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

STAFF REPORT
FOR THE PLANNING COMMISSION

FILE NUMBER:	SUB-15-02
HEARING DATE:	December 2, 2015
REQUEST:	6-lot Subdivision at 23128 Bland Circle
APPROVAL CRITERIA:	Community Development Code (CDC) Chapter 12, Single-Family Residential Detached and Attached, R-7; Chapter 85 Land Division General Provisions.
STAFF REPORT PREPARED BY:	Darren Wyss, Associate Planner

Planning Manager's Initials KB Development Review Engineer's Initials KQL.

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GENERAL INFORMATION

OWNER:	23128 Bland Circle, LLC 1235 N Dutton Ave. #E Santa Rosa, CA 95401 Contact: David Chiddix
APPLICANT:	Bland Circle Estates, LLC 931 SW King Ave. Portland, OR 97205 Contact: Ryan Zygar
CONSULTANT:	3J Consulting, Inc. 5075 SW Griffith Drive, Suite 150 Beaverton, OR 97005 Contact: Andrew Tull
SITE LOCATION:	23128 Bland Circle
LEGAL DESCRIPTION:	Clackamas County Assessor's Map 2S1E35B00500
SITE SIZE:	2.11 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 November 5, 2015. The 120-day maximum application-processing period ends on March 4, 2016.
PUBLIC NOTICE:	Public notice was mailed to the all neighborhood associations and affected property owners on November 10, 2015. The property was posted with a notice sign on November 20, 2015. The notice was published in the West Linn Tidings on November 19, 2015. The notice requirements of CDC Chapter 99 have been met. In addition, the application was posted on the City's website November 9, 2015.

EXECUTIVE SUMMARY

The applicant seeks approval of an application for Subdivision Preliminary Plat for the development of 6 residential lots (Savanna Heights Subdivision) on the 2.11 acre site. All lots will exceed 7,000 square feet in size per the underlying R-7 zone, with five of the lots being buildable and the sixth retaining the existing single-family home. The property is located in the Savanna Oaks neighborhood on the north side of Bland Circle between Falcon Drive and Tannler Drive. The property to the north is owned by the City of West Linn and contains a water reservoir. Properties to the east and west are zoned R-7, while properties on the south side, across Bland Circle are zoned R-7 and R-10.

The existing single-family home will remain on Lot 1 and take direct access from Tannler Drive. An existing detached garage and basketball court will be removed. Lot 6 will front and take direct access from Tannler Drive. The remaining four lots (2-5) will take access from a private access drive which will intersect with Tannler Drive. No direct access to Bland Circle is proposed. Bland Circle and Tannler Drive rights-of-way (ROW) will be widened and half street improvements made to Public Works standards.

The property slopes gently to the southeast and a stormwater facility (Tract A) is proposed in the southeast corner of the site. Grading will be required for the public street improvements, as well as for the private drive and stormwater improvements. The applicant's Arborist Report and Tree Preservation Plan identified 19 significant trees and proposes to retain 42% during site development. Mitigation will be provided for the removed significant trees.

The applicable approval criteria include:

- Chapter 12, Single-Family Residential Detached and Attached, R-7 zone;
- Chapter 85, Land Division General Provisions;
- Chapter 48, Access, Egress and Circulation

Site Conditions: The site is approximately 310 feet wide and 340 feet deep. From the north property line, the existing site slopes southeasterly down at approximately nine percent. There are 19 significant trees located over most of the property. A single family home, detached garage, and basketball court occupy the property.

Public comments:

Tualatin Valley Fire and Rescue submitted comments dated October 6, 2015.

RECOMMENDATION

Staff recommends approval of application SUB-15-02, 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 project shall conform to the Tentative Subdivision Plat dated 9/14/2015.**

2. **Engineering Standards. All public improvements and facilities associated with public improvements including street improvements, utilities, grading, onsite stormwater design, street lighting, easements, and easement locations 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 the portion of Bland Circle abutting the subject property. In addition, 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 the portion of Tannler Drive, from Bland Circle to Sunbreak Lane, abutting the subject property. The applicant shall also pave Tannler Drive, from Bland Circle to Sunbreak Lane, from curb-to-curb and be reimbursed by the City of West Linn for the half street pavement layer not immediately adjacent to the subject property. The applicant shall also complete the private road access to Lots 2-5 prior to Certificate of Occupancy.**

4. **Stormwater Tract A. The applicant shall dedicate Stormwater Tract A to the City of West Linn.**

5. **Mutual Maintenance and Easements. The applicant shall provide the City of West Linn, along with the final plat, a Mutual Maintenance and Reciprocal Access and Public Utility Easement for platted Lots 2-5 to ensure continued access and necessary maintenance of the shared drive in perpetuity.**

6. **No Parking Signs. The applicant shall install signs reading "No Parking – Fire Lane" on both sides of the shared access drive. The signs shall be 12 inches wide by 18 inches**

high and shall have red letters on a white reflective background. The signs shall be installed with a clear space above grade level of 7 feet.

7. **Fire Flow. The applicant shall perform a fire flow test and submit a letter from Tualatin Valley Fire and Rescue showing adequate fire flow is present.**

8. **Tree Conservation Easement. The applicant shall provide a tree conservation easement for trees 3991, 3992, and 4772. The easement shall extend outwards to the tree dripline plus 10 feet. The easement shall include a legal description and a map of the area. The easement shall be recorded with the County and a copy of the recorded easement shall be provided to the City of West Linn.**

9. **Significant Tree Mitigation. The applicant shall mitigate for the loss of 70 caliper inches of significant trees, not including street trees which are a requirement of the subdivision approval, before recording of the final plat. The mitigation shall either occur on the subject property or through fee-in-lieu payment to the City of West Linn.**

10. **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.**

11. **Public Utility and Access Easement. The applicant shall vacate the portion of the existing public utility and access easement on the eastern edge of the property that is no longer needed, but retain the section on Lot 1 that provides access to the City of West Linn Property to the north.**

12. **Street Lights. The applicant shall install street lights on Bland Circle and Tannler Drive according to City of West Linn Public Works Standards and Portland General Electric Standards.**

13. **Lot Access. Access to Lots 1 and 6 shall be from Tannler Drive.**

ADDENDUM

PLANNING COMMISSION STAFF REPORT

November 20, 2015

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.

Staff Finding 1: The applicant's subdivision proposes to accommodate six single-family detached homes which are permitted outright in this zone. This criterion is met.

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

Staff Finding 2: All lots exceed 7,000 square feet. All lots have front lot line dimensions and average widths greater than the required 35 feet. The 20-foot wide shared private access drive for Lots 2-5 exceeds the minimum accessway width of 15 feet. These criteria are met.

II. CHAPTER 85, GENERAL PROVISIONS

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. General. 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 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.
(….)
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).

Staff Finding 3: Staff incorporates applicant findings. This criterion is met.

2. Right-of-way and roadway widths. In order to accommodate larger tree-lined boulevards and sidewalks, particularly in residential areas, the standard right-of-way widths for the different street classifications shall be within the range listed below. But instead of filling in the right-of-way with pavement, they shall accommodate the amenities (e.g., boulevards, street trees, sidewalks). The exact width of the right-of-way shall be determined by the City Engineer or the approval authority. The following ranges will apply:

Street Classification	*Right of Way (from West Linn TSP)*
(….)	
Collector	*48-72 feet*
Local Street	*48-56 feet*
(….)	

Additional rights-of-way for slopes may be required. Sidewalks shall not be located outside of the right-of-way unless to accommodate significant natural features or trees.

Staff Finding 4: The applicant proposes to dedicate 24 feet of right-of-way on the eastern edge of the project to accommodate a total right-of-way width of 48 feet for local street Tannler Drive. The applicant proposes to dedicate variable width along the southern edge of the project to accommodate a total right-of-way width of 58 to 62 feet for collector street Bland Circle. All sidewalks will be located within the dedicated rights-of-way. Subject to the completion of Conditions of Approval, this criterion is met.

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.
(…)

Staff Finding 5: The applicant proposes a street width of 24 feet for Tannler Drive, which meets the required travel lane standards for a local street with no parking. The applicant proposes a street width of 34 feet for Bland Circle which meets the required pavement

standard for a collector without median. Subject to the completion of Conditions of Approval, this criterion is met.

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.
(…)
l. Street furniture needs, hydrants.

Staff Finding 6: The applicant has incorporated the City Engineer's recommendations into the Preliminary Subdivision Plat. Subject to the Conditions of Approval, these criteria are met.

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.

Staff Finding 7: Tannler Drive, a local street, will not carry more than normal traffic loads and does not require a parking lane. Bland Circle, a collector street, will have a 34 foot pavement width, which could accommodate on-street parking. Neither street is proposed as a bike route nor are any arterials adjacent to the proposed subdivision. These criteria are met.

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

Staff Finding 8: No reserve strips are proposed so this criterion does not apply.

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

Staff Finding 9: The Tannler Drive extension to the north, from Bland Circle, will align with the existing Tannler Drive on the south side of Bland Circle. This criterion is met.

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

Staff Finding 10: The applicant proposes to extend Tannler Drive to connect to Sunbreak Lane, but does not propose any internal streets that would have future connections to adjoining lands. This criterion is met.

9. Intersection angles. Streets shall be laid out to intersect angles as near to right angles as practical, except where topography requires lesser angles, but in no case less than 60 degrees unless a special intersection design is approved. Intersections which are not at right angles shall have minimum corner radii of 15 feet along right-of-way lines which form acute angles. Right-of-way lines at intersections with arterial streets shall have minimum curb radii of not less than 35 feet. Other street intersections shall have curb radii of not less than 25 feet. All radii shall maintain a uniform width between the roadway and the right-of-way lines. The intersection of more than two streets at any one point will not be allowed unless no alternative design exists.

Staff Finding 11: The proposed extension of Tannler Drive intersects Bland Circle at an angle greater than 60 degrees. The curb radii of this intersection, which includes a collector and local street, will exceed 25 feet and be of uniform width between the roadway and right-of-way lines. This criterion is met.

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

Staff Finding 12: The applicant proposes to dedicate required rights-of-way to meet the street standards for Tannler Drive and Bland Circle. Condition of Approval 3 ensures the provision is adequate. Subject to the completion of Conditions of Approval, this criterion is met.

11. Cul-de-sacs.
a. New cul-de-sacs and other closed-end streets (not including stub streets intended to be connected) on sites containing less than five acres, or sites accommodating uses other than residential or mixed use development, are not allowed unless the applicant demonstrates that there is no feasible alternative due to:
1) Physical constraints (e.g., existing development, the size or shape of the site, steep topography, or a fish bearing stream or wetland protected by Chapter 32 CDC), or
(…)

Staff Finding 13: The applicant proposes a shared access drive for Lots 2-5 as existing development precludes the future extension of any street design that would serve the interior of the property. The City of West Linn owns the property to the north, which houses a water reservoir. Properties to the south, east, and west have already been subdivided/partitioned and contain no stubbed streets to make a connection. These criteria are met.

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).
(…)

Staff Finding 14: The applicant proposes a shared access drive for Lots 2-5 that measures 174 feet to the center point of the TVFR required hammerhead turnaround and is 20 feet wide. TVFR requires a minimum 20 foot wide horizontal access, therefore no parking shall be allowed per Condition of Approval 6. The access drive meets the access standards. Subject to the Conditions of Approval, this criterion is met.

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.

Staff Finding 15: The shared access drive serving Lots 2-5 is terminated by a TVFR approved hammerhead and, at 20 feet wide, meets TVFR access standards. This criterion is met.

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.

Staff Finding 16: The applicant proposes a private street for Lots 2-5 and no direct pedestrian or bicycle access from the terminus of the hammerhead as existing development precludes the connection. The City of West Linn owns the property to the north, which houses a water reservoir. Properties to the south, east, and west have already been subdivided/partitioned and contain no stubbed streets or easements to make a connection. This criterion is met.

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).

Staff Finding 17: The shared access drive serving Lots 2-5 is terminated by a TVFR approved hammerhead that meet the specifications. This criterion is met.

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.

Staff Finding 18: Tannler Drive and Bland Circle are established street names. The applicant does not propose any additional street names. This criterion is met.

13. Grades and curves. Grades shall not exceed 8 percent on major or secondary arterials, 10 percent on collector streets, or 15 percent on any other street unless by variance. (…)

Staff Finding 19: The proposed grade of the Tannler Drive extension, a local street, is 11.4 percent, which doesn't exceed 15 percent. The proposed grade of Bland Circle, a collector street, does not exceed 2.5 percent. The criterion is met.

14. Access to local streets
(…)
15. Alleys
(…)

Staff Finding 20: Staff incorporates applicant findings. These criteria are 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 21: The applicant proposes to install six-foot sidewalks and six-foot planter strips along Tannler Drive and Bland Circle frontages of the property. Subject to the Conditions of Approval 2 and 3, this criterion is met.

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…or in response to right-of-way limitations.

Staff Finding 22: The applicant proposes to install six-foot sidewalks and six-foot planter strips along Tannler Drive and Bland Circle frontages of the property. Subject to the Conditions of Approval 2 and 3, this criterion is met.

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

Staff Finding 23: The applicant proposes to dedicate the streets without any reservations or restrictions. The criterion 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 24: Please see staff findings 45 to 64. The criterion is met.

20. Gated Streets
(…)
21. Entryway treatments and street isle design
(…)

Staff Finding 25: Staff incorporates applicant findings. These criteria are 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. 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.

Staff Finding 26: The applicant proposes right-of-way dedication and street improvements to Tannler Drive and Bland Circle along the frontages of the property. The City Engineer has concluded no off-site improvements are required to mitigate impacts. The criterion is met.

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

Staff Finding 27: Staff incorporates applicant findings. 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 28: Please see staff findings 45 to 64. The criterion is met.

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

Staff Finding 29: Staff incorporates applicant findings. These criteria are met.

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 30: Lots 2 and 5 are proposed as flag lots in order to have the required street frontage. This required frontage width meets the required 8 feet per lot. Both flag lots exceed 7,000 square feet exclusive of the stem and meet the lot dimensions of the underlying R-7 zoning. The proposal is for a shared private street and easement for lots 2 thru 5. The access drive will be 20 feet wide and the applicant will record a mutual maintenance agreement and reciprocal access and utility easement as required by Condition of Approval 5. These criteria are met.

8. Large lots or parcels.

Staff Finding 31: Staff incorporates applicant findings. This criterion is met.

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

Staff Finding 32: Staff incorporates applicant findings. These criteria are 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 33: The proposed subdivision site does not contain any Type I or II lands. The City Development Engineer has reviewed the applicant's plans and geotechnical report and finds the grading and fill plans to meet the criteria. These criteria are 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 34: Water is available in Tannler Drive to serve this subdivision. The applicant proposes to meter the 6 lots individually at the street. Lots 1 and 6 will take direct access from Tannler Drive, while Lots 2-5 will take access from the 20 foot access/utility easement. The City Engineer has confirmed the water system has sufficient water volume and pressure to serve the subdivision. The applicant shall complete and submit a fire flow test from a hydrant within 600 feet of the subdivision per Condition of Approval 7. Subject to the Conditions of Approval, these criteria are 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 35: The applicant proposes to install a sanitary sewer line in the 20 foot access/utility easement that will gravity flow to an existing line in Tannler Drive. All lots will lateral into the line in the easement. No wetlands or drainageways exist on the property. The system will be built to appropriate standards and the City Engineer has confirmed the sufficient capacity of the sanitary system and sewage treatment facility. These criteria are met.

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.

Staff Finding 36: The applicant proposes to provide a 20 foot access/utility easement to serve the subdivision. The applicant also proposes to retain the public utility and access easement along the northeast corner of Lot 1 for City of West Linn access to the water reservoir property to the north. The applicant shall vacate the remainder of the easement per Condition of Approval 11. Subject to the Conditions of Approval, this criterion is met.

J. Supplemental provisions.
1. Wetland and natural drainageways.
2. Willamette and Tualatin Greenways.

Staff Finding 37: The property is not within the Willamette or Tualatin Greenways, nor are any wetlands or natural drainageways on the subject property. These criteria do not apply.

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

Staff Finding 38: Staff incorporates applicant findings and the street trees shall be installed as required in the West Linn Public Works Standards. These criteria are met.

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 39: The applicant shall provide and install street lighting to meet the West Linn Public Works Standards and Portland General Electric Standards per Condition of Approval 12. Subject to the Conditions of Approval, this criterion 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 40: The applicant will dedicate right of way (ROW) along Bland Circle and Tannler Drive to accommodate the needed street width and associated planter and sidewalk. 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.

Staff Finding 41: The applicant shall underground utilities to meet the West Linn Public Works Standards. 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 42: The subject property is 2.11 acres (91,912 sq. ft.) and contains no Type I or II lands. The subject property contains 1 cluster of significant trees needing 3,200 sq. ft. for protection. CDC 55.100.B.2.b allows for the removing of a cluster of significant trees to calculate minimum density during subdivision. Removing the cluster of significant trees gives a developable net area of 88,712 sq. ft. Seventy percent of the maximum density for developable net area (88,712 sq. ft. x 0.70) equals 62,098 sq. ft. This allows for a minimum of 8 lots on the subject property as the minimum lot size in the R-7 zone is 7,000 sq. ft. The applicant proposal is for 6 lots. Lot 1 currently contains an existing single-family home that will be retained. Lot 1 is sized to have the capacity to be partitioned in the future into 3 lots. This brings the total density to 8 lots. 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 43: Staff incorporates applicant findings. This criterion is met.

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 44: Please see findings 66 to 71. This criterion is met.

III. 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 45: 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 5 additional/new homes should only generate an ADT of 48 new trips per day according to the Institute of Traffic Engineers (ITE) trip generation tables at 9.57 trips per household. 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 46: The City requires a reciprocal access easement, per Condition of Approval 5, for the shared private street that is proposed to serve Lots 2-5. 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 47: The applicant proposes access to Lots 2-5 by use of Option 2 and a shared private street. An access easement will be recorded as required by Condition of Approval 5 and the private street improvements per Condition of Approval 3. Lots 1 and 6 will use Option

3, take direct access from Tannler Drive per Condition of Approval 13, and the proposal meets the spacing standards found below. These criteria are met.

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

Staff Finding 48: This subdivision does not front on an arterial. There are no double frontage lots proposed. These criteria do not apply.

6. Access spacing.
a. The access spacing standards found in Chapter 8 of the adopted Transportation System Plan (TSP) shall be applicable to all newly established public street intersections and non-traversable medians.
b. Private drives and other access ways are subject to the requirements of CDC 48.060.

Staff Finding 49: The proposal does not create any new intersections or non-traversable intersections. CDC 48.060 is addressed in Findings 59 to 63. These criteria are met.

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

Staff Finding 50: Staff incorporates applicant findings. These criteria are 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 51: The applicant's proposal forms a complete block on Tannler Drive, between Bland Circle and Sunbreak Lane, which is 250 feet long. This criterion is met.

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.

Staff Finding 52: All street designs and improvements shall be consistent with the provisions of CDC Chapters 92 and 85, and the West Linn Transportation System Plan. 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 53: Staff incorporates applicant findings. 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 54: The applicant shall comply with maximum driveway grades during construction of the homes. The proposed shared access drive for Lots 2-5 has a grade of 3.5%. 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 55: Staff incorporates applicant findings. 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 56: The applicant proposes the shared access drive for Lots 2-5 have a hammerhead turnaround that meets TVRF standards. The access drive will have a 20 foot wide surface and no vertical impediments. These criteria are met.

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.

Staff Finding 57: The applicant proposes for Lots 1 and 6 to take direct access from Tannler drive. Lots 2-5 will take access from a shared access drive. This criterion is 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 58: The applicant proposal is for single-family homes with no curb cuts on Bland Circle, a collector street, nor gated access to any of the Lots. 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.

Staff Finding 59: Staff incorporates applicant findings. These criteria are met.

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 60: The applicant proposes curb cuts on Tannler Drive, a local street. Driveway access for Lot 6 is proposed at a distance of 68 feet from the intersection with Bland Circle. To meet the 30 foot spacing standards for 2 curb cuts on the same lot, as the southern shared

access drive for Lots 2-5 is on Lot 6, the applicant will need to move the access drive for Lot 6 a distance of 14 feet to the south. Upon accommodation of the minimum curb cut requirements, the access drive for Lot 6 will be a distance of 54 from the intersection with Bland Circle. 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.*

Staff Finding 61: The applicant proposes 2 curb cuts on Lot 1. One curb cut provides access to the water reservoir to the north for the City of West Linn through an access easement. The two curb cuts are located a distance of 36 feet from one another. The applicant proposes 2 curb cuts on Lot 6. One curb cut provides access to Lot 6 and the other constitutes the southern edge of the shared access drive for Lots 2-5. The proposed distance between curb cuts is 16 feet. The applicant shall move the Lot 6 access drive curb cut 14 feet to the south. These criteria are met.

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

Staff Finding 61: Staff incorporates applicant findings. This criterion is 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 62: The applicant proposes to provide access to Lots 2-5 by way of a shared access drive. This action keeps curb cuts to Tannler Drive to a minimum. This criterion is met.

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

Staff Finding 63: Staff incorporates applicant findings. This criterion is met.

48.070 PLANNING DIRECTOR'S AUTHORITY TO RESTRICT ACCESS APPEAL PROVISIONS

(…)

48.080 BICYCLE AND PEDESTRIAN CIRCULATION

(…)

Staff Finding 64: Staff incorporates applicant findings. These criteria are met.

IV. CHAPTER 54, LANDSCAPING

Staff Finding 65: Staff incorporates applicant findings. These criteria are met.

IV. CHAPTER 55, DESIGN REVIEW

55.100 APPROVAL STANDARDS – CLASS II DESIGN REVIEW

B. Relationship to the natural and physical environment.

1. The buildings and other site elements (…)

2. All heritage trees (…)

a. Non-residential and residential projects on Type I and II lands (…)

Staff Finding 66: Staff incorporates applicant findings. These criteria are met.

b. Non-residential and residential projects on non-Type I and II lands shall set aside up to 20 percent of the area to protect trees and tree clusters that are determined to be significant, plus any heritage trees. Therefore, in the event that the City Arborist determines that a significant tree cluster exists at a development site, then up to 20 percent of the non-Type I and II lands shall be devoted to the protection of those trees, either by dedication or easement. The exact percentage is determined by establishing the driplines of the trees or tree clusters that are to be protected. In order to protect the roots which typically extend further, an additional 10-foot measurement beyond the dripline shall be added. The square footage of the area inside this "dripline plus 10 feet" measurement shall be the basis for calculating the percentage (see figure below). The City Arborist will identify which tree(s) are to be protected. Development of non-Type I and II lands shall also require the careful layout of streets, driveways, building pads, lots, and utilities to avoid significant trees, tree clusters, heritage trees, and other natural resources pursuant to this code. Exemptions of subsections (B)(2)(c), (e), and (f) of this section shall apply. Please note that in the event that more than 20 percent of the non-Type I and II lands comprise significant trees or tree clusters, the developer shall not be required to save the excess trees, but is encouraged to do so.

Staff Finding 67: There are neither Type I or II lands on the subject property, nor heritage trees. The applicant has provided an Arborist Report that identifies 19 significant trees, with 35,230 sq. ft. of canopy coverage, on the site. The City Arborist concurred with the Report. The applicant proposes to remove 11 of the significant trees, with 23,358 sq. ft. of canopy coverage, due to the construction of the right-of-way improvements, the stormwater facility, and to accommodate the shared access drive and building pads. The applicant proposal used a careful layout of the development to avoid significant trees and still meet minimum density requirements. The 8 significant trees to be retained, with 11,873 sq. ft. of canopy coverage, provides a set aside of up to 20 percent of the area. The applicant shall protect the retained significant trees, not already protected by required setbacks, through the recording of an easement as required in Condition of Approval 8. This criterion is met.

c. Where stubouts of streets occur on abutting properties, and the extension of those streets will mean the loss of significant trees, tree clusters, or heritage trees, it is understood that tree loss may be inevitable. In these cases, the objective shall be to minimize tree loss. These provisions shall also apply in those cases where access, per construction code standards, to a lot or parcel is blocked by a row or screen of significant trees or tree clusters.

Staff Finding 68: No street stubouts occur on abutting properties. This criterion does not apply.

d. For both non-residential and residential development, the layout shall achieve at least 70 percent of maximum density for the developable net area. The developable net area excludes all Type I and II lands and up to 20 percent of the remainder of the site for the purpose of protection of stands or clusters of trees as defined in subsection (B)(2) of this section.

Staff Finding 69: The subject property is 2.11 acres (91,912 sq. ft.) and contains no Type I or II lands. The subject property contains 1 cluster of significant trees needing 3,200 sq. ft. for protection as defined in the section referenced above. Removing the cluster of significant trees gives a developable net area of 88,712 sq. ft. Seventy percent of the maximum density for developable net area (88,712 sq. ft. x 0.70) equals 62,098 sq. ft. This allows for a minimum of 8 lots on the subject property as the minimum lot size in the R-7 zone is 7,000 sq. ft. The applicant proposal is for 6 lots. Lot 1 currently contains an existing single-family home that will be retained. Lot 1 is sized to have the capacity to be partitioned in the future into 3 lots. This brings the total density to 8 lots. This criterion is met.

e. For arterial and collector street projects, including Oregon Department of Transportation street improvements, the roads and graded areas shall avoid tree clusters where possible. Significant trees, tree clusters, and heritage tree loss may occur, however, but shall be minimized.

Staff Finding 70: The applicant proposes to build half-street improvement for Bland Circle, a collector, along the portion abutting the subject property. Two significant trees will be removed to accommodate the required ROW width and improvements. This criterion is met.

f. If the protection of significant tree(s) or tree clusters is to occur in an area of grading that is necessary for the development of street grades, per City construction codes, which will result in an adjustment in the grade of over or under two feet, which will then threaten the health of the tree(s), the applicant will submit evidence to the Planning Director that all reasonable alternative grading plans have been considered and cannot work. The applicant will then submit a mitigation plan to the City Arborist to compensate for the removal of the tree(s) on an "inch by inch" basis (e.g., a 48-inch Douglas fir could be replaced by 12 trees, each four-inch). The mix of tree sizes and types shall be approved by the City Arborist.

Staff Finding 71: Two significant trees (Arborist Report Trees 4775 and 4818) will be removed to accommodate the required ROW width and improvements along Bland Circle. The total

DBH for the two trees is 70 inches. The applicant shall mitigate for the significant tree loss per Condition of Approval 9. This criterion is met.

V. 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 72: The applicant shall install improvements to meet the West Linn Public Works Standards per Conditions of Approval 2 and 3. These criteria are met.

E. Surface drainage and storm sewer system. A registered civil engineer shall prepare a plan and statement which shall be supported by factual data that clearly shows that there will be no adverse impacts from increased intensity of runoff off site of a 100-year storm, or the plan and statement shall identify all off-site impacts and measures to mitigate those impacts commensurate to the particular land use application. Mitigation measures shall maintain pre-existing levels and meet buildout volumes, and meet planning and engineering requirements

Staff Finding 73: The applicant has submitted a Preliminary Stormwater Report that complies with City of West Linn Public Works Standards. The applicant shall install improvements to meet the Standards, including the proposed stormwater facility in Tract A. The applicant will dedicate Tract A to the City of West Linn per Condition of Approval 4. This criterion is met.

F. Sanitary sewers
(…)
Q. Joint mailbox facilities

Staff Finding 74: The applicant shall comply with the requirements and install improvements to meet the West Linn Public Works Standards. These criteria are met.

92.030 IMPROVEMENT PROCEDURES
(…)

Staff Finding 75: The applicant shall comply with the requirements and install improvements to meet the West Linn Public Works Standards. 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-15-02 Applicant's Name Ryan Zysar - Bland Circle Estates
Development Name _____
Scheduled ~~Meeting~~/Decision Date 12-2-15

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 ✓

A.	The applicant (date) 11-10-15	(signed)	S. Shroyer
B.	Affected property owners (date) 11-10-15	(signed)	S. Shroyer
C.	School District/Board (date) _____	(signed)	_____
D.	Other affected gov't. agencies (date) _____	(signed)	_____
E.	Affected neighborhood assns. (date) 11-10-15 ALL	(signed)	S. Shroyer
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) 11-19-15 (signed) S. Shroyer
City's website (posted date) 11-9-15 (signed) S. Shroyer

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) 11-20-2015 (signed) Dan S Wyse

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) 11-21-2015 (signed) Dan S Wyse

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-15-02

The West Linn Planning Commission will hold a public hearing on Wednesday, **December 2, 2015, starting at 6:30 p.m.** in the Council Chambers in City Hall, 22500 Salamo Road, West Linn, to consider a request for a six-lot Subdivision at 23128 Bland Circle.

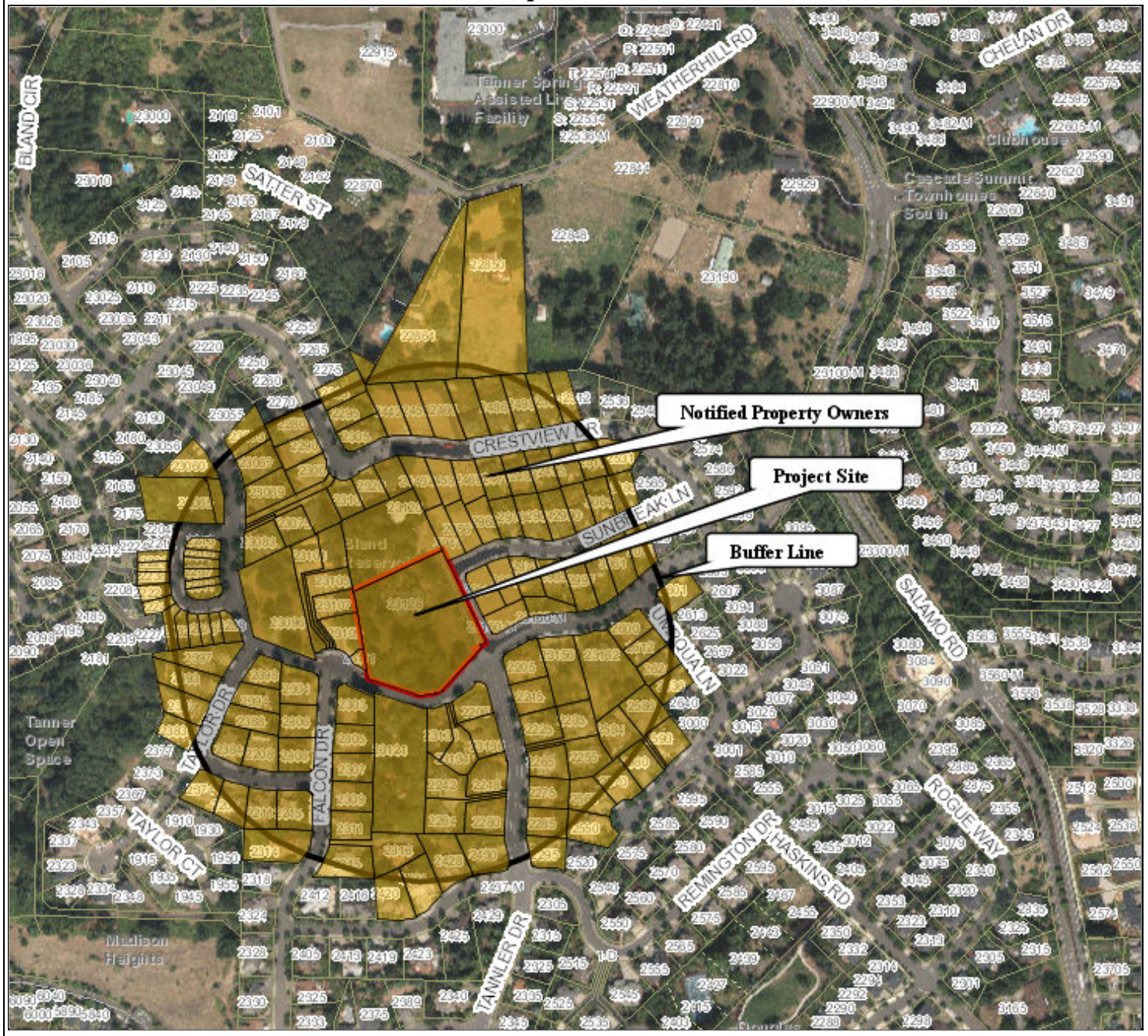
The criteria applicable to subdivision are found in Chapters 12 and 85 of the West Linn Community Development Code (CDC). The decision by the Planning Commission to approve or deny this request will be based upon the applicable criteria. At the hearing, it is important that comments relate specifically 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 (tax lot 500, Assessor's Map 21E35B), or as otherwise required by Chapter 99 of the CDC. The site is further identified as 23128 Bland Circle. The complete application for SUB-15-02 is available for inspection at no cost at City Hall or via the City of West Linn's website at http://westlinnoregon.gov/planning/23128-bland-circle-six-lot-subdivision. Printed copies of these documents may be obtained at City Hall 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 at no cost or copies can be obtained for a minimal charge per page. For further information, please contact Associate Planner Darren Wyss at City Hall, 22500 Salamo Road, West Linn, OR 97068, dwyss@westlinnoregon.gov, or 503-722-5512.

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**. It is important to submit all evidence (in writing or at the hearing) to the Planning Commission. City Council review of any appeal is on the record**. 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.

23128 Bland Circle Notification Map



CITY OF West Linn

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

Map created by: SSHROYER
Date Created: 06-Nov-15 02:21 PM

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. Source: West Linn GIS (Geographic Information System) MapOptix.

CITY OF West Linn

PLANNING COMMISSION MEETING 12/2/15

PROJECT # SUB-15-02
MAIL 11/12/15 TIDINGS 11/19/15

CITIZEN CONTACT INFORMATION

To lessen the bulk of agenda packets, land use application notice, and to address the worries 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.

Citizen Contact Information Agenda Packets and Project Files

CITY OF WEST LINN PLANNING COMMISSION
PUBLIC HEARING NOTICE
FILE NO. SUB-15-02

The West Linn Planning Commission is scheduled to hold a public hearing on **Wednesday, December 2, 2015, starting at 6:30 p.m.** in the Council Chambers of City Hall, 22500 Salamo Road, West Linn, to consider a request for a six-lot Subdivision at 23128 Bland Circle (tax Lot 500 of Clackamas County Assessor's Map 21E 35B).

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

The complete application for file number SUB-15-02 is available for inspection at no cost at City Hall or via the web site at http://westlinnoregon.gov/planning/23128-bland-circle-six-lot-subdivision. Printed copies can be obtained at City Hall 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 at no cost or copies can be obtained for a minimal charge per page. For further information, please contact Associate Planner Darren Wyss at dwyss@westlinnoregon.gov or 503-722-5512 or at 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. **It is important to submit all evidence (in writing or at the hearing) to the Planning Commission. City Council review of any appeal is on the record**. 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.

Publish: West Linn Tidings, November 19, 2015

PC-2 COMPLETENESS LETTER

CITY OF
West Linn

November 5, 2015

Bland Circle Estates, LLC
Attn: Ryan Zygar
931 SW King Ave.
Portland, OR. 97205

SUBJECT: SUB-15-02 application for 6-Lot Subdivision at 23128 Bland Circle.

Dear Ryan:

You submitted this application on September 15, 2015. The Planning and Engineering Departments found that this application was incomplete on October 13, 2015. Additional information was subsequently provided on October 28, 2015 and the application has now been deemed **complete.** The city has 120 days to exhaust all local review; that period ends March 4, 2016.

Please be aware that a 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 for a public hearing before the Planning Commission on December 2, 2015.

Please contact me at 503-722-5512, or by email at dwyss@westlinnoregon.gov if you have any questions or comments.

Sincerely,

Darren Wyss

Associate Planner

PC-3 APPLICANT'S SUBMITTAL

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 Darren Wyss	PROJECT NO(S). SUB-15-02	
NON-REFUNDABLE FEE(S) $ 500-	REFUNDABLE DEPOSIT(S) $ 5400-	TOTAL $ 5900-

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
- [x] 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:	Assessor's Map No.: 21E35B
23128 BLAND CIRCLE	Tax Lot(s): 500
	Total Land Area: 2.13 ACRES

Brief Description of Proposal:

The Applicant is proposing a six lot subdivision which will include the retention of the existing house.

Applicant Name: (please print) Bland Circle Estates, LLC attn: Ryan Zygar — Phone: 360-798-4838
Address: 931 SW King Avenue — Email: ryan@zygar.com
City State Zip: Portland, OR 97205

Owner Name (required): (please print) 23128 Bland Circle, LLC C/O David Chiddix — Phone:
Address: 1235 N Dutton Avenue #E — Email:
City State Zip: Santa Rosa, CA 95401

Consultant Name: (please print) 3J Consulting, LLC attn: Andrew Tull — Phone: 503-545-1907
Address: 5075 SW Griffith Drive, Suite 150 — Email: andrew.tull@3j-consulting.com
City State Zip: Beaverton, OR 97005

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

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CITY OF WEST LINN

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: B61F39707459434... — 9/15/2015 | 8:11 AM PT — Applicant's signature — Date

DocuSigned by: EAD2708CZ2DC41D... — 9/15/2015 | 8:10 — Owner's signature ***(required)*** — Date

CONTENTS

Appendix List

GENERAL INFORMATION

Property Owner:	**23128 Bland Circle, LLC** **C/O David Chiddix** **1235 N Dutton Avenue #E** **Santa Rosa, CA 95401**
Applicant:	**Bland Circle Estates, LLC** **C/O Ryan Zygar** **931 SW King Avenue** **Portland, OR 97205** **Phone: 360-798-4838** **Email: ryan@zygar.com**
Applicant's Representative:	**3J Consulting, Inc.** **5075 SW Griffith Drive, Suite 150** **Beaverton, OR 97005** **Contact: Andrew Tull** **Phone: 503-545-1907** **Email: andrew.tull@3j-consulting.com**

SITE INFORMATION

Tax Lot Numbers:	**2S1E35B00500**
Address:	**23128 Bland Circle**
Size:	**2.11 acres**
Zoning Designation:	**R-7 (City of West Linn)**
Neighborhood:	**Savanna Oaks**
Comprehensive Plan:	**Low Density Residential**
Existing Use:	**There is one single-family home on the site (residential).**
Street Functional Classifications:	**The site currently takes access from Bland Circle, a collector. As proposed, the lots would take access from Tannler Drive, a local street north of Bland Circle, and a private access drive connecting to Tannler Drive.**
Surrounding Zoning:	**North, East and West- R7 (West Linn)** **South- R10 (West Linn)**

INTRODUCTION

APPLICANT'S REQUEST

The Applicant seeks approval of an application for Subdivision Preliminary Plat for the development of 6 residential lots (Savanna Heights Subdivision). This narrative describes the proposed subdivision of the site and documents compliance with the relevant sections of the City of West Linn's Community Development Code ("CDC").

PROPOSED SITE IMPROVEMENTS

The project site consists of a total of 2.11 acres. The property is located between Falcon Drive and Tannler Drive on the north side of Bland Circle. There is one single-family detached home in the middle of the property that will be retained as part of this project.

Four of the six proposed lots front Bland Circle but will not take access because of the Collector designation of this road. Lots 1 and 6 will take access directly from Tannler Drive, a local street north of Bland Circle. Lots 2-5 will share a private access drive which will intersect with Tannler Drive. No access to Bland Circle is proposed.

The intent of this subdivision is to provide five buildable lots and one lot for the retention of the existing home on the property. Each of the proposed lots will exceed the minimum of 7,000 square feet in size, for development with single-family homes, a use permitted outright in the R-7 zone.

APPLICABLE CRITERIA

The following sections of the CDC have been extracted as they have been deemed to be applicable to the proposal. Following each applicable criteria or design standard, the Applicant has provided a series of draft findings. The intent of providing code and detailed responses and findings is to document that the proposed development has satisfied the approval criteria for Subdivision Preliminary Plat.

DIVISION 2. ZONING PROVISIONS

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.**
2. **Single-family attached residential units.**
3. **Community recreation.**
4. **Family day care.**
5. **Residential home.**
6. **Utilities, minor.**
7. **Transportation facilities (Type I).**
8. **Manufactured home. (Ord. 1226, 1988; Ord. 1500, 2003; Ord. 1584, 2008; Ord. 1635 § 10, 2014)**

Applicant's Finding:	The proposed subdivision is intended for single-family detached residential units, a use permitted outright in the R-7 zone.

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 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)

Applicant's Finding:	The proposed lots range in size from 7,137 square feet to 29,950 square feet, well over the 7,000 square foot minimum for single-family detached residential in the R-7 zone. The lot widths at front property line and lot width averages all exceed 35 feet, as demonstrated on the submitted plans. The 20 foot wide shared accessway exceeds the minimum accessway width of 15 feet. Yard dimensions, building height, lot coverage, floor area ratios and sidewall provisions will all meet the requirements of this section and will be verified at time of building permit submittal.

DIVISION 8. LAND DIVISION

CHAPTER 85. GENERAL PROVISIONS

85.170 SUPPLEMENTAL SUBMITTAL REQUIREMENTS FOR TENTATIVE SUBDIVISION OR PARTITION PLAN

B. Transportation.

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. When required. A Traffic Impact Analysis may be required to be submitted to the City with a land use application, when the following conditions apply:

1) The development application involves one or more of the following actions:

(A) A change in zoning or a plan amendment designation; or

Applicant's Finding: 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 is not required per this subsection.

(B) Any proposed development or land use action that ODOT states may have operational or safety concerns along a State highway; and

Applicant's Finding: The proposed development is not located along a State highway, therefore a Traffic Impact Analysis is not required per this subsection.

(C) The development shall cause one or more of the following effects, which can be determined by field counts, site observation, traffic impact analysis or study, field measurements, crash history, Institute of Transportation Engineers Trip Generation manual; and information and studies provided by the local reviewing jurisdiction and/or ODOT:

(1) An increase in site traffic volume generation by 250 average daily trips (ADT) or more (or as required by the City Engineer); or

Applicant's Finding: The *Institute of Transportation Engineers Trip Generation Manual, 9th Edition* estimates an average increase in daily trips as 9.5 trips/ residential lot. The proposed 6 lot subdivision will generate 57 average daily trips (ADT), therefore a Traffic Impact Analysis is not required per this subsection.

(2) An increase in use of adjacent streets by vehicles exceeding the 20,000-pound gross vehicle weights by 10 vehicles or more per day; or

Applicant's Finding: The proposed development is intended to serve primarily residential traffic and is not estimated to increase the use of adjacent streets by vehicles exceeding 20,000-pound gross vehicle weights by 10 vehicles or more per day, therefore a Traffic Impact Analysis is not required per this subsection.

(3) The location of the access driveway does not meet minimum intersection sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or such vehicles queue or hesitate on the State highway, creating a safety hazard; or

Applicant's Finding: Proposed access driveways have been designed to meet the minimum intersection site distance for new single family homes.

(4) The location of the access driveway does not meet the access spacing standard of the roadway on which the driveway is located; or

Applicant's Finding: Proposed access driveways have been designed to meet the minimum intersection site distance for new single family homes.

(5) A change in internal traffic patterns that may cause safety problems, such as backup onto the highway or traffic crashes in the approach area.

Applicant's Finding: No changes to local traffic patterns hold the potential to cause off-site safety problems.

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. General. 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 lot 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).

Applicant's Finding: This site is located north of the intersection of Tannler Drive and Bland Circle, Tannler Drive is a collector street from the south until its intersection with Bland Circle, and then it's local. Bland Circle is designated a collector, adjacent to this property. The development of this site will not affect the connectivity of these two streets. Figure 8-6 of the West Linn Transportation System Plan - Future Local Street Connectivity Improvements, does not identify a new street connection within or adjacent to this site. However, the proposed subdivision will include extension of Tannler Drive to the north from Bland Circle to Sunbreak Lane in the location of the current private driveway.

The current right-of-way widths of Bland Circle and Tannler Drive adjacent to the subject site are inadequate based on the requirements of Section 2, below. The Applicant proposes additional right-of-way along the property's frontage on these two streets, as discussed below. Sidewalks and planter strips are also proposed.

This section requires the developer to be responsible for the construction of internal streets. One internal private access drive is proposed, running generally east-west and providing access to Tannler Drive north of Bland Circle. The Applicant proposes full responsibility for construction of this internal accessway.

2. Right-of-way and roadway widths. In order to accommodate larger tree-lined boulevards and sidewalks, particularly in residential areas, the standard right-of-way widths for the different street classifications shall be within the range listed below. But instead of filling in the right-of-way with pavement, they shall accommodate the amenities (e.g., boulevards, street trees, sidewalks). The exact width of the right-of-way shall be determined by the City Engineer or the approval authority. The following ranges will apply:

Street Classification	Right-of-Way
Collector Street	48' – 72'

Additional rights-of-way for slopes may be required. Sidewalks shall not be located outside of the right-of-way unless to accommodate significant natural features or trees.

Applicant's Finding: The Applicant proposes dedication of 24 feet of right-of-way the site's eastern edge to accommodate a future right-of-way width of 48 feet for Tannler Drive north of Bland Circle. The Applicant further proposes dedication of a variable width along the site's

southern edge to accommodate a total right-of-way width of 58 to 62 feet for Bland Circle west of Tannler Drive. These dedications are consistent with the Transportation System Plan (TSP) requirements of 48'-56'ROW for a local street and 48'-72'ROW for a collector street.

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.

Applicant's Finding: The width of the paved section of the extension of Tannler Drive will be 24 feet, per the TSP standard for a local street. The paved section of Bland Circle adjacent to this site will be variable but will not be less than 17 feet in width from centerline, per the TSP standard for a collector street without a center median.

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.

Applicant's Finding: The City's Development Engineer has reviewed the proposal and made recommendations to the applicant, which are incorporated into the proposed roadway configuration.

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.

Applicant's Finding: The private access drive will result in the 6 proposed homes taking access to Tannler drive at one access point, no more than a normal Local Street traffic load. Tannler will then intersect Bland Circle, a collector. The dedication of right-of-way and street improvements will result in adequate facilities on both adjacent public streets. No arterials are adjacent to this proposal.

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

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

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

Applicant's Finding: The extension of Tannler Drive north of Bland Circle will be in direct alignment. No "T" intersections are proposed.

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

Applicant's Finding: The Applicant proposes to construct Tannler Drive to connect to Sunbreak Lane, a local public street.

9. Intersection angles. Streets shall be laid out to intersect angles as near to right angles as practical, except where topography requires lesser angles, but in no case less than 60 degrees unless a special intersection design is approved. Intersections which are not at right angles shall have minimum corner radii of 15 feet along right-of-way lines which form acute angles. Right-of-way lines at intersections with arterial streets shall have minimum curb radii of not less than 35 feet. Other street intersections shall have curb radii of not less than 25 feet. All radii shall maintain a uniform width between the roadway and the right-of-way lines. The intersection of more than two streets at any one point will not be allowed unless no alternative design exists.

Applicant's Finding: The new northern extension of Tannler Drive will intersect Bland Circle the existing location, greater than a 60 degree angle. The curb radii at the intersection will exceed 25 feet.

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

Applicant's Finding: Additional right-of-way on Tannler Drive and Bland Circle, as discussed above, will be dedicated at time of subdivision.

11. Cul-de-sacs.

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

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

Applicant's Finding: No cul-de-sacs are proposed with this subdivision as existing development patterns and the size and shape of the property preclude the placement of stub streets or cul-de-sacs.

The requirements of this section have been met.

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).

Applicant's Finding: No cul-de-sacs are proposed with this subdivision. The requirements of this section do not apply.

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.

Applicant's Finding: No cul-de-sacs are proposed with this subdivision as the site does not require a cul-de-sac to provide access to the proposed homes. The Applicant's proposal includes the continuation and full build-out of Tannler Drive, a local street with connectivity to the east and south. The remaining portion of the site can be developed as individual lots and served by driveways. The requirements of this section do not apply.

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.

Applicant's Finding: No cul-de-sacs have been proposed. The requirements of this section do not apply.

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.

Applicant's Finding: No cul-de-sacs have been proposed. The requirements of this section do not apply.

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).

Applicant's Finding: No cul-de-sacs are proposed with this subdivision. The requirements of this section do not apply.

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.

Applicant's Finding: The street names of Tannler Drive and Bland Circle are established. No other street names are proposed as the internal drive is a private access drive.

13. Grades and curves. Grades shall not exceed 8 percent on major or secondary arterials, 10 percent on collector streets, or 15 percent on any other street unless by variance. Willamette Drive/Highway 43 shall be designed to a minimum horizontal and vertical design speed of 45 miles per hour, subject to Oregon Department of Transportation (ODOT) approval. Arterials shall be designed to a minimum horizontal and vertical design speed of 35 miles per hour. Collectors shall be designed to a minimum horizontal and vertical design speed of 30 miles per hour. All other streets shall be designed to have a minimum centerline radii of 50 feet. Super elevations (i.e., banking) shall not exceed four percent. The centerline profiles of all streets may be provided where terrain constraints (e.g., over 20 percent slopes) may result in considerable deviation from the originally proposed alignment.

Applicant's Finding: The grade of the northern extension of Tannler Drive will not exceed 15 percent, per this standard. No street will have a centerline radius of less than 50 feet.

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.

Applicant's Finding: The subject property does not abut nor contain an existing or proposed Major Arterial Street, nor is an intersection of a Local Residential Street with an Arterial Street proposed.

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. ***

Applicant's Finding: No alleys are proposed with this subdivision.

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.

Applicant's Finding: The applicant proposes to install a 6-foot sidewalk plus planter strip along the Tannler Drive and Bland Circle frontages of this property, per this standard.

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.

Applicant's Finding: The applicant proposes to install a 6-foot planter strip between all proposed sidewalks and paved street sections on Tannler Drive and Bland Circle.

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

Applicant's Finding: No reservations or restrictions are proposed with the street dedication.

The requirements of this section have been satisfied.

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.

Applicant's Finding: Lots 2-5 utilize a platted private street/access drive to access the northern extension of Tannler Drive, a public street. Section 48.020.B of this Code permits lots to utilize a platted private street for access. Lots 3 and 4 have frontage along Bland Circle; however, as this is a collector street, the lots will access the private street/access drive to reduce access points on the collector. Lots 1 and 6 will take direct access to the northern extension of Tannler Drive, a local street.

The requirements of this section have been satisfied.

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.

Applicant's Finding: Gated streets are not proposed.

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.

Applicant's Finding: The applicant does not propose to construct entryway treatments to the subdivision at this time.

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.

Applicant's Finding: Right-of-way dedication and street improvements are proposed with this application proportionate to the construction of 6 new lots. Off-site street improvements are not necessary or proportionate to mitigate traffic impacts from this 6-lot subdivision.

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.

Applicant's Finding: The lot layout is based on due regard for the provision of adequate building sites; traffic safety, convenience, access, circulation and control; and the limitations and opportunities of topography and solar access. The lots are generously sized to accommodate homes that are similar in nature to those in surrounding subdivisions. The extension of Tannler Drive north of Bland Circle allows all traffic access from a local-classification street. The site is adjacent to the City's Bland Reservoir to the north, limiting connectivity options. The lots are all deep in the north-south direction, thus enhancing solar access on the building sites.

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.

Applicant's Finding: The City's TSP does not propose a specific lot or block arrangement within this part of the City. Blocks are generally recommended to be approximately 400 feet in length to allow for connectivity. The maximum allowable block length without topographic constraint, is recommended to be 800 feet. The block length pattern in this area is already determined and construction of Tannler north of Bland Circle to Sunbreak Lane will result in a block length of just over 200 feet. The location of the City's Bland Reservoir adjacent to the north of this site limits connectivity options to the north. Properties to the east and west

are developed. Bland Circle south of the site is intersected by Falcon Drive west of this site and Tannler Drive adjacent to this site, a distance of approximately 400 feet.

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).
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.

Chapter 12- Single-Family Residential Detached and Attached, R-7 standards are as follows:

Lot Size (Detached Dwelling Units)	**7,000 square feet**
Lot Size (Attached Dwelling Units)	**5,500 square feet**
Front Lot Line Length/Minimum Lot Width at Front Lot Line	**35 feet**
Average Minimum Lot Width	**35 feet**

Applicant's Finding: All proposed lots are a minimum of 7,000 square feet in size to accommodate single-family detached dwelling units. All 6 proposed lots exceed the minimum requirements for front lot line length, lot width and lot depth.

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

Applicant's Finding: Section 48.020.B states: "All lots shall have access from a public street or from a platted private street approved under the land division chapter." Lots 1 and 6 will have access from Tannler Drive, a public street. Lots 2-5 will have access from a platted private drive that will then connect to Tannler Drive.

5. 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.

Applicant's Finding: No through lots or double fronted lots are proposed with this application.

6. 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.

Applicant's Finding: Though the shape of the subject site is somewhat irregular, all side lot lines run at approximate right angles to the streets upon which they face as far as practicable.

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. ***

Applicant's Finding: Lots 2 and 5 are flag lots. A minimum street frontage of at least eight feet per lot has been provided along Tannler Drive. The common access drive proposed to service the flag lots as well as lots 3 and 4 will be provided with a mutual maintenance and reciprocal access agreement along with the final plat.

8. 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.

Applicant's Finding: Lot 1 is sized such that it could be redivided in the future; however, the quality and value of the home on this lot make redivision very unlikely. Regardless, Lot 1 could easily be redivided with lots that would access the private street/access drive and be of adequate size for the R-7 zone.

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.

Applicant's Finding: The proposed extension of Tannler Drive and improvements to Bland Circle include sidewalks and, therefore, additional trails or pedestrian connections are not required. There are no existing trail connections which require connection from this site. Bland Circle sidewalks to the east and west and Tannler Drive sidewalks to the north and south provide opportunities for connectivity along public streets adjacent to this site.

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.

Applicant's Finding:	Transit facilities have not been identified by Tri-Met or the City Development Engineer adjacent to this property.

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.

Applicant's Finding: A geotechnical engineering report is included with this submittal. A grading report is 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.

Applicant's Finding: The applicant will connect all lots to public water per the submitted public improvement plans. To serve this site, The Applicant will install a new water line in the private access drive to serve lots 2-5. Lots 1 and 6 will be metered at the Tannler Drive frontage. This plan is consistent with the adopted Comprehensive Water System Plan.

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.

Applicant's Finding: The applicant will connect all lots to public sanitary sewer per the submitted public improvement plans. The lots in the subdivision will be provided sanitary sewer service via a new sanitary line extension within a new public easement which will be located in the private access drive. The Applicant proposes adding manholes within the easement and one manhole within the right-of-way of Tannler Drive. The sewer system will be connected to the existing 8" public sewer main in Tannler Drive. 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

1. A stormwater quality and detention plan shall be submitted which complies with the submittal criteria and approval standards contained within Chapter 33 CDC. It shall include profiles of proposed drainageways with reference to the adopted Storm Drainage Master Plan.

2. Storm treatment and detention facilities shall be sized to accommodate a 25-year storm incident. A registered civil engineer shall prepare a plan and statement which shall be supported by factual data that clearly shows that there will be no adverse off-site impacts from increased intensity of runoff downstream or constriction causing ponding upstream. The plan and statement shall identify all on- or off-site impacts and measures to mitigate those impacts. The plan and statement shall, at a minimum, determine the off-site impacts from a 25-year storm.

3. Plans shall demonstrate how storm drainage will be collected from all impervious surfaces including roof drains. Storm drainage connections shall be provided to each dwelling unit/lot. The location, size, and type of material selected for the system shall correlate with the 25-year storm incident.

4. Treatment of storm runoff shall meet municipal code standards.

Applicant's Finding: The proposed stormwater treatment and detention has been designed to meet City standards, as detailed in the submitted stormwater report. The project will be served by a linear stormwater facility located at the south end of the property adjacent to Bland Circle. The lots will connect to a storm line constructed in a public utility easement within the private access drive.

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.

Applicant's Finding: The applicant will establish utility easements as determined by the City Engineer and shown on the preliminary 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.

Applicant's Finding: The proposed subdivision does not impact any wetlands or natural drainage ways as none exist on the property.

2. Willamette and Tualatin Greenways. The approval authority may require the dedication to the City or setting aside of greenways which will be open or accessible to the public. Except for trails or paths, such greenways will usually be left in a natural condition without improvements. Refer to Chapter 28 CDC for further information on the Willamette and Tualatin River Greenways.

Applicant's Finding: 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.

Applicant's Finding: Street trees will be installed as part of the public improvements with the development of this subdivision.

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.

Applicant's Finding: Any street light installation within the subdivision will utilize LED fixtures.

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.

Applicant's Finding: The applicant is proposing right-of-way dedication and improvements that are roughly proportional to the development of a 6-lot subdivision.

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.

Applicant's Finding: All utilities will be installed in compliance with this section.

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.

Applicant's Finding: The R-7 zone permits a maximum density of 6.2 dwelling units per net acre. Net acre is defined as "The total gross acres less the public right-of-way and other acreage deductions, as applicable". The net acreage of this site after removal of dedicated right-of way is 1.87 acres. At 6.2 dwelling units per net acre, the maximum number of dwelling units on this site is 11. This proposal is for 6 lots; however, one of the lots is sized in such a way that it could be re-divided into three parcels. The 5 standard sized lots and the 3 parcels possible from the oversized lot would result in a net site density of 8 dwelling units, or 73% of the maximum 11 lots on the site.

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.

Applicant's Finding: 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.

Applicant's Finding: No heritage trees have been identified on this site. Tree preservation is discussed further in this report in Section 55.100.

DIVISION 3. SUPPLEMENTAL PROVISIONS AND EXCEPTIONS

CHAPTER 42. CLEAR VISION AREAS

42.020 CLEAR VISION AREAS REQUIRED, USES PROHIBITED

A. A clear vision area shall be maintained on the corners of all property adjacent to an intersection as provided by CDC 42.040 and 42.050.

B. A clear vision area shall contain no planting, fence, wall, structure or temporary or permanent obstruction (except for an occasional utility pole or tree) exceeding three feet in height, measured from the top of the curb, or, where no curb exists, from the street centerline grade, except that trees exceeding this height may be located in this area, provided all branches below eight feet are removed. (Ord. 1192, 1987)

42.030 EXCEPTIONS

The following described area in Willamette shall be exempt from the provisions of this chapter. The parcels of land zoned General Commercial which abut Willamette Falls Drive, located between 10th and 16th Streets. Beginning at the intersection of Willamette Falls Drive and 11th Street on 7th Avenue to 16th Street; on 16th Street to 9th Avenue; on 9th Avenue to 14th Street to the Tualatin River; following the Tualatin River and Willamette River to 12th Street; on 12th Street to 4th Avenue; on 4th Avenue to 11th Street; on 11th Street to Willamette Falls Drive. This described area does not include the northerly side of Willamette Falls Drive.

42.040 COMPUTATION; STREET AND ACCESSWAY 24 FEET OR MORE IN WIDTH

The clear vision area for all street intersections and street and accessway intersections (accessways having 24 feet or more in width) shall be that triangular area formed by the right-of-way or property lines along such lots and a straight line joining the right-of-way or property line at points which are 30 feet distant from the intersection of the right-of-way line and measured along such lines.

42.050 COMPUTATION; ACCESSWAY LESS THAN 24 FEET IN WIDTH

The clear vision area for street and accessway intersections (accessways having less than 24 feet in width) shall be that triangular area whose base extends 30 feet along the street right-of-way line in both directions from the centerline of the accessway at the front setback line of a single-family and two-family residence, and 30 feet back from the property line on all other types of uses.

Applicant's Finding:	All clear vision areas at the intersections of public streets with driveways or other public streets on the subject site will be free of plantings, fences, walls, structures and obstructions, meeting the requirements for clear vision areas. **The requirements of this section have been satisfied.**

CHAPTER 44. FENCES

44.020 SIGHT-OBSCURING FENCE; SETBACK AND HEIGHT LIMITATIONS

A. A sight- or non-sight-obscuring fence may be located on the property line or in a yard setback area subject to the following:

1. **The fence is located within:**

a. A required front yard area, and it does not exceed three feet, except pillars and driveway entry features subject to the requirements of Chapter 42 CDC, Clear Vision Areas, and approval by the Planning Director;

b. A required side yard which abuts a street and it is within that portion of the side yard which is also part of the front yard setback area and it does not exceed three feet;

c. A required side yard which abuts a street and it is within that portion of the side yard which is not also a portion of the front yard setback area and it does not exceed six feet provided the provisions of Chapter 42 CDC are met;

d. A required rear yard which abuts a street and it does not exceed six feet; or

e. A required side yard area which does not abut a street or a rear yard and it does not exceed six feet.

Applicant's Finding: New fences are not indicated on the proposed plans because the exact locations have yet to be determined. All fences constructed as part of this subdivision will meet the requirements of these standards.

B. Fence or wall on a retaining wall. When a fence is built on a retaining wall or an artificial berm, the following standards shall apply:

1. When the retaining wall or artificial berm is 30 inches or less in height from finished grade, the maximum fence or wall height on top of the retaining wall shall be six feet.

2. When the retaining wall or earth berm is greater than 30 inches in height, the combined height of the retaining wall and fence or wall from finished grade shall not exceed eight and one-half feet.

3. Fences or walls located on top of retaining walls or earth berms in excess of 30 inches above finished grade may exceed the total allowed combined height of eight and one-half feet; provided, that the fence or wall is located a minimum of two feet from the retaining wall and the fence or wall height shall not exceed six feet.

Applicant's Finding: Any fences built on retaining walls will meet these standards.

The requirements of this section have been satisfied.

44.030 SCREENING OF OUTDOOR STORAGE

A. All service, repair, and storage activities carried on in connection with any commercial, business or industrial activity and not conducted within an enclosed building shall be screened from view of all adjacent properties and adjacent streets by a sight-obscuring fence.

B. The sight-obscuring fence shall be in accordance with provisions of Chapter 42 CDC, Clear Vision Areas, and shall be subject to the provisions of Chapter 55 CDC, Design Review.

Applicant's Finding: This site is residential and no service, repair, or storage activities in connection with commercial, business, or industry activities are proposed.

44.040 LANDSCAPING

Landscaping which is located on the fence line and which impairs sight vision shall not be located within the clear vision area as provided in Chapter 42 CDC.

44.050 STANDARDS FOR CONSTRUCTION

A. The structural side of the fence shall face the owner's property; and

B. The sides of the fence abutting adjoining properties and the street shall be maintained. (Ord. 1291, 1990

Applicant's Finding: Any fences built will meet these standards.

The requirements of this section have been satisfied.

CHAPTER 48. ACCESS, EGRESS AND CIRCULATION

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.)

Applicant's Finding: The City has not required a traffic impact analysis due to the small size of this development and the relatively low impacts created by the addition of the new lots proposed.

The requirements of this section have been satisfied.

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.

Applicant's Finding: The Applicant has proposed to limit curb cuts for access to the new lots proposed within this development. No new access will be provided to Bland Circle. Four of the new lots (lots 2-5) will take access to Tannler via a new shared driveway. Lots 6 and lot 1 will take access to Tannler via individual driveways. The City's spacing standards for driveways along residential streets has been maintained for all new driveway access locations. The proposed configuration will create a safe and efficient access configuration for all of the new driveways.

The requirements of this section have been satisfied.

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.

Applicant's Finding: The Applicant is proposing access to the site via Option 3. The proposed design limits curb cuts for access to the new lots proposed within this development. No new access will be provided to Bland Circle. Four of the new lots (lots 2-5) will take access to Tannler via a new shared driveway. Lots 6 and lot 1 will take access to Tannler via individual driveways. The City's spacing standards for driveways along residential streets has been maintained for all new driveway access locations. The proposed configuration will create a safe and efficient access configuration for all of the new driveways.

The requirements of this section have been satisfied.

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).

Applicant's Finding: The proposed development does not front onto an arterial. The requirements of this section do not apply.

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

Applicant's Finding: No double fronted lots will be created as part of this subdivision.

6. Access spacing.

a. The access spacing standards found in Chapter 8 of the adopted Transportation System Plan (TSP) shall be applicable to all newly established public street intersections and non-traversable medians.

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

Applicant's Finding: The Applicant's proposed driveway locations are shown on Sheet C2.1. The City's access spacing requirements for new driveways onto a residential local street have been maintained.

The requirements of this section have been satisfied.

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.

Applicant's Finding: The Applicant is proposing only one access point for each new single family lot. Lot 1 currently has a looped driveway however the northern edge of the driveway also provides access to the City's Water Reservoir located on taxlot 504, to the north. The looped driveway configuration and the City's existing access point to the Reservoir will be maintained following the construction of Tannler.

The requirements of this section have been satisfied.

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.

Applicant's Finding: The applicant has proposed a shared driveway for lots 2 through 5. The shared driveway will take access to Tannler Street, a local street. The Applicant will record a shared access

and maintenance agreement over the shared access drive at the time of final plat submission.

The requirements of this section are satisfied.

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.

Applicant's Finding: The Applicant has provided a subdivision plan which meets the City's Block length and perimeter standards. The length between the area's existing streets, Falcon and Tannler is approximately 400 feet. As this project qualifies as infill development, the existing street pattern is fairly well established. Block perimeter standards do not apply to this property as there is no future land division opportunities either to the north, on the City owned property or to the west and east, where single family development patterns are already established.

The requirements of this section are met.

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.

Applicant's Finding: No access to any arterials has been proposed. This section does not apply.

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

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

Applicant's Finding: All proposed driveways within 150 feet of the adjacent right-of-way associated with Tannler will provide at least 10 feet of unobstructed horizontal clearance. No access has been proposed to Bland Circle.

The requirements of this section have been met.

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.

Applicant's Finding: The proposed shared driveway that will serve lots 2-5 will have a 20 foot wide paved surface.

The requirements of this section have been 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.

Applicant's Finding: The proposed shared driveway that will serve lots 2-5 has been proposed at less than 50 percent.

The requirements of this section have been 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.

Applicant's Finding: All proposed homes will have individual driveway areas of at least 20 feet to allow for parking of vehicles off of the common access ways or public roads.

The requirements of this section have been 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.

Applicant's Finding: The Applicant has proposed a design for access to the proposed home sites which has been preliminarily approved by the Fire Chief.

The requirements of this section have been met.

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

Applicant's Finding: All proposed driveway will have a horizontal clearance of at least 20 feet.

The requirements of this section are met.

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.

Applicant's Finding: The Applicant has proposed to provide access to all six lots created by this subdivision through the extension of Tannler Drive, a public street.

The requirements of this section are met.

48.060 WIDTH AND LOCATION OF CURB CUTS AND ACCESS SEPARATION REQUIREMENTS

A. Minimum curb cut width shall be 16 feet.

Applicant's Finding: All proposed curb cuts exceed the minimum 16 foot standard.

The requirements of this section are met.

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.

Applicant's Finding: The maximum width of the curb cuts provided is less than 36 feet.

The requirements of this section are met.

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.

Applicant's Finding: The Applicant's proposed driveway spacing exceeds the minimum 35 foot spacing requirements for local streets intersecting collectors. In this case, Tannler Drive intersects Bland Circle.

The requirements of this section 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:

***

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

Applicant's Finding: A minimum distance of 30 feet of spacing has been provided between curb cuts along Tannler Drive.

The requirements of this section are met.

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

Applicant's Finding: No rolled curbs have been proposed. The requirements of this section do not apply.

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.

Applicant's Finding: The requirements of this section do not apply.

G. Adequate line of sight pursuant to engineering standards should be afforded at each driveway or accessway. (Ord. 1270, 1990; Ord. 1584, 2008; Ord. 1636 § 35, 2014)

Applicant's Finding: The proposed driveways will comply with the City's engineering standards for site distance. This requirement will be verified at the time of building permit submission for each individual home site and driveway.

The requirements of this section have been met.

48.070 PLANNING DIRECTOR'S AUTHORITY TO RESTRICT ACCESS APPEAL PROVISIONS

A. In order to provide for increased traffic movement on congested streets and eliminate turning movement problems, the Planning Director and the City Engineer, or his designee, may restrict the location of driveways on said street and require the location of driveways on adjacent streets upon the finding that the proposed access would:

Applicant's Finding:

1. Provide inadequate access for emergency vehicles; or

Applicant's Finding: The proposed development continues a public street network into the site and provides a private driveway with access to multiple lots. The proposed private driveway will be constructed in accordance with the City's requirements for emergency vehicle access. Adequate access for emergency vehicles has been provided throughout the site.

The requirements of this section have been met.

2. Cause or increase hazardous conditions to exist which would constitute a clear and present danger to the public health safety and general welfare.

Applicant's Finding: The site has no hazardous conditions which would be exacerbated by the development proposal.

The requirements of this section do not apply.

48.080 BICYCLE AND PEDESTRIAN CIRCULATION

A. Within all multi-family developments (except two-family/duplex dwellings), each residential dwelling shall be connected to vehicular parking stalls, common open space, and recreation facilities by a pedestrian pathway system having a minimum width of six feet and constructed of an all-weather material. The pathway material shall be of a different color or composition from the driveway. (Bicycle routes adjacent to the travel lanes do not have to be of different color or composition.)

Applicant's Finding:

B. Bicycle and pedestrian ways within a subdivision shall be constructed according to the provisions in CDC 85.200(A)(3).

Applicant's Finding: The Applicant has provided for the extension of a public street into the proposed development. The street will provide facilities for both pedestrians and cyclists, consistent with the City's standards for public streets.

The requirements of this section have been met.

CHAPTER 54. LANDSCAPING

54.020 APPROVAL CRITERIA

A. Every development proposal requires inventorying existing site conditions which include trees and landscaping. In designing the new project, every reasonable attempt should be made to preserve and protect existing trees and to incorporate them into the new landscape plan. Similarly, significant landscaping (e.g., bushes, shrubs) should be integrated. The rationale is that saving a 30-foot-tall mature tree helps maintain the continuity of the site, they are qualitatively superior to two or three two-inch caliper street trees, they provide immediate micro-climate benefits (e.g., shade), they soften views of the street, and they can increase the attractiveness, marketability, and value of the development.

Applicant's Finding: This subdivision application includes a tree inventory and preservation plan focused on maintaining significant trees and clusters. Roads, utilities, and lots have been carefully placed to allow the retention of as many trees as possible.

B. To encourage tree preservation, the parking requirement may be reduced by one space for every significant tree that is preserved in the parking lot area for a maximum reduction of 10 percent of the required parking. The City Parks Supervisor or Arborist shall determine the significance of the tree and/or landscaping to determine eligibility for these reductions.

Applicant's Finding: No parking areas, aside from driveways, are required for residential subdivisions. No parking reduction is requested.

C. Developers must also comply with the municipal code chapter on tree protection.

Applicant's Finding: The developer will comply with all municipal code requirements for tree protection.

D. Heritage trees. Heritage trees are trees which, because of their age, type, notability, or historical association, are of special importance. Heritage trees are trees designated by the City Council following review of a nomination. A heritage tree may not be removed without a public hearing at least 30 days prior to the proposed date of removal. Development proposals involving land with heritage tree(s) shall be required to protect and save the tree(s). Further discussion of heritage trees is found in the municipal code.

Applicant's Finding: No heritage trees have been identified on this site.

The requirements of this section have been satisfied.

E. (Not applicable to single-family residential)

F. Landscaping (trees) in new subdivision.

1. Street trees shall be planted by the City within the planting strips (minimum six-foot width) of any new subdivision in conformity with the street tree plan for the area, and in accordance with the planting specifications of the Parks and Recreation Department. All trees shall be planted during the first planting season after occupancy. In selecting types of trees, the City Arborist may determine the appropriateness of the trees to local conditions and whether that tree has been overplanted, and whether alternate species should be selected. Also see subsection (C) of this section.

2. The cost of street trees shall be paid by the developer of the subdivision.

3. The fee per street tree, as established by the City, shall be based upon the following:

a. The cost of the tree;

b. Labor and equipment for original placement;

c. Regular maintenance necessary for tree establishment during the initial two-year period following the City schedule of maintenance; and

d. A two-year replacement warranty based on the City's established failure rate. (Ord. 1408, 1998; Ord. 1463, 2000)

Applicant's Finding: The applicant will pay for the installation of street trees by the City and maintain the trees for the two-year establishment period.

The requirements of this section have been satisfied.

54.030 PLANTING STRIPS FOR MODIFIED AND NEW STREETS

All proposed changes in width in a public street right-of-way or any proposed street improvement shall, where feasible, include allowances for planting strips. Plans and specifications for planting such areas shall be integrated into the general plan of street improvements. This chapter requires any multi-family, commercial, or public facility which causes change in public right-of-way or street improvement to comply with the street tree planting plan and standards.

Applicant's Finding: 6-foot-wide planting strips will be installed between the sidewalk and the asphalt within the right-of-way of Bland Circle and Tannler Drive.

The requirements of this section have been satisfied.

54.040 INSTALLATION

A. All landscaping shall be installed according to accepted planting procedures.

B. The soil and plant materials shall be of good quality.

C. Landscaping shall be installed in accordance with the provisions of this code.

D. Certificates of occupancy shall not be issued unless the landscaping requirements have been met or other arrangements have been made and approved by the City such as the posting of a bond.

Applicant's Finding: All landscaping installation will meet the requirements of this section.

The requirements of this section have been satisfied.

54.050 PROTECTION OF STREET TREES

Street trees may not be topped or trimmed unless approval is granted by the Parks Supervisor or, in emergency cases, when a tree imminently threatens power lines.

Applicant's Finding: There are no existing street trees adjacent to this property.

The requirements of this section have been satisfied.

54.060 MAINTENANCE

A. The owner, tenant and their agent, if any, shall be jointly and severally responsible for the maintenance of all landscaping which shall be maintained in good condition so as to present a healthy, neat, and orderly appearance and shall be kept free from refuse and debris.

B. All plant growth in interior landscaped areas shall be controlled by pruning, trimming, or otherwise so that:

1. **It will not interfere with the maintenance or repair of any public utility;**
2. **It will not restrict pedestrian or vehicular access; and**
3. **It will not constitute a traffic hazard because of reduced visibility.**

Applicant's Finding: The owners of this property, including future homeowners, will be responsible for maintenance of landscaping.

The requirements of this section have been satisfied.

54.070 SPECIFICATION SUMMARY

*****25% of residential/multi-family site must be landscaped.**

Applicant's Finding: A minimum of 25% of this site will be landscaped as part of the yards of future homes.

The requirements of this section have been satisfied.

DIVISION 4. DESIGN REVIEW

CHAPTER 55. DESIGN REVIEW

55.100 APPROVAL STANDARDS - CLASS II DESIGN REVIEW

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.**

Applicant's Finding: No heritage trees were identified on this site.

The requirements of this section have been satisfied.

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. In cases where there is a difference of opinion on the significance of a tree or tree cluster, the City Arborist's

findings shall prevail. It is important to acknowledge that all trees are not significant and, further, that this code section will not necessarily protect all trees deemed significant.

Applicant's Finding: The findings of subsections (B)(2)(a) through (f) are found below.

The requirements of this section have been satisfied.

a. Non-residential and residential projects on Type I and II lands shall protect all heritage trees and all significant trees and tree clusters by either the dedication of these areas or establishing tree conservation easements. Development of Type I and II lands shall require the careful layout of streets, driveways, building pads, lots, and utilities to avoid heritage trees and significant trees and tree clusters, and other natural resources pursuant to this code. The method for delineating the protected trees or tree clusters ("dripline + 10 feet") is explained in subsection (B)(2)(b) of this section. Exemptions of subsections (B)(2)(c), (e), and (f) of this section shall apply.

Applicant's Finding: This site is not classified as Type I or Type II and, therefore, this standard is not applicable.

The requirements of this section have been satisfied.

b. Non-residential and residential projects on non-Type I and II lands shall set aside up to 20 percent of the area to protect trees and tree clusters that are determined to be significant, plus any heritage trees. Therefore, in the event that the City Arborist determines that a significant tree cluster exists at a development site, then up to 20 percent of the non-Type I and II lands shall be devoted to the protection of those trees, either by dedication or easement. The exact percentage is determined by establishing the driplines of the trees or tree clusters that are to be protected. In order to protect the roots which typically extend further, an additional 10-foot measurement beyond the dripline shall be added. The square footage of the area inside this "dripline plus 10 feet" measurement shall be the basis for calculating the percentage (see figure below). The City Arborist will identify which tree(s) are to be protected. Development of non-Type I and II lands shall also require the careful layout of streets, driveways, building pads, lots, and utilities to avoid significant trees, tree clusters, heritage trees, and other natural resources pursuant to this code. Exemptions of subsections (B)(2)(c), (e), and (f) of this section shall apply. Please note that in the event that more than 20 percent of the non-Type I and II lands comprise significant trees or tree clusters, the developer shall not be required to save the excess trees, but is encouraged to do so.

Applicant's Finding: The proposed subdivision is located on non-Type I and II lands. Streets, driveways, building pads, lots and utilities have been carefully laid out so as to avoid significant trees and clusters. Every effort has been made to retain trees as they enhance the value of the properties for the developer and the future homeowners. 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 plan.

There are a total of 19 trees identified as significant on this site, for a total of 569-inches DBH of significant trees. Of the 19 significant trees, 8 will be retained with this subdivision application, for a total of 240-inches DBH. 11 significant trees will be removed totaling 329-inches DBH, or 33.7% of the total DBH of all significant trees on site.

The requirements of this section have been satisfied.

c. Where stubouts of streets occur on abutting properties, and the extension of those streets will mean the loss of significant trees, tree clusters, or heritage trees, it is understood that tree loss may be inevitable. In these cases, the objective shall be to minimize tree loss. These provisions shall also apply in those cases where access, per construction code standards, to a lot or parcel is blocked by a row or screen of significant trees or tree clusters.

Applicant's Finding: No street stubouts are proposed on abutting properties.

The requirements of this section have been satisfied.

d. For both non-residential and residential development, the layout shall achieve at least 70 percent of maximum density for the developable net area. The developable net area excludes all Type I and II lands and up to 20 percent of the remainder of the site for the purpose of protection of stands or clusters of trees as defined in subsection (B)(2) of this section.

Applicant's Finding: The R-7 zone permits a maximum density of 6.2 dwelling units per net acre. Net acre is defined as "The total gross acres less the public right-of-way and other acreage deductions, as applicable". The net acreage of this site after removal of dedicated right-of way is 1.87 acres. At 6.2 dwelling units per net acre, the maximum number of dwelling units on this site is 11. This proposal is for 6 lots; however, one of the lots is sized in such a way that it could be re-divided into three parcels. The 5 standard sized lots and the 3 parcels possible from the oversized lot would result in a net site density of 8 dwelling units, or 73% of the maximum 11 lots on the site.

The requirements of this section have been satisfied.

e. For arterial and collector street projects, including Oregon Department of Transportation street improvements, the roads and graded areas shall avoid tree clusters where possible. Significant trees, tree clusters, and heritage tree loss may occur, however, but shall be minimized.

Applicant's Finding: No arterial or collector street projects are included with this development application.

The requirements of this section have been satisfied.

f. If the protection of significant tree(s) or tree clusters is to occur in an area of grading that is necessary for the development of street grades, per City construction codes, which will result in an adjustment in the grade of over or under two feet, which will then threaten the health of the tree(s), the applicant will submit evidence to the Planning Director that all reasonable alternative grading plans have been considered and cannot work. The applicant will then submit a mitigation plan to the City Arborist to compensate for the removal of the tree(s) on an "inch by inch" basis (e.g., a 48-inch Douglas fir could be replaced by 12 trees, each four-inch). The mix of tree sizes and types shall be approved by the City Arborist.

Applicant's Finding:

The Applicant's proposed access drives will result in the removal of one 39-inch DBH Douglas-fir tree (identified as Tree No. 3697 in the submitted arborist's report). This tree is not a significant tree as determined by the project arborist and City Arborist.

Construction of improvements on Bland Circle will result in the loss of ten trees for a total of 154-inches DBH. Two of the trees proposed for removal have been determined to be significant.

Construction of improvements on Tannler Drive will result in the loss of six trees for a total of 56-inches DBH, none of which are identified as significant.

Two significant trees or tree clusters with a total DBH of 70 inches are proposed for removal due to street construction. The Applicant is proposing to mitigate for the removal of 70 inches of DBH by planting 35 trees, each two inches.

The requirements of this section have been satisfied.

DIVISION 8. LAND DIVISIONS

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. <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.

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

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

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.

E. Surface drainage and storm sewer system. A registered civil engineer shall prepare a plan and statement which shall be supported by factual data that clearly shows that there will be no adverse impacts from increased intensity of runoff off site of a 100-year storm, or the plan and statement shall identify all off-site impacts and measures to mitigate those impacts commensurate to the particular land use application. Mitigation measures shall maintain pre-existing levels and meet buildout volumes, and meet planning and engineering requirements.

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 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.

G. Water system. Water lines with valves and fire hydrants providing service to each building site in the subdivision and connecting the subdivision to City mains shall be installed. Prior to starting building construction, the design shall take into account provisions for extension beyond the subdivision and to adequately grid the City system. Hydrant spacing is to be based on accessible area served according to the City Engineer's recommendations and City standards. If required water mains will directly serve property outside the subdivision, the City may reimburse the developer an amount estimated to be the proportionate share of the cost for each connection made to the water mains by property owners outside the subdivision for a period of 10 years from the time of installation of the mains. If oversizing of water mains is required to areas outside the subdivision as a general improvement, but to which no new connections can be identified, the City may reimburse the developer that proportionate share of the cost for oversizing. The actual amount and reimbursement method shall be as determined by the City Administrator considering current or actual construction costs.

H. Sidewalks.

1. Sidewalks shall be installed on both sides of a public street and in any special pedestrian way within the subdivision, except that in the case of primary or secondary arterials, or special type industrial districts, or special site conditions, the Planning Commission may approve a subdivision without sidewalks if alternate pedestrian routes are available.

In the case of the double-frontage lots, provision of sidewalks along the frontage not used for access shall be the responsibility of the developer. Providing front and side yard sidewalks shall be the responsibility of the land owner at the time a request for a building permit is received. Additionally, deed restrictions and CC&Rs shall reflect that sidewalks are to be installed prior to occupancy and it is the responsibility of the lot or homeowner to provide the sidewalk, except as required above for double-frontage lots.

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

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

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

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

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

b. The street is a dead-end street;

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

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

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.

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.

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.

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.

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.

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.

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.

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

Q. Joint mailbox facilities shall be provided in all residential subdivisions, with each joint mailbox serving at least two, but no more than eight, dwelling units. Joint mailbox structures shall be placed in the street right-of-way adjacent to roadway curbs. Proposed locations of joint mailboxes shall be designated on a copy of the tentative plan of the subdivision, and shall be approved as part of the tentative plan approval. In addition, sketch plans for the joint mailbox structures to be used shall be submitted and approved by the City Engineer prior to final plat approval. (Ord. 1180, 1986; Ord. 1192, 1987; Ord. 1287, 1990; Ord. 1321, 1992; Ord. 1339, 1993; Ord. 1401, 1997; Ord. 1408, 1998; Ord. 1442, 1999)

Applicant's Finding: All improvements will be installed per the submitted plans and in conformance with the requirements of this title.

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. (Ord. 1408, 1998)

Applicant's Finding: All improvements will be installed in conformance with the requirements of this title.

DIVISION 9. ADMINISTRATIVE PROCEDURES
CHAPTER 99 PROCEDURES FOR DECISION MAKING: QUASI-JUDICIAL

99.030 APPLICATION PROCESS: WHO MAY APPLY, PRE-APPLICATION CONFERENCE, REQUIREMENTS, REFUSAL OF APPLICATION, FEES

A. <u>Who may apply</u>.

1. Applications for approval required under this chapter may be initiated by:

a. The owner of the property that is the subject of the application or the owner's duly authorized representative;

b. The purchaser of such property who submits a duly executed written contract or copy thereof, which has been recorded with the Clackamas Clerk;

c. A lessee in possession of such property who submits written consent of the owner to make such application; or

d. Motion by the Planning Commission or City Council.

2. Any person authorized by this chapter to submit an application for approval may be represented by an agent who is authorized in writing by such a person to make the application.

Applicant's Finding: The owner of the property is initiating this application for approval.

B. Pre-application conferences.

1. Subject to subsection (B)(4) of this section, a pre-application conference is required for, but not limited to, ***l. land divisions.

Applicant's Finding: A pre-application meeting was held February 5, 2015.

C. The requirements for making an application.

1. The application shall be made on forms provided by the Director as provided by CDC 99.040(A)(1);

2. The application shall be complete and shall contain the information requested on the form, shall address the appropriate submittal requirements and approval criteria in sufficient detail for review and action, and shall be accompanied by the deposit or fee required by CDC 99.033. No application will be accepted if not accompanied by the required fee or deposit. In the event an additional deposit is required by CDC 99.033 and not provided within the time required, the application shall be rejected without further processing or deliberation and all application materials shall be returned to the applicant, notwithstanding any determination of completeness. (Ord. 1527, 2005; Ord. 1568, 2008; Ord. 1590 § 1, 2009; Ord. 1599 § 6, 2011)

Applicant's Finding: This application has been made on forms provided by the City's Planning Department. The application contains the necessary information and the required fee.

99.033 FEES

The Council shall adopt a schedule of fees reasonably calculated to defray the expenses of the administrative process. The Council may establish either a set fee or a deposit system in which the applicant pays a deposit and the City determines the total administrative cost at the end of the process and refunds any unused amount of the deposit to the applicant. No additional deposit shall be required for additional costs that are incurred because the matter is referred to or called up by a higher decision-making authority. The Council shall charge no fees for City-initiated land use applications or appeals filed by a recognized neighborhood association pursuant to the provisions of CDC 99.240. (Ord. 1527, 2005; Ord. 1568, 2008; Ord. 1604 § 70, 2011)

Applicant's Finding: **The required fee was submitted with the land use application.**

99.038 NEIGHBORHOOD CONTACT REQUIRED FOR CERTAIN APPLICATIONS

Prior to submittal of an application for any subdivision, conditional use permit, multi-family project, planned unit development of four or more lots, non-residential buildings of over 1,500 square feet, or

a zone change that requires a Comprehensive Plan amendment, the applicant shall contact and discuss the proposed development with any affected neighborhood as provided in this section. Although not required for other or smaller projects, contact with neighbors is highly recommended. The Planning Director may require neighborhood contact pursuant to this section prior to the filing of an application for any other development permit if the Director deems neighborhood contact to be beneficial.

A. Purpose. The purpose of neighborhood contact is to identify potential issues or conflicts regarding a proposed application so that they may be addressed prior to filing. This contact is intended to result in a better application and to expedite and lessen the expense of the review process by avoiding needless delays, appeals, remands, or denials. The City expects an applicant to take the reasonable concerns and recommendations of the neighborhood into consideration when preparing an application. The City expects the neighborhood association to work with the applicant to provide such input.

B. The applicant shall contact by letter all recognized neighborhood associations whose boundaries contain all or part of the site of the proposed development and all property owners within 500 feet of the site.

C. The letter shall be sent by to the president of the neighborhood association, and to one designee as submitted to the City by the neighborhood association, and shall be sent by regular mail to the other officers of the association and the property owners within 500 feet. If another neighborhood association boundary is located within the 500-foot notice radius, the letter shall be sent to that association's president, and to one designee as submitted to the City by the neighborhood association as well. The letter shall briefly describe the nature and location of the proposed development, and invite the association and interested persons to a meeting to discuss the proposal in more detail. The meeting shall be scheduled at the association's regularly scheduled monthly meeting, or at another time at the discretion of the association, and not less than 20 days from the date of mailing of the notice. If the meeting is scheduled as part of the association's regular monthly meeting, the letter shall explain that the proposal may not be the only topic of discussion on the meeting agenda. The letter shall encourage concerned citizens to contact their association president, or their association designee, with any questions that they may want to relay to the applicant.

Neighborhood contact shall be initiated by the applicant by mailing the association president, and to one designee as submitted to the City by the neighborhood association, a letter, return receipt requested, formally requesting, within 60 days, a date and location to have their required neighborhood meeting. The 60 days shall be calculated from the date that the applicant mails this letter to the association. If the neighborhood association does not want to meet within the 60-day timeframe, or if there is no neighborhood association, the applicant may hold a public meeting during the evening after 6:00 p.m., or on the weekend no less than 20 days from the date of mailing of the notice. All meetings shall be held at a location open to the public within the boundaries of the association or at a public facility within the City of West Linn. If the meeting is held at a business, it shall be posted at the time of the meeting as the meeting place and shall note that the meeting is open to the public and all interested persons may attend.

D. On the same date the letters described in subsections A through C of this section are mailed, the applicant shall provide and post notice on the property subject to the proposed application. The notice shall be posted at a location visible from the public right-of-way. If the site is not located adjacent to a through street, then an additional sign shall be posted on the nearest through street. The sign notice shall be at least 11 inches by 17 inches in size on durable material and in clear, legible writing. The notice shall state that the site may be subject to a proposed development (e.g., subdivision, variance, conditional use) and shall set forth the name of the applicant and a telephone number where the

applicant can be reached for additional information. The site shall remain posted until the conclusion of the meeting.

E. An application shall not be accepted as complete unless and until the applicant demonstrates compliance with this section by including with the application:

1. A copy of the certified letter to the neighborhood association with a copy of return receipt;

2. A copy of the letter to officers of the association and to property owners within 500 feet, including an affidavit of mailing and a copy of the mailing list containing the names and addresses of such owners and residents;

3. A copy of the required posted notice, along with an affidavit of posting;

4. A copy of the minutes of the meetings, produced by the neighborhood association, which shall include a record of any verbal comments received, and copies of any written comments from property owners, residents, and neighborhood association members. If there are no minutes, the applicant may provide a summary of the meeting comments. The applicant shall also send a copy of the summary to the chair of the neighborhood association. The chair shall be allowed to supplement the summary with any additional comments regarding the content of the meeting, as long as such comments are filed before the record is closed;

5. An audiotape of the meeting; and

6. In the event that it is discovered by staff that the aforementioned procedures of this section were not followed, or that a review of the audio tape and meeting minutes show the applicant has made a material misrepresentation of the project at the neighborhood meeting, the application shall be deemed incomplete until the applicant demonstrates compliance with this section. (Ord. 1425, 1998; Ord. 1474, 2001; Ord. 1568, 2008; Ord. 1590 § 1, 2009)

Applicant's Finding: This section requires the applicant to contact and discuss the proposed development with any affected neighborhood as provided in this section.

A meeting was held with the Savanna Oaks Neighborhood Association on September 1, 2015. The meeting was scheduled and noticed per the requirements of this section, and the required neighborhood meeting documentation is submitted with this application. The applicant provided renderings and information regarding the proposed subdivision and answered all questions asked by the members of the neighborhood association.

SUMMARY AND CONCLUSION

Based upon the materials submitted herein, the Applicant respectfully requests that the City's Planning Commission approve this 6-lot subdivision.

City of West Linn

PRE-APPLICATION CONFERENCE MEETING
SUMMARY NOTES

February 5, 2015

SUBJECT: Proposed six lot subdivision at 23128 Bland Circle

FILE: PA-15-04

ATTENDEES: Applicants: Andrew Tull, Ryan Zygar
Staff: Peter Spir (Planning), Khoi Le, Erich Lais (Engineering) Jason Arn (TVFR)
Other: Laurie and John Coppedge, Roberta Schwarz

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. <u>These comments are PRELIMINARY in nature</u>. Please contact the Planning Department with any questions regarding approval criteria, submittal requirements, or any other planning-related items. Please note disclaimer statement below.

Site Information

Site Address: 23128 Bland Circle
Tax Not No.: tax lot 500 of Assessor's Map 21E35B
Site Area: 2.11 acres
Neighborhood: Savanna Oaks (Willamette (abutting))
Comp. Plan: Low density residential
Zoning: R-7 (Single family residential attached and detached / 7,000 square foot minimum lot size)
Applicable code: CDC Chapter 85: Land Division (subdivision)
CDC Chapter 12: R-7

<u>Project Details:</u> The applicant proposes a six lot subdivision on the recently annexed property. All lots exceed the 7,000 square foot minimum lot size ranging from 8,013 square feet to 25,557 square feet for the lot with the existing house. Four lots (2-5) would use a shared 20 foot wide access easement and private driveway to access the extension of Tannler Drive while the other two lots (1 and 6) will have direct driveway access to the extension of Tannler Drive consistent with the driveway separation standards of CDC Chapter 48. No lots will access Bland Circle. Storm detention and treatment is proposed in a tract contiguous to Bland Circle. There are a number of trees at the site which will have to be inventoried and their significance determined by the City Arborist.

Engineering Division Comments

The applicant should contact Khoi Le of the Engineering Department to determine required improvements at Kle@westlinnoregon.gov. TVFR comments are available from Jason.Arn@TVFR.com.

Process

For the Subdivision, address the submittal requirements and provide responses to the approval criteria of CDC Chapter 85. There is a deposit fee of $4,200 plus $200 a lot plus final plat fee of $2,000 and a final inspection fee of $500.

N/A is not an acceptable response to the approval criteria. The submittal requirements may be waived, but the applicant must first identify the specific submittal requirement and request, in letter form, that it be waived by the Planning Manager and must identify the specific grounds for that waiver.

A neighborhood meeting is required per CDC 99.038. Follow the requirements of that section explicitly. The site is within the Savanna Oaks neighborhood. Please contact neighborhood president Ed Schwarz, available at SavannaOaksNA@westlinnoregon.gov. The Willamette neighborhood is within 500 feet of the site (on the south side of Bland Circle). Please contact Michael Selvaggio, available at WillametteNA@westlinnoregon.gov .

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 deemed complete, a hearing with the Planning Commission will be scheduled.

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. ***A new pre-application conference would have to be scheduled one that period lapses and these notes would no longer be valid. Any changes to the CDC standards may require a different design or submittal.***

NEIGHBORHOOD MEETING

AFFIDAVIT OF MAILING

STATE OF OREGON)

SS

County of Clackamas)

I, Mercedes Smith, being duly sworn, state that I represent the party initiating interest in a proposed subdivision affecting the land located at 23128 Bland Circle in West Linn, Oregon and that pursuant to Community development Code Section 99, did on the 7th day of August, 2015 caused to have mailed, to each of the persons on the attached list, a notice of a meeting to discuss the proposed development of the aforementioned property.

I further state that said notices were enclosed in plainly addressed envelopes to said persons and were deposited on the date indicated above in the United States Post Office with postage prepaid thereon.

This 15 TH day of September, 2015.

Signature

Subscribed and sworn to, or affirmed, before me this 15th day of September, 2015.

OFFICIAL STAMP
NEETI ARORA
NOTARY PUBLIC-OREGON
COMMISSION NO. 931338
MY COMMISSION EXPIRES AUGUST 27, 2018

Neeti Arora

Notary Public for the State of OREGON

County of WASHINGTON

My Commission Expires: Aug 27, 2018

NEIGHBORHOOD MEETING

AFFIDAVIT OF POSTING NOTICE

STATE OF OREGON)

SS

County of Clackamas)

I, Mercedes Smith, being duly sworn, state that I represent the party initiating interest in a proposed subdivision affecting the land located at 23128 Bland Circle in West Linn, Oregon and that pursuant to Community development Code Section 99, did on the 7th day of August, 2015 personally post notice indicating that the site may be proposed for a subdivision application.

A sign was posted along the southern property line.

This 15TH day of SEPTEMBER, 2015.

Signature

Subscribed and sworn to, or affirmed, before me this 15th day of September, 2015.

OFFICIAL STAMP
NEETI ARORA
NOTARY PUBLIC-OREGON
COMMISSION NO. 931338
MY COMMISSION EXPIRES AUGUST 27, 2018

Notary Public for the State of OREGON

County of WASHINGTON

My Commission Expires: AUG 27th 2018

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WEST LINN OR 97068

OFFICIAL USE

Postage	$	$3.45
Certified Fee		$2.80
Return Receipt Fee (Endorsement Required)		$0.00
Restricted Delivery Fee (Endorsement Required)		N/A
Total Postage & Fees	$	$6.74

0100 09 Postmark Here
BEAVERTON OR 97005
JUL 30 2015
07/30/2015 USPS

7014 2870 0001 6538 3403

Sent To: KEN PRYOR
Street & Apt. No., or PO Box No.: 2119 GREENE ST.
City, State, ZIP+4: WEST LINN OR 97068

PS Form 3800, July 2014 — See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

WEST LINN OR 97068

OFFICIAL USE

Postage	$	$3.45
Certified Fee		$2.80
Return Receipt Fee (Endorsement Required)		$0.00
Restricted Delivery Fee (Endorsement Required)		N/A
Total Postage & Fees	$	$6.74

0100 Postmark Here
BEAVERTON OR 97005
JUL 30 2015
07/30/2015 USPS

7014 2870 0001 6538 3410

Sent To: ED SCHWARZ
Street & Apt. No., or PO Box No.: 2206 TANNLER DR
City, State, ZIP+4: WEST LINN OR 97068

PS Form 3800, July 2014 — See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

WEST LINN OR 97068

OFFICIAL USE

Postage	$	$3.45
Certified Fee		$2.80
Return Receipt Fee (Endorsement Required)		$0.00
Restricted Delivery Fee (Endorsement Required)		N/A
Total Postage & Fees	$	$6.74

0100 Postmark Here
BEAVERTON OR 97005
JUL 30 2015
07/30/2015 USPS

7014 2870 0001 6538 3397

Sent To: MICHAEL SELVA 9910
Street & Apt. No., or PO Box No.: 1790 5TH AVE
City, State, ZIP+4: WEST LINN, OR 97068

PS Form 3800, July 2014 — See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

...return the card to you.

- Place barcode on Sender's side of the form at the bottom of the Section 1.
- Scan barcode according to Retail System prompt.

Return Receipt Tracer Number
Label 3611TB, June 2015

1. Article Addressed to:

ED SCHWARZ
SAVANNA OAKS NA
2206 TANNLER DR
WEST LINN OR 97068

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Roberta Schwarz ☐ Agent ☐ Addressee

B. Received by (Printed Name) Roberta Schwarz C. Date of Delivery AUG 3 2015

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

WEST LINN OR USPS

3. Service Type
☐ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7014 2870 0001 6538 3410

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Place barcode on Sender's side of the form at the bottom of the Section 1.
- Scan barcode according to Retail System prompt.

Return Receipt Tracer Number
Label 3611TB, June 2015

1. Article Addressed to:

KEN PRYOR
SAVANNA OAKS NA
2119 GREENE ST.
WEST LINN, OR 97068

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery
X

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

3. Service Type
☐ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7014 2870 0001 6538 3403

PS Form 3811, July 2013 Domestic Return Receipt

CITY OF West Linn

SUB-15-02

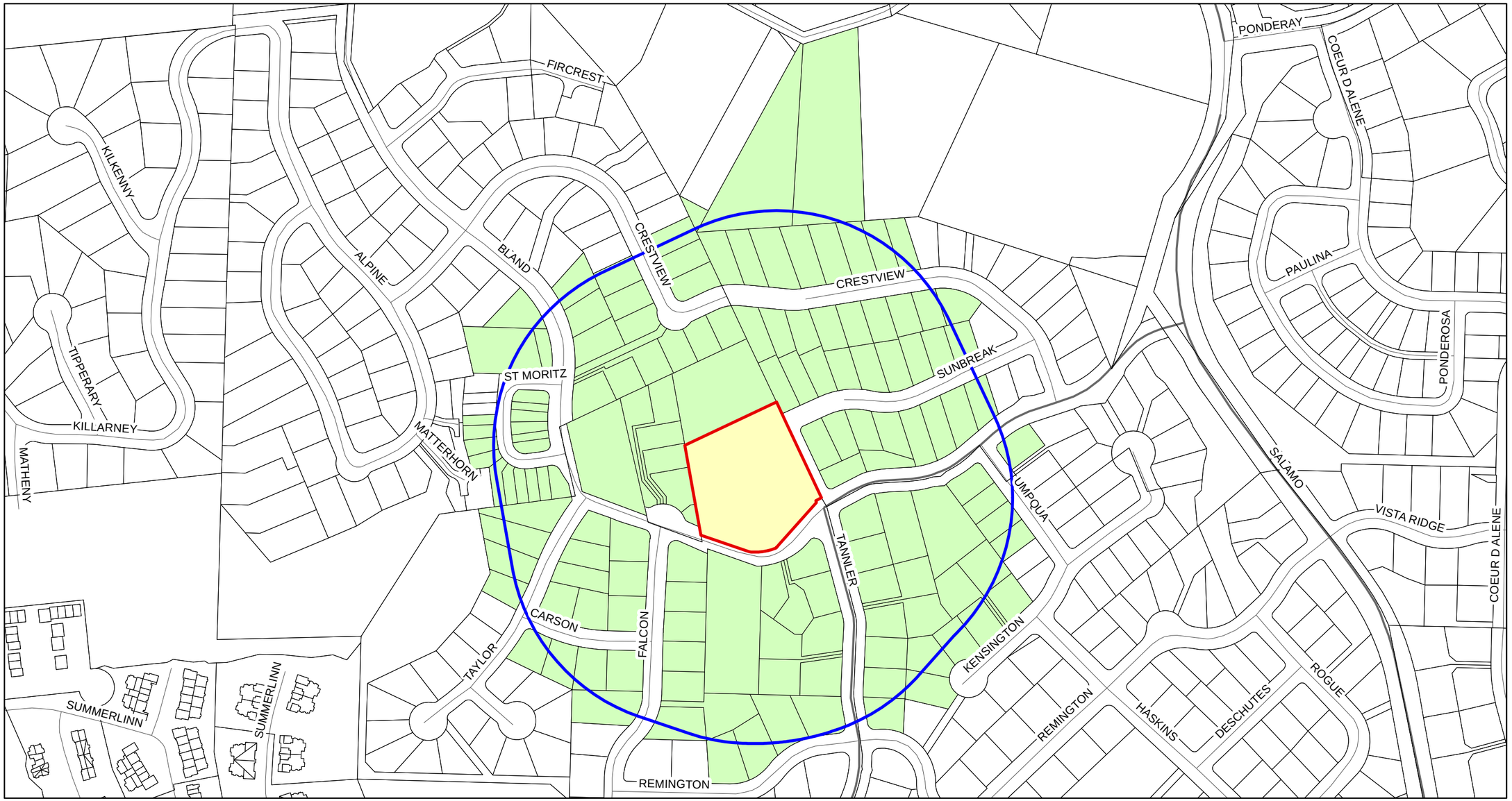
CITIZEN CONTACT INFORMATION

To lessen the bulk of agenda packets, land use application notice, and to address the worries 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.

Citizen Contact Information Agenda Packets and Project Files

23128 BLAND CIR, WEST LINN, OR, 97068

Subject Property
500ft Radius
Radius Results



0 250 500 1,000 1,500 2,000 Feet

WFG National Title Insurance Company
a Williston Financial Group company

Customer Service Department
12909 SW 68th Parkway, Suite 350
Portland, OR 97223
(503) 603-1700 cs@wfgnationaltitle.com

Civil Engineering
Water Resources
Land Use Planning

August 6, 2015

Neighborhood Meeting
23128 Bland Circle
West Linn, OR 97068
Proposed Residential Subdivision

To Our Neighbors:

3J Consulting acts on behalf of Bland Circle Estates LLC., regarding the planned subdivision of a property located at 23128 Bland Circle. The location of the property is shown on the attached map. The tax lot number for the property is 21E35B 00500. 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 design 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 Savanna 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, September 1st at 7:00pm
TVF&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 special 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.

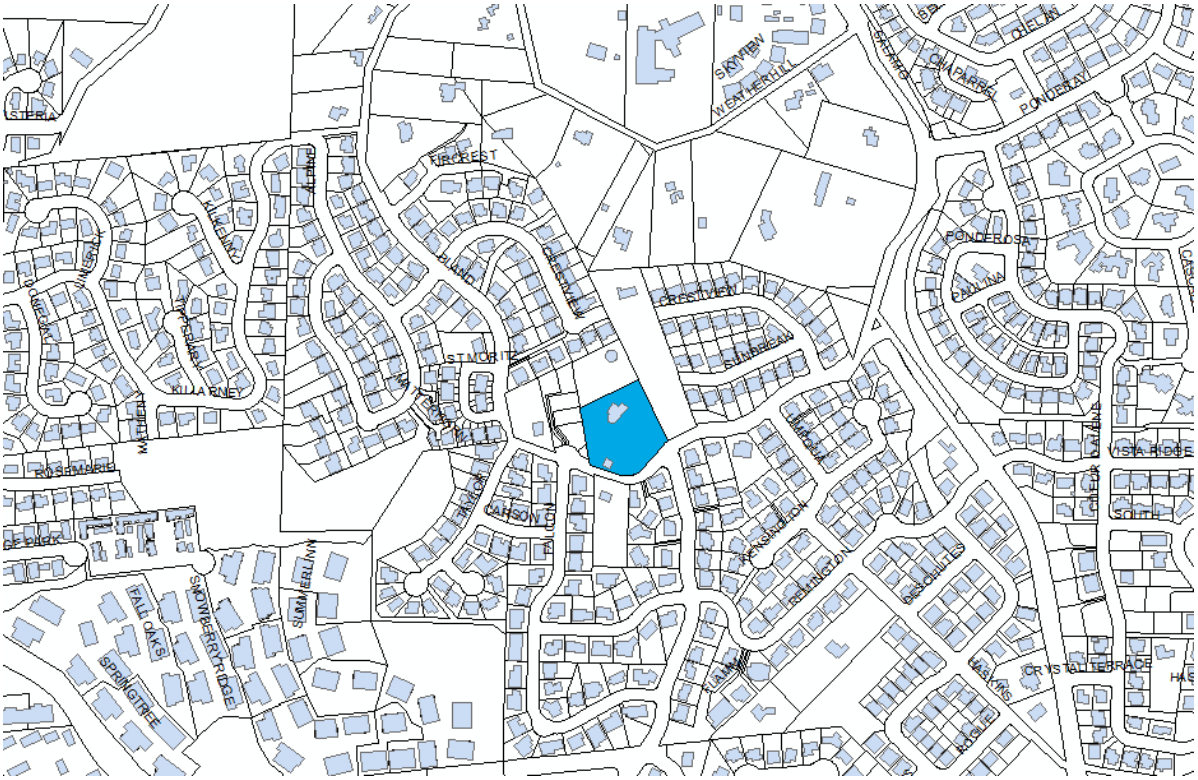
Please note that this will be an informational meeting based on preliminary development plans and that these plans may change before the application is submitted to the City.

We look forward to discussing this proposal with you. Please feel free to contact us by emailing andrew.tull@3j-consulting.com if you have any questions.

Sincerely,

Andrew Tull
Principal Planner
3J Consulting, Inc

3J Consulting, Inc.
5075 SW Griffith Drive, Suite 150, Beaverton, OR 97005
Ph: 503-946-9365
andrew.tull@3j-consulting.com



Vicinity Map - 23128 Bland Circle

Civil Engineering
Water Resources
Land Use Planning

Meeting Minutes – Savanna Heights

Date: September 1, 2015
Meeting No: Neighborhood Meeting
Project: Savanna Heights
3J No.: 15266
Location: West Linn Fire Station 59

Presenters	Company
Andrew Tull	**3J Consulting**
Ryan Zygar	**Savanna Heights**

In preparation for the submission of a land use application for the subdivision or partitioning of the subject property, the Applicant conducted a neighborhood meeting with the Savanna Oaks Neighborhood Association.

The meeting began with a presentation by Andrew Tull and Ryan Zygar. The project team started by explaining that the property would be subdivided in accordance with the City's development codes. A description of the development, the road access, and the proposed lots was provided. The general timeframe for the land use and construction process was described.

Following the introduction of the project, neighbors and attendees openly asked questions of the project team. The following is a record of the questions and the project teams' responses.

Item	Question	Response
1	Who owns the property?	Bland Circle Estates, LLC. The Coppedge's no longer own the property.
2	Will you disclose the other owners?	Ryan Zygar is the representative for the owners. Colorado Federal Building and Investment, LLC also has an interest in the property.
3	Will you be building this out?	The developer is currently planning to build the homes.
4	Will you be retaining the Coppedge House?	The Coppedge House is intended to remain.
5	We'd like for you to retain as many trees as possible.	Trees will be retained where possible. The City has a 20% tree retention requirement for significant tree retention. The Application will meet this requirement.
6	How large will the homes be?	The lots are large, the home will be on the mid to larger end? Potentially 3,800 to 6,000 sf.
7	How much will the homes cost?	Price depends upon the market.
8	Are you putting in a turn-around?	Yes, the private drive will have a turn-around.
9	How will trees be retained without a written agreement?	The City's code requires a tree protection easement but the County's surveyor has been reluctant to record these on plats. Another alternative would be to record the plats with a

		notice of development restriction, specifying which trees are to be retained.
10	What is to be located in the tract along Bland?	The stormwater system will be sized and placed at the low point?
11	Will you be decommissioning the septic system?	The septic system will need to be removed through the health department.
12	Will you be abandoning the well?	The well will be abandoned.
13	Will you be building the homes or selling them off?	The developer is planning to keep the project and build the lots.
14	What about the traffic issues associated with construction? Will all the homes be constructed at the same time?	The plan is to construct at least two homes in the first phase. Market conditions will affect future sales.
15	Will sidewalks be constructed?	Yes, Bland and Tannler will be improved to the City's standards, with curbs, sidewalks, and planters.
16	Will the historic shed be retained?	The barn will be dismantled. The developer may re-use the materials.
17	Where will the traffic SDC's be spent on this project?	The City will determine where the SDC's are going to be spent.
18	Could you please provide the Neighborhood Association with a resume of built homes and details regarding the LLC?	The developer may follow up with this information.

The meeting concluded at approximately 7:50pm.

Civil Engineering
Water Resources
Land Use Planning

July 30, 2015

Savanna Oaks Neighborhood Association
Ed Schwarz
Savanna Oaks NA President
2206 Tannler
West Linn, OR 97068

23128 Bland Circle
Proposed Residential Subdivision

Dear Mr. Schwarz,

3J Consulting acts on behalf of Bland Circle Estates LLC., regarding the planned subdivision of a property located at 23128 Bland Circle. The location of the property is shown on the attached map. The tax lot number for the property is 21e35b 00500. The property is located inside the City of West Linn's boundaries and it is zoned R-7 for Single Family Dwellings.

Bland Circle Estates is considering a subdivision of the 2.1 acre property in order to create 5 new single-family residential lots and one lot which will contain the existing home on the property. It is envisaged that each of the proposed lots will 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 Savanna Oaks and Willamette neighborhood associations 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 to identify issues so they can be given proper consideration. These meetings are required the public to share with the project team any special 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.

We would like to formally request a meeting with the neighborhood association. Further to our discussions over the phone, we understand that the Neighborhood Association would be able to include us during your agenda for the Savannah Oaks Neighborhood Association's September 1st meeting. If you could please confirm that this meeting is possible, we will send notification to residents located within the City's 500 foot notification boundary.

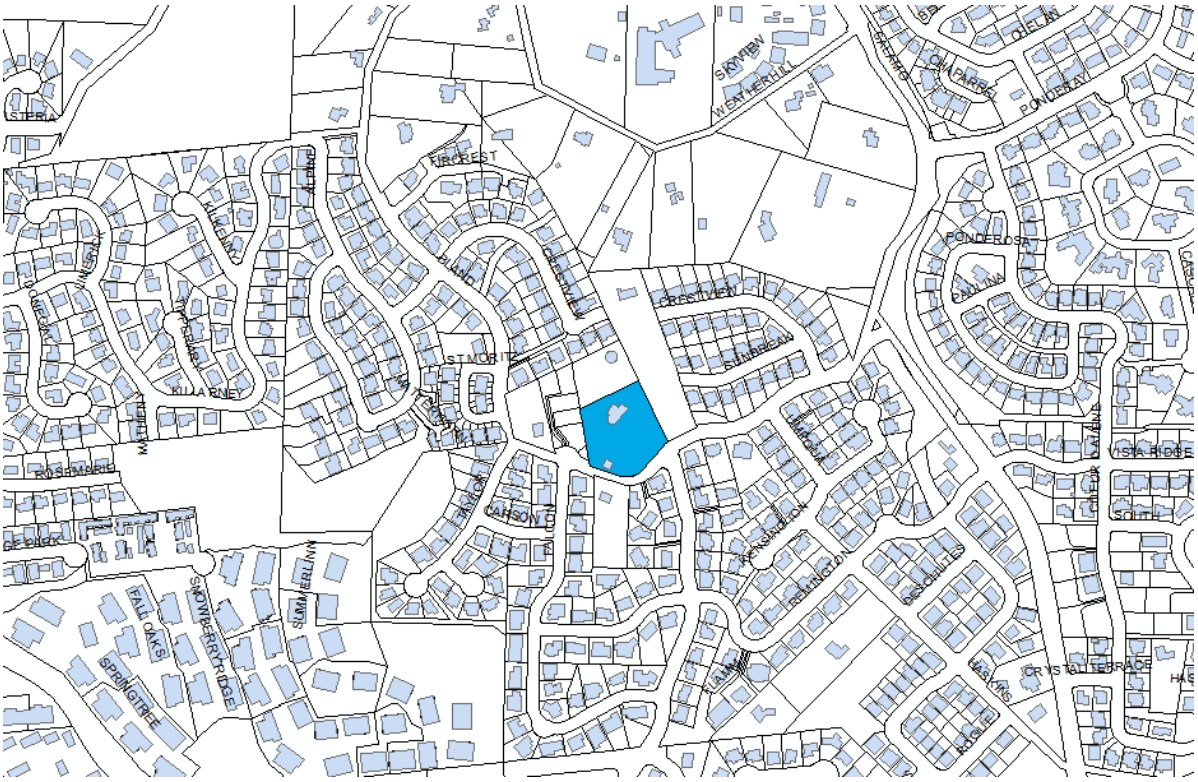
Please note that this will be an informational meeting based upon preliminary development plans and that these plans may change before the application is submitted to the City.

If the proposed meeting is acceptable, we would ask that you please respond to this letter with an email to andrew.tull@3j-consulting.com or phone call to 503-946-9365.

Sincerely,

Andrew Tull
Principal Planner
3J Consulting, Inc

Certified Copies to: Mr. Ken Pryor, Savanna Oaks Neighborhood Association
Mr. Michael Selvaggio, Willamette Neighborhood Association



Vicinity Map - 23128 Bland Circle

WFG National Title Insurance Company
a Williston Financial Group company

Prepared For:

Prepared By: **Amanda Shaw** Prepared Date: 8/3/2015
WFG National Title - Customer Service Department
12909 SW 68th Pkwy # 350 Portland, OR 97223
Phone: 503.603.1700 Fax: 888.833.6840
E-mail: cs@wfgnationaltitle.com

OWNERSHIP INFORMATION

Owner	: 23128 S Bland Circle LLC	Ref Parcel Number	: 21E35B 00500
CoOwner	:	T: 02S R: 01E S: 35 Q: NW QQ:	
Site Address	: 23128 Bland Cir West Linn 97068	Parcel Number	: 00405458
Mail Address	: 1235 N Dutton Ave #E Santa Rosa Ca 95401	County	: Clackamas (OR)

PROPERTY DESCRIPTION

Map Page & Grid	:
Census Tract	: 205.01 Block: 2
Improvement Type	: 300 Farm
Subdivision/Plat	: Bland Acres
Neighborhood Code	: West Linn/Lake Oswego Rural
Land Use	: 101 Res,Residential Land,Improved
Legal	: 304 BLAND ACRES PT LT 30
	:
	:

ASSESSMENT AND TAX INFORMATION

Mkt Land	: $263,102
Mkt Structure	: $602,780
Mkt Total	: $865,882
%Improved	: 70
M50AssdTotal	: $680,194
Mill Rate	: 17.2241
Levy Code	: 003031
14-15 Taxes	: $11,085.43
Millage Rate	: 17.2241

PROPERTY CHARACTERISTICS

Bedrooms	: 4	BldgLivingSqFt	: 4,276	BldgSqFt	: 4,276
Bathrooms	: 3.50	1st Floor SqFt	:	Lot Acres	: 2.13
Full Baths	: 3	UpperFinSqFt	:	Lot SqFt	: 92,622
Half Baths	: 1	Finished SqFt	: 4,276	Year Built	: 2004
Fireplace	:	AbvGrdSqFt	: 4,276	Foundation	:
Heat Type	:	UpperTotSqFt	:	Roof Type	:
Floor	:	UnFinUpStySqFt	:	Roof Shape	:
Stories	:	Bsmt Fin SqFt	:	Exterior Fin	:
Garage SF	:	Bsmt Unfin SqFt	:		
		Bsmt Total SqFt	:		

TRANSFER INFORMATION

Owner(s)	Date	Doc #	Price	Deed
:23128 S Bland Circle LLC	:04/29/2015	015-024662	:$1,260,000	:Warranty
:Coppedge Johnny N/Laurie A	:11/24/2004	004-108672	:$920,000	:Warranty
:Huot Cory/Jodi	:12/03/2003	003-158221	:$280,000	:Warranty
:Huot Cory	:11/13/2003	003-160267	:$280,000	:
:Kiley Brooks D/Linda S	:10/03/1995	0095-60758	:	:Warranty
:Biancardi Robert/Amelia	:03/17/1994	0094-22286	:$20,000	:Special Warranty

Clackamas County Official Records
Sherry Hall, County Clerk

2015-024662

04/29/2015 03:01:27 PM

D-D Cnt=1 Stn=5 KANNA
$15.00 $16.00 $10.00 $22.00

$63.00

File No. 14012553

WFG Title 14012553 NW

Grantor
Johnny N. Coppedge Laurie A. Coppedge
Grantee
23128 S. Bland Circle, LLC
After recording return to
23128 S. Bland Circle, LLC c/o David Chiddix 1235 North Dutton Ave, Suite E Santa Rosa, CA 95401
Until requested, all tax statements shall be sent to
same as above
Tax Acct No(s): **00405458**

Reserved for Recorder's Use

STATUTORY WARRANTY DEED

Johnny N. Coppedge and Laurie A. Coppedge, Grantor(s) convey and warrant to

23128 S. Bland Circle, LLC,

Grantee(s), the following described real property free of encumbrances except as specifically set forth herein:

SEE ATTACHED EXHIBIT "A"

Subject to and excepting: Covenants, Conditions, Restrictions and Easements of record as of the date of this Deed, and additional Deed exceptions as shown on attached Exhibit "One", which is incorporated herein.

The true consideration for this conveyance is **$1,260,000.00** (Here comply with requirements of ORS 93.030.)

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009 AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

Executed this 7 day of April, 2015.

Johnny N. Coppedge

Laurie A. Coppedge

State of Oregon, County of Clackamas) ss.

This instrument was acknowledged before me on this 7 day of April, 2015 by Johnny N. Coppedge and Laurie A. Coppedge.

Notary Public for
My commission expires: 10-10-15

OFFICIAL SEAL
JULIE KAY SANDLIN
NOTARY PUBLIC - OREGON
COMMISSION NO. 457633
MY COMMISSION EXPIRES JUNE 08, 2015

OR Deed-Statutory Warranty

EXHIBIT "A"

A portion of Lot 30, BLAND ACRES, in the Northwest one-quarter of Section 35, Township 2 South, Range 1 East of the Willamette Meridian, Clackamas County, Oregon, being more particularly described as follows:

Beginning at the intersection of the. lot line between Lots 28 and 30 with the North right of way line of road, as dedicated on said plat; thence South 6O°52'56" West 16.87 feet to a point, which is a 2 inch galvanized iron pipe set 6 inches deed at the angle point in right of way lines of said road; thence South 15°49'46" East 5.05 feet to a one-half inch iron pipe called for in Deed Book 634, Page 773, Alfred L. Joy, et ux, to Clackamas County; thence South 40°48'33" West 146.34 feet to a one-half inch iron pipe called to in said deed; thence continuing South 40°48'33" West 7.48 feet to the point of curve of a non-tangent curve (the radius point bears North 49°26'38" West 58.76 feet); thence, on the arc of said curve to the right, 69.61 feet (the chord bears South 74°29'44" West 65.61 feet) to a point on the North right of way line of a 30 foot wide road between Lots 30 and 31 of said plat, from which point said radius point bears North 18°26'07" East 58.76 feet; thence, on last said right of way line, North 71 °07'00" West 141.68 feet to the East line of contract between Marcella M. Joy and John T. Allison, et ux, recorded January 11, 1974, Recorder's Fee No. 74 847; thence North 11°O9'41" West 238.13 feet, on said East line, to the Southwest corner of the tract as conveyed to the City of West Linn, by deed recorded May 18, 1979, as Recorder's Fee No. 79 20637; thence North 63°55'27" East 262.41 feet to the Southeast corner of said City of West Linn tract, said point being on the Easterly line of said Lot 30; thence South 26°07'52" East, along the East line of said Lot 30, a distance of 275.99 feet to the point of beginning.

Excepting therefrom that portion deeded to the City of West Linn, by deed recorded February 20, 2001, as Recorder's Fee No. 2001-011129, Clackamas County Deed Records.

EXHIBIT "One"

1. Rights of the public in and to any portion of the herein described premises lying within the boundaries of streets, roads or highways.

2. Easement, including the terms and provisions thereof:

For	:	Ingress, egress, roadway and utilities
Granted to	:	City of West Linn
Recorded	:	May 18, 1979
Recording No.	:	79020638
Affects	:	Northeasterly portion

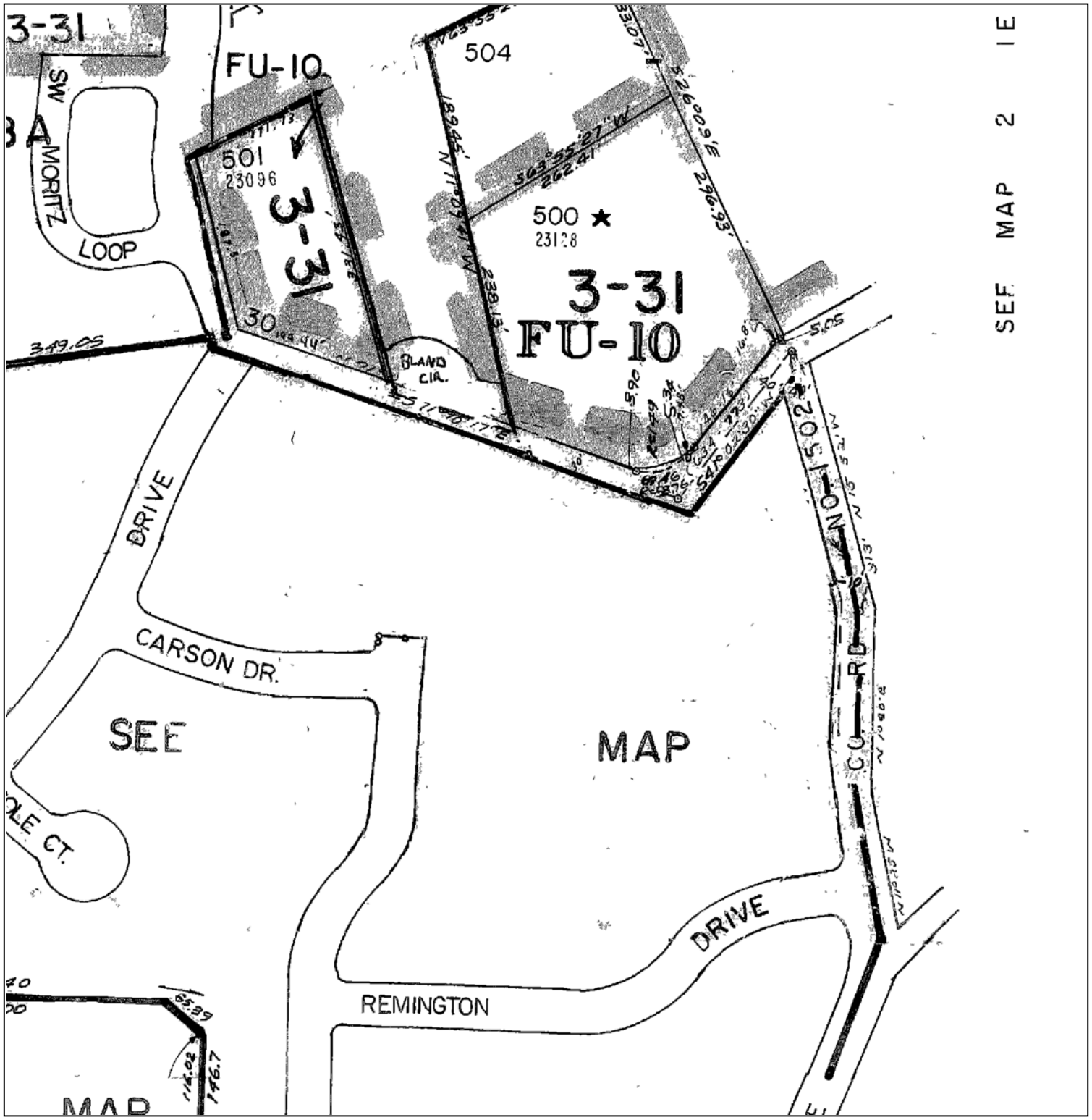
3. Public Easement Use Agreement, including the terms and provisions thereof:

Between	:	City of West Linn, a municipal corporation
And	:	Johnny N. Coppedge and Laurie A. Coppedge
Recorded	:	October 27, 2014
Recording No.	:	2014-055333

WFG National Title Insurance Company
a Williston Financial Group company

WFG National Title
Customer Service Department
12909 SW 68th Pkwy # 350
Portland, OR 97223
Phone: 503.603.1700
Fax: 888.833.6840
E-mail: cs@wfgnationaltitle.com

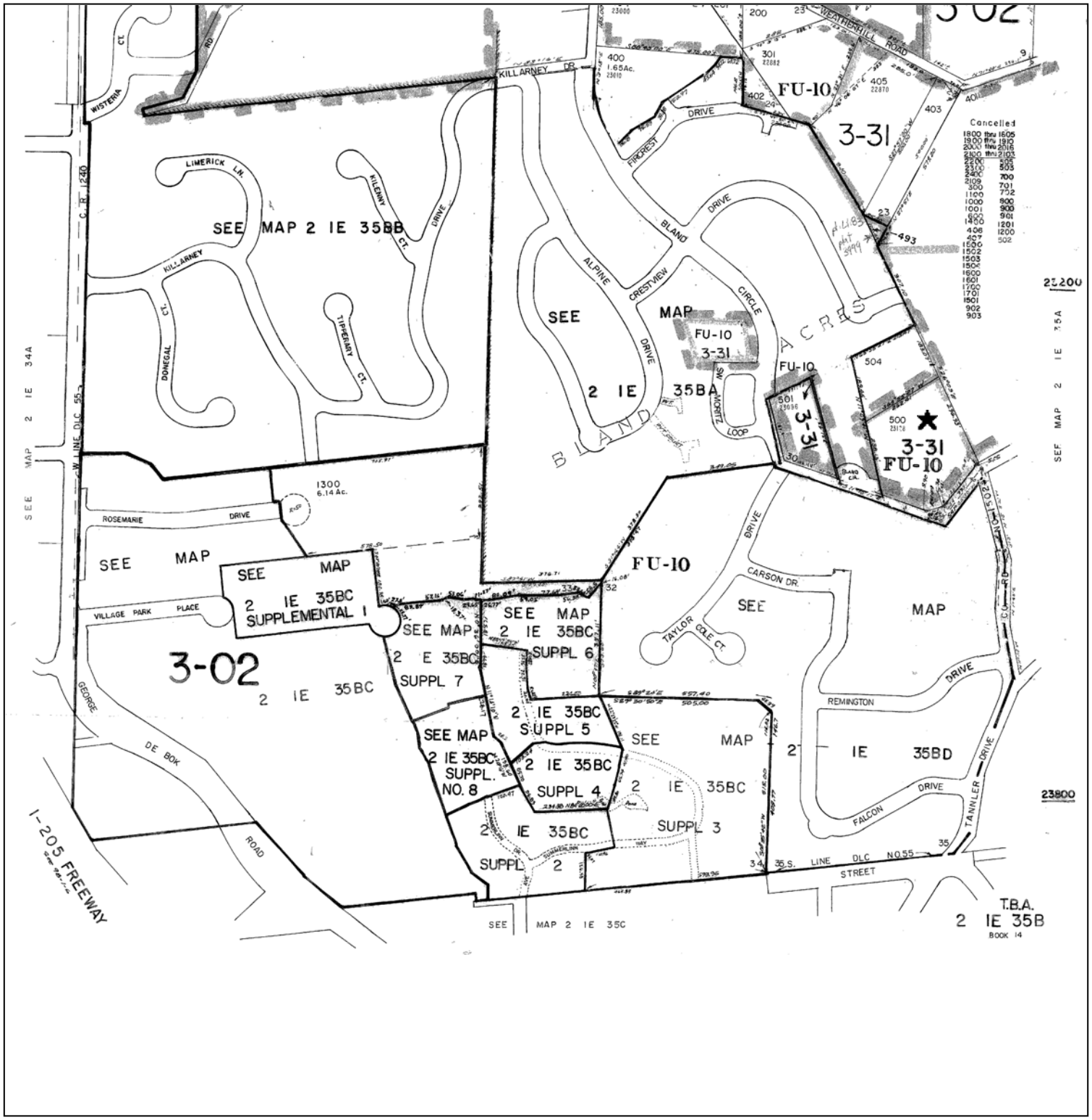
Parcel # : 00405458 / 21E35B 00500



This map is a copy of public record and is provided solely for informational purposes. WFG National Title assumes no liability for variations, if any, in dimensions, area or location of the premises or the location of improvements.

WFG National Title
Customer Service Department
12909 SW 68th Pkwy # 350
Portland, OR 97223
Phone: 503.603.1700
Fax: 888.833.6840
E-mail: cs@wfgnationaltitle.com

Parcel # : 00405458 / 21E35B 00500



This map is a copy of public record and is provided solely for informational purposes. WFG National Title assumes no liability for variations, if any, in dimensions, area or location of the premises or the location of improvements.

WFG National Title - Customer Service Department
12909 SW 68th Pkwy # 350 Portland, OR 97223
Phone: 503.603.1700 Fax: 888.833.6840
E-mail: cs@wfgnationaltitle.com

Date	:8/3/2015	Prepared By	:Amanda Shaw
Time	:2:58 PM	Prepared For	:
County	:Clackamas (OR)	Company	:
Sort Type	:OWNER	Address	:
Parcels Records	:143	City/ST/Zip	:

SEARCH PARAMETERS

Reference Parcel Number...143

21E35A 01200
21E35A 01201
21E35AB00100
21E35AB00200
21E35AB00300
21E35AB01500
21E35AB01600
21E35AB01700
21E35AB01800
21E35AB01900
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SEARCH PARAMETERS (Continued)

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21E35BD08100
21E35BD08200

PUBLIC NOTICE

OF A NEIGHBORHOOD MEETING

THIS SITE MAY BE SUBJECT TO A PROPOSED SUBDIVISION.

PLEASE CONTACT THE APPLICANT FOR MORE INFORMATION AT
THE FOLLOWING NUMBER OR FEEL FREE TO ATTEND THE
SCHEDULED NEIGHBORHOOD MEETING:
3J CONSULTING, INC. C/O ANDREW TULL
503-946-9365

NEIGHBORHOOD MEETING:

SAVANNA OAKS NEIGHBORHOOD ASSOCIATION
SEPTEMBER 1, 2015 AT 7:00 PM
TVF&R FIRE STATION COMMUNITY ROOM
1860 WILLAMETTE FALLS DRIVE
WEST LINN, OR 97068

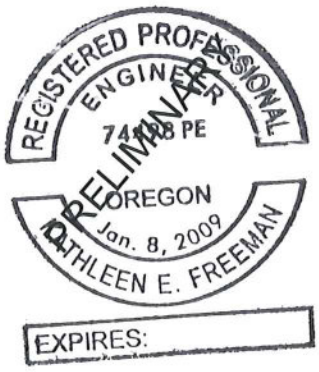
PRELIMINARY
STORMWATER REPORT

SAVANNA HEIGHTS
WEST LINN, OR

September 15, 2015

Prepared For:

23128 South Bland Circle, LLC
West Linn, OR



Prepared By:
3J Consulting, Inc.
5075 SW Griffith Drive, Suite 150
Beaverton, Oregon 97005
Project No: 15246
KEF

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

The existing site is located on private property at 23128 Bland Circle in West Linn, Oregon (See Figure 2). The property and road improvement area is approximately 2.23 acres and currently contains a single family home, woods, and asphalt. The proposed development will consist of subdividing the property to create 6 lots with minimum area of 7,130 ft^2. Additionally, Tannler Drive adjacent to the east side of the property and west of Sunbreak Subdivision will be extended north from Bland Circle. Half-street improvements along Bland Circle will be constructed as well. The purpose of this storm water report is to describe the design of the stormwater management systems following the City of West Linn requirements.

Stormwater runoff from the proposed development will be conveyed to a detention pond for water quality treatment and detention. The pond has been sized to comply with the following requirements:

- Treat stormwater runoff using the City of Portland's requirement of 0.83 inches of precipitation for a 24-hour storm event.
- Capture and detain the 2, 5, 10 and 25-year, 24-hour post developed runoff rate to release at the 2, 5, 10 and 25-year, 24-hour existing runoff rate.

A geotechnical investigation was completed in June 2015 showing that infiltration rates on the site 1.2 in/hr at 2 feet below ground surface.

The purpose of this report is to describe the facilities being proposed and to show that the design follows the City of West Linn's Public Works Design Standards.

PROJECT DESCRIPTION

The existing site is located on private property at 23128 Bland Circle in West Linn, Oregon (See Figure 1 and 2).

The purpose of this report is to describe the facilities being proposed and show that the design follows the City of West Linn Public Works Design Standards in effect at the time of this report.

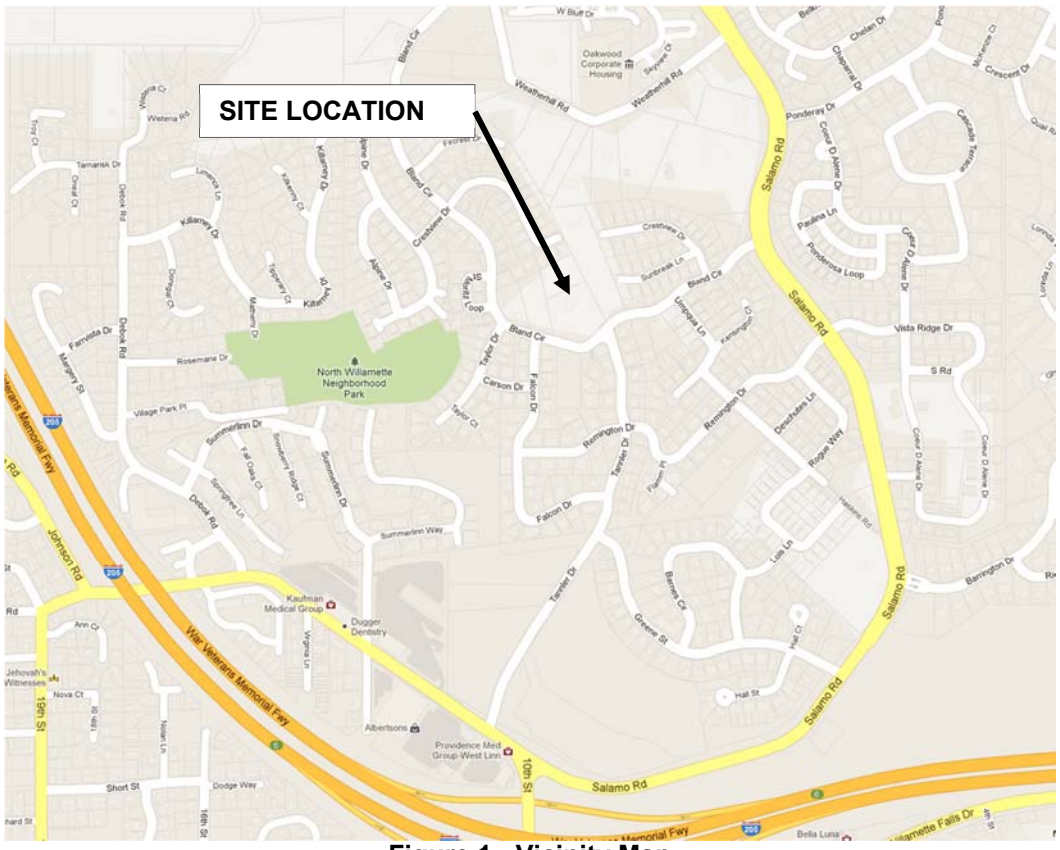


Figure 1 - Vicinity Map

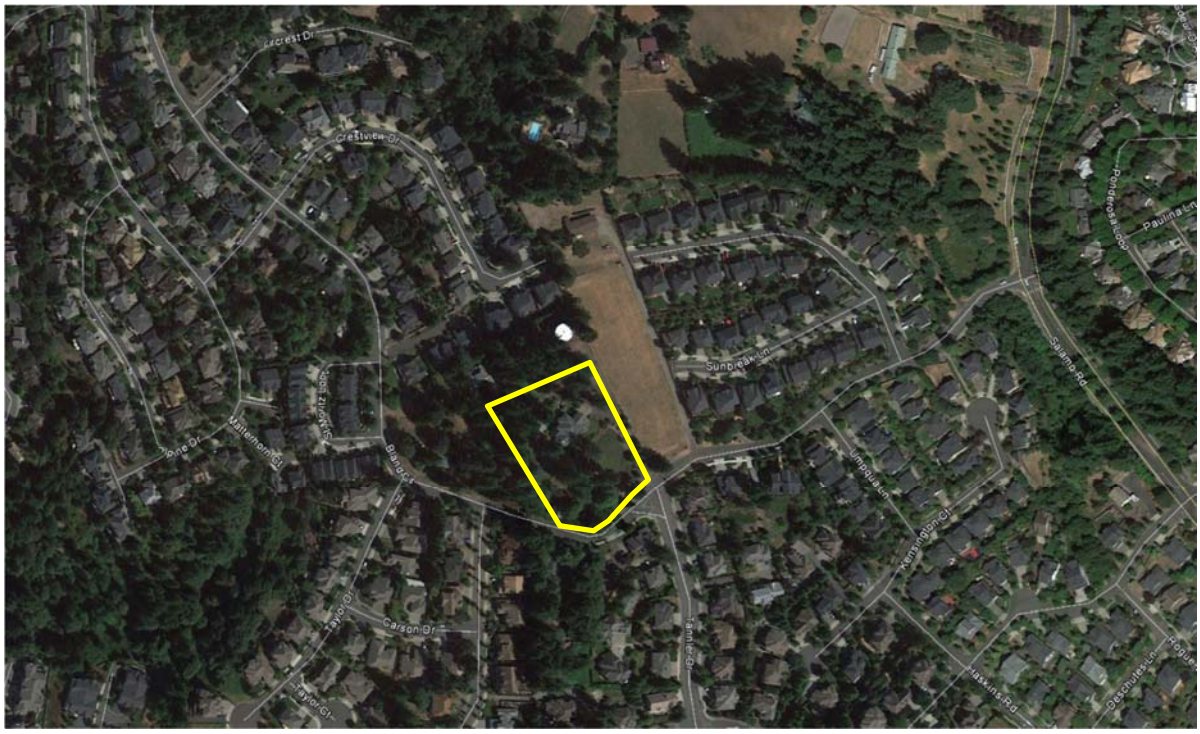


Figure 2 - Site Location

EXISTING CONDITIONS

Site
The property slopes toward south-southeast at grades ranging from 6% to 30%. Elevations range from a maximum of 531 feet on the north side of the property to a minimum of 499 feet on the south side. Currently contains a single family home, woods, and asphalt.

Climate
The site is located in Clackamas County approximately 12 miles south of downtown Portland in the West Linn foothills. Average annual rainfall recorded in this area is 47 inches.

Flood Map
The flood plain map shows that the site resides in Zone X, where no base flood elevations have been determined (See Technical Appendix: Exhibits – FIRM Panel 257 of 1175).

Site Geology
The soil type as classified by the United States Department of Agriculture Soil Survey of Clackamas County is identified in Table 1 (See Technical Appendix: Exhibits - Hydrologic Soil Group for Clackamas County Area, Oregon).

Soil Type	Hydrologic Group
Nekia silty clay loam	C
Saum silt loam	C

Table 1 - Soil Characteristics

A geotechnical investigation was completed in June 2015 showing that infiltration rates on the site are 1.2 in/hr at 2 feet below ground surface (See Technical Appendix: Geotechnical Report).

Existing Drainage

Existing Onsite

The existing site does not contain a stormwater management system. Stormwater runoff from the site sheet flows south towards adjacent property, Bland Circle and Tannler Drive.

Existing Offsite-Bland Circle

Currently the northern area of Bland Circle drains to a roadside ditch which conveys flow to an existing underground storm system.

Basin Areas

Table 2 shows the current impervious and pervious areas for the property and Bland Circle (See Technical Appendix: Exhibits – Existing Site Conditions).

Existing Onsite Basin Area	sq. ft.	acres
Impervious Area	14,026	0.32
Pervious Area	72,876	1.67
Total Existing Basin Area	86,902	2.00
Existing Offsite Basin Area	**sq. ft.**	**acres**
Impervious Area	4,574	0.11
Pervious Area	5,619	0.13
Total Existing Basin Area	10,193	0.23

Table 2 – Existing Basin Areas

Curve Number

The major factors for determining the CN values are hydrologic soil group, cover type, treatment, hydrologic condition, and antecedent runoff condition. The curve number represents runoff potential from the ground. Tables 2-2a and 2-2c in the TR-55 manual were used to determine the appropriate curve numbers (See Technical Appendix: Exhibits – Table 2-2a and 2-2c Runoff Curve Numbers).

The existing site consists of brush/trees, a house and driveway. The pervious area was considered to be meadow (CN=73) and the impervious surface has CN=98. The post-developed pervious area was considered to be open space in fair condition (grass cover 50%-75%) with a corresponding curve number of 79.

Time of Concentration

The time of concentration was calculated for the existing site using the TR-55 Method. The time of concentration of 35 minutes was calculated for the existing basin (See Technical Appendix: Calculations– Time of Concentration). The time of concentration for the post-developed conditions was assumed to be 5 minutes.

POST-DEVELOPED CONDITIONS

Post-Developed Site
Stormwater runoff from the site will be conveyed to a proposed detention pond in the southeastern portion of the site (Tract A) via catch basins and manholes. Runoff from the new impervious area will be conveyed to the pond via ditch inlets. The pond will treat and detain the stormwater releasing it to the existing storm system in Bland Circle.

Basin Areas
Table 3 shows the post-developed impervious and pervious areas (See Technical Appendix: Exhibits – Post-Developed Site Conditions).

Post-Developed Onsite Basin Area	sq. ft.	acres
Impervious Area	34,369	0.79
Pervious Area	52,533	1.21
Total Basin Area	86,902	2.00
Post-Developed Offsite Basin Area	**sq. ft.**	**acres**
Impervious Area	8,581	0.20
Pervious Area	1,612	0.04
Total Basin Area	10,193	0.23

Table 3 – Post-Developed Basin Areas

HYDROLOGIC ANALYSIS DESIGN GUIDELINES

Design Guidelines
The site is located within the jurisdiction of the City of West Linn, which follows the City of Portland's Stormwater Management Manual for the design of stormwater facilities. Stormwater runoff from the proposed development will be conveyed to a wet detention pond for water quality treatment and detention. The pond has been sized to comply with the following requirements:

- Treat stormwater runoff for water quality storm event (0.83 inches);
- Capture and detain the 2, 5, 10 and 25-year, 24-hour post developed runoff rates to the existing 2, 5, 10 and 25-year, 24-hour existing runoff rates.

An infiltration rate of 1.2 in/hr with a factor of safety of 4 was used for the bottom surface area of the pond.

Hydrograph Method
Naturally occurring rainstorms dissipate over long periods of time. An effective way of estimating storm rainfall is by using the hydrograph method. The Santa Barbara Unit Hydrograph (SBUH) method was used to develop runoff rates. The computer software Hydraflow was used to compute runoff rates and volumes.

Design Storm
The rainfall distribution to be used for this area is the design storm of 24-hour duration based on the standard Type 1A rainfall distribution. Table 4 shows total precipitation depths for the various storm events, which were used as a multiplier for the Type 1A 24-hour rainfall distribution.

Recurrence Interval (years)	Total Precipitation Depth (in.)
Water Quality	0.83
2	2.50
5	3.00
10	3.40
25	3.90
100	4.50

Table 4 - Design Storms

Basin Runoff

Table 5 shows the runoff rates for the existing and post-developed conditions and the allowable release rates after construction (See Technical Appendix: Hydrographs – Hydrograph Report: Existing and Post-Developed).

Recurrence Interval (years)	Existing Runoff Rate (cfs)	Post-Developed Runoff Rate (cfs)	Allowable Release Rate (cfs)
WQ	N/A	0.02	0.013
2	0.19	0.69	0.19
5	0.31	0.94	0.31
10	0.42	1.16	0.42
25	0.57	1.43	0.57

Table 5 - Basin Runoff Rates

HYDRAULIC ANALYSIS AND DESIGN CHARACTERISTICS

The stormwater conveyance system and flow control structure will be sized in the final design phase of the project.

WATER QUALITY/QUANTITY

Water Quality Guidelines

The stormwater facility design follows West Linn's design standards and the City of Portland's Stormwater Management Manual guidelines. The stormwater facility will be designed for flow control and pollution reduction. The City of Portland's performance approach was used to size an extended wet pond. The pond will detain the water quality volume for a minimum of 24 hours. The water quality volume (based on preliminary analysis) for the post-developed condition is 1,128 ft^3.

Water Quantity Guidelines

The pond has been designed to release flows at or below the required release rates (as described on the previous page) based on the Existing Runoff Rates shown in Table 5.

Wet detention Pond Volume

Table 6 shows the available storage capacity of the proposed pond.

Elevation (ft.)	Surface Area (ft^2)	Average Surface Area (ft^2)	Sectional Volume (ft^3)	Total Volume (ft^3)
498	1,812			
		2,169	2,169	
499	2,526			**2,169**
		2,926	2,926	
500	3,325			**5,095**
		3,767	3,767	
501	4,209			**8,861**
		4,455	2,228	
501.5	4,702			**11,089**

Table 6 – Proposed Pond Volume

SUMMARY

The stormwater design for the proposed Savanna Heights will meet or exceed the City of West Linn's requirements. All sizing of water quality/quantity facilities followed the City of Portland's Stormwater Management Manual.

TECHNICAL APPENDIX

Exhibits

- FIRM Panel 260 of 1175
- Hydrologic Soil Group-Clackamas County Area, Oregon
- Table 2-2a and 2-2c Runoff Curve Numbers
- Existing Site Conditions
- Post-Developed Site Conditions

Drawings

- Sheet C1.0 – Existing Conditions and Demolition Plan
- Sheet C2.1 – Site Plan
- Sheet C2.2 – Grading Plan
- Sheet C3.0 – Composite Utility Plan

Hydrographs

- Existing Runoff Hydrograph
- Post Developed Runoff Hydrograph
- Peak Release Rate Hydrograph

Calculations

- Time of Concentration (TR55 Tc Worksheet)

Geotechnical Reports

- Geotechnical Engineering Report, GeoPacific Engineering, Inc, July 20, 2015

Operations and Maintenance

- Operations and Maintenance Plan for Stormwater Facilities - To be Completed with the Final Design

REFERENCES

1. City of West Linn's Public Works Design Standards Issued in 2010

2. City of Portland's Stormwater Management Manual Issued in January 2014

3. Soil Survey of Clackamas County Area. National Resource Conservation Service

4. Urban Hydrology for Small Watersheds – TR-55 Issued in June 1986 – U.S. Department of Agriculture, Natural Resources Conservation Service, Conservation Engineering Division

5. http://westlinnoregon.gov/publicworks/stormwater-fact-sheet

EXHIBITS

MAP SCALE 1" = 500'

250 0 500 1000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0257D

FIRM

FLOOD INSURANCE RATE MAP

CLACKAMAS COUNTY, OREGON

AND INCORPORATED AREAS

PANEL 257 OF 1175

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLACKAMAS COUNTY	415588	0257	D
OREGON CITY, CITY OF	410021	0257	D
WEST LINN, CITY OF	410024	0257	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

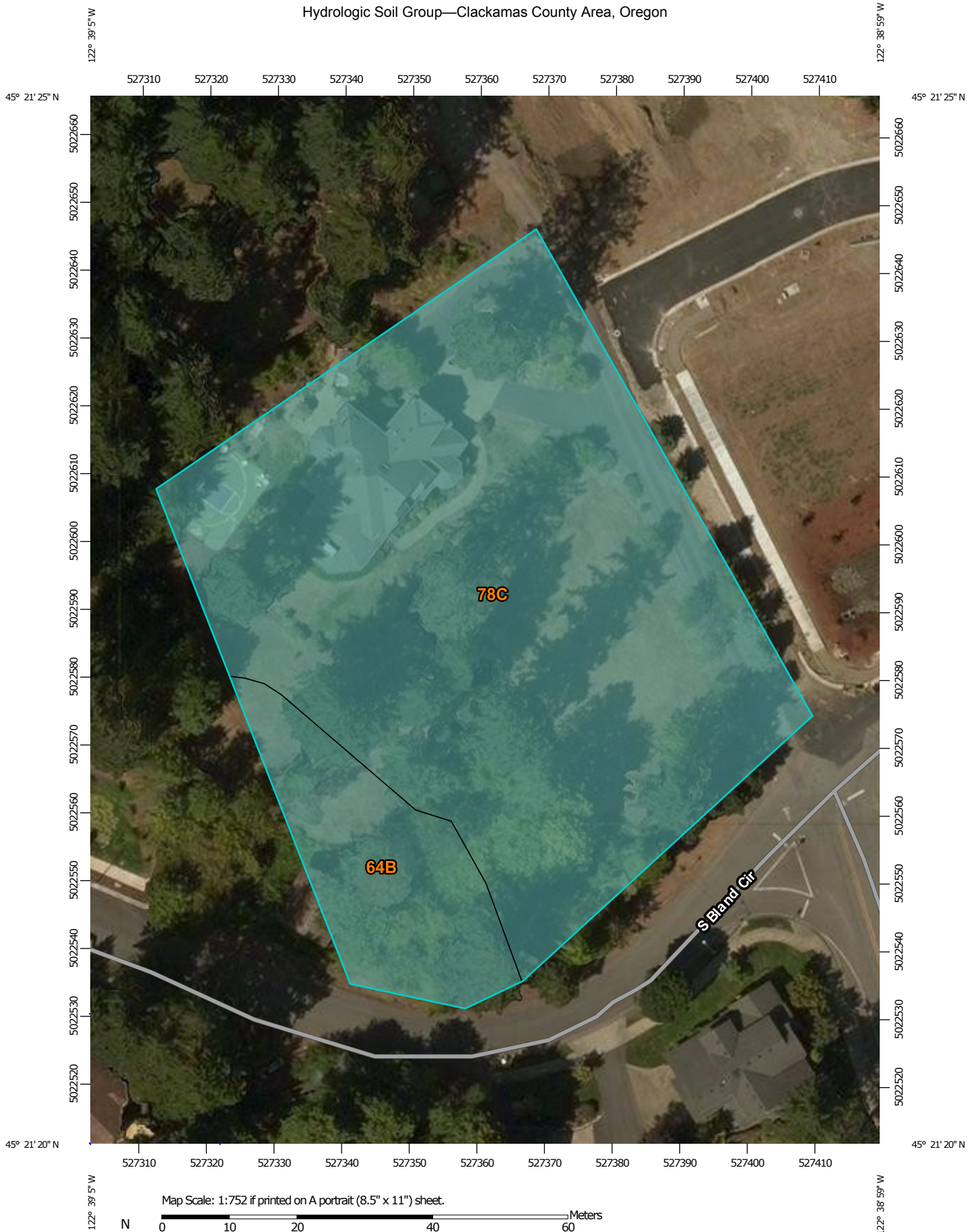
MAP NUMBER
41005C0257D

EFFECTIVE DATE
JUNE 17, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Hydrologic Soil Group—Clackamas County Area, Oregon



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Clackamas County Area, Oregon
Survey Area Data: Version 9, Sep 19, 2014

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

Date(s) aerial images were photographed: Jul 26, 2014—Sep 5, 2014

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

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Clackamas County Area, Oregon (OR610)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
64B	Nekia silty clay loam, 2 to 8 percent slopes	C	0.2	14.5%
78C	Saum silt loam, 8 to 15 percent slopes	C	1.4	85.5%
Totals for Area of Interest			**1.6**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Table 2-2a Runoff curve numbers for urban areas [1]

Cover description		Curve numbers for hydrologic soil group			
Cover type and hydrologic condition	Average percent impervious area [2]	A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) [3]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) [4]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation) [5]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

[1] Average runoff condition, and $I_a = 0.2S$.

[2] The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

[3] CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

[4] Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

[5] Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Table 2-2c Runoff curve numbers for other agricultural lands [1/]

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. [2/]	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. [3/]	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 [4/]	48	65	73
Woods—grass combination (orchard or tree farm). [5/]	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. [6/]	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 [4/]	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

1 Average runoff condition, and $I_a = 0.2S$.
2 *Poor:* <50%) ground cover or heavily grazed with no mulch.
Fair: 50 to 75% ground cover and not heavily grazed.
Good: > 75% ground cover and lightly or only occasionally grazed.
3 *Poor*: <50% ground cover.
Fair: 50 to 75% ground cover.
Good: >75% ground cover.
4 Actual curve number is less than 30; use CN = 30 for runoff computations.
5 CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.
6 *Poor:* Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.
Fair: Woods are grazed but not burned, and some forest litter covers the soil.
Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

EXISTING SITE AREA = 1.995 AC
IMPERVIOUS AREA = 0.322 AC
PERVIOUS AREA = 1.673 AC
PERVIOUS CURVE NUMBER = 73
TIME OF CONCENTRATION = 35.44 MIN

EXISTING OFFSITE AREA = 0.234 AC
IMPERVIOUS AREA = 0.105 AC
PERVIOUS AREA = 0.129 AC
PERVIOUS CURVE NUMBER = 73
TIME OF CONCENTRATION = 5 MIN

FLOW DIRECTION

N

Scale: 1 inch = 50 feet

50 25 0 25 50

3J CONSULTING, INC

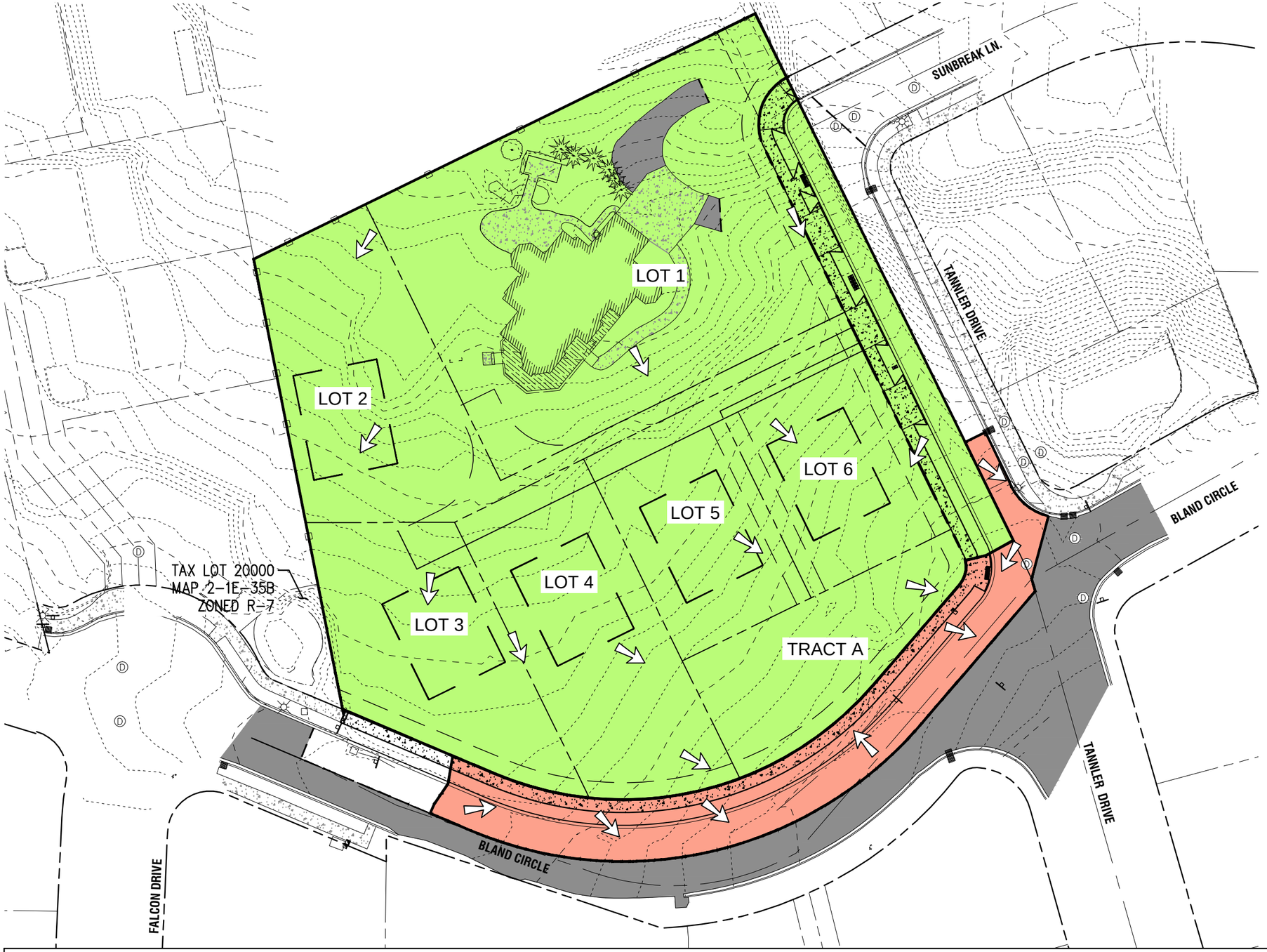
CIVIL ENGINEERING
WATER RESOURCES
LAND USE PLANNING

EXISTING SITE CONDITIONS
SAVANNA HEIGHTS

Storm Report

Exhibit 1

Date:09/11/15 By: KEF



POST-DEV SITE AREA = 1.995 AC
IMPERVIOUS AREA = 0.789 AC
PERVIOUS AREA = 1.206 AC
PERVIOUS CURVE NUMBER = 79
TIME OF CONCENTRATION = 5 MIN

POST-DEV OFFSITE AREA = 0.234 AC
IMPERVIOUS AREA = 0.197 AC
PERVIOUS AREA = 0.037 AC
PERVIOUS CURVE NUMBER = 79
TIME OF CONCENTRATION = 5 MIN

FLOW DIRECTION

N

Scale: 1 inch = 50 feet

50 25 0 25 50

3J CONSULTING, INC

CIVIL ENGINEERING
WATER RESOURCES
LAND USE PLANNING

POST-DEVELOPED SITE CONDITIONS
SAVANNA HEIGHTS

Storm Report

Exhibit 2

Date:09/11/15 **By: KEF**

DRAWINGS

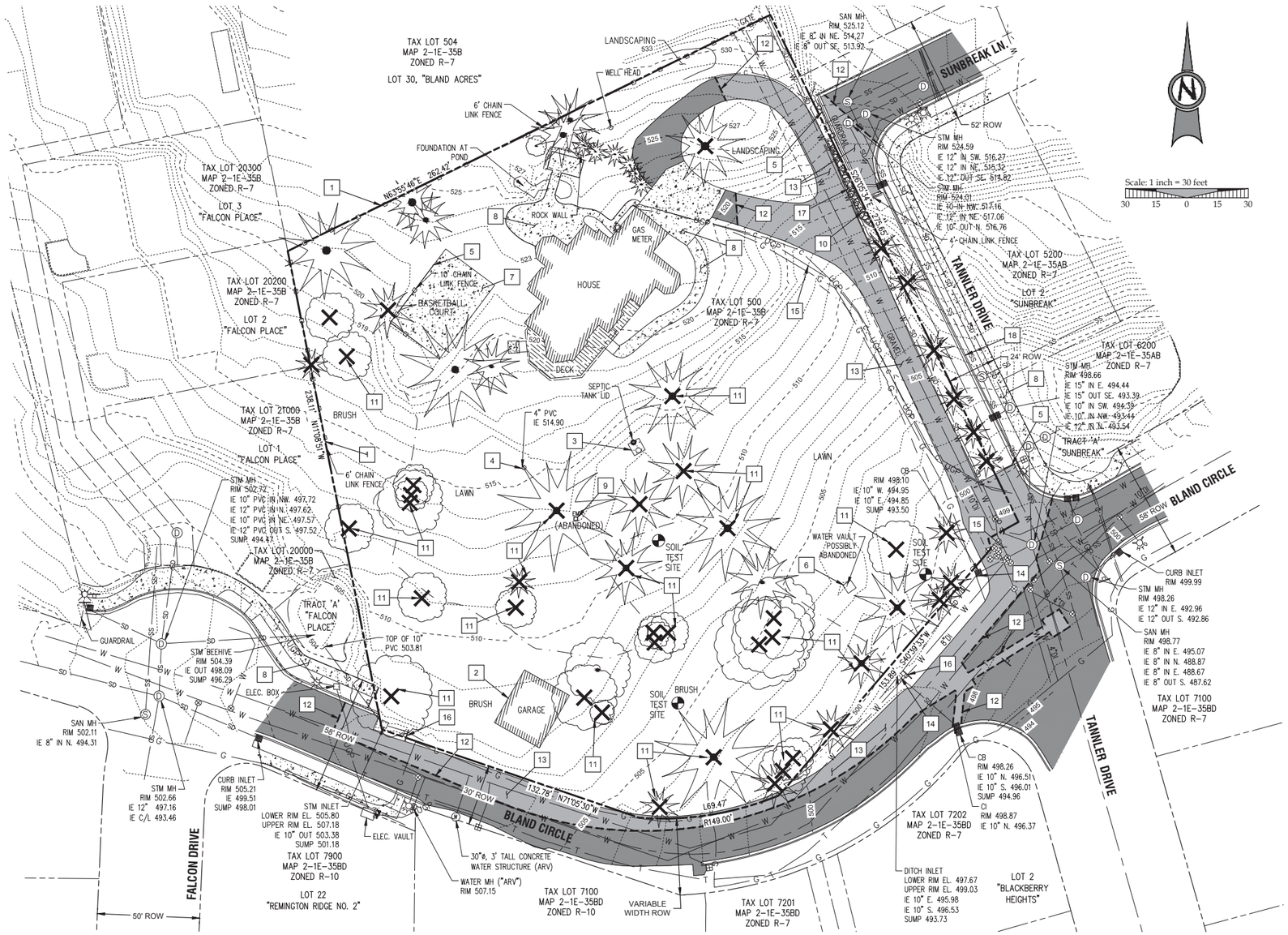
TAX LOT 500, MAP 2-1E-35B
NE 1/4 SECTION 35, T.2S., R.1E., W.M.
CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

FLOOD HAZARD INFORMATION

ZONE X (UN-SHADED) — THE SITE IS LOCATED WITHIN ZONE X (UN-SHADED) PER FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY-PANEL NUMBER 41005C0257D. FEMA'S DEFINITION OF ZONE X (UN-SHADED) IS AN AREA OF MINIMAL FLOOD HAZARD, USUALLY DEPICTED ON FIRMS AS ABOVE THE 500-YEAR FLOOD LEVEL. ZONE X IS THE AREA DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD AND PROTECTED BY LEVEE FROM 100-YEAR FLOOD. IN COMMUNITIES THAT PARTICIPATE IN THE NFIP, FLOOD INSURANCE IS AVAILABLE TO ALL PROPERTY OWNERS AND RENTERS IN THESE ZONES.

EXISTING CONDITIONS PLAN

THIS PLAN IS INTENDED FOR USE AS AN EXISTING CONDITIONS PLAN SHOWING THE CONDITIONS OF THE SITE PRIOR TO CONSTRUCTION. INFORMATION SHOWN ON THIS PLAN WAS DEVELOPED FROM THE TOPOGRAPHIC SURVEY, AERIAL PHOTOS, AND SITE OBSERVATIONS BY THE ENGINEER . NOT ALL SURFACE FEATURES OR UTILITIES MAY BE SHOWN. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION TO DETERMINE WORK SPECIFIC DETAILS. TOPOGRAPHIC INFORMATION PROVIDED BY COMPASS LAND SURVEYORS DATED AUGUST, 2015 .



LEGEND

- BOUNDARY LINE
- RIGHT-OF-WAY
- CENTER LINE
- LOT LINE
- BUILDING
- 199 1 FT CONTOUR
- 200 5 FT CONTOUR
- FENCE LINE
- W WATER LINE
- G EXISTING GAS LINE
- C UNDERGROUND CABLE LINE
- UGP UNDERGROUND POWER LINE
- SD (D) SD EXISTING STORM LINE AND MANHOLE
- SS (S) SS EXISTING SANITARY SEWER LINE AND MANHOLE
- SAW CUT LINE
- EXISTING ASPHALT TO REMAIN
- EXISTING ASPHALT TO BE REMOVED
- EXISTING CONCRETE
- EXISTING GRAVEL
- EXISTING TREES
- EXISTING SIGN
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- TREE TO BE REMOVED
- EXISTING WATER METER
- EXISTING STORM DRAIN CATCH BASIN
- EXISTING LIGHT POLE
- EXISTING TELEPHONE PEDESTAL

NOTES

1. UTILITY INFORMATION SHOWN ON THIS MAP IS BASED UPON OBSERVED FEATURES, RECORD DATA AND TONE MARKS PROVIDED BY PUBLIC UTILITY LOCATION SERVICES. NO WARRANTIES ARE MADE REGARDING THE ACCURACY OR COMPLETENESS OF THE UTILITY INFORMATION SHOWN. ADDITIONAL UTILITIES MAY EXIST. INTERESTED PARTIES ARE HEREBY ADVISED THAT UTILITY LOCATIONS SHOULD BE VERIFIED PRIOR TO DESIGN OR CONSTRUCTION OF ANY CRITICAL ITEMS.
2. VERTICAL DATUM: NAVD '88 UTILIZING GPS POSITIONING TIED TO THE ORGN WITH REAL TIME CORRECTORS REFERENCED TO NAD '83 (2011).
3. CONTOUR INTERVAL IS ONE FOOT.
4. TOPOGRAPHIC FEATURES SHOWN ON THIS MAP WERE LOCATED USING STANDARD PRECISION TOPOGRAPHIC MAPPING PROCEDURES. THIRD PARTY USERS OF DATA FROM THIS MAP PROVIDED VIA AUTOCAD DRAWING FILES OR DATA EXCHANGE FILES SHOULD NOT RELY ON ANY AUTOCAD GENERATED INFORMATION WHICH IS BEYOND THE LIMITS OF PRECISION OF THIS MAP. THIRD PARTIES USING DATA FROM THIS MAP IN AN AUTOCAD FORMAT SHOULD VERIFY ANY ELEMENTS REQUIRING PRECISE LOCATIONS PRIOR TO COMMENCEMENT OF ANY CRITICAL DESIGN OR CONSTRUCTION. CONTACT COMPASS LAND SURVEYORS FOR FURTHER INFORMATION. FURTHERMORE, COMPASS LAND SURVEYORS WILL NOT BE RESPONSIBLE NOR HELD LIABLE FOR ANY DESIGN OR CONSTRUCTION RELATED PROBLEMS THAT ARISE OUT OF THIRD PARTY USAGE OF THIS MAP (IN AUTOCAD OR OTHER FORMAT) IN ANY MANNER INCONSISTENT WITH THIS STATEMENT.
5. UNDERGROUND PIPE SIZES AND MATERIAL TYPES ARE BASED UPON RECORD DRAWINGS, INFORMATION PROVIDED BY UTILITY LOCATORS AND FIELD OBSERVATIONS AT MANHOLES AND CATCH BASIN RIMS AND SHOULD BE VERIFIED.

KEY NOTES

1	PROTECT EXISTING FENCING TO REMAIN.
2	EXISTING STRUCTURE TO BE DEMOLISHED. DEBRIS AND REFUSE TO BE DISPOSED OFF-SITE AT AN APPROVED LOCATION.
3	REMOVE EXISTING SEPTIC TANK AND AND DECOMMISSION PER JURISDICTIONAL STANDARDS.
4	REMOVE EXISTING WELL STRUCTURE AND DECOMMISSION PER JURISDICTIONAL STANDARDS.
5	REMOVE EXISTING FENCING AND DISPOSE OF OFF-SITE.
6	REMOVE EXISTING WATER VAULT AND AND DECOMMISSION PER JURISDICTIONAL STANDARDS.
7	REMOVE EXISTING CONCRETE AND BASE ROCK. DISPOSE OF RUBBLE AND REFUSE OFF-SITE.
8	PROTECT EXISTING CONCRETE/SIDEWALK TO REMAIN.
9	EXISTING ELECTRICAL METER TO BE DISCONNECTED AND RETURNED TO POWER COMPANY. CONTRACTOR TO COORDINATE WITH UTILITY PURVEYOR.
10	REMOVE EXISTING ROCK WALL AND DISPOSE OF OFF-SITE.
11	REMOVE EXISTING TREE/LANDSCAPING NECESSARY TO INSTALL IMPROVEMENTS, SEE SHEET C2.1.
12	SAWCUT EXISTING ASPHALT PAVEMENT AS SHOWN.
13	REMOVE EXISTING ASPHALT SURFACING AND BASE ROCK. DISPOSE OF RUBBLE AND REFUSE OFF SITE.
14	REMOVE EXISTING DITCH INLET AND PIPING AND DISPOSE OF OFF-SITE.
15	PROTECT EXISTING UTILITIES TO REMAIN.
16	REMOVE AND RELOCATE EXISTING "13 TON TRUCK WEIGHT LIMIT" SIGN.
17	REMOVE EXISTING RETAINING WALL AND ASPHALT BERM. DISPOSE OF RUBBLE AND REFUSE OFFSITE.
18	PROTECT EXISTING CURB AND GUTTER TO REMAIN.

GENERAL DEMOLITION NOTES

1. DEMOLITION NOTES ARE FOR CLARIFICATION ONLY AND ARE SHOWN FOR THE CONTRACTOR'S BENEFIT. THESE NOTES ARE NOT INTENDED TO BE COMPREHENSIVE. THE CONTRACTOR SHALL REMOVE OR RELOCATE ALL EXISTING ON-SITE IMPROVEMENTS NECESSARY TO ACCOMMODATE THE PROPOSED CONSTRUCTION.
2. ALL EXISTING PROPERTY UTILITY SERVICES TO BE TERMINATED AND CAPPED AT THE RIGHT OF WAY PRIOR TO DEMOLISHING ANY EXISTING BUILDINGS, UNLESS NOTED OTHERWISE.
3. CONTRACTOR IS TO REMOVE ALL EXISTING SURFACE IMPROVEMENTS AND DEBRIS WITHIN THE LIMITS OF WORK UNLESS OTHERWISE NOTED. ALL DEBRIS FOUND ON SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE STATE CODES.
4. CONTRACTOR TO PROTECT EXISTING FEATURES WHICH ARE TO REMAIN.
5. CONTRACTOR SHALL ADJUST ALL EXISTING MANHOLE RIMS, DRAINAGE STRUCTURES, VALVE BOXES, VAULT LIDS AND UTILITY ACCESS STRUCTURES TO FINISH GRADE WITHIN AREAS AFFECTED BY PROPOSED CONSTRUCTION.
6. CONSTRUCTION AND DEMOLITION ACTIVITIES SHALL BE PHASED IN SUCH A MANNER AS TO ENSURE THAT PUBLIC ACCESS ROADS ARE NOT BLOCKED AND REMAIN OPERATIONAL.
7. SEE TREE PROTECTION AND REMOVAL PLAN (SHEET C1.2) FOR ALL TREE REMOVAL INFORMATION.

Know what's **below.** **Call** before you dig.

DATE	BY	REVISION SUMMARY
09/14/2015		LAND USE APPROVAL

EXISTING CONDITIONS AND DEMOLITION PLAN
SAVANNA HEIGHTS *SUBDIVISION*
BLAND CIRCLE ESTATES, LLC
WEST LINN, OR

REGISTERED PROFESSIONAL ENGINEER 80004 OREGON JULY 21, 2014 JEFFREY L. FERGESON
PRELIMINARY
EXPIRES: 12/31/15

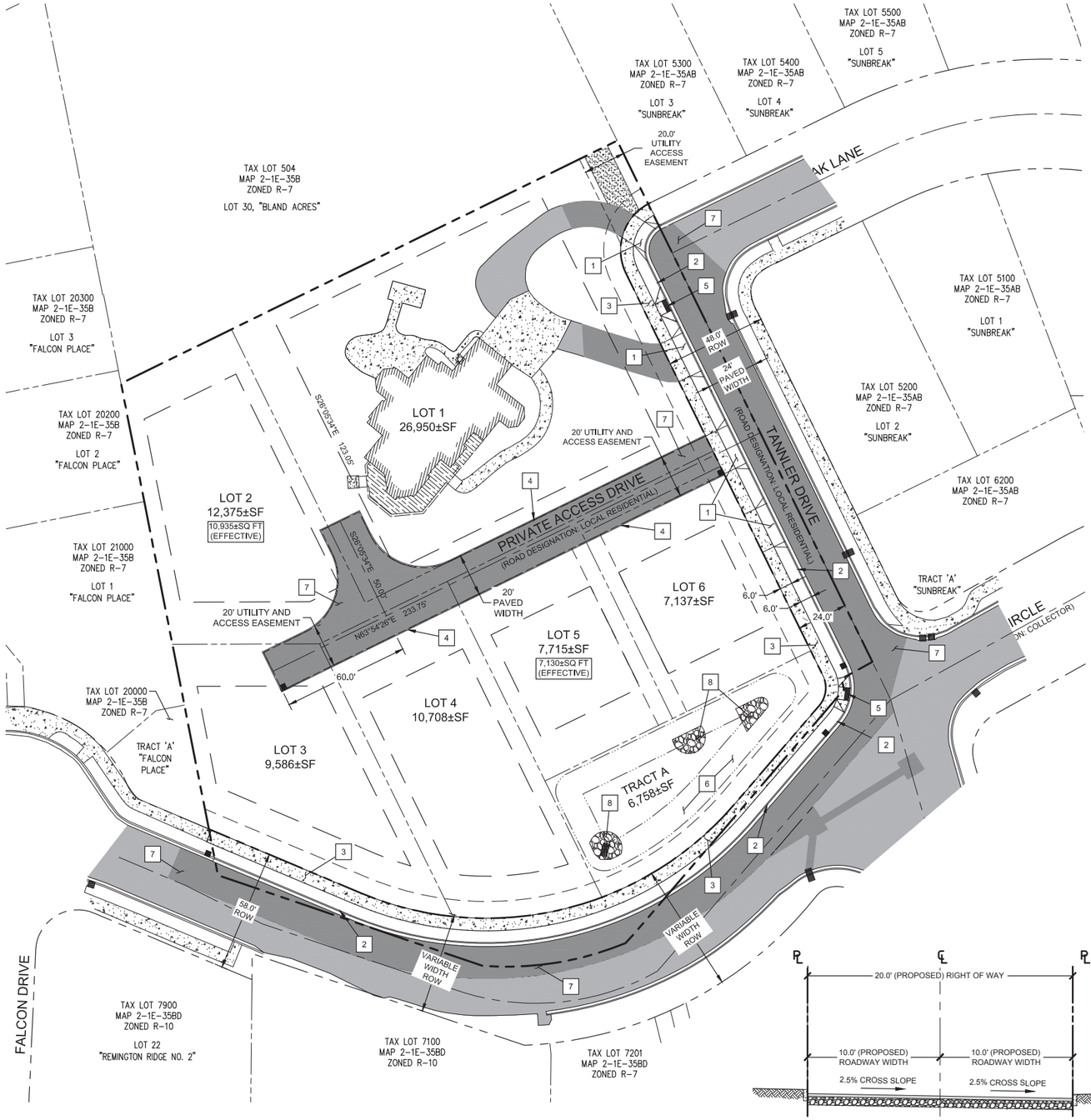
3J CONSULTING, INC
CIVIL ENGINEERING
WATER RESOURCES
LAND USE PLANNING
5075 SW GRIFFITH DRIVE, SUITE 150, BEAVERTON, OR 97005
PHONE & FAX: (503) 946-9365

3J JOB ID #	15246
LAND USE #	
TAX LOT #	21E35B 00500
DESIGNED BY	CLF, JKG
CHECKED BY	AJM

SHEET TITLE
EX COND. & DEMO

SHEET NUMBER
C1.0

TAX LOT 500 LOCATED IN THE
N.E. 1/4 SECTION 35, T.2S., R.1E., W.M.
WEST LINN, CLACKAMOS COUNTY, OREGON



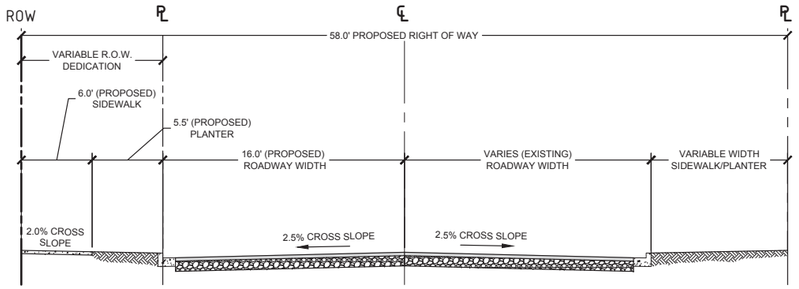
LEGEND

- BOUNDARY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING LOT LINE
- EXISTING CURB
- EXISTING UTILITY EASEMENT
- PROPOSED LOT LINE
- PROPOSED SETBACK LINE
- PROPOSED UTILITY/ACCESS EASEMENT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- PROPOSED GRAVEL

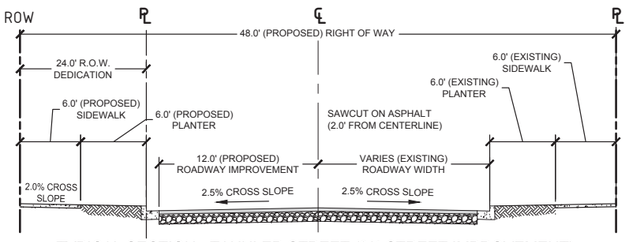
CONSTRUCTION KEY NOTES

1. PROPOSED LOT ACCESS LOCATION.
2. CONSTRUCT STANDARD CURB AND GUTTER PER CITY OF WEST LINN STANDARD DETAIL WL-501 (TYPICAL CURBS).
3. CONSTRUCT 6 FT WIDE DETATCHED SIDEWALK PER CITY OF WEST LINN STANDARD DETAIL WL-508 (CONCRETE SIDEWALK CROSS SECTION).
4. CONSTRUCT STANDARD CURB PER CITY OF WEST LINN STANDARD DETAIL WL-501 (TYPICAL CURBS).
5. CONSTRUCT CURB RAMP PER CITY OF WEST LINN STANDARD DETAIL WL-507A (SINGLE CURB RAMP).
6. CONSTRUCT WATER QUALITY AND DETENTION FACILITY.
7. INSTALL ASPHALT PAVEMENT.
8. CONSTRUCT RIPRAP OUTLET PROTECTION.

TYPICAL SECTION - PRIVATE DRIVE
SCALE: N.T.S



TYPICAL SECTION - BLAND CIRCLE (1/2 STREET IMPROVEMENT)
SCALE: N.T.S



TYPICAL SECTION - TANNLER STREET (3/4 STREET IMPROVEMENT)
SCALE: N.T.S

811 Know what's **below.** **Call** before you dig.

LAND USE APPROVAL	09/14/2015
REVISION SUMMARY	BY / DATE

SITE PLAN
SAVANNA HEIGHTS SUBDIVISION
BLAND CIRCLE ESTATES, LLC
WEST LINN, OR

REGISTERED PROFESSIONAL ENGINEER 80054 OREGON JULY 21, 2012 JERRY L. FERGESON
PRELIMINARY
EXPIRES: 12/31/15

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

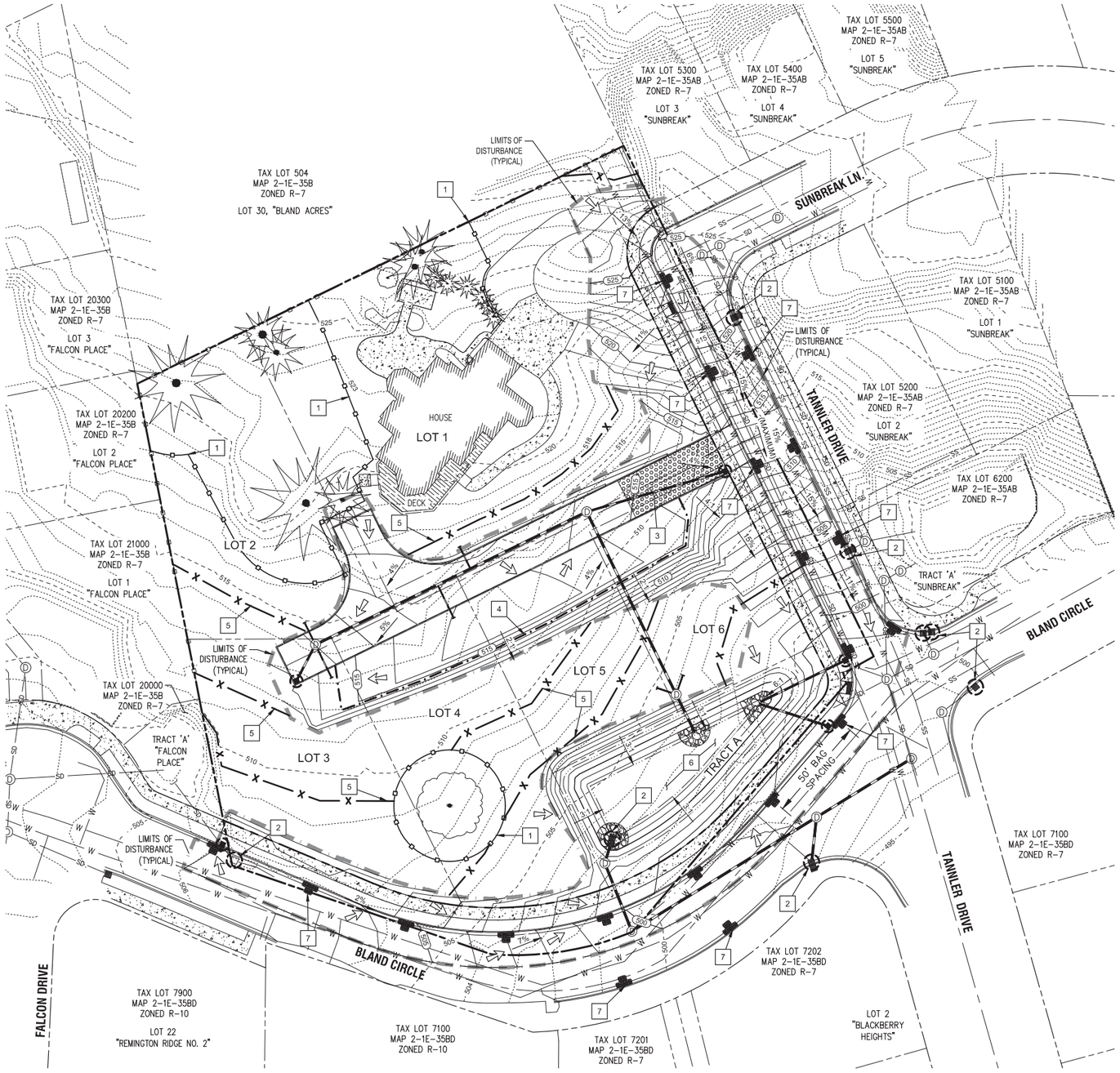
3J JOB ID #	15246
LAND USE #	
TAX LOT #	21E35B 00500
DESIGNED BY	CLF, JKG
CHECKED BY	AJM

SHEET TITLE
SITE PLAN

SHEET NUMBER
C2.1

P:\15246-COPPEDGE PROPERTY\CAD\DD\15246-C2.1-SITE PLAN.DWG

TAX LOT 500 LOCATED IN THE
N.E. 1/4 SECTION 35, T.2S., R.1E., W.M.
WEST LINN, CLACKAMAS COUNTY, OREGON



Scale: 1 inch = 30 feet
30 15 0 15 30

LEGEND

- BOUNDARY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING LOT LINE
- EXISTING CURB
- EXISTING UTILITY EASEMENT
- EXISTING STORM SEWER LINE
- PROPOSED LOT LINE
- PROPOSED SETBACK LINE
- STORM DRAIN LINE AND MANHOLE
- STORM SEWER LATERAL AS NOTED
- PROPOSED UTILITY/ACCESS EASEMENT
- TREE PROTECTION FENCING
- EROSION CONTROL: SILT FENCING
- CONSTRUCTION ENTRANCE
- EXISTING CONCRETE
- PROPOSED CONCRETE
- EXISTING EVERGREEN TREE
- EXISTING CONIFER TREE
- EXISTING 1FT CONTOUR
- EXISTING 5FT INDEX CONTOUR
- PROPOSED 1FT CONTOUR
- PROPOSED 5FT INDEX CONTOUR
- LIMITS OF GRADING/DISTURBANCE
- EROSION CONTROL: FESCUE STRAW WATTLE
- EROSION CONTROL: INLET PROTECTION
- STORM DRAIN CATCH BASIN

SITE GRADING INFORMATION	
SITE STRIPPING	1,819.5 CY
CUT (TO FINISH GRADE)	1,133.2 CY
FILL (TO FINISH GRADE)	2,749.1 CY
MAXIMUM CUT DEPTH	7.6 FT
MAXIMUM FILL DEPTH	7.7 FT
MAXIMUM PROPOSED SLOPE	FILL SLOPE = 2:1 (H:V) CUT SLOPE = 2:1 (H:V)
TOTAL AREA OF DISTURBANCE	1.128 ACRES

EROSION CONTROL CONSTRUCTION NOTES	
1	INSTALL AND MAINTAIN TREE PROTECTION FENCING THROUGHOUT CONSTRUCTION ACTIVITIES. SEE TREE PRESERVATION PLANS FOR ADDITIONAL INFORMATION.
2	PLACE INLET PROTECTION AT LOCATION SHOWN.
3	CONSTRUCT AND MAINTAIN STABILIZED CONSTRUCTION ENTRANCE.
4	INSTALL STRAW WATTLES.
5	INSTALL SILT FENCE AT LIMITS OF GRADING ON LEVELS OF CONTOURS.
6	CONSTRUCT WATER QUALITY AND DETENTION FACILITY.
7	PLACE BIO-BAG CHECK DAM FOR SEDIMENT CONTROL ADJACENT TO ALL NEW CONCRETE WORK WITHIN RIGHT OF WAY.

Know what's below.
Call before you dig.

LAND USE APPROVAL	09/14/2015
REVISION SUMMARY	BY DATE
A	

GRADING AND EROSION CONTROL PLAN
SAVANNA HEIGHTS SUBDIVISION
BLAND CIRCLE ESTATES, LLC
WEST LINN, OR

REGISTERED PROFESSIONAL ENGINEER
80056
OREGON
JULY 21, 2006
CLAY L. FERGESON
PRELIMINARY
EXPIRES: 12/31/15

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

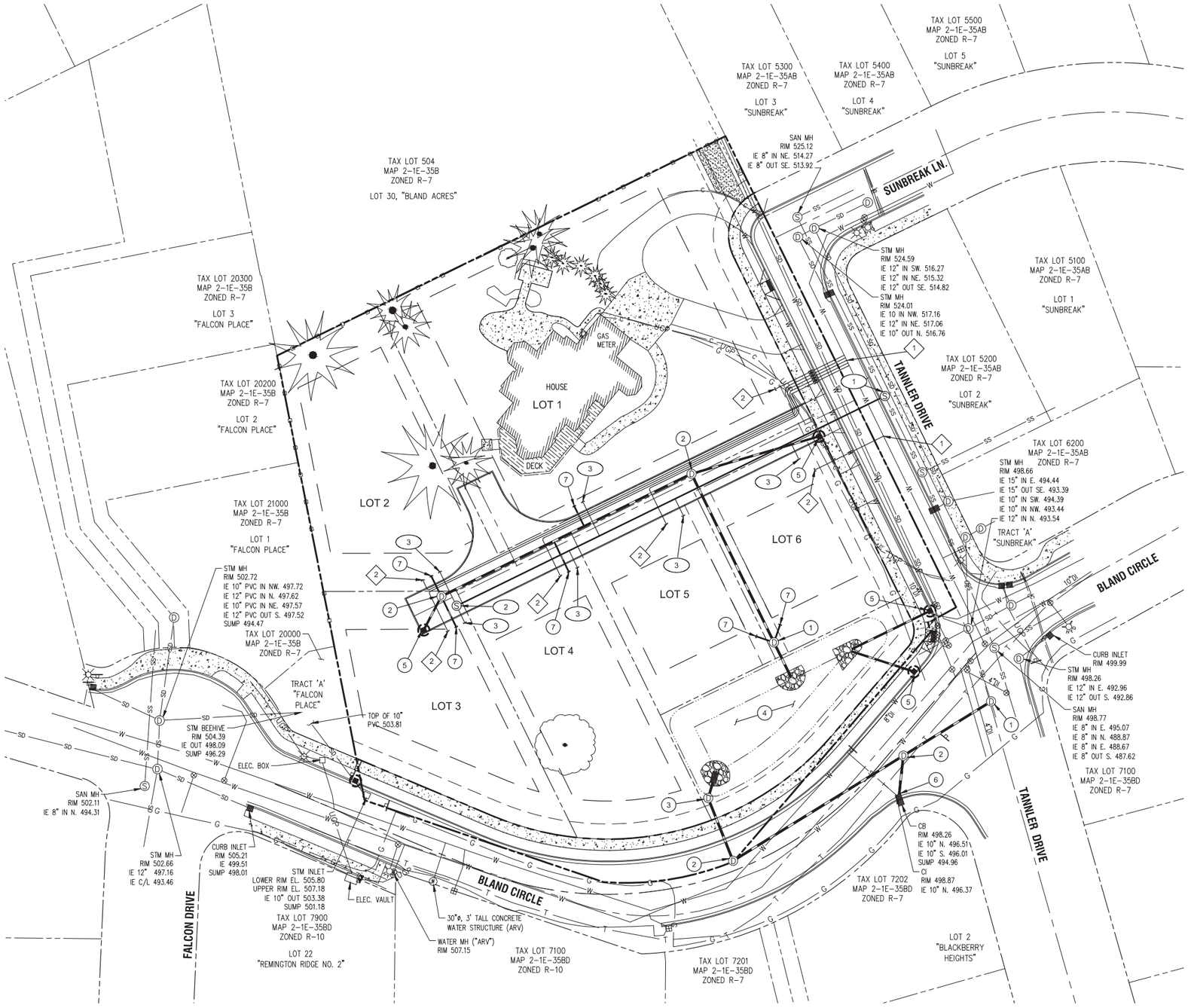
3J JOB ID #	15246
LAND USE #	_____
TAX LOT #	21E35B 00500
DESIGNED BY	CLF, JKG
CHECKED BY	AJM

SHEET TITLE
GRADING PLAN

SHEET NUMBER
C2.2

P:\15246-COPPEDGE PROPERTY\CAD\DWG\15246-C2.2-GRADING_EROSION CONTROL.DWG

TAX LOT 500 LOCATED IN THE
N.E. 1/4 SECTION 35, T.2S., R.1E., W.M.
WEST LINN, CLACKAMAS COUNTY, OREGON



Scale: 1 inch = 30 feet
30 15 0 15 30

LEGEND

- BOUNDARY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING LOT LINE
- EXISTING CURB
- PROPOSED LOT LINE
- PROPOSED CENTER LINE
- PROPOSED SETBACK LINE
- SANITARY SEWER LINE AND MANHOLE
- STORM DRAIN LINE AND MANHOLE
- DOMESTIC WATER SERVICE & METER
- STORM SEWER LATERAL AS NOTED
- SANITARY SEWER LATERAL AS NOTED
- UTILITY/ACCESS EASEMENT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- PROPOSED GRAVEL
- EXISTING STORM LINE AND MANHOLE
- EXISTING SANITARY SEWER LINE AND MANHOLE
- UGP — EXISTING UNDERGROUND POWER LINE
- C — EXISTING UNDERGROUND CABLE LINE
- T — EXISTING UNDERGROUND TELEPHONE LINE
- G — EXISTING GAS LINE
- EXISTING WATER METER
- EXISTING STORM DRAIN CATCH BASIN
- EXISTING SIGN
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING TELEPHONE PEDESTAL
- EXISTING LIGHT POLE
- EXISTING TREES TO REMAIN

STORM SEWER CONSTRUCTION NOTES

1	CONSTRUCT STANDARD 48" STORM SEWER MANHOLE OVER EXISTING STORM LINE.
2	CONSTRUCT STANDARD 48" STORM SEWER MANHOLE.
3	CONSTRUCT FLOW CONTROL STRUCTURE FOR POND OUTLET.
4	CONSTRUCT WATER QUALITY FACILITY (PER APPENDIX D; STANDARD SURFACE WATER SPECIFICATIONS). MAX POND STAGE: 501.5'; POND BOTTOM:497.5'.
5	CONSTRUCT STORM DRAINAGE STRUCTURE WITH 10" STORM LINE.
6	RECONSTRUCT EXISTING CURB INLET LATERAL TO DIVERT OFFSITE STORMWATER DOWNSTREAM.
7	PROVIDE 4" PRIVATE STORM DRAIN LATERAL CONNECTION FOR INDIVIDUAL LOT SERVICE.

SANITARY SEWER CONSTRUCTION NOTES

1	CONSTRUCT STANDARD 48" SANITARY SEWER MANHOLE OVER EXISTING SEWER LINE.
2	CONSTRUCT STANDARD 48" SANITARY SEWER MANHOLE.
3	PROVIDE 4" SANITARY SEWER LATERAL FOR INDIVIDUAL LOT SERVICE.

WATER CONSTRUCTION NOTES

1	CONNECT TO EXISTING WATER MAIN WITH 4 (FOUR) 1" SERVICE LINES.
2	INSTALL SINGLE 1" WATER METER FOR INDIVIDUAL LOT SERVICE. EXTEND 1" SERVICE AS REQUIRED.

811 Know what's **below.** **Call** before you dig.

LAND USE APPROVAL 09/14/2015
REVISION SUMMARY BY DATE

COMPOSITE UTILITY PLAN
SAVANNA HEIGHTS SUBDIVISION
BLAND CIRCLE ESTATES, LLC
WEST LINN, OR

PRELIMINARY
REGISTERED PROFESSIONAL ENGINEER
80007
OREGON
JULY 21, 2014
CLIFFORD L. FERGESON
EXPIRES: 12/31/15

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 #	15246
LAND USE #	
TAX LOT #	21E35B 00500
DESIGNED BY	CLF, JKG
CHECKED BY	AJM

SHEET TITLE
UTILITY PLAN

SHEET NUMBER
C3.0

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HYDROGRAPHS

Hydrograph Report

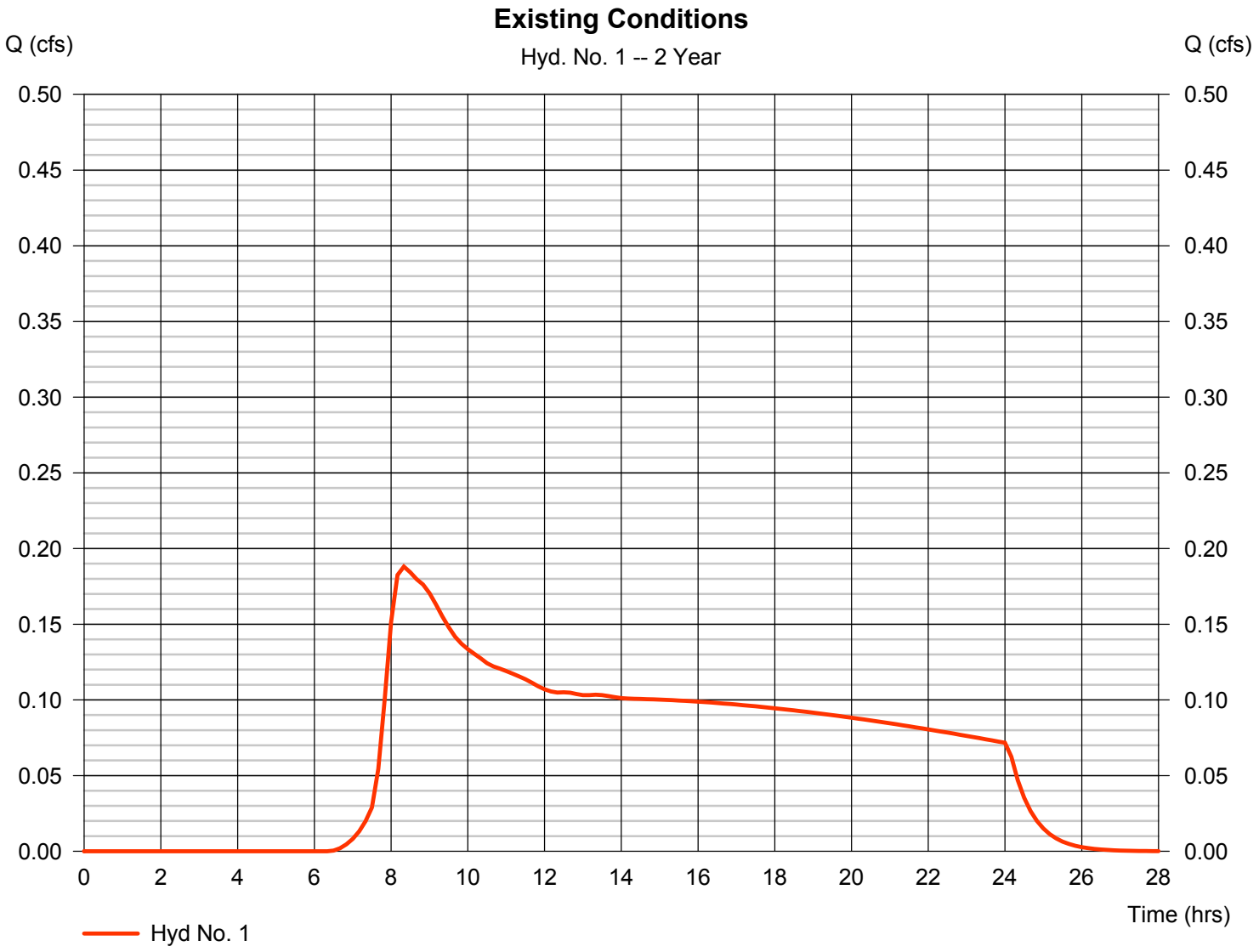
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Thursday, 09 / 10 / 2015

Hyd. No. 1

Existing Conditions

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.188 cfs
Storm frequency	= 2 yrs	Time to peak	= 8.33 hrs
Time interval	= 10 min	Hyd. volume	= 6,378 cuft
Drainage area	= 2.230 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 35.40 min
Total precip.	= 2.50 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.322 x 98) + (1.673 x 73) + (0.105 x 98) + (0.129 x 73)] / 2.230



Hydrograph Report

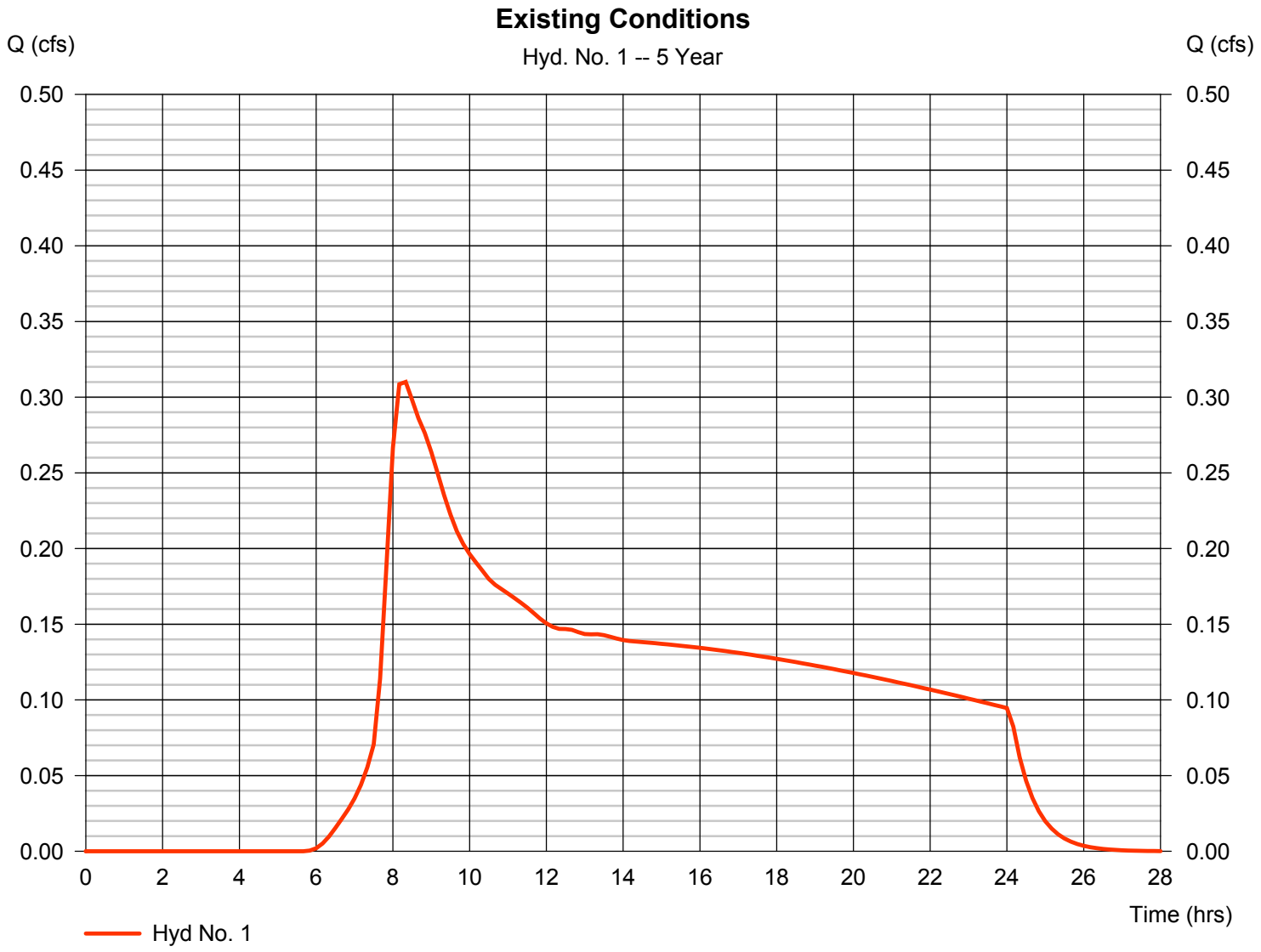
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Thursday, 09 / 10 / 2015

Hyd. No. 1

Existing Conditions

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.310 cfs
Storm frequency	= 5 yrs	Time to peak	= 8.33 hrs
Time interval	= 10 min	Hyd. volume	= 9,138 cuft
Drainage area	= 2.230 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 35.40 min
Total precip.	= 3.00 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.322 x 98) + (1.673 x 73) + (0.105 x 98) + (0.129 x 73)] / 2.230



Hydrograph Report

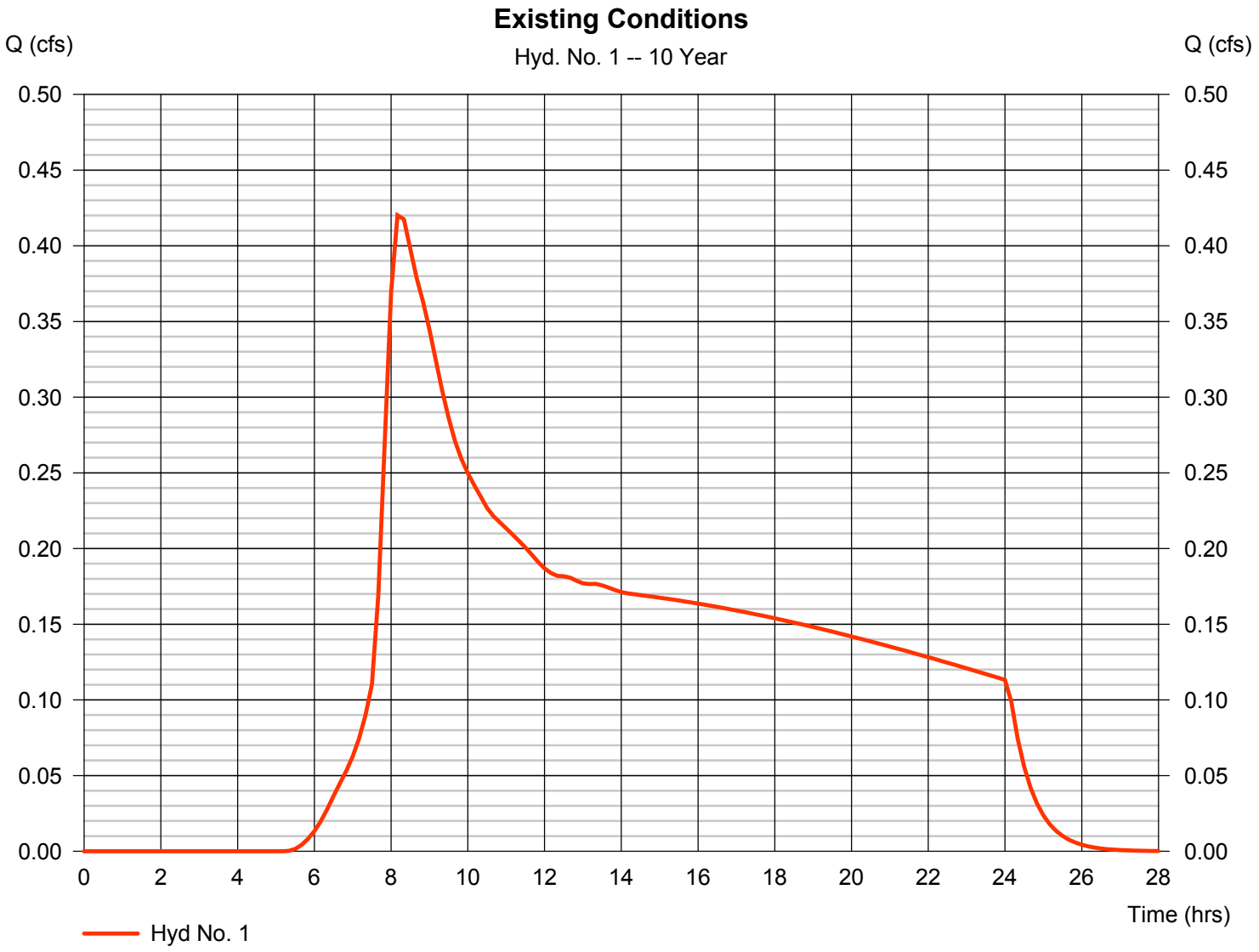
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Thursday, 09 / 10 / 2015

Hyd. No. 1

Existing Conditions

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.420 cfs
Storm frequency	= 10 yrs	Time to peak	= 8.17 hrs
Time interval	= 10 min	Hyd. volume	= 11,509 cuft
Drainage area	= 2.230 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 35.40 min
Total precip.	= 3.40 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.322 x 98) + (1.673 x 73) + (0.105 x 98) + (0.129 x 73)] / 2.230



Hydrograph Report

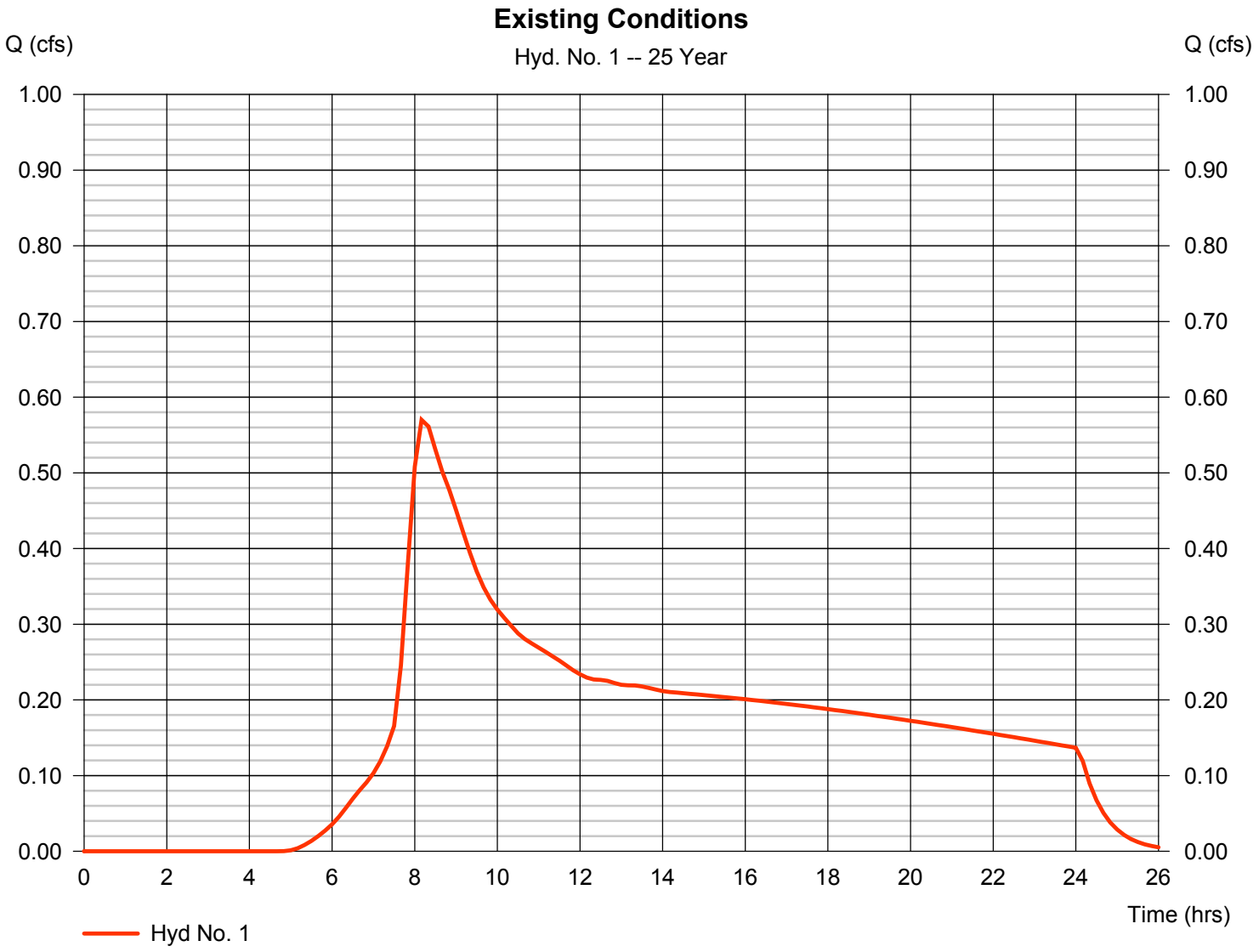
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Thursday, 09 / 10 / 2015

Hyd. No. 1

Existing Conditions

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.570 cfs
Storm frequency	= 25 yrs	Time to peak	= 8.17 hrs
Time interval	= 10 min	Hyd. volume	= 14,632 cuft
Drainage area	= 2.230 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 35.40 min
Total precip.	= 3.90 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.322 x 98) + (1.673 x 73) + (0.105 x 98) + (0.129 x 73)] / 2.230



Hydrograph Report

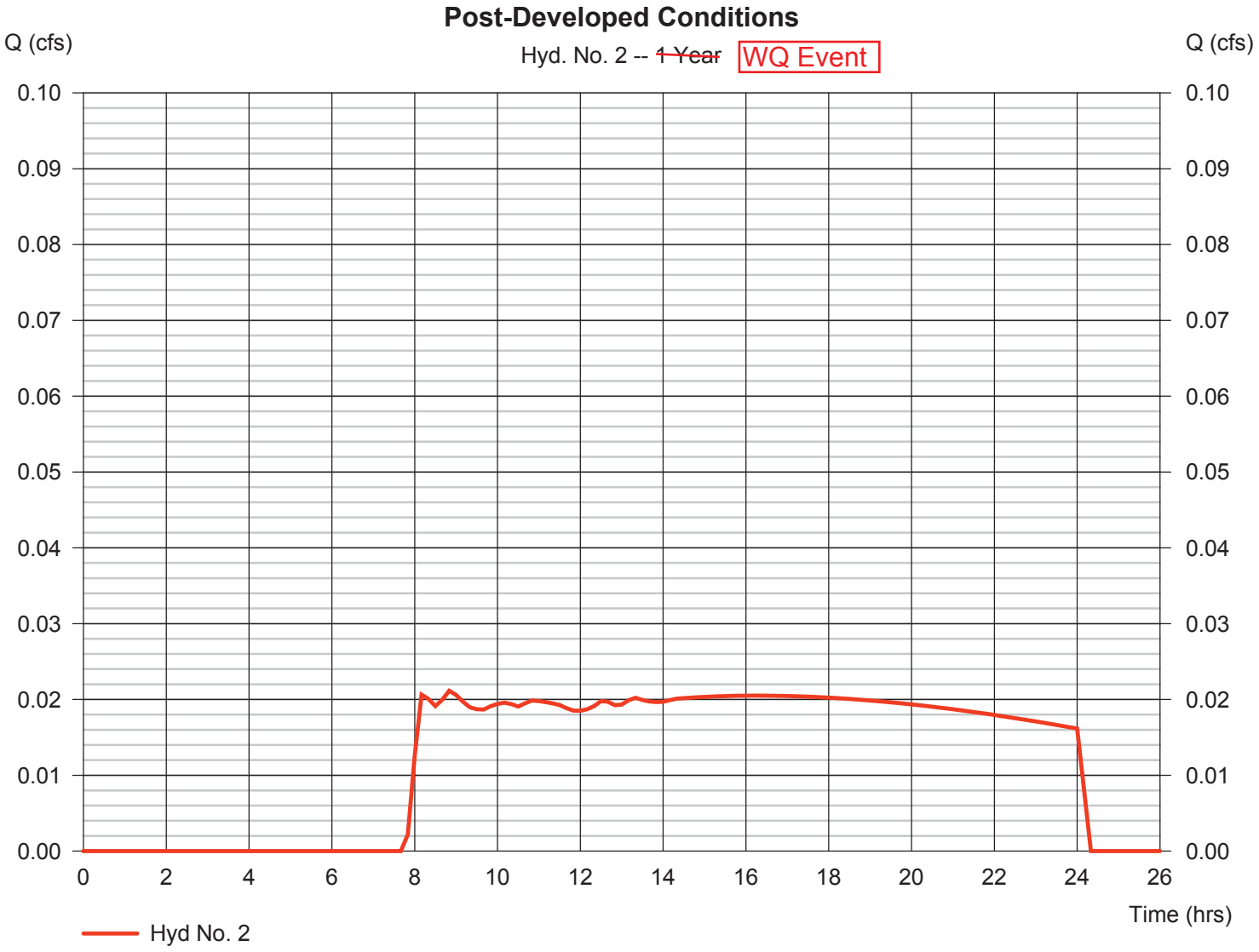
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Thursday, 09 / 10 / 2015

Hyd. No. 2

Post-Developed Conditions

Hydrograph type	=	SBUH Runoff	Peak discharge	=	0.021 cfs
Storm frequency	=	~~1 yrs~~ WQ Event	Time to peak	=	8.83 hrs
Time interval	=	10 min	Hyd. volume	=	1,128 cuft
Drainage area	=	2.230 ac	Curve number	=	87*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	0.83 in	Distribution	=	Type IA
Storm duration	=	24 hrs	Shape factor	=	n/a

* Composite (Area/CN) = [(0.789 x 98) + (1.206 x 79) + (0.197 x 98) + (0.037 x 79)] / 2.230



Hydrograph Report

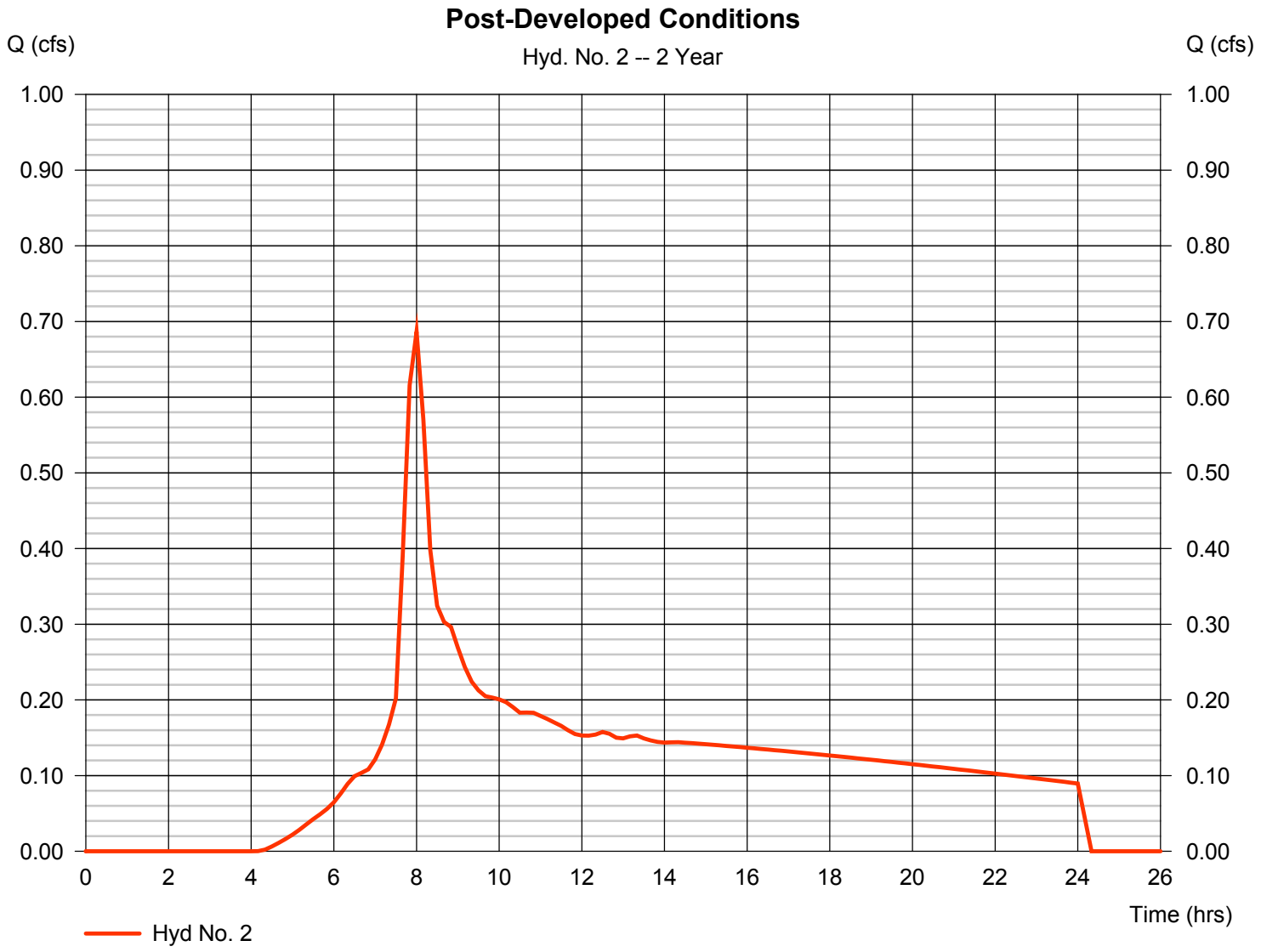
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Thursday, 09 / 10 / 2015

Hyd. No. 2

Post-Developed Conditions

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.686 cfs
Storm frequency	= 2 yrs	Time to peak	= 8.00 hrs
Time interval	= 10 min	Hyd. volume	= 10,613 cuft
Drainage area	= 2.230 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.789 x 98) + (1.206 x 79) + (0.197 x 98) + (0.037 x 79)] / 2.230



Hydrograph Report

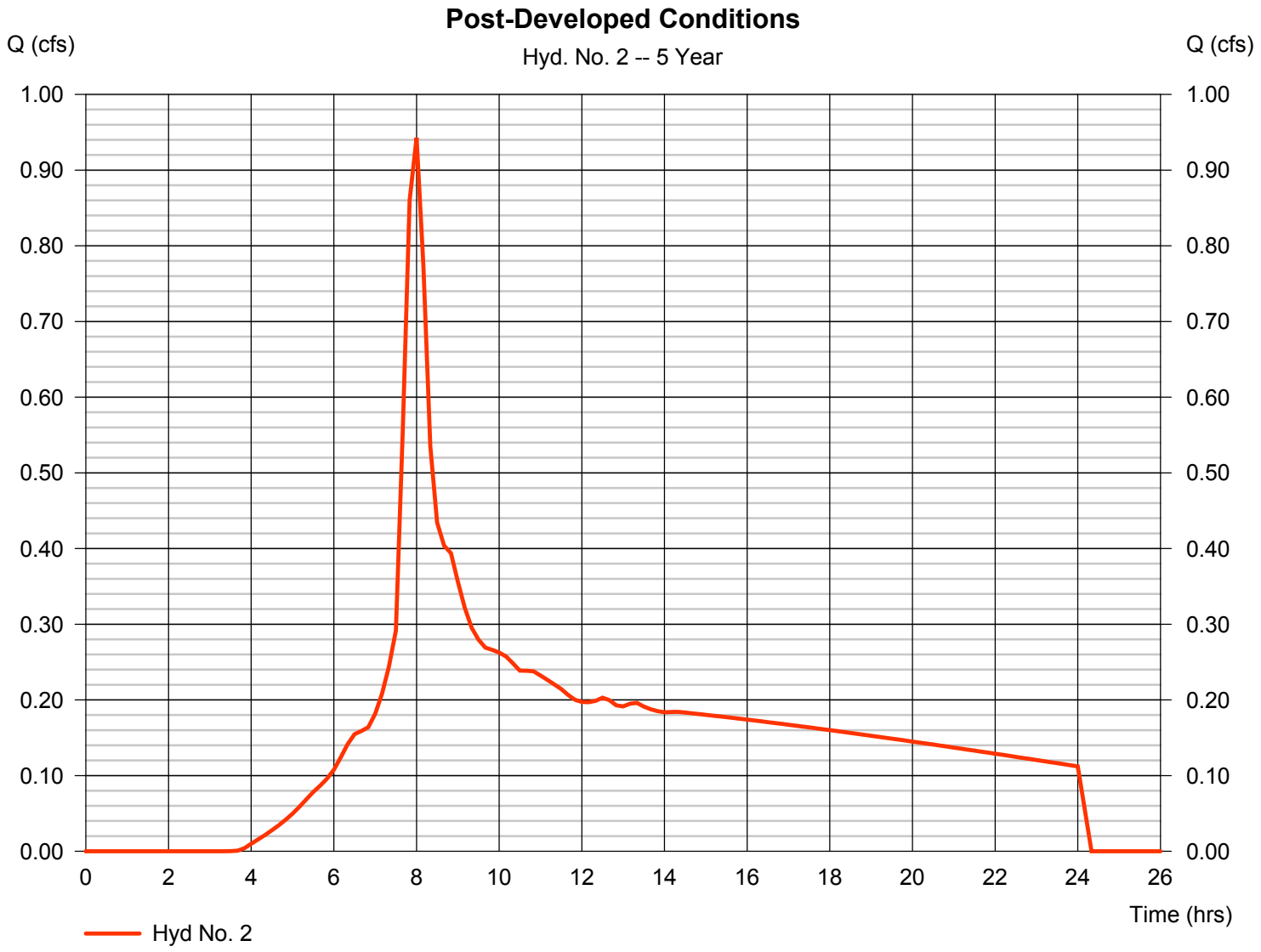
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Thursday, 09 / 10 / 2015

Hyd. No. 2

Post-Developed Conditions

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.943 cfs
Storm frequency	= 5 yrs	Time to peak	= 8.00 hrs
Time interval	= 10 min	Hyd. volume	= 14,078 cuft
Drainage area	= 2.230 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.00 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.789 x 98) + (1.206 x 79) + (0.197 x 98) + (0.037 x 79)] / 2.230



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Thursday, 09 / 10 / 2015

Hyd. No. 2

Post-Developed Conditions

Hydrograph type	= SBUH Runoff	Peak discharge	= 1.155 cfs
Storm frequency	= 10 yrs	Time to peak	= 8.00 hrs
Time interval	= 10 min	Hyd. volume	= 16,941 cuft
Drainage area	= 2.230 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.40 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.789 x 98) + (1.206 x 79) + (0.197 x 98) + (0.037 x 79)] / 2.230

Hydrograph Report

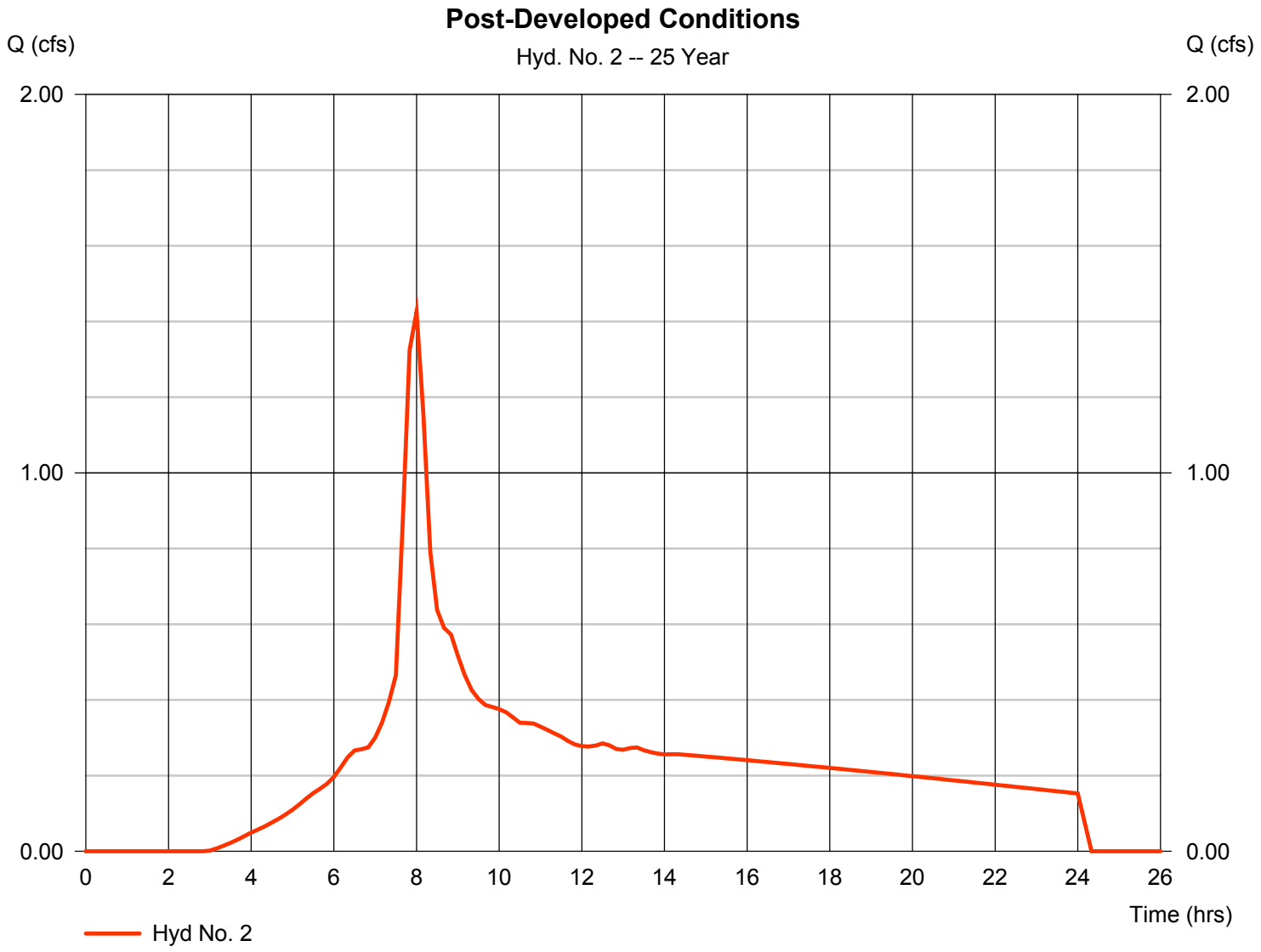
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Thursday, 09 / 10 / 2015

Hyd. No. 2

Post-Developed Conditions

Hydrograph type	= SBUH Runoff	Peak discharge	= 1.425 cfs
Storm frequency	= 25 yrs	Time to peak	= 8.00 hrs
Time interval	= 10 min	Hyd. volume	= 20,602 cuft
Drainage area	= 2.230 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.90 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.789 x 98) + (1.206 x 79) + (0.197 x 98) + (0.037 x 79)] / 2.230



Hydrograph Report

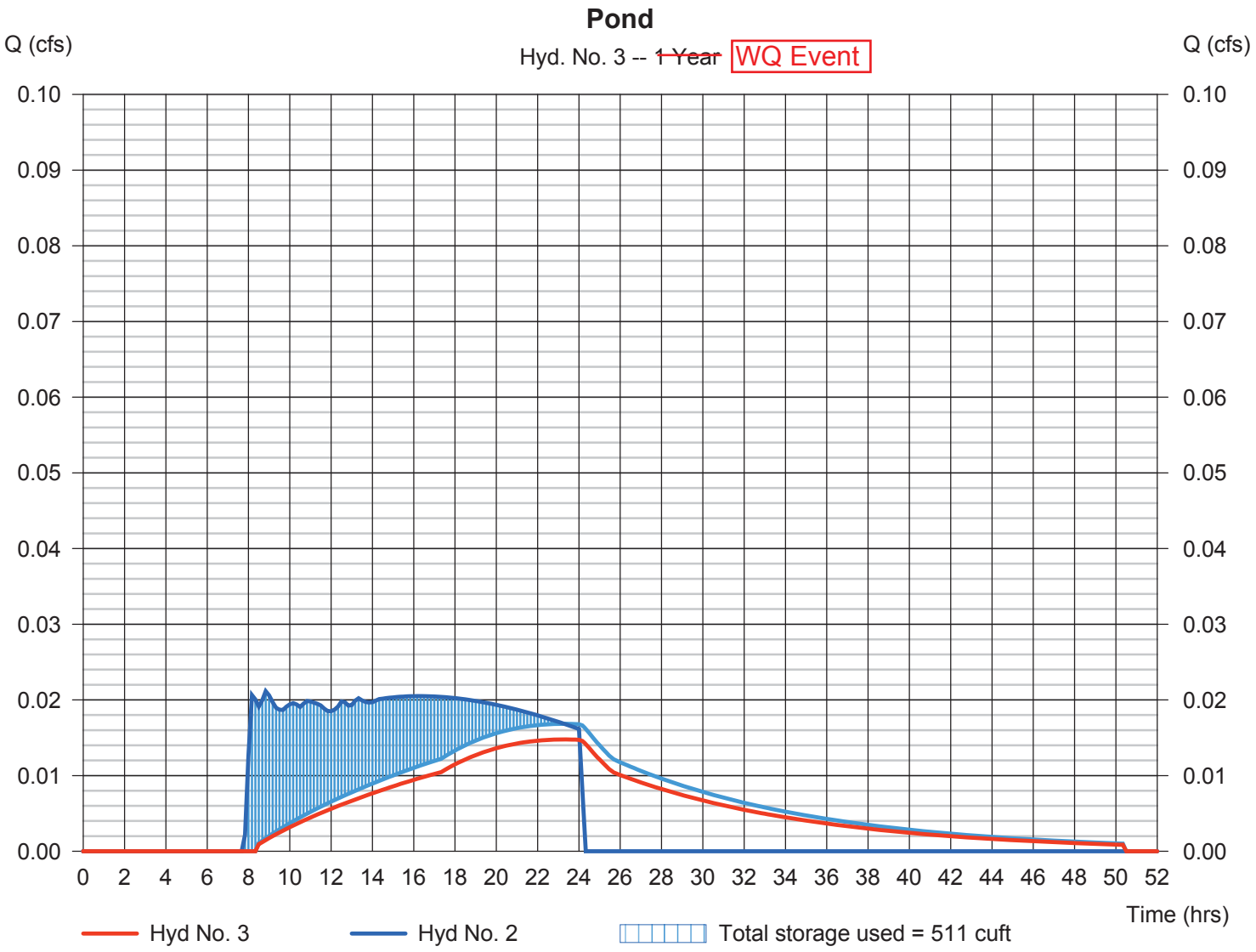
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Monday, 09 / 14 / 2015

Hyd. No. 3

Pond

Hydrograph type	=	Reservoir	Peak discharge	=	0.015 cfs
Storm frequency	=	~~1 yrs~~ WQ Event	Time to peak	=	23.33 hrs
Time interval	=	10 min	Hyd. volume	=	943 cuft
Inflow hyd. No.	=	2 - Post-Developed Conditions	Max. Elevation	=	498.24 ft
Reservoir name	=	Detention Pond	Max. Storage	=	511 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

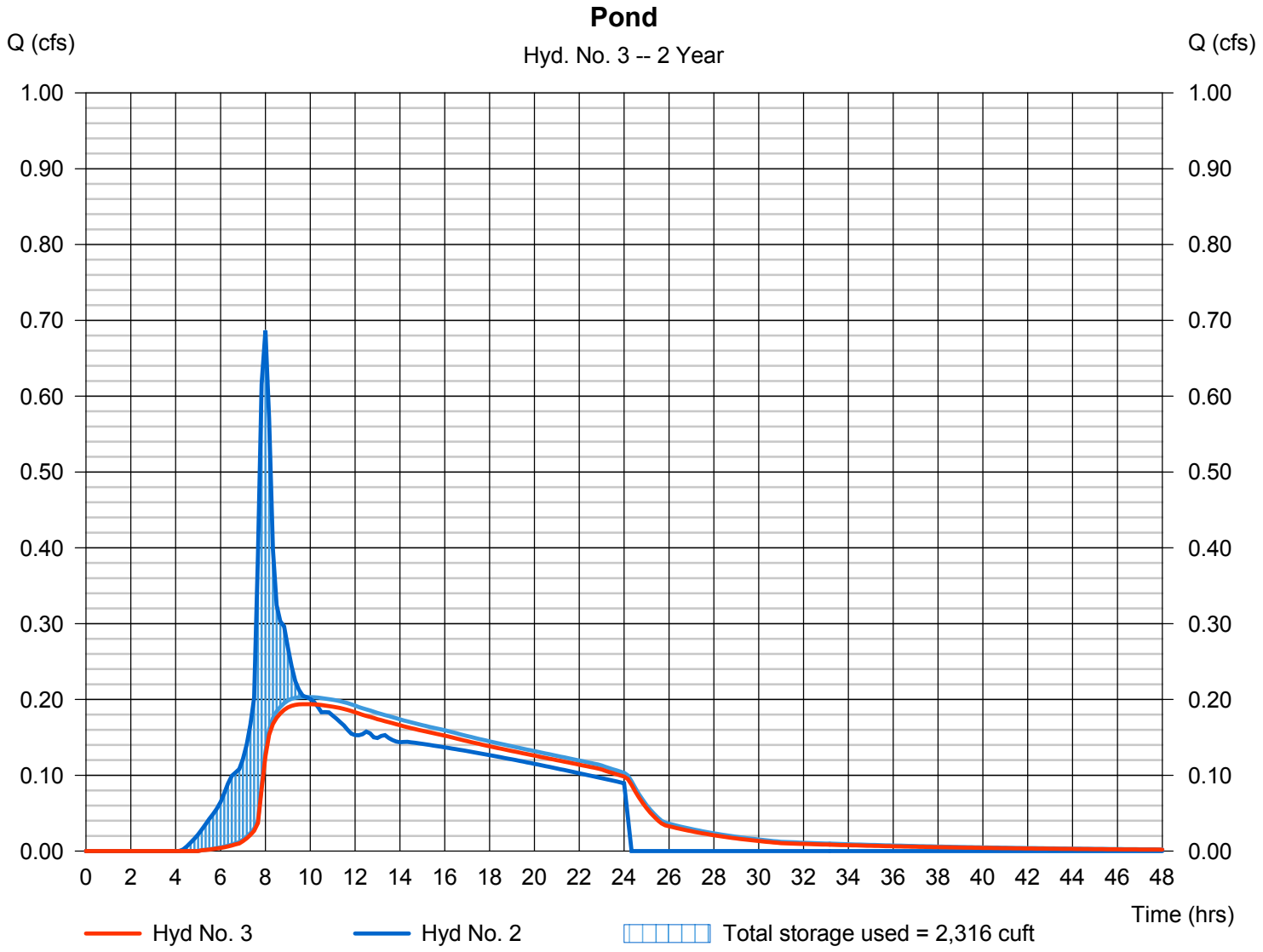
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Monday, 09 / 14 / 2015

Hyd. No. 3

Pond

Hydrograph type	= Reservoir	Peak discharge	= 0.194 cfs
Storm frequency	= 2 yrs	Time to peak	= 9.83 hrs
Time interval	= 10 min	Hyd. volume	= 10,016 cuft
Inflow hyd. No.	= 2 - Post-Developed Conditions	Max. Elevation	= 499.07 ft
Reservoir name	= Detention Pond	Max. Storage	= 2,316 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

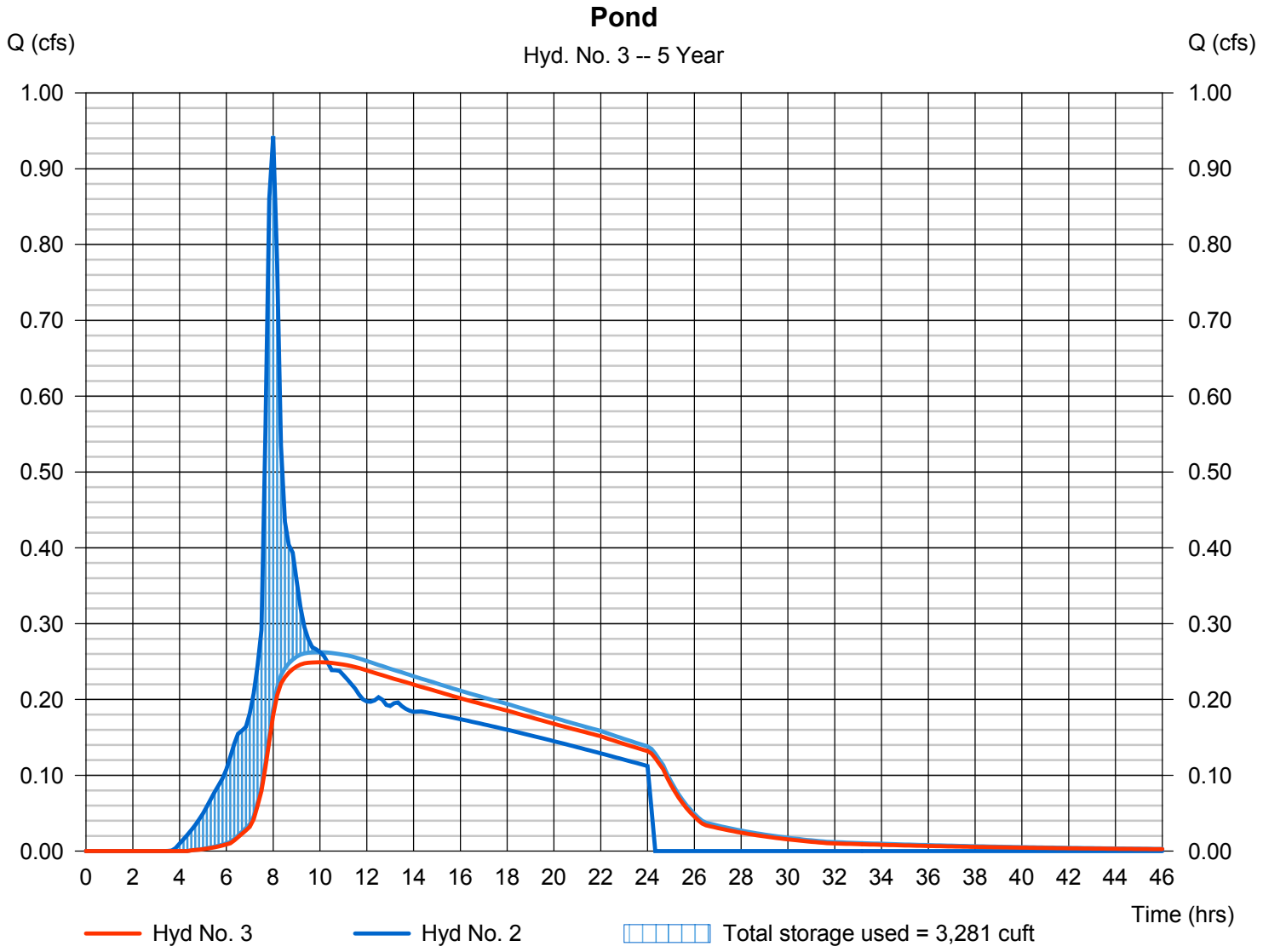
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Monday, 09 / 14 / 2015

Hyd. No. 3

Pond

Hydrograph type	= Reservoir	Peak discharge	= 0.249 cfs
Storm frequency	= 5 yrs	Time to peak	= 10.00 hrs
Time interval	= 10 min	Hyd. volume	= 13,297 cuft
Inflow hyd. No.	= 2 - Post-Developed Conditions	Max. Elevation	= 499.51 ft
Reservoir name	= Detention Pond	Max. Storage	= 3,281 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

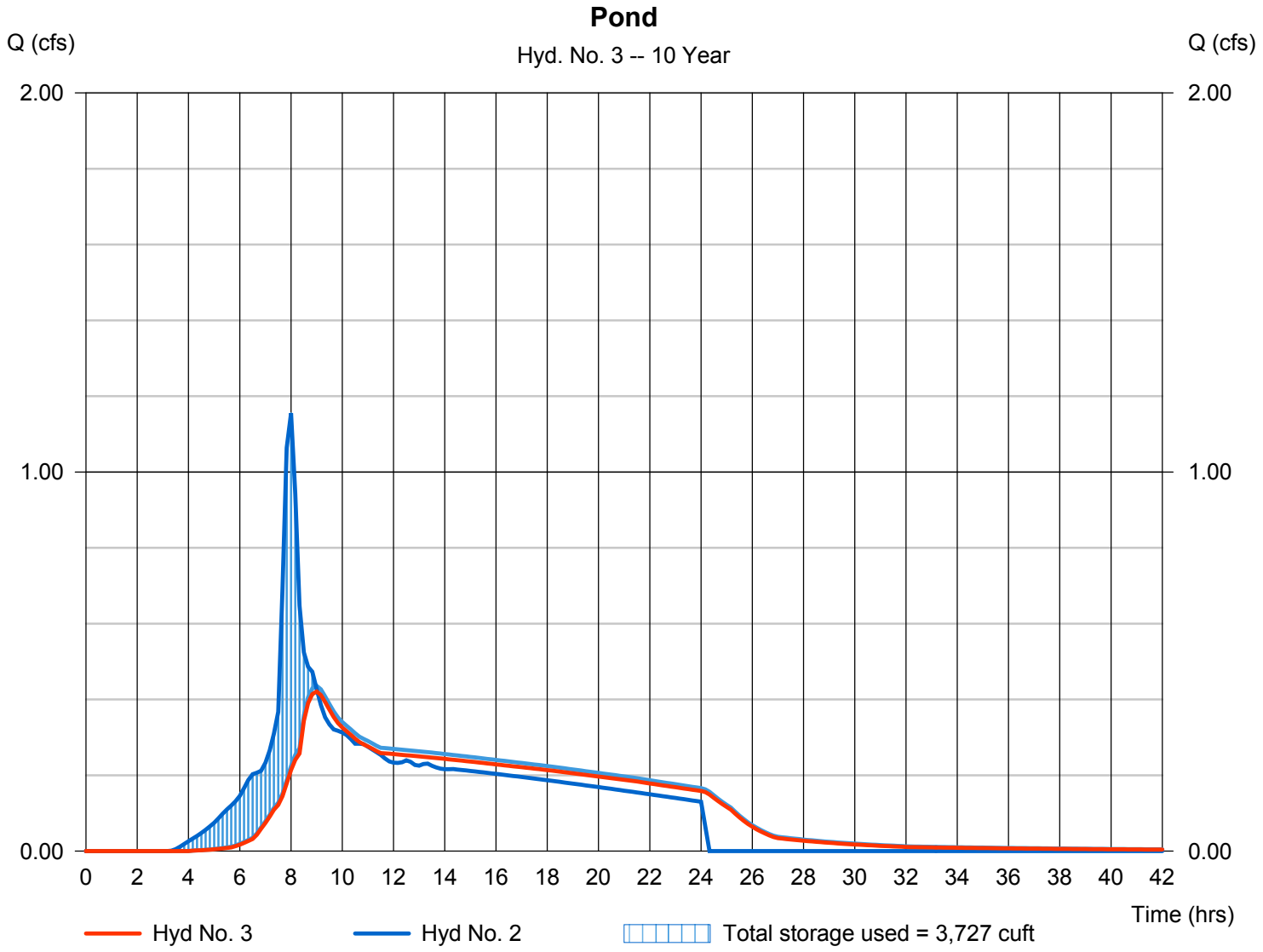
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Monday, 09 / 14 / 2015

Hyd. No. 3

Pond

Hydrograph type	= Reservoir	Peak discharge	= 0.421 cfs
Storm frequency	= 10 yrs	Time to peak	= 9.00 hrs
Time interval	= 10 min	Hyd. volume	= 16,041 cuft
Inflow hyd. No.	= 2 - Post-Developed Conditions	Max. Elevation	= 499.72 ft
Reservoir name	= Detention Pond	Max. Storage	= 3,727 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

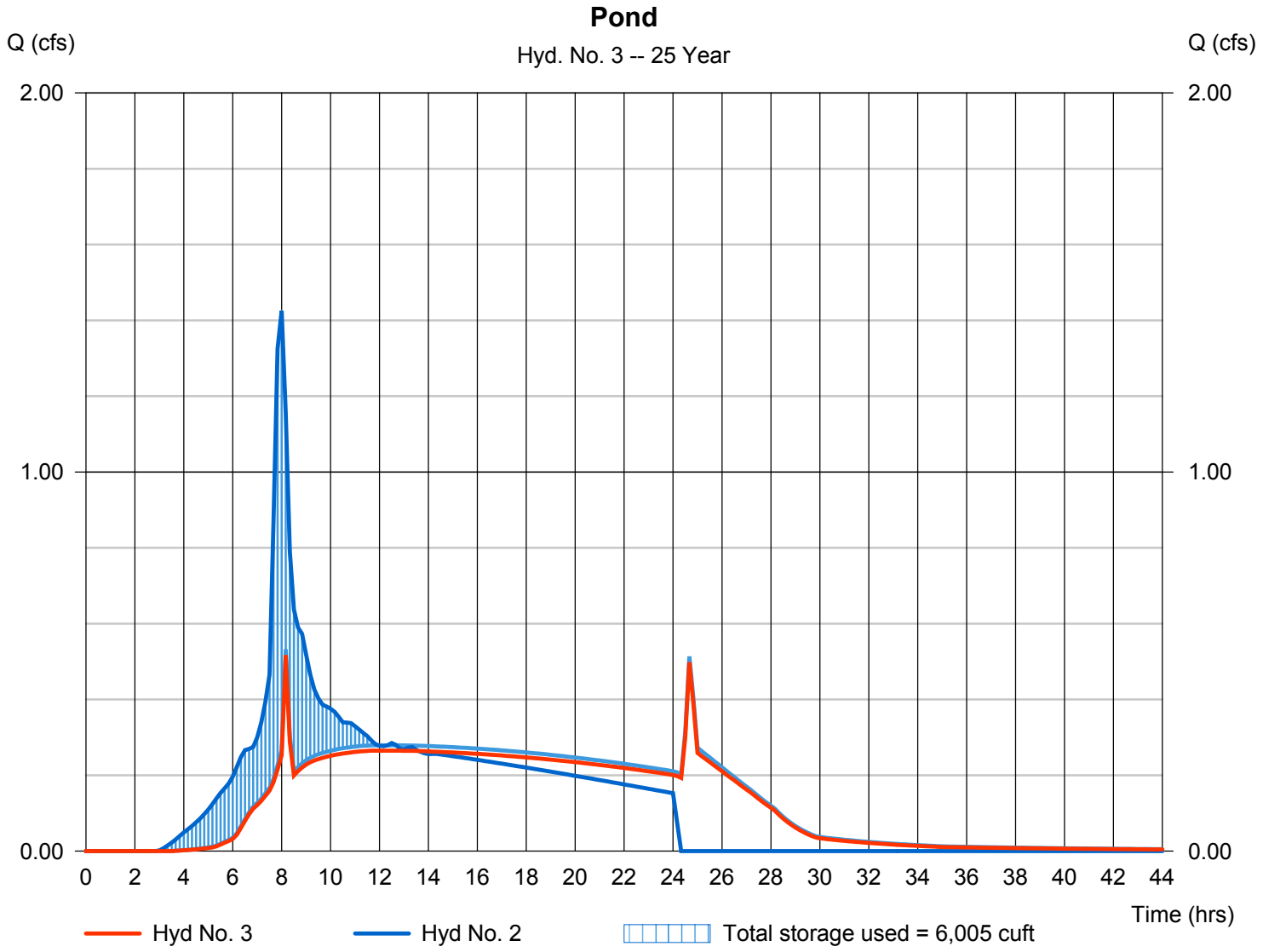
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Monday, 09 / 14 / 2015

Hyd. No. 3

Pond

Hydrograph type	= Reservoir	Peak discharge	= 0.516 cfs
Storm frequency	= 25 yrs	Time to peak	= 8.17 hrs
Time interval	= 10 min	Hyd. volume	= 19,492 cuft
Inflow hyd. No.	= 2 - Post-Developed Conditions	Max. Elevation	= 499.79 ft
Reservoir name	= Detention Pond	Max. Storage	= 6,005 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



CALCULATIONS

TR55 Tc Worksheet

Hyd. No. 1

Existing Conditions

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 300.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 2.50		0.00		0.00		
Land slope (%)	= 7.05		0.00		0.00		
Travel Time (min)	**= 35.35**	**+**	**0.00**	**+**	**0.00**	**=**	**35.35**
Shallow Concentrated Flow							
Flow length (ft)	= 24.71		0.00		0.00		
Watercourse slope (%)	= 8.25		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=4.63		0.00		0.00		
Travel Time (min)	**= 0.09**	**+**	**0.00**	**+**	**0.00**	**=**	**0.09**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 35.44 min

GEOTECHNICAL REPORTS

Real-World Geotechnical Solutions
Investigation • Design • Construction Support

July 20, 2015
Project No. 15-3848

Ryan Zygar
Bland Circle Estates, LLC
931 SW King Avenue
Portland, Oregon 97205

CC: Andrew Tull, 3J Consulting Engineers, Via email: andrew.tull@3j-consulting.com

SUBJECT: GEOTECHNICAL ENGINEERING REPORT
COPPEDGE PROPERTY
23128 BLAND CIRCLE
WEST LINN, OREGON

This report presents the results of a geotechnical exploration conducted by GeoPacific Engineering, Inc. (GeoPacific) for the above-referenced project. The purpose of our work was to evaluate subsurface conditions at the site and provide recommendations for site development. This geotechnical exploration was performed in accordance with GeoPacific Proposal No. P-5608, revised May 21, 2015, and your subsequent authorization of our proposal and *General Conditions for Geotechnical Services*.

SITE DESCRIPTION AND PROPOSED DEVELOPMENT

The subject property is composed of one tax lot approximately 2.11 acres in size. Topography is gently to moderately sloping to the south. Aerial photographs indicate the property is occupied by one home and one outbuilding. Vegetation consists primarily of short grasses and sparse trees. Vegetation is most dense in the southwest portion of the site and along the western property boundary, consisting of dense brush and small to large trees.

It is our understanding that the proposed development will consist of a 6 lot subdivision for single family homes, a new shared access street, and associated underground utilities. The existing home will be retained on Lot 1. A grading plan has not yet been provided for the proposed development, however we do not anticipate cuts or fills in excess of 5 feet. The proposed multi-family residential buildings will likely be wood frame construction utilizing conventional spread footings with raised wood floors and crawl spaces.

SITE GEOLOGY

Regionally, 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. Valley-fill sediment in

the adjacent basin achieves a maximum thickness of 1,500 feet and overlies Miocene Columbia River Basalt at depth (Madin, 1990; Yeats et al., 1996).

Geologic mapping indicates that the site is underlain by the Columbia River Basalt Formation (Madin, 1990). The Miocene aged (about 14.5 to 16.5 million years ago) Columbia River Basalts are a thick sequence of lava flows which form the crystalline basement of the Tualatin Valley. 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 4.4 miles northeast of the site. The Oatfield Fault occurs along the western side of the Portland Hills, and is approximately 2.9 miles northeast of the site. The Oatfield Fault is considered to be potentially seismogenic (Wong, et al., 2000). Mabey et al., (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 16.8 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 geotechnical engineering report was conducted on June 10, 2015. A total of 4 exploratory test pits (designated TP-1 through TP-4) were excavated to depths ranging from 3.5 to 12 feet at the locations shown on Figures 2 and 3. Test pit locations were determined in the field by pacing or taping distances from property corners and other site features discernible in aerial photographs. As such, the locations of the explorations should be considered approximate.

A representative of the GeoPacific engineering staff 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. Rock hardness was classified in accordance with the below table (Table 1), which was modified from the ODOT Rock Hardness Classification Chart.

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

During our explorations, geotechnical conditions such as soil consistency, moisture and groundwater conditions were also noted. For additional information pertaining to subsurface conditions at specific location, refer to the attached test pit logs. It should be noted that subsurface conditions can vary between exploration locations, as discussed in the *Uncertainty and Limitations* section of this report. The following sections discuss the subsurface conditions encountered in our test pit explorations.

Soils

The underlying soils encountered in our explorations consisted of topsoil, undocumented fill, buried topsoil, residual soil, and the Columbia River Basalt Formation:

Topsoil Horizon: Directly underlying the ground surface in test pits TP-1 and TP-4, we observed moderately to highly organic SIL T(ML-OL) with fine to medium roots throughout. The topsoil layer in test pits TP-1 and TP-4 extended to depths of 12 and 10 inches, respectively.

Undocumented Fill: Directly underlying the ground surface in test pits TP-2 and TP-3, we observed undocumented fill material. In test pit TP-2, the fill material generally consisted of silt with a significant amount of glass bottles and trash and extended to a depth of approximately 14 inches. In test pit TP-3, the fill material generally consisted of silt with small amounts of trash and debris and extended to a depth of approximately 4 feet, overlying buried topsoil.

Buried Topsoil: Underlying the undocumented fill material in test pit TP-3, we observed buried topsoil material. The layer of buried topsoil generally consisted of moderately organic SILT (ML-

OL) with fine roots throughout and was generally soft. A large decayed root was encountered at 4 feet. The layer of buried topsoil extended to a depth of 6 feet.

Residual Soil: Underlying the topsoil in test pits TP-1 and TP-4, the undocumented fill material in test pit TP-2, and the buried topsoil layer in test pit TP-3, we observed residual soil derived from the in-place weathering of the underlying Columbia River Basalt Formation. The residual soil generally consisted of silty CLAY (CL) to clayey SILT (ML) and was characterized by a very stiff to hard consistency. The residual soil transitioned to less weathered basalt bedrock as discussed below. Where encountered, the residual soil extended to depths of 3, 4, 9, and 4 feet in test pits TP-1, TP-2, TP-3, and TP-4, respectively.

Columbia River Basalt: Underlying the residual soil in all test pits, we observed gray basalt belonging to the Columbia River Basalt Formation. The upper portion of the basalt encountered was extremely soft (R0) to soft (R2) with trace reddish-brown silty clay to clayey silt. The medium-size backhoe used for our explorations was able to excavate the basalt classified as R0 and R2; however, practical refusal was met in test pits TP-1, TP-2, and TP-4 on medium hard (R3) basalt. Soft basalt (R0) extended beyond the maximum depth of exploration in test pit TP-3. Table 2 summarizes the depths to refusal on medium hard (R3) basalt.

Table 2 – Depths to Refusal in Test Pit Explorations

Test Pit Designation	Depth of Refusal (ft)
TP-1	3.5
TP-2	6
TP-4	6

Soil Moisture and Groundwater

On June 10, 2015 the soil moisture conditions observed in test pits were damp to moist. No seepage or static groundwater were encountered in our explorations. However, 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. It is anticipated that groundwater conditions will vary depending on the season, local subsurface conditions, changes in site utilization, and other factors.

INFILTRATION TESTING

On June 10, a representative of GeoPacific Engineering, Inc. (GeoPacific) performed one falling head, pushed pipe infiltration test in test pit TP-1 at the approximate location shown in Figures 2 and 3. The test was conducted in native residual soil at a depth of approximately 2 feet. The soils encountered test pits are summarized in the attached test pit logs. During the test, water levels were measured over 10 minute intervals until three successive measurements showing a consistent infiltration rate were achieved.

The test results indicate that infiltration rate at a depth of 2 feet in test pit TP-1 is 1.2 inches per hour. The measured rate reflects vertical pathways only.

CONCLUSIONS AND RECOMMENDATIONS

Based on our review, we consider the proposed development to be geotechnically feasible, provided that the recommendations of this report are incorporated into the design and construction phases of the project. In our opinion, there are two main geotechnical issues for project completion. The first issue is the presence of undocumented fill material and buried topsoil. Undocumented fill material was encountered to depths of 14 and 48 inches in test pits TP-2 and TP-3, respectively. Buried topsoil was encountered underlying the undocumented fill material in test pit TP-3 to a depth of 72 inches beneath the ground surface.

The second issue is the presence of basalt bedrock at relatively shallow depths across the site. Practical refusal on medium hard (R3) basalt was obtained with the medium-size backhoe used for our investigation at a depth of 3.5 feet in test pit TP-1, and at a depth of 6 feet in test pits TP-2 and TP-4. The presence of basalt bedrock at relatively shallow depths will likely present challenges during the excavation of deeper utility trenches. A large excavator may be needed for excavation of the medium hard (R3) basalt, and chipping with a hydraulic hammer may also be necessary. We anticipate that slow excavating conditions will be encountered during installation of utilities deeper than approximately 3.5 feet. Additionally, on-site subsurface infiltration of stormwater may not be feasible for this project, except for the use of pervious pavers, due to the shallow bedrock present throughout the site.

The following report sections provide recommendations for addressing undocumented fill materials and shallow bedrock at the site, in addition to general recommendations for site development and construction in accordance with the current applicable codes and local standards of practice.

General Slope Stability

Based on the results of our geotechnical investigation, the site is underlain by stiff to hard silt, with basalt bedrock at relatively shallow depths. Based on the results of our geotechnical investigation and our understanding of current plans for site development, it is our opinion that on-site slopes exhibit adequate overall stability. The potential for slope instability resulting in damage to the proposed development is considered to be low, and no further evaluation of the slope instability hazard is necessary, provided that the project is designed and constructed in accordance with our recommendations.

Site Preparation

Areas of proposed buildings, streets, and areas to receive fill should be cleared of vegetation and any organic and inorganic debris. The site plan for the proposed development indicates existing single family residence in the northeast portion of the site will remain, but that the outbuilding located in the southwest portion of the site will be razed. Existing structures should be completely demolished and any resulting cavities backfilled with engineered fill. Inorganic debris should be removed from the site. Organic materials from clearing should either be removed from the site or placed as landscape fill (in areas not planned for structures, driving lanes, or parking areas).

Organic-rich topsoil should then be stripped from construction areas of the site or where engineered fill is to be placed. In general, the estimated necessary depth of removal in undisturbed areas for moderately organic soils is 10 to 12 inches. However, it should be noted that the necessary depth of topsoil removal in treed areas of the site may be up to 12 to 18

inches. Large trees are present at the site and deeper stripping to remove large roots or other organics may be necessary in localized areas. 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 be stockpiled only in designated areas and stripping operations should be observed and documented by the geotechnical engineer (or representative).

Any remaining disturbed native soils, undocumented fills, buried topsoil, 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. Undocumented fill material was encountered to depths of 14 and 48 inches in test pits TP-2 and TP-3, respectively. Buried topsoil was encountered underlying the undocumented fill material in test pit TP-3 to a depth of 72 inches beneath the ground surface. Additional undocumented fill material likely exists in the vicinity of the existing home and outbuilding.

GeoPacific should be consulted during site preparation to determine whether or not the existing undocumented fill material may be used as engineered fill. Based on the results of our exploration, we anticipate that the fill material encountered in TP-2 will not be suitable for reuse as engineered fill due to the significant amount of deleterious material it contains. However, the undocumented fill material in the vicinity of test pit TP-3 may be suitable for reuse as engineered fill. Reuse of the existing undocumented fill as engineered fill may require sorting operations.

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 90% of the maximum dry density determined by Modified Proctor, AASHTO T-180 or equivalent. Field density testing should conform to current ASTM standards and practices. All engineered fill should be observed and tested by the project geotechnical engineer (or 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 considerable additional cost compared to earthwork performed under dry-weather conditions.

Excavating Conditions and Utility Trenches

Based on the preliminary construction site plan, it appears the majority of the site will be developed with structures, parking lanes, and/or paved parking areas. The presence of shallow basalt bedrock throughout the site may present issues for the development of this site; and it should be noted that typical construction equipment may not be adequate for site preparation.

We expect utility trenches less than about 3.5 feet below existing grade can be excavated in the soft basalt using conventional large trackhoe equipment. Practical refusal on medium hard (R3) basalt was obtained with the medium-size backhoe used for our investigation at a depth of 3.5 feet in test pit TP-1, and at a depth of 6 feet in test pits TP-2 and TP-4, which will likely present challenges during the excavation of deeper utility trenches. A medium to large excavator may be needed for excavation of the medium hard (R3) basalt, and chipping with a hydraulic hammer may also be necessary. We anticipate that slow excavating conditions will be encountered during installation of utilities deeper than approximately 3.5 feet.

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.

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. All temporary cuts in excess of 4 feet in height should be sloped in accordance with U.S. Occupational Safety and Heath Administration (OSHA) regulations (29 CFR Part 1926), or be shored. The existing native silt soils classify as Type B and temporary excavation side slope inclinations as steep as 1H:1V may be assumed for planning purposes. The existing native bedrock classifies as Type A and temporary excavation side slope inclinations as steep as 3/4H:1V may be assumed for planning purposes. These cut slope inclination is applicable to excavations above the water table 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.

PVC pipe should be installed in accordance with the procedures specified in ASTM D2321. We recommend that trench backfill be compacted to at least 90% of the maximum dry density obtained by AASHTO T-180 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. 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 bales 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 may 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 should not be left uncompacted or 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
- Bales of straw and/or geotextile silt fences 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.

New Pavement Sections for Proposed Streets

We understand that the proposed development will consist of paved roadways that will be surfaced with asphalt pavement. Table 3 presents the recommended section thicknesses for the proposed pavement areas that are to be completed as part of the project, under dry weather construction conditions. In our opinion, this pavement section is suitable to support the anticipated levels of traffic. See attached pavement section calculations for details.

Table 3 - Recommended Minimum Dry-Weather Pavement Section for Light-Duty Roadways

Material Layer	Section Thickness (in)	Compaction Standard
Asphaltic Concrete (AC)	3	91%/ 92% of Rice Density AASHTO T-209
Crushed Aggregate Base ¾"-0 (leveling course)	2	95% of Modified Proctor AASHTO T-180
Crushed Aggregate Base 1½"-0	8	95% of Modified Proctor AASHTO T-180
Competent Subgrade	12	Approved native or 90% of Modified Proctor AASHTO T-180

Any pockets of organic debris or loose fill encountered during subgrade preparation 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. General recommendations for wet weather pavement sections are provided below.

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.

As noted in the Subsurface Conditions section above (and the attached test pit logs), shallow bedrock was encountered at several locations throughout the site. If pavement sections are to be constructed overlying undisturbed bedrock, GeoPacific may be consulted to verify subgrade conditions during construction and to provide revised pavement section recommendations for those portions of the site.

Wet Weather Construction Pavement Section

This section presents our recommendations for wet weather pavement sections, which are for construction of on-site driving lanes and parking areas. These wet weather pavement section recommendations are intended for use in situations where it is not feasible to compact the subgrade soils to Clackamas County requirements, due to wet subgrade soil conditions, and/or construction during wet weather.

Based on our site review, we recommend a wet weather section with a minimum subgrade deepening of 6 inches to accommodate a working subbase of additional 1½"-0 crushed rock. Geotextile fabric, Mirafi 500x or equivalent, should be placed on subgrade soils prior to placement of base rock.

In some instances it may be preferable to use Special Treated Base (STB) in combination with overexcavation and increasing the thickness of the rock section. GeoPacific should be consulted for additional recommendations regarding use of STB in wet weather pavement sections if it is desired to pursue this alternative. Cement treatment of the subgrade may also be considered instead of overexcavation. For planning purposes, we anticipate that treatment of the on site soils would involve mixing cement powder to approximately 6 percent cement content and a mixing depth on the order of 12 inches.

With implementation of the above recommendations, it is our opinion that the resulting pavement sections will provide equivalent or greater structural strength than the dry weather pavement section currently planned. However, it should be noted that construction in wet weather is challenging, and the performance of pavement subgrade depend on a number of factors including the weather conditions, the contractor's methods, and the amount of traffic the areas are subjected to. There is a potential that soft spots may develop even with implementation of the wet weather provisions recommended in this letter. If soft spots in the subgrade are identified during roadway excavation, or develop prior to paving, the soft spots should be over-excavated and backfilled with additional crushed rock.

During subgrade excavation, care should be taken to avoid disturbing the subgrade soils. Removals should be performed using an excavator with a smooth-bladed bucket. Truck traffic should be limited until an adequate working surface has been established. We suggest that the crushed rock be spread using bulldozer equipment rather than dump trucks, to reduce the amount of traffic and potential disturbance of subgrade soils.

Care should be taken to avoid over-compaction of the base course materials, which could create pumping, unstable subgrade soil conditions. Heavy and/or vibratory compaction efforts should be applied with caution. Following placement and compaction of the crushed rock to

project specifications (95% of AASHTO T-180), a finish proof-roll should be performed before paving.

The above recommendations are subject to field verification. GeoPacific should be on-site during construction to verify subgrade strength and to take density tests on the engineered fill, base rock and asphaltic pavement materials.

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 18 inches below exterior grade. Minimum footing widths should be determined by the project engineer/architect in accordance with applicable design codes.

The anticipated allowable soil bearing pressure is 2,000 lbs/ft^2 for footings bearing on competent, native soil and/or engineered fill. A maximum chimney and column load of 30 kips is preliminarily 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 0.45, 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 over-excavation of footings and backfill with compacted, crushed aggregate.

Footing and Roof Drains

If the proposed structures will have a raised floor, and no concrete slab-on-grade floors 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 used, 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. Water collected from the footing drains should be directed to 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. The footing drains should include clean-outs to allow periodic maintenance and inspection. 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 the street.

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 in order to reduce the potential for clogging. Roof drain water should be directed to an appropriate discharge point well away from structural foundations. Grades should be sloped downward and away from buildings to reduce the potential for ponded water near structures.

Stormwater Management Facilities

We understand that plans for project development may include stormwater management facilities. As previously discussed, the site is underlain by hard rock at relatively shallow depths. Subsurface infiltration into hard rock is not recommended for design purposes due to the high risk of biological and sediment clogging. Therefore, on-site subsurface infiltration should not be considered in the design of stormwater management facilities on the site, with the exception of pervious pavers. If pervious pavers are to be utilized, GeoPacific should be consulted to provide additional recommendations.

Systems should be constructed as specified by the designer and/or in accordance with jurisdictional design manuals. Stormwater exceeding storage capacities will need to be directed to a suitable surface discharge location. Stormwater management systems may need to include overflow outlets, surface water control measures and/or be connected to the street stormdrain system, if available.

Seismic Design

Structures should be designed to resist earthquake loading in accordance with the methodology described in the 2012 International Residential Code (IRC) for One- and Two-Family Dwellings, 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) *2014 Seismic Design Maps Summary Report* are summarized in Table 4.

Table 4 - Recommended Earthquake Ground Motion Parameters (2015 USGS)

Parameter	Value
Location (Lat, Long), decimal	45.356, -122.651
Probabilistic Ground Motion Values, 2% Probability of Exceedance in 50 yrs	
Short Period, S_s	0.949 g
1.0 Sec Period, S_1	0.409 g
Soil Factors for Site Class D:	
F_a	1.020
F_v	1.391
Residential Site Value = 2/3 x F_a x S_s	0.646 g
Residential Seismic Design Category	C

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. The on-site soils consist predominantly of dense residual soil and hard rock, and are not considered susceptible to liquefaction. Therefore, it is our opinion that special design or construction measures are not required to mitigate the effects of liquefaction.

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.

Benjamin G. Anderson
Project Engineer

EXPIRES: 06/30/2017

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

Attachments: References
Figure 1 - Vicinity Map
Figure 2 - Site Plan and Exploration Locations
Figure 3 - Aerial Photo and Exploration Locations
Test Pit Logs (TP-1 through TP-4)

REFERENCES

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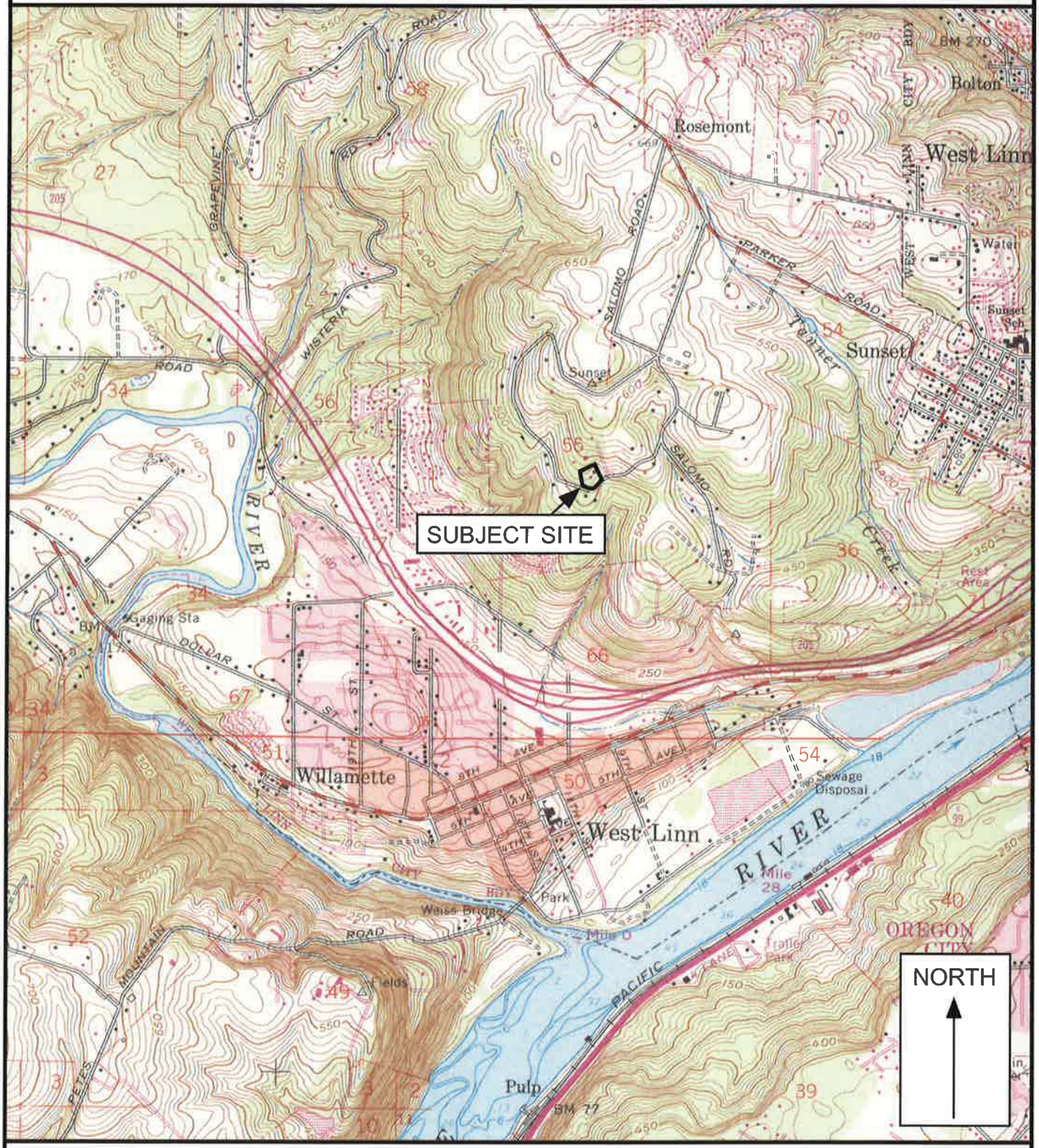
GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
Tel: (503) 598-8445 Fax: (503) 941-9281

VICINITY MAP



Legend

Approximate Scale 1 in = 2,000 ft

Date: 07/20/15
Drawn by: BGA

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

Project: Coppedge Property West Linn, Oregon	Project No. 15-3848	FIGURE 1

GeoPacific Engineering, Inc.
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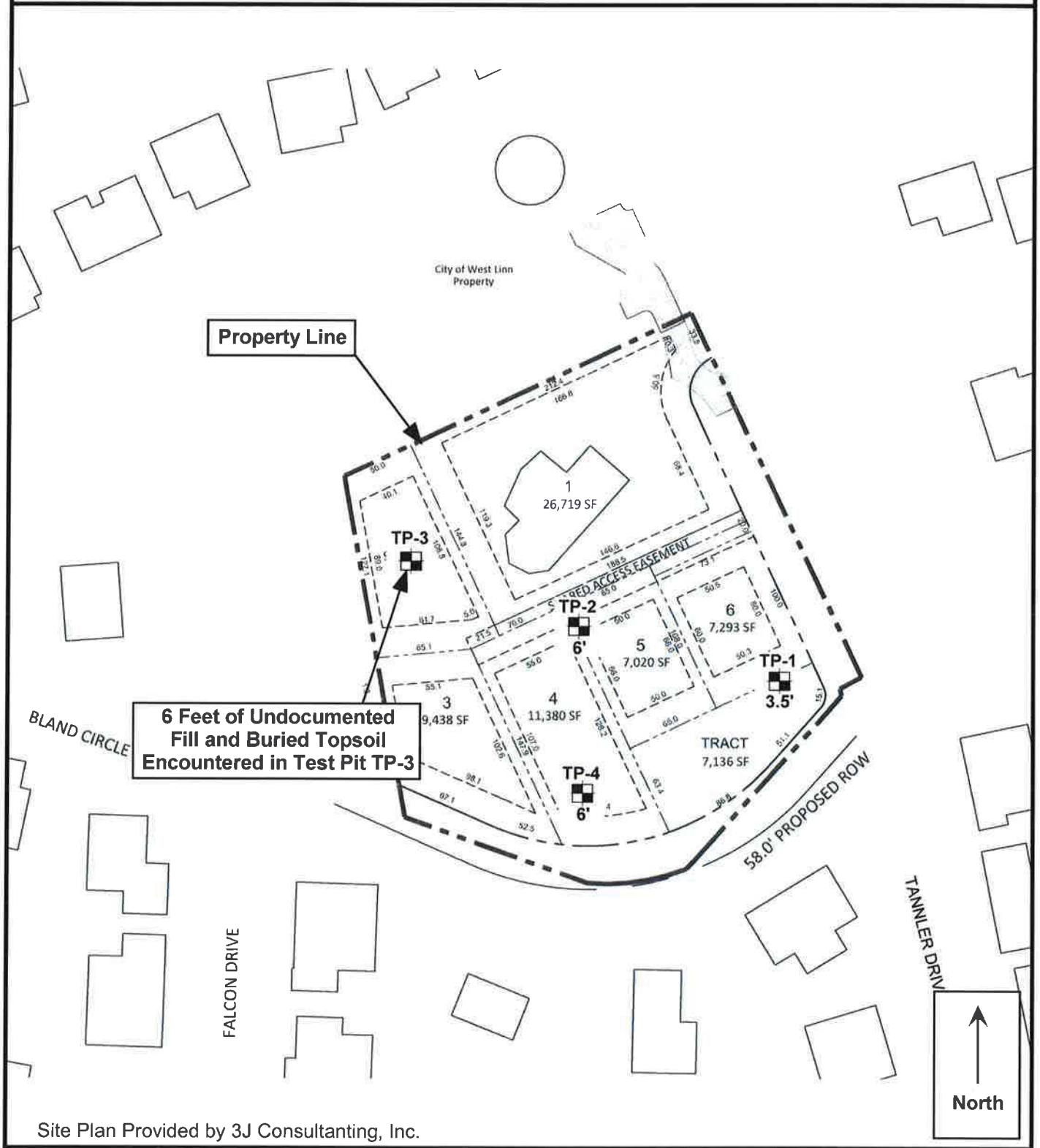
SITE PLAN AND EXPLORATION LOCATIONS



Site Plan Provided by 3J Consultanting, Inc.

Legend

TP-1 / 3.5' — Test Pit Designation, Approximate Location, and Depth of Refusal on Medium Hard Basalt

0 100'
APPROXIMATE SCALE 1"=100'

Date: 07/20/15
Drawn by: BGA

Project: Coppedge Property West Linn, Oregon	Project No. 15-3848	FIGURE 2

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

AERIAL PHOTO AND EXPLORATION LOCATIONS

Aerial Photograph Obtained from PortlandMaps.com

Legend

TP-1 / 3.5' — Test Pit Designation, Approximate Location, and Depth of Refusal on Medium Hard Basalt

0 100'

APPROXIMATE SCALE 1"=100'

Date: 07/20/15
Drawn by: BGA

Project: Coppedge Property West Linn, Oregon	Project No. 15-3848	FIGURE 3

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

TEST PIT LOG

Project: Coppedge Property West Linn, Oregon	Project No. 15-3848	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
1						12" soft, highly organic SILT (OL-ML), dark brown, with fine to medium roots throughout, moist (Topsoil)
2	>4.5					Very stiff to hard, clayey SILT (ML) to silty CLAY (CL), reddish brown, trace black staining, damp (Residual Soil)
3	>4.5					
4						Very soft to soft (R1-R2), highly weathered BASALT, trace reddish-brown matrix of silty clay to clayey silt, light gray, black staining, damp to moist (Columbia River Basalt)
5						Test pit terminated at 3.5 feet due to practical refusal on medium hard (R3) basalt
6						Note: No seepage or groundwater encountered
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						

LEGEND

Bag Sample

Bucket Sample


Shelby Tube Sample


Seepage


Water Bearing Zone


Water Level at Abandonment

Date Excavated: 06/10/15
Logged By: BGA
Surface Elevation:

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

TEST PIT LOG

Project: Coppedge Property West Linn, Oregon	Project No. 15-3848	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
1						14" soft, SILT (ML), brown, with fine roots throughout, with significant amounts of glass bottles and trash, damp (Undocumented Fill)
2	>4.5					Very stiff to hard, clayey SILT (ML) to silty CLAY (CL), reddish brown, trace black staining, damp (Residual Soil)
3	>4.5					
4						
5						Very soft to soft (R1-R2), highly weathered BASALT, trace reddish-brown matrix of silty clay to clayey silt, light gray, black staining, damp to moist (Columbia River Basalt)
6						Test pit terminated at 6 feet due to practical refusal on medium hard (R3) basalt Note: No seepage or groundwater encountered
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						

LEGEND

Bag Sample

Bucket Sample


Shelby Tube Sample


Seepage


Water Bearing Zone


Water Level at Abandonment

Date Excavated: 06/10/15
Logged By: BGA
Surface Elevation:

GeoPacific Engineering, Inc.
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TEST PIT LOG

Project: Coppedge Property
West Linn, Oregon

Project No. 15-3848

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
1						Soft to medium stiff, SILT (ML), brown, with fine roots throughout, with small amounts of debris and trash, with fine roots throughout the upper 4 inches, damp (Undocumented Fill)
3						Plywood debris encountered at 3 feet
4						Decayed root encountered at 4 feet Soft to medium stiff, moderately organic SILT (ML-OL), dark brown, with fine roots throughout, damp to moist (Buried Topsoil)
6						Very stiff to hard, clayey SILT (ML) to silty CLAY (CL), reddish brown, trace black staining, damp (Residual Soil)
9						Extremely soft (R0), highly weathered BASALT, trace reddish-brown matrix of silty clay to clayey silt, light gray, black staining, damp to moist (Columbia River Basalt)
12						Test pit terminated at 12 feet Note: No seepage or groundwater encountered
17						

LEGEND

Bag Sample (100 to 1,000 g) | Bucket Sample (5 Gal. Bucket) | Shelby Tube Sample | Seepage | Water Bearing Zone | Water Level at Abandonment

Date Excavated: 06/10/15
Logged By: BGA
Surface Elevation:

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TEST PIT LOG

Project: Coppedge Property West Linn, Oregon	Project No. 15-3848	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
1						10" soft, moderately organic SILT (OL-ML), dark brown, with fine to medium roots throughout, moist (Topsoil)
2	>4.5					Very stiff to hard, clayey SILT (ML) to silty CLAY (CL), reddish brown, trace black staining, damp (Residual Soil)
3	>4.5					
4						
5						Very soft to soft (R1-R2), highly weathered BASALT, trace reddish-brown matrix of silty clay to clayey silt, light gray, black staining, damp to moist (Columbia River Basalt)
6						Test pit terminated at 6 feet due to practical refusal on medium hard (R3) basalt Note: No seepage or groundwater encountered
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						

LEGEND

Bag Sample

Bucket Sample


Shelby Tube Sample


Seepage


Water Bearing Zone


Water Level at Abandonment

Date Excavated: 06/10/15
Logged By: BGA
Surface Elevation:

OPERATIONS AND MAINTENANCE

To be Completed with Final Design

Morgan Holen & Associates, LLC
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October 4, 2015

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

Re: Arborist Report and Tree Preservation Plan for Savanna Heights Subdivision
West Linn, Oregon
Project No. MHA14116 Savanna Heights

Please find enclosed the Arborist Report and Tree Preservation Plan for the Savanna Heights Subdivision project located at 23128 Bland Circle in West Linn, Oregon. Please contact us if you have questions or need any additional information.

Respectfully,
Morgan Holen & Associates, LLC

Morgan E. Holen, Owner
ISA Certified Arborist, PN-6145A
ISA Tree Risk Assessment Qualified
Forest Biologist

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Arborist Report and Tree Preservation Plan

Savanna Heights Subdivision
West Linn, Oregon

October 4, 2015

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Table of Contents

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Savanna Heights Subdivision – West Linn, Oregon
Arborist Report and Tree Preservation Plan
October 4, 2015

MHA14116

Purpose

This Arborist Report and Tree Preservation Plan for the Savanna Heights Subdivision project in West Linn, Oregon, is provided pursuant to City of West Linn Community Development Code Chapter 55, Municipal Code Sections 8.500 and 8.600, 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 International Society of Arboriculture (ISA) Certified Arborist (PN-6145A) and Qualified Tree Risk Assessor Morgan Holen during a site visit conducted on July 29, 2015, a subsequent site meeting with the City Arborist Mike Perkins on September 2, 2015, and site plan coordination with 3J Consulting.

Scope of Work and Limitations

Morgan Holen & Associates, LLC, was contracted by Bland Circle Estates, LLC, 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, six building lots, and a water quality facility. Site plans were provided by 3J Consulting illustrating the location of existing trees and potential construction impacts.

Visual Tree Assessment (VTA) was performed on individual trees located across the site. The enclosed tree inventory data and sheet C1.2 in the Land Use Plan Set demonstrate 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 3J Consulting 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 Morgan Holen & Associates, LLC, have assumed any responsibility for liability associated with the trees on or adjacent to this site.

General Description

The Savanna Heights Subdivision project site is located at 23128 Bland Circle in West Linn, Oregon. The site is sloping to the south and includes one existing single family residential home which is planned to remain on proposed lot 1. The site is heavily treed and includes a mix of species in variable condition. The location of individual trees is shown on site plan drawings and tree numbers correspond with the enclosed tree data.

Tree Inventory

In all, 61 existing trees were inventoried, including 14 different species. Table 1 provides a summary of the number of inventoried trees by species. The enclosed tree data provides a complete description of the individual trees.

Table 1. Number of Trees by Species – Savanna Heights Subdivision.

Common Name	Species Name	Quantity	Percent
apple	*Malus* spp.	1	1.6%
Austrian pine	*Pinus nigra*	3	5%
bigleaf maple	*Acer macrophyllum*	14	23%
Douglas-fir	*Pseudotsuga menziesii*	17	28%
incense cedar	*Calocedrus decurrens*	4	7%
madrone	*Arbutus menziesii*	1	1.6%
palm	*Arecaceae* spp.	1	1.6%
ponderosa pine	*Pinus ponderosa*	1	1.6%
Port-Orford-cedar	*Chamaecyparis lawsoniana*	1	1.6%
scots pine	*Pinus sylvestris*	1	1.6%
Scouler's willow	*Salix scouleriana*	5	8%
spruce	*Picea* spp.	6	9.8%
western redcedar	*Thuja plicata*	5	8%
white pine	*Pinus monticola*	1	1.6%
Total		**61**	**100%**

Douglas-fir (*Pseudotsuga menziesii*) and bigleaf maple (*Acer macrophyllum*) account for more than half of the inventoried trees and they are scattered across the site. The Douglas-firs are the largest and most prominent trees on the site measuring 12- to 44-inches in diameter. Most of the Douglas-firs are in generally good condition and with no major defects. A few have minor defects including twig dieback, reduced vigor, codominant stems, and some history of lateral branch failure. One Douglas-fir (#3697) appeared in severe and progressive decline. The bigleaf maples are relatively smaller—measuring six to 22-inches in diameter—and less prominent trees and most appeared in fair condition with poor to moderate structure.

The remaining 49% of the inventoried trees include a mix of species:

- The apple (*Malus* spp.) tree growing along the north side of Bland Circle has poor structure and is not well-maintained; it likely sprouted from natural regeneration.
- The Austrian pines (*Pinus nigra*), spruces (*Picea* spp.), and one scots pine (*Pinus sylvestris*) generally border the eastern and southern property boundaries and are small trees in fair condition with structural defects.
- One palm tree (*Arecaceae* spp.), three of the four incense cedars (*Calocedrus decurrens*) and three of the five western redcedars (*Thuja plicata*) are relatively young landscape trees planted north of the existing home. The other incense cedar and two western redcedars are located along the north side of Bland Circle—this incense cedar (#4818) is 32-inches in diameter and in generally good condition, while the two western redcedars are much smaller and in fair to poor condition with notable defects.
- The madrone (*Arbutus menziesii*) is dead.
- The Scouler's willows (*Salix scouleriana*) mostly appear in poor condition with dieback and decay.
- The ponderosa pine (*Pinus ponderosa*) is infected with western gall rust which is caused by the fungus *Endocronartium harknessii*.

- The Port-Orford-cedar (*Chamaecyparis lawsoniana*) is a small, young tree growing into the property line fence along the western boundary.
- The white pine (*Pinus monticola*) is a small landscape tree with lower trunk decay.

Significant trees will be determined by the City Arborist. Based on our evaluation of the size, type, location, health, and long term survivability of the individual trees, 19 (31%) trees were identified as potentially being significant.

Tree Preservation Plan

We coordinated with the project team to discuss trees suitable for preservation in terms of potential construction impacts. Table 2 provides a summary of the number of non-significant and potentially significant trees by treatment recommendation.

Table 2. Number of On Site Trees by Treatment Recommendation and Significance.

Treatment	Remove	Retain	Total
Non-Significant Trees	35	7	**42**
Potentially Significant Trees	11	8	**19**
Total	**46**	**15**	**61**

Of the 61 on site trees, 46 are recommended for removal either for construction or because of condition, including 11 potentially significant trees. Ten of these 11 trees are located on proposed lots 4 and 5 and in the vicinity of grading for the water quality facility; adequate protection is not possible for these trees. The eleventh tree is a 44-inch diameter Douglas-fir (#4830) located on lot 1 in a landscape island surrounded by the existing driveway. This tree is in fair condition with some twig dieback and resin flow. It will not be impacted by the proposed construction, but is planned for removal because of declining condition. However, this tree could be retained with monitoring. If this tree is retained, we recommend conducting a soil analysis and performing a root invigoration treatment to reduce soil compaction and add organic matter and nutrients if needed (based on the results of the soil analysis) to improve growing space.

The remaining 15 trees are recommended for retention, including 8 potentially significant trees. Minor pruning to remove dead and defective branches for safety is recommended for trees to be retained and pruning should be performed by a Qualified Tree Service. Trees to be retained should be protected with tree protection fencing established at the dripline at a minimum for non-significant trees and at the dripline plus 10-feet for significant trees.

In some cases, the proposed development will encroach within the tree protection area and special protection measures will be needed.

- At proposed lot 2, future home construction should require a building layout that is compatible with tree protection. The future home should allow for protection of trees #3988, #3989 and #4746 located in the rear of the lot at the dripline plus 10-feet. However, it will not be possible to provide protection for tree #3991 at the dripline plus 10-feet and a modified foundation design will be needed. Tree #3991 is located on the east side of the lot within the allowable building footprint. The future home should be designed to sit as far west from tree #3991 as

possible and a pier and beam foundation is recommended to avoid foundation excavation in the tree protection zone.

- The private access drive ends directly south of trees #3991 and #3992. The street should stop as far south of these trees as possible, yet it will not be possible to avoid encroachment within the dripline plus 10-feet. Therefore, we recommend using a modified profile for street construction within the tree protection zone. As provided in the figure below, this profile allows removal of only the uppermost organic matter from the ground surface, with no excavation. A layer of permeable geotextile fabric is placed on the ground surface beneath the dripline area and topped with clean crushed rock to the desired depth. The rock is then topped with surfacing, such as asphalt or concrete.

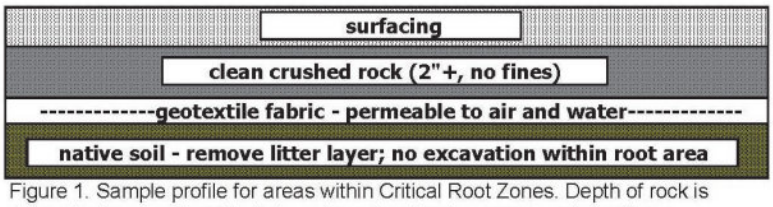


Figure 1. Sample profile for areas within Critical Root Zones. Depth of rock is dependent on grading. Technique based on best management practices.

- Future home construction at proposed lot 4 should also require a building layout that is compatible with tree protection. Tree #4772 is located within the allowable building footprint on the west side of the lot and near the center. It will not be possible to provide protection for tree #4772 at the dripline plus 10-feet and a modified foundation design will likely be needed to avoid excavation within the tree protection zone.

Work beneath the dripline of protected trees should be supervised by the project arborist in coordination with the City's arborist. Additional recommendations for special protection of these trees may be provided once the site is staked and prepared for construction. Standard tree protection specifications are provided in the next section and should be translated onto construction drawings.

Tree Protection Standards

Trees to be protected will need special consideration to assure their protection during construction. Any work that is necessary within the standard tree protection zone should be performed under the guidance of a qualified arborist. It is the Client's responsibility to implement this plan and to monitor the construction process. Tree protection measures include:

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. Alternatively, the TPZ shall be established at the dripline of protected trees. Where infrastructure (driveways, buildings, and utilities) must be installed closer to the tree(s), the TPZ may be established within the dripline area 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 advanced by the project arborist. Trees shall be carefully removed so as to avoid either above or below ground damage to those trees to be preserved. Roots of stumps that are adjacent to retained trees shall be carefully severed prior to stump extraction.
5. **Preconstruction Conference.** The project arborist shall be on site to discuss methods of tree removal and tree protection prior to any construction.
6. **Verification of Tree Protection Measures.** Prior to commencement of construction, the project arborist shall verify in writing to the City Arborist that tree protection fencing has been satisfactorily installed.

<u>During Construction</u>

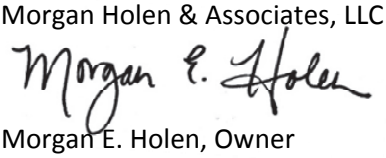
7. **Tree Protection Zone Maintenance.** The protection fencing shall not be moved, removed, or entered by equipment except under direction of the project arborist, in coordination with the City Arborist.
8. **Storage of Material or Equipment.** The contractor shall not store materials or equipment within 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.

Post Construction

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.

Please contact us if you have questions or need any additional information. Thank you for choosing Morgan Holen & Associates, LLC, to provide consulting arborist services for the Savanna Heights Subdivision project.

Thank you,
Morgan Holen & Associates, LLC



Morgan E. Holen, Owner
ISA Certified Arborist, PN-6145A
ISA Tree Risk Assessment Qualified
Forest Biologist

Enclosures: MHA14116 Savanna Heights – Tree Data 7-29-15

No.	Common Name	Species Name	DBH*	C-Rad^	Cond#	Comments	Sig?	Treatment
3682	spruce	*Picea* spp.	10	10	F	old broken top, moderate structure	No	Remove
3683	spruce	*Picea* spp.	10	10	F	off-site, forked leaders	No	Remove
3684	scots pine	*Pinus sylvestris*	10	10	F	strong but self-correcting lean	No	Remove
3685	spruce	*Picea* spp.	10	8	F	codominant stems, forked leaders, trunk damage	No	Remove
3686	spruce	*Picea* spp.	8	8	F	codominant stems, trunk damage	No	Remove
3687	spruce	*Picea* spp.	8	8	F	moderate structure, twig dieback	No	Remove
3688	spruce	*Picea* spp.	8	10	F	moderate structure, some twig dieback	No	Remove
3689	bigleaf maple	*Acer macrophyllum*	8	14	F	poor structure, chlorotic foliage	No	Remove
3692	Austrian pine	*Pinus nigra*	10	10	F	poor structure, old broken top, off-center leader	No	Remove
3693	Austrian pine	*Pinus nigra*	10	10	F	trunk damage	No	Remove
3694	Douglas-fir	*Pseudotsuga menziesii*	32	22	F	codominant leaders with V-shaped crotch, thin crown, few dead branches	No	Remove
3695	Douglas-fir	*Pseudotsuga menziesii*	40	26	G	no major defects	Yes	Remove
3696	Douglas-fir	*Pseudotsuga menziesii*	21	18	G	below dominant canopy	Yes	Remove
3697	Douglas-fir	*Pseudotsuga menziesii*	39	22	P	twig and branch dieback, poor vigor	No	Remove
3698	Douglas-fir	*Pseudotsuga menziesii*	21	16	G	below dominant canopy	Yes	Remove
3699	Douglas-fir	*Pseudotsuga menziesii*	34	18	G	some resin flow at lower trunk	Yes	Remove
3700	Douglas-fir	*Pseudotsuga menziesii*	38	30	G	no major defects	Yes	Remove
3701	white pine	*Pinus monticola*	8	8	F	lower trunk decay	No	Remove
3702	madrone	*Arbutus menziesii*	16	0	D	diseased, decay, few live epicormics, not viable	No	Remove
3843	incense cedar	*Calocedrus decurrens*	8	6	G	crown asymmetry, flagging in lower branches	No	Retain
3844	incense cedar	*Calocedrus decurrens*	7	5	P	dieback	No	Retain
3845	incense cedar	*Calocedrus decurrens*	6	6	G	minor crown asymmetry	No	Retain
3934	western redcedar	*Thuja plicata*	6	6	G	multiple leaders	No	Retain
3935	western redcedar	*Thuja plicata*	6	6	G	multiple leaders	No	Retain

No.	Common Name	Species Name	DBH*	C-Rad^	Cond#	Comments	Sig?	Treatment
3936	western redcedar	*Thuja plicata*	6	6	G	multiple leaders	No	Retain
3937	Douglas-fir	*Pseudotsuga menziesii*	30	16	F	moderate vigor, history of lateral branch failure, prune to reduce/remove high risk branches	Yes	Retain
3938	Douglas-fir	*Pseudotsuga menziesii*	24	16	F	old wound NE trunk, crook in main stem, below dominant canopy	Yes	Retain
3939	palm	*Arecaceae* spp.	6	5	G	small ornamental	No	Retain
3988	Douglas-fir	*Pseudotsuga menziesii*	26	14	G	codominant crown class with 3989	Yes	Retain
3989	Douglas-fir	*Pseudotsuga menziesii*	42	14	G	codominant crown class with 3988	Yes	Retain
3990	Douglas-fir	*Pseudotsuga menziesii*	12	14	G	basal wound, old broken top	No	Remove
3991	Douglas-fir	*Pseudotsuga menziesii*	38	28	G	some crown asymmetry	Yes	Retain
3992	Douglas-fir	*Pseudotsuga menziesii*	18	14	G	codominant with 3991	Yes	Retain
4743	Port-Orford-cedar	*Chamaecyparis lawsoniana*	9	8	G	young tree already growing into fence	No	Remove
4744	bigleaf maple	*Acer macrophyllum*	8	12	F	poor structure, broken top	No	Remove
4745	bigleaf maple	*Acer macrophyllum*	8	12	F	poor structure, broken top	No	Remove
4746	Douglas-fir	*Pseudotsuga menziesii*	44	24	G	no major defects, safety pruning recommended	Yes	Retain
4766	bigleaf maple	*Acer macrophyllum*	6	12	F	codominant leaders, one-sided crown	No	Remove
4767	Scouler's willow	*Salix scouleriana*	10	10	F	basal decay, poor structure, multiple leaders with included bark	No	Remove
4768	bigleaf maple	*Acer macrophyllum*	10	8	F	trunk decay, poor structure, multiple upright leaders	No	Remove
4769	Scouler's willow	*Salix scouleriana*	10	16	F	moderate structure, one-sided crown with lean away from 4768	No	Remove
4770	bigleaf maple	*Acer macrophyllum*	10	12	F	codominant leaders	No	Remove
4771	bigleaf maple	*Acer macrophyllum*	14	20	F	topped at over head lines, poor structure, decay	No	Remove
4772	bigleaf maple	*Acer macrophyllum*	18	16	G	codominant leaders, no major defects	Yes	Retain
4773	bigleaf maple	*Acer macrophyllum*	3x10	16	F	very poor structure	No	Remove

No.	Common Name	Species Name	DBH*	C-Rad^	Cond#	Comments	Sig?	Treatment
4774	bigleaf maple	*Acer macrophyllum*	12	6	P	advanced basal and trunk decay, dieback	No	Remove
4775	Douglas-fir	*Pseudotsuga menziesii*	38	30	G	no major defects, remove ivy	Yes	Remove
4776	bigleaf maple	*Acer macrophyllum*	2x16	22	G	codominant stems, okay in group with 4777 & 4817	Yes	Remove
4777	bigleaf maple	*Acer macrophyllum*	14	20	G	one-sided crown, okay in group with 4776 & 4817	Yes	Remove
4778	Scouler's willow	*Salix scouleriana*	14	10	P	advanced decay, dieback	No	Remove
4779	Scouler's willow	*Salix scouleriana*	12	8	P	advanced decay, dieback	No	Remove
4780	Scouler's willow	*Salix scouleriana*	9	0	D	dead	No	Remove
4816	ponderosa pine	*Pinus ponderosa*	18	18	F	spur leader, western gall rust infection	No	Remove
4817	bigleaf maple	*Acer macrophyllum*	15	20	G	moderate structure, okay in group with 4776 & 4777	Yes	Remove
4818	incense cedar	*Calocedrus decurrens*	32	12	G	no major defects, prune lower branches	Yes	Remove
4825	western redcedar	*Thuja plicata*	10	10	F	lower trunk wound, forked leaders	No	Remove
4826	Austrian pine	*Pinus nigra*	10	12	F	trunk damage	No	Remove
4827	apple	*Malus* spp.	10	12	F	poor structure, not maintained	No	Remove
4828	bigleaf maple	*Acer macrophyllum*	8	10	F	codominant leaders, upright crown	No	Remove
4829	western redcedar	*Thuja plicata*	12	12	P	trunk decay, poor structure	No	Remove
4830	Douglas-fir	*Pseudotsuga menziesii*	44	20	F	minor twig dieback, some resin flow	Yes	Remove

***DBH** is tree diameter measured at breast height, 4.5-feet above the ground level (inches); codominant trunks splitting below DBH are measured individually and separated by a comma, except for codominant stems of equal size are noted as quantity x size.

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

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

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

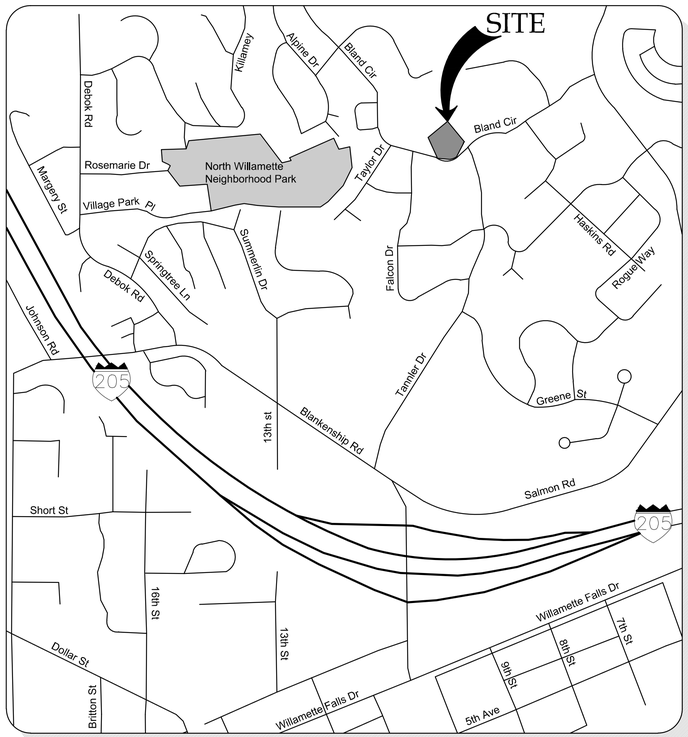
LAND USE DOCUMENTS

FOR

SAVANNA HEIGHTS SUBDIVISION

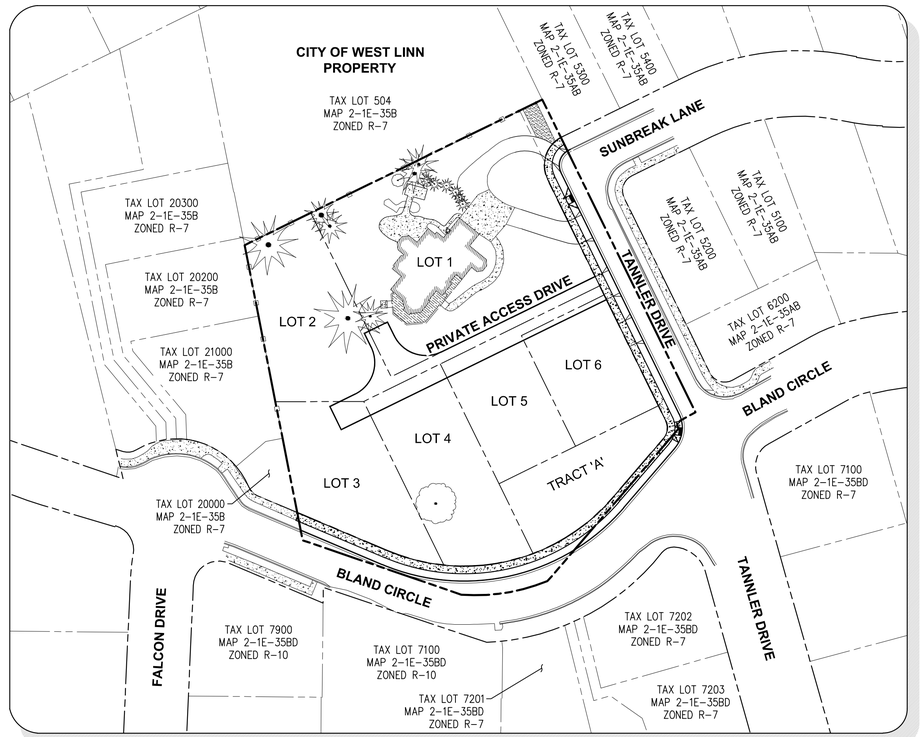
PREPARED FOR

BLAND CIRCLE ESTATES, LLC



VICINITY MAP

NOT TO SCALE



SITE MAP

Scale: 1 inch = 60 feet

60 30 0 30 60

TAX LOT 500 LOCATED IN THE
N.E. 1/4 SECTION 35, T.2S., R.1E., W.M.
WEST LINN, CLACKAMAS COUNTY, OREGON

PROJECT TEAM

OWNER/APPLICANT
23128 SOUTH BLAND CIRCLE, LLC
1235 NORTH DUTTON AVENUE, SUITE E
SANTA ROSA, CA 95401
CONTACT: RYAN ZYGAR
PHONE: (360) 798-4838
EMAIL: ryan@zygar.com

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

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

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

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

SITE INFORMATION

SITE ADDRESS
23128 BLAND CIRCLE
WEST LINN, OR 97068

TAX LOT(S)
21E35B 00500

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

JURISDICTION
CITY OF WEST LINN

ZONING
R-7

UTILITIES & SERVICES

WATER, STORM, SEWER
CITY OF WEST LINN

POWER
PGE

GAS
NORTHWEST NATURAL

CABLE
COMCAST

FIRE
TUALATIN VALLEY FIRE & RESCUE

POLICE, SCHOOLS, ROADS, PARKS
CITY OF WEST LINN

SHEET INDEX

LAND USE APPROVAL		09/14/2015
#	REVISION SUMMARY	BY DATE

COVER SHEET
SAVANNA HEIGHTS SUBDIVISION
BLAND CIRCLE ESTATES, LLC
WEST LINN, OR

REGISTERED PROFESSIONAL ENGINEER 80055PE OREGON JULY 21, 2006 CASEY L. FERGESON
PRELIMINARY
EXPIRES: 12/31/15

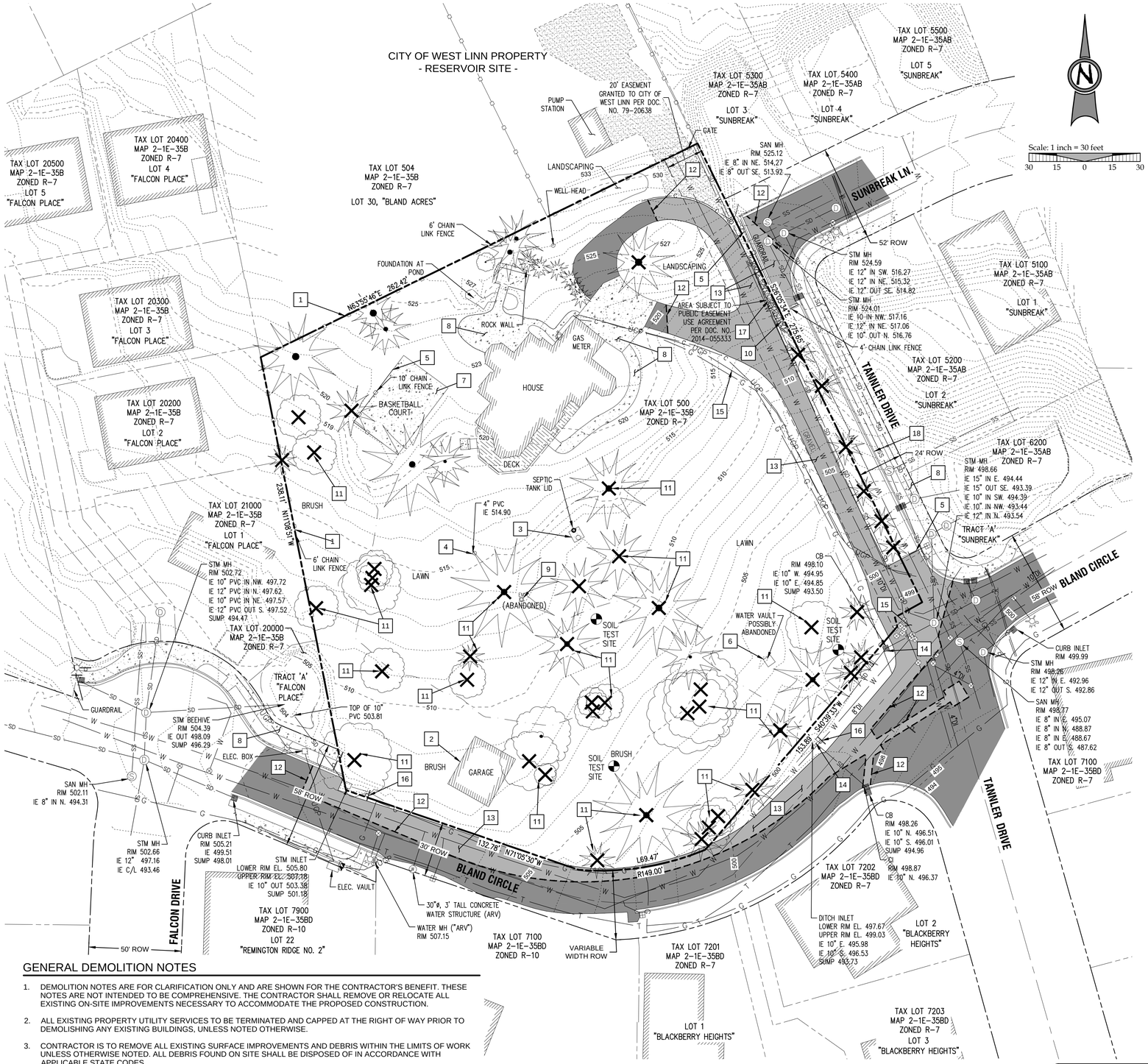
3J CONSULTING, INC
CIVIL ENGINEERING
WATER RESOURCES
LAND USE PLANNING
5075 SW GRIFFITH DRIVE, SUITE 150, BEAVERTON, OR 97005
PHONE & FAX: (503) 946-9365

3J JOB ID #	15246
LAND USE #	_____
TAX LOT #	21E35B 00500
DESIGNED BY	CLF, JKG
CHECKED BY	AJM

SHEET TITLE
COVER SHEET

SHEET NUMBER
C0.0

P:\15246-COPPEDGE PROPERTY\CAD\DD\15246-C0.0-COVER SHEET.DWG



LEGEND

- BOUNDARY LINE
- RIGHT-OF-WAY
- CENTER LINE
- LOT LINE
- BUILDING
- 199 — 1 FT CONTOUR
- 200 — 5 FT CONTOUR
- FENCE LINE
- W — WATER LINE
- G — EXISTING GAS LINE
- C — UNDERGROUND CABLE LINE
- UGP — UNDERGROUND POWER LINE
- SD — (D) — SD — EXISTING STORM LINE AND MANHOLE
- SS — (S) — SS — EXISTING SANITARY SEWER LINE AND MANHOLE
- SAW CUT LINE
- EXISTING ASPHALT TO REMAIN
- EXISTING ASPHALT TO BE REMOVED
- EXISTING CONCRETE
- EXISTING ROCKERY WALL
- EXISTING TREES
- EXISTING SIGN
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- TREE TO BE REMOVED
- EXISTING WATER METER
- EXISTING STORM DRAIN CATCH BASIN
- EXISTING LIGHT POLE
- EXISTING TELEPHONE PEDESTAL

NOTES

1. UTILITY INFORMATION SHOWN ON THIS MAP IS BASED UPON OBSERVED FEATURES, RECORD DATA AND TONE MARKS PROVIDED BY PUBLIC UTILITY LOCATION SERVICES. NO WARRANTIES ARE MADE REGARDING THE ACCURACY OR COMPLETENESS OF THE UTILITY INFORMATION SHOWN. ADDITIONAL UTILITIES MAY EXIST. INTERESTED PARTIES ARE HEREBY ADVISED THAT UTILITY LOCATIONS SHOULD BE VERIFIED PRIOR TO DESIGN OR CONSTRUCTION OF ANY CRITICAL ITEMS.
2. VERTICAL DATUM: NAVD '88 UTILIZING GPS POSITIONING TIED TO THE ORGN WITH REAL TIME CORRECTORS REFERENCED TO NAD '83 (2011).
3. CONTOUR INTERVAL IS ONE FOOT.
4. TOPOGRAPHIC FEATURES SHOWN ON THIS MAP WERE LOCATED USING STANDARD PRECISION TOPOGRAPHIC MAPPING PROCEDURES. THIRD PARTY USERS OF DATA FROM THIS MAP PROVIDED VIA AUTOCAD DRAWING FILES OR DATA EXCHANGE FILES SHOULD NOT RELY ON ANY AUTOCAD GENERATED INFORMATION WHICH IS BEYOND THE LIMITS OF PRECISION OF THIS MAP. THIRD PARTIES USING DATA FROM THIS MAP IN AN AUTOCAD FORMAT SHOULD VERIFY ANY ELEMENTS REQUIRING PRECISE LOCATIONS PRIOR TO COMMENCEMENT OF ANY CRITICAL DESIGN OR CONSTRUCTION. CONTACT COMPASS LAND SURVEYORS FOR FURTHER INFORMATION. FURTHERMORE, COMPASS LAND SURVEYORS WILL NOT BE RESPONSIBLE NOR HELD LIABLE FOR ANY DESIGN OR CONSTRUCTION RELATED PROBLEMS THAT ARISE OUT OF THIRD PARTY USAGE OF THIS MAP (IN AUTOCAD OR OTHER FORMAT) IN ANY MANNER INCONSISTENT WITH THIS STATEMENT.
5. UNDERGROUND PIPE SIZES AND MATERIAL TYPES ARE BASED UPON RECORD DRAWINGS, INFORMATION PROVIDED BY UTILITY LOCATORS AND FIELD OBSERVATIONS AT MANHOLES AND CATCH BASIN RIMS AND SHOULD BE VERIFIED.

KEY NOTES

1	PROTECT EXISTING FENCING TO REMAIN.
2	EXISTING STRUCTURE TO BE DEMOLISHED. DEBRIS AND REFUSE TO BE DISPOSED OFF-SITE AT AN APPROVED LOCATION.
3	REMOVE EXISTING SEPTIC TANK AND AND DECOMMISSION PER JURISDICTIONAL STANDARDS.
4	REMOVE EXISTING WELL STRUCTURE AND DECOMMISSION PER JURISDICTIONAL STANDARDS.
5	REMOVE EXISTING FENCING AND DISPOSE OF OFF-SITE.
6	REMOVE EXISTING WATER VAULT AND AND DECOMMISSION PER JURISDICTIONAL STANDARDS.
7	REMOVE EXISTING CONCRETE AND BASE ROCK. DISPOSE OF RUBBLE AND REFUSE OFF-SITE.
8	PROTECT EXISTING CONCRETE/SIDEWALK TO REMAIN.
9	EXISTING ELECTRICAL METER TO BE DISCONNECTED AND RETURNED TO POWER COMPANY. CONTRACTOR TO COORDINATE WITH UTILITY PURVEYOR.
10	REMOVE EXISTING ROCK WALL AND DISPOSE OF OFF-SITE.
11	REMOVE EXISTING TREE/LANDSCAPING NECESSARY TO INSTALL IMPROVEMENTS, SEE SHEET C2.1.
12	SAWCUT EXISTING ASPHALT PAVEMENT AS SHOWN.
13	REMOVE EXISTING ASPHALT SURFACING AND BASE ROCK. DISPOSE OF RUBBLE AND REFUSE OFF SITE.
14	REMOVE EXISTING DITCH INLET AND PIPING AND DISPOSE OF OFF-SITE.
15	PROTECT EXISTING UTILITIES TO REMAIN.
16	REMOVE AND RELOCATE EXISTING "13 TON TRUCK WEIGHT LIMIT" SIGN.
17	REMOVE EXISTING RETAINING WALL AND ASPHALT BERM. DISPOSE OF RUBBLE AND REFUSE OFFSITE.
18	PROTECT EXISTING CURB AND GUTTER TO REMAIN.

GENERAL DEMOLITION NOTES

1. DEMOLITION NOTES ARE FOR CLARIFICATION ONLY AND ARE SHOWN FOR THE CONTRACTOR'S BENEFIT. THESE NOTES ARE NOT INTENDED TO BE COMPREHENSIVE. THE CONTRACTOR SHALL REMOVE OR RELOCATE ALL EXISTING ON-SITE IMPROVEMENTS NECESSARY TO ACCOMMODATE THE PROPOSED CONSTRUCTION.
2. ALL EXISTING PROPERTY UTILITY SERVICES TO BE TERMINATED AND CAPPED AT THE RIGHT OF WAY PRIOR TO DEMOLISHING ANY EXISTING BUILDINGS, UNLESS NOTED OTHERWISE.
3. CONTRACTOR IS TO REMOVE ALL EXISTING SURFACE IMPROVEMENTS AND DEBRIS WITHIN THE LIMITS OF WORK UNLESS OTHERWISE NOTED. ALL DEBRIS FOUND ON SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE STATE CODES.
4. CONTRACTOR TO PROTECT EXISTING FEATURES WHICH ARE TO REMAIN.
5. CONTRACTOR SHALL ADJUST ALL EXISTING MANHOLE RIMS, DRAINAGE STRUCTURES, VALVE BOXES, VAULT LIDS AND UTILITY ACCESS STRUCTURES TO FINISH GRADE WITHIN AREAS AFFECTED BY PROPOSED CONSTRUCTION.
6. CONSTRUCTION AND DEMOLITION ACTIVITIES SHALL BE PHASED IN SUCH A MANNER AS TO ENSURE THAT PUBLIC ACCESS ROADS ARE NOT BLOCKED AND REMAIN OPERATIONAL.
7. SEE TREE PROTECTION AND REMOVAL PLAN (SHEET C1.2) FOR ALL TREE REMOVAL INFORMATION.

TAX LOT 500, MAP 2-1E-35B
NE 1/4 SECTION 35, T.2S., R.1E., W.M.
CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

FLOOD HAZARD INFORMATION

ZONE X (UN-SHADED)	THE SITE IS LOCATED WITHIN ZONE X (UN-SHADED) PER FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY-PANEL NUMBER 41005C0257D. FEMA'S DEFINITION OF ZONE X (UN-SHADED) IS AN AREA OF MINIMAL FLOOD HAZARD, USUALLY DEPICTED ON FIRMS AS ABOVE THE 500-YEAR FLOOD LEVEL. ZONE X IS THE AREA DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD AND PROTECTED BY LEVEE FROM 100-YEAR FLOOD. IN COMMUNITIES THAT PARTICIPATE IN THE NFIP, FLOOD INSURANCE IS AVAILABLE TO ALL PROPERTY OWNERS AND RENTERS IN THESE ZONES.

EXISTING CONDITIONS PLAN

THIS PLAN IS INTENDED FOR USE AS AN EXISTING CONDITIONS PLAN SHOWING THE CONDITIONS OF THE SITE PRIOR TO CONSTRUCTION. INFORMATION SHOWN ON THIS PLAN WAS DEVELOPED FROM THE TOPOGRAPHIC SURVEY, AERIAL PHOTOS, AND SITE OBSERVATIONS BY THE ENGINEER . NOT ALL SURFACE FEATURES OR UTILITIES MAY BE SHOWN. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION TO DETERMINE WORK SPECIFIC DETAILS. TOPOGRAPHIC INFORMATION PROVIDED BY COMPASS LAND SURVEYORS DATED AUGUST, 2015 .

Know what's **below.** **Call** before you dig.

DATE	BY	REVISION SUMMARY
10/27/2015		LAND USE APPROVAL

EXISTING CONDITIONS AND DEMOLITION PLAN

SAVANNA HEIGHTS SUBDIVISION

BLAND CIRCLE ESTATES, LLC
WEST LINN, OR

REGISTERED PROFESSIONAL ENGINEER
80056PE
OREGON
JULY 21, 2014
JEFFREY L. FERGESON
EXPIRES: 12/31/15

PRELIMINARY

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 #	15246
LAND USE #	
TAX LOT #	21E35B 00500
DESIGNED BY	CLF, JKG
CHECKED BY	AJM

SHEET TITLE
EX COND. & DEMO

SHEET NUMBER
C1.0

TAX LOT 500, MAP 2-1E-35B
NE 1/4 SECTION 35, T.2S., R.1E., W.M.
CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

Scale: 1 inch = 30 feet
30 15 0 15 30

LEGEND

- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- #3935 — TREE NUMBER
- SIGNIFICANT TREE CANOPY TO REMAIN (DRIPLINE + 10 FT)
- SIGNIFICANT TREE CANOPY TO BE REMOVED (DRIPLINE + 10 FT)
- TREE TO BE REMOVED
- TREE PROTECTION FENCING
- BOUNDARY LINE
- EXISTING BUILDING
- BOUNDARY LINE

GENERAL TREE INVENTORY STATISTICS

TOTAL PROPERTY AREA:	91,825 Sq. Ft. = 2.11 Ac.
TOTAL TREE INVENTORY (PROJECT BOUNDARY):	61 ea
TOTAL TREES RETAINED:	15 ea
TOTAL TREES REMOVED:	46 ea
TOTAL TREE CALIPER INCHES:	1,043 inches
TOTAL CALIPER INCHES RETAINED:	285 inches
TOTAL CALIPER INCHES REMOVED:	758 Inches

SIGNIFICANT TREE STATISTICS

SIGNIFICANT TREE INVENTORY:	19 ea
SIGNIFICANT TREES RETAINED:	8 ea
SIGNIFICANT TREES REMOVED:	11 ea
SIGNIFICANT TREE CALIPER INCHES:	569 inches
SIGNIFICANT CALIPER INCHES RETAINED:	240 inches
SIGNIFICANT CALIPER INCHES REMOVED:	329 inches
EXISTING SIGNIFICANT TREE CANOPY COVERAGE:	35,230.31 Sq. Ft.
SIGNIFICANT TREE CANOPY RETAINED:	11,872.63 Sq. Ft.
SIGNIFICANT TREE CANOPY REMOVED:	23,357.68 Sq. Ft.
SIGNIFICANT TREE CANOPY REMOVED DUE TO R.O.W. IMPROVEMENTS:	5,682.27 Sq. Ft.
TREE PRESERVATION AREA REQUIRED (*20% OF EXISTING CANOPY*):	7,046.06 Sq. Ft.
TREE PRESERVATION AREA PROVIDED (*33.7% OF EXISTING CANOPY*):	11,872.63 Sq. Ft.

Know what's below. Call before you dig.

LAND USE APPROVAL	09/14/2015
REVISION SUMMARY	BY DATE
#	

TREE PROTECTION AND REMOVAL PLAN
SAVANNA HEIGHTS SUBDIVISION
BLAND CIRCLE ESTATES, LLC
WEST LINN, OR

REGISTERED PROFESSIONAL ENGINEER
80055PE
OREGON
JULY 21, 2006
CLAY L. FERGESON
PRELIMINARY
EXPIRES: 12/31/15

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 #	15246
LAND USE #	
TAX LOT #	21E35B 00500
DESIGNED BY	CLF, JKG
CHECKED BY	AJM

SHEET TITLE
TREE PLAN

SHEET NUMBER
C1.2

TAX LOT 500, MAP 2-1E-35B
NE 1/4 SECTION 35, T.2S., R.1E., W.M.
CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

No.	Common Name	Species Name	DBH*	C-Rad^	Cond#	Comments	Sig?	Treatment
3682	spruce	Picea spp.	10	**10**	F	old broken top, moderate structure	No	Remove
3683	spruce	Picea spp.	10	**10**	F	off-site, forked leaders	No	Remove
3684	scots pine	*Pinus sylvestris*	10	**10**	F	strong but self-correcting lean	No	Remove
3685	spruce	Picea spp.	10	**8**	F	codominant stems, forked leaders, trunk damage	No	Remove
3686	spruce	Picea spp.	8	**8**	F	codominant stems, trunk damage	No	Remove
3687	spruce	Picea spp.	8	**8**	F	moderate structure, twig dieback	No	Remove
3688	spruce	Picea spp.	8	**10**	F	moderate structure, some twig dieback	No	Remove
3689	bigleaf maple	*Acer macrophyllum*	8	**14**	F	poor structure, chlorotic foliage	No	Remove
3692	Austrian pine	*Pinus nigra*	10	**10**	F	poor structure, old broken top, off-center leader	No	Remove
3693	Austrian pine	*Pinus nigra*	10	**10**	F	trunk damage	No	Remove
3694	Douglas-fir	*Pseudotsuga menziesii*	32	**22**	F	codominant leaders with V-shaped crotch, thin crown, few dead branches	No	Remove
3695	Douglas-fir	*Pseudotsuga menziesii*	40	**26**	G	no major defects	Yes	Remove
3696	Douglas-fir	*Pseudotsuga menziesii*	21	**18**	G	below dominant canopy	Yes	Remove
3697	Douglas-fir	*Pseudotsuga menziesii*	39	**22**	P	twig and branch dieback, poor vigor	No	Remove
3698	Douglas-fir	*Pseudotsuga menziesii*	21	**16**	G	below dominant canopy	Yes	Remove
3699	Douglas-fir	*Pseudotsuga menziesii*	34	**18**	G	some resin flow at lower trunk	Yes	Remove
3700	Douglas-fir	*Pseudotsuga menziesii*	38	**30**	G	no major defects	Yes	Remove
3701	white pine	*Pinus monticola*	8	**8**	F	lower trunk decay	No	Remove
3702	madrone	*Arbutus menziesii*	16	**0**	D	diseased, decay, few live epicormics, not viable	No	Remove
3843	incense cedar	*Calocedrus decurrens*	8	**6**	G	crown asymmetry, flagging in lower branches	No	Retain
3844	incense cedar	*Calocedrus decurrens*	7	**5**	P	dieback	No	Retain
3845	incense cedar	*Calocedrus decurrens*	6	**6**	G	minor crown asymmetry	No	Retain
3934	western redcedar	*Thuja plicata*	6	**6**	G	multiple leaders	No	Retain
3935	western redcedar	*Thuja plicata*	6	**6**	G	multiple leaders	No	Retain
3936	western redcedar	*Thuja plicata*	6	**6**	G	multiple leaders	No	Retain
3937	Douglas-fir	*Pseudotsuga menziesii*	30	**16**	F	moderate vigor, history of lateral branch failure, prune to reduce/remove high risk branches	Yes	Retain
3938	Douglas-fir	*Pseudotsuga menziesii*	24	**16**	F	old wound NE trunk, crook in main stem, below dominant canopy	Yes	Retain
3939	palm	Arecaceae spp.	6	**5**	G	small ornamental	No	Retain
3988	Douglas-fir	*Pseudotsuga menziesii*	26	**14**	G	codominant crown class with 3989	Yes	Retain
3989	Douglas-fir	*Pseudotsuga menziesii*	42	**14**	G	codominant crown class with 3988	Yes	Retain
3990	Douglas-fir	*Pseudotsuga menziesii*	12	**14**	G	basal wound, old broken top	No	Remove
3991	Douglas-fir	*Pseudotsuga menziesii*	38	**28**	G	some crown asymmetry	Yes	Retain
3992	Douglas-fir	*Pseudotsuga menziesii*	18	**14**	G	codominant with 3991	Yes	Retain
4743	Port-Orford-cedar	*Chamaecyparis lawsoniana*	9	**8**	G	young tree already growing into fence	No	Remove
4744	bigleaf maple	*Acer macrophyllum*	8	**12**	F	poor structure, broken top	No	Remove
4745	bigleaf maple	*Acer macrophyllum*	8	**12**	F	poor structure, broken top	No	Remove
4746	Douglas-fir	*Pseudotsuga menziesii*	44	**24**	G	no major defects, safety pruning recommended	Yes	Retain
4766	bigleaf maple	*Acer macrophyllum*	6	**12**	F	codominant leaders, one-sided crown	No	Remove
4767	Scouler's willow	*Salix scouleriana*	10	**10**	F	basal decay, poor structure, multiple leaders with included bark	No	Remove
4768	bigleaf maple	*Acer macrophyllum*	10	**8**	F	trunk decay, poor structure, multiple upright leaders	No	Remove
4769	Scouler's willow	*Salix scouleriana*	10	**16**	F	moderate structure, one-sided crown with lean away from 4768	No	Remove
4770	bigleaf maple	*Acer macrophyllum*	10	**12**	F	codominant leaders	No	Remove
4771	bigleaf maple	*Acer macrophyllum*	14	**20**	F	topped at over head lines, poor structure, decay	No	Remove
4772	bigleaf maple	*Acer macrophyllum*	18	**16**	G	codominant leaders, no major defects	Yes	Retain
4773	bigleaf maple	*Acer macrophyllum*	3x10	**16**	F	very poor structure	No	Remove
4774	bigleaf maple	*Acer macrophyllum*	12	**6**	P	advanced basal and trunk decay, dieback	No	Remove
4775	Douglas-fir	*Pseudotsuga menziesii*	38	**30**	G	no major defects, remove ivy	Yes	Remove
4776	bigleaf maple	*Acer macrophyllum*	2x16	**22**	G	codominant stems, okay in group with 4777 & 4817	Yes	Remove
4777	bigleaf maple	*Acer macrophyllum*	14	**20**	G	one-sided crown, okay in group with 4776 & 4817	Yes	Remove
4778	Scouler's willow	*Salix scouleriana*	14	**10**	P	advanced decay, dieback	No	Remove
4779	Scouler's willow	*Salix scouleriana*	12	**8**	P	advanced decay, dieback	No	Remove
4780	Scouler's willow	*Salix scouleriana*	9	**0**	D	dead	No	Remove
4816	ponderosa pine	*Pinus ponderosa*	18	**18**	F	spur leader, western gall rust infection	No	Remove
4817	bigleaf maple	*Acer macrophyllum*	15	**20**	G	moderate structure, okay in group with 4776 & 4777	Yes	Remove
4818	incense cedar	*Calocedrus decurrens*	32	**12**	G	no major defects, prune lower branches	Yes	Remove
4825	western redcedar	*Thuja plicata*	10	**10**	F	lower trunk wound, forked leaders	No	Remove
4826	Austrian pine	*Pinus nigra*	10	**12**	F	trunk damage	No	Remove
4827	apple	Malus spp.	10	**12**	F	poor structure, not maintained	No	Remove
4828	bigleaf maple	*Acer macrophyllum*	8	**10**	F	codominant leaders, upright crown	No	Remove
4829	western redcedar	*Thuja plicata*	12	**12**	P	trunk decay, poor structure	No	Remove
4830	Douglas-fir	*Pseudotsuga menziesii*	44	**20**	F	minor twig dieback, some resin flow	Yes	Remove

LAND USE APPROVAL 09/14/2015

#	REVISION SUMMARY	BY	DATE

TREE PROTECTION AND REMOVAL DETAILS

SAVANNA HEIGHTS SUBDIVISION

BLAND CIRCLE ESTATES, LLC
WEST LINN, OR

REGISTERED PROFESSIONAL ENGINEER
80055PE
OREGON
JULY 21, 2006
CLIFFORD L. FERGESON
PRELIMINARY
EXPIRES: 12/31/15

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

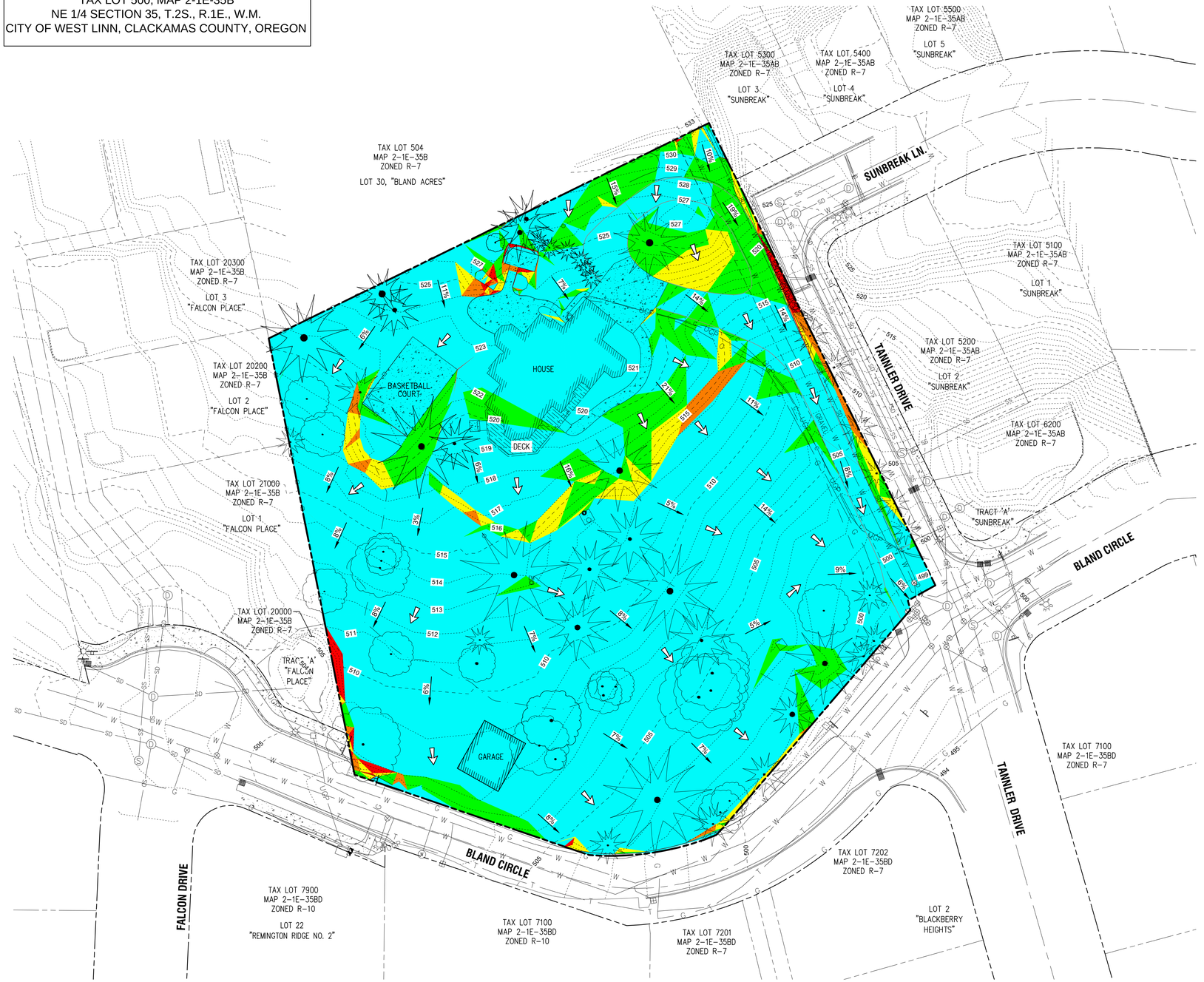
3J JOB ID #	15246
LAND USE #	_____
TAX LOT #	21E35B 00500
DESIGNED BY	CLF, JKG
CHECKED BY	AJM

SHEET TITLE
TREE PLAN DETAILS

SHEET NUMBER
C1.3

P:\15246-COPPEDGE PROPERTY\CAD\DD\15246-C1.3-TREE PROTECTION AND REMOVAL DETAILS.DWG

TAX LOT 500, MAP 2-1E-35B
NE 1/4 SECTION 35, T.2S., R.1E., W.M.
CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON



Scale: 1 inch = 30 feet
30 15 0 15 30

LEGEND

- BOUNDARY LINE
- 1 FOOT CONTOUR
- 200 — 5 FOOT CONTOUR
- EXISTING RIGHT-OF-WAY
- EXISTING LOT LINE
- EXISTING TREES
- RUNOFF FLOW DIRECTION

SITE SLOPE ANALYSIS TABLE

Minimum Slope	Maximum Slope	Area (sf)	%	Color
0%	15%	76,942	83.85	
16%	25%	10,189	11.10	
26%	35%	3,163	3.44	
36%	50%	967	1.05	
>50%	--	518	0.56	

LAND USE APPROVAL 09/14/2015

#	REVISION SUMMARY	BY	DATE

SLOPE ANALYSIS PLAN
SAVANNA HEIGHTS SUBDIVISION
BLAND CIRCLE ESTATES, LLC
WEST LINN, OR

REGISTERED PROFESSIONAL ENGINEER
80051
OREGON
JULY 21, 2015
CLIFFORD L. FERGESON
PRELIMINARY
EXPIRES: 12/31/15

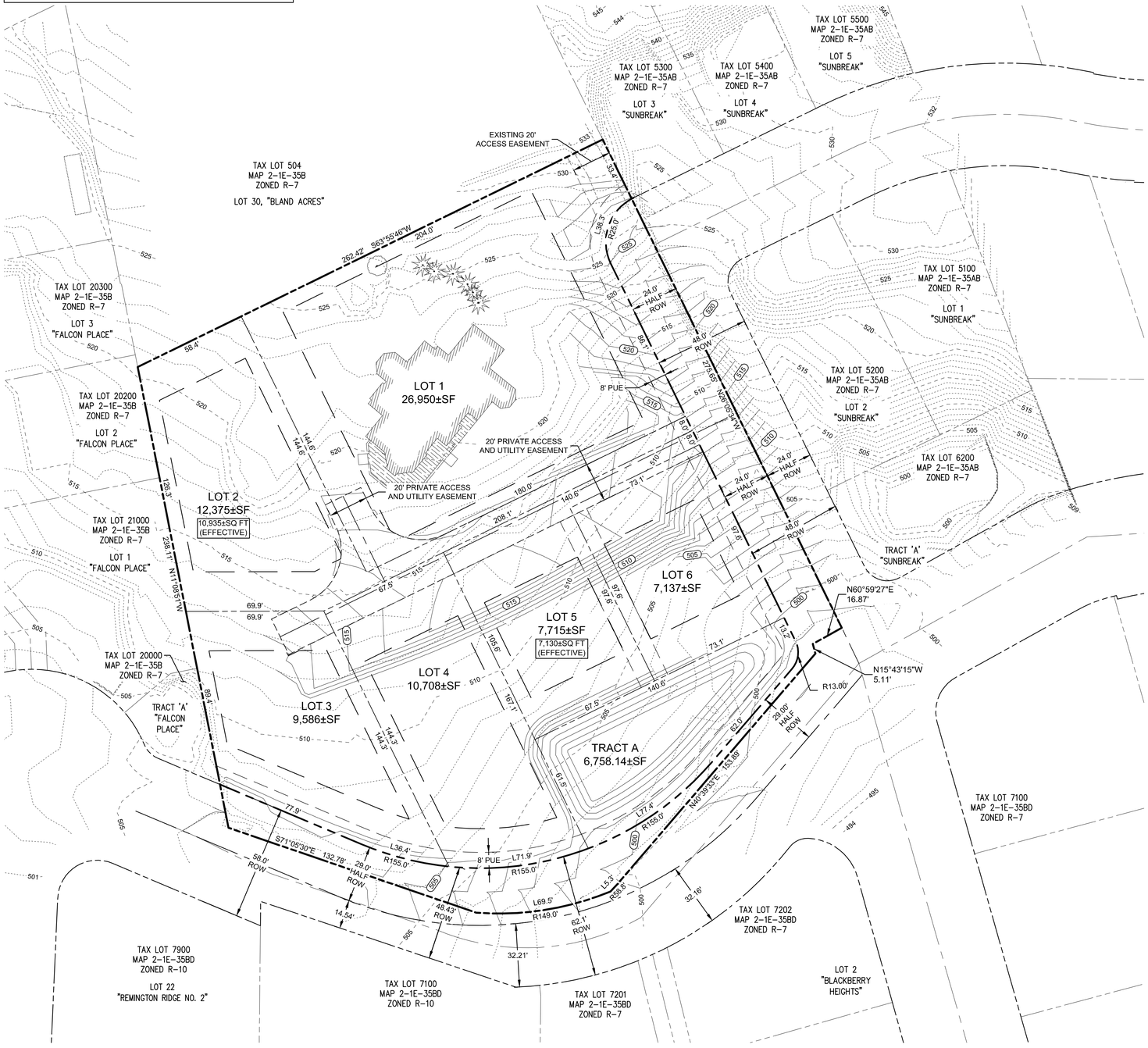
3J CONSULTING, INC
CIVIL ENGINEERING
WATER RESOURCES
LAND USE PLANNING
5075 SW GRIFFITH DRIVE, SUITE 150, BEAVERTON, OR 97005
PHONE & FAX: (503) 946-9365

3J JOB ID #	15246
LAND USE #	
TAX LOT #	21E35B 00500
DESIGNED BY	CLF, JKG
CHECKED BY	AJM

SHEET TITLE
SLOPE ANALYSIS

SHEET NUMBER
C1.4

TAX LOT 500, MAP 2-1E-35B
NE 1/4 SECTION 35, T.2S., R.1E., W.M.
CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON



Scale: 1 inch = 30 feet
30 15 0 15 30

LEGEND

- BOUNDARY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING LOT LINE
- EXISTING UTILITY EASEMENT
- PROPOSED LOT LINE
- PROPOSED SETBACK LINE
- PROPOSED UTILITY/ACCESS EASEMENT

SITE STATISTICS	
SITE ADDRESS	23128 BLAND CIRCLE WEST LINN, OR 97068
TAXLOT	21E35B 500
JURISDICTION	CITY OF WEST LINN
GROSS SITE AREA	2.11 ACRES
PROPERTY ZONING	R-7
FLOOD HAZARD MAP NUMBER	41005C0257D ZONE X (UNSHADED)

SUBDIVISION STATISTICS	
RIGHT OF WAY DEDICATION	0.243± ACRES
MINIMUM ALLOWABLE EFFECTIVE LOT SIZE	7,000 SF
MINIMUM LOT DENSITY	8.1 UNITS
MAXIMUM LOT DENSITY	11.6 UNITS
PROPOSED LOT DENSITY	3.2 UNITS/ACRE
MINIMUM LOT DENSITY (PER R-7 ZONING)	4.3 UNITS/ACRE
MAXIMUM LOT DENSITY (PER R-7 ZONING)	6.2 UNITS/ACRE
SETBACKS:	
FRONT	20 FEET
SIDE	7.5 FEET
REAR	20 FEET
STREET SIDE	15 FEET
MAX. HEIGHT	35 FEET

PROJECT TEAM

OWNER/APPLICANT
23128 SOUTH BLAND CIRCLE, LLC
1235 NORTH DUTTON AVENUE, SUITE E
SANTA ROSA, CA 95401
CONTACT: RYAN ZYGAR
PHONE: (360) 798-4838
EMAIL: ryan@zygar.com

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

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

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

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

DATE	BY	REVISION SUMMARY
09/14/2015		LAND USE APPROVAL

TENTATIVE SUBDIVISION PLAT
SAVANNA HEIGHTS SUBDIVISION
BLAND CIRCLE ESTATES, LLC
WEST LINN, OR

REGISTERED PROFESSIONAL ENGINEER
80059PE
OREGON
JULY 21, 2006
CASEY L. FERGESON
EXPIRES: 12/31/15
PRELIMINARY

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

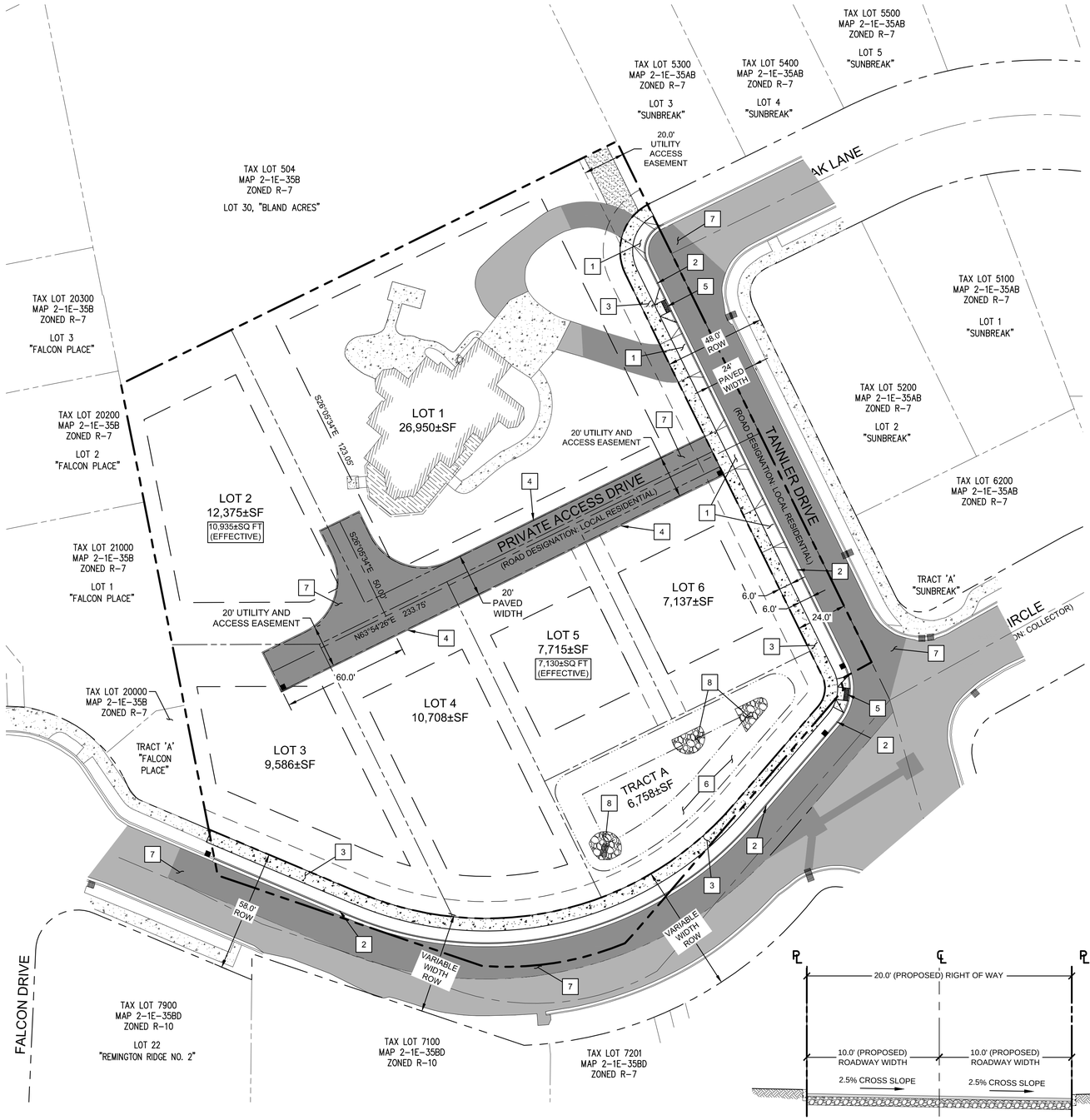
3J JOB ID #	15246
LAND USE #	
TAX LOT #	21E35B 00500
DESIGNED BY	CLF, JKG
CHECKED BY	AJM

SHEET TITLE
TENTATIVE PLAT

SHEET NUMBER
C2.0

P:\15246-COPPEDGE PROPERTY\CAD\DD\15246-C2.0-TENTATIVE PLAT.DWG

TAX LOT 500 LOCATED IN THE
N.E. 1/4 SECTION 35, T.2S., R.1E., W.M.
WEST LINN, CLACKAMAS COUNTY, OREGON



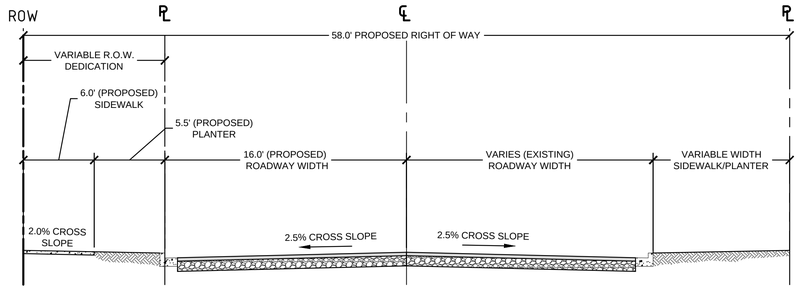
Scale: 1 inch = 30 feet
30 15 0 15 30

LEGEND

- BOUNDARY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING LOT LINE
- EXISTING CURB
- EXISTING UTILITY EASEMENT
- PROPOSED LOT LINE
- PROPOSED SETBACK LINE
- PROPOSED UTILITY/ACCESS EASEMENT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- PROPOSED GRAVEL

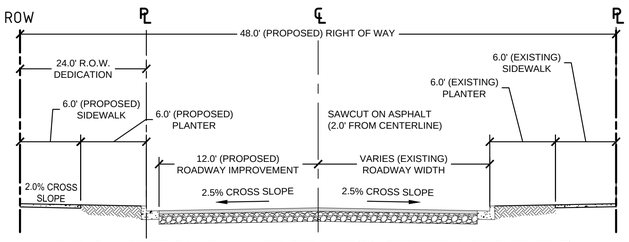
CONSTRUCTION KEY NOTES

1. PROPOSED LOT ACCESS LOCATION.
2. CONSTRUCT STANDARD CURB AND GUTTER PER CITY OF WEST LINN STANDARD DETAIL WL-501 (TYPICAL CURBS).
3. CONSTRUCT 6 FT WIDE DETATCHED SIDEWALK PER CITY OF WEST LINN STANDARD DETAIL WL-508 (CONCRETE SIDEWALK CROSS SECTION).
4. CONSTRUCT STANDARD CURB PER CITY OF WEST LINN STANDARD DETAIL WL-501 (TYPICAL CURBS).
5. CONSTRUCT CURB RAMP PER CITY OF WEST LINN STANDARD DETAIL WL-507A (SINGLE CURB RAMP).
6. CONSTRUCT WATER QUALITY AND DETENTION FACILITY.
7. INSTALL ASPHALT PAVEMENT.
8. CONSTRUCT RIPRAP OUTLET PROTECTION.



TYPICAL SECTION - BLAND CIRCLE (1/2 STREET IMPROVEMENT)
SCALE: N.T.S

TYPICAL SECTION - PRIVATE DRIVE
SCALE: N.T.S



TYPICAL SECTION - TANNLER STREET (3/4 STREET IMPROVEMENT)
SCALE: N.T.S

811 Know what's **below.** **Call** before you dig.

LAND USE APPROVAL	09/14/2015
REVISION SUMMARY	BY DATE
#	

SITE PLAN
SAVANNA HEIGHTS SUBDIVISION
BLAND CIRCLE ESTATES, LLC
WEST LINN, OR

REGISTERED PROFESSIONAL ENGINEER
80059
OREGON
JULY 21, 2015
JEFFREY L. FERGESON
PRELIMINARY
EXPIRES: 12/31/15

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

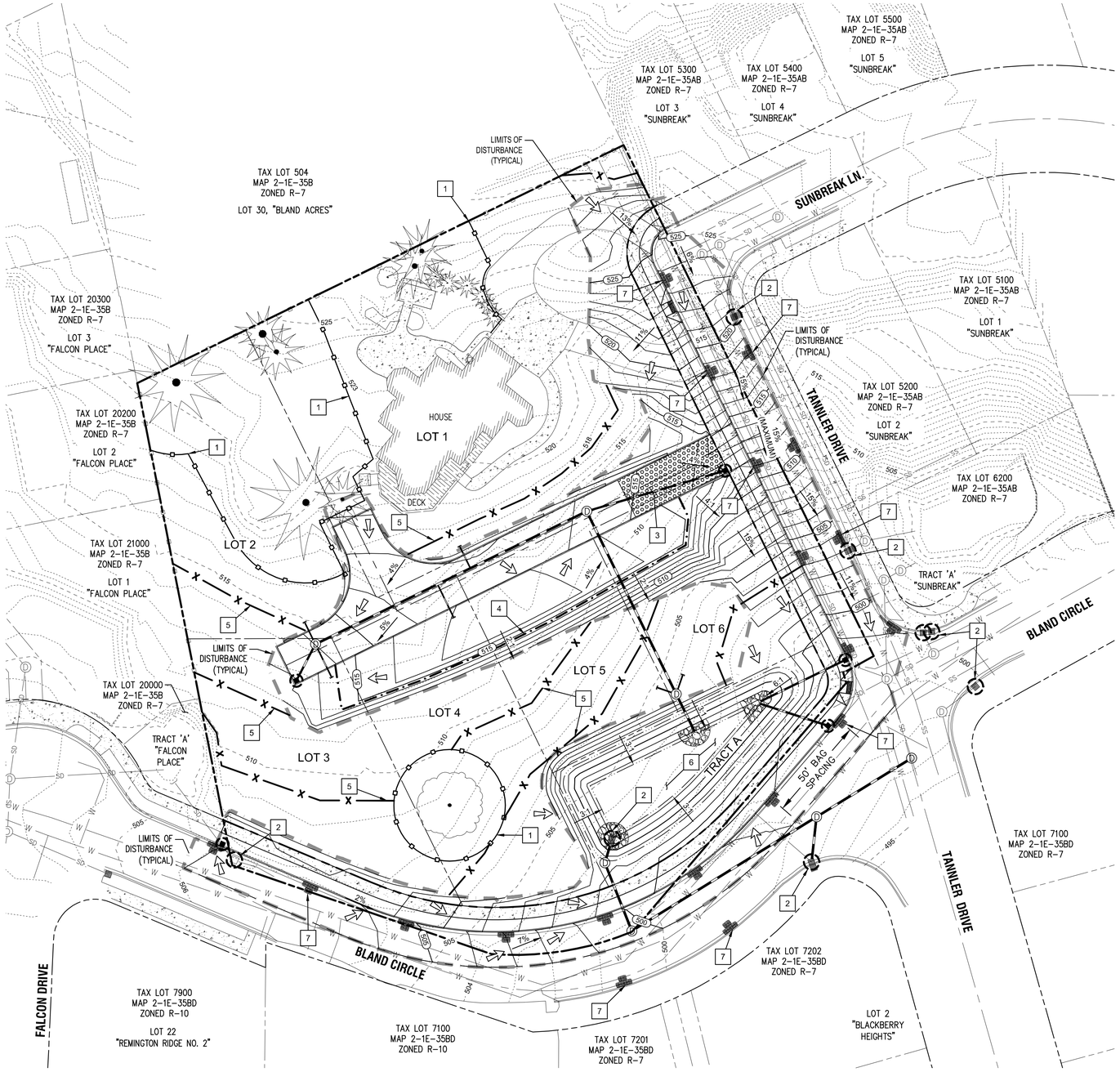
3J JOB ID #	15246
LAND USE #	
TAX LOT #	21E35B 00500
DESIGNED BY	CLF, JKG
CHECKED BY	AJM

SHEET TITLE
SITE PLAN

SHEET NUMBER
C2.1

P:\15246-COPPEDGE PROPERTY\CAD\DD\15246-C2.1-SITE PLAN.DWG

TAX LOT 500 LOCATED IN THE
N.E. 1/4 SECTION 35, T.2S., R.1E., W.M.
WEST LINN, CLACKAMAS COUNTY, OREGON



Scale: 1 inch = 30 feet
30 15 0 15 30

LEGEND

- BOUNDARY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING LOT LINE
- EXISTING CURB
- EXISTING UTILITY EASEMENT
- EXISTING STORM SEWER LINE
- PROPOSED LOT LINE
- PROPOSED SETBACK LINE
- STORM DRAIN LINE AND MANHOLE
- STORM SEWER LATERAL AS NOTED
- PROPOSED UTILITY/ACCESS EASEMENT
- TREE PROTECTION FENCING
- EROSION CONTROL: SILT FENCING
- CONSTRUCTION ENTRANCE
- EXISTING CONCRETE
- PROPOSED CONCRETE
- EXISTING EVERGREEN TREE
- EXISTING CONIFER TREE
- EXISTING 1FT CONTOUR
- EXISTING 5FT INDEX CONTOUR
- PROPOSED 1FT CONTOUR
- PROPOSED 5FT INDEX CONTOUR
- LIMITS OF GRADING/DISTURBANCE
- EROSION CONTROL: FESCUE STRAW WATTLE
- EROSION CONTROL: INLET PROTECTION
- STORM DRAIN CATCH BASIN

SITE GRADING INFORMATION

SITE STRIPPING	1,819.5 CY
CUT (TO FINISH GRADE)	1,133.2 CY
FILL (TO FINISH GRADE)	2,749.1 CY
MAXIMUM CUT DEPTH	7.6 FT
MAXIMUM FILL DEPTH	7.7 FT
MAXIMUM PROPOSED SLOPE	FILL SLOPE = 2:1 (H:V) CUT SLOPE = 2:1 (H:V)
TOTAL AREA OF DISTURBANCE	1.128 ACRES

EROSION CONTROL CONSTRUCTION NOTES

1	INSTALL AND MAINTAIN TREE PROTECTION FENCING THROUGHOUT CONSTRUCTION ACTIVITIES. SEE TREE PRESERVATION PLANS FOR ADDITIONAL INFORMATION.
2	PLACE INLET PROTECTION AT LOCATION SHOWN.
3	CONSTRUCT AND MAINTAIN STABILIZED CONSTRUCTION ENTRANCE.
4	INSTALL STRAW WATTLES.
5	INSTALL SILT FENCE AT LIMITS OF GRADING ON LEVELS OF CONTOURS.
6	CONSTRUCT WATER QUALITY AND DETENTION FACILITY.
7	PLACE BIO-BAG CHECK DAM FOR SEDIMENT CONTROL ADJACENT TO ALL NEW CONCRETE WORK WITHIN RIGHT OF WAY.

811 Know what's below. Call before you dig.

LAND USE APPROVAL 09/14/2015
REVISION SUMMARY | BY | DATE

GRADING AND EROSION CONTROL PLAN
SAVANNA HEIGHTS SUBDIVISION
BLAND CIRCLE ESTATES, LLC
WEST LINN, OR

REGISTERED PROFESSIONAL ENGINEER
80055PE
OREGON
JULY 21, 2015
CLAY L. FERGESON
EXPIRES: 12/31/15
PRELIMINARY

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 #	15246
LAND USE #	
TAX LOT #	21E35B 00500
DESIGNED BY	CLF, JKG
CHECKED BY	AJM

SHEET TITLE
GRADING PLAN

SHEET NUMBER
C2.2

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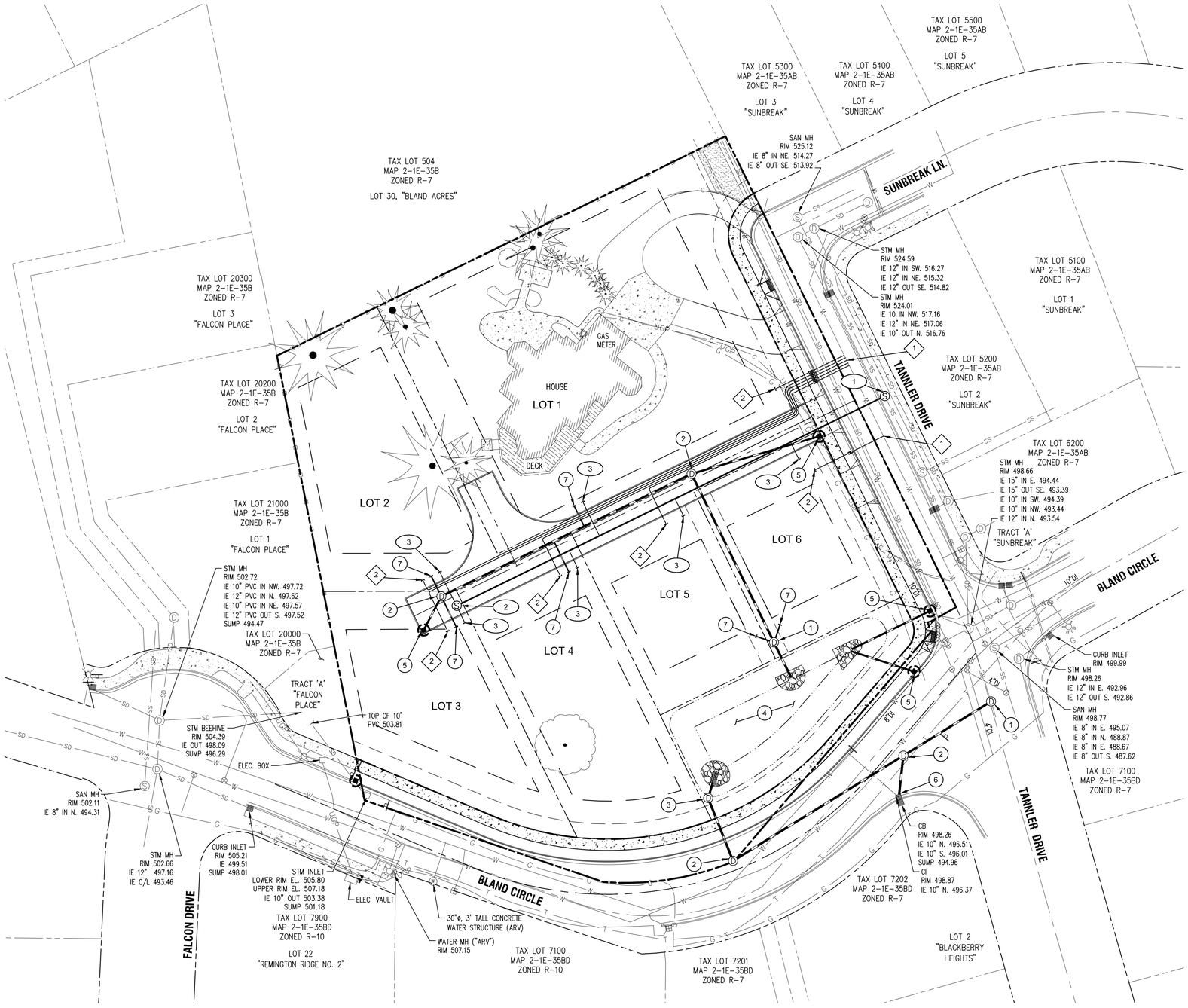
TAX LOT 500 LOCATED IN THE
N.E. 1/4 SECTION 35, T.2S., R.1E., W.M.
WEST LINN, CLACKAMAS COUNTY, OREGON



Scale: 1 inch = 30 feet

30 15 0 15 30

LEGEND

- BOUNDARY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING LOT LINE
- EXISTING CURB
- PROPOSED LOT LINE
- PROPOSED CENTER LINE
- PROPOSED SETBACK LINE
- SANITARY SEWER LINE AND MANHOLE
- STORM DRAIN LINE AND MANHOLE
- DOMESTIC WATER SERVICE & METER
- STORM SEWER LATERAL AS NOTED
- SANITARY SEWER LATERAL AS NOTED
- UTILITY/ACCESS EASEMENT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- PROPOSED GRAVEL
- EXISTING STORM LINE AND MANHOLE
- EXISTING SANITARY SEWER LINE AND MANHOLE
- EXISTING UNDERGROUND POWER LINE
- EXISTING UNDERGROUND CABLE LINE
- EXISTING UNDERGROUND TELEPHONE LINE
- EXISTING GAS LINE
- EXISTING WATER METER
- EXISTING STORM DRAIN CATCH BASIN
- EXISTING SIGN
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING TELEPHONE PEDESTAL
- EXISTING LIGHT POLE
- EXISTING TREES TO REMAIN

STORM SEWER CONSTRUCTION NOTES

1	CONSTRUCT STANDARD 48" STORM SEWER MANHOLE OVER EXISTING STORM LINE.
2	CONSTRUCT STANDARD 48" STORM SEWER MANHOLE.
3	CONSTRUCT FLOW CONTROL STRUCTURE FOR POND OUTLET.
4	CONSTRUCT WATER QUALITY FACILITY (PER APPENDIX D; STANDARD SURFACE WATER SPECIFICATIONS). MAX POND STAGE: 501.5'; POND BOTTOM:497.5'.
5	CONSTRUCT STORM DRAINAGE STRUCTURE WITH 10" STORM LINE.
6	RECONSTRUCT EXISTING CURB INLET LATERAL TO DIVERT OFFSITE STORMWATER DOWNSTREAM.
7	PROVIDE 4" PRIVATE STORM DRAIN LATERAL CONNECTION FOR INDIVIDUAL LOT SERVICE.

SANITARY SEWER CONSTRUCTION NOTES

1	CONSTRUCT STANDARD 48" SANITARY SEWER MANHOLE OVER EXISTING SEWER LINE.
2	CONSTRUCT STANDARD 48" SANITARY SEWER MANHOLE.
3	PROVIDE 4" SANITARY SEWER LATERAL FOR INDIVIDUAL LOT SERVICE.

WATER CONSTRUCTION NOTES

1	CONNECT TO EXISTING WATER MAIN WITH 4 (FOUR) 1" SERVICE LINES.
2	INSTALL SINGLE 1" WATER METER FOR INDIVIDUAL LOT SERVICE. EXTEND 1" SERVICE AS REQUIRED.

Know what's **below.**
Call before you dig.

LAND USE APPROVAL 09/14/2015

#	REVISION SUMMARY	BY	DATE

COMPOSITE UTILITY PLAN
SAVANNA HEIGHTS SUBDIVISION
BLAND CIRCLE ESTATES, LLC
WEST LINN, OR

REGISTERED PROFESSIONAL ENGINEER
80051
OREGON
JULY 21, 2015
CLIFFORD L. FERGESON
EXPIRES: 12/31/15
PRELIMINARY

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 #	15246
LAND USE #	
TAX LOT #	21E35B 00500
DESIGNED BY	CLF, JKG
CHECKED BY	AJM

SHEET TITLE
UTILITY PLAN

SHEET NUMBER
C3.0

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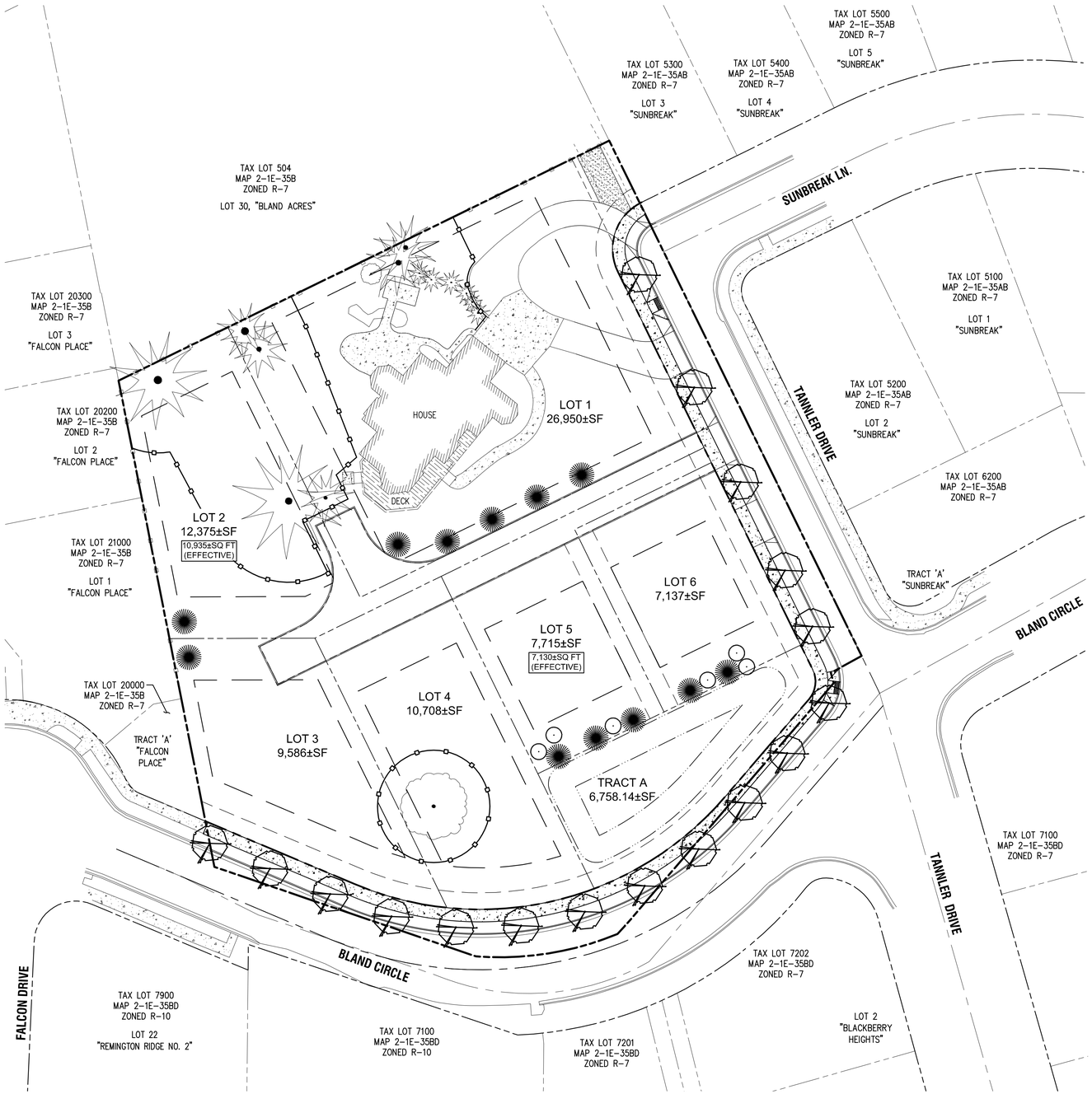
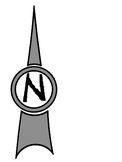
TAX LOT 500 LOCATED IN THE
N.E. 1/4 SECTION 35, T.2S., R.1E., W.M.
WEST LINN, CLACKAMAS COUNTY, OREGON





Scale: 1 inch = 30 feet

30 15 0 15 30

LEGEND

- BOUNDARY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING LOT LINE
- EXISTING CURB
- EXISTING UTILITY EASEMENT
- PROPOSED CENTERLINE
- PROPOSED LOT LINE
- PROPOSED SETBACK LINE
- PROPOSED UTILITY/ACCESS EASEMENT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- PROPOSED GRAVEL
- TREE PROTECTION FENCING

GENERAL LANDSCAPING NOTES

1. LANDSCAPE PLANTING SHALL CONFIRM TO THE STANDARDS ESTABLISHED UNDER THE WEST LINN STANDARDS FOR LANDSCAPE PLANTING
2. ALL PLANT BEDS SHALL HAVE A 3" DEPTH OF BARK MULCH
3. ALL PLANT MATERIAL DELIVERED TO THIS SITE SHALL MEET THE AMERICAN NURSERYMAN'S ASSOCIATION STANDARDS.
4. CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR ALL PLANT MATERIAL SUBSTITUTIONS FROM THE CIVIL ENGINEER PRIOR TO INSTALLATION. PLANT SUBSTITUTIONS WITHOUT PRIOR WRITTEN APPROVAL THAT DO NOT COMPLY WITH THE DRAWINGS AND SPECIFICATIONS MAY BE REJECTED BY THE LANDSCAPE ARCHITECT AT NO COST TO THE OWNER. THESE ITEMS MAY BE REQUIRED TO BE REPLACED WITH PLANT MATERIALS THAT ARE IN COMPLIANCE WITH THESE DRAWINGS.

PLANT MATERIALS SCHEDULE

COMMON NAME	BOTANICAL NAME	SIZE	SPACING	QUANTITY
SCARLET OAK	QUERCUS COCCINIA	2" CAL.	22' MIN	17
VINE MAPLE	ACER CIRCINATUM	6' / 2" CAL.	10' MIN	6
WESTERN RED CEDAR	THUJA PLICATA	2" CAL.	12' MIN	12

TOTAL PROPOSED TREE COUNT: 35
TOTAL MITIGATION REQURIEMENT: 70" (CALIPER MEASUREMENT)

Know what's **below.**
Call before you dig.

LAND USE APPROVAL 09/14/2015

#	REVISION SUMMARY	BY	DATE

LANDSCAPE MITIGATION PLAN
SAVANNA HEIGHTS SUBDIVISION
BLAND CIRCLE ESTATES, LLC
WEST LINN, OR

REGISTERED PROFESSIONAL ENGINEER
80058
OREGON
JULY 21, 2010
CLIFF L. FERGESON
PRELIMINARY
EXPIRES: 12/31/15

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 #	15246
LAND USE #	_____
TAX LOT #	21E35B 00500
DESIGNED BY	CLF, JKG
CHECKED BY	AJM

SHEET TITLE
MITIGATION PLAN

SHEET NUMBER
L1.0

P:\15246-COPPEDGE PROPERTY\CAD\DWG\15246-L1.0-TREE MITIGATION.DWG

PC-4 TUALATIN VALLEY FIRE & RESCUE COMMENTS

Tualatin Valley Fire & Rescue

October 6, 2015

Darren Wyss - Associate Planner
City of West Linn
22500 Salamo Road
West Linn, OR 97068

Re: SUB-15-02

Dear Darren,

Thank you for the opportunity to review the proposed site plan surrounding the above named development project. Tualatin Valley Fire & Rescue endorses this proposal predicated on the following criteria and conditions of approval:

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))

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 of approved turnarounds are shown below: (OFC 503.2.5 & D103.1)

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. The fire district will approve access roads of 12 feet for up to three dwelling units and accessory buildings. (OFC 503.2.1 & D103.1)

4. **NO PARKING SIGNS:** Where 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)

5. **NO PARKING:** Parking on emergency access roads shall be as follows (OFC D103.6.1-2):
   1. 20-26 feet road width – no parking on either side of roadway
   2. 26-32 feet road width – parking is allowed on one side
   3. Greater than 32 feet road width – parking is not restricted

6. **FIRE APPARATUS ACCESS ROADS WITH FIRE HYDRANTS:** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet and shall extend 20 feet before and after the point of the hydrant. (OFC D103.1)

7. **ACCESS ROAD GRADE:** Fire apparatus access roadway grades shall not exceed 12%. When fire sprinklers* are installed, a maximum grade of 15% will be allowed.

0-12%	Allowed

13-15%	Special consideration with submission of written Alternate Methods and Materials request. Ex: Automatic fire sprinkler (13-D) system* in lieu of grade.
16-18%	Special consideration on a case by case basis with submission of written Alternate Methods and Materials request Ex: Automatic fire sprinkler (13-D) system* plus additional engineering controls in lieu of grade.
Greater than18%	Not allowed**

*The approval of fire sprinklers as an alternate shall be accomplished in accordance with the provisions of ORS 455.610(5) and OAR 918-480-0100 and installed per section 903.3.1.1, 903.3.1.2, or 903.3.1.3 of the Oregon Fire Code (OFC 503.2.7 & D103.2)
** See Forest Dwelling Access section for exceptions.

8. **ANGLE OF APPROACH/GRADE FOR TURNAROUNDS:** Turnarounds shall be as flat as possible and have a maximum of 5% grade with the exception of crowning for water run-off. (OFC 503.2.7 & D103.2)

9. **GATES:** Gates securing fire apparatus roads shall comply with all of the following (OFC D103.5, and 503.6):
   1. Minimum unobstructed width shall be not less than 20 feet (or the required roadway surface width), or two 10 foot sections with a center post or island.
   2. Gates serving three or less single-family dwellings shall be a minimum of 12 feet in width.
   3. Gates shall be set back at minimum of 30 feet from the intersecting roadway or as approved.
   4. Electric gates shall be equipped with a means for operation by fire department personnel
   5. Electric automatic gates shall comply with ASTM F 2200 and UL 325.

10. **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)

11. **SINGLE FAMILY DWELLINGS - REQUIRED FIRE FLOW:** 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)

12. **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)

13. **FIRE HYDRANTS – ONE- AND TWO-FAMILY DWELLINGS:** Where a 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)

If you have questions or need further clarification, please feel free to contact me at (503) 649-8577.

Sincerely,

Ty Darby

Ty Darby
Deputy Fire Marshal

Cc: file