March 28, 2019

Toll Brothers
ATTN: JJ Portlock
4949 Meadows Road; Suite 420
Lake Oswego, OR 97035

SUBJECT: SUB-19-0 application for 25-lot Subdivision at 23190 Bland Circle

Dear Mr. Portlock:

You submitted this application on February 28, 2019. The Planning and Engineering Departments find that this application is **incomplete.** The following items must be addressed:

Engineering:

1. Stormwater Report. Clarification is required regarding references to a 16" diameter 'orifice' when the existing is 2.5".

2. Stormwater Report and narrative. Please remove references to 22870 Weatherhill Road in both the narrative and supplemental documents/reports.

3. Geotechnical Report. This report references a 24-lot subdivision and this application is for a 25-lot subdivision.

Planning:

1. The City's Arborist has concerns regarding lot 10 and buildability. Please show the lot dimensions for buildable area, while meeting setback requirements and avoiding encroachment into the tree protection area.

2. Community Development Code Chapter 28, Willamette and Tualatin River Protection: A narrative addressing approval and submittal criteria for Chapter 28 is required.

3. 48.030.B, 48.030.C, 48.030.D, 48.030.E, 48.030.F, 48.030.G, 48.030.H, and 48.030.I: The narrative must address all sections of 48.030 individually, even if some criteria do not apply to this project.

4. 85.200.A(12): Street Names. Please name the proposed new street and private road tracts. Refer to proposed street names in the narrative and on tentative plan sheets.

5. 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.

6. 92.010.E(1-5): Narrative must address this criteria as it DOES apply to the applicant's proposal.

7. 99.038.E(5) Neighborhood Association Meeting Submittal Requirements: Submitting an audiotape of the meeting is an application requirement.

* Pursuant to CDC 99.035, the Planning Director may require information in addition to that required by a specific chapter in the Community Development Code or may waive a specific requirement for information or a requirement to address a certain approval standards.

Pursuant to ORS 227.178 "If an application for a permit, limited land use decision or zone change is incomplete, the governing body or its designee shall notify the applicant in writing of exactly what information is missing within 30 days of receipt of the application and allow the applicant to submit the missing information. The application shall be deemed complete for the purpose of subsection (1) of this section upon receipt by the governing body or its designee of:

(a) All of the missing information;
(b) Some of the missing information and written notice from the applicant that no other information will be provided; or
(c) Written notice from the applicant that none of the missing information will be provided.

You now have 180 days, through September 24, 2019, to make the application complete by providing the information outlined above. On the 181st day after first being submitted, the application will be considered void if the applicant has been notified of the missing information and has not submitted the information as requested above or a written notice responding to the above options.

Please contact me at 503-742-6057, or by email at jarnold@westlinnoregon.gov if you have any questions or comments.

Sincerely,

Jennifer Arnold

Associate Planner

EMERIO Design

CIVIL ENGINEERS & PLANNERS

DATE: 2-28-2018
UPDATED: 6/21/2019

PROPERTY OWNER: David and Drucilla Sloop
23190 Bland Circle
West Linn, OR 97068

APPLICANT: Toll West Coast, LLC
Attn: JJ Portlock
4949 Meadows Road, Suite 420
Lake Oswego, OR 97035
Ph.: (971) 339-5176
Email: jportlock@tollbrothers.com

CIVIL ENGINEER, PLANNING & SURVEYOR: Emerio Design, LLC
Attn: Steve Miller
6445 SW Fallbrook Pl., Suite 100
Beaverton, OR 97008
(541) 318-7487
E-mail: stevem@emeriodesign.com

REQUEST: Approval of a 25-Lot residential subdivision in the R-7 zone.

SITE LOCATION: 23190 Bland Circle

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

SITE SIZE: 6.52 Acres

LEGAL DESCRIPTION: Tax Map 2S1E35AB, Tax Lot 9100

LIST OF EXHIBITS:

1 – Title Report

2 – Wetland Delineation Report

3 – Detailed Plan Set

4 – Neighborhood Meeting Notice

5 – Arborist Report

6 – Geotechnical Report

7 – Pre-Application Notes

8 - Stormwater Management 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 6.52 – 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 and a pre-application conference (File # PA-18-34) was held with the City to discuss the subdivision of this property on November 15, 2018 by the Applicant.

The subject property is located on the west side of Salamo Road and approximately 188-feet north of Bland Circle. 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 several accessory structures. 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 north, south, east and west are within the West Linn City limits and are zoned R-7. These properties are developed with a range of residential dwellings.

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 twenty-five (25) lots proposed in the subdivision are between 7,010 square feet, and 10,673 square feet, not including Tracts A and B, with an average lot size of 8,203 square feet. As such, all twenty-five (25) 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 twenty-five (25) 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. Nevertheless, the applicant has provided a sight distance evaluation letter for the proposed access to Salamo Road. The site distance evaluation determined that intersection sight distance is met for right-turning traffic from the proposed access and stopping sight distance is adequate for traffic traveling southbound along Salamo Road.

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 Satter St. and/or the proposed new public street, which are both public streets adjacent to the site with a local designation. Lots 9 and 10, as well as Lots 17 and 18, will have access to a private street that connects with the proposed public streets. 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. Access options. 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) Option 1. 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 Options 2 and 3. The proposed design limits curb cuts for access to the new lots proposed within this development. Each lot will take access to either from Satter St. or the proposed new public street, via individual driveways or a private street (i.e. Tracts C and D). 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 has frontage along Salamo Rd., which is designated as a Minor Arterial on the City's Transportation System Plan (TSP). No proposed lots will have direct access to Salamo Road. Instead, the lots will take access from secondary streets (i.e. local), or from a private street located within tracts C and D. The applicant's proposal satisfies the above criterion.

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: Due to the site's frontage along Salamo Rd. there will be a total of three (3) double fronted lots (i.e. Lots 17 – 19) that will be created as part of this subdivision. All proposed double fronted lots will take access from a proposed private street (i.e. Tract C) since Salamo Rd. is designated as a Minor Arterial as required by the above criterion. The applicant's proposal satisfies the above criterion.

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 25 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: Satter Street is currently stubbed at the southwestern boundary of the site. With this proposal the applicant will be extending Satter Street through the site from west to east before stubbing the street at the northern boundary of the site for future extension. Because the proposed development is essentially an "in-fill" development, there are limitations on where the Applicant can provide new street connections to the existing street network.

Because the Applicant needs to rely on the existing established development pattern in the surrounding area in order to develop the subject property, the block length for the site begins at the intersection of Satter St. and De Vries Way. The applicant will be extending Satter St. approximately 120-feet from its current terminus at the southwest corner of the site before turning the street to the north. Satter St. will continue being extended to the north and will intersect with a proposed new local street that will be extended to the east to connect with Salamo Rd. Thus, beginning at the existing Satter St. and De Vries Way intersection, the total block length being created with the proposed subdivision will be approximately 750 +/- feet to connect with Salamo Rd.

With the extension of Satter Street through the site and stubbing at the northern property boundary, it will allow for the future extension of the street through the neighbor's property. When the property to the north 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 Salamo Road.

Lastly, existing development patterns and topographic conditions preclude a comprehensive street network through the site or within close proximity to other developments which could logically provide typical blocks. 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: Even though the site abuts a Minor Arterial street (i.e. Salamo Rd.), the Applicant is not proposing any direct individual access from a single-family dwelling to an arterial street as part of the proposed development. All proposed lots will take access from a local residential street, or from a private street. Because the applicant is proposing alternative access for all proposed lots, as opposed to accessing the adjacent Minor Arterial street, the above criteria do not apply to the applicant's proposal.

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.***

RESPONSE: As noted above, even though the site abuts a Minor Arterial street (i.e. Salamo Rd.), the Applicant is not proposing any direct individual access from a single-family dwelling to an arterial street as part of the proposed development. All proposed lots will take access from a local residential street, or from a private street. Because the applicant is proposing alternative access for all proposed lots, as opposed to accessing the adjacent Minor Arterial street, the above criteria do not apply to the applicant's proposal.

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.

RESPONSE: As noted above, even though the site abuts a Minor Arterial street (i.e. Salamo Rd.), the Applicant is not proposing any direct individual access from a single-family dwelling to an arterial street as part of the proposed development. All proposed lots will take access from a local residential street, or from a private street. Because the applicant is proposing alternative access for all proposed lots, as opposed to accessing the adjacent Minor Arterial street, the above criteria do not apply to the applicant's proposal.

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.

RESPONSE: No more than four (4) single-family homes are proposed to take access from the proposed private streets (i.e. Tracts C and D). All other single-family homes will take access from dedicated residential streets build to full construction code standards. The applicant's proposal satisfies this criterion.

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.***

RESPONSE: The above criteria do not apply to the applicant's proposal because the applicant is not proposing any multi-family dwellings as part of this proposal.

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.

RESPONSE: No on-site maneuvering and/or access drives are being proposed as part of this development proposal, therefore, the above criteria do not apply to the applicant's request.

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.

RESPONSE: As noted above, even though the site abuts a Minor Arterial street (i.e. Salamo Rd.), the Applicant is not proposing any direct individual access from a single-family dwelling to an arterial street as part of the proposed development. All proposed lots will take access from a local residential street, or from a private street. The only access being proposed to the Minor Arterial is a limited access (right-in/right-out) new residential street. Because the applicant is proposing alternative access for all proposed lots, as opposed to accessing the adjacent Minor Arterial street, the above criteria do not apply to the applicant's proposal.

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.

RESPONSE: The above criterion does not apply to the applicant's proposal because no public street connections are being proposed through a multi-family site as part of this development proposal.

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 Satter St., the proposed new local residential street, or via the two (2) proposed private streets. All proposed accesses 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, except for two (2) short private streets (i.e. Tracts C and D). 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. <u>Transportation.</u>

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. Typical average daily trips. 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. Traffic impact analysis requirements.

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.

C. Grading.

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 8) 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 9) 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 any 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 9) 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 a stormwater pond in Tract B for treatment and detention for the public stormwater. Individual LIDA planters will 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 9) 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 immediately adjacent to Salamo Rd. along the sites eastern/southeastern property boundary, and north of Bland Circle. Satter St. is stubbed to the site's southwestern property boundary. Except for Salamo Rd., which is designated as a Minor Arterial, 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.

The street system has been designed to assure an adequate traffic or circulation system with intersection angles, grades, tangents, and curves appropriate for the traffic to be carried on the proposed streets. The proposed street pattern also provides for the continuation of the streets to the north by stubbing the street to allow for the appropriate development of adjoining lands or access thereto.

The applicant's proposal satisfies the above criteria.

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 Salamo Road along the eastern property boundary. Satter Street is stubbed to the site's southwestern property boundary. Satter street is designated as local streets, while Salamo Rd. is designated as a Minor Arterial. No right-of-way dedication is required for Salamo Rd. as it is currently developed to City standards for a Minor Arterial street. Satter Street is a local street with a 52-foot right-of-way. The applicant will extend Satter St. through the site and maintain the existing 52-foot right-of-way as part of the proposed subdivision. 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: Only one (1) new local residential street is proposed with this land use application. The applicant will be extending Satter St., which is stubbed to the site's southwestern property boundary, through the site. In addition, the applicant will be creating a new local residential street running east/west through the site and connecting with Salamo Rd. The proposed new street will match the street width of Satter Street. All streets, whether existing or proposed, will meet the City's 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: The pre-application conference notes do not identify the need for any further improvements along Salamo Road. Satter Street has been designed to comply with all City standards and specification, as well as the proposed new east/west street. A street lighting plan has been submitted as part of the overall plan set (see Sheet 10). All streets, whether proposed or existing, meet the City's design requirements for their classification. The applicant's proposal satisfies the above criteria.

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 twenty-five (25) new homes taking access to the existing surrounding transportation system. Salamo Rd., which is designated as a Minor Arterial street, is adjacent to this proposal and is currently developed to City standards and specifications. No new lots will have direct access to Salamo Rd. as part of the proposed development.

The applicant will be extending a stubbed local street (i.e. Satter St.) through the site, as well as adding a new local street which run east/west through the site and connect with Salamo Road. Satter St. will be stubbed to the site's northern property boundary to allow for its future extension with the development of the adjacent property. The propose new local street will connect with Salamo Rd. and be a right-in, right-out street.

6. <u>Reserve strips.</u> 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. Salamo Rd. is currently developed with a reserve strip and it will not be altered as part of the proposed development. 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 a short new local street east/west through the site to connect with Salamo Rd., no other new streets are proposed. Satter Street will be extended through the site, which will be the continuation of an existing street stub.

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 northern 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: One new intersection is being proposed as part of the Applicant's proposal. The new proposed street will be a short east/west street connecting with Salamo Rd. and will be restricted to right-in/right-out turning movements by the existing reserve strip located in Salamo Rd. The proposed new local street has been laid out to intersect Salamo Rd. with intersect angles as near to right angles as practical. The applicant's proposal satisfies the above criterion.

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 pre-application conference notes do not identify the need for any further improvements along the site's Salamo Road 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: One (1) new street is being proposed as part of this land use application and the Applicant is proposing to name the new street, Dahlia Court. No difficult of unusual spellings are being proposed.

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: As mentioned previously, the property abuts Salamo Rd. along the site's eastern property boundary. Salamo Rd. is designated as a Minor Arterial on the City's TSP. The applicant is proposing a new local street that will intersect with Salamo Rd. and be restricted to right-in/right-out turning movements by the existing reserve strip located in Salamo Rd. The applicant has submitted a sight distance letter from a traffic engineer that supports the applicant's proposal for a right-in/right-out local street intersecting with a Minor Arterial.

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 provide sidewalks along both sides of Satter St. with the extension of the street through the site, as well as along both sides of the new local street running east/west 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: With the extension of Satter St. through the site, as well as the development of the new local street, the applicant is proposing to install a planter strip between the curb and sidewalk providing space for a grassed and/or landscaped area along both sides of the streets as part of the proposed development. No improvements are required area along the sites Salamo Rd. frontage as part of the proposed development.

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: The block patterns in the surrounding area have already established with the existing development patterns. The proposed subdivision is essentially an "in-fill" development and will be taking advantage of the existing development patterns in the surrounding area. As such, the length, width, and shape of blocks have been pre-determined by the existing development patterns in the area.

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: As discussed previously in this narrative, the block pattern in the surrounding area is already established by the existing development pattern. The Applicant has proposed a logical extension of Satter St., which is currently stubbed to the site's southwestern property boundary, through the site to create new blocks. In addition to extending Satter St. through the site and stubbing it at the northern property boundary for its future extension, the applicant will also be providing a new local street that will connect with Salamo Rd. By extending the new local street to Salamo Rd. it will establish a block length of approximately 750 feet. It's physically not possible to create the recommended block size due to existing barriers such as pre-existing development, topography, and natural features. As such, the applicant is requesting an exception to the recommended block size as a result of these barriers.

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: There will be three (3) double frontage lots (i.e. Lots 17 – 19) created as part of the proposed subdivision. However, no lots will have access to Salamo Rd., which is designated as a Minor Arterial street. The double fronted lots will take access from a proposed private street (i.e. Tract C) as required by the above criterion. The Applicant's proposal satisfies the above criterion.

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 does not propose any flag lot as part of the subdivision, therefore, the above criteria do not apply to the Applicant's proposal.

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 Sattter Street, the new proposed local street, or through the private street tracts (i.e. Tracts C and D) 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 Sattter Street, the new proposed local street, or through the private street tracts (i.e. Tracts C and D), 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 stormwater pond located in Tract B. 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 9 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 any necessary utility easements as determined by the City Engineer and they will be 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. Nevertheless, as part of the submitted application materials, the applicant has provided a wetland delineation report prepared by Schott & Associates. An electronic copy of the wetland delineation report has been sent to Oregon Department of State Lands.

Schott & Associates have prepared a detailed narrative responding to Chapter 32 of the CDC and it has been included as part of the overall application materials. Please refer to this report for a complete response.

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 site's Salammo Road street frontage and none are proposed as part of the proposed development. The applicant will install street trees as a component of extending Satter St. through the site, as well as along both sides of the new proposed east/west local street.

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 Satter St. with the extension of the street through the site, as well as along the proposed new east/west local street. All required street lights will provide adequate lighting per current City standards. A photometric plan has been provided for review (see Sheet 10 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: Except for the dedications required for extending Satter St. through the site and for the development of the proposed new east/west local street, no other dedications are required with the Applicant's proposal. All required right-of-way dedications will be done 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 public right-of- way, private street tracts (i.e. Tracts C and D), Water Quality tract (i.e. Tract B), and the tree preservation tract (i.e. Tract A) is 203,114 sq. ft. or 4.66 acres. At 6.4 dwelling units per net acre, the maximum number of dwelling units on this site is 29.82. This proposal is for a 25-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 (Sheets 3 & 4). The trees identified as significant on this site will be retained with the development of the subdivision as required by City code.

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 25-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: With the proposed subdivision the Applicant will be extending Satter St. from the site's southwestern property through the site and stubbing it at the northern boundary of the site for its future extension with the future development of the adjacent parcel. The applicant will also be creating a new east/west local street and it will terminate at the intercepting paving line of Salamo Road. All streets will be improved to meet the City's street standards. The applicant's proposal satisfies the above criterion.

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: The property abuts Salamo Rd. along the site's eastern property boundary. Salamo Rd. is currently built to City standards and the applicant is not proposing any improvements to Salamo Rd. as part of this development proposal. All existing or proposed local streets that will be serving the proposed subdivision have been designed to the City's permanent improvement standards and specification. The Applicant's proposal satisfies the above criterion.

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 Applicant has submitted a detailed grading and erosion control plan (see Sheet 8) showing the location and extent to which grading will take place on-site. The submitted grading plan shows general contour lines, slope ratios, slope stabilization proposals, and the location and height of a retaining wall between the swale and the end of the private drive south of Lot 17.

The Applicant has worked tirelessly with the City's Engineering Staff on the proposed storm detention and treatment facilities to make sure they comply with the West Linn Public Works Design Standards for the improvements of public and private drainage systems. There is an existing public stormwater pond located in proposed Tract B, which the Applicant will be utilizing for the stormwater run-off generated by the proposed subdivision. As part of the submitted application materials, the applicant has submitted a preliminary stormwater report that demonstrates that there will be no adverse off-site impacts, including impacts from increased intensity of runoff downstream or constrictions causing ponding upstream, and that there is sufficient factual data to support the conclusions of the plan. See the submitted preliminary stormwater report for more detail.

No Type IV lands will be impacted by the Applicant's proposed stormwater detention and treatment plan.

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 9 of the plan set that shows the line sizing and location for the proposed sewer lines.

G. <u>Water system</u>. 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 9 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. <u>Sidewalks</u>.

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 both of the proposed local street within the development. 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 Satter St. 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 25-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 25-lot residential subdivision.

EMERIO
Design

CIVIL ENGINEERS & PLANNERS

Stormwater Management Report
Bland Circle Subdivision
25-Lot Subdivision at
23190 Bland Circle
West Linn, Oregon

Emerio Project Number:	0542-001
City of West Linn Permit Numbers:	TBD
Date:	02/11/2019

Prepared For:

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Prepared By:
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6445 SW Fallbrook Pl, Suite 100
Beaverton, Oregon 97008
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(503) 746-8812

Table of Contents:

Project Overview and Description:

Size and location of project site (vicinity map):
The current site is located northwest of the corner of Bland Circle & Salamo Road. One large lot will be divided into 25 lots. The proposed site is 6.52 acres and will encompass roughly 103,100 SF of impervious onsite improvements and 480 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, two outbuildings, and associated driveways.

Watershed Description: The site drainage area presently flows from offsite from the west, east, and north to the existing regional detention pond on the southeast portion of the site. In the post-developed condition, the site impervious flows will be treated onsite at the existing swale before entering the existing pond and discharging offsite. Drainage basin areas are shown in Appendix D(2).

Soil Classification:

The NRCS soil survey of Clackamas County, Oregon classifies the onsite soils as Delena silt loam and Nekia silt loam. 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 modifications to an existing onsite water quality swale to address water quality requirements. The proposed grading will retain the general existing drainage pattern for pervious areas of the site. All impervious surfaces will be collected and routed to discharge into the existing swale and then flow into an existing local stormwater detention pond to meet detention requirements. Three planter boxes will be designed at the time of individual building permits to address the water quality storm event for three lots (16, 17, & 18) that will discharge into the pond and downstream of the swale.

Note that impervious surface (7,072 SF) from the frontage of 22870 Weatherhill Road will be collected by catch basins and connect to storm sewer pipe upstream of the onsite swale. This area will serve as proxy treatment for a shared driveway (3,562 SF) that will not receive treatment do to grading challenges (see basin exhibit in Appendix D(2)).

Water Quality

Water quality will be achieved by means of widening the existing water quality swale to accommodate the impervious area added by this project. The existing swale

currently provides water quality treatment for impervious areas from the adjacent subdivision to the west, Weatherhill Estates.
Onsite stormwater runoff will be collected by catch basins in the proposed street and by laterals to individual proposed lots. The geometry of the modified swale is shown by the following:

Bottom Width	4 Feet
Side Slopes	4:1
Length	150 Feet
Slope	0.84%

As shown in Appendix C(2), the total impervious area draining to the swale is 4.94 acres 215,056 SF). The total impervious area and the swale geometry were entered into a swale geometry spreadsheet (Appendix C(3)). The calculations shown in this exhibit show that the water quality standards meet the residence time of 9 minutes and a depth of 0.49 feet. The water quality depth maximum of 0.50 feet has been approved in conversation with West Linn engineering staff.

Quantity Control/Detention

The existing pond was analyzed for the 5, 10, and 25-year design storms when first designed in 1992. To maintain continuity with the analysis provided by Otak for the original design of the regional pond, this analysis used the same design storm definitions. HydroCAD V.10 was used to model the storm events.

The existing flow control device for the pond is proposed to be modified to allow the flow to be controlled for design storm events via one 16" diameter orifice set at an elevation of 527.9'. This orifice is set in the weir wall of the flow control manhole. The top of the weir wall is proposed to be raised in elevation to 535.68' to allow for the required detention effect and will serve as the overflow in the event of flows greater than the 25-year design storm. Reference appendix C(3) for HydroCAD calculations and results for the existing and proposed site conditions. Note that while the same basin characteristics were entered for the pre-developed condition as will the prior two drainage reports for this regional pond, yet there is a slight discrepancy between the pre-developed flows rates in the original report and this report. This minor difference is due to the different stormwater modeling software used and is negligible.

Return Period	Pre-Developed (from 1992 report) (CFS)	Pre-Developed (HydroCAD Matching Analysis) (CFS)	Post-Developed Pond Discharge (CFS)
5-Year	18.4	18.06	15.22
10-Year	22.8	22.44	16.50
25-Year	28.6	28.10	17.91
100-Year	35.7	35.09	27.40

Note from the table above, this design passes the 5-year through 100-year events. Reference Appendix C(3) for HydroCAD modeling output results.

Analysis:

The following design assumptions were utilized in this design.

1992 Design Storms:	5-year 24-hour storm **= 3.1" in 24 hours**
	10-year 24-hour storm **= 3.5" in 24 hours**
	25-year 24-hour storm **= 4.0" in 24 hours**
*Current Design Storms:	Water quality storm **= 0.83" in 24 hours**
	5-year 24-hour storm **= 3.0" in 24 hours**
	10-year 24-hour storm **= 3.4" in 24 hours**
	25-year 24-hour storm **= 3.9" in 24 hours**

(*1992 design storms used in this report)

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

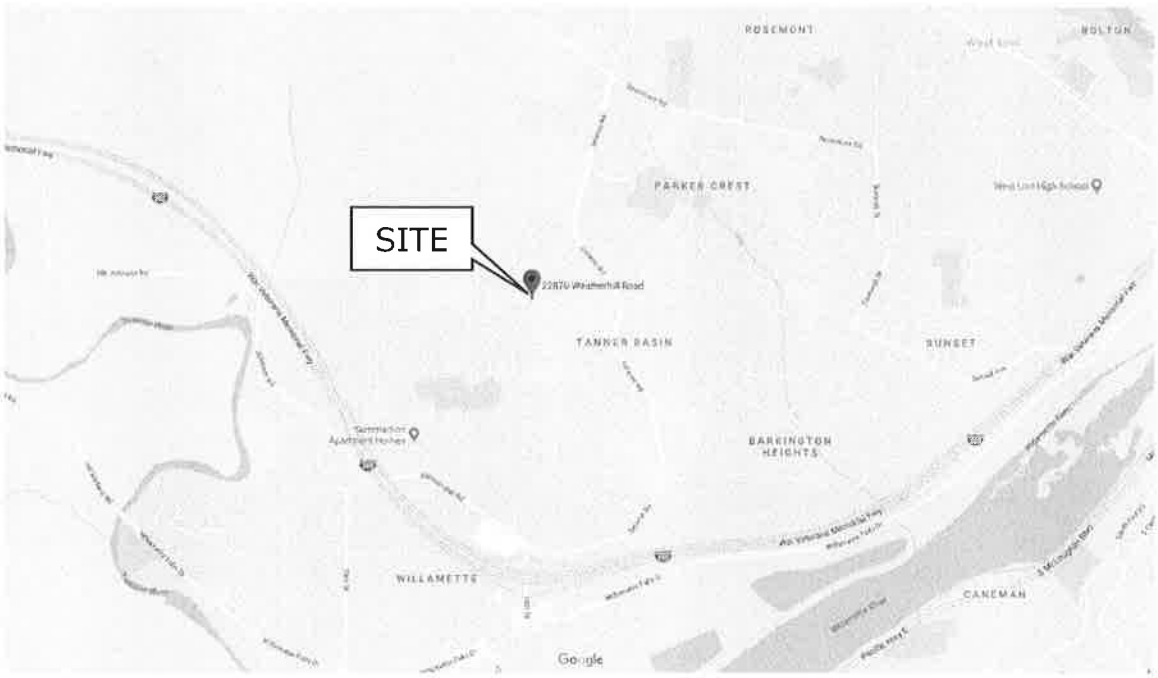
Curve numbers utilized in the design were 98 for impervious areas, 86 for pervious areas.

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.

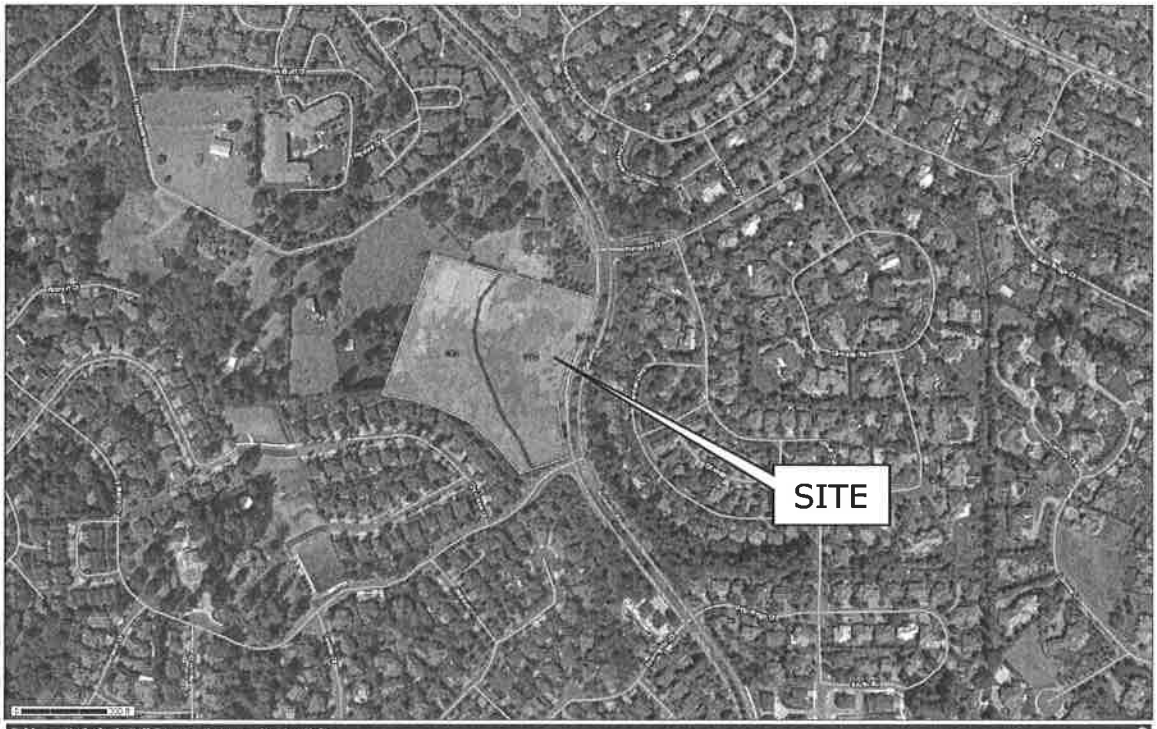
Appendix A:

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
23C	Cornelius silt loam, 8 to 15 percent slopes	C	0.0	0.0%
30C	Delena silt loam, 3 to 12 percent slopes	C/D	4.1	52.0%
64C	Nekia silty clay loam, 8 to 15 percent slopes	C	3.8	47.9%
Totals for Area of Interest			7.9	**100.0%**

SITE

Appendix C:

Basin Area Tabulated Data
Bland Circle

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	Onsite	284,206	6.52	25	62,500	40,649	103,149	181,057
102	Onsite to Swale	276,706	6.35	22	55,000	40,649	95,649	181,057
202	Offsite adjacent (NW)	73,986	1.70	4	10,000	0	10,000	63,986
201	Weatherview Estates to swale only	189,107	4.34	22	55,000	47,335	102,335	86,772
300	Pre-developed Upstream (1992)	3,227,796	74.10	-	0	0	0	3,227,796
301	Post-Developed Upstream (1992)	3,227,796	74.10	-	-	1,588,545	1,588,545	1,639,251

Bland Circle - Modified Existing Offsite Facility
City of Portland Water Quality Grassy Swale

Water Quality Area

Total Area = 4.937 ac
Runoff Coefficient (C) = 0.855

Water Quality Flow

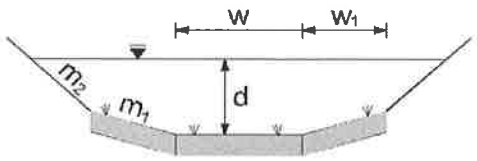
0.19 in/hr for flow rate based facilities

HydroCAD V.10

= 0.855 x 0.19 in x 4.94 (ac)

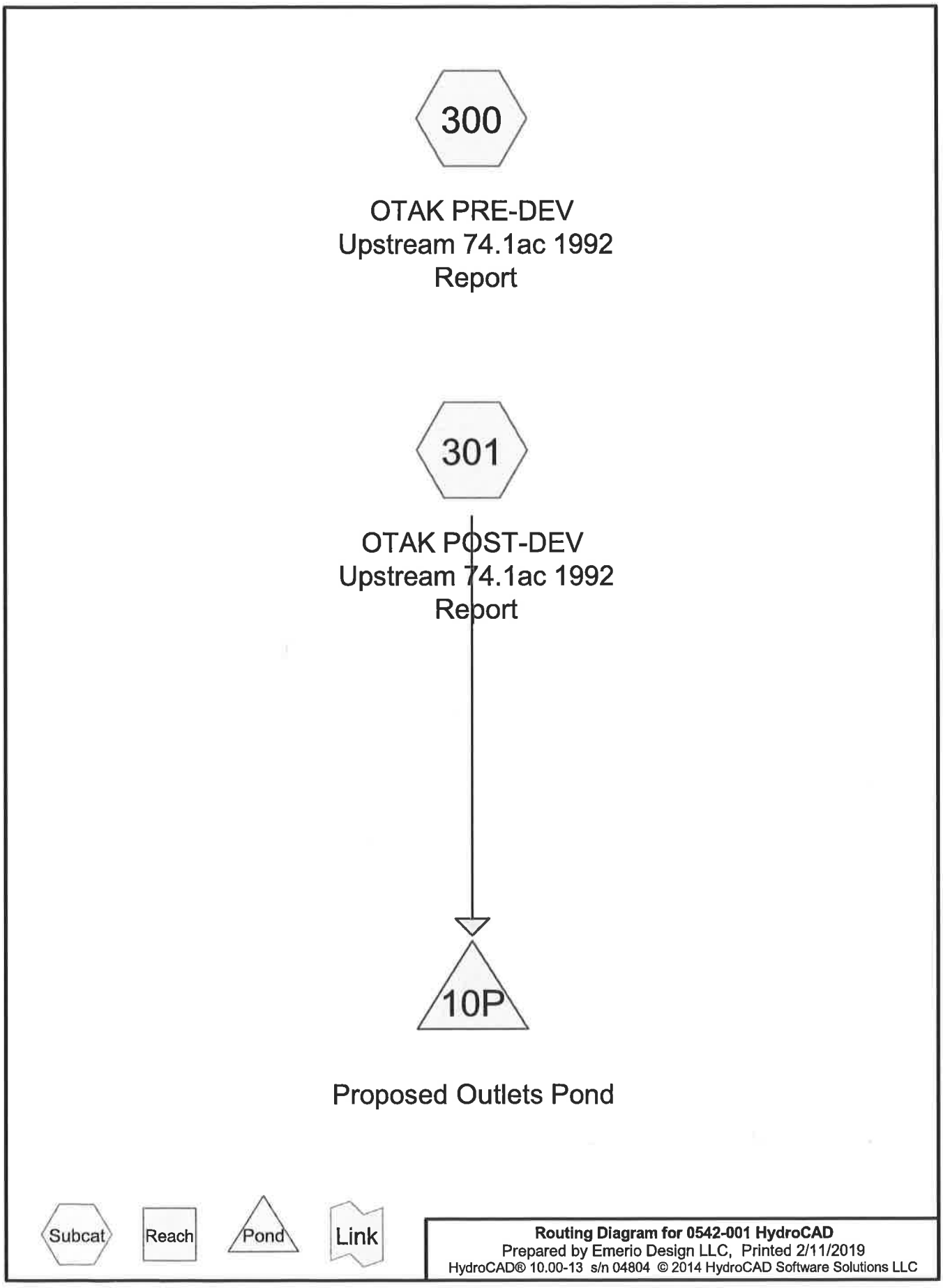
= 0.802 cfs

Biofilter Swale



Water Quality Event

Transverse Properties			X-Sectional Properties		
Q	=	0.802 cfs	w	=	4.0'
s	=	0.84%	w_1	=	2.0'
n	=	0.250	m_1	=	4:1
L	=	150.0 LF	m_2	=	2.5:1
v	=	0.28 fps ✓	d	=	0.49' ✓
t	=	9.04 min ✓			


300
OTAK PRE-DEV
Upstream 74.1ac 1992
Report
301
OTAK POST-DEV
Upstream 74.1ac 1992
Report
10P
Proposed Outlets Pond
Subcat
Reach
Pond
Link
Routing Diagram for 0542-001 HydroCAD
Prepared by Emerio Design LLC, Printed 2/11/2019
HydroCAD® 10.00-13 s/n 04804 © 2014 HydroCAD Software Solutions LLC

Summary for Subcatchment 300: OTAK PRE-DEV Upstream 74.1ac 1992 Report

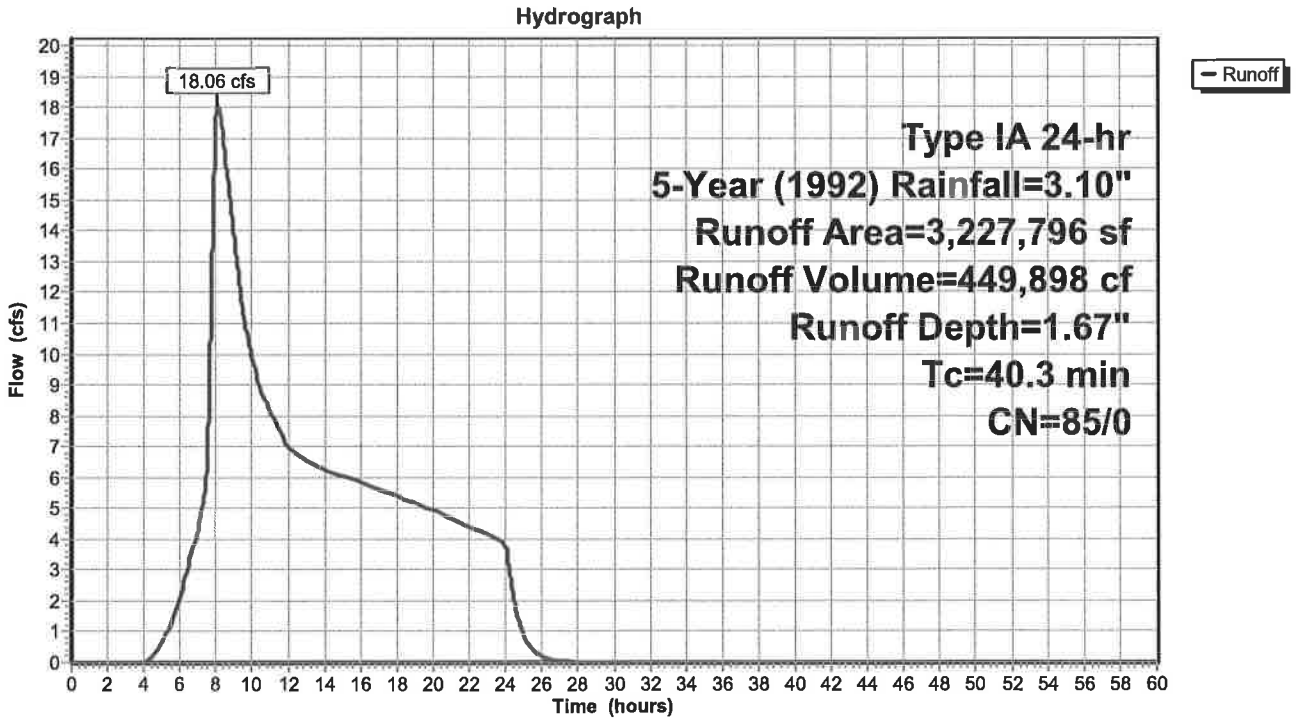
Runoff = 18.06 cfs @ 8.12 hrs, Volume= 449,898 cf, Depth= 1.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-Year (1992) Rainfall=3.10"

	Area (sf)	CN	Description
*	0	98	impervious
*	3,227,796	85	pervious
	3,227,796	85	Weighted Average
	3,227,796	85	100.00% Pervious Area

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

Subcatchment 300: OTAK PRE-DEV Upstream 74.1ac 1992 Report



Summary for Subcatchment 301: OTAK POST-DEV Upstream 74.1ac 1992 Report

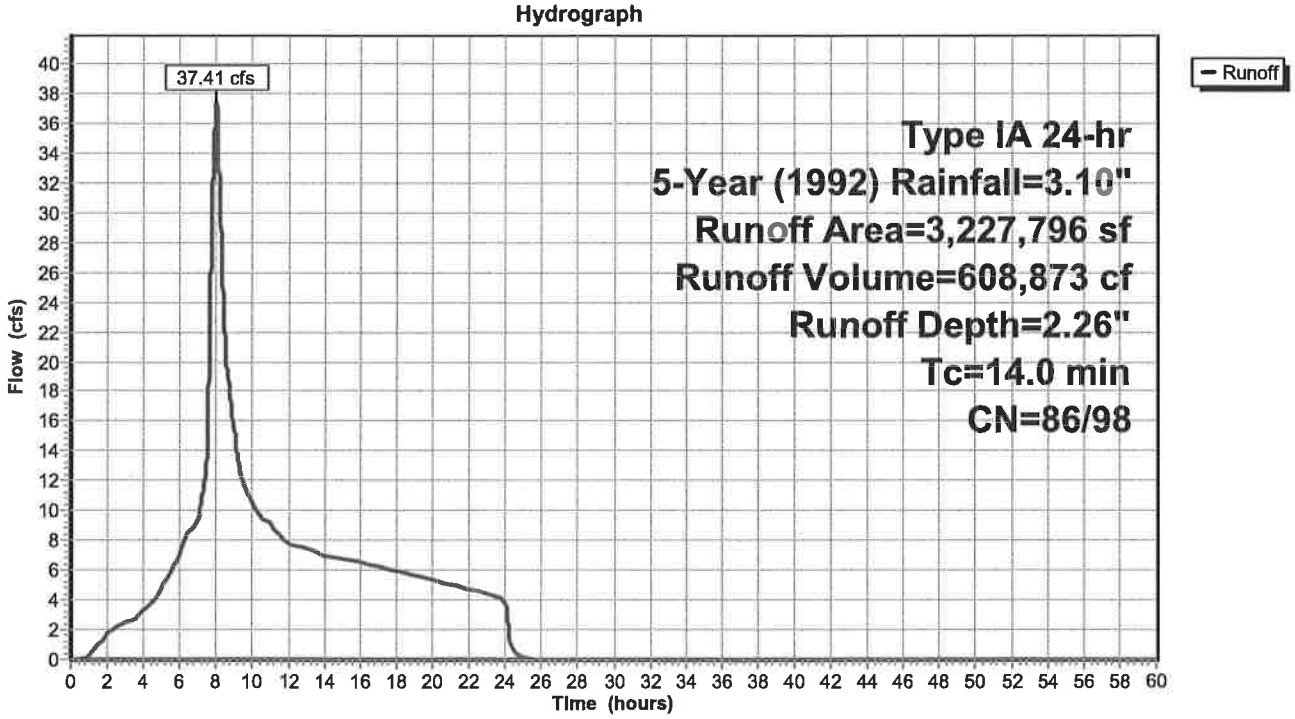
Runoff = 37.41 cfs @ 8.00 hrs, Volume= 608,873 cf, Depth= 2.26"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-Year (1992) Rainfall=3.10"

	Area (sf)	CN	Description
*	1,485,396	98	impervious
*	1,742,400	86	pervious
	3,227,796	92	Weighted Average
	1,742,400	86	53.98% Pervious Area
	1,485,396	98	46.02% Impervious Area

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

Subcatchment 301: OTAK POST-DEV Upstream 74.1ac 1992 Report



Summary for Pond 10P: Proposed Outlets Pond

Inflow Area = 3,227,796 sf, 46.02% Impervious, Inflow Depth = 2.26" for 5-Year (1992) event
Inflow = 37.41 cfs @ 8.00 hrs, Volume= 608,873 cf
Outflow = 15.22 cfs @ 8.99 hrs, Volume= 608,873 cf, Atten= 59%, Lag= 59.8 min
Primary = 15.22 cfs @ 8.99 hrs, Volume= 608,873 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 533.69' @ 8.99 hrs Surf.Area= 0 sf Storage= 81,513 cf

Plug-Flow detention time= 46.2 min calculated for 608,873 cf (100% of inflow)
Center-of-Mass det. time= 46.2 min (769.2 - 723.0)

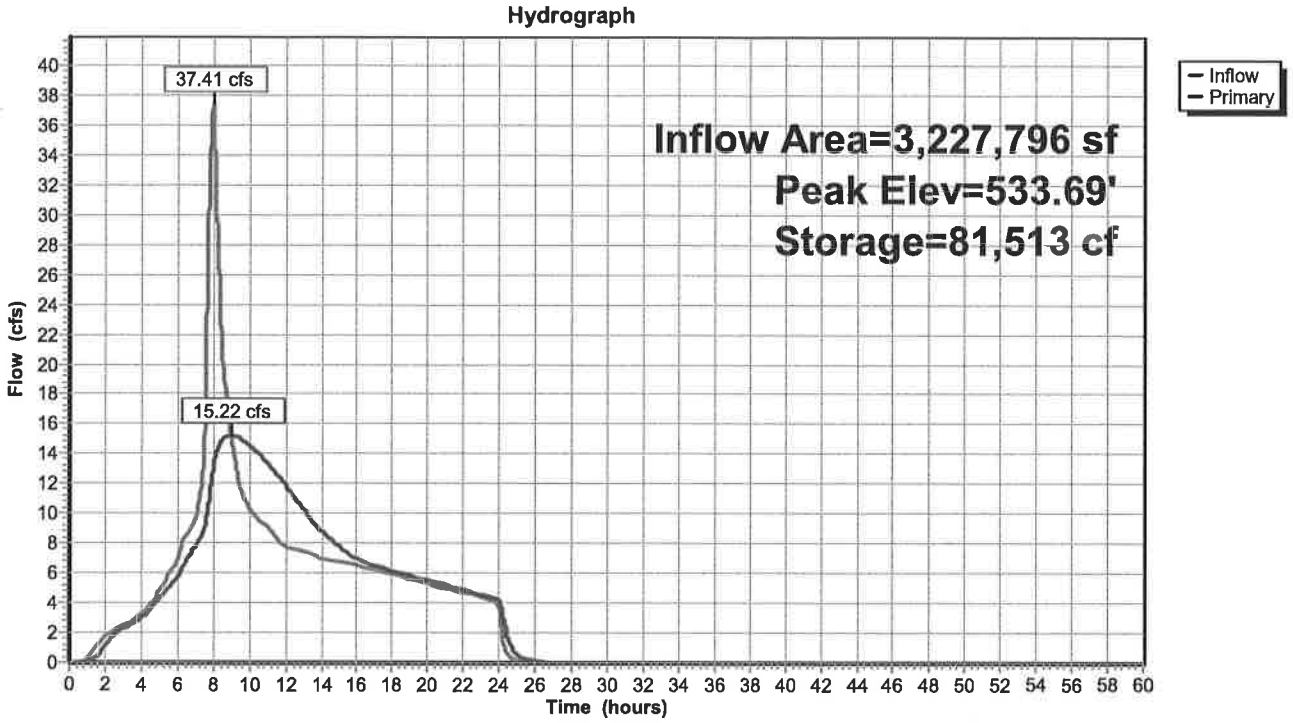
Volume	Invert	Avail.Storage	Storage Description
#1	528.00'	228,868 cf	**Custom Stage Data** Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
528.00	0	0
529.00	5,347	5,347
530.00	9,721	15,068
531.00	13,466	28,534
532.00	16,630	45,164
533.00	19,962	65,126
534.00	23,625	88,751
535.00	27,407	116,158
536.00	31,865	148,023
537.00	37,538	185,561
538.00	43,307	228,868

Device	Routing	Invert	Outlet Devices
#1	Primary	524.00'	**36.0" Round Culvert** L= 94.5' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 524.00' / 519.17' S= 0.0511 '/' Cc= 0.900 n= 0.012, Flow Area= 7.07 sf
#2	Device 1	527.90'	**16.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	535.68'	**5.0' long x 1.70' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s)

Primary OutFlow Max=15.22 cfs @ 8.99 hrs HW=533.69' (Free Discharge)
└─**1=Culvert** (Passes 15.22 cfs of 97.42 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 15.22 cfs @ 10.90 fps)
  └─**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 10P: Proposed Outlets Pond



Summary for Subcatchment 300: OTAK PRE-DEV Upstream 74.1ac 1992 Report

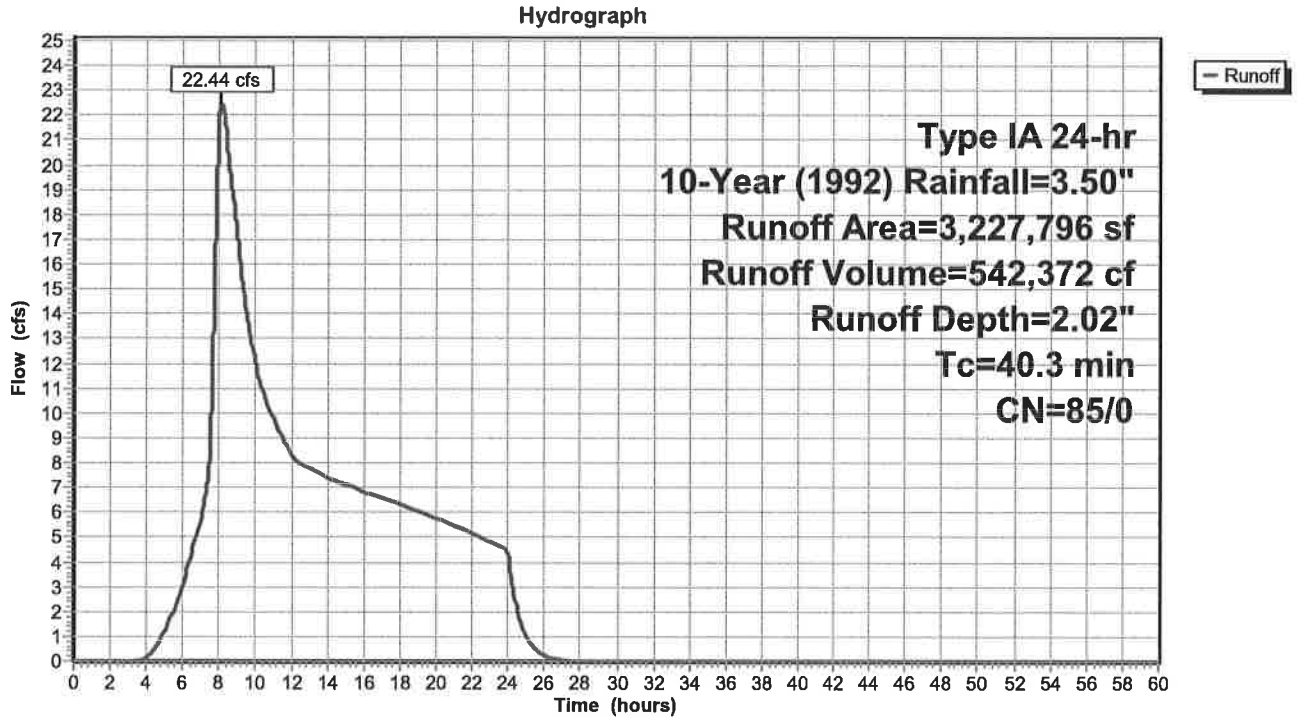
Runoff = 22.44 cfs @ 8.10 hrs, Volume= 542,372 cf, Depth= 2.02"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-Year (1992) Rainfall=3.50"

	Area (sf)	CN	Description
*	0	98	impervious
*	3,227,796	85	pervious
	3,227,796	85	Weighted Average
	3,227,796	85	100.00% Pervious Area

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

Subcatchment 300: OTAK PRE-DEV Upstream 74.1ac 1992 Report



Summary for Subcatchment 301: OTAK POST-DEV Upstream 74.1ac 1992 Report

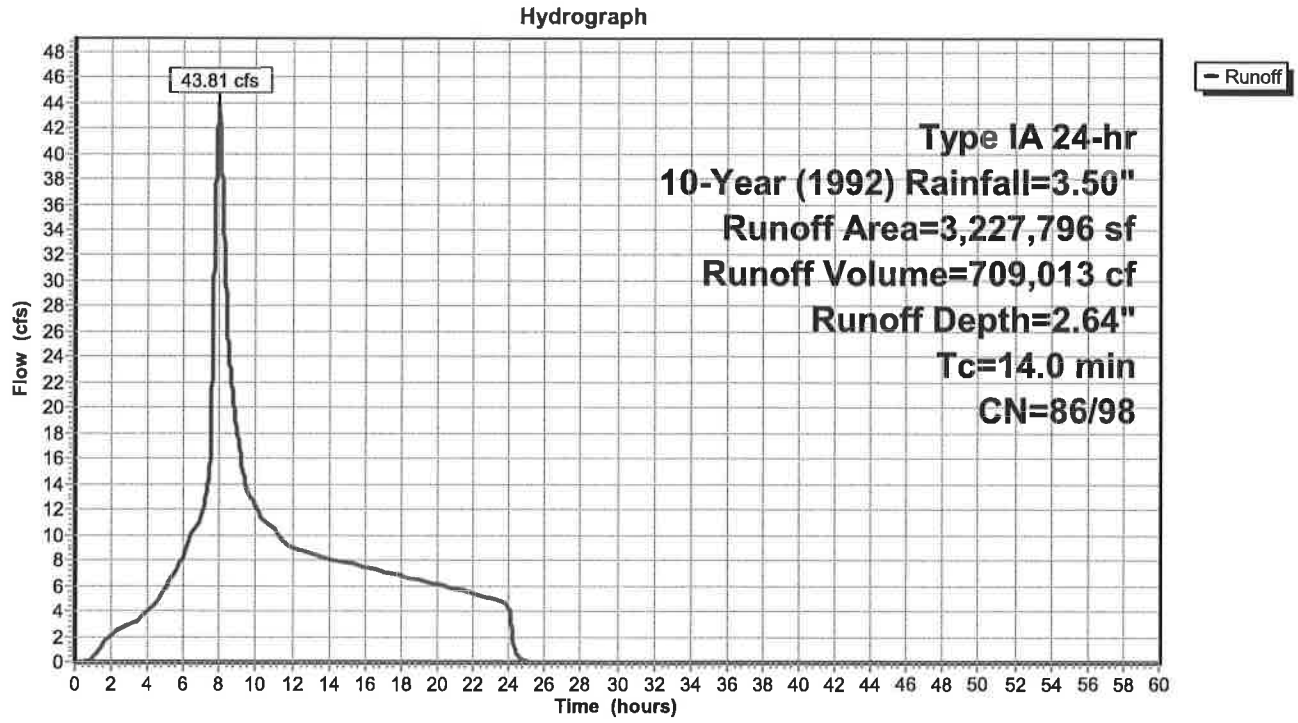
Runoff = 43.81 cfs @ 8.00 hrs, Volume= 709,013 cf, Depth= 2.64"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-Year (1992) Rainfall=3.50"

	Area (sf)	CN	Description
*	1,485,396	98	impervious
*	1,742,400	86	pervious
	3,227,796	92	Weighted Average
	1,742,400	86	53.98% Pervious Area
	1,485,396	98	46.02% Impervious Area

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

Subcatchment 301: OTAK POST-DEV Upstream 74.1ac 1992 Report



Summary for Pond 10P: Proposed Outlets Pond

Inflow Area = 3,227,796 sf, 46.02% Impervious, Inflow Depth = 2.64" for 10-Year (1992) event
Inflow = 43.81 cfs @ 8.00 hrs, Volume= 709,013 cf
Outflow = 16.50 cfs @ 9.11 hrs, Volume= 709,013 cf, Atten= 62%, Lag= 66.6 min
Primary = 16.50 cfs @ 9.11 hrs, Volume= 709,013 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 534.59' @ 9.11 hrs Surf.Area= 0 sf Storage= 104,871 cf

Plug-Flow detention time= 55.7 min calculated for 709,013 cf (100% of inflow)
Center-of-Mass det. time= 55.6 min (773.6 - 718.0)

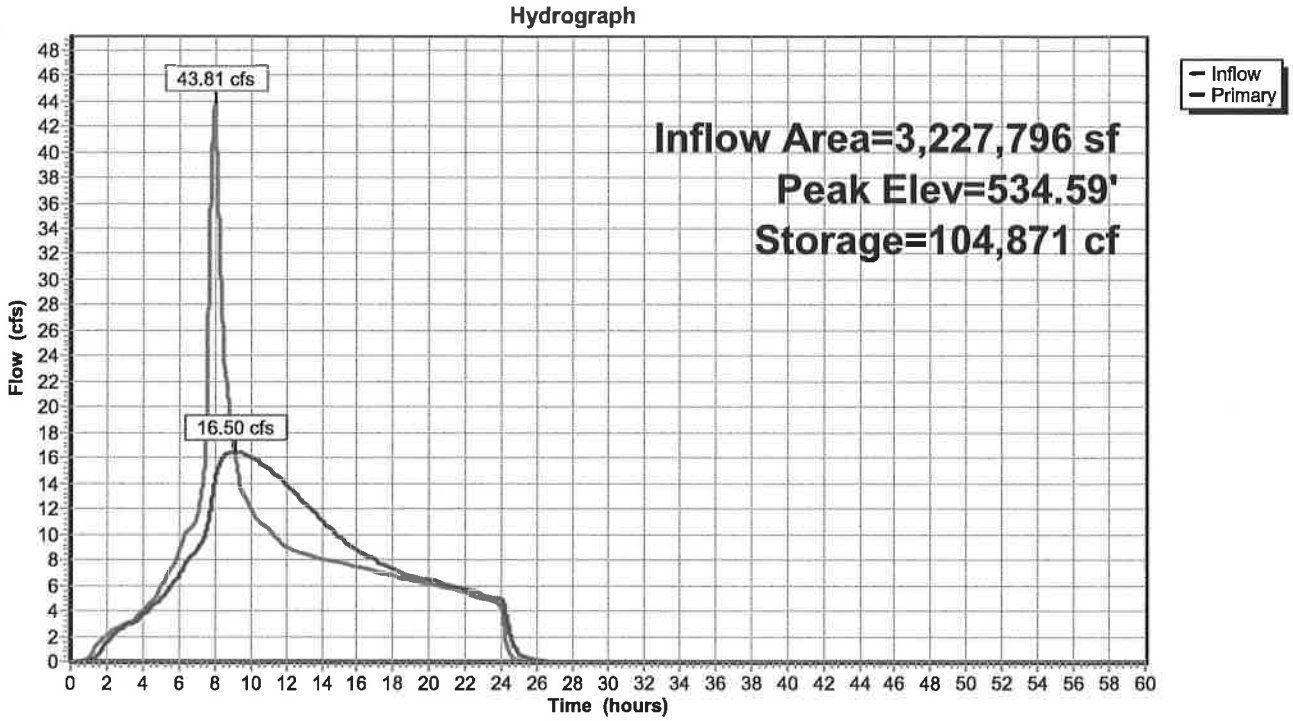
Volume	Invert	Avail.Storage	Storage Description
#1	528.00'	228,868 cf	**Custom Stage Data** Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
528.00	0	0
529.00	5,347	5,347
530.00	9,721	15,068
531.00	13,466	28,534
532.00	16,630	45,164
533.00	19,962	65,126
534.00	23,625	88,751
535.00	27,407	116,158
536.00	31,865	148,023
537.00	37,538	185,561
538.00	43,307	228,868

Device	Routing	Invert	Outlet Devices
#1	Primary	524.00'	**36.0" Round Culvert** L= 94.5' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 524.00' / 519.17' S= 0.0511 '/' Cc= 0.900 n= 0.012, Flow Area= 7.07 sf
#2	Device 1	527.90'	**16.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	535.68'	**5.0' long x 1.70' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s)

Primary OutFlow Max=16.50 cfs @ 9.11 hrs HW=534.59' (Free Discharge)
└─**1=Culvert** (Passes 16.50 cfs of 102.60 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 16.50 cfs @ 11.82 fps)
  └─**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 10P: Proposed Outlets Pond



Summary for Subcatchment 300: OTAK PRE-DEV Upstream 74.1ac 1992 Report

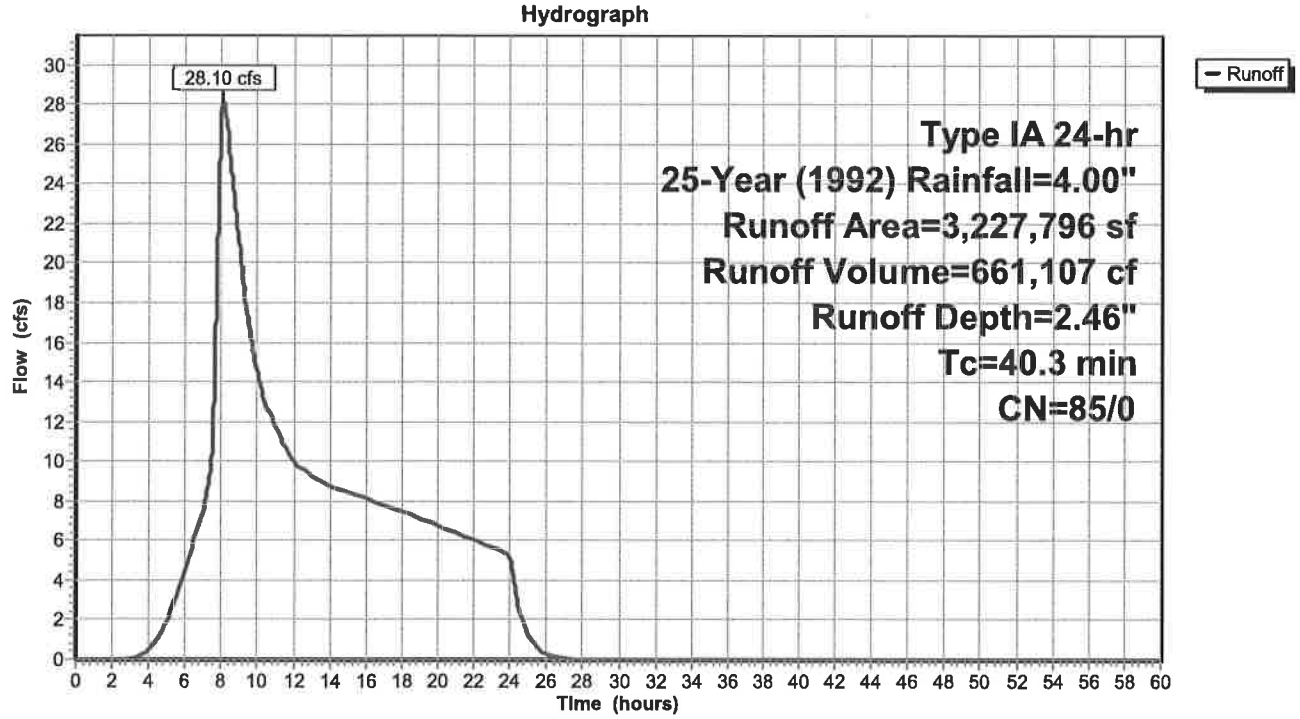
Runoff = 28.10 cfs @ 8.09 hrs, Volume= 661,107 cf, Depth= 2.46"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-Year (1992) Rainfall=4.00"

	Area (sf)	CN	Description
*	0	98	impervious
*	3,227,796	85	pervious
	3,227,796	85	Weighted Average
	3,227,796	85	100.00% Pervious Area

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

Subcatchment 300: OTAK PRE-DEV Upstream 74.1ac 1992 Report



Summary for Subcatchment 301: OTAK POST-DEV Upstream 74.1ac 1992 Report

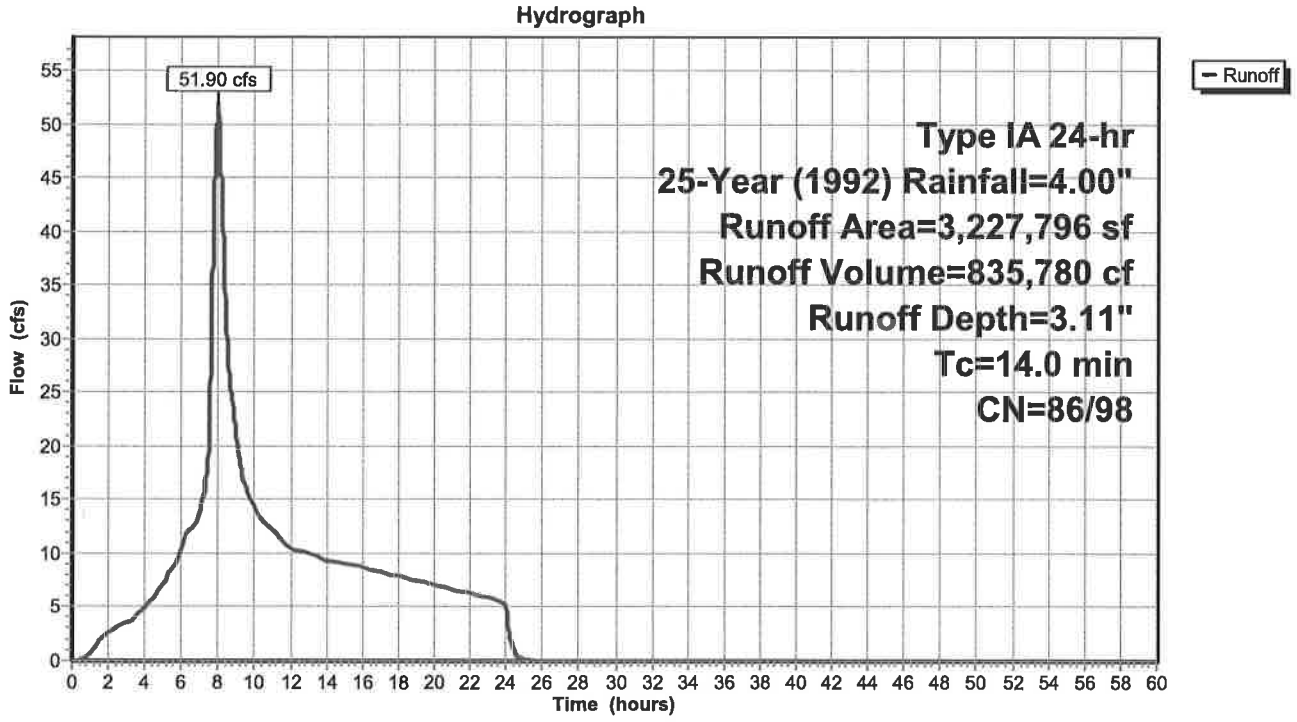
Runoff = 51.90 cfs @ 8.00 hrs, Volume= 835,780 cf, Depth= 3.11"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-Year (1992) Rainfall=4.00"

	Area (sf)	CN	Description
*	1,485,396	98	impervious
*	1,742,400	86	pervious
	3,227,796	92	Weighted Average
	1,742,400	86	53.98% Pervious Area
	1,485,396	98	46.02% Impervious Area

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

Subcatchment 301: OTAK POST-DEV Upstream 74.1ac 1992 Report



Summary for Pond 10P: Proposed Outlets Pond

Inflow Area = 3,227,796 sf, 46.02% Impervious, Inflow Depth = 3.11" for 25-Year (1992) event
Inflow = 51.90 cfs @ 8.00 hrs, Volume= 835,780 cf
Outflow = 17.91 cfs @ 9.24 hrs, Volume= 835,780 cf, Atten= 65%, Lag= 74.8 min
Primary = 17.91 cfs @ 9.24 hrs, Volume= 835,780 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 535.67' @ 9.24 hrs Surf.Area= 0 sf Storage= 137,376 cf

Plug-Flow detention time= 69.2 min calculated for 835,641 cf (100% of inflow)
Center-of-Mass det. time= 69.2 min (781.9 - 712.7)

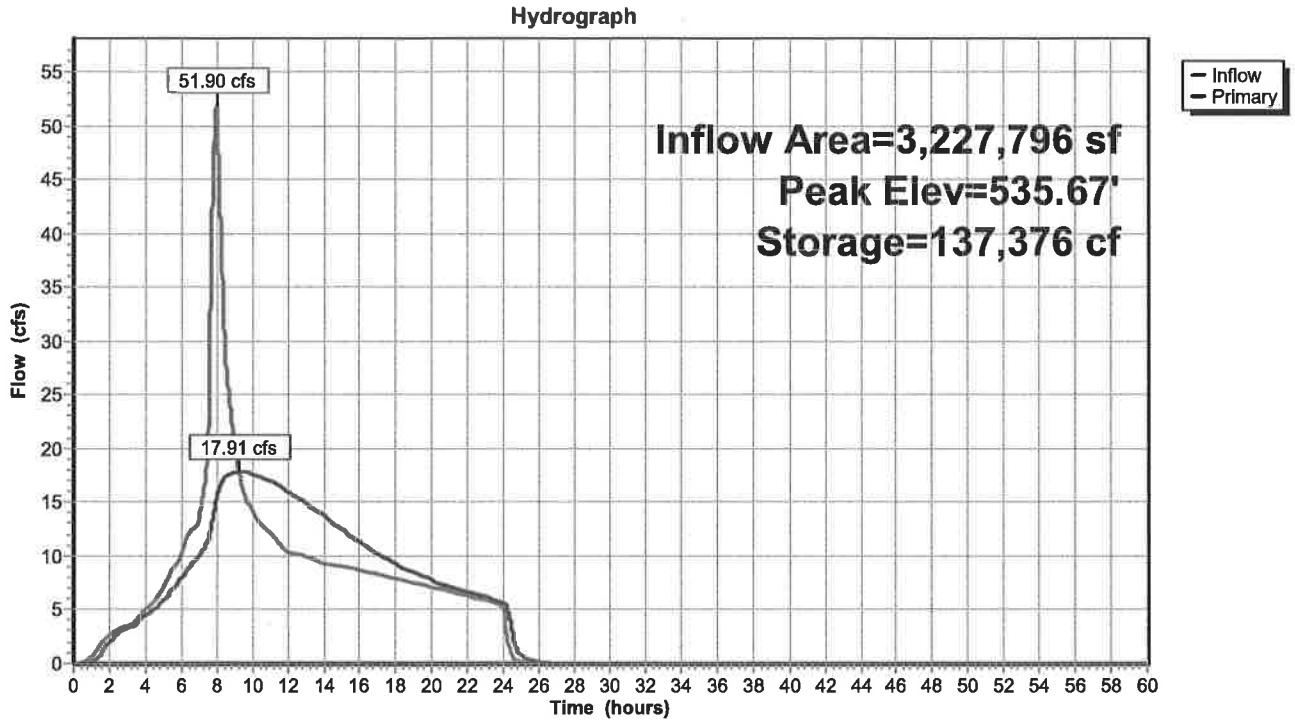
Volume	Invert	Avail.Storage	Storage Description
#1	528.00'	228,868 cf	**Custom Stage Data** Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
528.00	0	0
529.00	5,347	5,347
530.00	9,721	15,068
531.00	13,466	28,534
532.00	16,630	45,164
533.00	19,962	65,126
534.00	23,625	88,751
535.00	27,407	116,158
536.00	31,865	148,023
537.00	37,538	185,561
538.00	43,307	228,868

Device	Routing	Invert	Outlet Devices
#1	Primary	524.00'	**36.0" Round Culvert** L= 94.5' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 524.00' / 519.17' S= 0.0511 '/' Cc= 0.900 n= 0.012, Flow Area= 7.07 sf
#2	Device 1	527.90'	**16.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	535.68'	**5.0' long x 1.70' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s)

Primary OutFlow Max=17.91 cfs @ 9.24 hrs HW=535.67' (Free Discharge)
↑—**1=Culvert** (Passes 17.91 cfs of 108.52 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 17.91 cfs @ 12.83 fps)
—**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 10P: Proposed Outlets Pond



Summary for Subcatchment 300: OTAK PRE-DEV Upstream 74.1ac 1992 Report

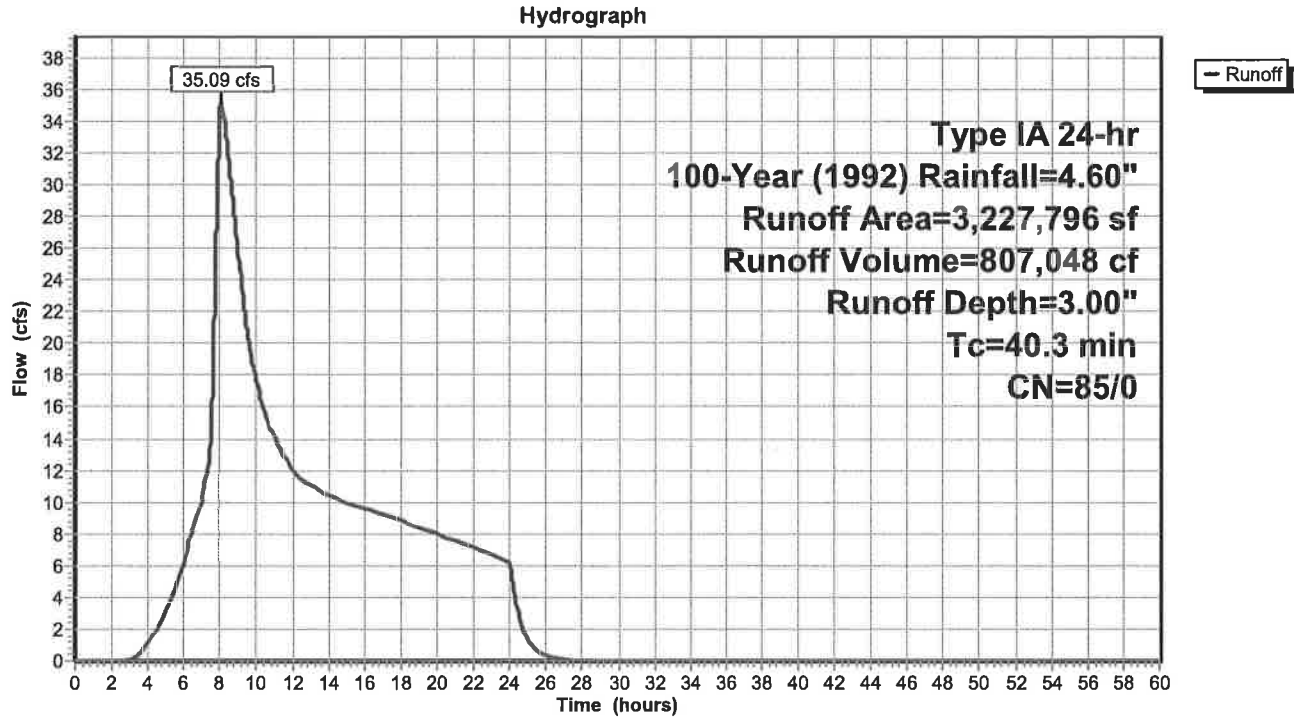
Runoff = 35.09 cfs @ 8.07 hrs, Volume= 807,048 cf, Depth= 3.00"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-Year (1992) Rainfall=4.60"

	Area (sf)	CN	Description
*	0	98	impervious
*	3,227,796	85	pervious
	3,227,796	85	Weighted Average
	3,227,796	85	100.00% Pervious Area

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

Subcatchment 300: OTAK PRE-DEV Upstream 74.1ac 1992 Report



Summary for Subcatchment 301: OTAK POST-DEV Upstream 74.1ac 1992 Report

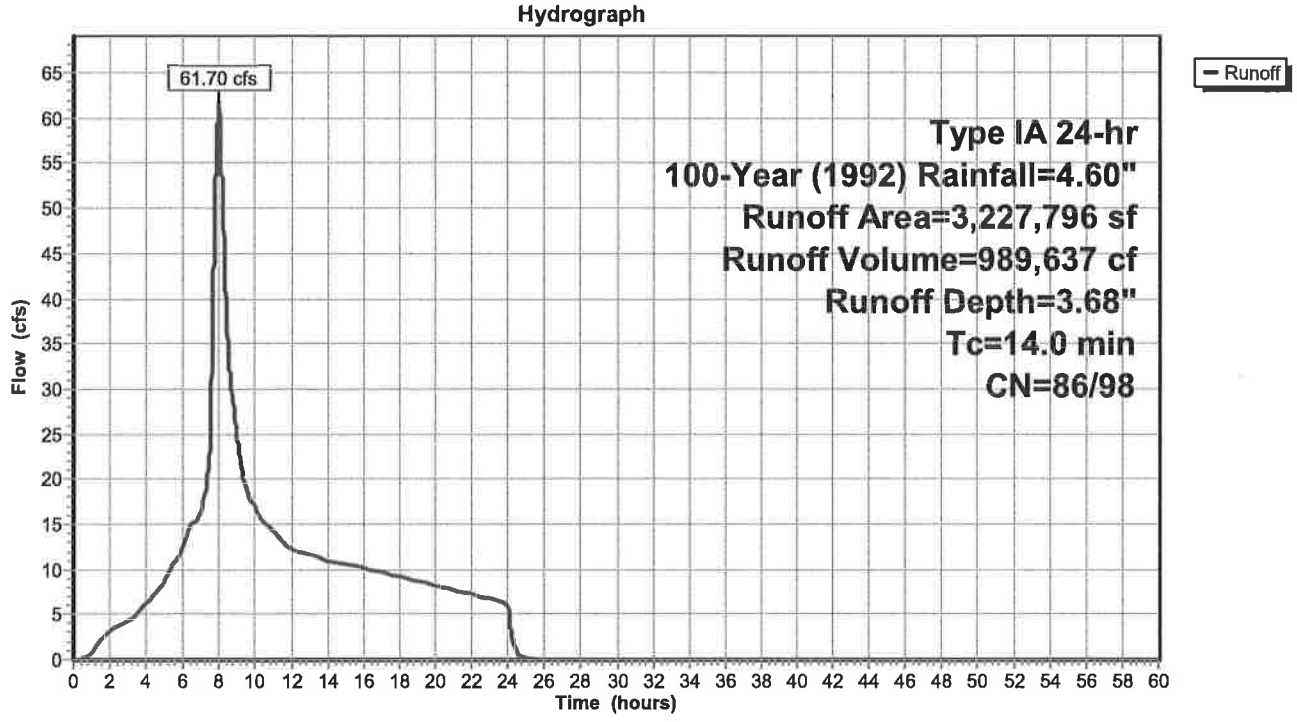
Runoff = 61.70 cfs @ 8.00 hrs, Volume= 989,637 cf, Depth= 3.68"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-Year (1992) Rainfall=4.60"

	Area (sf)	CN	Description
*	1,485,396	98	impervious
*	1,742,400	86	pervious
	3,227,796	92	Weighted Average
	1,742,400	86	53.98% Pervious Area
	1,485,396	98	46.02% Impervious Area

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

Subcatchment 301: OTAK POST-DEV Upstream 74.1ac 1992 Report



Summary for Pond 10P: Proposed Outlets Pond

Inflow Area = 3,227,796 sf, 46.02% Impervious, Inflow Depth = 3.68" for 100-Year (1992) event
Inflow = 61.70 cfs @ 8.00 hrs, Volume= 989,637 cf
Outflow = 27.40 cfs @ 8.81 hrs, Volume= 989,637 cf, Atten= 56%, Lag= 48.9 min
Primary = 27.40 cfs @ 8.81 hrs, Volume= 989,637 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 536.33' @ 8.81 hrs Surf.Area= 0 sf Storage= 160,567 cf

Plug-Flow detention time= 76.2 min calculated for 989,472 cf (100% of inflow)
Center-of-Mass det. time= 76.2 min (783.4 - 707.2)

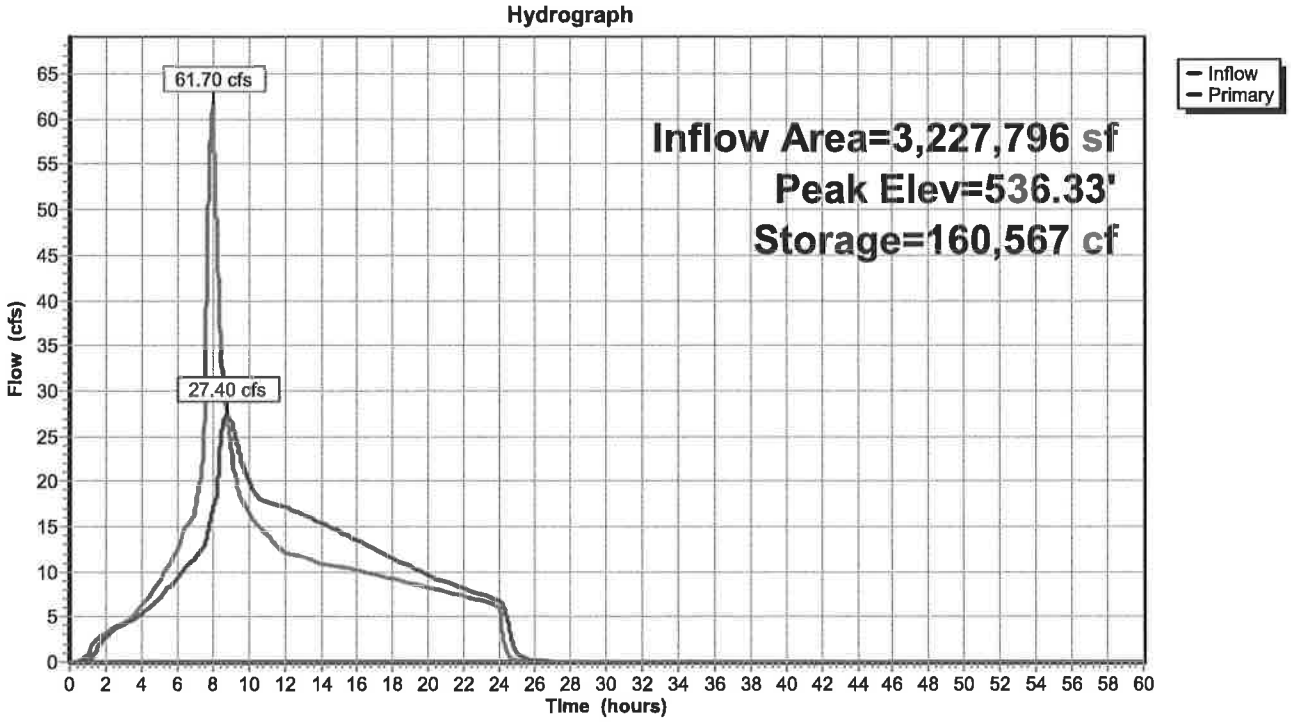
Volume	Invert	Avail.Storage	Storage Description
#1	528.00'	228,868 cf	**Custom Stage Data** Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
528.00	0	0
529.00	5,347	5,347
530.00	9,721	15,068
531.00	13,466	28,534
532.00	16,630	45,164
533.00	19,962	65,126
534.00	23,625	88,751
535.00	27,407	116,158
536.00	31,865	148,023
537.00	37,538	185,561
538.00	43,307	228,868

Device	Routing	Invert	Outlet Devices
#1	Primary	524.00'	**36.0" Round Culvert** L= 94.5' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 524.00' / 519.17' S= 0.0511 '/' Cc= 0.900 n= 0.012, Flow Area= 7.07 sf
#2	Device 1	527.90'	**16.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	535.68'	**5.0' long x 1.70' rise Sharp-Crested Rectangular Weir** 0 End Contraction(s)

Primary OutFlow Max=27.39 cfs @ 8.81 hrs HW=536.33' (Free Discharge)
└─**1=Culvert** (Passes 27.39 cfs of 112.03 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 18.74 cfs @ 13.42 fps)
  └─**3=Sharp-Crested Rectangular Weir** (Weir Controls 8.65 cfs @ 2.64 fps)

Pond 10P: Proposed Outlets Pond



Appendix D:

SHEET 2 of 9

EMERIO Design
8445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
FAX: (503) 639-9592
www.emeriodesign.com

REVISIONS		
NO.	DATE	DESCRIPTION
0	02/19	PLANNING 1ST SUBMITTAL
1	"	"

PRE-DEVELOPED STORM WATER BASINS

23190 BLAND CIRCLE SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

FILE P: \0842-001 23190 S Bland Circle\docs\civil\storm\CAD\0842-00Basins, Layout: PRE-DEVELOPED BASINS, Plot Date: 2/11/2019 4:24 PM, By: Josh Ayers

SHEET 2 OF 2	EMERIO Design 8445 SW FALLBROOK PLACE, SUITE 100 BEAVERTON, OREGON 97008 TEL: (503) 748-8812 FAX: (503) 839-9582 www.emeriodesign.com	REVISIONS NO. DATE DESCRIPTION 0 02/19 PLANNING 1ST SUBMITTAL 1 - -	POST-DEVELOPED STORM WATER BASINS	23190 BLAND CIRCLE SUBDIVISION TAX MAP 2S1E 35AB TAX LOT 9100 CITY OF WEST LINN, OREGON

FILE: P:\0542-001 23190 S Bland Circle\plans\civil\storm\CAD\0542-SDTS.dwg, Layout: POST-DEVELOPED BASINS, Plot Date: 2/27/2019 4:18 PM, by: Josh Ayers

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 and Authorization Information

☒ Applicant ☐ Owner Name, Firm and Address:
Toll Brothers, Inc
JJ Portlock
4949 Meadows Road, Suite 420
Lake Oswego, Oregon 97035

Business phone #
Mobile phone # (optional)
E-mail: jportlock@tollbrothers.com

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

Business phone #
Mobile phone # (optional)
E-mail:

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: JJ Portlock **Signature:**
Date: 1/9/19 Special instructions regarding site access:

Project and Site Information

Project Name: 23190 Bland Circle

Latitude: 45.358 Longitude: -122.647
decimal degree - centroid of site or start & end points of linear project

Proposed Use:
Development

Tax Map # 35AB 2S 1E
Tax Lot(s) 9100

Tax Map #
Tax Lot(s)

Project Street Address (or other descriptive location):
23190 Bland Circle

Township 2 S Range 1E Section 35 QQ AB
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/Carl Cramer
PO Box 589
Aurora, OR 97002

Phone # (503) 678-6007
Mobile phone # (if applicable)
E-mail: carlc@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: Carl Cramer Date: 1.15.18

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

Wetland/Waters Present? ☐ Yes ☒ No Study Area size: 6.5AC Total Wetland Acreage: 0.0000

Check Applicable 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 TA1-1

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

23190 Bland Circle
West Linn, Oregon

Prepared for

Toll Brothers
4949 Meadows Road, Suite 420
Lake Oswego, Oregon 97035

Prepared by

Cari L Cramer
Of
Schott and Associates, Inc.

Date:

January 2019

Project # 2649

TABLE OF CONTENTS

LIST OF FIGURES

(A) Landscape Setting and Land Use

The 6.5 acre subject property is located at 23190 Bland Circle in West Linn, Clackamas County, Oregon (T2S R1E Sec.35AB TL9100).

The rectangular shaped subject property has a house located in the southwest corner entered from a driveway extending north from Bland Circle to the south. A house, horse stable/barn and an associated outbuilding are located at the north end of the property with driveway access off of Salamo Drive to the east. The site topography is gently south sloping. The northern half of the property is an open area containing the horse stable/barn, open horse arena, grass fields and large garden areas. In the southwest portion of the property the house is located near the west property boundary and surrounded by a maintained landscape of lawn and woody species. Beyond the living area to the east and south is a forested area with a tree canopy consisting of Douglas fir *(Pseudotsuga menziesii*) and bigleaf maple (*Acer macrophyllum*). The understory is open and consists of nonnative grasses and forbs with some patches of Himalayan blackberry (*Rubus armeniacus*) and scattered English hawthorn (*Crataegus monogyna*), beaked hazelnut *(Corylus cornuta*), common snowberry (*Symphoricarpos albus*) and thimbleberry (*Rubus parviflorus*). The southeast portion of the property is fenced on all sides and is an open field used for horse grazing. Vegetation mainly consists of grasses and blackberry with scattered young Douglas fir trees and western red cedars (*Thuja plicata*). In the southeast corner, at the southern property boundary, is a U-shaped water quality swale that is connected to a water detention pond located offsite directly south. Per the City of West Linn, the water detention facility is in a Detention Easement.
The surrounding area is residential.

(B) Site Alterations

There is a house and one barn on the property and two entry driveways. The northern half of the property has vegetable gardens, open horse arena and large grass areas. The southeast portion of the property is fenced and used for a horse pasture. A water quality swale is located at the southern property boundary near the east property boundary. Per Google Earth Photographs, construction of the residence and the water detention facility began in 1994. In 2001Aerial photographs show the house, barn and the water detention facility construction was completed.

(C) Precipitation Data and Analysis

The site was visited on October 3, 2018. Precipitation was recorded at 0.00 inches by the West Linn weather station on that day (accuweather.com) as well as on the 1st and 2nd days of October. Total precipitation recorded in the two weeks prior to the site visit was 0.18 inches. Precipitation for the month of September was 0.66 inches, which was 36% of average and below WETS range. Precipitation for July and August were below normal range at 0% and 7% of average respectively. June precipitation was within normal range

at 66% of average. May was below normal 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 September 30, 2018 a total of 36.58" of precipitation was recorded. This is 80% 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	9
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	0.66	1.85	0.94-2.20	36
Water Year	36.58	45.99		80%

(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. Previous site information was requested from DSL, but none was available.

Schott and Associates walked the subject property to assess the presence or absence of onsite wetlands and waters October 3, 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. Sample plots 1, 5 and 6 were taken in lower areas that were caused by horses grazing the field. Sample plots 1 and 6 met vegetation criteria but sp5 did not.

Soils were a 10YR3/2 or 3/3 and did not meet the hydric soil indicators in any of the sample plots and no hydrology was observed.

One water quality facility was delineated onsite that drained to a City water detention facility. A sample plot (3) was taken in the swale that was more like a u-shaped ditch approximately 3' wide. Vegetation met criterion, but soils were a 10YR2/1 without redoximorphic features. Hydrology criterion was met as surface saturation was observed.

Sample plots 2 and 4 were taken in upland plots that were higher in elevation. Vegetation criterion met but soils were a 10YR 3/2 or 3/3 without redoximorphic features.

The WRA map and the LWI mapped a wetland south of the subject property. The wetland showed extending onto the site just across the southern property line. Salamo Creek was mapped through the wetland, continuing north beyond the wetland halfway across the subject property. The mapped wetland feature is the City's water detention facility and does not meet wetland criteria.

Onsite findings indicated a water detention swale at the southern property boundary connecting to a water detention pond offsite to the south. Salamo Creek was not observed on the property.

(F) Deviation from LWI or NWI

The Local Wetland Inventory (LWI) for the City of West Linn mapped a wetland and drainage within the southern portion of the property near the east property line. The drainage directed north beyond the wetland halfway up the property.

There proved to be no drainage on the site. There was a water quality facility, which was misidentified as a natural drainage. No wetlands were found onsite. The water quality swale was observed in the location of the mapped wetland. A sample plot taken in the bottom of the swale did not have hydric soils.

(G) Mapping Method

The sample plots and water quality swale were flagged by Schott and Associates and surveyed by Emerio Design Professional Land Surveyor (PLS).

(H) Additional Information

As part of the construction for an offsite development called Weatherhill Estates Subdivision, a water detention facility was constructed partially on tax lot 9100 and two additional tax lots to the south, TL 9200 and 9300. The onsite portion was a water quality swale that connected to the offsite water quality pond, all part of a water detention facility

permitted by the City of West Linn in September of 2015 and placed in a detention Easement per Document no. 95-004520.

Additionally, Record Drawings were done December 22, 2016 of the final construction and submitted to the City of West Linn.

(I) Results and Conclusions

Based on soil, vegetation and hydrology data taken in the field no wetlands were found onsite. One small water quality swale was found onsite at the southeast property line. The water quality swale connected to an offsite water detention pond to the south.

The LWI mapped a wetland and drainage extending north from the mapped wetland in the southeast portion of the property. Onsite findings indicated there were no wetlands located onsite, but a water quality swale was observed where the LWI mapped a wetland. The mapped drainage was not found.onsite.

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

The soil survey map for Clackamas County mapped Nekia silty clay loam 8 to 15% slope on the approximate west half of the property. Delena silt loam at 3 to12% slopes was mapped on the approximate east half of the property. Nekia silty clay loam is not considered hydric, but Delena silt loam is considered hydric..

The topographic map showed the property south 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

oogle Maps

FIGURE 1. SITE LOCATION MAP
Bland Circle
S&A# 2649

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

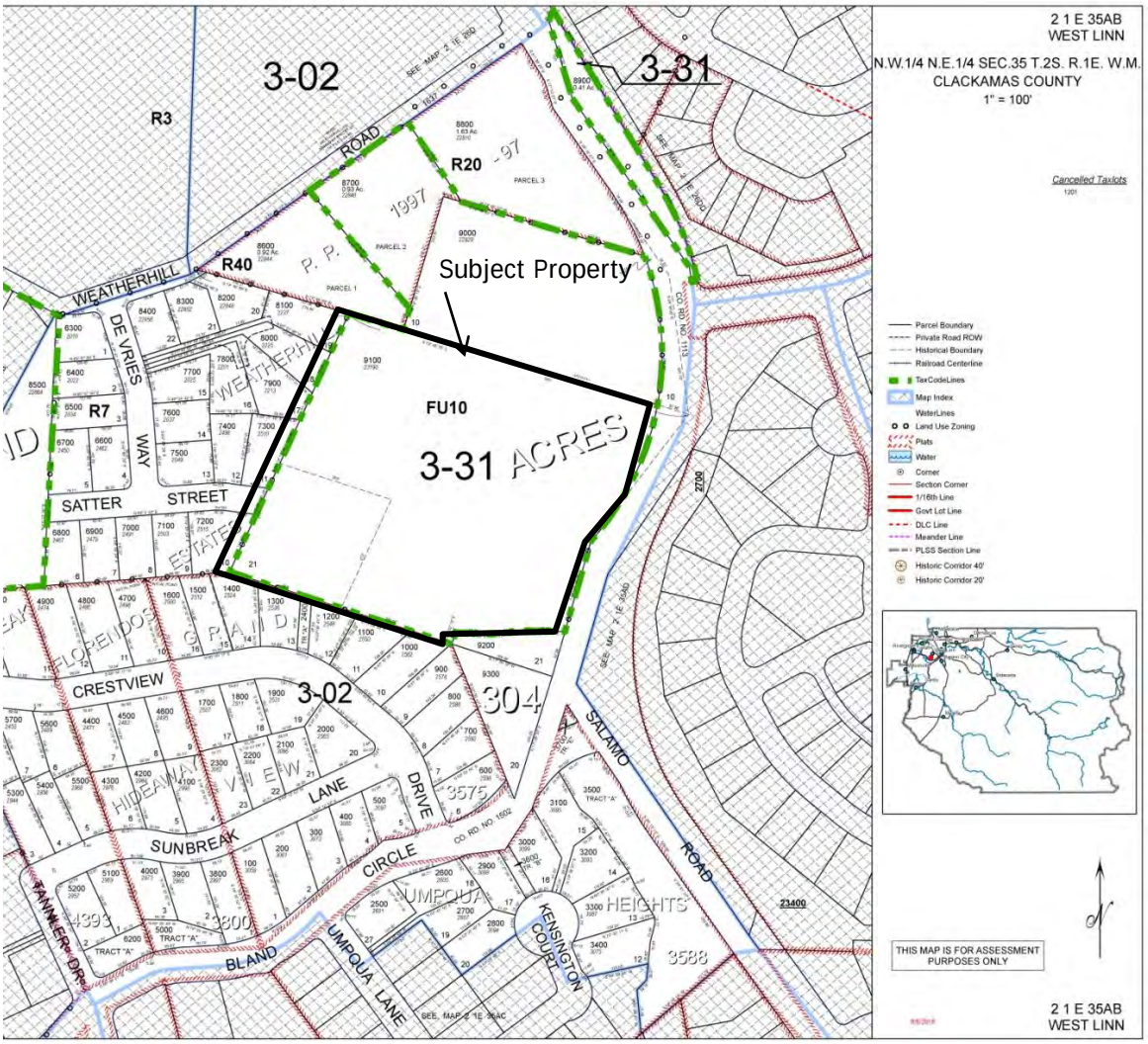


FIGURE 2. TAX MAP
Bland Circle
S&A#2649

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

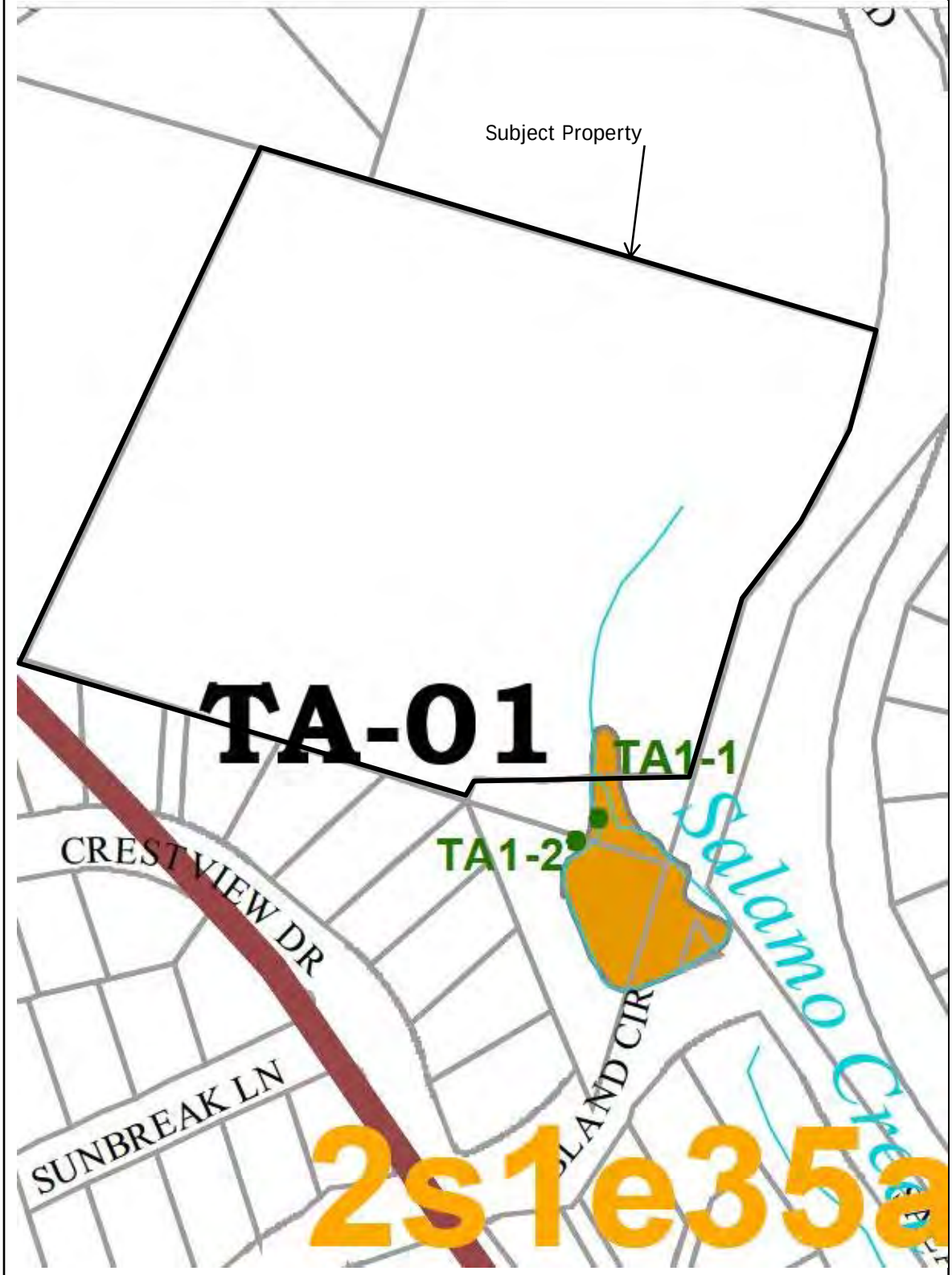


FIGURE 3.LWI MAP
Bland Circle
S&A#2649

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
23B	Cornelius silt loam, 3 to 8 percent slopes	6.8	19.9%
23C	Cornelius silt loam, 8 to 15 percent slopes	8.5	25.0%
30C	Delena silt loam, 3 to 12 percent slopes	9.2	27.0%
64C	Nekia silty clay loam, 8 to 15 percent slopes	9.6	28.1%
Totals for Area of Interest		34.1	100.0%

FIGURE 4. NRCS SOIL MAP
Bland Circle
S&A# 2649

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

FIGURE 5. 2018 AERIAL PHOTOGRAPH-GOOGLE EARTH
Bland Circle
S&A#2649

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

SCALE: 1" = 40'

S□R□EYOR□S NO□E

THE DATUM FOR THIS SURVEY IS BASED UPON OREGON REAL-TIME GNSS NETWORK (ORGN). NGVD29.

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.

23190 BLAND CIRCLE SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

REVISIONS

NO.	DATE	DESCRIPTION
0	-	-
1	-	-

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
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PRELIMINARY

SHEET
OF

FILE:P:\0542-001 23190 S Bland Circle_outgoing\2019-01-09_Ex cond to Schott & Assoc\0542-001_02exst, Layout: 2 EXISTING CONDITIONS PLAN, Plot Date: 1/9/2019 1:23 PM, by: Jacob Snyder

Appendix B: Data Forms

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

Project/Site: 23190 Bland Circle | City/County: West Linn/Clackamas | Sampling Date: 10/3/18
Applicant/Owner: Toll Brothers | State: OR | Sampling Point: 1
Investigator(s): JR/MS | Section, Township, Range: 35AB 2S 1E
Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Convex | Slope (%): 0-3
Subregion (LRR): A | Lat: 45.358 | Long: -122.647 | Datum: DD
Soil Map Unit Name: Delena SiCL 3 to 12% slope | 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	
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. *Crataegus douglasii*	30	X	FAC
2.			
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5'r)			
1. *Rubus armeniacus*	15	X	FAC
2.			
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Urtica dioica*	5		FAC
2. *Tanacetum vulgare*	15		FACU
3. *Convolvulus sp*	20	X	FACU
4. *Lolium perenne*	20	X	FAC
5. *Agrositis capillaris*	20	X	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Rubus ursinus	15	X	FACU
2.			
	15	= Total Cover	

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (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
0-14	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: 23190 Bland Circle | City/County: West Linn/Clackamas | Sampling Date: 10/3/18
Applicant/Owner: Toll Brothers | State: OR | Sampling Point: 2
Investigator(s): JR/MS | Section, Township, Range: 35AB 2S 1E
Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): 0-3
Subregion (LRR): A | Lat: 45.358 | Long: -122.647 | Datum: DD
Soil Map Unit Name: Delena SiCL 3 to 12% slope | 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	
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:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1. *Rubus armeniacus*	20	X	FAC
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Poa sp*	40	X	FAC
2. *Holcus lanatus*	5		FAC
3. *Rumex crispus*	15		FAC
4. *Ranunculus repens*	10		FAC
5. *Cirsium arvense*	2		FAC
6. *Bromus sp*	10		FACU
7.			
8.			
9.			
10.			
11.			
	82 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 15

Dominance Test worksheet:

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

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR3/2	100					SiL	
8-16	10YR2/2	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: 23190 Bland Circle | City/County: West Linn/Clackamas | Sampling Date: 10/3/18
Applicant/Owner: Toll Brothers | State: OR | Sampling Point: 3
Investigator(s): JR/MS | Section, Township, Range: 35AB 2S 1E
Landform (hillslope, terrace, etc.): Swale | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRR): A | Lat: 45.358 | Long: -122.647 | Datum: DD
Soil Map Unit Name: Delena SiCL 3 to 12% slope | 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	
Hydric Soil Present?	Yes		No	x
Wetland Hydrology Present?	Yes	x	No	

Is the Sampled Area within a Wetland? **Yes** ___ **No** x

Remarks: Sample plot within a swale that is part of a water quality facility.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ___)			
1. *Veronica Americana*	25	X	OBL
2. *Carex obnupta*	5		OBL
3. *Alopecurus pratensis*	40	X	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- 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: 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
0-20	10YR2/1	100					S	

[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: Soil is sand-likely brought in when constructing the water quality facility

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- x 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 x No ___ Depth (inches): surf

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

Wetland Hydrology Present? **Yes** x **No** ___

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

Remarks: within bottom of swale in part of a water quality facility.

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

Project/Site: 23190 Bland Circle | City/County: West Linn/Clackamas | Sampling Date: 10/3/18
Applicant/Owner: Toll Brothers | State: OR | Sampling Point: 4
Investigator(s): JR/MS | Section, Township, Range: 35AB 2S 1E
Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Convex | Slope (%): 0-3
Subregion (LRR): A | Lat: 45.358 | Long: -122.647 | Datum: DD
Soil Map Unit Name: Delena SiCL 3 to 12% slope | 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	
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:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1. Prunus laurocerasus	15	x	UPL
2. Rubus armeniacus	10	X	FAC
3.			
4.			
5.			
	25 = Total Cover		
Herb Stratum (Plot size: 5')			
1. *Cirsium arvense*	5	X	FAC
2. *Agrositis capillaris*	20	x	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 75

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (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: 4

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
0-13	10YR3/2	100					SL	

[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: 23190 Bland Circle | City/County: West Linn/Clackamas | Sampling Date: 10/3/18
Applicant/Owner: Toll Brothers | State: OR | Sampling Point: 5
Investigator(s): JR/MS | Section, Township, Range: 35AB 2S 1E
Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): concave | Slope (%): 0-3
Subregion (LRR): A | Lat: 45.358 | Long: -122.647 | Datum: DD
Soil Map Unit Name: Delena SiCL 3 to 12% slope | 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: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1. *Corylus cornuta*	30	X	FACU
2. *Rubus armeniacus*	10	x	FAC
3. *Crataegus monogyna*	5		FAC
4.			
5.			
	45 = Total Cover		
Herb Stratum (Plot size: 5')			
1. *Polystichum munitum*	5	X	FACU
2. *Convolvulus sp*	20	X	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
Woody Vine Stratum (Plot size: 5)			
1. Rubus ursinus	15	X	FACU
2.			
	15 = Total Cover		

% Bare Ground in Herb Stratum 50

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: 5

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
0-13	10YR3/2	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: 23190 Bland Circle | City/County: West Linn/Clackamas | Sampling Date: 10/3/18
Applicant/Owner: Toll Brothers | State: OR | Sampling Point: 6
Investigator(s): JR/MS | Section, Township, Range: 35AB 2S 1E
Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Concave | Slope (%): 2-4
Subregion (LRR): A | Lat: 45.358 | Long: -122.647 | Datum: DD
Soil Map Unit Name: Delena SiCL 3 to 12% slope | 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	
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: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1. *Salix matsudana*	10	X	NOL
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 5')			
1. *Poa pratensis*	40	X	FAC
2. *Trifolium repens*	30	X	FAC
3. *Hypochaeris radicata*	5		FACU
4. *Vicia sp*	10		FAC
5. Unknown grass	15		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (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: SAMA is an ornamental corkscrew willow

SOIL

Sampling Point: 6

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
0-13	10YR3/2	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:

Appendix C: Ground Level Photographs

Photo Point 1. At Sample Plot 1, facing north.

Photo Point 1. At Sample Plot 1, facing east, down slope.

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

Photo Point 1. At Sample Plot 1, facing south.

Photo Point 2. At Sample Plot 2,facng southeast into drainage swale.

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

Photo Point 2. At Sample Plot 2, facing north.

Photo Point 2. At Sample Plot 2, facing northwest.

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

Photo Point 3. Facing northwest along drainage.

Photo Point 3. Facing southeast toward culvert.

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

Photo Point 3. Facing northwest upslope.

Photo Point 4. Facing south.

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

Photo Point 4. Facing north.

Photo Point 5. At Sample Plot 6, facing east.

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

Photo Point 5. Facing south.

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

Appendix D: Water Quality Swale Documentation

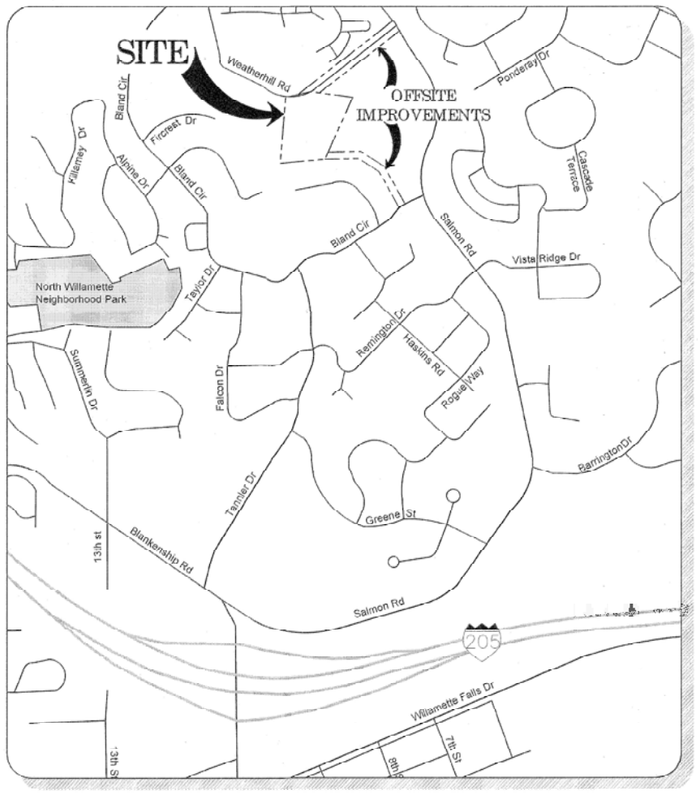
CONSTRUCTION DOCUMENTS

FOR

WEATHERVIEW ESTATES SUBDIVISION

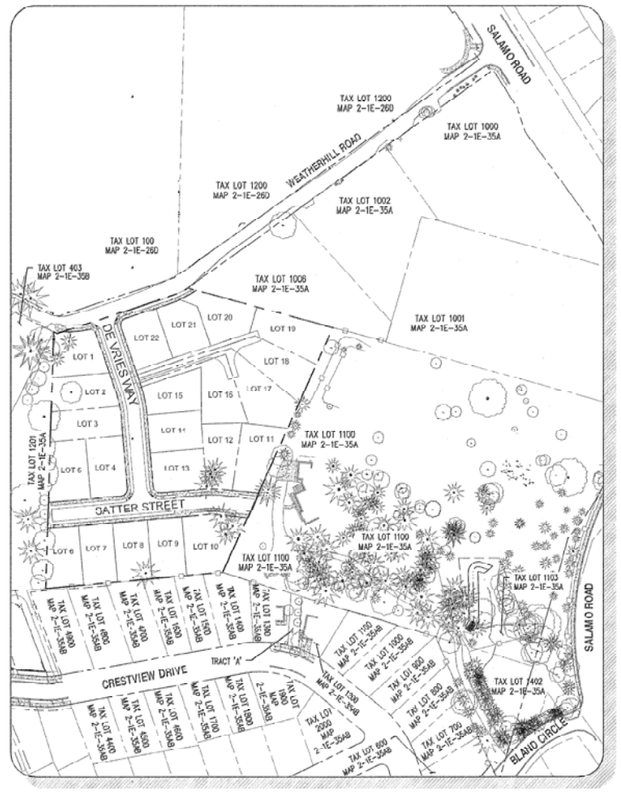
PREPARED FOR

BLACK DIAMOND PROPERTIES, LLC



VICINITY MAP

NOT TO SCALE



SITE MAP

Scale: NTS

A PORTION OF LOT 22, "BLAND ACRES"
TAX LOTS 1200 & 1202, MAP 2-1E-35A
NE 1/4 SECTION 35, T.2S., R.1E., W.M.
CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

SHEET LIST

SITE INFORMATION

SITE ADDRESS
22850 WEATHERHILL ROAD
WEST LINN, OR 97068

TAX LOT(S)
21E35A 1200 & 1202

JURISDICTION
CITY OF WEST LINN

FLOOD HAZARD
MAP NUMBER: 41005C0257D ZONE X (UNSHADED)

ZONING
R-7

PROJECT TEAM

OWNER/APPLICANT
BLACK DIAMOND PROPERTIES, LLC
C/O: J.T. SMITH COMPANIES
5285 MEADOWS ROAD, SUITE #171
LAKE OSWEGO, OR 97035
CONTACT: JESSE NEMEC
PHONE: (503) 730-8830
EMAIL: jnemec@jtsmithco.com

PLANNING CONSULTANT
3J CONSULTING, INC
5075 SW GRIFFITH DR, SUITE 150
BEAVERTON, OR 97005
CONTACT: ANDREW TULL
PHONE: 503-946-9365
EMAIL: andrew.tull@3j-consulting.com

LAND SURVEYOR
COMPASS SURVEYING
4107 SE INTERNATIONAL WAY, SUITE 705
MILWAUKIE, OR 97222
CONTACT: DON DEVLAEMINCK, PLS
PHONE: 503-653-9093
EMAIL: dond@compass-engineering.com

GEOTECHNICAL CONSULTANT
GEOPACIFIC ENGINEERING, INC.
14835 SW 72ND AVENUE
PORTLAND, OR 97224
CONTACT: JIM IMBRIE
PHONE: (503) 625-4455
EMAIL: jimbrie@geopacificeng.com

CIVIL ENGINEER
3J CONSULTING, INC.
5075 SW GRIFFITH DR, SUITE 150
BEAVERTON, OR 97005
CONTACT: AARON MURPHY, PE
PHONE: (503) 946-9365
EMAIL: aaron.murphy@3j-consulting.com

UTILITIES & SERVICES

WATER, STORM, SEWER
CITY OF WEST LINN
CONTACT: KHOI LE
PHONE: (503) 722-5517
EMAIL: kle@westlinnoregon.gov

GAS
NORTHWEST NATURAL - ENGINEERING
CONTACT: BRIAN KELLEY
PHONE: (503) 220-2427
EMAIL: brian.kelley@nwnatural.com

FIRE
TUALATIN VALLEY FIRE & RESCUE
CONTACT: TY DARBY
PHONE: (503) 259-1409
EMAIL: ty.darby@tvfr.com

POWER
PGE
CONTACT: CHRIS JEWETT
PHONE: (503) 672-5481
EMAIL: chris.jewett@pgn.com

CABLE
COMCAST
CONTACT: KENNETH WILLS
PHONE: (503) 793-9981
EMAIL: kenneth_wills@cable.comcast.com

POLICE, SCHOOLS, ROADS, PARKS
CITY OF WEST LINN

CABLE
CENTURYLINK - REGIONAL ENGINEER
CONTACT: KENNETH SCIULLI
PHONE: (503) 242-0304
EMAIL: kenneth.sciulli@centurylink.com

CENTURYLINK - REGIONAL MANAGER
CONTACT: JEREMY MORRIS
PHONE: (503) 293-4567
EMAIL: jeremy.morris@centurylink.com

RECORD DRAWING

This drawing has been prepared to reflect constructed deviations from permit drawings. The basis of this information is derived in whole/part from a combination of:

- Contractor supplied redlines
- Field observations by the engineer
- Other: _____

The stamping engineer of record certifies this drawing is an accurate portrayal of the final construction, and the resulting improvements are in conformance with the standards of the City of West Linn.

COVER SHEET

WEATHERVIEW ESTATES SUBDIVISION

WEST LINN, OR

BLACK DIAMOND PROPERTIES, LLC

J.T. SMITH companies

REGISTERED PROFESSIONAL ENGINEER
89784PE
OREGON
AARON J. MURPHY
EXPIRES: 12/31/16

Dec 23 2016 7:37 AM

3J CONSULTING, INC.
CIVIL ENGINEERING
WATER RESOURCES
LAND USE PLANNING
5075 SW GRIFFITH DRIVE, SUITE 150, BEAVERTON, OR 97005
PHONE & FAX: (503) 946-9365

3J JOB ID #	13171
LAND USE #	SUB 15 01
TAX LOT #'S	2S1E35B 1200, 1202
DESIGNED BY	CLF, JKG, JTE
CHECKED BY	AJM, RGW

SHEET TITLE
COVER SHEET

SHEET NUMBER
C000

WEST LINN PLANNING COMMISSION

FINAL DECISION AND ORDER

SUB-15-01

IN THE MATTER OF A PROPOSAL TO DEVELOP THE 22 LOT "WEATHERVIEW" SUBDIVISION

I. Overview

At their meeting of September 16, 2015, the West Linn Planning Commission ("Commission") held a public hearing to consider the request by Jesse Nemec, Black Diamond Properties, LLC, to approve a proposal to develop the 22 lot "Weatherview" subdivision. The approval criteria for land division are found in Chapter 85 of the Community Development Code (CDC). The hearing was conducted pursuant to the provisions of CDC Chapter 99.

The hearing commenced with a staff report presented by John Boyd Planning Manager for Peter Spir, Associate Planner. Andrew Tull, of 3 J Consulting, presented as the applicant. Alice Richmond testified in support for the project. The hearing was closed and a motion was made by Commissioner Knight and seconded by Vice-Chair Griffith to approve the application with five conditions of approval. The motion passed unanimously.

II. The Record

The record was finalized at the September 16, 2015, hearing. The record includes the entire file from SUB-15-01.

III. Findings of Fact

1) The Overview set forth above is true and correct.
2) The applicant is Jesse Nemec, Black Diamond Properties, LLC.
3) The Commission finds that it has received all information necessary to make a decision based on the Staff Report and attached findings; public comment, if any; and the evidence in the whole record, including any exhibits received at the hearing.

IV. Findings

The Commission adopts the Staff Report for September 2, 2015, with attachments, including specifically the Addendum dated September 2, 2015, as its findings, which are incorporated by this reference. The Commission concludes that all of the required approval criteria are met subject to the following conditions of approval:

1. Site Plan. With the exception of modifications required by these conditions, the project shall conform to the Tentative Subdivision Plat dated 6/23/2015.

2. Engineering Standards. All public improvements and facilities associated with public improvements including street improvements, utilities, grading, onsite stormwater design, street lighting, easements, easement locations, and utility connection for future extension of utilities are subject to the City Engineer's review, modification, and approval. These must be designed, constructed, and completed prior to final plat approval.

3. Street Improvements. The applicant shall dedicate on the face of the plat additional ROW and complete half street improvements including curb, planter strip and sidewalks, and street trees for those portions of Weatherhill Road abutting the subject property. In addition, the applicant shall dedicate on the face of the plat ROW for extension of Salter Street and complete full street improvements for internal local streets, per the applicant's submittal, consistent with Public Works standards. Planter strip, sidewalks, and street tree installation shall be completed prior to platting or bonded.

4. Water. The water main shall be looped and connect to the existing water main in Crestview Drive. The applicant shall be responsible for obtaining all needed easements. All work and easements shall meet Public Works standards or be acceptable to the City Engineer.

5. TVFR. "No Parking-Fire Lane" signs shall be posted on both sides of the shared driveway at 25 foot intervals. The signs shall be seven feet above grade and be 12 inches wide by 18 inches high and have red letters on white reflective background.

V. Order

The Commission concludes that SUB-15-01 is approved based on the Record, Findings of Fact and Findings above.

Lorie Griffith — 9-17-15

LORIE GRIFFITH, VICE CHAIR — DATE
WEST LINN PLANNING COMMISSION

This decision may be appealed to the City Council pursuant to the provisions of Chapter 99 of the Community Development Code and any other applicable rules and statutes. This decision will become effective 14 days from the date of mailing of this final decision as identified below.

Mailed this 17th day of September, 2015.

Therefore, this decision becomes effective at 5 p.m., October 1, 2015.

RECORD DRAWING

The drawing has been prepared to reflect constructed deviations from permit documents. The basis of this information is derived in whole or in part from a combination of:

- Contractor supplied redlines
- Field observations by the engineer
- Post construction survey

The stamping engineer of record certifies this drawing is an accurate portrayal of the final construction, and the resulting improvements are in conformance with the standards of the City of West Linn.

CONDITIONS OF APPROVAL

WEATHERVIEW ESTATES SUBDIVISION

WEST LINN, OR

BLACK DIAMOND PROPERTIES, LLC

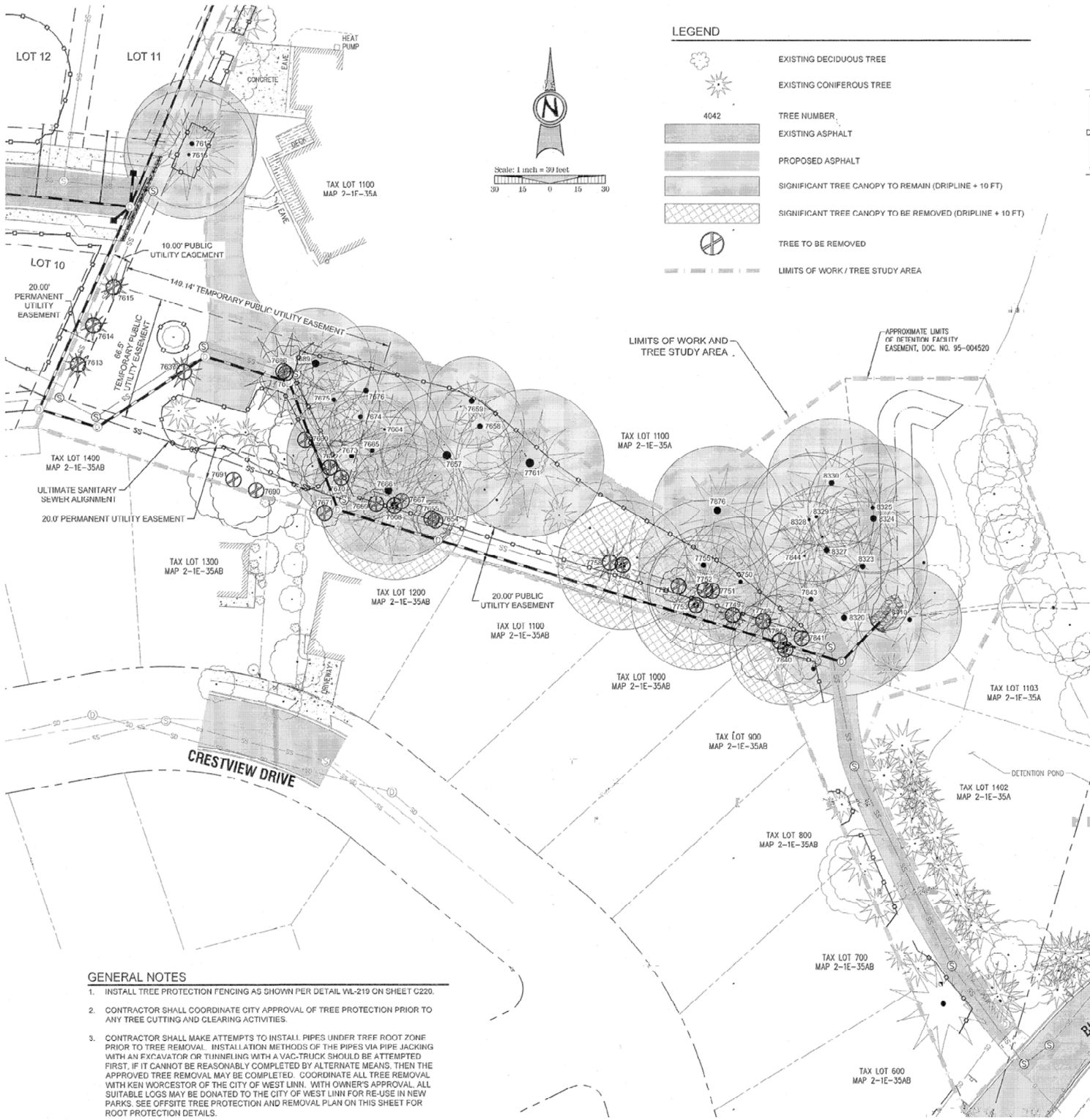
J.T. SMITH companies

3J CONSULTING, INC.
CIVIL ENGINEERING
WATER RESOURCES
LAND USE PLANNING
5075 SW GRIFFITH DRIVE, SUITE 150, BEAVERTON, OR 97005
PHONE & FAX: (503) 946-9365

3J JOB ID #	13171
LAND USE #	SUB 15 01
TAX LOT #'S	2S1E35B 1200, 1202
DESIGNED BY	CLF, JKG, JTE
CHECKED BY	AJM, RGW

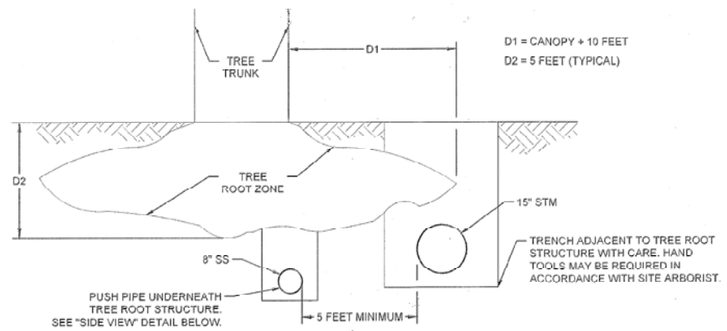
SHEET TITLE
Cover

SHEET NUMBER
C001



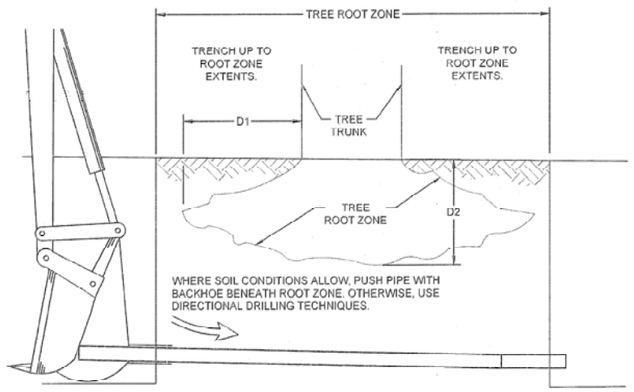
LEGEND

- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- 4042 TREE NUMBER
- EXISTING ASPHALT
- PROPOSED ASPHALT
- SIGNIFICANT TREE CANOPY TO REMAIN (DRIPLINE + 10 FT)
- SIGNIFICANT TREE CANOPY TO BE REMOVED (DRIPLINE + 10 FT)
- TREE TO BE REMOVED
- LIMITS OF WORK / TREE STUDY AREA



ROOT PROTECTION PLAN - END VIEW

SCALE: N.T.S



ROOT PROTECTION PLAN - SIDE VIEW

SCALE: N.T.S

GENERAL NOTES

1. INSTALL TREE PROTECTION FENCING AS SHOWN PER DETAIL WL-219 ON SHEET C220.
2. CONTRACTOR SHALL COORDINATE CITY APPROVAL OF TREE PROTECTION PRIOR TO ANY TREE CUTTING AND CLEARING ACTIVITIES.
3. CONTRACTOR SHALL MAKE ATTEMPTS TO INSTALL PIPES UNDER TREE ROOT ZONE PRIOR TO TREE REMOVAL. INSTALLATION METHODS OF THE PIPES VIA PIPE JACKING WITH AN EXCAVATOR OR TUNNELING WITH A VAC-TRUCK SHOULD BE ATTEMPTED FIRST, IF IT CANNOT BE REASONABLY COMPLETED BY ALTERNATE MEANS, THEN THE APPROVED TREE REMOVAL MAY BE COMPLETED. COORDINATE ALL TREE REMOVAL WITH KEN WORCESTOR OF THE CITY OF WEST LINN. WITH OWNER'S APPROVAL, ALL SUITABLE LOGS MAY BE DONATED TO THE CITY OF WEST LINN FOR RE-USE IN NEW PARKS. SEE OFFSITE TREE PROTECTION AND REMOVAL PLAN ON THIS SHEET FOR ROOT PROTECTION DETAILS.

RECORD DRAWING
12.22.2016

This drawing has been prepared to reflect constructed changes and record conditions. The basis of this information is derived in whole or in part from a combination of:
- Contractor supplied redlines
- Site observations by the engineer
- As-built survey information

The stamping engineer of record certifies this drawing is an accurate portrayal of the final construction, and the resulting improvements are in conformance with the standards of the City of West Linn

OFFSITE TREE PROTECTION & REMOVAL PLAN II
WEATHERVIEW ESTATES
SUBDIVISION

WEST LINN, OR

BLACK DIAMOND PROPERTIES, LLC

J.T. SMITH companies

REGISTERED PROFESSIONAL ENGINEER
OREGON
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AARON J. MURPHY
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3J CONSULTING, INC
CIVIL ENGINEERING
WATER RESOURCES
LAND USE PLANNING
5975 SW GRIFFITH DRIVE, SUITE 150, BEAVERTON, OR 97005
PHONE & FAX: (503) 946-9365

3J JOB ID #	13171
LAND USE #	SUB-15-01
TAX LOT #'S	2S1E35B 1200, 1202
DESIGNED BY	CLF, JKG, JTE
CHECKED BY	AJM, RGW

SHEET TITLE
OFFSITE TREE PLAN II

SHEET NUMBER
C113

Appendix E: 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.

Federal Register, 1980. 40 CFR Part 230: Section 404(b)(1), *Guidelines for Specification of Disposal Sites of Dredged or Fill Material,* Vol. 45, No. 249, pp. 85352-85353, U.S. Govt. Printing Office, Washington, D.C.

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.

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NATURAL RESOURCE ASSESSMENT
Within
Habitat Conservation Area

FOR

23190 Bland Circle
West Linn, Oregon

Prepared for:
Toll Brothers
4800 Meadows Road, Suite 335A
Lake Oswego, Oregon 97035

Prepared by:
Cari Cramer
at
Schott and Associates

June 2019
Project #: 2649

INTRODUCTION

Site Location

Schott and Associates was contracted to conduct a wetland delineation and natural resource assessment on the subject property located at 23190 Bland Circle in West Linn, Clackamas County, Oregon (T2S R1E Sec.35AB TL9100).

Site Description

The rectangular shaped subject property has a house located in the southwest corner entered from a driveway extending north from Bland Circle to the south. A house, horse stable/barn and an associated outbuilding are located at the north end of the property with driveway access off Salamo Drive to the east. The site topography is gently south sloping. The northern half of the property is an open area containing the horse stable/barn, open horse arena, grass fields and large garden areas. In the southwest portion of the property the house is located near the west property boundary and surrounded by a maintained landscape of lawn and woody species. Beyond the living area, to the east and south, is a forested area with a tree canopy consisting of Douglas fir *(Pseudotsuga menziesii*) and bigleaf maple (*Acer macrophyllum*). The understory is open and consists of nonnative grasses and forbs with some patches of Himalayan blackberry (*Rubus armeniacus*) and scattered English hawthorn (*Crataegus monogyna*), beaked hazelnut *(Corylus cornuta*), common snowberry (*Symphoricarpos albus*) and thimbleberry (*Rubus parviflorus*). The southeast portion of the property is fenced on all sides and is an open field used for horse grazing. Vegetation mainly consists of grasses and blackberry with scattered young Douglas fir trees and western red cedars (*Thuja plicata*). In the southeast corner, at the southern property boundary is a J-shaped water quality swale that is connected to a water detention pond that extends offsite to the south. Per the City of West Linn, the water detention facility is in a Detention Easement.

The surrounding area is residential.

Project Objectives

The applicant proposes a 25 lot residential subdivision with associated access roads and utilities. Main access will be from Salamo Drive at the northeast end of the subdivision with additional access from Satter Street in the southwest portion of the development.

As shown on the HCA Map, the subject property contains Habitat Conservation Areas (HCAs). A small area in the southeast corner of the subject property shows a waterway extending offsite south. The mapped waterway is bordered by High and Medium HCA as well as Habitat and Impact Area not designated as HCA. The resource around which the HCA is mapped was assessed in the field. Onsite evaluation identified it as a water detention swale connected to a water detention pond that extends offsite to the south. The housing development to the west already uses the water detention facility and further utilization is proposed within Mapped Medium and High HCA for the new housing development on the subject property. This report will provide HCA map verification and a description of site findings.

METHODS

A wetland delineation and natural resource assessment were conducted October 3, 2018. As per 28.030 and 28.070, Habitat Conservation Area boundaries were determined and documented in this report.

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 (LWI), the National Wetland Inventory (NWI), the Water Resource Area (WRA) map and the Habitat Conservation Area (HCA) map. The USGS topography map was also reviewed prior to the site visit.

The wetland delineation field work was conducted using the *1987 Manual* and *Regional Supplement to the Corps of Engineers Delineation Manual: Western Mountains, Valleys and Coast Region* to determine presence or absence of State of Oregon wetland boundaries and the Federal jurisdictional wetlands. The delineation was concurred with by DSL (WD-2019-0061).

SENSITIVE AREA CONDITIONS

Waterway

During the delineation site visit one water quality swale connected to the onsite portion of a water quality pond were delineated. The water quality pond extended offsite to the south. The entire feature is part of the City water detention facility.

A sample plot (3) was taken in the swale that was essentially a J-shaped ditch approximately 3' wide. Vegetation met wetland criterion, but soils were a 10YR2/1 without redoximorphic features. Hydrology criterion was met as surface saturation was observed. Sample plots 2 and 4 were taken in upland plots that were higher in elevation on both sides of the swale. Vegetation criterion met but soils were a 10YR 3/2 or 3/3 without redoximorphic features and no hydrology was observed.

East of and connected to the swale was a small onsite portion of a water quality/detention pond that was mostly located offsite to the south. DSL took jurisdiction of the detention pond but not the detention swale.

During a requested DSL agency site visit on March 12, 2019 water was observed draining through a culvert under the driveway to the north that entered from Salamo Road. The flow line followed natural topography and drained into the water quality swale. DSL determined this to be an ephemeral drainage and requested it to be mapped. DSL did not take jurisdiction of the ephemeral drainage.

Wetland

Based on soil, vegetation and hydrology data taken in the field no wetlands were delineated on site. Sample Plots 1, 5 and 6 were taken in lower areas that were caused by horses grazing the field. Sample plots 1 and 6 met vegetation criteria but SP 5 did not. Soils were a 10YR3/2 or 3/3 and did not meet the hydric soil indicators in any of the sample plots and no hydrology was observed.

The WRA map and the LWI mapped a wetland south of the subject property. The wetland extended onto the site just across the southern property line. Salamo Creek was mapped through the wetland, continuing north beyond the wetland halfway across the subject property. The wetland delineation found the mapped wetland feature to be the City's water detention facility not meeting wetland criteria.

The soil survey map for Clackamas County mapped Nekia silty clay loam 8 to 15% slope on the approximate west half of the property. Delena silt loam at 3 to12% slopes was mapped on the approximate east half of the property. Nekia silty clay loam is not considered hydric, but Delena silt loam is considered hydric.

HCA

28.070 PLANNING DIRECTOR VERIFICATION OF METRO HABITAT PROTECTION MAP BOUNDARIES

A. The HCA Map is the basis for identifying and designating the habitat conservation areas in the City. A copy of the latest, updated HCA Map is on file at the City and is adopted by reference for use with this chapter.

It is inevitable, given the large area that Metro's HCA Map covers, that there may be some errors. In cases where, for example, three properties share the same contours and the same natural features but the map shows the middle lot with an HCA designation on it, it is reasonable to question the accuracy of that HCA designation. Using tree overstory as the sole basis for HCA designation will also allow a change in

designation since trees are already protected in the municipal code and Chapters 55 and 85 CDC.

B. The Planning Director shall verify the appropriate HCA or non-HCA designation by site visits or consultations with Metro or by other means. Determination is based on whether the Metro criteria are met or whether the Metro designation was based solely on tree overstory in which case a redesignation is appropriate. In cases where the determination is that the map is incorrect, the Planning Director will make a written finding of this as well as the site conditions that led to that conclusion.

C. Class B public notice, per Chapter 99 CDC, shall be required prior to issuance of the redesignation decision if it involves redesignation of the HCA boundary to allow the construction of, or addition to, a house.

D. This determination and findings shall become part of the City record and part of the record for any associated land use application. The Planning Director shall also include in the record the revised map boundary. The Planning Director's determination and map revisions shall also be sent to Metro so that their map may be corrected as necessary.

E. The Planning Director determination is appealable to the City Council per Chapter 99 CDC.

F. Lands that are designated as an HCA only due to a forested overstory are exempt under CDC 28.040, Exemptions, since trees are already protected in the municipal code and Chapters 55 and 85 CDC. Similar exemptions apply to lands that exhibit no constraints. (Ord. 1576, 2008; Ord. 1604 §§ 25 – 28, 2011)

HCA Map description

The southeast corner of the subject property is mapped HCA. A drainage (Salamo Creek) and pond are shown extending onto the property from the south. The drainage is bordered by High and Medium HCA and then Habitat and Impact Area. The pond is mapped mostly offsite to the south and connecting to the onsite mapped HCA. The offsite mapped pond is bordered to the east and south by High and Medium HCA. The southeast portion of the subject property is fenced on all sides and is an open field mainly consisting of grasses and blackberry with scattered young Douglas fir trees and western red cedars (*Thuja plicata*). There is no tree overstory or water resource onsite requiring HCA, but instead a water detention swale, connected to a water detention pond that continues south of the subject property. The water detention facility is utilized by the Weatherhill Estates development located to the west of the site. The existing water detention swale is proposed to be widened to accommodate the new proposed development as well.

HCA on site findings

The site was visited and information documented in October of 2018. In the southeast corner of the site a wetland with a drainage directing through the middle were WRA and LWI mapped. The same drainage was HCA mapped surrounded by High and Medium HCA.

A sample plot (3) was taken in the swale that was essentially a J-shaped ditch approximately 2' wide. Vegetation met criterion, but soils were a 10YR2/1 without redoximorphic features. Hydrology criterion was met as surface saturation was observed.

As part of the construction for an offsite development called Weatherhill Estates Subdivision, a water detention swale was constructed on tax lot 9100 connecting to a water detention pond that continued offsite to the south on tax lots 9200 and 9300. The onsite portion was a water quality swale constructed in 2015 that connected to the water quality pond constructed in the 1990s, all part of a water quality detention facility permitted by the City of West Linn in September of 2015 and placed in a detention Easement per Document no. 95-004520. Additionally, Record Drawings were done December 22, 2016 of the final construction and submitted to the City of West Linn.

Upon site observation and site information gathered prior to the site visit, we contend that there was a mapping error and there is no actual HCA onsite. What was identified onsite was a documented water quality swale that was constructed between 2015 and 2016 that connected to an onsite and offsite water quality pond that was constructed in the 1990's. Per Google Earth aerial photos, the subject property has been like this since at least 1994 and has remained the same to date.

Impacts to Wetlands/Waters

There are no wetlands onsite. There is one water quality detention pond that DSL has taken jurisdiction of and the City contends it should not be jurisdictional. There will be no impacts to the detention pond. A non-jurisdictional water quality swale connects to the pond. The swale releases stormwater into the regional pond that was constructed in the 1990's. The detention swale will be widened for storm water use for the proposed development.

Impacts to the mapped HCA

There will be no impacts to the mapped HCA as the mapped drainage way surrounded by High and Moderate HCA is actually the location of a water quality swale and water quality pond. The documented, non jurisdictional water quality swale used by a development to the west is proposed to be further utilized by the new proposed subdivision on the subject property. The water quality detention pond will not be impacted. Surrounding the swale and pond are non-native grasses with some Himalayan blackberry and a few scattered Douglas fir and western red cedar trees. The detention swale and detention pond will be in a separate tract.

Per documentation the water quality swale was constructed between 2015 and 2016. Per Google Earth the offsite regional pond that the swale utilizes was constructed prior to 1994 and remains the same to date.

28.110 APPROVAL CRITERIA

No application for development on property within the protection area shall be approved unless the decision-making authority finds that the following standards have been met or can be met by conditions of approval. The development shall comply with the following criteria as applicable:

A. Development: All sites

1. Sites shall first be reviewed using the HCA Map to determine if the site is buildable or what portion of the site is buildable. HCAs shall be verified by the Planning Director per CDC 28.070 and site visit. Also, "tree canopy only" HCAs shall not constitute a development limitation and may be exempted per CDC 28.070(A). The municipal code protection for trees and Chapters 55 and 85 CDC tree protection shall still apply.

An HCA map with a development overlay is attached. As described above onsite conditions and review of historical aerials indicate a mapping error and no actual HCA was found to be onsite.

2. HCAs shall be avoided to the greatest degree possible and development activity shall instead be directed to the areas designated "Habitat and Impact Areas Not Designated as HCAs," consistent with subsection (A)(3) of this section.

The attached development plan demonstrates that a majority of development is in Onsite Habitat and Impact Areas Not Designated as HCAs or outside of the mapped HCA. The mapped HCA is actually a water detention swale and pond bordered by a grass field used for grazing and a few scattered Douglas fir and western red cedar. The water detention facility is currently being utilized by a development to the west. Widening the swale is

proposed so the swale can convey treated storm water from the proposed development into the connected regional pond that extends offsite to the south. The water quality swale and pond will be in their own tract. We believe the mapping is in error and there were no HCAs on the subject property.

3. *If the subject property contains no lands designated "Habitat and Impact Areas Not Designated as HCAs" and development within HCA land is the only option it shall be directed towards the low HCA areas first, then medium HCA areas and then to high HCA as the last choice. The goal is to, at best, avoid or, at least, minimize disturbance of the HCAs. (Water-dependent uses are exempt from this provision.)*

Minimum development is within mapped High and Moderate HCAs and as per 28.070 the mapped HCA is believed to be a mapping error. A portion of the mapped High HCA is actually the location of a water quality swale and pond already being utilized by a development to the west. The remaining mapped High HCA and Moderate HCA is within a non-native grass field used for grazing. The majority of the proposed development is in Habitat and Impact Areas Not Designated as HCAs or outside of the HCA mapping areas. The existing water quality swale is currently being utilized for a neighboring development and is proposed to be widened from 2' to 4' at the bottom to be further utilized by the new proposed development on the subject property. The water quality pond will not be impacted.

4. *All development, including exempted activities of CDC 28.040, shall have approved erosion control measures per Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual, rev. 2008, in place prior to site disturbance and be subject to the requirements of CDC 32.070 and 32.080 as deemed applicable by the Planning Director.*

This condition shall be met.

B. *Single-family or attached residential. Development of single-family homes or attached housing shall be permitted on the following HCA designations and in the following order of preference with "a" being the most appropriate and "d" being the least appropriate:*

a "Habitat and Impact Areas Not Designated as HCAs"

b Low HCA

c Moderate HCA

d High HCA

1. Development of land classifications in "b," "c" and "d" shall not be permitted if at least a 5,000-square-foot area of buildable land ("a") exists for home construction, and associated impermeable surfaces (driveways, patios, etc.).

2. If 5,000 square feet of buildable land ("a") are not available for home construction, and associated impermeable surfaces (driveways, patios, etc.) then combinations of land classifications ("a," "b" and "c") totaling a maximum of 5,000 square feet shall be used to avoid intrusion into high HCA lands. Development shall emphasize area "a" prior to extending construction into area "b," then "c" lands.

3. The underlying zone FAR shall also apply as well as allowable lot coverage.

4. Development may occur on legal lots and non-conforming lots of record located completely within the HCA areas or that have the majority of the lot in the HCA to the extent that the applicant has less than 5,000 square feet of non-HCA land.

Development shall disturb the minimum necessary area to allow the proposed use or activity, shall direct development to any available non-HCA lands and in any situation shall create no more than 5,000 square feet

of impervious surface. (Driveways, paths, patios, etc., that are constructed of approved water-permeable materials will not count in calculating the 5,000-square-foot lot coverage.) The underlying zone FAR and allowable lot coverage shall also apply and may result in less than 5,000 square feet of lot coverage.

When only HCA land is available then the structure shall be placed as far away from the water resource area or river as possible. To facilitate this, the front setback of the structure or that side which is furthest away from the water resource or river may be reduced to a five-foot setback from the front property line without a variance. Any attached garage must provide a 20-foot by 20-foot parking pad or driveway so as to provide off-street parking exclusive of the garage. The setbacks of subsection C of this section shall still apply.

5. Driveways, paths, patios, etc., that are constructed of approved water-permeable materials will be exempt from the lot coverage calculations of subsections (B)(1) through (4) of this section and the underlying zone.

6. Table showing development allowed by land classification:

	Development Allowed
Non-HCA ("a")	*Yes*
Low-Medium HCA ("b" and "c")	*Yes, if less than 5,000 sq. ft. of non-HCA land available. Avoid "d."*
High HCA ("d")	*Yes, but only if less than 5,000 sq. ft. of "a," "b" and "c" land available.*
Non-conforming Structures (structures on HCA land)	*Yes: vertically, laterally and/or away from river.* *Avoid "d" where possible*

Development is proposed within mapped HCA. As outlined above this mapping is believed to be in error and no development should is proposed within HCA.

(The underlying zone FAR and allowable lot coverage shall also apply.)

C. Setbacks from top of bank.

1. Development of single-family homes or attached housing on lands designated as "Habitat and Impact Areas Not Designated as HCAs" shall require a structural setback of 15 feet from any top of bank that represents the edge of the land designated as "Habitat and Impact Areas Not Designated as HCAs."

2. At-grade water-permeable patios or decks within 30 inches of grade may encroach into that setback but must keep five feet from top of bank and cannot cantilever over the top of bank or into the five-foot setback area.

3. For properties that lack a distinct top of bank the applicant shall identify the boundary of the area designated as "Habitat and Impact Areas Not Designated as HCAs" which is closest to the river. A structural setback of 15 feet is required from that boundary line. That 15-foot measurement extends from the boundary line away from the river. At-grade water-permeable patios or decks within 30 inches of grade may encroach into that setback 10 feet but must keep five feet from the boundary and cannot cantilever into the five-foot setback area. For vacant lots of record that comprise no lands with "Habitat and Impact Areas Not Designated as HCAs" designation or insufficient lands with those designations so that the above setbacks

cannot be met, the house shall be set back as far from river as possible to accommodate house as part of the allowed 5,000 square feet of impermeable surfaces.

There is no Top of Bank bordering the Habitat and Impact Areas Not Designated as HCAs.

D. Development of lands designated for industrial, commercial, office, public and other non-residential uses.

1. Development of lands designated for industrial, multi-family, mixed use, commercial, office, public and other non-single-family residential uses shall be permitted on the following land designations and in the following order of preference with "a" being the most appropriate for development and "d" being the least appropriate.

a "Habitat and Impact Areas Not Designated as HCAs"

b Low HCA

c Moderate HCA

d High HCA

Proposed use is single family residential.

2. Developing HCA land.

a. Where non-HCA or areas designated as "Habitat and Impact Areas Not Designated as HCAs" are lacking or are in such limited supply as to render uses allowed by the underlying zone (e.g., general industrial) functionally impractical, the HCA may be utilized and built upon but shall emphasize "b" and "c" designations.

b. Where it is proposed that a "d" or high HCA classification be used, the property owner must demonstrate that the proposed use is clearly a water-dependent use. Proximity to the river for the purpose of views is not valid grounds. However, public interpretive facilities of historic facilities such as the government locks will be permitted as well as wildlife interpretive facilities and ADA-accessible platforms.

The land is proposed to be developed as single family residential. The land is not proposed for industrial, multi-family, mixed use, commercial, office, public or any other non-single family residential use.

E. Hardship provisions and non-conforming structures.

1. For the purpose of this chapter, non-conforming structures are existing structures whose building footprint is completely or partially on HCA lands. Any additions, alterations, replacement, or rehabilitation of existing non-conforming non-water-related structures (including decks), roadways, driveways, accessory uses and accessory structures shall avoid encroachment upon the HCAs, especially high HCAs, except that:

a. A 10-foot lateral extension of an existing building footprint is allowed if the lateral extension does not encroach any further into the HCA or closer to the river or water resource area than the portion of the existing footprint immediately adjacent.

b. An addition to the existing structure on the side of the structure opposite to the river or water resource area shall be allowed. There will be no square footage limitation in this direction except as described in subsection (E)(1)(c) of this section.

c. The same allowance for the use of, and construction of, 5,000 square feet of total impervious surface for sites in HCAs per subsections (B)(2) through (4) of this section shall apply to lots in this section.

d. Vertical additions are permitted including the construction of additional floors.

e. The provisions of Chapter 66 CDC, Non-conforming Structures, shall not apply.

f.. Access and property rights.

1. Private lands within the protection area shall be recognized and respected.

2. Where a legal public access to the river or elsewhere in the protection area exists, that legal public right shall be recognized and respected.

3. To construct a water-dependent structure such as a dock, ramp, or gangway shall require that all pre-existing legal public access or similar legal rights in the protection area be recognized and respected. Where pre-existing legal public access, such as below the OLW, is to be obstructed by, for example, a ramp, the applicant shall provide a reasonable alternate route around, over or under the obstruction. The alternate route shall be as direct as possible. The proposed route, to include appropriate height clearances under ramps/docks and specifications for safe passage over or around ramps and docks, shall be reviewed and approved by the Planning Director for adequacy.

4. Any public or private water-dependent use or facility shall be within established DSL-authorized areas.

5. Legal access to, and along, the riverfront in single-family residential zoned areas shall be encouraged and pursued especially when there are reasonable expectations that a continuous trail system can be facilitated. The City recognizes the potential need for compensation where nexus and proportionality tests are not met. Fee simple ownership by the City shall be preferred. The trail should be dimensioned and designed appropriate to the terrain it traverses and the user group(s) it can reasonably expect to attract. The City shall be responsible for signing the trail and delineating the boundary between private and public lands or access easements.

There are no non-conforming structures or hardships and this criterion does not apply.

G. Incentives to encourage access in industrial, multi-family, mixed use, commercial, office, public and non-single-family residential zoned areas.

1. For all industrial, multi-family, mixed use, commercial, office, public and other non-single-family residential zones, this section encourages the dedication or establishment of access easements to allow legal public access to, and along, the river. Support for access may be found in the Parks Master Plan, a neighborhood plan or any applicable adopted sub-area plans. The emphasis will be upon locating paths where there is a reasonable expectation that the path can be extended to adjacent properties to form a connective trail system in the future, and/or where the trail will provide opportunities for appreciation of, and access to, the river.

2. Height or density incentives may be available to developers who provide public access. Specifically, commercial, industrial, multi-family, mixed use, and public projects may be constructed to a height of 60 feet. No variance is required for the 60-foot height allowance regardless of the underlying zone height limitations; however, the following conditions must be met:

a. Provide a minimum 20-foot-wide all-weather public access path along the project's entire river frontage (reduced dimensions would only be permitted in response to physical site constraints such as rock outcroppings, significant trees, etc.); and

b. Provide a minimum 10-foot-wide all-weather public access path from an existing public right-of-way to that riverfront path or connect the riverfront path to an existing riverfront path on an adjoining property that accesses a public right-of-way.

c. Fencing may be required near steep dropoffs or grade changes.

The proposed development is for single family residential. This criterion does not apply.

H. Partitions, subdivisions and incentives.

1. When dividing a property into lots or parcels, an applicant shall verify the boundaries of the HCA on the property.

See attached HCA map with development overlay. This map is provided for reference as the site visit has verified no actual HCA onsite.

2. Applicant shall partition or subdivide the site so that all lots or parcels have a buildable site or envelope available for home construction located on non-HCA land or areas designated "Habitat and Impact Areas Not Designated as HCAs" per the HCA Map.

A majority of the lots are proposed in non HCAs and most of the lots have a buildable site envelope located outside the mapped HCA. The proposed improvements are within the existing water quality swale in the southeast portion of the property. The swale is already being utilized by a development to the west and will be widened to accommodate the proposed development on the subject property. There will be no impacts. As identified onsite and described in this report no actual HCA was found onsite.

3. Development of HCA-dominated lands shall be undertaken as a last resort. A planned unit development (PUD) of Chapter 24 CDC may be required.

4. Incentives are available to encourage provision of public access to, and/or along, the river. By these means, planned unit developments shall be able to satisfy the shared outdoor recreation area requirements of CDC 55.100(F). Specifically, for every square foot of riverfront path, the applicant will receive credit for two square feet in calculating the required shared outdoor recreation area square footage. Applicants shall also be eligible for a density bonus under CDC 24.150(B). To be eligible to receive either of these incentives, applicants shall:

a. Provide a minimum 20-foot-wide all-weather public access path along the project's entire river frontage (reduced dimensions would only be permitted in response to physical site constraints such as rock outcroppings, significant trees, etc.); and

b. Provide a minimum 10-foot-wide all-weather public access path from an existing public right-of-way to that riverfront path or connect the riverfront path to an existing riverfront path on an adjoining property that accesses a public right-of-way;

c. Fencing may be required near steep dropoffs or grade changes.

No development is proposed near a river. The property does not border the Tualatin or Willamette River. Salamo Creek is HCA mapped on the property, connecting with Tanner Creek to the southeast which connects to the Willamette River to the south. The onsite feature was found to be a manmade water quality swale. This Criterion does not apply.

I. Docks and other water-dependent structures.

1. Once the preference rights area is established by DSL, the property owner identifies where the water-dependent use will be located within the authorized portion of the preference rights area. The water-dependent use should be centered or in the middle of the preference rights/authorized area or meet the side yard setbacks of the underlying zone.

Private and public non-commercial docks are permitted where dredging is required so long as all applicable federal and State permits are obtained. Dredging is encouraged if deposits silt up under an existing dock. Dredging is seen as preferable to the construction of longer docks/ramps.

2. Both joint and single use docks shall not extend into the water any further than necessary to provide four feet between the ship's keel or fixed propeller/rudder and the bottom of the water at any time during the water's lowest point.

3. In no case except as provided in this section shall a private ramp and private dock extend more than 100 feet from OLW towards the center of the river or slough. In the case of L-shaped docks, the 100 feet shall be measured from the OLW to the furthest part of the private dock closest to the center of the river.

4. Docks on sloughs and similar channels shall not extend more than 30 percent of the distance between two land masses at OHW, such as between the mainland and an island or peninsula, measured in a lineal manner at right angle to the dominant shoreline. In no way shall a dock impede existing public usage or block navigation of a channel.

5. Boat storage associated with a rail launch facility shall be located above the OHW, either vertically raised above the ordinary high water line or set back behind the OHW. Such boat storage structure will be natural wood colors or similar earth tones. Private railed launch facilities are permitted for individual boat owners. The onshore setback of the storage structure is equal distance on both sides as extended perpendicular to the thread of the stream, or seven and one-half feet, whichever is the greater setback.

6. The width of each deck section shall be no more than 12 feet wide.

7. For only single-user and joint-user docks, pilings shall not exceed a maximum height of eight feet above the 100-year flood elevation.

8. A single user non-commercial dock shall not exceed 400 square feet in deck area. The boat slip is not included in the calculation of this square footage limitation.

9. Private non-commercial boat houses are allowed but only if they are within 50 feet of OLW and/or in locations sufficiently screened from view so that they do not have a significant visual impact on views from adjacent and nearby homes. Building and roof colors shall be brown, gray, beige, natural or similar earth tones. Non-commercial boat houses shall not exceed 12 feet in height measured from the boat house deck level to the roof peak. The size of the boat house shall be sized to accommodate one boat only and shall not exceed a footprint greater than 500 square feet. Boatlifts are permitted within the boat house. The above provisions also apply to open-walled boat shelters with or without boatlifts.

No Docks or other water dependent structures are proposed nor is there a river or slough on the subject property and this criterion does not apply.

J. Joint docks.

1. Joint use boat docks may be permitted by the reviewing authority where the applicants are riverfront property owners, ideally owners of adjacent lots of record.

2. Co-owners of the joint dock use shall be prohibited from having their own non-joint dock.

3. A joint use agreement shall be prepared which will be included in the application for review by the reviewing authority and subsequently recorded. A copy of the recorded document with the County Recorder's stamp shall be submitted to the City.

4. A condition of approval for any joint use permit shall be that the dock must be used to serve the same lots of record for which the dock permit was issued. Joint use cannot be transferred to, or used by, any party other than the original applicants or the future owners of those properties.

5. Joint docks may go on the common property line between the two landowners who are sharing the dock. Unless agreed to by the adjoining owner, joint docks not being shared with the adjacent property owner must be at least 15 feet from the preference rights area side lines or centered in the middle of the preference rights area.

No Joint Docks are proposed nor is there a river on the subject property and this criterion does not apply.

K. Non-conforming docks and other water-related structures. Pre-existing non-conforming structures, including docks, ramps, boat houses, etc., as defined in this chapter may remain in place. Replacement in kind (e.g., replacement of decking and other materials) will be allowed provided the replacement meets the standards of this chapter. However, if any non-conforming structure that is damaged and destroyed or otherwise to be replaced to the extent that the rebuilding or replacing (including replacement in kind) would exceed 50 percent of the current replacement cost of the entire structure, the owner shall be required to meet all the standards of this chapter.

There are no non-conforming docks or other water related structures proposed and this criterion does not apply.

L. Roads, driveways, utilities, or passive use recreation facilities. Roads, driveways, utilities, public paths, or passive use recreation facilities may be built in those portions of HCAs that include wetlands, riparian areas, and water resource areas when no other practical alternative exists but shall use water-permeable materials unless City engineering standards do not allow that. Construction to the minimum dimensional standards for roads is required. Full mitigation and revegetation is required, with the applicant to submit a mitigation plan pursuant to CDC 32.070 and a revegetation plan pursuant to CDC 32.080. The maximum disturbance width for utility corridors is as follows:

1. For utility facility connections to utility facilities, no greater than 10 feet wide.

2. For upgrade of existing utility facilities, no greater than 15 feet wide.

3. For new underground utility facilities, no greater than 25 feet wide, and disturbance of no more than 200 linear feet of water quality resource area, or 20 percent of the total linear feet of water quality resource area, whichever is greater.

Road construction is proposed in areas HCA mapped as Habitat and Impact Areas Not Designated as HCA Impacts or areas that are not HCA mapped at all. Driveways will likely be constructed in at least 1 to 2 lots within mapped HCA area, but we believe the HCA map is in error as described above and there is no HCA on the subject property.

There is an existing water quality swale within High HCA mapped area in the southeast corner of the property. The swale is approximately 2' wide and 2' additional width is proposed so the swale can be further utilized by the proposed development on the subject property. The limit of disturbance for grading along the centerline of the swale will be 18' in width and will be a temporary impact less the permanent impact for

additional swale width. A storm drain line will connect through a rock outfall at the north end of the expanded existing water quality swale. Criteria will be met, but we believe the HCA map is in error as described above and there is no HCA on the subject property.

M. Structures. All buildings and structures in HCAs and riparian areas, including all exterior mechanical equipment, should be screened, colored, or surfaced so as to blend with the riparian environment. Surfaces shall be non-polished/reflective or at least expected to lose their luster within a year. In addition to the specific standards and criteria applicable to water-dependent uses (docks), all other provisions of this chapter shall apply to water dependent uses, and any structure shall be no larger than necessary to accommodate the use.

This criterion does not apply.

N. Water-permeable materials for hardscapes. The use of water-permeable materials for parking lots, driveways, patios, and paths as well as flow-through planters, box filters, bioswales and drought tolerant plants are strongly encouraged in all "a" and "b" land classifications and shall be required in all "c" and "d" land classifications. The only exception in the "c" and "d" classifications would be where it is demonstrated that water-permeable driveways/hardscapes could not structurally support the axle weight of vehicles or equipment/storage load using those areas. Flow through planters, box filters, bioswales, drought tolerant plants and other measures of treating and/or detaining runoff would still be required in these areas.

Flow through planters, box filters, bioswales, drought tolerant plants and other measures of treating and/or detaining runoff use will be implemented within High HCA mapped areas if applicable.

The proposed path will be constructed of water permeable materials.

Any individual driveways within High and Moderate HCA mapped areas would not be constructed with water permeable materials as the proper structural support would not be provided.

A minimal amount of Mapped HCA would be impacted, but we believe the HCA map is in error as described above and there is no HCA on the subject property.

O. Signs and graphics. No sign or graphic display inconsistent with the purposes of the protection area shall have a display surface oriented toward or visible from the Willamette or Tualatin River. A limited number of signs may be allowed to direct public access along legal routes in the protection area.

This criterion will be met.

P. Lighting. Lighting shall not be focused or oriented onto the surface of the river except as required by the Coast Guard. Lighting elsewhere in the protection area shall be the minimum necessary and shall not create off-site glare or be omni-directional. Screens and covers will be required.

This criterion will be met.

Q. Parking. Parking and unenclosed storage areas located within or adjacent to the protection area boundary shall be screened from the river in accordance with Chapter 46 CDC, Off-Street Parking, Loading and Reservoir Areas. The use of water-permeable material to construct the parking lot is either encouraged or required depending on HCA classification per CDC 28.110(N)(4).

This criterion is not applicable.

R. Views. Significant views of the Willamette and Tualatin Rivers shall be protected as much as possible as seen from the following public viewpoints: Mary S. Young Park, Willamette Park, Cedar Oak Park, Burnside Park, Maddox Park, Cedar Island, the Oregon City Bridge, Willamette Park, and Fields Bridge Park.

Where options exist in the placement of ramps and docks, the applicant shall select the least visually intrusive location as seen from a public viewpoint. However, if no options exist, then the ramp, pilings and dock shall be allowed at the originally proposed location.

This criterion is not applicable.

S. Aggregate deposits. Extraction of aggregate deposits or dredging shall be conducted in a manner designed to minimize adverse effects on water quality, fish and wildlife, vegetation, bank stabilization, stream flow, visual quality, noise and safety, and to promote necessary reclamation.

This criterion is not applicable.

T. Changing the landscape/grading.

1. Existing predominant topographical features of the bank line and escarpment shall be preserved and maintained except for disturbance necessary for the construction or establishment of a water related or water dependent use. Measures necessary to reduce potential bank and escarpment erosion, landslides, or flood hazard conditions shall also be taken.

Any construction to stabilize or protect the bank with rip rap, gabions, etc., shall only be allowed where there is clear evidence of erosion or similar hazard and shall be the minimum needed to stop that erosion or to avoid a specific and identifiable hazard. A geotechnical engineer's stamped report shall accompany the application with evidence to support the proposal.

2. The applicant shall establish to the satisfaction of the approval authority that steps have been taken to minimize the impact of the proposal on the riparian environment (areas between the top of the bank and the low water mark of the river including lower terrace, beach and river edge).

3. The applicant shall demonstrate that stabilization measures shall not cause subsequent erosion or deposits on upstream or downstream properties.

4. Prior to any grading or development, that portion of the HCA that includes wetlands, creeks, riparian areas and water resource area shall be protected with an anchored chain link fence (or approved equivalent) at its perimeter and shall remain undisturbed except as specifically allowed by an approved Willamette and Tualatin River Protection and/or water resource area (WRA) permit. Such fencing shall be maintained until construction is complete. That portion of the HCA that includes wetlands, creeks, riparian areas and water resource area shall be identified with City-approved permanent markers at all boundary direction changes and at 30- to 50-foot intervals that clearly delineate the extent of the protected area.

5. Full erosion control measures shall be in place and approved by the City Engineer prior to any grading, development or site clearing.

This criterion will be met where applicable. The existing water quality swale is proposed to be widened and erosion control measures will be taken.

A minimal amount of Mapped HCA would be impacted, but we believe the HCA map is in error as described above and there is no HCA on the subject property.

U. Protect riparian and adjacent vegetation. Vegetative ground cover and trees upon the site shall be preserved, conserved, and maintained according to the following provisions:

1. Riparian vegetation below OHW removed during development shall be replaced with indigenous vegetation, which shall be compatible with and enhance the riparian environment and approved by the approval authority as part of the application.

2. Vegetative improvements to areas within the protection area may be required if the site is found to be in an unhealthy or disturbed state by the City Arborist or his or her designated expert. "Unhealthy or disturbed" includes those sites that have a combination of native trees, shrubs, and groundcover on less than 80 percent of the water resource area and less than 50 percent tree canopy coverage in the primary and secondary habitat conservation area to be preserved. "Vegetative improvements" will be documented by submitting a revegetation plan meeting CDC 28.160 criteria that will result in the primary and secondary habitat conservation area to be preserved having a combination of native trees, shrubs, and groundcover on more than 80 percent of its area, and more than 50 percent tree canopy coverage in its area. The vegetative improvements shall be guaranteed for survival for a minimum of two years. Once approved, the applicant is responsible for implementing the plan prior to final inspection.

3. Tree cutting shall be prohibited in the protection area except that:

a. Diseased trees or trees in danger of falling may be removed with the City Arborist's approval; and

b. Tree cutting may be permitted in conjunction with those uses listed in CDC 28.030 with City Arborist approval; to the extent necessary to accommodate the listed uses;

c. Selective cutting in accordance with the Oregon Forest Practices Act, if applicable, shall be permitted with City Arborist approval within the area between the OHW and the greenway boundary provided the natural scenic qualities of the greenway are maintained. (Ord. 1576, 2008; Ord. 1590 § 1, 2009; Ord. 1604 §§ 29 – 36, 2011; amended during July 2014 supplement; Ord. 1635 § 17, 2014; Ord. 1636 § 27, 2014)

This criteria will be met where applicable. A Tree preservation plan has been implemented and a Tract "A proposed for further tree protection. (Tree Preservation Plan attached.)

28.120 SITE PLAN

A. All site plans and maps shall include the name, address and telephone number of the applicant, a lineal scale of the plot plan, a north arrow and a vicinity map.

See attached development plan

B. The applicant shall submit a site plan drawn to an appropriate scale (in order of preference: one inch equals 10 feet to one inch equals 30 feet), which contains the following information:

1. Assessor's Map number and tax lot number.

2. The lot or parcel boundaries, dimensions and gross area.

3. The applicant's property and the surrounding property to a distance sufficient to determine the relationship between the applicant's property and proposed development to the adjacent property and development.

4. The location, dimensions, and names of all existing and platted streets and other public ways and easements on adjacent property and on the site.

5. The location, dimensions and setback distances of all:

a. Existing structures, improvements, utility facilities and drainageways on site and on adjoining properties;

b. Proposed structures or changes to existing structures, improvements, utility facilities and drainageways on the site.

6. All developments shall define and map existing public access rights on, and adjacent to, the subject property.

7. A slope contour map at minimum two-foot intervals showing slope classifications of zero to 25 percent and greater than 25 percent.

8. If a wetland on the West Linn Local Wetland Inventory is identified on the property and the proposed activity is expected to encroach within 25 feet of the wetland, a delineation of the precise boundaries of that wetland prepared by a wetland biologist.

9. The location of the ordinary high water mark and the ordinary low water mark on the property and on abutting properties.

10. The delineation of areas designated "Habitat and Impact Areas Not Designated as HCAs" and HCA areas by low, medium and high designation shall be mapped based on the HCA Map and any necessary verification shall be done by the Planning Director. (Ord. 1576, 2008; Ord. 1604 § 37, 2011; Ord. 1636 § 28, 2014)

See attached existing conditions map and development plan

28.130 GRADING PLAN

The grading plan shall be at the same scale as the site plan (CDC 28.120) and shall show or attach:

A. 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.

B. 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:

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

2. Assessment of engineering geological conditions and factors;

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

4. 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.

C. Sufficient factual data to support the conclusions of the plan.

D. Identification information, including the name and address of the owner, developer, project designer, and the project engineer. (Ord. 1576, 2008; Ord. 1635 § 18, 2014; Ord. 1662 § 5, 2017)

See attached grading plan

28.140 ARCHITECTURAL DRAWINGS

A. Architectural drawings shall be submitted at the same scale as the site plan scale, as described in the site plan, showing:

1. Elevations of structure(s). For additions, the drawings should clearly distinguish between existing structure and proposed addition and show distance from addition and existing structure to the protected water resource.

2. The exterior building materials: type, color, and texture.

3. For docks, all pilings and their heights shall be shown. The applicant shall indicate the depth from the end of the dock to the river bottom during typical summer months. The applicant shall also provide any available product literature and photographs from the manufacturer or installer.

4. For docks, the applicant shall provide a plan view of the structure in relation to the shoreline and river. The plans shall also indicate graphically the OLW and the OHW and the DSL's preference rights and authorized areas. (Ord. 1576, 2008)

Any applicable drawings will be attached

28.150 LANDSCAPE PLAN

A. The landscape plan shall be prepared per site plan standards (CDC 28.120) and in addition shall show:

1. The location, size and type of existing trees and location and type of vegetation to be removed and to be retained;

2. The location and design of landscaped areas;

3. The varieties and sizes of trees and materials to be planted;

4. The location and height of fences and other buffering or screening materials; and

5. The location, materials, dimensions and design of terraces, decks, patios, shelters, footpaths, retaining walls and play areas.

B. Revegetation plan per CDC 32.080. (Ord. 1576, 2008)

This criterion does not apply

28.160 MITIGATION PLAN

If any HCA is permanently disturbed as a result of the proposed development of any uses or structures, the applicant shall prepare and implement a revegetation and mitigation plan pursuant to the provisions of CDC 32.070 and 32.080. (Ord. 1576, 2008)

The water quality pond is DSL jurisdictional and there is no proposed impact.

The widening of the existing non-jursidictional water quality swale by 2' is proposed at the south end of the tax lot through Mapped HCA to serve the proposed subdivision.

Per above described documentation we believe the HCA map is in error and there is no HCA on the subject property. Further, the water quality swale and water quality pond will be in their own tract. No mitigation is required or proposed.

28.170 PENALTIES

Violation of any provision or requirement of this chapter or conditions of approval is a Class A violation, and shall also constitute a public nuisance. Each day of violation constitutes a separate offense. In addition, the City retains the authority to require any water resource area which has been altered illegally to have erosion control measures put in place and be reestablished to its natural condition, including replanting trees, shrubs, etc., and reseeding open areas at the owner's expense. In addition, the City Attorney may institute any necessary legal proceedings to enforce the provisions of this chapter, or cure any problems resulting from violations of this chapter. (Ord. 1576, 2008; Ord. 1621 § 25, 2014)

CONCLUSION

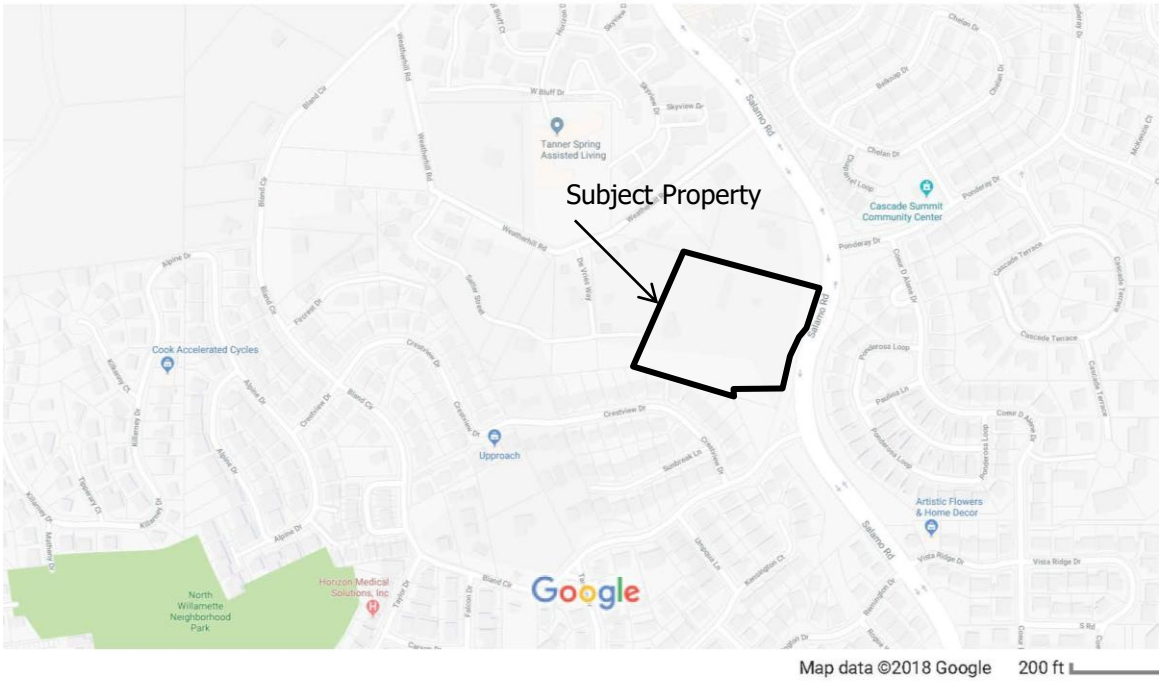
The subject property was walked to verify HCA mapping accuracy. Approximately one quarter of the property in the southeast portion is mapped by Metro as high and moderate HCA. Upon walking the site and conducting a natural resource assessment, we believe the HCA mapping is in error and there is no HCA onsite. We request this be verified by the planning director per 28.070.

A 25 lot development plan has been proposed. Widening of the existing water quality swale in the southeast portion of the property is proposed as well as the addition of paths (an allowed use). Impacts in currently mapped Medium and High HCA are proposed but should not be relevant to this application due to the mapping error. A water retention pond was constructed in the 1990's of which a small portion of the pond starts on the subject property and extends and enlarges to the south. DSL has taken jurisdiction of the water quality pond. There are no proposed encroachments to the pond. The pond is identified and under the care of the City of West Linn Public Works Department as a Surface Water Control Facility. A water quality swale was constructed between 2015 and 2016 connecting to the onsite portion of the water quality pond to be utilized by the subdivision to the west. The water quality swale is non-jurisdictional and is proposed to be widened for further utilization for the proposed development.

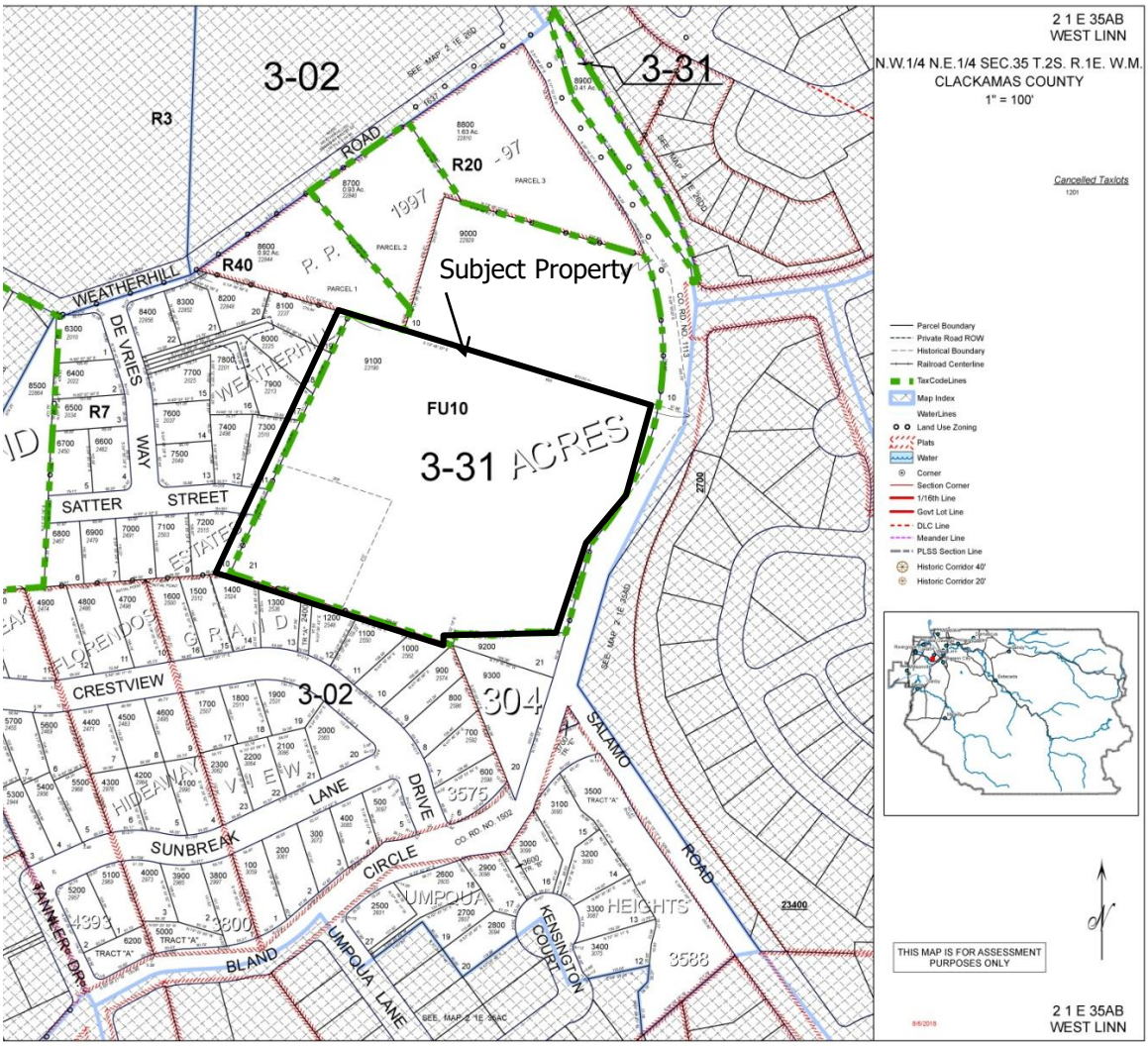
Appendices

A: Site Vicinity Map
B: Tax Map
C: HCA Map
D: Aerial Photograph
E: Development Plan
F: Development Plan Overlay on HCA Map
G: Ground Level Photographs
H: Grading Plan
I: Utility Plan
J: Tree Preservation Plan

oogle Maps



Appendix A: SITE LOCATION MAP Bland Circle S&A# 2649	Schott & Associates P.O. Box 589 Aurora, OR. 97002 503.678.6007



Appendix B. TAX MAP
Bland Circle
S&A#2649

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

Appendix C: HCA Map
Bland Circle
S&A#2649

Schott & Associates
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Appendix D. 2018 AERIAL PHOTOGRAPH-GOOGLE EARTH
Bland Circle
S&A#2649

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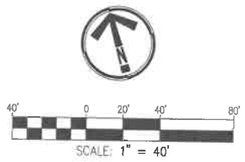

LEGEND

- 8' 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 RESIDENTIAL DRIVEWAY PER CITY OF WEST LINN DETAIL WL-503A (TYP. OF 21)
3. INSTALL 6' CONCRETE SIDEWALK PER CITY OF WEST LINN DETAIL WL-508
4. INSTALL AC SECTION FOR SATTER STREET PER SECTION TO MATCH EXISTING
5. INSTALL AC SECTION FOR SALAMO ROAD PER SECTION TO MATCH EXISTING
6. WIDEN EXISTING WATER QUALITY SWALE
7. INSTALL END OF ROAD BARRICADE

23190 BLAND CIRCLE SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

PRELIMINARY SITE PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	02/19	PLANNING 1ST SUBMITTAL
1	-	-

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
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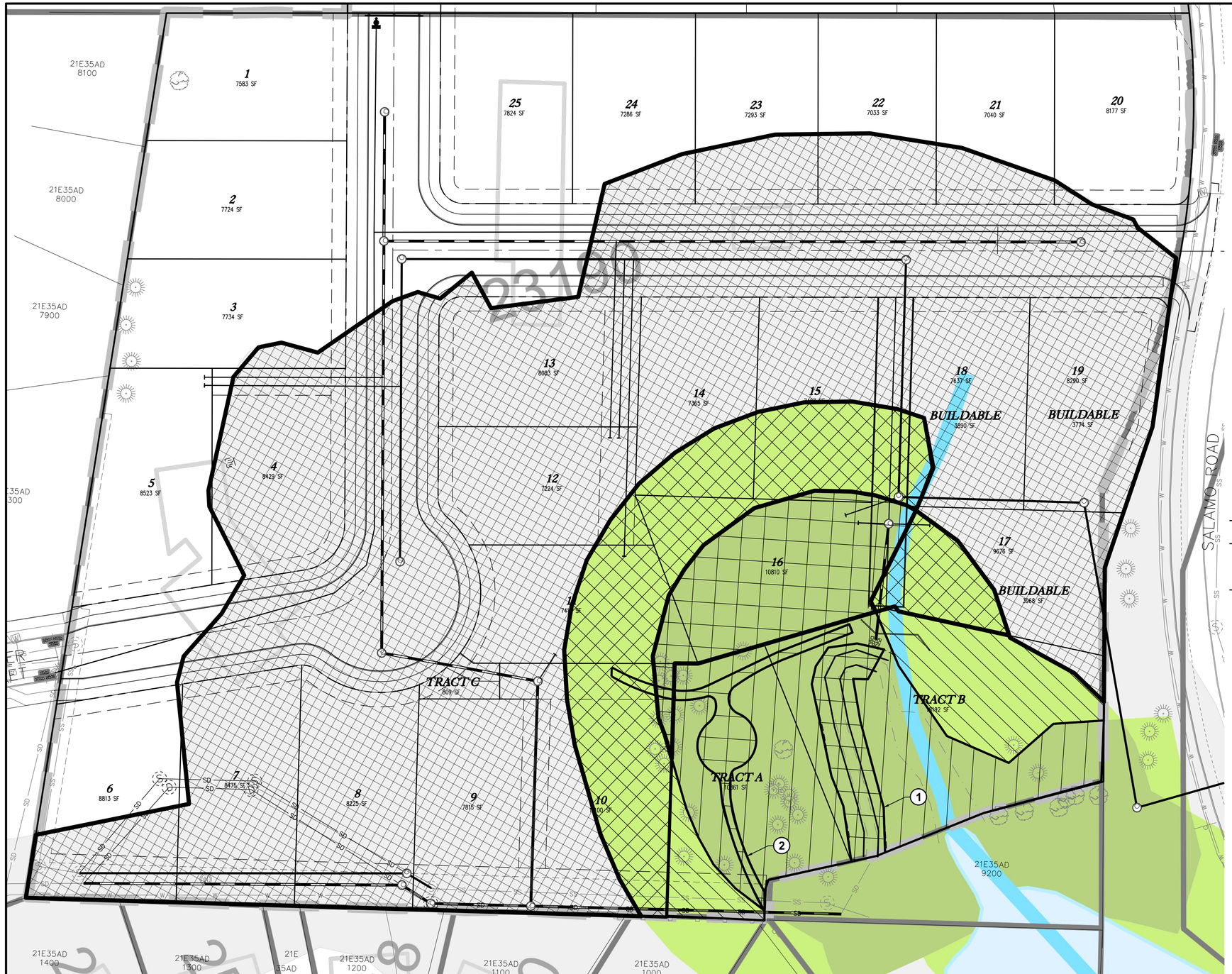
PRELIMINARY

SHEET 7 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\Plan\Planning Set\0542-001_07site_Layout - 7 PRELIMINARY SITE PLAN, Plot Date: 6/14/2019 11:15 AM, by: Jake Snyder



30' 0 15' 30' 60'

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)
- SILT FENCE
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED STORM DRAIN MANHOLE

SITE NOTES

TOTAL ONSITE HABITAT AND IMPACT AREAS NOT DESIGNATED AS HCAs (GREY) = 134,320 SF

TOTAL ONSITE HABITAT AND IMPACT AREAS NOT DESIGNATED AS HCAs IMPACTED = 134,320 SF

TOTAL ONSITE LOW IMPACT HCA AREAS = 0 SF

TOTAL ONSITE MODERATE IMPACT AREAS (LIGHT GREEN) = 28,620 SF

TOTAL ONSITE MODERATE HCA IMPACTED = 20,910 SF

TOTAL ONSITE HIGH IMPACT AREAS (DARK GREEN) = 30,050 SF

TOTAL ONSITE HIGH HCA IMPACTED = 14,038 SF

- NON-HCA DESIGNATED HABITAT AREA IMPACTED (GREY) = 134,320 SF
- MODERATE AREA NOT IMPACTED (LIGHT GREEN) = 7,710 SF
- MODERATE AREA IMPACTED (LIGHT GREEN) = 20,910 SF
- HIGH AREA NOT IMPACTED (DARK GREEN) = 16,012 SF
- HIGH AREA IMPACTED (DARK GREEN) = 14,038 SF

(1) GRADING LIMITS OF WIDENED WATER QUALITY SWALE. THIS AREA IS INCLUDED IN THE ABOVE LEGEND HIGH AREA IMPACTED TOTALS
SWALE IMPACT LIMITS = 2,850 SF

(2) LIMITS OF SOFT SURFACE PATH. THIS AREA IS INCLUDED IN THE ABOVE LEGEND MODERATE AND HIGH AREA IMPACTED TOTALS.
PATH LIMITS = 2,082 SF

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TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

HABITAT CONSERVATION AREA (HCA) EXHIBIT

REVISIONS

NO.	DATE	DESCRIPTION

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FAX: (503) 626-8562
www.emeriodesign.com

PRELIMINARY

SHEET - OF -

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Photo Point 1. At Sample Plot 1, facing north.

Photo Point 1. At Sample Plot 1, facing east, down slope.

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Aurora, OR. 97002
503.678.6007

Photo Point 1. At Sample Plot 1, facing south.

Photo Point 2. At Sample Plot 2,facng southeast into drainage swale.

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Aurora, OR. 97002
503.678.6007

Photo Point 2. At Sample Plot 2, facing north.

Photo Point 2. At Sample Plot 2, facing northwest.

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503.678.6007

Photo Point 3. Facing northwest along drainage.

Photo Point 3. Facing southeast toward culvert.

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503.678.6007

Photo Point 3. Facing northwest upslope.

Photo Point 4. Facing south.

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503.678.6007

Photo Point 4. Facing north.

Photo Point 5. At Sample Plot 6, facing east.

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503.678.6007

Photo Point 5. Facing south.

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Aurora, OR. 97002
503.678.6007

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
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- PROPOSED STORM DRAIN LINE
- PROPOSED WATER LINE
- CONSTRUCTION TREE PROTECTION FENCE (6' HIGH CHAIN LINK WITH METAL POSTS)
- SILT FENCE
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED STORM DRAIN MANHOLE

SITE NOTES

1. CONSTRUCT 4' TALL WALL BETWEEN SWALE AND END OF PRIVATE DRIVE
2. CONSTRUCT NATURAL STEPS/PATHWAY, MATERIAL TBD.
3. CONSTRUCT SOFT SURFACE PATHWAY.

23190 BLAND CIRCLE SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

GRADING & EROSION CONTROL PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	02/19	PLANNING 1ST SUBMITTAL
1	-	-

EMERIO Design
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PRELIMINARY

SHEET 8 OF 11

FILE P: \0542-001 23190 S Bland Circle \dwg \plan \Planning Set \0542-001_08grad. Layout: 10 GRADING & EROSION CONTROL PLAN, Plot Date: 6/14/2019 11:17 AM, by: Jake Snyder

COMPOSITE UTILITY PLAN

SCALE: 1"=30'

30' 0 15' 30' 60'

SCALE: 1" = 30'

UTILITY CONSTRUCTION NOTES

1. INSTALL STANDARD 48" MANHOLE (TYP. OF 16)
2. REPLACE AND LOWER EXISTING STORM LINE

* LOT TO BE EQUIPPED WITH FIRE SPRINKLERS IF REQUIRED IN LIEU OF TVFR STANDARD FIRE TURNAROUND

LEGEND:

- PROPOSED SANITARY SEWER LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED WATER LINE
- PROPOSED PUE EASEMENT
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED STORM DRAIN MANHOLE

23190 BLAND CIRCLE
SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

COMPOSITE UTILITY PLAN

NO.	DATE	DESCRIPTION
0	02/19	PLANNING 1ST SUBMITTAL
1	-	-

REVISIONS

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
FAX: (503) 598-8592
www.emeriodesign.com

PRELIMINARY

SHEET 9 OF 11

FILE:P: \0542-001 23190 S Bland Circle \dwg \plan \Planning Set \0542-001_05utili, Layout: 9 COMPOSITE UTILITY PLAN, Plot Date: 6/14/2019 11:18 AM, by: John Snyder

TREE PROTECTION FENCING AT DRIPLINE PLUS 10 FEET FOR SIGNIFICANT TREES

SALAMO ROAD

SATTER STREET

TRACT A 10981 SF

TRACT B 18182 SF

TRACT C 809 SF

BUILDABLE 3890 SF

BUILDABLE 3774 SF

BUILDABLE 3968 SF

RETAIN STUMPS OR CAREFULLY STUMP GRIND TREES REMOVED FROM TREE PROTECTION ZONES.

ADDITIONAL TREE PROTECTION FENCING FOR NON-SIGNIFICANT TREES TO BE RETAINED.

APPROVAL OF PROJECT ARBORIST REQUIRED FOR CONSTRUCTION IN TREE PROTECTION ZONE.

OWNER APPROVAL MUST BE OBTAINED PRIOR TO REMOVAL OF OFFSITE TREES, OTHERWISE BORE AT DEPTH OF 5' OR MORE.

LEGEND

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

30' 0 15' 30' 60'

SCALE: 1" = 30'

GENERAL TREE INVENTORY

TOTAL PROPERTY AREA	284,010 SF (6.52 AC)
TOTAL TREE INVENTORY	223
TOTAL TREES RETAINED	38
TOTAL TREES REMOVED	185

SIGNIFICANT TREES INVENTORY

ONSITE SIGNIFICANT TREE INVENTORY	63
SIGNIFICANT TREES RETAINED	15
SIGNIFICANT TREES REMOVED	48
EXISTING SIGNIFICANT TREE CANOPY COVERAGE	87,961 SF
TREE PRESERVATION AREA REQUIRED (20% OF EXISTING SIGNIFICANT TREE CANOPY)	17,592 SF
TREE PRESERVATION AREA PROVIDED	21,640 SF

23190 BLAND CIRCLE
SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

TREE PRESERVATION PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	02/19	PLANNING 1ST SUBMITTAL
1	-	-

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PRELIMINARY

SHEET 3 OF 11

FILE: P:\0542-001 23190 S Bland Circle\dwg\Plan\Planning Set\0542-001_01.dwg, Layout: 3 TREE PRESERVATION PLAN, Plot Date: 6/14/2019 11:19 AM, by: Jake Snyder

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

May 6, 2019

Toll Brothers, Inc.
Attn: JJ Portlock
4949 Meadows Rd., Ste. 420
Lake Oswego, OR 97035

Re: WD # 2019-0061 Wetland Delineation Report for 23190 Bland Circle;
Clackamas County; T2S R1E Sec. 35AB, Tax Lot 9100
West Linn Local Wetland Inventory TA-01

Dear Mr. Portlock:

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, a site visit on March 12, 2019 and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figure 6 of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map.

Within the study area, one detention pond and one ephemeral drainage were identified. The detention pond is jurisdictional per OAR 141-085-0515(6) and is subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high-water line (OHWL) of the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined). The ephemeral 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. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

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

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. If you have any questions, please phone me at 503-986-5246.

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
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 and Authorization Information

☒ Applicant ☐ Owner Name, Firm and Address:
Toll Brothers, Inc
JJ Portlock
4949 Meadows Road, Suite 420
Lake Oswego, Oregon 97035

Business phone #
Mobile phone # (optional)
E-mail: jportlock@tollbrothers.com

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

Business phone #
Mobile phone # (optional)
E-mail:

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: JJ Portlock **Signature:**
Date: 1/9/19 Special instructions regarding site access:

Project and Site Information

Project Name: 23190 Bland Circle

Latitude: 45.358 351982 Longitude: -122.647 111
decimal degree - centroid of site or start & end points of linear project

Proposed Use:
Development

Tax Map # 35AB 2S 1E
Tax Lot(s) 9100

Tax Map #
Tax Lot(s)

Project Street Address (or other descriptive location):
23190 Bland Circle

Township 2 S Range 1E Section 35 QQ AB

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/Carl Cramer
PO Box 589
Aurora, OR 97002

Phone # (503) 678-6007
Mobile phone # (if applicable)
E-mail: carlc@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: Carl Cramer Date: 1.15.18

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

Wetland/Waters Present? ☐ Yes ☒ No | Study Area size: 6.5AC | Total Wetland Acreage: 0.0000

Check Applicable 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 TA1-1

For Office Use Only

DSL Reviewer: CS Fee Paid Date: ___/___/___ DSL WD # 2019-0061

Date Delineation Received: 1/28/19 Scanned: ☐ Electronic: ☑ DSL App.# _____

proj. # 77643

oogle Maps

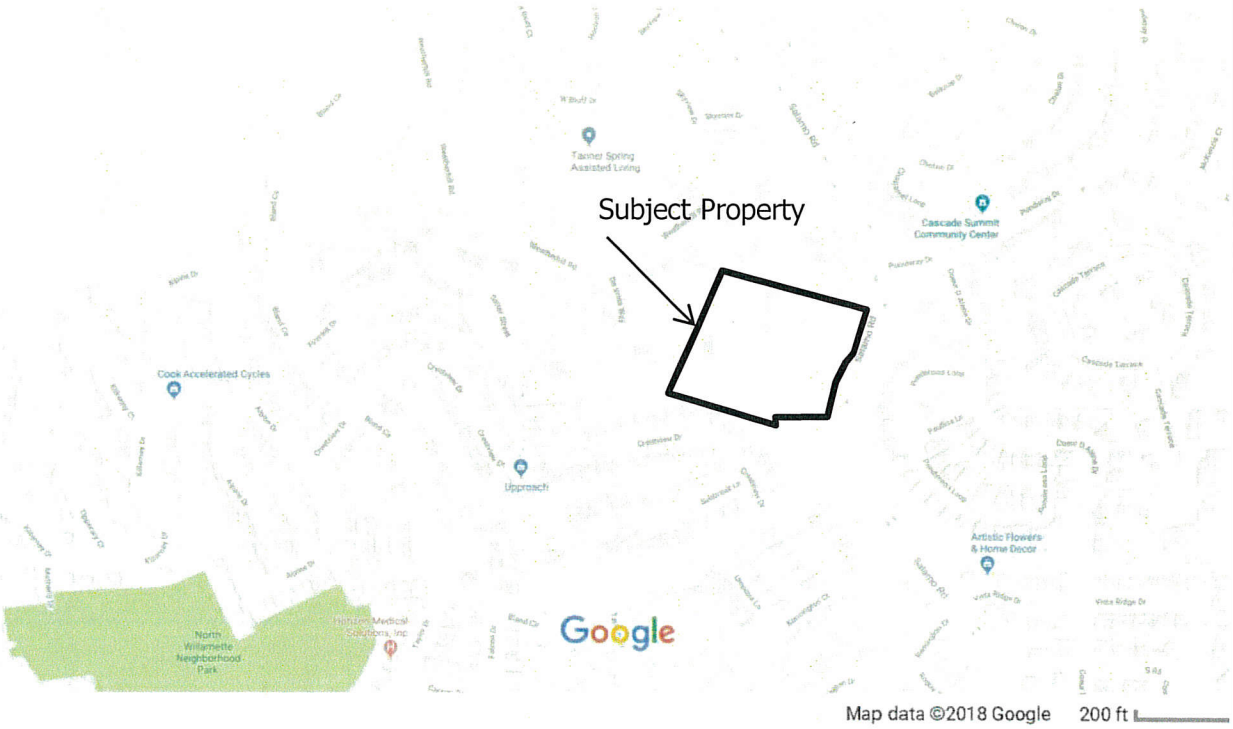

FIGURE 1. SITE LOCATION MAP
Bland Circle
S&A# 2649

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

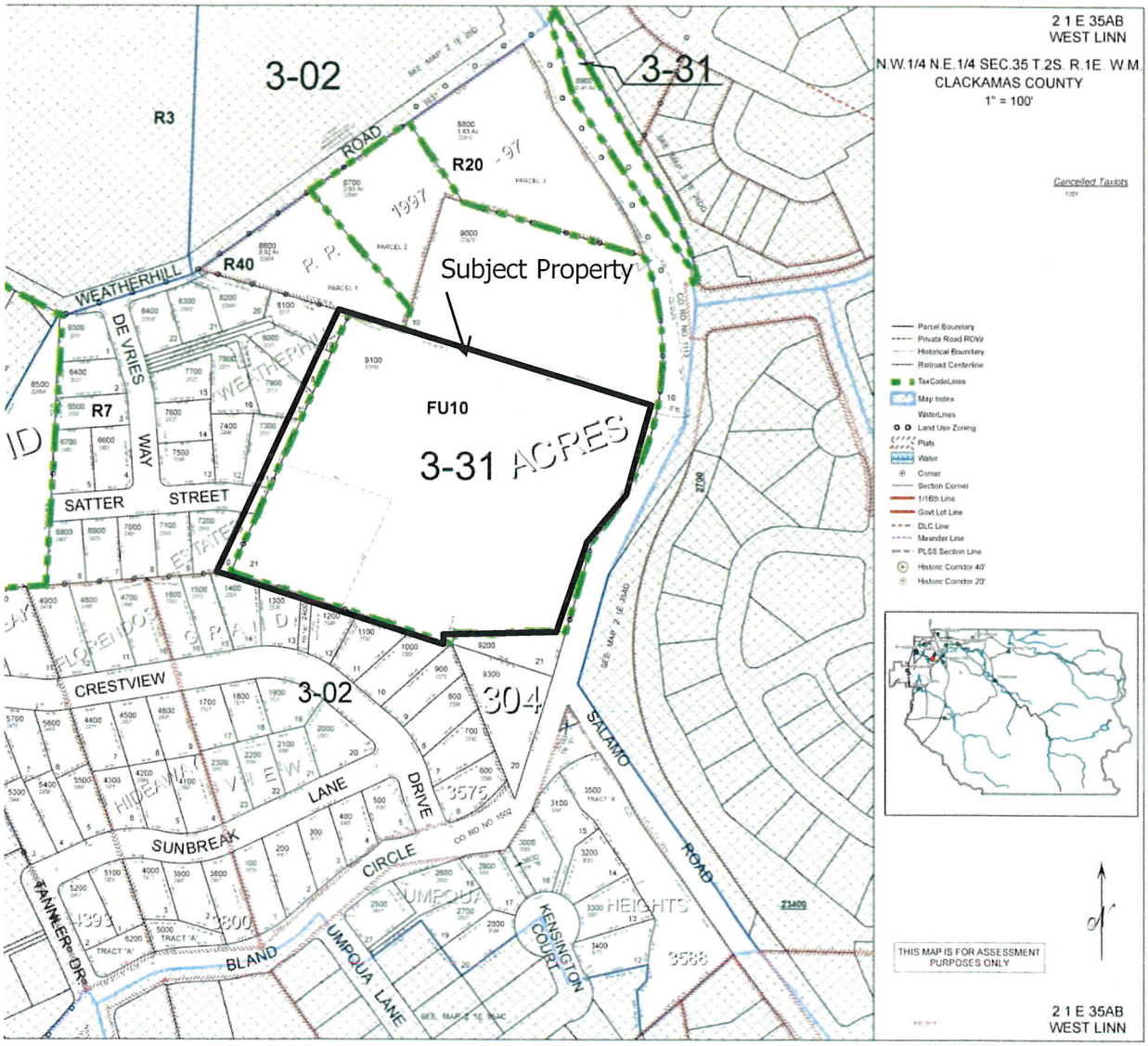

FIGURE 2. TAX MAP
Bland Circle
S&A#2649

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

23190 BLAND CIRCLE
SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

Figure 6

PARCEL 1
283,996 SF

SALAMO ROAD

APPROX. END CULVERT LOCATION NO IE

CULVERT
IE 536.56 OUT 18" N

APPROX FLOWLINE

EXISTING SWALE & POND BREAKLINE

APPROX SWALE LIMITS

APPROX POND WATERLINE

CULVERT
IE 532.76 OUT
IE 532.28 IN 8" NW
IE 532.18 OUT 8" SE

WATER LINE PER 3/'s AS BUILTS

BURRIED/NOT FOUND

SHOWN PER RECORD

SP=Sample Plot
PP=Photo Point

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

SCALE: 1" = 40'

DSL WD # 2019-0061
Approval Issued 5-06-19
Approval Expires 5-06-24

SURVEYOR'S NOTE

THE DATUM FOR THIS SURVEY IS BASED UPON OREGON REAL-TIME GNSS NETWORK (ORGN). NGVD29.

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.

REVISIONS

NO.	DATE	DESCRIPTION
0	-	-
1	-	-

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PRELIMINARY

SHEET
OF

FILE P: \2642-001 23190 S Bland Circle_outgoing \2019-01-09_Ex cond to Schott & Assoc \2642-001_02exst_revised, Layout: 2 EXISTING CONDITIONS PLAN, Plot Date: 3/27/2019 1:26 PM, by: Jacob Snyder

NATURAL RESOURCE ASSESSMENT
Within
Water Resource Area
Re-submittal

FOR

23190 Bland Circle
West Linn, Oregon

Prepared for:
Toll Brothers
4800 Meadows Road, Suite 335A
Lake Oswego, Oregon 97035

Prepared by:
Cari Cramer
Schott and Associates

Amended June 2019
Project #: 2649

INTRODUCTION

Site Location

Schott and Associates (S&A) was contracted to conduct a natural resource assessment on the 6.5 acre subject property located at 23190 Bland Circle in West Linn, Clackamas County, Oregon (T2S, R1E, Sec. 35AB, TL 9100).

Site Description

The rectangular shaped subject property has a house located in the southwest corner entered from a driveway extending north from Bland Circle to the south. A house, horse stable/barn and an associated outbuilding are located at the north end of the property with driveway access off of Salamo Drive to the east. The site topography is gently south sloping. The northern half of the property is an open area containing the horse stable/barn, open horse arena, grass fields and large garden areas. In the southwest portion of the property the house is located near the west property boundary and surrounded by a maintained landscape of lawn and woody species. Beyond the living area to the east and south is a forested area with a tree canopy consisting of Douglas fir *(Pseudotsuga menziesii*) and bigleaf maple (*Acer macrophyllum*). The understory is open and consists of nonnative grasses and forbs with some patches of Himalayan blackberry (*Rubus armeniacus*) and scattered English hawthorn (*Crataegus monogyna*), beaked hazelnut *(Corylus cornuta*), common snowberry (*Symphoricarpos albus*) and thimbleberry (*Rubus parviflorus*). The southeast portion of the property is fenced on all sides and is an open field used for horse grazing. Vegetation mainly consists of grasses and blackberry with scattered young Douglas fir trees and western red cedars (*Thuja plicata*). In the southeast corner, at the southern property boundary, is a J-shaped water quality swale that is connected to a water detention pond located offsite directly south. Per the City of West Linn, the water detention facility is in a Detention Easement.

The WRA Map documents a protected water resource on site (Appendix C). The WRA map and the LWI mapped a wetland south of the subject property extending onto the site just across the southern property line. Salamo Creek was mapped through the wetland, continuing north beyond the wetland halfway across the subject property. The mapped wetland feature is the City's water detention facility and does not meet wetland criteria.

The surrounding area is residential.

Project Objectives

The applicant proposes construction of a 25 lot subdivision with associated access drive, parking and utilities.

The wetland and drainage are 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 any onsite WRA feature, provide water resource map amendment and address the approval criteria in CDC Chapter 32.080 Alternate Review Process.

METHODS

A wetland delineation and natural resource assessment was conducted by S&A on October 3, 2018 for the purposes of identifying onsite wetlands and waterways and natural resource assessment. As per 32.020 Chapter 32 of the CDC applies to all development, activity or uses within WRAs identified on the WRA map. The presence or absence of any onsite undisturbed wetland or waterway was determined based on field verified conditions and documented in this report. The delineation was concurred with by DSL (WD-2019-0061).

WRA CONDITIONS

Waterway

During the delineation site visit one water quality swale connected to the onsite portion of a water quality pond were delineated. The water quality pond extended offsite to the south, all part of the City water detention facility.

A sample plot (3) was taken in the swale that was essentially a J-shaped ditch approximately 3' wide. Vegetation met wetland criterion, but soils were a 10YR2/1 without redoximorphic features. Hydrology criterion was met as surface saturation was observed. Sample plots 2 and 4 were taken in upland plots that were higher in elevation on both sides of the swale. Vegetation criterion met but soils were a 10YR 3/2 or 3/3 without redoximorphic features and no hydrology was observed.

East of and connected to the swale was a small onsite portion of a water quality/detention pond that was mostly located offsite to the south.

During a requested DSL agency site visit on March 12, 2019 water was observed draining through a culvert under the driveway to the north that entered from Salamo Road. The flow line followed natural topography and drained into the water quality swale. DSL determined this to be an ephemeral drainage and requested it to be mapped. DSL did not take jurisdiction of the ephemeral drainage.

Wetland

Based on soil, vegetation and hydrology data taken in the field no wetlands were delineated on site. Sample Plots 1, 5 and 6 were taken in lower areas that were caused by horses grazing the field. Sample plots 1 and 6 met vegetation criteria but SP 5 did not. Soils were a 10YR3/2 or 3/3 and did not meet the hydric soil indicators in any of the sample plots and no hydrology was observed.

The Local Wetland Inventory (LWI) for the City of West Linn mapped a wetland and drainage within the southern portion of the property near the east property line. The drainage directed north beyond the wetland halfway up the property.

There proved to be no WRA mapped drainage on the site. There was a water quality/detention pond, which was misidentified as a natural drainage. No wetlands were found onsite. The water quality swale was observed in the location of the mapped wetland. A sample plot taken in the bottom of the swale did not have hydric soils.

DSL concurred with the delineation and took jurisdiction of the detention pond portion of the water quality facility in May 2019. The water quality swale and an ephemeral drainage were not found to be jurisdictional. (WD-2019-0061)

Water Resource Area (WRA)

A wetland and stream are WRA mapped in the southeast corner of the site. Additionally, the wetland with the stream extending through it was WRA mapped extending offsite to the south. An onsite delineation conducted by wetland biologists found that there were no wetlands or waters on site except for an ephemeral drainage and a water quality swale connecting to an onsite portion of a water quality pond that extends offsite to the south. The water quality swale connects to the City's water detention facility and was permitted by the City of West Linn in September of 2015 and placed in a detention Easement per Document no. 95-004520. The existing swale currently provides water quality treatment for the adjacent subdivision to the west, Weatherhill Estates. The swale was constructed prior to December 2016 and releases treated stormwater to an existing regional pond that was originally constructed in the 1990's. Additionally, Record Drawings were done December 22, 2016 of the final construction of the water quality swale and submitted to the City of West Linn.

Though DSL determined the storm water detention pond to be jurisdictional, the City contends that it is actually part of a larger water quality facility requiring maintenance and should not be considered a protected water resource; therefore a WRA should not be required.

Undisturbed WRA Conditions

During the delineation site visit a water quality swale and water quality pond were located within the area that was WRA mapped as a wetland and stream. During a DSL agency site visit overland flow was observed directing south coming from under a driveway culvert located north on the site. There was no stream channel on the north or south sides of the driveway/culvert. Surrounding area was a non-native grass field with a few scattered Douglas fir and Western red cedar. The field was used as a horse pasture.

IMPACTS

Impacts to Wetlands/Waters

No wetlands were found onsite. DSL has taken jurisdiction of the water quality detention pond which will not be encroached upon. The pond and bio-swale will be protected within their own tract.

Sheet flow was observed during a March DSL agency site visit coming from the north through a driveway culvert, flowing south through south sloping topography into the water quality swale. DSL requested it to be mapped and labeled as a non-jurisdictional ephemeral drainage. There was no stream channel north of the driveway and culvert. The water source is entirely tied to the existing culvert. Once water exited the culvert it followed south sloping topography to the water quality swale. The ephemeral drainage provides no functions and has no value. Once proposed development occurs the ephemeral drainage will no longer exist. Storm water would be appropriately routed as discussed further in this report. A 15' WRA width on each side of the ephemeral drainage would not be applicable.

Impacts to the WRA

A wetland and stream were WRA mapped in the southeast corner of the subject property. A 65' WRA boundary adjacent to each side of the water resource would be required. The field work failed to find a WRA onsite. As there are no WRA area on-site, no impacts to any WRA are proposed.

The water quality detention pond that DSL took jurisdiction of will not be impacted and will be within a tract.

The water quality swale that is non-jurisdictional will be widened and contained within the same tract as the water quality pond.

An ephemeral drainage was observed onsite during a DSL site visit and determined non-jurisdictional. The ephemeral drainage was not previously WRA mapped and is simply water being focused by a culvert from the north and flowing south in natural downhill topography. The ephemeral drainage does not merit a buffer and storm water will be more effectively routed within the proposed development plan.

32.020 APPLICABILITY

A. *This chapter applies to all development, activity or uses within WRAs identified on the WRA Map. It also applies to all verified, unmapped WRAs. The WRA Map shall be amended to include the previously unmapped WRAs.*

B. The burden is on the property owner to demonstrate that the requirements of this chapter are met, or are not applicable to the land, development activity, or other proposed use or alteration of land. The Planning Director may make a determination of applicability based on the WRA Map, field visits, and any other relevant maps, site plans and information, as to:

1. The existence of a WRA;

2. The exact location of the WRA; and/or

3. Whether the proposed development, activity or use is within the WRA boundary.

In cases where the location of the WRA is unclear or disputed, the Planning Director may require a survey, delineation, or sworn statement prepared by a natural resource professional/wetland biologist or specialist that no WRA exists on the site. Any required survey, delineation, or statement shall be prepared at the applicant's sole expense. (Ord. 1623 § 1, 2014)

A wetland and stream are WRA mapped in the southeast corner of the site extending offsite to the south. A Natural Resource Assessment was conducted in October of 2018. Findings concluded that there are no wetlands or waterways onsite or offsite to the south, except one ephemeral drainage. There was a water quality swale and pond within the location of the mapped WRA. The pond was found to be DSL jurisdictional but did not meet wetland criteria. The swale and ephemeral drainage are non-jurisdictional and it is contended that there is no WRA onsite.

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.

Not applicable. The Alternate Review Process shall be addressed.

32.070 ALTERNATE REVIEW PROCESS

This section establishes a review and approval process that applicants can use when there is reason to believe that the width of the WRA prescribed under the standard process (CDC 32.060(D)) is larger than necessary to protect the functions of the water resource at a particular site. It allows a qualified professional to determine what water resources and associated functions (see Table 32-4 below) exist at a site and the WRA width that is needed to maintain those functions. (Ord. 1623 § 1, 2014)

As per Table 32-2, the required width of the WRA on each side of the delineated protected water resource or edge of delineated wetland shall extend 65 feet from the ordinary high water (OHW) line. It is contended that there is no water resource onsite, and therefore no

WRA. The pond and bio-swale are part of a City water quality facility requiring regular maintenance and will be placed within a separate tract. The ephemeral stream provides no functions and is of no value. Water exits through a culvert and follows a natural topographic down slope path and should not actually be considered an ephemeral drainage. The non-jurisdictional ephemeral drainage will no longer exist with proposed development and storm water will be routed appropriately through a storm water plan.

32.080 APPROVAL CRITERIA (ALTERNATE REVIEW PROCESS)

Applications reviewed under the alternate review process shall meet the following approval criteria:

A. The proposed WRA shall be, at minimum, qualitatively equal, in terms of maintaining the level of functions allowed by the WRA standards of CDC 32.060(D).

A wetland and stream are the water resources WRA mapped on site. These were mis-mapped and a water quality swale and water quality pond are located where the resources were mapped. The standards of 32.060(D) require a minimum WRA width 65 feet from the OHW or wetland boundary for the protected WRA Water Resource. Additionally, there is an ephemeral drainage flowing from north to south half way down the property. The standards require a 15' WRA width on either side. The ephemeral drainage will no longer exist with proposed development and storm water will be more effectively routed within a stormwater plan. There is no water resource, therefore there is no WRA.

B. If a WRA is already significantly degraded (e.g., native forest and ground cover have been removed or the site dominated by invasive plants, debris, or development), the approval authority may allow a reduced WRA in exchange for mitigation, if:

1. The proposed reduction in WRA width, coupled with the proposed mitigation, would result in better performance of functions than the standard WRA without such mitigation. The approval authority shall make this determination based on the applicant's proposed mitigation plan and a comparative analysis of ecological functions under existing and enhanced conditions (see Table 32-4).

There is no existing WRA as there is no water resource as previously discussed in this report.

2. The mitigation project shall include all of the following components as applicable. It may also include other forms of enhancement (mitigation) deemed appropriate by the approval authority.

a. Removal of invasive vegetation.

b. Planting native, non-invasive plants (at minimum, consistent with CDC 32.100) that provide improved filtration of sediment, excess nutrients, and pollutants. The amount of enhancement (mitigation) shall meet or exceed the standards of CDC 32.090(C).

c. Providing permanent improvements to the site hydrology that would improve water resource functions.

d. Substantial improvements to the aquatic and/or terrestrial habitat of the WRA.

Mitigation should not be required as there is no water resource or WRA to impact.

C. Identify and discuss site design and methods of development as they relate to WRA functions.

There is no WRA but the water quality swale and pond will be contained within a tract and utilized as described below.

D. Address the approval criteria of CDC 32.060, with the exception of CDC 32.060(D).
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.

There is no WRA to impact but the water quality swale and pond will be protected within a tract as stated above.

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 utilize the existing water quality swale 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 site drainage area presently flows from offsite from the west, east and north into the existing regional detention pond just offsite to the southeast. In the post developed condition, the site impervious flows will be treated onsite in the existing swale before entering the existing offsite pond and discharging offsite.

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.).

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.

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.

This project proposes modifications to an existing onsite water quality swale to address water quality requirements. The proposed grading will retain the general existing drainage pattern for pervious areas of the site. All runoff from impervious surfaces will be collected and routed to discharge into the existing swale and then flow into an existing local stormwater detention pond to meet detention requirements. Three planter boxes will be designed at the time of individual building permits to address the water quality storm event for three lots (16, 17, 18) that will discharge into the pond and downstream of the swale.

Impervious surface runoff from the frontage of 22870 Weatherhill Road will be collected by catch basins and connect to storm sewer pipe upstream of the onsite swale.

The existing water quality swale will be widened to accommodate the impervious area added by the development project. The existing swale currently provides water quality treatment for impervious areas from the adjacent subdivision to the west, Weatherhill Estates. Onsite stormwater runoff will be collected by catch basins in the proposed street and by laterals to individual proposed lots.

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.

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.

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.

The mapped resource was mis-mapped as described previously and is a water quality swale and pond that should not require a surrounding WRA. However, the water quality swale and pond will be within a separate tract. A 15' WRA is required adjacent to ephemeral drainges. The mapped drainage was not found to be jurisdictional. Its source of water will be eliminated by the proposed development resulting in the loss of the drainage. No WRA is mapped or proposed for this drainage.

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 to 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.

There are no wetlands or waterways onsite, except an ephemeral drainage that is proposed to be removed as it serves no function, therefore there is no WRA. There will be no roads or driveways located within the water quality swale and pond or tract they are within.

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.

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.

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).

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, wetlands or riparian corridors onsite.

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.

H. *Daylighting Piped Streams*.

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.

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.

N/A

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 to the degree possible even though there is no WRA, but instead a water quality swale and pond that will be within a protected tract.

32.090 MITIGATION PLAN

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.

There is no WRA. Development is not proposed within the onsite water quality swale. The swale will be widened and the pond will not be impacted. Mitigation plans are not required.

32.110 HARDSHIP PROVISIONS

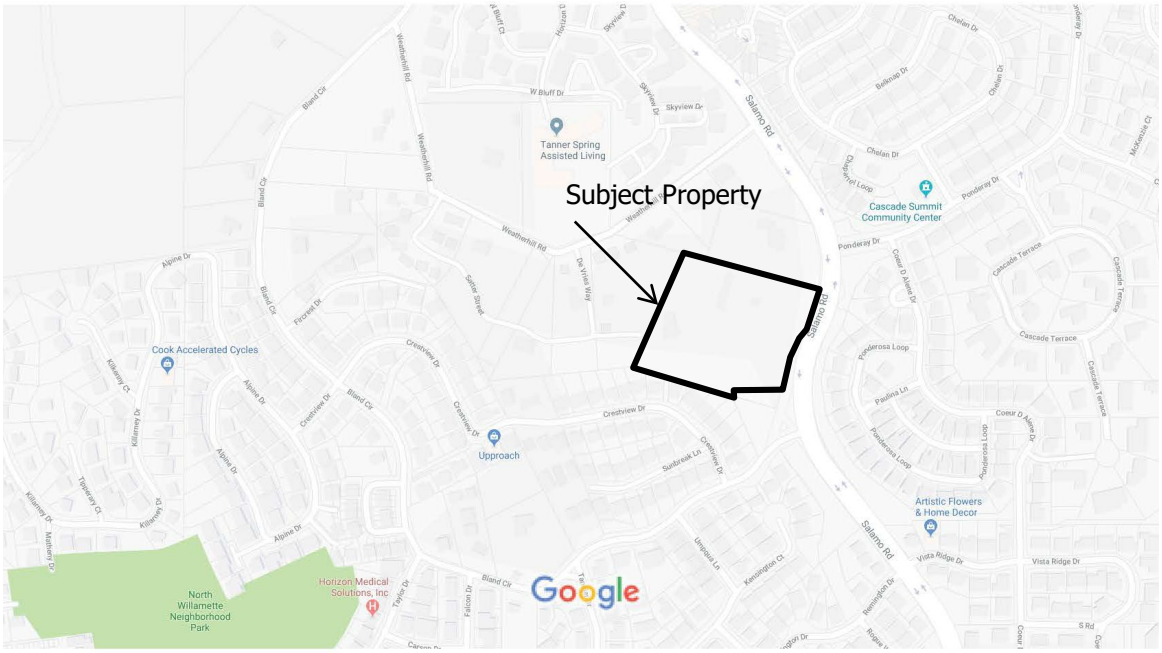
The purpose of this section is to ensure that compliance with this chapter does not deprive an owner of reasonable use of land. To avoid such instances, the requirements of this chapter may be reduced. The decision-making authority may impose such conditions as are deemed necessary to limit any adverse 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.

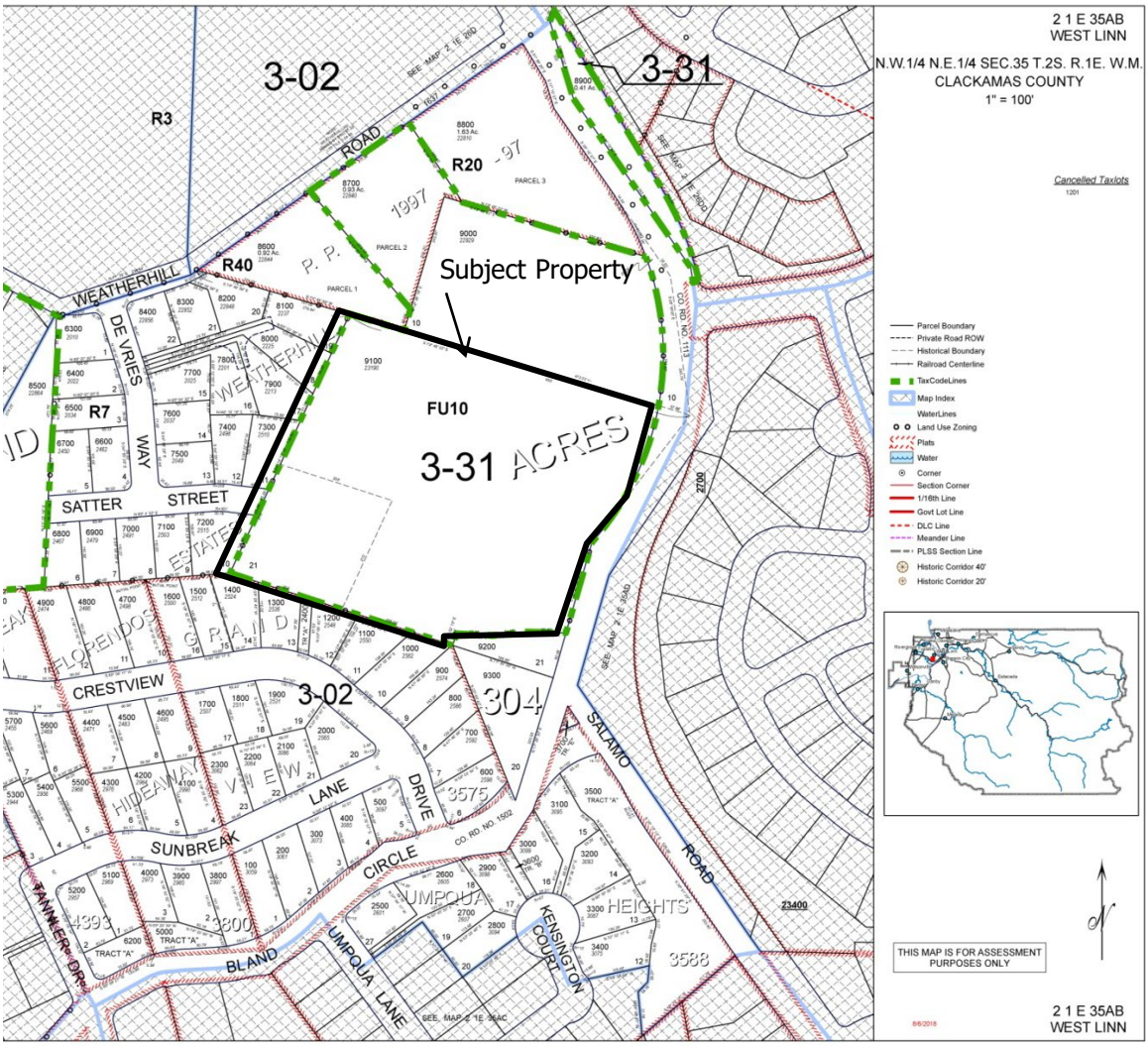
Appendices

Appendix A: Site Vicinity Map
Appendix B: Tax Lot Map
Appendix C: WRA Map
Appendix D: Existing Conditions Map
Appendix E: Development Plan
Appendix F: Wetland Delineation Report and concurrence letter

oogle Maps

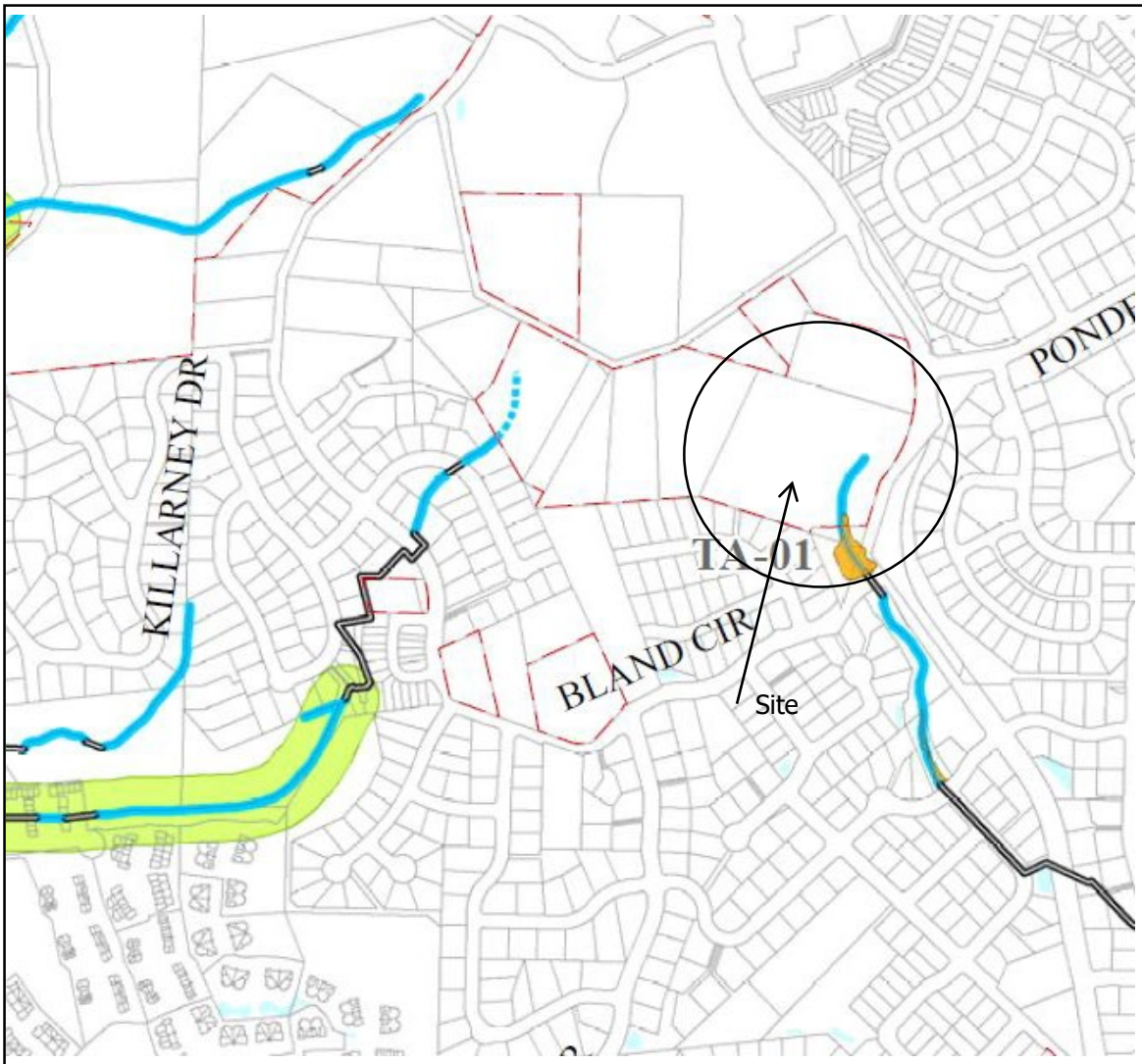


Appendix A: SITE LOCATION MAP Bland Circle S&A# 2649	Schott & Associates P.O. Box 589 Aurora, OR. 97002 503.678.6007



Appendix B. TAX MAP
Bland Circle
S&A#2649

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



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

City of West Linn GIS GEOGRAPHIC INFORMATION SYSTEMS

Appendix C. WRA Map
23190 Bland Circle
S&A#2649

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

23190 BLAND CIRCLE
SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

PARCEL 1
283,996 SF

SCALE: 1" = 40'

LEGEND

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

SP=Sample Plot
PP=Photo Point

SURVEYOR'S NOTE

THE DATUM FOR THIS SURVEY IS BASED UPON OREGON REAL-TIME GNSS NETWORK (ORGN). NGVD29.

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.

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REVISIONS

NO.	DATE	DESCRIPTION
0	- -	- -
1	- -	- -

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
FAX: (503) 620-3433
www.emeriodesign.com

PRELIMINARY

SHEET
OF

FILE:P:\0542-001 23190 S Bland Circle_outgoing\2019-01-09_Ex cond to Schott & Assoc\0542-001_02exst_revised_Layout: 2 EXISTING CONDITIONS PLAN, Plot Date: 3/21/2019 1:26 PM, by: Jacob Snyder

40' 0 20' 40' 80'

SCALE: 1" = 40'

LEGEND

- 8' 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 RESIDENTIAL DRIVEWAY PER CITY OF WEST LINN DETAIL WL-503A (TYP. OF 21)
3. INSTALL 6' CONCRETE SIDEWALK PER CITY OF WEST LINN DETAIL WL-508
4. INSTALL AC SECTION FOR SATTER STREET PER SECTION TO MATCH EXISTING
5. INSTALL AC SECTION FOR SALAMO ROAD PER SECTION TO MATCH EXISTING
6. WIDEN EXISTING WATER QUALITY SWALE
7. INSTALL END OF ROAD BARRICADE

23190 BLAND CIRCLE SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

PRELIMINARY SITE PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	02/19	PLANNING 1ST SUBMITTAL
1	-	-

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FAX: (503) 626-8910
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PRELIMINARY

SHEET 7 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_07site_Layout- 7 PRELIMINARY SITE PLAN, Plot Date: 6/14/2019 11:15 AM, by: Jake Snyder

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

May 20, 2019

Toll Brothers, Inc.
Attn: JJ Portlock
4949 Meadows Rd., Ste. 420
Lake Oswego, OR 97035

Re: WD # 2019-0061 Correction
Wetland Delineation Report for 23190 Bland Circle;
Clackamas County; T2S R1E Sec. 35AB, Tax Lot 9100
West Linn Local Wetland Inventory TA-01

Dear Mr. Portlock:

The purpose of this letter is to update the mapping for this study area to include a previously unidentified water quality swale. 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, a site visit on March 12, 2019 and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figure 6 of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map.

Within the study area, one detention pond, one water quality swale and one ephemeral drainage were identified. The detention pond is jurisdictional per OAR 141-085-0515(6) and is subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high-water line (OHWL) of the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined). The ephemeral drainage is exempt per OAR 141-085-0515(3). The water quality swale is exempt per OAR 141-085-0515(8).

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

Please be advised that state law establishes a preference for avoidance of impacts to wetlands or other waters. Because measures to avoid and minimize impacts to wetlands or other waters may include reconfiguring parcel layout and size or

development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. If you have any questions, please phone me at 503-986-5246.

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
Anita Huffman, DSL

PARCEL 1
283,996 SF

ephemeral drainage

APPROX. END LOCATION NO IE

CULVERT IE 538.56 OUT 18" N

APPROX FLOWLINE

EXISTING SWALE & POND BREAKLINE

APPROX SWALE LIMITS

APPROX POND WATERLINE

CULVERT IE 532.76 OUT

SALAMO ROAD

WATER LINE PER 1/3 AS BUILTS

BURRIED PIPE NOT FOUND

SCALE: 1" = 40'

LEGEND

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

water quality swale

detention pond

culvert

SURVEYOR'S NOTE

THE DATUM FOR THIS SURVEY IS BASED UPON OREGON REAL-TIME GNSS NETWORK (ORGN). NGVD29.

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

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23190 BLAND CIRCLE
SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

REVISIONS

NO.	DATE	DESCRIPTION
0	- -	-
1	- -	-

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PRELIMINARY

SHEET
OF

FILE: I:\542-001 23190 Bland Circle\Lodging\2019-11-19_Ex cond to Schott & Assoc\10542-001_02ext_revised_Layout 2 EXISTING CONDITIONS PLAN, Plot Date: 3/27/2019 1:26 PM, by Jacob Snyder

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

May 6, 2019

Toll Brothers, Inc.
Attn: JJ Portlock
4949 Meadows Rd., Ste. 420
Lake Oswego, OR 97035

Re: WD # 2019-0061 Wetland Delineation Report for 23190 Bland Circle;
Clackamas County; T2S R1E Sec. 35AB, Tax Lot 9100
West Linn Local Wetland Inventory TA-01

Dear Mr. Portlock:

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, a site visit on March 12, 2019 and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figure 6 of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map.

Within the study area, one detention pond and one ephemeral drainage were identified. The detention pond is jurisdictional per OAR 141-085-0515(6) and is subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high-water line (OHWL) of the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined). The ephemeral 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. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

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

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. If you have any questions, please phone me at 503-986-5246.

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
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 and Authorization Information

☒ Applicant ☐ Owner Name, Firm and Address:
Toll Brothers, Inc
JJ Portlock
4949 Meadows Road, Suite 420
Lake Oswego, Oregon 97035

Business phone #
Mobile phone # (optional)
E-mail: jportlock@tollbrothers.com

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

Business phone #
Mobile phone # (optional)
E-mail:

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: JJ Portlock **Signature:**
Date: 1/9/19 Special instructions regarding site access:

Project and Site Information

Project Name: 23190 Bland Circle

Latitude: 45.358 351982 Longitude: -122.647 111
decimal degree - centroid of site or start & end points of linear project

Proposed Use:
Development

Tax Map # 35AB 2S 1E
Tax Lot(s) 9100

Tax Map #
Tax Lot(s)

Project Street Address (or other descriptive location):
23190 Bland Circle

Township 2 S Range 1E Section 35 QQ AB

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/Carl Cramer
PO Box 589
Aurora, OR 97002

Phone # (503) 678-6007
Mobile phone # (if applicable)
E-mail: carlc@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: Carl Cramer Date: 1.15.18

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

Wetland/Waters Present? ☐ Yes ☒ No | Study Area size: 6.5AC | Total Wetland Acreage: 0.0000

Check Applicable 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 TA1-1

For Office Use Only

DSL Reviewer: CS Fee Paid Date: ___/___/___ DSL WD # 2019-0061

Date Delineation Received: 1/28/19 Scanned: ☐ Electronic: ☑ DSL App.# _____

proj. # 77643

oogle Maps

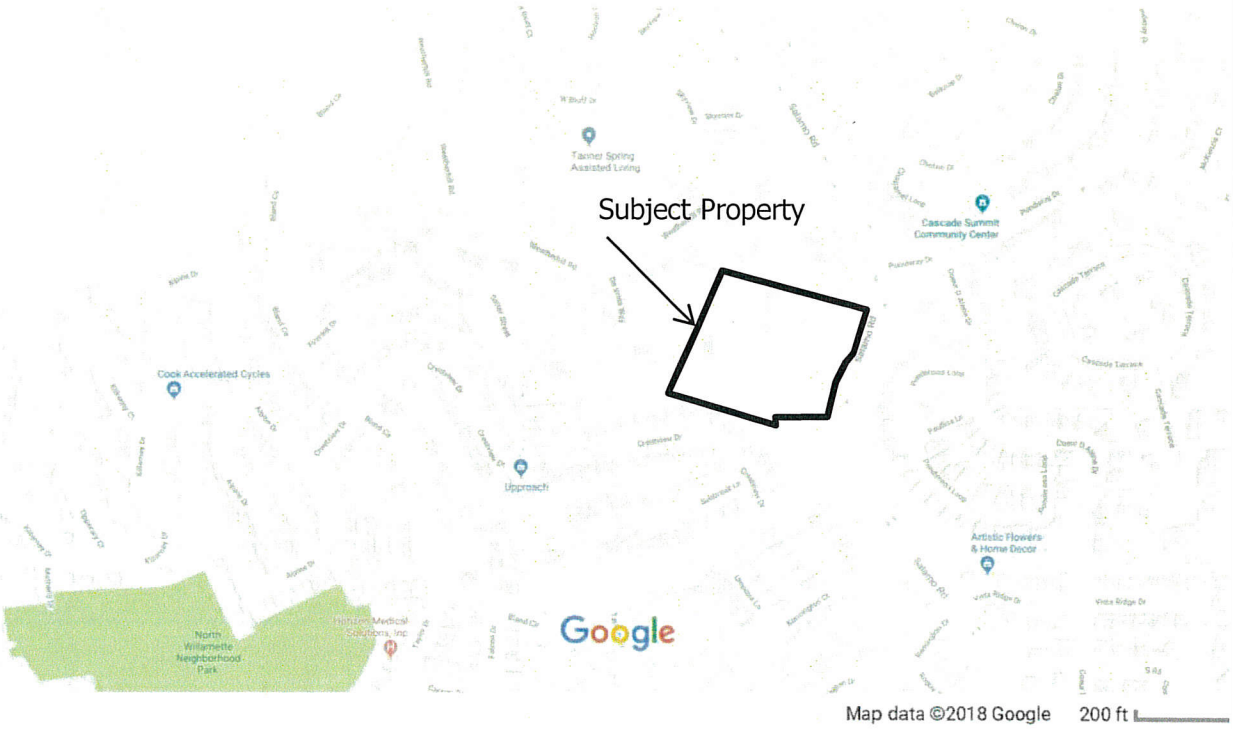

FIGURE 1. SITE LOCATION MAP
Bland Circle
S&A# 2649

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

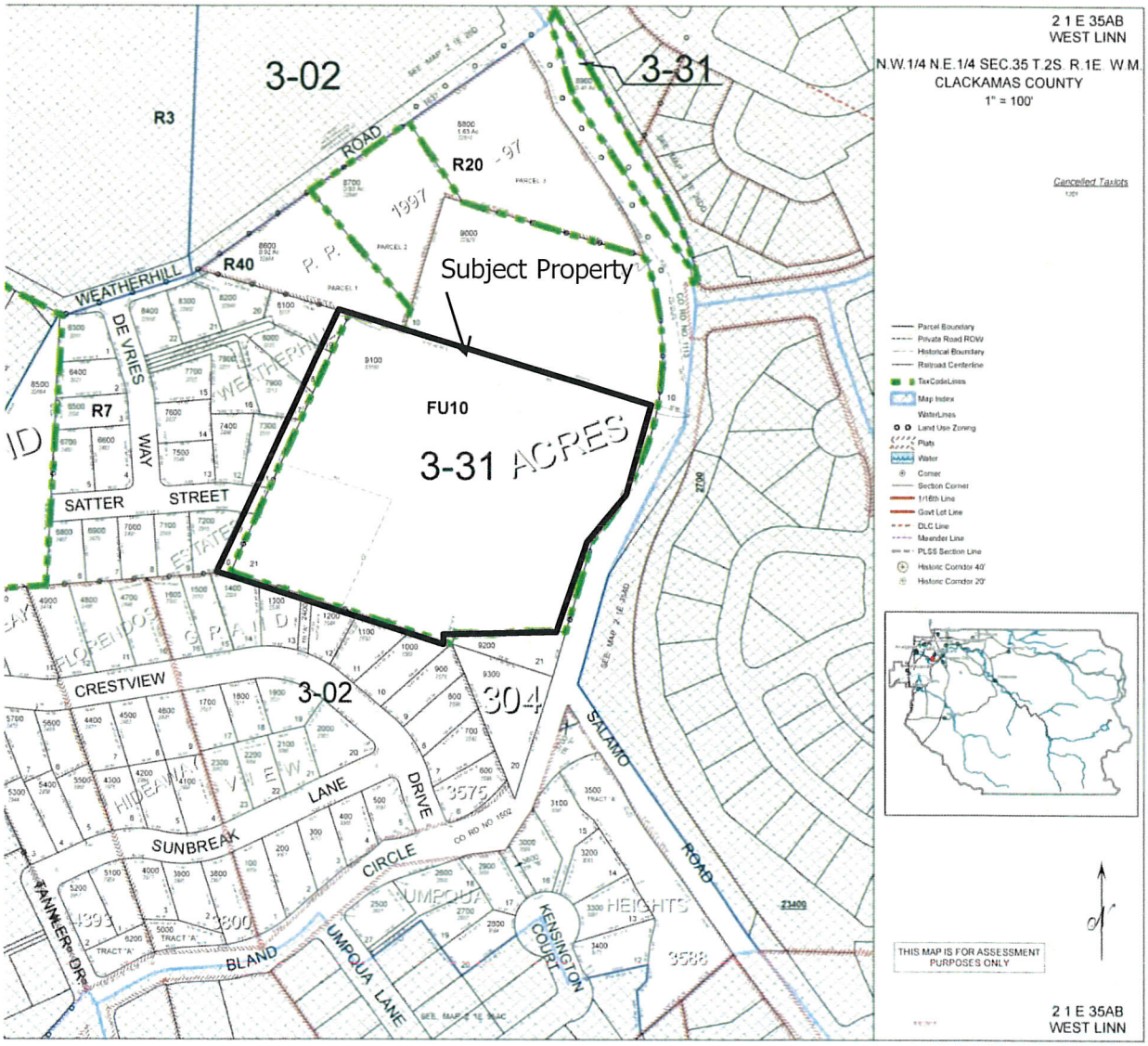

FIGURE 2. TAX MAP
Bland Circle
S&A#2649

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

23190 BLAND CIRCLE
SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

Figure 6

PARCEL 1
283,996 SF

SALAMO ROAD

APPROX. END CULVERT LOCATION NO IE

CULVERT
IE 536.56 OUT 18" N

APPROX FLOWLINE

EXISTING SWALE & POND BREAKLINE

APPROX SWALE LIMITS

APPROX POND WATERLINE

CULVERT
IE 532.76 OUT
IE 532.28 IN 8" NW
IE 532.18 OUT 8" SE

WATER LINE PER 3/'s AS BUILTS

BURRIED/NOT FOUND

SHOWN PER RECORD

SP=Sample Plot
PP=Photo Point

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

SCALE: 1" = 40'

DSL WD # 2019-0061
Approval Issued 5-06-19
Approval Expires 5-06-24

SURVEYOR'S NOTE

THE DATUM FOR THIS SURVEY IS BASED UPON OREGON REAL-TIME GNSS NETWORK (ORGN). NGVD29.

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.

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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.

REVISIONS

NO.	DATE	DESCRIPTION
0	-	-
1	-	-

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
PHONE: (503) 641-8560
FAX: (503) 639-9592
www.emeriodesign.com

PRELIMINARY

SHEET
OF

FILE P: \2642-001 23190 S Bland Circle_outgoing \2019-01-09_Ex cond to Schott & Assoc \2642-001_02exst_revised, Layout: 2 EXISTING CONDITIONS PLAN, Plot Date: 3/27/2019 1:26 PM, by: Jacob Snyder

MEMORANDUM

DATE: April 5, 2019

TO: JJ Portlock, Toll Brothers
Mike Grubbe, Toll Brothers

FROM: Dana M. Beckwith, P.E. / P.T.O.E.
Phoebe Kuo

SUBJECT: West Linn Bland Circle Subdivision Trip Generation

This memorandum summarizes the trip generation evaluation for the proposed 25-lot (6.52 acre) subdivision located at 23190 Bland Circle in the City of West Linn, Oregon.

PROJECT DESCRIPTION

The proposed subdivision at 23190 Bland Circle is located within an area of West Linn zoned as R-7 Single-Family Residential Detached and Attached housing. Figure 1 shows the proposed site plan. The development is a conforming land use per the City of West Linn Municipal Code Section 12 and consists of 25 Single Family Dwelling Units.

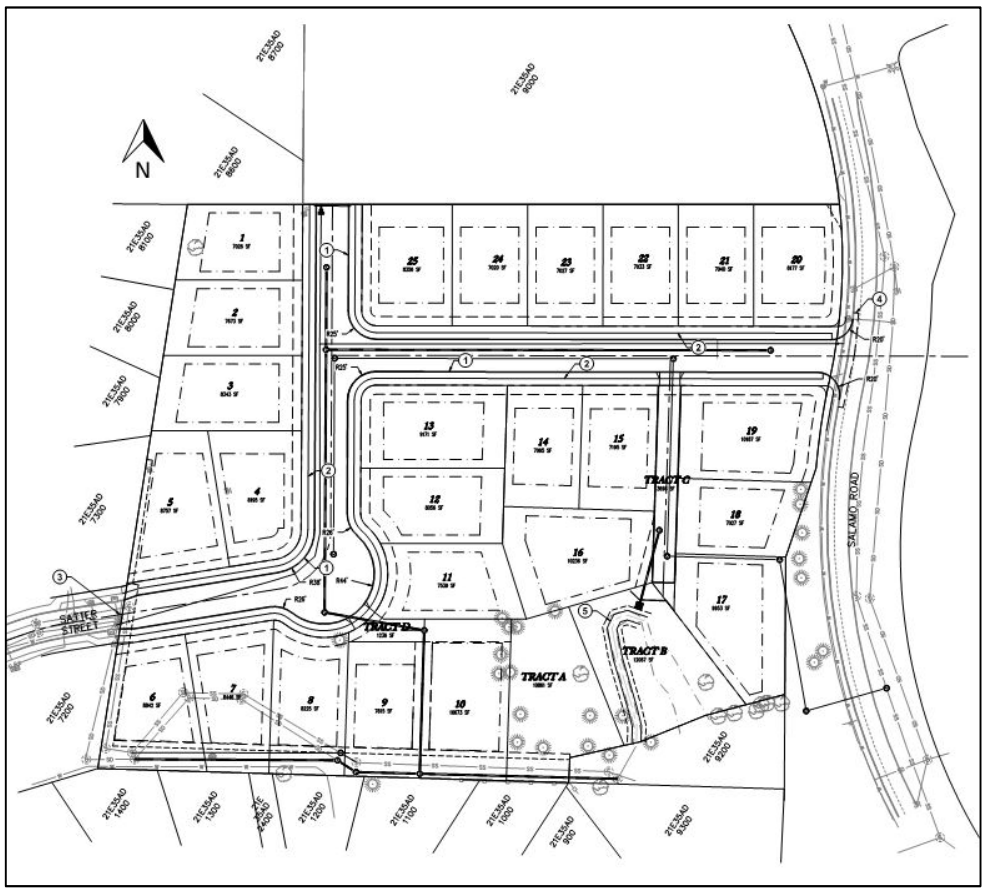


Figure 1 Site Plan

TRIP GENERATION

Trip rates presented in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, Tenth Edition*, were utilized to estimate the number of vehicle trips per dwelling unit that are anticipated to be generated by the site. The trip generation is based on the ITE Single-Family Detached Housing land use (ITE Code 210) for weekdays during the peak hour of adjacent street traffic. Table 1 summarizes the estimated trip generation for the site.

Table 1: Trip Generation Summary

Land Use	Dwelling Units	Weekday						
		ADT [2]	AM Peak Hour			PM Peak Hour		
			Total	Enter	Exit	Total	Enter	Exit
Single-Family Detached Housing (ITE 210)								
Generation Rate Per Dwelling Units[1]	25	9.44	0.74	25%	75%	0.99	63%	37%
New Site Trips		236	19	5	14	25	16	9

[1] Source: *Trip Generation Manual, Tenth Edition*, ITE, 2017, Average Rates.
[2] Average Daily Trips

As summarized in Table 1, it is estimated that 236 daily trips including 19 AM peak hour trips and 25 PM peak hour trips will be added to the local street network due to the proposed development.

MEMORANDUM

DATE: January 30, 2019

TO: JJ Portlock, Toll Brothers

Mike Grubbe, Toll Brothers

FROM: Dana Beckwith, PE, PTOE
Phoebe Kuo

SUBJECT: West Linn Bland/Salamo Road Sight Distance Evaluation P18-164-000

This memorandum summarizes the sight distance evaluation prepared for a roadway access to a new 25 lot subdivision in West Linn, Oregon. The access will be located along the west side of Salamo Road approximately 300 feet south of Ponderay Drive. This sight distance evaluation is based on the American Association of State Highway and Transportation Official's (AASHTO) Geometric Design of Highway and Streets, 2011.

This sight distance evaluation was conducted to verify the stopping sight distance for traffic approaching the site access from Salamo Road and intersection sight distance for traffic turning out of the proposed site. This memorandum summarizes the proposed site conditions, existing conditions, the results of the sight distance evaluation, and findings.

Proposed Site Conditions

Figure 1 provides a vicinity map for the proposed subdivision and the location of the new access to the subdivision. The proposed site access is located approximately 300 feet south of Ponderay Drive on the outside of a horizontal curve. The access will be designed to only allow right-in / right-out turn movements. Figure 2 provides a detailed site plan for the proposed development, including the location of the proposed access.

Figure 1: Vicinity Map

Figure 2: Site Plan

Existing Conditions

An inventory of the existing transportation conditions was conducted along Salamo Road, Ponderay Drive, and Bland Circle within the project vicinity. All modes of travel including pedestrians, bicycles, transit, and motor vehicles were included. The Salamo Road / Ponderay Drive and Salamo Road / Bland Circle intersections are both stop controlled.

GLOBAL Transportation Engineering

Table 1. Existing Study Area Roadway Conditions

Roadway	Posted Speed Limit	Sidewalks	Bike Facilities	Road Geometry	On-Street Parking	Transit Route
Salamo Road	35 mph	Both sides	Both sides	One lane in each direction, separated by a 20' wide median. (≈18' travel lane)	No	No
Ponderay Drive	25 mph	Both sides	No	One lane in each direction, separated by a 17' wide median. (≈18' travel lane)	No	No
Bland Circle	25 mph	South side	No	One lane in each direction. (≈32' total cross section)	No	No

Sight Distance Evaluation

Intersection sight distance and stopping sight distance for the proposed access were evaluated under existing conditions. The sight distance evaluation follows the guidance provided in the AASHTO Geometric Design of Highway and Streets, 2011.

Intersection sight distance is the minimum clear distance needed for drivers to anticipate and avoid collisions while determining whether to proceed through an intersection. The intersection sight distance evaluation assumes vehicles traveling at 35 mph along Salamo Road, driver's eye height of 3.5 feet, approaching object height of 3.5 feet, and setback of 14.5 feet from the existing traveled way. Intersection sight distance was compared to the AASHTO Design Intersection Sight Distance for "Case B2 - Right Turn from a Minor Street" [1].

Stopping sight distance (SSD) is the minimum sight distance needed for drivers to perceive, react, and stop for an object on the roadway. Since there is a median along Salamo Road, stopping sight distance (SSD) for the proposed access was compared to the AASHTO Design Standards for the southbound direction only[2]. An adjustment factor of 1.1 was used to account for an approximate 4.5 percent downgrade. Table 2 summarizes the sight distance evaluation.

Table 2. Sight Distance Evaluation

Location	Sight Distance Evaluated	Estimated Available Sightline(ft)	Sight Distance Standards(ft)	Meets Standard?
Proposed Access	Case B2: Right-turn	>335	335	Yes
	SSD SB Direction [a]	>271	271	Yes

[a] A 4.5% downgrade was assumed for southbound traffic.

[1] AASHTO, Case B2 – Intersections with stop control on the minor road (AASHTO, Case B2, Table 9-8).

[2] AASHTO Stopping Sight Distance on Grades, Table 3-2.

Findings

As summarized in Table 2, intersection sight distance is met for right-turning traffic from the proposed access and stopping sight distance is adequate for traffic traveling southbound along Salamo Road. Figure 3 and 4 show the existing view at 271 feet and

Figure 3: View to Site Access at 271 ft North

Figure 4: View to Site Access at 335 ft North

335 feet north of the proposed access looking from the anticipated driver's position on Salamo Road.[3] To maintain clear intersection sight triangles, it is recommended to trim trees as shown in Figure 4, only allow low plantings along the Salamo Road frontage and keep fencing and buildings setback as to not block the intersection sight triangle to the north.

[3] Photo taken from location of Driver's Eye: 3.5 feet above grade and center of travel lane.

Savanna Oaks Neighborhood Association Meeting

January 8th, 2019 at 7:00 PM

Minutes

Meeting was called to order at 7:00 pm by SONA President, Ed Schwarz

In attendance were thirty people. Twenty-two were members of SONA. There were three people who were guests from the Willamette Neighborhood Association. One person, Steve Miller of Emerio Design, was there to present plans for a 24-unit subdivision at 23190 Bland Circle. Four people were there from Tualatin Valley Fire and Rescue to answer questions and discuss home and neighborhood fire prevention and safety.

Meeting minutes from the December 2018 meeting were approved with a unanimous vote.

It was reported by the President, as had been relayed by the Treasurer, that the current SONA balance is $4,680.64.

Old Business:

1. Roberta Schwarz gave an update on the White Oak Savanna.
2. A new White Oak Savanna Committee has been established with the following people volunteering to be on it: Ed Schwarz, Roberta Schwarz, Patrick McGuire, Michael Rutten, Kim Shettler, and Carmela Selby. They took a site tour of the Savanna and made a list of restoration and maintenance items that need to be done. They took photos of problem areas and shared them with the SONA members at this meeting. They will meet with the Parks Advisory Board and make a presentation on Thursday, January 10th.
3. There was a discussion about not having the mud pit and shower in the Natural Play Area but instead having Bernert Creek in the Riparian Zone brought up to ground level. A photo mock-up was passed around to show what the Creek would look like if it were to flow above ground. The Natural Play Area Concept was also passed around the room. A vote was taken and the support for this plan of bringing the Bernert Creek above ground and **not** having the mud pit or shower was unanimous.

New Business:

1. A presentation was made by Steve Miller of Emerio Design regarding a proposed development of 24 homes at 23190 Bland Circle. There is an easement off Bland currently. The proposed development will be on approximately 6.5 acres. The single-family homes will be built by Toll Brothers and will be priced at approximately $750,000 to $800,000. Parking will be on one side of the street and there will be a demarcation (probably red curbs) to show potential buyers that this is the case. They will preserve a large grove of significant trees. There will be a right in, right out onto Salamo. There will be a storm water retention pond. The homes will be on approximately 7,000 square foot lots minimum. They will be approximately 30 feet tall. They will have 2 to 3 car garages. Several questions were asked and answered. Mr. Miller handed out several maps of the proposed development and his business card. He invited people to call or email him with their individual questions.

2. There was an update given by the President and the Secretary on the latest submittal (MISC-18-07) to the City by Mr. Parker and his partner for the property at 2444, 2422, and 2410 Tannler Dr. An appeal has been received and the City Council is tentatively scheduled to hear it on February 11th. More information will be forthcoming at the next SONA meeting.

3. The results of the Toys and Toiletries Drive by the Clackamas Women's Center were presented by the Secretary. She showed photos of the 50 toys that were purchased for the drive from the Dollar Store with the $50 from the Savanna Oaks Neighborhood Association Fund. These were from the approved list of that organization for the women and children in crisis during the Holiday Season.

4. An update was given to the presentation made previously by Terrence S. of the Master Recycler's program. He wanted to make sure we got the correction that the tops to plastic bottles should **not** be kept on the bottles when they are recycled.

5. Four representatives from Tualatin Valley Fire and Rescue were present at this meeting and two of them spoke. Chris Weaver, a Lieutenant and Paramedic and Casey Brown, a Battalion Chief were the presenters. They spoke about fire prevention in our homes and neighborhood including the White Oak Savanna. They said that they are happy to hear that SONA is recognized as a Fire Wise Community. Chris Weaver stated that we can have a person do a site visit of the Savanna annually like we used to do with Piseth P., who is no longer working in this area. They agreed the no parking areas should be marked on streets that have no parking because they are too narrow to allow for emergency vehicles to reach people who are in need of services. They said that the police force of W.L. should enforce these restrictions. They agreed that a 28 ft wide pavement is preferable to a 24 ft wide pavement. They agreed that what happened on the narrow Sattler St last summer when emergency vehicles could not reach a special needs child quickly because of parking on both sides of the street because it wasn't marked as no parking was regrettable and they believe it should not happen again. They passed out literature including "Home Hazard Checklist" and "Wildfire!". If anyone reading these notes would like a copy of either or both please email us at the SONA email address: savannaoaksna@westlinnoregon.gov

6. Ed Schwarz, seeing no further business, adjourned the meeting at 8:30 pm.

BLAND CIRCLE SUBDIVISION

25 LOT SUBDIVISION
NW 1/4 NE 1/4 SECTION 35, T. 2S, R. 1E, 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

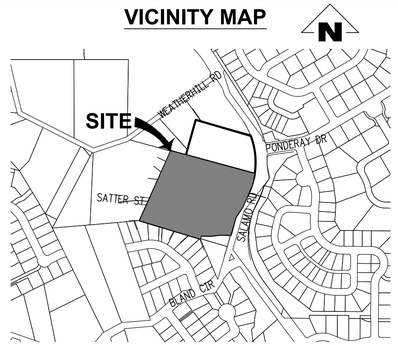
THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT THOSE SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT 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

BENCHMARK INFORMATION

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

DATUM = NGVD 29

SITE DATA

AREA:	6.52 Ac.
ZONING:	R-7
TAX MAP:	T2SR1E35AB
TAX LOT:	9100
NO. OF LOTS:	25

PROJECT CONTACTS

APPLICANT:

TOLL WEST COAST LLC.
4949 MEADOWS ROAD, SUITE 420
LAKE OSWEGO, OR 97035
(971) 339-5176
JPORTLOCK@TOLLBROTHERS.COM

OWNER:

DAVID & DRUCILLA SLOOP
23190 BLAND CIRCLE
WEST LINN, OR 97068

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)

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

23190 BLAND CIRCLE
SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

COVER SHEET

REVISIONS

NO.	DATE	DESCRIPTION
0	02/19	PLANNING 1ST SUBMITTAL
1	-	-

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

PRELIMINARY

SHEET 1 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_01cover, Layout: 1 COVER SHEET, Plot Date: 6/14/2019 10:59 AM, by: Jake Snyder

DEMOLITION KEY NOTES

1. REMOVE AND REPLACE SPEED LIMIT SIGN 25' SOUTH ALONG SALAMO RD.
2. REMOVE EXISTING SIDEWALK & GUTTER
3. SAWCUT & REMOVE EXISTING AC.
4. REMOVE EXISTING AC & GRAVEL DRIVEWAY.
5. REMOVE EXISTING FENCING.
6. REMOVE EXISTING CULVERT.
7. REMOVE EXISTING AC DRIVEWAY UP TO LOT LINE.
8. REMOVE EXISTING BUILDING/STRUCTURE
9. REMOVE EXISTING CONCRETE AREAS
10. REMOVE EXISTING TREES (TYP.). SEE SHEET 3 & 4 FOR DETAILED TREE PLANS
11. INSTALL CONSTRUCTION ENTRANCE
12. REMOVE EXISTING WELL

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

SCALE: 1" = 40'

SURVEYOR'S NOTE

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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.

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23190 BLAND CIRCLE SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

EXISTING CONDITIONS & DEMO PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	02/19	PLANNING 1ST SUBMITTAL
1	-	-

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
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PRELIMINARY

SHEET 2 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_02exsL Layout: 2 EXISTING CONDITIONS & DEMO PLAN, Plot Date: 6/14/2019 11:01 AM, by: Jake Snyder

TREE PROTECTION FENCING AT DRIPLINE PLUS 10 FEET FOR SIGNIFICANT TREES

LEGEND

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

30' 0 15' 30' 60'

SCALE: 1" = 30'

GENERAL TREE INVENTORY	
TOTAL PROPERTY AREA	284,010 SF (6.52 AC)
TOTAL TREE INVENTORY	223
TOTAL TREES RETAINED	38
TOTAL TREES REMOVED	185

SIGNIFICANT TREES INVENTORY	
ONSITE SIGNIFICANT TREE INVENTORY	63
SIGNIFICANT TREES RETAINED	15
SIGNIFICANT TREES REMOVED	48
EXISTING SIGNIFICANT TREE CANOPY COVERAGE	87,961 SF
TREE PRESERVATION AREA REQUIRED (20% OF EXISTING SIGNIFICANT TREE CANOPY)	17,592 SF
TREE PRESERVATION AREA PROVIDED	21,640 SF

RETAIN STUMPS OR CAREFULLY STUMP GRIND TREES REMOVED FROM TREE PROTECTION ZONES.

ADDITIONAL TREE PROTECTION FENCING FOR NON-SIGNIFICANT TREES TO BE RETAINED.

APPROVAL OF PROJECT ARBORIST REQUIRED FOR CONSTRUCTION IN TREE PROTECTION ZONE.

OWNER APPROVAL MUST BE OBTAINED PRIOR TO REMOVAL OF OFFSITE TREES, OTHERWISE BORE AT DEPTH OF 5' OR MORE.

23190 BLAND CIRCLE SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

TREE PRESERVATION PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	02/19	PLANNING 1ST SUBMITTAL
1	–	–

EMERIO Design
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PRELIMINARY

SHEET 3 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_03tree.Layout: 3 TREE PRESERVATION PLAN, Plot Date: 6/14/2019 11:19 AM, by: Jake Snyder

Tree No.	Svy. Type	Common Name	Scientific Name	Svy. DBH	DBH[1]	Single DBH[2]	C-Rad[3]	Condition[4]	Structure	Sig.?[5]	Comments	Treatment
50178	E	western red cedar	*Thuja plicata*	6	7	7	7	good	good	no		remove
50180	E	western red cedar	*Thuja plicata*	8	8	8	7	fair	good	no	epicormic growth at lower trunk	remove
50236	D	Oregon white oak	*Quercus garryana*	18	18	18	16	good	good	yes		retain
50329	D	Oregon white oak	*Quercus garryana*	44	47	47	39	good	fair	yes	multiple leaders, failed branches up to 6" diameter	remove
50344	D	wild plum	*Prunus americana*	6	8	8	10	poor	poor	no	stump sprout	remove
50345	D	wild plum	*Prunus americana*	8	10	10	10	poor	poor	no	partial uproot	remove
50385	D	orchard apple	*Malus domestica*	10	11	11	9	poor	poor	no	branch failures	remove
50446	D	Oregon white oak	*Quercus garryana*	10	10	10	10	good	fair	no	multiple leaders	remove
50449	D	Oregon white oak	*Quercus garryana*	6	5	5	6	good	fair	no	multiple leaders	remove
50452	D	Oregon white oak	*Quercus garryana*	10	10	10	11	good	fair	no	multiple leaders	remove
50467	D	Chinese willow	*Salix matsudana*	8	28	28	17	good	fair	no	multiple leaders at 2'	remove
50866	D	black locust	*Robinia pseudoacacia*	6	6	6	6	fair	fair	no	one sided, size estimated, not tagged because offsite	retain
50868	D	black locust	*Robinia pseudoacacia*	18	18	18	15	fair	fair	no	one sided, size estimated, not tagged because offsite	retain
50871	D	black locust	*Robinia pseudoacacia*	12	12	12	20	fair	fair	no	one sided, size estimated, not tagged because offsite	retain
50872	D	bigleaf maple	*Acer macrophyllum*	10	10	10	15	poor	poor	no	suppressed, overtopped by adjacent trees, size estimated, not tagged because offsite	retain
50873	D	bigleaf maple	*Acer macrophyllum*	16	16	16	20	good	fair	no	multiple leader, size estimated, not tagged because offsite	retain
50874	D	bigleaf maple	*Acer macrophyllum*	16	18	18	20	fair	fair	no	one sided, size estimated, not tagged because offsite	retain
50887	E	Port-Orford-cedar	*Chamaecyparis lawsoniana*	4	12	12	6	good	fair	no	multiple leaders at 6"	retain
50888	E	Port-Orford-cedar	*Chamaecyparis lawsoniana*	8	10	10	7	good	good	no		retain
50889	E	Douglas-fir	*Pseudotsuga menziesii*	8	8	8	11	good	good	no		retain
50896	E	western red cedar	*Thuja plicata*	14	13	13	12	good	good	no		retain
50897	E	Port-Orford-cedar	*Chamaecyparis lawsoniana*	12	24	24	12	good	fair	no	codominant at 3' with included bark	remove
50898	E	Port-Orford-cedar	*Chamaecyparis lawsoniana*	12	10	10	11	good	good	no		remove
50899	E	western red cedar	*Thuja plicata*	12	14	14	10	good	fair	no	competing upright leaders	remove
50900	E	western red cedar	*Thuja plicata*	14	18	18	14	good	fair	no	codominant at 6" with included bark	remove
50905	E	western red cedar	*Thuja plicata*	14	14	14	13	good	good	no		remove

Tree No.	Svy. Type	Common Name	Scientific Name	Svy. DBH	DBH[1]	Single DBH[2]	C-Rad[3]	Condition[4]	Structure	Sig.?[5]	Comments	Treatment
50906	E	western red cedar	*Thuja plicata*	12	12	12	12	good	good	no		remove
50911	D	black locust	*Robinia pseudoacacia*	10	12	12	21	fair	fair	no	one sided, significant lean	remove
50913	D	black locust	*Robinia pseudoacacia*	6	6	6	13	fair	fair	no	one sided	remove
50916	E	Port-Orford-cedar	*Chamaecyparis lawsoniana*	10	11	11	11	good	good	no		retain
50917	E	Port-Orford-cedar	*Chamaecyparis lawsoniana*	8	9	9	10	good	good	no		retain
50918	D	bigleaf maple	*Acer macrophyllum*	14	17	17	24	good	fair	no	multiple leaders	remove
50935	E	Port-Orford-cedar	*Chamaecyparis lawsoniana*	10	24	24	11	good	fair	no	codominant at 6" and 4'	remove
50936	E	Douglas-fir	*Pseudotsuga menziesii*	24	24	24	14	good	good	yes		retain
50937	E	western red cedar	*Thuja plicata*	12	14	14	12	good	good	no		retain
50938	E	western red cedar	*Thuja plicata*	10	11	11	10	good	good	no		remove
50939	E	Port-Orford-cedar	*Chamaecyparis lawsoniana*	12	16	16	12	good	fair	no	codominant at 5'	remove
50940	E	western red cedar	*Thuja plicata*	14	15	15	15	good	good	no		remove
50941	E	western red cedar	*Thuja plicata*	12	11	11	11	good	good	no		remove
50942	E	western red cedar	*Thuja plicata*	10	18	18	12	good	fair	no	codominant at 3' with included bark	remove
50957	D	black locust	*Robinia pseudoacacia*	10	11	11	10	fair	fair	no	one sided	remove
50960	E	western red cedar	*Thuja plicata*	14	14	14	15	good	good	no		remove
50961	E	western red cedar	*Thuja plicata*	14	14	14	15	good	good	no		remove
50962	E	western red cedar	*Thuja plicata*	12	11,5	11	12	fair	fair	no	codominant at ground level, decay at base of trunk	remove
50963	E	western red cedar	*Thuja plicata*	10	15	15	12	good	fair	no	multiple leaders at 6"	remove
50964	E	western red cedar	*Thuja plicata*	10	11	11	11	good	good	no		remove
50970	E	western red cedar	*Thuja plicata*	12	16	16	12	good	good	no		remove
50971	E	western red cedar	*Thuja plicata*	10	12	12	13	good	good	no		remove
50973	E	Douglas-fir	*Pseudotsuga menziesii*	24	27	27	24	poor	poor	no	branch dieback and crown thinning	remove
50974	E	Douglas-fir	*Pseudotsuga menziesii*	40	38	38	17	fair	fair	yes	scattered branch dieback	remove
50975	D	English hawthorn	*Crataegus monogyna*	10	12	12	16	fair	fair	no	codominant at 1'	remove
50976	E	Douglas-fir	*Pseudotsuga menziesii*	40	43	43	31	good	fair	yes	moderately one sided, edge of grove	retain
50977	E	Douglas-fir	*Pseudotsuga menziesii*	22	25	25	16	fair	fair	yes	moderately one sided, moderately thin crown, edge of grove	remove
50978	E	Douglas-fir	*Pseudotsuga menziesii*	38	39	39	24	very poor	very poor	no	Phaeolus conk at base of trunk	remove
51106	E	Douglas-fir	*Pseudotsuga menziesii*	30	31	31	25	very poor	very poor	no	Phaeolus conk at base of trunk	remove

Tree No.	Svy. Type	Common Name	Scientific Name	Svy. DBH	DBH[1]	Single DBH[2]	C-Rad[3]	Condition[4]	Structure	Sig.?[5]	Comments	Treatment
51107	E	Douglas-fir	*Pseudotsuga menziesii*	18	18	18	16	fair	fair	no	thin crown, branch dieback	remove
51108	E	Douglas-fir	*Pseudotsuga menziesii*	18	16	16	13	poor	poor	no	thin crown, branch dieback, top failed	remove
51122	D	English hawthorn	*Crataegus monogyna*	12	11	11	16	fair	fair	no	multiple leaders	remove
51123	D	Douglas-fir	*Pseudotsuga menziesii*	24	22	22	22	fair	fair	no	moderately thin crown	remove
51124	D	Douglas-fir	*Pseudotsuga menziesii*	28	28	28	19	fair	fair	no	one sided, scattered branch dieback	remove
51132	D	black hawthorn	*Crataegus douglasii*	10	12	12	13	poor	poor	no	branch dieback, multiple leaders	remove
51198	D	wild plum	*Prunus americana*	14	17	17	16	fair	fair	no	multiple leaders	remove
51201	D	scouler's willow	*Salix scouleriana*	14	17	17	15	poor	poor	no	codominant, trunk decay	remove
51202	E	Douglas-fir	*Pseudotsuga menziesii*	14	15	15	17	fair	fair	no	thin crown, one sided	remove
51203	D	n/a	n/a	6	n/a	n/a	n/a	n/a	n/a	n/a	same as 51239	n/a
51204	D	black locust	*Robinia pseudoacacia*	12	14	14	14	fair	fair	no	one sided	remove
51204.1		black locust	*Robinia pseudoacacia*		14	14	7	fair	fair	no	high crown, added to site map in approximate location by arborist	remove
51204.2		black locust	*Robinia pseudoacacia*		14	14	20	fair	poor	no	one sided, significant lean, added to site map in approximate location by arborist	remove
51204.3		black locust	*Robinia pseudoacacia*		14	14	15	fair	fair	no	one sided, added to site map in approximate location by arborist	remove
51221	D	black locust	*Robinia pseudoacacia*	18	19	19	19	fair	fair	no	one sided	remove
51222	D	black locust	*Robinia pseudoacacia*	12	14	14	14	fair	fair	no	high crown	remove
51223	D	wild plum	*Prunus americana*	6	6	6	9	fair	fair	no	overtopped by adjacent trees	remove
51224	D	black locust	*Robinia pseudoacacia*	10	14	14	24	fair	fair	no	one sided	remove
51225	D	black locust	*Robinia pseudoacacia*	16	15	15	23	fair	fair	no	multiple leaders	remove
51226	D	black locust	*Robinia pseudoacacia*	10	9	9	8	fair	fair	no	one sided	remove
51227	D	black locust	*Robinia pseudoacacia*	8	6	6	12	fair	fair	no	one sided, overtopped by adjacent trees	remove
51228	D	black locust	*Robinia pseudoacacia*	14	15	15	16	fair	fair	no	multiple leaders	remove
51229	D	black locust	*Robinia pseudoacacia*	10	10	10	12	fair	fair	no	one sided	remove
51230	D	black locust	*Robinia pseudoacacia*	14	15	15	10	fair	fair	no	multiple leaders	remove
51231	D	black locust	*Robinia pseudoacacia*	10	10	10	12	fair	fair	no	one sided	remove
51232	D	black locust	*Robinia pseudoacacia*	10	12	12	8	fair	fair	no	high crown	remove
51233	D	black locust	*Robinia pseudoacacia*	8	23	23	23	fair	fair	no	multiple leaders at 1', one sided	remove
51234	D	n/a	n/a	12	n/a	n/a	n/a	n/a	n/a	n/a	same as 51233	n/a
51235	D	black locust	*Robinia pseudoacacia*	6	7	7	8	fair	fair	no	overtopped by adjacent trees	remove
51236	D	black locust	*Robinia pseudoacacia*	12	13	13	15	fair	fair	no	one sided	remove
51237	D	black locust	*Robinia pseudoacacia*	10	11	11	10	fair	fair	no	high crown	remove
51238	D	black locust	*Robinia pseudoacacia*	8	10	10	10	fair	fair	no	one sided	remove

Tree No.	Svy. Type	Common Name	Scientific Name	Svy. DBH	DBH[1]	Single DBH[2]	C-Rad[3]	Condition[4]	Structure	Sig.?[5]	Comments	Treatment
51239	D	black locust	*Robinia pseudoacacia*	6	6	6	12	fair	fair	no	one sided, same as 51203	remove
51240	D	black locust	*Robinia pseudoacacia*	8	9	9	6	poor	poor	no	suppressed	remove
51241	D	black locust	*Robinia pseudoacacia*	12	14	14	20	fair	fair	no	one sided	remove
51242	D	black locust	*Robinia pseudoacacia*	8	9	9	6	poor	poor	no	suppressed	remove
51243	D	black locust	*Robinia pseudoacacia*	8	10	10	10	fair	fair	no	one sided	remove
51244	D	black locust	*Robinia pseudoacacia*	8	9	9	20	fair	poor	no	overtopped by adjacent trees, one sided, significant lean	remove
51245	D	black locust	*Robinia pseudoacacia*	8	17	17	15	fair	fair	no	codominant at 2' with included bark, one sided	remove
51246	D	black locust	*Robinia pseudoacacia*	8	16	16	16	fair	fair	no	multiple leaders, one sided, overtopped by adjacent trees	remove
51247	D	black locust	*Robinia pseudoacacia*	22	23	23	20	fair	fair	no	one sided	remove
51248	D	sweet cherry	*Prunus avium*	10	9	9	12	fair	poor	no	overtopped by adjacent trees	remove
51269	D	English hawthorn	*Crataegus monogyna*	6	13	13	12	fair	fair	no	codominant at 1'	remove
51270	D	bigleaf maple	*Acer macrophyllum*	30	30	30	22	fair	fair	no	branch dieback, history of branch dieback and decay	remove
51271	E	Port-Orford-cedar	*Chamaecyparis lawsoniana*	8	10	10	10	fair	good	no	chlorotic, potential Phytopthora	remove
51272	E	western red cedar	*Thuja plicata*	12	14	14	12	good	good	no		remove
51273	E	western red cedar	*Thuja plicata*	12	18	18	12	good	fair	no	codominant at ground level	remove
51274	E	western red cedar	*Thuja plicata*	12	14	14	10	good	fair	no	codominant at 5' with included bark	remove
51275	E	orchard apple	*Malus domestica*	10	9	9	9	fair	fair	no	not maintained	remove
51276	E	orchard apple	*Malus domestica*	8	8	8	9	poor	poor	no	not maintained, large pruning cuts	remove
51378	E	Douglas-fir	*Pseudotsuga menziesii*	44	41	41	21	good	fair	yes	moderately one sided	remove
51379	D	English hawthorn	*Crataegus monogyna*	8	9	9	8	fair	fair	no	one sided, multiple leaders	remove
51380	D	bigleaf maple	*Acer macrophyllum*	16	16	16	22	fair	fair	no	multiple leaders, swelling at base of trunk indicative of decay	remove
51381	D	Douglas-fir	*Pseudotsuga menziesii*	34	35	35	25	fair	poor	no	significant Phellinus pini conks along trunk	remove
51382	D	Douglas-fir	*Pseudotsuga menziesii*	24	23	23	20	fair	poor	no	overtopped by adjacent trees	remove
51383	D	black hawthorn	*Crataegus douglasii*	32	34	34	21	good	fair	yes	moderately one sided	retain
51392	E	Douglas-fir	*Pseudotsuga menziesii*	22	21	21	12	fair	fair	no	suppressed crown extension, significant wound at 20'	retain
51393	E	Douglas-fir	*Pseudotsuga menziesii*	10	10	10	10	poor	poor	no	suppressed, Phellinus pini conks on trunk, lost top	retain
51394	E	Douglas-fir	*Pseudotsuga menziesii*	12	12	12	11	fair	fair	no	overtopped by adjacent trees	retain
51395	E	Douglas-fir	*Pseudotsuga menziesii*	28	31	31	20	good	fair	yes	one sided	retain

Tree No.	Svy. Type	Common Name	Scientific Name	Svy. DBH	DBH[1]	Single DBH[2]	C-Rad[3]	Condition[4]	Structure	Sig.?[5]	Comments	Treatment
51395.1		Douglas-fir	*Pseudotsuga menziesii*		26	26	20	good	fair	yes	one sided, added to site map in approximate location by arborist	remove
51396	E	Douglas-fir	*Pseudotsuga menziesii*	16	19	19	12	fair	fair	no	one sided	retain
51417	D	bigleaf maple	*Acer macrophyllum*	22	22	22	20	good	fair	no	crown raised, size estimated, not tagged because on property line	remove
51418	E	Douglas-fir	*Pseudotsuga menziesii*	22	26	26	18	fair	fair	yes	history of lower branch failure	retain
51418.1		Douglas-fir	*Pseudotsuga menziesii*		30	30	20	good	fair	yes	moderately one sided, added to site map in approximate location by arborist, size estimated, not tagged because offsite	retain
51419	E	Douglas-fir	*Pseudotsuga menziesii*	12	12	12	14	good	fair	no	one sided	retain
51420	E	Douglas-fir	*Pseudotsuga menziesii*	26	26	26	20	fair	fair	yes	moderately thin crown, moderately one sided	retain
51421	E	Douglas-fir	*Pseudotsuga menziesii*	28	30	30	16	fair	fair	yes	Phellinus pini conks on trunk, 60% live crown ratio (lcr)	retain
51421.1		Douglas-fir	*Pseudotsuga menziesii*		41	41	22	fair	fair	yes	history of lower branch failure, added to site map in approximate location by arborist	retain
51443	D	Douglas-fir	*Pseudotsuga menziesii*	8	8	8	10	good	good	no		remove
51444	D	English hawthorn	*Crataegus monogyna*	8	20	20	15	fair	fair	no	multiple leaders at 3'	remove
51469	E	Douglas-fir	*Pseudotsuga menziesii*	38	45	45	28	good	good	yes		remove
51470	D	English hawthorn	*Crataegus monogyna*	12	12	12	12	fair	fair	no	multiple leaders	remove
51471	D	English hawthorn	*Crataegus monogyna*	8	9	9	10	fair	fair	no	one sided	remove
51472	E	Douglas-fir	*Pseudotsuga menziesii*	46	47	47	19	good	fair	yes	one sided	remove
51473	E	Douglas-fir	*Pseudotsuga menziesii*	18	30	30	20	good	fair	yes	one sided	remove
51481	E	Douglas-fir	*Pseudotsuga menziesii*	34	34	34	24	poor	poor	no	thinning crown, 40% lcr, size estimated and not tagged because offsite	remove
51489	E	Douglas-fir	*Pseudotsuga menziesii*	22	28	28	22	fair	fair	yes	scattered branch dieback, driveway damage from roots	remove
51526	E	Douglas-fir	*Pseudotsuga menziesii*	16	16	16	19	good	fair	no	lost top, one sided	remove
51527	E	Douglas-fir	*Pseudotsuga menziesii*	42	45	45	23	good	fair	yes	moderately one sided	remove
51528	E	Douglas-fir	*Pseudotsuga menziesii*	26	30	30	17	good	fair	yes	crown extension limited by adjacent trees	remove
51529	E	Douglas-fir	*Pseudotsuga menziesii*	24	28	28	25	fair	fair	yes	one sided, lower crown dieback	remove
51530	E	Douglas-fir	*Pseudotsuga menziesii*	24	28	28	24	good	fair	yes	one sided	remove
51531	E	Douglas-fir	*Pseudotsuga menziesii*	24	31	31	20	good	fair	yes	one sided	remove
51532	D	English hawthorn	*Crataegus monogyna*	8	9	9	13	fair	fair	no	overtopped by adjacent trees, multiple leaders	remove

Tree No.	Svy. Type	Common Name	Scientific Name	Svy. DBH	DBH[1]	Single DBH[2]	C-Rad[3]	Condition[4]	Structure	Sig.?[5]	Comments	Treatment
51533	D	English hawthorn	*Crataegus monogyna*	8	8	8	13	fair	fair	no	overtopped by adjacent trees, multiple leaders	remove
51534	E	Douglas-fir	*Pseudotsuga menziesii*	26	32	32	23	good	fair	yes	previous codominant stem failure, standing water in wound	remove
51535	E	Douglas-fir	*Pseudotsuga menziesii*	38	41	41	22	fair	fair	yes	scattered branch dieback	remove
51536	E	Douglas-fir	*Pseudotsuga menziesii*	16	16	16	14	good	fair	no	overtopped by adjacent trees	remove
51537	E	Douglas-fir	*Pseudotsuga menziesii*	40	46	46	28	good	good	yes		remove
51538	E	Douglas-fir	*Pseudotsuga menziesii*	24	26	26	16	good	fair	yes	40% lcr	retain
51539	E	Douglas-fir	*Pseudotsuga menziesii*	22	25	25	12	fair	fair	yes	suppressed crown extension	retain
51540	E	Douglas-fir	*Pseudotsuga menziesii*	22	25	25	18	good	fair	yes	one sided	retain
51541	E	Douglas-fir	*Pseudotsuga menziesii*	12	12	12	15	good	fair	no	one sided, overtopped by adjacent trees	remove
51542	E	Douglas-fir	*Pseudotsuga menziesii*	16	19	19	12	good	fair	no	one sided	remove
51543	E	Douglas-fir	*Pseudotsuga menziesii*	10	11	11	12	good	fair	no	overtopped by adjacent trees	remove
51544	E	Douglas-fir	*Pseudotsuga menziesii*	32	34	34	21	fair	fair	yes	40% lcr	retain
51545	E	Douglas-fir	*Pseudotsuga menziesii*	24	24	24	18	fair	fair	yes	one sided	retain
51546	E	Douglas-fir	*Pseudotsuga menziesii*	30	34	34	24	fair	fair	yes	one sided, scattered branch dieback	retain
51547	E	Douglas-fir	*Pseudotsuga menziesii*	12	12	12	16	good	fair	no	one sided	remove
51548	E	Douglas-fir	*Pseudotsuga menziesii*	28	31	31	18	good	good	yes		remove
51549	E	Douglas-fir	*Pseudotsuga menziesii*	36	42	42	27	fair	fair	yes	history of lower branch failure	remove
51550	E	Douglas-fir	*Pseudotsuga menziesii*	24	22	22	24	fair	fair	yes	one sided, think crown	remove
51551	E	Douglas-fir	*Pseudotsuga menziesii*	30	35	35	22	good	fair	yes	one sided	remove
51552	D	elm	*Ulmus sp.*	6	6	6	9	good	good	no		remove
51553	E	Douglas-fir	*Pseudotsuga menziesii*	30	35	35	23	fair	fair	yes	moderately one sided, history of lower branch failure	remove
51554	D	English holly	*Ilex aquifolium*	6	6	6	11	good	fair	no	one sided	remove
51555		English holly	*Ilex aquifolium*	8	9	9	15	good	fair	no	codominant	remove
51556	D	English holly	*Ilex aquifolium*	6	10	10	15	good	fair	no	multiple leaders at 6"	remove
51557	D	English holly	*Ilex aquifolium*	6	8	8	12	good	fair	no	one sided	remove
51559	E	Douglas-fir	*Pseudotsuga menziesii*	1	18	18	18	poor	poor	no	extensive Phellinus pini along lower trunk	remove
51560	D	bigleaf maple	*Acer macrophyllum*	8	8	8	0	very poor	very poor	no	dead	remove
51561	E	Douglas-fir	*Pseudotsuga menziesii*	12	14	14	13	good	fair	no	one sided, marginal trunk taper	remove
51562	E	Douglas-fir	*Pseudotsuga menziesii*	20	21	21	13	fair	fair	yes	50% lcr	remove
51563	D	Norway maple	*Acer platanoides*	8	8	8	27	good	good	no		remove
51564	E	Douglas-fir	*Pseudotsuga menziesii*	14	16	16	13	good	fair	no	marginal trunk taper, 50% lcr	remove
51565	E	Douglas-fir	*Pseudotsuga menziesii*	24	32	32	17	fair	fair	yes	one sided, 40% lcr	remove

Tree No.	Svy. Type	Common Name	Scientific Name	Svy. DBH	DBH[1]	Single DBH[2]	C-Rad[3]	Condition[4]	Structure	Sig.?[5]	Comments	Treatment
51618	D	English hawthorn	*Crataegus monogyna*	6	12	12	10	fair	fair	no	multiple leaders, size estimated, not tagged because on property line	remove
51715	E	Douglas-fir	*Pseudotsuga menziesii*	52	54	54	30	good	good	yes		remove
51716	E	Douglas-fir	*Pseudotsuga menziesii*	46	45	45	31	good	good	yes		remove
51717	E	Douglas-fir	*Pseudotsuga menziesii*	38	38	38	34	good	fair	yes	moderately one sided	remove
51718	E	Douglas-fir	*Pseudotsuga menziesii*	20	22	22	15	good	fair	yes	one sided	remove
51719	E	Douglas-fir	*Pseudotsuga menziesii*	12	13	13	11	fair	poor	no	overtopped by adjacent trees, lost top	remove
51720	E	Douglas-fir	*Pseudotsuga menziesii*	32	31	31	20	good	fair	yes	moderately one sided	remove
51721	E	Douglas-fir	*Pseudotsuga menziesii*	14	16	16	14	fair	poor	no	marginal trunk taper, 40% lcr	remove
51722	E	Douglas-fir	*Pseudotsuga menziesii*	22	24	24	24	good	fair	yes	one sided	remove
51723	E	Douglas-fir	*Pseudotsuga menziesii*	30	35	35	22	good	fair	yes	moderately one sided	remove
51723.1		Douglas-fir	*Pseudotsuga menziesii*		28	28	14	fair	fair	yes	one sided, codominant at 50', added to site map in approximate location by arborist	remove
51724	E	Douglas-fir	*Pseudotsuga menziesii*	26	28	28	16	fair	fair	yes	40% lcr	remove
51725	E	Douglas-fir	*Pseudotsuga menziesii*	18	22	22	18	good	fair	yes	previous top failure with new leader	remove
51726	E	Douglas-fir	*Pseudotsuga menziesii*	26	28	28	30	good	fair	yes	one sided	remove
51727	E	Douglas-fir	*Pseudotsuga menziesii*	28	30	30	24	fair	fair	yes	scattered branch dieback, 40% lcr	remove
51728	E	Douglas-fir	*Pseudotsuga menziesii*	28	30	30	25	fair	fair	yes	scattered branch dieback	remove
51729	E	Douglas-fir	*Pseudotsuga menziesii*	26	26	26	20	fair	fair	yes	one sided	remove
51730	E	Douglas-fir	*Pseudotsuga menziesii*	12	14	14	0	very poor	very poor	no	dead	remove
51731	E	Douglas-fir	*Pseudotsuga menziesii*	24	24	24	15	good	fair	yes	one sided	remove
51732	E	Douglas-fir	*Pseudotsuga menziesii*	24	28	28	16	good	fair	yes	one sided	remove
51733	E	Douglas-fir	*Pseudotsuga menziesii*	26	26	26	22	good	fair	yes	one sided	remove
51734	E	Douglas-fir	*Pseudotsuga menziesii*	6	40	40	18	good	good	yes		remove
51735	E	giant sequoia	*Sequoiadendron giganteum*	10	12	12	7	good	good	no		remove
51736	E	giant sequoia	*Sequoiadendron giganteum*	12	15	15	8	good	good	no		remove
51746	E	Deodar cedar	*Cedrus deodara*	10	8	8	11	good	poor	no	lost top	remove
51761	E	Douglas-fir	*Pseudotsuga menziesii*	22	21	21	19	good	fair	yes	moderately one sided	remove
51762	E	Douglas-fir	*Pseudotsuga menziesii*	20	20	20	22	good	fair	yes	one sided	remove
51876	E	Deodar cedar	*Cedrus deodara*	16	17	17	13	good	fair	no	previously lost top with newly grown top	retain
51877	E	western red cedar	*Thuja plicata*	6	8,6,5,5	12	9	good	fair	no	multiple leaders	retain

Tree No.	Svy. Type	Common Name	Scientific Name	Svy. DBH	DBH[1]	Single DBH[2]	C-Rad[3]	Condition[4]	Structure	Sig.?[5]	Comments	Treatment
51878	E	Deodar cedar	*Cedrus deodara*	12	20	20	15	good	fair	no	codominant at 1' with included bark	retain
51879	E	western red cedar	*Thuja plicata*	6	14,4,3	14	9	good	fair	no	multiple leaders at ground level	retain
51897	D	scouler's willow	*Salix scouleriana*	8	19	19	17	fair	fair	no	codominant at 2' with included bark, multiple leaders	remove
51897.1		madrone	*Arbutus menziesii*		9	9	7	good	fair	no	one sided, added to site map in approximate location by arborist	remove
51898	D	scouler's willow	*Salix scouleriana*	8	15	15	19	fair	fair	no	codominant at 1' with included bark, multiple leaders	remove
51899	D	scouler's willow	*Salix scouleriana*	6	14	14	18	fair	fair	no	codominant at 1' with included bark, multiple leaders	remove
51899.1		madrone	*Arbutus menziesii*		6	6	12	good	fair	no	one sided, added to site map in approximate location by arborist	remove
51936	E	Douglas-fir	*Pseudotsuga menziesii*	44	44	44	25	good	good	yes		remove
51937	E	Douglas-fir	*Pseudotsuga menziesii*	44	43	43	25	good	good	yes		remove
51938	E	scouler's willow	*Salix scouleriana*	14	16,5,5,5	18	14	very poor	very poor	no	top failed, extensive decay	remove
51939	E	purpleleaf plum	*Prunus cerasifera*	12	11	11	13	fair	fair	no	multiple leaders	remove
51970	D	wild plum	*Prunus americana*	8	9	9	10	poor	poor	no	suppressed	remove
52004	E	Douglas-fir	*Pseudotsuga menziesii*	32	39	39	21	good	fair	yes	moderately one sided	remove
52005	D	wild plum	*Prunus americana*	12	12	12	14	poor	poor	no	one sided, significant epicormic growth	remove
52006	D	scouler's willow	*Salix scouleriana*	18	21	21	17	poor	poor	no	extensive decay at lower trunk	remove
52007	E	Douglas-fir	*Pseudotsuga menziesii*	10	10	10	14	good	fair	no	overtopped by adjacent trees	remove
52008	E	Oregon white oak	*Quercus garryana*	10	10	10	11	poor	poor	no	suppressed	remove
52009	E	Douglas-fir	*Pseudotsuga menziesii*	24	26	26	17	good	fair	yes	one sided	remove
52010	E	Douglas-fir	*Pseudotsuga menziesii*	44	49	49	25	fair	fair	yes	scattered branch dieback	remove
52039	E	ponderosa pine	*Pinus ponderosa*	8	7	7	8	good	good	no		remove
52317	D	pin oak	*Quercus palustris*	2	2	2	2	good	fair	no	street tree	remove
52318	D	pin oak	*Quercus palustris*	2	2	2	2	good	fair	no	street tree	remove
52391	D	pin oak	*Quercus palustris*	2	2	2	2	good	fair	no	street tree	remove

Tree No.	Svy. Type	Common Name	Scientific Name	Svy. DBH	DBH[1]	Single DBH[2]	C-Rad[3]	Condition[4]	Structure	Sig.?[5]	Comments	Treatment
52394	D	pin oak	*Quercus palustris*	2	2	2	2	good	fair	no	street tree	remove

[1]**DBH** is the trunk diameter in inches measured per International Society of Arboriculture (ISA) standards.

[2]**Single** DBH is the trunk diameter of a multi-stem tree converted to a single number according to the following formula: square root of the sum of squared DBH of each stem.

[3]**C-Rad** is the approximate crown radius in feet.

[4]**Condition and Structure** ratings range from very poor, poor, fair, to good.

[5]**Significant tree** is a tree is determined to be significant by the City Arborist based on its size, health, species, location, proximity to other significant trees, and other characteristics.

Note: Trees are defined by the City as having a minimum 6 inch DBH for Oregon White Oak, Pacific Madrone, and Pacific Dogwood, and 12 inch DBH for all other species.

23190 BLAND CIRCLE SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

TREE PRESERVATION DETAILS

REVISIONS

NO.	DATE	DESCRIPTION
0	02/19	PLANNING 1ST SUBMITTAL
1	–	–

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FILE: P: \0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_04tree, Layout: 4 TREE PRESERVATION DETAILS, Plot Date: 6/14/2019 11:25 AM, by: Jake Snyder

Slopes Table				
Number	Minimum Slope	Maximum Slope	Area	Color
1	0%	15%	220950	
2	15%	25%	69563	
3	25%	35%	13993	
4	35%	–	7209	

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SLOPE ANALYSIS PLAN

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TAX LOT 9100
CITY OF WEST LINN, OREGON

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_05slop, Layout: 2 EXISTING CONDITIONS PLAN, Plot Date: 2/14/2019 11:23 AM, by: Jacob Snyder

LEGEND

- 8' P.U.E.
- BOUNDARY LINE
- RIGHT-OF-WAY LINE
- LOT LINE
- SETBACK LINES (20' FRONT & BACK, 7.5' SIDE, 15' STREET SIDE)

21E35AD 8100 | 21E35AD 8000 | 21E35AD 7900 | 21E35AD 7300 | 21E35AD 7200 | 21E35AD 9000 | 21E35AD 9200 | 21E35AD 9300 | 21E35AD 1400 | 21E35AD 1300 | 21E35AD 2400 | 21E35AD 1200 | 21E35AD 1100 | 21E35AD 1000

1 7583 SF | 2 7724 SF | 3 7734 SF | 4 8429 SF | 5 8523 SF | 6 8813 SF | 7 8475 SF | 8 8225 SF | 9 7815 SF | 10 11100 SF | 11 7417 SF | 12 7224 SF | 13 8083 SF | 14 7365 SF | 15 7497 SF | 16 10810 SF | 17 9676 SF | 18 7637 SF | 19 8290 SF | 20 8177 SF | 21 7040 SF | 22 7033 SF | 23 7293 SF | 24 7286 SF | 25 7824 SF

BUILDABLE 3890 SF | BUILDABLE 3774 SF | BUILDABLE 3968 SF

TRACT A 10861 SF | TRACT B 18192 SF | TRACT C 809 SF

20' SHARED ACCESS & UTILITY EASE.

SATTER STREET | SALAMO ROAD

SCALE: 1" = 30'

23190 BLAND CIRCLE SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

PRELIMINARY PLAT

REVISIONS

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SHEET 6 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\plot\Planning Set\0542-001_06plot, Layout: PRELIMINARY PLAT, Plot Date: 6/14/2019 11:13 AM, by: Jake Snyder

40' 0 20' 40' 80'

SCALE: 1" = 40'

LEGEND

- 8' 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 RESIDENTIAL DRIVEWAY PER CITY OF WEST LINN DETAIL WL-503A (TYP. OF 21)
3. INSTALL 6' CONCRETE SIDEWALK PER CITY OF WEST LINN DETAIL WL-508
4. INSTALL AC SECTION FOR SATTER STREET PER SECTION TO MATCH EXISTING
5. INSTALL AC SECTION FOR SALAMO ROAD PER SECTION TO MATCH EXISTING
6. WIDEN EXISTING WATER QUALITY SWALE
7. INSTALL END OF ROAD BARRICADE

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SUBDIVISION
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TAX LOT 9100
CITY OF WEST LINN, OREGON

PRELIMINARY SITE PLAN

REVISIONS

NO.	DATE	DESCRIPTION
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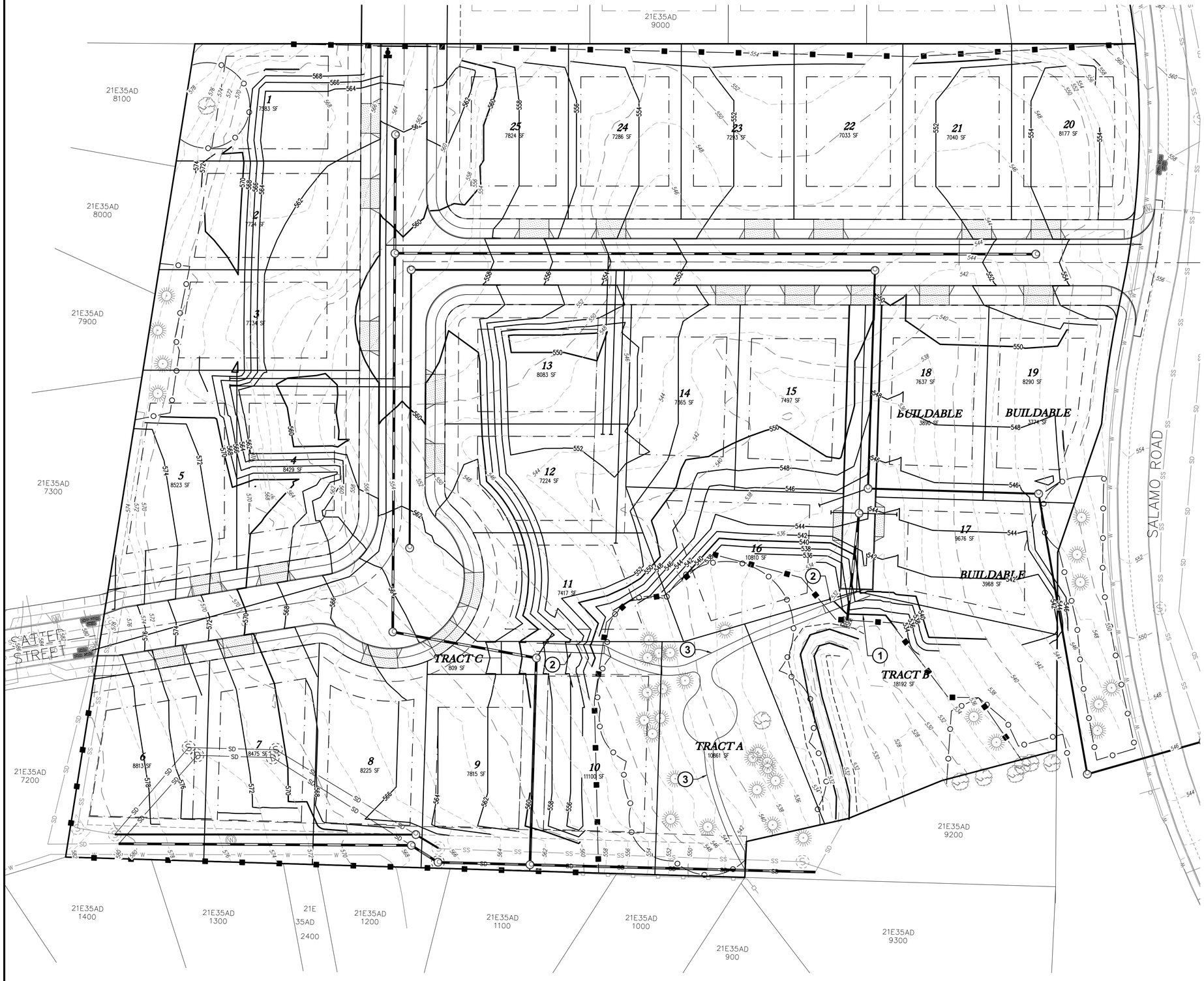
SHEET 7 OF 11

FILE P: \0542-001 23190 S Bland Circle \dwg \plan \Planning Set \0542-001_01site, Layout: 7 PRELIMINARY SITE PLAN, Plot Date: 6/14/2019 11:15 AM, by: Jake Snyder



30' 0 15' 30' 60'

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)
- SILT FENCE
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED STORM DRAIN MANHOLE

SITE NOTES

1. CONSTRUCT 4' TALL WALL BETWEEN SWALE AND END OF PRIVATE DRIVE
2. CONSTRUCT NATURAL STEPS/PATHWAY, MATERIAL TBD.
3. CONSTRUCT SOFT SURFACE PATHWAY.

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SUBDIVISION
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TAX LOT 9100
CITY OF WEST LINN, OREGON

GRADING & EROSION CONTROL PLAN

REVISIONS

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SHEET 8 OF 11

FILE P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_08grad_Layout- 10 GRADING & EROSION CONTROL PLAN, Plot Date: 6/14/2019 11:17 AM, by: Jake Snyder

COMPOSITE UTILITY PLAN

SCALE: 1"=30'

30' 0 15' 30' 60'

SCALE: 1" = 30'

UTILITY CONSTRUCTION NOTES

1. INSTALL STANDARD 48" MANHOLE (TYP. OF 16)
2. REPLACE AND LOWER EXISTING STORM LINE

* LOT TO BE EQUIPPED WITH FIRE SPRINKLERS IF REQUIRED IN LIEU OF TVFR STANDARD FIRE TURNAROUND

LEGEND:

- PROPOSED SANITARY SEWER LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED WATER LINE
- PROPOSED PUE EASEMENT
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED STORM DRAIN MANHOLE

23190 BLAND CIRCLE
SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

COMPOSITE UTILITY PLAN

REVISIONS

NO.	DATE	DESCRIPTION
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SHEET 9 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_Cbarb, Layout: 9 COMPOSITE UTILITY PLAN, Plot Date: 6/14/2019 11:18 AM, by: Jake Snyder

(LP / X) = INSTALL NEW LUMINAIRE ON POLE #.
(X = 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" = 40'

NUMERIC SUMMARY						
PROJECT: BLAND SALAMO						
LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN
SATTER STREET	ILLUMINANCE	FC	0.42	1.00	0.10	4.20

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

BLAND SALAMO
WEST LINN, OR

REV DESCRIPTION	REV DATE	NO.

Title: STREET LIGHTING
Designed by: Adam Suminski
Checked by: Jesse Culp
Date: February 11, 2019

DWG. NO
EL1

23190 BLAND CIRCLE
SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

LIGHTING PLAN

REVISIONS

NO.	DATE	DESCRIPTION
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FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_1Night_Layout- 10 LIGHTING PLAN, Plot Date: 6/14/2019 11:18 AM, by: Jake Snyder

60' 0 30' 60' 120'

SCALE: 1" = 60'

LEGEND

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

23190 BLAND CIRCLE SUBDIVISION
TAX MAP 2S1E 35AB
TAX LOT 9100
CITY OF WEST LINN, OREGON

FUTURE LOT LAYOUT

REVISIONS

NO.	DATE	DESCRIPTION
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1	–	–

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SHEET 11 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_11x17s, Layout: 11 FUTURE LOT LAYOUT, Plot Date: 6/14/2019 11:19 AM, by: Jake Snyder