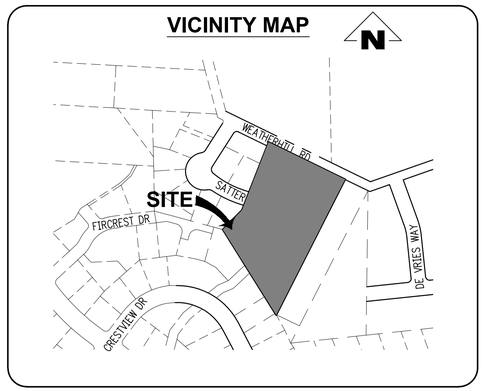
THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

SITE MAP



VICINITY MAP



DRAWING INDEX

** LOTS 4 THROUGH 12 TO BE CONSTRUCTED WITH FIRE SPRINKLERS UNLESS SATTER STREET IS CONNECTED THROUGH FROM THE EAST PRIOR TO HOME OCCUPANCY.

BENCHMARK INFORMATION

THE DATUM FOR THIS SURVEY IS BASED UPON OREGON REAL-TIME GNSS NETWORK (ORGN).

DATUM = NAVD 88

SITE DATA

AREA:	2.57 Ac.
ZONING:	R-7
TAX MAP:	T2SR1E35B
TAX LOT:	405
NO. OF LOTS:	12

NOTICE TO EXCAVATORS:
ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER.
(NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503)-232-1987).

POTENTIAL UNDERGROUND FACILITY OWNERS

Dig Safely.
Call the Oregon One-Call Center
DIAL 811 or 1-800-332-2344

EMERGENCY TELEPHONE NUMBERS

NW NATURAL GAS	
M-F 7am-6pm	503-226-4211 Ext.4313
AFTER HOURS	503-226-4211
PGE	503-464-7777
CENTURY LINK	1-800-491-0118
FRONTIER	1-800-921-8101
CITY OF WEST LINN PUBLIC WORKS	503-635-0238

PROJECT CONTACTS

APPLICANT:
ROD FREISEN
22870 WEATHERHILL, LLC
WEST LINN, OR 97068
(971) 235-3314
ROD.FRIESEN@FRONTIER.COM

OWNER:
22870 WEATHERHILL, LLC
PARTINERSHIP ADMINISTRATOR:
ROD FREISEN
(971) 235-3314

LAND USE, CIVIL ENGINEER AND SURVEYOR:
EMERIO DESIGN, LLC
6445 SW FALLBROOK PL, SUITE 100
BEAVERTON, OR 97008
LAND USE CONTACT: STEVE MILLER
ENGINEER CONTACT: ERIC EVANS
SURVEYOR CONTACT: KING PHELPS
(503) 746-8812 (P)
(503) 639-9592 (F)

22870 S WEATHERHILL ROAD
TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

COVER SHEET

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

EMERIO Design
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BEAVERTON, OREGON 97008
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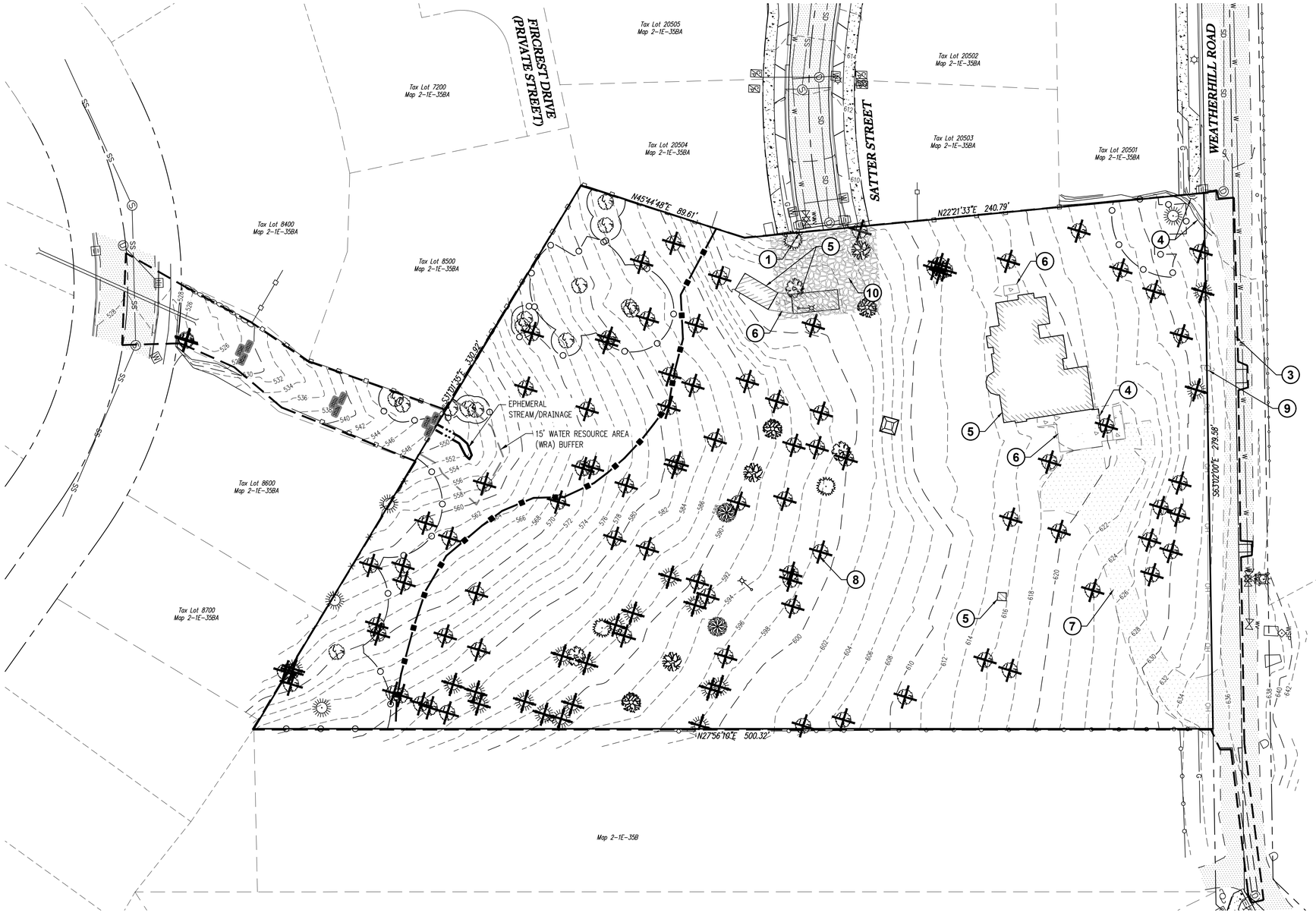
SHEET 1 OF 12

FILE:P:\463-003 Weatherhill Road Phase 1\dwg\plan\463-003_01cvr, Layout: 01 COVER SHEET, Plot Date: 2/15/2019 9:21 AM, by: Jacob Snyder



DEMOLITION KEY NOTES

1. REMOVE EXISTING END OF ROAD SIGN.
2. POTHOLE END OF SANITARY LINE AND REMOVE EXISTING PLUG. CONTRACTOR TO NOTIFY ENGINEER IF EXISTING SANITARY INVERT ELEVATION IS DIFFERENT THAN STATED ON THESE PLANS.
3. SAWCUT AND REMOVE EXISTING AC.
4. REMOVED EXISTING WALL
5. REMOVED EXISTING BUILDING/STRUCTURE
6. REMOVE EXISTING CONCRETE AREAS
7. REMOVE EXISTING AC DRIVEWAY
8. REMOVE EXISTING TREE (TYP.). SEE SHEET 3 & 4 FOR DETAILED TREE PLANS
9. REMOVE EXISTING POWER POLE. POWER TO BE UNDERGROUNDED.
10. INSTALL CONSTRUCTION ENTRANCE

GENERAL NOTES:

A. SEE SHEETS 3 AND 4 FOR TREE PRESERVATION PLAN. TREE PROTECTION TO BE INSTALLED BEFORE ANY SITE DEMOLITION, GRUBBING, OR CLEARING.

LEGEND

- BOUNDARY OF SITE
- LIMITS OF CONSTRUCTION
- EXISTING FENCE
- SILT FENCE
- TREE PROTECTION FENCE

SURVEYOR'S NOTE

THE DATUM FOR THIS SURVEY IS BASED UPON OREGON REAL-TIME GNSS NETWORK (ORGN). NAVD88.

A TOPCON PS104B, TRIMBLE R5 INSTRUMENTS WERE USED TO COMPLETE THIS SURVEY.

BOUNDARIES WERE DRAWN PER PLAT AND MONUMENTS FOUND. NO PROPERTY CORNERS WERE SET IN THIS SURVEY.

NO WARRANTIES ARE MADE AS TO MATTERS OF UNWRITTEN TITLE, SUCH AS ADVERSE POSSESSION, ESTOPPEL, ACQUIESCENCE, ETC.

THE UNDERGROUND UTILITIES AS SHOWN ON THIS MAP HAVE BEEN LOCATED FROM FIELD SURVEY OF ABOVE GROUND STRUCTURES AND AS MARKED BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPROMISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES 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. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS TRACT. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY SURVEYOR.

NO TITLE REPORT WAS SUPPLIED OR USED IN THE PREPARATION OF THIS MAP. THERE MAY EXIST EASEMENTS, CONDITIONS, OR RESTRICTIONS THAT COULD AFFECT THE TITLE OF THIS PROPERTY. NO ATTEMPT HAS BEEN MADE IN THIS SURVEY TO SHOW SUCH MATTERS THAT MAY AFFECT TITLE.

REGISTERED PROFESSIONAL LAND SURVEYOR

OREGON
JANUARY 19, 1991
EDWARD KING PHELPS
2586
EXPIRES: 12-31-18

22870 S WEATHERHILL ROAD
TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

EXISTING CONDITIONS, DEMOLITION, & PH 1 EROSION CONTROL PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

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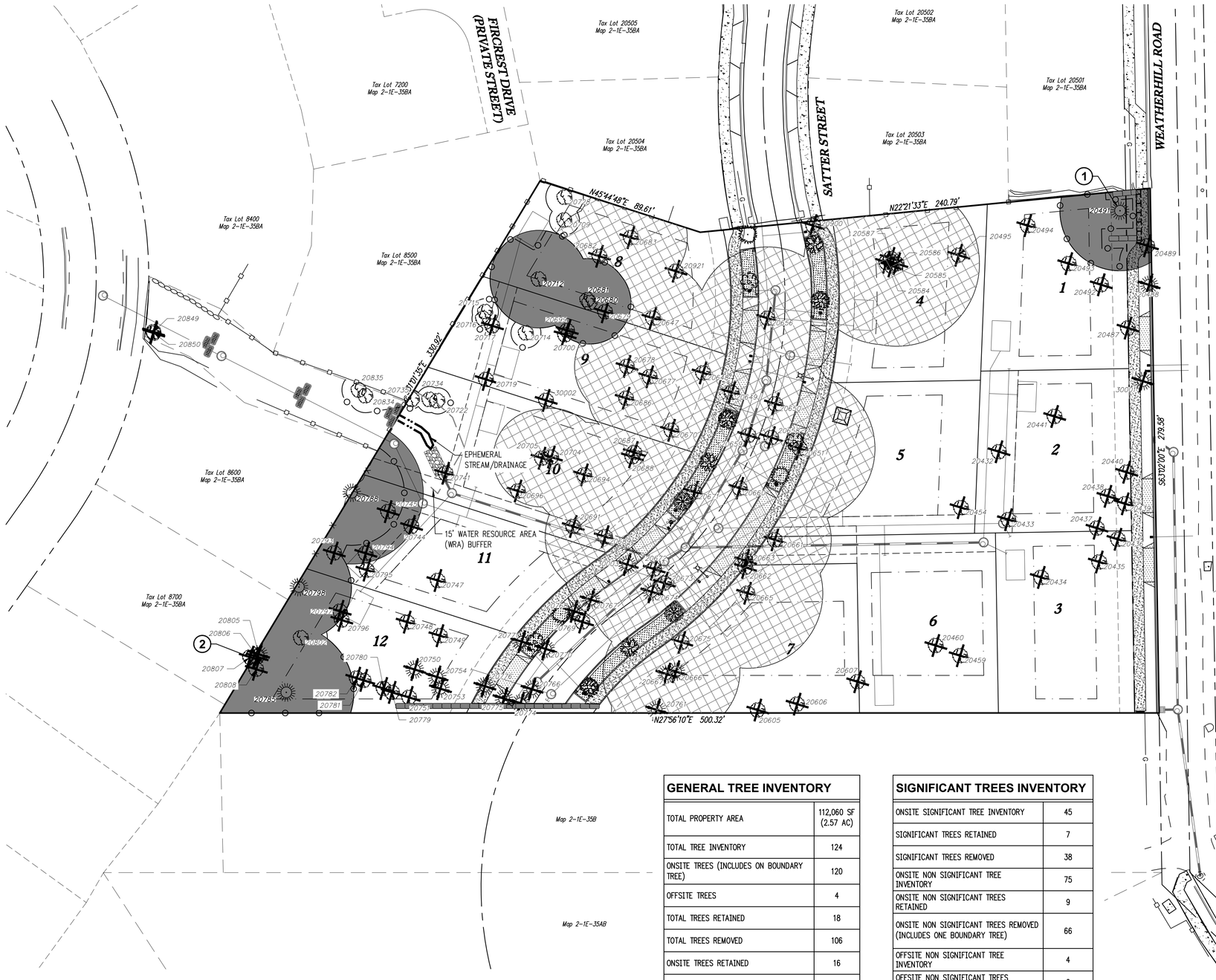
SHEET 2 OF 12

FILE P: \463-003 Weatherhill Road Phase 1\dwg\plan\463-003_02exst, Layout: 2 EXISTING CONDITIONS DEMOLITION & PH 1 EROSION CONTROL PLAN, Plot Date: 2/15/2019 9:26 AM, by: Jacob Snyder



30' 0 15' 30' 60'

SCALE: 1" = 30'

LEGEND

- RETAIN SIGNIFICANT TREE CANOPY
- REMOVE SIGNIFICANT TREE CANOPY
- RETAIN EVERGREEN TREE
- RETAIN DECIDUOUS TREE
- TREE PROTECTION FENCING

GENERAL NOTES

1. REFER TO TREE PROTECTION NOTE 9 FOR SPECIAL PROTECTION NEEDED AT TREE #20491.
2. SEE ARBORIST REPORT FOR TREE #20807 REMOVAL NOTES.

TREE PROTECTION NOTES

1. TREE PROTECTION ZONE. THE STANDARD TREE PROTECTION ZONE (TPZ) FOR EACH TREE TO BE PROTECTED SHALL BE ESTABLISHED ½-FOOT RADIUS PER INCH OF TRUNK DIAMETER FOR NON-SIGNIFICANT TREES AND AT THE DRIPLINE PLUS 10-FEET FOR SIGNIFICANT TREES. WHERE INFRASTRUCTURE (PLANTER BOX, UNDERGROUND UTILITIES AND MANHOLES, BLOCK WALL) MUST BE INSTALLED CLOSER TO THE TREE(S), PROTECTION FENCING MAY BE ESTABLISHED WITHIN THE TPZ IN ACCORDANCE WITH THE TREE PROTECTION PLAN.
2. PROTECTION FENCING. PROTECTION FENCING SHALL BE INSTALLED AS DEPICTED ON THE TREE PRESERVATION PLAN BEFORE DEMOLITION, GRUBBING, GRADING, OR CONSTRUCTION BEGINS. ALL TREES TO BE RETAINED SHALL BE PROTECTED BY SIX-FOOT-HIGH CHAIN LINK FENCES INSTALLED PER PLAN. PROTECTION FENCING SHALL BE SECURED TO TWO-INCH DIAMETER GALVANIZED IRON POSTS, DRIVEN TO A DEPTH OF A LEAST TWO FEET, PLACED NO FURTHER THAN 10-FEET APART. IF FENCING IS LOCATED ON PAVEMENT, POSTS MAY BE SUPPORTED BY AN APPROPRIATE GRADE LEVEL CONCRETE BASE. PROTECTION FENCING SHALL REMAIN IN PLACE UNTIL FINAL INSPECTION OF THE PROJECT PERMIT, OR IN CONSULTATION WITH THE PROJECT ARBORIST.
3. SIGNAGE. AN 8.5X11 INCH SIGN STATING, "WARNING: TREE PROTECTION ZONE," SHALL BE DISPLAYED ON EACH PROTECTION FENCE AT ALL TIMES.
4. DESIGNATION OF CUT TREES. TREES TO BE REMOVED SHALL BE CLEARLY MARKED WITH CONSTRUCTION FLAGGING, TREE-MARKING PAINT, OR OTHER METHODS APPROVED IN ADVANCED BY THE PROJECT ARBORIST. TREES SHALL BE CAREFULLY REMOVED SO AS TO AVOID EITHER ABOVE OR BELOW GROUND DAMAGE TO THOSE TREES TO BE PRESERVED. ROOTS OF STUMPS THAT ARE ADJACENT TO RETAINED TREES SHALL BE CAREFULLY SEVERED PRIOR TO STUMP EXTRACTION.
5. PRECONSTRUCTION CONFERENCE. THE PROJECT ARBORIST SHALL BE ON SITE TO DISCUSS METHODS OF TREE REMOVAL AND TREE PROTECTION PRIOR TO ANY CONSTRUCTION.
6. VERIFICATION OF TREE PROTECTION MEASURES. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE PROJECT ARBORIST SHALL VERIFY IN WRITING TO THE CITY ARBORIST THAT TREE PROTECTION FENCING HAS BEEN SATISFACTORILY INSTALLED.
7. TREE PROTECTION ZONE MAINTENANCE. THE PROTECTION FENCING SHALL NOT BE MOVED, REMOVED, OR ENTERED BY EQUIPMENT EXCEPT UNDER DIRECTION OF THE PROJECT ARBORIST, IN COORDINATION WITH THE CITY ARBORIST.
8. STORAGE OF MATERIAL OR EQUIPMENT. THE CONTRACTOR SHALL NOT STORE MATERIALS OR EQUIPMENT WITHIN THE TPZ.
9. ACTIVITY ADJACENT TO TREE #20491. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE PROJECT ARBORIST IN A TIMELY MANNER PRIOR TO WORKING BENEATH THE DRIPLINE OF TREE #20491. DEMOLITION OF THE EXISTING ROCKERY WALL AND EXCAVATION FOR CONSTRUCTION OF THE PROPOSED BLOCK WALL SHALL BE PERFORMED UNDER THE DIRECT ON-SITE SUPERVISION OF THE PROJECT ARBORIST. WORK SHALL BE PERFORMED BY HAND AND WITH HAND TOOLS ONLY. EXCAVATION SHALL NOT EXCEED 1-FOOT DEPTH. THE PROJECT ARBORIST SHALL MONITOR AND DOCUMENT WORK, ASSESS EXPOSED ROOTS IN TERMS OF QUANTITY, SIZE, CONDITION, AND PROXIMITY TO TRUNK, DIRECT PRUNING OF NON-CRITICAL ROOTS, AND PROVIDE RECOMMENDATIONS FOR THE PROTECTION OF CRITICAL ROOTS IF ANY ARE ENCOUNTERED. EACH SITE VISIT DURING CONSTRUCTION SHALL BE DOCUMENTED BY THE PROJECT ARBORIST IN AN INSPECTION REPORT SUBMITTED TO THE CLIENT, CONTRACTOR AND CITY ARBORIST.
10. CROWN PRUNING. CROWN PRUNING MAY BE NEEDED TO PROVIDE OVERHEAD CLEARANCE AND REMOVED DEAD AND DEFECTIVE BRANCHES FOR SAFETY. PRUNING SHOULD BE PERFORMED IN ACCORDANCE WITH THE WEST LINN TREE TECHNICAL MANUAL, BEST MANAGEMENT PRACTICES FOR TREE PRUNING AND ANSI A300 STANDARDS, AND CONDUCTED BY A QUALIFIED TREE SERVICE.
11. QUALITY ASSURANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE PROJECT ARBORIST AS NEEDED, IN A TIMELY MANNER, PRIOR TO CONSTRUCTION ACTIVITIES THAT COULD ENCROACH ON PROTECTED TREES. THE PROJECT ARBORIST SHOULD MONITOR CONSTRUCTION ACTIVITIES AND PROGRESS ON-CALL AND PROVIDE WRITTEN REPORTS TO THE DEVELOPER AND THE CITY FOLLOWING EACH SITE VISIT.
12. FINAL REPORT. AFTER THE PROJECT HAS BEEN COMPLETED, THE PROJECT ARBORIST SHALL PROVIDE A FINAL REPORT TO THE CLIENT AND CITY ARBORIST. THE FINAL REPORT SHALL INCLUDE CONCERNS ABOUT ANY TREES NEGATIVELY IMPACTED DURING CONSTRUCTION, AND DESCRIBE THE MEASURES NEEDED TO MAINTAIN AND PROTECT THE REMAINING TREES FOR A MINIMUM OF TWO YEARS AFTER PROJECT COMPLETION.

GENERAL TREE INVENTORY

TOTAL PROPERTY AREA	112,060 SF (2.57 AC)
TOTAL TREE INVENTORY	124
ONSITE TREES (INCLUDES ON BOUNDARY TREE)	120
OFFSITE TREES	4
TOTAL TREES RETAINED	18
TOTAL TREES REMOVED	106
ONSITE TREES RETAINED	16
OFFSITE TREES RETAINED	2

SIGNIFICANT TREES INVENTORY

ONSITE SIGNIFICANT TREE INVENTORY	45
SIGNIFICANT TREES RETAINED	7
SIGNIFICANT TREES REMOVED	38
ONSITE NON SIGNIFICANT TREE INVENTORY	75
ONSITE NON SIGNIFICANT TREES RETAINED	9
ONSITE NON SIGNIFICANT TREES REMOVED (INCLUDES ONE BOUNDARY TREE)	66
OFFSITE NON SIGNIFICANT TREE INVENTORY	4
OFFSITE NON SIGNIFICANT TREES RETAINED	2
OFFSITE NON SIGNIFICANT TREES REMOVED	2
EXISTING SIGNIFICANT TREE CANOPY COVERAGE	50,265 SF
TREE PRESERVATION AREA PROVIDED (21.3% OF EXISTING SIGNIFICANT TREE CANOPY COVERAGE)	10,687 SF
TOTAL EXISTING SIGNIFICANT TREES IN TYPE I OR II AREA	0 SF

22870 S WEATHERHILL ROAD
TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

TREE PRESERVATION PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

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BEAVERTON, OREGON 97008
TEL: (503) 746-8812
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SHEET 3 OF 12

FILE P:\463-003 Weatherhill Road Phase 1\dwg\plan\463-003_03tree, Layout: 3 TREE PRESERVATION PLAN, Plot Date: 2/15/2019 10:20 AM, by: Jacob Snyder

Morgan Holen & Associates, LLC

MHA18060 22870 Weatherhill Road - Tree Data 9-26-18 Rev. 12-16-18.xlsx

No.	Type	Common Name	Species Name	DBH*	C-Rad^	Cond°	Comments	Sig?	Treatment
20432	Dec	Coral Bark maple	*Acer palmatum* 'Sango-kaku'	3x5	12	F	Storm damage, codominant stem failure, open wound	No	Remove
20433	Dec	English hawthorn	*Crataegus monogyna*	4x10	18	F	Invasive species, moderate structure, crown decay	No	Remove
20434	Dec	English hawthorn	*Crataegus monogyna*	7x8	25	G	Invasive species	No	Remove
20435	Dec	river birch	*Betula nigra*	23	30	F	Moderate structure, twig dieback	No	Remove
20436	Dec	river birch	*Betula nigra*	17	16	F	Moderate structure, twig dieback	No	Remove
20437	Dec	river birch	*Betula nigra*	16	0	D	Mostly dead	No	Remove
20438	Dec	river birch	*Betula nigra*	15	28	F	Moderate structure, twig dieback	No	Remove
20439	Dec	river birch	*Betula nigra*	14	16	F	Moderate structure, twig dieback	No	Remove
20440	Dec	river birch	*Betula nigra*	18	16	F	Moderate structure, twig dieback	No	Remove
20441	Dec	cherry	*Prunus* spp.	14	18	G	Well-maintained	No	Remove
20454	Dec	English hawthorn	*Crataegus monogyna*	4x8	18	F	Invasive species, moderate structure, crown decay	No	Remove
20459	Dec	English hawthorn	*Crataegus monogyna*	5,6,2x8	18	G	Invasive species	No	Remove
20460	Dec	English hawthorn	*Crataegus monogyna*	5,2x8	14	G	Invasive species	No	Remove
20487	Con	incense cedar	*Calocedrus decurrens*	22	12	G	Some crown asymmetry	No	Remove
20488	Con	Douglas-fir	*Pseudotsuga menziesii*	30	26	F	Topped	No	Remove
20489	Dec	bigleaf maple	*Acer macrophyllum*	13,21	26	F	Moderate structure, previously topped, some trunk decay	No	Remove
20491	Con	Douglas-fir	*Pseudotsuga menziesii*	34	22	G	Spur leader, no major defects	Yes	Retain
20492	Dec	paper birch	*Betula papyrifera*	11	10	G		No	Remove
20493	Dec	paper birch	*Betula papyrifera*	2x10	16	G		No	Remove
20494	Dec	English hawthorn	*Crataegus monogyna*	5x10	20	G	Invasive species	No	Remove
20495	Dec	English hawthorn	*Crataegus monogyna*	3x12	20	G	Invasive species	No	Remove
20584	Dec	Oregon white oak	*Quercus garryana*	12,16	34	G	Dense group	Yes	Remove
20585	Dec	Oregon white oak	*Quercus garryana*	6	22	F	Dense group	Yes	Remove
20586	Dec	Oregon white oak	*Quercus garryana*	19	34	G	Dense group	Yes	Remove
20587	Dec	Oregon white oak	*Quercus garryana*	16	34	G	Dense group	Yes	Remove
20605	Dec	Scouler's willow	*Salix scouleriana*	2x12	16	F	Previous leader failure, dead and broken branches	No	Remove
20606	Dec	English hawthorn	*Crataegus monogyna*	14	13	F	Invasive species	No	Remove
20607	Dec	sweet cherry	*Prunus avium*	22	22	F	Invasive species, moderate structure, dead and broken branches	No	Remove
20647	Dec	Oregon white oak	*Quercus garryana*	2x18	20	G	Oak grove	Yes	Remove
20648	Dec	Oregon white oak	*Quercus garryana*	14	16	F	Oak grove, few dead and broken branches	Yes	Remove
20649	Dec	Oregon white oak	*Quercus garryana*	12	15	G	Oak grove	Yes	Remove
20650	Dec	Oregon white oak	*Quercus garryana*	11,14, 16	20	G	Oak grove	Yes	Remove
20651	Dec	Oregon white oak	*Quercus garryana*	14,16	30	G	Oak grove	Yes	Remove
20656	Dec	Oregon white oak	*Quercus garryana*	8,3x14, 17	28	G	Oak grove, hornets nest, old steel brace compartmentalized in trunk	Yes	Remove
20658	Dec	Oregon white oak	*Quercus garryana*	3x10	14	G	Oak grove	Yes	Remove
20659	Dec	Oregon white oak	*Quercus garryana*	14	20	G	Oak grove, one-sided to south	Yes	Remove
20660	Dec	Oregon white oak	*Quercus garryana*	8	16	G	Oak grove	Yes	Remove
20661	Dec	Oregon white oak	*Quercus garryana*	8,10, 14,15	20	G	Oak grove	Yes	Remove
20662	Dec	Oregon white oak	*Quercus garryana*	5,2x6, 11	12	F	Oak grove, very upright high live crown, small diameter stems are completely dead	Yes	Remove
20663	Dec	Oregon white oak	*Quercus garryana*	5,6, 7,14,18	15	F	Oak grove, moderate one-sided crown structure	Yes	Remove
20665	Dec	Oregon white oak	*Quercus garryana*	10,2x12, 18,20	30	G	Oak grove, few dead and broken branches	Yes	Remove
20666	Con	Douglas-fir	*Pseudotsuga menziesii*	32	24	G	Codominant crown class, ivy up lower trunk	Yes	Remove

Morgan Holen & Associates, LLC
Consulting Arborists and Urban Forest Management
3 Monroe Parkway, Suite P220, Lake Oswego, OR 97035
morgan.holen@comcast.net | 971.409.9354

Morgan Holen & Associates, LLC

MHA18060 22870 Weatherhill Road - Tree Data 9-26-18 Rev. 12-16-18.xlsx

No.	Type	Common Name	Species Name	DBH*	C-Rad^	Cond°	Comments	Sig?	Treatment
20667	Con	Douglas-fir	*Pseudotsuga menziesii*	28	24	G	Codominant crown class, ivy up lower trunk	Yes	Remove
20670	Dec	Oregon white oak	*Quercus garryana*	8,10,12	16	G	Oak grove	Yes	Remove
20671	Dec	Oregon white oak	*Quercus garryana*	4x12	18	G	Oak grove	Yes	Remove
20672	Dec	Oregon white oak	*Quercus garryana*	14	20	F	One-sided to west	Yes	Remove
20673	Dec	Oregon white oak	*Quercus garryana*	14	30	F	One-sided to north, few dead and broken branches	Yes	Remove
20674	Con	Douglas-fir	*Pseudotsuga menziesii*	36	24	G	Codominant crown class, few dead and broken branches	Yes	Remove
20675	Dec	apple	*Malus* spp.	8,10	20	P	Very poor structure, dieback, decay	No	Remove
20677	Dec	Oregon white oak	*Quercus garryana*	14	14	F	Oak grove, one-sided to north, few dead and broken branches	Yes	Remove
20678	Dec	Oregon white oak	*Quercus garryana*	8,9,14	18	G	Oak grove, few dead and broken branches	Yes	Remove
20679	Dec	Oregon white oak	*Quercus garryana*	12	12	F	Oak grove, few dead and broken branches, ivy up lower trunk	Yes	Remove
20680	Dec	Oregon white oak	*Quercus garryana*	12	12	F	Oak grove, few dead and broken branches, ivy up lower trunk	Yes	Retain
20681	Dec	Oregon white oak	*Quercus garryana*	14	12	F	Oak grove, few dead and broken branches, ivy up lower trunk	Yes	Retain
20682	Dec	Oregon white oak	*Quercus garryana*	7,2x10	16	G	Oak grove, some ivy	Yes	Remove
20683	Dec	Oregon white oak	*Quercus garryana*	10,12,14	20	F	Oak grove, few dead and broken branches	Yes	Remove
20686	Dec	Oregon white oak	*Quercus garryana*	6,8	10	F	Oak grove, few dead and broken branches	Yes	Remove
20687	Dec	Oregon white oak	*Quercus garryana*	6	10	F	Oak grove, few dead and broken branches	Yes	Remove
20688	Dec	Oregon white oak	*Quercus garryana*	10	10	F	Oak grove, few dead and broken branches	Yes	Remove
20689	Con	Douglas-fir	*Pseudotsuga menziesii*	26	22	F	Codominant crown class, broken top, new leaders	Yes	Remove
20691	Dec	Oregon ash	*Fraxinus latifolia*	7	14	F	Moderate structure	No	Remove
20694	Dec	Oregon white oak	*Quercus garryana*	16,18	18	G	Oak grove	Yes	Remove
20696	Dec	Oregon white oak	*Quercus garryana*	2x14	12	P	Half dead	No	Remove
20699	Dec	Oregon white oak	*Quercus garryana*	10	5	P	Oak grove, suppressed	No	Remove
20700	Dec	Oregon white oak	*Quercus garryana*	14	12	P	Oak grove, severe ivy infestation, small live crown	No	Remove
20704	Dec	Oregon white oak	*Quercus garryana*	2x14	16	G	Oak grove	Yes	Remove
20705	Dec	Oregon white oak	*Quercus garryana*	16	16	G	Oak grove	Yes	Remove
20709	Dec	madrone	*Arbutus menziesii*	16	14	F	Crown dieback, trunk decay	No	Retain
20712	Dec	Oregon white oak	*Quercus garryana*	18	16	G	Oak grove, ivy up lower trunk	Yes	Retain
20714	Dec	Scouler's willow	*Salix scouleriana*	4x8	12	F	Inaccessible	No	Retain
20715	Dec	Scouler's willow	*Salix scouleriana*	14	12	F	Inaccessible	No	Retain
20716	Dec	Scouler's willow	*Salix scouleriana*	12	12	F	Inaccessible	No	Retain
20717	Dec	Scouler's willow	*Salix scouleriana*	10	12	F	Inaccessible	No	Remove
20719	Dec	Scouler's willow	*Salix scouleriana*	14	12	F	Inaccessible	No	Remove
20722	Dec	Scouler's willow	*Salix scouleriana*	14	12	F	Inaccessible	No	Retain
20728	Dec	bigleaf maple	*Acer macrophyllum*	3x20	24	F	Moderate structure, additional codominant stem failed in past and has advanced decay, remaining stems are mostly one-sided to east	No	Retain
20734	Dec	Scouler's willow	*Salix scouleriana*	14	12	F	Inaccessible	No	Retain
20735	Dec	bigleaf maple	*Acer macrophyllum*	10	12	F	Inaccessible	No	Retain
20741	Dec	Scouler's willow	*Salix scouleriana*	14	10	F	Inaccessible	No	Remove
20744	Dec	bigleaf maple	*Acer macrophyllum*	7	12	F	Poor structure	No	Remove
20745	Dec	Scouler's willow	*Salix scouleriana*	16	8	P	History of branch failure, crown decay, trunk decay with hollow	No	Remove
20747	Dec	bigleaf maple	*Acer macrophyllum*	8	16	F	Poor structure	No	Remove
20748	Dec	English holly	*Ilex aquifolium*	8	8	F	Invasive species	No	Remove
20749	Dec	bigleaf maple	*Acer macrophyllum*	8	8	F	Poor structure	No	Remove
20750	Con	Douglas-fir	*Pseudotsuga menziesii*	18	14	F	Codominant crown class, old broken top	No	Remove

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Morgan Holen & Associates, LLC

MHA18060 22870 Weatherhill Road - Tree Data 9-26-18 Rev. 12-16-18.xlsx

No.	Type	Common Name	Species Name	DBH*	C-Rad^	Cond°	Comments	Sig?	Treatment
20751	Dec	bigleaf maple	*Acer macrophyllum*	10	16	F	Poor structure	No	Remove
20753	Con	Douglas-fir	*Pseudotsuga menziesii*	16	14	F	Codominant crown class, ivy	No	Remove
20754	Con	Douglas-fir	*Pseudotsuga menziesii*	7	3	P	Suppressed, mostly dead	No	Remove
20761	Con	Douglas-fir	*Pseudotsuga menziesii*	18	14	G	Ivy up trunk, codominant crown class	Yes	Remove
20766	Con	Douglas-fir	*Pseudotsuga menziesii*	12	10	F	Codominant crown class, some ivy	No	Remove
20767	Con	Douglas-fir	*Pseudotsuga menziesii*	18	14	F	Pistolbutt, sweep in upper trunk	No	Remove
20768	Con	Douglas-fir	*Pseudotsuga menziesii*	19	14	F	One-sided to south, sweep in upper trunk	No	Remove
20769	Dec	Oregon white oak	*Quercus garryana*	16,20	12	F	Codominant stems with seam, dead and broken branches, crown decay, upright crown	No	Remove
20770	Con	Douglas-fir	*Pseudotsuga menziesii*	20	15	F	Old broken top, forked leaders, twig dieback	No	Remove
20771	Con	Douglas-fir	*Pseudotsuga menziesii*	16	14	F	Codominant crown class	No	Remove
20774	Con	Douglas-fir	*Pseudotsuga menziesii*	12	10	F	Codominant crown class, ivy up trunk	No	Remove
20775	Con	Douglas-fir	*Pseudotsuga menziesii*	16	8	F	Codominant crown class, ivy up trunk	No	Remove
20776	Con	Douglas-fir	*Pseudotsuga menziesii*	10	6	P	Suppressed, extensive ivy	No	Remove
20779	Dec	bigleaf maple	*Acer macrophyllum*	8	16	F	Very poor structure	No	Remove
20780	Dec	bigleaf maple	*Acer macrophyllum*	2x6	10	F	Very poor structure	No	Remove
20781	Dec	bigleaf maple	*Acer macrophyllum*	10	10	F	Very poor structure	No	Remove
20782	Dec	bigleaf maple	*Acer macrophyllum*	8	10	F	Very poor structure	No	Remove
20785	Con	Douglas-fir	*Pseudotsuga menziesii*	47	26	G	Forked leaders	Yes	Retain
20788	Con	Douglas-fir	*Pseudotsuga menziesii*	36	28	G	Limited assessment	Yes	Retain
20793	Con	Scouler's willow	*Salix scouleriana*	14	8	P	Multiple leader failures, vigorous sprouting	No	Remove
20794	Dec	bigleaf maple	*Acer macrophyllum*	9	16	F	Poor structure	No	Retain
20795	Dec	bigleaf maple	*Acer macrophyllum*	2x6	10	P	Very poor structure	No	Remove
20796	Dec	bigleaf maple	*Acer macrophyllum*	8	12	F	Poor structure	No	Remove
20797	Dec	bigleaf maple	*Acer macrophyllum*	7	14	F	Poor structure	No	Remove
20798	Con	Douglas-fir	*Pseudotsuga menziesii*	23	18	G	Limited assessment	Yes	Retain
20802	Dec	bigleaf maple	*Acer macrophyllum*	16	18	G		No	Remove
20805	Con	Douglas-fir	*Pseudotsuga menziesii*	8	6	P	Suppressed, growing into 20806	No	Remove
20806	Dec	bigleaf maple	*Acer macrophyllum*	15	16	P	Advanced trunk decay with hollow 0-3' north face, poor crown structure	No	Remove
20807	Dec	bigleaf maple	*Acer macrophyllum*	8	14	P	Boundary tree, very poor structure, not suitable for retention with exposure from removal of adjacent hazard tree 20806	No	Remove with adjacent owner's consent
20808	Dec	madrone	*Arbutus menziesii*	15	18	P	Crown difficult to assess but advanced basal decay	No	Remove
20834	Dec	Scouler's willow	*Salix scouleriana*	18	12	F	Off-site in utility easement, inaccessible	No	Retain
20835	Dec	Scouler's willow	*Salix scouleriana*	18	12	F	Off-site in utility easement, inaccessible	No	Retain
20849	Con	western redcedar	*Thuja plicata*	6	6	G	Off-site in utility easement, young tree	No	Remove
20850	Con	western redcedar	*Thuja plicata*	6	6	G	Off-site in utility easement, young tree	No	Remove
20900	Dec	bigleaf maple	*Acer macrophyllum*	8	12	P	Very poor structure	No	Remove
20921	Dec	bigleaf maple	*Acer macrophyllum*	9,12	16	F	Poor structure, trunk decay	No	Remove
30001	Con	spruce	*Picea* spp.	8	8	G		No	Remove
30002	Dec	Oregon white oak	*Quercus garryana*	7,9,11	14	P	Low vigor, dieback	No	Remove
30003	Con	Douglas-fir	*Pseudotsuga menziesii*	32	24	G	Codominant crown class, few dead and broken branches	Yes	Remove

***DBH** is tree diameter measured at breast height, 4.5-feet above the ground level (inches); codominant trunks splitting below DBH are measured individually and DBH is reported as the sum of each stem.

^C-Rad is the average crown radius measured in feet.

°Cond is an arborist assigned rating to generally describe the condition of individual trees as follows- **D**ead; **P**oor; **F**air; **G**ood; or **E**xcellent condition.

Sig? asks whether or not individual trees are considered potentially significant, either Yes (likely significant) or No (not considered significant).

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22870 S WEATHERHILL ROAD
TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

TREE PRESERVATION DETAILS

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

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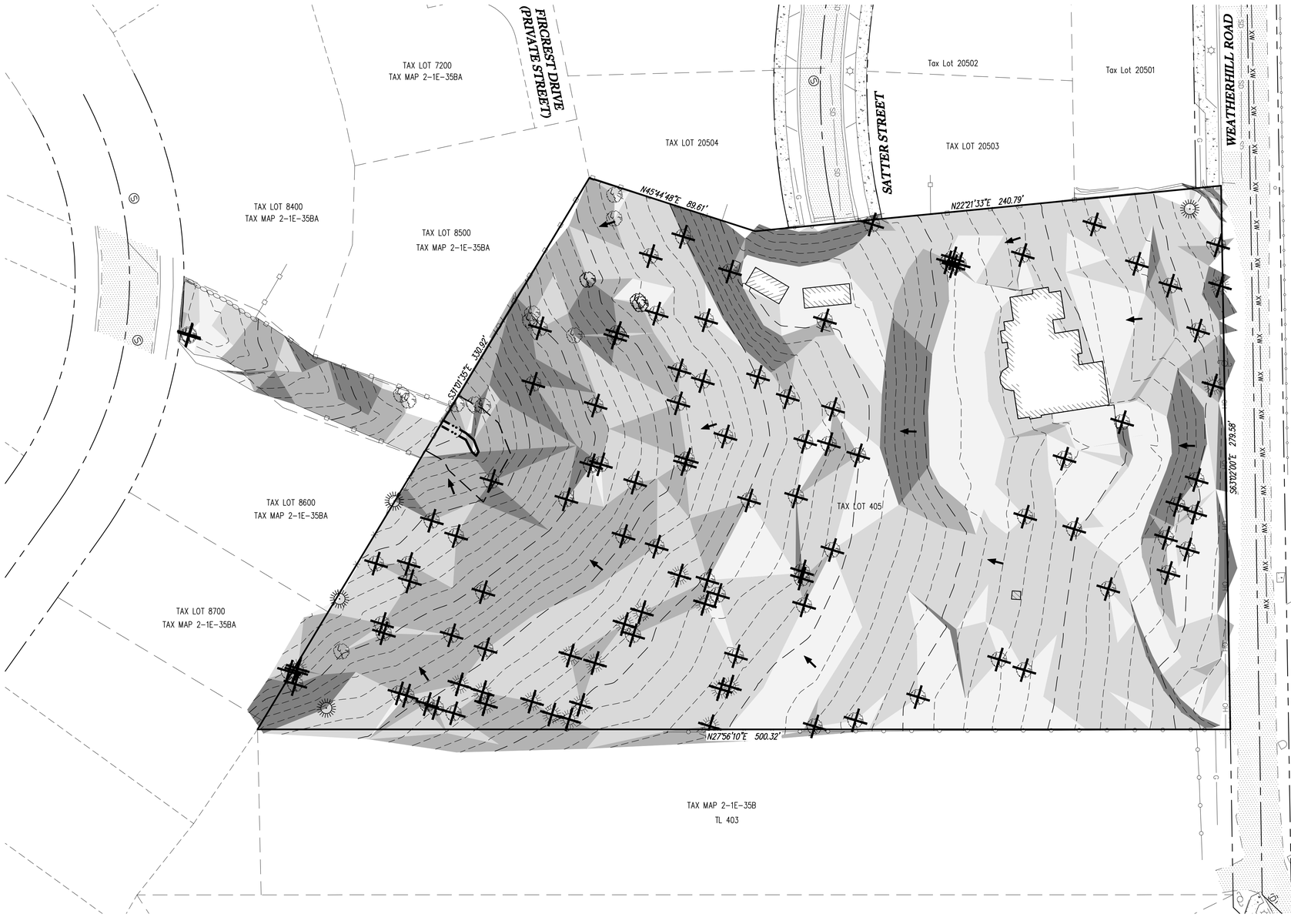
SHEET 4 OF 12

FILE:P:\463-003 Weatherhill Road Phase 1\dwg\plan\463-003_04tree, Layout: 4 TREE PRESERVATION DETAILS, Plot Date: 2/15/2019 9:31 AM, by: Jacob Snyder



30' 0 15' 30' 60'

SCALE: 1" = 30'

Slopes Table				
Number	Minimum Slope	Maximum Slope	Area	Color
1	0%	15%	23,980	
2	15%	25%	53,565	
3	25%	35%	26,069	
4	35%	–	12,308	

22870 S WEATHERHILL ROAD
TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

SLOPE ANALYSIS PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

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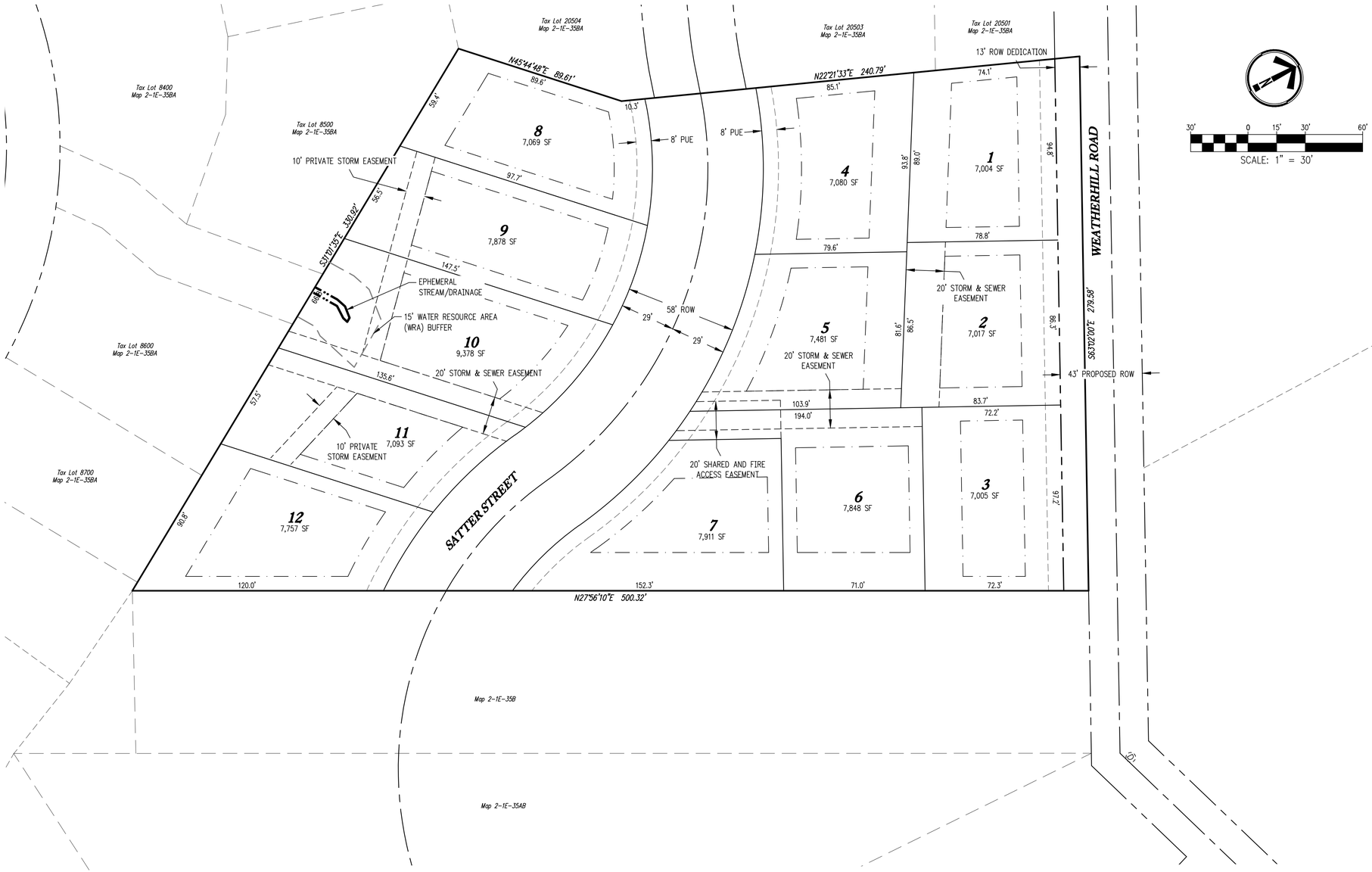
SHEET 5 OF 12

FILE P:\463-003 Weatherhill Road Phase 1\dwg\plan\463-003_05slope, Layout: 5 SLOPE ANALYSIS PLAN, Plot Date: 2/15/2019 9:37 AM, by: Jacob Snyder



LEGEND

- 6' P.U.E.
- SETBACK LINES
- BOUNDARY LINE
- RIGHT-OF-WAY LINE
- LOT LINE
- PROPOSED FENCE

PARCEL DATA

AREA:	2.57 Ac.
ZONING:	R-7
TAX MAP:	2S1E 35B
TAX LOTS:	0405
NO. OF LOTS:	12
PARCELS:	1

MIMIMUM SETBACKS

FRONT:	20'
SIDE:	7.5'
STREET SIDE:	15'
GARAGE DOOR:	20'
REAR	20'
MAX HEIGHT:	35'
MAX LOT COVERAGE:	35%
AVERAGE MIN LOT WIDTH:	35'

SITE DATA

ZONE: R-7

TOTAL SITE AREA:	2.57 ACRES (112,060 SQ. FT.)
R.O.W. DEDICATION:	0.08 ACRES (3,626 SQ. FT.)
PUBLIC STREET	0.41 ACRES (17,914 SQ. FT.)

12 LOTS/1 PARCEL

MINIMUM LOT SIZE:	7,004 SQ. FT.
MAXIMUM LOT SIZE:	9,378 SQ. FT.
AVG. LOT SIZE:	7,543 SQ. FT.

22870 S WEATHERHILL ROAD

TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

PRELIMINARY PLAT

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

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SHEET 6 OF 12

FILE:P:\463-003 Weatherhill Road Phase 1\dwg\plan\463-003_6plat, Layout: 6 PRELIMINARY PLAT, Plot Date: 2/15/2019 9:39 AM, by: Jacob Snyder

30' 0 15' 30' 60'

SCALE: 1" = 30'

LEGEND

- 6' P.U.E.
- SETBACK LINES
- BOUNDARY LINE
- RIGHT-OF-WAY LINE
- LOT LINE

SITE NOTES

1. INSTALL TYPICAL CURB & GUTTER PER CITY OF WEST LINN DETAIL WL-501
2. INSTALL 6' CONCRETE SIDEWALK PER CITY OF WEST LINN DETAIL WL-508
3. INSTALL RESIDENTIAL DRIVEWAY PER CITY OF WEST LINN DETAIL WL-503A (TYP. OF 12)
4. FIRE TURNAROUND FIGUIRE
5. INSTALL STORMWATER FLOW-THROUGH PLANTER BOX PER CITY OF PORTLAND DETAIL SW-311B & SW-312A
6. INSTALL AC SECTION FOR SATTER STREET PER SECTION DETAIL SHEET 8
7. INSTALL AC SECTION FOR WEATHERHILL ROAD PER SECTION DETAIL SHEET 9
8. CONSTRUCT ULTRABLOCK RETAINING WALL SURROUNDING EXISTING TREE

22870 S WEATHERHILL ROAD
TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

PRELIMINARY SITE PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

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SHEET 7 OF 12

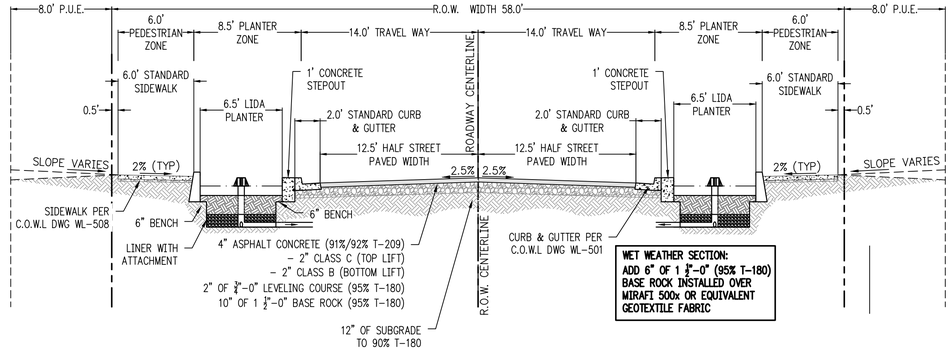
FILE:P:\463-003 Weatherhill Road Phase 1\dwg\plan\463-003_07site, Layout: 7 PRELIMINARY SITE PLAN, Plot Date: 2/15/2019 10:19 AM, by: Jacob Snyder

SATTER STREET PLAN

SCALE: 1"=40'

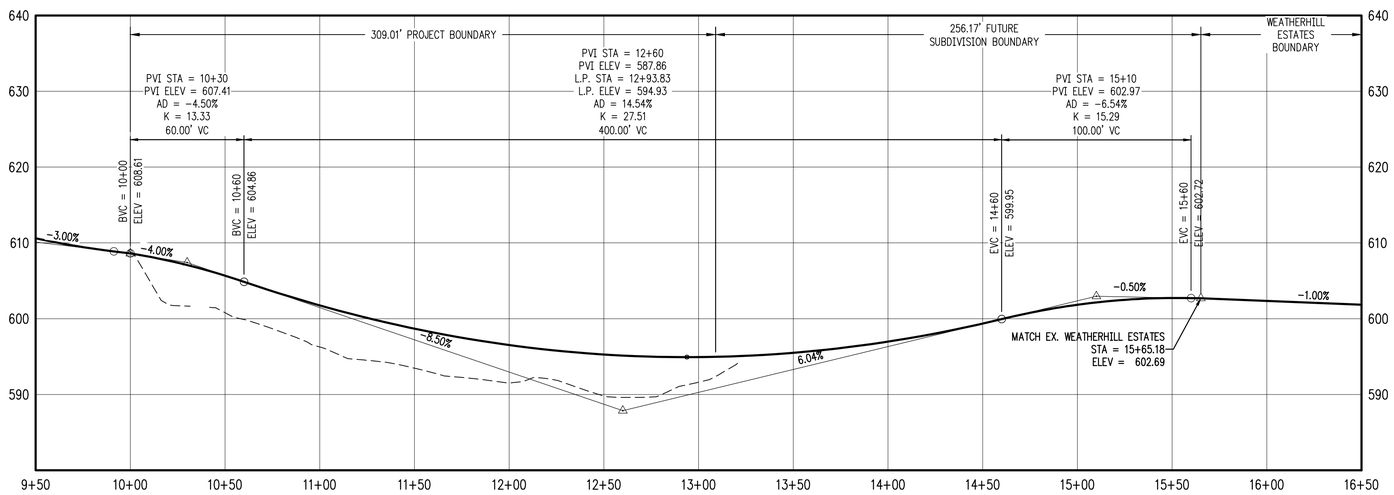
STREET TREE LEGEND

- INSTALL STREET TREE
  AUTUMN PURPLE ASH
  FRAXINUS AMERICANA 'JUNGINGER'
  1 1/2" CALIPER – 3 TOTAL
- INSTALL STREET TREE
  OREGON ASH
  FRAXINUS LATIFOLIA
  1 1/2" CALIPER – 3 TOTAL
- INSTALL STREET TREE
  RAYWOOD ASH
  FRAXINUS OXYCARPA 'RAYWOOD'
  1 1/2" CALIPER – 3 TOTAL
- INSTALL STREET TREE
  COPPER BEECH
  FAGUS SYLVATICA 'ATROPURPUREA'
  1 1/2" CALIPER – 2 TOTAL
- INSTALL STREET TREE IN
  STORM WATER FACILITY
  VILLAGE GREEN JAPANESE ZELKOVA
  ZELCOVA SERRATA 'VILLAGE GREEN'
  1 1/2" CALIPER – 3 TOTAL



SECTION A-A: 28' LOCAL ROAD W/ DETACHED SIDEWALKS (LEFT & RIGHT) - TYPICAL SECTION

SCALE: N.T.S.



SATTER STREET PROFILE

SCALE: 1"=40' HORZ. 1"=10' VERT.

22870 S WEATHERHILL ROAD
TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

SATTER STREET PLAN, PROFILE, AND STORM LINE

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

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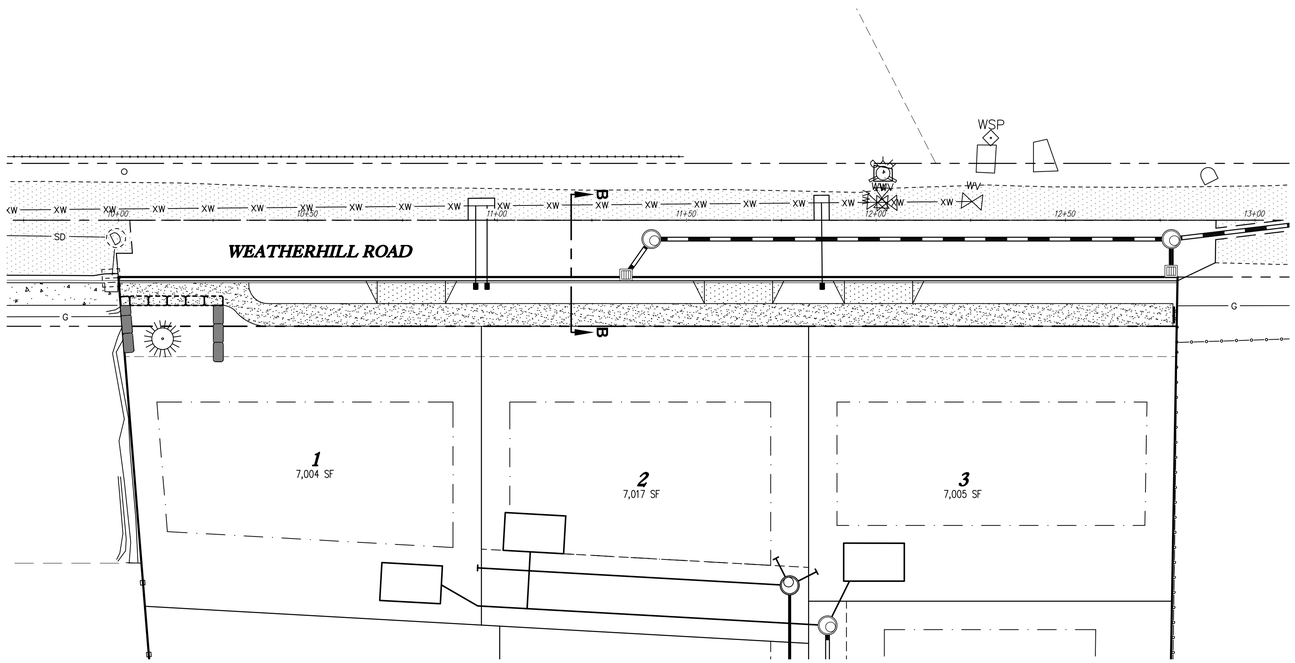
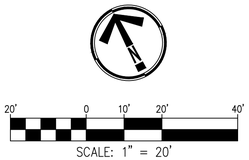
SHEET 8 OF 12

FILE:P:\1463-003 Weatherhill Road Phase 1\dwg\plan\1463-003_Bstreet, Layout: 8 SATTER STREET PLAN PROFILE AND STORM LINE, Plot Date: 2/15/2019 10:19 AM by: Jacob Snyder

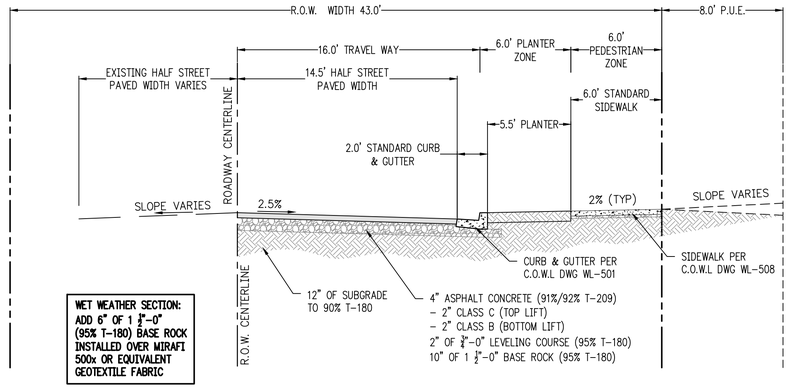


WEATHERHILL ROAD PLAN

SCALE: 1"=20'

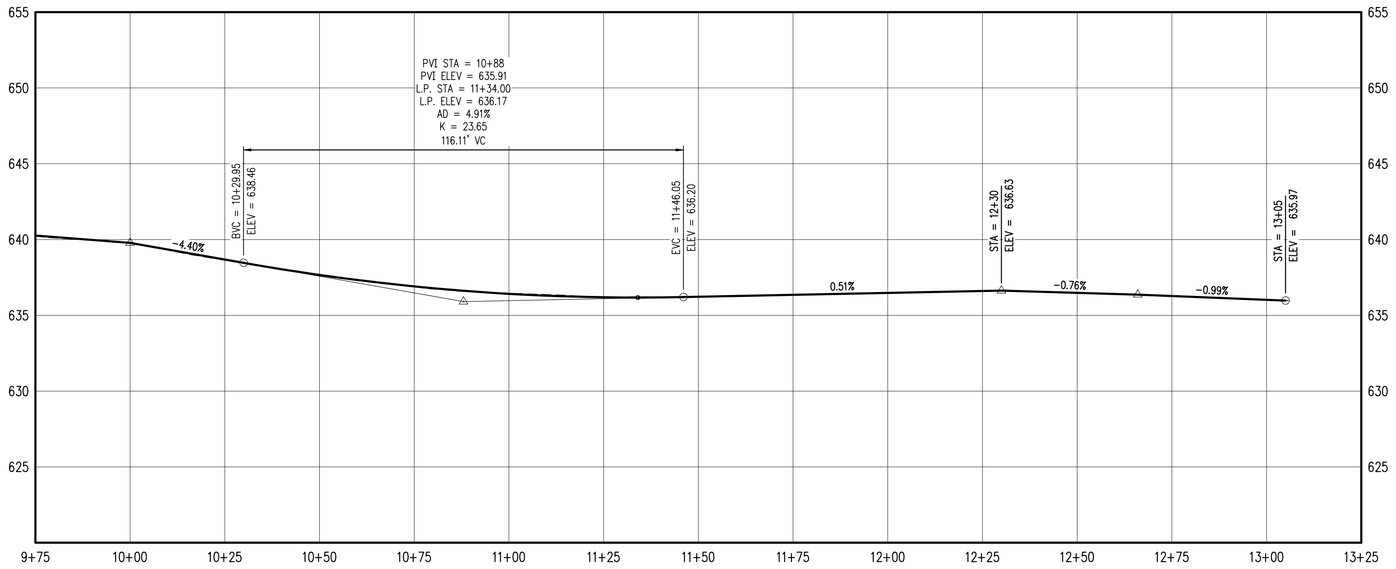


SCALE: 1" = 20'



SECTION B-B: LOCAL ROAD W/ DETACHED SIDEWALK (RIGHT) - TYPICAL SECTION

SCALE: N.T.S.



WEATHERHILL ROAD PROFILE

SCALE: 1"=20' HORZ. 1"=5' VERT.

22870 S WEATHERHILL ROAD

TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

WEATHERHILL ROAD PLAN, PROFILE, AND STORM LINE

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

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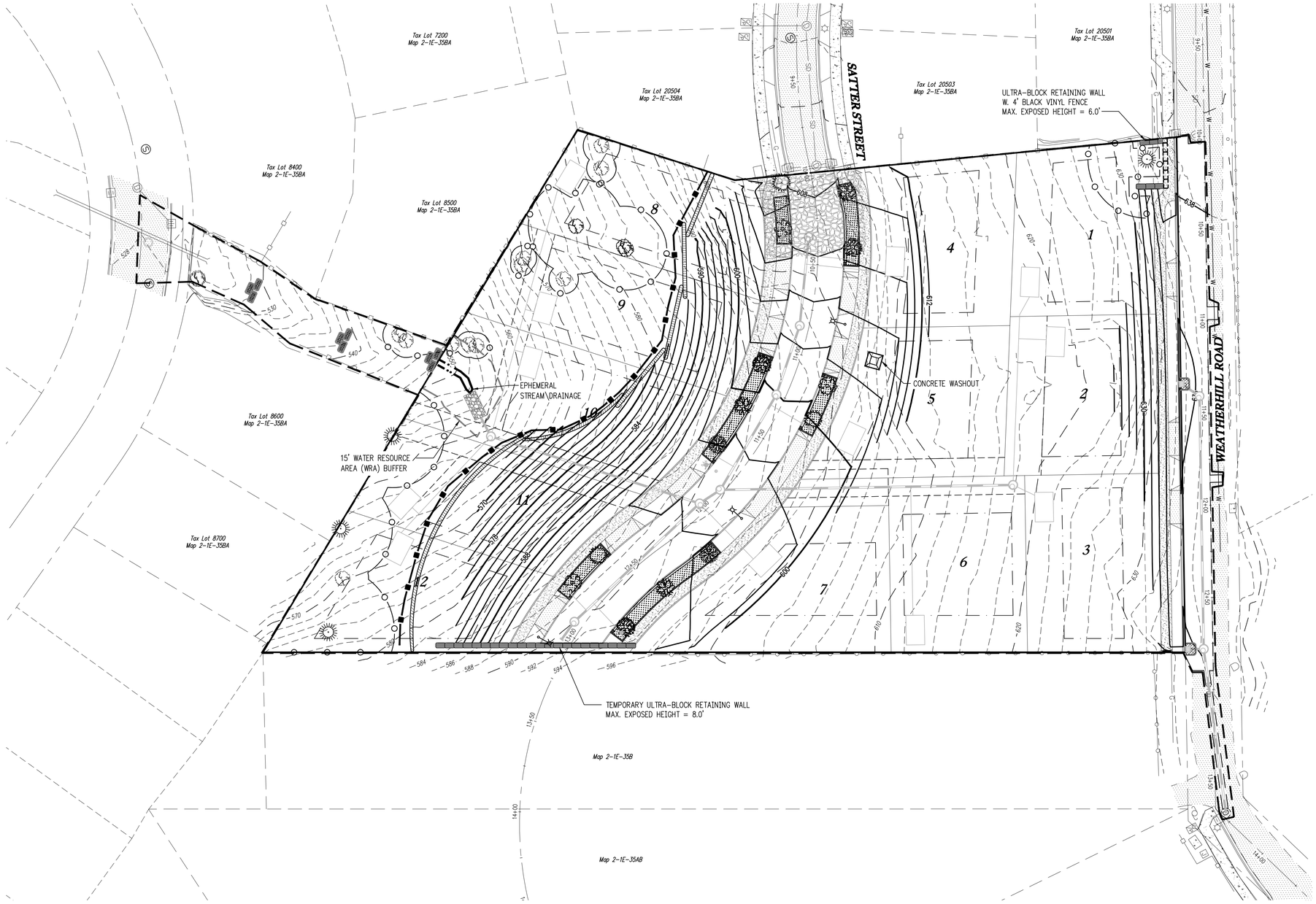
SHEET 9 OF 12

FILE:P:\463-003 Weatherhill Road Phase 1\dwg\plan\463-003_Sstreet, Layout: 9 WEATHERHILL ROAD PLAN PROFILE AND STORM LINE, Plot Date: 2/15/2019 9:42 AM, by: Jacob Snyder



30' 0 15' 30' 60'

SCALE: 1" = 30'

LEGEND

- 220 — PROPOSED MAJOR CONTOUR LINE
- 219 — PROPOSED MINOR CONTOUR LINE
- 195 — EXISTING MAJOR CONTOUR LINE
- 194 — EXISTING MINOR CONTOUR LINE
- PROPERTY BOUNDARY LINE
- SIGNIFICANT RESOURCE OVERLAY ZONE (SROZ)
- PROPOSED LOT LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED PUE EASEMENT
- PROPOSED SANITARY SEWER LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED WATER LINE
- CONSTRUCTION TREE PROTECTION FENCE (6' HIGH CHAIN LINK WITH METAL POSTS)
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED CURB INLET CATCH BASIN
- PROPOSED FIRE HYDRANT
- PROPOSED SIDEWALK TO BE INSTALLED AT TIME OF STREET CONSTRUCTION
- PROPOSED LIDA PLANTER

22870 S WEATHERHILL ROAD

TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

PHASE 2 GRADING & EROSION CONTROL PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

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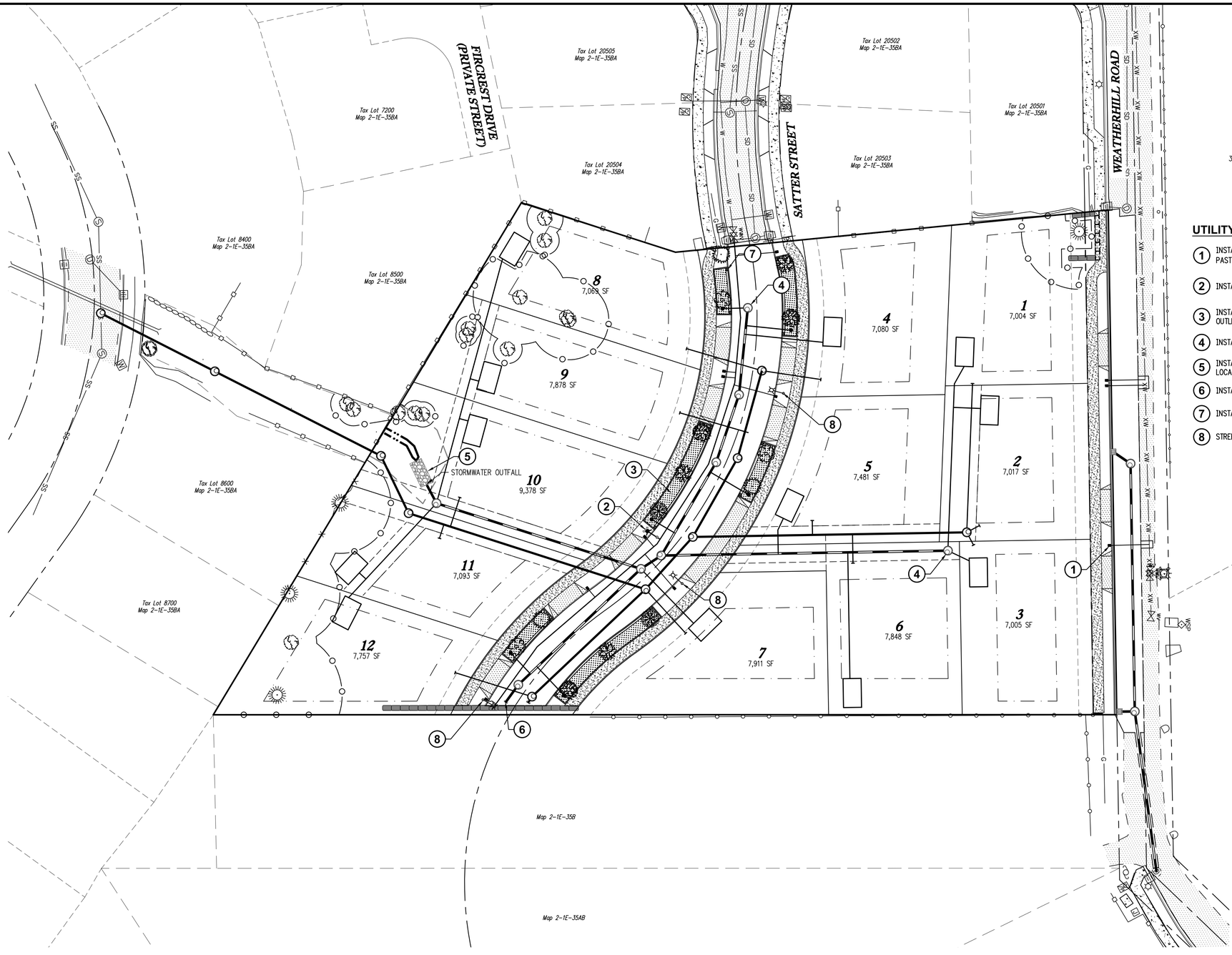
SHEET 10 OF 12

FILE:P:\1463-003 Weatherhill Road Phase 1\dwg\plan\1463-003_10grad, Layout: 10 PHASE 2 GRADING & EROSION CONTROL PLAN, Plot Date: 2/15/2019 10:16 AM, by: Jacob Snyder



COMPOSITE UTILITY PLAN

SCALE: 1"=30'

30' 0 15' 30' 60'

SCALE: 1" = 30'

UTILITY CONSTRUCTION NOTES

1. INSTALL SINGLE WATER METER PER LOT AND EXTEND 1" SERVICE LATERAL 3' PAST PUE (TYP. OF 12)
2. INSTALL FIRE HYDRANT PER CITY OF WEST LINN DETAIL WL-401
3. INSTALL LIDA FLOW-THROUGH PLANTER BOX WITH UNDERDRAIN & BEEHIVE OUTLET
4. INSTALL STANDARD 48" MANHOLE (TYP. OF 14)
5. INSTALL 7' X 14.5' RIP RAP PAD AT OVERLAND STORMWATER DISCHARGE LOCATION
6. INSTALL PLUG ON STORM SEWER FOR FUTURE CONNECTION TO THE EAST
7. INSTALL CURB CUT INLET FOR LIDA FLOW-THROUGH PLANTER (TYP. OF 6)
8. STREET LIGHT (SEE SH. 12)

LOT DRAINAGE NOTE:

1. EACH LOT SHALL HAVE AN ON SITE LIDA PLANTER TO TREAT ON SITE STORM DRAINAGE.

LEGEND:

- PROPOSED SANITARY SEWER LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED WATER LINE
- PROPOSED PUE EASEMENT
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED CURB INLET CATCH BASIN
- PROPOSED FIRE HYDRANT
- PROPOSED BLOW-OFF
- LIDA PLANTER
- PROPOSED WATER METER
- ON LOT LIDA PLANTER

22870 S WEATHERHILL ROAD
TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

COMPOSITE UTILITY PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
FAX: (503) 626-8552
www.emeriodesign.com

SHEET 11 OF 12

FILE P: \463-003 Weatherhill Road Phase 1\dwg\plan\463-003_11x17, Layout: 11 COMPOSITE UTILITY PLAN, Plot Date: 2/15/2019 10:15 AM, by: Jacob Snyder

LP / X = INSTALL NEW LUMINAIRE ON POLE #. (X = POLE #).

LP / EX = EXISTING 47W LED LUMINAIRE ON POLE.

PUBLIC STREET LIGHTING OPTION "A" NOTES:

1. LIGHT POLE SHALL BE 30-FOOT DIRECT BURIED, 25-FOOT MOUNTING HEIGHT, TWO-PIECE BRONZE, FIBERGLASS LIGHT POLE.

PGE APPROVED LIGHT POLES ARE:
SHAKESPEARE BHT3099S5BL9901
CMT MDS30-F-100-S2-HS-PC-NP-1B-22

PGE APPROVED STUBS ARE:
SHAKESPEARE BHS3099N3BL9901
CMT 25-STUB-UP

2. JUNCTION BOXES SHALL BE PGE APPROVED SPLICE BOXES.

PGE APPROVED JUNCTION BOXES ARE:
NEWBASIS FCA132418T-00043
QUAZITE A4213418A017
ARMORCAST A6001946TAX18-PGE
HIGHLINE CHA132418HE1

"ELECTRIC" OR "POWER" SHALL BE IN THE LID MARKING AREA.

3. LUMINAIRES SHALL BE PGE APPROVED 47 WATT LED, 240V, MAST-ARM MOUNTED, BRONZE SHOEBOX FIXTURE WITH TWISTLOCK P.E. RECEPTACLE.

PGE APPROVED SHOEBOX LUMINAIRES ARE:
47W CREE STR-LWY-2M-HT-02-E-UL-BZ-700-40K-R-UTL

4. THE PHOTOELECTRIC CONTROL SHALL BE PGE APPROVED EXTENDED LIFE TWISTLOCK, FAIL-ON, ELECTRONIC, 105-300 VAC, 60 HZ, PER ANSI 136.10, BRONZE HOUSING, 1.5 LUMEN TURN-ON, RATED 1000W TUNGSTEN (1800 VA BALLAST) 1.5:1 TURN-OFF/TURN-ON RATIO, SOLID BRASS PLUG BLADES, CONFORMABLY COATED CDS CELL, 160 JOULE MOV, 2-4 SEC. TURN-OFF DELAY.

PGE APPROVED PHOTOELECTRIC CONTROLS ARE:
RIPLEY RD8645
DTL DLL 1271.5 J50

5. THE WIRING FROM THE SPLICE BOX TO THE LUMINAIRE SHALL BE PGE APPROVED #10AWG, 600-VOLT, 3-CONDUCTOR, CLASS B STANDING TYPE TC WITH 45-MIL SUNLIGHT RESISTANT PVC JACKET, SUITABLE FOR DIRECT BURIED APPLICATIONS. RATED 90°C DRY AND 75°C WET.

FOR 240-VOLT APPLICATIONS, THE PGE WIRING CONFIGURATION IS:
BLACK AND RED (HOT)
GREEN (GROUND)

6. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO P.G.E. SCHEDULE "95" OPTION "A" SPECIFICATIONS. ALL MATERIALS AND INSTALLATION SHALL BE APPROVED BY P.G.E. LIGHT POLES AND STREET LIGHTS TO BE INSTALLED BY P.G.E.

7. LIGHTING CONTRACTOR/INSTALLER IS SOLELY RESPONSIBLE FOR INSTALLATION OF CORRECT MATERIAL BASED ON CURRENT PGE APPROVED MATERIAL LIST AND JURISDICTION SPECIFICATIONS AND STANDARDS. LIGHT POLE AND FIXTURE SUBMITTAL TO PROPER JURISDICTION RECOMMENDED.

STREETLIGHTING DESIGN
Scale: 1" = 30'

NUMERIC SUMMARY						
PROJECT: WEATHERHILL						
LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN
SATTER STREET	ILLUMINANCE	FC	0.47	0.90	0.10	4.70
SW WEATHERHILL ROAD	ILLUMINANCE	FC	0.58	0.90	0.10	5.80

Northstar Electrical Contractors
11055 S.W. Clay Street
Sherwood, Oregon 97140
Phone 503-612-0840
Fax 503-612-0891
Email adam.suminski@NorthStarElect.com

22870 S WEATHERHILL ROAD
TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

LIGHTING PLAN

WEATHERHILL
WEST LINN, OR

REVISIONS		
NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

	REV DATE	NO.	REV DESCRIPTION
Title:	STREET LIGHTING		
Designed by:	Adam Suminski		
Checked by:	Jesse Culp		
Date:	February 8, 2019		

DWG. NO
EL1

SHEET 12 OF 12

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
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FAX: (503) 626-8552
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FILE:P:\463-003 Weatherhill Road Phase 1\dwg\plan\463-003_12lite, Layout: 12 LIGHTING PLAN, Plot Date: 2/18/2019 11:24 AM, by: Jacob Snyder

NATURAL RESOURCE ASSESSMENT
Within
Water Resource Area

FOR

22870 WEATHERHILL ROAD

Prepared for:
Bob Schultz
22870 Weatherhill LLC
22870 Weatherhill Road
West Linn, OR 97068

Prepared by:
Cari Cramer
Schott and Associates

February 2019
Project #: 2637

INTRODUCTION

Site Location

Schott and Associates (S&A) was contracted to conduct a natural resource assessment on the 2.56 acre subject property located at 22870 Weatherhill Road in West Linn, Clackamas County, Oregon (T2S, R1E, Sec. 35B, TL 405).

Site Description

The property is entered south from a driveway off of Weatherhill Road to the north. The site topography is terraced and south, southwest sloping. The northern half of the property is on the terrace and has one existing home and a barn located on the northwest portion of the property. A maintained landscape, dominated by lawn grasses and scattered ornamental and native trees, surrounds the house. The southern approximate half of the property is undeveloped with the exception of a few formed dirt trails. The northern 2/3rds of the southern half of the property contained large Oregon white oaks (*Quercus garryana*) with an understory of non-native grasses with some poison oak (*Toxicodendron diversilobum*), English ivy (*Hedera helix*) and Himalayan blackberry (*Rubus armeniacus*). The most southern third of the property was dominated by big leaf maple (*Acer macrophyllum*) with some Oregon ash (*Fraxinus latifolia*) in the overstory. The understory mainly consisted of Himalayan blackberry and English ivy with some beaked hazelnut (*Corylus cornuta*), vine maple (*Acer circinatum*), snowberry (*Symphoricarpos albus*) and English holly (*Ilex aquifolium*).

There is an open tract southwest of the site. The surrounding area is residential.

Project Objectives

The applicant proposes construction of a 12 lot subdivision with associated access drive, parking and utilities. Also proposed is continuing Satter Street through the approximate middle of the property directing east, southeast.

The WRA Map documents a protected water resource on site (Appendix A). An Ephemeral Stream is WRA mapped through the south half of the property starting near the west property boundary and directing south down slope and extending offsite through a tract. The ephemeral stream is mapped within the Goal 5 Significant Riparian Corridor. As per 32.120 *the WRA map is … not intended to delineate the exact WRA boundaries or water feature alignment. Amendments to the WRA Maps may be made in accordance with the provisions of Chapters 98 and 99 CDC.*

This report will outline the actual extent of the onsite WRA feature, and address the approval criteria in CDC Chapter 32.060 Standard Review Process.

METHODS

A natural resource assessment was conducted by S&A on September 13, 2018 for the purposes of completing a wetland delineation and natural resource assessment. 32.020 Chapter 32 of the CDC applies to all development, activity or uses within WRAs identified on the WRA map. The limits of the onsite undisturbed waterway was determined based on field verified conditions and documented in this report.

WRA CONDITIONS

Waterway

During the delineation site visit one ephemeral stream was located onsite at the southwest property boundary. The ephemeral stream started 25' up slope to the northeast and directed to the southwest. Within the ephemeral stream the ground was mainly bare and had no hydrology at the time of the site visit. The homeowner indicated that there is only hydrology after hard rains. The stream continued offsite through a tract to a culvert under Crestview Drive. The stream channel south of the site was less than 18" wide.

Wetland

Based on soil, vegetation and hydrology data taken in the field no wetlands were delineated on site. The upland sample plots were within forested area in the southern half of the subject property and consisted of Oregon white oak with an understory of nonnative grasses such as tall fescue (*Schedonorus arundinaceus*) with some Himalayan blackberry, English ivy and poison oak (sp1) in the northern portion. Within the southern portion of the forested area at the lowest point (sp2) in the northwest corner, the overstory consisted of bigleaf maple with beaked hazelnut, Himalayan blackberry and English ivy in the understory. Near the southwest property boundary within a converging slope that is approximately 25' long and directing down slope southwest a stream was LWI and WRA mapped. Sample plot 3 was taken at the lowest point in this area. Vegetation consisted of Oregon ash, bigleaf maple, snowberry, vine maple, holly, sword fern, English ivy and Himalayan blackberry.

Soils were a 10YR3/3 in all of the sample plots and did not meet the hydric soil indicators. No hydrology was observed.

The Local Wetland Inventory (LWI) for the City of West Linn showed a drainage within the southern portion of the property starting near the middle of the west property line and directing south and off property at the southwest property line. Onsite findings did not show any indications of the drainage extending from half way up the property. The LWI corresponds only partially with onsite findings. The ephemeral drainage starts within converging slopes 25' northeast, upslope of the southwest property boundary. The drainage angles down slope to the southwest extending off property through an offsite tract.

Water Resource Area (WRA)

The water resource delineated onsite is an ephemeral stream. As per Table 32-2, the required width of the WRA on each side of the ephemeral stream is 15'.

Undisturbed WRA Conditions

The water resource delineated onsite is within an undeveloped portion of the site. There has been little to no disturbance.

As per CDC Section 32.050(F)(8) plant communities within the undisturbed WRA were identified and characterized. The onsite tree canopy within the 15' adjacent to the delineated resource consisted of bigleaf maple and Oregon ash. Understory vegetation consisted of common snowberry, vine maple, and holly with some beaked hazelnut, Himalayan blackberry and sword fern. The WRA was in good condition.

Table 1. WRA vegetation

Scientific Name	Common Name	Layer	% Cover
Acer macrophyllum	Big leaf maple	Tree	40
Fraxinus latifolia	Oregon ash	Tree	30
Symphoricarpos albus	Common snowberry	Shrub	10
Acer circinatum	Vine maple	Tree	5
Corylus cornuta	Beaked hazelnut	Tree	5
Ilex aquifolium	English holly	Shrub	5
Polystichum munitum	Sword fern	Forb	5
Rubus armeniacus	Himalayan blackberry	Shrub	5
% cover by natives			95
% native tree canopy			70
% invasive/noxious			10

IMPACTS

Impacts to Wetlands/Waters

No impacts to wetlands or waters are proposed.

Impacts to the WRA

The required WRA width is 15' for an ephemeral drainage. The ephemeral drainage is located 25' upslope from the southwest property boundary. Sewer pipe will be extended down to the existing sewer line at Crestview Drive resulting in minor temporary impacts within the WRA.
Temporary impacts proposed are approximately 100sf at the southeast corner of the WRA .

32.060 APPROVAL CRITERIA (STANDARD PROCESS)

No application for development on property containing a WRA shall be approved unless the approval authority finds that the proposed development is consistent with the following approval criteria, or can satisfy the criteria by conditions of approval:

A. WRA protection/minimizing impacts.

1. Development shall be conducted in a manner that will avoid or, if avoidance is not possible, minimize adverse impact on WRAs.

2. Mitigation and re-vegetation of disturbed WRAs shall be completed per CDC 32.090 and 32.100 respectively.

Proposed development shall avoid permanent impacts to the WRA. A Sewer pipe will be installed and extended down to the existing sewer line at Crestview Drive resulting in approximately 100sf of temporary impacts at the southeast corner of the WRA minimizing the area of temporary disturbance to the extent possible.

B. Storm water and storm water facilities.

1. Proposed developments shall be designed to maintain the existing WRAs and utilize them as the primary method of storm water conveyance through the project site unless:

a. The surface water management plan calls for alternate configurations (culverts, piping, etc.); or

b. Under CDC 32.070, the applicant demonstrates that the relocation of the water resource will not adversely impact the function of the WRA including, but not limited to, circumstances where the WRA is poorly defined or not clearly channelized. Re-vegetation, enhancement and/or mitigation of the re-aligned water resource shall be required as applicable.

The project has been designed to maintain the existing WRA and to utilize it as the primary method of storm water conveyance through the project site.

2. Public and private storm water detention, storm water treatment facilities and storm water outfall or energy dissipaters (e.g., rip rap) may encroach into the WRA if:

a. Accepted engineering practice requires it;

b. Encroachment on significant trees shall be avoided when possible, and any tree loss shall be consistent with the City's Tree Technical Manual and mitigated per CDC 32.090;

c. There shall be no direct outfall into the water resource, and any resulting outfall shall not have an erosive effect on the WRA or diminish the stability of slopes; and

d. There are no reasonable alternatives available.

A geotechnical report may be required to make the determination regarding slope stability.

The treated public and private storm water will outfall into the WRA as there are no reasonable alternatives available on site. The proposed outfall design follows accepted engineering practices and it does not encroach on any significant trees. The storm water

outfall will occur above the ephemeral stream and any resulting outfall will not have an erosive affect on the stream or diminish the stability of any slopes.

3. *Roadside storm water conveyance swales and ditches may be extended within rights-of-way located in a WRA. When possible, they shall be located along the side of the road furthest from the water resource. If the conveyance facility must be located along the side of the road closest to the water resource, it shall be located as close to the road/sidewalk as possible and include habitat friendly design features (treatment train, rain gardens, etc.).*

No roadside storm water swales or ditches will be extended into the WRA.

4. *Storm water detention and/or treatment facilities in the WRA shall be designed without permanent perimeter fencing and shall be landscaped with native vegetation.*

No storm water detention and/or treatment facilities will be located in the WRA.

5. *Access to public storm water detention and/or treatment facilities shall be provided for maintenance purposes. Maintenance driveways shall be constructed to minimum width and use water permeable paving materials. Significant trees, including roots, shall not be disturbed to the degree possible. The encroachment and any tree loss shall be mitigated per CDC 32.090. There shall also be no adverse impacts upon the hydrologic conditions of the site.*

The applicant is proposing to install LIDA planters within the Satter Street right of way to treat the public storm water, so access will be readily available.

6. *Storm detention and treatment and geologic hazards. Per the submittals required by CDC 32.050(F)(3) and 92.010(E), all proposed storm detention and treatment facilities must comply with the standards for the improvement of public and private drainage systems located in the West Linn Public Works Design Standards, there will be no adverse off-site impacts caused by the development (including impacts from increased intensity of runoff downstream or constrictions causing ponding upstream), and the applicant must provide sufficient factual data to support the conclusions of the submitted plan.*

All plans have been prepared by a licensed Oregon Engineer and a Geotechnical report has been provided by GeoPacific Engineering, Inc. All proposed storm detention and treatment facilities have been designed to comply with the standards for the improvement of public and private drainage systems located in the West Linn Public Works Design Standards, and there will be no adverse off-site impacts caused by the proposed development. All factual data required to support the conclusions have been submitted as part of the overall application materials.

C. *Repealed by Ord. 1647.*

NA

D. *WRA width. Except for the exemptions in CDC 32.040, applications that are using the alternate review process of CDC 32.070, or as authorized by the approval authority consistent with the provisions of this chapter, all development is prohibited in the WRA as established in Table 32-2.*

As per Table 32-2 the protected WRA feature onsite is an Ephemeral Stream requiring a 15' width on each side of the water resource.

E. Per the submittals required by CDC 32.050(F)(4), the applicant must demonstrate that the proposed methods of rendering known or potential hazard sites safe for development, including proposed geotechnical remediation, are feasible and adequate to prevent landslides or other damage to property and safety. The review authority may impose conditions, including limits on type or intensity of land use, which it determines are necessary to mitigate known risks of landslides or property damage.

A Geotechnical report is provided as part of the submitted application materials. The report did not identify any potential hazards on the site that would be impacted by the proposed development.

F. Roads, driveways and utilities.

1. New roads, driveways, or utilities shall avoid WRAs unless the applicant demonstrates that no other practical alternative exists. In that case, road design and construction techniques shall minimize impacts and disturbance to the WRA by the following methods:

a. New roads and utilities crossing riparian habitat areas or streams shall be aligned as close to perpendicular to the channel as possible.

b. Roads and driveways traversing WRAs shall be of the minimum width possible to comply with applicable road standards and protect public safety. The footprint of grading and site clearing to accommodate the road shall be minimized.

c. Road and utility crossings shall avoid, where possible:

1) Salmonid spawning or rearing areas;
2) Stands of mature conifer trees in riparian areas;
3) Highly erodible soils;
4) Landslide prone areas;
5) Damage to, and fragmentation of, habitat; and
6) Wetlands identified on the WRA Map.

The proposed development has been designed to minimize adverse impacts on the WRA. There will be no new roads or driveways located in the WRA.

A sewer line is proposed to be installed along the northern boundary of proposed lot 11 and through a small portion of the 15' WRA. The sewer line will not cross the ephemeral stream but will temporarily impact an approximate 100sf area at the southeast corner of the WRA. In addition, the applicant is proposing to have the treated storm sewer line installed along the southern boundary of lot 10 with the stormwater outfall occurring above the ephemeral

stream and sheet flow through the stream naturally. No mature trees or wetlands will be impacted by the proposed activity.

2. *Crossing of fish bearing streams and riparian corridors shall use bridges or arch-bottomless culverts or the equivalent that provides comparable fish protection, to allow passage of wildlife and fish and to retain the natural stream bed.*

There are no fish bearing streams or riparian corridors. There is an ephemeral drain that will be within a protected tract and there will be no crossing.

3. *New utilities spanning fish bearing stream sections, riparian corridors, and wetlands shall be located on existing roads/bridges, elevated walkways, conduit, or other existing structures or installed underground via tunneling or boring at a depth that avoids tree roots and does not alter the hydrology sustaining the water resource, unless the applicant demonstrates that it is not physically possible or it is cost prohibitive. Bore pits associated with the crossings shall be restored upon project completion. Dry, intermittent streams may be crossed with open cuts during a time period approved by the City and any agency with jurisdiction.*

There are no fish bearing streams, riparian corridors or wetlands onsite.

4. *No fill or excavation is allowed within the ordinary high water mark of a water resource, unless all necessary permits are obtained from the City, U.S. Army Corps of Engineers and Oregon Department of State Lands (DSL).*

No fill or excavation is proposed within the OHW of the ephemeral drain.

5. Crossings of fish bearing streams shall be aligned, whenever possible, to serve multiple properties and be designed to accommodate conduit for utility lines. The applicant shall, to the extent legally permissible, work with the City to provide for a street layout and crossing location that will minimize the need for additional stream crossings in the future to serve surrounding properties.

There are no fish bearing streams on site, just a non-jurisdictional ephemeral stream. There will be no crossing of the stream.

G. Passive recreation. Low impact or passive outdoor recreation facilities for public use including, but not limited to, multi-use paths and trails, not exempted per CDC 32.040(B)(2), viewing platforms, historical or natural interpretive markers, and benches in the WRA, are subject to the following standards:

1. *Trails shall be constructed using non-hazardous, water permeable materials with a maximum width of four feet or the recommended width under the applicable American*

Association of State Highway and Transportation Officials (AASHTO) standards for the expected type and use, whichever is greater.

2. Paved trails are limited to the area within 20 feet of the outer boundary of the WRA, and such trails must comply with the storm water provisions of this chapter.

3. All trails in the WRA shall be set back from the water resource at least 30 feet except at stream crossing points or at points where the topography forces the trail closer to the water resource.

4. Trails shall be designed to minimize disturbance to existing vegetation, work with natural contours, avoid the fall line on slopes where possible, avoid areas with evidence of slope failure and ensure that trail runoff does not create channels in the WRA.

5. Foot bridge crossings shall be kept to a minimum. When the stream bank adjacent to the foot bridge is accessible (e.g., due to limited vegetation or topography), where possible, fences or railings shall be installed from the foot bridge and extend 15 feet beyond the terminus of the foot bridge to discourage trail users and pets from accessing the stream bank, disturbing wildlife and habitat areas, and causing vegetation loss, stream bank erosion and stream turbidity. Bridges shall not be made of continuous impervious materials or be treated with toxic substances that could leach into the WRA.

6. Interpretive facilities (including viewpoints) shall be at least 10 feet from the top of the water resource's bankfull flow/OHW or delineated wetland edge and constructed with a fence between users and the resource. Interpretive signs may be installed on footbridges.

No passive low impact outdoor recreation amenities are being proposed as part of the development so above criterion does not apply.

H. <u>Daylighting Piped Streams</u>.

1. As part of any application, covered or piped stream sections shown on the WRA Map are encouraged to be "daylighted" or opened. Once it is daylighted, the WRA will be limited to 15 feet on either side of the stream. Within that WRA, water quality measures are required which may include a storm water treatment system (e.g., vegetated bioswales), continuous vegetative ground cover (e.g., native grasses) at least 15 feet in width that provides year round efficacy, or a combination thereof.

2. The re-opened stream does not have to align with the original piped route but may take a different route on the subject property so long as it makes the appropriate upstream and downstream connections and meet the standards of subsections (H)(3) and (4) of this section.

3. A re-aligned stream must not create WRAs on adjacent properties not owned by the applicant unless the applicant provides a notarized letter signed by the adjacent property owner(s) stating that the encroachment of the WRA is permitted.

4. The evaluation of proposed alignment and design of the reopened stream shall consider the following factors:

a. The ability of the reopened stream to safely carry storm drainage through the area without causing significant erosion.

b. Continuity with natural contours on adjacent properties, slope on site and drainage patterns.

c. Continuity of adjacent vegetation and habitat values.

d. The ability of the existing and proposed vegetation to filter sediment and pollutants and enhance water quality.

e. Provision of water temperature conducive to fish habitat.

There is no proposal to cover, pipe or re-align a stream section.

5. Any upstream or downstream WRAs or riparian corridors shall not apply to, or overlap, the daylighted stream channel.

No upstream or downstream WRAs or riparian corridors apply to or overlap the daylighted stream channel.

6. When a stream is daylighted the applicant shall prepare and record a legal document describing the reduced WRA required by subsections (H)(1) and (5) of this section. The document will be signed by a representative of the City and recorded at the applicant's expense to better ensure long term recognition of the reduced WRA and reduced restrictions for the daylighted stream section.

No stream daylighting or WRA reduction is proposed.

I. The following habitat friendly development practices shall be incorporated into the design of any improvements or projects in the WRA to the degree possible:

1. Restore disturbed soils to original or higher level of porosity to regain infiltration and storm water storage capacity.

2. Apply a treatment train or series of storm water treatment measures to provide multiple opportunities for storm water treatment and reduce the possibility of system failure.

3. Incorporate storm water management in road rights-of-way.

4. Landscape with rain gardens to provide on-lot detention, filtering of rainwater, and groundwater recharge.

5. Use multi-functional open drainage systems in lieu of conventional curb-and-gutter systems.

6. Use green roofs for runoff reduction, energy savings, improved air quality, and enhanced aesthetics.

7. Retain rooftop runoff in a rain barrel for later on-lot use in lawn and garden watering.

8. Disconnect downspouts from roofs and direct the flow to vegetated infiltration/filtration areas such as rain gardens.

9. Use pervious paving materials for driveways, parking lots, sidewalks, patios, and walkways.

10. Reduce sidewalk width to a minimum four feet. Grade the sidewalk so it drains to the front yard of a residential lot or retention area instead of towards the street.

11. Use shared driveways.

12. Reduce width of residential streets and driveways, especially at WRA crossings.

13. Reduce street length, primarily in residential areas, by encouraging clustering.

14. Reduce cul-de-sac radii and use pervious and/or vegetated islands in center to minimize impervious surfaces.

15. Use previously developed areas (PDAs) when given an option of developing PDA versus non-PDA land.

16. Minimize the building, hardscape and disturbance footprint.

17. Consider multi-story construction over a bigger footprint. (Ord. 1623 § 1, 2014; Ord. 1635 § 19, 2014; Ord. 1647 § 5, 2016; Ord. 1662 § 7, 2017)

The applicant is agreeable to following the habitat friendly development practices listed above for any improvements in the WRA to the degree possible. As a condition of any final approval, the applicant is agreeable to incorporating the habitat friendly development practices listed above into the civil designs, to the extent practicable, for the installation of the sewer pipe and treated storm water.

32.070 Alternate Review Process; 32.080 APPROVAL CRITERIA (ALTERNATE REVIEW PROCESS)

The above criteria do not apply as WRA reduction is not being proposed. An ephemeral drainage was delineated onsite and the location was concurred with by DSL. The required WRA on each side of the delineated ephemeral drainage is 15' and no alternative is being proposed.

32.090 MITIGATION PLAN

A A mitigation plan shall only be required if development is proposed within a WRA (including development of a PDA). (Exempted activities of CDC 32.040 do not require mitigation unless specifically stated. Temporarily disturbed areas, including TDAs associated

with exempted activities, do not require mitigation, just grade and soil restoration and re-vegetation.) The mitigation plan shall satisfy all applicable provisions of CDC 32.100, Re-Vegetation Plan Requirements.

32.100 RE-VEGETATION PLAN REQUIREMENTS
A. In order to achieve the goal of re-establishing forested canopy, native shrub and ground cover and to meet the mitigation requirements of CDC 32.090 and vegetative enhancement of CDC 32.080, tree and vegetation plantings are required according to the following standards:

Development is not proposed in the WRA. Only temporary impacts of 100sf in the southeast corner of the WRA are proposed to install a sewer line. The area will be restored and re-vegetated with native plant species as required by 32.090.

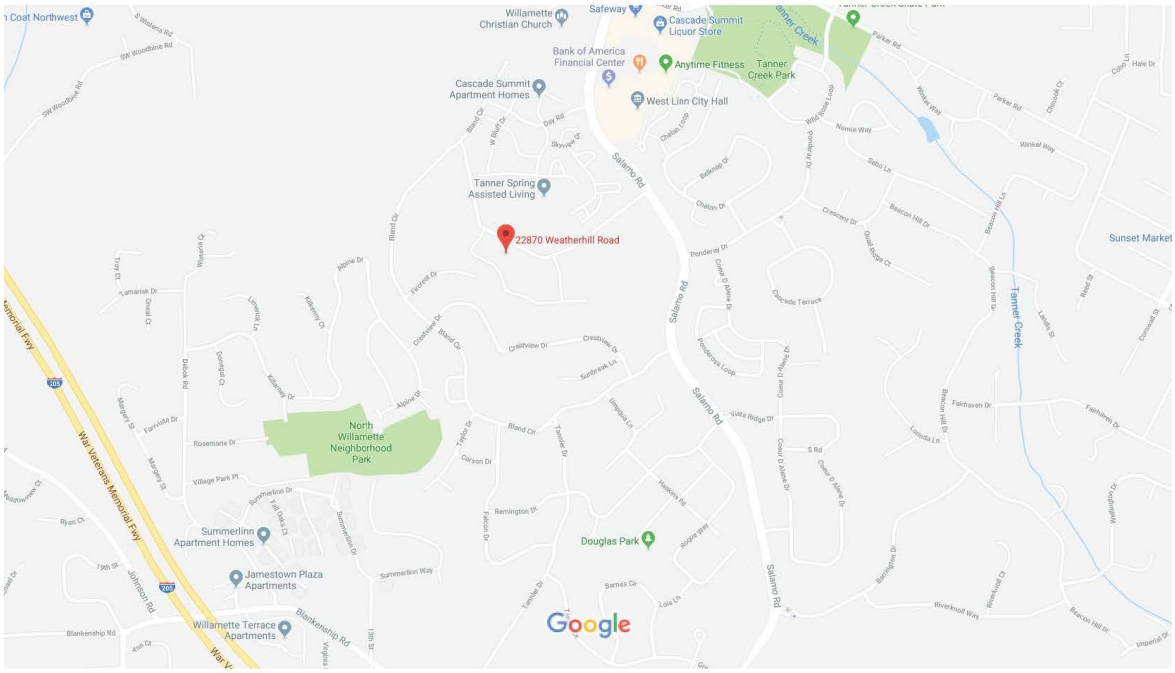
32.110 HARDSHIP PROVISIONS
The purpose of this section is to ensure that compliance with this chapter does not deprive an owner of reasonable use of land. To avoid such instances, the requirements of this chapter may be reduced. The decision-making authority may impose such conditions as are deemed necessary to limit any adverse impacts that may result from granting relief. The burden shall be on the applicant to demonstrate that the standards of this chapter, including Table 32-2, Required Width of WRA, will deny the applicant "reasonable use" of his/her property.

The Hardship Provision does not apply.

Appendix A. Site Vicinity Map

22870 Weatherhill Rd - Google Maps

gle Maps 22870 Weatherhill Rd



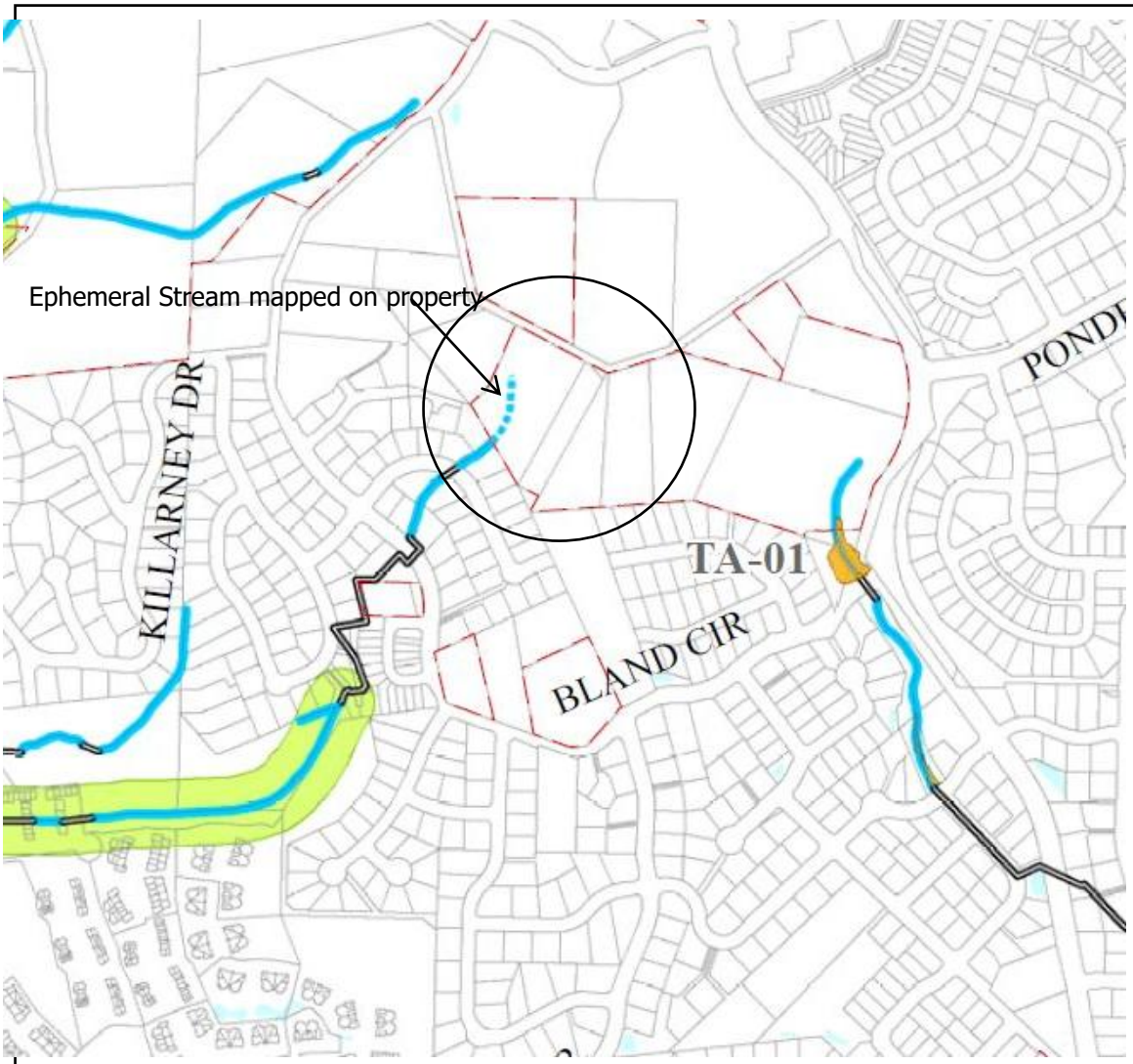
Map data ©2018 Google 500 ft

oogle.com/maps/place/22870+Weatherhill+Rd,+West+Linn,+OR+97068/@45.3577601,-122.6489393,16z/data=!4m5!3m4!1s0x54957165ce0feb55:0x292c778d1811d453!8m2!3d45.3

Appendix A: SITE LOCATION MAP
22870 Weatherhill Road
S&A#2637

Schott & Associates
P.O. Box 589
Aurora, OR. 97002
503.678.6007

Appendix B. WRA Map



Goal 5 Significant Riparian Corridors*

- Significant Riparian Corridors
- Streams
- Ephemeral Stream
- Piped Segments
- Upper Stream Reach of Fish Inventory 2003/2004 Survey

Goal 5 Wetland Inventory**

- Locally Significant Wetlands, DSL 2005
- Other Wetlands, DSL 2005
- TA-05 Specific Wetland Identifier
- Rivers & Ponds
- West Linn City Limits
- Taxlot Base Map***

0 0.25 0.5 1 Miles

Map Created: 6/6/2014

LOC: G:\PROJECTS\GIS\GOAL5_2006\SIGRIPARIAN\SIGRIPARIAN_WETLANDS_201406V6_FINAL.MXD | KAHA
VERSION 5 TO VERSION 6: REMOVED "PROPOSED" FROM MAP TITLE

West Linn GIS GEOGRAPHIC INFORMATION SYSTEMS

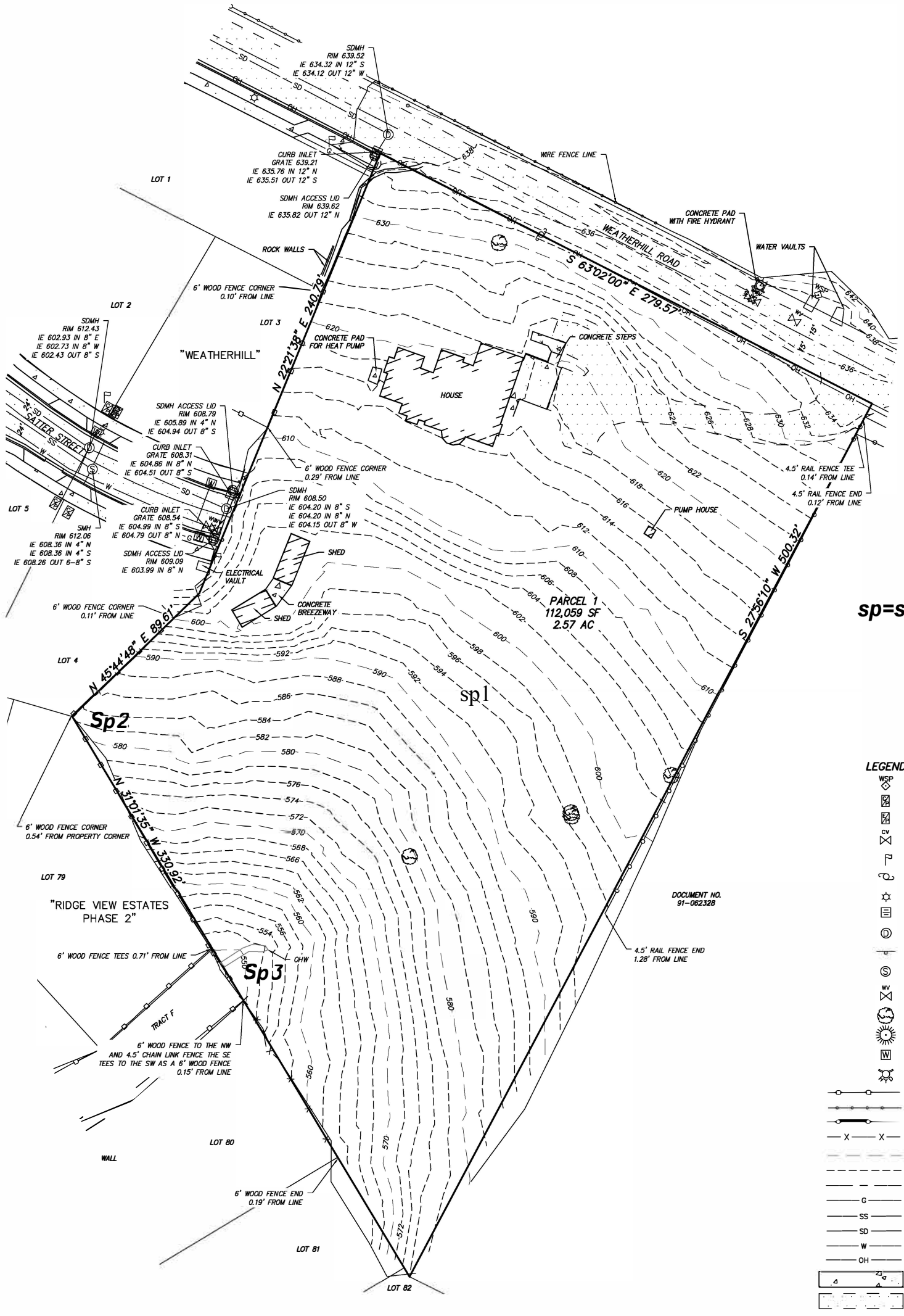
Appendix B. WRA Map
22870 Weatherhill Road
S&A#2637

Schott & Associates
P.O. Box 589
Aurora, OR. 97002
503.678.6007

Appendix C. Existing Conditions Map

EXISTING CONDITIONS MAP

OF PORTION OF LOT 23,
"BLAND ACRES" LOCATED IN THE
NW 1/4 OF SECTION 35,
T.2S., R.1E., W.M. CITY OF WEST LINN,
CLACKAMAS COUNTY, OREGON



sp=sample plot

LEGEND:

- INDICATES WATER STAND PIPE
- INDICATES COMMUNICATION PEDESTAL
- INDICATES ELECTRICAL PANEL
- INDICATES IRRIGATION CONTROL VALVE
- INDICATES GAS MARKER
- INDICATES POWER POLE
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- INDICATES SIGN
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- INDICATES 5 FOOT INTERVAL CONTOUR
- INDICATES 1 FOOT INTERVAL CONTOUR
- INDICATES ROADWAY CENTERLINE
- INDICATES EXISTING GAS
- INDICATES EXISTING SANITARY SEWER
- INDICATES EXISTING STORM SEWER
- INDICATES EXISTING WATER MAIN
- INDICATES OVERHEAD POWER
- INDICATES EXISTING CONCRETE
- INDICATES EXISTING ASPHALT

SURVEY NOTES:

THE DATUM FOR THIS SURVEY IS BASED UPON OREGON REAL-TIME GNSS NETWORK (ORGN). NAVD88.

A TOPCON PS104B, TRIMBLE R5 INSTRUMENTS WERE USED TO COMPLETE THIS SURVEY.

BOUNDARIES WERE DRAWN PER PLAT AND MONUMENTS FOUND. NO PROPERTY CORNERS WERE SET IN THIS SURVEY.

NO WARRANTIES ARE MADE AS TO MATTERS OF UNWRITTEN TITLE, SUCH AS ADVERSE POSSESSION, ESTOPPEL, ACQUIESCENCE, ETC.

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N

60' 0 30' 60' 120'

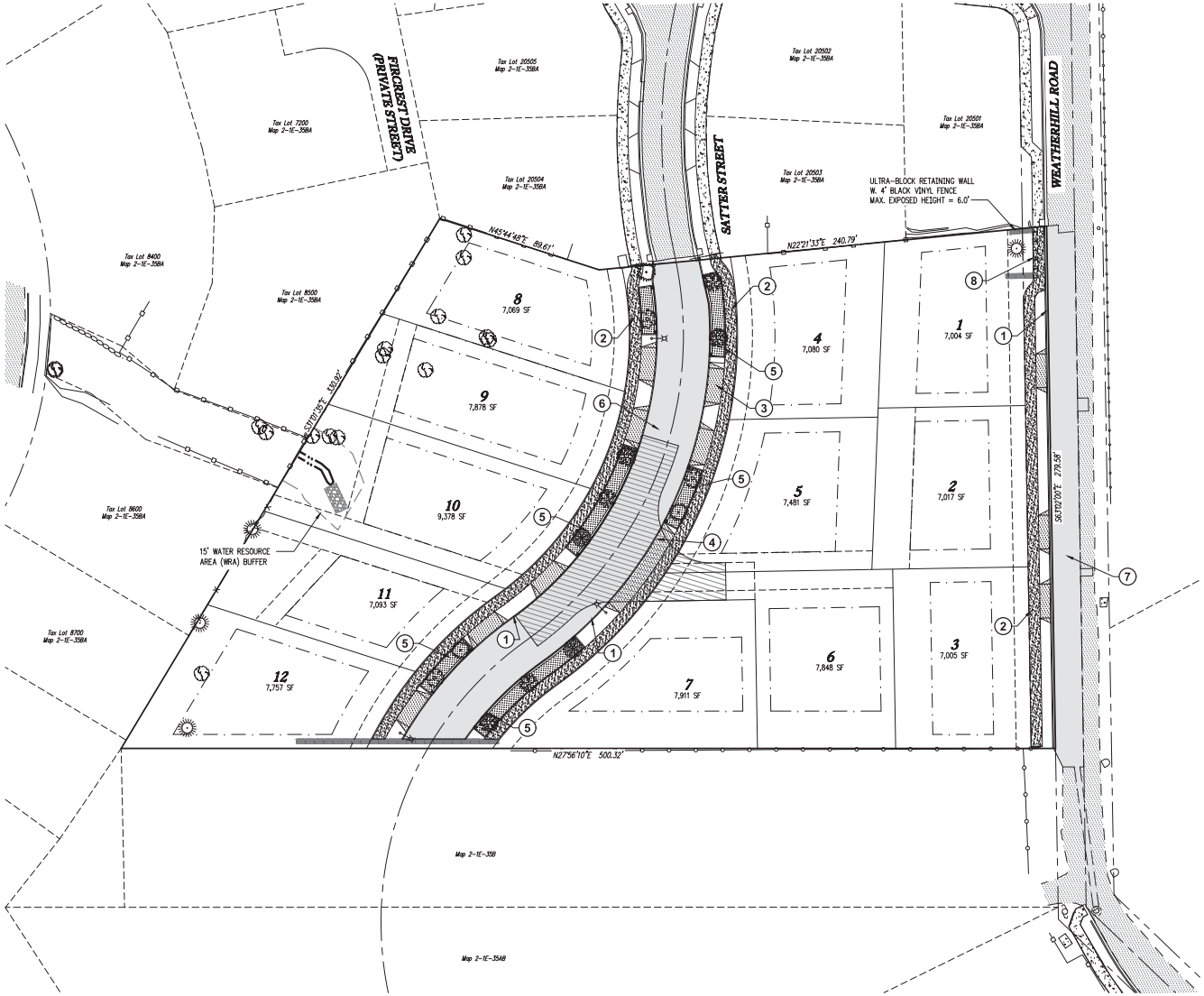
SCALE: 1" = 60

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
PH: (503) 746-8812
FAX: (503) 639-9592

OCTOBER 15, 2018

JOB: 463-003

Appendix D. Development Plan



30' 0 15' 30' 60'

SCALE: 1" = 30'

LEGEND

- 6' P.U.E.
- SETBACK LINES
- BOUNDARY LINE
- RIGHT-OF-WAY LINE
- LOT LINE

SITE NOTES

1. INSTALL TYPICAL CURB & GUTTER PER CITY OF WEST LINN DETAIL WL-501
2. INSTALL 6' CONCRETE SIDEWALK PER CITY OF WEST LINN DETAIL WL-508
3. INSTALL RESIDENTIAL DRIVEWAY PER CITY OF WEST LINN DETAIL WL-503A (TYP. OF 12)
4. FIRE TURNAROUND FIGURE
5. INSTALL STORMWATER FLOW-THROUGH PLANTER BOX PER CITY OF PORTLAND DETAIL SW-311B & SW-312A
6. INSTALL AC SECTION FOR SATTER STREET PER SECTION DETAIL SHEET 8
7. INSTALL AC SECTION FOR WEATHERHILL ROAD PER SECTION DETAIL SHEET 9
8. CONSTRUCT ULTRABLOCK RETAINING WALL SURROUNDING EXISTING TREE

22870 S WEATHERHILL ROAD
TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

PRELIMINARY SITE PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

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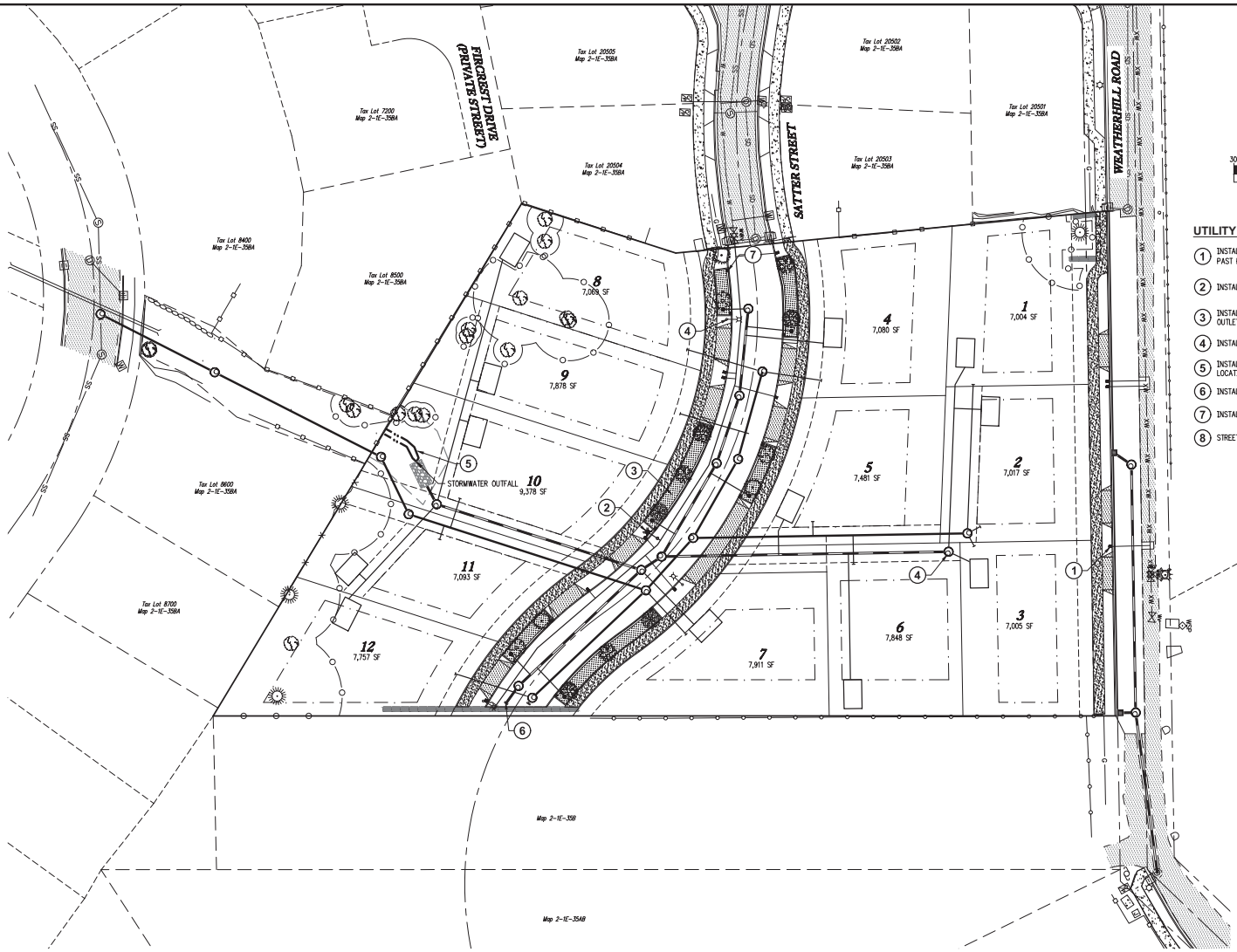
BEAVERTON, OREGON 97008
TEL: (503) 546-8052
FAX: (503) 639-9592
www.emeriodesign.com

SHEET 7 OF 11

FILE:P:\463-003 Weatherhill Road Phase 1\dwg\plan\463-003_07site_Layout: 7 PRELIMINARY SITE PLAN, Plot Date: 2/8/2019 11:28 AM, by: Kyung Han



COMPOSITE UTILITY PLAN

SCALE: 1"=30'

UTILITY CONSTRUCTION NOTES

1. INSTALL SINGLE WATER METER PER LOT AND EXTEND 1" SERVICE LATERAL 3' PAST PUE (TYP. OF 12)
2. INSTALL FIRE HYDRANT PER CITY OF WEST LINN DETAIL WL-401
3. INSTALL LIDA FLOW-THROUGH PLANTER BOX WITH UNDERDRAIN & BEEHIVE OUTLET
4. INSTALL STANDARD 48" MANHOLE (TYP. OF 14)
5. INSTALL 7' X 14.5' RIP RAP PAD AT OVERLAND STORMWATER DISCHARGE LOCATION
6. INSTALL PLUG ON STORM SEWER FOR FUTURE CONNECTION TO THE EAST
7. INSTALL CURB CUT INLET FOR LIDA FLOW-THROUGH PLANTER (TYP. OF 6)
8. STREET LIGHT (TO BE DESIGNED BY OTHERS)

LOT DRAINAGE NOTE:

1. EACH LOT SHALL HAVE AN ON SITE LIDA PLANTER TO TREAT ON SITE STORM DRAINAGE.

LEGEND:

- PROPOSED SANITARY SEWER LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED WATER LINE
- PROPOSED PUE EASEMENT
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED CURB INLET CATCH BASIN
- PROPOSED FIRE HYDRANT
- PROPOSED BLOW-OFF
- LIDA PLANTER
- PROPOSED WATER METER

22870 S WEATHERHILL ROAD
TAX MAP T2S R1E 35B
TAX LOT 405
WEST LINN, OREGON

COMPOSITE UTILITY PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	7/2018	1ST SUBMITTAL

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6445 SW FALLBROOK PLACE, SUITE 100
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SHEET 11 OF 11

FILE:P:\463-003 Weatherhill Road Phase 1\dwg\plan\463-003_11utl1, Layout: 11 COMPOSITE UTILITY PLAN, Plot Date: 2/6/2019 11:29 AM, by Kyung Han

Appendix E. Delineation and Concurrence Letter

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: https://apps.oregon.gov/DSL/EPS/program?key=4.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279.** A single PDF of the completed cover from and report may be e-mailed to: **Wetland_Delineation@dsl.state.or.us**. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Co

☒ Applicant ☒ Owner Name, Firm and Address:

22870 Weatherhill, LLC
Billing Address: % Partnership Administrator: Rod Friesen
12810 SW Morningstar Dr., Tigard, OR 97223

Business phone # 971-235-3314
Mobile phone # (optional)
E-mail: rod.friesen@frontier.com

☐ Authorized Legal Agent, Name and Address (if different):

Managing Member: Bob Schultz
22870 Weatherhill, West Linn, OR 97068

Business phone #
Mobile phone # (optional) 971-732-0347
E-mail: duke.pdx@gamil.com

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

Typed/Printed Name: BOB SCHULTZ **Signature:**
Date: 11-22-18 Special instructions regarding site access:

Project and Site Information

Project Name: 22870 Weatherhill Road

Latitude: 45.359 Longitude: -122.652
decimal degree - centroid of site or start & end points of linear project

Proposed Use:
Residential subdivision

Tax Map # 2S 1E Sec 35B
Tax Lot(s) 405

Tax Map #
Tax Lot(s)

Project Street Address (or other descriptive location):
22870 Weather Road,

Township 2S Range 1E Section 35 QQ B
Use separate sheet for additional tax and location information

City: West Linn County: Clackamas

Waterway: River Mile:

Wetland Delineation Information

Wetland Consultant Name, Firm and Address:
Schott and Associates/Cari Cramer
PO Box 589
Aurora, OR 97002

Phone # (503) 678-6007
Mobile phone # (if applicable)
E-mail: caric@schottandassociates.com

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.
Consultant Signature: Cari Cramer Date: November 26, 2018

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

Wetland/Waters Present? ☒ Yes ☐ No Study Area size: 2.56AC Total Wetland Acreage: 0.0000

Check Applicable Items Below

☐ R-F permit application submitted
☐ Mitigation bank site
☐ Industrial Land Certification Program Site
☐ Wetland restoration/enhancement project (not mitigation)
☐ Previous delineation/application on parcel
If known, previous DSL # ____

☒ Fee payment submitted $ 437.00
☐ Fee ($100) for resubmittal of rejected report
☐ Request for Reissuance. See eligibility criteria. (no fee)
DSL # ____ Expiration date ____
☐ LWI shows wetlands or waters on parcel
Wetland ID code ____

For Office Use Only

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

Date Delineation Received: ___/___/___ Scanned: ☐ Electronic: ☐ DSL App.# ____

SCHOTT & ASSOCIATES
Ecologists & Wetlands Specialists
21018 NE Hwy 99E • P.O. Box 589 • Aurora, OR 97002 • (503) 678-6007 • FAX: (503) 678-6011

JURISDICTIONAL WETLAND DELINEATION FOR

22870 Weatherhill Road
West Linn, Oregon

Prepared for

Bob Schultz
22870 Weatherhill LLC
22870 Weatherhill Road
West Linn, OR 97068

Prepared by

Cari L Cramer
Of
Schott and Associates, Inc.

Date:

November 2018

Project # 2637

TABLE OF CONTENTS

LIST OF FIGURES

(A) Landscape Setting and Land Use

The 2.56 acre subject property is located at 22870 Weatherhill Road in West Linn, Hillsboro, Clackamas County, Oregon (T2S R1E Sec.35B TL405).

The property is entered from a driveway extending south from Weatherhill Road to the north. The site topography is terraced and south, southwest sloping. The northern half of the property is on the terrace and has one existing home and a barn located on the northwest portion of the property. A maintained landscape, dominated by lawn grasses and scattered ornamental and native trees, encompasses the house. The southern approximate half of the property is undeveloped with the exception of a few formed dirt trails. The northern 2/3rds of the southern half of the property contained large Oregon white oaks (*Quercus garryana*) with an understory of non-native grasses with some poison oak (*Toxicodendron diversilobum*), English ivy (*Hedera helix*) and Himalayan blackberry (*Rubus armeniacus*). The most southern third of the property was dominated by big leaf maple (*Acer macrophyllum*) with some Oregon ash (*Fraxinus latifolia*) in the overstory. The understory mainly consisted of Himalayan blackberry and English ivy with some beaked hazelnut (*Corylus cornuta*), vine maple (*Acer circinatum*), snowberry (*Symphoricarpos albus*) and holly (*Ilex sp*). There is an open tract southwest of the site.

The surrounding area is residential.

(B) Site Alterations

There is a house and one barn on the northwest portion of the property. The northern half of the property has a vegetable garden and a maintained landscape.

(C) Precipitation Data and Analysis

The site was visited on September 13, 2018. Precipitation was recorded at 0.03 inches by the West Linn weather station on that day (accuweather.com). Total precipitation recorded in the two weeks prior to the site visit was 0.21 inches. Precipitation for the month of September through the 13th was 0.24 inches, all of which accumulated on the day of the site visit and the two days prior. Precipitation for July and August were below average range according to the Oregon City WETS table at 0% and 7% of average respectively. June precipitation was within average range at 66% of average. May was below average range at 8% of average according to the Oregon City WETS table. No WETS table is available for West Linn. Between October 1st 2017 and August 13, 2018 a total of 36.16” of precipitation was recorded. This is 79% percent of the water year average through the month of September.

Table 1. Precipitation Summary and WETS Averages

Month	2017-2018 Precipitation	WETS Average	WETS Range	Percent of Average
May	0.23	2.70	1.78-3.24	8
June	1.20	1.81	1.13-2.18	66
July	0	0.83	0.33-0.98	0
August	0.07	1.03	0.29-1.12	7
September*	0.24	1.85	0.94-2.20	13
Water Year**	36.16	45.99		79%

*Recorded precipitation through September 13, 2018 (43% of the month) compared with average for the entire month.
** Water Year average through the month of September.

(D) Site Specific Methods

Prior to visiting, site information was gathered, including recent and historical aerial photographs provided by Google Earth, the soil survey (NRCS web soil survey), the Local Wetland Inventory and National Wetland Inventory and the Water Resource Area (WRA) Map for West Linn. The USGS topography map was also reviewed prior to site visits.

Schott and Associates walked the subject property to assess the presence or absence of onsite wetlands and waters September 13, 2018. The *1987 Manual* and *Regional Supplement to the Corps of Engineers Delineation Manual: Western Mountains, Valleys, and Coast Region* were used to determine presence or absence of State of Oregon wetland boundaries and the Federal jurisdictional wetlands.

Sample plots were placed where geomorphic location or vegetation indicated the possibility of wetlands. For each sample plot, data on vegetation, hydrology and soils was collected, recorded in the field and later transferred to data forms (Appendix B). If a wetland was present paired plots were located in the adjacent upland to document the transition.

(E) Description of All Wetlands and Other Non-Wetland Waters

Based on soil, vegetation and hydrology data taken in the field no wetlands were delineated on site. The upland sample plots were within forested area in the southern half of the subject property and consisted of Oregon white oak with an understory of nonnative grasses such as tall fescue (*Schedonorus arundinaceus*) with some Himalayan blackberry, English ivy and poison oak (sp1) in the northern portion. Within the southern portion of the forested area at the lowest point (sp2) in the southwest corner, the overstory consisted of bigleaf maple with beaked hazelnut, Himalayan blackberry and ivy in the

understory. Near the southwest property boundary within a converging slope that is approximately 25' long and directing down slope southwest, where a stream was mapped on the LWI and WRA , sample plot 3 was taken at the lowest point. Vegetation consisted of Oregon ash, bigleaf maple, snowberry, vine maple, holly, sword fern, English ivy and Himalayan blackberry.

Soils were a 10YR3/3 and did not meet the hydric soil indicators in any of the sample plots and no hydrology was observed.

The WRA map showed an ephemeral drainage and the LWI showed a potential jurisdictional drainage that was mapped from approximately halfway up the property near the northwest property boundary angling south down slope, extending offsite through a tract directing southwest.

Onsite findings indicated an ephemeral drainage that started 25' up slope from the southwest property boundary. The ephemeral drainage was mainly bare and had no hydrology at the time of the site visit. Trace amounts of holly, English ivy and sword fern were growing within the drainage. The drainage extended offsite through a tract and was culverted under Crestview Drive. The drainage channel south of the site was less than 18" wide.

(F) Deviation from LWI or NWI

The Local Wetland Inventory (LWI) for the City of West Linn showed a drainage within the southern portion of the property starting near the northwest property line and directing south and off property at the southwest property line. Onsite findings did not show any indications of the drainage extending from half way up the property. The LWI corresponds only partially with onsite findings. The ephemeral drainage starts within converging slopes 25' northeast upslope of the southwest property boundary. The drainage angles down slope to the southwest extending off property through an offsite tract.

(G) Mapping Method

The sample plots and drainage boundary were flagged by Schott and Associates and surveyed by Emerio Design Professional Land Surveyor (PLS).

(H) Additional Information

None

(I) Results and Conclusions

Based on soil, vegetation and hydrology data taken in the field no wetlands were found onsite. One small ephemeral drainage was found onsite forming just north east of the

southwest property line. The drainage had bare ground. Just south of the site the drainage was less than 18 inches wide and looked like a recently formed erosion rill.

The LWI mapped a drainage starting upslope halfway up the property angling south and extending offsite at the southwest property line. Onsite findings located a much smaller ephemeral drainage starting approximately 25' upslope from the southwest property line. The drainage extended offsite southwest through a tract.

The NWI did not map any resource onsite or offsite bordering the subject property.

The soil survey map for Clackamas County mapped Saum silt loam on the entire property. Saum silt loam is not considered hydric.

The topographic map showed the property south, southwest sloping.

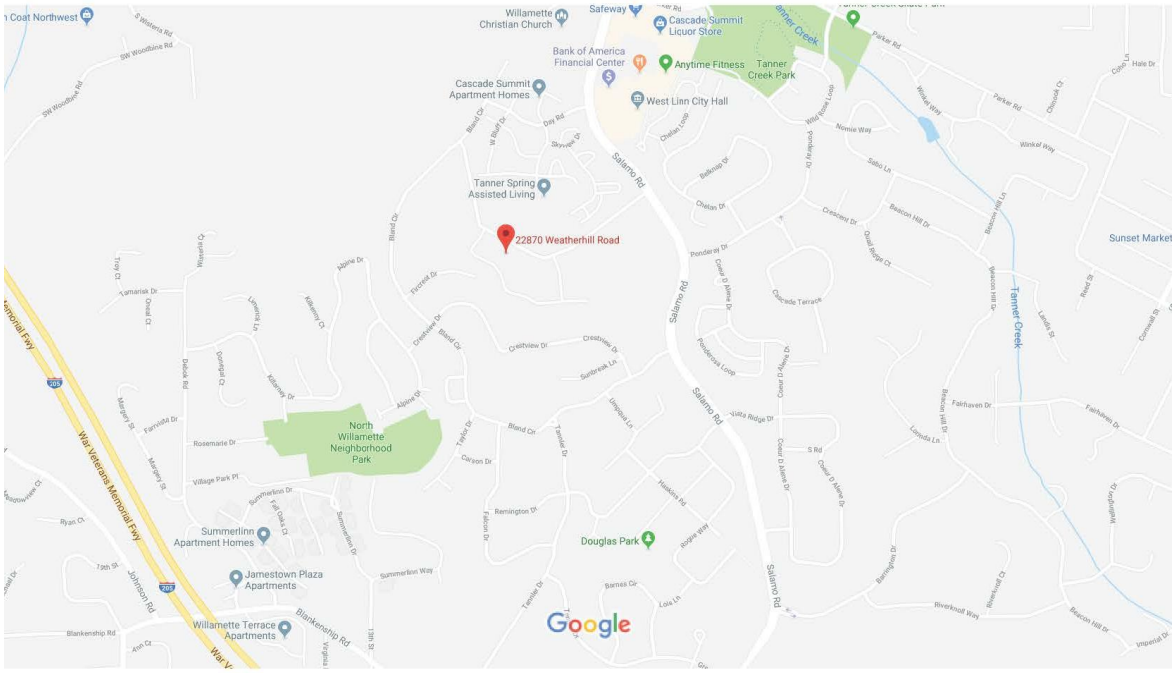
(J) Disclaimer

This report documents the investigation, best professional judgment and the conclusions of the investigator. It is correct and complete to the best of my knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State lands in accordance with OAR 141-090-0005 through 141-090-005.

Appendix A: Maps

22870 Weatherhill Rd - Google Maps

gle Maps 22870 Weatherhill Rd



Map data ©2018 Google 500 ft

oogle.com/maps/place/22870+Weatherhill+Rd,+West+Linn,+OR+97068/@45.3577601,-122.6489393,16z/data=!4m5!3m4!1s0x54957165ce0feb55:0x292c778d1811d453!8m2!3d45.3

FIGURE 1. SITE LOCATION MAP
22870 Weatherhill Road
S&A#2637

Schott & Associates
P.O. Box 589
Aurora, OR. 97002
503.678.6007

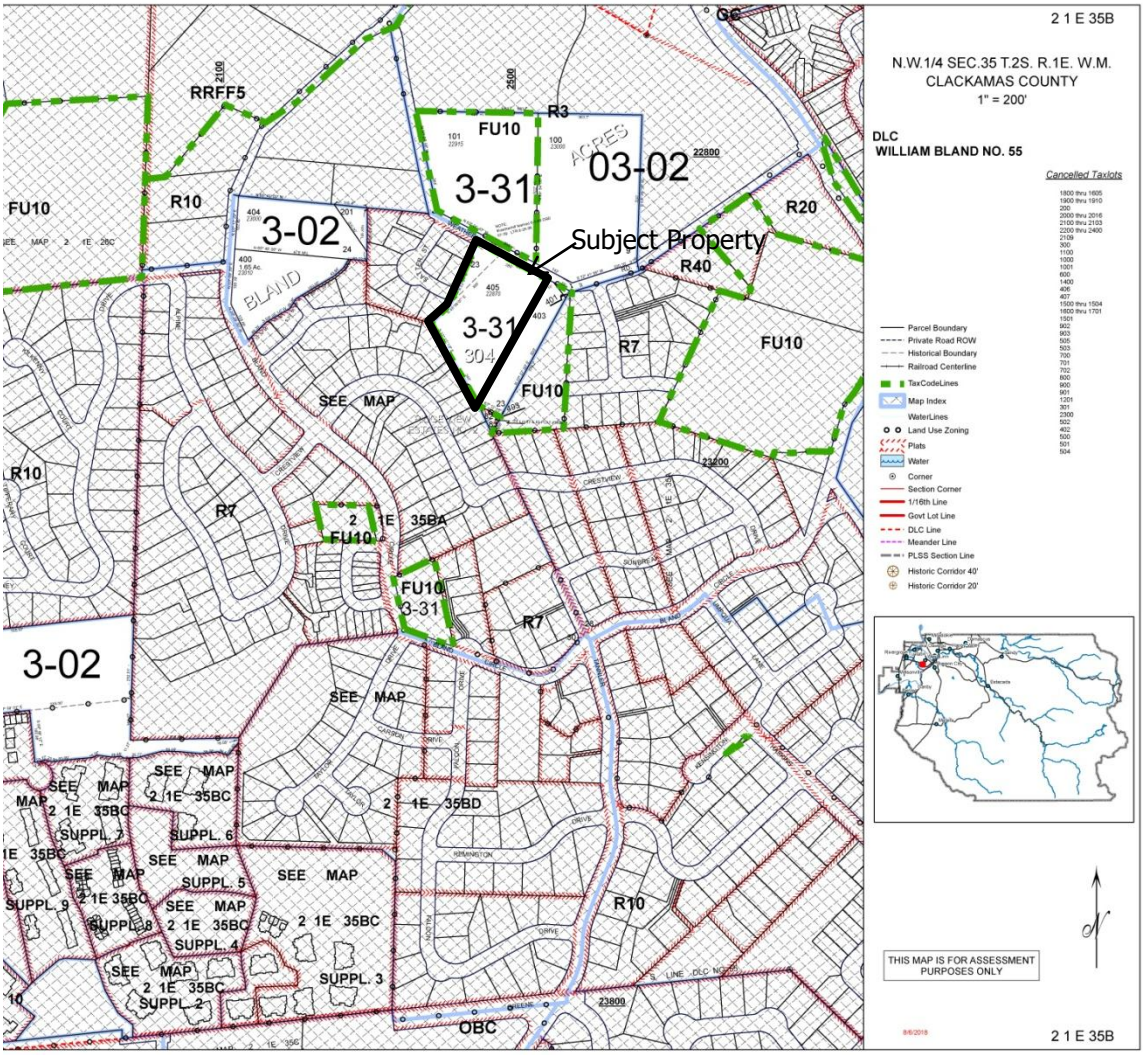


FIGURE 2. TAX MAP
22870 Weatherhill Road
S&A#2637

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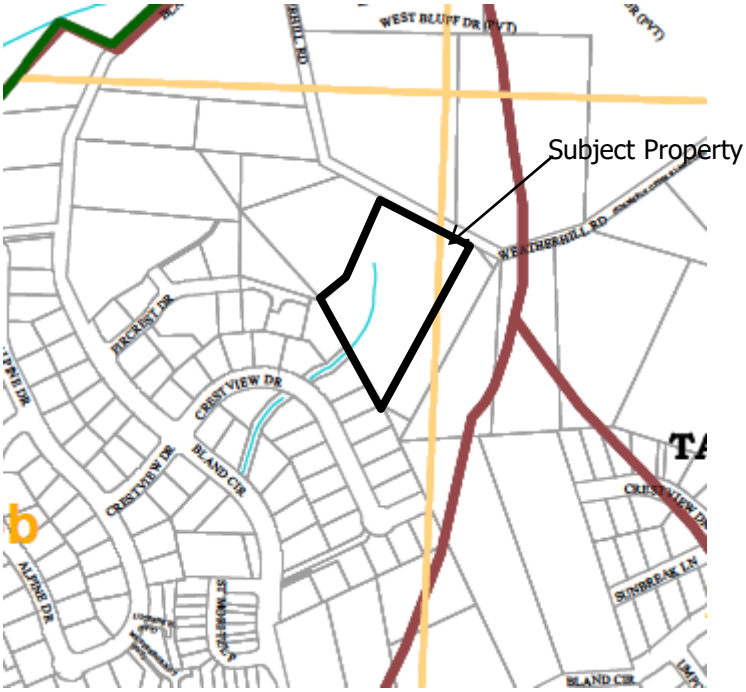

FIGURE 3.LWI MAP
22870 Weatherhill Road
S&A#2637

Schott & Associates
P.O. Box 589
Aurora, OR. 97002
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Soil Map—Clackamas County Area, Oregon

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
64C	Nekia silty clay loam, 8 to 15 percent slopes	1.4	20.9%
78B	Saum silt loam, 3 to 8 percent slopes	0.6	8.3%
78C	Saum silt loam, 8 to 15 percent slopes	4.8	70.8%
Totals for Area of Interest		**6.8**	**100.0%**

FIGURE 4. NRCS SOIL MAP
22870 Weatherhill Road
S&A#2637

Schott & Associates
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Aurora, OR. 97002
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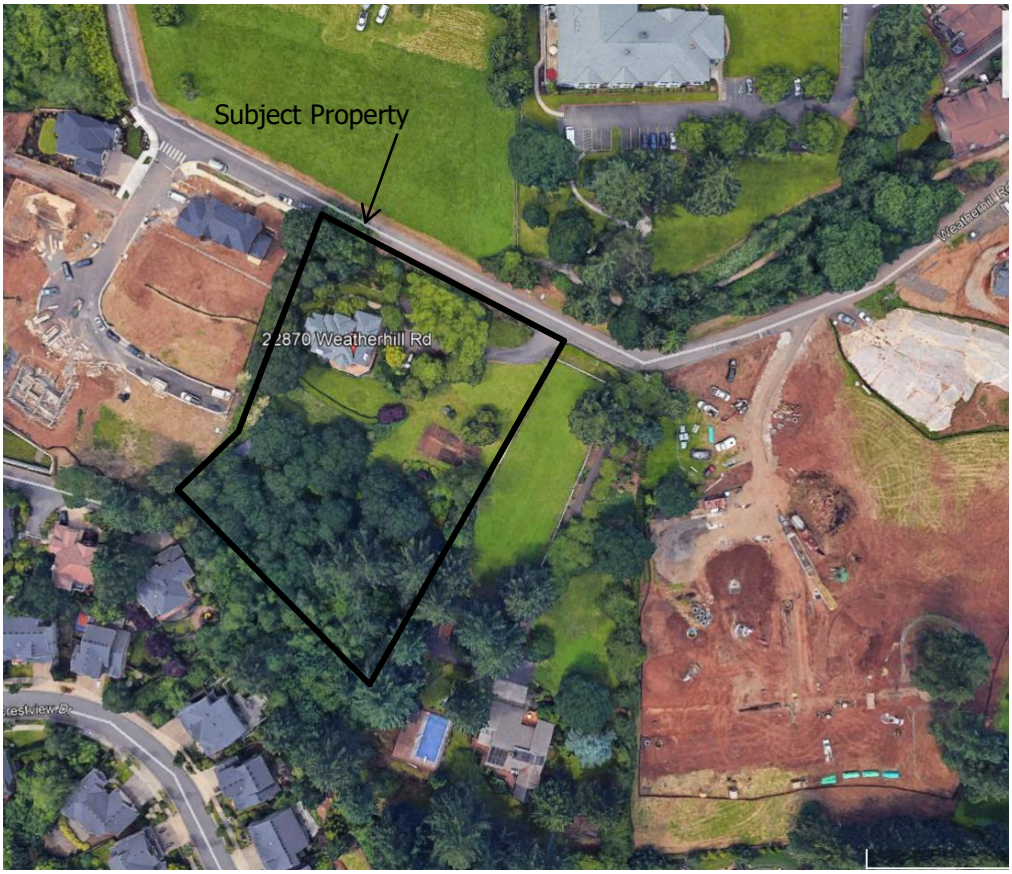

FIGURE 5. AERIAL PHOTOGRAPH-GOOGLE EARTH
22870 Weatherhill Road
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EXISTING CONDITIONS MAP

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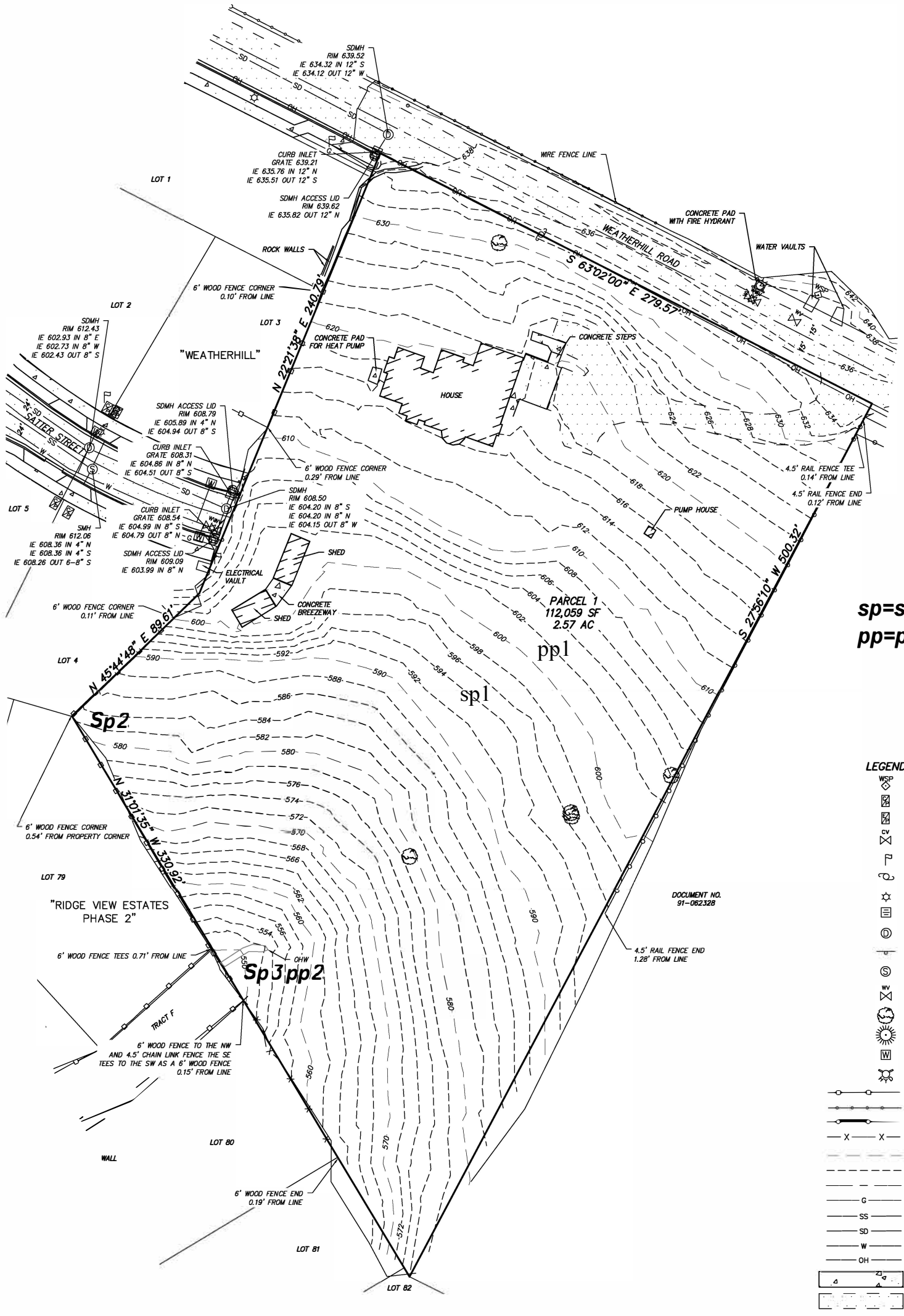

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SCALE: 1" = 60

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
PH: (503) 746-8812
FAX: (503) 639-9592

OCTOBER 15, 2018

JOB: 463-003

Appendix B: Data Forms

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

Project/Site: 22870 Weatherhill Road | City/County: West Linn, Clackamas | Sampling Date: September 13, 2018
Applicant/Owner: 22870 Weatherhill LLC | State: OR | Sampling Point: Sp1
Investigator(s): Cari Cramer | Section, Township, Range: Sec 35B 2S 1E
Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Convex | Slope (%): 2-5
Subregion (LRR): A | Lat: 45.359 | Long: -122.652 | Datum: DD
Soil Map Unit Name: Saum silt Loam | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ Significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___, Soil ___, or Hydrology ___ Naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus garryana*	80	X	FACU
2.			
3.			
4.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5')			
1. Rubus armeniacus	5	x	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	

Herb Stratum (Plot size: 5)			
1. *Schedonorus arundinaceus*	60	X	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60	= Total Cover	

Woody Vine Stratum (Plot size: 5)			
1. Hedera helix	5	X	FACU
2. Toxicodendron diversilobum	5	X	FAC
	10	= Total Cover	

% Bare Ground in Herb Stratum 25

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** x **No** ___

Remarks:

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR3/3	100					SiL	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? **Yes** ___ **No** x

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

Remarks:

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

Project/Site: 22870 Weatherhill Road | City/County: West Linn, Clackamas | Sampling Date: September 13, 2018
Applicant/Owner: 22870 Weatherhill LLC | State: OR | Sampling Point: Sp2
Investigator(s): Cari Cramer | Section, Township, Range: Sec 35B 2S 1E
Landform (hillslope, terrace, etc.): Slope | Local relief (concave, convex, none): Convex | Slope (%): 2
Subregion (LRR): A | Lat: 45.359 | Long: -122.652 | Datum: DD
Soil Map Unit Name: Saum silt Loam | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ Significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ Naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	___	No	x
Hydric Soil Present?	Yes	___	No	x
Wetland Hydrology Present?	Yes	___	No	x

Is the Sampled Area within a Wetland? **Yes** ___ **No** x

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer macrophyllum*	50	X	FACU
2. *Fraxinus latifolia*	5		FACW
3.			
4.			
	55	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5')			
1. Rubus armeniacus	15	x	FAC
2. Corylus cornuta	5	X	FACU
3.			
4.			
5.			
	20	= Total Cover	

Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	

Woody Vine Stratum (Plot size: 5)			
1. Hedera helix	80	X	FACU
2.			
	80	= Total Cover	

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** ___ **No** x

Remarks:

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR3/3	100					SiL	Roots at 12”

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? **Yes** ___ **No** x

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

Remarks:

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

Project/Site: 22870 Weatherhill Road | City/County: West Linn, Clackamas | Sampling Date: September 13, 2018
Applicant/Owner: 22870 Weatherhill LLC | State: OR | Sampling Point: Sp3
Investigator(s): Cari Cramer | Section, Township, Range: Sec 35B 2S 1E
Landform (hillslope, terrace, etc.): Slope | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRR): A | Lat: 45.359 | Long: -122.652 | Datum: DD
Soil Map Unit Name: Saum silt Loam | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ Significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ Naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	___	No	x
Hydric Soil Present?	Yes	___	No	x
Wetland Hydrology Present?	Yes	___	No	x

Is the Sampled Area within a Wetland? **Yes** ___ **No** x

Remarks: At bottom of ephemeral drainage

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer macrophyllum*	30	X	FACU
2. *Fraxinus latifolia*	20	x	FACW
3.			
4.			
	50	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5')			
1. Rubus armeniacus	5		FAC
2. Symphoricarpos albus	20	X	FACU
3. Acer circinatum	5		
4. Ilex aquifolium	20	X	FACU
5.			
	50	= Total Cover	

Herb Stratum (Plot size: 5)			
1. *Polysticum munitum*	3		FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	3	= Total Cover	

Woody Vine Stratum (Plot size: 5)			
1. Hedera helix	10	X	FACU
2.			
	10	= Total Cover	

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** ___ **No** x

Remarks:

SOIL

Sampling Point: 3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR3/3	100					SiL	Roots at 12”

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? **Yes** ___ **No** x

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

Remarks:

Appendix C: Ground Level Photographs

Photo Point 1 facing west, northwest

Photo Point 1 facing southwest

Schott & Associates
P.O. Box 589
Aurora, OR. 97002
503.678.6007

Photo Point 1 facing east, southeast

Photo Point 1 facing north, northeast

Schott & Associates
P.O. Box 589
Aurora, OR. 97002
503.678.6007

Photo Point 2 facing northeast

Photo Point 2 facing north, northwest

Appendix C: Ground Level Photographs
22870 Weatherhill Road
S&A# 2637

Schott & Associates
P.O. Box 589
Aurora, OR. 97002
503.678.6007

Photo Point 2 facing southwest

Schott & Associates
P.O. Box 589
Aurora, OR. 97002
503.678.6007

Appendix D: References

Environmental Laboratory, 1987. *Corps of Engineers Wetlands Delineation Manual,* Technical Report Y-87-1, U.S. Army Engineers Waterways Experiment Station, Vicksburg, MS.

Environmental Laboratory, 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (Version 2.0),* Wetlands Regulatory Assistance Program ERDC/EL TR-10-3 U.S. Army Engineer Research and Development Center. Vicksburg, MS.

Federal Interagency Committee for Wetland Delineation, 1989. *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S.D.A. Soil Conservation Service, Washington, D.C. Cooperative technical publication. 138 pp.

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Federal Register, 1982. Title 33, *Navigation and Navigable Waters; Chapter II, Regulatory Programs of the Corps of Engineers.* Vol. 47, No. 138, p. 31810, U.S. Govt. Printing Office, Washington, D.C.

Federal Register, 1986. 33 CFR Parts 320 through 330, *Regulatory Programs of the Corps of Engineers; Final Rule,* Vol. 51, No. 219 pp. 41206-41259, U.S. Govt. Printing Office, Washington, D.C.

Kollmorgen Corporation, 1975. *Munsell Soil Color Charts.* Macbeth Division of Kollmorgen Corporation, Baltimore, MD.

U.S. Army Corps of Engineers – Cold Regions Research and Engineering Laboratory (CRREL). 2014. *Western Mountains, Valleys and Coast 2016 Regional Wetland Plant List*

U.S. Department of Agriculture, Web Soil Survey *Soil Survey of Clackamas County, Oregon.* U.S.D.A. Soil Conservation Service, Washington, D.C.,

Oregon
Kate Brown, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregon.gov/dsl

December 26, 2018

22870 Weatherhill, LLC
Attn: Rod Friesen
12810 SW Morningstar Dr.
Tigard, OR 97068

Re: WD # 2018-0636 Wetland Delineation Report for 22870 Weatherhill Rd.; Clackamas County; T2S R1E Sec. 35B, Tax Lot 405
City of West Linn Local Wetlands Inventory

Dear Mr. Friesen:

The Department of State Lands has reviewed the wetland delineation report prepared by Schott & Associates for the site referenced above. Based upon the information presented in the report, we concur with the waterway boundary as mapped in Figure 6 of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map.

Within the study area, one ephemeral drainage was identified. This drainage is exempt per OAR 141-085-0515 (3). This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will determine jurisdiction for purposes of the Clean Water Act.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5246 if you have any questions.

Sincerely,

Chris Stevenson
Jurisdiction Coordinator

Approved by _____
Peter Ryan, PWS
Aquatic Resource Specialist

Enclosures

ec: Cari Cramer, Schott & Associates
City of West Linn Planning Department (Maps enclosed for updating LWI)
Jessica Menichino, Corps of Engineers
Bob Schultz, Weatherhill, LLC
Anita Huffman, DSL

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: https://apps.oregon.gov/DSL/EPS/program?key=4.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279.** A single PDF of the completed cover from and report may be e-mailed to: **Wetland_Delineation@dsl.state.or.us**. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Contact Information

☒ Applicant ☒ Owner Name, Firm and Address:

22870 Weatherhill, LLC
Billing Address: % Partnership Administrator: Rod Friesen
12810 SW Morningstar Dr., Tigard, OR 97223

Business phone # 971-235-3314
Mobile phone # (optional)
E-mail: rod.friesen@frontier.com

☐ Authorized Legal Agent, Name and Address (if different):

Managing Member: Bob Schultz
22870 Weatherhill, West Linn, OR 97068

Business phone #
Mobile phone # (optional) 971-732-0347
E-mail: duke.pdx@gamil.com

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

Typed/Printed Name: BOB SCHULTZ **Signature:** _____
Date: 11-22-18 Special instructions regarding site access: _____

Project and Site Information

Project Name: 22870 Weatherhill Road

Latitude: 45.359 Longitude: -122.652
decimal degree - centroid of site or start & end points of linear project

Proposed Use:
Residential subdivision

Tax Map # 2S 1E Sec 35B
Tax Lot(s) 405

Tax Map #
Tax Lot(s)

Project Street Address (or other descriptive location):
22870 Weather Road,

Township 2S Range 1E Section 35 QQ B
Use separate sheet for additional tax and location information

City: West Linn County: Clackamas

Waterway: River Mile:

Wetland Delineation Information

Wetland Consultant Name, Firm and Address:
Schott and Associates/Cari Cramer
PO Box 589
Aurora, OR 97002

Phone # (503) 678-6007
Mobile phone # (if applicable)
E-mail: caric@schottandassociates.com

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.
Consultant Signature: Cari Kramer Date: November 26, 2018

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

Wetland/Waters Present? ☒ Yes ☐ No Study Area size: 2.56AC Total Wetland Acreage: 0.0000

Check Appropriate Boxes Below

☐ R-F permit application submitted
☐ Mitigation bank site
☐ Industrial Land Certification Program Site
☐ Wetland restoration/enhancement project (not mitigation)
☐ Previous delineation/application on parcel
If known, previous DSL # _____

☒ Fee payment submitted $ 437.00
☐ Fee ($100) for resubmittal of rejected report
☐ Request for Reissuance. See eligibility criteria. (no fee)
DSL # _____ Expiration date _____
☐ LWI shows wetlands or waters on parcel
Wetland ID code _____

For Office Use Only

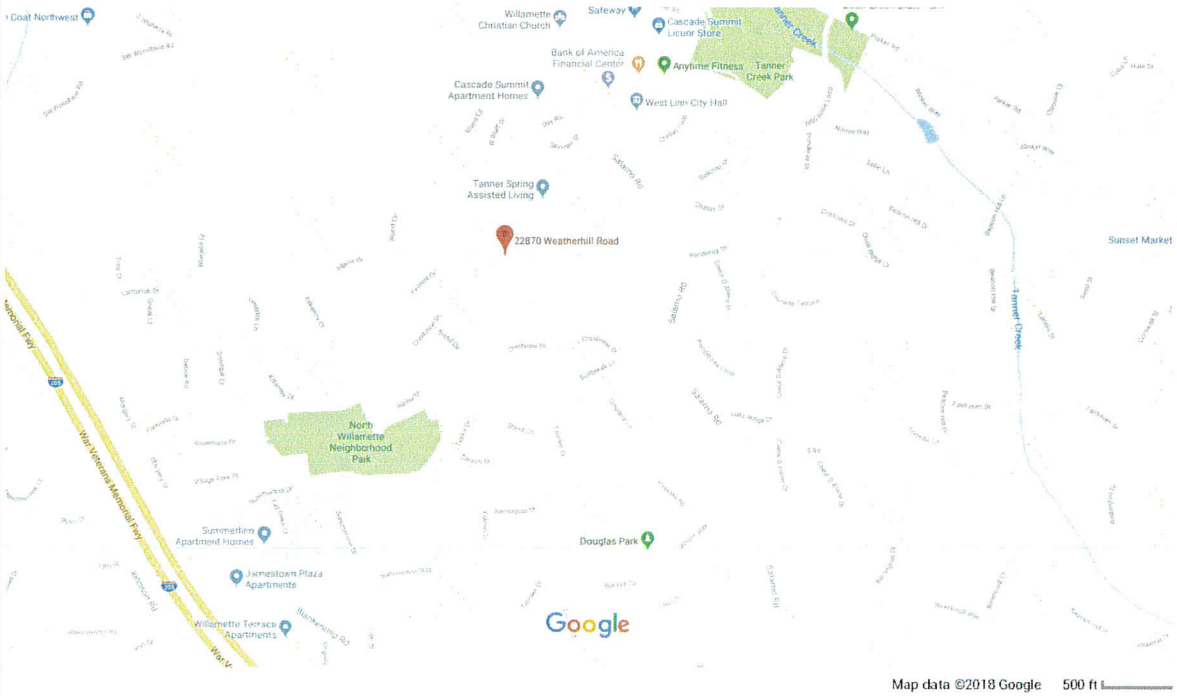
DSL Reviewer: _____ Fee Paid Date: ___/___/___ DSL WD # 2018-0056

Date Delineation Received: ___/___/___ Scanned: ☐ Electronic: ☐ DSL App.# _____

PA 6628

22870 Weatherhill Rd - Google Maps

gle Maps 22870 Weatherhill Rd



oogle.com/maps/place/22870+Weatherhill+Rd,+West+Linn,+OR+97068/@45.3577601,-122.6489393,16z/data=!4m5!3m4!1s0x54957165ce0feb55:0x292c778d1811d453!8m2!3d45.

FIGURE 1. SITE LOCATION MAP
22870 Weatherhill Road
S&A#2637

Schott & Associates
P.O. Box 589
Aurora, OR. 97002
503.678.6007

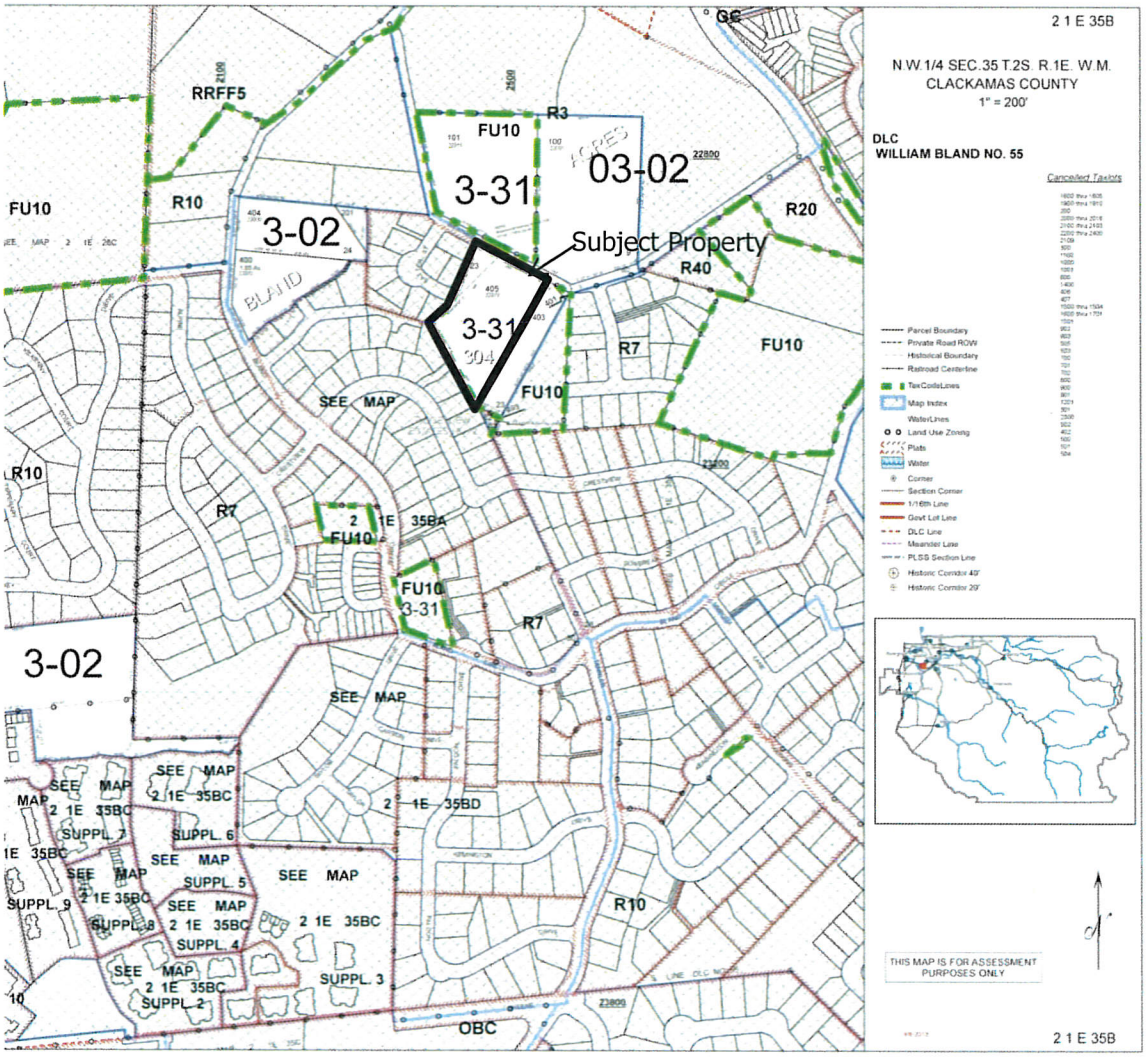
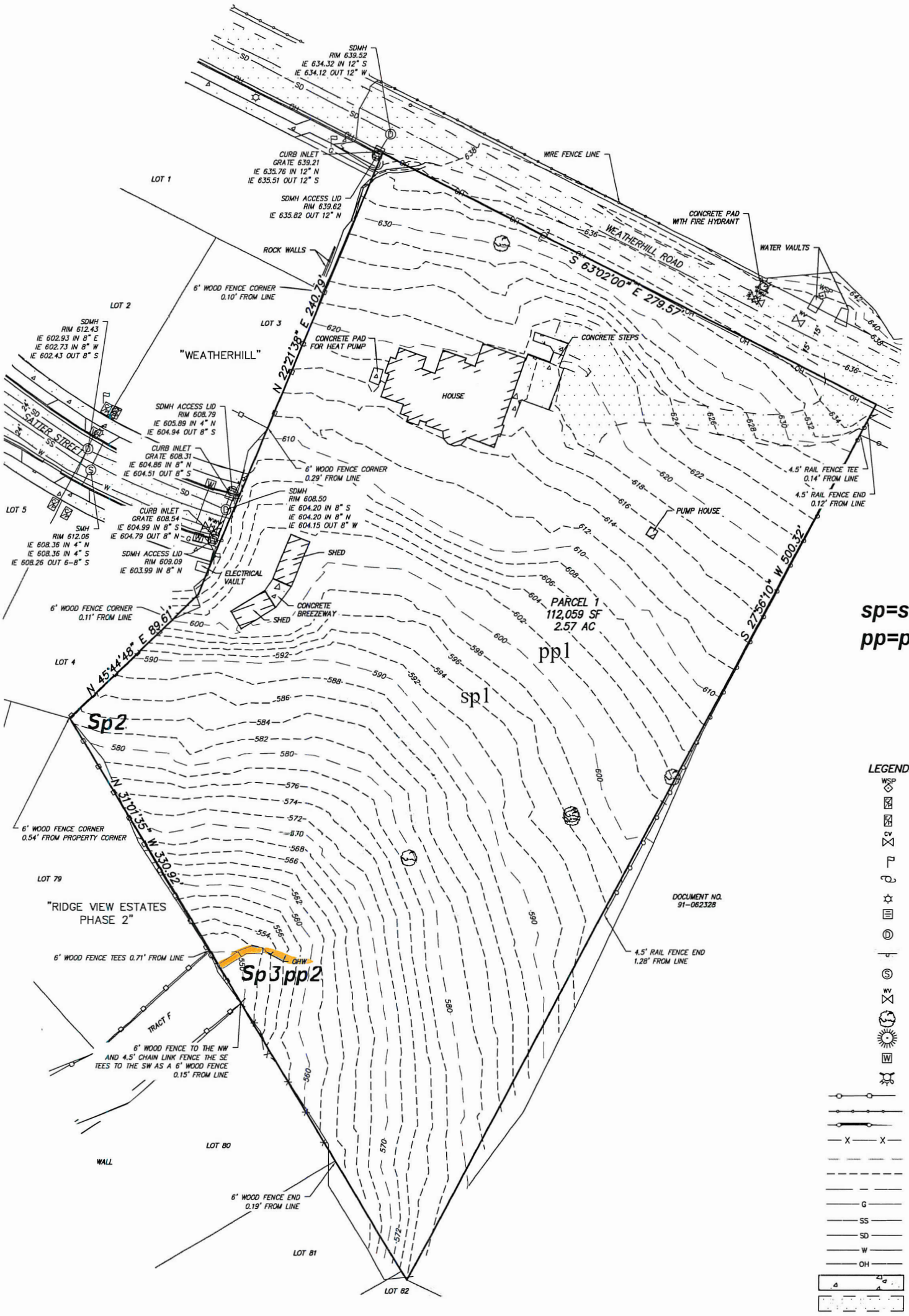


FIGURE 2. TAX MAP
22870 Weatherhill Road
S&A#2637

Schott & Associates
P.O. Box 589
Aurora, OR. 97002
503.678.6007

EXISTING CONDITIONS MAP

OF PORTION OF LOT 23,
"BLAND ACRES" LOCATED IN THE
NW 1/4 OF SECTION 35,
T.2S., R.1E., W.M. CITY OF WEST LINN,
CLACKAMAS COUNTY, OREGON



sp=sample plot
pp=photo point

LEGEND:

- INDICATES WATER STAND PIPE
- INDICATES COMMUNICATION PEDESTAL
- INDICATES ELECTRICAL PANEL
- INDICATES IRRIGATION CONTROL VALVE
- INDICATES GAS MARKER
- INDICATES POWER POLE
- INDICATES STREET LIGHT
- INDICATES CATCH BASIN
- INDICATES STORM MANHOLE (SDMH)
- INDICATES SIGN
- INDICATES SANITARY MANHOLE (SMH)
- INDICATES WATER VALVE
- INDICATES DECIDUOUS TREE
- INDICATES EVERGREEN TREE
- INDICATES WATER METER
- INDICATES FIRE HYDRANT
- INDICATES WOODEN FENCE LINE
- INDICATES WIRE FENCE LINE
- INDICATES RAIL FENCE LINE
- INDICATES CHAIN LINK FENCE LINE
- INDICATES 5 FOOT INTERVAL CONTOUR
- INDICATES 1 FOOT INTERVAL CONTOUR
- INDICATES ROADWAY CENTERLINE
- INDICATES EXISTING GAS
- INDICATES EXISTING SANITARY SEWER
- INDICATES EXISTING STORM SEWER
- INDICATES EXISTING WATER MAIN
- INDICATES OVERHEAD POWER
- INDICATES EXISTING CONCRETE
- INDICATES EXISTING ASPHALT

SURVEY NOTES:

THE DATUM FOR THIS SURVEY IS BASED UPON OREGON REAL-TIME GNSS NETWORK (ORGN). NAVD88.

A TOPCON PS104B, TRIMBLE RS INSTRUMENTS WERE USED TO COMPLETE THIS SURVEY.

BOUNDARIES WERE DRAWN PER PLAT AND MONUMENTS FOUND. NO PROPERTY CORNERS WERE SET IN THIS SURVEY.

NO WARRANTIES ARE MADE AS TO MATTERS OF UNWRITTEN TITLE, SUCH AS ADVERSE POSSESSION, ESTOPPEL, ACQUIESCENCE, ETC.

THE UNDERGROUND UTILITIES AS SHOWN ON THIS MAP HAVE BEEN LOCATED FROM FIELD SURVEY OF ABOVE GROUND STRUCTURES AND AS MARKED BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPROMISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES 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. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS TRACT. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY SURVEYOR.

NO TITLE REPORT WAS SUPPLIED OR USED IN THE PREPARATION OF THIS MAP. THERE MAY EXIST EASEMENTS, CONDITIONS, OR RESTRICTIONS THAT COULD AFFECT THE TITLE OF THIS PROPERTY. NO ATTEMPT HAS BEEN MADE IN THIS SURVEY TO SHOW SUCH MATTERS THAT MAY AFFECT TITLE.

DSL WD # 2018-0636
Approval Issued 12-26-18
Approval Expires 12-26-23

60' 0 30' 60' 120'

SCALE: 1" = 60

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
PH: (503) 746-8812
FAX: (503) 639-9592

OCTOBER 15, 2018

JOB: 463-003