CITY OF
West Linn
22500 Salamo Road
West Linn, OR 97068

STAFF REPORT
FOR THE PLANNING COMMISSION

FILE NUMBER:	SUB-19-01
HEARING DATE:	November 6, 2019
REQUEST:	25-lot Subdivision at 23190 Bland Circle
APPROVAL CRITERIA:	Community Development Code (CDC) Chapter 12, Single-Family Residential Detached and Attached, R-7; Chapter 28, Willamette and Tualatin River Protection; Chapter 32, Water Resource Area Protection; Chapter 48, Access, Egress and Circulation; Chapter 55, Design Review; Chapter 85 Land Division General Provisions; Chapter 92, Required Improvements.
STAFF REPORT PREPARED BY:	Jennifer Arnold, Associate Planner

Planning Manager's Initials AB Development Review Engineer's Initials EL

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GENERAL INFORMATION

APPLICANT:	Toll Brothers 4949 Meadows Road; Suite 420 Lake Oswego, OR 97035
CONSULTANT:	Emerio Design, LLC 6445 SW Fallbrook PL. STE 100 Beaverton, OR 97008
OWNER:	David & Drucilla Sloop 23190 Bland Circle West Linn, OR 97068
SITE LOCATION:	23190 Bland Circle West Linn, OR 97068
LEGAL DESCRIPTION:	Tax lot 9100 Assessor's Map 21E 35AB
SITE SIZE:	281,833 square feet (6.47 acres)
ZONING:	R-7, Single-Family Residential Detached and Attached. (7,000 square foot minimum lot size for single family detached homes)
COMP PLAN DESIGNATION:	Low-Density Residential
120-DAY PERIOD:	This application became complete on September 23, 2019. The 120-day maximum application-processing period ends on January 14, 2020.
PUBLIC NOTICE:	Public notice was mailed to the all neighborhood associations and affected property owners on October 17, 2019. The property was posted with a notice sign on October 23, 2019. The notice was published in the West Linn Tidings on October 24, 2019. The notice requirements of CDC Chapter 99 have been met. In addition, the application was posted on the City's website.

EXECUTIVE SUMMARY

The applicant seeks approval of an application for a Water Resource Protection Area and Willamette and Tualatin River Protection permits for a Subdivision development of 25 residential lots on the 6.47 site. All lots will exceed 7,000 square feet in size per the underlying R-7 zone. Access will be to a public street either directly off of the Satter Street extension or the new proposed public street Dahlia Court. Proposed lots 9 and 10 take access onto the Satter Street extension via a private tract (Tract C).

The applicable approval criteria include:

- Chapter 12, Single-Family Residential Detached and Attached, R-7;
- Chapter 28, Willamette and Tualatin River Protection
- Chapter 32, Water Resource Area Protection
- Chapter 48, Access, Egress and Circulation;
- Chapter 85, Land Division General Provisions;
- Chapter 92, Required Improvements

Site Conditions: The site is approximately 413.62 feet wide and 569.10 feet deep. 78% of the property has a slope from 0% to 15% and approximately 2.5% of the property has a slope greater than 35%. The property has 63 significant trees totaling at 87,961 square feet. The existing home on the property is proposed to be removed. Satter Street will be extended through the property.

Public comments:

See Planning Commission Exhibit PC-4 for Public Testimony and TVFR comments.

RECOMMENDATION

Staff recommends approval of application SUB-19-01, based on: 1) the findings submitted by the applicant, which are incorporated by this reference, 2) supplementary staff findings included in the Addendum below, and 3) the addition of conditions of approval below. With these findings, the applicable approval criteria are met. The conditions are as follows:

1. **Site Plan. With the exception of modifications required by these conditions, the final plat shall conform to the submitted Tentative Plan, (Sheet 6 of 11 "Preliminary Plat").**

2. **Engineering Standards. All public improvements and facilities including street improvements, utilities, grading, onsite storm water design, driveway placement and construction, pavement mitigation, street lighting, street trees, easements,**

and easement locations are subject to the City Engineer's review, modification, and approval per the City adopted Public Works standards. All improvements must be designed, constructed, and completed prior to final plat approval. The Director of Public Works may allow a waiver of improvements as allowed by Code. (See Staff Findings: 16, 22, 23, 30, 31, 34, 41, 43, 44, 45, 50, & 52)

3. **<u>HCA Boundary</u>. The HCA Boundary is revised to correct an identified mapping error (Staff Finding 2). A copy of the map change report and final findings shall be provided to Metro and the City's GIS mapping to initiate the change. (See Staff Findings: 2, 3, 6, 8, 9, & 10)**

4. **<u>Access & Utility Easement.</u> An access and utility easement is required over Tract C to serve proposed lots 9 and 10. An access and utility easement is required over the 'flag poles' accessing proposed lots 16 and 17. (See Staff Findings: 14, 21, & 36)**

ADDENDUM

PLANNING COMMISSION STAFF REPORT

November 6, 2019

STAFF EVALUATION OF THE PROPOSAL'S COMPLIANCE WITH APPLICABLE CODE CRITERIA

I. 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.

(…)

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.

2. For each attached single-family unit, 5,500 square feet. No yard shall be required between the units.

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.

D. Repealed by Ord. 1622.

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. (Ord. 1226, 1988; Ord. 1308, 1991; Ord. 1377, 1995; Ord. 1538, 2006; Ord. 1622 § 24, 2014; Ord. 1675 § 11, 2018)

Staff Response 1: The only uses proposed by the applicant are single-family detached residential units. All other standards above are also met or exceeded by each lot. At the time that building permits are applied for the construction of a house, the front, side and rear setbacks, building height, lot coverage, FAR, sidewall transition requirements, off-street parking, fencing, and clear vision provisions on corner lots will be reviewed for compliance. The existing home on the property is proposed to be removed. Staff determines the criteria are met.

CHAPTER 28: WILLAMETTE AND TUALATIN RIVER PROTECTION AREA
28.070 PLANNING DIRECTOR VERIFICATION OF METRO HABITAT PROTECTION MAP BOUNDARIES
A. The [Habitat Conservation Area] 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.

Staff Finding 2: The applicant requested a Planning Manager verification of the Metro HCA boundary found on the subject property. The Planning Manager recommends the Planning Commission accept the following findings in support of the boundary verification. The HCA implements Title 13 of the Metro Urban Growth Management Functional Plan. Title 13 identifies habitat conservation areas in two areas, those associated with riparian areas and those in upland areas. The HCA on the subject property is associated with a water quality swale. Please see findings provided by the applicant and the study by Schott and Associates (June 2019 titled "Natural Resource Assessment within Habitat Conservation Area"). The report included the following findings:

"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.

Schott and Associates have the professional qualifications to make these findings. The central finding of their report is that Metro erred when they classified the area as riparian per Metro Title 13 Table 3.07-13a: Method for Identifying Habitat. The other classification of habitat is upland, which does not apply to areas with high, medium, or low urban development value. The subject property is currently zoned for urban development, thus having urban development value. The Planning Manager recommends adjusting the HCA boundary on the

subject property to correct the identified mapping error. Subject to the Conditions of Approval, the criteria is met. (Condition of Approval 3 makes note of the HCA map change and obliges the City to make all necessary changes to City and Metro mapping.) The HCA would impact proposed lots 10, 16, 17, Tract A and Tract B without the mapping error corrected. Tract B serves as the protection around the identified ephemeral stream, Salamo Creek.

28.110 APPROVAL CRITERIA

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.

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.

(...)

B. Single-family or attached residential.

(…)

Staff Finding 3: The applicant has requested a Planning Manager verification of the Metro HCA boundary per Staff Finding 2. The applicant's consultant, Schott and Associates, determined that "*there was a mapping error and there is no actual HCA onsite*". The Planning Manager recommends adjusting the HCA boundary on the subject property to correct the mapping error per Condition of Approval 3. With the re-designated HCA boundary, staff finds that no development will occur in the HCA. Subject to the Conditions of Approval, the criteria are met.

C. Setbacks from top of bank.

(…)

Staff Finding 4: All development, including home construction, will occur on lands designated as "Habitat and Impact Areas Not Designated as HCAs" or non-HCA lands. Setback requirements will be reviewed at time of building permit application. The criteria is met.

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

E. Hardship provisions and non-conforming structures.

F. Access and property rights.

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

Staff Finding 5: The subject property is zoned single-family residential, has no non-conforming structures, has legal access, and the applicant is not requesting a hardship. The criteria are not applicable.

H. Partitions, subdivisions and incentives.
1. When dividing a property into lots or lots, an applicant shall verify the boundaries of the HCA on the property.
2. Applicant shall partition or subdivide the site so that all lots or lots 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.
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.

Staff Finding 6: The applicant has requested a Planning Manager verification of the Metro HCA boundary per Staff Finding 2. The applicant's consultant, Schott and Associates, determined that "*there was a mapping error and there is no actual HCA onsite*". The Planning Manager recommends adjusting the HCA boundary on the subject property to correct the mapping error per Condition of Approval 3. With the re-designated HCA boundary, staff finds that no development will occur in the HCA. Subject to the Conditions of Approval, the criteria are met.

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.
(…)
I. Docks and other water-dependent structures.
J. Joint docks.
K. Non-conforming docks and other water-related structures.

Staff Finding 7: This application does not include any riverfront property to facilitate access to or along the river, nor does it include any docks or other water-related structures. The criteria are not applicable.

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:
(…)

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.

Staff Finding 8: The applicant's consultant, Schott and Associates, determined that "*there was a mapping error and there is no actual HCA onsite*". The Planning Manager recommends adjusting the HCA boundary on the subject property to correct the identified error per Condition of Approval 3. With the re-designated HCA boundary, staff finds that no development will occur in the HCA. Subject to the Conditions of Approval, the criteria are met. Appropriate stormwater facilities are proposed. The maximum disturbance has a width of 18 feet and due to the Schott and Associates determination of no real HCAs on site, no mitigation is required. The criteria is met.

M. Structures.
N. Water-permeable materials for hardscapes.
O. Signs and graphics.
P. Lighting.
Q. Parking.
R. Views.
S. Aggregate deposits.

Staff Finding 9: The applicant's consultant, Schott and Associates, determined that "*there was a mapping error and there is no actual HCA onsite*", therefore this application does not include any structures, hardscapes, signs or graphics, parking, or aggregate deposits in an HCA boundary (see Staff Findings 2). The site is not adjacent to the Tualatin or Willamette Rivers so no lighting is directed towards the river surfaces and no views are obstructed. The criteria are met.

T. Changing the landscape/grading.
U. Protect riparian and adjacent vegetation.

Staff Finding 10: The applicant has requested a Planning Manager verification of the Metro HCA boundary per Staff Finding 2. The applicant's consultant, Schott and Associates, determined that "*there was a mapping error and there is no actual HCA onsite*". The Planning Manager recommends adjusting the HCA boundary on the subject property to correct the mapping error per Condition of Approval 3. With the re-designated HCA boundary, staff finds that no development will occur in the HCA. Subject to the Conditions of Approval, the criteria are met.

CHAPTER 32: WATER RESOURCE AREA PROTECTION
32.060 APPROVAL CRITERIA (STANDARD PROCESS)
(…)
D. WRA width.
Ephemeral Stream – 15 feet

Staff Finding 11: The applicant submitted a report by Schott and Associates (titled "Natural Resource Assessment within Water Resource Area" dated June 2019) identifying Salamo Creek as an ephemeral stream the southeast corner of the site. The applicant also submitted a wetland delineation report which did not identify any wetlands onsite. Staff adopts the findings in the "Natural Resource Assessment with Water Resource Area" dated June 2019, and the wetland delineation report found in the applicant's submittal. The criteria is met.

CHAPTER 48, ACCESS CONTROL

48.025 ACCESS CONTROL
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. (See also CDC 55.125, Traffic Impact Analysis.)

Staff Finding 12: No traffic impact analysis (TIA) is required since none of the criteria of 85.170(B) (2) are met. For example, an Average Daily Trip count (ADT) of 250 is required before a TIA is needed. The addition of 25 additional/new homes should only generate an ADT of 239.25 new trips per day according to the Institute of Traffic Engineers (ITE) trip generation tables at 9.57 trips per household. Staff has informed the applicant's consultants that a traffic impact analysis may still be required by the Planning Commission. This criterion is met.

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.

Staff Finding 13: Access to this site will be via the extension of Satter Street and the new public street Dahlia Court. All proposed driveways will be reviewed by the City Engineer at the time of building permit review. This criterion is met.

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" to the developer/subdivider.
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.

Staff Finding 14: The applicant proposes access using a combination of Option 2 and Option 3. Access to these proposed lots will be via Satter Street, Dahlia Court or a private tract (Tract C)/ shared driveway. Proposed lots 9 and 10 travel through a shared private tract (Tract C) before accessing Satter Street. Proposed lots 16 and 17 utilize a shared accessway before taking access onto Dahlia Court. All other lots take direct access via a local street (Satter Street or Dahlia Court). Per condition of approval 4, a public utility and access easement shall be recorded to benefit lots 9, 10, 16 and 17. These criteria are met.

4. Subdivisions fronting onto an arterial street.
(…)
5. Double-frontage lots.
(…)

Staff Finding 15: Proposed lots 19 and 20 are proposed to be corner lots with Dahlia Court and Salamo Road. The subject property has frontage along Salamo Road, a minor arterial classified road. There is no proposed direct access from a lot in this subdivision onto Salamo Road. Access of these lots will be via the Satter Street extension or Dahlia Court. See Staff Findings 16 and 17. These criteria are satisfied.

6. Access spacing.
(…)

7. Number of access points.
8. Shared driveways.

Staff Finding 16: Proposed lots 9 and 10 will take access onto Satter Street (a local street) via a 20' wide private tract (Tract C). The applicant also proposes a 20' wide shared driveway to serve lots 16 and 17 (flag lots). All other lots will take access via newly constructed individual driveways per condition of approval 2. Subject to the conditions of approval, the criteria is met.

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.

Staff Finding 17: The applicant proposes to extend the stubbed-out section of Satter Street to the west of the subject property through this proposed subdivision intersecting with a new proposed local street, Dahlia Court. The applicant has proposed a 52 foot right-of-way for each public street, which allows for parking on one side. This is wider than the existing sections of Satter Street. The proposed subdivision is following the previous block development pattern by extending Satter Street. Staff adopts the applicant's findings found on page 7/40 of the applicant's submitted narrative. This criterion is met.

48.030 MINIMUM VEHICULAR REQUIREMENTS FOR RESIDENTIAL USES

A. Direct individual access from single-family dwellings and duplex lots to an arterial street (…)

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.

Staff Finding 18: Staff incorporates applicant findings on page 8/40 of the applicant's submitted narrative. These criteria are met.

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.

Staff Finding 19: The applicant shall comply with maximum driveway grades during construction of the homes. This criterion is met.

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.

Staff Finding 20: The applicant shall comply with driveway length requirements during the construction of the homes. These criteria are met.

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

Staff Finding 21: Proposed lots 10 and 16 are the only lots with this application that could have a home more than 150 feet from public right-of-way. Access to lot 16 is a 20' wide shared accessway. Lot 10 has a 20' wide accessway onto Satter Street via a private tract (Tract C) (See condition of approval 4). Proposed lot 17 is accessed by the same 20' wide accessway serving lot 16, but lot 17 backs up to Salamo Road right-of-way. There is no proposed direct access from any proposed lot in this subdivision onto Salamo Road. See Exhibit PC-4 for public and TVFR comments. These criteria are met.

E. Access and/or service drives for multi-family dwellings shall be fully improved with hard surface pavement:
1. With a minimum of 24-foot width when accommodating two-way traffic; or
2. With a minimum of 15-foot width when accommodating one-way traffic. Horizontal clearance shall be two and one-half feet wide on either side of the driveway.
3. Minimum vertical clearance of 13 feet, six inches.
4. Appropriate turnaround facilities per Fire Chief's standards for emergency vehicles when the drive is over 150 feet long. Fire Department turnaround areas shall not exceed seven percent grade unless waived by the Fire Chief.
5. The grade shall not exceed 10 percent on average, with a maximum of 15 percent.
6. A minimum centerline turning radius of 45 feet for the curve.
F. Where on-site maneuvering and/or access drives are necessary to accommodate required parking, in no case shall said maneuvering and/or access drives be less than that required in Chapters 46 and 48 CDC.
G. The number of driveways or curb cuts shall be minimized on arterials or collectors. Consolidation or joint use of existing driveways shall be required when feasible.
H. In order to facilitate through traffic and improve neighborhood connections, it may be necessary to construct a public street through a multi-family site.
I. Gated accessways to residential development other than a single-family home are prohibited.

Staff Finding 22: The applicant proposal is for single-family homes with no gated access points. No arterial roadways are proposed with this application. All driveways shall meet the engineering standards of Condition of Approval number 2. These criteria are met.

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.

(…)
6. On a local street when intersecting any other street, 35 feet.

Staff Finding 23: All driveways and curb cuts shall meet the engineering standards of Condition of Approval number 2. Satter Street and Dahlia Court are local streets (see applicant's submittal Sheet 7 of 11 "Preliminary Site Plan"). These criteria are met.

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.

Staff Finding 24: See Staff Finding 25-26. These criteria are met.

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.

Staff Finding 25: The applicant proposes to provide access to public right-of-way or a private drive for each lot. This criterion is met.

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

Staff Finding 26: The driveway spacing standards reviewed at the time of building permit plan review verify compliance with Chapter 48 requirements. This criterion is met.

CHAPTER 55: DESIGN REVIEW
55.100 APPROVAL STANDARDS – CLASS II DESIGN REVIEW
(Design Review is only applicable to significant trees as cross referenced by CDC 85.200(J)(9))

B. Relationship to the natural and physical environment.
1. The buildings and other site elements shall be designed and located so that 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.
2. All heritage trees, as defined in the municipal code, all trees and clusters of trees ("cluster" is defined as three or more trees with overlapping driplines; however, native oaks need not have an overlapping dripline) that are considered significant by the City Arborist, either individually or in consultation with certified arborists or similarly qualified professionals, based on accepted

arboricultural standards including consideration of their size, type, location, health, long term survivability, and/or numbers, shall be protected pursuant to the criteria of subsections (B)(2)(a) through (f) of this section. (…)
Non-residential and residential projects on Type I and II lands shall protect all heritage trees and all significant trees and tree clusters by limiting development in the protected area. (…)

Staff Finding 27: There are no heritage trees on the subject property. There are 63 significant trees on the property as verified by the City Arborist. The applicant proposes to retain 15 significant trees (23%) with a total of 17,592 square feet of canopy coverage. The criteria is met.

CHAPTER 85, GENERAL PROVISIONS (LAND DIVISION)

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. <u>Streets</u>.

1. General. The location, width and grade of streets shall be considered in their relation to existing and planned streets (…) 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 Public Works Director. (….)

Staff Finding 28: The applicant has proposed to extend Satter Street, currently stubbed to the western property boundary, through the subject property and stub it to the northern property boundary. The applicant proposes a new public street, Dahlia Court which will intersect Salamo Road along the eastern property line. Satter Street and Dahlia Court are designated as local streets and the applicant proposes a right-of-way width of 52 feet to allow for parking on one side. The applicant is not required to dedicate any additional right-of-way to Salamo Road. This criteria is met.

2. Right-of-way and roadway widths.
3. Street widths. Street widths shall depend upon which classification of street is proposed. The classifications and required cross sections are established in Chapter 8 of the adopted TSP. (…)
4. The decision-making body shall consider the Public Works Director'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 Public Works Director of the following criteria: (…)

Staff Finding 29: See Staff Finding 31. The applicant has proposed to extend Satter Street through the subject property (stubbed to the northern property line) and intersect Dahlia

Court which is extended to Salamo Road. All proposed right-of-way widths are 52 feet allowing for parking along one side. The existing center line of Satter Street will be maintained through the extension of Satter Street on the subject site. This criteria is met.

(…)

16. Sidewalks. Sidewalks shall be installed per CDC 92.010*(H), Sidewalks. The residential sidewalk width is six feet plus planter strip…or to match existing sidewalks or right-of-way limitations.*
(…)

Staff Finding 30: The applicant is proposing to construct sidewalks and planter strip along both sides of the Satter Street extension and along Dahlia Court per condition of approval 2. Subject to conditions of approval the criteria is met.

(…)

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.*

Staff Finding 31: All lots will access a public street (Satter Street and Dahlia Court) via individual driveways, except proposed lots 9 and 10. Proposed lots 9 and 10 will take access onto Satter Street via a private tract (Tract C). See condition of approval 2. Subject to conditions of approval, the criteria is met.

(…)
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. ….

Staff Finding 32: No offsite improvements are required with this subdivision. The criteria is met.

B. Blocks and lots.
1. General
(…)
2. Sizes
(…)
3. Lot size and shape

Staff Finding 33: Staff incorporates applicant findings on page 24/40 of the applicant's submitted narrative. These criteria are met.

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

Staff Finding 34: Please see staff findings 15 to 29. The criterion is met.

5. Double frontage lots and parcels.
(…)
6. Lot and parcel side lines

Staff Finding 35: No double frontage lots are proposed with this application. These criteria do not apply.

7. 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.
(…)
e. As per CDC 48.030, the accessway shall have a minimum paved width of 12 feet.

Staff Finding 36: The applicant proposes two flag lots (proposed lots 16 & 17). Proposed lots 9 and 10 take access onto Satter Street via a private tract (Tract C). The applicant has proposed to keep Tract C in common ownership between lots 9 and 10 (see condition of approval 4). The applicant has proposed a 20 foot accessway to proposed lots 16 and 17. Subject to the conditions of approval, this criterion is met.

8. Large lots or parcels.

Staff Finding 37: Staff incorporates applicant findings on page 26/40 of the applicant's submitted narrative. This criterion is met.

C. Pedestrian and bicycle trails.
(…)
D. Transit Facilities.
(…)

Staff Finding 38: The applicant has proposed to maintain the existing sidewalks along Salamo Road. The applicant also proposes sidewalks along Satter Street extension and Dahlia Court.

No other pedestrian or bicycle facilities are proposed or required with this application. The criteria is met.

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.

Staff Finding 39: All grading and erosion control plans will be reviewed by the City Engineer at the time the applicant applies for infrastructure plan review and building permits. A

geotechnical report was submitted with this subdivision application (see applicant's submitted geotechnical report dated December 3, 2018 by GeoPacific Engineering). The criteria is met.

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.

Staff Finding 40: The applicant proposes new water services for all lots off Satter Street or the new proposed local street, Dahlia Court. Utilities are currently stubbed to the western property line within the existing Satter Street right-of-way. The applicant proposes to extend those utilities through the subject property. See 'Composite Utility Plan' sheet 9 of 11 of the applicant's submittal. The criteria is met.

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 down-system 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

Staff Finding 41: The Sewer Master Plan has confirmed that there is sufficient sanitary system and sewage treatment facility capacity. All lots will have a new separate sewer lateral via the extended sewer line in the Satter Street Right-of-way stubbed to the western property line. The extension shall be reviewed and approved by the City Engineer per condition of approval 2. The sewer extension is the responsibility of the applicant per condition of approval 2 (see 'Composite Utility Plan' sheet 9 of 11 of the applicant's submittal). Subject to conditions of approval, the criteria is met.

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.

Staff Finding 42: The applicant has proposed a stormwater detention and treatment facility on the southeastern portion of the subject site adjacent (Tract B). All treated overflow is proposed to be directed into the existing stormwater infrastructure located in a City owned tract south of the subject property. Tract B also serves as the buffer around the identified ephemeral stream, Salamo Creek. This criteria is met.

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.

Staff Finding 43: An 8 foot public utility easement shall be recorded on the face of the plat per condition of approval 2 along all public right-of-way (Satter Street, Dahlia Court, & Salamo Road). The applicant shows this easement on sheet 9/11 'Composite Utility Plan' and sheet 6/11 'Preliminary Plat'. This criteria is met.

J. Supplemental provisions.
(…)
3. Street trees.

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

4. Lighting.
To reduce ambient light and glare, high or low pressure sodium light bulbs shall be required for all subdivision street or alley lights. The light shall be shielded so that the light is directed downwards rather than omni-directional.

Staff Finding 44: The applicant will provide street trees and street lighting along all public right-of-ways on or directly adjacent to the subject property, as required by the Public Works standards and Condition of Approval 2. The criteria is met.

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.

Staff Finding 45: The subject property fronts Salamo Road which is built out to capacity. The applicant proposes to extend Satter Street (stubbed to the western property line) through the subject property to a new local street, Dahlia Court. Both proposed streets shall be built to Engineering Standards per condition of approval 2. The subject property currently has sidewalks along the entire frontage of Salamo Road. The applicant will not be required to dedicate additional property along Salamo Road since the improvements are already existing. This criterion is met.

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.

Staff Finding 46: The subject property does not contain any overhead utilities and the applicant has proposed to underground all new utilities. This criterion is met.

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.

Staff Finding 47: The subject property is roughly 6.5 acres (311,715 sq. ft.) and contains 21,202 square feet of Type I or II lands. The subject property contains 290,513 square feet of land sloped less than 25% (See applicant's submittal sheet 5 of 11 "Slope Analysis Plan"). The applicant is developing the subject property to the maximum density allowed which exceeds 70%. This criterion is met.

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.

Staff Finding 48: The property is zoned R-7, so this criteria does not apply.

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.

Staff Finding 49: There are no heritage trees on the subject property. There are 63 significant trees on the property as verified by the City Arborist. The applicant proposes to retain 15 significant trees (23%) with a total of 17,592 square feet of canopy coverage. See applicant's submittal Sheets 3 of 11 and 4 of 11 "Tree Preservation Plan". This criterion is met.

CHAPTER 92, REQUIRED IMPROVEMENTS

92.010 PUBLIC IMPROVEMENTS FOR ALL DEVELOPMENT
The following improvements shall be installed at the expense of the developer and meet all City codes and standards:

A. Streets within subdivisions.
B. Extension of streets to subdivisions
C. Local and minor collector streets
D. Monuments

Staff Finding 50: The applicant shall install improvements to meet the West Linn Public Works Design Standards per Condition of Approval 2. Subject to the Conditions of Approval, these criteria are met.

92.030 IMPROVEMENT PROCEDURES
(…)

Staff Finding 51: The applicant shall comply with the requirements and install improvements to meet the West Linn Public Works Standards. Subject to condition of approval 2, these criteria are met.

PC-1 AFFIDAVIT AND NOTICE PACKET

AFFIDAVIT OF NOTICE

We, the undersigned do hereby certify that, in the interest of the party (parties) initiating a proposed land use, the following took place on the dates indicated below:

GENERAL

File No. SUB-19-01/WAP19-02/WRG-19-01 Applicant's Name Toll Brothers

Development Name

Scheduled Meeting/Decision Date 11-6-19

NOTICE: Notices were sent at least 20 days prior to the scheduled hearing, meeting, or decision date per Section 99.080 of the Community Development Code. **(check below)**

TYPE A X

A. The applicant (date) 10-17-19 (signed) LS

B. 500ft Affected property owners (date) 10-17-19 (signed) LS

C. School District/Board (date) 10-17-19 (signed) LS

D. Other affected gov't. agencies (date) 10-17-19 (signed) LS

E. Affected neighborhood assns. (date) 10-17-19 (signed) LS

F. All parties to an appeal or review (date)_____ (signed)_____

At least 10 days prior to the scheduled hearing or meeting, notice was published/posted:

Tidings (published date) 10-24-19 (signed) LS

City's website (posted date) 10-17-19 (signed) LS

SIGN

At least 10 days prior to the scheduled hearing, meeting or decision date, a sign was posted on the property per Section 99.080 of the Community Development Code.

(date) 10/23/19 (signed) Jennifer Arold

NOTICE: Notices were sent at least 14 days prior to the scheduled hearing, meeting, or decision date per Section 99.080 of the Community Development Code. **(check below)**

TYPE B _____

A. The applicant (date)_____ (signed)_____

B. Affected property owners (date)_____ (signed)_____

C. School District/Board (date)_____ (signed)_____

D. Other affected gov't. agencies (date)_____ (signed)_____

E. Affected neighborhood assns. (date)_____ (signed)_____

Notice was posted on the City's website at least 10 days prior to the scheduled hearing or meeting.

Date:_____ (signed)_____

STAFF REPORT mailed to applicant, City Council/Planning Commission and any other applicable parties 10 days prior to the scheduled hearing.

(date)_____ (signed)_____

FINAL DECISION notice mailed to applicant, all other parties with standing, and, if zone change, the County surveyor's office.

(date)_____ (signed)_____

p:\devrvw\forms\affidvt of notice-land use (9/09)

CITY OF WEST LINN PLANNING COMMISSION
PUBLIC HEARING NOTICE
FILE NO. SUB-19-01/WAP-19-02/WRG-19-01

The West Linn Planning Commission will hold a public hearing, on **Wednesday, November 6, 2019, starting at 6:30 p.m.** in the Council Chambers of City Hall, 22500 Salamo Road, West Linn, to consider a request for a 25-Lot Subdivision, HCA provision in a Willamette Greenway Permit and Water Resource Area Permit at 23190 Bland Circle.

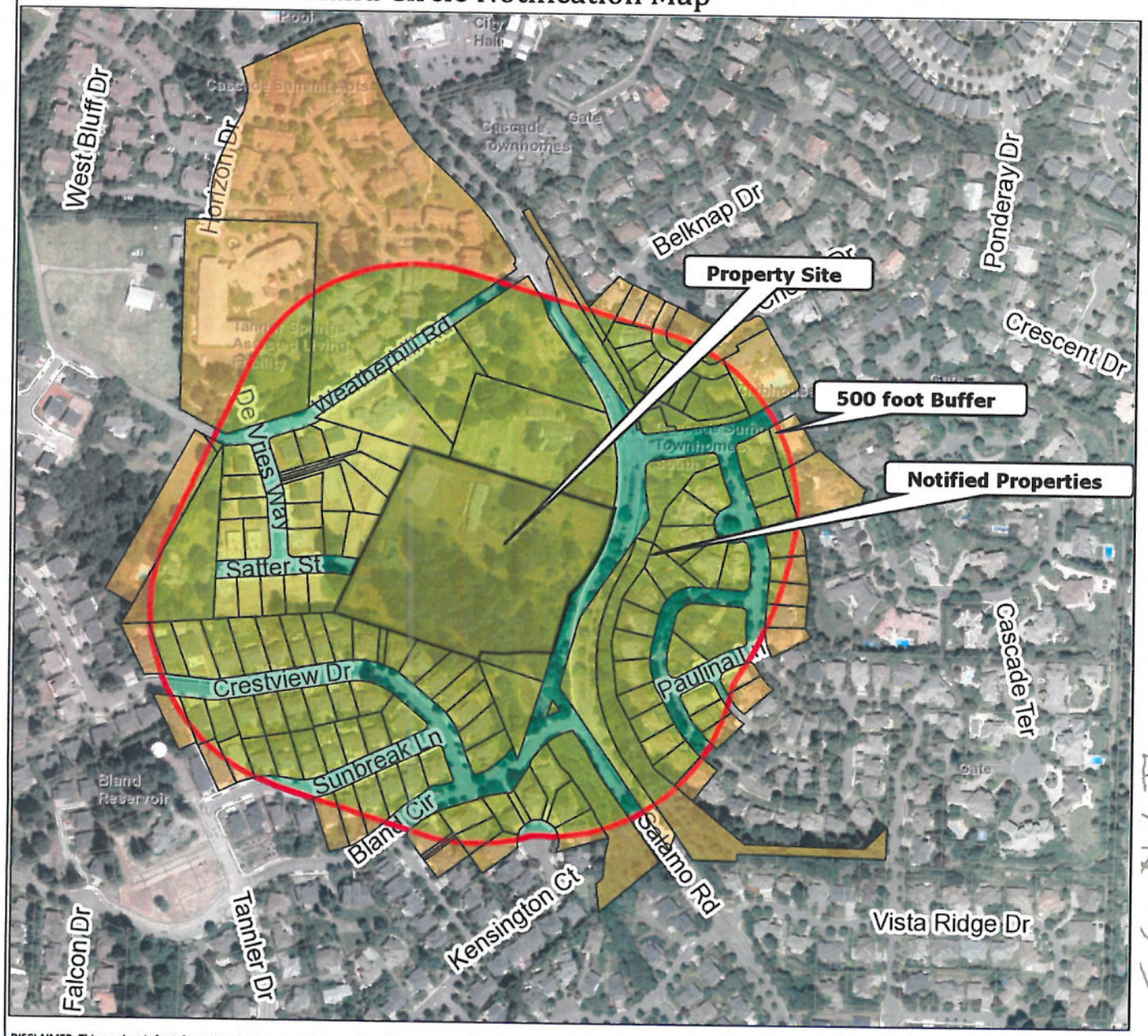
The decision by the Planning Commission to approve or deny this request will be based upon the applicable criteria found in Chapters 12, 28, 32, 48, 85, 92, and 99 of the West Linn Community Development Code. At the hearing, it is important that comments relate specifically to the applicable criteria.

You have been notified of this proposal because County records indicate that you own property within 500 feet of the subject property (Clackamas County Assessor's Map 2S-1E-35AB, Tax Lot 9100), or as otherwise required by Chapter 99 of the CDC.

The complete application in the above noted file is available for inspection at no cost at City Hall or via the web site at https://westlinnoregon.gov/planning/23190-bland-circle-25-lot-subdivision-r-7-zone or copies can be obtained for a minimal charge per page. At least ten days prior to the hearing, a copy of the staff report will be available for inspection. For further information, please contact Associate Planner Jennifer Arnold at jarnold@westlinnoregon.gov or 503-742-6057. Alternately, visit City Hall, 22500 Salamo Road, West Linn, OR 97068.

The hearing will be conducted in accordance with the rules of Section 99.170 of the CDC. Anyone wishing to present written testimony on this proposed action may do so in writing prior to, or at the public hearing. Oral testimony may be presented at the public hearing. At the public hearing, the Planning Commission will receive a staff presentation, and invite both oral and written testimony. The Planning Commission may continue the public hearing to another meeting to obtain additional information, leave the record open for additional evidence, arguments, or testimony, or close the public hearing and take action on the application as provided by state law. **In the event that the Planning Commission decision is appealed, City Council review of the appeal will be de novo.** Failure to raise an issue in person or by letter at some point prior to the close of the hearing, or failure to provide sufficient specificity to afford the decision maker an opportunity to respond to the issue, precludes an appeal to the Land Use Board of Appeals (LUBA) based on that issue.

SUB-19-01 23190 Bland Circle Notification Map



CITY OF West Linn

N W E S

Feet
0 200

Scale 1:4,800 - 1 in = 400 ft
Scale is based on 8-1/2 x 11 paper size

Map created by: LSCHRODER
Date Created: 17-Oct-19 10:02 AM

WEST LINN GIS

DISCLAIMER: This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. Map scale is approximate. Source: West Linn GIS (Geographic Information System) MapOptix.

CITY OF
West Linn
COMMUNITY DEVELOPMENT

NOTICE OF UPCOMING
PLANNING COMMISSION DECISION

PROJECT # SUB-19-01/WAP-19-02/WRG-19-01
MAIL: 10/17/2019 TIDINGS: 10/24/19

CITIZEN CONTACT INFORMATION

To lessen the bulk of agenda packets and land use application notice, and to address the concerns of some City residents about testimony contact information and online application packets containing their names and addresses as a reflection of the mailing notice area, this sheet substitutes for the photocopy of the testimony forms and/or mailing labels. A copy is available upon request.

PC-2 COMPLETENESS LETTER

September 23, 2019

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

SUBJECT: SUB-19-01 application for 25-lot Subdivision at 23190 Bland Circle

Dear Mr. Portlock:

You submitted this application on February 28, 2019 which was deemed incomplete March 28, 2019 and August 14, 2019. After reviewing the supplemental submittal, the Planning and Engineering Departments find that this application is now **complete.** The city has 120 days to exhaust all local review; that period ends January 14, 2020.

Please be aware that determination of a complete application does not guarantee a recommendation of approval from staff for your proposal as submitted – it signals that staff believes you have provided the necessary information for the Planning Commission to render a decision on your proposal.

A 20-day public notice will be prepared and mailed. This notice will identify the Planning Commission hearing date.

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

PC-3 APPLICANT'S SUBMITTAL

DocuSign Envelope ID: 494274F5-1E0E-48A1-8224-7707D9C20CC3

CITY OF West Linn

Planning & Development • 22500 Salamo Rd #1000 • West Linn, Oregon 97068
Telephone 503.656.4211 • Fax 503.656.4106 • westlinnoregon.gov

DEVELOPMENT REVIEW APPLICATION

For Office Use Only		
STAFF CONTACT Jennifer Arnold	PROJECT NO(S). SUB-1901 / WAP-19-02 / WRG-19-01	
NON-REFUNDABLE FEE(S) $3,350	REFUNDABLE DEPOSIT(S) 10,900	TOTAL 14,250-

Type of Review (Please check all that apply):

- ☐ Annexation (ANX)
- ☐ Appeal and Review (AP) *
- ☐ Conditional Use (CUP)
- ☐ Design Review (DR)
- ☐ Easement Vacation
- ☐ Extraterritorial Ext. of Utilities
- ☐ Final Plat or Plan (FP)
- ☐ Flood Management Area
- ☐ Hillside Protection & Erosion Control
- ☐ Historic Review
- ☐ Legislative Plan or Change
- ☐ Lot Line Adjustment (LLA) */**
- ☐ Minor Partition (MIP) (Preliminary Plat or Plan)
- ☐ Non-Conforming Lots, Uses & Structures
- ☐ Planned Unit Development (PUD)
- ☐ Pre-Application Conference (PA) */**
- ☐ Street Vacation
- ☒ Subdivision (SUB)
- ☐ Temporary Uses *
- ☐ Time Extension *
- ☐ Variance (VAR)
- ☐ Water Resource Area Protection/Single Lot (WAP)
- ☒ Water Resource Area Protection/Wetland (WAP)
- ☒ Willamette & Tualatin River Greenway (WRG)
- ☐ Zone Change

Home Occupation, Pre-Application, Sidewalk Use, Sign Review Permit, and Temporary Sign Permit applications require different or additional application forms, available on the City website or at City Hall.

Site Location/Address: 23190 S Bland Cir, West Linn, 97068	Assessor's Map No.: **21E35AB**
	Tax Lot(s): **9100**
	Total Land Area: **6.52 Acres**

Brief Description of Proposal: The applicant is requesting approval of a 25-Lot residential subdivision in the R-7 zone.

Applicant Name: (please print)	**TOLL BROTHERS / ATTN: JJ PORTLOCK**	Phone: **(971) 339-5176**
Address:	**4949 MEADOWS ROAD; SUITE 420**	Email: jportlock@tollbrothers.com
City State Zip:	**LAKE OSWEGO, OR 97035**	
Owner Name (required): (please print)	**David and Drucilla Sloop**	Phone:
Address:	**23190 Bland Circle**	Email:
City State Zip:	**West Linn, OR 97068**	
Consultant Name: (please print)	**EMERIO DESIGN, LLC – ATTN: STEVE MILLER**	Phone: **(541) 318-7487**
Address:	**6445 SW FALLBROOK PL., SUITE 100**	Email:
City State Zip:	**BEAVERTON, OR 97008**	**stevem@emeriodesign.com**

1. All application fees are non-refundable (excluding deposit). **Any overruns to deposit will result in additional billing.**
2. The owner/applicant or their representative should be present at all public hearings.
3. A denial or approval may be reversed on appeal. No permit will be in effect until the appeal period has expired.
4. **Three (3) complete hard-copy sets (single sided) of application materials must be submitted with this application. One (1) complete set of digital application materials must also be submitted on CD in PDF format. If large sets of plans are required in application please submit only two sets.**

* No CD required / ** Only one hard-copy set needed

The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application. Acceptance of this application does not infer a complete submittal. All amendments to the Community Development Code and to other regulations adopted after the application is approved shall be enforced where applicable. Approved applications and subsequent development is not vested under the provisions in place at the time of the initial application.

DocuSigned by: JJ Portlock 7242A5AEC2CC4A7...	02-25-2019	DocuSigned by: David Sloop 058B25AC71AA49F...	DocuSigned by: Drucilla Sloop 058B25AC71AA49F...	02-23-2019
Applicant's signature	Date	Owner's signature *(required)*		Date

RECEIVED FEB 2 3 2019

West Linn

Expedited Land Division Acknowledgement Form

All applicants for partitions and subdivisions must acknowledge, by completing this form, that they were notified about the ELD process and must indicate whether they intend to apply for an ELD or a standard subdivision or partition using the procedures set forth in the City of West Linn's Community Development Code. Applicants who do not sign this form (page 1) and subsequently submit a land division application will have the land division processed under the ELD procedures per ORS 197.365. This completed form must accompany the separate ELD or standard subdivision or partition application form.

Are you intending to apply for an Expedited Land Division?

Yes __ **No** ☑

If **"Yes"**, your application must include a written description of how the proposal satisfies ORS 197.360(1).

If **"No"**, it indicates your intention to use the procedure set forth in the City of West Linn Community Development Code Land Division regulations.

Applicant Name: Toll Brothers, Inc. - JJ Portlock

Applicant Signature: DocuSigned by: JJ Portlock 7242A5AEC2CC4A7... Date: 02-25-2019

Applicant Mailing Address: 4949 Meadows Road, Ste 420, Lake Oswego, OR 97035

Owner's Name: David and Drucilla Sloop

Owner's Signature: DocuSigned by: David Sloop 058B25AC71AA49F... DocuSigned by: Drucilla Sloop 058B25AC71AA49F... Date: ~~02-23-2019~~ 02-23-2019

Owner's Mailing Address: 6445 SW Fallbrook Pl., Ste 100, Beaverton, OR 97008

Site Address: 23190 S Bland Circle, West Linn 97068

Fidelity National Title
Company of Oregon

PUBLIC RECORD REPORT FOR NEW SUBDIVISION OR LAND PARTITION

THIS REPORT IS ISSUED BY THE ABOVE-NAMED COMPANY ("THE COMPANY") FOR THE EXCLUSIVE USE OF THE FOLLOWING CUSTOMER:

Fidelity National Title Company of Oregon
Phone No.: (503)222-2424

Date Prepared: February 27, 2019
Effective Date: February 25, 2019 / 08:00 AM
Charge: $0.00
Order No.: 45141816799
Reference:

The information contained in this report is furnished to the Customer by Fidelity National Title Company of Oregon (the "Company") as an information service based on the records and indices maintained by the Company for the county identified below. This report is not title insurance, is not a preliminary title report for title insurance, and is not a commitment for title insurance. No examination has been made of the Company's records, other than as specifically set forth in this report ("the Report"). Liability for any loss arising from errors and/or omissions is limited to the lesser of the fee paid or the actual loss to the Customer, and the Company will have no greater liability by reason of this report. This report is subject to the Definitions, Conditions and Stipulations contained in it.

REPORT

A. The Land referred to in this report is located in the County of Clackamas, State of Oregon, and is described as follows:

As fully set forth on Exhibit "A" attached hereto and by this reference made a part hereof.

B. As of the Effective Date, the tax account and map references pertinent to the Land are as follows:

As fully set forth on Exhibit "B" attached hereto and by this reference made a part hereof.

C. As of the Effective Date and according to the Public Records, we find title to the land apparently vested in:

As fully set forth on Exhibit "C" attached hereto and by this reference made a part hereof.

D. As of the Effective Date and according to the Public Records, the Land is subject to the following liens and encumbrances, which are not necessarily shown in the order of priority:

As fully set forth on Exhibit "D" attached hereto and by this reference made a part hereof.

EXHIBIT "A"
(Land Description)

Parcel I:

Portion of Lot 21, BLAND ACRES, in the County of Clackamas and State of Oregon, more particularly described as follows:

Beginning at the most Westerly corner of Lot 21, BLAND ACRES, in the County of Clackamas and State of Oregon; thence North 24°13' East along the Northwesterly boundary of said Lot, 210.00 feet to a point; thence South 73°10' East parallel to the Southerly boundary of said Lot, 208.00 feet to a point; thence South 24°13' West, parallel to the Northwesterly boundary of said Lot, 210.00 feet to a point on the Southerly boundary of said Lot; thence North 73°10' West along said Southerly boundary 208.00 feet to the point of beginning.

Parcel II:

Lot 21, BLAND ACRES, in the County of Clackamas and State of Oregon.

EXCEPTING THEREFROM that portion previously conveyed to Bob Bissell, Inc., by Deed recorded February 14, 1975 as Fee No. 75 3883, Clackamas County Deed Records, more particularly described as follows:

Beginning at the most Westerly corner of Lot 21, BLAND ACRES; thence North 24°13' East along the Northwesterly boundary of said Lot, 210.00 feet to a point; thence South 73°10' East parallel to the Southerly boundary of said Lot, 208.00 feet to a point; thence South 24°13' West parallel to the Northwesterly boundary of said Lot, 210.00 feet to a point on the Southerly boundary of said Lot, thence North 73°10' West along said Southerly boundary 208.00 feet to the point of beginning.

FURTHER EXCEPTING THEREFROM that portion conveyed to The City of West Linn by Deed Recorded November 15, 1995 as Fee No. 95-071438, more particularly described as follows:

Beginning at the point of intersection of the Westerly right-of-way of Salamo Road (County Road Number 1113) and the Southerly line of that parcel of land described in Document Number 89-35589 as recorded August 16, 1989 in the Deed Records of said Clackamas County; thence North 71°50'35" West along said Southerly line of Document Number 89-35589 parcel, 186.66 feet; thence leaving said Southerly line North 19'02'10" East, 21.83 feet; thence South 86°16'50" East, 63.29 feet; thence North 84°23'46" East, 61.41 feet; thence South 88°19'30" East, 69.49 feet to a point on said Westerly right-of-way of Salamo Road; thence South 16°37'18" West along said Westerly right-of-way, 82.09 feet to the point of beginning of the herein described parcel.

FURTHER EXCEPTING THEREFROM that portion conveyed to The City of West Linn, for road purposes, by Deed Recorded Janurary 25, 1995 as Fee No. 95-004519, more particularly described as follows:

Beginning at the point of intersection of the Westerly right-of-way of Salamo Road (County Road Number 1113) and the Northerly line of that parcel of land described in Document Number 89-35589 as recorded August 16, 1989 in the Deed Records of said Clackamas County; thence South 08°18'09" East along said Westerly right-of-way of Salamo Road, 1.26 feet; thence South 35°03'45" West, 242.87 feet; thence leaving said Westerly right-of-way, along the arc of a nontangent curve (the radius point of which bears South 69°05'55" East, 570.00 feet) through a central angle of 07°43'12" (chord bears North 24°45'40" East, 76.74 feet), 76.80 feet to a point of reverse curvature; thence along the arc of a 490.00 foot radius curve left through a central angle of 18°15'29" (chord bears North I9°29'32" East, 155.49 feet), 156.15 feet to a point on the Northerly line of said Document Number 89-35589 parcel; thence South 73°32'51 " East along said Northerly line, 57.98 feet to the point of beginning of the herein described parcel.

EXHIBIT "B"
(Tax Account and Map)

APN/Parcel ID(s) 00405092

EXHIBIT "C"
(Vesting)

David Sloop and Drucilla A. Sloop, as tenants by the entirety

EXHIBIT "D"
(Liens and Encumbrances)

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests or claims, which are not shown by the Public Records but which could be ascertained by an inspection of the Land or which may be asserted by persons in possession thereof.

3. Easements, or claims thereof, which are not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.

4. Any encroachment, encumbrance, violation, variation or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.

5. Any lien, or right to a lien, for services, labor, material or equipment rental, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, heretofore or hereafter furnished, imposed by law and not shown by the Public Records.

SPECIFIC ITEMS AND EXCEPTIONS:

6. Unpaid Property Taxes with partial payment are as follows:

Fiscal Year:	2018-2019
Original Amount:	$13,551.18
Unpaid Balance:	$4,517.06, plus interest, if any
Levy Code:	003-031
Account No.:	00405092
Map No.:	21E35AB09100

Prior to close of escrow, please contact the Tax Collector's Office to confirm all amounts owing, including current fiscal year taxes, supplemental taxes, escaped assessments and any delinquencies.

7. The Land has been classified as Forest and Farm Land, as disclosed by the tax roll. If the Land becomes disqualified, said Land may be subject to additional taxes and/or penalties.

8. Rights of the public to any portion of the Land lying within the area commonly known as public streets, roads and highways.

EXHIBIT "D"
(Liens and Encumbrances)
(continued)

9. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	City of West Linn
Purpose:	Construction and Slope
Recording Date:	January 25, 1995
Recording No:	95-004519
Affects:	Reference is hereby made to said document for full particulars

10. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	City of West Linn
Purpose:	Detention facility
Recording Date:	January 25, 1995
Recording No:	95-004520
Affects:	Reference is hereby made to said document for full particulars

11. A deed of trust to secure an indebtedness in the amount shown below,

Amount:	$228,500.00
Dated:	October 11, 2012
Trustor/Grantor:	David Sloop and Drucilla A. Sloop, husband and wife
Trustee:	Linear Title & Closing, LTD
Beneficiary:	Mortgage Electronic Registration Systems, Inc., as nominee for Farmers Bank & Trust, NA
Loan No.:	120711045774 / MIN: 1002634-9000046376-3
Recording Date:	October 22, 2012
Recording No.:	2012-068694

NOTE: Based on recitals in the trust deed or an assignment of the trust deed, it appeared that Farmers Bank & Trust, NA was the then owner of the indebtedness secured by the trust deed. It may be possible, for a MERS trust deed, to obtain information regarding the current owner of the indebtedness and the servicer, if any, by contacting MERS at 888-679-6377 or through the MERS website.

12. A deed of trust to secure an indebtedness in the amount shown below,

Amount:	$110,747.00
Dated:	January 29, 2019
Trustor/Grantor:	David Sloop and Drucilla A. Sloop
Trustee:	Fidelity National Title Insurance Company of Oregon
Beneficiary:	TOLL BROS., INC, a Pennsylvania corporation
Recording Date:	January 29, 2019
Recording No.:	2019-004627

EXHIBIT "D"
(Liens and Encumbrances)
(continued)

13. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	City of West Linn
Purpose:	Public utility
Recording Date:	July 29, 2016
Recording No:	2016-051114
Affects:	Reference is hereby made to said document for full particulars

14. If requested to issue an extended coverage ALTA loan policy, the following matters must be addressed:

a) The rights of tenants holding under unrecorded leases or tenancies
b) Matters disclosed by a statement as to parties in possession and as to any construction, alterations or
repairs to the Land within the last 75 days. The Company must be notified in the event that any funds are to be used for construction, alterations or repairs.
c) [Intentionally Deleted]

15. Any rights, interests, or claims which may exist or arise by reason of the following matters disclosed by survey,

Job No.: 0542-001
Dated: November 8, 2018
Prepared by: Emerio Design
Matters shown:
A) There is a plastic fence encroachment approximately 52 feet Northeast of the Northeast corner of the stable.
B) There is a plastic fence encroachment on the Northeast corner of the property.
C) There is a wood fence encroachment approximately 38 feet Northwest of Northeast corner of Lot 11.
D) There is a concrete wall encroachment approximately 3 feet Northwest of Northeast corner of Lot 11.
E) There is a concrete wall encroachment approximately 38 feet Southeast of Northwest corner of Lot 11.
F) There is a sanitary sewer and storm sewer encroachment near the South property line above the public utility easement.
G) The Existing house is accessing the property through the property owned by the City of West Linn from Bland Circle. There does not appear to be an easement that has been recorded for that access, however, the access has been continuously used over a very long time.
H) On the West side of the property Satter Street dead ends into the Westerly property line. The City of West Linn controls the access to that road and will have to give permission in order to access it from the property,

16. [Intentionally Deleted]

EXHIBIT "D"
(Liens and Encumbrances)
(continued)

17. A deed of trust to secure an indebtedness in the amount shown below,

Amount:	$110,747.00
Dated:	January 29, 2019
Trustor/Grantor:	David Sloop and Drucilla A. Sloop, as tenants by the entirety
Trustee:	Fidelity National Title Company of Oregon
Beneficiary:	Toll Bros.,Inc., a Pennsylvania corporation
Loan No.:	None Shown
Recording Date:	January 29, 2019
Recording No.:	2019-004627

Fidelity National Title Company of Oregon
Public Record Report for New Subdivision or Land Partition
Order No. 45141816799

DEFINITIONS, CONDITIONS AND STIPULATIONS

1. **Definitions.** The following terms have the stated meaning when used in this report:
   (a) "Customer": The person or persons named or shown as the addressee of this report.
   (b) "Effective Date": The effective date stated in this report.
   (c) "Land": The land specifically described in this report and improvements affixed thereto which by law constitute real property.
   (d) "Public Records": Those records which by the laws of the state of Oregon impart constructive notice of matters relating to the Land.
2. **Liability of Company.**
   (a) This is not a commitment to issue title insurance and does not constitute a policy of title insurance.
   (b) The liability of the Company for errors or omissions in this public record report is limited to the amount of the charge paid by the Customer, provided, however, that the Company has no liability in the event of no actual loss to the Customer.
   (c) No costs (including without limitation attorney fees and other expenses) of defense, or prosecution of any action, is afforded to the Customer.
   (d) In any event, the Company assumes no liability for loss or damage by reason of the following:
      (1) Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records.
      (2) Any facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the land or by making inquiry of persons in possession thereof.
      (3) Easements, liens or encumbrances, or claims thereof, which are not shown by the Public Records.
      (4) Discrepancies, encroachments, shortage in area, conflicts in boundary lines or any other facts which a survey would disclose.
      (5) (i) Unpatented mining claims; (ii) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (iii) water rights or claims or title to water.
      (6) Any right, title, interest, estate or easement in land beyond the lines of the area specifically described or referred to in this report, or in abutting streets, roads, avenues, alleys, lanes, ways or waterways.
      (7) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the Public Records at the effective date hereof.
      (8) Any governmental police power not excluded by 2(d)(7) above, except to the extent that notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the Public Records at the effective date hereof.
      (9) Defects, liens, encumbrances, adverse claims or other matters created, suffered, assumed, agreed to or actually known by the Customer.
3. **Report Entire Contract.** Any right or action or right of action that the Customer may have or may bring against the Company arising out of the subject matter of this report must be based on the provisions of this report. No provision or condition of this report can be waived or changed except by a writing signed by an authorized officer of the Company. By accepting this form report, the Customer acknowledges and agrees that the Customer has elected to utilize this form of public record report and accepts the limitation of liability of the Company as set forth herein.
4. **Charge.** The charge for this report does not include supplemental reports, updates or other additional services of the Company.

LIMITATIONS OF LIABILITY

"CUSTOMER" REFERS TO THE RECIPIENT OF THIS REPORT.

CUSTOMER EXPRESSLY AGREES AND ACKNOWLEDGES THAT IT IS EXTREMELY DIFFICULT, IF NOT IMPOSSIBLE, TO DETERMINE THE EXTENT OF LOSS WHICH COULD ARISE FROM ERRORS OR OMISSIONS IN, OR THE COMPANY'S NEGLIGENCE IN PRODUCING, THE REQUESTED REPORT, HEREIN "THE REPORT." CUSTOMER RECOGNIZES THAT THE FEE CHARGED IS NOMINAL IN RELATION TO THE POTENTIAL LIABILITY WHICH COULD ARISE FROM SUCH ERRORS OR OMISSIONS OR NEGLIGENCE. THEREFORE, CUSTOMER UNDERSTANDS THAT THE COMPANY IS NOT WILLING TO PROCEED IN THE PREPARATION AND ISSUANCE OF THE REPORT UNLESS THE COMPANY'S LIABILITY IS STRICTLY LIMITED. CUSTOMER AGREES WITH THE PROPRIETY OF SUCH LIMITATION AND AGREES TO BE BOUND BY ITS TERMS

THE LIMITATIONS ARE AS FOLLOWS AND THE LIMITATIONS WILL SURVIVE THE CONTRACT:

ONLY MATTERS IDENTIFIED IN THIS REPORT AS THE SUBJECT OF THE REPORT ARE WITHIN ITS SCOPE. ALL OTHER MATTERS ARE OUTSIDE THE SCOPE OF THE REPORT.

CUSTOMER AGREES, AS PART OF THE CONSIDERATION FOR THE ISSUANCE OF THE REPORT AND TO THE FULLEST EXTENT PERMITTED BY LAW, TO LIMIT THE LIABILITY OF THE COMPANY, ITS LICENSORS, AGENTS, SUPPLIERS, RESELLERS, SERVICE PROVIDERS, CONTENT PROVIDERS AND ALL OTHER SUBSCRIBERS OR SUPPLIERS, SUBSIDIARIES, AFFILIATES, EMPLOYEES, AND SUBCONTRACTORS FOR ANY AND ALL CLAIMS, LIABILITIES, CAUSES OF ACTION, LOSSES, COSTS, DAMAGES AND EXPENSES OF ANY NATURE WHATSOEVER, INCLUDING ATTORNEY'S FEES, HOWEVER ALLEGED OR ARISING, INCLUDING BUT NOT LIMITED TO THOSE ARISING FROM BREACH OF CONTRACT, NEGLIGENCE, THE COMPANY'S OWN FAULT AND/OR NEGLIGENCE, ERRORS, OMISSIONS, STRICT LIABILITY, BREACH OF WARRANTY, EQUITY, THE COMMON LAW, STATUTE OR ANY OTHER THEORY OF RECOVERY, OR FROM ANY PERSON'S USE, MISUSE, OR INABILITY TO USE THE REPORT OR ANY OF THE MATERIALS CONTAINED THEREIN OR PRODUCED**, SO THAT THE TOTAL AGGREGATE LIABILITY OF THE COMPANY AND ITS AGENTS, SUBSIDIARIES, AFFILIATES, EMPLOYEES, AND SUBCONTRACTORS SHALL NOT IN ANY EVENT EXCEED THE COMPANY'S TOTAL FEE FOR THE REPORT.**

CUSTOMER AGREES THAT THE FOREGOING LIMITATION ON LIABILITY IS A TERM MATERIAL TO THE PRICE THE CUSTOMER IS PAYING, WHICH PRICE IS LOWER THAN WOULD OTHERWISE BE OFFERED TO THE CUSTOMER WITHOUT SAID TERM. CUSTOMER RECOGNIZES THAT THE COMPANY WOULD NOT ISSUE THE REPORT BUT FOR THIS CUSTOMER AGREEMENT, AS PART OF THE CONSIDERATION GIVEN FOR THE REPORT, TO THE FOREGOING LIMITATION OF LIABILITY AND THAT ANY SUCH LIABILITY IS CONDITIONED AND PREDICATED UPON THE FULL AND TIMELY PAYMENT OF THE COMPANY'S INVOICE FOR THE REPORT.

THE REPORT IS LIMITED IN SCOPE AND IS NOT AN ABSTRACT OF TITLE, TITLE OPINION, PRELIMINARY TITLE REPORT, TITLE REPORT, COMMITMENT TO ISSUE TITLE INSURANCE, OR A TITLE POLICY, AND SHOULD NOT BE RELIED UPON AS SUCH. THE REPORT DOES NOT PROVIDE OR OFFER ANY TITLE INSURANCE, LIABILITY COVERAGE OR ERRORS AND OMISSIONS COVERAGE. THE REPORT IS NOT TO BE RELIED UPON AS A REPRESENTATION OF THE STATUS OF TITLE TO THE PROPERTY. THE COMPANY MAKES NO REPRESENTATIONS AS TO THE REPORT'S ACCURACY, DISCLAIMS ANY WARRANTY AS TO THE REPORT, ASSUMES NO DUTIES TO CUSTOMER, DOES NOT INTEND FOR CUSTOMER TO RELY ON THE REPORT, AND ASSUMES NO LIABILITY FOR ANY LOSS OCCURRING BY REASON OF RELIANCE ON THE REPORT OR OTHERWISE.

IF CUSTOMER (A) HAS OR WILL HAVE AN INSURABLE INTEREST IN THE SUBJECT REAL PROPERTY, (B) DOES NOT WISH TO LIMIT LIABILITY AS STATED HEREIN AND (C) DESIRES THAT ADDITIONAL LIABILITY BE ASSUMED BY THE COMPANY, THEN CUSTOMER MAY REQUEST AND PURCHASE A POLICY OF TITLE INSURANCE, A BINDER, OR A COMMITMENT TO ISSUE A POLICY OF TITLE INSURANCE. NO ASSURANCE IS GIVEN AS TO THE INSURABILITY OF THE TITLE OR STATUS OF TITLE. CUSTOMER EXPRESSLY AGREES AND ACKNOWLEDGES IT HAS AN INDEPENDENT DUTY TO ENSURE AND/OR RESEARCH THE ACCURACY OF ANY INFORMATION OBTAINED FROM THE COMPANY OR ANY PRODUCT OR SERVICE PURCHASED.

NO THIRD PARTY IS PERMITTED TO USE OR RELY UPON THE INFORMATION SET FORTH IN THE REPORT, AND NO LIABILITY TO ANY THIRD PARTY IS UNDERTAKEN BY THE COMPANY.

CUSTOMER AGREES THAT, TO THE FULLEST EXTENT PERMITTED BY LAW, IN NO EVENT WILL THE COMPANY, ITS LICENSORS, AGENTS, SUPPLIERS, RESELLERS, SERVICE PROVIDERS, CONTENT PROVIDERS, AND ALL OTHER SUBSCRIBERS OR SUPPLIERS, SUBSIDIARIES, AFFILIATES, EMPLOYEES AND SUBCONTRACTORS BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, INDIRECT, PUNITIVE, EXEMPLARY, OR SPECIAL DAMAGES, OR LOSS OF PROFITS, REVENUE, INCOME, SAVINGS, DATA, BUSINESS, OPPORTUNITY, OR GOODWILL, PAIN AND SUFFERING, EMOTIONAL DISTRESS, NON-OPERATION OR INCREASED EXPENSE OF OPERATION, BUSINESS INTERRUPTION OR DELAY, COST OF CAPITAL, OR COST OF REPLACEMENT PRODUCTS OR SERVICES, REGARDLESS OF WHETHER SUCH LIABILITY IS BASED ON BREACH OF CONTRACT, TORT, NEGLIGENCE, THE COMPANY'S OWN FAULT AND/OR NEGLIGENCE, STRICT LIABILITY, BREACH OF WARRANTIES, FAILURE OF ESSENTIAL PURPOSE, OR OTHERWISE AND WHETHER CAUSED BY NEGLIGENCE, ERRORS, OMISSIONS, STRICT LIABILITY, BREACH OF CONTRACT, BREACH OF WARRANTY, THE COMPANY'S OWN FAULT AND/OR NEGLIGENCE OR ANY OTHER CAUSE WHATSOEVER, AND EVEN IF THE COMPANY HAS BEEN ADVISED OF THE LIKELIHOOD OF SUCH DAMAGES OR KNEW OR SHOULD HAVE KNOWN OF THE POSSIBILITY FOR SUCH DAMAGES.

END OF THE LIMITATIONS OF LIABILITY

EMERIO Design

CIVIL ENGINEERS & PLANNERS

DATE: 2-28-2018

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

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

b) Option 2. Access is from a private street or driveway connected to an adjoining property that has direct access to a public street (i.e., "shared driveway"). A public access easement

covering the driveway shall be recorded in this case to assure access to the closest public street for all users of the private street/drive.

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

RESPONSE: The Applicant is proposing access to the site via 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. The Applicant's proposal satisfies the above criteria.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

RESPONSE: Access to each lot will be provided to/from either 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. Transportation.

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

2. Traffic Impact Analysis (TIA).

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

b. 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. <u>Sewer</u>.

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. ***<u>Alignment.</u> 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. ***<u>Future extension of streets.</u> 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. ***<u>Intersection angles.</u> 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. ***<u>Additional right-of-way for existing streets.</u> 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. ***<u>Cul-de-sacs</u>.***

    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. At this time a new street name has not been identified. The Applicant will work with the City's Planning staff to identify a new street name prior to the Planning Commission hearing so that it can be approved along with the proposed development as required by the above criterion. No difficult of unusual spellings will be 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. <u>Extension of streets to subdivisions</u>. 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. <u>Local and minor collector streets</u> 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 subject property does not contain any Type I, II, III and/or IV lands per the City's definitions in Chapter 02 of the CDC. As such, the above criteria do not apply to the Applicant's proposal.

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

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

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

RESPONSE: As mentioned previously in this narrative, the sanitary sewer lines will be installed to meet all City Standards and Specifications to serve the subdivision. As part of the submitted application materials, the Applicant has provided a detailed composite utility plan on Sheet 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. <u>Street name signs</u>. 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. <u>Dead-end street signs</u>. 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. <u>Signs indicating future use</u> 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. <u>Street lights</u>. 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. <u>Utilities</u>. 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. <u>Curb cuts and driveways</u>. 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. <u>Street trees</u>. 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. <u>Joint mailbox facilities</u> 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.

NATURAL RESOURCE ASSESSMENT
Within
Water Resource Area

FOR

23190 Bland Circle
West Linn, Oregon

Prepared for:
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Prepared by:
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February 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 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 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 natural resource assessment was conducted by S&A on October 3, 2018 for the purposes of completing a wetland delineation and natural resource assessment. 32.020 Chapter 32 of the CDC applies to all development, activity or uses within WRAs identified on the WRA map. The presence or absence of any onsite undisturbed wetland or waterway was determined based on field verified conditions and documented in this report.

WRA CONDITIONS

Waterway

During the delineation site visit one water quality facility was delineated onsite that drained to a City water detention facility just offsite to the south. A sample plot (3) was taken in the swale that was essentially 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.

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 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.

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 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.

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 but instead there was a water quality swale onsite connecting to a water quality pond offsite to the south. The water quality swale and pond are 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. 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.

There is no water resource onsite. There is a documented water quality swale onsite. Therefore a WRA is not required.

Undisturbed WRA Conditions

During the delineation site visit no water resource was found onsite. A water quality swale was located within the area that was WRA mapped as a wetland. 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 or waterways were found onsite.

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. No WRA was found to be onsite. No impacts to any WRA are proposed.

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. There was a water quality facility within the location of the mapped WRA. The facility did not meet wetland criteria and no WRA was found 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.

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, nor WRA.

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 mapped on site. These were mis-mapped and a water quality swale is 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. There is no water resource, there for 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 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 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 to the existing regional detention pond on just offsite to the southeast. In the post developed condition, the site impervious flows will be treated onsite at 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 (7,072sf) 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 mismapped as described previously and is a water quality swale that should not require a surrounding WRA. However, the water quality swale will be within its own tract.

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 waterways or wetlands onsite, therefore there is no WRA. There will be no roads of driveways located within the water quality swale or tract it is 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. There is not a stream onsite, just a water quality swale.

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.

There is no stream channel.

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.

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. 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: Utility Plan
Appendix G: Drainage Report
Appendix H: Wetland Delineation Report

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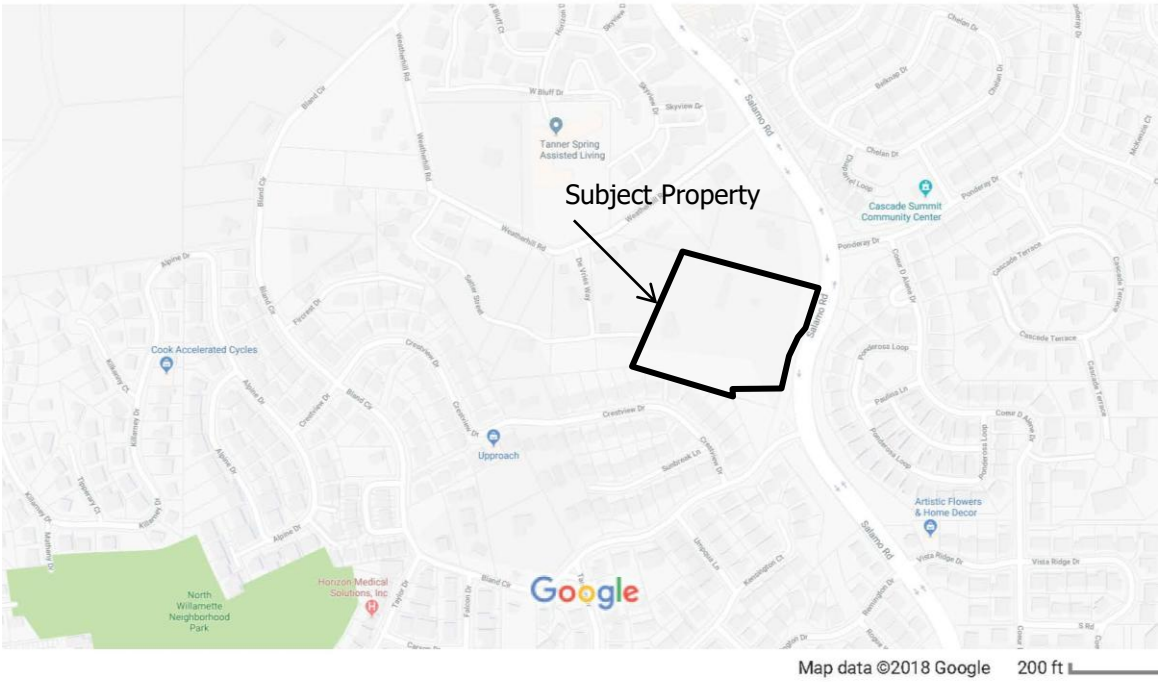
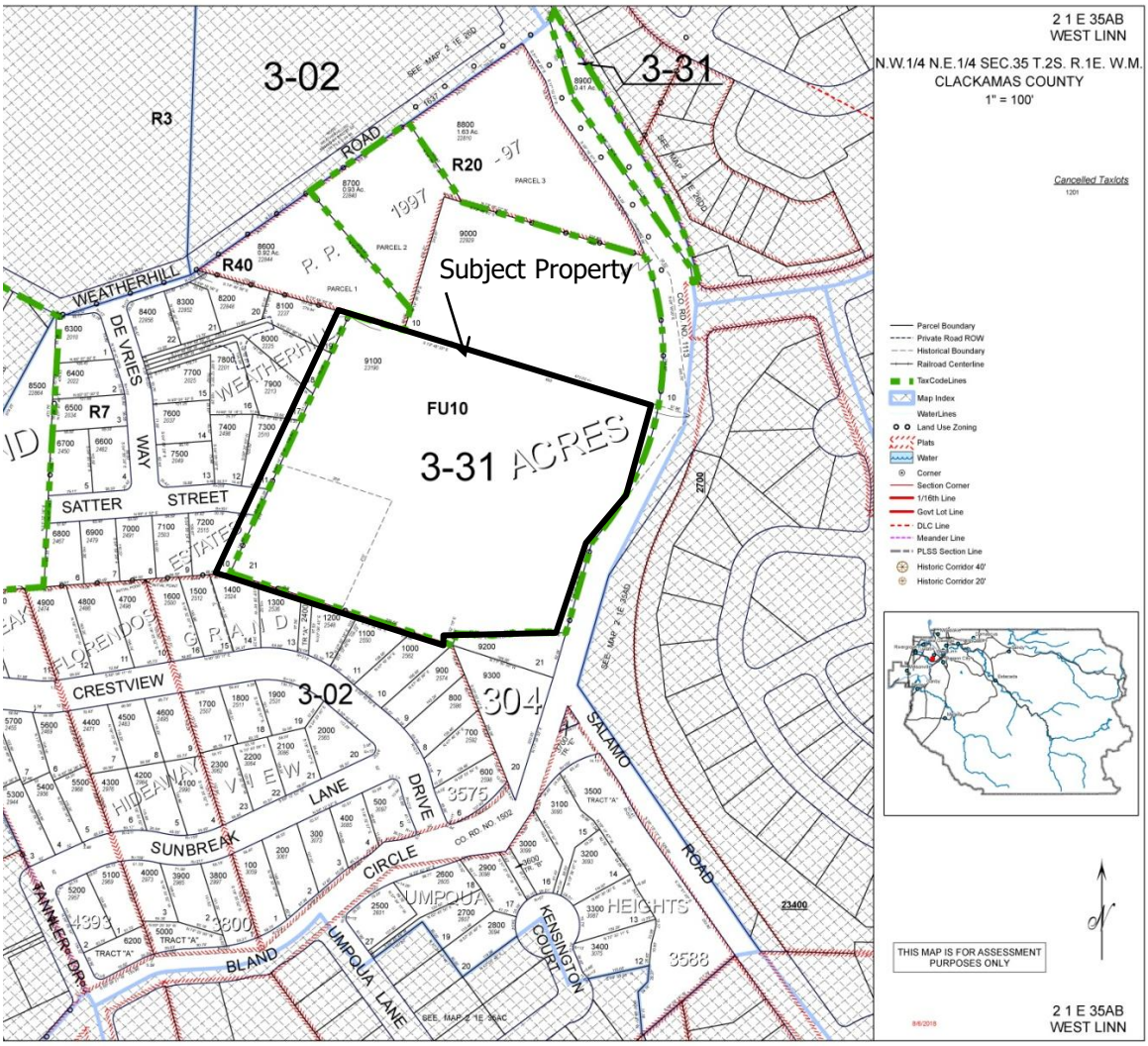


Map data ©2018 Google 200 ft

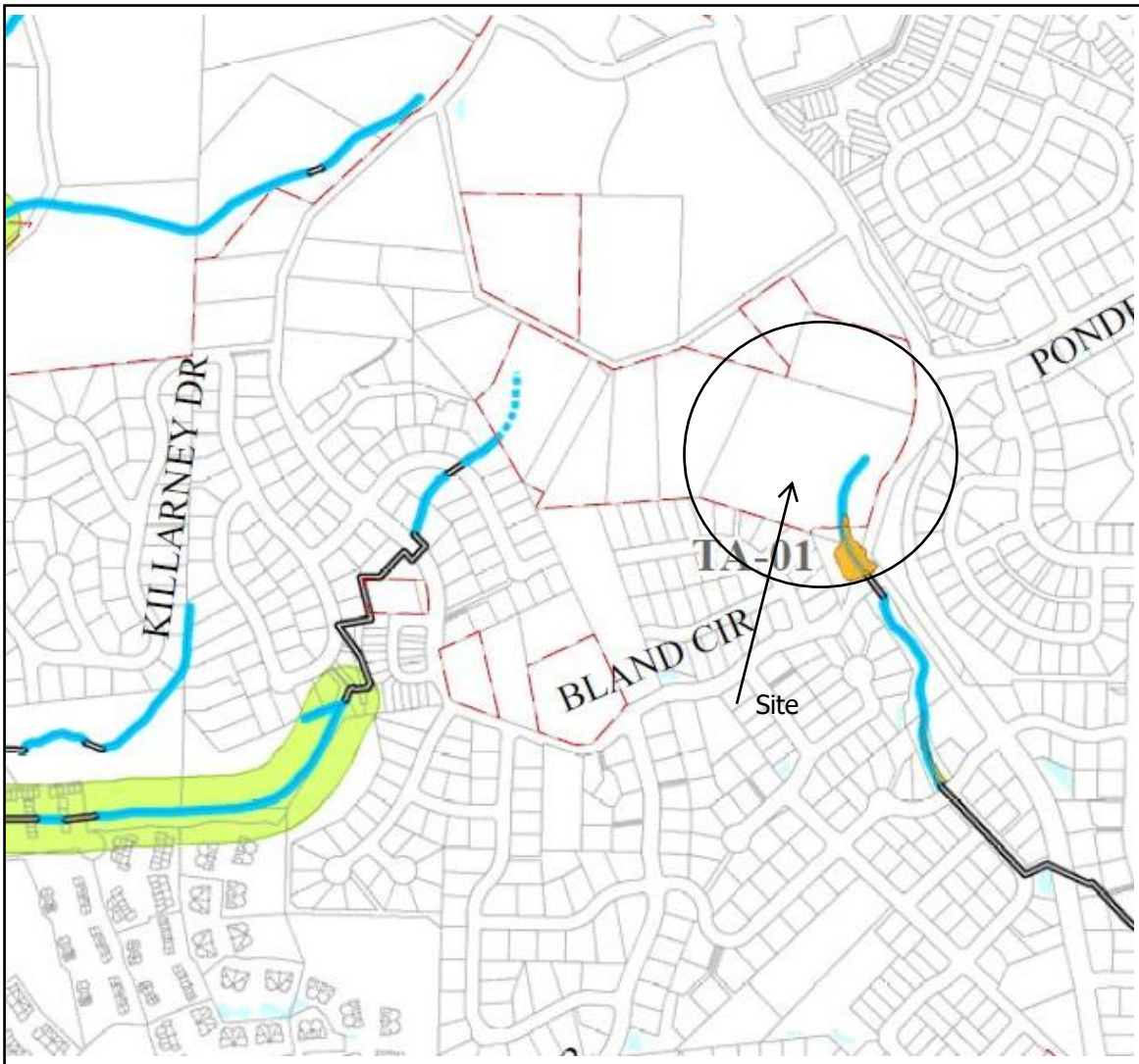
Appendix A: SITE LOCATION MAP
Bland Circle
S&A# 2649

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

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

LEGEND

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

SURVEYOR'S NOTE

THE DATUM FOR THIS SURVEY IS BASED UPON OREGON REAL-TIME GNSS NETWORK (ORGN). 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
FAX: (503) 746-8813
www.emeriodesign.com

PRELIMINARY

SHEET
OF

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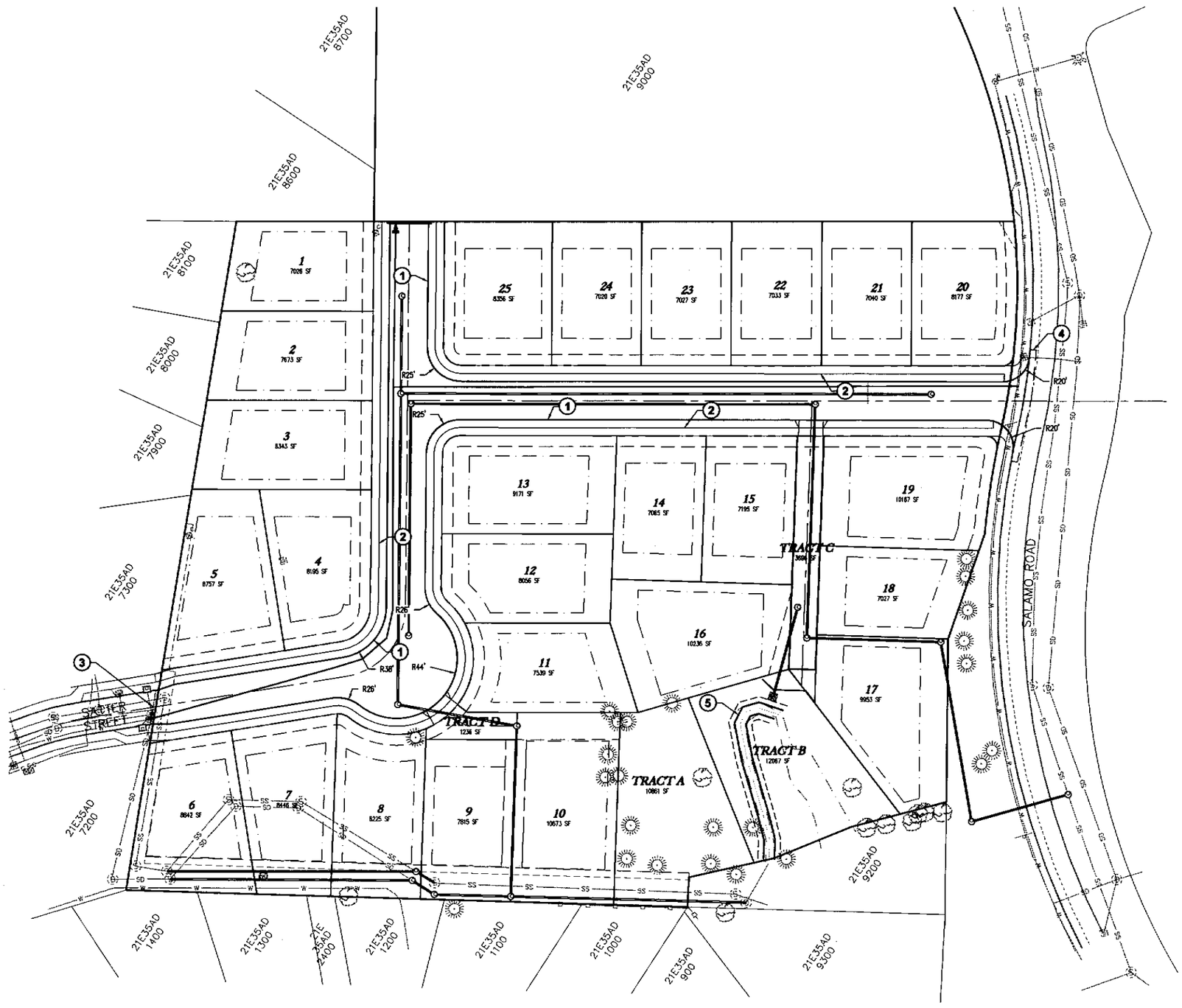

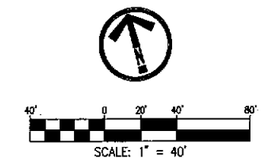

LEGEND

- 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 6' CONCRETE SIDEWALK PER CITY OF WEST LINN DETAIL WL-508
3. INSTALL AC SECTION FOR SATTER STREET PER SECTION TO MATCH EXISTING
4. INSTALL AC SECTION FOR SALAMO ROAD PER SECTION TO MATCH EXISTING
5. WIDEN EXISTING WATER QUALITY SWALE

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

PRELIMINARY SITE PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	01/19	PLANNING 1ST SUBMITTAL
1	-	-

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BEAVERTON, OREGON 97008
TEL: (503) 746-8812
FAX: (503) 639-9592
www.emeriodesign.com

PRELIMINARY

SHEET 7 OF 10

FILE:P:\10542-001 23190 S Bland Circle\dwg\plan\Planning Set\10542-001_D-Site, Layout: 7 PRELIMINARY SITE PLAN, Plot Date: 1/30/2019 1:35 PM, by: Jacob 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
0	01/19	PLANNING 1ST SUBMITTAL
1	-	-

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
(503) 626-0884
FAX: (503) 639-9592
www.emeriodesign.com

PRELIMINARY

SHEET 9 OF 10

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_Title Layout: 9 COMPOSITE UTILITY PLAN, Plot Date: 1/30/2019 1:35 PM, by: Jacob Snyder

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: 11/9/19 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.# _____

March 2018

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

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(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

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

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

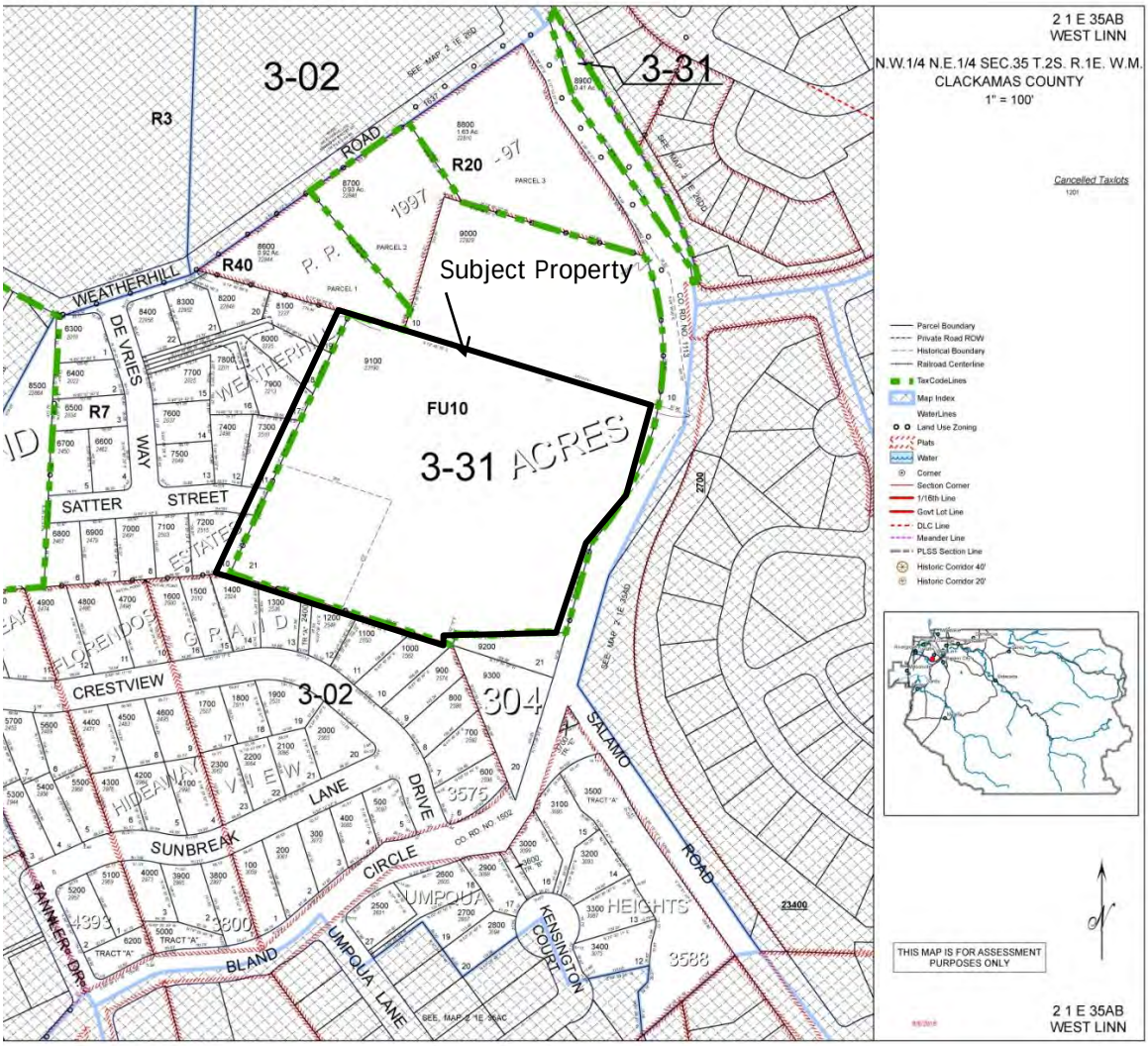


FIGURE 2. TAX MAP
Bland Circle
S&A#2649

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

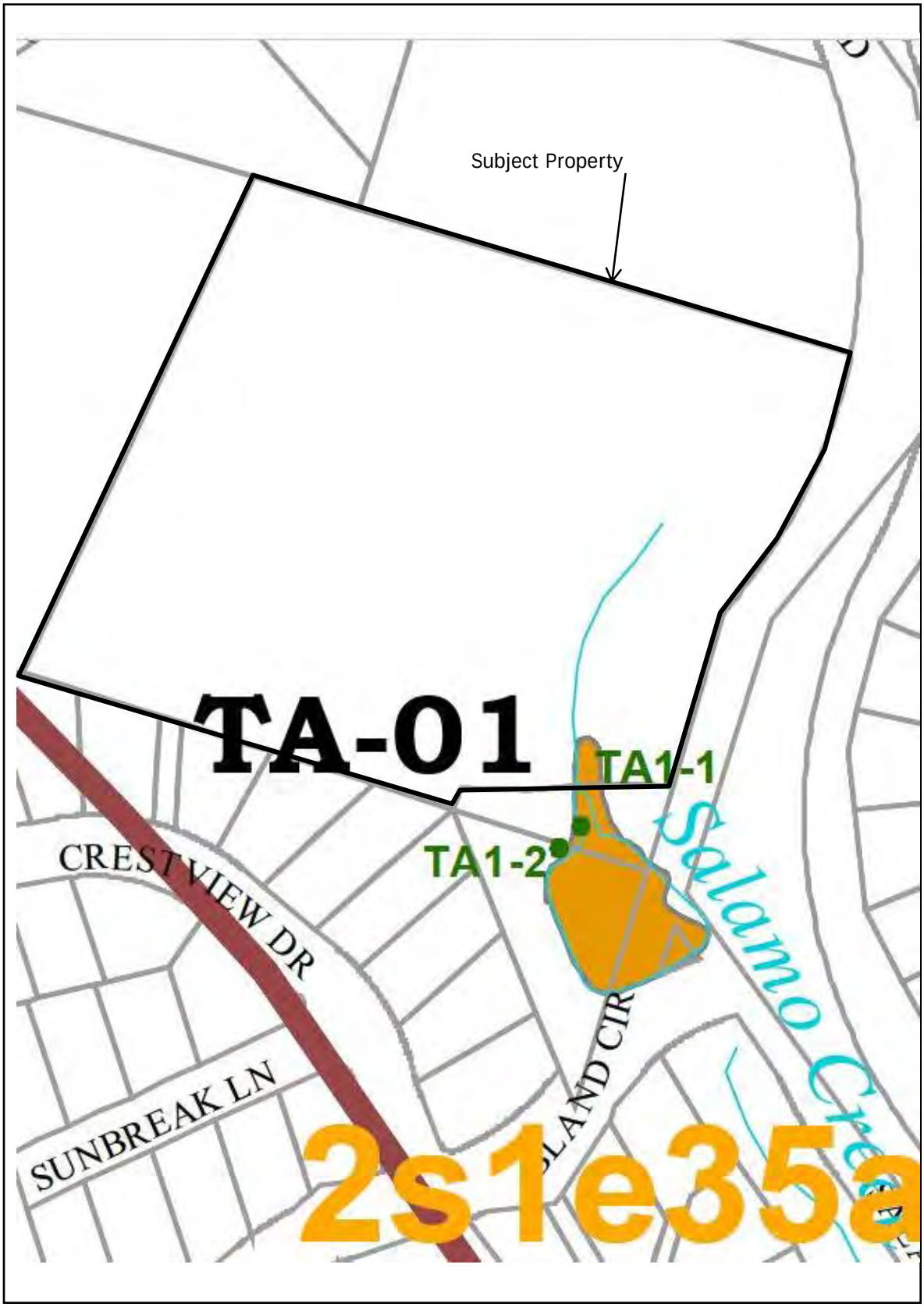


FIGURE 3.LWI MAP
Bland Circle
S&A#2649

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

40' 0 20' 40' 80'

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.

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
FAX: (503) 746-8813
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, 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 ___	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** x
Hydric Soil Present?	Yes ___	No x	
Wetland Hydrology Present?	Yes ___	No x	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *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 %	Type[1]	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')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Rubus armeniacus*	20	X	FAC
2.			
3.			
4.			
5.			
	20 = Total Cover		

Herb Stratum (Plot size: 5)	Absolute % Cover	Dominant Species?	Indicator Status
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: ___)	Absolute % Cover	Dominant Species?	Indicator Status
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)	Matrix %	Redox Features Color (moist)	Redox %	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 ___	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes ___	No x		
Wetland Hydrology Present?	Yes x	No ___		

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 %	Type[1]	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')	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus laurocerasus	15	x	UPL
2. Rubus armeniacus	10	X	FAC
3.			
4.			
5.			
	25 = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
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: ___)	Absolute % Cover	Dominant Species?	Indicator Status
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 %	Type[1]	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	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes ___	No x		
Wetland Hydrology Present?	Yes ___	No x		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		

Sapling/Shrub Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
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')	Absolute % Cover	Dominant Species?	Indicator Status
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)	Absolute % Cover	Dominant Species?	Indicator Status
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 %	Type[1]	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')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix matsudana*	10	X	NOL
2.			
3.			
4.			
5.			
	10 = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
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: ___)	Absolute % Cover	Dominant Species?	Indicator Status
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 %	Type[1]	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.

APPENDIX C. GROUND LEVEL PHOTOGRAPHS
Bland Circle
S&A#2649

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.

APPENDIX C. GROUND LEVEL PHOTOGRAPHS
Bland Circle
S&A#2649

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.

APPENDIX C. GROUND LEVEL PHOTOGRAPHS Bland Circle S&A#2649	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.

APPENDIX C. GROUND LEVEL PHOTOGRAPHS Bland Circle S&A#2649	Schott & Associates P.O. Box 589 Aurora, OR. 97002 503.678.6007

Photo Point 3. Facing northwest upslope.

Photo Point 4. Facing south.

APPENDIX C. GROUND LEVEL PHOTOGRAPHS
Bland Circle
S&A#2649

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.

APPENDIX C. GROUND LEVEL PHOTOGRAPHS Bland Circle S&A#2649	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

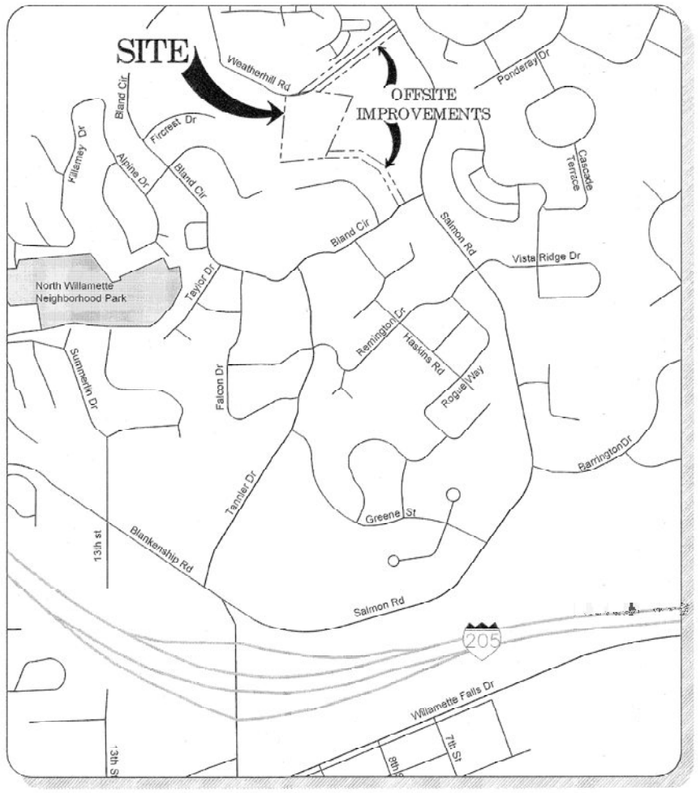
CONSTRUCTION DOCUMENTS

FOR

WEATHERVIEW ESTATES SUBDIVISION

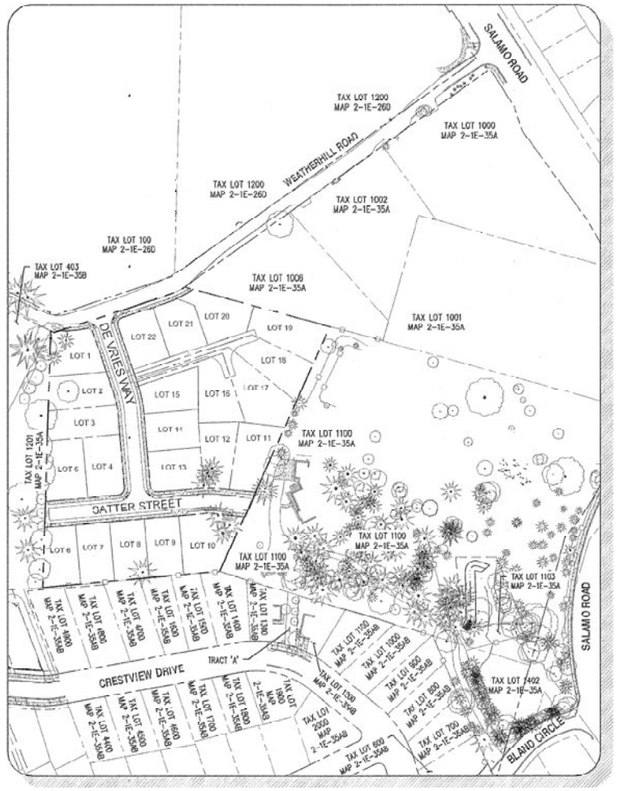
PREPARED FOR

BLACK DIAMOND PROPERTIES, LLC



VICINITY MAP

NOT TO SCALE



SITE MAP

Scale: NTS

SHEET LIST

C000	COVER SHEET	C303	STREET LIGHTING PLAN
C001	CONDITIONS OF APPROVAL	C310A	STORMWATER LINE 'O' PLAN & PROFILE I
C002	GENERAL NOTES	C310B	STORMWATER LINE 'O' PLAN & PROFILE II
C100	ONSITE EXISTING CONDITIONS PLAN	C311	STORMWATER LINE 'A' PLAN & PROFILE
C101	ONSITE DEMOLITION PLAN	C312	STORMWATER LINE 'B' PLAN & PROFILE
C102	OFFSITE EXISTING COND. & DEMO PLAN I	C313	STORMWATER LINE 'C' PLAN & PROFILE
C103	OFFSITE EXISTING COND. & DEMO PLAN II	C314	STORMWATER LINE 'D' PLAN & PROFILE
C105	PHASE I GRADING AND EROSION CONTROL PLAN	C315	STORMWATER LINE 'E' PLAN & PROFILE
C110	ONSITE TREE PROTECTION AND REMOVAL PLAN	C316	REGIONAL POND SEDIMENT REMOVAL & FLOW CONTROL MANHOLE ACCESS & RETROFIT
C111	ONSITE TREE PROTECTION AND REMOVAL DETAILS	C320	STORMWATER DRAINAGE DETAILS I
C112	OFFSITE TREE INVENTORY PLAN I	C321	STORMWATER DRAINAGE DETAILS II
C113	OFFSITE TREE INVENTORY PLAN II	C322	STORMWATER DRAINAGE DETAILS III
C114	OFFSITE TREE INVENTORY DETAILS	C330	SANITARY SEWER 'O' PLAN & PROFILE I
C200	TENTATIVE SUBDIVISION PLAT	C331	SANITARY SEWER 'O' PLAN & PROFILE II
C210	WEATHERHILL ROAD IMPROVEMENT PLAN & PROFILE	C332	SANITARY SEWER 'A' PLAN & PROFILE
C211	DEVRIES WAY IMPROVEMENT PLAN & PROFILE	C333	SANITARY SEWER 'B' PLAN & PROFILE
C212	SATTER STREET IMPROVEMENT PLAN & PROFILE	C334	SANITARY SEWER 'C' PLAN & PROFILE
C213	PRIVATE DRIVE IMPROVEMENT PLAN & PROFILE	C335	SANITARY SEWER 'D' PLAN & PROFILE
C214	FIRE TURNAROUND & 22004 WEATHERHILL ROAD DRIVEWAY RECONSTRUCTION	C340	SANITARY SEWER CONSTRUCTION DETAILS
C220	SITE CONSTRUCTION DETAILS I	C350	WATER LINE 'A' PLAN & PROFILE I
C221	SITE CONSTRUCTION DETAILS II	C351	WATER LINE 'A' PLAN & PROFILE II
C230	ONSITE PHASE II GRADING & EROSION CONTROL PLAN	C352	WATER LINE 'A' PLAN & PROFILE III
C231	OFFSITE PHASE II GRADING & EROSION CONTROL PLAN I	C353	WATER LINE 'A' PLAN & PROFILE IV
C232	OFFSITE PHASE II GRADING & EROSION CONTROL PLAN II	C354	WATER LINE 'B' PLAN & PROFILE
C240	EROSION & SEDIMENT CONTROL DETAILS	C355	WATER LINE 'C' PLAN & PROFILE
C300	ONSITE COMPOSITE UTILITY PLAN	C360	WATER CONSTRUCTION DETAILS
C301	OVERALL SANITARY SEWER & WATER UTILITY KEYMAP	L100	MITIGATION PLANTING PLAN
C302	OVERALL STORMWATER UTILITY KEYMAP	L101	OFFSITE MITIGATION PLANTING PLAN

SITE INFORMATION

SITE ADDRESS
22850 WEATHERHILL ROAD
WEST LINN, OR 97068

JURISDICTION
CITY OF WEST LINN

ZONING
R-7

TAX LOT(S)
21E35A 1200 & 1202

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

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) 730-8800
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: dand@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

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

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

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

POLICE, SCHOOLS, ROADS, PARKS
CITY OF WEST LINN

RECORD DRAWING

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

- Contractor supplied redlines
- Field observations by the engineer
- Record drawings

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 80084PE 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 Satter 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 revised 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
- Site observations by the engineer
- Field measurements

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

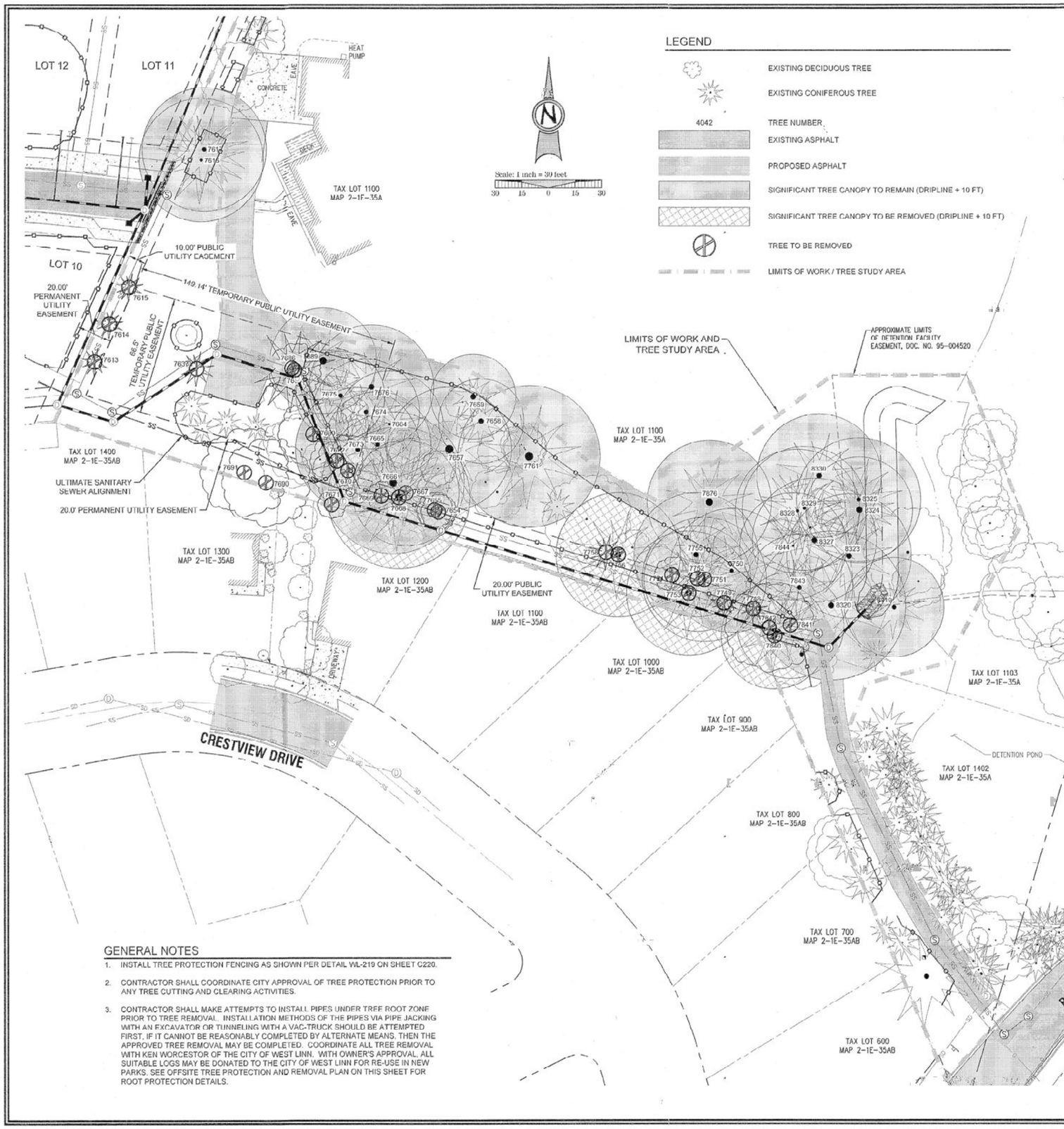
CIVIL ENGINEERING
WATER RESOURCES
LAND USE PLANNING

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

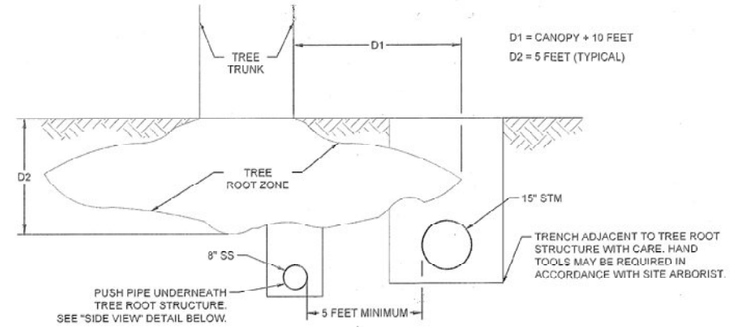
SHEET TITLE
Cover

SHEET NUMBER
C001



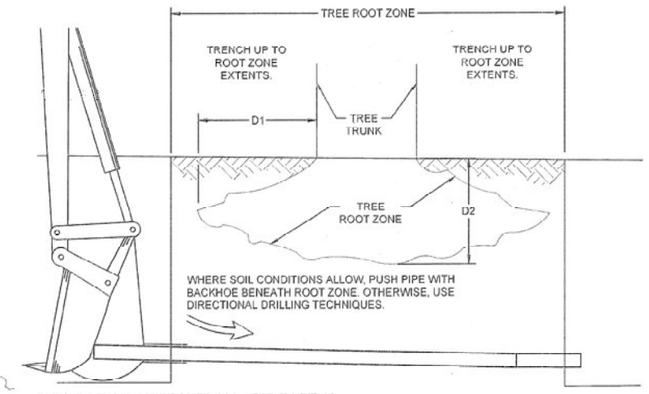
LEGEND

- 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 conditions. Information presented on this drawing is based in whole or in part from a combination of:
- Contractor supplied redlines
- Site observations by the engineer

The surveying 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
AARON J. MURPHY
EXPIRES: 12/31/16

Dec 23 2016 7:40 AM

3J CONSULTING, INC
CIVIL ENGINEERING
WATER RESOURCES
LAND USE PLANNING
5075 SW GRIFFITH DRIVE, SUITE 150, BEAVERTON, OR 97005
PHONE & FAX: (503) 646-9355

3J JOB ID #	13171
LAND USE #	SUB-15-01
TAX LOT #'S	2S1E35B 1200, 1202
DESIGNED BY	PCLF, 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.

Federal Register, 1986. 33 CFR Parts 320 through 330, *Regulatory Programs of the Corps of Engineers; Final Rule,* Vol. 51, No. 219 pp. 41206-41259, U.S. Govt. Printing Office, Washington, D.C.

Kollmorgen Corporation, 1975. *Munsell Soil Color Charts.* Macbeth Division of Kollmorgen Corporation, Baltimore, MD.

U.S. Army Corps of Engineers – Cold Regions Research and Engineering Laboratory (CRREL). 2016. *Western Mountains, Valleys and Coast 2016 Regional Wetland Plant List*

U.S. Department of Agriculture, Web Soil Survey *Soil Survey of Clackamas County, Oregon.* U.S.D.A. Soil Conservation Service, Washington, D.C.,

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

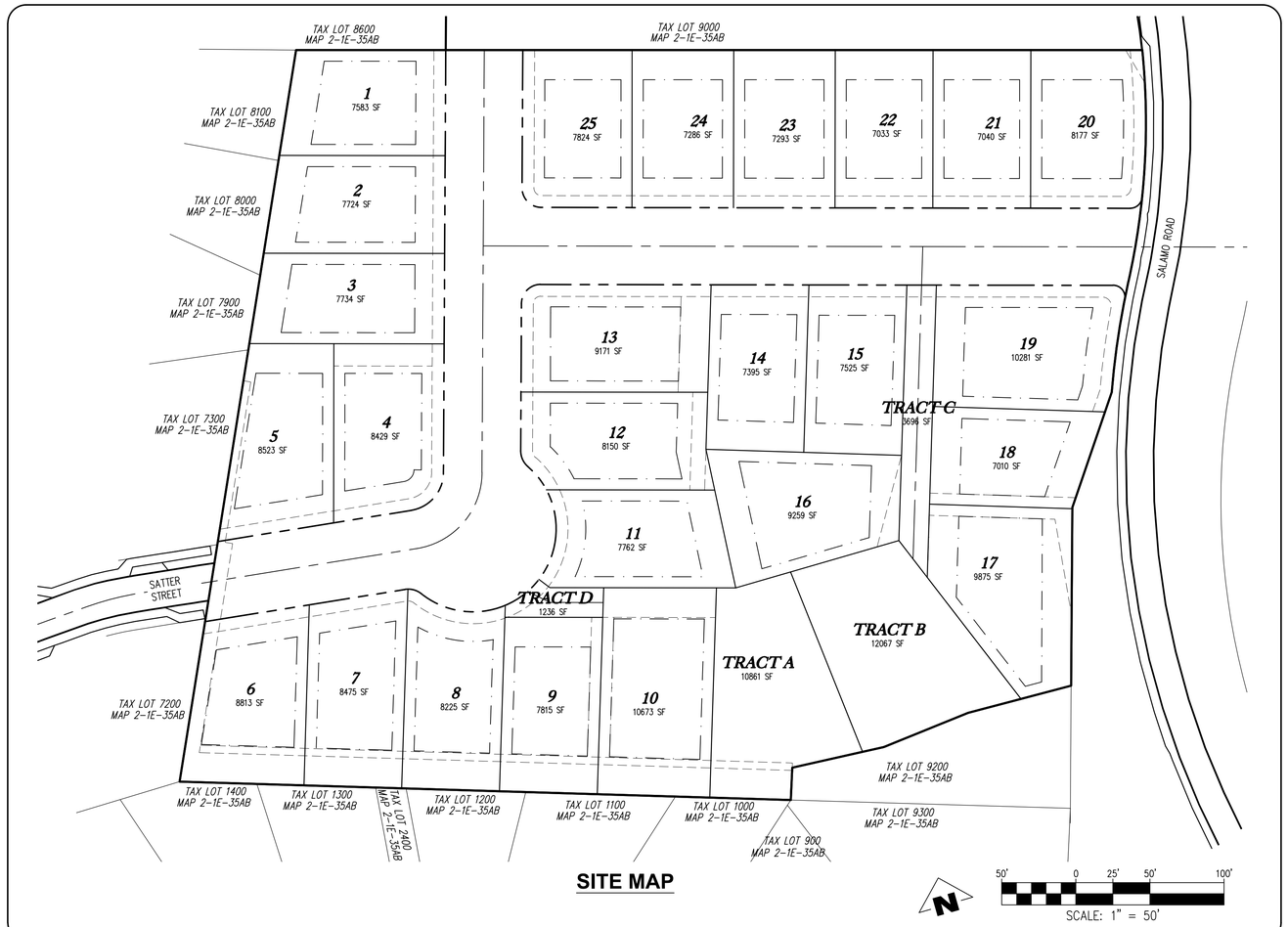
- LANDSCAPE HEDGE
- FLOW LINE
- FENCE
- EXISTING MAJOR CONTOUR LINE
- EXISTING MINOR CONTOUR LINE
- PROPOSED MAJOR CONTOUR LINE
- PROPOSED MINOR CONTOUR LINE
- SIGNIFICANT RESOURCE OVERLAY ZONE (SROZ)
- SANITARY SEWER LINE
- STORM DRAIN LINE
- GAS LINE
- WATER LINE
- OVERHEAD UTILITIES LINE
- UNDERGROUND 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.

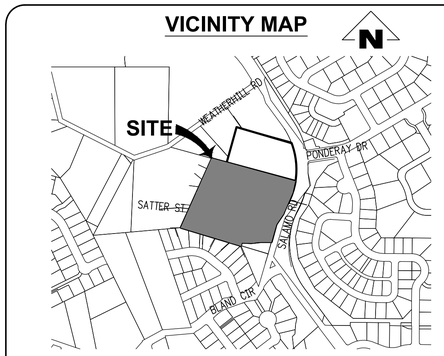
THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR 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

SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	EXISTING CONDITIONS & DEMO PLAN
3	TREE PRESERVATION PLAN
4	TREE PRESERVATION DETAILS
5	SLOPE ANALYSIS PLAN
6	PRELIMINARY PLAT
7	PRELIMINARY SITE PLAN
8	GRADING & EROSION CONTROL PLAN
9	COMPOSITE UTILITY PLAN
10	LIGHTING PLAN
11	FUTURE LOT LAYOUT

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_01cov, Layout: 1 COVER SHEET, Plot Date: 2/14/2019 11:33 AM, by: Jacob 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

40' 0 20' 40' 80'

SCALE: 1" = 40'

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.

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	-	-

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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: 2/14/2019 11:27 AM, by: Jacob Snyder

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\eng\plan\Planning Set\0542-001_0.tree, Layout: 3 TREE PRESERVATION PLAN, Plot Date: 2/14/2019 11:25 AM, by: Jacob 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	–	–

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

SHEET 4 OF 10

FILE: P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_04tree, Layout: 4 TREE PRESERVATION DETAILS, Plot Date: 2/14/2019 8:19 AM, by: Jacob 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	

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

SLOPE ANALYSIS PLAN

REVISIONS

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

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PRELIMINARY

SHEET 5 OF 11

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

30' 0 15' 30' 60'
SCALE: 1" = 30'

LEGEND

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

PARCEL DATA

AREA:	6.52 Ac.
ZONING:	R-7
TAX MAP:	2S1E 35AB
TAX LOTS:	9100
NO. OF LOTS:	25
PARCELS:	1

MIMIMUM SETBACKS

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

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

PRELIMINARY PLAT

REVISIONS

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

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PRELIMINARY

SHEET 6 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_Eplat, Layout: 6 PRELIMINARY PLAT, Plot Date: 2/14/2019 11:22 AM, 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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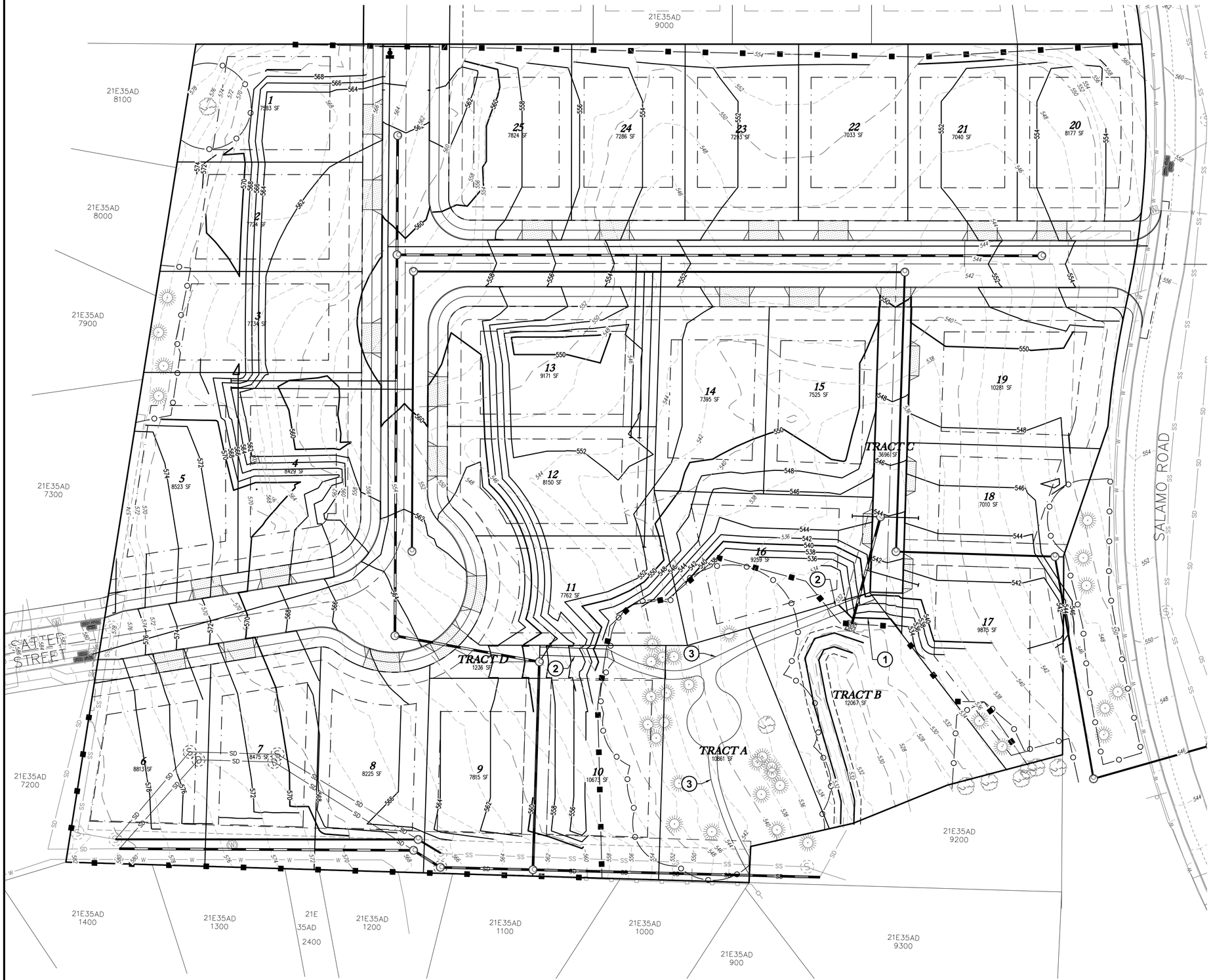
PRELIMINARY

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: 2/14/2019 11:22 AM, by: Jacob Snyder



30' 0 15' 30' 60'

SCALE: 1" = 30'

LEGEND

- 220 — PROPOSED MAJOR CONTOUR LINE
- 219 — PROPOSED MINOR CONTOUR LINE
- 195 — EXISTING MAJOR CONTOUR LINE
- 194 — EXISTING MINOR CONTOUR LINE
- PROPERTY BOUNDARY LINE
- SIGNIFICANT RESOURCE OVERLAY ZONE (SROZ)
- PROPOSED LOT LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED PUE EASEMENT
- PROPOSED SANITARY SEWER LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED WATER LINE
- CONSTRUCTION TREE PROTECTION FENCE (6' HIGH CHAIN LINK WITH METAL POSTS)
- 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	-	-

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PRELIMINARY

SHEET 8 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_Topo2_Layout-10 GRADING & EROSION CONTROL PLAN, Plot Date: 2/14/2019 11:35 AM, by: Jacob 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
0	02/19	PLANNING 1ST SUBMITTAL
1	-	-

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SHEET 9 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_1Tutil, Layout: 9 COMPOSITE UTILITY PLAN, Plot Date: 2/14/2019 11:21 AM, by: Jacob 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

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

BLAND SALAMO
WEST LINN, OR

LIGHTING PLAN

REVISIONS

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

REV DATE	NO.	REV DESCRIPTION

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

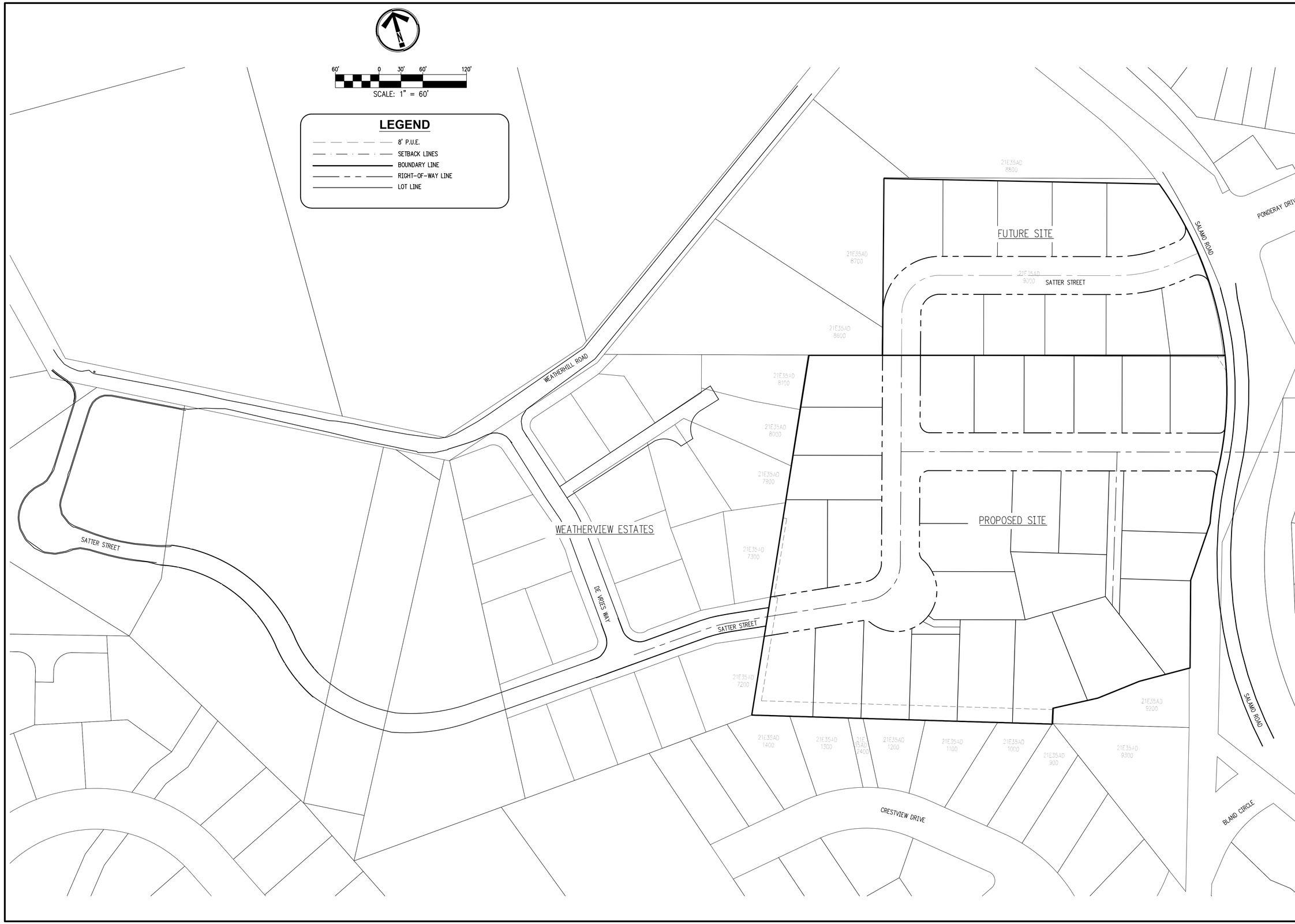
DWG. NO
EL1

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
FAX: (503) 746-8813
www.emeriodesign.com

PRELIMINARY

SHEET 10 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_11light, Layout: 10 LIGHTING PLAN, Plot Date: 2/14/2019 10:09 AM, by: Jacob Snyder



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

FUTURE LOT LAYOUT

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) 297-1592
www.emeriodesign.com

PRELIMINARY

SHEET 11 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_10lots, Layout: 11 FUTURE LOT LAYOUT, Plot Date: 2/14/2019 10:19 AM, by: Jacob Snyder

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.

Simpson Realty Group Lp
8110 East Union Ave
Denver, CO 80237

City Of West Linn
22500 Salamo Rd #600
West Linn, OR 97068

City Of West Linn
22500 Salamo Rd #600
West Linn, OR 97068

Michael Grubb
22810 Weatherhill Rd
West Linn, OR 97068

James McKune
22929 S Salamo Rd
West Linn, OR 97068

Main Source Management LLC
841 SW Gaines St Unit 904
Portland, OR 97239

Kestek, Beverly J Living Trust
23000 Horizon Dr
West Linn, OR 97068

Main Source Management LLC
841 SW Gaines St Unit 904
Portland, OR 97239

Main Source Management LLC
841 SW Gaines St Unit 904
Portland, OR 97239

Michel Romanino
22840 Weatherhill Rd
West Linn, OR 97068

Edwin Winkler III
19363 Willamette Dr
West Linn, OR 97068

Corey Wilks
3515 Coeur D Alene Dr
West Linn, OR 97068

David Smith
3527 Coeur D Alene Dr
West Linn, OR 97068

Lisa Grage
3551 Coeur D Alene Dr
West Linn, OR 97068

Judith Crowell
3559 Coeur D Alene Dr
West Linn, OR 97068

Lorne Cross
22660 Ponderay Dr
West Linn, OR 97068

Robert Murphy Jr
22640 Ponderay Dr
West Linn, OR 97068

House William Meredith Trustee
3483 Cascade Ter
West Linn, OR 97068

Eric Benson
3558 Coeur D Alene Dr
West Linn, OR 97068

Raat Roy E Trustee
3546 Coeur D Alene Dr
West Linn, OR 97068

Raoul Calderon
3538 Coeur D Alene Dr
West Linn, OR 97068

Lawrence Laderoute
3522 Coeur D Alene Dr
West Linn, OR 97068

Jeff Woodrum
3510 Coeur D Alene Dr
West Linn, OR 97068

Douglas Schreck
3496 Ponderosa Loop
West Linn, OR 97068

Christopher Thorn
3492 Ponderosa Loop
West Linn, OR 97068

Susan Bement
3486 Ponderosa Loop
West Linn, OR 97068

Lawrence Free
3482 Ponderosa Loop
West Linn, OR 97068

Nikolas Heagy
3476 Ponderosa Loop
West Linn, OR 97068

Toby Childs
3472 Ponderosa Loop
West Linn, OR 97068

Wally Peppel
3466 Ponderosa Loop
West Linn, OR 97068

Dustin Dickson
3460 Ponderosa Loop
West Linn, OR 97068

James Bruce
3457 Ponderosa Loop
West Linn, OR 97068

Amaya Cromwell
3456 Ponderosa Loop
West Linn, OR 97068

Christopher Stark
3461 Ponderosa Loop
West Linn, OR 97068

Roth Family Trust
3450 Ponderosa Loop
West Linn, OR 97068

Martin Downs
3467 Ponderosa Loop
West Linn, OR 97068

Brion Benninger
3481 Ponderosa Loop
West Linn, OR 97068

Montague Gonzales
3491 Ponderosa Loop
West Linn, OR 97068

Jon Acord
23022 Paulina Ln
West Linn, OR 97068

Jeffrey Ray
3450 Coeur D Alene Dr
West Linn, OR 97068

Robert Christnacht
3451 Coeur D Alene Dr
West Linn, OR 97068

Jeremy Buttson
3473 Coeur D Alene Dr
West Linn, OR 97068

John Agcaoili
3491 Coeur D Alene Dr
West Linn, OR 97068

Cascade Summit Hmownrs Assn
,

City Of West Linn
22500 Salamo Rd #600
West Linn, OR 97068

Mushlitz Ryan D Trustee
3484 Chelan Dr
West Linn, OR 97068

Chelan At Cascade Summit Owners Assn
340 Oswego Point Dr
Lake Oswego, OR 97034

Sterling Property Services Inc
9320 SW Barbur Blvd Ste 170
Portland, OR 97219

City Of West Linn
22500 Salamo Rd #600
West Linn, OR 97068

Cascade Summit Hmownrs Assn
,

City Of West Linn
22500 Salamo Rd #600
West Linn, OR 97068

Wattles Family Trust
3486 Chelan Dr
West Linn, OR 97068

City Of West Linn
22500 Salamo Rd #600
West Linn, OR 97068

City Of West Linn
22500 Salamo Rd #600
West Linn, OR 97068

Doris Jenkins
3485 Chelan Dr
West Linn, OR 97068

Danny Stills
3498 Chaparrel Loop
West Linn, OR 97068

Lewis Colin E Co-Trustee
3496 Chaparrel Loop
West Linn, OR 97068

Martin Trust
3494 Chaparrel Loop
West Linn, OR 97068

Joe Clark
3492 Chaparrel Loop
West Linn, OR 97068

Selby Carmela L Trustee
3490 Chaparrel Loop
West Linn, OR 97068

Liberty Bryson G Trustee
3488 Chaparrel Loop
West Linn, OR 97068

Paul Blankenmeister
3486 Chaparrel Loop
West Linn, OR 97068

Sterling Property Services Inc
9320 SW Barbur Blvd Ste 170
Portland, OR 97219

Bialas Family Trust
3059 Sunbreak Ln
West Linn, OR 97068

Jennifer Talaga
3061 Sunbreak Ln
West Linn, OR 97068

Ronald Jackson
3073 Sunbreak Ln
West Linn, OR 97068

Jennifer Spencer-Liams
3085 Sunbreak Ln
West Linn, OR 97068

Daniel Haddad
3097 Sunbreak Ln
West Linn, OR 97068

Luke Lopez
2598 Crestview Dr
West Linn, OR 97068

William Peck
2592 Crestview Dr
West Linn, OR 97068

Dawson Sheri Co-Trustee
2586 Crestview Dr
West Linn, OR 97068

Steve Latourrette
2574 Crestview Dr
West Linn, OR 97068

Mark Hatfield
2562 Crestview Dr
West Linn, OR 97068

Hendrickson Stacy Trustee
2550 Crestview Dr
West Linn, OR 97068

Stephen Laidlaw
2548 Crestview Dr
West Linn, OR 97068

Christopher Renaud
2536 Crestview Dr
West Linn, OR 97068

Cornelia Luca
2524 Crestview Dr
West Linn, OR 97068

Karin Schaffer
2512 Crestview Dr
West Linn, OR 97068

Jennifer Pakula
2500 Crestview Dr
West Linn, OR 97068

David Roethe
2507 Crestview Dr
West Linn, OR 97068

Erik Swanson
2511 Crestview Dr
West Linn, OR 97068

Michael Moore
2531 Crestview Dr
West Linn, OR 97068

Katie Peterson
2565 Crestview Dr
West Linn, OR 97068

Carr John T Trustee
3086 Sunbreak Ln
West Linn, OR 97068

Jeffrey Barnett
3064 Sunbreak Ln
West Linn, OR 97068

Kevin Spellman
3062 Sunbreak Ln
West Linn, OR 97068

City Of West Linn
22500 Salamo Rd #600
West Linn, OR 97068

Williams Donald W Trustee
2601 Umpqua Ln
West Linn, OR 97068

Jeffery Stallard
2605 Umpqua Ln
West Linn, OR 97068

Steven Kriesel
2607 Umpqua Ln
West Linn, OR 97068

Robert Oliveras
3094 Kensington Ct
West Linn, OR 97068

Oman, Zimmerman Living Trust
3098 Kensington Ct
West Linn, OR 97068

Gregory Watson
3099 Kensington Ct
West Linn, OR 97068

Stickler Gary D Co-Trustee
3095 Kensington Ct
West Linn, OR 97068

James Krubel
3093 Kensington Ct
West Linn, OR 97068

Aaron Howard
3087 Kensington Ct
West Linn, OR 97068

City Of West Linn
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West Linn, OR 97068

City Of West Linn
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West Linn, OR 97068

City Of West Linn
22500 Salamo Rd #600
West Linn, OR 97068

Robert Bierman
2613 Umpqua Ln
West Linn, OR 97068

Aaron Egland
2997 Sunbreak Ln
West Linn, OR 97068

Anderson, Timothy J & Jacquie L Trust
2990 Sunbreak Ln
West Linn, OR 97068

Brian Riehm
2984 Sunbreak Ln
West Linn, OR 97068

Jie Feng
2976 Sunbreak Ln
West Linn, OR 97068

Christopher Fry
2471 Crestview Dr
West Linn, OR 97068

James Betty III
2483 Crestview Dr
West Linn, OR 97068

Vishal Singh
2495 Crestview Dr
West Linn, OR 97068

Robert Conlin
2498 Crestview Dr
West Linn, OR 97068

Charles Parker
2486 Crestview Dr
West Linn, OR 97068

C Briggs
2474 Crestview Dr
West Linn, OR 97068

Susan Walter
2956 Sunbreak Ln
West Linn, OR 97068

Amanda Keller
2968 Sunbreak Ln
West Linn, OR 97068

Michael Leonard
2469 Crestview Dr
West Linn, OR 97068

Willis Roc W Trustee
2455 Crestview Dr
West Linn, OR 97068

Mei Su
2443 Crest View Dr
West Linn, OR 97068

Parker Warren
2442 Crestview Dr
West Linn, OR 97068

Jessica Reiland
2454 Crest View Dr
West Linn, OR 97068

Allan Klinck
2466 Crest View Dr
West Linn, OR 97068

Thomas Horvath
2010 De Vries Way
West Linn, OR 97068

Jennie Snow
2022 De Vries Way
West Linn, OR 97068

Ankur Shah
2034 De Vries Way
West Linn, OR 97068

Christopher Thompson
2462 Satter St
West Linn, OR 97068

William Blount
2450 Satter St
West Linn, OR 97068

Stephen Kelly
2467 Satter St
West Linn, OR 97068

Ashley Lockridge
2479 Satter St
West Linn, OR 97068

Nicole Budden
2491 Satter St
West Linn, OR 97068

Jason Ferrell
2503 Satter St
West Linn, OR 97068

David Drochner
2515 Satter St
West Linn, OR 97068

David Brodsky
2510 Satter St
West Linn, OR 97068

Dean McDonald
2498 Satter St
West Linn, OR 97068

Zhoudong Jia
2049 De Vries Way
West Linn, OR 97068

Gennaro Iervolino
6290 Haverhill Ct
West Linn, OR 97068

Steven Hoffen
2025 De Vries Way
West Linn, OR 97068

Erik Daniels
2201 De Vries Ln
West Linn, OR 97068

Joshua Wright
2213 De Vries Ln
West Linn, OR 97068

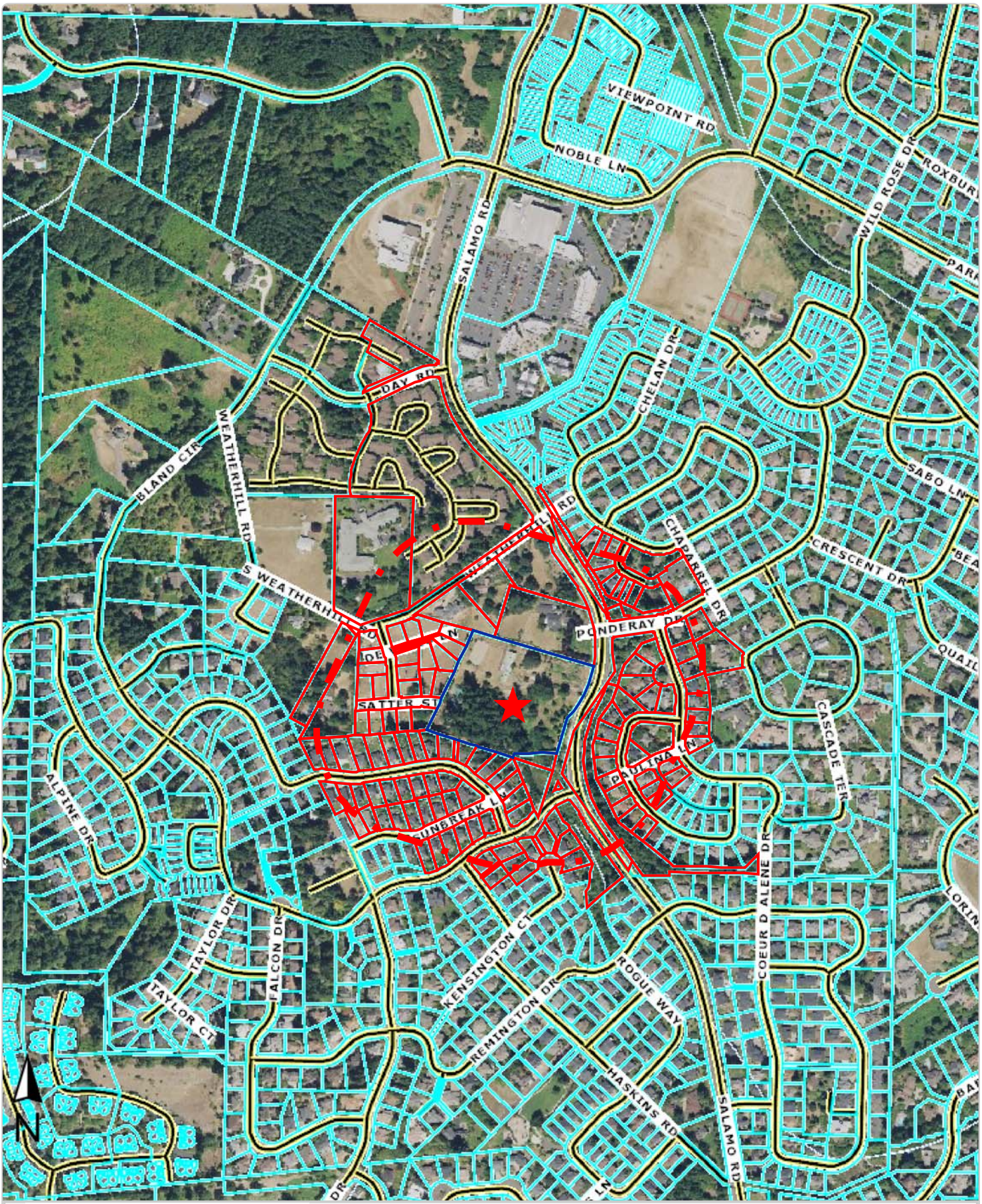
Brian Harrison
2225 De Vries Ln
West Linn, OR 97068

Lin Luo
1927 NW Jasmine Ln
Portland, OR 97229

Matthew Pearce
22848 Weatherhill Rd
West Linn, OR 97068

David Phillips
22852 Weatherhill Rd
West Linn, OR 97068

Yao Mai
22856 Weatherhill Rd
West Linn, OR 97068



WFG National Title Insurance Company
a Williston Financial Group company

This map/plat is being furnished as an aid in locating the herein described land in relation to adjoining streets, natural boundaries and other land, and is not a survey of the land depicted. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the company does not insure dimensions, distances, location of easements, acreage or other matters shown thereon.

WFG National Title Insurance Company
a Williston Financial Group company

ParcelID	Site Address	Site City	Site ZIP	Acres	Bldg Area	Fin Area	Owner
00391837	22201 Skyview Dr	West Linn	97068	10.62 Acres	1,008 SqFt	1,008 SqFt	Simpson Realty Group Lp
00404958		West Linn	97068	0.42 Acres	1,365 SqFt	1,365 SqFt	City Of West Linn
00405065		West Linn	97068	1.00 Acres	0 SqFt		City Of West Linn
00405074	22810 Weatherhill Rd	West Linn	97068	1.63 Acres	4,062 SqFt	4,062 SqFt	Grubb, Michael D
00405083	22929 S Salamo Rd	West Linn	97068	2.42 Acres	2,884 SqFt	2,884 SqFt	McKune, James D
00405127	22864 S Weatherhill Rd	West Linn	97068	1.38 Acres	3,866 SqFt	3,866 SqFt	Main Source Management LLC
00405341	23000 Horizon Dr	West Linn	97068	4.48 Acres	1,838 SqFt	1,838 SqFt	Kestek, Beverly J Living Trust
00405403			97068	0.02 Acres	0 SqFt		Main Source Management LLC
00405421			97068	0.95 Acres	0 SqFt		Main Source Management LLC
01405580	22840 S Weatherhill Rd	West Linn	97068	0.93 Acres	2,904 SqFt	2,904 SqFt	Romanino, Michel F
01405599	22844 Weatherhill Rd	West Linn	97068	0.92 Acres	6,913 SqFt	6,913 SqFt	Winkler, Edwin W III
01557265	3515 Coeur D Alene Dr	West Linn	97068	0.17 Acres	2,438 SqFt	2,438 SqFt	Wilks, Corey L
01557274	3527 Coeur D Alene Dr	West Linn	97068	0.18 Acres	2,684 SqFt	2,684 SqFt	Smith, David P
01557283	3551 Coeur D Alene Dr	West Linn	97068	0.19 Acres	2,881 SqFt	2,881 SqFt	Grage, Lisa
01557292	3559 Coeur D Alene Dr	West Linn	97068	0.19 Acres	2,907 SqFt	2,907 SqFt	Crowell, Judith A
01557309	22660 Ponderay Dr	West Linn	97068	0.25 Acres	2,905 SqFt	2,905 SqFt	Cross, Lorne M
01557318	22640 Ponderay Dr	West Linn	97068	0.26 Acres	3,147 SqFt	3,147 SqFt	Murphy, Robert G Jr
01557372	3483 Cascade Ter	West Linn	97068	0.69 Acres	6,034 SqFt	6,034 SqFt	House William Meredith Trustee
01558567	3558 Coeur D Alene Dr	West Linn	97068	0.23 Acres	2,790 SqFt	2,790 SqFt	Benson, Eric H
01558585	3546 Coeur D Alene Dr	West Linn	97068	0.23 Acres	2,839 SqFt	2,839 SqFt	Raat Roy E Trustee
01558601	3538 Coeur D Alene Dr	West Linn	97068	0.28 Acres	3,110 SqFt	3,110 SqFt	Calderon, Raoul G
01558629	3522 Coeur D Alene Dr	West Linn	97068	0.23 Acres	2,960 SqFt	2,960 SqFt	Laderoute, Lawrence
01558647	3510 Coeur D Alene Dr	West Linn	97068	0.23 Acres	2,845 SqFt	2,845 SqFt	Woodrum, Jeff

01558665	3496 Ponderosa Loop	West Linn	97068	0.25 Acres	2,714 SqFt	2,714 SqFt	Schreck, Douglas M
01558683	3492 Ponderosa Loop	West Linn	97068	0.18 Acres	2,426 SqFt	2,426 SqFt	Thorn, Christopher
01558709	3486 Ponderosa Loop	West Linn	97068	0.19 Acres	2,469 SqFt	2,469 SqFt	Bement, Susan E
01558727	3482 Ponderosa Loop	West Linn	97068	0.19 Acres	1,868 SqFt	1,868 SqFt	Free, Lawrence J
01558745	3476 Ponderosa Loop	West Linn	97068	0.18 Acres	1,909 SqFt	1,909 SqFt	Heagy, Nikolas
01558763	3472 Ponderosa Loop	West Linn	97068	0.17 Acres	2,816 SqFt	2,816 SqFt	Childs, Toby B
01558781	3466 Ponderosa Loop	West Linn	97068	0.17 Acres	2,243 SqFt	2,243 SqFt	Peppel, Wally N
01558807	3460 Ponderosa Loop	West Linn	97068	0.15 Acres	2,334 SqFt	2,334 SqFt	Dickson, Dustin C
01558816	3457 Ponderosa Loop	West Linn	97068	0.12 Acres	2,370 SqFt	2,370 SqFt	Bruce, James E
01558825	3456 Ponderosa Loop	West Linn	97068	0.18 Acres	4,284 SqFt	4,284 SqFt	Cromwell, Amaya Bilbao
01558834	3461 Ponderosa Loop	West Linn	97068	0.12 Acres	2,913 SqFt	2,913 SqFt	Stark, Christopher A
01558843	3450 Ponderosa Loop	West Linn	97068	0.15 Acres	2,554 SqFt	2,554 SqFt	Roth Family Trust
01558852	3467 Ponderosa Loop	West Linn	97068	0.14 Acres	2,816 SqFt	2,816 SqFt	Downs, Martin T
01558870	3481 Ponderosa Loop	West Linn	97068	0.18 Acres	2,699 SqFt	2,699 SqFt	Benninger, Brion
01558898	3491 Ponderosa Loop	West Linn	97068	0.54 Acres	2,866 SqFt	2,866 SqFt	Gonzales, Montague C
01558914	23022 Paulina Ln	West Linn	97068	0.13 Acres	3,234 SqFt	3,234 SqFt	Acord, Jon G
01558932	3450 Coeur D Alene Dr	West Linn	97068	0.15 Acres	2,788 SqFt	2,788 SqFt	Ray, Jeffrey E
01559049	3451 Coeur D Alene Dr	West Linn	97068	0.15 Acres	2,892 SqFt	2,892 SqFt	Christnacht, Robert J
01559058	3473 Coeur D Alene Dr	West Linn	97068	0.16 Acres	2,770 SqFt	2,770 SqFt	Buttson, Jeremy A
01559067	3491 Coeur D Alene Dr	West Linn	97068	0.16 Acres	3,159 SqFt	3,159 SqFt	Agcaoili, John S
01559076		West Linn	97068	0.48 Acres	0 SqFt		Cascade Summit Hmownrs Assn
01559085		West Linn	97068	1.72 Acres	0 SqFt		City Of West Linn
01604348	3484 Chelan Dr	West Linn	97068	0.53 Acres	3,766 SqFt	3,766 SqFt	Mushlitz Ryan D Trustee
01604357		West Linn	97068	0.30 Acres	0 SqFt		Chelan At Cascade Summit Owners Assn
01604375	3480 Chaparrel Dr	West Linn	97068	0.64 Acres	0 SqFt		Sterling Property Services Inc

01604384		West Linn	97068	0.31 Acres	0 SqFt		City Of West Linn
01604393		West Linn	97068	0.11 Acres	0 SqFt		Cascade Summit Hmownrs Assn
01604437		West Linn	97068	0.48 Acres	0 SqFt		City Of West Linn
01614435	3486 Chelan Dr	West Linn	97068	0.20 Acres	2,611 SqFt	2,611 SqFt	Wattles Family Trust
01614444		West Linn	97068	0.19 Acres	0 SqFt		City Of West Linn
01681077		West Linn	97068	0.22 Acres	0 SqFt		City Of West Linn
01825145	3485 Chelan Dr	West Linn	97068	0.12 Acres	2,060 SqFt	2,060 SqFt	Jenkins, Doris Darlene
01825154	3498 Chaparrel Loop	West Linn	97068	0.11 Acres	2,082 SqFt	2,082 SqFt	Stills, Danny T
01825163	3496 Chaparrel Loop	West Linn	97068	0.14 Acres	2,141 SqFt	2,141 SqFt	Lewis Colin E Co-Trustee
01825172	3494 Chaparrel Loop	West Linn	97068	0.12 Acres	2,166 SqFt	2,166 SqFt	Martin Trust
01825181	3492 Chaparrel Loop	West Linn	97068	0.13 Acres	3,002 SqFt	3,002 SqFt	Clark, Joe J
01825190	3490 Chaparrel Loop	West Linn	97068	0.09 Acres	2,387 SqFt	2,387 SqFt	Selby Carmela L Trustee
01825207	3488 Chaparrel Loop	West Linn	97068	0.08 Acres	2,394 SqFt	2,394 SqFt	Liberty Bryson G Trustee
01825216	3486 Chaparrel Loop	West Linn	97068	0.12 Acres	3,282 SqFt	3,282 SqFt	Blankenmeister, Paul B
01825225		West Linn	97068	0.34 Acres	0 SqFt		Sterling Property Services Inc
05001403	3059 Sunbreak Ln	West Linn	97068	0.20 Acres	2,631 SqFt	2,631 SqFt	Bialas Family Trust
05001404	3061 Sunbreak Ln	West Linn	97068	0.21 Acres	3,252 SqFt	3,252 SqFt	Talaga, Jennifer J
05001405	3073 Sunbreak Ln	West Linn	97068	0.17 Acres	3,138 SqFt	3,138 SqFt	Jackson, Ronald A
05001406	3085 Sunbreak Ln	West Linn	97068	0.15 Acres	2,875 SqFt	2,875 SqFt	Spencer-Liams, Jennifer
05001407	3097 Sunbreak Ln	West Linn	97068	0.16 Acres	3,266 SqFt	3,266 SqFt	Haddad, Daniel R
05001408	2598 Crestview Dr	West Linn	97068	0.20 Acres	2,753 SqFt	2,753 SqFt	Lopez, Luke P
05001409	2592 Crestview Dr	West Linn	97068	0.19 Acres	2,494 SqFt	2,494 SqFt	Peck, William D
05001410	2586 Crestview Dr	West Linn	97068	0.20 Acres	3,326 SqFt	3,326 SqFt	Dawson Sheri Co-Trustee
05001411	2574 Crestview Dr	West Linn	97068	0.19 Acres	2,753 SqFt	2,753 SqFt	Latourrette, Steve
05001412	2562 Crestview Dr	West Linn	97068	0.22 Acres	3,325 SqFt	3,325 SqFt	Hatfield, Mark T
05001413	2550 Crestview Dr	West Linn	97068	0.20 Acres	3,265 SqFt	3,265 SqFt	Hendrickson Stacy Trustee
05001414	2548 Crestview Dr	West Linn	97068	0.14 Acres	2,292 SqFt	2,292 SqFt	Laidlaw, Stephen C
05001415	2536 Crestview Dr	West Linn	97068	0.17 Acres	2,594 SqFt	2,594 SqFt	Renaud, Christopher
05001416	2524 Crestview Dr	West Linn	97068	0.20 Acres	2,796 SqFt	2,796 SqFt	Luca, Cornelia Adriana
05001417	2512 Crestview Dr	West Linn	97068	0.17 Acres	2,747 SqFt	2,747 SqFt	Schaffer, Karin L

05001418	2500 Crestview Dr	West Linn	97068	0.20 Acres	2,722 SqFt	2,722 SqFt	Pakula, Jennifer L
05001419	2507 Crestview Dr	West Linn	97068	0.17 Acres	2,879 SqFt	2,879 SqFt	Roethe, David
05001420	2511 Crestview Dr	West Linn	97068	0.15 Acres	2,658 SqFt	2,658 SqFt	Swanson, W Erik
05001421	2531 Crestview Dr	West Linn	97068	0.17 Acres	3,024 SqFt	3,024 SqFt	Moore, Michael L
05001422	2565 Crestview Dr	West Linn	97068	0.21 Acres	2,452 SqFt	2,452 SqFt	Peterson, Katie E
05001423	3086 Sunbreak Ln	West Linn	97068	0.16 Acres	3,142 SqFt	3,142 SqFt	Carr John T Trustee
05001424	3064 Sunbreak Ln	West Linn	97068	0.17 Acres	2,645 SqFt	2,645 SqFt	Barnett, Jeffrey C
05001425	3062 Sunbreak Ln	West Linn	97068	0.17 Acres	2,878 SqFt	2,878 SqFt	Spellman, Kevin M
05001426		West Linn	97068	0.04 Acres	0 SqFt		City Of West Linn
05001822	2601 Umpqua Ln	West Linn	97068	0.18 Acres	3,244 SqFt	3,244 SqFt	Williams Donald W Trustee
05001823	2605 Umpqua Ln	West Linn	97068	0.21 Acres	2,392 SqFt	2,392 SqFt	Stallard, Jeffery
05001824	2607 Umpqua Ln	West Linn	97068	0.17 Acres	2,304 SqFt	2,304 SqFt	Kriesel, Steven D
05001825	3094 Kensington Ct	West Linn	97068	0.17 Acres	2,914 SqFt	2,914 SqFt	Oliveras, Robert B
05001826	3098 Kensington Ct	West Linn	97068	0.16 Acres	2,950 SqFt	2,950 SqFt	Oman, Zimmerman Living Trust
05001827	3099 Kensington Ct	West Linn	97068	0.18 Acres	2,419 SqFt	2,419 SqFt	Watson, Gregory I
05001828	3095 Kensington Ct	West Linn	97068	0.22 Acres	3,030 SqFt	3,030 SqFt	Stickler Gary D Co-Trustee
05001829	3093 Kensington Ct	West Linn	97068	0.20 Acres	4,048 SqFt	4,048 SqFt	Krubel, James R
05001830	3087 Kensington Ct	West Linn	97068	0.22 Acres	3,867 SqFt	3,867 SqFt	Howard, Aaron R
05001832		West Linn	97068	1.00 Acres	0 SqFt		City Of West Linn
05001833		West Linn	97068	0.04 Acres	0 SqFt		City Of West Linn
05001834		West Linn	97068	0.02 Acres	0 SqFt		City Of West Linn
05001846	2613 Umpqua Ln	West Linn	97068	0.15 Acres	3,276 SqFt	3,276 SqFt	Bierman, Robert M
05007657	2997 Sunbreak Ln	West Linn	97068	0.20 Acres	4,163 SqFt	4,163 SqFt	Egland, Aaron Elliot Swinford
05007660	2990 Sunbreak Ln	West Linn	97068	0.20 Acres	3,467 SqFt	3,467 SqFt	Anderson, Timothy J & Jacquie L Trust
05007661	2984 Sunbreak Ln	West Linn	97068	0.19 Acres	2,948 SqFt	2,948 SqFt	Riehm, Brian
05007662	2976 Sunbreak Ln	West Linn	97068	0.16 Acres	2,720 SqFt	2,720 SqFt	Feng, Jie
05007663	2471 Crestview Dr	West Linn	97068	0.18 Acres	4,447 SqFt	4,447 SqFt	Fry, Christopher M
05007664	2483 Crestview Dr	West Linn	97068	0.18 Acres	4,244 SqFt	4,244 SqFt	Betty, James C III
05007665	2495 Crestview Dr	West Linn	97068	0.17 Acres	4,447 SqFt	4,447 SqFt	Singh, Vishal
05007666	2498 Crestview Dr	West Linn	97068	0.23 Acres	3,227 SqFt	3,227 SqFt	Conlin, Robert S
05007667	2486 Crestview Dr	West Linn	97068	0.26 Acres	3,426 SqFt	3,426 SqFt	Parker, Charles H
05007668	2474 Crestview Dr	West Linn	97068	0.26 Acres	3,425 SqFt	3,425 SqFt	Briggs, C C
05026281	2956 Sunbreak Ln	West Linn	97068	0.16 Acres	3,424 SqFt	3,424 SqFt	Walter, Susan R
05026282	2968 Sunbreak Ln	West Linn	97068	0.16 Acres	3,356 SqFt	3,356 SqFt	Keller, Amanda
05026283	2469 Crestview Dr	West Linn	97068	0.16 Acres	4,607 SqFt	4,607 SqFt	Leonard, Michael J
05026284	2455 Crestview Dr	West Linn	97068	0.17 Acres	4,120 SqFt	4,120 SqFt	Willis Roc W Trustee

05026285	2443 Crest View Dr	West Linn	97068	0.20 Acres	4,078 SqFt	4,078 SqFt	Su, Mei
05026286	2442 Crest View Dr	West Linn	97068	0.22 Acres	3,140 SqFt	3,140 SqFt	Warren, Parker
05026287	2454 Crest View Dr	West Linn	97068	0.21 Acres	3,417 SqFt	3,417 SqFt	Reiland, Jessica A
05026288	2466 Crest View Dr	West Linn	97068	0.30 Acres	3,394 SqFt	3,394 SqFt	Klinck, Allan Crone
05031187	2010 De Vries Way	West Linn	97068	0.17 Acres	3,017 SqFt	3,017 SqFt	Horvath, Thomas P
05031188	2022 De Vries Way	West Linn	97068	0.17 Acres	2,979 SqFt	2,979 SqFt	Snow, Jennie
05031189	2034 De Vries Way	West Linn	97068	0.17 Acres	3,338 SqFt	3,338 SqFt	Shah, Ankur
05031190	2462 Satter St	West Linn	97068	0.18 Acres	3,338 SqFt	3,338 SqFt	Thompson, Christopher
05031191	2450 Satter St	West Linn	97068	0.19 Acres	3,338 SqFt	3,338 SqFt	Blount, William L
05031192	2467 Satter St	West Linn	97068	0.16 Acres	3,962 SqFt	3,962 SqFt	Kelly, Stephen D
05031193	2479 Satter St	West Linn	97068	0.16 Acres	3,889 SqFt	3,889 SqFt	Lockridge, Ashley E
05031194	2491 Satter St	West Linn	97068	0.16 Acres	3,756 SqFt	3,756 SqFt	Budden, Nicole E
05031195	2503 Satter St	West Linn	97068	0.16 Acres	3,097 SqFt	3,097 SqFt	Ferrell, Jason
05031196	2515 Satter St	West Linn	97068	0.23 Acres	4,006 SqFt	4,006 SqFt	Drochner, David R
05031197	2510 Satter St	West Linn	97068	0.20 Acres	3,635 SqFt	3,635 SqFt	Brodsky, David
05031198	2498 Satter St	West Linn	97068	0.17 Acres	2,289 SqFt	2,289 SqFt	McDonald, Dean R
05031199	2049 De Vries Way	West Linn	97068	0.17 Acres	3,338 SqFt	3,338 SqFt	Jia, Zhoudong
05031200	2037 De Vries Way	West Linn	97068	0.16 Acres	3,619 SqFt	3,619 SqFt	Iervolino, Gennaro
05031201	2025 De Vries Way	West Linn	97068	0.16 Acres	3,017 SqFt	3,017 SqFt	Hoffen, Steven
05031202	2201 De Vries Ln	West Linn	97068	0.21 Acres	3,148 SqFt	3,148 SqFt	Daniels, Erik D
05031203	2213 De Vries Ln	West Linn	97068	0.26 Acres	3,962 SqFt	3,962 SqFt	Wright, Joshua D
05031204	2225 De Vries Ln	West Linn	97068	0.23 Acres	3,889 SqFt	3,889 SqFt	Harrison, Brian
05031205	2237 De Vries Ln	West Linn	97068	0.25 Acres	3,652 SqFt	3,652 SqFt	Luo, Lin
05031206	22848 Weatherhill Rd	West Linn	97068	0.18 Acres	2,962 SqFt	2,962 SqFt	Pearce, Matthew G
05031207	22852 Weatherhill Rd	West Linn	97068	0.16 Acres	3,933 SqFt	3,933 SqFt	Phillips, David A
05031208	22856 Weatherhill Rd	West Linn	97068	0.16 Acres	3,849 SqFt	3,849 SqFt	Mai, Yao

EMERIO Design

CIVIL ENGINEERS, SURVEYORS & PLANNERS

December 18, 2018

Neighborhood Meeting Notice

RE: Proposed 24 Lot Residential Subdivision

To Our Neighbors:

Emerio Design, LLC acts on behalf of Toll Brothers regarding the planned subdivision of a property located at 23190 S Bland Cir, West Linn 97068. The location of the property is shown on the attached Clackamas County Assessor Map. The tax lot number for the property is 21E35AB; Tax Lot 9100. The property is located inside the City of West Linn's boundaries and it is zoned R-7 for Single Family Dwellings. Prior to applying to the City of West Linn for subdivision review, we would like to take the opportunity to discuss the proposal in more detail with you. Before finalizing an application to the City's Planning Department for the proposed subdivision, we would like to take the opportunity to discuss this proposal with the members of the Savana Oaks and Willamette Neighborhood Associations and property owners residing within 500 feet of the property.

A meeting to discuss this project has been scheduled at the following time and location:

Informational Meeting
Tuesday, January 8th at 7:00pm
TV&R Fire Station – Community Room
1860 Willamette Falls Drive
West Linn, OR 97068

The purpose of this meeting will be to provide a forum for surrounding property owners and residents to review the proposal and to identify issues so they can be given proper consideration. This meeting will provide the opportunity for the public to share with the project team any specific information about the property involved. The project team will try to answer questions related to how the project meets the relevant development standards consistent with West Linn's land use regulations.

Please note that this will be an informational meeting based on preliminary development plans and that these plans may change before the application is submitted to the City.

We look forward to discussing this proposal with you. Please feel free to contact me at (541) 318-7487 or stevem@emeriodesign.com if you have questions prior to the meeting.

Respectfully,

Steve Miller, Principal Planner
Emerio Design, LLC

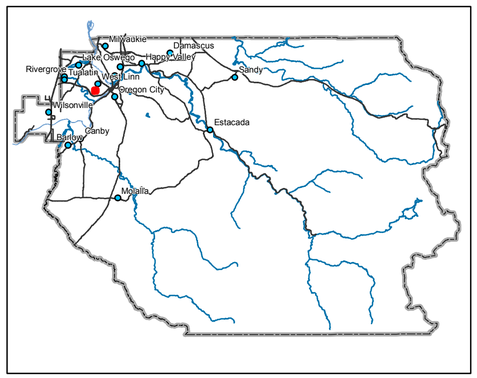
2 1 E 35AB
WEST LINN

N.W.1/4 N.E.1/4 SEC.35 T.2S. R.1E. W.M.
CLACKAMAS COUNTY
1" = 100'

Cancelled Taxlots

1201

- Parcel Boundary
- Private Road ROW
- Historical Boundary
- Railroad Centerline
- TaxCodeLines
- Map Index
- WaterLines
- Land Use Zoning
- Plats
- Water
- Corner
- Section Corner
- 1/16th Line
- Govt Lot Line
- DLC Line
- Meander Line
- PLSS Section Line
- Historic Corridor 40'
- Historic Corridor 20'



THIS MAP IS FOR ASSESSMENT PURPOSES ONLY

9/5/2018

2 1 E 35AB
WEST LINN

EMERIO Design

CIVIL ENGINEERS & PLANNERS

PROJECT INTRODUCTION & BACKGROUND INFORMATION

PERSONAL INFO: Steve Miller, Emerio Design, LLC – Working on behalf of the developer.

The purpose of having the neighborhood meeting is to share the proposed project with you and to get your feedback and suggestions prior to submitting our application.

REQUEST: 24-Lot Residential subdivision in the R-7 Zone. The subdivision will be developed pursuant to the City of West Linn Land Use and Development Code requirements.

SITE LOCATION: 23190 Bland Circle

ZONING: Very Low Density Residential (VLDR)

SITE SIZE: 6.5 Acres and is irregular in shape.

LEGAL DESCRIPTION: Tax Map Tax Map 2S1E35AB; Tax Lots 9100

- The site is developed with a single-family dwelling and several accessory structures.
- The property is vegetated with a mix of trees, shrubs, and grass fields, and has an undulating topography throughout.

Brief re-cap of the project:

- 24-lot subdivision/planned unit development
- Single-family residential detached dwellings on each lot
- All houses will meet maximum height requirements for the R-7 zone
- SW Satter St. will be extended and improved to City standards.

- All proposed local streets serving the project will be built to city standards, which will include parking on one-side of the street.

- The development will be developed to city standards. No exceptions, variances or adjustments are being requested.

- The minimum lot size in the R-7 zone is 7,000 square feet and all of the lots meet this lot size or are greater in size.

- A pre-application conference with the City of West Linn was already held for the project.

- All environmentally sensitive areas have been identified on the property and will be preserved pursuant to city code requirements.

- A minimum of 20% of the significant trees will be preserved with the development of the subdivision.

EMERIO Design

CIVIL ENGINEERS, SURVEYORS & PLANNERS

December 18, 2018

Savana Oaks Neighborhood Association
Ed Schwarz, President
2206 Tannler Drive
West Linn, OR 97068

RE: Proposed 24 Lot Residential Subdivision

Dear Mr. Schwarz,

Emerio Design, LLC acts on behalf of the Toll Brothers regarding the planned subdivision of a property located at 23190 S Bland Cir, West Linn 97068. The location of the property is shown on the attached map. The tax lot number for the property is 21E35AB; Tax Lot 9100. The property is located inside the City of West Linn's boundaries and it is zoned R-7 for Single Family Dwellings.

Schultz Development Group is considering a subdivision of the 6.47-acre property in order to create twenty-four (24) new single-family residential lots. Each of the twenty-four proposed lots will meet or exceed 7,000 square feet, which is the minimum lot size within the R-7 zoning district.

Before finalizing an application to the City's Planning Department for the proposed subdivision, we would like to take the opportunity to discuss this proposal with the members of the Savana Oaks Neighborhood Association and property owners residing within 500 feet of the property.

The purpose of this meeting will be to provide a forum for surrounding property owners and residents to review the proposal and identify issues so they can be given proper consideration. These meetings are required so the public can share any specific information about the property with the project team. The project team will try to answer questions related to how the project meets the relevant development standards consistent with West Linn's land use regulations.

We would like to formally request a meeting with the Savana Oaks Neighborhood Association. As we discussed via email, we would like to be included on the agenda of the Savana Oaks Neighborhood Association's December 4th meeting. This is the date we will use to send notification to residents located within the City's 500-foot notification boundary.

Please note that this will be an informational meeting based upon preliminary development plans and that these plans may change before the application is submitted to the City. If the proposed meeting

is acceptable, we would ask that you please respond to this letter with an email to stevem@emeriodesign.com or phone call to my cell 541-318-7487.

Sincerely,

Steve Miller, Principal Planner
Emerio Design, LLC

EMERIO Design

CIVIL ENGINEERS, SURVEYORS & PLANNERS

December 18, 2018

Savana Oaks Neighborhood Association
Roberta Schwarz, President Designee
2206 Tannler Drive
West Linn, OR 97068

RE: Proposed 24 Lot Residential Subdivision

Dear Mrs. Schwarz,

Emerio Design, LLC acts on behalf of the Toll Brothers regarding the planned subdivision of a property located at 23190 S Bland Cir, West Linn 97068. The location of the property is shown on the attached map. The tax lot number for the property is 21E35AB; Tax Lot 9100. The property is located inside the City of West Linn's boundaries and it is zoned R-7 for Single Family Dwellings.

Toll Brothers is considering a subdivision of the 6.47-acre property in order to create twenty-four (24) new single-family residential lots. Each of the twenty-four proposed lots will meet or exceed 7,000 square feet, which is the minimum lot size within the R-7 zoning district.

Before finalizing an application to the City's Planning Department for the proposed subdivision, we would like to take the opportunity to discuss this proposal with the members of the Savana Oaks Neighborhood Association and property owners residing within 500 feet of the property.

The purpose of this meeting will be to provide a forum for surrounding property owners and residents to review the proposal and identify issues so they can be given proper consideration. These meetings are required so the public can share any specific information about the property with the project team. The project team will try to answer questions related to how the project meets the relevant development standards consistent with West Linn's land use regulations.

We would like to formally request a meeting with the Savana Oaks Neighborhood Association. As we discussed via email, we would like to be included on the agenda of the Savana Oaks Neighborhood Association's January 8th, 2019 meeting. This is the date we will use to send notification to residents located within the City's 500-foot notification boundary.

Please note that this will be an informational meeting based upon preliminary development plans and that these plans may change before the application is submitted to the City. If the proposed meeting

is acceptable, we would ask that you please respond to this letter with an email to stevem@emeriodesign.com or phone call to my cell 541-318-7487.

Sincerely,

Steve Miller, Principal Planner
Emerio Design, LLC

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ed Schwarz
2206 Tannler Dr.
West Linn, OR

9590 9402 2858 7069 6726 99

2. Article Number (Transfer from service label)

7018 0040 0000 9817 6102

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Roberta Schwarz ☐ Agent ☐ Addres

B. Received by (Printed Name) C. Date of De

D. Is delivery address different from item 1? ☐ Y
If YES, enter delivery address below: ☐

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☐ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Roberta Schwarz
2206 Tannler Dr.
West Linn, OR

9590 9402 2858 7069 6727 05

2. Article Number (Transfer from service label)

7018 0040 0000 9817 6119

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Roberta Schwarz ☐ Agent

B. Received by (Printed Name) C.

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☐ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

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WEST LINN, OR 97068

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☐ Return Receipt (electronic) $0.00
☐ Certified Mail Restricted Delivery $0.00
☐ Adult Signature Required $0.00
☐ Adult Signature Restricted Delivery $
Postage $0.50
Total Postage and Fees $6.70

$2.75
0100
06
DEC 19 2018
Postmark Here
12/19/2018

Sent To Roberta Schwarz
Street and Apt. No., or PO Box No. 2206 Tannler Dr
City, State, ZIP+4® West Linn, OR 97068

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7018 0040 0000 9817 6102

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Extra Services & Fees (check box, add fee as appropriate)
☐ Return Receipt (hardcopy) $0.00
☐ Return Receipt (electronic) $0.00
☐ Certified Mail Restricted Delivery $0.00
☐ Adult Signature Required $0.00
☐ Adult Signature Restricted Delivery $
Postage $0.50
Total Postage and Fees $6.70

$2.75
0100
06
Postmark Here
12/19/2018

Sent To Ed Schwarz
Street and Apt. No., or PO Box No. 2206 Tannler Dr
City, State, ZIP+4® West Linn, OR 97068

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

Teragan & Associates, Inc
3145 Westview Circle
Lake Oswego, OR 97034
971-295-4835
teragan.com

February 13, 2019

Planning and Building
City of West Linn
22500 Salamo Road #1000
West Linn, Oregon 97068

Re: Arborist Report and Tree Preservation Plan for Bland Circle Subdivision

Please find enclosed the Arborist Report and Tree Preservation Plan for the Bland Circle Subdivision project located at 23190 Bland Circle in West Linn, Oregon.

Do not hesitate to contact me if you have any questions, concerns, or need any additional information.

Sincerely,

Todd Prager

Todd Prager
ASCA Registered Consulting Arborist #597
ISA Board Certified Master Arborist, WE-6723B
ISA Qualified Tree Risk Assessor
AICP, American Planning Association

Encl.

TERAGAN & ASSOCIATES, INC.
ARBORICULTURAL CONSULTANTS

Arborist Report and Tree Preservation Plan

For Bland Circle Subdivision at
23190 Bland Circle in West Linn, Oregon

Prepared by:
Todd Prager, RCA #597, ISA Board Certified Master Arborist, AICP, Teragan & Associates, Inc.

2/13/2019

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TERAGAN & ASSOCIATES, INC.
ARBORICULTURAL CONSULTANTS

Bland Circle Subdivision – West Linn, Oregon
Arborist Report and Tree Preservation Plan
February 13, 2019

Purpose

This Arborist Report and Tree Preservation Plan for the Bland Circle Subdivision project in West Linn, Oregon, is provided pursuant to City of West Linn Community Development Code Chapter 55 and the West Linn Tree Technical Manual. This report describes the existing trees located on the project site, as well as recommendations for tree removal, retention and protection. This report is based on observations made by Registered Consulting Arborist (RCA #597), Board Certified Master Arborist (WE-6723B), and Qualified Tree Risk Assessor Todd Prager during site visits conducted on November 12 and 13, 2018, a subsequent site meeting with the City Arborist Mike Perkins on December 20, 2018, and site plan coordination with Emerio Design.

Scope of Work and Limitations

Teragan & Associates, Inc. was contracted by Toll Brothers to collect tree inventory data for individual trees measuring six inches and larger in diameter and to develop an arborist report and tree preservation plan for the project. The site is planned for residential development with new streets, 25 building lots, two open space tracts, and a water quality facility. Site plans were provided by Emerio Design illustrating the location of existing trees and potential construction impacts.

Visual Tree Assessment (VTA) was performed on individual trees located throughout the site. The enclosed tree inventory data sheet in Attachment 1 demonstrates that all trees on the site were physically identified. VTA is the standard process whereby the inspector visually assesses the tree from a distance and up close, looking for defect symptoms and evaluating overall condition and vitality of individual trees. Trees were evaluated in terms of general condition and potential construction impacts. Following the inventory fieldwork, we coordinated with Emerio Design to discuss tree protection recommendations.

The client may choose to accept or disregard the recommendations contained herein, or seek additional advice. Neither this author nor Teragan & Associates, Inc. have assumed any responsibility for liability associated with the trees on or adjacent to this site.

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General Description

The Bland Circle Subdivision project site is located at 23190 Bland Circle in West Linn, Oregon. The site consists of a single family home on the west side of the site, a stable and fenced areas for horses with sparse tree coverage at the north side of the site, non-native black locust (*Robinia pseudoacacia*) and relatively young planted trees along the east side of the site, and a mature grove of primarily Douglas-fir (*Pseudotsuga menziesii*) along the southern half of the site.

The grove of Douglas-firs includes the highest quality trees at the site. The trees are undergoing natural stand dynamics, whereby trees are competing with one another; over time, some trees become dominant or codominant while others are suppressed beneath the dominant overstory. The stand is generally in good condition as an intact and undisturbed group. The understory of the grove has been mostly cleared of native and non-native vegetation. Most of the trees in the grove are well spaced without excessive competition, and are in fair to good health and structural condition.

The exhibit in Attachment 2 by Emerio Design includes the locations of existing trees in relation to proposed construction impacts such as grading, streets, utilities, and building envelopes. The tree numbers in Attachment 2 correspond to the tree numbers in the inventory in Attachment 1. The trees were also tagged with their corresponding numbers in the field.

Tree Inventory

On November 12 and 13, 2018, I completed an assessment of all existing trees over 6-inches in trunk diameter (DBH) at the Bland Circle Subdivision project site. A spreadsheet of the inventoried trees is provided in Attachment 1. The inventory lists the tree number, species (common and scientific names), DBH, crown radius, health condition, structural condition, whether the tree is significant as defined in the City of West Linn Community Development Code and approved by the City Arborist, pertinent comments, and treatment (remove/retain).

The tree numbers in the inventory in Attachment 1 correspond to the tree numbers in the tree exhibit in Attachment 2. Significant tree symbols are black and non-significant tree symbols are grey in Attachment 2.

Note that Emerio Design has created additional plan sheets as part of their land use plan set with additional tree information such as significant tree canopy protection and removal areas. This information is intended to demonstrate compliance with applicable Development Code and Tree Technical Manual requirements.

Tree Preservation Plan

We coordinated with the project team to discuss trees suitable for preservation in terms of potential construction impacts. Table 1 provides a summary of the number of non-significant and significant trees by treatment recommendation.

Table 1. Number of Inventoried Trees by Treatment and Significance.

Treatment	Remove	Retain	Total
Non-Significant Trees (Onsite)	134	16	**150**
Significant Trees (Onsite)	48	15 (23.8%)	**63**
Offsite	3	7	**10**
Total	185	38	223

Onsite Trees
Of the onsite trees, 31 trees are planned for retention and 182 trees are planned for removal to accommodate the proposed development. The following is a discussion of the proposed significant and non-significant tree retention and removal.

Significant Tree Retention
The 31 trees planned for retention include 15 significant onsite trees. These trees are primarily part of the grove of Douglas-firs located within tract A, or directly adjacent to tract A on lots 10, 11, and 16. There are also two isolated specimen trees to be retained in the rear of lot 1 (tree 50236, Oregon white oak, *Quercus garryana*) and in the rear of lot 18 (tree 50936, Douglas-fir).

During the tree inventory fieldwork and again during the on-site meeting with the City's Arborist, we evaluated these trees in terms of potential impacts from adjacent tree removal. The isolated specimen trees on lots 1 and 18 are open grown and well adapted to site conditions, and will not be significantly impacted by the removal of adjacent trees.

The trees within the existing grove at the site will be more impacted by adjacent tree removal. Generally, trees located within the interior of a forested stand are adapted to the shelter provided by edge grown trees and are at increased risk of failure when edge trees are removed. However, the trees comprising the stand at this site were generally well spaced and not as dependant on one another for shelter when compared with a more dense stand with greater competition. Only those significant trees most suitable for preservation in light of adjacent tree removal were proposed for retention.

While the trees selected for preservation are anticipated to be viable for the foreseeable future, it is important to note that the removal of edge trees from a stand inherently increases the risk of adjacent tree failure. Therefore, I recommend re-evaluating the trees at the time of site clearing and periodically during construction to verify that they are suitable for preservation and do not present unacceptable risks to people or property.

Non-Significant Tree Retention
The other 16 onsite trees planned for retention are not significant. The retention of non-significant trees interior to the stand of significant trees will help to minimize stand disturbance and provide additional habitat and screening values.

In addition, the retention of non-significant trees along the rear of lots 3, 4, and 17 will maintain some screening benefits for adjacent properties and Salamo Road.

Onsite Tree Removal (Significant and Non-Significant)
The 184 onsite trees planned for removal include 48 significant trees and 134 non-significant trees. The reasons for the proposed removals are for mass grading of the site, building construction on individual lots, widening of the water quality swale in tract B, or removal of non-native nuisance species such as English hawthorn (*Crataegus monogyna*) and black locust (*Robinia pseudoacacia*).

Offsite Trees
Of the 223 inventoried trees, 10 are located off-site. Seven of the offsite trees will be protected during construction, while three of the offsite trees (trees 51378, 51417, and 51481) will be removed if approved by the tree owners. If the trees are not approved for removal, the utilities will need to be rerouted so they are outside the critical roots zones of offsite trees 51417 and 51481, or the utilities will need to be bored at a depth of five feet or greater. Tree 51378 is proposed for removal to widen the water quality facility. If this tree is not approved for removal, the facility should not be widened in the tree's critical root zone. The critical root zone is defined as a radius around a tree of .5 feet per inch of DBH.

Significant Tree Preservation Standards
The proposed significant tree preservation at this site exceeds the preservation requirements in Section 55.100.B.2 of the West Linn Development Code.

Table 2 includes a summary of the proposed significant tree preservation by number and protected area. The protected area of significant trees is determined by square feet beneath the dripline of each significant tree plus 10 feet.

Table 2. Significant Tree Preservation.

Treatment	Remove	Retain	% Retain	Total
Significant Trees (Number)	48	15	23.8%	63
Significant Trees (Area, sq. ft.)	66,321	21,640	24.6%	87,961

As shown in Table 2, 23.8 percent of the significant trees and 24.6 percent of the protected significant tree area is proposed to be retained. Section 55.100.B.2 of the West Linn Development Code requires "up to 20 percent" of the protected tree area to be retained.

Therefore, the proposed significant tree preservation at the site exceeds the requirements in the West Linn Development Code. Note that additional non-significant trees are also proposed for preservation where possible.

Tree Protection Standards
This section of the report includes tree protection recommendations in accordance with the City of West Linn Code and Tree Technical Manual.

Site Specific Tree Protection Recommendations

The following site specific tree protection standards apply to this project:

- **Tree Protection Fencing**: The trees to be retained should be protected with tree protection fencing as follows:
  - At a minimum radius from the trunk of non-significant trees of .5 feet per inch of DBH as shown in Attachment 2; and
  - At the dripline plus 10-feet for significant trees as shown in Attachment 2.
- **Directional Felling**: Fell the trees to be removed away from the trees to be retained so they do not contact or otherwise damage the trunks or branches of the trees to be retained. No vehicles or heavy equipment should be permitted within the tree protection zones during tree removal operations.
- **Stump Removal** - Stumps of trees removed within the tree protection zones shall be retained in place or carefully stump ground to protect the root systems of the trees to be retained unless otherwise approved by the project arborist.
- **Sediment Fence**: Ensure sediment fence is placed outside the tree protection zones to protect the root systems of the trees to be retained.
- **Periodic Risk Assessments**: The trees to be retained that were part of a larger grove will be at increased risk of failure after adjacent tree removal. These trees should be monitored periodically and after storm events by the project arborist following site clearing to determine if any pose unreasonable risks.
- **Tree Protection Zone Encroachments**: In some cases, the proposed development is likely to encroach within tree protection zones. In these cases, alternative tree protection measures will be needed. In particular, standard tree protection zones overlap with allowable building footprints in the rear of lots 1, 3, 5, 10, 11, 16, and 18. Tree protection fencing initially installed in the locations shown in Attachment 2 should only be adjusted based on coordination with the project arborist. Exploratory excavation is recommended during the site improvement phase of construction in order to locate roots of protected trees and assess potential impacts to critical roots. The contractor should coordinate with the project arborist to adjust tree protection fencing, monitor exploratory excavation, and evaluate potential root impacts. The arborist should then prepare a supplemental memorandum containing recommendations to minimize root impacts at specific trees on these lots. If critical roots are encountered, customized home plans may be needed to avoid critical root impacts and/or modified foundations may be necessary to allow encroachment into the critical root zone while avoiding excavation and root pruning by using pier and beam designs to span foundations across root zones. Tree protection recommendations specific to each lot should be required at the time of plat based on what is learned during exploratory excavation and evaluation of potential impacts in terms of lot specific building plans.
- **Offsite Tree Protection**: Of the 223 inventoried trees, 10 are located off-site. Seven of the offsite trees will be protected during construction, while three of

the offsite trees (trees 51378, 51417, and 51481) will be removed if approved by the tree owners. If the trees are not approved for removal, the utilities will need to be rerouted so they are outside the critical roots zones of offsite trees 51417 and 51481, or the utilities will need to be bored at a depth of five feet or greater. Tree 51378 is proposed for removal to widen the water quality facility. If this tree is not approved for removal, the facility should not be widened in the tree's critical root zone.

General Tree Protection Standards

The following general tree protection standards are consistent with the City of West Linn Code and Tree Technical Manual.

Before Construction

1. **Tree Protection Zone.** The project arborist shall designate the Tree Protection Zone (TPZ) for each tree to be protected. Where feasible, the size of the TPZ shall be established at the dripline of the tree plus 10-feet for significant trees. For non-significant trees, the TPZ shall be established at a minimum radius from the trunks of .5 feet per inch of DBH. Where improvements (driveways, buildings, and utilities) must be installed closer to the tree(s), the TPZ may be established within the standard setbacks if the project arborist, in coordination with the City Arborist, determines that the tree(s) will not be unduly damaged. The location of TPZs shall be shown on construction drawings.
2. **Protection Fencing.** Protection fencing shall serve as the tree protection zone and shall be erected before demolition, grubbing, grading, or construction begins. All trees to be retained shall be protected by six-foot-high chain link fences installed at the edge of the TPZ. Protection fencing shall be secured to two-inch diameter galvanized iron posts, driven to a depth of a least two feet, placed no further than 10-feet apart. If fencing is located on pavement, posts may be supported by an appropriate grade level concrete base. Protection fencing shall remain in place until final inspection of the project permit, or in consultation with the project arborist.
3. **Signage.** An 8.5x11 –inch sign stating, “WARNING: Tree Protection Zone,” shall be displayed on each protection fence at all times.
4. **Designation of Cut Trees.** Trees to be removed shall be clearly marked with construction flagging, tree-marking paint, or other methods approved in advance by the project arborist. Trees shall be carefully removed so as to avoid either above or below ground damage to those trees to be preserved.
5. **Preconstruction Conference.** The project arborist shall be on site to discuss methods of tree removal and tree protection prior to any construction.
6. **Verification of Tree Protection Measures.** Prior to commencement of construction, the project arborist shall verify in writing to the City Arborist that tree protection fencing has been satisfactorily installed.

<u>During Construction</u>

7. **Tree Protection Zone Maintenance.** The protection fencing shall not be moved, removed, or entered by equipment except under direction of the project arborist, in coordination with the City Arborist.
8. **Storage of Material or Equipment.** The contractor shall not store materials or equipment within the TPZ.
9. **Excavation within the TPZ.** Excavation with the TPZ shall be avoided if alternatives are available. If excavation within the TPZ is unavoidable, the project arborist shall evaluate the proposed excavation to determine methods to minimize impacts to trees. This can include tunneling, hand digging or other approaches. All construction within the TPZ shall be under the on-site technical supervision of the project arborist, in coordination with the City Arborist.
10. **Tree Protection Zone.** The project arborist shall monitor construction activities and progress, and provide written reports to the developer and the City at regular intervals. Tree protection inspections shall occur monthly or more frequently if needed.
11. **Quality Assurance.** The project arborist shall supervise proper execution of this plan during construction activities that could encroach on retained trees. Tree protection site inspection monitoring reports shall be provided to the Client and City on a regular basis throughout construction.

<u>Post Construction</u>

12. **Final Report.** After the project has been completed, the project arborist shall provide a final report to the developer and the City. The final report shall include concerns about any trees negatively impacted during construction, and describe the measures needed to maintain and protect the remaining trees for a minimum of two years after project completion.

Conclusion

The recommendations in this report meet the applicable requirements in the City of West Linn Code and Tree Technical Manual for the Bland Circle Subdivision project.

Please contact me if you have questions, concerns, or need any additional information.

Sincerely,

Todd Prager

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Attachment 1:	Tree Inventory
Attachment 2:	Tree Removal and Protection Exhibit
Attachment 3:	Assumptions and Limiting Conditions

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Attachment 1

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

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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

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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

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Attachment 1

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

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Attachment 1

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

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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

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Attachment 1

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

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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

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Attachment 1

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.

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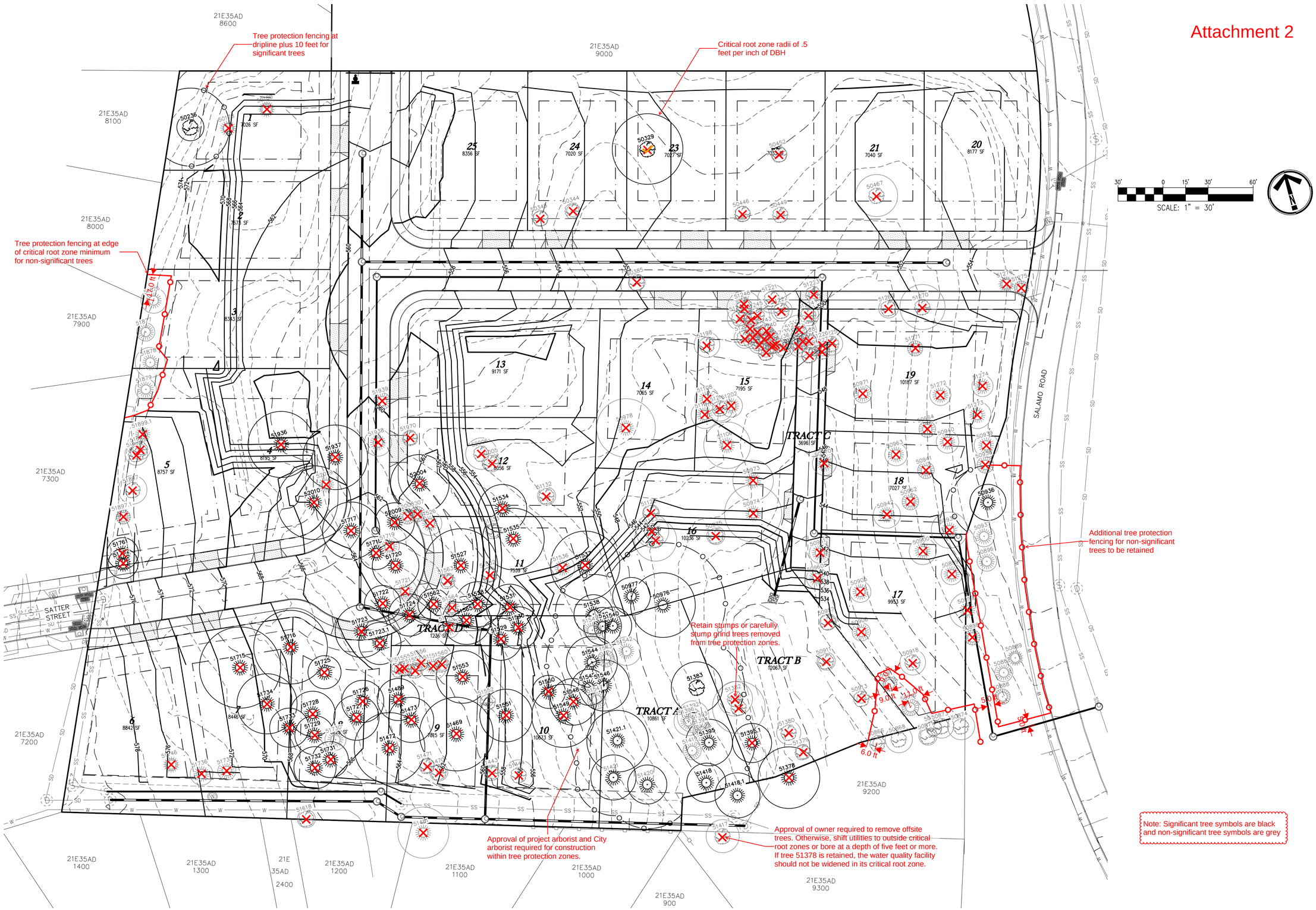
Attachment 2



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

EXHIBIT

REVISIONS

NO.	DATE	DESCRIPTION
0	01/19	PLANNING 1ST SUBMITTAL
1	-	-

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PRELIMINARY

SHEET - OF -

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Exhibits\0542-001_tree root exhibit, Layout: 3 TREE PRESERVATION PLAN, Plot Date: 2/17/2019 1:38 PM, by: Jacob Snyder

Attachment 3
Assumptions and Limiting Conditions

1. Any legal description provided to the consultant is assumed to be correct. The information provided by Toll Brothers and their consultants was the basis of the information provided in this report.
2. It is assumed that this property is not in violation of any codes, statutes, ordinances, or other governmental regulations.
3. The consultant is not responsible for information gathered from others involved in various activities pertaining to this project. Care has been taken to obtain information from reliable sources.
4. Loss or alteration of any part of this delivered report invalidates the entire report.
5. Drawings and information contained in this report may not be to scale and are intended to be used as display points of reference only.
6. The consultant's role is only to make recommendations. Inaction on the part of those receiving the report is not the responsibility of the consultant.
7. The purpose of this report is to provide tree removal, preservation, and protection recommendations in accordance with the City of West Linn Code and Tree Technical Manual.

Real-World Geotechnical Solutions
Investigation • Design • Construction Support

December 3, 2018
Project No. 18-5084

JJ Portlock
Toll Brothers
4800 Meadows Road, Suite 335A
Lake Oswego, Oregon 97035
Via email: jportlock@tollbrothers.com

CC: Eric Evans, Emerio Design Via email: eric@emeriodesign.com

SUBJECT: GEOTECHNICAL REPORT
BLAND CIRCLE SUBDIVISION
23190 BLAND CIRCLE
WEST LINN, OREGON

This report presents the results of a geotechnical engineering study conducted by GeoPacific Engineering, Inc. (GeoPacific) for the above-referenced project. The purpose of our investigation was to evaluate subsurface conditions at the site and to provide geotechnical recommendations for site development. This geotechnical study was performed in accordance with GeoPacific Proposal No. P-6729, dated September 28, 2018, and your subsequent authorization of our proposal and *General Conditions for Geotechnical Services*.

SITE DESCRIPTION AND PROPOSED DEVELOPMENT

The subject site is located northwest of the intersection of Bland Circle and Salamo Road in West Linn, Clackamas County, Oregon (Figure 1). The property is approximately 6.5 acres in size and topography is gently to moderately sloping to the southeast at grades of approximately 5 to 20 percent. The site is currently occupied by one home, barn, and outbuilding (Figure 2). Vegetation consists primarily of short grasses and dense to sparse trees.

It is our understanding that proposed development includes 24 lots for single family homes, construction of new streets, and associated underground utilities. The existing structures will be removed. A grading plan has not been provided for our review; however, we anticipate maximum cuts and fills will be on the order of 10 feet or less and may incorporate retaining walls.

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REGIONAL AND LOCAL GEOLOGIC SETTING

The subject site lies within the Willamette Valley/Puget Sound lowland, a broad structural depression situated between the Coast Range on the west and the Cascade Range on the east. A series of discontinuous faults subdivide the Willamette Valley into a mosaic of fault-bounded, structural blocks (Yeats et al., 1996). Uplifted structural blocks form bedrock highlands, while down-warped structural blocks form sedimentary basins.

The site is located on a south facing slope at elevations of approximately 525 to 585 feet above sea level. The subject site is underlain by Quaternary age (last 1.6 million years) loess, a windblown silt deposit that mantles uplands in the Tualatin Basin (Madin, 1990). The loess, included as a member of the Willamette Formation, generally consists of massive silt with localized buried paleosols indicating numerous depositional episodes which most likely followed catastrophic flooding events in the Willamette Valley, the last of which occurred about 10,000 years ago.

The loess is underlain by the Miocene aged (about 14.5 to 16.5 million years ago) Columbia River Basalt Formation, which are a thick sequence of lava flows which form the crystalline basement of the Tualatin Valley (Beeson et al., 1989; Gannett and Caldwell, 1998). The basalts are composed of dense, finely crystalline rock that is commonly fractured along blocky and columnar vertical joints. Individual basalt flow units typically range from 25 to 125 feet thick and interflow zones are typically vesicular, scoriaceous, brecciated, and sometimes include sedimentary rocks.

REGIONAL SEISMIC SETTING

At least three major fault zones capable of generating damaging earthquakes are thought to exist in the vicinity of the subject site. These include the Portland Hills Fault Zone, the Gales Creek-Newberg-Mt. Angel Structural Zone, and the Cascadia Subduction Zone.

Portland Hills Fault Zone

The Portland Hills Fault Zone is a series of NW-trending faults that include the central Portland Hills Fault, the western Oatfield Fault, and the eastern East Bank Fault. These faults occur in a northwest-trending zone that varies in width between 3.5 and 5.0 miles. The combined three faults vertically displace the Columbia River Basalt by 1,130 feet and appear to control thickness changes in late Pleistocene (approx. 780,000 years) sediment (Madin, 1990). The Portland Hills Fault occurs along the Willamette River at the base of the Portland Hills, and is approximately 4.3 miles northeast of the site. The East Bank Fault is oriented roughly parallel to the Portland Hills Fault, on the east bank of the Willamette River, and is located approximately 8.4 miles northwest of the site. The Oatfield Fault occurs along the western side of the Portland Hills, and is approximately 3.6 miles northeast of the site. The Oatfield Fault is considered to be potentially seismogenic (Wong, et al., 2000). Madin and Mabey (1996) indicate the Portland Hills Fault Zone has experienced Late Quaternary (last 780,000 years) fault movement; however, movement has not been detected in the last 20,000 years. The accuracy of the fault mapping is stated to be within 500 meters (Wong, et al., 2000). No historical seismicity is correlated with the mapped portion of the Portland Hills Fault Zone, but in 1991 a M3.5 earthquake occurred on a NW-trending shear plane located 1.3 miles east of the fault (Yelin, 1992). Although there is no definitive evidence of recent activity, the Portland Hills Fault Zone is assumed to be potentially active (Geomatrix Consultants, 1995).

Gales Creek-Newberg-Mt. Angel Structural Zone

The Gales Creek-Newberg-Mt. Angel Structural Zone is a 50-mile-long zone of discontinuous, NW-trending faults that lies approximately 15.9 miles southwest of the subject site. These faults are recognized in the subsurface by vertical separation of the Columbia River Basalt and offset seismic reflectors in the overlying basin sediment (Yeats et al., 1996; Werner et al., 1992). A geologic reconnaissance and photogeologic analysis study conducted for the Scoggins Dam site in the Tualatin Basin revealed no evidence of deformed geomorphic surfaces along the structural zone (Unruh et al., 1994). No seismicity has been recorded on the Gales Creek Fault or Newberg Fault (the fault closest to the subject site); however, these faults are considered to be potentially active because they may connect with the seismically active Mount Angel Fault and the rupture plane of the 1993 M5.6 Scotts Mills earthquake (Werner et al. 1992; Geomatrix Consultants, 1995).

Cascadia Subduction Zone

The Cascadia Subduction Zone is a 680-mile-long zone of active tectonic convergence where oceanic crust of the Juan de Fuca Plate is subducting beneath the North American continent at a rate of 4 cm per year (Goldfinger et al., 1996). A growing body of geologic evidence suggests that prehistoric subduction zone earthquakes have occurred (Atwater, 1992; Carver, 1992; Peterson et al., 1993; Geomatrix Consultants, 1995). This evidence includes: (1) buried tidal marshes recording episodic, sudden subsidence along the coast of northern California, Oregon, and Washington, (2) burial of subsided tidal marshes by tsunami wave deposits, (3) paleoliquefaction features, and (4) geodetic uplift patterns on the Oregon coast. Radiocarbon dates on buried tidal marshes indicate a recurrence interval for major subduction zone earthquakes of 250 to 650 years with the last event occurring 300 years ago (Atwater, 1992; Carver, 1992; Peterson et al., 1993; Geomatrix Consultants, 1995). The inferred seismogenic portion of the plate interface lies roughly along the Oregon coast at depths of between 20 and 40 miles.

SUBSURFACE CONDITIONS

Our site-specific exploration for this report was conducted on November 19, 2018. A total of 5 exploratory test pits were excavated with a small to medium sized trackhoe to depths of 6.5 to 10.5 feet at the approximate locations indicated on Figure 2. It should be noted that test pit locations were located in the field by pacing or taping distances from apparent property corners and other site features shown on the plans provided. As such, the locations of the explorations should be considered approximate.

A GeoPacific Engineering Geologist continuously monitored the field exploration program and logged the test pits. Soils observed in the explorations were classified in general accordance with the Unified Soil Classification System (USCS). Rock hardness was classified in accordance with Table 1, modified from the ODOT Rock Hardness Classification Chart. During exploration, our geologist also noted geotechnical conditions such as soil consistency, moisture and groundwater conditions. Logs of test pits are attached to this report. The following report sections are based on the exploration program and summarize subsurface conditions encountered at the site.

Table 1. Rock Hardness Classification Chart

ODOT Rock Hardness Rating	Field Criteria	Unconfined Compressive Strength	Typical Equipment Needed For Excavation
Extremely Soft (R0)	Indented by thumbnail	<100 psi	Small excavator
Very Soft (R1)	Scratched by thumbnail, crumbled by rock hammer	100-1,000 psi	Small excavator
Soft (R2)	Not scratched by thumbnail, indented by rock hammer	1,000-4,000 psi	Medium excavator (slow digging with small excavator)
Medium Hard (R3)	Scratched or fractured by rock hammer	4,000-8,000 psi	Medium to large excavator (slow to very slow digging), typically requires chipping with hydraulic hammer or mass excavation)
Hard (R4)	Scratched or fractured w/ difficulty	8,000-16,000 psi	Slow chipping with hydraulic hammer and/or blasting
Very Hard (R5)	Not scratched or fractured after many blows, hammer rebounds	>16,000 psi	Blasting

Undocumented Fill: Undocumented fill was not encountered in our explorations. Our reconnaissance indicates that approximately 5 to 6 feet of fill has been placed in the vicinity of the riding arena, round pen, and barn, as delineated on Figure 2. Explorations were not conducted in these areas since these areas are still in use. We anticipate other areas of fill may be present in the vicinity of the existing home and adjacent to Salamo Road.

Topsoil Horizon: Directly underlying the ground surface in test pits TP-1 through TP-5 was a topsoil horizon consisting of light brown, moderately to highly organic silt (OL-ML). The topsoil horizon was generally loose, contained many fine roots, and extended to a depth of 9 to 12 inches.

Loess: Underlying the topsoil horizon in test pits TP-1 through TP-5 was windblown silt (loess) included as a member of the Willamette Formation. The light brown clayey silt (ML) was generally characterized by a very stiff consistency and extended to a depth of 2 to 3 feet in explorations.

Residual Soil: Underlying the loess in test pits TP-1 through TP-5 was clayey silt (ML) to silty clay (CL) residual soil resulting from in-place weathering of the underlying Columbia River Basalt Formation. The light reddish brown silty clay to clayey silt contained varying quantities of weathered basalt fragments and was generally characterized by a very stiff consistency. In test pits TP-1 and TP-4, the residual soil extended to a depth of 4.5 to 8.5 feet and beyond the maximum depth of exploration in test pits TP-2, TP-3, and TP-5 (6.5 to 10.5 feet). Practical

refusal on a large boulder within the residual soil in test pit TP-3 was achieved with a small to medium sized trackhoe at a depth of 6.5 feet.

Columbia River Basalt Formation: Underlying the residual soil in test pits TP-1 and TP-4 was weathered basalt belonging to the Columbia River Basalt Formation. Generally, the gray basalt was extremely soft (R0) to soft (R2) with trace light reddish brown silty clay to clayey silt matrix. The basalt was excavatable to a depth of 10 to 10.5 feet in test pits TP-1 and TP-4. Table 2 presents the depths at which rock was first encountered in test pits and the depth at which practical refusal was achieved with a small to medium sized backhoe equipped with rock teeth.

Table 2. Depth of Exploration Refusal Encountered in Test Pits

Test Pit	Depth Rock First Encountered	Depth of Practical Refusal on Medium Hard (R3) Basalt
TP-1	4.5’	Greater than 10’
TP-3	Bedrock not encountered	6.5’ (Refusal on Boulder)
TP-4	8.5’	Greater than 10.5’

Soil Moisture and Groundwater

On November 19, 2018, perched groundwater seepage was encountered in test pits TP-4 and TP-5 at a depth of 7.5 feet. Discharge was visually estimated at ½ gallon per minute. Regional groundwater mapping indicates that static groundwater is present at a depth of approximately 220 to 260 feet below the ground surface (Snyder, 2008). Experience has shown that temporary storm related perched groundwater within the near surface soils often occur over fine-grained native deposits such as those beneath the site during the wet season and particularly in mottled soils such as were identified in the test pits. It is anticipated that groundwater conditions will vary depending on the season, local subsurface conditions, changes in site utilization, and other factors.

CONCLUSIONS AND RECOMMENDATIONS

Our investigation indicates that the proposed development is geotechnically feasible, provided that the recommendations of this report are incorporated into the design and sufficient geotechnical monitoring is incorporated into the construction phases of the project. In our opinion, the greatest geotechnical issue for project completion is the depth of the bedrock beneath the site. Weathered basalt bedrock was encountered in test pits in the central and eastern portions of the site at depths of 4.5 to 8.5 feet. The basalt was excavatable to depths of 10 to 10.5 feet; however, a large boulder was encountered in the southern portion of the property (test pit TP-3) and practical refusal was achieved on the medium hard (R3) boulder at a depth of 6.5 feet. A larger excavator should be able to achieve greater depths but difficult excavating conditions should be expected.

Although fill was not encountered in our explorations; our reconnaissance indicates 5 to 6 feet of fill has been placed in the northwestern portion of the site in the vicinity of the riding arena, round pen, and barn as indicated on Figure 2.

Site Preparation

Areas of proposed buildings, new streets, and areas to receive fill should be cleared of vegetation and any organic and inorganic debris. Existing buried structures, should be demolished and any cavities structurally backfilled. Inorganic debris and organic materials from clearing should be removed from the site. Existing fill and any organic-rich topsoil should then be stripped from construction areas of the site or where engineered fill is to be placed. Fill was not encountered in our explorations; however, our reconnaissance indicates that fill is likely present in the vicinity of the existing home, riding arena, round pen, and barn and potentially along Salamo Road.

Organic-rich topsoil should then be stripped from native soil areas of the site. The estimated depth range necessary for removal of topsoil in cut and fill areas is approximately 6 to 9 inches, respectively. The final depth of soil removal will be determined on the basis of a site inspection after the stripping/excavation has been performed. Stripped topsoil should preferably be removed from the site due to the high density of the proposed development. Any remaining topsoil should be stockpiled only in designated areas and stripping operations should be observed and documented by the geotechnical engineer or his representative.

Any remaining undocumented fills and subsurface structures (tile drains, basements, driveway and landscaping fill, old utility lines, septic leach fields, etc.) should be removed and the excavations backfilled with engineered fill.

Once stripping of a particular area is approved, the area must be ripped or tilled to a depth of 12 inches, moisture conditioned, root-picked, and compacted in-place prior to the placement of engineered fill or crushed aggregate base for pavement. Exposed subgrade soils should be evaluated by the geotechnical engineer. For large areas, this evaluation is normally performed by proof-rolling the exposed subgrade with a fully loaded scraper or dump truck. For smaller areas where access is restricted, the subgrade should be evaluated by probing the soil with a steel probe. Soft/loose soils identified during subgrade preparation should be compacted to a firm and unyielding condition, over-excavated and replaced with engineered fill (as described below), or stabilized with rock prior to placement of engineered fill. The depth of overexcavation, if required, should be evaluated by the geotechnical engineer at the time of construction.

Engineered Fill

All grading for the proposed development should be performed as engineered grading in accordance with the applicable building code at time of construction with the exceptions and additions noted herein. Proper test frequency and earthwork documentation usually requires daily observation and testing during stripping, rough grading, and placement of engineered fill. Imported fill material must be approved by the geotechnical engineer prior to being imported to the site. Oversize material greater than 6 inches in size should not be used within 3 feet of foundation footings, and material greater than 12 inches in diameter should not be used in engineered fill.

Engineered fill should be compacted in horizontal lifts not exceeding 8 inches using standard compaction equipment. We recommend that engineered fill be compacted to at least 95% of the maximum dry density determined by ASTM D698 (Standard Proctor) or equivalent. Field density testing should conform to ASTM D2922 and D3017, or D1556. All engineered fill should be observed and tested by the project geotechnical engineer or his representative. Typically,

one density test is performed for at least every 2 vertical feet of fill placed or every 500 yd^3, whichever requires more testing. Because testing is performed on an on-call basis, we recommend that the earthwork contractor be held contractually responsible for test scheduling and frequency.

Site earthwork will be impacted by soil moisture and shallow groundwater conditions. Earthwork in wet weather would likely require extensive use of cement or lime treatment, or other special measures, at a considerable additional cost compared to earthwork performed under dry-weather conditions.

Excavating Conditions and Utility Trenches

We anticipate that on-site soils can be excavated using conventional heavy equipment such as scrapers and trackhoes. Weathered basalt bedrock was encountered in test pits in the central and eastern portions of the site at depths of 4.5 to 8.5 feet. The basalt was excavatable to depths of 10 to 10.5 feet; however, a large boulder was encountered in the southern portion of the property (test pit TP-3) and practical refusal was achieved on the medium hard (R3) boulder at a depth of 6.5 feet. A larger excavator should be able to achieve greater depths but difficult excavating conditions should be expected.

All temporary cuts in excess of 4 feet in height should be sloped in accordance with U.S. Occupational Safety and Health Administration (OSHA) regulations (29 CFR Part 1926), or be shored. The existing native soil is classified as Type B Soil and temporary excavation side slope inclinations as steep as 1H:1V may be assumed for planning purposes. This cut slope inclination is applicable to excavations above groundwater seepage zones only. Maintenance of safe working conditions, including temporary excavation stability, is the responsibility of the contractor. Actual slope inclinations at the time of construction should be determined based on safety requirements and actual soil and groundwater conditions.

Saturated soils and groundwater may be encountered in utility trenches, particularly during the wet season. We anticipate that dewatering systems consisting of ditches, sumps and pumps would be adequate for control of perched groundwater. Regardless of the dewatering system used, it should be installed and operated such that in-place soils are prevented from being removed along with the groundwater.

Vibrations created by traffic and construction equipment may cause some caving and raveling of excavation walls. In such an event, lateral support for the excavation walls should be provided by the contractor to prevent loss of ground support and possible distress to existing or previously constructed structural improvements.

PVC pipe should be installed in accordance with the procedures specified in ASTM D2321. We recommend that trench backfill be compacted to at least 95% of the maximum dry density obtained by Modified Proctor ASTM D1557 or equivalent. Initial backfill lift thickness for a ¾”-0 crushed aggregate base may need to be as great as 4 feet to reduce the risk of flattening underlying flexible pipe. Subsequent lift thickness should not exceed 1 foot. If imported granular fill material is used, then the lifts for large vibrating plate-compaction equipment (e.g. hoe compactor attachments) may be up to 2 feet, provided that proper compaction is being achieved and each lift is tested. Use of large vibrating compaction equipment should be carefully monitored near existing structures and improvements due to the potential for vibration-induced damage.

Adequate density testing should be performed during construction to verify that the recommended relative compaction is achieved. Typically, one density test is taken for every 4 vertical feet of backfill on each 200-lineal-foot section of trench.

Erosion Control Considerations

During our field exploration program, we did not observe soil types that would be considered highly susceptible to erosion except in areas of moderately sloping topography. In our opinion, the primary concern regarding erosion potential will occur during construction, in areas that have been stripped of vegetation. Erosion at the site during construction can be minimized by implementing the project erosion control plan, which should include judicious use of straw wattles and silt fences. If used, these erosion control devices should be in place and remain in place throughout site preparation and construction.

Erosion and sedimentation of exposed soils can also be minimized by quickly re-vegetating exposed areas of soil, and by staging construction such that large areas of the project site are not denuded and exposed at the same time. Areas of exposed soil requiring immediate and/or temporary protection against exposure should be covered with either mulch or erosion control netting/blankets. Areas of exposed soil requiring permanent stabilization should be seeded with an approved grass seed mixture, or hydroseeded with an approved seed-mulch-fertilizer mixture.

Wet Weather Earthwork

Soils underlying the site are likely to be moisture sensitive and may be difficult to handle or traverse with construction equipment during periods of wet weather. Earthwork is typically most economical when performed under dry weather conditions. Earthwork performed during the wet-weather season will probably require expensive measures such as cement treatment or imported granular material to compact fill to the recommended engineering specifications. If earthwork is to be performed or fill is to be placed in wet weather or under wet conditions when soil moisture content is difficult to control, the following recommendations should be incorporated into the contract specifications:

- Earthwork should be performed in small areas to minimize exposure to wet weather. Excavation or the removal of unsuitable soils should be followed promptly by the placement and compaction of clean engineered fill. The size and type of construction equipment used may have to be limited to prevent soil disturbance. Under some circumstances, it may be necessary to excavate soils with a backhoe to minimize subgrade disturbance caused by equipment traffic;
- The ground surface within the construction area should be graded to promote run-off of surface water and to prevent the ponding of water;
- Material used as engineered fill should consist of clean, granular soil containing less than 5 percent fines. The fines should be non-plastic. Alternatively, cement treatment of on-site soils may be performed to facilitate wet weather placement;
- The ground surface within the construction area should be sealed by a smooth drum vibratory roller, or equivalent, and under no circumstances should be left uncompacted and exposed to moisture. Soils which become too wet for compaction should be removed and replaced with clean granular materials;

- Excavation and placement of fill should be observed by the geotechnical engineer to verify that all unsuitable materials are removed and suitable compaction and site drainage is achieved; and
- Geotextile silt fences, straw wattles, and fiber rolls should be strategically located to control erosion.

If cement or lime treatment is used to facilitate wet weather construction, GeoPacific should be contacted to provide additional recommendations and field monitoring.

Pavement Design

For design purposes, we used an estimated resilient modulus of 9,000 for compacted native soil. Table 3 presents our recommended minimum pavement section for dry weather construction.

Table 3. Recommended Minimum Dry-Weather Pavement Section

Material Layer	Light-duty Public Streets	Private Driveways	Compaction Standard
Asphaltic Concrete (AC)	3 in.	2.5 in.	92% of Rice Density AASHTO T-209
Crushed Aggregate Base ¾"-0 (leveling course)	2 in.	2 in.	95% of Modified Proctor AASHTO T-180
Crushed Aggregate Base 1½"-0	8 in.	6 in.	95% of Modified Proctor AASHTO T-180
Subgrade	12 in.	12 in.	95% of Standard Proctor AASHTO T-99 or equivalent

Any pockets of organic debris or loose fill encountered during ripping or tilling should be removed and replaced with engineered fill (see *Site Preparation* Section). In order to verify subgrade strength, we recommend proof-rolling directly on subgrade with a loaded dump truck during dry weather and on top of base course in wet weather. Soft areas that pump, rut, or weave should be stabilized prior to paving. If pavement areas are to be constructed during wet weather, the subgrade and construction plan should be reviewed by the project geotechnical engineer at the time of construction so that condition-specific recommendations can be provided. The moisture sensitive subgrade soils make the site a difficult wet weather construction project.

During placement of pavement section materials, density testing should be performed to verify compliance with project specifications. Generally, one subgrade, one base course, and one asphalt compaction test is performed for every 100 to 200 linear feet of paving.

Spread Foundations

The proposed residential structures may be supported on shallow foundations bearing on competent undisturbed, native soils and/or engineered fill, appropriately designed and constructed as recommended in this report. Foundation design, construction, and setback requirements should conform to the applicable building code at the time of construction. For maximization of bearing strength and protection against frost heave, spread footings should be

embedded at a minimum depth of 12 inches below exterior grade. The recommended minimum widths for continuous footings supporting wood-framed walls without masonry are 12 inches for single-story, 15 inches for two-story, and 18 inches for three-story structures. Minimum foundation reinforcement should consist of a No. 4 bar at the tops of stem walls, and a No. 4 bar at the bottom of footings. Concrete slab-on-grade reinforcement should consist of No. 4 bars placed on 24-inch centers in a grid pattern.

The anticipated allowable soil bearing pressure is 1,500 lbs/ft^2 for footings bearing on competent, native soil and/or engineered fill. A maximum chimney and column load of 30 kips is recommended for the site. The recommended maximum allowable bearing pressure may be increased by 1/3 for short-term transient conditions such as wind and seismic loading. For heavier loads, the geotechnical engineer should be consulted. The coefficient of friction between on-site soil and poured-in-place concrete may be taken as 0.40, which includes no factor of safety. The maximum anticipated total and differential footing movements (generally from soil expansion and/or settlement) are 1 inch and ¾ inch over a span of 20 feet, respectively. We anticipate that the majority of the estimated settlement will occur during construction, as loads are applied. Excavations near structural footings should not extend within a 1H:1V plane projected downward from the bottom edge of footings.

Footing excavations should penetrate through topsoil and any loose soil to competent subgrade that is suitable for bearing support. All footing excavations should be trimmed neat, and all loose or softened soil should be removed from the excavation bottom prior to placing reinforcing steel bars. Due to the moisture sensitivity of on-site native soils, foundations constructed during the wet weather season may require overexcavation of footings and backfill with compacted, crushed aggregate.

Our recommendations are for house construction incorporating raised wood floors and conventional spread footing foundations. If living space of the structures will incorporate basements, a geotechnical engineer should be consulted to make additional recommendations for retaining walls, water-proofing, underslab drainage and wall subdrains. After site development, a Final Soil Engineer's Report should either confirm or modify the above recommendations.

Permanent Below-Grade Walls

Lateral earth pressures against below-grade retaining walls will depend upon the inclination of any adjacent slopes, type of backfill, degree of wall restraint, method of backfill placement, degree of backfill compaction, drainage provisions, and magnitude and location of any adjacent surcharge loads. At-rest soil pressure is exerted on a retaining wall when it is restrained against rotation. In contrast, active soil pressure will be exerted on a wall if its top is allowed to rotate or yield a distance of roughly 0.001 times its height or greater.

If the subject retaining walls will be free to rotate at the top, they should be designed for an active earth pressure equivalent to that generated by a fluid weighing 35 pcf for level backfill against the wall. For restrained wall, an at-rest equivalent fluid pressure of 55 pcf should be used in design, again assuming level backfill against the wall. These values assume that drainage provisions are incorporated, free draining gravel backfill is used, and hydrostatic pressures are not allowed to develop against the wall.

During a seismic event, lateral earth pressures acting on below-grade structural walls will increase by an incremental amount that corresponds to the earthquake loading. Based on the

Mononobe-Okabe equation and peak horizontal accelerations appropriate for the site location, seismic loading should be modeled using the active or at-rest earth pressures recommended above, plus an incremental rectangular-shaped seismic load of magnitude 6.5H, where H is the total height of the wall.

We assume relatively level ground surface below the base of the walls. As such, we recommend passive earth pressure of 320 pcf for use in design, assuming wall footings are cast against competent native soils or engineered fill. If the ground surface slopes down and away from the base of any of the walls, a lower passive earth pressure should be used and GeoPacific should be contacted for additional recommendations.

A coefficient of friction of 0.42 may be assumed along the interface between the base of the wall footing and subgrade soils. The recommended coefficient of friction and passive earth pressure values do not include a safety factor, and an appropriate safety factor should be included in design. The upper 12 inches of soil should be neglected in passive pressure computations unless it is protected by pavement or slabs on grade.

The above recommendations for lateral earth pressures assume that the backfill behind the subsurface walls will consist of properly compacted structural fill, and no adjacent surcharge loading. If the walls will be subjected to the influence of surcharge loading within a horizontal distance equal to or less than the height of the wall, the walls should be designed for the additional horizontal pressure. For uniform surcharge pressures, a uniformly distributed lateral pressure of 0.3 times the surcharge pressure should be added. Traffic surcharges may be estimated using an additional vertical load of 250 psf (2 feet of additional fill), in accordance with local practice.

The recommended equivalent fluid densities assume a free-draining condition behind the walls so that hydrostatic pressures do not build-up. This can be accomplished by placing a 12 to 18-inch wide zone of sand and gravel containing less than 5 percent passing the No. 200 sieve against the walls. A 3-inch minimum diameter perforated, plastic drain pipe should be installed at the base of the walls and connected to a suitable discharge point to remove water in this zone of sand and gravel. The drain pipe should be wrapped in filter fabric (Mirafi 140N or other as approved by the geotechnical engineer) to minimize clogging.

Wall drains are recommended to prevent detrimental effects of surface water runoff on foundations – not to dewater groundwater. Drains should not be expected to eliminate all potential sources of water entering a basement or beneath a slab-on-grade. An adequate grade to a low point outlet drain in the crawlspace is required by code. Underslab drains are sometimes added beneath the slab when placed over soils of low permeability and shallow, perched groundwater.

Water collected from the wall drains should be directed into the local storm drain system or other suitable outlet. A minimum 0.5 percent fall should be maintained throughout the drain and non-perforated pipe outlet. Down spouts and roof drains should not be connected to the wall drains in order to reduce the potential for clogging. The drains should include clean-outs to allow periodic maintenance and inspection. Grades around the proposed structure should be sloped such that surface water drains away from the building.

GeoPacific should be contacted during construction to verify subgrade strength in wall keyway excavations, to verify that backslope soils are in accordance with our assumptions, and to take density tests on the wall backfill materials.

Structures should be located a horizontal distance of at least 1.5H away from the back of the retaining wall, where H is the total height of the wall. GeoPacific should be contacted for additional foundation recommendations where structures are located closer than 1.5H to the top of any wall.

Seismic Design

The Oregon Department of Geology and Mineral Industries (Dogami), Oregon HazVu: 2018 Statewide GeoHazards Viewer indicates that the site is in an area where *very strong* ground shaking is anticipated during an earthquake. Structures should be designed to resist earthquake loading in accordance with the methodology described in the 2015 International Building Code (IBC) with applicable Oregon Structural Specialty Code (OSSC) revisions (current 2014). We recommend Site Class C be used for design per the OSSC, Table 1613.5.2 and as defined in ASCE 7, Chapter 20, Table 20.3-1. Design values determined for the site using the USGS (United States Geological Survey) 2016 Seismic Design Maps Summary Report are summarized in Table 4, presented on the following page, and are based upon existing soil conditions.

Table 4. Recommended Earthquake Ground Motion Parameters (2010 ASCE-7)

Parameter	Value
Location (Lat, Long), degrees	45.359, -122.648
Mapped Spectral Acceleration Values (MCE):	
Peak Ground Acceleration PGA_M	0.449
Short Period, S_s	0.950 g
1.0 Sec Period, S_1	0.409 g
Soil Factors for Site Class D:	
F_a	1.120
F_v	1.591
Residential Site Value = 2/3 x F_a x S_s	0.709 g
Residential Seismic Design Category	D

Soil liquefaction is a phenomenon wherein saturated soil deposits temporarily lose strength and behave as a liquid in response to earthquake shaking. Soil liquefaction is generally limited to loose, granular soils located below the water table. According to the Oregon HazVu: Statewide Geohazards Viewer, the subject site is regionally characterized as having no risk of soil liquefaction (DOGAMI:HazVu, 2018).

Footing and Roof Drains

Construction should include typical measures for controlling subsurface water beneath the homes, including positive crawlspace drainage to an adequate low-point drain exiting the foundation, visqueen covering the exposed ground in the crawlspace, and crawlspace ventilation (foundation vents). The homebuyers should be informed and educated that some slow flowing water in the crawlspaces is considered normal and not necessarily detrimental to the home given these other design elements incorporated into its construction. Appropriate design professionals should be consulted regarding crawlspace ventilation, building material selection and mold prevention issues, which are outside GeoPacific's area of expertise.

Down spouts and roof drains should collect roof water in a system separate from the footing drains to reduce the potential for clogging. Roof drain water should be directed to an appropriate discharge point and storm system well away from structural foundations. Grades should be sloped downward and away from buildings to reduce the potential for ponded water near structures.

If the proposed structures will have a raised floor, and no concrete slab-on-grade floors in living spaces are used, perimeter footing drains would not be required based on soil conditions encountered at the site and experience with standard local construction practices. Where it is desired to reduce the potential for moist crawl spaces, footing drains may be installed. If concrete slab-on-grade floors are used, perimeter footing drains should be installed as recommended below.

Where necessary, perimeter footing drains should consist of 3 or 4-inch diameter, perforated plastic pipe embedded in a minimum of 1 ft^3 per lineal foot of clean, free-draining drain rock. The drain pipe and surrounding drain rock should be wrapped in non-woven geotextile (Mirafi 140N, or approved equivalent) to minimize the potential for clogging and/or ground loss due to piping. A minimum 0.5 percent fall should be maintained throughout the drain and non-perforated pipe outlet. In our opinion, footing drains may outlet at the curb, or on the back sides of lots where sufficient fall is not available to allow drainage to meet the street.

UNCERTAINTIES AND LIMITATIONS

We have prepared this report for the owner and their consultants for use in design of this project only. This report should be provided in its entirety to prospective contractors for bidding and estimating purposes; however, the conclusions and interpretations presented in this report should not be construed as a warranty of the subsurface conditions. Experience has shown that soil and groundwater conditions can vary significantly over small distances. Inconsistent conditions can occur between explorations that may not be detected by a geotechnical study. If, during future site operations, subsurface conditions are encountered which vary appreciably from those described herein, GeoPacific should be notified for review of the recommendations of this report, and revision of such if necessary.

Sufficient geotechnical monitoring, testing and consultation should be provided during construction to confirm that the conditions encountered are consistent with those indicated by explorations. The checklist attached to this report outlines recommended geotechnical observations and testing for the project. Recommendations for design changes will be provided should conditions revealed during construction differ from those anticipated, and to verify that the geotechnical aspects of construction comply with the contract plans and specifications.

Within the limitations of scope, schedule and budget, GeoPacific attempted to execute these services in accordance with generally accepted professional principles and practices in the fields of geotechnical engineering and engineering geology at the time the report was prepared. No warranty, expressed or implied, is made. The scope of our work did not include environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous or toxic substances in the soil, surface water, or groundwater at this site.

We appreciate this opportunity to be of service.

Sincerely,

GEOPACIFIC ENGINEERING, INC.

CERTIFIED OREGON ELIZABETH K. RAPP No. E2190 ENGINEERING GEOLOGIST

exp 2/1/19

REGISTERED PROFESSIONAL ENGINEER 14743PE OREGON JAN. 23, 1990 JAMES D. IMBRIE

EXPIRES: 06/30/2019

Beth K. Rapp, C.E.G.
Senior Engineering Geologist

James D. Imbrie, P.E., G.E.
Principal Geotechnical Engineer

Attachments: References
Checklist of Recommended Geotechnical Testing and Observation
Figure 1 – Vicinity Map
Figure 2 – Site and Exploration Plan
Test Pit Logs (TP-1 – TP-5)

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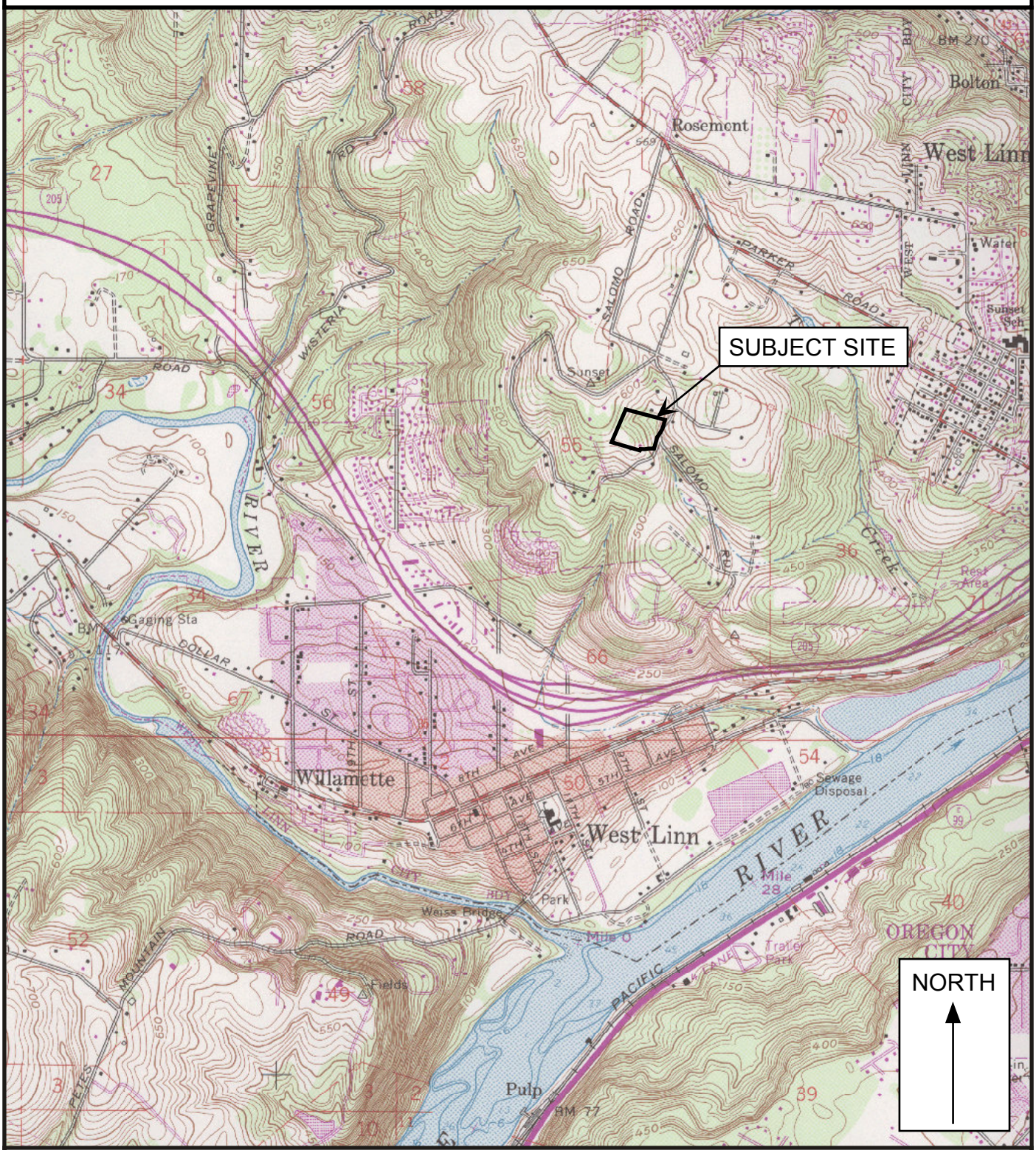
CHECKLIST OF RECOMMENDED GEOTECHNICAL TESTING AND OBSERVATION

Item No.	Procedure	Timing	By Whom	Done
1	Preconstruction meeting	Prior to beginning site work	Contractor, Developer, Civil and Geotechnical Engineers	
2	Fill removal from site or sorting and stockpiling	Prior to mass stripping	Soil Technician/ Geotechnical Engineer	
3	Stripping, aeration, and root-picking operations	During stripping	Soil Technician	
4	Compaction testing of engineered fill (90% of Modified Proctor)	During filling, tested every 2 vertical feet	Soil Technician	
5	Compaction testing of trench backfill (95% of Standard Proctor)	During backfilling, tested every 4 vertical feet for every 200 lineal feet	Soil Technician	
6	Street Subgrade Compaction (95% of Standard Proctor)	Prior to placing base course	Soil Technician	
7	Base course compaction (95% of Modified Proctor)	Prior to paving, tested every 200 lineal feet	Soil Technician	
8	AC Compaction (92% (bottom lift) / 92% (top lift) of Rice)	During paving, tested every 200 lineal feet	Soil Technician	
9	Final Geotechnical Engineer's Report	Completion of project	Geotechnical Engineer	

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
Tel: (503) 598-8445 Fax: (503) 941-9281

VICINITY MAP



Legend

Approximate Scale 1 in = 2,000 ft

Date: 12/3/2018
Drawn by: EKR

Base map: U.S. Geological Survey 7.5 minute Topographic Map Series, Canby, Oregon Quadrangle, 1961 (Photorevised 1985).

Project: 23190 Bland Circle West Linn, Oregon	Project No. 18-5084	FIGURE 1

GeoPacific Engineering, Inc.
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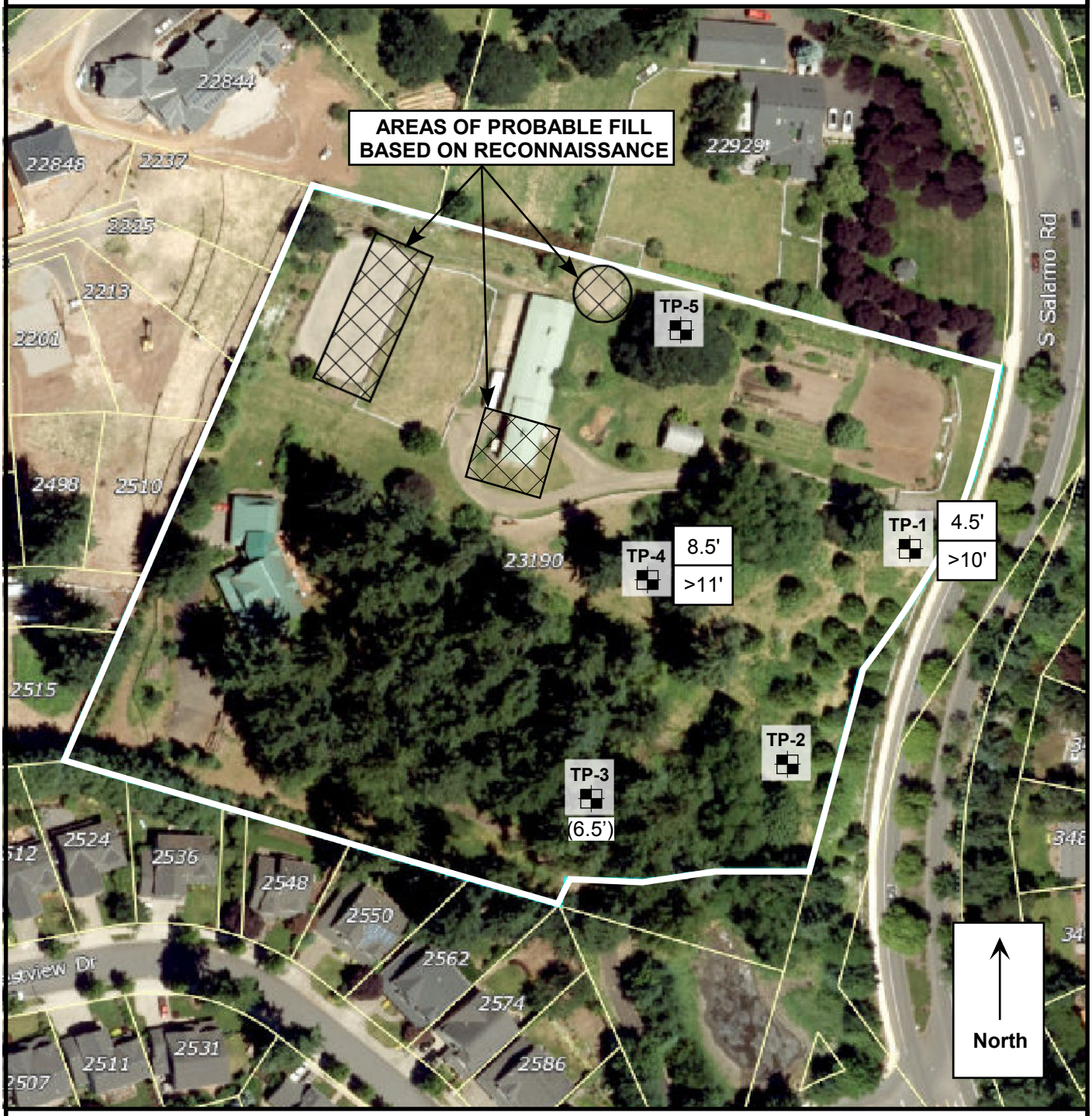
Portland, Oregon 97224
Tel: (503) 598-8445 Fax: (503) 941-9281

SITE PLAN AND EXPLORATION LOCATIONS



Legend

TP-1 — Test Pit Designation and Approximate Location

2.5'
6.5'

2.5' = Depth at Which Rock is First Encountered
6.5' = Depth of Practical Refusal on Rock
>10' = Depth of Practical Refusal Exceeds Depth of Exploration
(6.5') = Depth of Practical Refusal on Boulder

Date: 12/3/2018
Drawn by: EKR

0 — 120'
APPROXIMATE SCALE 1"=120'

Project: 23190 Bland Circle West Linn, Oregon	Project No. 18-5084	FIGURE 2

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
Tel: (503) 598-8445 Fax: (503) 941-9281

TEST PIT LOG

Project: 23190 Bland Circle
West Linn, Oregon

Project No. 18-5084

Test Pit No. **TP-1**

Depth (ft)	Pocket Penetrometer (tons/ft²)	Sample Type	In-Situ Dry Density (lb/ft³)	Moisture Content (%)	Water Bearing Zone	Material Description
						Moderately organic SILT (OL-ML), brown, light loose, fine roots throughout, moist (Topsoil Horizon)
1	1.5					Stiff to very stiff, clayey SILT (ML), light brown, micaceous, subtle orange and gray mottling, trace black staining, damp to moist (Loess)
	4.5					
2	4.5					
3	4.5					Very stiff, silty CLAY (CL) to clayey SILT (ML), with gray basalt fragments, light reddish brown, subtle orange and gray mottling, moist (Residual Soil)
4	4.5					
5						Extremely soft (R0) to soft (R2), highly weathered BASALT, trace light reddish brown silty clay to clayey silt matrix, light gray, trace black staining, vesicular, damp to moist (Columbia River Basalt Formation)
6						
7						
8						
9						
10						Test Pit Terminated at 10 Feet.
11						Note: No seepage or groundwater encountered.
12						

LEGEND

Date Excavated: 11/19/2018
Logged By: B. Rapp
Surface Elevation:

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
Tel: (503) 598-8445 Fax: (503) 941-9281

TEST PIT LOG

Project: 23190 Bland Circle
West Linn, Oregon

Project No. 18-5084

Test Pit No. **TP-2**

Depth (ft)	Pocket Penetrometer (tons/ft²)	Sample Type	In-Situ Dry Density (lb/ft³)	Moisture Content (%)	Water Bearing Zone	Material Description
						Moderately to highly organic SILT (OL-ML), brown, loose, 4-6 inch thick root mat, fine roots throughout, damp to moist (Topsoil Horizon)
1	2.5					Stiff to very stiff, clayey SILT (ML), light brown, micaceous, subtle orange and gray mottling, trace black staining, damp to moist (Loess)
	4.5					
2	4.5					
3	4.5					Very stiff, silty CLAY (CL) to clayey SILT (ML), with gray basalt fragments below 9 feet, light reddish brown, fine roots to 4 feet, subtle orange and gray mottling, moist (Residual Soil)
4	4.5					
5						
6						
7						
8						
9						
10						
11						Test Pit Terminated at 10.5 Feet.
						Note: No seepage or groundwater encountered.
12						

LEGEND

Date Excavated: 11/19/2018
Logged By: B. Rapp
Surface Elevation:

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
Tel: (503) 598-8445 Fax: (503) 941-9281

TEST PIT LOG

Project: 23190 Bland Circle
West Linn, Oregon

Project No. 18-5084

Test Pit No. **TP-3**

Depth (ft)	Pocket Penetrometer (tons/ft²)	Sample Type	In-Situ Dry Density (lb/ft³)	Moisture Content (%)	Water Bearing Zone	Material Description
						Moderately organic SILT (OL-ML), brown, loose, fine roots throughout, 5 inch thick root mat, damp to moist (Topsoil Horizon)
1	2.5					Stiff to very stiff, clayey SILT (ML), light brown, micaceous, subtle orange and gray mottling, trace black staining, trace fine roots, damp to moist (Loess)
	4.5					
2	4.5					
3	4.5					Very stiff, silty CLAY (CL) to clayey SILT (ML), with large gray basalt boulder at 5 feet, light reddish brown, trace fine roots to 3 feet, subtle orange and gray mottling, moist (Residual Soil)
4	4.5					
5						
6						
7						Practical Refusal on Medium Hard (R3) Boulder at 6.5 Feet.
8						Note: No seepage or groundwater encountered.
9						
10						
11						
12						

LEGEND

Date Excavated: 11/19/2018
Logged By: B. Rapp
Surface Elevation:

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
Tel: (503) 598-8445 Fax: (503) 941-9281

TEST PIT LOG

Project: 23190 Bland Circle
West Linn, Oregon

Project No. 18-5084

Test Pit No. **TP-4**

Depth (ft)	Pocket Penetrometer (tons/ft²)	Sample Type	In-Situ Dry Density (lb/ft³)	Moisture Content (%)	Water Bearing Zone	Material Description
						Moderately organic SILT (OL-ML), dark brown, loose, fine roots throughout, moist (Topsoil Horizon)
1	1.5					Stiff to very stiff, clayey SILT (ML), light brown, micaceous, subtle orange and gray mottling, trace black staining, trace roots to 2.5 feet, damp (Loess)
	4.5					
2	4.5					
3	4.5					
4	4.5					Very stiff, silty CLAY (CL) to clayey SILT (ML), trace subrounded to subangular gray basalt fragments, light reddish brown, subtle orange and gray mottling, moist (Residual Soil)
5						
6						
7						
8						
9						Very soft (R1) to soft (R2), weathered BASALT, trace light reddish brown silty clay to clayey silt matrix, light gray, trace black staining, vesicular, moist to wet (Columbia River Basalt Formation)
10						
11						Test Pit Terminated at 10.5 Feet.
12						Note: Groundwater seepage encountered at 7.5 feet. Discharge visually estimated at less than 1/2 gallon per minute.

LEGEND

Date Excavated: 11/19/2018
Logged By: B. Rapp
Surface Elevation:

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
Tel: (503) 598-8445 Fax: (503) 941-9281

TEST PIT LOG

Project: 23190 Bland Circle
West Linn, Oregon

Project No. 18-5084

Test Pit No. **TP-5**

Depth (ft)	Pocket Penetrometer (tons/ft²)	Sample Type	In-Situ Dry Density (lb/ft³)	Moisture Content (%)	Water Bearing Zone	Material Description
						Moderately organic SILT (OL-ML), dark brown, loose, fine roots throughout, 4 inch thick root mat, moist (Topsoil Horizon)
1	2.0					
	2.0					Stiff to very stiff, clayey SILT (ML), light brown, micaceous, subtle orange and gray mottling, trace black staining, trace roots to 2 feet, moist (Loess)
2	3.0					
3	4.5					
4	4.5					
5						Very stiff, silty CLAY (CL) to clayey SILT (ML), light reddish brown, subtle orange and gray mottling, trace black staining, moist (Residual Soil)
6						
7						
8						
9						
10						Test Pit Terminated at 9.5 Feet.
11						Note: Groundwater seepage encountered at 7.5 feet. Discharge visually estimated at less than 1/2 gallon per minute.
12						

LEGEND

Date Excavated: 11/19/2018
Logged By: B. Rapp
Surface Elevation:

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.

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.

City of West Linn

PRE-APPLICATION CONFERENCE MEETING
SUMMARY NOTES

November 15, 2018

SUBJECT:	Proposed 24-lot subdivision at 23190 Bland Circle
FILE:	PA-18-34
ATTENDEES:	Applicant: Steve Miller & Eric Evans (Emerio Designs), Mike Grubber & JJ Portlock (Toll Brothers) Staff: Darren Wyss, (Planning); Erich Lais (Engineering) Public: Margot Kelly, Ed Schwarz, David Sloop, Drucilla Sloop

---

The following is a summary of the meeting discussion provided to you from staff meeting notes. Additional information may be provided to address any "follow-up" items identified during the meeting. These comments are PRELIMINARY in nature. Please contact the Planning Department with any questions regarding approval criteria, submittal requirements, or any other planning-related items. Please note disclaimer statement below.

Project Details

Site Address:	23190 Bland Circle
Tax Not No.:	2S 1E 35AB tax lot 9100
Site Area:	6.47 acres (281,866 sq. ft.)
Neighborhood:	Savanna Oaks
Comp. Plan:	Low Density Residential
Zoning:	R-7: Single-Family Residential, Detached and Attached
Environmental Overlays:	Water Resource Area, Habitat Conservation Area
Applicable CDC Chapters:	Chapter 12, R-7 Zoning; Chapter 28, Willamette and Tualatin River Protection; Chapter 32, Water Resource Area Protection; Chapter 48, Access, Egress, and Circulation, Chapter 85, General Provisions, and Chapter 92, Required Improvements

Summary

The applicant proposes to create a 24-lot subdivision from one parcel currently developed with a single-family home and two accessory structures, for the purpose of constructing detached-single-family homes. This use is permitted outright and the 24 proposed lots meet minimum size requirements. Satter Street will enter the property from the west and either connect directly to Salamo Road or stub out at the north property line for future extension. All public streets will be built to City-standards. Contact TVF&R for private drive clearance/turnaround requirements. A regional stormwater facility is located in the southeast corner of the property. An assessment will be necessary to determine wetland status and existence of a creek. Any required riparian buffer width is found in CDC Chapter 32. The proposed site also contains a Habitat Conservation Area (HCA). CDC Chapter 28 addresses the HCAs and the applicant could apply for re-designation as allowed per the chapter. A significant tree inventory is required. Please contact the City Arborist to coordinate a significance determination (Mike Perkins 503-742-6046 or mperkins@westlinnoregon.gov).

There is an existing water, sanitary sewer, and stormwater line in Satter Street. An existing sanitary sewer and stormwater line is located in an easement on the south edge of the property.

Public Comments

Like to see as many trees preserved as possible; Interested in protection of streams/wetlands; Prefer a 32 ft. wide street, but 28 ft. is appreciated; Would not want Satter St. going straight to Salamo Rd.; Concern about construction traffic and noise; Request to tell homebuyers they have maintenance responsible for private access drives.

Engineering Comments: contact Erich Lais at elais@westlinnoregon.gov or 503-722-3434

Tualatin Valley Fire & Rescue Comments: contact Jason Arn at jason.arn@tvfr.com or 503-259-1500

Process

The proposal will require an application for a Subdivision and potentially a Water Resource Area Permit and Habitat Conservation Area Permit. All three can be processed at the same time during a public hearing before the Planning Commission. Please address the submittal requirements and responses to the criteria of CDC Chapter 85 and associated/referenced regulations in Chapters 12, 28, 32, 48, and 92. N/A is not an acceptable response to the approval criteria.

Submittal requirements may be waived by the Planning Manager following a request by the applicant. Such a request must identify the specific grounds for the waiver and must be submitted to the Planning Manager (or designee) in letter form (email is acceptable).

A neighborhood meeting is required per 99.038.

The applicant was advised of the expedited process as outlined in HB 3223.

The deposit for a subdivision is $4,200 plus $200 per lot. There is a $500 inspection fee for the subdivision. Water Resource Area Permit is a $1,850 deposit. The Habitat Conservation Area Permit requires a $1,700 deposit. The final subdivision plat fee is $2,000.

You may access the West Linn Community Development Code (CDC) online at http://westlinnoregon.gov/cdc.

Once the application and deposit/fee are submitted, the City has 30 days to determine if the application is complete or not. If the application is not complete, the applicant has 180 days to make it complete or provide written notice to staff that no other information will be provided.

Once the submittal is declared complete, staff will prepare a staff report and schedule a public hearing date for the Planning Commission review. There is a 14-day window following the decision to appeal the decision to City Council. If no appeal has been received by the close of the appeal period, the Planning Commission's decision is final and the applicant may move forward with the development of their proposal.

Pre-application notes are void after 18 months. After 18 months with no application approved or in process, a new pre-application conference is required.

Typical land use applications can take 6-10 months from beginning to end.

DISCLAIMER: This summary discussion covers issues identified to date. It does not imply that these are the only issues. The burden of proof is on the applicant to demonstrate that all approval criteria have been met. These notes do not constitute an endorsement of the proposed application ***or provide any assurance of potential outcomes***. Staff responses are based on limited material presented at this pre-application meeting. New issues, requirements, etc. could emerge as the application is developed. Pre-application notes are void after 18 months. After 18 months with no application approved or in process, a new pre-application conference is required. Any changes to the CDC standards may require a different design or submittal.

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

REGISTERED PROFESSIONAL ENGINEER
54665
OREGON
JULY 11, 2006
ERIC DANIEL EVANS
EXPIRES: 12 31 19

Prepared For:

Toll Brothers
4949 Meadows Road, Suite 420
Lake Oswego, OR 97035
jportlock@tollbrothers.com

Prepared By:
Eric Evans, PE
Emerio Design, LLC
6445 SW Fallbrook Pl, Suite 100
Beaverton, Oregon 97008
eric@emeriodesign.com
(503) 746-8812

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APPENDIX A
(1) Vicinity Map

APPENDIX B
(1) Soils Maps–"Soils Survey for Clackamas County"

APPENDIX C
(1) Basin Area Tabulated Data
(2) Swale Sizing Spreadsheet
(3) HydroCAD Output – Detention Stormwater Events

APPENDIX D
(1) Pre-Developed Site Map
(2) Post-Developed Site Map

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.

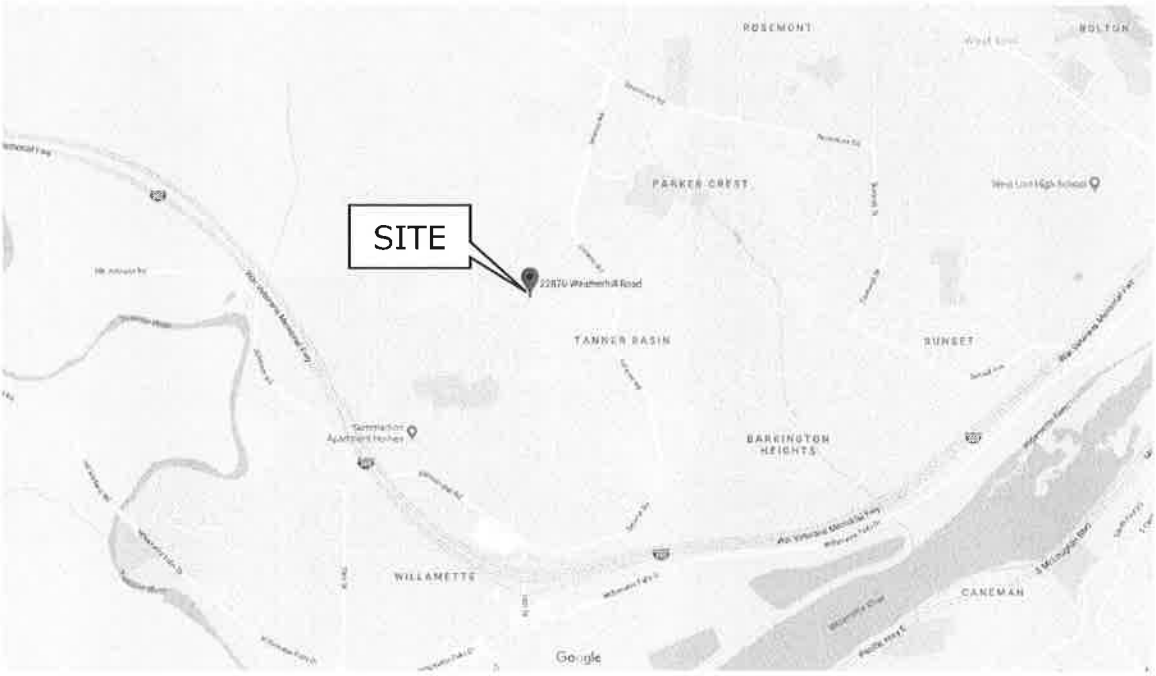
Curve numbers utilized in the design were 98 for impervious areas, 86 for pervious areas.

Engineering Conclusions:

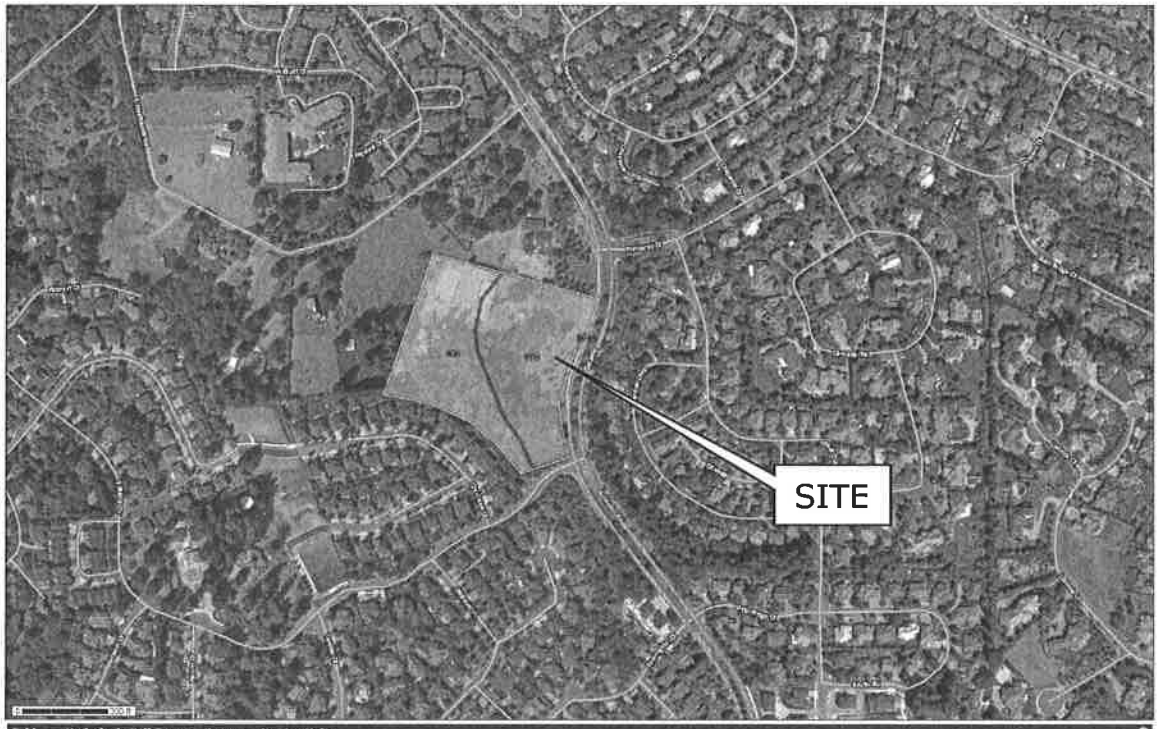
The design of the proposed stormwater management facilities satisfies the pollution reduction, conveyance and detention standards required by the 2010 City of West Linn Public Works Design Standards.

Appendix A:

Appendix A(1)
Vicinity Map



Appendix B:



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

Water Quality Area

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

Water Quality Flow

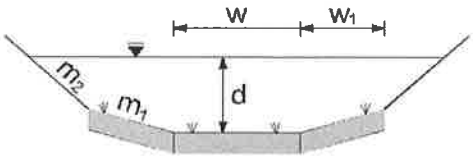
0.19 in/hr for flow rate based facilities

HydroCAD V.10

= 0.855 x 0.19 in x 4.94 (ac)

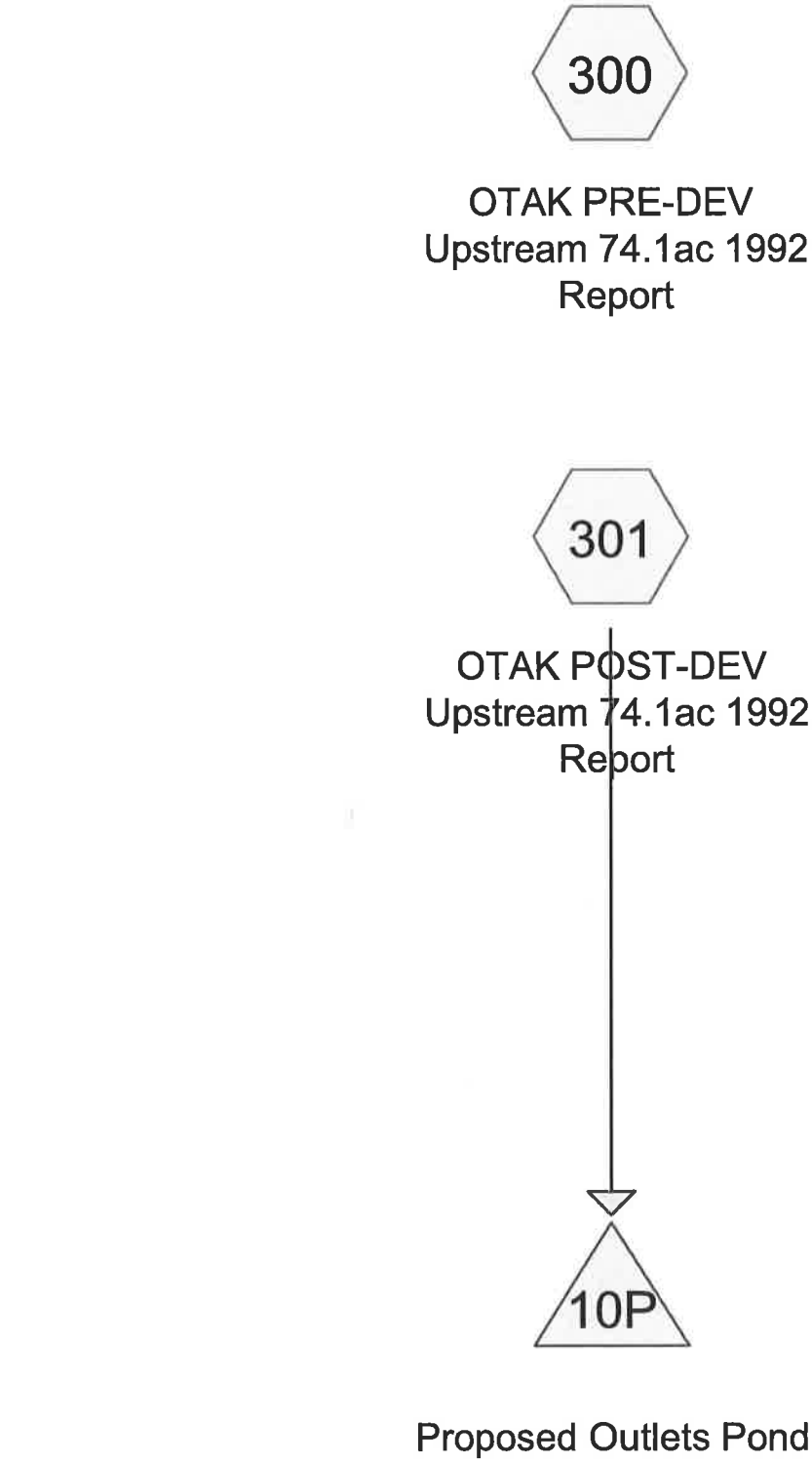
= 0.802 cfs

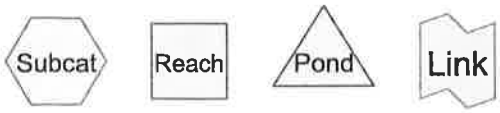
Biofilter Swale



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 ✓			





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

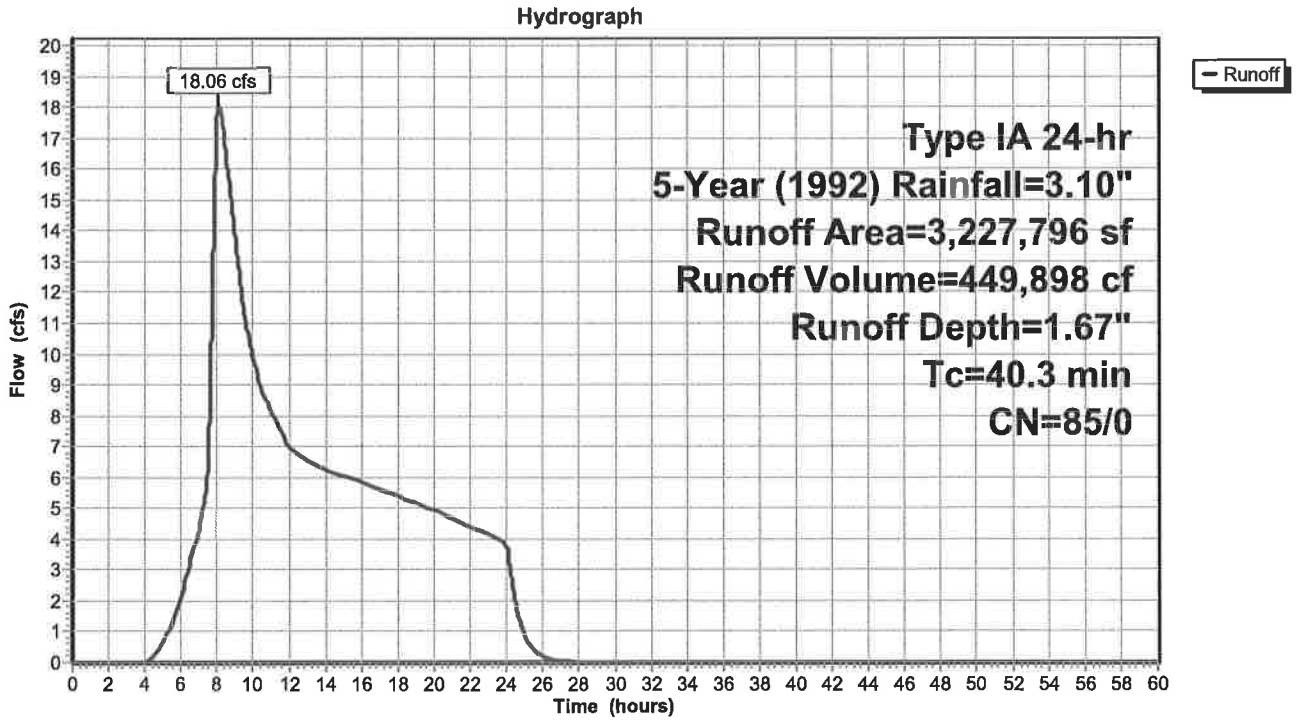
Runoff = 18.06 cfs @ 8.12 hrs, Volume= 449,898 cf, Depth= 1.67"

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

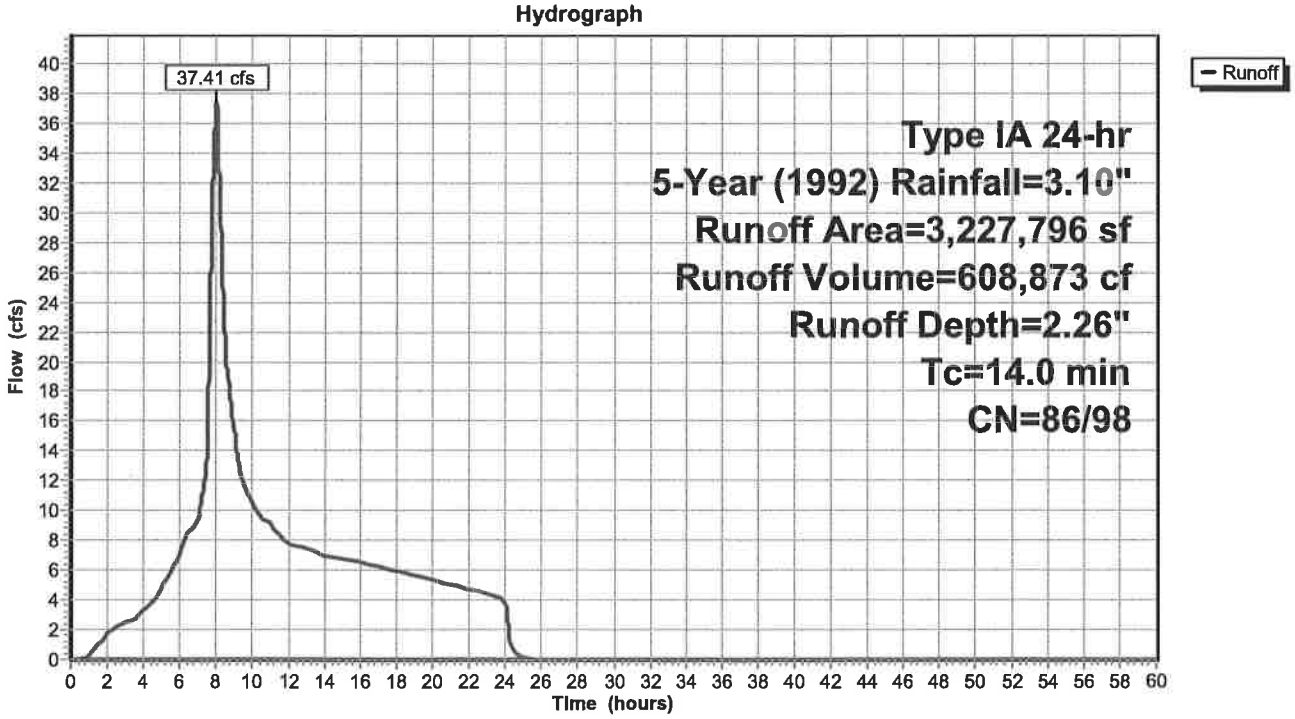
Runoff = 37.41 cfs @ 8.00 hrs, Volume= 608,873 cf, Depth= 2.26"

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)

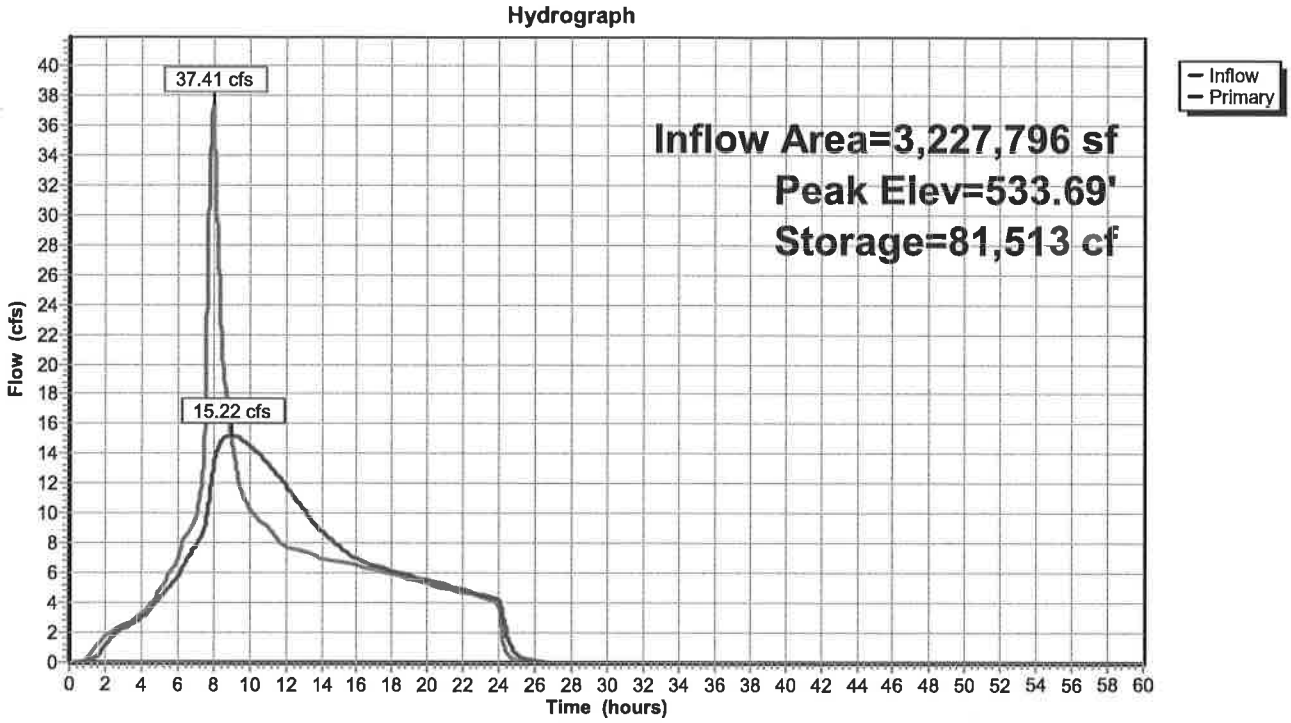
Volume	Invert	Avail.Storage	Storage Description
#1	528.00'	228,868 cf	**Custom Stage Data** Listed below

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

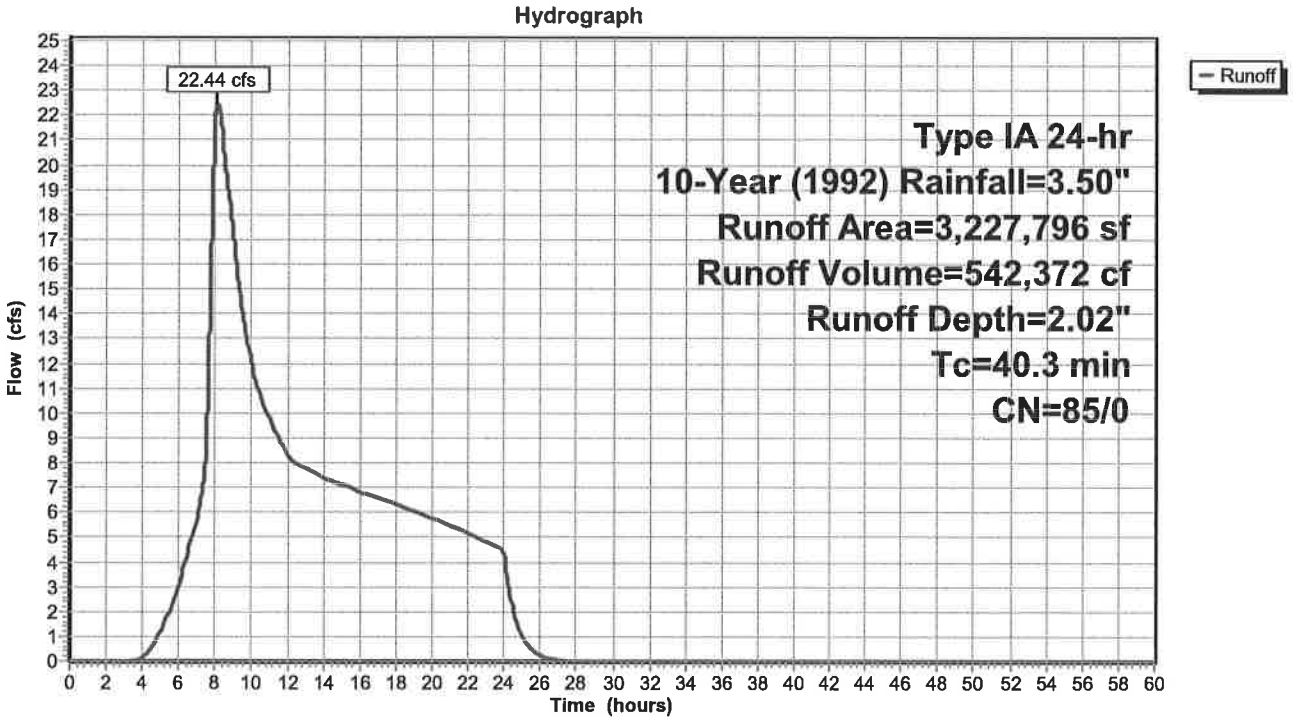
Runoff = 22.44 cfs @ 8.10 hrs, Volume= 542,372 cf, Depth= 2.02"

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

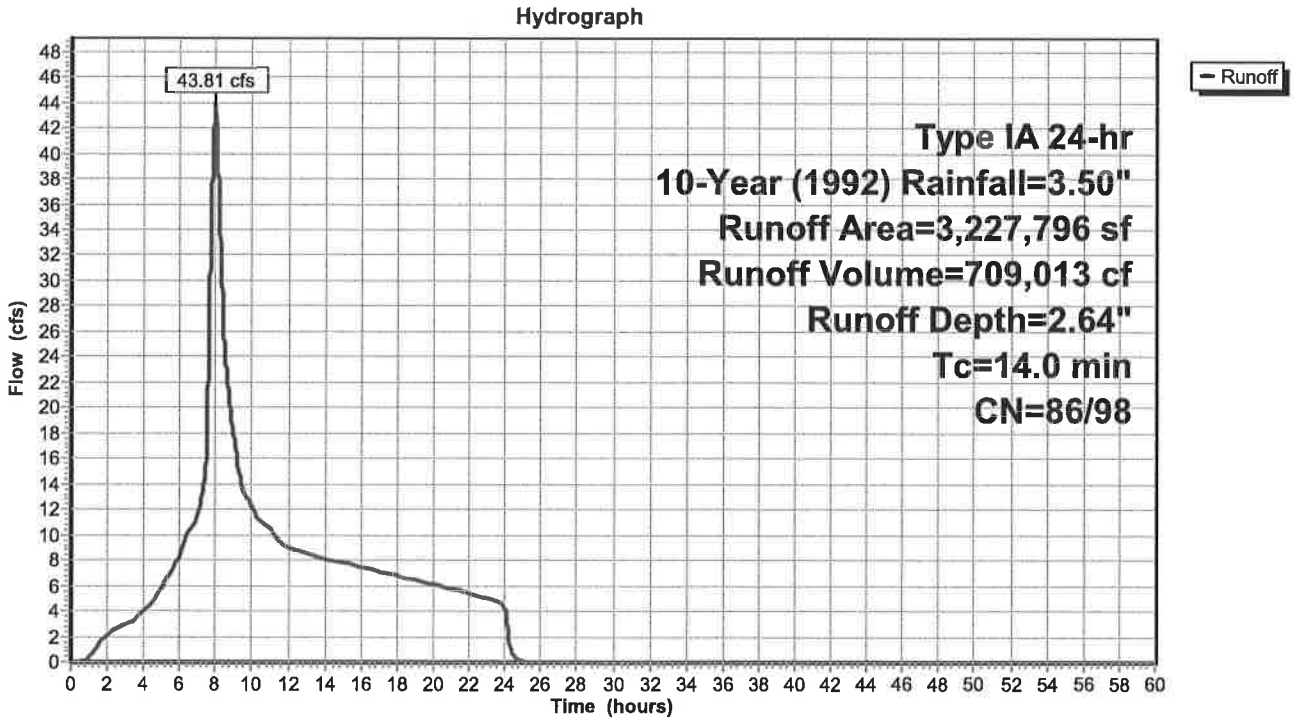
Runoff = 43.81 cfs @ 8.00 hrs, Volume= 709,013 cf, Depth= 2.64"

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)

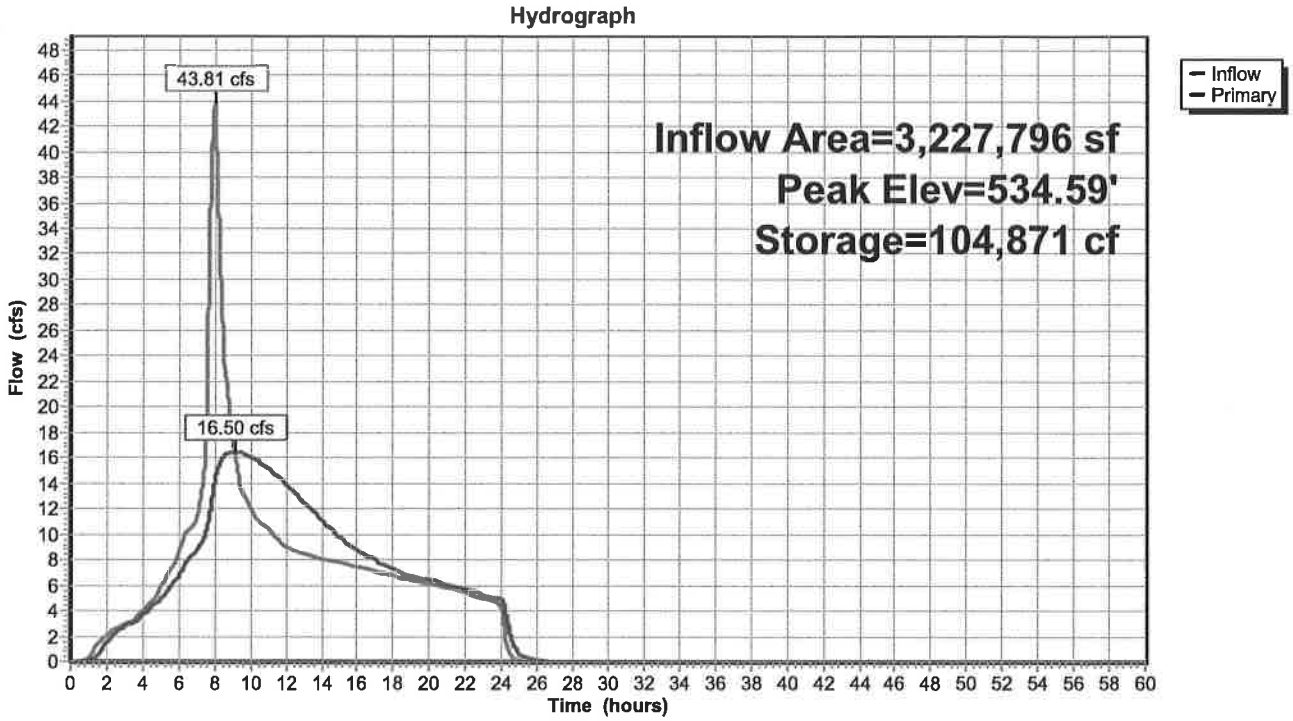
Volume	Invert	Avail.Storage	Storage Description
#1	528.00'	228,868 cf	**Custom Stage Data** Listed below

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

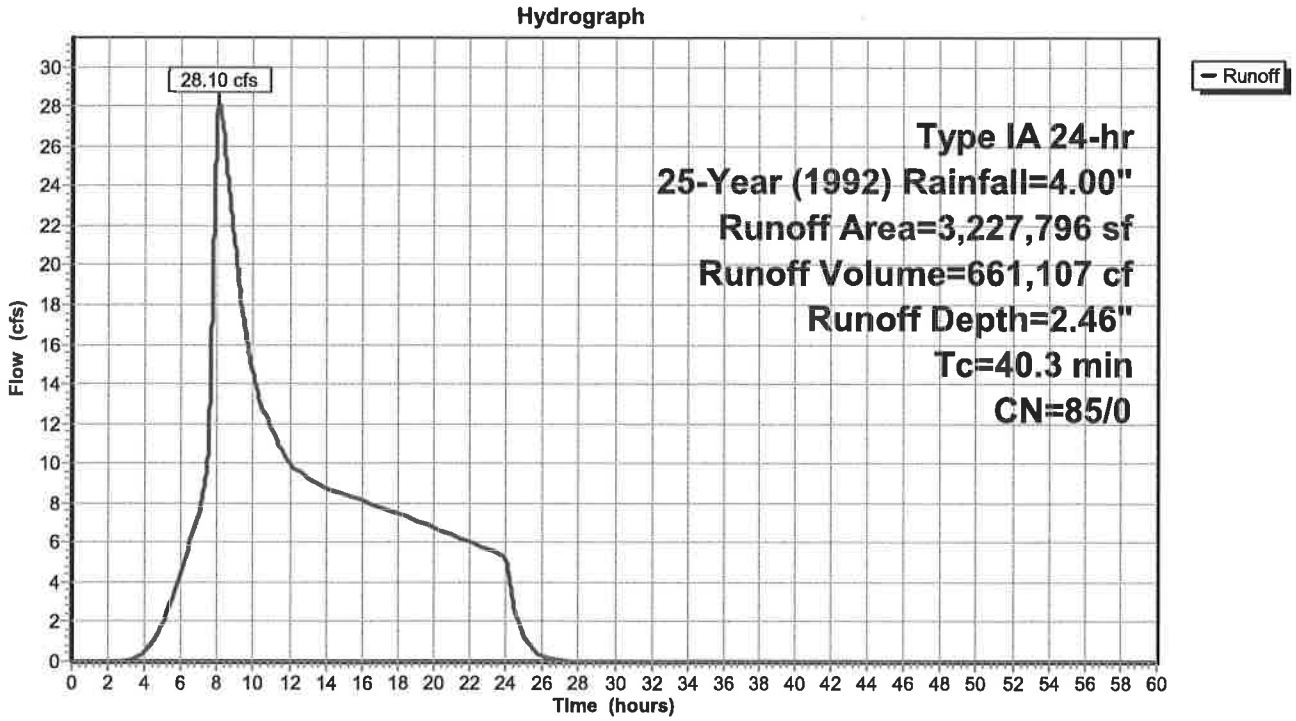
Runoff = 28.10 cfs @ 8.09 hrs, Volume= 661,107 cf, Depth= 2.46"

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

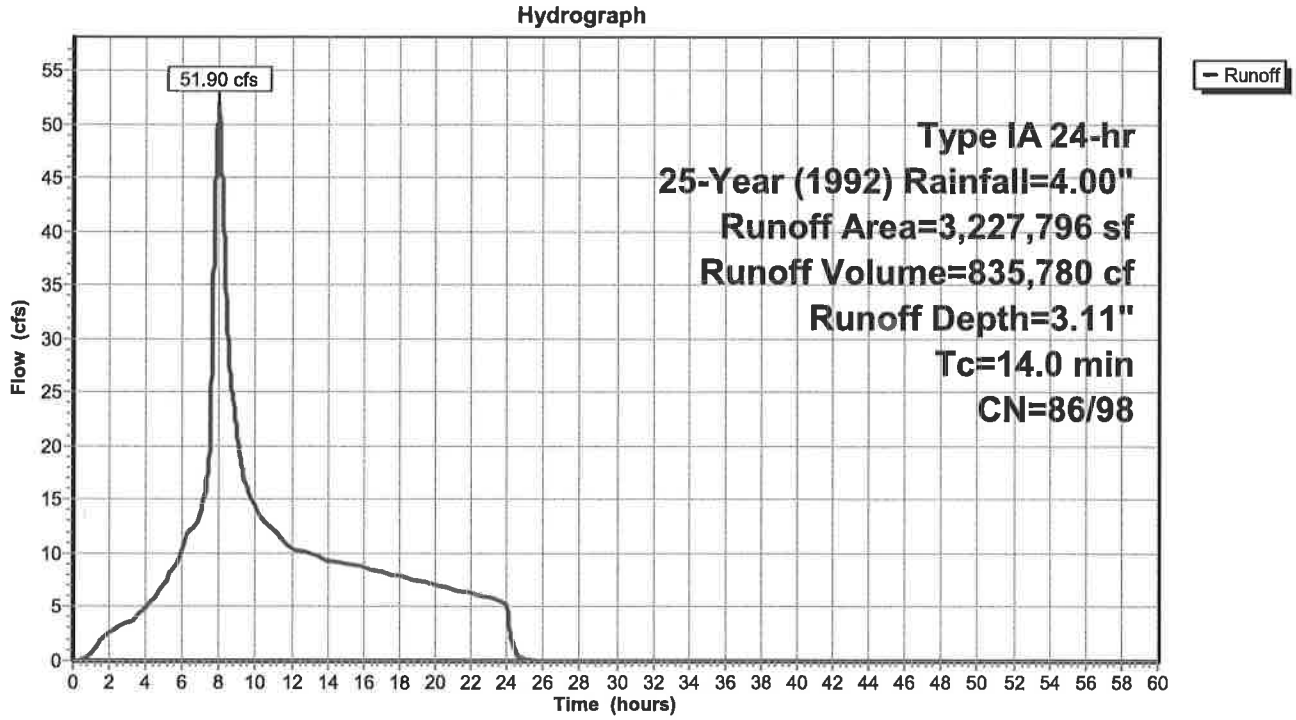
Runoff = 51.90 cfs @ 8.00 hrs, Volume= 835,780 cf, Depth= 3.11"

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)

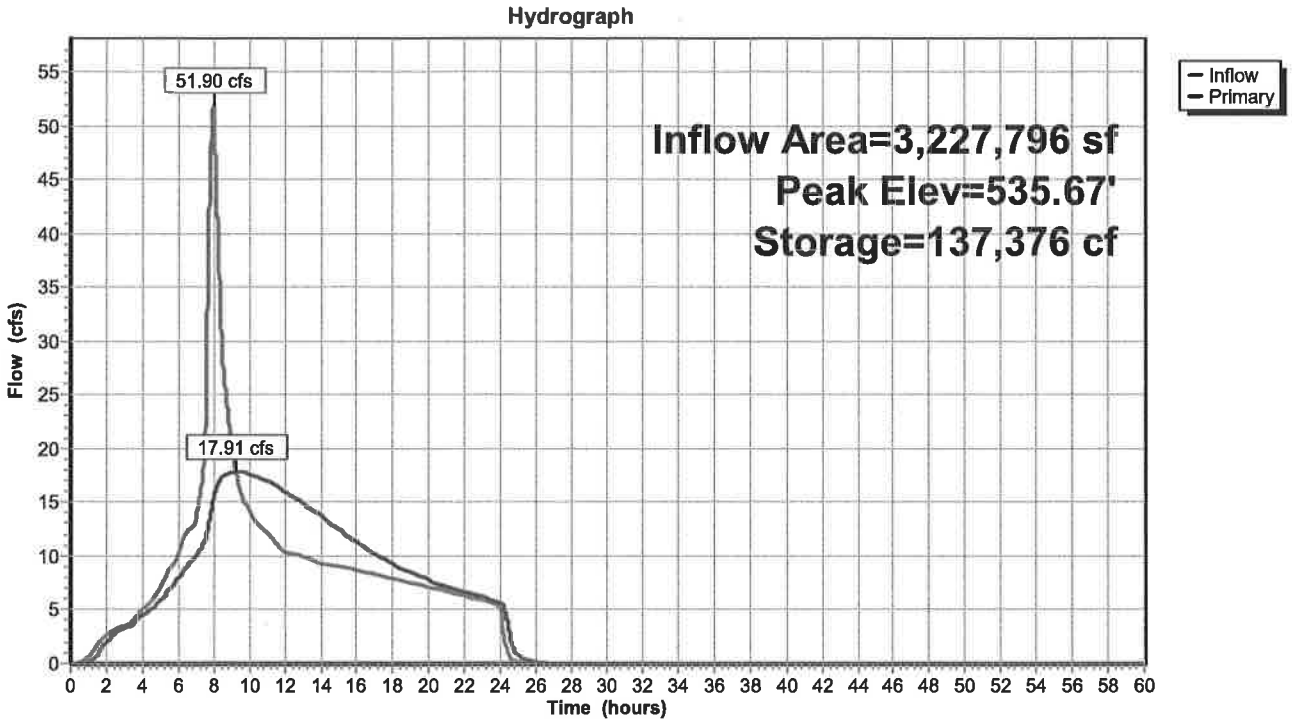
Volume	Invert	Avail.Storage	Storage Description
#1	528.00'	228,868 cf	**Custom Stage Data** Listed below

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

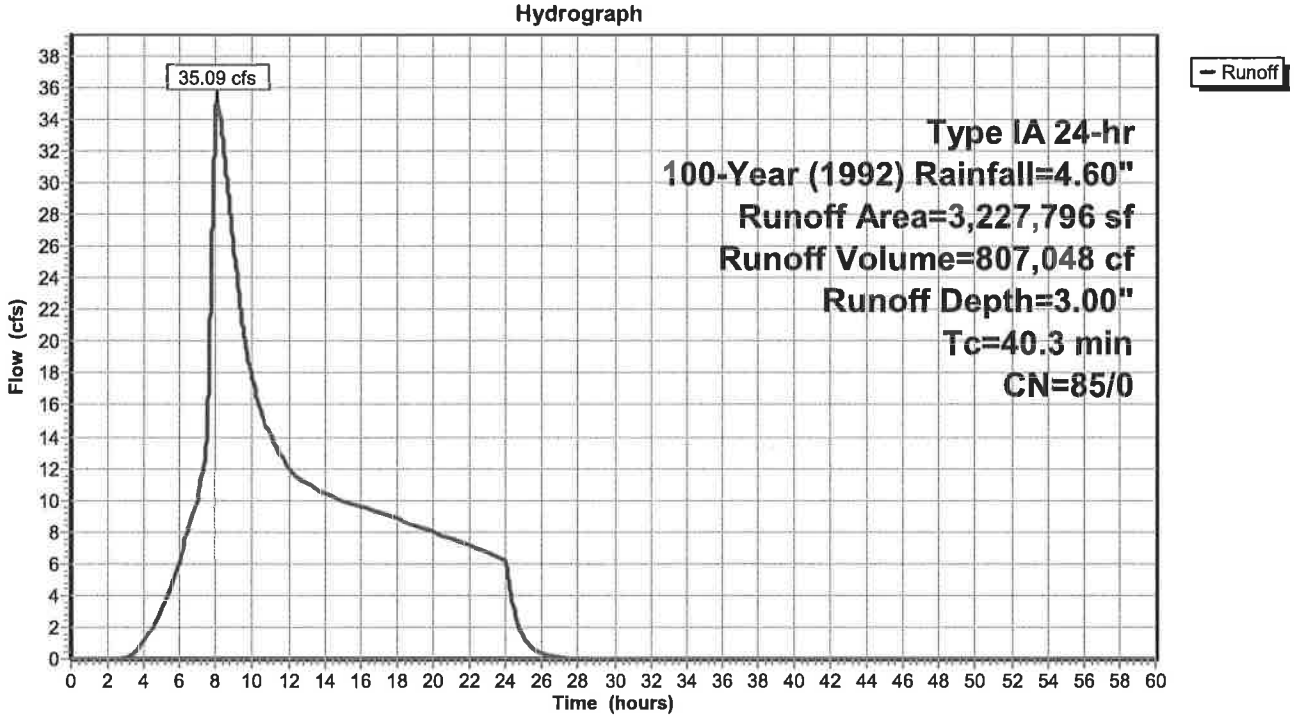
Runoff = 35.09 cfs @ 8.07 hrs, Volume= 807,048 cf, Depth= 3.00"

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

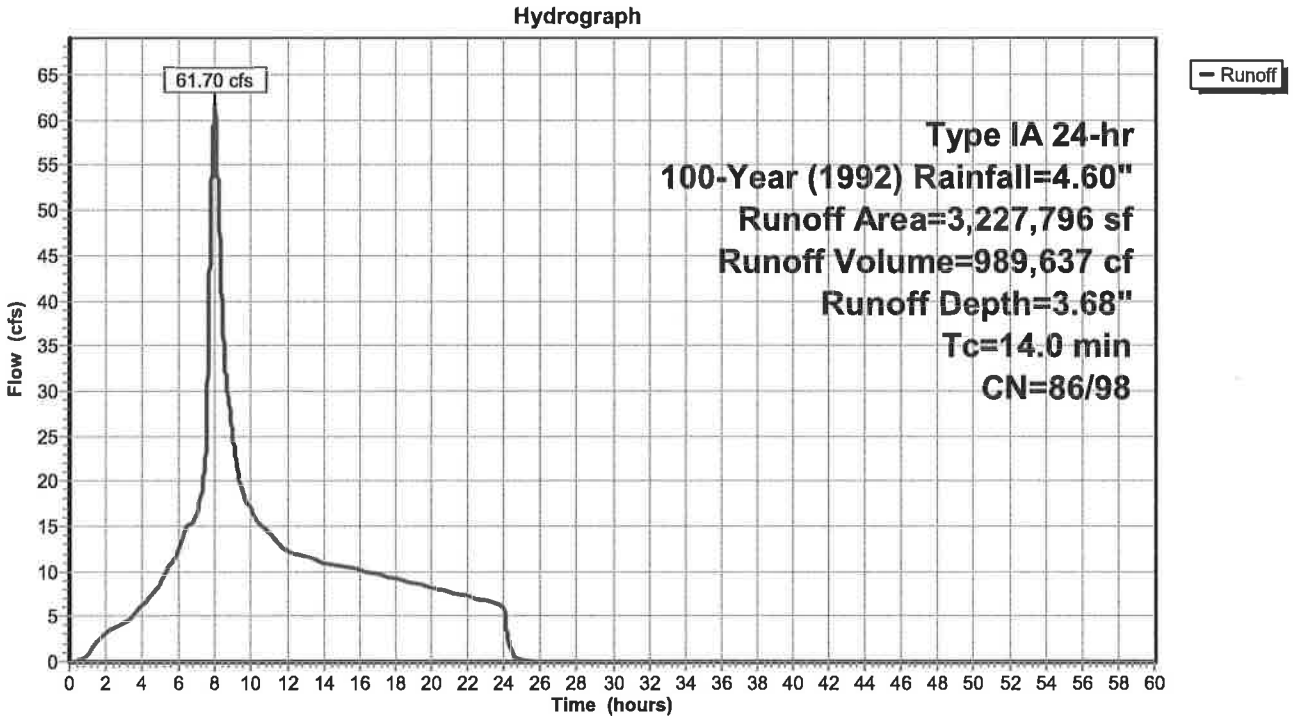
Runoff = 61.70 cfs @ 8.00 hrs, Volume= 989,637 cf, Depth= 3.68"

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)

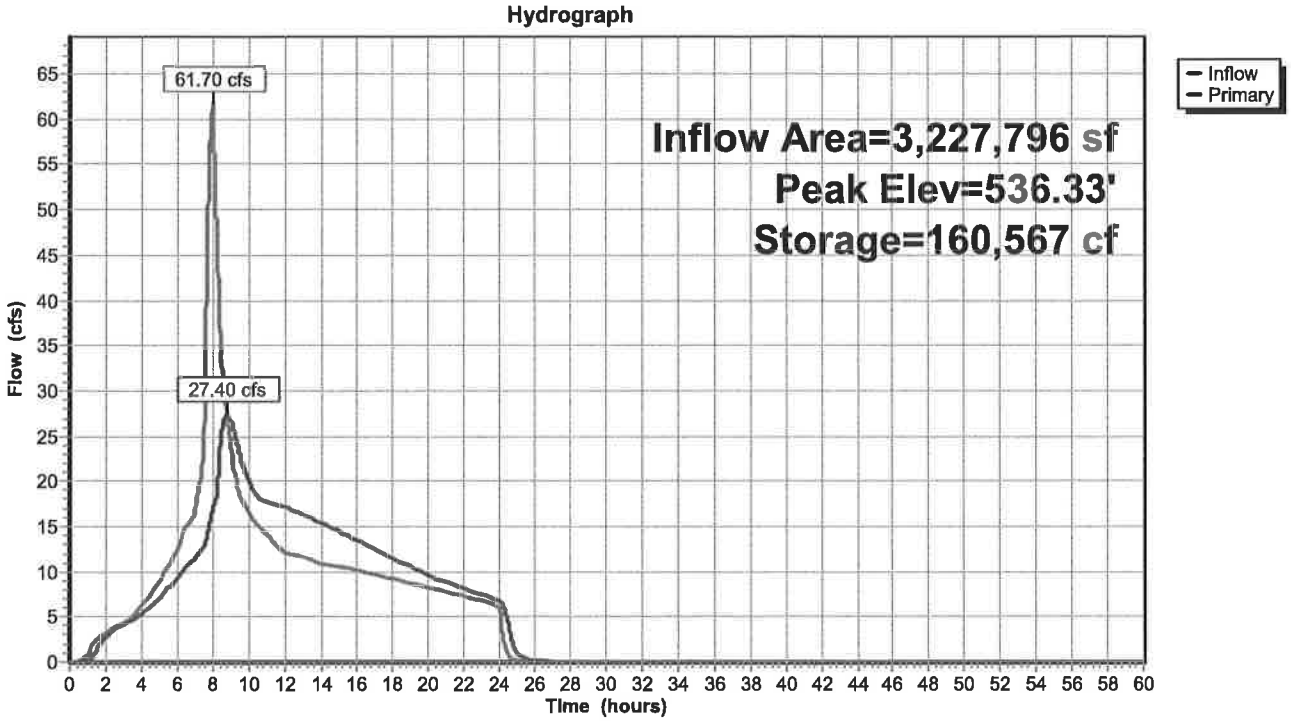
Volume	Invert	Avail.Storage	Storage Description
#1	528.00'	228,868 cf	**Custom Stage Data** Listed below

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:

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

PRE-DEVELOPED STORM
WATER BASINS

REVISIONS

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

EMERIO Design
8445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
PH: (503) 644-0611
FAX: (503) 639-2542
www.emerio.com

SHEET 2 OF

FILE: P:\0640-001 23190 S Bland Cir\dwgs\civil\0640-001BMR1 Layout PRE-DEVELOPED.dwg, Plot Date: 2/11/2019 4:14 PM, By: Jack Ayers

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

POST-DEVELOPED STORM
WATER BASINS

REVISIONS

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

EMERIO Design
8415 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 639-3731
FAX: (503) 639-8692

SHEET
2

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. <u>Traffic Impact Analysis (TIA).</u>

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

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

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

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

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

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

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

C. <u>Grading</u>.

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

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

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

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

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

b. Assessment of engineering geological conditions and factors;

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

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

RESPONSE: As part of the application materials, the applicant has provided a grading and erosion control plan (see Sheet 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. <u>Sewer</u>.

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. ***<u>Alignment.</u> 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. ***<u>Future extension of streets.</u> 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. ***<u>Intersection angles.</u> 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. ***<u>Additional right-of-way for existing streets.</u> 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. ***<u>Cul-de-sacs</u>.***

    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. <u>Extension of streets to subdivisions</u>. 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. <u>Local and minor collector streets</u> 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. <u>Monuments</u>. 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. <u>Street trees</u>. 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. <u>Joint mailbox facilities</u> 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

REGISTERED PROFESSIONAL ENGINEER
54665
OREGON
JULY 11, 2006
ERIC DANIEL EVANS
EXPIRES: 12 31 19

Prepared For:

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(503) 746-8812

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(3) HydroCAD Output – Detention Stormwater Events

APPENDIX D
(1) Pre-Developed Site Map
(2) Post-Developed Site Map

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.

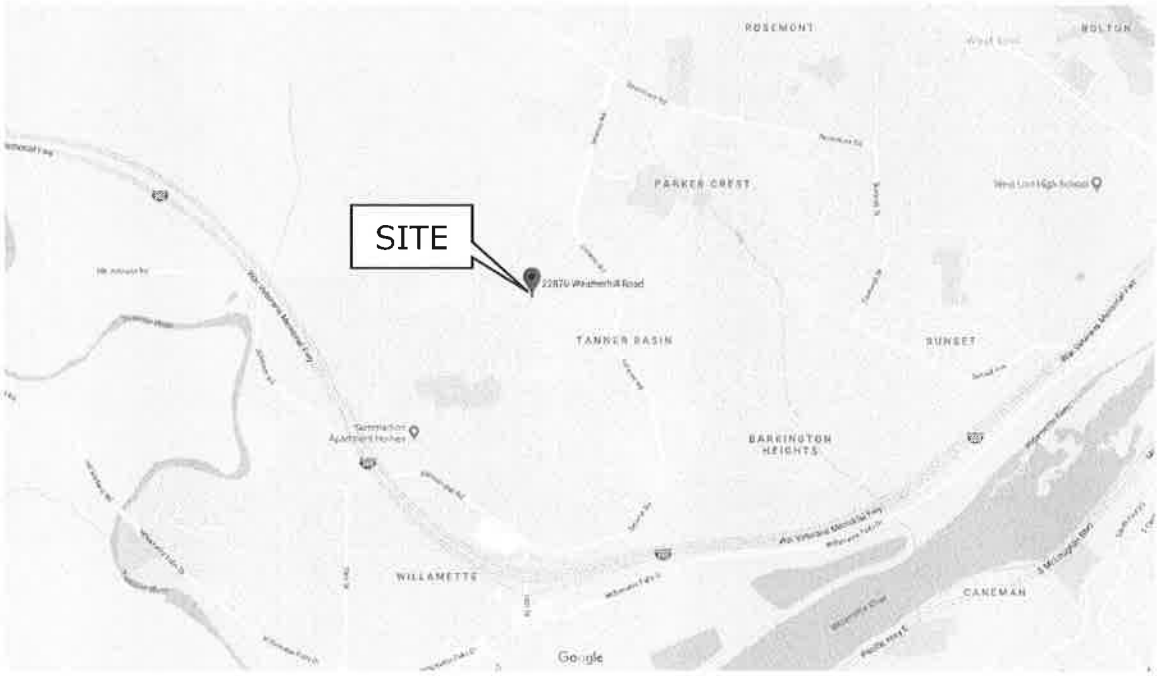
Curve numbers utilized in the design were 98 for impervious areas, 86 for pervious areas.

Engineering Conclusions:

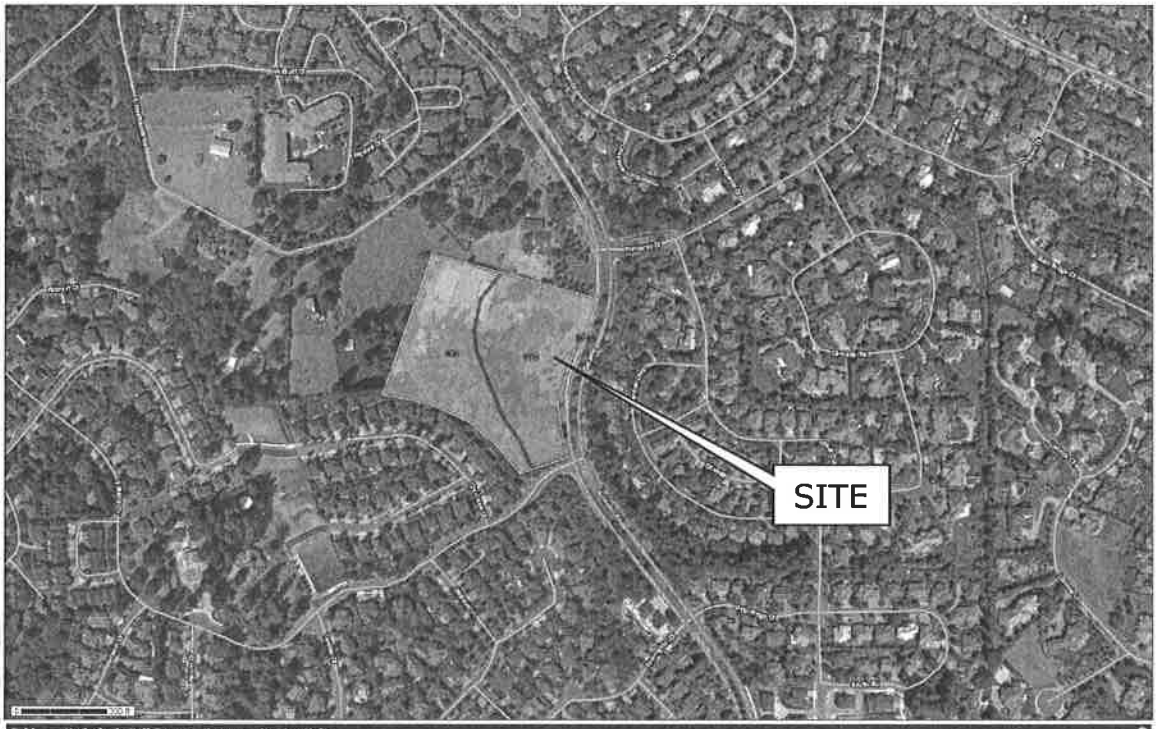
The design of the proposed stormwater management facilities satisfies the pollution reduction, conveyance and detention standards required by the 2010 City of West Linn Public Works Design Standards.

Appendix A:

Appendix A(1)
Vicinity Map



Appendix B:



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

Water Quality Area

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

Water Quality Flow

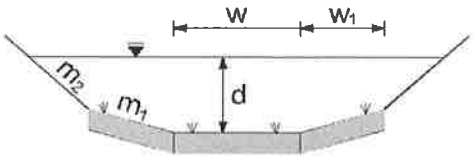
0.19 in/hr for flow rate based facilities

HydroCAD V.10

= 0.855 x 0.19 in x 4.94 (ac)

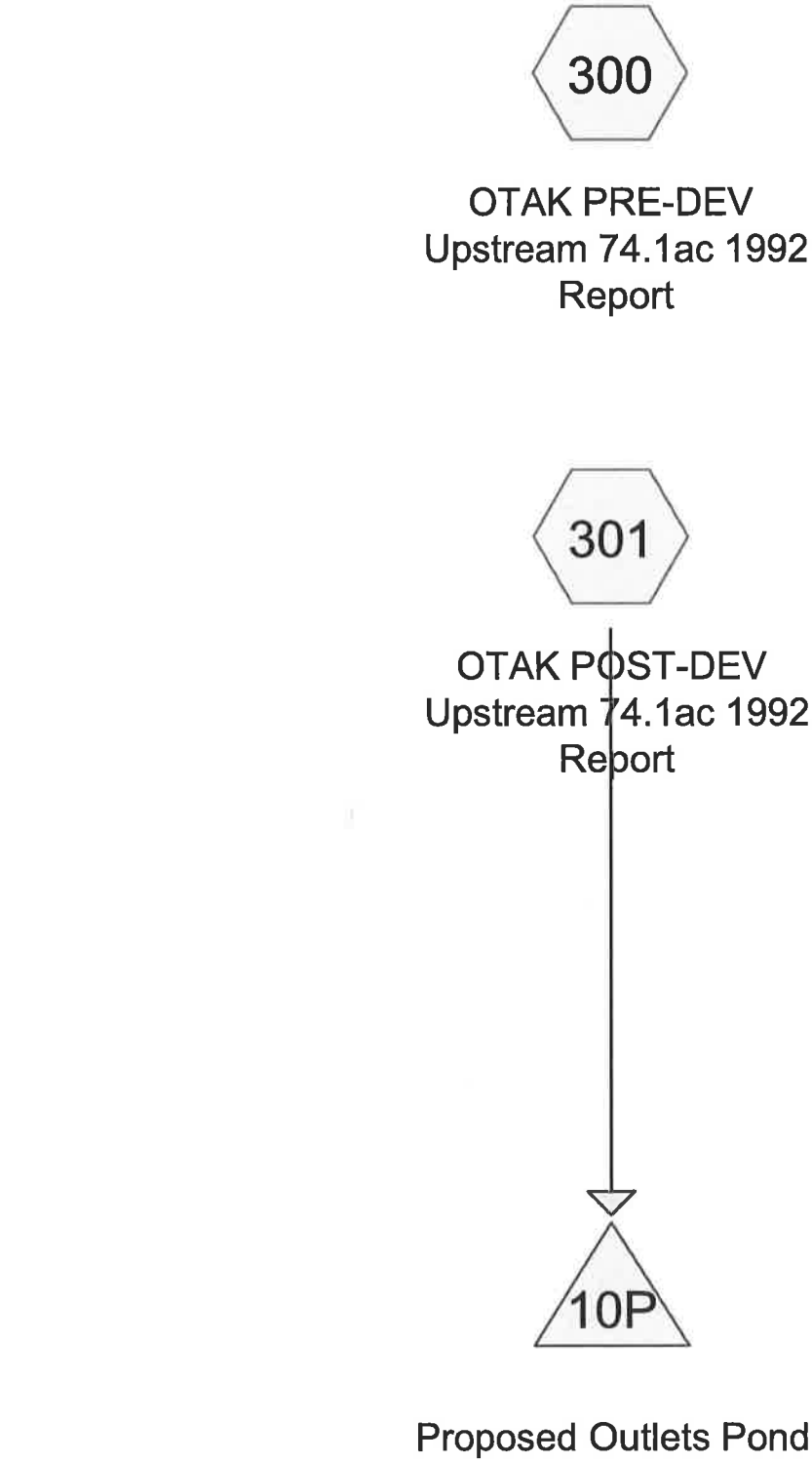
= 0.802 cfs

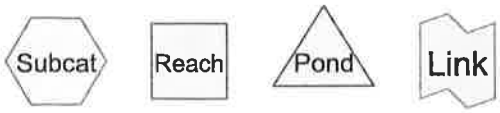
Biofilter Swale



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 ✓			





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

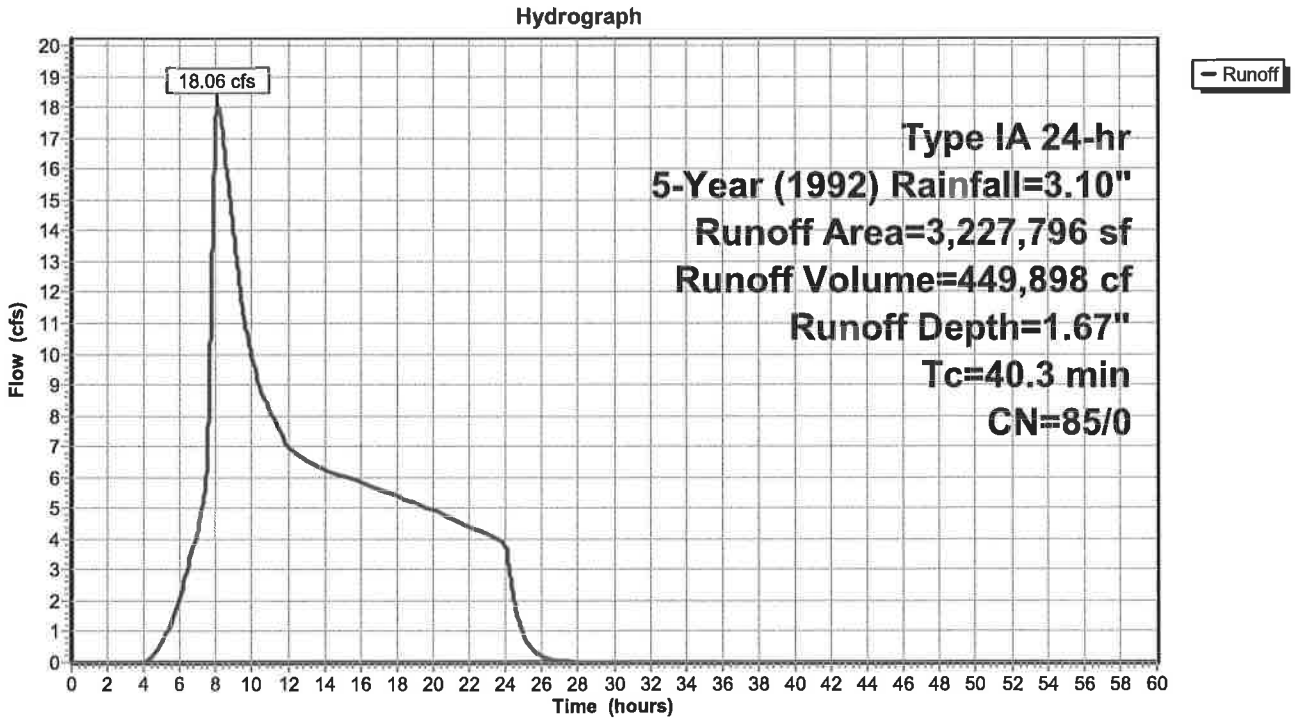
Runoff = 18.06 cfs @ 8.12 hrs, Volume= 449,898 cf, Depth= 1.67"

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

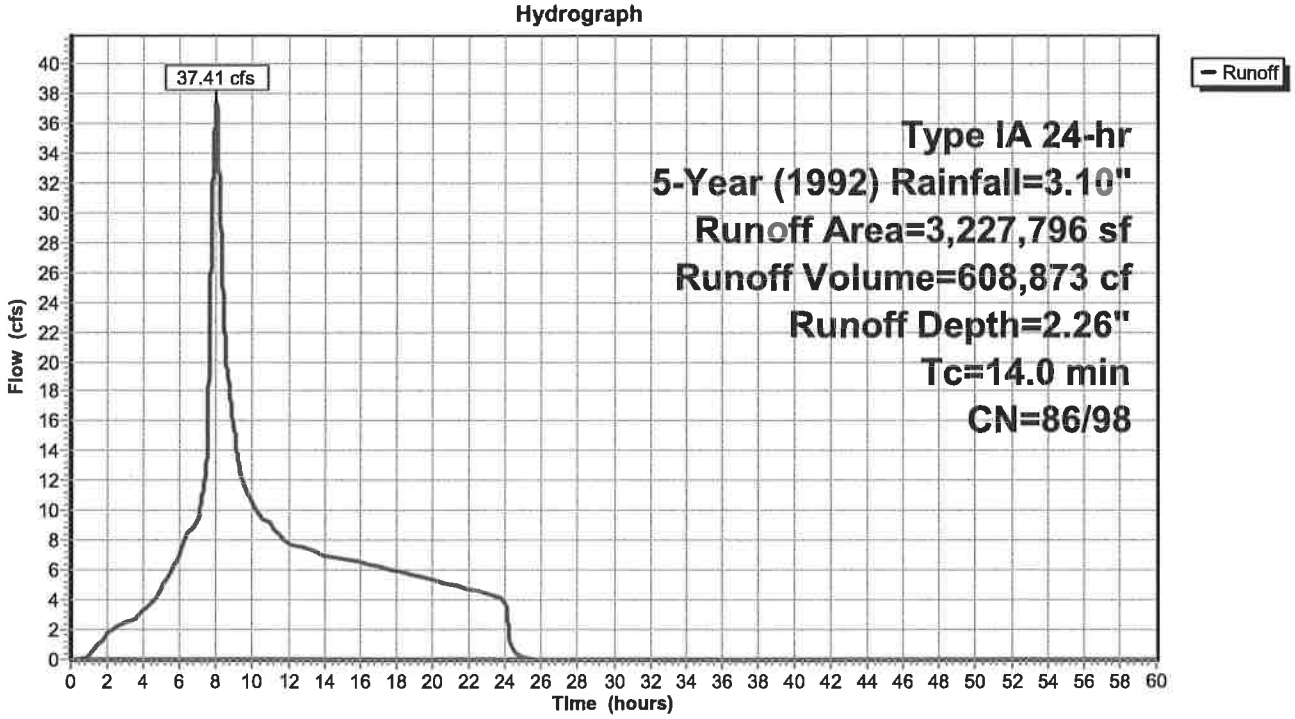
Runoff = 37.41 cfs @ 8.00 hrs, Volume= 608,873 cf, Depth= 2.26"

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)

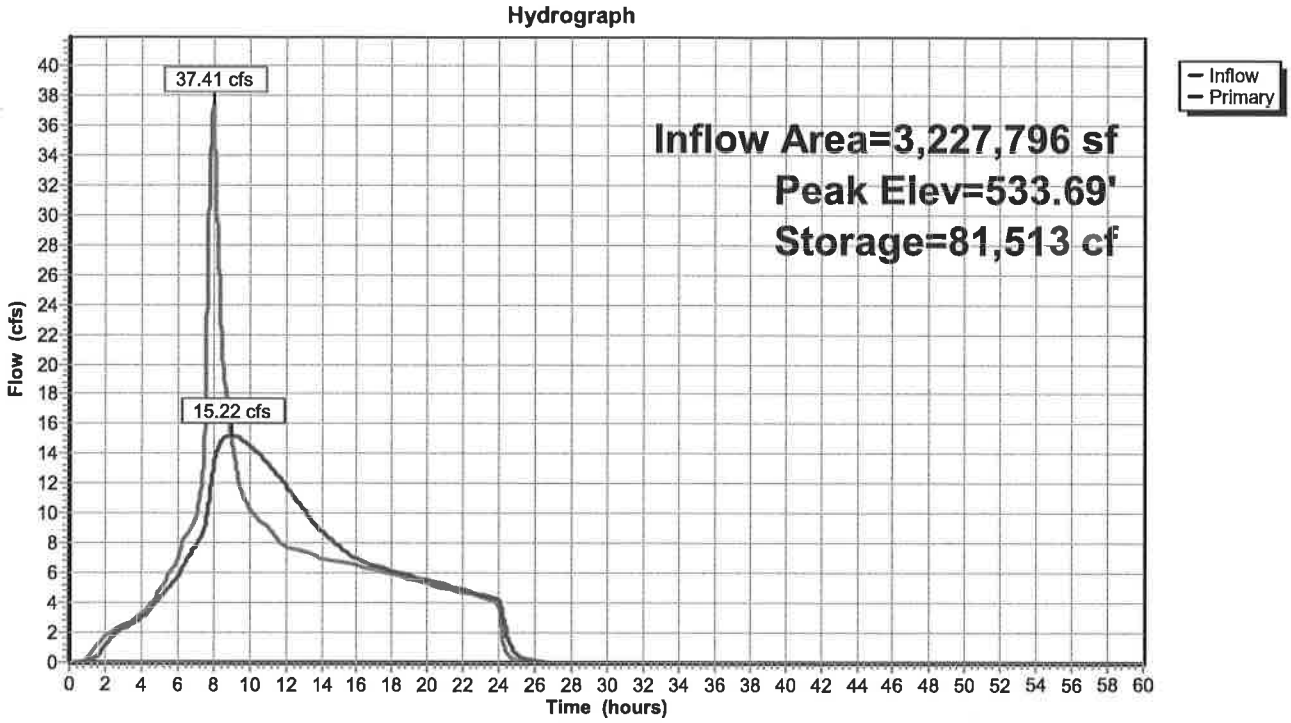
Volume	Invert	Avail.Storage	Storage Description
#1	528.00'	228,868 cf	**Custom Stage Data** Listed below

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

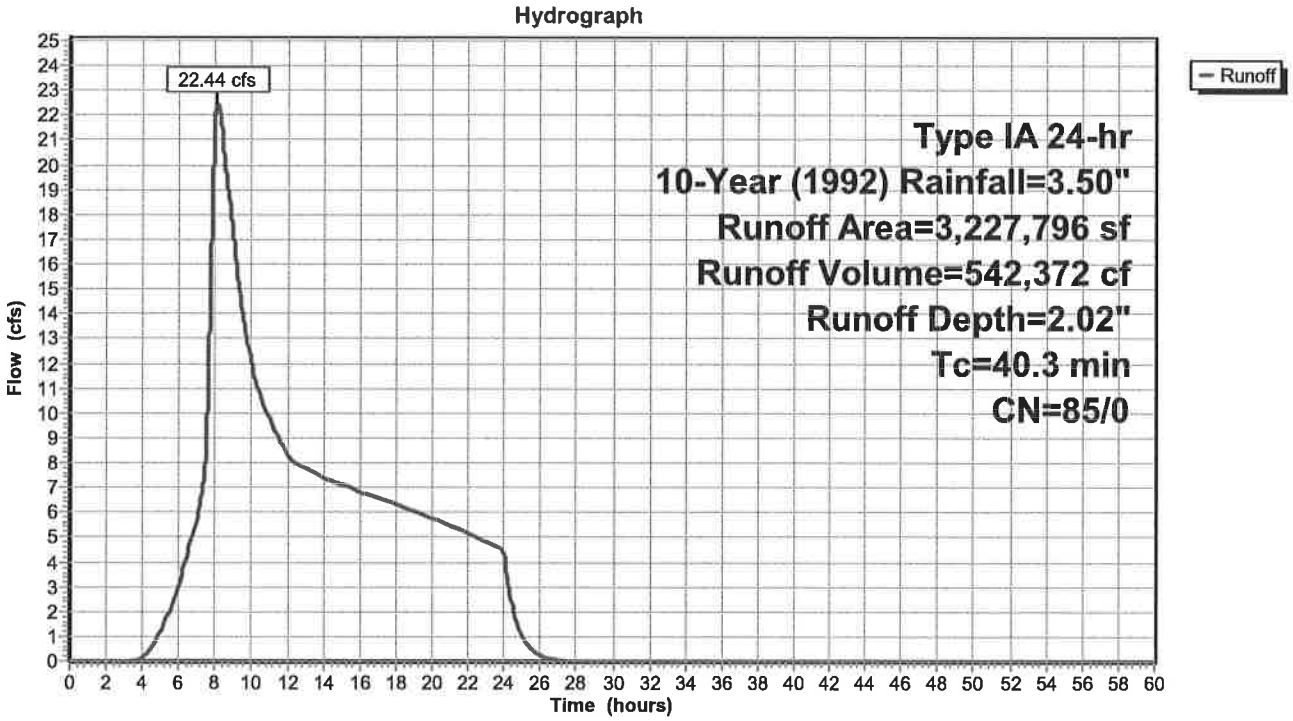
Runoff = 22.44 cfs @ 8.10 hrs, Volume= 542,372 cf, Depth= 2.02"

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

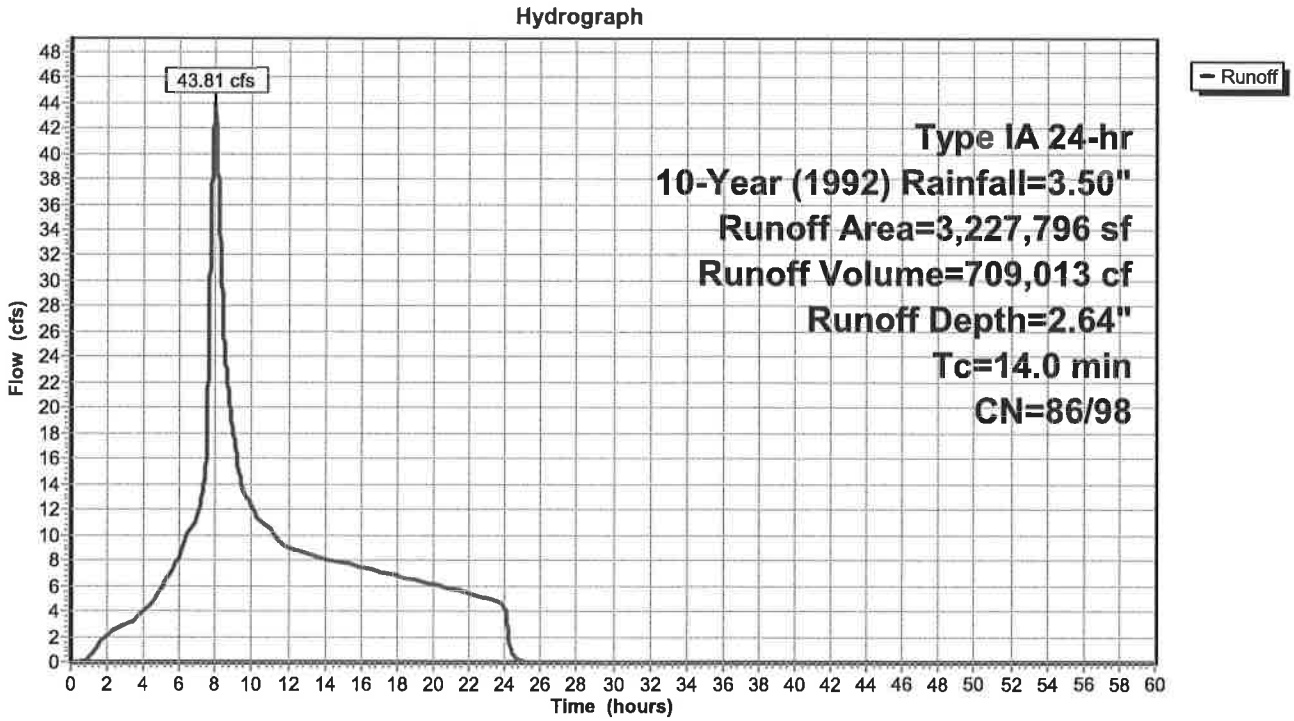
Runoff = 43.81 cfs @ 8.00 hrs, Volume= 709,013 cf, Depth= 2.64"

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)

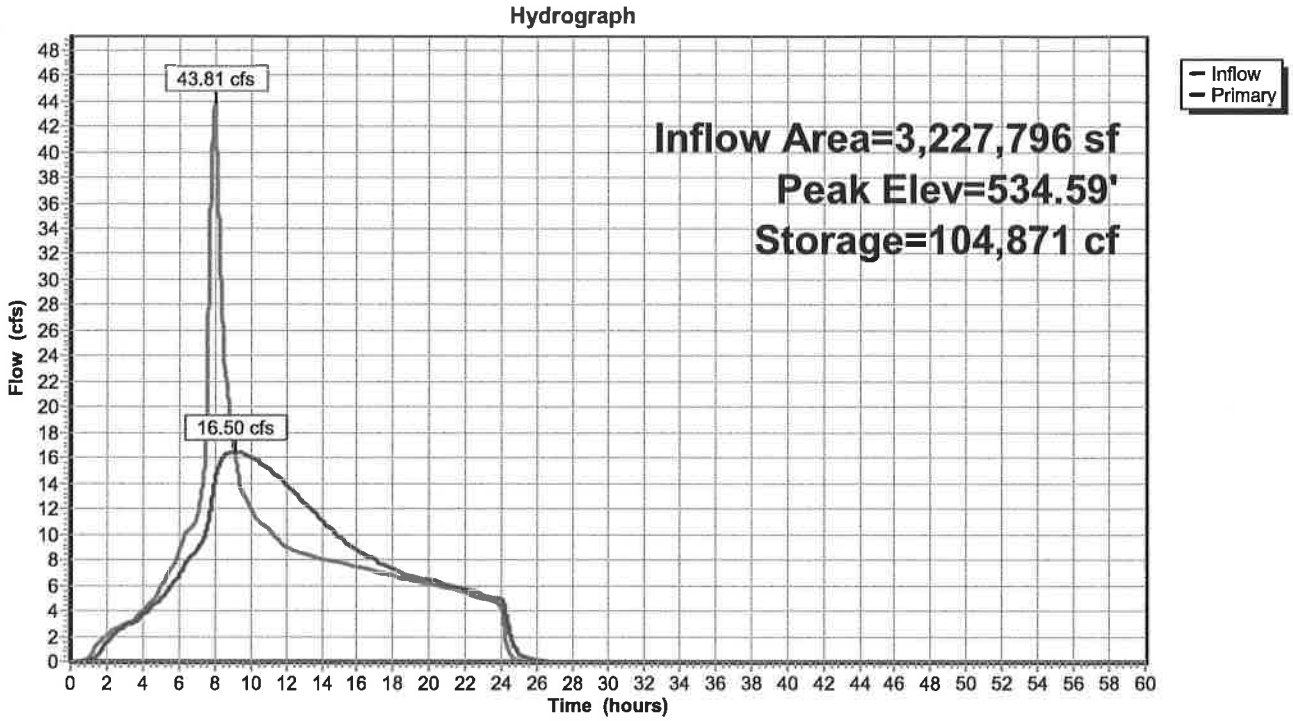
Volume	Invert	Avail.Storage	Storage Description
#1	528.00'	228,868 cf	**Custom Stage Data** Listed below

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

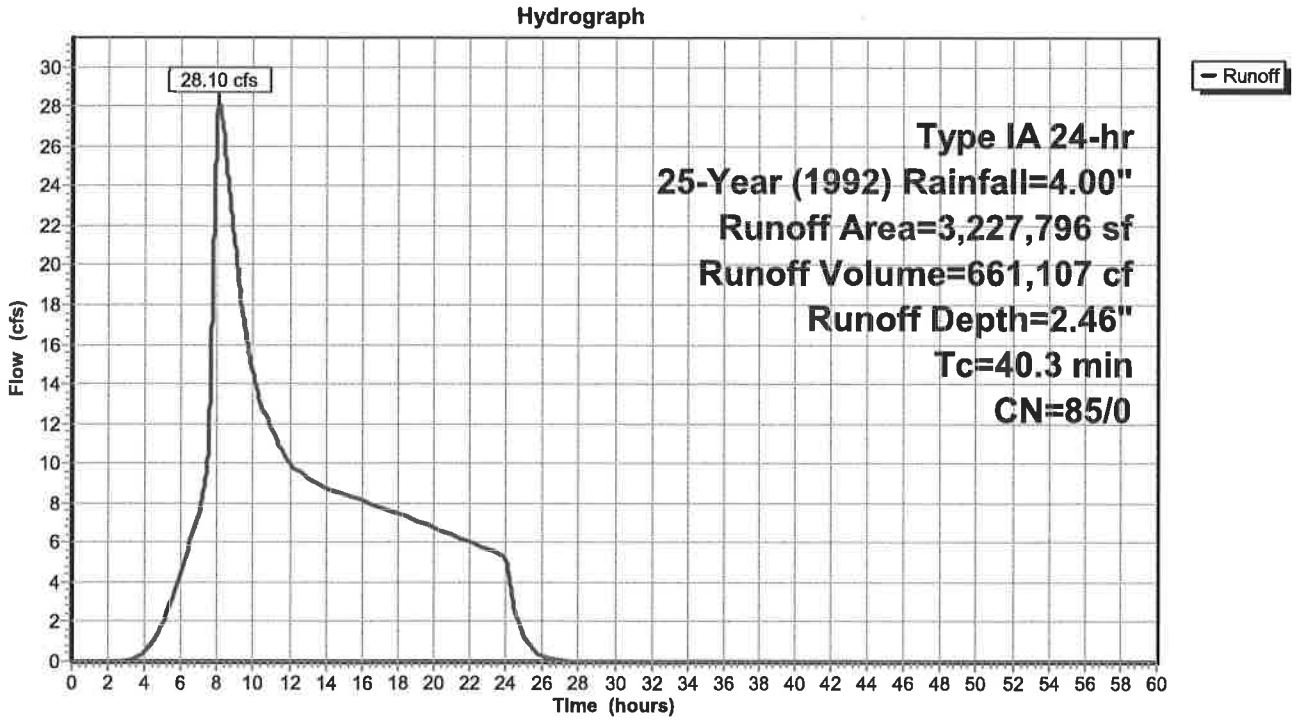
Runoff = 28.10 cfs @ 8.09 hrs, Volume= 661,107 cf, Depth= 2.46"

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

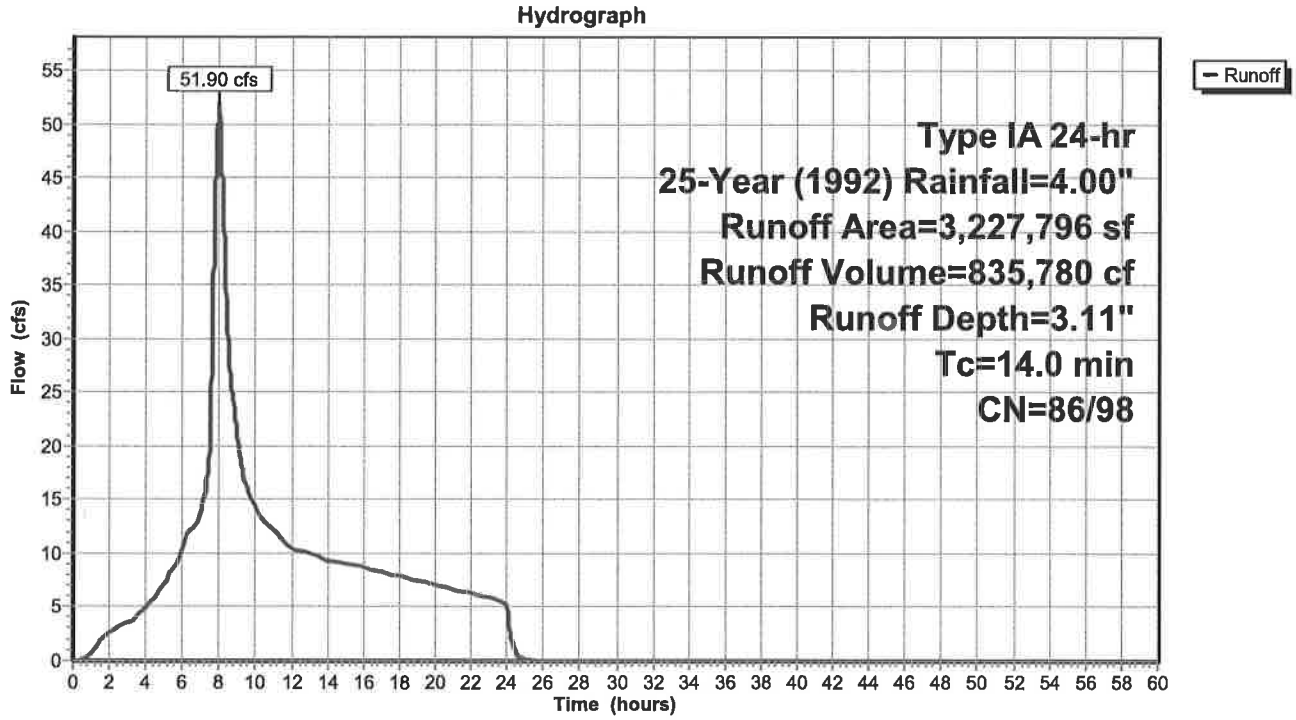
Runoff = 51.90 cfs @ 8.00 hrs, Volume= 835,780 cf, Depth= 3.11"

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)

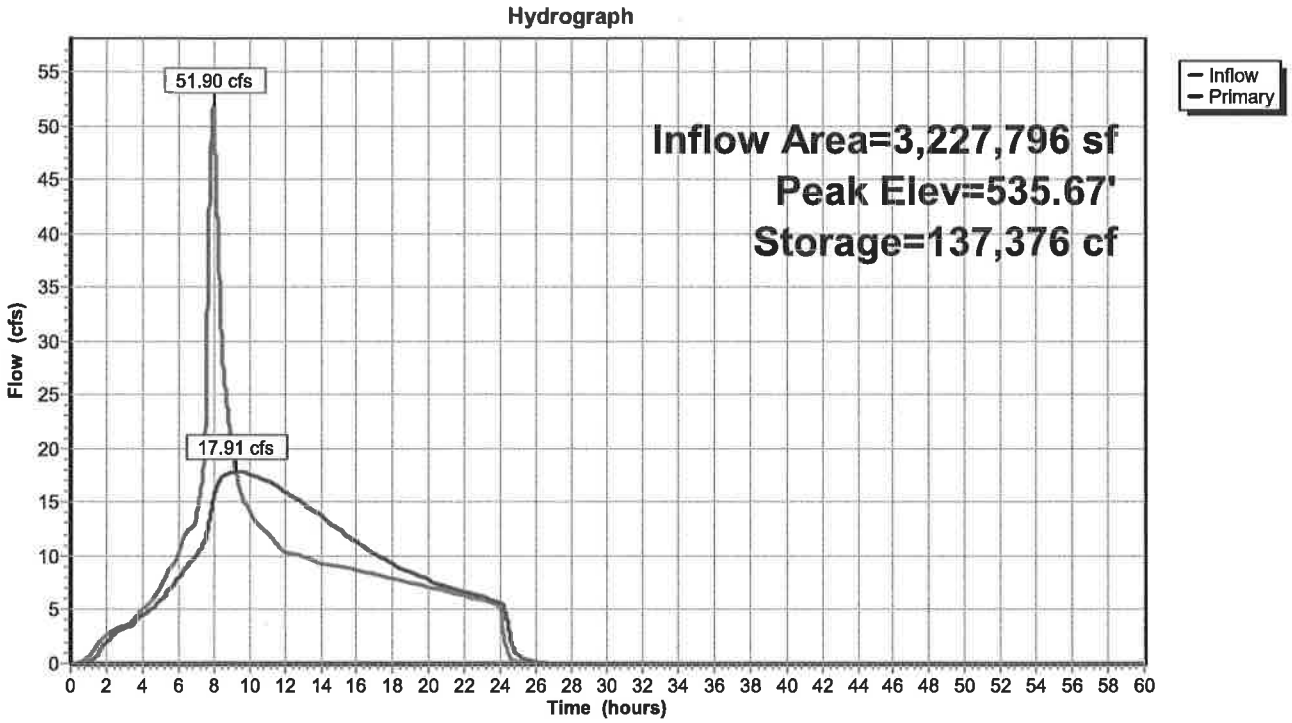
Volume	Invert	Avail.Storage	Storage Description
#1	528.00'	228,868 cf	**Custom Stage Data** Listed below

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

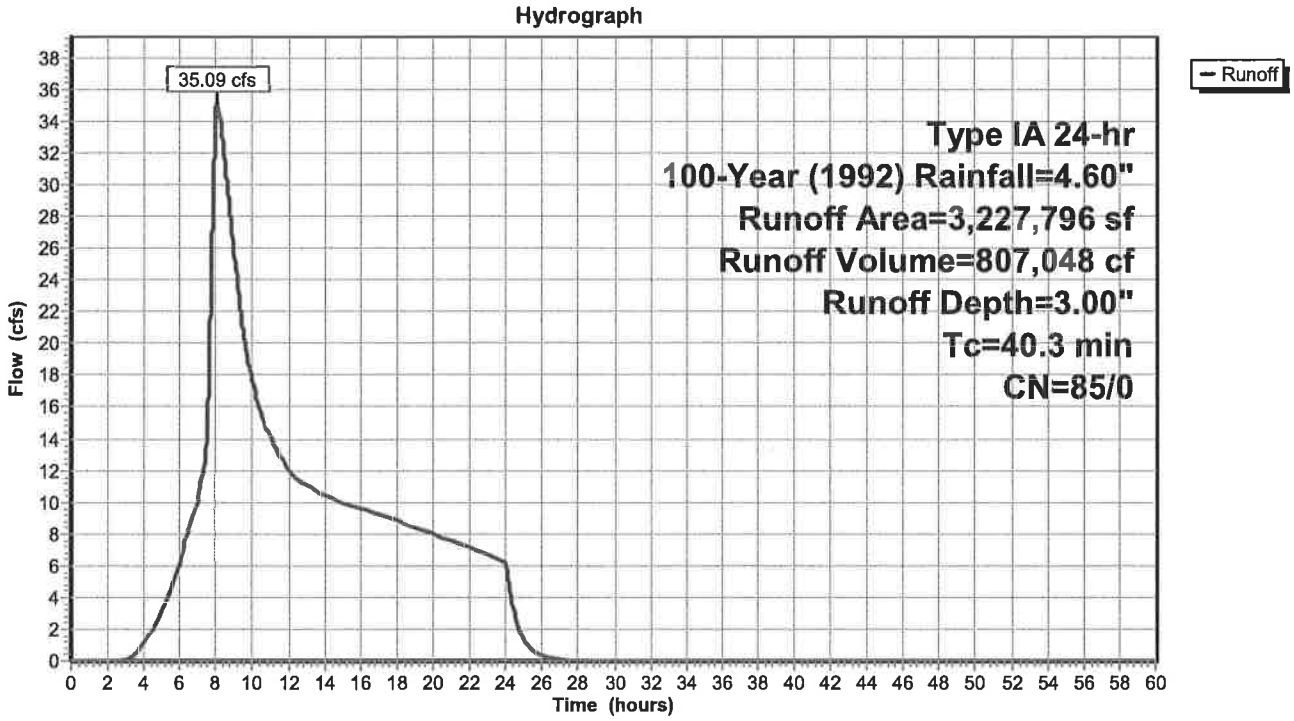
Runoff = 35.09 cfs @ 8.07 hrs, Volume= 807,048 cf, Depth= 3.00"

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

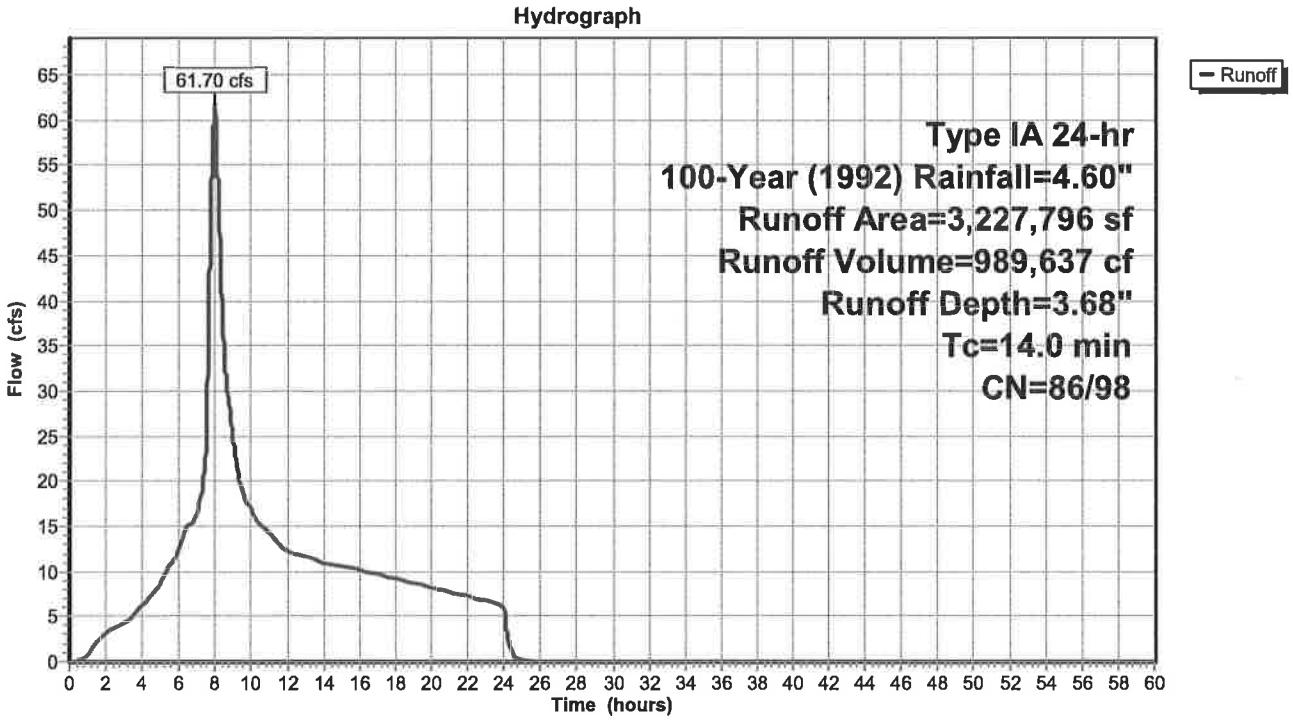
Runoff = 61.70 cfs @ 8.00 hrs, Volume= 989,637 cf, Depth= 3.68"

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)

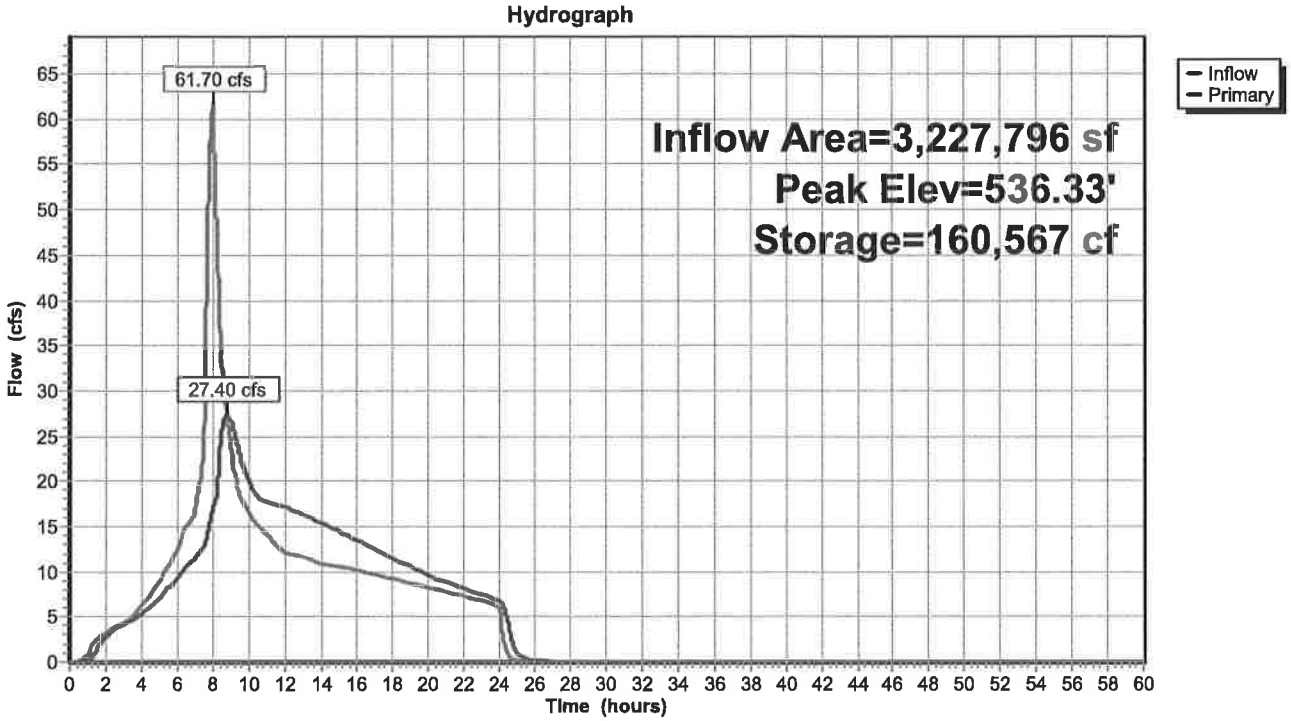
Volume	Invert	Avail.Storage	Storage Description
#1	528.00'	228,868 cf	**Custom Stage Data** Listed below

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

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\dwg\storm\CAD\0842-001basins, Layout: PRE-DEVELOPED BASINS, Plot Date: 2/11/2019 7:47 AM

SHEET 2 OF 2	EMERIO Design 8445 SW FALLBROOK PLACE, SUITE 100 BEAVERTON, OREGON 97005 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\dwg\civil\Form\CAD\0542-001Grading Layout POST-DEVELOPED BASINS Plot Date: 2/21/2019 9:44 AM

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: 11/9/19 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.# _____

March 2018

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

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(F) DEVIATION FROM LWI OR NWI 3
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(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

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

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

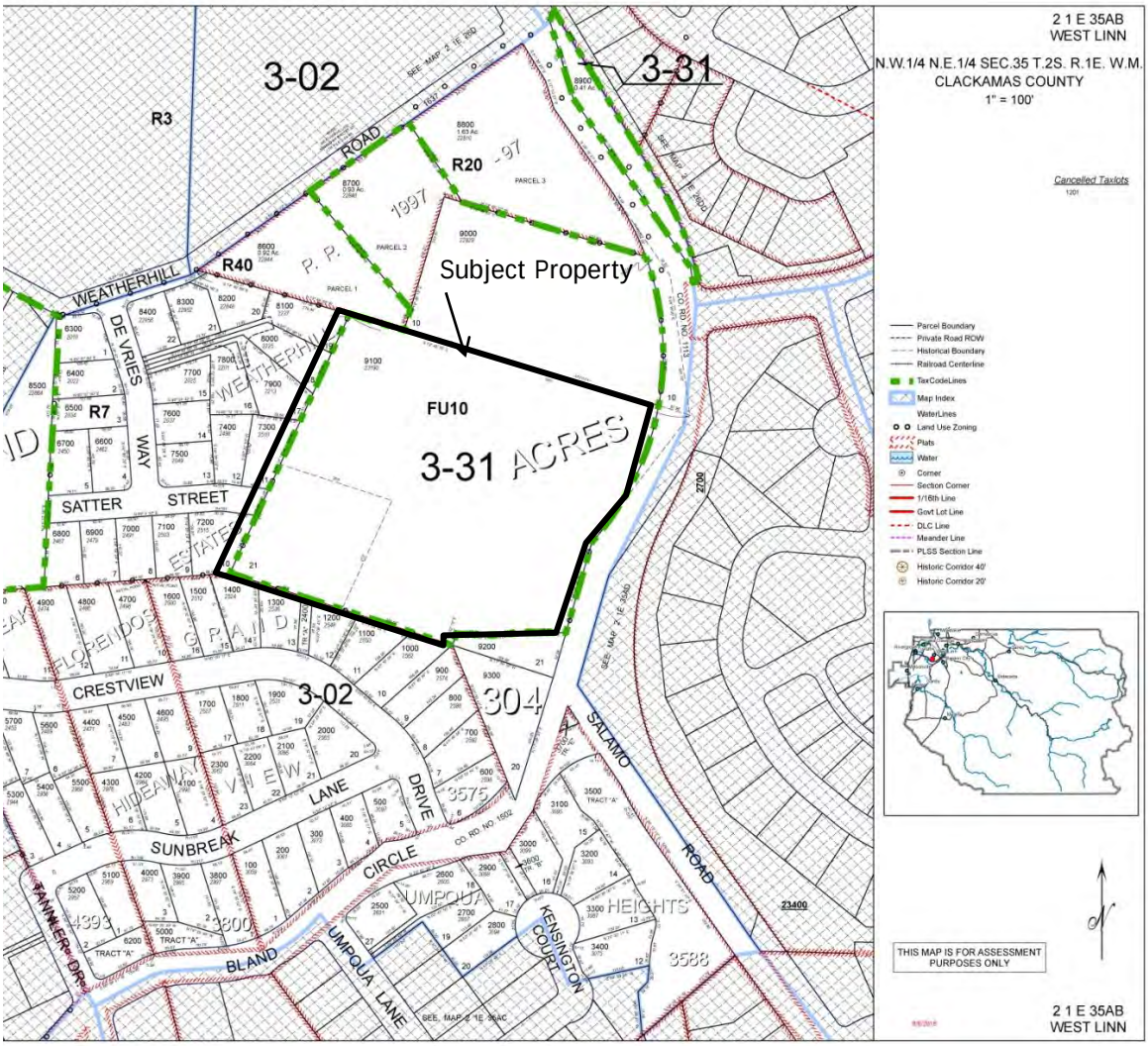

FIGURE 2. TAX MAP
Bland Circle
S&A#2649

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

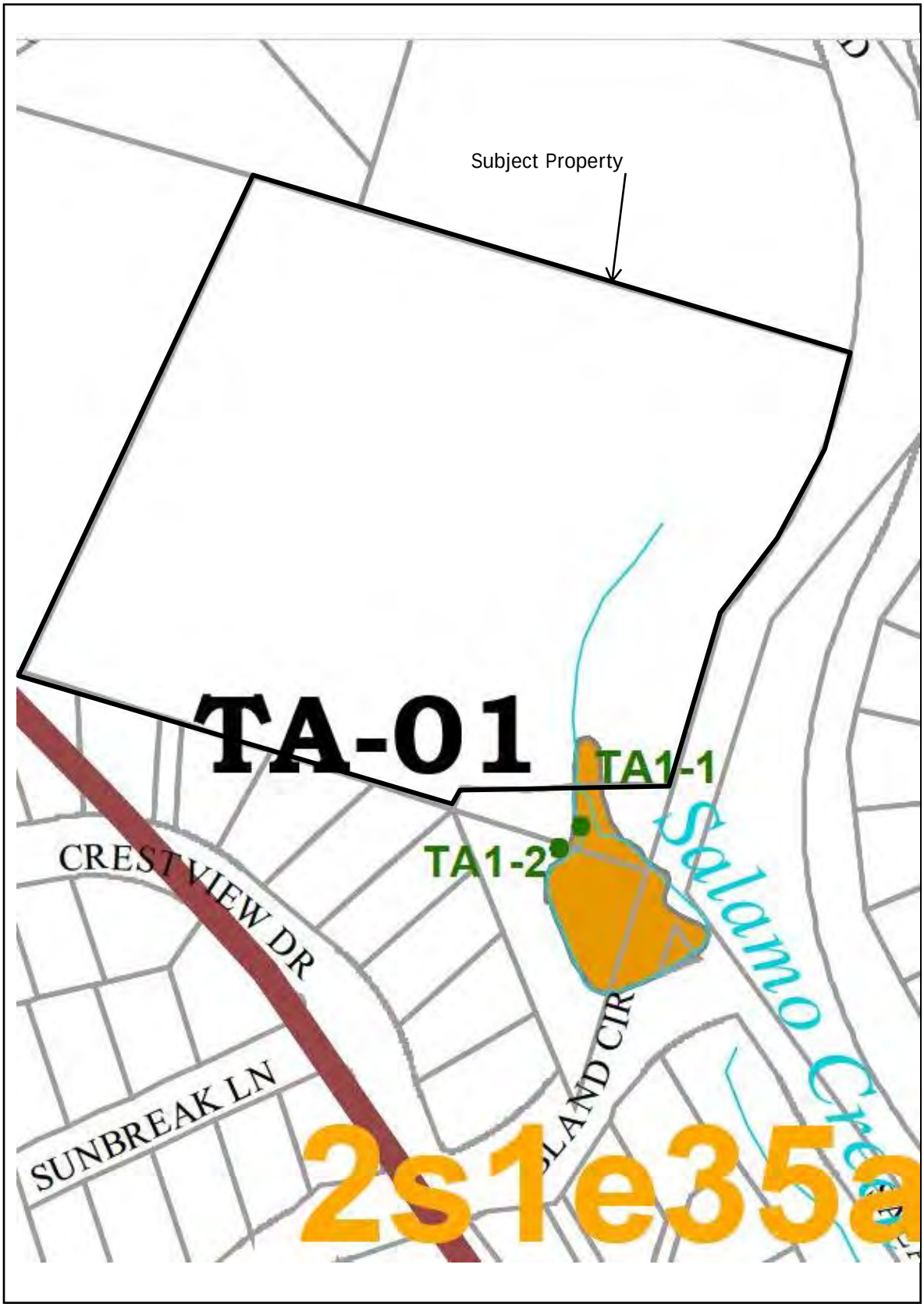

FIGURE 3.LWI MAP
Bland Circle
S&A#2649

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

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

40' 0 20' 40' 80'

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.

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:\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 %	Type[1]	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')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Rubus armeniacus*	20	X	FAC
2.			
3.			
4.			
5.			
	20 = Total Cover		

Herb Stratum (Plot size: 5)	Absolute % Cover	Dominant Species?	Indicator Status
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: ___)	Absolute % Cover	Dominant Species?	Indicator Status
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)	Matrix %	Redox Features Color (moist)	Redox %	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 ___	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes ___	No x		
Wetland Hydrology Present?	Yes x	No ___		

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 %	Type[1]	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')	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus laurocerasus	15	x	UPL
2. Rubus armeniacus	10	X	FAC
3.			
4.			
5.			
	25 = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
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: ___)	Absolute % Cover	Dominant Species?	Indicator Status
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 %	Type[1]	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	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes ___	No x		
Wetland Hydrology Present?	Yes ___	No x		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
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')	Absolute % Cover	Dominant Species?	Indicator Status
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)	Absolute % Cover	Dominant Species?	Indicator Status
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 %	Type[1]	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')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix matsudana*	10	X	NOL
2.			
3.			
4.			
5.			
	10 = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
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: ___)	Absolute % Cover	Dominant Species?	Indicator Status
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 %	Type[1]	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.

APPENDIX C. GROUND LEVEL PHOTOGRAPHS
Bland Circle
S&A#2649

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.

APPENDIX C. GROUND LEVEL PHOTOGRAPHS Bland Circle S&A#2649	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.

APPENDIX C. GROUND LEVEL PHOTOGRAPHS Bland Circle S&A#2649	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.

APPENDIX C. GROUND LEVEL PHOTOGRAPHS Bland Circle S&A#2649	Schott & Associates P.O. Box 589 Aurora, OR. 97002 503.678.6007

Photo Point 3. Facing northwest upslope.

Photo Point 4. Facing south.

Photo Point 4. Facing north.

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

APPENDIX C. GROUND LEVEL PHOTOGRAPHS
Bland Circle
S&A#2649

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

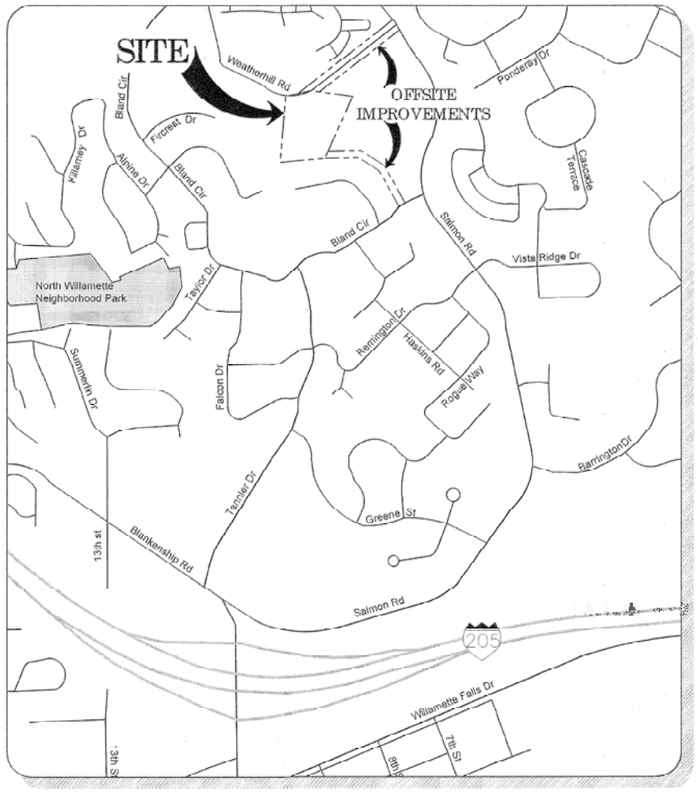
CONSTRUCTION DOCUMENTS

FOR

WEATHERVIEW ESTATES SUBDIVISION

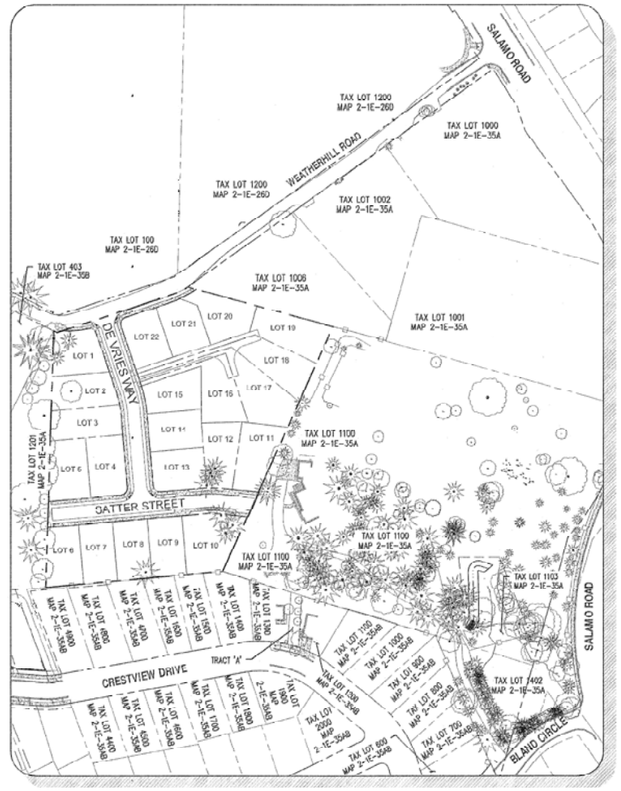
PREPARED FOR

BLACK DIAMOND PROPERTIES, LLC



VICINITY MAP

NOT TO SCALE



SITE MAP

Scale: NTS

SHEET LIST

C000	COVER SHEET	C303	STREET LIGHTING PLAN
C001	CONDITIONS OF APPROVAL	C310A	STORMWATER LINE 'O' PLAN & PROFILE I
C002	GENERAL NOTES	C310B	STORMWATER LINE 'O' PLAN & PROFILE II
C100	ONSITE EXISTING CONDITIONS PLAN	C311	STORMWATER LINE 'A' PLAN & PROFILE
C101	ONSITE DEMOLITION PLAN	C312	STORMWATER LINE 'B' PLAN & PROFILE
C102	OFFSITE EXISTING COND. & DEMO PLAN I	C313	STORMWATER LINE 'C' PLAN & PROFILE
C103	OFFSITE EXISTING COND. & DEMO PLAN II	C314	STORMWATER LINE 'D' PLAN & PROFILE
C105	PHASE I GRADING AND EROSION CONTROL PLAN	C315	STORMWATER LINE 'E' PLAN & PROFILE
C110	ONSITE TREE PROTECTION AND REMOVAL PLAN	C316	REGIONAL POND SEDIMENT REMOVAL & FLOW CONTROL MANHOLE ACCESS & RETROFIT
C111	ONSITE TREE PROTECTION AND REMOVAL DETAILS	C320	STORMWATER DRAINAGE DETAILS I
C112	OFFSITE TREE INVENTORY PLAN I	C321	STORMWATER DRAINAGE DETAILS II
C113	OFFSITE TREE INVENTORY PLAN II	C322	STORMWATER DRAINAGE DETAILS III
C114	OFFSITE TREE INVENTORY DETAILS	C330	SANITARY SEWER 'O' PLAN & PROFILE I
C200	TENTATIVE SUBDIVISION PLAT	C331	SANITARY SEWER 'O' PLAN & PROFILE II
C210	WEATHERHILL ROAD IMPROVEMENT PLAN & PROFILE	C332	SANITARY SEWER 'A' PLAN & PROFILE
C211	DEVRIES WAY IMPROVEMENT PLAN & PROFILE	C333	SANITARY SEWER 'B' PLAN & PROFILE
C212	SATTER STREET IMPROVEMENT PLAN & PROFILE	C334	SANITARY SEWER 'C' PLAN & PROFILE
C213	PRIVATE DRIVE IMPROVEMENT PLAN & PROFILE	C335	SANITARY SEWER 'D' PLAN & PROFILE
C214	FIRE TURNAROUND & 22004 WEATHERHILL ROAD DRIVEWAY RECONSTRUCTION	C340	SANITARY SEWER CONSTRUCTION DETAILS
C220	SITE CONSTRUCTION DETAILS I	C350	WATER LINE 'A' PLAN & PROFILE I
C221	SITE CONSTRUCTION DETAILS II	C351	WATER LINE 'A' PLAN & PROFILE II
C230	ONSITE PHASE II GRADING & EROSION CONTROL PLAN	C352	WATER LINE 'A' PLAN & PROFILE III
C231	OFFSITE PHASE II GRADING & EROSION CONTROL PLAN I	C353	WATER LINE 'A' PLAN & PROFILE IV
C232	OFFSITE PHASE II GRADING & EROSION CONTROL PLAN II	C354	WATER LINE 'B' PLAN & PROFILE
C240	EROSION & SEDIMENT CONTROL DETAILS	C355	WATER LINE 'C' PLAN & PROFILE
C300	ONSITE COMPOSITE UTILITY PLAN	C360	WATER CONSTRUCTION DETAILS
C301	OVERALL SANITARY SEWER & WATER UTILITY KEYMAP	L100	MITIGATION PLANTING PLAN
C302	OVERALL STORMWATER UTILITY KEYMAP	L101	OFFSITE MITIGATION PLANTING PLAN

SITE INFORMATION

SITE ADDRESS
22850 WEATHERHILL ROAD
WEST LINN, OR 97068

JURISDICTION
CITY OF WEST LINN

ZONING
R-7

TAX LOT(S)
21E35A 1200 & 1202

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

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) 730-8800
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: dand@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

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

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
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CENTURYLINK - REGIONAL ENGINEER
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EMAIL: jeremy.morris@centurylink.com

POLICE, SCHOOLS, ROADS, PARKS
CITY OF WEST LINN

RECORD DRAWING

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

- Contractor supplied redlines
- Field observations by the engineer
- Field measurements

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 80084PE 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 Satter 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 reviewed and 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
- Site observations by the engineer
- Record documents

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

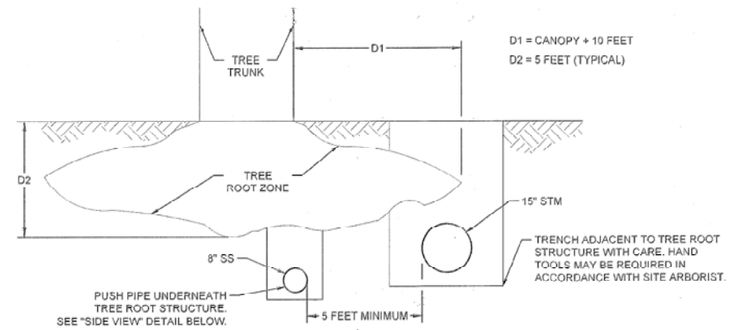
3J JOB ID #	13171
LAND USE #	SUB 15 01
TAX LOT #'S	2S1E35B 1200, 1202
DESIGNED BY	CLF, JKG, JTE
CHECKED BY	AJM, RGW

SHEET TITLE
C of A

SHEET NUMBER
C001

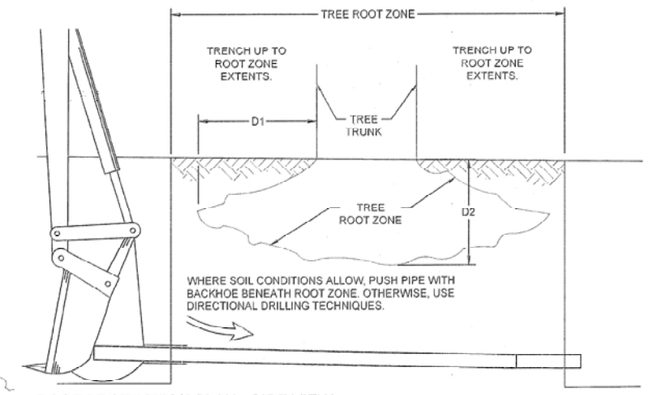
LEGEND

- 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 conditions. Field verification of the basis of this information is derived in whole or in part from a combination of:

- Contractor supplied redlines
- Site observations by the engineer

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 — AARON J. MURPHY

EXPIRES: 12/31/18

Dec 23 2016 7:40 AM

3J CONSULTING, INC
CIVIL ENGINEERING
WATER RESOURCES
LAND USE PLANNING
5075 SW GRIFFITH DRIVE, SUITE 150, BEAVERTON, OR 97005
PHONE & FAX: (503) 646-9335

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.

Federal Register, 1986. 33 CFR Parts 320 through 330, *Regulatory Programs of the Corps of Engineers; Final Rule,* Vol. 51, No. 219 pp. 41206-41259, U.S. Govt. Printing Office, Washington, D.C.

Kollmorgen Corporation, 1975. *Munsell Soil Color Charts.* Macbeth Division of Kollmorgen Corporation, Baltimore, MD.

U.S. Army Corps of Engineers – Cold Regions Research and Engineering Laboratory (CRREL). 2016. *Western Mountains, Valleys and Coast 2016 Regional Wetland Plant List*

U.S. Department of Agriculture, Web Soil Survey *Soil Survey of Clackamas County, Oregon.* U.S.D.A. Soil Conservation Service, Washington, D.C.,

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

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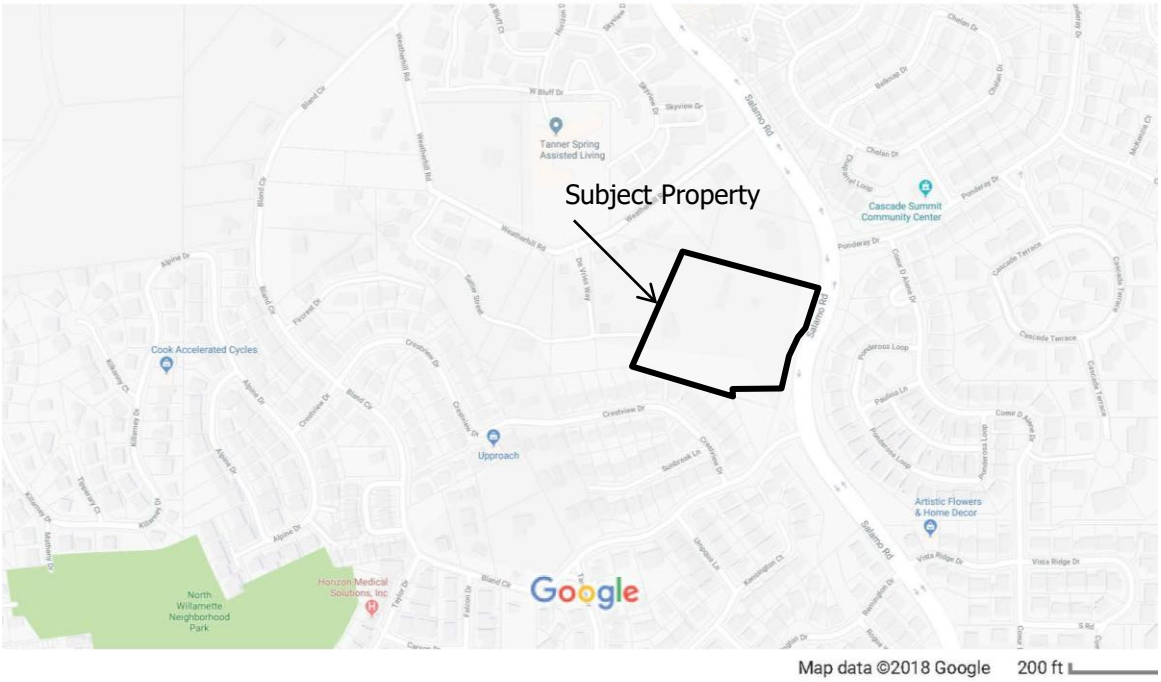
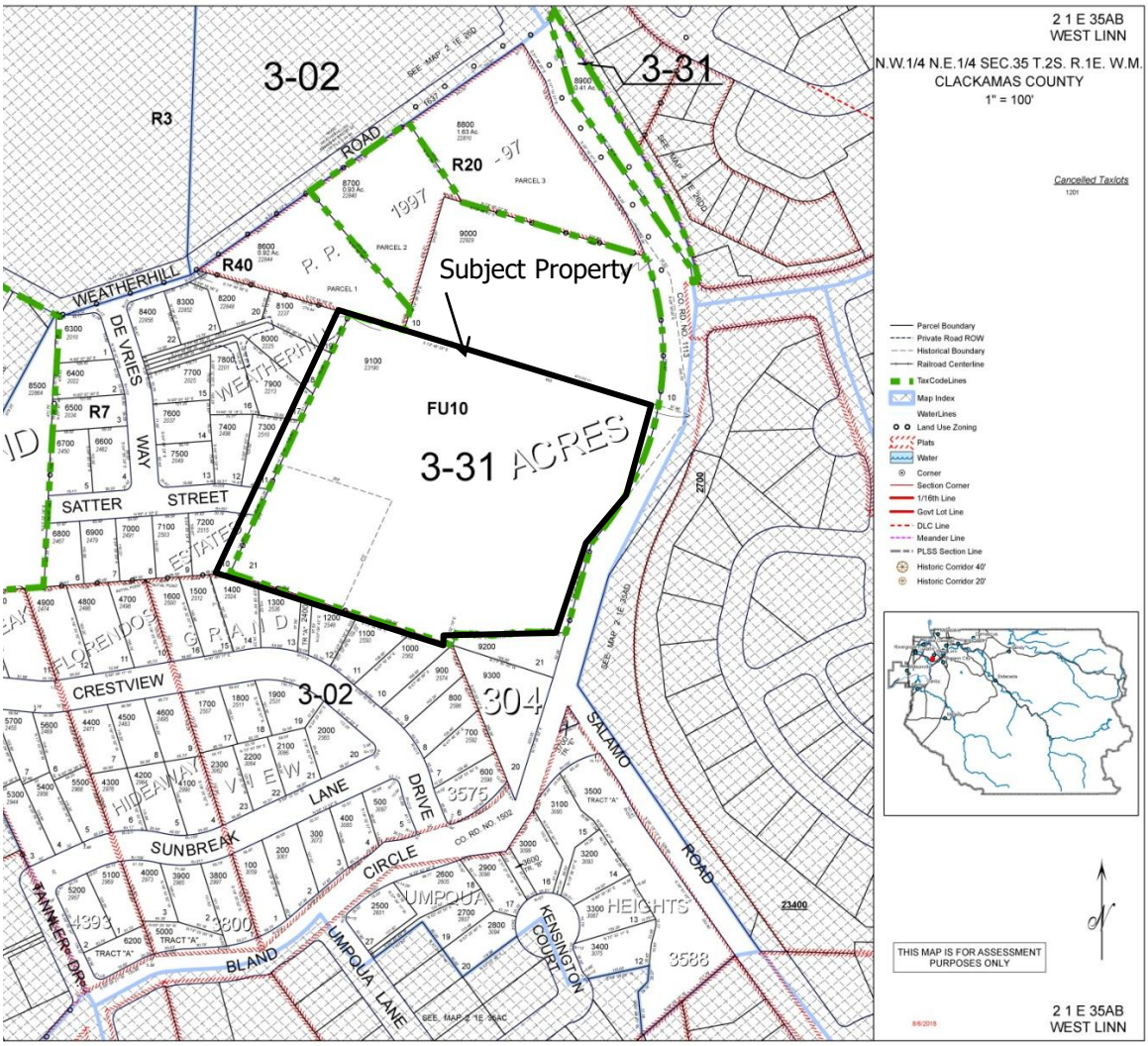


Map data ©2018 Google 200 ft

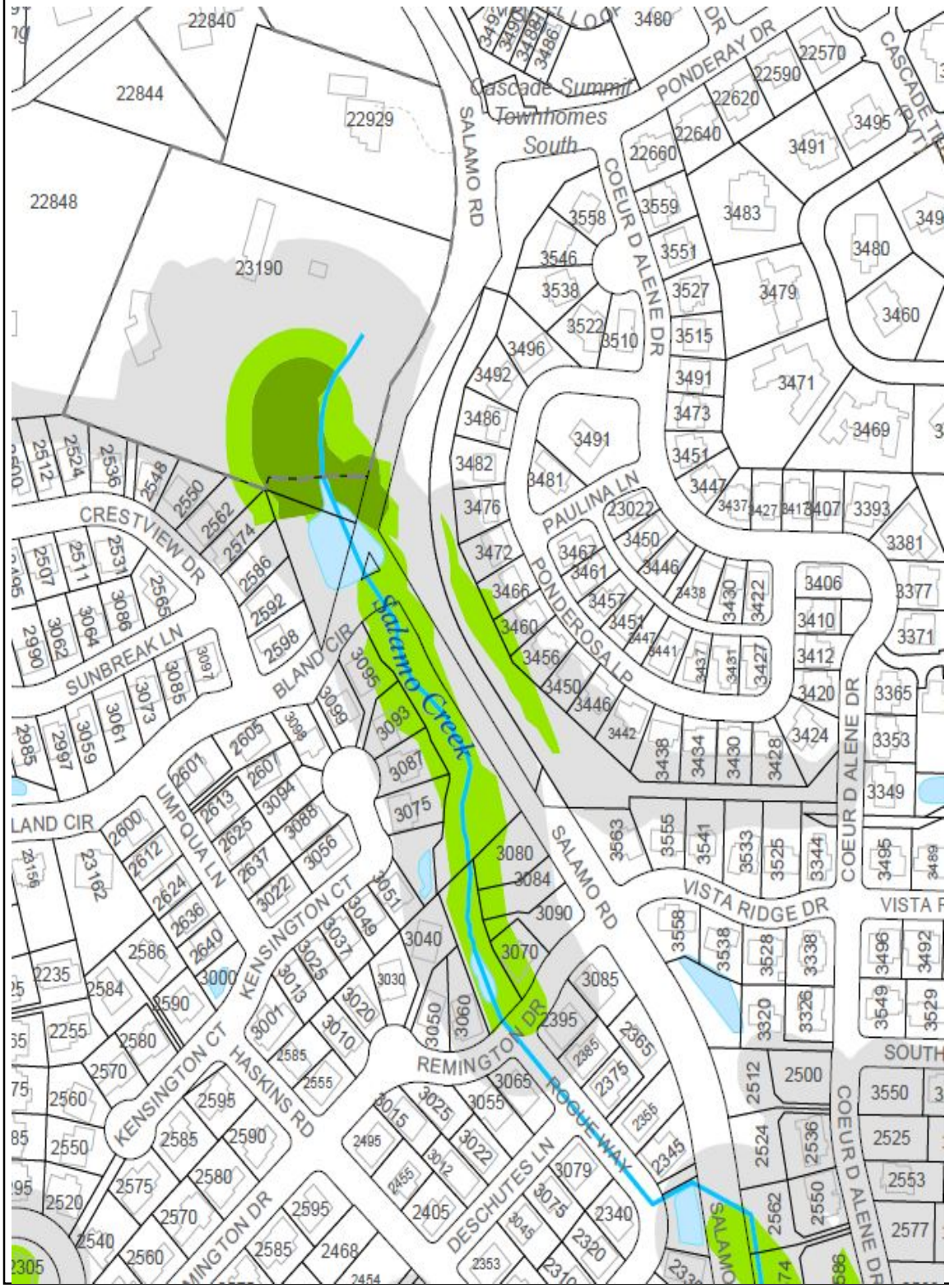
Appendix A: SITE LOCATION MAP
Bland Circle
S&A# 2649

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
P.O. Box 589
Aurora, OR. 97002
503.678.6007

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

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

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

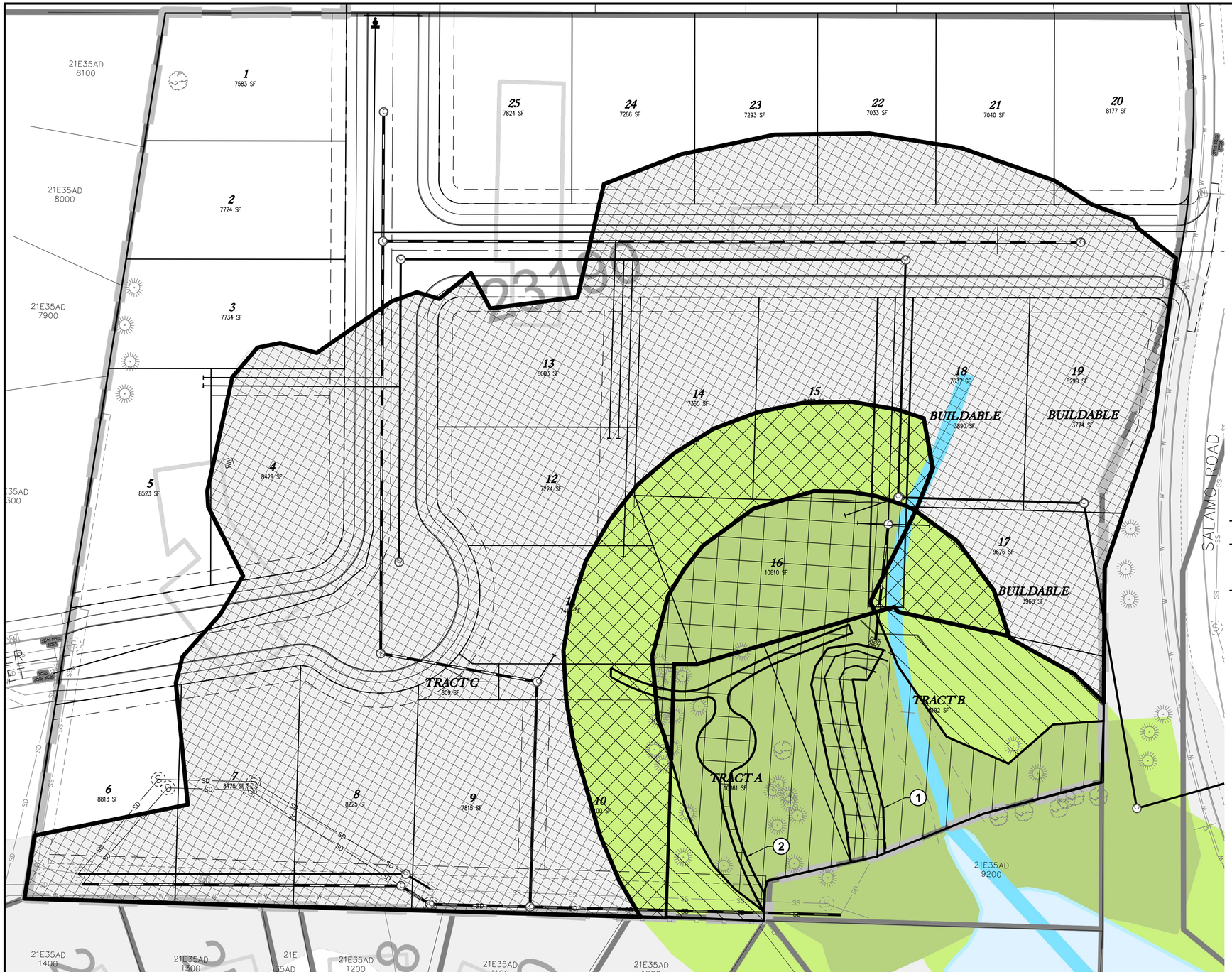
NO.	DATE	DESCRIPTION
0	02/19	PLANNING 1ST SUBMITTAL
1	-	-

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
FAX: (503) 626-0592
www.emeriodesign.com

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

- 220 — PROPOSED MAJOR CONTOUR LINE
- 219 — PROPOSED MINOR CONTOUR LINE
- 195 — EXISTING MAJOR CONTOUR LINE
- 194 — EXISTING MINOR CONTOUR LINE
- PROPERTY BOUNDARY LINE
- SIGNIFICANT RESOURCE OVERLAY ZONE (SROZ)
- PROPOSED LOT LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED PUE EASEMENT
- PROPOSED SANITARY SEWER LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED WATER LINE
- CONSTRUCTION TREE PROTECTION FENCE (6' HIGH CHAIN LINK WITH METAL POSTS)
- 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

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

HABITAT CONSERVATION AREA (HCA) EXHIBIT

REVISIONS

NO.	DATE	DESCRIPTION

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
FAX: (503) 626-8592
www.emeriodesign.com

PRELIMINARY

SHEET - OF -

FILE:P:\0542-001-23190 S Bland Circle\dwg\plan\Exhibits\0542-001_HCA overlay, Layout: HABITAT CONSERVATION AREA EXHIBIT, Plot Date: 6/19/2019 12:27 PM, by: Jake Snyder

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

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

APPENDIX C. GROUND LEVEL PHOTOGRAPHS Bland Circle S&A#2649	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.

APPENDIX C. GROUND LEVEL PHOTOGRAPHS Bland Circle S&A#2649	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.

APPENDIX C. GROUND LEVEL PHOTOGRAPHS Bland Circle S&A#2649	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.

APPENDIX C. GROUND LEVEL PHOTOGRAPHS
Bland Circle
S&A#2649

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

Photo Point 3. Facing northwest upslope.

Photo Point 4. Facing south.

Photo Point 4. Facing north.

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

APPENDIX C. GROUND LEVEL PHOTOGRAPHS Bland Circle S&A#2649	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

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.

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
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 748-8812
FAX: (503) 748-8815
www.emeriodesign.com

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

REVISIONS

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

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BEAVERTON, OREGON 97008
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FAX: (503) 626-6592
www.emeriodesign.com

PRELIMINARY

SHEET 9 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_05util, Layout: 9 COMPOSITE UTILITY PLAN, Plot Date: 6/14/2019 11:18 AM, by: Jake Snyder

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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BEAVERTON, OREGON 97008
TEL: (503) 748-8812
FAX: (503) 626-8992
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PRELIMINARY

SHEET 3 OF 11

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_Dbtree, 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

State Land Board

Kate Brown
Governor

Bev Clarno
Secretary of State

Tobias Read
State Treasurer

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

March 2018

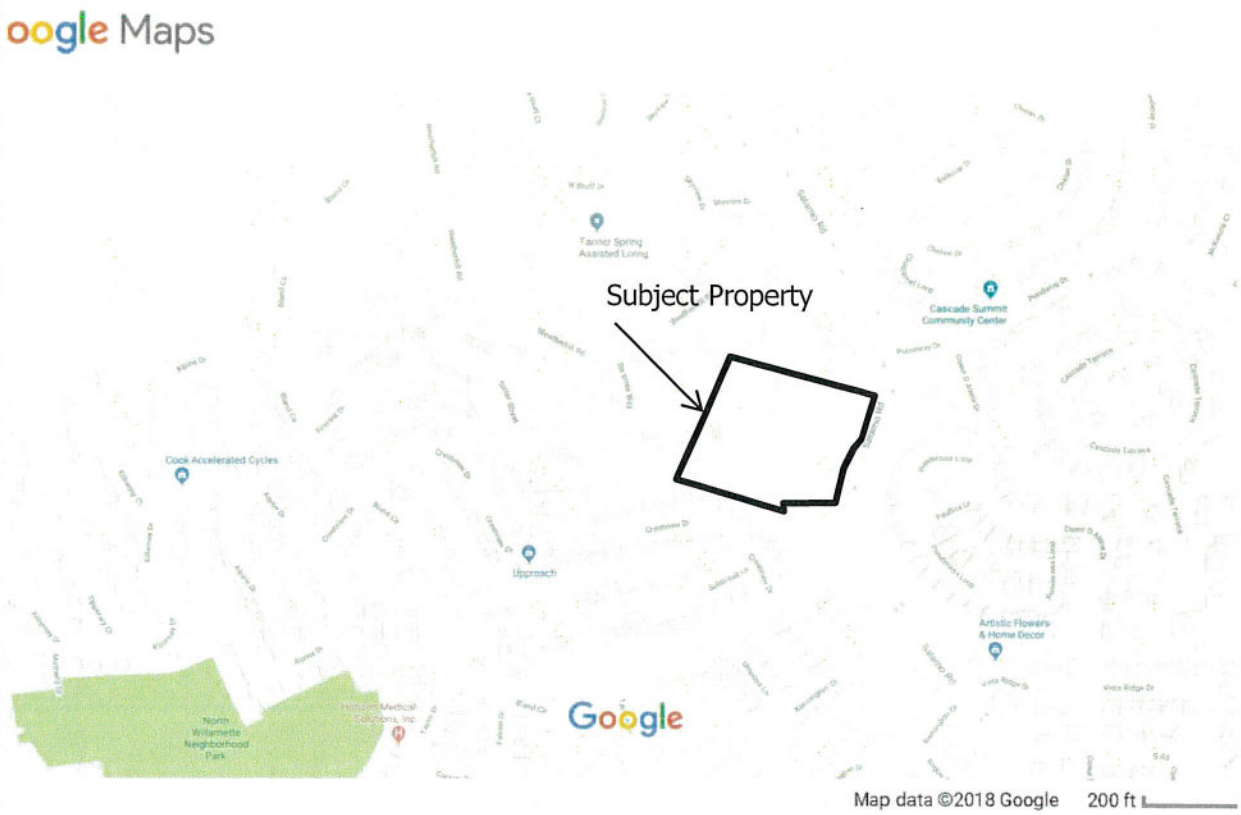


FIGURE 1. SITE LOCATION MAP
Bland Circle
S&A# 2649

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

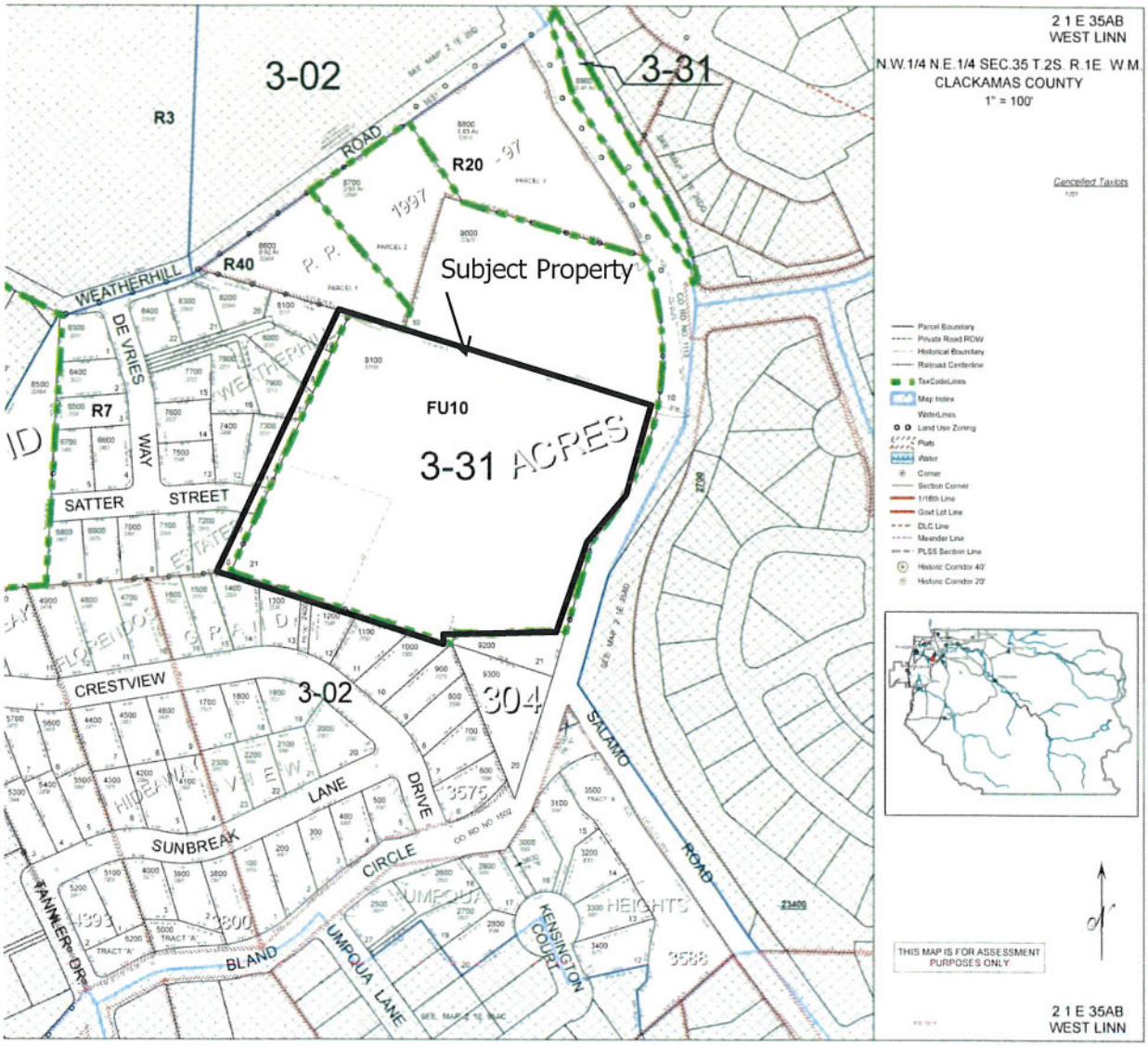


FIGURE 2. TAX MAP
Bland Circle
S&A#2649

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

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.

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

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

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

Figure 6

REVISIONS

NO.	DATE	DESCRIPTION
0		
1		

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
PH: (503) 626-6449
FAX: (503) 639-9592
www.emeriodesign.com

PRELIMINARY

SHEET OF

FILE:P:\0542-001 23190 S Bland Circle_outgoing\2019-01-08_Ex cond to Schott & Assoc\0542-001_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

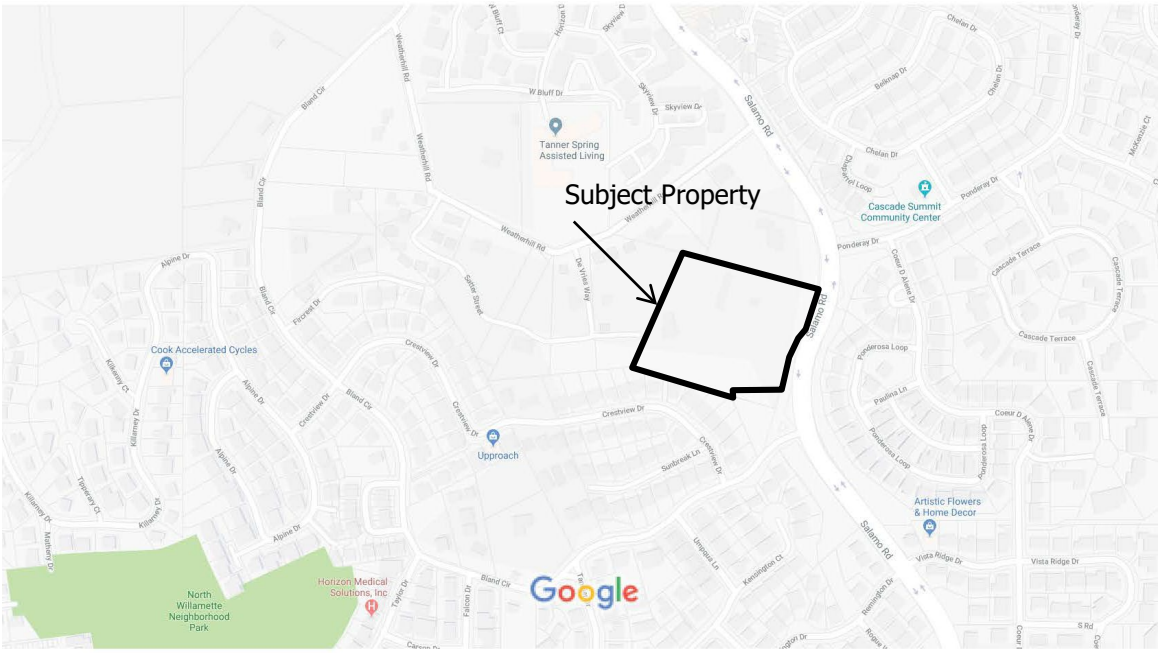
The purpose of this section is to ensure that compliance with this chapter does not deprive an owner of reasonable use of land. To avoid such instances, the requirements of this chapter may be reduced. The decision-making authority may impose such conditions as are deemed necessary to limit any adverse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

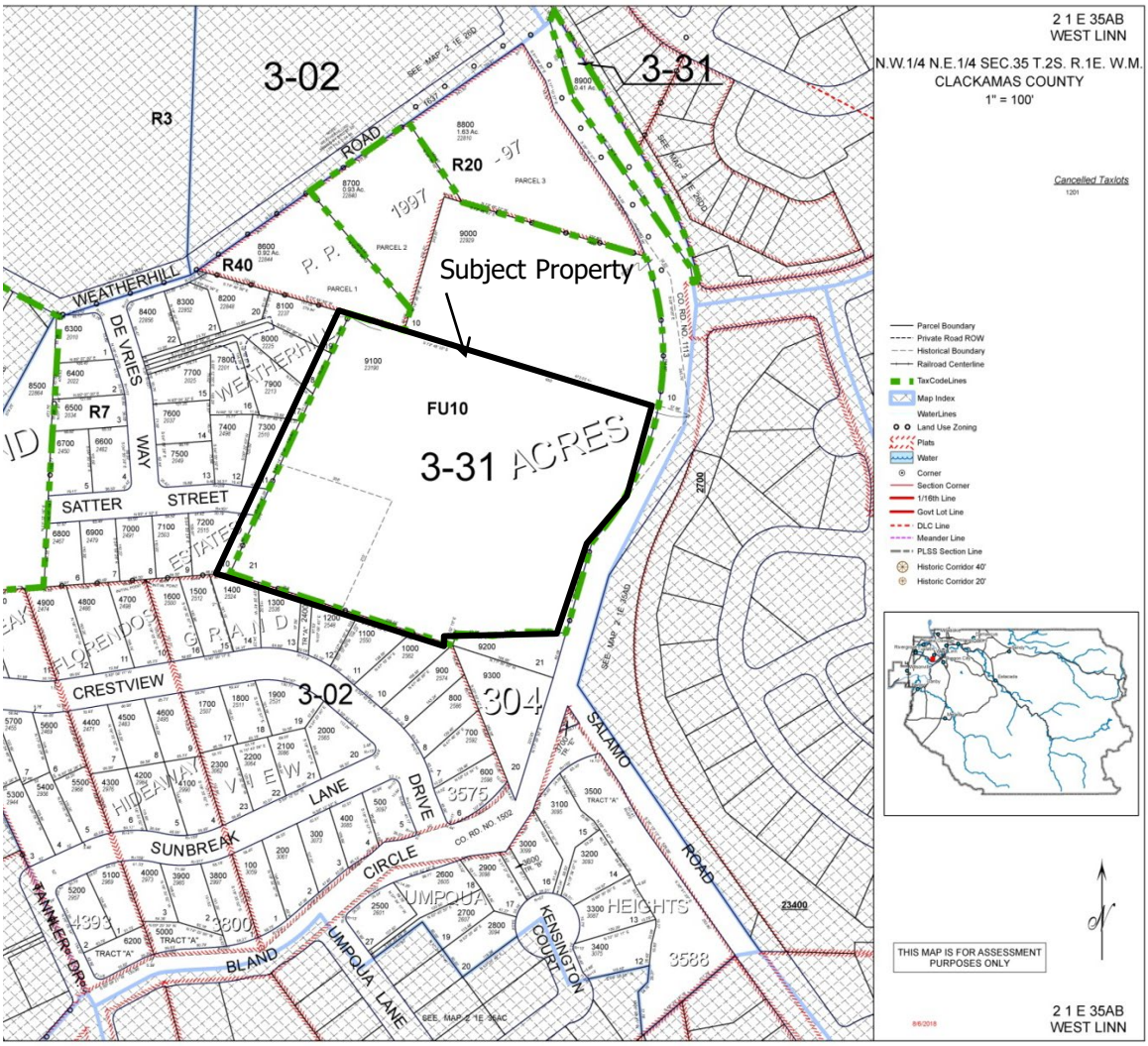
oogle Maps



Map data ©2018 Google 200 ft

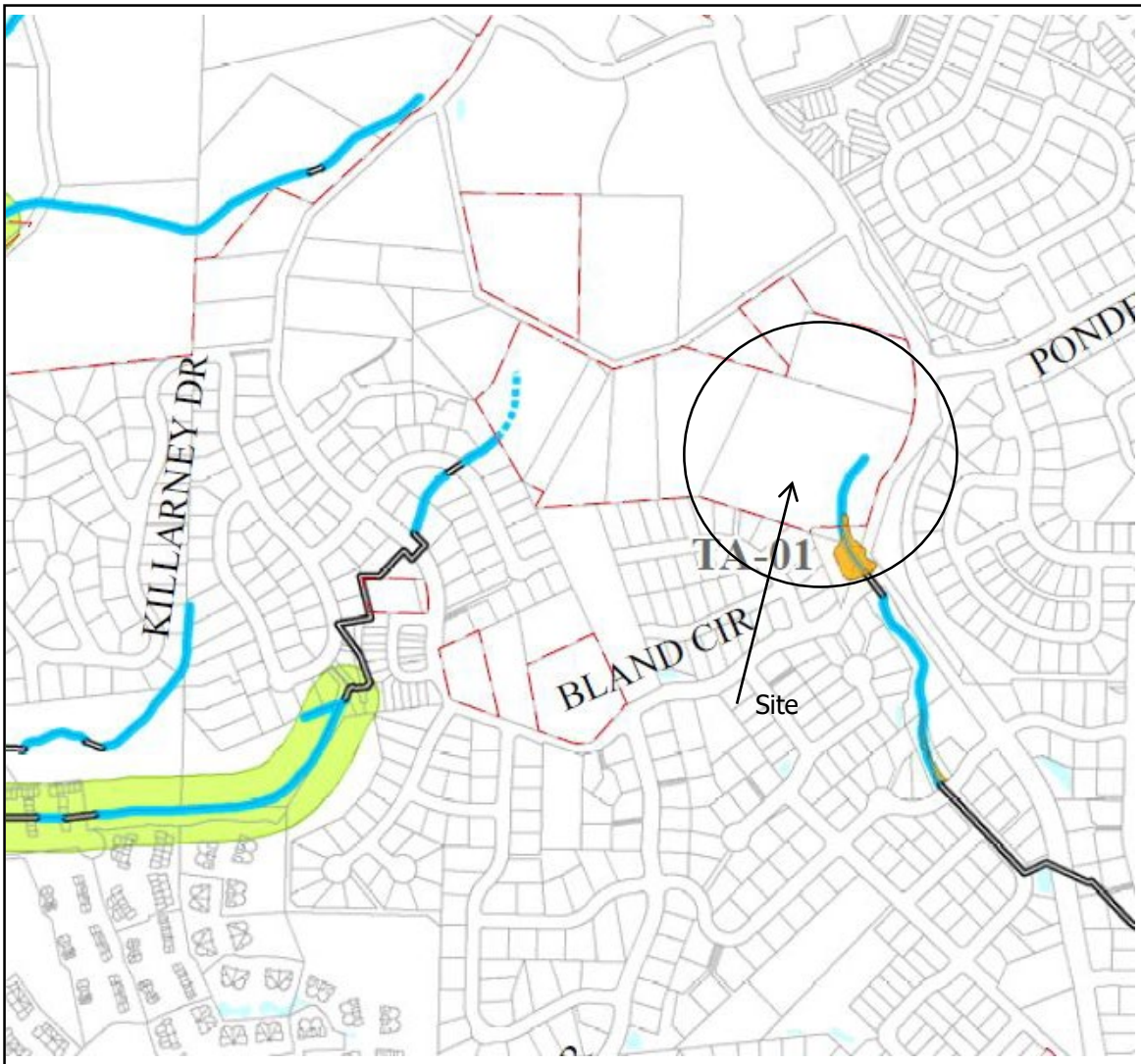
Appendix A: SITE LOCATION MAP
Bland Circle
S&A# 2649

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

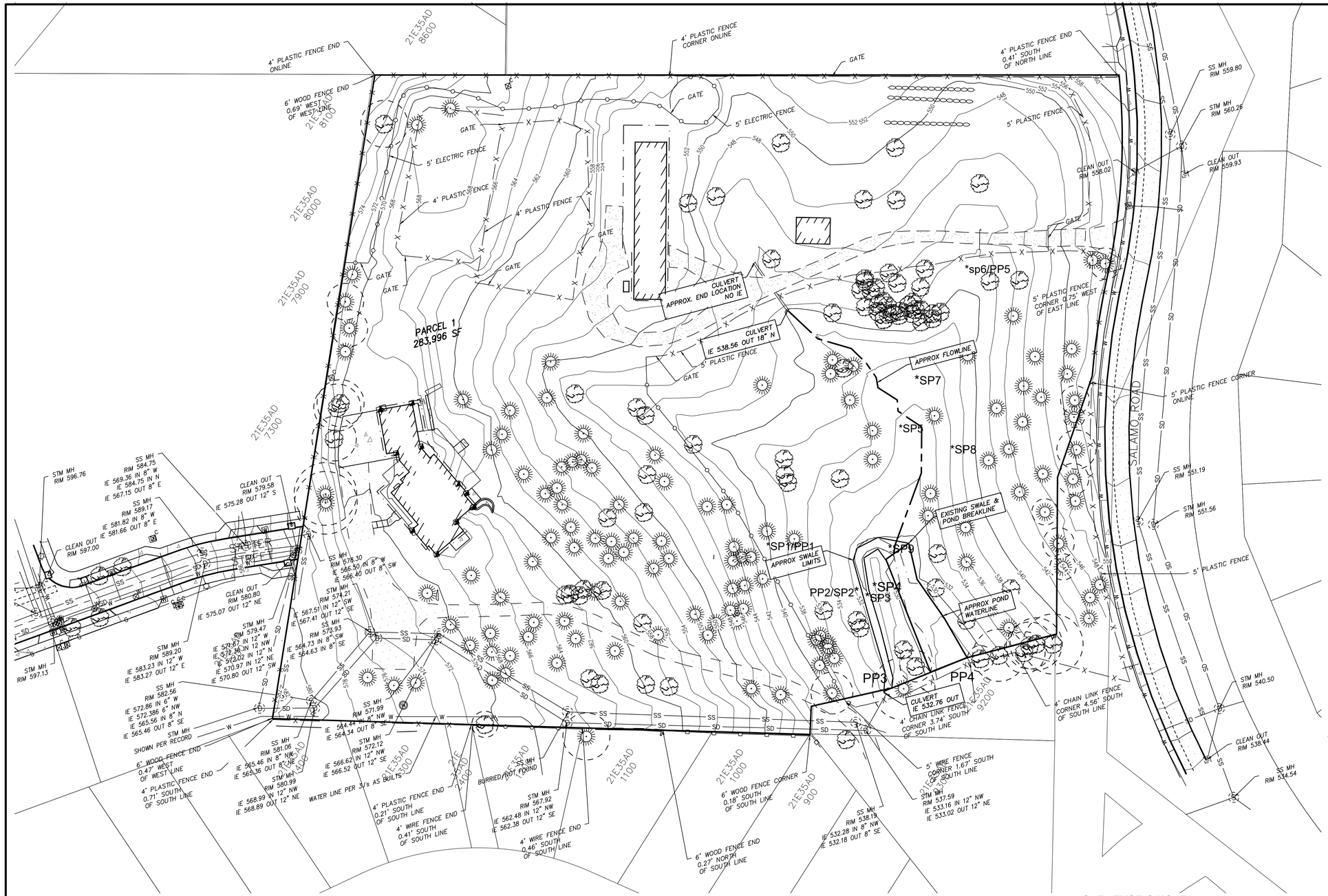
Map Created: 6/6/2014

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



LEGEND

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

SP=Sample Plot
PP=Photo Point

40' 0 20' 40' 80'
SCALE: 1" = 40'

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.

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

REVISIONS

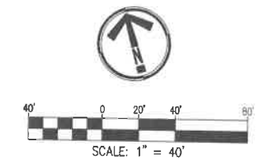
NO.	DATE	DESCRIPTION
0	-	-
1	-	-

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
FAX: (503) 746-8813
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



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
FAX: (503) 626-8657
www.emeriodesign.com

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

State Land Board

Kate Brown
Governor

Bev Clarno
Secretary of State

Tobias Read
State Treasurer

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.

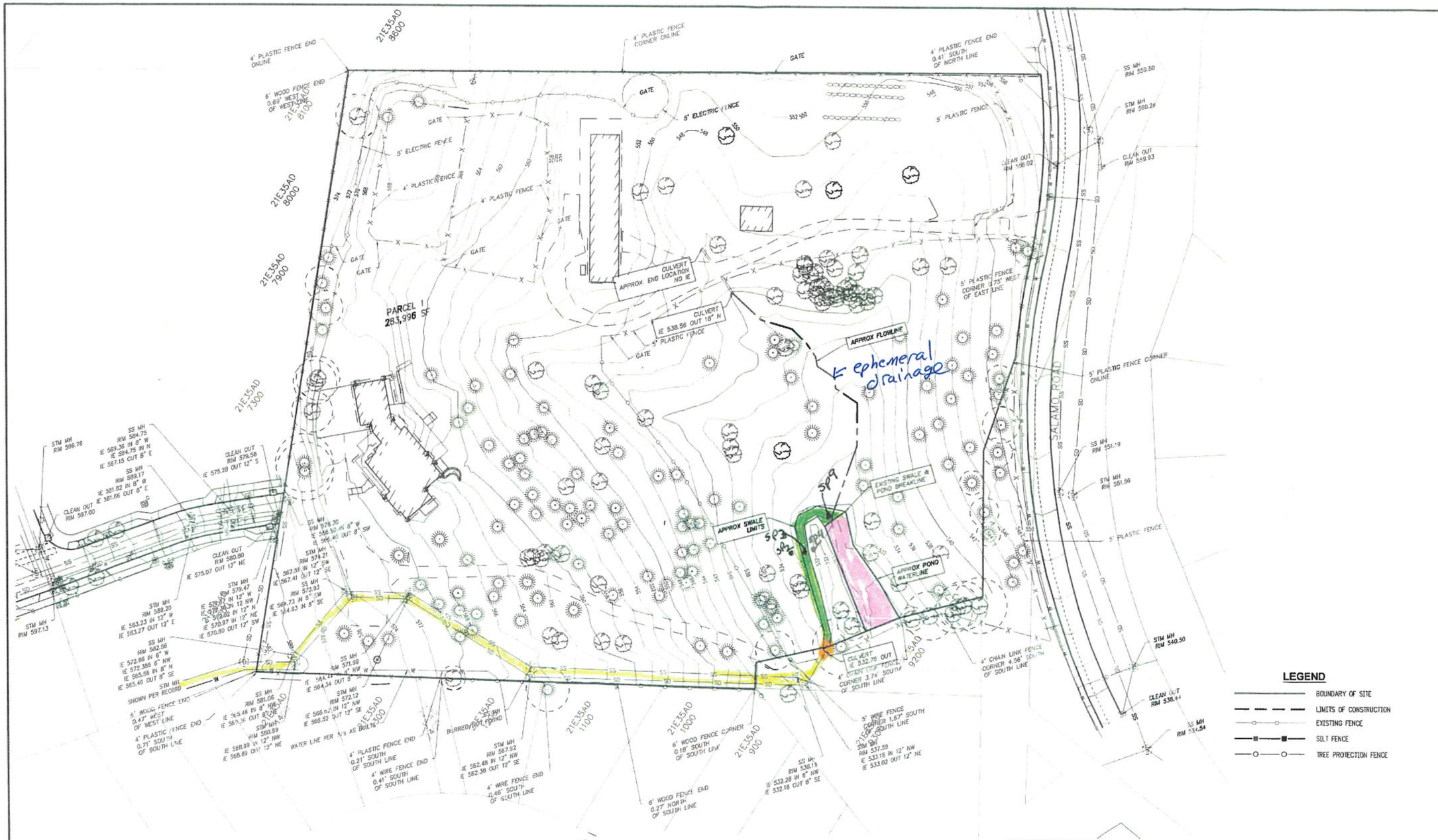
Sincerely,

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



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.

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

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

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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
FAX: (503) 746-8813
www.emeriodesign.com

PRELIMINARY

SHEET
OF

FILE: 10642-001 21190 Bland Circle_subdivision\219-11-02\Ex cond to Street & Assoc\10642-001_02ex1.revised, Layout: 2 EXISTING CONDITIONS PLAN, Plot Date: 3/27/2019 1:28 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

State Land Board

Kate Brown
Governor

Bev Clarno
Secretary of State

Tobias Read
State Treasurer

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).

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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

March 2018

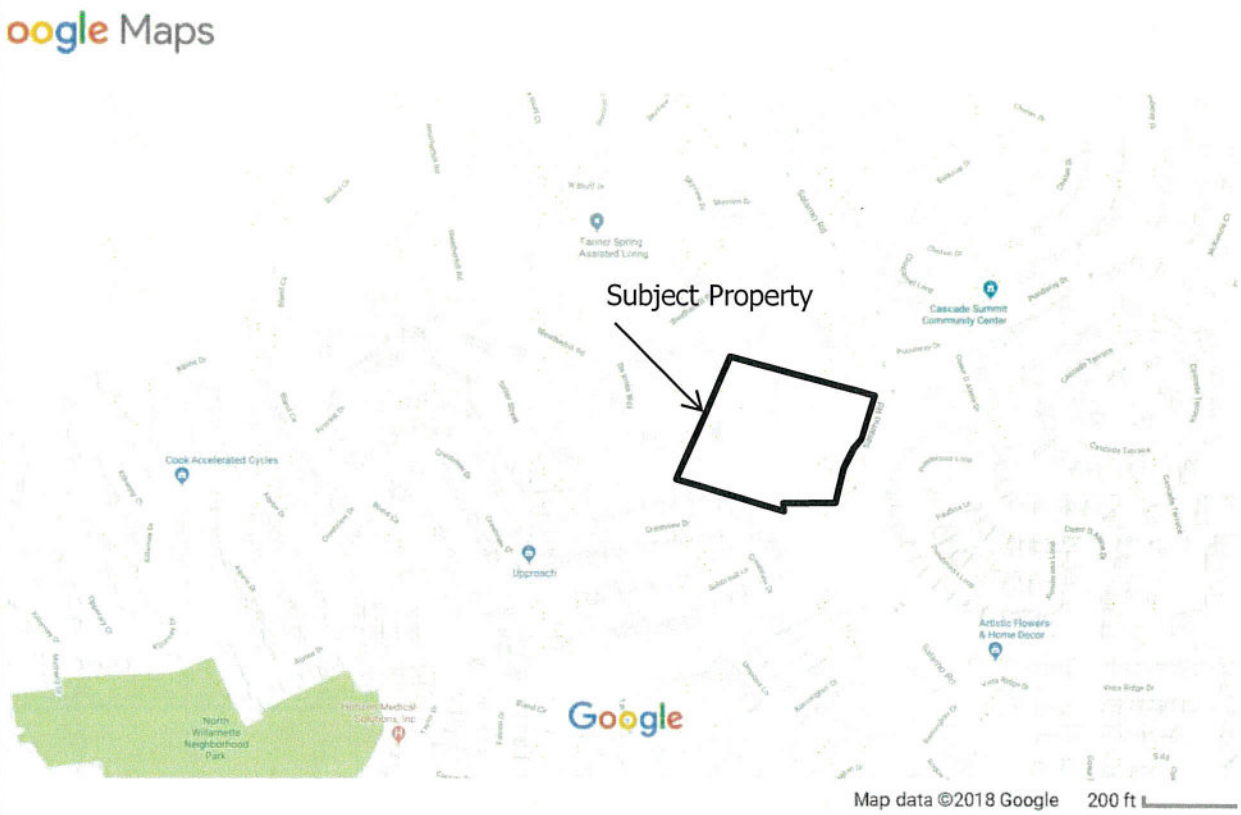

FIGURE 1. SITE LOCATION MAP
Bland Circle
S&A# 2649

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

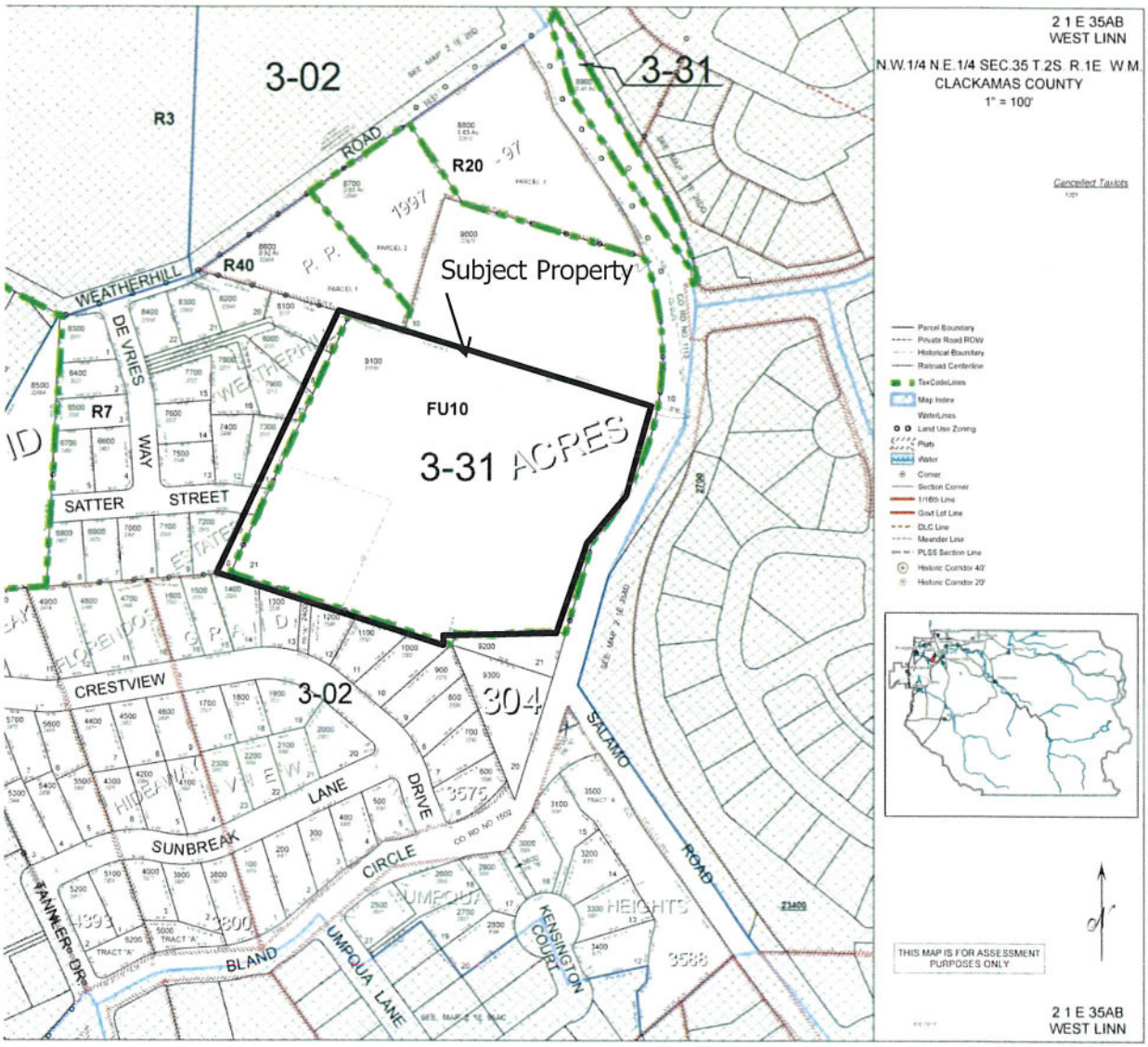

FIGURE 2. TAX MAP
Bland Circle
S&A#2649

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

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.

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

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

Figure 6

REVISIONS

NO.	DATE	DESCRIPTION
0		
1		

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
PH: (503) 643-3804
FAX: (503) 639-9592
www.emeriodesign.com

PRELIMINARY

SHEET OF

FILE:P:\0542-001 23190 S Bland Circle_outgoing\2019-01-08_Ex cond to Schott & Assoc\0542-001_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.

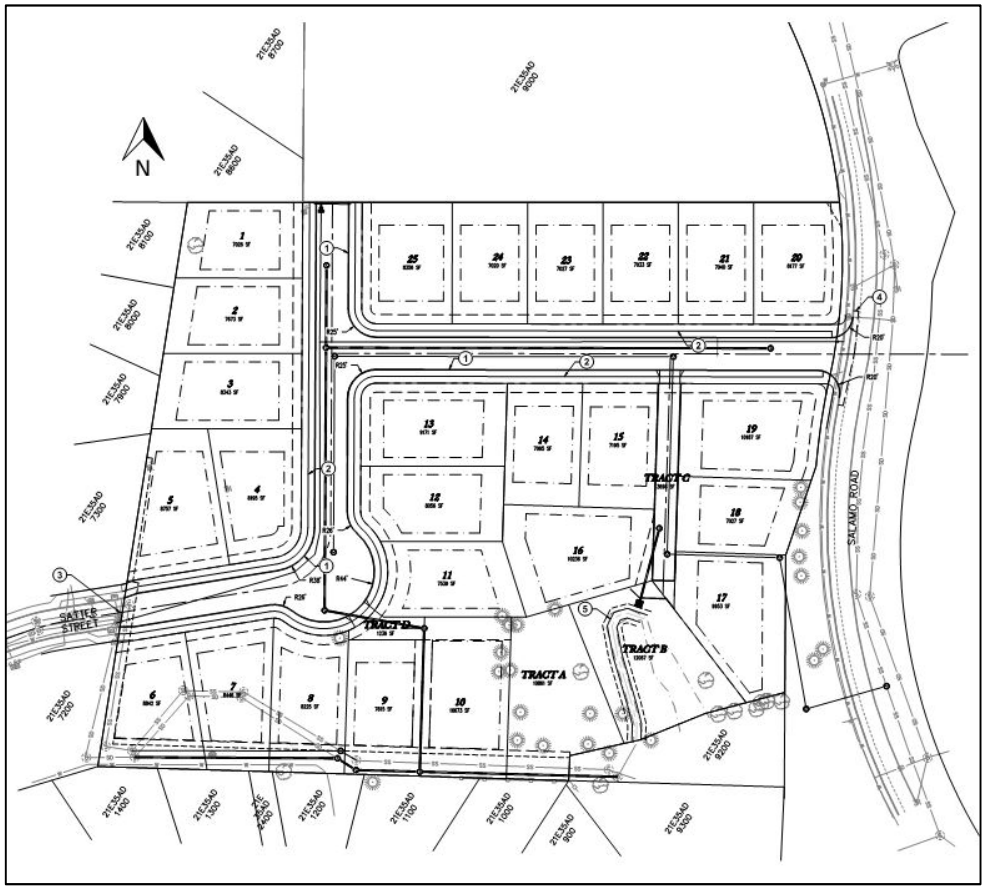

Figure 1 Site Plan

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.

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.

Arnold, Jennifer

From: Steve Miller <stevem@emeriodesign.com>
Sent: Wednesday, August 21, 2019 2:13 PM
To: Arnold, Jennifer
Subject: FW: Completeness determination for SUB-19-01 at 23190 Bland Circle
Attachments: 0542-001_Planning_Combined.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Jennifer,

Attached is an electronic copy of the revised plans for the Bland/Salamo Subdivision. I will be dropping off the hard copies this afternoon. Regarding the incomplete Planning items, you already have the TIA letter addressing the trips, the street names have now been added to the plan set, and the neighborhhod association meeting requirements are addressed below.

In regards to the incomplete item regarding the neighborhood association meeting, can you accept the response below as our reply?

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

EMERIO Design

Steve Miller | Senior Planner/Project Manager
6445 SW Fallbrook Place, Suite 100, Beaverton, OR 97008
Ofc: 503.746.8812 Cell: 541.318.7487 |
www.emeriodesign.com

From: Jake Snyder
Sent: Wednesday, August 21, 2019 1:47 PM
To: Josh Ayers ; Eric Evans ; Steve Miller
Subject: RE: Completeness determination for SUB-19-01 at 23190 Bland Circle

Sorry, do not use that one. Use this one.

From: Jake Snyder
Sent: Wednesday, August 21, 2019 1:41 PM
To: Josh Ayers <josh.ayers@emeriodesign.com>; Eric Evans <eric@emeriodesign.com>; Steve Miller <stevem@emeriodesign.com>
Subject: RE: Completeness determination for SUB-19-01 at 23190 Bland Circle

Updated planning set attached.

From: Josh Ayers <josh.ayers@emeriodesign.com>
Sent: Tuesday, August 20, 2019 1:08 PM
To: Jake Snyder <jakes@emeriodesign.com>; Eric Evans <eric@emeriodesign.com>; Steve Miller <stevem@emeriodesign.com>
Subject: RE: Completeness determination for SUB-19-01 at 23190 Bland Circle

Drainage report is revised, signed, and scanned in the following folder:

P:\0542-001 23190 S Bland Circle\docs\civl\storm

Due to a soon coming birth, I will be out of office at a moment's notice, tentatively until September 16.

Joshua Ayers | Civil Designer, EIT
6445 SW Fallbrook Place, Suite 100, Beaverton, OR 97008
503.746.8812 | www.emeriodesign.com

From: Jake Snyder <jakes@emeriodesign.com>
Sent: Tuesday, August 20, 2019 8:51 AM
To: Eric Evans <eric@emeriodesign.com>; Josh Ayers <josh.ayers@emeriodesign.com>; Steve Miller <stevem@emeriodesign.com>
Subject: RE: Completeness determination for SUB-19-01 at 23190 Bland Circle

Still fixing grading, trying to have it done this afternoon.

From: Eric Evans <eric@emeriodesign.com>
Sent: Tuesday, August 20, 2019 8:30 AM
To: Jake Snyder <jakes@emeriodesign.com>; Josh Ayers <josh.ayers@emeriodesign.com>; Steve Miller <stevem@emeriodesign.com>
Subject: FW: Completeness determination for SUB-19-01 at 23190 Bland Circle

Jake,

How are the plans coming along?

Josh,

Drainage?

Steve,

Your stuff?

Eric Evans, P.E.
Engineering Director
503.853.1910 | www.emeriodesign.com
6445 SW Fallbrook Place, Suite 100
Beaverton, OR 97008

From: JJ Portlock <jportlock@tollbrothers.com>
Sent: Tuesday, August 20, 2019 8:10 AM

To: Steve Miller <stevem@emeriodesign.com>; Eric Evans <eric@emeriodesign.com>
Cc: Nicholas Peets <npeets@tollbrothers.com>; Mike Grubbe <mgrubbe@tollbrothers.com>
Subject: FW: Completeness determination for SUB-19-01 at 23190 Bland Circle

Steve/Eric,

Did the re-submittal go in for this?

Thanks,

JJ Portlock
Division Vice President
Toll Brothers
4949 Meadows Rd, Suite 420
Lake Oswego, OR 97035
Office: (971) 339-5176 | Cell: (425) 829-1566

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From: Arnold, Jennifer <jarnold@westlinnoregon.gov>
Sent: Wednesday, August 14, 2019 4:37 PM
To: 'Steve Miller' <stevem@emeriodesign.com>; JJ Portlock <jportlock@tollbrothers.com>
Subject: Completeness determination for SUB-19-01 at 23190 Bland Circle

EXTERNAL EMAIL

Hello,

Please see the attached completeness determination for the above referenced project. If you have any questions please reply to this email.

Jennifer

Jennifer Arnold
Associate Planner
Planning

22500 Salamo Rd.
West Linn, Oregon 97068
jarnold@westlinnoregon.gov
westlinnoregon.gov
503-742-6057

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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

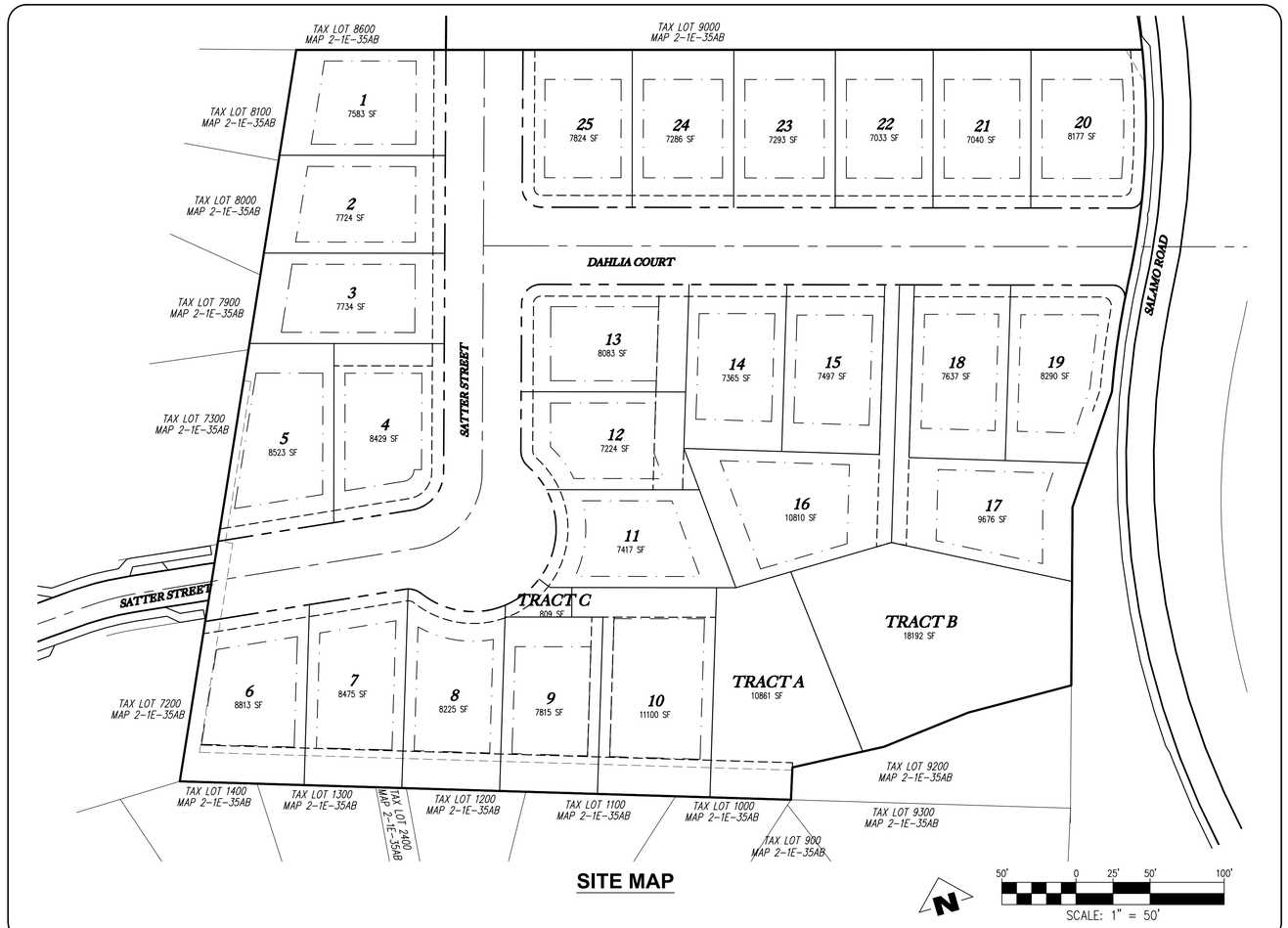
- LANDSCAPE HEDGE
- FLOW LINE
- FENCE
- EXISTING MAJOR CONTOUR LINE
- EXISTING MINOR CONTOUR LINE
- PROPOSED MAJOR CONTOUR LINE
- PROPOSED MINOR CONTOUR LINE
- SIGNIFICANT RESOURCE OVERLAY ZONE (SROZ)
- SANITARY SEWER LINE
- STORM DRAIN LINE
- GAS LINE
- WATER LINE
- OVERHEAD UTILITIES LINE
- UNDERGROUND 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.

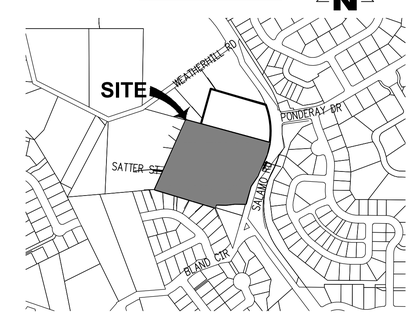
THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR 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

SH.	TITLE
1	COVER SHEET
2	EXISTING CONDITIONS & DEMO PLAN
3	TREE PRESERVATION PLAN
4	TREE PRESERVATION DETAILS
5	SLOPE ANALYSIS PLAN
6	PRELIMINARY PLAT
7	PRELIMINARY SITE PLAN
8	GRADING & EROSION CONTROL PLAN
9	COMPOSITE UTILITY PLAN
10	SATTER STREET PLAN & PROFILE
11	DAHLIA COURT PLAN & PROFILE
12	LIGHTING PLAN
13	FUTURE LOT LAYOUT

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 SUBMITTAL
1	08/19	PLANNING RESUBMITTAL

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 13

FILE P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_01cov, Layout: 1 COVER SHEET, Plot Date: 8/21/2019 8:11 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. EXISTING WELL TO BE DECOMMISSIONED.
13. EXISTING SEPTIC DRAIN FIELD TO BE DECOMMISSIONED.

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

40' 0 20' 40' 80'

SCALE: 1" = 40'

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.

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 SUBMITTAL
1	08/19	PLANNING RESUBMITTAL

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6445 SW FALLBROOK PLACE, SUITE 100
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FAX: (503) 626-0332
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PRELIMINARY

SHEET 2 OF 13

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_02exst, Layout: 2 EXISTING CONDITIONS & DEMO PLAN, Plot Date: 8/20/2019 4:02 PM, by: Jake Snyder

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 SUBMITTAL
1	08/19	PLANNING RESUBMITTAL

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
FAX: (503) 626-8502
www.emeriodesign.com

PRELIMINARY

SHEET 3 OF 13

FILE:P:\0542-001-23190 S Bland Circle\dwg\plan\Planning Set\0542-001_DJtree, Layout: 3 TREE PRESERVATION PLAN, Plot Date: 8/21/2019 8:16 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 SUBMITTAL
1	08/19	PLANNING RESUBMITTAL

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

PRELIMINARY

SHEET 4 OF 13

FILE: P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_04tree, Layout: 4 TREE PRESERVATION DETAILS, Plot Date: 8/21/2019 8:17 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	

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

SLOPE ANALYSIS PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	02/19	PLANNING SUBMITTAL
1	08/19	PLANNING RESUBMITTAL

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FAX: (503) 626-0592
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PRELIMINARY

SHEET 5 OF 13

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_0Sslop_Layout: 2 EXISTING CONDITIONS PLAN, Plot Date: 8/21/2019 8:18 AM, by: Jake 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)

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

PRELIMINARY PLAT

REVISIONS

NO.	DATE	DESCRIPTION
0	02/19	PLANNING SUBMITTAL
1	08/19	PLANNING RESUBMITTAL

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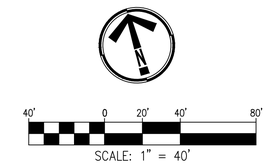
PRELIMINARY

SHEET 6 OF 13

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_Dbplat_Layout: PRELIMINARY PLAT, Plot Date: 8/21/2019 8:46 AM, by: Jake Snyder



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 SUBMITTAL
1	08/19	PLANNING RESUBMITTAL

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BEAVERTON, OREGON 97008
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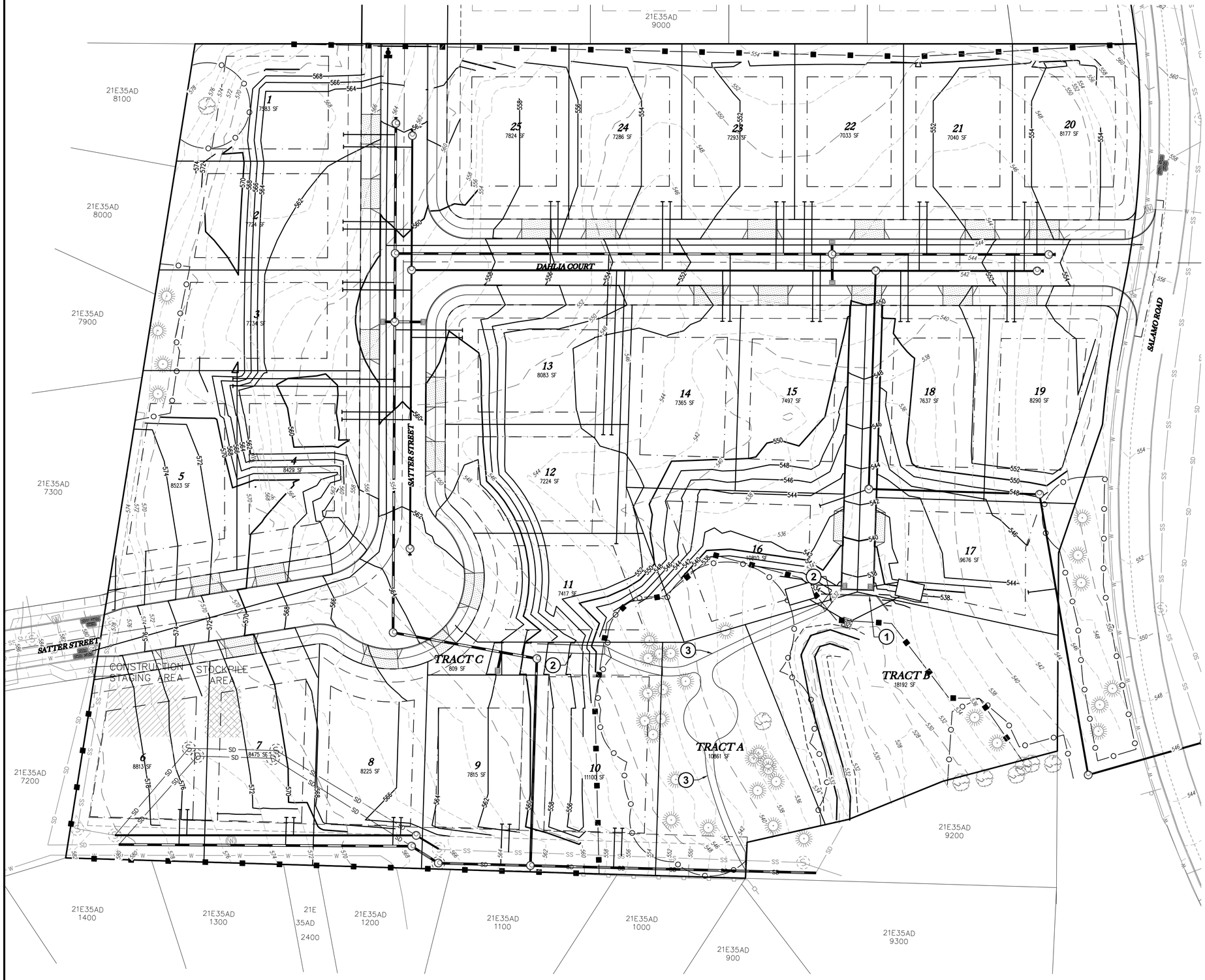
PRELIMINARY

SHEET 7 OF 13

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_07site, Layout: 7 PRELIMINARY-SITE PLAN, Plot Date: 8/21/2019 8:59 AM, by: Jake Snyder



30' 0 15' 30' 60'

SCALE: 1" = 30'

LEGEND

- 220 — PROPOSED MAJOR CONTOUR LINE
- 219 — PROPOSED MINOR CONTOUR LINE
- 195 — EXISTING MAJOR CONTOUR LINE
- 194 — EXISTING MINOR CONTOUR LINE
- PROPERTY BOUNDARY LINE
- SIGNIFICANT RESOURCE OVERLAY ZONE (SROZ)
- PROPOSED LOT LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED PUE EASEMENT
- PROPOSED SANITARY SEWER LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED WATER LINE
- CONSTRUCTION TREE PROTECTION FENCE (6' HIGH CHAIN LINK WITH METAL POSTS)
- 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 SUBMITTAL
1	08/19	PLANNING RESUBMITTAL

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TEL: (503) 746-8812
FAX: (503) 626-8592
www.emeriodesign.com

PRELIMINARY

SHEET 8 OF 13

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_DBgrad, Layout: 10 GRADING & EROSION CONTROL PLAN, Plot Date: 8/21/2019 11:33 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 19)
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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1	08/19	PLANNING RESUBMITTAL

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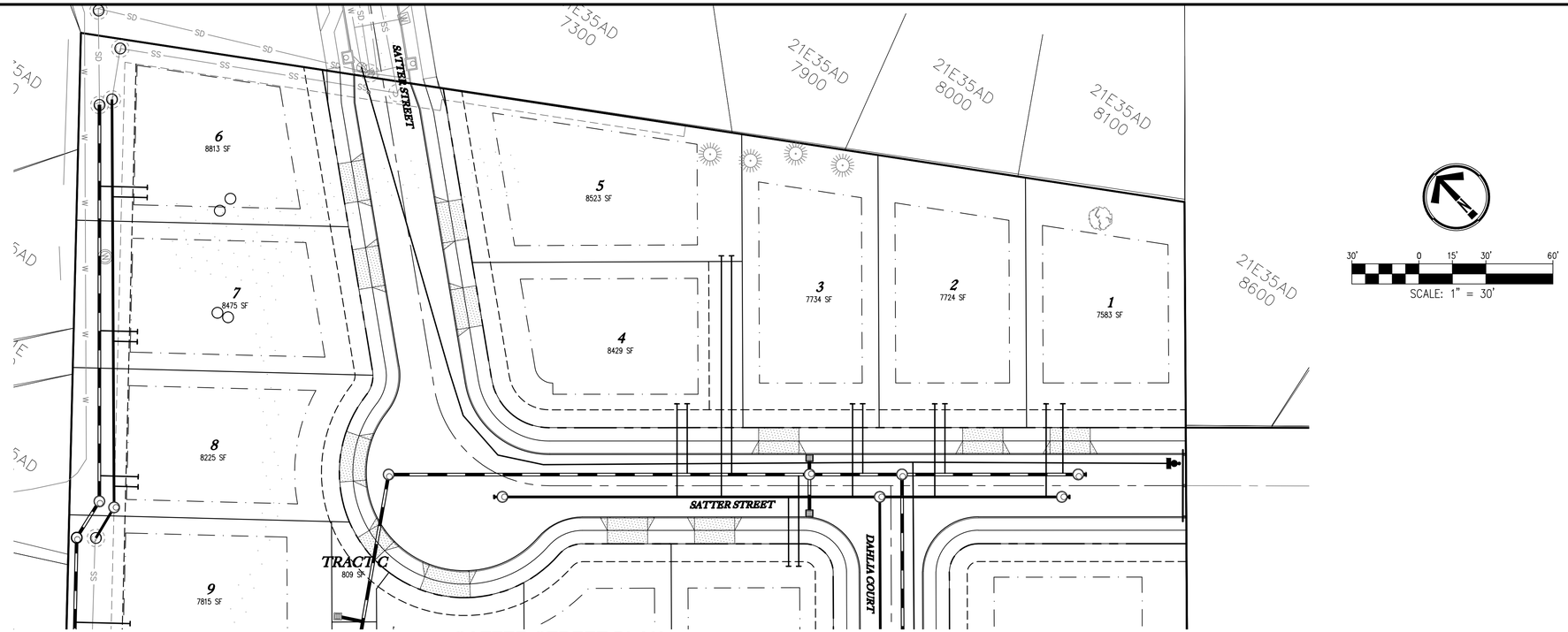
PRELIMINARY

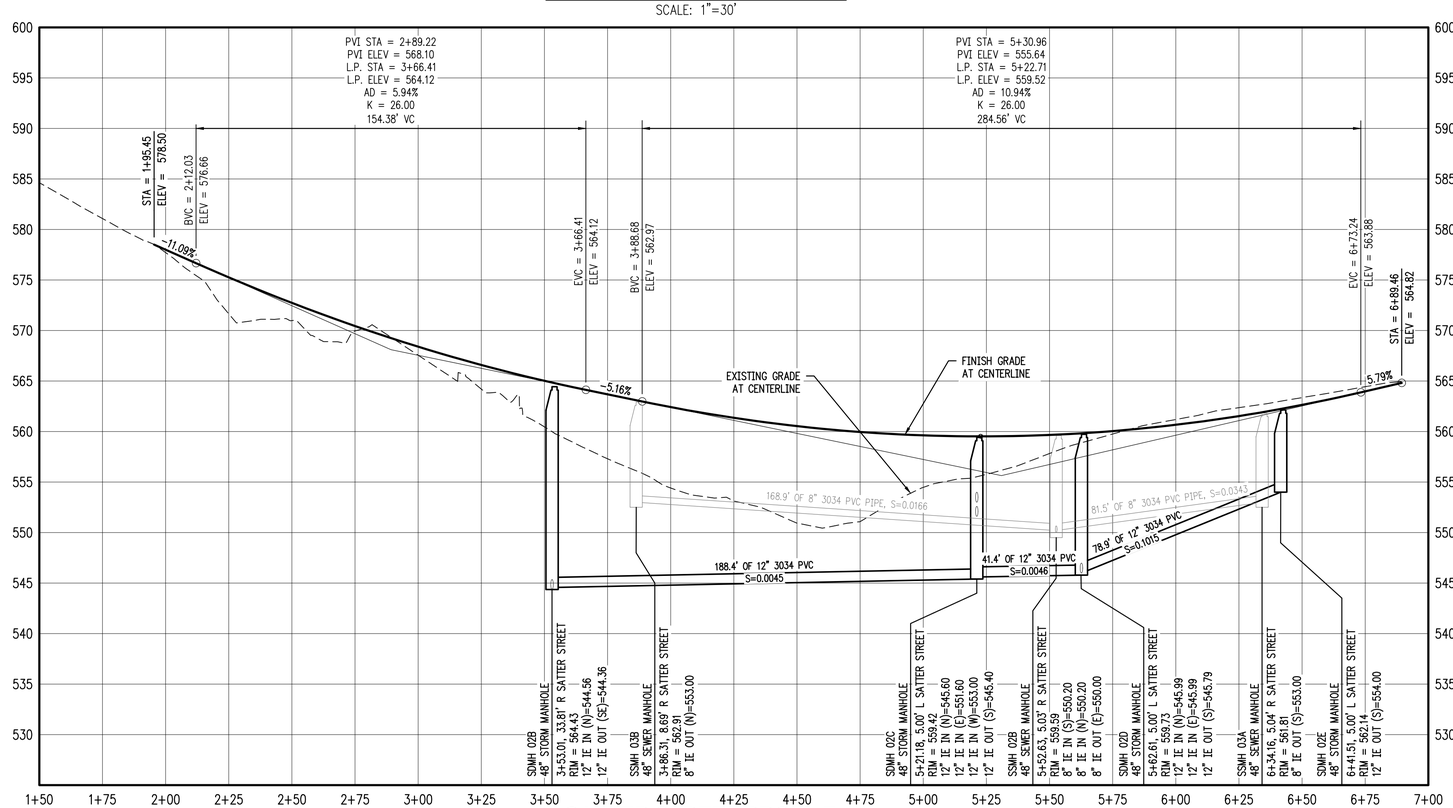
SHEET 9 OF 13

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_OSuth, Layout: 9 COMPOSITE UTILITY PLAN, Plot Date: 8/21/2019 9:07 AM, by: Jake Snyder



SATTER STREET PLAN

SCALE: 1"=30'



SATTER STREET PROFILE

SCALE: 1"=30' HORZ. 1"=7.5' VERT.

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

SATTER STREET PLAN & PROFILE

REVISIONS

NO.	DATE	DESCRIPTION
0	02/19	PLANNING SUBMITTAL
1	08/19	PLANNING RESUBMITTAL

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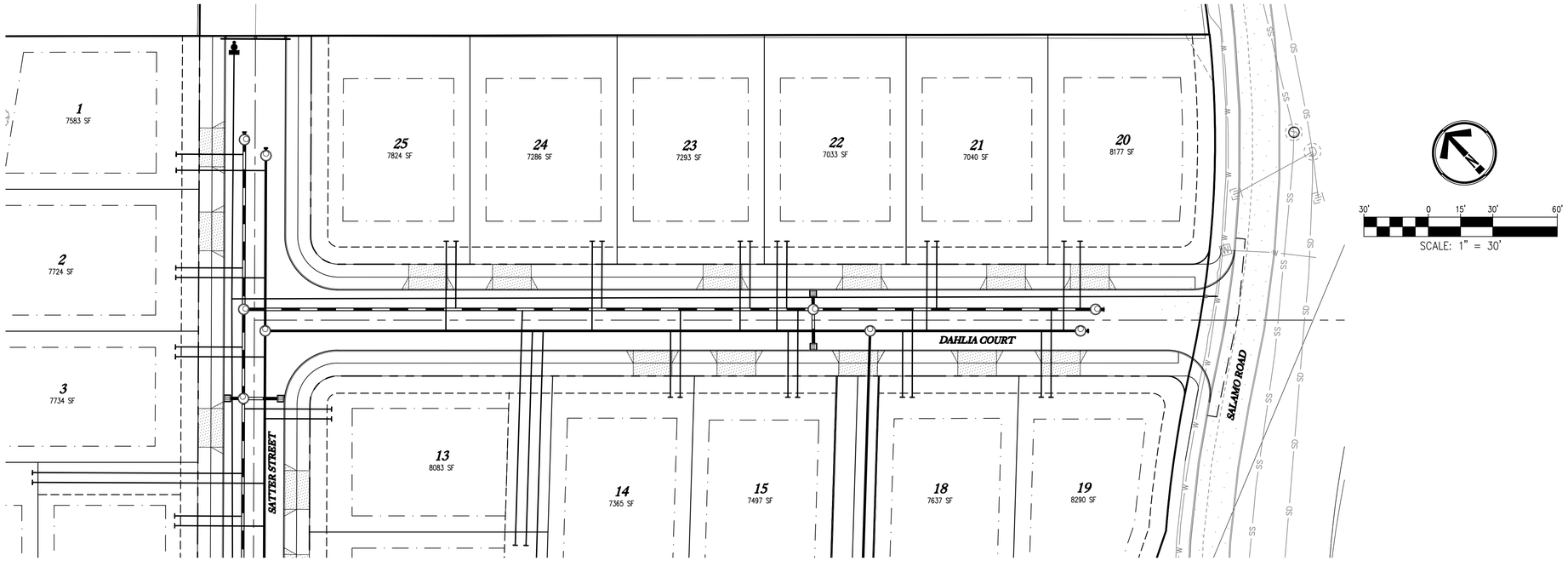
PRELIMINARY

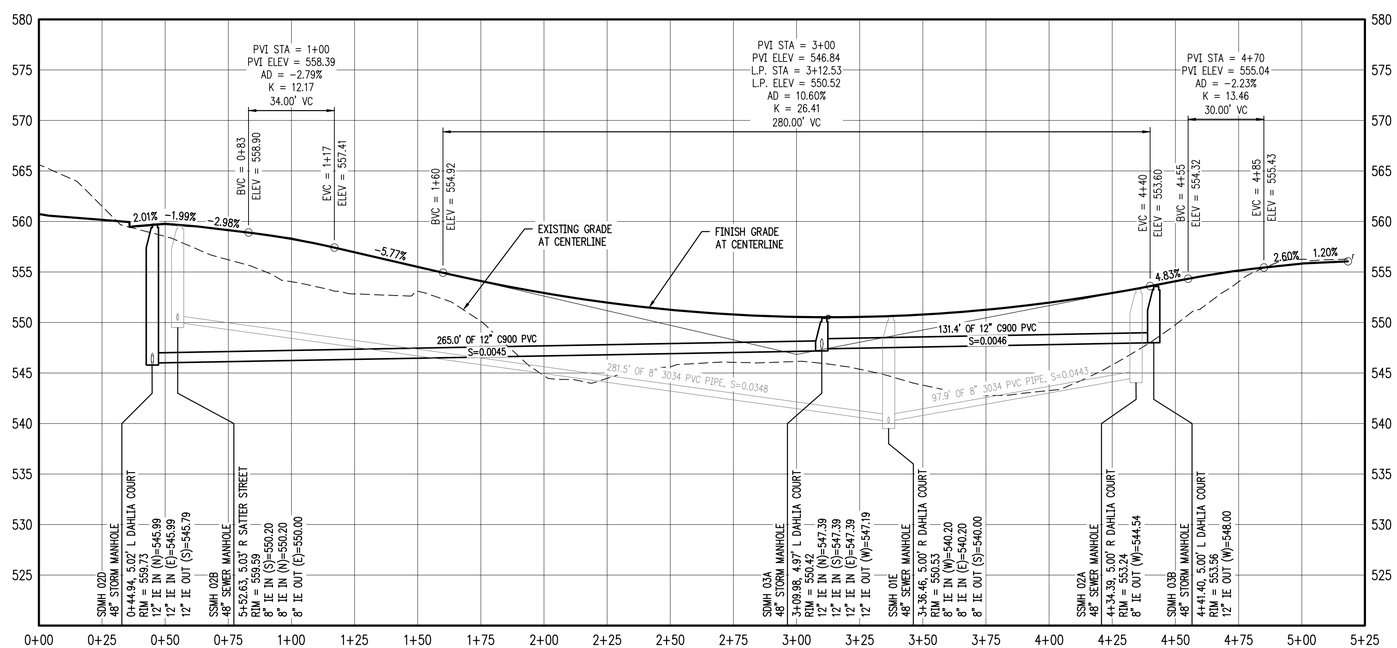
SHEET 10 OF 13

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_10satter, Layout: 10 SATTER STREET PROFILE, Plot Date: 8/21/2019 9:08 AM, by: Jake Snyder



DAHLIA COURT PLAN

SCALE: 1"=30'



DAHLIA COURT PROFILE

SCALE: 1"=30' HORZ. 1"=7.5' VERT.

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

DAHLIA COURT PLAN & PROFILE

REVISIONS

NO.	DATE	DESCRIPTION
0	02/19	PLANNING SUBMITTAL
1	08/19	PLANNING RESUBMITTAL

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6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
FAX: (503) 746-8992
www.emeriodesign.com

PRELIMINARY

SHEET 11 OF 13

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_11dahlia, Layout: 11 DAHLIA COURT PROFILE, Plot Date: 8/21/2019 9:13 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

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

BLAND SALAMO
WEST LINN, OR

LIGHTING PLAN

REVISIONS

NO.	DATE	DESCRIPTION
0	02/19	PLANNING SUBMITTAL
1	08/19	PLANNING RESUBMITTAL

NO.	REV DATE	REV DESCRIPTION

EMERIO Design
6445 SW FALLBROOK PLACE, SUITE 100
BEAVERTON, OREGON 97008
TEL: (503) 746-8812
FAX: (503) 746-8813
www.emeriodesign.com

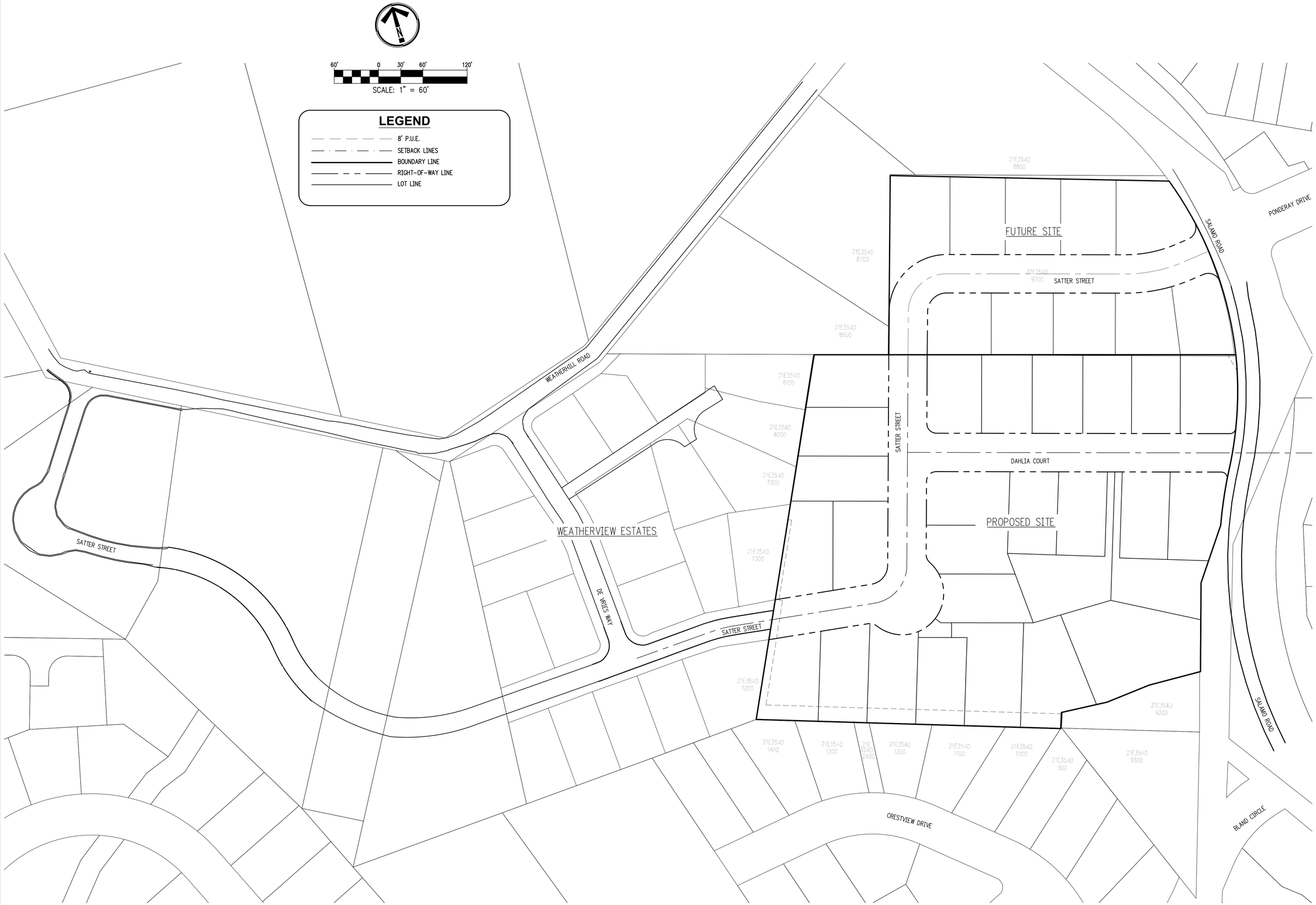
Title: STREET LIGHTING
Designed by: Adam Suminski
Checked by: Jesse Culp
Date: February 11, 2019

DWG. NO
EL1

PRELIMINARY

SHEET 12 OF 13

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_12light, Layout: 10 LIGHTING PLAN, Plot Date: 8/21/2019 9:15 AM, by: Jake Snyder



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

FUTURE LOT LAYOUT

REVISIONS

NO.	DATE	DESCRIPTION
0	02/19	PLANNING SUBMITTAL
1	08/19	PLANNING RESUBMITTAL

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FAX: (503) 626-6860
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PRELIMINARY

SHEET 13 OF 13

FILE:P:\0542-001 23190 S Bland Circle\dwg\plan\Planning Set\0542-001_1Muls, Layout: 11 FUTURE LOT LAYOUT, Plot Date: 8/21/2019 9:15 AM, by: Jake Snyder

From:	Steve Miller
To:	Arnold, Jennifer
Subject:	FW: SUB-19-01 info from Engineering
Date:	Monday, September 16, 2019 9:35:35 AM
Attachments:	Subdivision Narrative.docx

Hi Jennifer,

Are the responses below and the attached narrative addressing the LIDA planters on Lots 16 & 17 sufficient to get the ball rolling again on this project?

Steve Miller | Senior Planner/Project Manager
6445 SW Fallbrook Place, Suite 100, Beaverton, OR 97008
Ofc: 503.746.8812 Cell: 541.318.7487 | www.emeriodesign.com

From: Jake Snyder <jakes@emeriodesign.com>
Sent: Monday, September 9, 2019 1:25 PM
To: Eric Evans <eric@emeriodesign.com>; Steve Miller <stevem@emeriodesign.com>
Cc: Josh Ayers <josh.ayers@emeriodesign.com>
Subject: RE: SUB-19-01 info from Engineering

Please review and correct me where needed.

1. The applicant did not address the requirements of CDC 85.160, including in the narrative.
    a. The size and location of all existing water sewer, storm, and other utilities within the site and adjoining streets and properties need to be shown on the tentative plan. Except for a bit of information shown in profiles provided some proposed new lines, the sizing information is missing for existing and proposed infrastructure. (85.160.E.7)
        Except for LIDA planters on lots 16 & 17, all lots drain through a new 12" main storm sewer system with 4" lateral connections & using 48" standard storm manholes. Street runoff is captured in standard CG-2 catch-basins at the low points of proposed streets. The new 12" storm main connects to existing 12" storm sewer & is treated in an expanded on-site storm swale & pond. For sewer, lots 6-10 connect through 4" laterals to an existing & partially replaced 8" sanitary sewer main at the rear of lots. For sewer in the remaining lots, a new 8" sanitary sewer main with 48" standard manholes will connect to an existing 8" sanitary main in Salamo Road. Water service will be new 8" Ductile main with 1" individual service to all lots & connect at existing 8" & 12" mains in Satter & Salamo respectively.
    b. The width, location and purpose of all easements needs to be shown. (85.160.F.5)
        Along the rear of lots 6-10 & Tract B will be a 25' public utility easement to replace an existing 20' public utility easement. Between lots 9 & 10 will be 15' public storm sewer easement. At the front of lot 10, there will be a 20' wide shared access & public utility easement. Along the flags of lots 16 & 17 will be a 20' shared access & public utility easement. Along the rear of lots 12 & 13 will be a 20' private utility easement for the benefit of lots 11 & 12. Along the rear of lot 4 will be a 15' private utility easement for the benefit of lot 5. Lastly there will be a continuous 8' public

utility easement along all lots with frontage on public street.

c. A street tree planting plan (85.160.F.7)

A street tree planting plan will be provided to the city as part of the final engineering submittal. The Applicant requests that this be made a condition of final approval.

d. Identify the land area to be dedicated to the City or to common ownership (85.160.F.8)

The new proposed rights-of-ways for Satter St. and Dahlia Ct. will be dedicated public right-of-ways. Tract C will be a small private street held in common ownership.

2. The applicant needs to address the requirements of CDC 85.170

a. Show sizing of all proposed infrastructure. On the plan view of the sewer, show the depth of all manholes. Provide a profile of all storm infrastructure.

Depth & profiles of the mainlines of storm & sewer in the proposed streets are shown on sheets 10 & 11 of the planning set. A comprehensive list of all data including depths, laterals, crossings, sumps, etc. can be provided during final engineering submittal.

b. Some of the proposed infrastructure (storm and sewer) is located outside of the right-of-way. Provide a rational that the alternate location is necessary.

At the storm connection outside of the right of way, near the rear of lots 9 & 10, this was the only feasible connection that could be made while still treating & maintaining gravity service to all proposed lots. After being treating in an expanded WQ swale & pond it re-enters existing storm sewer infrastructure in the ROW near the intersection of Bland & Salamo. For the sanitary sewer connections, two were made to achieve gravity service throughout the subdivision. For lots 6-10 lateral connections are made to existing 8" mainline as well as a re-aligned portion of the same mainline to bring it inside the utility easement. This existing mainline connects in the ROW of Bland Circle. The remainder of the lots connect through a new mainline that connects in the ROW of Salamo Road. The decision of connecting to south of the new intersection of Dahlia Ct & Salamo Rd is due to it being the only feasible location to provide adequate gravity service to the lower lots in the subdivision.

c. LIDA planters are only proposed for lot 16/17. Revise narrative response on page 15 to accurately reflect this information.

See attached narrative.

From: Steve Miller
To: Arnold, Jennifer
Subject: FW: SUB-19-01 info from Engineering
Date: Monday, September 16, 2019 9:35:35 AM
Attachments: Subdivision Narrative.docx

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Ofc: 503.746.8812 Cell: 541.318.7487 | www.emeriodesign.com

From: Jake Snyder <jakes@emeriodesign.com>
Sent: Monday, September 9, 2019 1:25 PM
To: Eric Evans <eric@emeriodesign.com>; Steve Miller <stevem@emeriodesign.com>
Cc: Josh Ayers <josh.ayers@emeriodesign.com>
Subject: RE: SUB-19-01 info from Engineering

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EMERIO Design

CIVIL ENGINEERS & PLANNERS

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

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23190 Bland Circle
West Linn, OR 97068

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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. <u>Traffic Impact Analysis (TIA).</u>

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

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

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

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

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

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

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

C. <u>Grading</u>.

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

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

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

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

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

b. Assessment of engineering geological conditions and factors;

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

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

RESPONSE: As part of the application materials, the applicant has provided a grading and erosion control plan (see Sheet 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. <u>Sewer</u>.

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 Lots 16 and 17 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. ***<u>Alignment.</u> 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. ***<u>Future extension of streets.</u> 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. ***<u>Intersection angles.</u> 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. ***<u>Additional right-of-way for existing streets.</u> 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. ***<u>Cul-de-sacs</u>.***

    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. <u>Extension of streets to subdivisions</u>. 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. <u>Local and minor collector streets</u> 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. <u>Monuments</u>. 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. <u>Dead-end street signs</u>. 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. <u>Signs indicating future use</u> 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. <u>Street lights</u>. 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. <u>Utilities</u>. 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. <u>Curb cuts and driveways</u>. 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. <u>Street trees</u>. 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. <u>Joint mailbox facilities</u> 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.

PC-4 PUBLIC TESTIMONY

March 5, 2019

Jennifer Arnold
Associate Planner
City of West Linn
22500 Salamo Rd
West Linn, Oregon
97068

Re: SUB-19-01, 25-Lot Subdivision Bland Circle
Tax Lot I.D: 21E35AB09100

Jennifer,

Thank you for the opportunity to review the land use application surrounding the above named development project. These notes are provided in regards to the completeness review request sent on March 4, 2019. Tualatin Valley Fire & Rescue will endorse this proposal predicated on the following criteria and conditions of approval.

FIRE APPARATUS ACCESS:

1. **FIRE APPARATUS ACCESS ROAD DISTANCE FROM BUILDINGS AND FACILITIES:** Access roads shall be within 150 feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building or facility. An approved turnaround is required if the remaining distance to an approved intersecting roadway, as measured along the fire apparatus access road, is greater than 150 feet. (OFC 503.1.1) **Current proposal appears to meet the above requirement.**

2. **DEAD END ROADS AND TURNAROUNDS:** Dead end fire apparatus access roads in excess of 150 feet in length shall be provided with an approved turnaround. Diagrams can be found in the corresponding guide. http://www.tvfr.com/DocumentCenter/View/1438 (OFC 503.2.5 & D103.1) **Current proposal appears to meet the above requirement.**

3. **FIRE APPARATUS ACCESS ROAD WIDTH AND VERTICAL CLEARANCE:** Fire apparatus access roads shall have an unobstructed driving surface width of not less than 20 feet (26 feet adjacent to fire hydrants (OFC D103.1)) and an unobstructed vertical clearance of not less than 13 feet 6 inches. (OFC 503.2.1) **Please ensure the private access road serving lots 16-19 is not less than 20' feet wide.**

4. **FIRE APPARATUS ACCESS ROADS FOR INDIVIDUAL ONE AND TWO FAMILY DWELLINGS AND ACCESSORY STRUCTURES:** The fire district will approve access roads of 12 feet for up to three dwelling units (Group R-3) and accessory (Group U) buildings. (OFC 503.1.1) **Please ensure the private access road serving lots 9 & 10 is not less than 12' feet wide.**

5. **NO PARKING SIGNS:** Where **private** fire apparatus roadways are not of sufficient width to accommodate parked vehicles and 20 feet of unobstructed driving surface, "No Parking" signs shall be installed on one or both sides of the roadway and in turnarounds as needed. Signs shall read "NO PARKING - FIRE LANE" and shall be installed with a

clear space above grade level of 7 feet. Signs shall be 12 inches wide by 18 inches high and shall have red letters on a white reflective background. (OFC D103.6) **Please ensure "No Parking – Fire Lane" signs are installed on the private access roads.**

6. **PAINTED CURBS:** Where required, fire apparatus access roadway curbs shall be painted red (or as approved) and marked "NO PARKING FIRE LANE" at 25 foot intervals. Lettering shall have a stroke of not less than one inch wide by six inches high. Lettering shall be white on red background (or as approved). (OFC 503.3) Note: Curb painting is an additional option to No Parking signs (not required unless specified).

7. **SURFACE AND LOAD CAPACITIES:** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced as to provide all-weather driving capabilities. (OFC 503.2.3)

8. **ACCESS DURING CONSTRUCTION:** Approved fire apparatus access roadways shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. Temporary address signage shall also be provided during construction. (OFC 3309 and 3310.1)

9. **TRAFFIC CALMING DEVICES:** Shall be prohibited on fire access routes unless approved by the Fire Marshal. (OFC 503.4.1). Traffic calming measures linked here: http://www.tvfr.com/DocumentCenter/View/1578

FIREFIGHTING WATER SUPPLIES:

10. **FIREFIGHTING WATER SUPPLY FOR INDIVIDUAL ONE- AND TWO-FAMILY DWELLINGS:** The minimum available fire flow for one and two-family dwellings served by a municipal water supply shall be 1,000 gallons per minute. If the structure(s) is (are) 3,600 square feet or larger, the required fire flow shall be determined according to OFC Appendix B. (OFC B105.2)

11. **FIRE FLOW WATER AVAILABILITY:** Applicants shall provide documentation of a fire hydrant flow test or flow test modeling of water availability from the local water purveyor if the project includes a new structure or increase in the floor area of an existing structure. Tests shall be conducted from a fire hydrant within 400 feet for commercial projects, or 600 feet for residential development. Flow tests will be accepted if they were performed within 5 years as long as no adverse modifications have been made to the supply system. Water availability information may not be required to be submitted for every project. (OFC Appendix B)

12. **WATER SUPPLY DURING CONSTRUCTION IN MUNICIPAL AREAS:** In areas with fixed and reliable water supply, approved firefighting water supplies shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. (OFC 3312.1)

FIRE HYDRANTS:

13. **FIRE HYDRANTS – ONE- AND TWO-FAMILY DWELLINGS & ACCESSORY STRUCTURES:** Where the most remote portion of a structure is more than 600 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the structure(s), on-site fire hydrants and mains shall be provided. (OFC 507.5.1)

14. **FIRE HYDRANT(S) PLACEMENT:** (OFC C104)
    - Existing hydrants in the area may be used to meet the required number of hydrants as approved. Hydrants that are up to 600 feet away from the nearest point of a subject building that is protected with fire sprinklers may contribute to the required number of hydrants. (OFC 507.5.1)
    - Hydrants that are separated from the subject building by railroad tracks shall not contribute to the required number of hydrants unless approved by the Fire Marshal.
    - Hydrants that are separated from the subject building by divided highways or freeways shall not contribute to the required number of hydrants. Heavily traveled collector streets may be considered when approved by the Fire Marshal.
    - Hydrants that are accessible only by a bridge shall be acceptable to contribute to the required number of hydrants only if approved by the Fire Marshal.

15. **REFLECTIVE HYDRANT MARKERS:** Fire hydrant locations shall be identified by the installation of blue reflective markers. They shall be located adjacent and to the side of the center line of the access roadway that the fire hydrant is located on. In the case that there is no center line, then assume a center line and place the reflectors accordingly. (OFC 507)

16. **PREMISES IDENTIFICATION:** New and existing buildings shall have approved address numbers; building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property, including monument signs. These numbers shall contrast with their background. Numbers shall be a minimum of 4 inches high with a minimum stroke width of 1/2 inch. (OFC 505.1)
    Provide a physical address on the new home, as well as, near the intersection of the private drive and public road visible from both approaches of [enter road intersections here]

If you have questions or need further clarification, please feel free to contact me at **503-259-1510.**

Sincerely,

Jason Arn

Jason Arn
Deputy Fire Marshal II

Email Jason.arn@tvfr.com

Cc: File

A full copy of the New Construction Fire Code Applications Guide for Residential Development is available at http://www.tvfr.com/DocumentCenter/View/1438