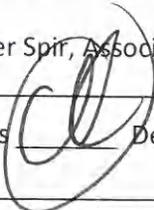




**STAFF REPORT  
FOR THE PLANNING COMMISSION**

**FILE NUMBER:** SUB-13-04  
**HEARING DATE:** December 18, 2013  
**REQUEST:** 11-lot subdivision  
**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:** Peter Spir, Associate Planner

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Planning Director's Initials  Development Review Engineer's Initials EL

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## GENERAL INFORMATION

<b>OWNER:</b>	Joseph Monahan, 22882 Weatherhill Rd., West Linn, OR 97068
<b>APPLICANT:</b>	JT Smith Companies, 5285 Meadows Rd., Ste. 171, Lake Oswego, OR 97035
<b>CONSULTANT:</b>	Andrew Tull, 3J Consulting, Inc., 10445 SW Canyon Rd., Ste. 245, Beaverton, OR 97005
<b>SITE LOCATION:</b>	22882 Weatherhill Road
<b>LEGAL DESCRIPTION:</b>	Clackamas County Assessor's Tax Lot 301, 200 and 402 of Clackamas County Assessor's Map 2-1E-35B.
<b>SITE SIZE:</b>	112,480 square feet or 2.58 acres
<b>ZONING:</b>	R-7, Single-Family Residential Detached and Attached
<b>COMP PLAN DESIGNATION:</b>	Low-Density Residential
<b>120-DAY PERIOD:</b>	This application became complete on October 21, 2013. The 120-day maximum application-processing period ends on February 18, 2014.
<b>PUBLIC NOTICE:</b>	Public notice was mailed to the Savanna Oaks and Willamette neighborhood associations and affected property owners on November 27, 2013. The property was posted with a sign on December 6, 2013. In addition, the application has been posted on the City's website and was published in the West Linn Tidings on December 5, 2013. The notice requirements have been met.

## BACKGROUND

**Site Conditions:** The property is located on the south side of Weatherhill Road 1300 feet west of the intersection with Salamo Road. From Weatherhill Road, the first 250 feet slopes downhill at a fairly constant 15% then the last 100 feet drop steeply at up to 25%. The southern edge of the property is defined by a private driveway that extends from Fircrest Drive.

The west edge of the property has a large grove of significant conifers, mostly Douglas Fir and deciduous trees; while the south and east boundary areas are home to many attractive Oak trees, also significant. There are no streams, wetlands or other Goal 5 protected resources on the property. There are no indications of past slope failure or slide potential per city hazard or DOGAMI maps.



The existing ranch style house is located amidst the main tree grove with a swimming pool and tennis court to the east of the house.

### Site Aerial View



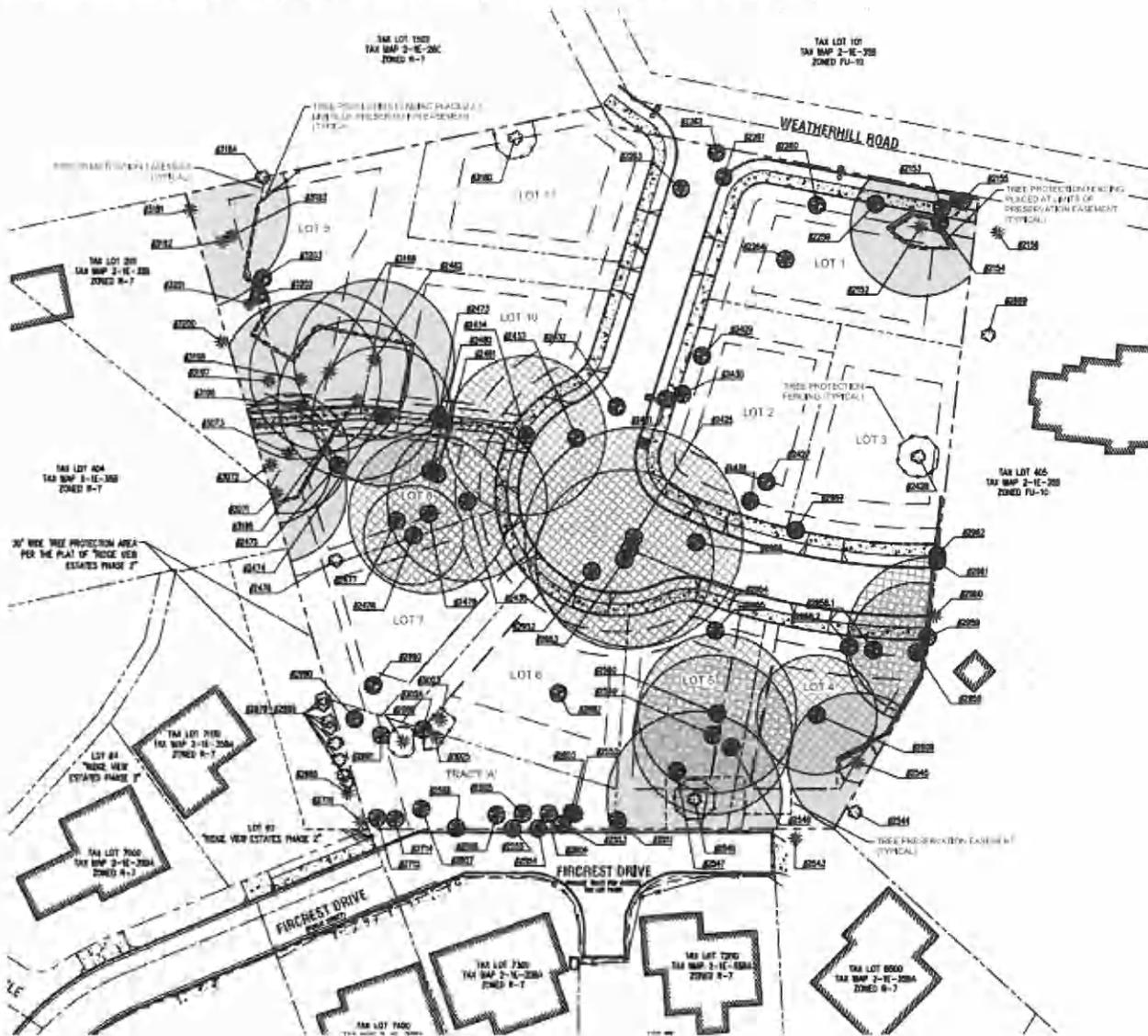
**Project Description:** The applicant proposes an 11-lot subdivision south of Weatherhill Road. Lots will range in size from 7,018 to 10,899 square feet. The zoning is R-7 (7,000 square foot minimum lot size/single family residential).

The subdivision's public street ("Satter Street") will provide internal access and curves eastward before stubbing out at the east property line. This street stub out provides for the future extension of the road through adjacent underdeveloped properties. All lots will access the internal street either by direct frontage or by flag lot connection.

There is no opportunity for access to the south since the public ROW for Fircrest Drive does not extend to the subject property. The paved driveway, which is an extension of Fircrest Drive, is private. The City is not in a position to compel or require that connection.

The applicant will be providing a pedestrian and bike connection to the west. This connection has the benefit of meeting the Transportation Planning Rule's multi-modal access requirements; and, because the

graded/disturbed area for a bike path is smaller than if a road had stubbed to the west, more of the significant tree grove may be retained along the west edge of the property.



Weatherhill Road will be improved along the site frontage with a 13 foot ROW dedication to supplement the existing 30 foot ROW width. A half street right of way is proposed to include a six foot wide sidewalk, six foot wide planter strip with street trees, curb and gutter plus street overlay. Satter Street is proposed to have a 48-foot right of way with 24 feet of paved width plus a 6-foot sidewalk and 6-foot planter strip on each side of the street. The street includes an eyebrow configuration where it curves to the east. This eyebrow will allow for safer and easier access to lots 6-10 as well as facilitate acceptable street grades. The stormwater facility for the entire subdivision is proposed for Tract A on the southwest edge of the property.

The existing house is to be demolished along with the pool and tennis court.

**Surrounding Land Use and Zoning:** The site is situated in the Savanna Oaks Neighborhood. The south side of Weatherhill Road is a mix of incorporated and unincorporated multi-acre properties occupied by single

family homes on them. Properties to the south and west are within the City limits and zoned R-7. Ridgeview Estates Phase II, to the south, has lot sizes ranging from 7,000 to 13,000 square feet.

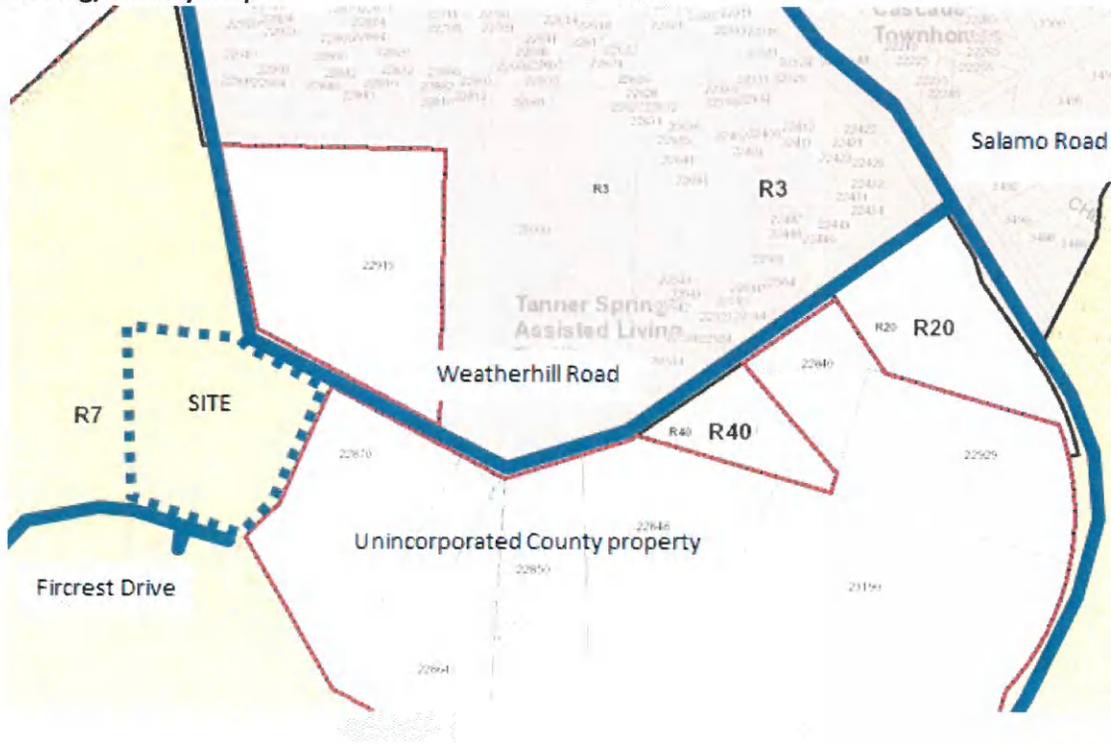
The properties to the east are still in the County. It is expected that as the Bland/Weatherhill area becomes increasingly urbanized, concurrent with an improved housing market, many of the unincorporated properties will seek annexation to the City and be subsequently developed. At such time that the County properties are annexed it is reasonable to expect that they will be zoned R-7, consistent with the dominant City zoning for the area south of Weatherhill Road.

Property to the north is unincorporated and in agricultural use. To the northeast is Tanner Springs Assisted Living Facility. It is incorporated into the City and zoned R-3.

**Table 1** Surrounding Land Use and Zoning

DIRECTION FROM SITE	LAND USE	ZONING
North	Single-family detached residential, multi-family, assisted living facility, farm property	R-3, R-7, Unincorporated County
East	Single-family residential detached	Unincorporated County
South	Single-family residential detached (Ridgeview Estates Phase II) 7,000-13,000 square foot lots	R-7
West	Single-family residential detached	R-7

**Zoning/Vicinity Map**



## ISSUES

### Connectivity

With so many large underdeveloped lots on the south side of Weatherhill Road there is the unique opportunity to lay out a comprehensive pattern of connecting streets. Starting with this application, Satter Street is aligned so it can continue eastwards through the adjoining lots. This approach will help avoid the frequently seen pattern of cul de sacs and flag lots with no connectivity between developments. The desire for connectivity is driven by the Transportation Planning Rule and the Regional Transportation Functional Plan (see Title 1 section 3.08.110(D) (E) (F)) which is articulated in the approval criteria of 85.200(A) (1):

*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. ... 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).*

Extension of local street to properties east of proposed subdivision is for illustrative purposes only to indicate how the street could facilitate development



Staff prepared preliminary plans for a connecting street pattern as guidance for this applicant and others who might develop adjoining lots. Initially, the applicant's application offered a cul de sac design. A



connecting street, it was thought, would jeopardize a significant tree grove on the west side of the property and a significant oak tree grove on the property to the east which also serves as the headwater for an intermittent stream. There are also steep slopes, approaching 25%, at the rear of the property which presented grading challenges.

Staff conducted further site visits and determined that there is a route to the east that can be used to provide connectivity while avoiding the oak tree grove and intermittent headwaters area on the lot next door. Staff also made note of the fact that the last sentence in the criteria above states: *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).*

After discussions with staff, the applicant subsequently re-designed Satter Street's alignment so it stubbed eastwards. The applicant's submittal has been modified to reflect this change. On the subject of whether the road should have also extended westwards, staff found that connectivity of 85.200(A)(1) had been satisfied by the eastwards stub out making a westwards stub out unnecessary; thus, allowing protection of much of the significant tree grove to the west.

### **Tree and Resource Protection**

The City Arborist identified the tree grove on the west side of the site as significant. Also significant were a number of trees scattered along the south and east edge of the site. The tree grove will be protected in large measure. In excess of 20% of the tree canopy is preserved. Meanwhile concerns about the impact of the eastward extension of Satter Street on the adjoining property's oak grove and stream headwaters were addressed after staff site analysis on that property. Staff found that the headwaters of the intermittent stream are 200 feet away from the proposed street extension. Also, the street extension alignment would be able to avoid most of the oak trees on that property.

### **Evolution of this application**

This application began as an 11-lot subdivision with a hammerhead cul de sac. At the applicant's request it was declared complete. Subsequent discussions between staff and the applicant made it clear that the cul de sac would not be supported by staff and that a re-design of the street heading eastwards would be the most appropriate way to satisfy connectivity requirements and preserve the maximum number of trees. The applicant modified the submittal and satisfactorily addressed the approval criteria. Whereas many elements of the original submittal, such as the geotechnical report, transportation analysis and tree inventory, etc. are still valid; the original site plan is not. Because of the changes to the site plan, the applicant requested a Planning Director waiver (per section 99.035(B)) of updated Street Lighting Plan, Mitigation Planting Plans and a Storm water report. The Planning Director approved the waiver after finding that (a.) the original application and plans included these studies and demonstrated that the lighting, tree mitigation and storm water requirements can be met; and (b.) a condition of approval 3, 8, 9 and 12 would require those updated plans after preliminary approval and prior to any site development.

## **APPROVAL CRITERIA**

As previously noted, the applicant requests approval of an 11-lot subdivision on an R-7-zoned property. No variances are needed.

Therefore the applicable approval criteria include:



- Chapter 12, Single-Family Residential Detached and Attached zoning district;
- Chapter 85, Land Division General Provisions, criteria in Section 85.200;

## ANALYSIS

The challenges of this property were, first, the provision of a connecting road to abutting properties so as to be consistent with the Transportation Planning Rule's connectivity requirements which are promulgated in section 85.2000(A)(1); and, second, protecting as many significant trees as possible, especially the grove on the west side of the site.

A connection to the south is impossible due to the fact that Fircrest Drive adjacent to this site is not a public ROW. The advantages of the eastward connection have been stated above in that it allows for the orderly extension of an internal street to serve a series of underdeveloped properties and avoid the alternative of cul de sacs and flag lots from Weatherhill Road.



Connection to the west is provided by the provision of a pedestrian and bicycle path between lots 9 and 10 through the significant tree grove. The applicant proposes that the access driveway to lot 8 should do double duty as the pedestrian and bicycle path route. (This has been done elsewhere in West Linn on Randall Street where a trail connects with Summit Street through a homeowner's driveway and side yard.) This approach provides the benefit of not expanding the graded area through the tree grove. The downside is that the abutting property owner may establish symbolic ownership of the path and discourage legitimate public use. This can be avoided by posting signs along the driveway identifying the public's right to access and installing a 10 foot wide paved path flanked by a three-foot high cyclone fence to the west property line from the terminus of the paved driveway to lot 8. Condition of approval 2 addresses this.



Satter Street will remain a stub street until the property to the east develops. Subsection 85.200(A) (8) requires that temporary turnarounds be provided for a dead end stub that is over 100 feet long. Since the eyebrow provides turnaround capacity and the distance from the eyebrow to the east stub out is less than 100 feet no TVFR turnaround is needed. (Please see correspondence from TVFR that no turnaround is needed and the homes do not have to be sprinklered.)

The applicant's plan shows that 20% of the significant tree canopy is preserved. Staff considered the protection of the tree grove as a central part of this application and that is largely accomplished.

Subsection 85.200(J) (9) requires that tree protection and removal be compatible with Subsection 55.100(B) (2). Subsection 55.100(B)(2)(f) requires that if significant trees are proposed for removal due to being located where street grading is necessary, the trees be mitigated for on an inch-per-inch basis. Recommended Condition of Approval 3 requires that mitigation.

### **Public comments:**

Ed Schwarz, Savanna Oaks Neighborhood Association President (April 4, 2013 email):

*"It appears that over the next several years there will be quite a number of houses built along Weatherhill which will significantly increase traffic along Weatherhill. Does the city have any plans to install a traffic light at the corner of Weatherhill and Salamo? If so, what would be the timeline and how would it be funded?"* (please see staff response 36.)

Ed Schwarz (E-mail dated 7/10/2013 from Ed Schwarz to the applicant's consultant Andrew Tull) This e-mail, which is part of the record, expressed concern about tree preservation and limited sight conditions at the intersection of Bland Circle and Weatherhill Drive, 650 feet west of the proposed subdivision.

David Dean (22870 Weatherhill Road): In a telephone conversation on April 4, 2013, staff discussed the proposed street stub out and connectivity with David Dean, the owner of the property immediately to the east of the proposed subdivision. Mr. Dean stated support for the concept of connectivity rather than seeing a pattern of flag lots or individual cul de sacs off Weatherhill Road. He stated that he had been in talks with other property owners to the east. One issue staff had with connecting to the east is the location of the stream on Mr. Dean's property. Mr. Dean explained that the intermittent stream originates at a spring about 15 feet north of his south property line. A subsequent e-mail on September 11, 2013 discussed the possible street extension route.

## **RECOMMENDATION**

Staff recommends approval of application SUB-13-04 subject to the following proposed conditions:

1. With the exception of modifications required by these conditions and the fact that Lot 8 (12,538 sq. ft.) should read lot 9 and lot 9 (7,271 sq. ft.) should read lot 8 on sheet C2.0, the project shall conform to the Tentative Subdivision Plat, Sheet C2.0, dated November 19, 2013.
2. The applicant shall post signs at the east end of the driveway to lot 9 identifying the public's right to access along the 15 foot wide public access easement. A similar sign shall be posted at the west



end of the trail adjacent to and facing the west property line. The sign, text and final location shall be approved by the Planning Director. From the west terminus of the paved driveway to lot 9, the applicant shall install a 10 foot wide gravel path flanked on the edges of the 15 foot wide easement by a three-foot high black matte chain link fence (or an alternative that is acceptable to the Parks and Recreation Department) along the trail corridor to the west property line.

3. Significant trees to be removed for street construction shall be mitigated for on an inch-to-inch basis and planted on site (in addition to proposed street trees) and/or on City-owned land as approved by the Parks and Recreation Department. A revised street tree plan shall be provided.
4. The applicant shall provide easements in favor of the City in order to provide connections to operating utility lines when the location of such lines is finalized.
5. Street improvements must be designed and constructed in accordance with West Linn Public Works Standards, and any applicable State and Federal Design Guidelines and Policies. The applicant must provide appropriate dedication for half street improvement consisting of 16' pavement, 6' planter strip and 6' sidewalk in accordance with the TSP. If there is no room to provide two-way traffic, application must also provide a 10' pavement improvement on the opposite side in addition to 16' pavement along the project frontage to accommodate two-way traffic.
6. The applicant shall provide an appropriately sized and located connection that meets accepted engineering standards to public sanitary sewer, storm sewer and water lines (the "utility lines").
7. The storm sewer line, water line, and dry utility lines shall be extended to the east end of Satter Street and along the frontage of Weatherhill.
8. Storm lines shall be public and designed in accordance with West Linn Public Works Standards.
9. Storm water quality and detention facilities must be designed and constructed in accordance with West Linn Public Works Standards including appropriate access for repair and maintenance.
10. Water main must be designed with the least number of dead ends for water quality purposes including replacing T-design dead end with L-design dead end.
11. Street lights shall be designed and constructed in accordance with West Linn Public Works Standards and any applicable PGE guidelines and standards. A revised street lighting plan shall be provided.
12. All existing overhead utilities including one located on the west side of development must be placed underground.
13. All public improvements, including grading, are subject to review, modification, and approval of the City Engineer.
14. Applicant shall loop existing water 8" DI water main on Weatherhill Road for subdivision serviceability per the Water Master Plan.



**ADDENDUM**  
**PLANNING COMMISSION STAFF REPORT**  
December 18, 2013

**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 Response 1: The only use proposed on site is single-family detached residential units. Staff determines the 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.

(...)

**Staff Response 2: As shown on the Tentative Subdivision Plat, Sheet C2.0, all proposed lots are at least 7,000 square feet in size. Staff finds that the criterion is met.**

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

**Staff Response 3: As shown on the Tentative Subdivision Plat, Sheet C2.0, all proposed lots have a front lot line that is greater than 35 feet in length. Staff finds that the criterion is met.**

- C. The average minimum lot width shall be 50 feet.

**Staff Response 4: As shown on the Tentative Subdivision Plat, Sheet C2.0, all proposed lots have a minimum average width of at least 50 feet. Staff finds that the criterion is met.**

- D. The lot depth comprising non-Type I and II lands shall be less than two and one-half times the width and more than an average depth of 90 feet.

(...)

**Staff Response 5: All lots meet this standard. (Flag lot frontage on the ROW is only required to be 15 feet per 85.200(B) (7).)**

### **III. 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. 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 and any adopted updated plans.

An applicant may submit a written request for a waiver of abutting street improvements if the Transportation System Plan (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).

**Staff Response 6:** The extension of Satter Street so that it stubs out to the property to the east correctly responds to the TPR connectivity requirements of this section. This connection will allow the Satter Street to be extended through adjoining underdeveloped properties to the east and eventually reconnect with Weatherhill Drive and/or Salamo Road. This extension avoids the ad hoc development pattern of cul de sacs and flag lots. Staff notes that there are significant tree groves to the west; thus, staff recommends a bike/pedestrian connection in that direction. The applicant will provide all street improvements and ROW dedications prior to final platting. The dedication of right of way and the proposed improvements on Weatherhill Road and Satter Street will be consistent with Construction Code standards. Outside of the travel lanes, standard curb, six foot planter strips and six foot wide sidewalks will be provided. Staff finds that the criterion is met by Condition of Approval 5.

A sidebar to the street criteria is the submittal requirement of 85.170 which may require a Traffic Impact Analysis (TIA) if a threshold is met. Staff finds that the proposal does not meet any of the criteria that trigger a TIA (e.g. 250 trips per day). There will be no new or additional points of access to Weatherhill Road; in fact the access points will be reduced from two to one. According to the Institute of Traffic Engineers (ITE) tables, ten new lots (excluding the trip generation of the existing single family home) are expected to generate 100 trips per weekday. That is far below the 250 trip threshold. The PM peak hour (5-6 PM) trip generation of 1.01 will yield 10.1 trips. The applicant did submit a Transportation Analysis Letter from Lancaster Engineering (July 31, 2013) which made similar findings to staff's: that the project will have minimal trip generation to the extent that "none of the surrounding transportation facilities are expected to see a significant increase in traffic or change in operation".

Subsection 48.025(B) (6) requires access driveways to meet the standards in Chapter 8 of the Transportation System Plan (TSP). Specifically, it states, "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, private drives, and nontraversable medians." (staff's emphasis) If a public street is proposed using the existing alignment of the driveway the it would not count as a newly established private drive, and therefore the TSP Chapter 8 standards would not be applicable. Based on the fact that the proposed public street will replace an existing private driveway these provisions do not apply.

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

60 – 80

Local street

40 – 60

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 Response 7: The applicant proposes Satter Street to have a 48-foot right of way. Weatherhill Road’s ROW is currently 30 feet wide. The applicant proposes to dedicate an addition 13 feet along the project frontage to facilitate necessary half street improvements on that street and accommodate an ultimate ROW width of 56 feet at such time that the north side of Weatherhill Road is developed. Both Weatherhill Road and Satter Street are local streets; therefore the proposed right of way is acceptable. Staff finds that the criterion is met by satisfying Condition of Approval 5.**

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. Streets are classified as follows.

(...)

**Local streets** have the sole function of providing access to immediately adjacent land. Service to through traffic movement on local streets is deliberately discouraged by design.

The following table identifies appropriate street width (curb to curb) in feet for various street classifications. The desirable width shall be required unless the applicant or his engineer can demonstrate that site conditions, topography, or site design require the reduced minimum width.

**City of West Linn Roadway Cross-Section Standards**

Street Element	Characteristic	Width/Options
Vehicle Lane Widths (minimum widths)	Arterial Collector Neighborhood Local Turn Lane	11 feet 10 feet 10 feet 12 feet 10-14 feet
On-Street Parking	Arterials Collectors Neighborhood Local	Limited (in commercial areas) Some (unstriped) Some (8 feet) Some (unstriped)
Bicycle Lanes (minimum widths)	New Construction Reconstruction	5 to 6 feet 5 to 6 feet
Sidewalks (minimum width) (See note below)	Arterial Collector Neighborhood/Local	6 feet 6 feet 6 feet



Landscape Strips	Can be included in all streets	6 feet
Medians	5-Lane 3-Lane 2-Lane	Optional Optional Consider if appropriate
Neighborhood Traffic Management	Arterials Collectors Neighborhood Local	Not recommended Under special conditions Should consider if appropriate Should consider if appropriate
Transit	Arterial/Collectors Neighborhood Route Local	Appropriate Only in special circumstances Not recommended

(...)

Sidewalk Location	Sidewalk Width
Residential Development	6 feet (+ 6-foot planter strip)

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.

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.

**Staff Response 8: The applicant proposes a 24 foot street width for Satter Street widening at the eyebrow to a maximum width of 62 feet. The eyebrow is required to avoid a variance and offers a transition in grades and a vehicular turnaround area if needed. Improvements also include a six foot wide planter and six foot wide sidewalk in back of the curbs. The applicant proposes improvements to Weatherhill Road including a six foot wide planter and six foot wide sidewalk in back of the curbs and a 16 foot wide travel**



lane for the entire project frontage. The City Engineer finds that additional street width may be required to accommodate two-way traffic. Staff determines that the criteria are met by Condition of Approval 5.

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 Response 9:** The challenges of this property were, first, the provision of connecting street to abutting properties so as to be consistent with the Transportation Planning Rule's connectivity requirements which are promulgated in section 85.200(A)(1) and, second, protecting as many significant trees as possible, especially the grove on the west side of the site. A connection to the south is impossible due to the fact that Fircrest Drive adjacent to this site is not a public ROW. However, the advantage of the eastward connection is that it allows for the orderly extension of an internal street to serve a series of underdeveloped properties and avoid the alternative of cul de sacs and flag lots from Weatherhill Road.

Connection to the west is provided in by the provision of a pedestrian and bicycle path between lots 9 and 10 through the significant tree grove. The applicant proposes that the access driveway to lot 8 should also serve as the pedestrian and bicycle path route. (This has been done elsewhere in West Linn on Randall Street where a trail connects with Summit Street through a homeowner's driveway and side yard.) This approach provides the benefit of not expanding the graded area through the tree grove. The downside is that the abutting property owner may establish symbolic ownership of the path and discourage legitimate public use. This can be avoided by posting signs along the driveway identifying the public's right to access and installing a 10 foot wide gravel path flanked by a three-foot high cyclone fence to the west property line from the terminus of the paved driveway to lot 8. Condition of approval 2 addresses this.

Tualatin Valley Fire and Rescue (TVFR) submitted correspondence (Nov. 27, 2013) into the record that no vehicle turnaround or house sprinklers are required.

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 Response 10:** The only new intersection proposed is where the Satter Street right of way is proposed to intersect with Weatherhill Road. Although the intersection is not at right angles to Weatherhill Road ROW as currently recorded, the intersection is expected to be constructed at a curve on Weatherhill Road meaning that the intersection will enjoy good lines of sight in each direction. Staff determines the 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 Response 11: Weatherhill Road is a local street. The required ROW width is 40-60 feet. The existing ROW is 30 feet. This applicant proposes to convey 13 feet to the ROW width which, when matched by an equal amount on the north side, will boost the ROW to a compliant 56 feet. Staff determines the criterion is met by Condition of Approval 5.**

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.

**Staff Response 12: Satter Street's steepest grade is 14.7% for the section between Weatherhill Road and the wide eyebrow section. This street is a local street and the maximum allowable grade is 15%. Staff determines the criterion is met.**

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.

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 curb line. 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.

**Staff Response 13: Weatherhill Road and Satter Street will all have a six-foot planter strip and six-foot sidewalk. Staff determines that the criteria are met by Condition of Approval 5.**

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

**Staff Response 14: The dedications are proposed without any reservations or restrictions. Staff determines 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 Response 15: All lots will front directly onto a public street, except lot 9, which will use a 15 foot wide flag lot stem for frontage. Staff determines the criterion is met.**

**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.

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.

**Staff Response 16: Because properties to the east of this site are still in the County and can't be developed, their ability to construct public streets and thereby create appropriately sized block lengths is on hold. However, at such time that the properties are annexed it is expected that new streets will connect with Weatherhill Road and satisfy the desired block length requirements.**

3. Lot size and shape. Lot size, width, shape, and orientation shall be appropriate for the location of the subdivision, 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 shall be dimensioned to contain part of an existing or proposed street. All lots shall be buildable, and the buildable depth should not exceed two and one-half times the average width. "Buildable" describes lots that are free of constraints such as wetlands, drainageways, etc., that would make home construction impossible. Lot sizes shall not be less than the size required by the zoning code unless as allowed by planned unit development (PUD).

**Staff Response 17: All lots meet the minimum lot size of 7,000 square feet and are appropriately proportioned. Five of the 11 lots have their main building line oriented within five degrees of an east – west axis and on a south facing slope to maximize solar access benefits. Lot shape and location provide buildable envelopes on each lot.**

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

**Staff Response 18: All but one lot has direct access to Satter Street. Lot 9 will rely on a flag lot stem for access. All lots will be able to have their own individual driveway that easily meets the driveway length and width provisions of Chapter 48. Staff determines the criterion is met.**

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.



**Staff Response 19:** Side lot lines of seven of the 11 lots are at right angles to the adjacent street while the three lots that are adjacent to the curved eyebrow section radiate from that street as one would expect. The final lot: the flag lot is separated from the street but its side lot lines are generally at right angles to the street. Staff determines that the lines are proposed at right angles to the streets as far as is practicable and that therefore the criterion is met.

C. Pedestrian and bicycle trails.

1. Trails or multi-use pathways shall be installed, consistent and compatible with federal ADA requirements and with the Oregon Transportation Planning Rule, between subdivisions, cul-de-sacs, and streets that would otherwise not be connected by streets due to excessive grades, significant tree(s), and other constraints natural or manmade. Trails shall also accommodate bicycle or pedestrian traffic between neighborhoods and activity areas such as schools, libraries, parks, or commercial districts. Trails shall also be required where designated by the Parks Master Plan.

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

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

(...)

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

(...)

**Staff Response 20:** The applicant proposes a trail from Satter Street along the driveway between lots 8 and 10 towards lot 9 and the west property line. The path would be asphalt and contained within a 15 foot wide pedestrian access easement. The grade of the path is 5-10% which is under the allowable limit.

The applicant will be required to install a sign at each end of the trail identifying this as a public access trail.

E. Lot 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).
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.

**Staff Response 21: Cut slopes do not exceed 67% and fill slopes do not exceed 50%. (Lot 6 for example has a cut slope of 37 percent.) The grading proposed is the minimum necessary for this relatively sloped site where street stubs are to be extended and houses are to be built. The characteristics are appropriate for the proposed use. Staff determines that the criteria are met.**

5. Where landslides have actually occurred, where the area is identified as a hazard site in the West Linn Comprehensive Plan Report, or where field investigation by the City Engineer confirms the existence of a severe landslide hazard, development shall be prohibited unless satisfactory evidence is additionally submitted by a registered geotechnical engineer which certifies that methods of rendering a known hazard site safe for construction are feasible for a given site. The City Engineer's field investigation shall include, but need not be limited to, the following elements:  
(....)

**Staff Response 22: No landslides are mapped in this area by the City or DOGAMI maps. No indications of slumps or mass movement were noted during site visits. The applicant's geotechnical report by GeoPacific Engineering (April 30, 2013) also did not identify any hazards at this site. Staff determines the criterion is met.**

6. All cuts and fills shall conform to the Uniform Building Code.

**Staff Response 23: Cuts and fills will be required through the process to conform to the Uniform Building Code. Staff determines that the criterion is met.**

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.

**Staff Response 24: There are no landslide or erosion hazard conditions at the site. Erosion potential during site preparation and construction will be properly addressed by standard erosion control measures. The toe of slopes will be correctly set back from property lines. All retaining walls will be designed and constructed as required above. Roads are designed to be the minimum width necessary to reduce cut and fill and still be in conformance with City standards. Staff determines that the criteria are met.**

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

(...)

**Staff Response 25: There are no areas on site with over 50% grade.**

**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.

(...)

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 Response 26: The applicant proposes water lines in Satter Street connecting water line in Weatherhill Road ROW with Ridge View Estates Phase II to the south. The applicant shows the water line (sheet C3.0) exiting the site onto a private driveway at the end of Fircrest Road. Although the applicant has a utility easement to act as a corridor at the extreme west end of the driveway at this time there is no easement in place to accommodate the utilities in the eastern 160 feet (+/-) of the private driveway. The applicant is expected to secure an easement. All water lines shown on the plans are correctly sized and located to facilitate looping of the water either as shown in the submittal or by satisfaction of Conditions of Approval 4, 6, 7, 10 and 14.**



#### 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 Response 27: The applicant proposes sanitary sewer lines in Satter Street connecting Weatherhill Road ROW with Ridge View Estates Phase II to the south. The applicant shows the sanitary line (sheet C3.0) exiting the site onto a private driveway at the end of Fircrest Road. Although the applicant has a utility easement to act as a corridor at the extreme west end of the driveway, at the present time there is no easement in place to accommodate the utilities in the eastern 160 feet (+/-) of the private driveway. The applicant is expected to secure that easement. All sewer lines shown on the plans are correctly sized. Staff determines that the criteria are met by satisfying Condition of Approval 4, 6 and 7.**

#### H. Storm.

1. A storm water 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.

**Staff Response 28:** The applicant shows two storm water lines (sheet C3.0) exiting the site onto a private driveway at the end of Fircrest Road. Although the applicant has a utility easement to act as a corridor at the extreme west end of the driveway there is, at present, no easement in place to accommodate the utilities in the eastern 160 feet (+/-) of the private driveway. The applicant is expected to secure an easement. All storm lines shown on the plans are correctly sized. The applicant proposes a storm water pond in Tract A, the lowest point on the site. Individual storm water treatment planters are provided on lots 4, 5, 8 and 9. Staff determines that the criteria are met by satisfying Conditions of Approval 4, 6, 7, 8 and 9.

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 Response 29:** The applicant proposes to use the private driveway that extends east from Fircrest Drive. Although the applicant has a utility easement to act as a corridor at the extreme west end of the driveway there is, at this time, no easement in place to accommodate the utilities in the eastern 160 feet (+/-) of the private driveway. Condition of Approval No. 4 will address this issue and, thereby, staff determines the criterion is met.

J. Supplemental provisions.

(...)

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

**Staff Response 30:** Street trees are proposed on Weatherhill Road and Satter Street. The criterion is 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 Response 31: Street lighting is proposed for the new street section and for the area to be improved along Weatherhill Road. The applicant proposes to use the types of bulbs required by this criterion. Like the existing streetlights nearby, the lights will be of the shoe box style, which are directed downwards and shielded. Staff determines the 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 Response 32: The applicant proposes dedication to expand the Weatherhill Road ROW by 13 feet in width. No other dedication is required, and the applicant recognizes that the proposed dedication is proportional to development.**

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

**Staff Response 33: The applicant proposes to underground all utilities. Staff determines the criterion is met by Condition of Approval 13.**

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 Response 34: After proposed right-of-way dedication the site net size will be approximately 101,930 square feet. This allows for a maximum of 14.56 lots under the R-7 zoning. 11 lots are proposed. Seventy percent of 14.56 is 10.19 lots so the proposed 11 lots exceed the amount and the 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 Response 35:** There are no heritage trees on site. The City Arborist agrees with the applicant's Tree Plan, Sheet C1.2 as to which trees are significant. That plan shows 23 significant trees of which 11 will be preserved. Twelve will be removed to accommodate the required street connection, lot development and the associated grading, especially on the lots below the street. Of the 12 trees to be removed, four are within the proposed street ROW and require mitigation on a one-to-one basis. The trees are 2959(42"), 2425(54"), 2953(36") and 2434(30"). These trees comprise 162 inches, so an equal caliper amount of new trees shall be planted on site (in addition to proposed street trees) and/or on City-owned land as approved by the Parks and Recreation Department. Staff determines that the criterion is met upon the inclusion of Condition of Approval 3.

Traffic Impact Analysis. Subsection 85.170(B) (2) (c) (1) lists the circumstances that require a traffic impact analysis (TIA).

(...)

A Traffic Impact Analysis may be required to be submitted to the City with a land use application, when ... the development application involves one or more of the following actions:

- (A) A change in zoning or a plan amendment designation; or
- (B) Any proposed development or land use action that ODOT states may have operational or safety concerns along a State highway; and
- (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
  - (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
  - (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
  - (4) The location of the access driveway does not meet the access spacing standard of the roadway on which the driveway is located; or
  - (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.

**Staff Response No. 36:** The proposal does not meet any of the criteria that trigger a TIA. There will be no new or additional points of access to Weatherhill Road. The trip generation of 10 new lots (excluding the trip generation of the existing single family home) will not exceed 250 trips per day. Per the Institute of Traffic Engineers (ITE) tables, single family homes are expected to generate 9-10 trips per weekday meaning that this subdivision would produce 100 weekday trips. The PM peak hour (5-6 PM) trip generation of 1.01 will yield 10.1 peak hour trips.



Regarding the need for a traffic light at the Salamo Road and Weatherhill Road intersection, the Transportation System Plan (TSP) has not studied the Salamo/Weatherhill Road intersection but has studied the Salamo/Rosemont, Salamo/Parker, Salamo/Bland and Salamo/Barrington intersections out to 2030.

Both Bland Circle and Barrington Drive intersections are not expected to meet the warrants for lights by 2030. Certainly the LOS of Bland Circle and Barrington Drive will be poor (e.g. "D") but the function of Salamo Road is expected to maintain LOS of "A". Both Bland Circle and Barrington Drive have higher functional street classifications compared to Weatherhill Road in that they are Collector and Neighborhood Routes respectively. Weatherhill Road is a local street and the PM peak hour trip generation is expected to be very low by comparison to Bland Circle and Barrington Drive. Bland Circle, for example, has a PM peak hour trip count (left turn from Bland onto Salamo) of 35 trips and (RT) of 5 trips. Bland Circle does not meet the warrants for a light nor is it expected to by 2030.

It would be reasonable to anticipate that Weatherhill Road, with far fewer homes on it, would not come close to meeting the warrants for a traffic light, even at buildout on the north and south sides. Additionally, residents on Weatherhill Road would have the option of using Day Road or Bland Circle to access Salamo Road.

These finding generally agree with the applicant's traffic report (July 31, 2013) from Lancaster Engineering.





Weatherhill Road looking east (above).  
Weatherhill Road looking west (below)



**EXHIBITS PC-1 THROUGH PC-4**

**AFFIDAVIT AND NOTICE MAILING**

**PACKET, COMPLETENESS LETTER, TVFR and PUBLIC COMMENTS**

**FILE NUMBER: SUB-13-04**

**REQUEST: 11-LOT SUBDIVISION**



**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. SVB-13-04 Applicant's Name John Wyland - JT Smith Companies  
Development Name Weatherhill Subdivision  
Scheduled Meeting/Decision Date 12-18-13

**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) 11-27-13 (signed) S. Skoyev
- B. Affected property owners (date) 11-27-13 (signed) S. Skoyev
- C. School District/Board (date) \_\_\_\_\_ (signed) \_\_\_\_\_
- D. Other affected gov't. agencies (date) \_\_\_\_\_ (signed) \_\_\_\_\_
- E. Affected neighborhood assns. (date) 11-27-13 ALL (signed) S. Skoyev
- 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) 12-5-13 (signed) S. Skoyev  
City's website (posted date) 11-26-13 (signed) S. Skoyev

**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) Dec 6 (signed) [Signature]

**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) 12-6-13 (signed) S. Skoyev

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

(date) \_\_\_\_\_ (signed) \_\_\_\_\_

PUBLIC NOTICE CHECKLIST

FILE NO.: SUB-13-04 SITE ADDRESS: 22882 WEATHERHILL

PROJECT MANAGER: PETER SPIR DATE: 10-29-13

MAILING DEADLINE DATE - 14-day or 20-day (circle one): ~~NOV 14~~ NOV 27

PUBLISH IN LOCAL PAPER (10 days prior): Yes  No

MEETING DATE: DEC. ~~4~~ 18<sup>TH</sup>

SEND TO (check where applicable):

Applicant: Name: \_\_\_\_\_ Applicant Address: JOHN ~~WYLAND~~ WYLAND  
5285 MEADOWS RD  
SUITE 171  
LAKE OSWEGO 97035

If Applicant Representative or Owner to receive please list in others below:

- School District/Board \_\_\_\_\_
- Metro \_\_\_\_\_
- Tri-Met \_\_\_\_\_
- Clackamas County \_\_\_\_\_
- ODOT (if on State Hwy. or over 40 dwelling units) \_\_\_\_\_
- Neighborhood Assn(s). \_\_\_\_\_  
(please specify) ALL
- Division of State Lands \_\_\_\_\_
- US Army Corps of Engineers \_\_\_\_\_
- Stafford-Tualatin CPO \_\_\_\_\_
- City of Lake Oswego \_\_\_\_\_
- Dept. of Fish & Wildlife \_\_\_\_\_
- Other(s): \_\_\_\_\_

Other(s): 3 J CONSULTING  
~~10445~~ 10445 SW CANYON  
BEAVERTON, OR. 97005

Other(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Other(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**CITY OF WEST LINN  
PLANNING COMMISSION  
PUBLIC HEARING NOTICE  
FILE NO. SUB-13-04**

The West Linn Planning Commission is scheduled to hold a public hearing, on Wednesday, December 18, 2013, **starting at 7:00 p.m.** in the Council Chambers of City Hall, 22500 Salamo Road, West Linn, to consider a request for an 11-lot Subdivision located at 22882 Weatherhill Road (Tax Lot 301, 200 and 402 of Clackamas County Assessor's Map 2-1E-35B).

Criteria for subdivisions are found in Chapter 85 of the Community Development Code (CDC). Approval or disapproval of the request by the Planning Commission will be based upon these criteria and these criteria only. At the hearing, it is important that comments relate specifically to the applicable criteria listed.

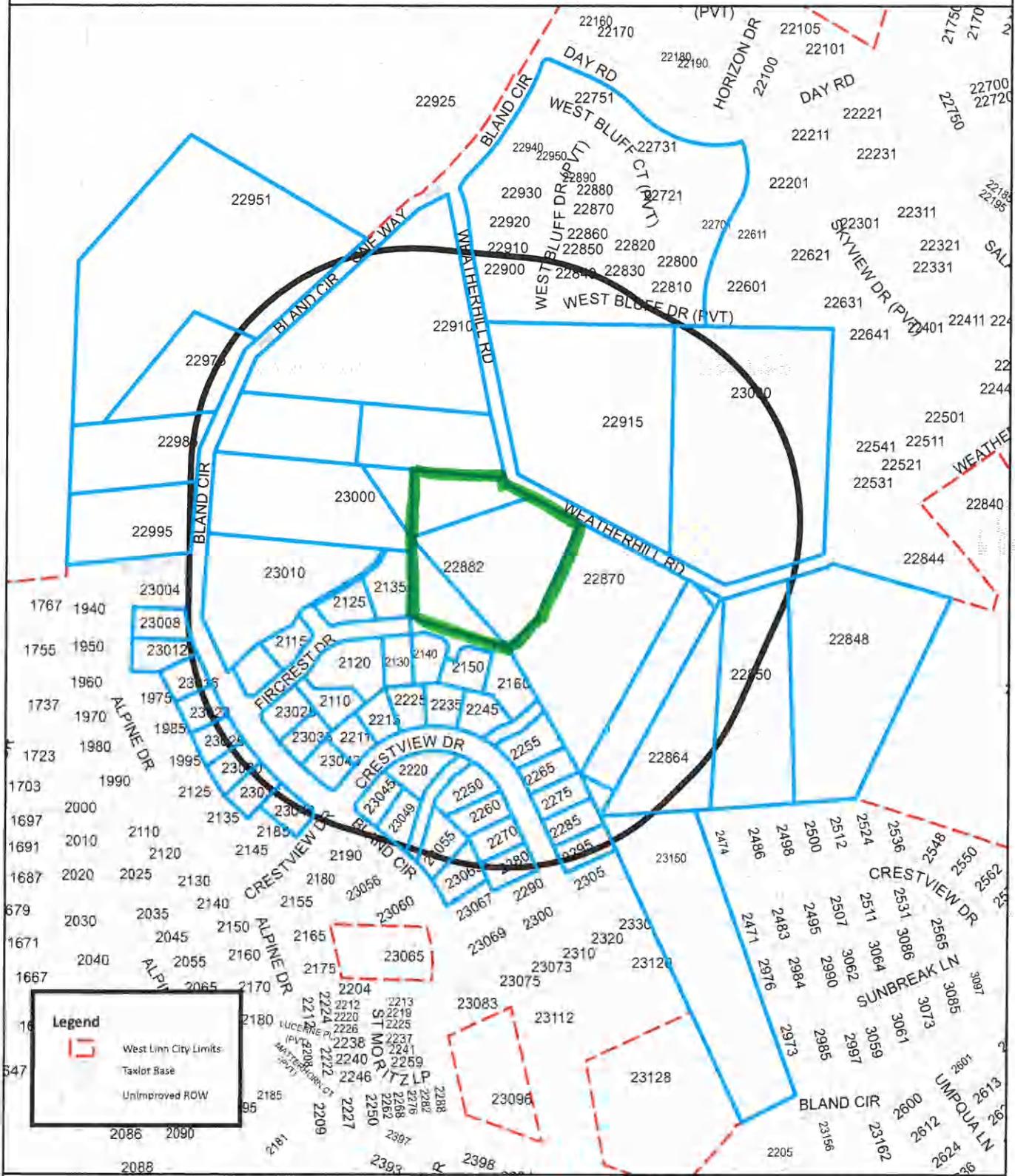
You have been notified of this proposal because County records indicate that you own property within 500 feet of the affected site and/or as required by Chapter 99 of the CDC.

The complete application in the above noted file is available for inspection at no cost at City Hall or via the web site at <http://westlinnoregon.gov/planning/22882-weatherhill-road-11-lot-subdivision> or copies can be obtained for a minimal charge per page. At least ten days prior to the hearing, a copy of the staff report will be available for inspection. For further information, please contact Associate Planner Peter Spir, at [pspir@westlinnoregon.gov](mailto:pspir@westlinnoregon.gov) or 503-723-2539. Alternately, visit City Hall, 22500 Salamo Road, West Linn, OR 97068.

The hearing will be conducted in accordance with the rules of Section 99.170 of the CDC. Anyone wishing to present written testimony on this proposed action may do so in writing prior to, or at the public hearing. Oral testimony may be presented at the public hearing. At the public hearing, the Planning Commission will receive a staff presentation, and invite both oral and written testimony. The Planning Commission may continue the public hearing to another meeting to obtain additional information, leave the record open for additional evidence, arguments, or testimony, or close the public hearing and take action on the application as provided by state law. 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.

SHAUNA SHROYER  
Planning Administrative Assistant

# 22882 Weatherhill Road 500' Buffer



**Legend**

- West Linn City Limits
- Taxlot Base
- Unimproved ROW

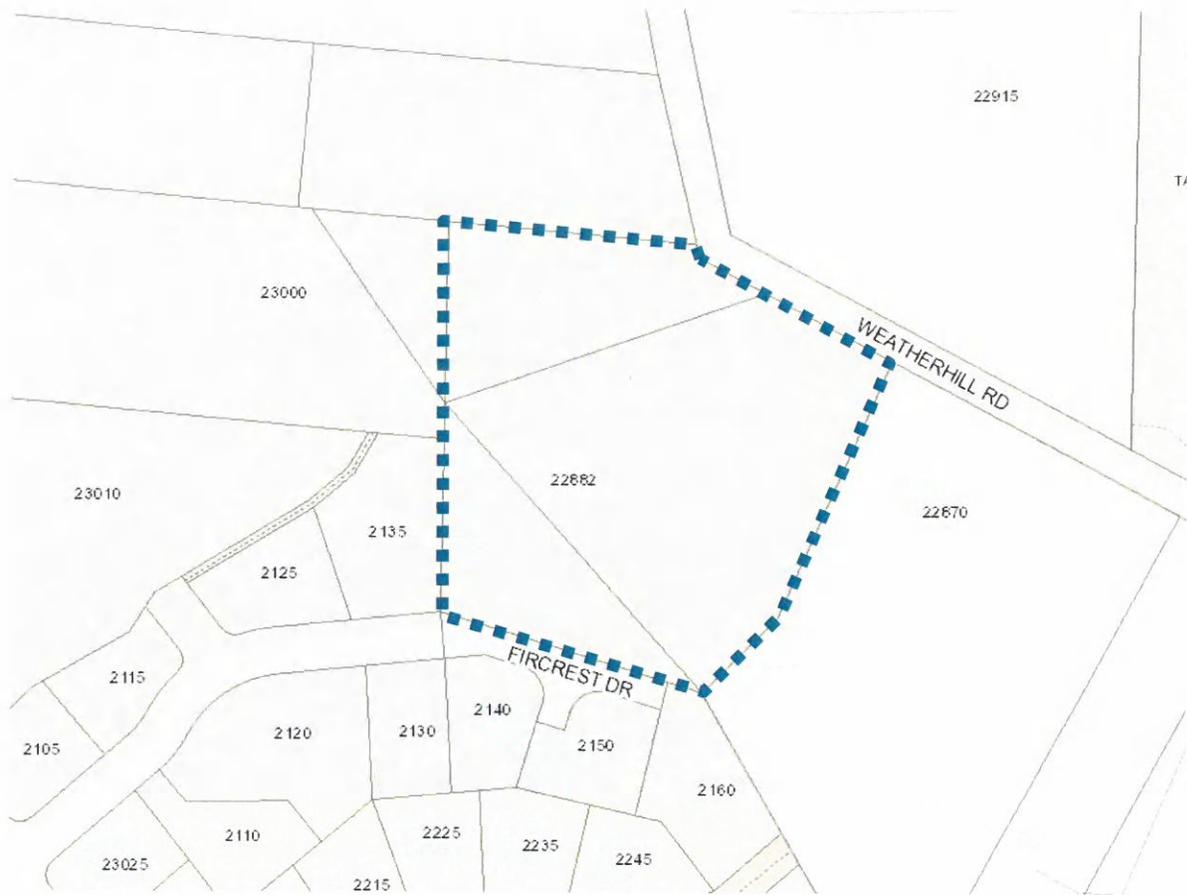
This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.  
 Taxlot Base Source: Clackamas County GIS

NOT TO SCALE



SNAPNOTIFY.MXD / AHA APP 3-24-2011

User Name:  
 Map Creation Date: Nov 26, 2013



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PLANNING COMMISSION  
PUBLIC HEARING NOTICE  
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SHAUNA SHROYER  
Planning Administrative Assistant

Publish: West Linn Tidings, December 5, 2013

ALMODOVAR DAVID R & JULIE A  
2220 CRESTVIEW DR  
WEST LINN, OR 97068

BAUER ROBERT L & CAMERON S  
23000 S BLAND CIR  
WEST LINN, OR 97068

BEACHY JEFF L & MARGARET A  
23020 BLAND CIR  
WEST LINN, OR 97068

BISSELL ROBERT  
23030 BLAND CIR  
WEST LINN, OR 97068

BLACK BERNARD & BRENDA WATT-  
BLACK  
22975 BLAND CIR  
WEST LINN, OR 97068

BOSTWICK TERRY E  
22985 BLAND CIR  
WEST LINN, OR 97068

BRIGHAM ELSIE I TRUSTEE  
23025 BLAND CIR  
WEST LINN, OR 97068

BUTLER JAMES  
2295 CRESTVIEW DR  
WEST LINN, OR 97068

CHAN JOHN H TRUSTEE  
2250 CRESTVIEW DR  
WEST LINN, OR 97068

CITY OF WEST LINN  
22500 SALAMO RD #600  
WEST LINN, OR 97068

CORRY THOMAS B & SHELLEY K  
2130 FIRCREST DR  
WEST LINN, OR 97068

DAUTREMONT NEIL J & MARY N  
23008 BLAND CIR  
WEST LINN, OR 97068

DEAN DAVID E & DIANA E  
22870 S WEATHERHILL RD  
WEST LINN, OR 97068

DEVRIES JOHN C TRUSTEE  
22850 S WEATHERHILL RD  
WEST LINN, OR 97068

ELROD HAROLD C & LINDA  
375 S TWILIGHT TRL  
WEST LINN, OR 97068

GABEL DONALD W & KRISTI L  
2225 CRESTVIEW DR  
WEST LINN, OR 97068

GHOORBANI-ELIZEH EDISON & TAMARA J  
2280 CRESTVIEW DR  
WEST LINN, OR 97068

GLATT RICHARD M & JEANNE L  
12492 SE 155TH AVE  
HAPPY VALLEY, OR 97086

HARDY WILLIAM M & ETHEL N  
22915 S WEATHERHILL RD  
WEST LINN, OR 97068

HONG LE  
2160 FIRCREST DR  
WEST LINN, OR 97068

HUBERTY DAVID P & ERIKA E S  
2120 FIRCREST DR  
WEST LINN, OR 97068

HUOT CORY L & JODI L  
23055 BLAND CIR  
WEST LINN, OR 97068

JENSEN THERON K  
2215 CRESTVIEW DR  
WEST LINN, OR 97068

JOHNSON WILLIAM S  
23016 BLAND CIR  
WEST LINN, OR 97068

KARR DARREN & LESLIE  
2265 CRESTVIEW DR  
WEST LINN, OR 97068

MALCOLM STACEE RAE  
2135 FIRCREST DR  
WEST LINN, OR 97068

MARSHALL GRIFFITH M II TRUSTEE  
23040 BLAND CIR  
WEST LINN, OR 97068

MASLEN BOBBY LYNN & JOHN R  
4325 SW 34TH AVE  
PORTLAND, OR 97201

MAYS ROBERT T II TRUSTEE  
2211 CRESTVIEW DR  
WEST LINN, OR 97068

MEAGHER JAMES P & JENNIFER L  
23063 BLAND CIR  
WEST LINN, OR 97068

MONAHAN JOSEPH M  
19363 WILLAMETTE DR #203  
WEST LINN, OR 97068

MOORE DAVID A TRUSTEE  
23012 BLAND CIR  
WEST LINN, OR 97068

MREEN RICHARD  
23049 BLAND CIR  
WEST LINN, OR 97068

MUSALO ROBERT TRUSTEE  
2115 FIRCREST DR  
WEST LINN, OR 97068

NEWTON AVIAN CHARLES  
2245 CRESTVIEW DR  
WEST LINN, OR 97068

NILSEN JOHN & LYNN  
23010 BLAND CIR  
WEST LINN, OR 97068

OMLOR JOHN J & RACHEL  
23150 BLAND CIR  
WEST LINN, OR 97068

PEPPERLING KENNETH L & VICTORIA L  
22995 BLAND CIR  
WEST LINN, OR 97068

PERCIN JOHN J SR & MARY E  
23036 BLAND CIR  
WEST LINN, OR 97068

QUESNEL DAVID A & SANDRA R  
2275 CRESTVIEW DR  
WEST LINN, OR 97068

REMINGTON TAD W  
2140 FIRCREST DR  
WEST LINN, OR 97068

RITTER DAVID & KARI  
23045 BLAND CIR  
WEST LINN, OR 97068

ROWER JEREMY A  
2255 CRESTVIEW DR  
WEST LINN, OR 97068

SCHMID DAVID & JILL  
22951 BLAND CIR  
WEST LINN, OR 97068

SEQUOIA HEIGHTS CAPITAL PARTNERS  
1101 FIFTH AVE STE 300  
SAN RAFAEL, CA 94901

SHEKARRIZ HABIB  
21633 SW JOHNSON RD  
WEST LINN, OR 97068

SIMPSON REALTY GROUP LP  
8110 EAST UNION AVE  
DENVER, CO 80237

SMITH DAVID P & JILLIAN N  
2285 CRESTVIEW DR  
WEST LINN, OR 97068

SNOW KENNETH E  
2125 FIRCREST DR  
WEST LINN, OR 97068

SOBOTTA THOMAS J  
2270 CRESTVIEW DR  
WEST LINN, OR 97068

WAGNER ROBERT E  
23043 BLAND CIR  
WEST LINN, OR 97068

WEI LI & LI LI  
22864 S WEATHERHILL RD  
WEST LINN, OR 97068

XAVIER ANTONIO L  
2260 CRESTVIEW DR  
WEST LINN, OR 97068

YU JIANG  
2150 FIRCREST DR  
WEST LINN, OR 97068

ZHUANG YANG & JUN LIU  
23035 BLAND CIR  
WEST LINN, OR 97068

JOHN WYLAND  
J T SMITH COMPANIES  
5285 MEADOWS RD., STE 171  
LAKE OSWEGO, OR 97035

ANDREW TULL  
3J CONSULTING, INC  
10445 SW CANYON RD, STE 245  
BEAVERTON, OR 97005

STEVE GARNER  
BHT NA PRESIDENT  
3525 RIVERKNOLL WAY  
WEST LINN OR 97068

SALLY MCLARTY  
BOLTON NA PRESIDENT  
19575 RIVER RD # 64  
GLADSTONE OR 97027

ALEX KACHIRISKY  
HIDDEN SPRINGS NA PRESIDENT  
6469 PALOMINO WAY  
WEST LINN OR 97068

JEF TREECE  
MARYLHURST NA PRESIDENT  
1880 HILLCREST DR  
WEST LINN OR 97068

BILL RELYEA  
PARKER CREST NA PRESIDENT  
3016 SABO LN  
WEST LINN OR 97068

AARON BUFFINGTON  
ROBINWOOD NA PRESIDENT  
3820 RIDGEWOOD WAY  
WEST LINN OR 97068

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

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

TRACY GILDAY  
SKYLINE RIDGE NA PRESIDENT  
1341 STONEHAVEN DR  
WEST LINN OR 97068

TROY BOWERS  
SUNSET NA PRESIDENT  
2790 LANCASTER ST  
WEST LINN OR 97068

JULIA SIMPSON  
WILLAMETTE NA PRESIDENT  
1671 KILLARNEY DR  
WEST LINN OR 97068

ALMA COSTON  
BOLTON NA DESIGNEE  
PO BOX 387  
WEST LINN OR 97068

SUSAN VAN DE WATER  
HIDDEN SPRINGS NA DESIGNEE  
6433 PALOMINO WAY  
WEST LINN OR 97068

KEVIN BRYCK  
ROBINWOOD NA DESIGNEE  
18840 NIXON AVE  
WEST LINN OR 97068

DOREEN VOKES  
SUNSET NA SEC/TREAS  
4972 PROSPECT ST  
WEST LINN OR 97068

WEST LINN CHAMBER OF  
COMMERCE  
1745 WILLAMETTE FALLS DR  
WEST LINN OR 97068

*SUB-13-04*  
**MAILED**  
*11-27-13 SS*

*Smith*



CITY OF  
**West Linn**

October 30, 2013

John Wyland  
JT Smith Companies  
5285 Meadows Rd.  
Ste. 171  
Lake Oswego, OR 97035

SUBJECT: SUB-13-04 application for 11 lot subdivision at 22882 Weatherhill Road

Dear Mr. Wyland:

You provided a re-submittal on October 21, 2013 with the request that it be deemed complete upon its receipt. After review, your application has been declared **complete** as of the October 21, 2013 re-submittal date. The City now has 120 days (until February 18, 2014) to exhaust all local review per state statute. The application will be scheduled for a Planning Commission hearing. Tentative dates include December 4 and 18, 2013. At least 20 days before the hearing you will be sent a copy of the hearing notice and the exact hearing date.

Please contact me at 503-723-2539, or by email at [pspir@westlinnoregon.gov](mailto:pspir@westlinnoregon.gov) if you have any questions or comments.

Sincerely,

*Peter Spir*

Peter Spir  
Associate Planner

## Spir, Peter

---

**From:** Darby, Ty M. <Ty.Darby@tvfr.com>  
**Sent:** Wednesday, November 27, 2013 4:45 PM  
**To:** Spir, Peter  
**Cc:** Le, Khoi; Arn, Jason S.  
**Subject:** RE: subdivision approval

Peter,

Just as a follow up, the Fire District does require a fire hydrant within 600 ft. of all the proposed structures. Thank you.

**Ty Darby | Deputy Fire Marshal**  
Tualatin Valley Fire & Rescue  
Direct: 503-259-1409  
[www.tvfr.com](http://www.tvfr.com)

---

**From:** Darby, Ty M.  
**Sent:** Wednesday, November 27, 2013 4:36 PM  
**To:** 'Spir, Peter'  
**Cc:** Le, Khoi  
**Subject:** RE: subdivision approval

Peter,

Good afternoon. The Fire District will not require the installation of residential fire sprinklers or a fire apparatus turn-around for this proposed development. Please let me know if you have any questions. Thank you.

**Ty Darby | Deputy Fire Marshal**  
Tualatin Valley Fire & Rescue  
Direct: 503-259-1409  
[www.tvfr.com](http://www.tvfr.com)

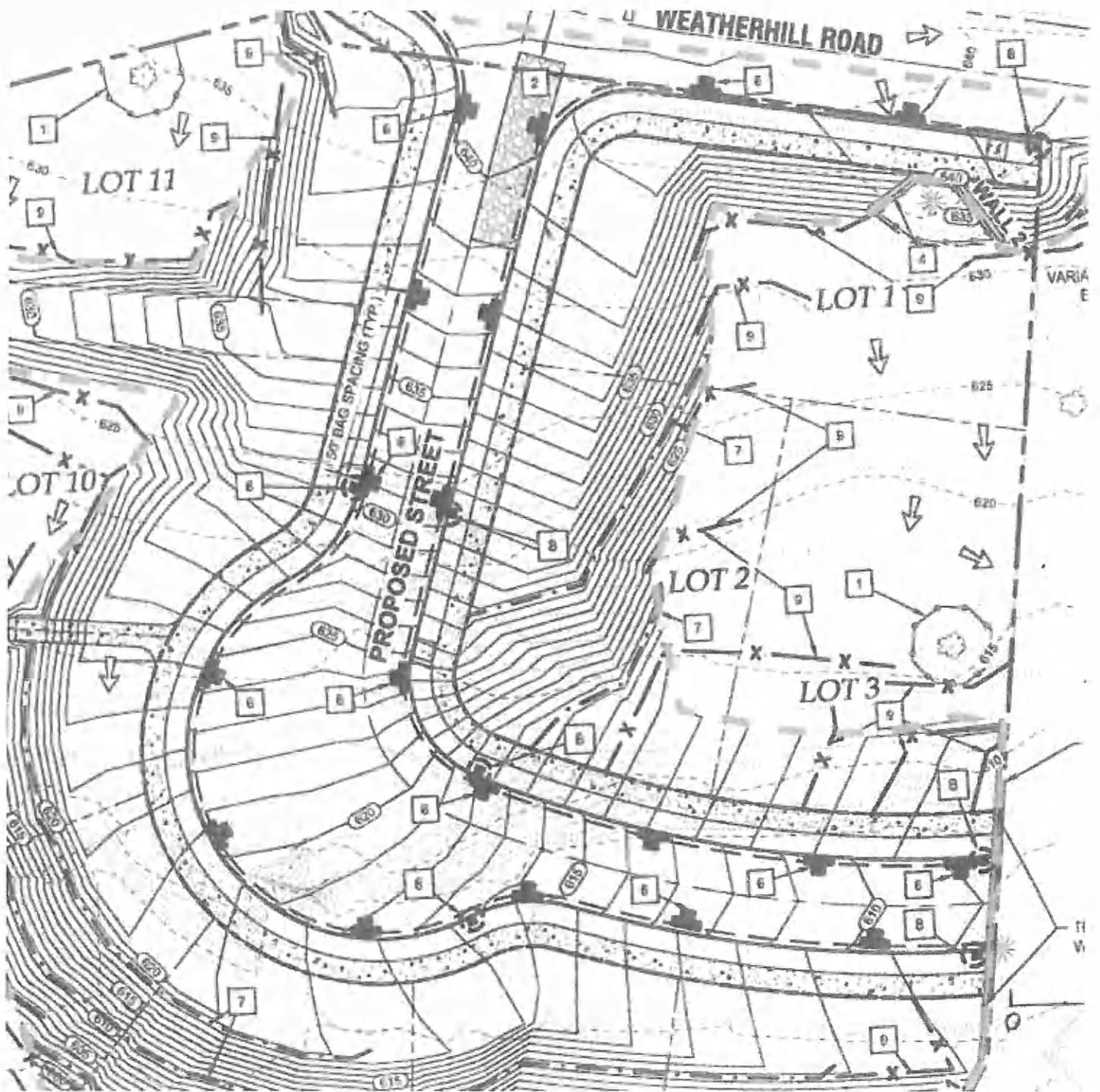
---

**From:** Spir, Peter [<mailto:Pspir@westlinnoregon.gov>]  
**Sent:** Tuesday, November 26, 2013 10:34 AM  
**To:** Darby, Ty M.  
**Cc:** Le, Khoi  
**Subject:** subdivision approval

Hi Ty

An 11 lot subdivision is proposed with a 330 foot long street which stub outs to an adjoining property. The expectation is that the 24 foot wide street will be extended in the future. A very large 60 foot wide "eyebrow" is provided 120 feet from the stub out. Will we need to require all homes to be sprinklered or is the eyebrow sufficient to provide fire apparatus turnarounds? I will need to know by next Monday at the latest.

Much obliged.  
Peter Spir  
503-723-2539



CITY OF  
**West  
 Linn**

100 Years  
 1913 - 2013

Peter Spir  
 Pspir@westlinnoregon.gov  
 Associate Planner  
 22500 Salamo Rd.  
 West Linn, OR 97068  
 P: (503) 723-2539  
 F: (503) 656-4106  
 Web: [westlinnoregon.gov](http://westlinnoregon.gov)



## EXHIBIT

E-mail dated 7/10/2013 from Ed Schwarz to applicant's consultant Andrew Tull

Andrew,

Thanks to you and Jeff Smith for attending the July 2, 2013 meeting of Savanna Oaks NA and discussing the Weatherhill development.

After the meeting, the NA members discussed concerns that they have regarding this development.

The NA members asked that I send you the following list of concerns. It is our hope that you can address these concerns as the development moves toward the Planning Commission hearing.

### **Trees**

You stated that there are 22 significant trees on the property and that it was your hope that 50% of them could be saved during development. The NA members ask that you set 50% tree preservation as a minimum goal for this development. We also ask that you make every effort to save the large Madrone tree on the property as trees of that size are very rare and a significant community asset.

### **Fircrest Drive**

You stated that it might be necessary during construction to remove most of the existing trees along the bottom of the property along Fircrest Drive. If it is not possible to save these trees then you stated that new trees would be planted along Fircrest to shield the existing homes there from views of the new homes. The NA members ask that you make every effort to save the existing trees and, if this is not possible, that new trees be planted along Fircrest such that the existing homes are shielded from the new homes.

### **Traffic / Blind Corner on Bland Circle**

During your presentation, an NA member commented on the blind corner on Bland Circle which is located down the street from the property you are developing. While not specifically related to your development, the NA members requested that all developers along Weatherhill work with the city in an attempt to eliminate or at least reduce the effects of additional traffic at this blind corner. The NA members expressed concerns that additional traffic on Bland Circle will make this corner more dangerous.

Please keep us updated on the progress of this development, especially regarding any progress made towards the above goals.

Regards,  
Ed Schwarz, President  
Savanna Oaks Neighborhood Association

---

**EXHIBIT PC-5**

**APPLICANT'S SUBMITTAL**

**FILE NUMBER: SUB-13-04**

**REQUEST: 11-LOT SUBDIVISION**





November 27, 2013

City of West Linn  
Mr. Peter Spir  
Associate Planner  
22500 Salamo Road  
West Linn, OR 97068

**SUBJECT: WEATHERHILL (SUB-13-04)**

Dear Peter,

I am writing on behalf of JT Smith Companies regarding the previously submitted changes to the plans for the Weatherhill Subdivision. This letter has been prepared in order to supplement the record for the project and to document the ability of the current site plan to meet the City's approval criteria for a subdivision.

Below you will find the code sections and revised findings for the sections identified within your November 21 correspondence. In addition to sections identified with your email, we have also included several sections which were identified by the project team as also needing revision. As in the original narrative, Code sections are **Bold** and the findings are immediately below each section. Please accept this letter into the record as an addendum to the previously submitted narrative.

**DIVISION 8. LAND DIVISION  
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. 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 and any adopted updated plans.

An applicant may submit a written request for a waiver of abutting street improvements if the Transportation System Plan 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 propose a fee amount that will be reviewed by the City Manager or the Manager's designee. The City Manager or the Manager's designee will revise the proposed fee as necessary and establish the amount to be paid on a case-by-case basis. The applicant shall pay an in-lieu fee for improvements to the nearest street identified by the City Manager or Manager's designee as necessary and appropriate. The amount of the in-lieu fee shall be roughly proportional to the impact of the development on the street system as determined in subsection (A)(22) of this section.

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 on Weatherhill Road, a local street. Weatherhill Road adjacent to this site connects Bland Circle to the west with Salamo Road to the east. The connectivity of this local street will not be changed. The current right-of-way width of Weatherhill Road adjacent to the subject site is 30 feet, inadequate based on the requirements of Section 2, below. The Applicant proposes 13-feet of additional right-of-way along the property's frontage on Weatherhill Road, for a total right-of-way width of 43 feet. Sidewalks and planter strips are also proposed.

This section requires that the developer be responsible for the construction of internal streets. One internal street is proposed, providing access to all 11 lots. The Applicant proposes full responsibility for construction of this internal street, with a total right-of-way width of 48 feet. The paved surface will be 24 feet in width and 6-foot sidewalks and 6-foot planter strips will be provided on each side of the paved surface.

The proposed internal street will connect through the property, from Weatherhill Road to the north and to the adjacent property to the east. The alignment provides connectivity while preserving some tree clusters and maintaining density on the site.

The requirements of this section have been satisfied.

**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:

<u>Street Classification</u>	<u>Right-of-Way</u>
Local street	40 – 60

**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:**

As discussed above, the Applicant proposes the dedication of 13 feet of right-of-way along Weatherhill Road to increase the right-of-way width from 30 feet to 43 feet. From centerline, the right-of-way will increase from 15 feet to 28 feet. This will accommodate a total right-of-way of 56 feet when the property to the north develops in the future. The City's Engineering Department calls out a 56-foot right-of-way in the pre-application notes dated April 4, 2013.

The Applicant further proposes a new local street with a 48 foot right-of-way and 24 foot pavement width. No parking is proposed on this new public street.

The requirements of this section have been satisfied.

**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:**

As discussed above, the width of the paved section of the new local street will be 24 feet, per the TSP standard for a local street with no on-street parking.

The requirements of this section have been satisfied.

**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 original submittal included a hammerhead termination of the new local street that did not provide the connectivity that the new configuration does. The City Engineer has reviewed the proposal and made dimensional recommendations to the applicant, which are incorporated into the proposed configuration.

The requirements of this section have been satisfied.

**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 layout of the proposed local street extends to the eastern boundary of the subdivision and dead-ends at the property to the east, providing the opportunity for connectivity when and if the property to the west develops in the future.

The requirements of this section have been satisfied.

**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 public local street will intersect Weatherhill Road approximately at the location of the existing driveway and as near to a right angle as practical. The curb radii at the intersection will exceed 25 feet.

The requirements of this section have been satisfied.

**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 Weatherhill Road and the new public local street, as discussed above, will be dedicated at time of subdivision.



The requirements of this section have been satisfied.

**11. Cul-de-sacs.** Cul-de-sacs are not allowed except as required by topography, slope, site limitations, and lot shapes. Cul-de-sacs shall have maximum lengths of 400 feet and serve no more than 12 dwelling units, unless by variance per Chapter 75 CDC. All cul-de-sacs 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:** The Applicant has not proposed to construct a hammer head or cul-de-sac.  
This section does 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 Applicant proposes the name Satter Street for the new street within the development.

The requirements of this section have been satisfied.

**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 and curves of the new local public street will not exceed 15 percent, per this standard. The minimum centerline radii will be 50 feet. No super elevations are proposed.

The requirements of this section have been satisfied.

**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.

The requirements of this section have been satisfied.

**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.

The requirements of this section have been satisfied.

**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 Weatherhill Road frontage of this property, and along the new public street within the development, per this standard.

The requirements of this section have been satisfied.

**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 Weatherhill Road and the new local public street.

The requirements of this section have been satisfied.

**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:** All lots in the subdivision will have access to the new public street proposed.  
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.  
The requirements of this section have been satisfied.

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.

The requirements of this section have been satisfied.

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** Right-of-way dedication and street improvements are proposed with this



**Finding:** application proportionate to the construction of eleven new lots. Off-site improvements are not necessary or proportionate to mitigate impacts from this 11-lot subdivision.

The requirements of this section have been satisfied.

**B. Blocks and lots.**

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:** Weatherhill Road currently extends from Salamo Road on the east to Bland Circle on the West. The new public street proposed with this subdivision application will intersection Weatherhill Road near the middle of the distance between Salamo and Bland. This new public street will then connect to the eastern boundary of the subdivision, providing future connectivity to the property to the east for vehicles, pedestrians and bicycles. A pedestrian/bicycle path is proposed to extend to the east of the new public street.

The requirements of this section have been satisfied.

3. **Lot size and shape.** Lot size, width, shape, and orientation shall be appropriate for the location of the subdivision, 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 shall be dimensioned to contain part of an existing or proposed street. All lots shall be buildable, and the buildable depth should not exceed two and one-half times the average width. "Buildable" describes lots that are free of constraints such as wetlands, drainageways, etc., that would make home construction impossible. Lot 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	50 feet
Lot Depth	Less than 2.5x Width and greater than Average Depth of 90 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 11 proposed lots exceed the minimum requirements for front lot line length, lot width and lot depth. The sizes, width, shape, and orientation of the lots is appropriate for the zone, the property shape and the location of the subdivision.

The requirements of this section have been satisfied.

**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. \*\*\*

- a. Setbacks applicable to the underlying zone shall apply to the flag lot.
- b. Front yard setbacks may be based on the rear property line of the parcel which substantially separates the flag lot from the street from which the flag lot gains access. Alternately, the house and its front yard may be oriented in other directions so long as some measure of privacy is ensured, or it is part of a pattern of development, or it better fits the topography of the site.
- c. The lot size shall be calculated exclusive of the accessway; the access strip may not be counted towards the area requirements.
- d. The lot depth requirement contained elsewhere in this code shall be measured from the rear property line of the parcel which substantially separates the flag lot from the street from which the flag lot gains access.
- e. As per CDC 48.030, the accessway shall have a minimum paved width of 12 feet.
- f. If the use of a flag lot stem to access a lot is infeasible because of a lack of adequate existing road frontage, or location of existing structures, the proposed lot(s) may be accessed from the public street by an access easement of a minimum 15-foot width across intervening property.

**Applicant's Finding:** Lot 8 is proposed as a flag lot. The width of the frontage is 15 feet. All setback, lot size, lot depth and access requirements are met.

The requirements of this section have been satisfied.

**C. Pedestrian and bicycle trails.**

1. Trails or multi-use pathways shall be installed, consistent and compatible with federal ADA requirements and with the Oregon Transportation Planning Rule, between subdivisions, cul-de-sacs, and streets that would otherwise not be connected by streets due to excessive grades, significant tree(s), and other constraints natural or manmade. Trails shall also accommodate bicycle or pedestrian traffic between neighborhoods and activity areas such as schools, libraries, parks, or commercial districts. Trails shall also be required where designated by the Parks Master Plan.

2. The all-weather surface (asphalt, etc.) trail should be eight feet wide at minimum for bicycle use and six feet wide at minimum for pedestrian use. Trails within 10 feet of a wetland or natural drainageway shall not have an all-weather surface, but shall have a soft surface as approved by the Parks Director. These trails shall be contained within a corridor dedicated to the City that is wide enough to provide trail users with a sense of defensible space. Corridors that are too narrow, confined, or with vegetative cover may be threatening and discourage use. Consequently, the minimum corridor width shall be 20 feet. Sharp curves, twists, and blind corners on the trail are to be avoided as much as possible to enhance defensible space. Deviations from the corridor and trail width are permitted only where topographic and ownership constraints require it.
3. Defensible space shall also be enhanced by the provision of a three- to four-foot-high matte black chain link fence or acceptable alternative along the edge of the corridor. The fence shall help delineate the public and private spaces.
4. The bicycle or pedestrian trails that traverse multi-family and commercial sites should follow the same defensible space standards but do not need to be defined by a fence unless required by the decision-making authority.
5. Except for trails within 10 feet of a wetland or natural drainageway, soft surface or gravel trails may only be used in place of a paved, all-weather surface where it can be shown to the Planning Director that the principal users of the path will be recreational, non-destination-oriented foot traffic, and that alternate paved routes are nearby and accessible.
6. The trail grade shall not exceed 12 percent except in areas of unavoidable topography, where the trail may be up to a 15 percent grade for short sections no longer than 50 feet. In any location where topography requires steeper trail grades than permitted by this section, the trail shall incorporate a short stair section to traverse the area of steep grades.

**Applicant's Finding:** Sidewalks will be constructed with the new local street, connecting from the north at Weatherhill Road and extending east to the property boundary. The Applicant is also proposing a 10 foot pedestrian access easement with 6-foot all-weather surface path from the new public street within the subdivision to the west property lines.

The requirements of this section have been satisfied.

**D. Transit facilities.**

1. The applicant shall consult with Tri-Met and the City Engineer to determine the appropriate location of transit stops, bus pullouts, future bus routes, etc., contiguous to or within the development site. If transit service is planned to be provided within the next two years, then facilities such as pullouts shall be constructed per Tri-Met standards at the time of development. More elaborate facilities, like shelters, need only be built when service is existing or imminent. Additional rights-of-way may be required of developers to accommodate buses.
2. The applicant shall make all transit-related improvements in the right-of-way or in easements abutting the development site as deemed appropriate by the City Engineer.
3. Transit stops shall be served by striped and signed pedestrian crossings of the street within 150 feet of the transit stop where feasible. Illumination of the transit stop



and crossing is required to enhance defensible space and safety. ODOT approval may be required.

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

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

The requirements of this section have been satisfied.

**E. Lot 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. Where landslides have actually occurred, where the area is identified as a hazard site in the West Linn Comprehensive Plan Report, or where field investigation by the City Engineer confirms the existence of a severe landslide hazard, development shall be prohibited unless satisfactory evidence is additionally submitted by a registered geotechnical engineer which certifies that methods of rendering a known hazard site safe for construction are feasible for a given site. The City Engineer's field investigation shall include, but need not be limited to, the following elements:

a. Occurrences of geotropism.

b. Visible indicators of slump areas.

c. Existence of known and verified hazards.

d. Existence of unusually erosive soils.

e. Occurrences of unseasonably saturated soils.

The City Engineer shall determine whether the proposed methods or designs are adequate to prevent landslide or slope failure. The City Engineer may impose conditions consistent with the purpose of these ordinances and with standard engineering practices including limits on type and intensity of land use, which have been determined necessary to assure landslide or slope failure does not occur.

6. All cuts and fills shall conform to the Uniform Building Code.

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:** All grading on site will be done in conformance with these standards. A grading and erosion control plan is included with the land use application submittal and the applicant will obtain a grading permit prior to any earthwork on the site.

The requirements of this section have been satisfied.

**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 subject property is located in the Horton and Rosemont water pressure zone. The City Engineering Department's comments in the pre-application notes dated April 4, 2013 indicate that there is a surplus in supply capacity during normal conditions and that there is no storage volume deficit during normal conditions in the Horton pressure zone. The applicant will connect all lots to public water per the submitted public improvement plans. This plan is consistent with the adopted Comprehensive Water System Plan.

The requirements of this section have been satisfied.



**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 proposed sanitary sewer system is consistent with the Sanitary Sewer Master Plan, is in the correct basin and allows for full gravity service.

The requirements of this section have been satisfied.

**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 is designed to meet city standards, as detailed in the submitted stormwater report.

The requirements of this section have been satisfied.

**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. All public utility easements will be shown on the final plat.

The requirements of this section have been satisfied.

**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 drainageways.

The requirements of this section have been satisfied.

**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 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.

The requirements of this section have been satisfied.

**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.

The requirements of this section have been satisfied.

**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 with the subdivision will utilize high or low pressure sodium light bulbs.



The requirements of this section have been satisfied.

**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 an 11-lot subdivision. Additional dedication and/or public improvements would exceed rough proportionality of this development.

The requirements of this section have been satisfied.

**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.

The requirements of this section have been satisfied.

**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 2.34 acres. At 6.2 dwelling units per net acre, the maximum number of dwelling units on this site is 14. The proposed 11 dwelling units would be 78 percent of the maximum density.

The requirements of this section have been satisfied.

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

**Applicant's Finding:** This property is zoned R-7 and, therefore, the use of the parcel as an entirely residential development is permitted.

The requirements of this section have been satisfied.



**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. Removal of significant trees has been minimized to the greatest extent feasible and reasonable. Several clusters of Douglas fir trees (some designated significant) will be protected throughout the construction process. A detailed tree protection and removal plan is included with this submittal.

The requirements of this section have been satisfied.

#### 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.

The requirements of this section have been satisfied.

**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.

The requirements of this section have been satisfied.

**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.

The requirements of this section have been satisfied.

**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 new street right-of-way and along Weatherhill Road. The newly proposed roadway will also contain 6-foot-wide planting strips.

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.

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.

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.

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.

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 parcel is blocked by a row or screen of significant trees or tree clusters.

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.

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.

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 has inventoried all trees and tree clusters on the site. The applicant is proposing tree preservation consistent with these requirements, as detailed in the tree plan.

The site plan, with the revised roadway alignment, would enable the retention of approximately 22,023 square feet of significant tree canopy. This represents 47% of the existing significant canopy on the property. Of the retained canopy, approximately 9,350 square feet of the retained canopy will be placed into an conservation easement. The easement area on site represents 20% of the total significant tree canopy area plus ten feet.

The Applicant's proposed roadways and access drives will result in the removal of 210 caliper inches therefore mitigation for 210 inches is required. During the construction documentation phase of the project, the Applicant will provide a mitigation plan containing the required 105 trees required to meet the mitigation thresholds. All trees installed will be 2 inches in caliper size or greater, therefore meeting the inch for inch mitigation requirement.

The requirements of this section have been satisfied.

We trust that these responses will assist with the City's favorable evaluation of the project. Please feel free to contact us with any questions that you may have. We will be ready to respond to any questions or requests for any further clarification.



Sincerely,



Andrew Tull  
Senior Planner  
3J Consulting, Inc.

copy: Mr. John Wyland, JT Smith Companies  
Mr. Mike Robinson, Perkins Coie  
Mr. Brian Feeney, 3J Consulting, Inc  
File



TAX LOTS 300, 301, AND 402 LOCATED IN THE NW 1/4 SECTION 28S, R.1E, W.1M NW 1/4 SECTION 30N, CLATSOP COUNTY, OREGON

LAND USE REGION SUMMARY  
BY DATE 11/19/13

WEATHERHILL SUBDIVISION  
TREE PROTECTION AND REMOVAL PLAN  
LF 7, LLC  
J.T. SMITH

3J CONSULTING, INC.  
WATER RESOURCES  
LAND USE PLANNING  
PHONE: 503.625.4628  
FAX: 503.625.4628  
1045 SW CAMDEN ROAD SUITE 102 SEASIDE, OREGON 97138

3/10/09 BY 10119  
LAND USE # 1  
TAX LOT # 5 DEFERRED REVIEW  
CHECKED BY TOP  
CHECKED DATE

SHEET TITLE  
TREE PLAN  
SHEET NUMBER  
C1.2



- LEGEND**
- EXISTING DECIDUOUS TREE
  - EXISTING CONIFEROUS TREE
  - TREE (SPRINT TYPE, CALIPER AND DHP/LINE 12" D.)
  - SIGNIFICANT TREE CANOPY TO REMAIN (DHP/LINE - 10 FT.)
  - SIGNIFICANT TREE CANOPY TO BE REMOVED (DHP/LINE - 10 FT.)
  - TREE TO BE REMOVED
  - TREE PROTECTION FENCING
  - TREE PRESERVATION EASEMENT

**GENERAL TREE INVENTORY STATISTICS**

TOTAL PROPERTY AREA: 11,02,880 SQ. FT. ± (2.59 AC.)

TOTAL TREE INVENTORY PROJECT BOUNDARY: 87 TREES

TOTAL TREES REMOVED: 23 TREES

TOTAL TREES RETAINED: 64 TREES

TOTAL TREE CALIPER INCHES: 1,987 INCHES

TOTAL CALIPER INCHES RETAINED: 2,627 SQ. FT.

TOTAL CALIPER INCHES REMOVED: 1,100 INCHES

**SIGNIFICANT TREE STATISTICS**

SIGNIFICANT TREE INVENTORY: 73 TREES

SIGNIFICANT TREES RETAINED: 11 TREES

SIGNIFICANT TREES REMOVED: 12 TREES

SIGNIFICANT TREE CALIPER INCHES: 844 INCHES

SIGNIFICANT CALIPER INCHES RETAINED: 354 INCHES

SIGNIFICANT CALIPER INCHES REMOVED: 490 INCHES

SIGNIFICANT TREE CANOPY COVERAGE: 48,673 SQ. FT.

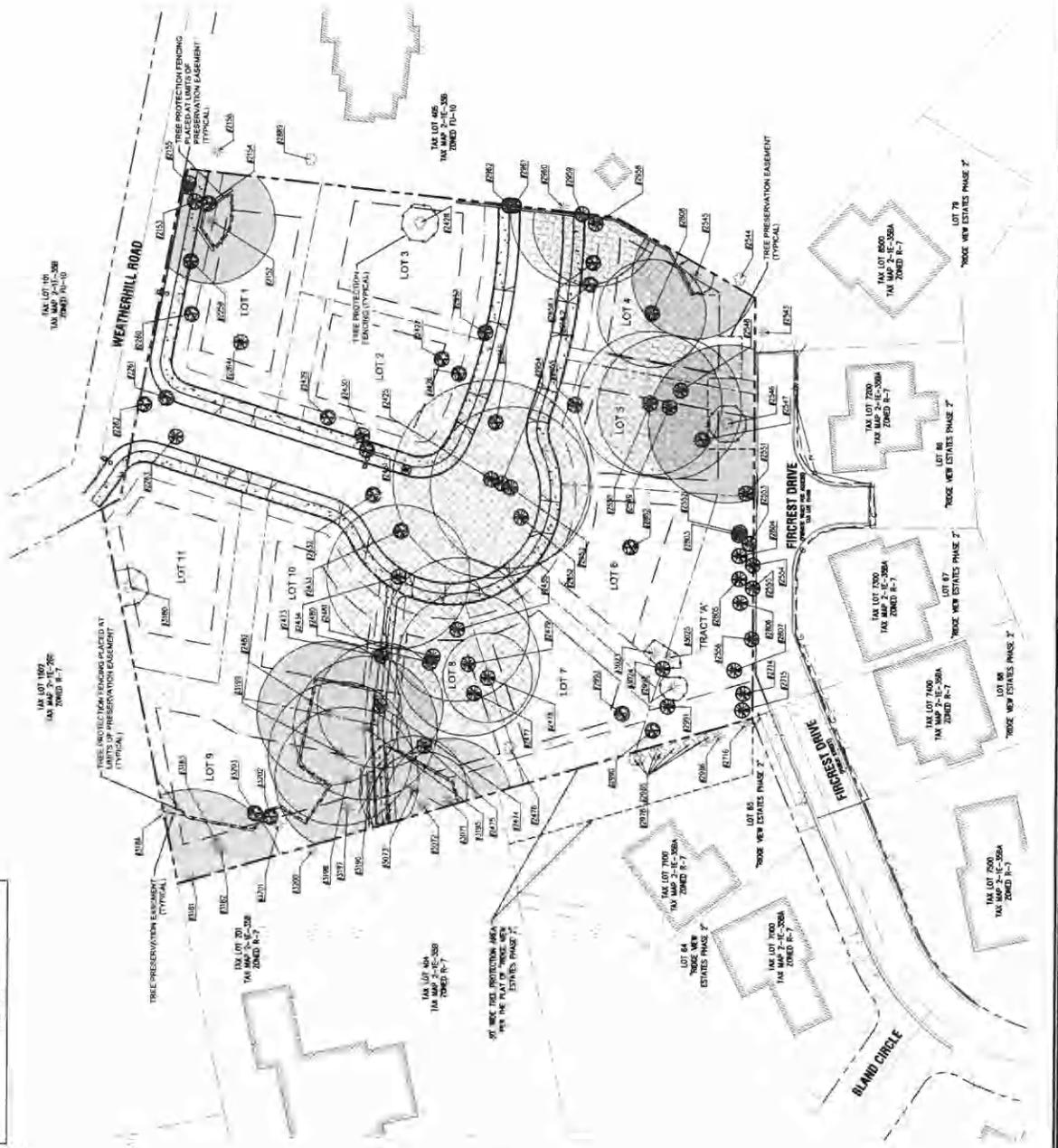
SIGNIFICANT TREE CANOPY RETAINED: 22,627 SQ. FT.

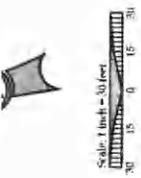
SIGNIFICANT TREE CANOPY REMOVED: 26,046 SQ. FT.

SIGNIFICANT TREE CANOPY REMOVED DUE TO R.O.W. IMPROVEMENTS: 18,189 SQ. FT.

TREE PRESERVATION EASEMENT AREA REQUIRED (10% OF EXISTING CANOPY): 9,326 SQ. FT.

TREE PRESERVATION EASEMENT AREA PROVIDED (10% OF EXISTING CANOPY): 9,340 SQ. FT.





**LEGEND**

- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- TREE POINT, TYPE, CALIPER AND DRIPLINE
- SIGNIFICANT TREE CANOPY TO REMAIN (DRIPLINE - 10 FT)
- SIGNIFICANT TREE CANOPY TO BE REMOVED (DRIPLINE - 10 FT)
- TREE TO BE REMOVED
- TREE PROTECTION FENCING
- TREE PRESERVATION EASEMENT



**GENERAL TREE INVENTORY STATISTICS**

TOTAL PROPERTY AREA:	112,808 Sq. Ft. = 2.59 Ac.
TOTAL TREE INVENTORY (PROJECT BOUNDARY):	37 trees
TOTAL TREES RETAINED:	23 trees
TOTAL TREES REMOVED:	64 trees
TOTAL TREE CALIPER INCHES:	1,867 inches
TOTAL TREE CALIPER INCHES RETAINED:	767 inches
TOTAL CALIPER INCHES REMOVED:	1,100 inches

**SIGNIFICANT TREE STATISTICS**

SIGNIFICANT TREE INVENTORY:	23 trees
SIGNIFICANT TREES RETAINED:	11 trees
SIGNIFICANT TREES REMOVED:	12 trees
SIGNIFICANT TREE CALIPER INCHES:	844 inches
SIGNIFICANT CALIPER INCHES RETAINED:	304 inches
SIGNIFICANT CALIPER INCHES REMOVED:	450 inches
SIGNIFICANT TREE CANOPY COVERAGE:	46,673 Sq. Ft.
SIGNIFICANT TREE CANOPY RETAINED:	22,023 Sq. Ft.
SIGNIFICANT TREE CANOPY REMOVED:	24,650 Sq. Ft.
SIGNIFICANT TREE CANOPY REMOVED DUE TO H.O.W. IMPROVEMENTS:	18,189 Sq. Ft.
TREE PRESERVATION EASEMENT AREA REQUIRED (20% OF EXISTING CANOPY):	9,356 Sq. Ft.
TREE PRESERVATION EASEMENT AREA PROVIDED (20% OF EXISTING CANOPY):	9,350 Sq. Ft.



WEATHERHILL SUBDIVISION  
WEST LINA, OR  
LF 2, LLC

J.T. SMITH CONSULTANTS

3J CONSULTING, INC.  
CIVIL ENGINEERING  
WATER RESOURCES  
LAND USE PLANNING  
10445 SW CANYON ROAD SUITE 245 BEAVERTON, OR 97005  
PHONE 503.622.9463 FAX 503.622.9428

3J JOB ID # 13118  
LAND USE #  
TAX LOT #S 171E08 20, 30, 40  
DESIGNED BY ICF  
CHECKED BY IBS  
SHEET TITLE TREE PLAN  
SHEET NUMBER C1.2



TENTATIVE SUBDIVISION PLAT  
 WEATHERHILL  
 SUBDIVISION  
 WEST LINN, OR  
 LF 7, LLC



**J.S. CONSULTING INC.**  
 CIVIL ENGINEERING  
 WATER RESOURCES  
 1045 SW CAMDEN ROAD SUITE 248  
 WEST LINN, OR 97136  
 PHONE: 503.864.5000  
 FAX: 503.864.5005  
 www.jscconsulting.com

**GEOTECHNICAL CONSULTANT**  
 JSC CONSULTING INC.  
 1045 SW CAMDEN ROAD SUITE 248  
 WEST LINN, OR 97136  
 CONTACT: SCOTT HARDWAY  
 PHONE: 503.864.5000  
 FAX: 503.864.5005  
 www.jscconsulting.com

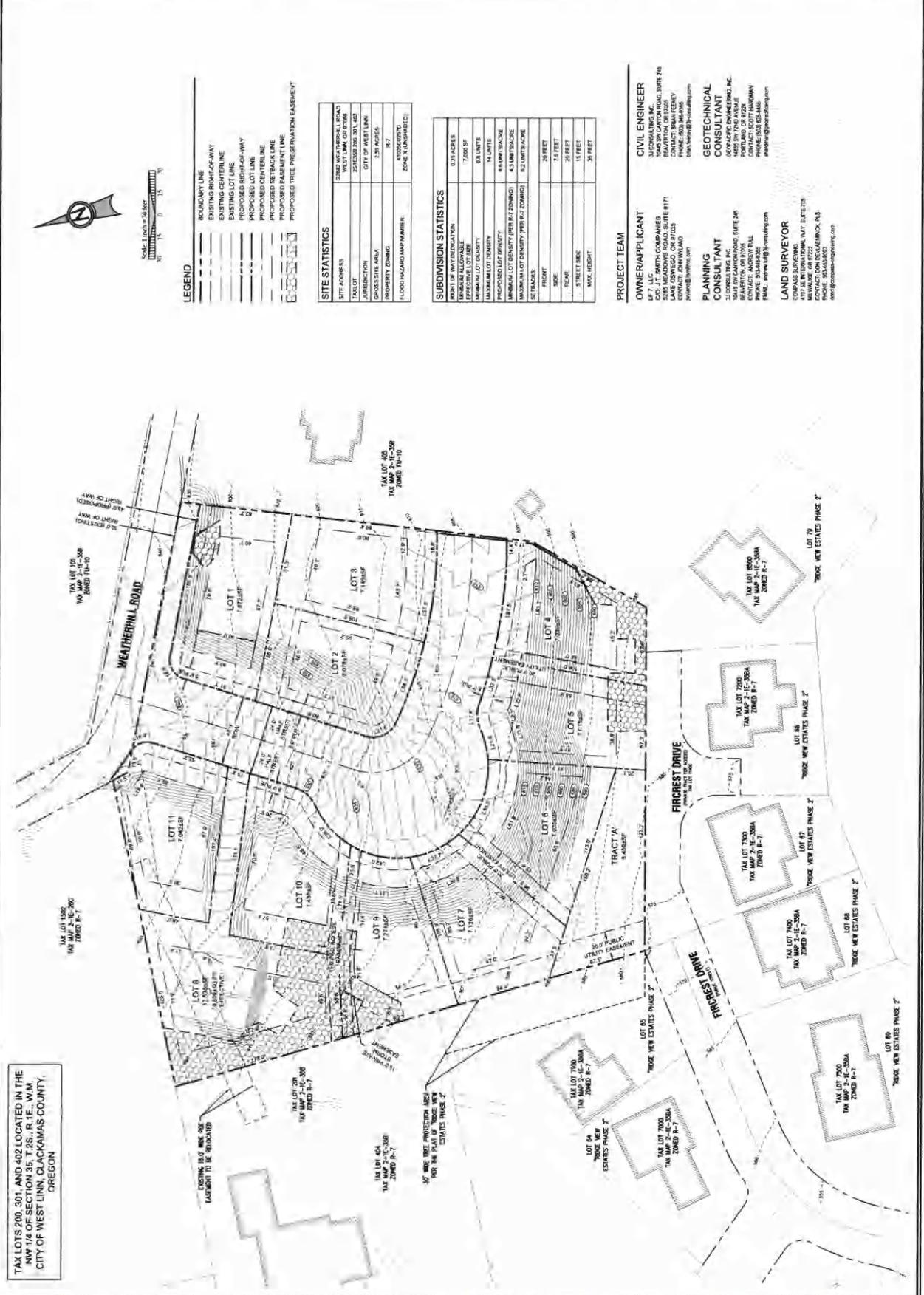
**LAND SURVEYOR**  
 COMPASS SURVEYING, INC.  
 10000 N. W. 22ND AVENUE  
 SUITE 100  
 FORT LAUDERDALE, FL 33322  
 PHONE: 352.453.3000  
 www.compass-engineering.com

**OWNER/APPLICANT**  
 J.T. SMITH COMPANIES  
 3445 MADISON ROAD SUITE #171  
 WEST LINN, OR 97136  
 CONTACT: JOAN WYLAND  
 PHONE: 503.864.5000  
 www.jt-smith.com

**PLANNING CONSULTANT**  
 J.S. CONSULTING INC.  
 1045 SW CAMDEN ROAD SUITE 248  
 WEST LINN, OR 97136  
 CONTACT: ANDREW FULL  
 PHONE: 503.864.5000  
 FAX: 503.864.5005  
 www.jscconsulting.com

**CIVIL ENGINEER**  
 J.S. CONSULTING INC.  
 1045 SW CAMDEN ROAD SUITE 248  
 WEST LINN, OR 97136  
 CONTACT: SCOTT HARDWAY  
 PHONE: 503.864.5000  
 FAX: 503.864.5005  
 www.jscconsulting.com

**PROJECT TEAM**





Scale: 1 inch = 30 feet  
0 15 30

- LEGEND**
- BOUNDARY LINE
  - EXISTING RIGHT-OF-WAY
  - EXISTING CENTERLINE
  - EXISTING LOT LINE
  - PROPOSED RIGHT-OF-WAY
  - PROPOSED LOT LINE
  - PROPOSED CENTERLINE
  - PROPOSED SETBACK LINE
  - PROPOSED EASEMENT LINE
  - PROPOSED TREE PRESERVATION EASEMENT

**SITE STATISTICS**

20885 WEATHERHILL BOARDS WEST LANE, OR 97068
TAX LOT 251519 200, 201, 402
JURISDICTION CITY OF WEST LANE
GROSS SITE AREA 2.99 ACRES
PROPERTY ZONING R-7
FLOOD HAZARD MAP NUMBER 4109002070
ZONE ZONE X (UNSHADED)

**SUBDIVISION STATISTICS**

RIGHT OF WAY DEDICATION 0.25 ACRES
MINIMUM ALLOWABLE 7,600 SF
EFFECTIVE LOT SIZE 9.8 UNITS
MINIMUM LOT DENSITY 14 UNITS
MAXIMUM LOT DENSITY 4.8 UNITS/ACRE
PROPOSED LOT DENSITY 4.3 UNITS/ACRE
MINIMUM LOT DENSITY (PER R-7 ZONING) 4.3 UNITS/ACRE
MAXIMUM LOT DENSITY (PER R-7 ZONING) 8.2 UNITS/ACRE
RETRAKES:
FRONT 20 FEET
SIDE 7.5 FEET
REAR 20 FEET
STREET SIDE 15 FEET
MAX. HEIGHT 35 FEET

**PROJECT TEAM**

**OWNER/APPLICANT**  
LF 7, LLC  
C/O: J.T. SMITH COMPANIES  
10000 W. WASHINGTON AVENUE SUITE #171  
LAKE OSWEGO, OR 97036  
CONTACT: JOHN WYLAND  
jwyland@lf7.com

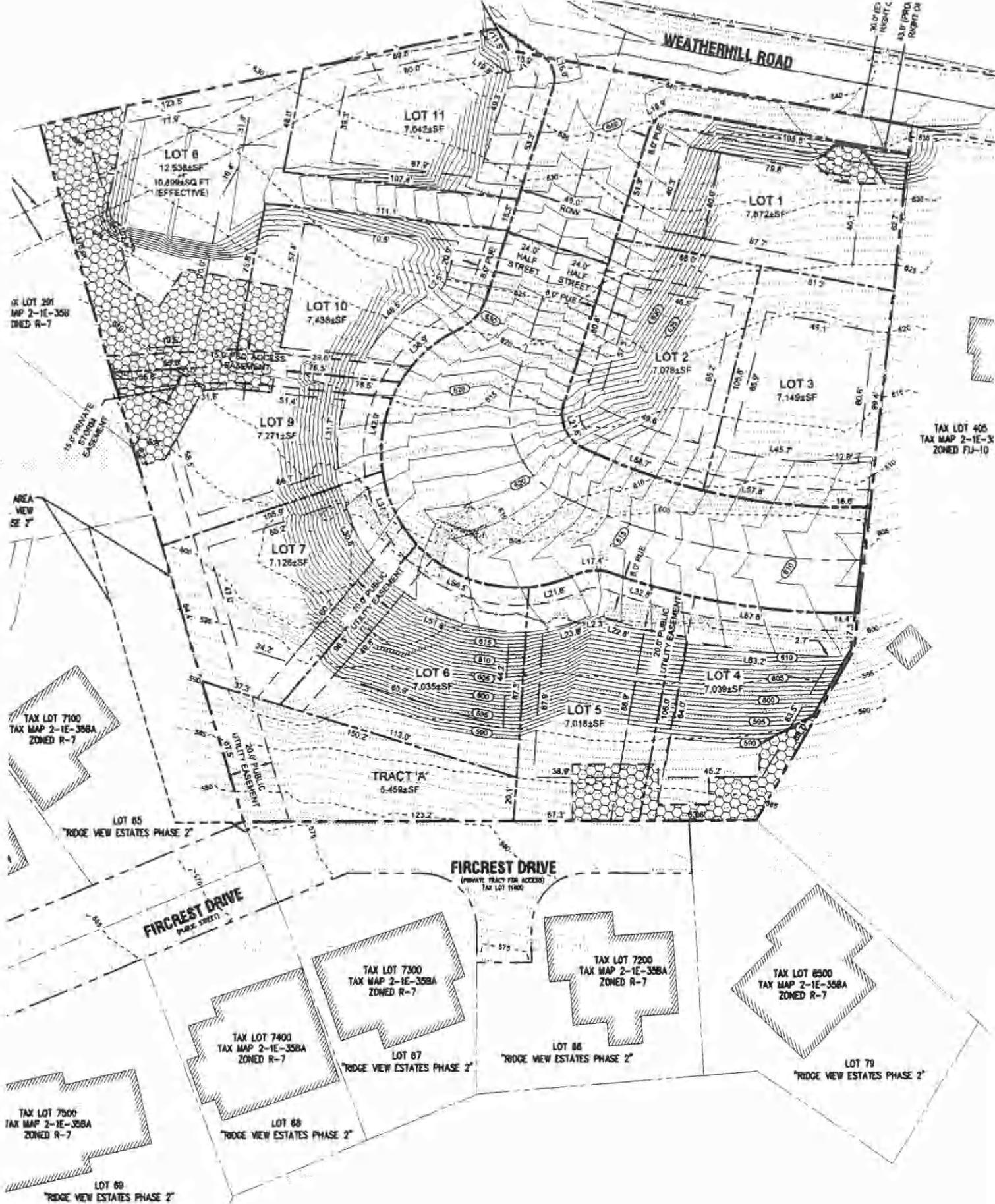
**CIVIL ENGINEER**  
JI CONSULTING, INC.  
1048 SW CANYON ROAD, SUITE 245  
PORTLAND, OR 97224  
CONTACT: BRIAN REENEY  
PHONE: (503) 846-9395  
brian\_reeneey@jiconsulting.com

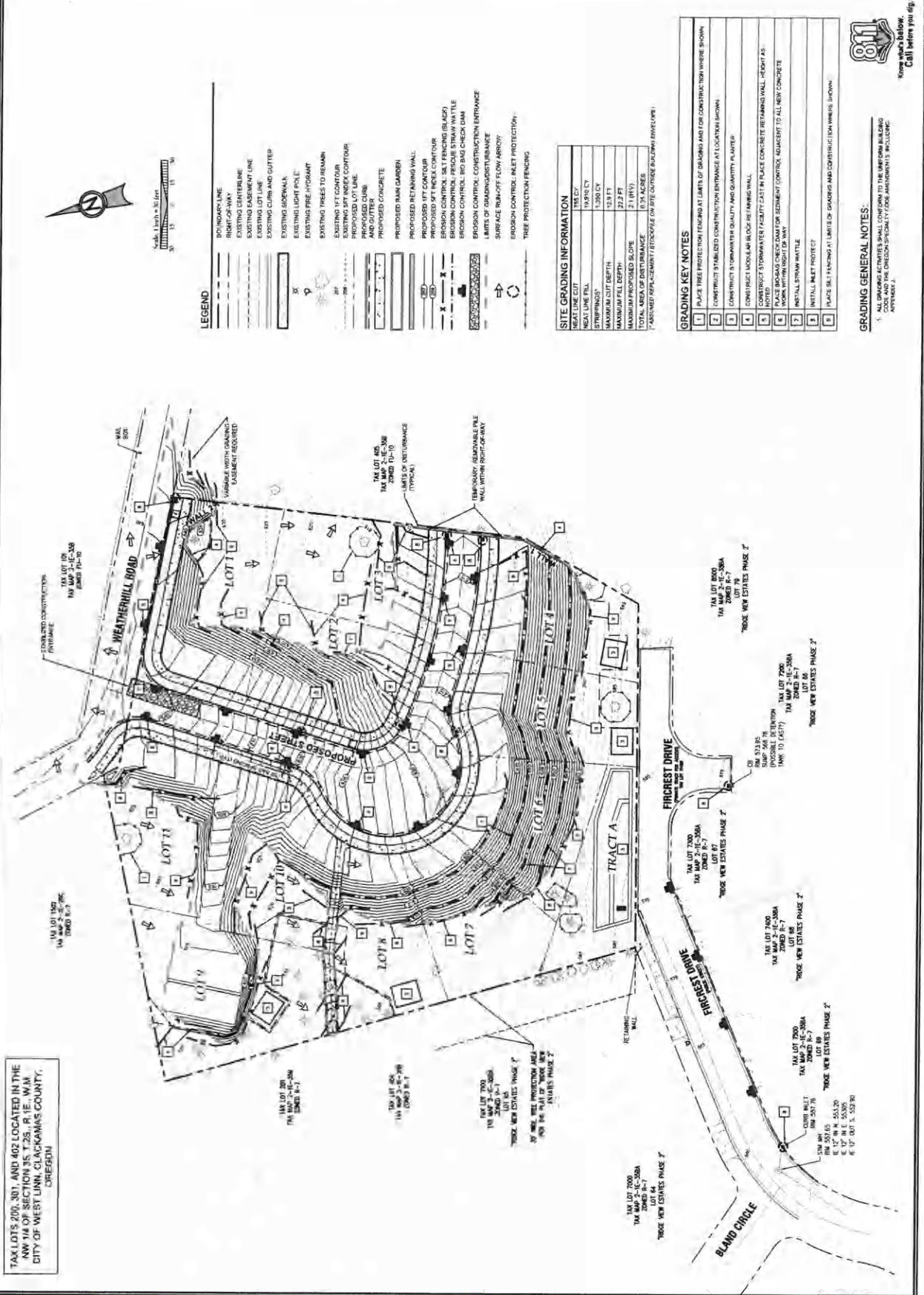
**GEOTECHNICAL CONSULTANT**  
GEORGE ENGINEERING, INC.  
1403 SW 72ND AVENUE  
PORTLAND, OR 97224  
CONTACT: SCOTT HARMAN  
PHONE: (503) 824-4455  
sherman@georgeengineering.com

**PLANNING CONSULTANT**  
JI CONSULTING, INC.  
1048 SW CANYON ROAD, SUITE 245  
BEAVERTON, OR 97005  
CONTACT: ANDREW TULL  
PHONE: 503-846-9395  
EMAIL: andrew.tull@jiconsulting.com

**LAND SURVEYOR**  
COMPASS SURVEYING  
4107 SE INTERNATIONAL WAY, SUITE 105  
PORTLAND, OR 97202  
CONTACT: DON DEVALLE/BLACK, PLS  
PHONE: 503-833-9023  
don@compass-engineering.com







TAX LOTS 200, 301, AND 402 LOCATED IN THE NW 1/4 OF SECTION 35 T.2S. R.1E. W.1/2 CITY OF WEST LINN, CLATSOP COUNTY, OREGON



Keep what's below.  
 Call before you dig.

GRADING GENERAL NOTES:  
 1. ALL GRADING ACTIVITIES SHALL CONFORM TO THE UNIFORM BUILDING CODE AND THE OREGON SPECIALTY CODE AMENDMENTS INCLUDING APPENDIX A.

**SITE GRADING INFORMATION**

MEAN LINE CUT	18.07'
MEAN LINE FILL	19.89' CY
STREPPINGS	1,306.0 Y
MAXIMUM CUT DEPTH	12.8 FT
MAXIMUM FILL DEPTH	22.2 FT
MAXIMUM PROPOSED SLOPE	2:1 (H/V)
TOTAL AREA OF DISTURBANCE	0.9 ACRES

\* ASSIGNED APPLICATION FEES/LEASABLE ON SITE OUTSIDE BOUNDARY ENVELOPE

**GRADING KEY NOTES**

1. PLACE TREE PROTECTION FENCING AT LIMITS OF GRADING AND FOR CONSTRUCTION WHERE SHOWN AT LOCATION.
2. CONSTRUCT 2' HIGHER CONSTRUCTION ENTRANCE AT LOCATION SHOWN.
3. CONSTRUCT 3' GRANITE RETAINING WALL AND QUANTITY PLANTED.
4. CONSTRUCT MODULAR BLOCK RETAINING WALL.
5. CONSTRUCT STORMWATER FACILITY LIST IN PLACE CONCRETE RETAINING WALL HEIGHT AS SHOWN.
6. PLACE BODAS CHECK DAM FOR SEDIMENT CONTROL, ADJACENT TO ALL NEW CONCRETE WORK WITHIN RIGHT OF WAY.
7. METALL STRAW MATTE.
8. METALL INLET PROTECT.
9. PLACE SILT FENCING AT LIMITS OF GRADING AND CONSTRUCTION WHERE SHOWN.



**LEGEND**

- BOUNDARY LINE
- RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING EASEMENT LINE
- EXISTING LOT LINE
- EXISTING CURB AND GUTTER
- EXISTING SIDEWALK
- EXISTING LIGHT POLE
- EXISTING FIRE HYDRANT
- EXISTING TREES TO REMAIN
- EXISTING 1FT CONTOUR
- EXISTING 5FT INDEX CONTOUR
- PROPOSED LOT LINE
- PROPOSED CURB AND GUTTER
- PROPOSED CONCRETE
- PROPOSED RAIR GARDEN
- PROPOSED RETAINING WALL
- PROPOSED 1FT CONTOUR
- PROPOSED 5FT INDEX CONTOUR
- EROSION CONTROL SILT FENCING (BLACK)
- EROSION CONTROL RESCUE STRAW MATTE
- EROSION CONTROL BIG BAG CHECK DAM
- EROSION CONTROL CONSTRUCTION ENTRANCE
- LIMITS OF GRADING/DISTURBANCE
- SURFACE RUN-OFF FLOW ARROW
- EROSION CONTROL INLET PROTECTION
- TREE PROTECTION FENCING

**SITE GRADING INFORMATION**

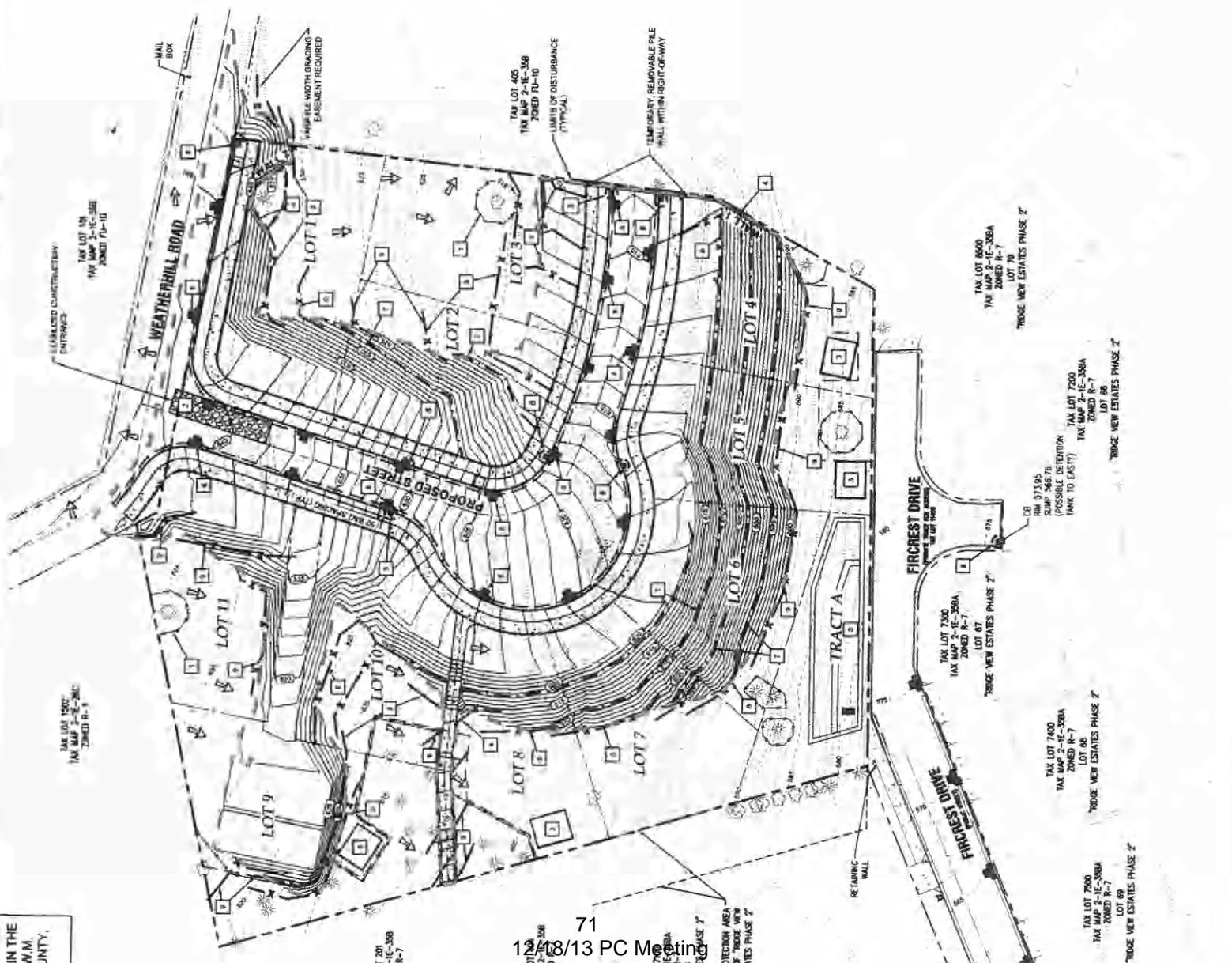
NEAT LINE CUT	755 CY
NEAT LINE FILL	19,810 CY
STRIPPINGS*	1,350 CY
MAXIMUM CUT DEPTH	12.9 FT
MAXIMUM FILL DEPTH	22.2 FT
MAXIMUM PROPOSED SLOPE	2:1 (H:V)
TOTAL AREA OF DISTURBANCE	0.35 ACRES

\* ASSUMED REPLACEMENT 7.8 TON/TON ON SITE OUTSIDE BUILDING ENVELOPE

**GRADING KEY NOTES**

1. PLACE TREE PROTECTION FENCING AT LIMITS OF GRADING AND FOR CONSTRUCTION WHERE SHOWN
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AT LOCATION SHOWN
3. CONSTRUCT STREAMWATER QUALITY AND QUANTITY PLANTER
4. CONSTRUCT MODULAR BLOCK RETAINING WALL
5. CONSTRUCT STORMWATER FACILITY CAST IN PLACE CONCRETE RETAINING WALL HEIGHT AS NOTED
6. PLACE BRUSH CHECK DAM FOR SEDIMENT CONTROL ADJACENT TO ALL NEW CONCRETE WORK WITHIN RIGHT OF WAY
7. INSTALL STRAW MATTE
8. INSTALL INLET PROTECT
9. PLACE SILT FENCING AT LIMITS OF GRADING AND CONSTRUCTION WHERE SHOWN

**GRADING GENERAL NOTES:**  
 1. ALL GRADING ACTIVITIES SHALL CONFORM TO THE UNIFORM BUILDING CODE AND THE OREGON SPECIFICATIONS FOR CONSTRUCTION (BY DATE OF PERMIT).







Scale: 1 inch = 30 feet

**LEGEND**

[Symbol]	BOUNDARY LINE
[Symbol]	EXISTING RIGHT-OF-WAY
[Symbol]	EXISTING CENTERLINE
[Symbol]	EXISTING LOT LINE
[Symbol]	EXISTING CURB
[Symbol]	EXISTING ASPHALT
[Symbol]	EXISTING SIDEWALK
[Symbol]	EXISTING LIGHT POLE
[Symbol]	PROPOSED RIGHT-OF-WAY
[Symbol]	PROPOSED LOT LINE
[Symbol]	PROPOSED CURB
[Symbol]	PROPOSED SIDEWALK
[Symbol]	PROPOSED SETBACK LINE
[Symbol]	SANITARY SEWER LINE AND MANHOLE
[Symbol]	STORM DRAIN LINE AND MANHOLE
[Symbol]	DOMESTIC WATER SERVICE & METER
[Symbol]	STORM SEWER LATERAL AS NOTED
[Symbol]	STORM SEWER CURB INLET
[Symbol]	PROPOSED STREET LIGHT
[Symbol]	PROPOSED RETAINING WALL
[Symbol]	ROSEBOMT PRESSURE ZONE (ELEV. 620)
[Symbol]	UTILITY ACCESS EASEMENT
[Symbol]	TREE PRESERVATION EASEMENT

**STORM SEWER CONSTRUCTION NOTES**

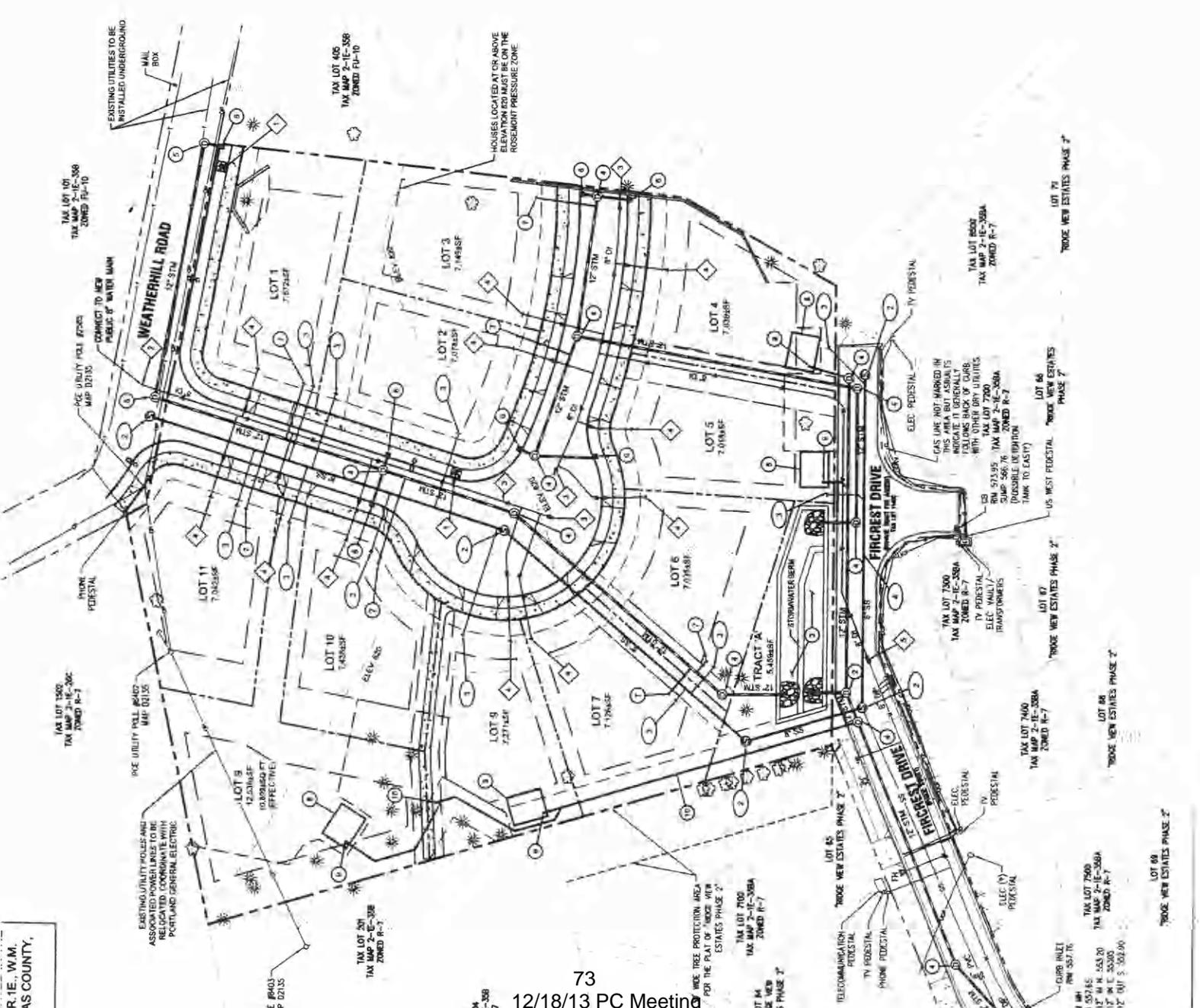
- CONNECT PROPOSED 12" STORMLINE TO EXISTING MANHOLE.
- CONSTRUCT FLOW CONTROL STRUCTURE FOR POND OUTLET.
- CONSTRUCT NET DETENTION POND (PER APPENDIX D: CCSD AT STANDARD SURFACE WATER SPECIFICATIONS).
- CONSTRUCT STANDARD 48" STORM SEWER MANHOLE.
- CONSTRUCT SHALLOW 48" STORM SEWER MANHOLE.
- CONSTRUCT CURB INLET WITH 12" STORM LINE.
- PROVIDE A PRIVATE STORM DRAIN LATERAL CONNECTION FOR INDIVIDUAL LOT SERVICE. EXTEND SERVICE LATERAL 3' BEYOND P.M.E.
- STORMWATER INFILTRATION PLANTER FOR MANAGEMENT OF FUTURE PROPERTY IMPROVEMENTS.
- ROUTE WATER QUALITY PLANTER OVERFLOWS TO ULTIMATE STORMWATER OUTLET.
- INSTALL 8" CLEAN OUT AS REQUIRED.

**SANITARY SEWER CONSTRUCTION NOTES**

- CONNECT PROPOSED 8" SEWER LINE TO NEW MANHOLE OVER EXISTING SEWER LINE.
- CONSTRUCT STANDARD 48" SANITARY SEWER MANHOLE.
- PROVIDE NEW 4" SANITARY SEWER LATERAL FOR INDIVIDUAL LOT SERVICE. EXTEND SERVICE LATERAL 3' BEYOND P.M.E.
- INSTALL 8" CLEAN OUT AS REQUIRED.

**WATER CONSTRUCTION NOTES**

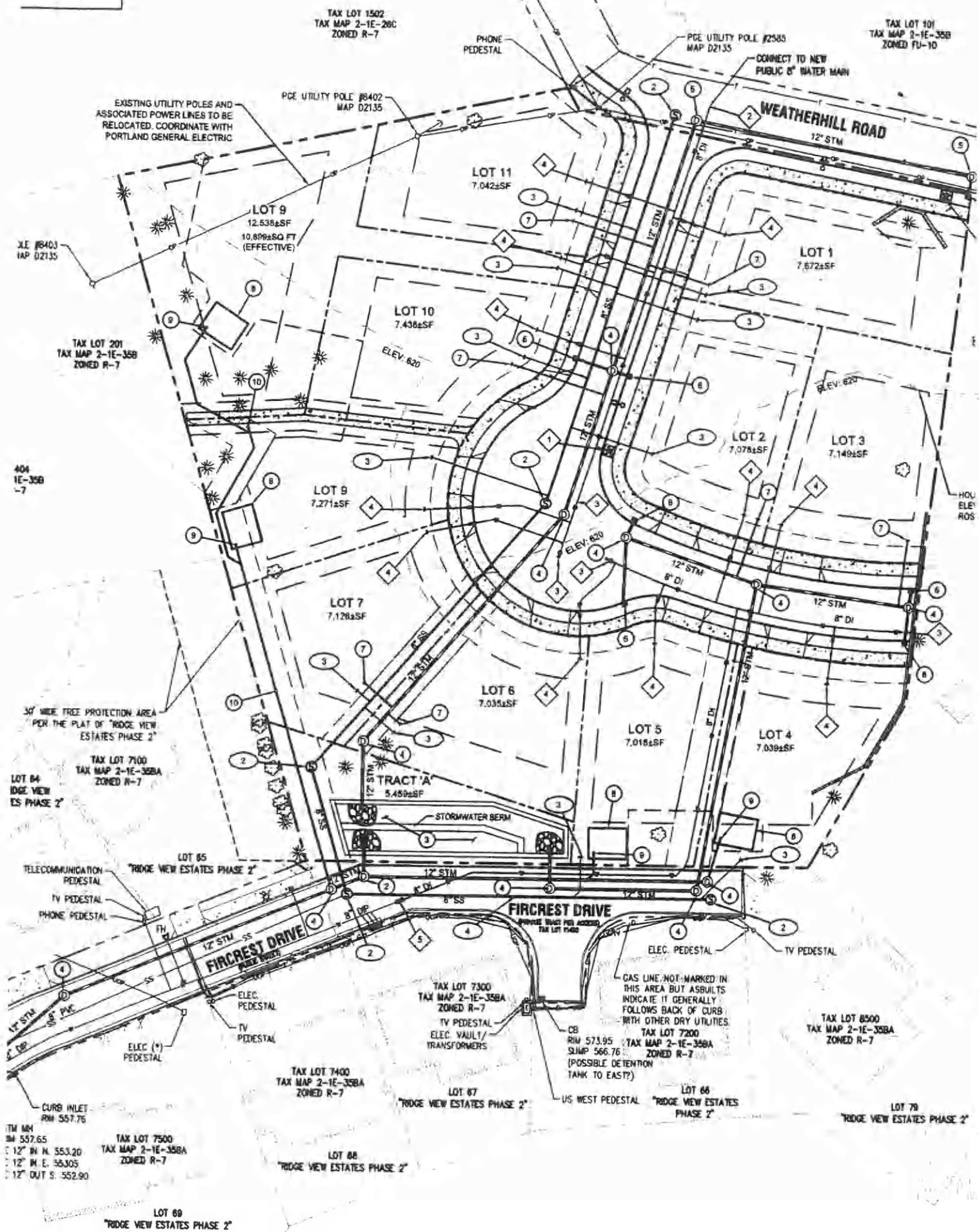
- INSTALL FIRE HYDRANT.
- CONNECT TO CITY WATER MAIN. CONTRACTOR TO COORDINATE WITH CITY OF WEST Linn PUBLIC WORKS WATER LINE IMPROVEMENT PROJECT.
- INSTALL STANDARD BLOW-OFF.
- INSTALL SINGLE WATER METER FOR INDIVIDUAL LOT SERVICE. EXTEND 1" SERVICE LATERAL 3' BEYOND P.M.E.
- REMOVE EXISTING BLOW-OFF AND CONNECT TO EXISTING 8" D.I.P.



R.1E., W.M., 4AS COUNTY,



Know what's below. Call before you dig.



TW MH  
 BM 557.65  
 12" IN N. 553.20  
 12" IN E. 563.05  
 12" OUT S. 552.90

November 24, 2013

City of West Linn  
Mr. Peter Spir  
Associate Planner  
22500 Salamo Road  
West Linn, OR 97068

**SUBJECT: WEATHERHILL (SUB-13-04)**

Dear Peter,

I am writing on behalf of JT Smith Companies regarding the previously submitted changes to the plans for the Weatherhill Subdivision. This letter has been prepared in order to supplement the record for the project and to document the ability of the current site plan to meet the City's approval criteria for a subdivision.

Below you will find the code sections and revised findings for the sections identified within your November 21 correspondence. In addition to sections identified with your email, we have also included several sections which were identified by the project team as also needing revision. As in the original narrative, Code sections are **Bold** and the findings are immediately below each section. Please accept this letter into the record as an addendum to the previously submitted narrative.

**DIVISION 8. LAND DIVISION  
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. 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 and any adopted updated plans.

An applicant may submit a written request for a waiver of abutting street improvements if the Transportation System Plan 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 propose a fee amount that will be reviewed by the City Manager or the Manager's designee. The City Manager or the Manager's designee will revise the proposed fee as necessary and establish the amount to be paid on a case-by-case basis. The applicant shall pay an in-lieu fee for improvements to the nearest street identified by the City Manager or Manager's designee as necessary and appropriate. The amount of the in-lieu fee shall be roughly proportional to the impact of the development on the street system as determined in subsection (A)(22) of this section.

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 on Weatherhill Road, a local street. Weatherhill Road adjacent to this site connects Bland Circle to the west with Salamo Road to the east. The connectivity of this local street will not be changed. The current right-of-way width of Weatherhill Road adjacent to the subject site is 30 feet, inadequate based on the requirements of Section 2, below. The Applicant proposes 13-feet of additional right-of-way along the property's frontage on Weatherhill Road, for a total right-of-way width of 43 feet. Sidewalks and planter strips are also proposed.

This section requires that the developer be responsible for the construction of internal streets. One internal street is proposed, providing access to all 11 lots. The Applicant proposes full responsibility for construction of this internal street, with a total right-of-way width of 48 feet. The paved surface will be 24 feet in width and 6-foot sidewalks and 6-foot planter strips will be provided on each side of the paved surface.



The proposed internal street will connect through the property, from Weatherhill Road to the north to the adjacent property to the east. The alignment provides connectivity while preserving some tree clusters and maintaining density on the site.

The requirements of this section have been satisfied.

**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 original submittal included a hammerhead termination of the new local street that did not provide the connectivity that the new configuration does. The City Engineer has reviewed the proposal and made dimensional recommendations to the applicant, which are incorporated into the proposed configuration.

The requirements of this section have been satisfied.

**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 layout of the proposed local street extends to the eastern boundary of the subdivision and dead-ends at the property to the east, providing the opportunity for connectivity when and if the property to the west develops in the future.

The requirements of this section have been satisfied.

**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 and curves of the new local public street will not exceed 15 percent, per this standard. The minimum centerline radii will be 50 feet. No super elevations are proposed.

The requirements of this section have been satisfied.

**B. Blocks and lots.**

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:** Weatherhill Road currently extends from Salamo Road on the east to Bland Circle on the West. The new public street proposed with this subdivision application will intersection Weatherhill Road near the middle of the distance between Salamo and Bland. This new public street will then connect to the eastern boundary of the subdivision, providing future connectivity to the property to the east for vehicles, pedestrians and bicycles. A pedestrian/bicycle path is proposed to extend to the east of the new public street.

The requirements of this section have been satisfied.

3. **Lot size and shape.** Lot size, width, shape, and orientation shall be appropriate for the location of the subdivision, 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 shall be dimensioned to contain part of an existing or proposed street. All lots shall be buildable, and the buildable depth should not exceed two and one-half times the average width. "Buildable" describes lots that are free of constraints such as wetlands, drainageways, etc., that would make home construction impossible. Lot 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:**

<b>Lot Size (Detached Dwelling Units)</b>	<b>7,000 square feet</b>
<b>Lot Size (Attached Dwelling Units)</b>	<b>5,500 square feet</b>
<b>Front Lot Line Length/Minimum Lot Width at Front Lot Line</b>	<b>35 feet</b>
<b>Average Minimum Lot Width</b>	<b>50 feet</b>
<b>Lot Depth</b>	<b>Less than 2.5x Width and greater than Average Depth of 90 feet</b>

**Applicant's Finding:** All proposed lots are a minimum of 7,000 square feet in size to accommodate single-family detached dwelling units. All 11 proposed lots exceed the minimum requirements for front lot line length, lot width and lot depth. The size, width, shape, and orientation of the lots is appropriate for the zone, the property shape and the location of the subdivision.

The requirements of this section have been satisfied.

**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. \*\*\*

- a. Setbacks applicable to the underlying zone shall apply to the flag lot.
- b. Front yard setbacks may be based on the rear property line of the parcel which substantially separates the flag lot from the street from which the flag lot gains access. Alternately, the house and its front yard may be oriented in other directions so long as some measure of privacy is ensured, or it is part of a pattern of development, or it better fits the topography of the site.
- c. The lot size shall be calculated exclusive of the accessway; the access strip may not be counted towards the area requirements.
- d. The lot depth requirement contained elsewhere in this code shall be measured from the rear property line of the parcel which substantially separates the flag lot from the street from which the flag lot gains access.
- e. As per CDC 48.030, the accessway shall have a minimum paved width of 12 feet.
- f. If the use of a flag lot stem to access a lot is infeasible because of a lack of adequate existing road frontage, or location of existing structures, the proposed lot(s) may be accessed from the public street by an access easement of a minimum 15-foot width across intervening property.

**Applicant's Finding:** Lot 8 is proposed as a flag lot. The width of the frontage is 15 feet. All setback, lot size, lot depth and access requirements are met.

The requirements of this section have been satisfied.



**C. Pedestrian and bicycle trails.**

1. Trails or multi-use pathways shall be installed, consistent and compatible with federal ADA requirements and with the Oregon Transportation Planning Rule, between subdivisions, cul-de-sacs, and streets that would otherwise not be connected by streets due to excessive grades, significant tree(s), and other constraints natural or manmade. Trails shall also accommodate bicycle or pedestrian traffic between neighborhoods and activity areas such as schools, libraries, parks, or commercial districts. Trails shall also be required where designated by the Parks Master Plan.
2. The all-weather surface (asphalt, etc.) trail should be eight feet wide at minimum for bicycle use and six feet wide at minimum for pedestrian use. Trails within 10 feet of a wetland or natural drainageway shall not have an all-weather surface, but shall have a soft surface as approved by the Parks Director. These trails shall be contained within a corridor dedicated to the City that is wide enough to provide trail users with a sense of defensible space. Corridors that are too narrow, confined, or with vegetative cover may be threatening and discourage use. Consequently, the minimum corridor width shall be 20 feet. Sharp curves, twists, and blind corners on the trail are to be avoided as much as possible to enhance defensible space. Deviations from the corridor and trail width are permitted only where topographic and ownership constraints require it.
3. Defensible space shall also be enhanced by the provision of a three- to four-foot-high matte black chain link fence or acceptable alternative along the edge of the corridor. The fence shall help delineate the public and private spaces.
4. The bicycle or pedestrian trails that traverse multi-family and commercial sites should follow the same defensible space standards but do not need to be defined by a fence unless required by the decision-making authority.
5. Except for trails within 10 feet of a wetland or natural drainageway, soft surface or gravel trails may only be used in place of a paved, all-weather surface where it can be shown to the Planning Director that the principal users of the path will be recreational, non-destination-oriented foot traffic, and that alternate paved routes are nearby and accessible.
6. The trail grade shall not exceed 12 percent except in areas of unavoidable topography, where the trail may be up to a 15 percent grade for short sections no longer than 50 feet. In any location where topography requires steeper trail grades than permitted by this section, the trail shall incorporate a short stair section to traverse the area of steep grades.

**Applicant's Finding:** Sidewalks will be constructed with the new local street, connecting from the north at Weatherhill Road and extending east to the property boundary. The Applicant is also proposing a 10 foot pedestrian access easement with 6-foot all-weather surface path from the new public street within the subdivision to the west property lines.

The requirements of this section have been satisfied.

**E. Lot 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. Where landslides have actually occurred, where the area is identified as a hazard site in the West Linn Comprehensive Plan Report, or where field investigation by the City Engineer confirms the existence of a severe landslide hazard, development shall be prohibited unless satisfactory evidence is additionally submitted by a registered geotechnical engineer which certifies that methods of rendering a known hazard site safe for construction are feasible for a given site. The City Engineer's field investigation shall include, but need not be limited to, the following elements:
  - a. Occurrences of geotropism.
  - b. Visible indicators of slump areas.
  - c. Existence of known and verified hazards.
  - d. Existence of unusually erosive soils.
  - e. Occurrences of unseasonably saturated soils.

The City Engineer shall determine whether the proposed methods or designs are adequate to prevent landslide or slope failure. The City Engineer may impose conditions consistent with the purpose of these ordinances and with standard engineering practices including limits on type and intensity of land use, which have been determined necessary to assure landslide or slope failure does not occur.

6. All cuts and fills shall conform to the Uniform Building Code.
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:** All grading on site will be done in conformance with these standards. A grading and erosion control plan is included with the land use application submittal and the applicant will obtain a grading permit prior to any earthwork on the site.

The requirements of this section have been satisfied.

**J. Supplemental provisions.**

**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. Removal of significant trees has been minimized to the greatest extent feasible and reasonable. Several clusters of Douglas fir trees (some designated significant) will be protected throughout the construction process. A detailed tree protection and removal plan is included with this submittal.

The requirements of this section have been satisfied.

**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.



The requirements of this section have been satisfied.

**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.

The requirements of this section have been satisfied.

**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.

The requirements of this section have been satisfied.

**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 new street right-of-way and along Weatherhill Road. The newly proposed roadway will also contain 6-foot-wide planting strips.

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.

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.

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.

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.

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 parcel is blocked by a row or screen of significant trees or tree clusters.

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.

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.

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 has inventoried all trees and tree clusters on the site. The applicant is proposing tree preservation consistent with these requirements, as detailed in the tree plan.

The site plan, with the revised roadway alignment, would enable the retention of approximately 22,023 square feet of significant tree canopy. This represents 47% of the existing significant canopy on the property. Of the retained canopy, approximately 9,350 square feet of the retained canopy will be placed into an



conservation easement. The easement area on site represents 20% of the total significant tree canopy area plus ten feet.

The Applicant's proposed roadways and access drives will result in the removal of 210 caliper inches therefore mitigation for 210 inches is required. During the construction documentation phase of the project, the Applicant will provide a mitigation plan containing the required 105 trees required to meet the mitigation thresholds. All trees installed will be 2 inches in caliper size or greater, therefore meeting the inch for inch mitigation requirement.

The requirements of this section have been satisfied.

We trust that these responses will assist with the City's favorable evaluation of the project. Please feel free to contact us with any questions that you may have. We will be ready to respond to any questions or requests for any further clarification.

Sincerely,



Andrew Tull  
Senior Planner  
3J Consulting, Inc.

copy: Mr. John Wyland, JT Smith Companies  
Mr. Mike Robinson, Perkins Coie  
Mr. Brian Feeney, 3J Consulting, Inc  
File





November 19, 2013

City of West Linn  
Mr. Peter Spir  
Associate Planner  
22500 Salamo Road  
West Linn, OR 97068

**SUBJECT: WEATHERHILL (SUB-13-04)**

Dear Peter,

I am writing on behalf of JT Smith Companies regarding a series of changes to the plans for the Weatherhill Subdivision. The Applicant has prepared the attached plans in response to a request from the City to provide pedestrian connectivity to the west of the property and a road connection to the east. The preliminary designs for the site that have already been submitted into the record have established that the site will be able to be serviced and designed in accordance with the City's standards for a land division within the R-7 zone. The Applicant has provided this letter to both introduce the resubmission and to request a waiver from the director for the submission of a fully revised plan set.

For the continued review by the City's staff, the applicant has prepared and submitted a revised Site Plan, Tentative Plat, Grading Plan, Composite Utility Plan and a Tree Protection Plan. The proposed Street Lighting Plan, Mitigation Planting Plans, and Stormwater Report have not yet been updated; however, the applicant intends to fully comply with the applicable City standards.

Section 99.035(B) permits the Planning Director to waive specific requirements for information where the Director finds that:

1. The specific information is not necessary to properly evaluate the application, or
2. The specific approval standard is not applicable to the application.

The plans omitted from the subdivision plan set will not prevent staff and the Planning Commission from evaluating and approving the proposed subdivision. The Applicant is willing to work directly with staff to provide a revised mitigation plan and street lighting plan during the construction documentation review process. The construction documentation process will commence immediately following the issuance of an approval of the preliminary subdivision plan.

Subsection (C) of section 99.035 requires the planning director to report upon the specific reasons why the requirement has been waived. The applicant suggests that, if the Director grants the requested waiver, that the staff recommend a condition of approval that the requested plans be submitted to and approved by the City Engineer prior to issuance of construction permits. A draft condition of approval has been submitted below:

"The applicant shall submit final grading and utility plans to the Director for approval prior to the issuance of any development permits. The plans shall be generally consistent with the subdivision plan approved by the Planning Commission."

The applicant believes that it would be possible to fulfill this condition of approval.

We trust that this request will be well received by the City. Please feel free to contact us with any questions that you may have. We will be ready to respond to any questions or requests for any further clarification.

Sincerely,



Andrew Tull  
Senior Planner  
3J Consulting, Inc.

Attachments:

- Revised Preliminary Plat
- Revised Preliminary Grading and Erosion Control Plan
- Revised Tree Protection Plan
- Revised Composite Utility Plan

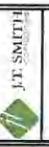
copy: Mr. John Wyland, JT Smith Companies  
Mr. Mike Robinson, Perkins Coie  
Mr. Brian Feeney, 3J Consulting, Inc  
File



TAX LOTS 200, 301, AND 402 LOCATED IN THE NW 1/4 OF SECTION 35, T. 25 S., R. 15 W., CITY OF WEST LINN, CLATSOP COUNTY, OREGON

LAND USE REGION SUMMARY BY DATE  
11/19/13

WEATHERHILL SUBDIVISION TREE PROTECTION AND REMOVAL PLAN  
WEST LINN, OR  
LP 7, LLC

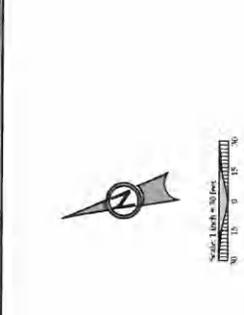


J.T. SMITH  
CIVIL ENGINEERING  
WATER RESOURCES  
LAND USE PLANNING  
1545 SW CHAYNOR ROAD SUITE 300 WEST LINN, OREGON 97136  
PHONE & FAX: (503) 946-0283



J3 CONSULTING INC.  
31 JUNE 27, 2014  
LAND USE # 1  
VALUED BY 101  
DESIGNED BY 101  
CHECKED BY 104  
DRAWN BY 104

SHEET NUMBER  
TREE PLAN  
CL.2



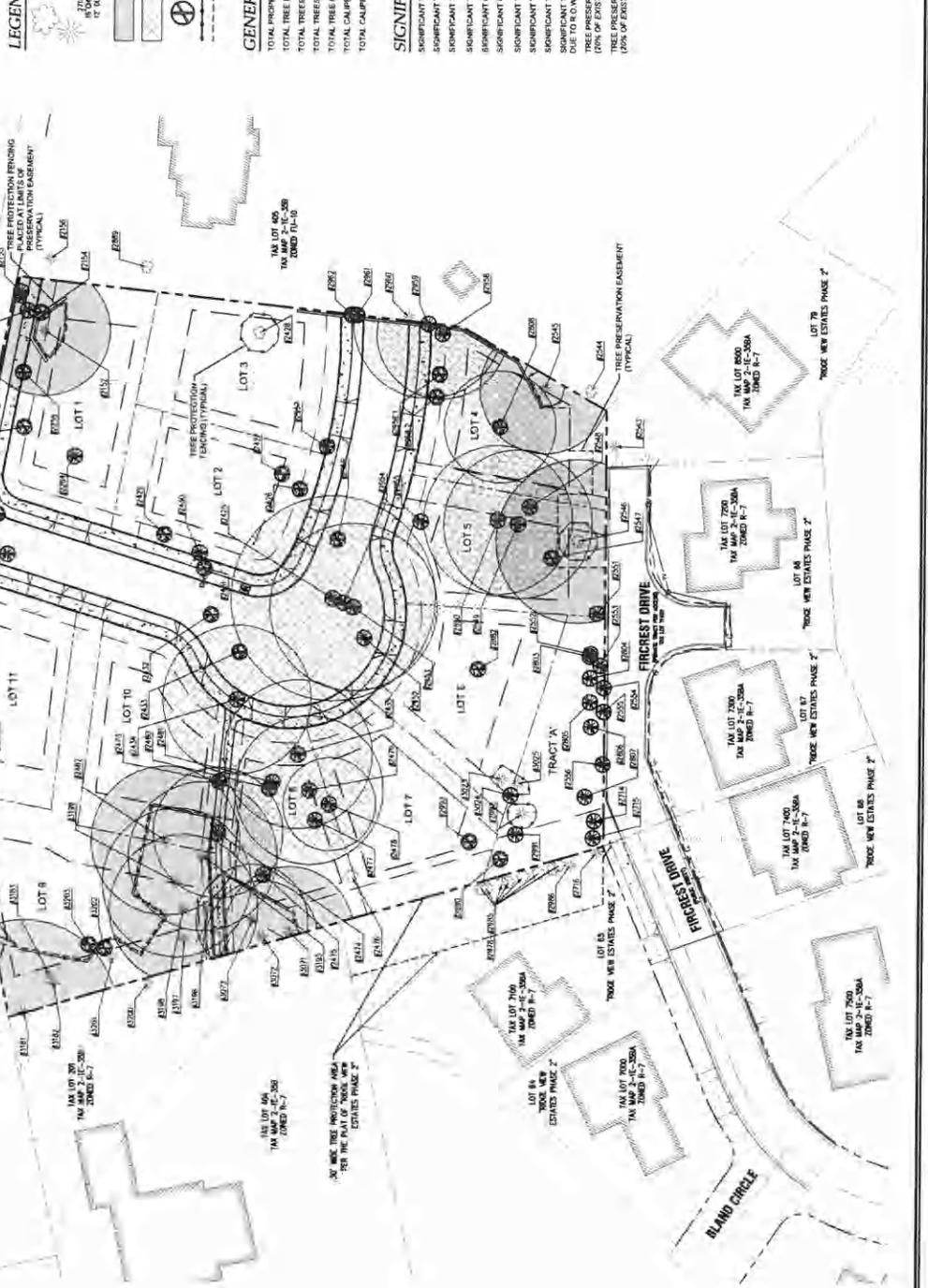
- LEGEND**
- EXISTING DECIDUOUS TREE
  - EXISTING CONIFEROUS TREE
  - TREE POINT TYPE, CALIPER AND DRINKLINE
  - SIGNIFICANT TREE CANOPY TO REMAIN (DRINKLINE + 10 FT)
  - SIGNIFICANT TREE CANOPY TO BE REMOVED (DRINKLINE + 10 FT)
  - TREE TO BE REMOVED
  - TREE PROTECTION FENCING
  - TREE PRESERVATION EASEMENT

**GENERAL TREE INVENTORY STATISTICS**

TOTAL PROPERTY AREA:	12,898.56 S.F. (4,230 S.F.)
TOTAL TREE INVENTORY (PROJECT BOUNDARY):	37 trees
TOTAL TREES RETAINED:	23 trees
TOTAL TREES REMOVED:	14 trees
TOTAL TREE CALIPER INCHES:	1,907 inches
TOTAL CALIPER INCHES RETAINED:	707 inches
TOTAL CALIPER INCHES REMOVED:	1,100 inches

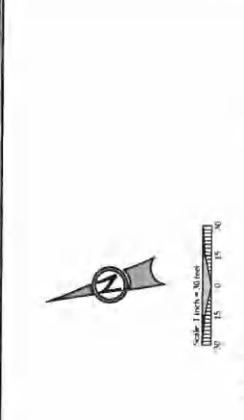
**SIGNIFICANT TREE STATISTICS**

SIGNIFICANT TREE INVENTORY:	23 trees
SIGNIFICANT TREES RETAINED:	11 trees
SIGNIFICANT TREES REMOVED:	12 trees
SIGNIFICANT TREE CALIPER INCHES:	844 inches
SIGNIFICANT CALIPER INCHES RETAINED:	334 inches
SIGNIFICANT CALIPER INCHES REMOVED:	510 inches
SIGNIFICANT TREE CANOPY COVERAGE:	48,673.84 S.F.
SIGNIFICANT TREE CANOPY REMOVED:	22,670.56 S.F.
SIGNIFICANT TREE CANOPY RETAINED:	24,455.56 S.F.
SIGNIFICANT TREE CANOPY REMOVED DUE TO R.O.W. IMPROVEMENTS:	18,188.56 S.F.
TREE PRESERVATION EASEMENT AREA REQUIRED (20% OF EXISTING CANOPY):	9,335.94 S.F.
TREE PRESERVATION EASEMENT AREA PROVIDED (10% OF EXISTING CANOPY):	4,867.38 S.F.





TENTATIVE SUBDIVISION PLAT  
WEATHERHILL  
SUBDIVISION  
WEST LINN, OR  
LF 7, LLC



- LEGEND**
- BOUNDARY LINE
  - EXISTING RIGHT-OF-WAY
  - EXISTING CENTERLINE
  - EXISTING LOT LINE
  - PROPOSED RIGHT-OF-WAY
  - PROPOSED LOT LINE
  - PROPOSED DETACHMENT LINE
  - PROPOSED EASEMENT LINE
  - PROPOSED TREE PRESERVATION EASEMENT

**SITE STATISTICS**

TAX ADDRESS	ZONE WEATHERHILL ROAD
TAX LOT	251238, 26, 301, 822
JURISDICTION	CITY OF WEST LINN
CROSS ST. AREA	2.94 ACRES
PROPERTY ZONING	R-7
FLOOD HAZARD MAP NUMBER	41000002D
	ZONE 2 (UNSHADED)

**SUBDIVISION STATISTICS**

NUMBER OF PARCELS	32 PARCELS
NUMBER OF LOTS	32 LOTS
NUMBER OF UNITS	32 UNITS
MINIMUM LOT DENSITY	14 UNITS
MAXIMUM LOT DENSITY	43 UNITS/ACRE
PROPOSED LOT DENSITY	43 UNITS/ACRE
MINIMUM LOT DENSITY PER AC. ZONING	14 UNITS/ACRE
MAXIMUM LOT DENSITY PER AC. ZONING	43 UNITS/ACRE
ST. DEPTH	20 FEET
ST. WIDTH	20 FEET
ST. AREA	14 FEET
ST. HEIGHT	24 FEET

**PROJECT TEAM**

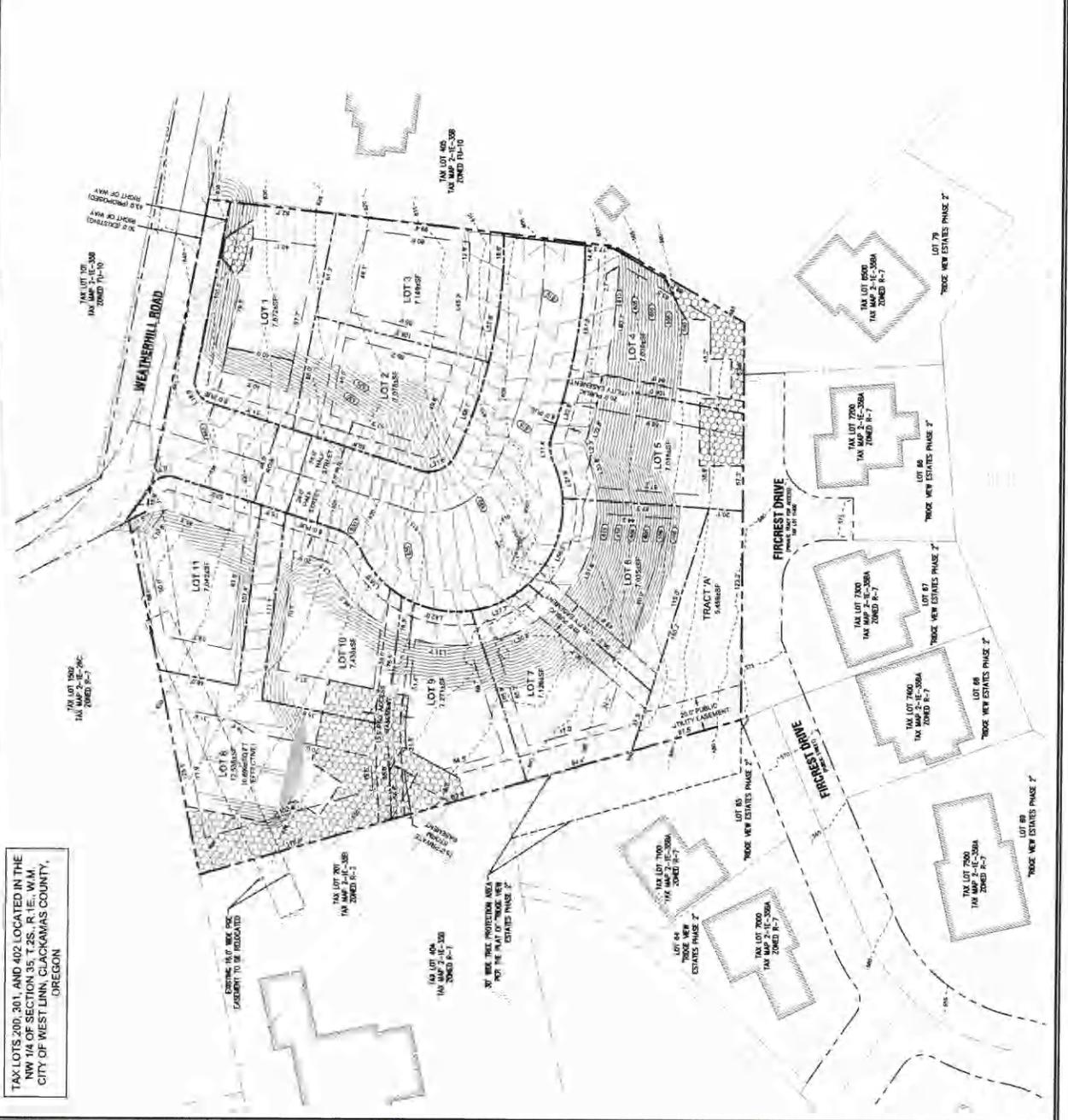
**OWNER/APPLICANT**  
LF 7, LLC  
C/O J.T. SMITH COMPANIES  
1445 SW CANTON ROAD SUITE 245  
WEST LINN, OREGON 97136  
PHONE: 503.346.5465  
CONTACT: JIM WYLAND  
jim.wyland@jtsmith.com

**CIVIL ENGINEER**  
J3 CONSULTING, INC.  
1445 SW CANTON ROAD SUITE 245  
WEST LINN, OREGON 97136  
PHONE: 503.346.5465  
CONTACT: JIM WYLAND  
jim.wyland@j3consulting.com

**PLANNING CONSULTANT**  
J3 CONSULTING, INC.  
1445 SW CANTON ROAD SUITE 245  
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CONTACT: JIM WYLAND  
jim.wyland@j3consulting.com

**GEOTECHNICAL CONSULTANT**  
GEOPACIFIC ENGINEERS, INC.  
1445 SW CANTON ROAD SUITE 245  
WEST LINN, OREGON 97136  
PHONE: 503.346.5465  
CONTACT: SCOTT HEDMAN  
scott.hedman@geopacific.com

**LAND SURVEYOR**  
COMBES SURVEYING  
1000 N. WASHINGTON ST. SUITE 100  
WEST LINN, OREGON 97136  
PHONE: 503.346.5465  
CONTACT: JIM WYLAND  
jim.wyland@combes.com



**LEGEND**

- BOUNDARY LINE
- RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING LOT LINE
- EXISTING LOT LINE
- EXISTING CURB AND GUTTER
- EXISTING SIDEWALK
- EXISTING LOT LINE
- EXISTING FIRE HYDRANT
- EXISTING TREES TO REMAIN
- EXISTING 1" FT CONTOUR
- EXISTING 2" FT CONTOUR
- EXISTING 3" FT CONTOUR
- PROPOSED CURB AND GUTTER
- PROPOSED CONCRETE
- PROPOSED RAIN GARDEN
- PROPOSED RETAINING WALL
- PROPOSED 1" FT CONTOUR
- PROPOSED 2" FT CONTOUR
- EROSION CONTROL (SILT FENCING (BLACK))
- EROSION CONTROL (RESOLVE STRAW WATTLE)
- EROSION CONTROL (8" SAG CHECK DAM)
- EROSION CONTROL (CONSTRUCTION ENTRANCE)
- LIMITS OF GRUNDIGSSTUENZUNG
- SURFACE RUNOFF FLOW ARROW
- EROSION CONTROL (BALET PROTECTION)
- TREE PROTECTION FENCING

**SITE GRADING INFORMATION**

NEAT LINE CUT	735 CY
NEAT LINE FILL	10,910 CY
STRIPPINGS	1,360 CY
MAXIMUM CUT DEPTH	13.8 FT
MAXIMUM FILL DEPTH	22.2 FT
MAXIMUM PROPOSED SLOPE	2:1 (H:V)
TOTAL AREA OF DISTURBANCE	4.33 ACRES

\* ASSUMED REPLACEMENT/ STOCKPILE ON SITE OUTSIDE BUILDING FOOTPRINT

**GRADING KEY NOTES**

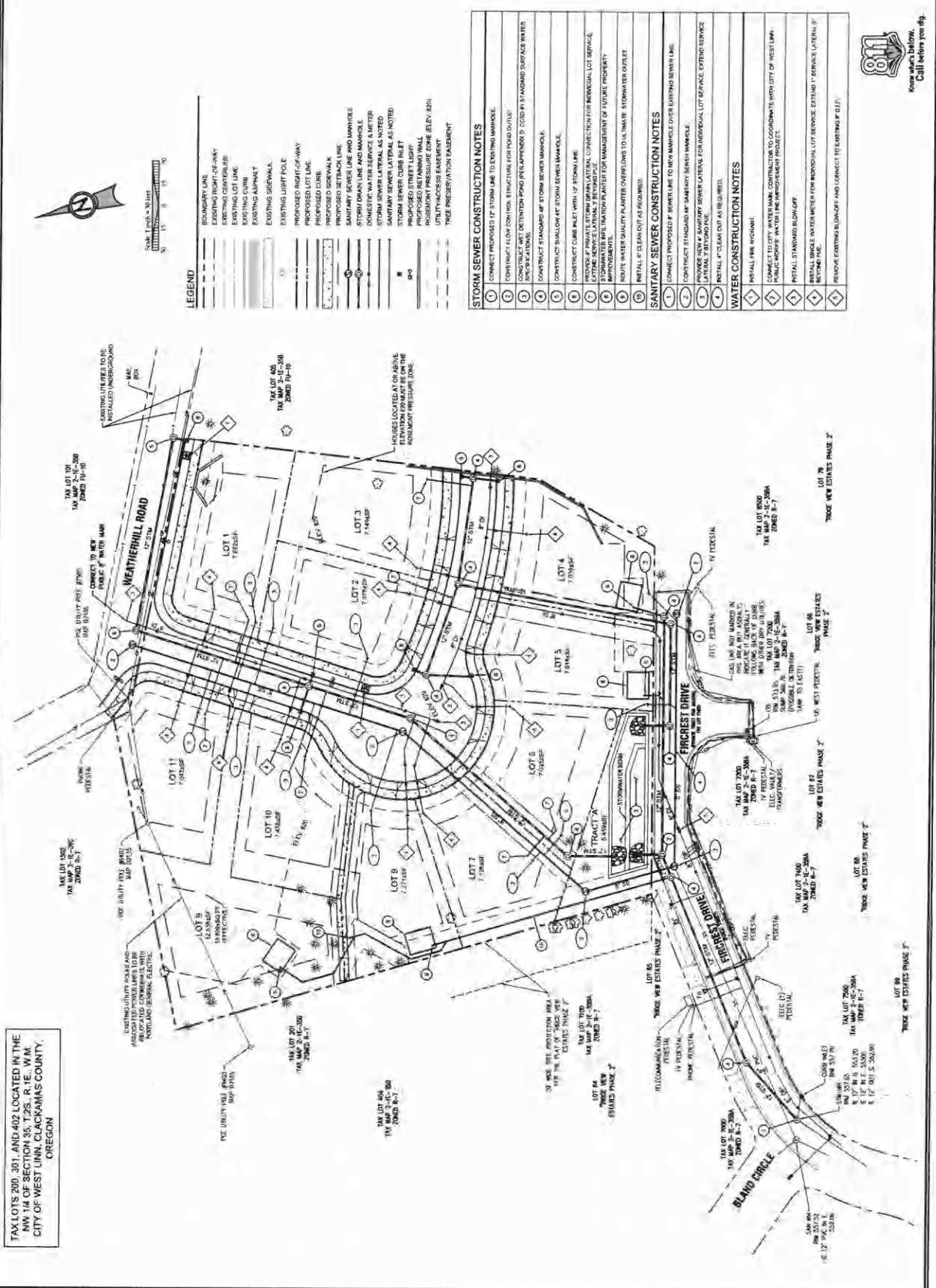
- PLACE TREE PROTECTION FENCING AT LIMITS OF GRADING AND FOR CONSTRUCTION WHERE SHOWN
- CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AT LOCATION SHOWN
- CONSTRUCT STORMWATER QUALITY AND QUANTITY FILTERS
- CONSTRUCT MODULAR BLOCK RETAINING WALL
- CONSTRUCT STORMWATER FACILITY CAST IN PLACE CONCRETE RETAINING WALL HEIGHT AS SHOWN
- PLACE BARRIERS CHECK DAM FOR SEDIMENT CONTROL ADJACENT TO ALL NEW CONCRETE WORK WITHIN RIGHT OF WAY
- INSTALL STRAW WATTLE
- INSTALL BALET PROTECT
- PLACE SILT FENCING AT LIMITS OF GRADING AND CONSTRUCTION WHERE SHOWN

**GRADING GENERAL NOTES:**

- ALL GRADING ACTIVITIES SHALL CONFORM TO THE UNIFORM BUILDING CODE AND THE OREGON SPECIFIC CODE AMENDMENTS INCLUDING APPENDIX J.

Know what's below.  
Call before you dig.





TAX LOTS 200, 301, AND 402 LOCATED IN THE NW 1/4 OF SECTION 56, T.2S, R.1E, W.4N, CITY OF WEST LINN, CLATSOP COUNTY, OREGON

**LEGEND**

- BOUNDARY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING LOT LINE
- EXISTING CURB
- EXISTING ASPHALT
- EXISTING SIDEWALK
- EXISTING SIREWALL
- EXISTING LIGHT POLE
- PROPOSED RIGHT-OF-WAY
- PROPOSED LOT LINE
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED SETBACK LINE
- PROPOSED DRIVEWAY
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER SERVICE & METER
- PROPOSED STORM WATER LATERAL AS NOTED
- PROPOSED SANITARY WATER LATERAL AS NOTED
- PROPOSED STREET LIGHT
- PROPOSED STREET LIGHT
- PROPOSED PRESSURE ZONE (SEE SLE, 420)
- UTILITY ACCESS EASEMENT
- TREE PRESERVATION EASEMENT

**STORM SEWER CONSTRUCTION NOTES**

- CONNECT PROPOSED STORM LANE TO EXISTING MANHOLE.
- CONSTRUCT FLOW CONTROL STRUCTURE FOR POOL OUTLET.
- CONSTRUCT WET DETENTION POND PER APPENDIX C, GOOD IN STANDARD SURFACE WATER MANAGEMENT.
- CONSTRUCT STORM MAIN AS NOTED.
- CONSTRUCT STORM MAIN AS NOTED.
- CONSTRUCT CHIMNEY WITH 18" STORM LANE.
- PROVIDE 12" STORM MAIN WITH 18" STORM LANE.
- ESTIMATE WATER LATERAL TO BE CONSTRUCTED FOR MANAGEMENT OF FUTURE PROPERTY.
- ROUTE WATER QUALITY PUMPED OVERDRAIN TO ULTIMATE STORMWATER OUTLET.
- INSTALL 1" CLEANOUT AS REQUIRED.

**SANITARY SEWER CONSTRUCTION NOTES**

- CONSTRUCT PROPOSED SANITARY SEWER MAIN TO BE MANHOLE OVER EXISTING SEWER LANE.
- PROVIDE NEW SANITARY SEWER LATERAL FOR INDIVIDUAL LOT SERVICE. EXTENDING SERVICE TO BE CONSTRUCTED.
- INSTALL 1" CLEANOUT AS REQUIRED.

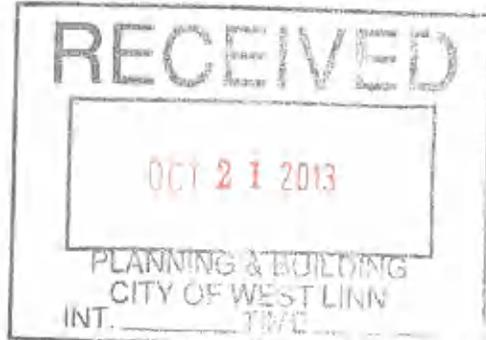
**WATER CONSTRUCTION NOTES**

- CONNECT TO CITY WATER MAIN. CONTRACTOR TO COORDINATE WITH CITY OF WEST LINN. VALID CONTRACT IS TO BE SUBMITTED TO THE PROJECT.
- INSTALL SHARED BLOWOFF.
- INSTALL SINGLE WATER METER FOR INDIVIDUAL LOT SERVICE. EXTENDING SERVICE TO BE CONSTRUCTED.
- REMOVE EXISTING BLOWOFF AND CONNECT TO EXISTING 6" O.D.F.



October 21, 2013

City of West Linn  
Mr. Peter Spir  
Associate Planner  
22500 Salamo Road  
West Linn, OR 97068



**SUBJECT: WEATHERHILL (SUB-13-04)**

Dear Peter,

I am writing on behalf of JT Smith Companies to request that the application for the Subdivision of the Weatherhill Properties (SUB-13-04) be deemed complete upon receipt of this letter. I have prepared this letter, as well as a revised preliminary development plat (dated October 21, 2013) to show that the revised plans satisfactorily address the comments provided by the City in the August 29, 2013 incompleteness notification letter and to show that CDC 85.200(A)(1) and (11) are satisfied. As the applicant has shown below and within the previous submission materials, no feasible alternative exists, therefore a cul-de-sac should be permitted.

**1. Initial Layout Discussions**

There have been a significant number of discussions regarding the Applicant's proposed street design for this subdivision. The Applicant's original design proposal for this subdivision was very similar to the cul-de-sac design of the current plan. The cul-de-sac plan was originally proposed by the Applicant to respond to the existing grades on the site, the presence of significant tree groves, and because of the presence of unknown and unmapped resources on adjoining properties. Staff initially responded to the applicant's site plan with the following excerpt from the pre-application conference notes:

**Maslen Property**



*"To the east of the property is a single family home on a 2.58 acre parcel. That property is unincorporated. It is heavily forested in its southern portion which is the origin of an intermittent stream. To the west is a similarly forested vacant .56 acre parcel. To the south is a private driveway which is an extension of Fircrest Drive. Because no part of the subject property is contiguous to a public section of Fircrest Drive, the connection of this subdivision southwards is not possible."*

**Applicant's March 2013 pre-application conference submission**

## 2. The Maslen Property

Staff did not initially support the proposed cul-de-sac design, suggesting that provisions for both east and west connections should be provided within the Applicant's proposed design. This suggestion was made in consideration of a pre-application conference which has held for the Maslen properties, located to the north east of the property.

The Maslen property was previously approved for development by the City in 2007. Upon receipt of this information, the Applicant began a redesign effort for the site. The Applicant also reviewed the existing approved construction documents and entered into a discussion with the owner of the Maslen property for potential purchase.

The drawing below shows a connectivity plan prepared by the Applicant's representatives for the Maslen property and for the properties located south of Weatherhill Road. This plan was created as a suggestion by the Maslen's engineers.



The Applicant reviewed the construction plans for the Maslen site and expressed several significant concerns about the costs and constructability of the approved subdivision design. The approved design for the site, also constrained by the hillside, had significant fills and a series of very large and very long retaining walls. Some of the walls exceeded 15 feet at different parts the plan.

The Applicant also noted that there would be little opportunity to preserve significant trees on both the Applicant's property and on neighbor's properties with future streets aligned directly at significant tree groves.

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Based upon the presence of the trees on the Applicant's properties and the neighboring grove, the City agreed in July, by an email from the planning department, that the cul-de-sac better allowed for tree retention.

**3. Disadvantages to connecting to the Maslen Property**

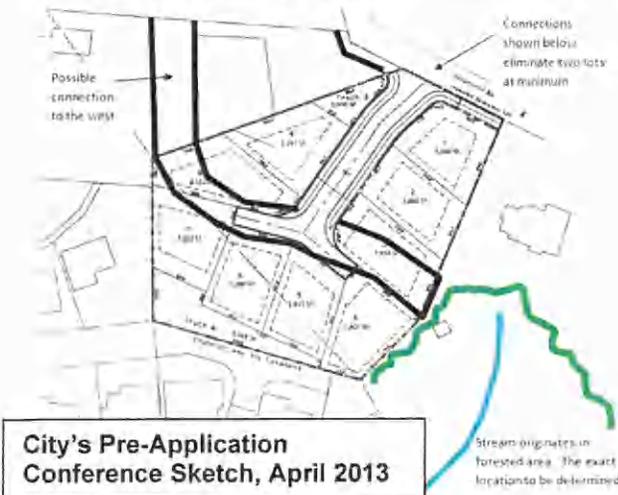
If the Applicant were to reapply for the Subdivision for the Maslen property, the layout would more closely reflect the design shown below. The design below removes one of the previously approved street connections allowing for fewer grading constraints on the property. Site grading is dictated, in part, by the number of required road connections. Within hillside development, fewer connections are almost always better for the grading and wall requirements on site.



**Applicant's Concept for the Maslen Site – April, 2013**

**4. Disadvantage of a connection to the Dean Property**

A connection to the east was also explored by both staff and the applicant. The connection to east was ruled out initially because of the presence of an stream headwaters which is known to be located on the property to the east. This resource was drawn in by staff on the map below:



While the City staff has discussed this potential stream with the neighbor and determined through their discussions that the potential resource is a seasonal drainage, staff has not employed the services of a professional wetland biologist to determine whether or not the stream will be considered jurisdictional by the state of Oregon.

Our experience with streams is that even seasonal resources can be jurisdictional and impacts to the streams should be avoided wherever possible. Due to the uncertainty of the classification and the location of the stream on the neighboring



property, the Applicant is proposing a pedestrian only connection rather than a full street connection. Unless the neighboring property owner invests in a delineation of the resource by a qualified biologist and a survey to determine its precise location on the site, the location and classification of the resources on the neighbors' property will remain subject to speculation.

### 5. Why is connectivity an issue?

Connectivity is an issue within this area because of a recent change to the City's community development codes. Section 85.200 of the West Linn Community Development Code was updated in July 2013 to define the standards under which new cul-de-sacs may be created. Section 85.200(A)(11)(a) provides the following:

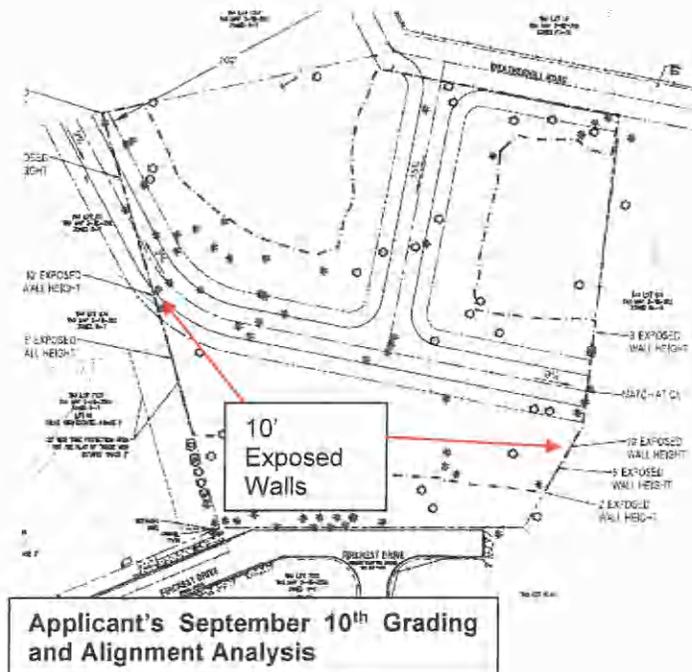
*"a. New cul-de-sacs and other closed-end streets (not including stub streets intended to be connected) on sites containing less than 5 acres, or sites accommodating uses other than residential or mixed use development, are not allowed unless the applicant demonstrates that there is no feasible alternative 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 CDC Chapter 32), or*

*2) existing easements or leases."*

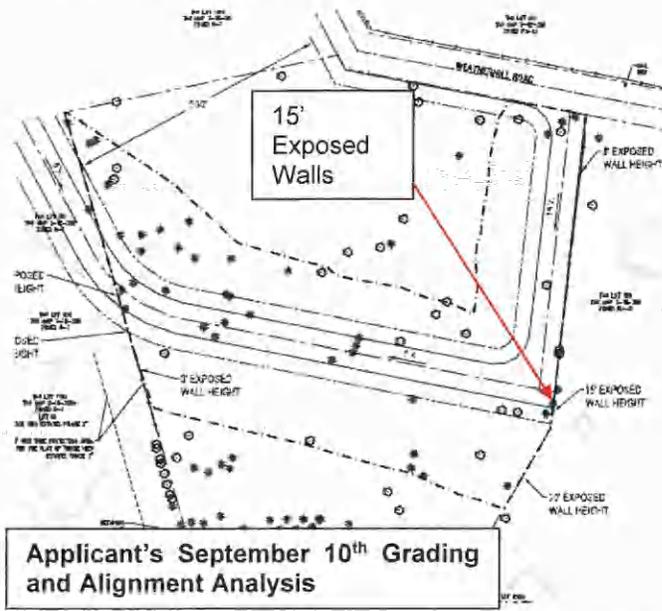
There are significant physical constraints which preclude the applicant's ability to connect to the adjacent properties. These constraints include steep slopes and the presence of significant trees. These constraints are also present on the properties located to the east and west of the Applicant's property. If the Applicant were to propose a layout with connections to the east and west, development of the neighboring properties will be negatively affected due to the walls and road alignments that the development will require.

An analysis of the potential to connect both east and west was presented to the City in August of 2013. The following two plans show potential roadway connections both east and west, with different access points along Weatherhill Road.



For the two alignments that the Applicant explored, the Applicant prepared a road alignment and a preliminary grading plan showing the envelope of the grading required to construct the roads to grades acceptable by the fire department. Within both plans, the proposed road alignment would require the construction of exposed walls along the edges of the Applicant's property. In several cases, the walls would be between ten and fifteen feet tall. Tying into these walls and re-engineering them or removing them would become the responsibility of the neighboring property owners. The redevelopment of these walls would represent a significant cost imposition on the owners of the





The proposed road alignments would also require the removal of the majority of the significant trees on the Applicant's property. In the case of the road extension to the northwest, a significant grove of trees on the neighbor's property would almost certainly need to be cleared to facilitate the road connection.

The Applicant's current proposal would retain nearly 50% of the existing significant tree canopy on the Applicant's site, would avoid the placement of retaining walls on the neighboring sites, and would avoid the need for the compulsory removal of significant trees on neighboring properties to facilitate road extensions.

The City's staff responded to the conceptual road alignments provided by the Applicant by preparing their own "regional plan" for the area south of Weatherhill Road. This plan is shown in the map below.



City's October 4<sup>th</sup> Regional Concept Plan

The alignment of the roadways suggested by the City would result in a near clear cut of the significant trees on the Applicant's site. The roadway plan would also result in the removal of the trees on the neighboring property to the northwest of the Applicant's site. The full impacts of the proposed alignment have not been evaluated as the City has not provided a grading plan showing the full impacts of the imposition of the roadway. The City has also not indicated how these



properties would be able to develop on an individual basis. While the overall concept may be viable, to have one property develop in isolation from the others may require the construction of significant and expensive retaining walls along each property's boundary. This concept was illustrated in the Applicant's August submission of the conceptual grading plans showing the connected street network.

In any case, the proposed alignment that the City provided can only be regarded as a suggestion as it has not been adopted by the City. In order to require conformance with the suggested plan, the City should further vet the issues associated with the proposed alignment and adopt the plan as a "special area plan or a local street connectivity plan" within the City's Comprehensive Plan or Transportation System Plan (TSP). This process would require a public review of the proposed alignment and a formal plan amendment process. This type of process would be highly unusual for a local street as the TSP typically only prescribes the alignment of higher classification streets.

#### **6. The Current Site Plan**

The Applicant has explored a variety of connectivity options for the property. Each of these options has been shared with staff and support for a cul-de-sac has been issued and then subsequently withdrawn. To summarize our discussions and timeline:

- The Applicant first submitted the cul-de-sac design in early April, 2013 and received confirmation that the City would be comfortable with the layout to avoid significant trees.
- The Applicant then received word in late August, 2013 that the City was not comfortable with the design and wanted a road connection to the northwest.
- The Applicant provided a copy of two alternative road alignments which explored the grading and wall construction for the connected layouts. Both layouts resulted in retaining walls along the boundaries of the property and near clear-cuts of the site.
- On October 4, two months after the discussion began, the City released a "preferred road alignment" for the area south of Weatherhill but did not provide sufficient detail to explain why the alignment was better than the Applicant's proposal. The City also did not offer an explanation of how the connected road network could be constructed without the full participation of all of the parties affected by the road.
- Since the release of the preferred road alignment, the City released an additional option for the developer's consideration. On October 15 2013, the City released the drawing below, acknowledging that this alignment would be favorably received by the City.



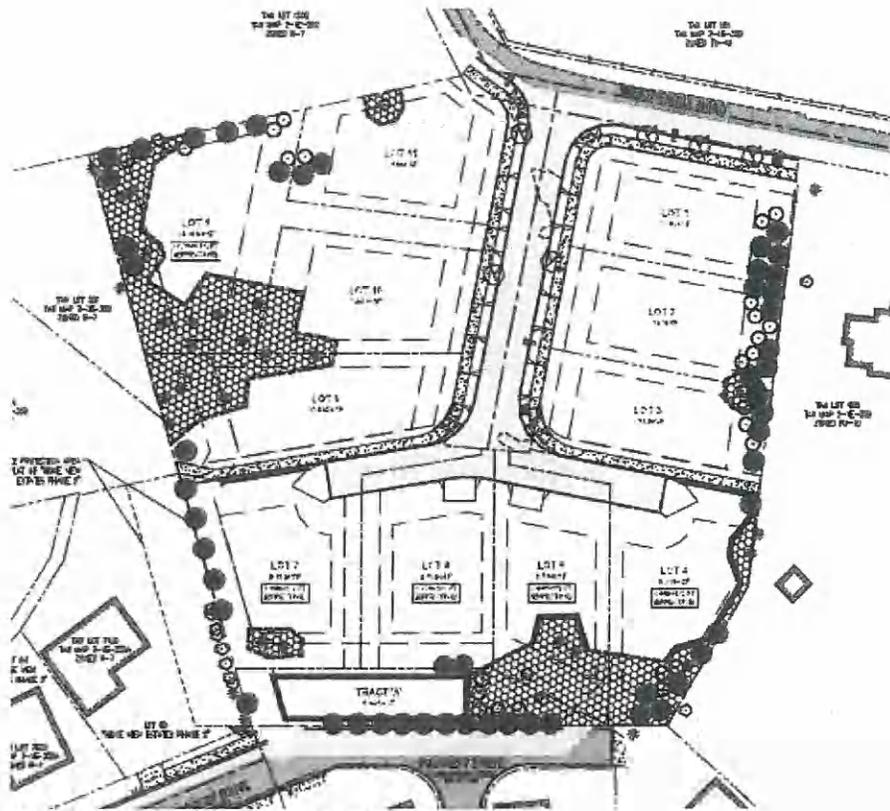


City's October 15<sup>th</sup> Concept

Rather than utilizing one of staff's suggested alignments for the road network, the Applicant has opted to retain the original design for the subdivision application. The design has been retained for the following reasons:

- The access road from Weatherhill has been graded to a 10% slope. If we were to connect to the neighboring properties, the road grade would need to be closer to 15%. 15% is a quite uncomfortable for normal vehicle traffic and very uncomfortable for larger trucks, moving vans, and fire vehicles.
- The site plan does not impose a pre-determined road connection on the neighbors and avoids the need for engineered retaining walls along the edges of the property. This will save the property owners of the adjoining properties from having to remove or redesign these walls when connecting new road extensions.
- Connectivity, in the form of a pedestrian connection has been provided to both the east and west. Within a local setting, a new local road is not needed or practical. Pedestrian connectivity will be more of an amenity to future residents than a new roadway.
- The proposed development has achieved significant tree retention of 23% of the significant tree canopy within easement. The plan also achieves 50% retention of the existing significant tree canopy. The layouts provided by the City to try to accommodate the road connections resulted in a near clear-cut of the applicant's property.
- The removal of the need for the road extensions allows the property owner to the northwest the opportunity to plan around the significant tree grove located on their property. The alignment also allows the property owner to the east to plan around the non-delineated resource corridor.

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Applicant's Preferred Concept - August, 2013

The following has been provided to document our response to each of the requests listed within the August 29th incompleteness notification. The applicant is providing all of the missing information identified in the incompleteness determination as required by ORS 227.178(2)(a). The issue regarding compliance with CDC 85.200(A)(11) is not a completeness issue but is instead a compliance issue. While the applicant hopes that the staff will agree a cul-de-sac is allowed because there is no reasonable alternative due to physical constraints, the application includes all of the information required to allow for Planning Commission review.

Within the materials below, Code sections and staff comments have been listed to the left and the Applicant's responses have been provided to the right. Engineering's comments have been accepted by the Applicant as comments and not as completeness items.

Planning Comments		
Code Section	Staff Comment	Applicant's Response
Section 85.160(D)(4) and 85.170 (A)(3)	Provide legal description of the tract boundaries.	The Applicant's 8/1 submission contains a legal description on the Existing Conditions Plan and on the Tentative Subdivision Plat. The description reads "Tax Lots 200,301, and 402 located in the NW ¼ of Section 35, T.2S., R.1E., W.M. City of West Linn, Clackamas County, Oregon."
Section 85.160(E)(5)	Requires an inventory of significant trees on the site. Mike Perkins has not finished	The Applicant has submitted an arborist's report for the project. We understand that the City's arborist has since confirmed the

31

	his assessment.	significant trees listed within the report.
Section 85.170(J)(9)	Retention of significant trees on type I and II lands	The Applicant has provided a revised slope analysis showing the trees proposed to be retained and removed and the proposed road grading envelopes. All significant trees which are not affected by road grading and therefore exempted through section 55.100(B)(2)(f) will be retained.
85.200(B)(3)	Lot Size and Shape – Lot 9 does not meet the 2.5 times rule of 12.070(D).	Measuring from the center of lot 9, the ratio of width to depth is 2.47. This meets the requirements of section 12.070(D).
85.200(A)(1)(8)(11)	Provide narrative responses that address whether the paths meet the ADA, grade, and defensible space criteria	<p>85.200.A, "Streets".</p> <p>1. Introduction. The application proposes a hammerhead local street because two (2) physical constraints prevent a continuation of the local street system to the adjacent properties and because, consistent with CDC; 85.200(A)(1), "General", the continuation of the local street is not a continuation of a "principal" street and would impede and adversely affect development of adjoining lands. Additionally, CDC 85.200(11), "Cul-de-sacs", allows a "closed end street" (this term is not defined in the CDC) because there is no "feasible alternative" due to physical constraints and the lack of existing easements that, in one case, prevent a connection.</p> <p>The application shows a local street system that is reasonable given existing topographic, legal and physical constraints that allow the City to approve a street system without connections to adjoining lots.</p> <p>2. Subsection (1), "General". This is one of two (2) relevant subsections that address street connectivity. Notwithstanding that subsection (11) is more specific as to cul-de-sacs, the City must give effect to this subsection, as well.</p> <p>A. Location of streets in relation to existing and planned streets, to the reasonable layout of streets on adjacent undeveloped parcels, topographical conditions and to the proposed use of land to be served by the streets.</p> <p>The proposed subdivision contains 2.59 acres and 11 lots. The local street to serve</p>

		<p>the subdivision is proposed to connect to Weatherhill Road, a local City street. The site is fairly steep (10-25% grades across the property). Site grading necessary to meet street grade standards and fire code standards requires significant site grading.</p> <p>There are three (3) adjacent lots to this subdivision site. The two (2) adjacent lots on the east and west are undeveloped because they are capable of being divided (both lots have existing dwellings; one lot is not in the City). The lots to the south are developed but are served by a private street system that does not provide for public use from a connecting public street.</p> <p>The City can find that a closed-end street is allowed under this criterion for the following reasons. This section uses the word "shall" which means it is mandatory language and the City must give consideration to its requirements.</p> <p>(a) First, this subsection provides that the location and grade of streets "SHALL" be considered to the generalized layout of streets on undeveloped lots. This site's grading proposes a closed-end street because in order to connect to either the east or west lot, resulting site grading would make the proposed lots far too steep, make driveway connections too steep, which creates dangerous conditions in winter weather and make the lots less desirable. The proposed site grading that is appropriate for this site results in significant grade differences between this site and the two adjoining lots that would adversely affect development of those lots. As a result, a connecting street system would either adversely affect this site or development of the two adjoining lots.</p> <p>(b) This site and the adjoining undeveloped lots do not require a connecting street system. All three (3) lots are served by a local street, Weatherhill, which has sufficient capacity to serve development of these three (3) lots. If the sole connecting street were a street type that discouraged local access, then a connecting street system might be necessary. This application does not require the continuation of an "existing principal street system". However, a</p>
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		<p>connecting street system would "impede or adversely affect development of adjoining lands" for the reasons explained here.</p> <p>(c) This section provides that the emphasis "SHOULD" be on a continuous system of connected streets. The use of the word "should" means that this statement is a goal and not a mandatory approval standard.</p> <p>(d) The adjoining lot to the south contains a private street stub abutting this site. The private street is owned by the subdivision's homeowners association and is for the purpose of serving the lots in that subdivision. There is no legal right to connect a public street to the private street. Subsection (A)(1) does not require a connection where an existing legal right prevents the connection and there is no likelihood of such right being changed.</p> <p>(e) Conclusion. This subsection does not require that a connecting street system be provided to the adjoining 3 lots because a principal street is not involved, the connection would adversely affect the development of this site and the two adjoining lots on the east and west sides of the site and is not allowed by the private street to the south.</p> <p>3. Subsection (11), "Cul-de-sacs".</p> <p>(a) Subsection (11)(a) allows closed-end streets on sites less than five (5) acres such as this if the applicant demonstrates that there is no "feasible alternative" due to "physical constraints", including steep topography (without limitation) and a stream protected by CDC Chapter 32, "Water Resource Area Management".</p> <p>(b) As explained above, steep topography on both this site and the two adjoining lots to the east and west present no feasible alternative allowing connectivity. Connecting streets will either adversely affect this site's development or the development of the adjoining properties.</p> <p>(c) The City's current 2006 Surface Water Management Plan (the "Plan") shows an "open channel" on the adjoining lot to the east. See Figure 4.5, page 4-24. An open</p>
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		<p>channel may contain wetlands. However, there is no delineation for this area and neither the applicant nor the City may conduct one without the property owner's authorization. CDC 32.020(A) applies where there is a natural drainage way, without exception. While CDC 32.050(A) allows the City Engineer to map the precise location of the open channel; he may not ignore it regardless of seasonality, an action to delete the channel from the Plan. Such an action would require the Plan to be amended by the adopting body, the West Linn City Council.</p> <p>Because the open channel may contain wetlands, this subsection allows a closed-end street system to the east.</p> <p>(d) The lot to the south is not required to have a street connection because it does not have an easement over the existing private street allowing a public connection.</p> <p>(e) The application satisfies subsection (11)(b) because the closed-end street will either be less than 200' long or will meet TVFD standards.</p> <p>(f) The application satisfies subsection (11)(e) because it provided direct pedestrian and bicycle access ways that can be constructed at reasonable cost and that are not precluded by physical constraints. These smaller access ways can be accommodated on the steep topography whereas streets cannot because of the differing requirements.</p> <p>(g) The application satisfies subsection (11)(f) because turnarounds can be provided.</p> <p>(h) Conclusion. The City can find that a closed-end street system is allowed because of steep topography, potential wetlands in an open channel identified on the Plan and the lack of an easement for public use of a private street.</p>
99.038(E)(1)	Provide a copy of the certified letters sent to the neighborhood association with return receipt.	Within the digital version of the submission, copies of the certified mailing receipts as well as the return receipts were provided to the City. A hard copy and an electronic of

		these items has been submitted as an attachment to this letter.
99.038(E)(5)	Provide copy of audio tape of the neighborhood meeting	Digital audio recordings of both the May 7 <sup>th</sup> and May 8 <sup>th</sup> neighborhood meetings were provided to the City in an electronic format within the initial submission. The recordings have been submitted on disk as an attachment to this letter.

There are Engineering comments provided on pg. 2 of the August 29, 2013 completeness letter that are not necessarily completeness related items. Although important to note, these items will be addressed during the post approval construction document review period. One item we would like to raise at this time is the water availability for the site. Currently, each of the lots within the development will be located above the 600 foot elevation and therefore serviced by the Rosemont Pressure Zone. At this time there is no water line for this zone available to the site. We understand that the City of West Linn has initiated a capital improvement project to complete the water improvements within Weatherhill which would facilitate the delivery of services to the site. Since the completion date of these improvements has not yet been determined, we are aware of the fact that an agreement may need to be completed between the City and the Developer if the Developer is required to complete the off-site improvements required to facilitate these connections. This agreement would allow the developer to complete the waterline improvement along the frontage of Weatherhill with the City then reimbursing the developer for costs associated with these improvements through SDC credits or other funding mechanism.

We trust that these responses and materials will assist in the City's favorable evaluation of the application. Please feel free to contact us with any questions that you may have. We will be ready to respond to any questions or requests for any further clarification.

Sincerely,



Andrew Tull  
Senior Planner  
3J Consulting, Inc.

Attachments:

Revised Preliminary Plat and Slope Analysis – Dated October 21, 2013  
DVD containing neighborhood meeting recordings

copy: Mr. John Wyland, JT Smith Companies  
Mr. Mike Robinson, Perkins Coie  
Mr. Brian Feeney, 3J Consulting, Inc  
File





**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

BETH STOLENS  
 1852 4TH AVE  
 WEST LINN, OR 97068

2. Article Number  
(Transfer from service label)

7007 0220 0001 7088 9515

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X *[Signature]*  Agent  
 Addressee

B. Received by (Printed Name)

KEON HELWIGS

C. Date of Delivery

4-12-13

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

3. Service Type

- Certified Mail  Express Mail
- Registered  Return Receipt for Merchandise
- Insured Mail  C.O.D.

4. Restricted Delivery? (Extra Fee)

Yes

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
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1. Article Addressed to:

ED SCHWARZ  
 2206 TANNLER DR.  
 WEST LINN, OR 97068

2. Article Number  
(Transfer from service label)

7007 0220 0001 7088 9508

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X *[Signature]*  Agent  
 Addressee

B. Received by (Printed Name)

EDWARD SCHWARZ

C. Date of Delivery

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

3. Service Type

- Certified Mail  Express Mail
- Registered  Return Receipt for Merchandise
- Insured Mail  C.O.D.

4. Restricted Delivery? (Extra Fee)

Yes





**Walter H. Knapp & Associates, LLC**  
*Consultants in Arboriculture, Silviculture, and Forest Ecology*

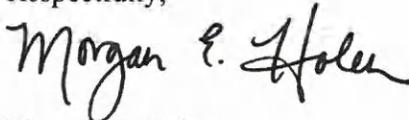
August 9, 2013

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

Re: Arborist Report and Tree Preservation Plan for the Weatherhill Project  
West Linn, Oregon  
Project No.: 1327 Weatherhill

Please find enclosed the Arborist Report and Tree Preservation Plan for the Weatherhill Subdivision project located at 22882 Weatherhill Road in West Linn, Oregon. Please contact us if you have questions or need any additional information.

Respectfully,



Morgan E. Holen  
*Morgan Holen & Associates, LLC*  
*ISA Certified Arborist, PN-6145A*  
*ISA Tree Risk Assessment Qualified*  
*Forest Biologist*

**Walter H. Knapp & Associates, LLC**  
*Consultants in Arboriculture, Silviculture, and Forest Ecology*

# Arborist Report and Tree Preservation Plan

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Weatherhill Subdivision  
West Linn, Oregon

August 9, 2013

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7615 SW Dunsmuir Lane, Beaverton, OR 97007  
Phone: (503) 646-4349 Fax: (503) 747-4863

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August 9, 2013

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**WEATHERHILL SUBDIVISION – WEST LINN, OREGON  
ARBORIST REPORT AND TREE PRESERVATION PLAN**

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1327

**Purpose**

This Arborist Report and Tree Preservation Plan for the Weatherhill 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.

**Site Description**

The project site is located at 22882 Weatherhill Road in West Linn. The site is sloping with one existing residence and trees scattered across the site. The site is planned to be subdivided for residential development. A site visit was conducted on June 5, 2013 by ISA Certified Arborists Morgan Holen (PN-6145A) and Walt Knapp (PN-0497A) in order to evaluate the existing trees in terms of species, size, condition, significance, and suitability for preservation with development. The location of individual trees is shown on site plan drawings and tree numbers correspond with the enclosed inventory data.

**Tree Inventory**

In all, 103 existing trees were inventoried, including 16 trees located on adjacent properties that will be protected throughout construction. The remaining 87 trees are located on site and include 17 different tree species. Table 1 provides a summary of the number of on-site trees by species.

**Table 1. Number of On Site Trees by Species – Weatherhill Project.**

Common Name	Species Name	Quantity	Percent
apple	<i>Malus spp.</i>	2	2%
Austrian pine	<i>Pinus nigra</i>	2	2%
bigleaf maple	<i>Acer macrophyllum</i>	10	11%
blue spruce	<i>Picea pungens</i>	1	1%
Douglas-fir	<i>Pseudotsuga menziesii</i>	35	40%
English hawthorn	<i>Crataegus monogyna</i>	1	1%
incense-cedar	<i>Calocedrus decurrens</i>	3	3%
Leyland cypress	<i>Cupressocyparis leylandii</i>	9	10%
lodgepole pine	<i>Pinus contorta</i>	2	2%
madrone	<i>Arbutus menziesii</i>	5	6%
Norway maple	<i>Acer platanoides</i>	2	2%
Norway spruce	<i>Picea abies</i>	1	1%
Oregon white oak	<i>Quercus garryana</i>	5	6%
scotch pine	<i>Pinus sylvestris</i>	1	1%

Common Name	Species Name	Quantity	Percent
silver maple	<i>Acer saccharinum</i>	1	1%
sweet cherry	<i>Prunus avium</i>	3	3%
western redcedar	<i>Thuja plicata</i>	4	5%
<b>Total</b>		<b>87</b>	<b>100%</b>

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 located on site, 26 (30%) on site trees were identified as potentially being classified as significant. This includes two Oregon white oaks (*Quercus garryana*) and 24 Douglas-firs (*Pseudotsuga menziesii*). The enclosed tree inventory data provides a complete description of the individual trees.

### Tree Plan Recommendations

We coordinated with the project team to discuss trees suitable for preservation in terms of proposed construction impacts. Of the 87 on site trees, 70 (80%) are planned for removal either for construction or because of poor or hazardous condition, and 17 (20%) are planned for retention including 16 potentially significant trees. 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	Percent
Non-Significant Trees	60	1	<b>61</b>	70%
Potentially Significant	10	16	<b>26</b>	30%
<b>Total</b>	<b>70</b>	<b>17</b>	<b>87</b>	100%
Percent	80%	20%		

The Tree Plan drawing illustrates the location of trees to be removed and preserved, and the approximate location of tree protection measures.

### Tree Protection Standards

Trees to be protected will need special consideration to assure their protection during construction. 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 (retaining walls, 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 will verify in writing to the City Arborist that tree protection fencing has been satisfactorily installed.

#### **During Construction**

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.**
  - a. Excavation within the TPZ shall be avoided if alternatives are available.
  - b. 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.
  - c. 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 will 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 should be provided to the Client and City on a regular basis throughout construction.

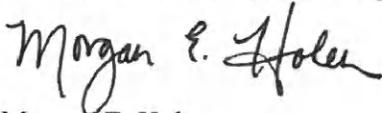
**Post Construction**

- 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.

**Summary**

The enclosed tree inventory provides complete data for individual trees at the Sunbreak project site in West Linn. The location of inventoried trees and tree protection measures shall be shown on site plan drawings. Seventeen trees are recommended for removal because of condition or for the purposes of construction and three potentially significant on-site trees are planned for preservation with protection during construction. It is the Client's responsibility to implement this plan and to monitor the construction process. The project arborist will be available during construction to help with tree related issues.

Please contact us if you have questions or need any additional information.



Morgan E. Holen  
Morgan Holen & Associates, LLC  
ISA Certified Arborist, PN-6145A  
ISA Tree Risk Assessment Qualified



Walter H. Knapp  
Walter H. Knapp & Associates, LLC  
ISA Certified Arborist, PN-0497A  
SAF Certified Forester, No. 406

Enclosure: 1327 Weatherhill - Tree Data 6-5-13

No.	Common Name	Species Name	DBH* C-Rad^A	Defects and Comments	Sig?	Recommendation
2152	Douglas-fir	<i>Pseudotsuga menziesii</i>	28	25 suitable for retention with 2154	yes	remove
2153	Norway spruce	<i>Picea abies</i>	18	12 dead branches	no	remove
2154	madrone	<i>Arbutus menziesii</i>	18	25 natural lean, dead branches	no	remove
2155	lodgepole pine	<i>Pinus contorta</i>	8	8	no	remove
2156	adjacent	n/a	36	30 neighboring Douglas-fir	x	protect neighboring tree
2259	bigleaf maple	<i>Acer macrophyllum</i>	15	20	no	remove
2260	bigleaf maple	<i>Acer macrophyllum</i>	20	25	no	remove
2261	Oregon white oak	<i>Quercus garryana</i>	6	8 could transplant	no	remove
2262	Oregon white oak	<i>Quercus garryana</i>	6	8 could transplant	no	remove
2263	lodgepole pine	<i>Pinus contorta</i>	20	12 extensive ivy	no	remove
2264	blue spruce	<i>Picea pungens</i>	18	10 topped, new forked top	no	remove
2425	Douglas-fir	<i>Pseudotsuga menziesii</i>	54	45 excellent condition	yes	remove
2426	madrone	<i>Arbutus menziesii</i>	14	25 decline, mostly dead	no	remove
2427	madrone	<i>Arbutus menziesii</i>	60	30 twig dieback, suspect <i>P. washingtonensis</i> infection	no	remove
2428	silver maple	<i>Acer saccharinum</i>	26	36 major branch failure; branch decay	no	remove
2429	Norway maple	<i>Acer platanoides</i>	16	20 invasive species	no	remove
2430	Douglas-fir	<i>Pseudotsuga menziesii</i>	28	24 4-degree lean to north	no	remove
2431	bigleaf maple	<i>Acer macrophyllum</i>	20	25 ivy	no	remove
2432	bigleaf maple	<i>Acer macrophyllum</i>	16	25 dead branches, ivy	no	remove
2433	Norway maple	<i>Acer platanoides</i>	16	20 invasive species	no	remove
2434	Douglas-fir	<i>Pseudotsuga menziesii</i>	42	30	yes	remove
2435	Douglas-fir	<i>Pseudotsuga menziesii</i>	40	30 excellent condition	yes	remove
2473	scotch pine	<i>Pinus sylvestris</i>	8	15 poor condition	no	remove
2474	Douglas-fir	<i>Pseudotsuga menziesii</i>	40	25	yes	retain
2475	Douglas-fir	<i>Pseudotsuga menziesii</i>	40	25 off color, thin crown, broken branches	yes	retain
2476	sweet cherry	<i>Prunus avium</i>	24	30 invasive species	no	remove
2477	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	25 overtopped, extensive ivy	no	remove
2478	Douglas-fir	<i>Pseudotsuga menziesii</i>	36	15 sweep, but no major defects	yes	retain
2479	Douglas-fir	<i>Pseudotsuga menziesii</i>	44	30 excellent condition	yes	retain
2480	Douglas-fir	<i>Pseudotsuga menziesii</i>	29	30 broken top, new potentially hazardous top	no	remove

No.	Common Name	Species Name	DBH* C-Rad^	Defects and Comments	Sig?	Recommendation
2481	Douglas-fir	<i>Pseudotsuga menziesii</i>	28	<i>Phellinus pini</i> conks, remove with 2480	no	remove
2482	Douglas-fir	<i>Pseudotsuga menziesii</i>	42	remove ivy	yes	retain
2543	adjacent	n/a	32		x	protect neighboring tree
2544	adjacent	n/a	24		x	protect neighboring tree
2545	Douglas-fir	<i>Pseudotsuga menziesii</i>	28		yes	retain
2546	Oregon white oak	<i>Quercus garryana</i>	36		yes	retain
2547	madrone	<i>Arbutus menziesii</i>	18	hollow with decay in codom juncture	no	retain
2548	Douglas-fir	<i>Pseudotsuga menziesii</i>	36	<i>Phellinus pini</i> conks, trunk swell	no	remove
2549	Douglas-fir	<i>Pseudotsuga menziesii</i>	44		yes	retain
2550	Douglas-fir	<i>Pseudotsuga menziesii</i>	34		yes	remove
2551	Leyland cypress	<i>Cupressocyparis leylandii</i>	6		no	remove
2552	incense-cedar	<i>Calocedrus decurrens</i>	8		no	remove
2553	Leyland cypress	<i>Cupressocyparis leylandii</i>	10		no	remove
2554	Leyland cypress	<i>Cupressocyparis leylandii</i>	6		no	remove
2555	Leyland cypress	<i>Cupressocyparis leylandii</i>	6		no	remove
2556	incense-cedar	<i>Calocedrus decurrens</i>	6		no	remove
2714	western redcedar	<i>Thuja plicata</i>	8		no	remove
2715	Leyland cypress	<i>Cupressocyparis leylandii</i>	8		no	remove
2716	adjacent	n/a	8		x	protect neighboring tree
2803	incense-cedar	<i>Calocedrus decurrens</i>	8		no	remove
2804	Leyland cypress	<i>Cupressocyparis leylandii</i>	8		no	remove
2805	western redcedar	<i>Thuja plicata</i>	8		no	remove
2806	western redcedar	<i>Thuja plicata</i>	10		no	remove
2807	western redcedar	<i>Thuja plicata</i>	10		no	remove
2808	Oregon white oak	<i>Quercus garryana</i>	12,14	codom stems, ivy in crown	yes	remove
2882	apple	<i>Malus spp.</i>	12		no	remove
2889	adjacent	n/a	20		x	protect neighboring tree
2952	Douglas-fir	<i>Pseudotsuga menziesii</i>	42	<i>Phellinus pini</i> conks, codom stems	no	remove
2953	Douglas-fir	<i>Pseudotsuga menziesii</i>	36	needs just 7ft protection zone to SE	yes	remove
2954	Douglas-fir	<i>Pseudotsuga menziesii</i>	18	suitable for retention with 2953 and 2425	no	remove

No.	Common Name	Species Name	DBH* C-Rad^A	Defects and Comments	Sig?	Recommendation
2955	Douglas-fir	<i>Pseudotsuga menziesii</i>	44	35 new top is large diameter and off-center	no	remove
2956	bigleaf maple	<i>Acer macrophyllum</i>	12	25	no	remove
2957	bigleaf maple	<i>Acer macrophyllum</i>	3*6	25 poor structure	no	remove
2958	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	25	yes	remove
2958.1	bigleaf maple	<i>Acer macrophyllum</i>	8	15 poor condition	no	remove
2958.2	bigleaf maple	<i>Acer macrophyllum</i>	14	0 dead	no	remove
2959	Douglas-fir	<i>Pseudotsuga menziesii</i>	30	30	yes	retain
2960	adjacent	n/a	34	30	x	protect neighboring tree
2961	bigleaf maple	<i>Acer macrophyllum</i>	16	15	no	remove
2962	bigleaf maple	<i>Acer macrophyllum</i>	8	10	no	remove
2978	adjacent	n/a	6	12	x	protect neighboring tree
2979	adjacent	n/a	6	12	x	protect neighboring tree
2980	adjacent	n/a	6	12	x	protect neighboring tree
2981	adjacent	n/a	6	12	x	protect neighboring tree
2982	adjacent	n/a	6	12	x	protect neighboring tree
2983	adjacent	n/a	6	12	x	protect neighboring tree
2984	adjacent	n/a	6	12	x	protect neighboring tree
2985	adjacent	n/a	6	12	x	protect neighboring tree
2986	adjacent	n/a	6	8	x	protect neighboring tree
2990	madrone	<i>Arbutus menziesii</i>	12	12 tip dieback	no	remove
2991	Austrian pine	<i>Pinus nigra</i>	6	7	no	remove
2992	Austrian pine	<i>Pinus nigra</i>	6	7	no	remove
2993	apple	<i>Malus spp.</i>	18	20 codorn stems	no	remove
3023	Leyland cypress	<i>Cupressocyparis leylandii</i>	8	15	no	remove
3024	Leyland cypress	<i>Cupressocyparis leylandii</i>	8	15	no	remove
3025	Leyland cypress	<i>Cupressocyparis leylandii</i>	8	15	no	remove
3071	Douglas-fir	<i>Pseudotsuga menziesii</i>	40	25	yes	retain
3072	Douglas-fir	<i>Pseudotsuga menziesii</i>	40	20 ivy	yes	retain
3073	Douglas-fir	<i>Pseudotsuga menziesii</i>	36	20 ivy	yes	retain
3180	Oregon white oak	<i>Quercus garryana</i>	8	8 topped	no	remove

No.	Common Name	Species Name	DBH*	C-Rad <sup>^</sup>	Defects and Comments	Sig?	Recommendation
3181	Douglas-fir	<i>Pseudotsuga menziesii</i>	60	40	remarkable condition	yes	retain
3182	Douglas-fir	<i>Pseudotsuga menziesii</i>	30	25	broken top	no	remove
3183	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	10	suppressed	no	remove
3184	English hawthorn	<i>Crataegus monogyna</i>	7	10	invasive species	no	remove
3195	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	30	ivy	yes	retain
3196	Douglas-fir	<i>Pseudotsuga menziesii</i>	30	30	intermediate crown class	yes	retain
3197	Douglas-fir	<i>Pseudotsuga menziesii</i>	36	30	one-sided, extensive ivy	yes	retain
3198	Douglas-fir	<i>Pseudotsuga menziesii</i>	36	30	ivy	yes	retain
3199	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	30		yes	retain
3200	adjacent	n/a	42	30		x	protect neighboring tree
3201	Douglas-fir	<i>Pseudotsuga menziesii</i>	20	30	moderate condition; epicormic sprouts	no	remove
3202	sweet cherry	<i>Prunus avium</i>	6	8	invasive species	no	remove
3203	sweet cherry	<i>Prunus avium</i>	6	8	dead	no	remove

\*DBH is tree diameter measured at breast height, 4.5-feet above the ground level (inches)

<sup>^</sup>C-RAD is the average crown radius measured in feet

Sig? asks whether or not the tree is considered potentially significant, either Yes (significant), No (non-significant), or x (off-site tree, non-applicable)

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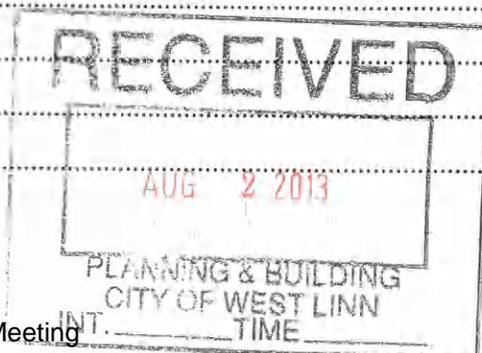
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## GENERAL INFORMATION

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## SITE INFORMATION

Tax Lot Numbers: 2S1E35B00301, 2S1E35B00200 and 2S1E35B00402  
Address: 22882 Weatherhill Road  
Size: 2.59 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 Weatherhill Road, a local street. As proposed, the lots would take access from a new local street that then connects to Weatherhill Road at the location of one of the existing driveways.  
Surrounding Zoning: North and East- FU-10  
South and West – R-7

## **INTRODUCTION**

### **APPLICANT'S REQUEST**

The Applicant seeks approval of an application for Subdivision Preliminary Plat for the development of 11 residential lots. 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 2.59 acres. The property is located between Weatherhill Road to the north and the private terminus of Fircrest Drive to the south, just east of Bland Circle. There is one single-family detached home with a pool in the middle of the property that will be demolished as part of this project.

The intent of this subdivision is to provide eleven buildable lots, each a minimum of 7,000 square feet in size, for development with single-family homes, a use permitted outright in the R-7 zone.

### **TRAFFIC AND PARKING**

The preliminary plat shows that access to the eleven parcels will come from driveways on a newly constructed public street section that will then connect to Weatherhill Road. Additionally, each lot will have adequate off-street parking available.

## 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 8. LAND DIVISION

#### 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. 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 and any adopted updated plans.

An applicant may submit a written request for a waiver of abutting street improvements if the Transportation System Plan 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 propose a fee amount that will be reviewed by the City Manager or the Manager's designee. The City Manager or the Manager's designee will revise the proposed fee as necessary and establish the amount to be paid on a case-by-case basis. The applicant shall pay an in-lieu fee for improvements to the nearest street identified by the City Manager or Manager's designee as necessary and appropriate. The amount of the in-lieu fee shall be roughly proportional to the impact of the development on the street system as determined in subsection (A)(22) of this section.

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 on Weatherhill Road, a local street. Weatherhill Road adjacent to this site connects Bland Circle to the west with Salamo Road to the east. The connectivity of this local street will not be changed. The current right-of-way width of Weatherhill Road adjacent to the subject site is 30 feet, inadequate based on the requirements of Section 2, below. The Applicant proposes 13-feet of additional right-of-way along the property's frontage on Weatherhill Road, for a total right-of-way width of 43 feet. Sidewalks and planter strips are also proposed.

This section requires that the developer be responsible for internal streets. One internal street is proposed, providing access to all 11 lots. The Applicant proposes full responsibility for construction of this internal street, with a total right-of-way width of 48 feet. The paved surface will be 24 feet in width and 6-foot sidewalks and 6-foot planter strips will be provided on each side of the paved surface.

The requirements of this section have been satisfied.

**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

**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:** As discussed above, the Applicant proposes the dedication of 13 feet of right-of-way along Weatherhill Road to increase the right-of-way width from 30 feet to 43 feet. From centerline, the right-of-way will increase from 15 feet to 28 feet. This will accommodate a total right-of-way of 56 feet when the property to the north develops in the future. The City's Engineering Department calls out a 56-foot right-of-way in the pre-application notes dated April 4, 2013.

The Applicant further proposes a new local street with a 48 foot right-of-way and 24 foot pavement width. No parking is proposed on this new public street.

The requirements of this section have been satisfied.

**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:** As discussed above, the width of the paved section of the new local street will be 24 feet, per the TSP standard for a local street with no on-street parking.

The requirements of this section have been satisfied.

**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 Engineer has reviewed the proposal and made recommendations to the applicant, which are incorporated into the proposed configuration.

The requirements of this section have been satisfied.

**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 proposed street will serve the 11 proposed lots, no more than a normal Local Street traffic load. The dedication of right-of-way and street improvements will result in adequate facilities on Weatherhill Road. No arterials are adjacent to this proposal.

The requirements of this section have been satisfied:

**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.

The requirements of this section have been satisfied.

**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 new proposed street does not continue on the north side of Weatherhill Road. The "T" intersection created will be more than 100 feet from the next intersection point along Weatherhill.

The requirements of this section have been satisfied.

**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:** All adjoining land has access to Weatherhill Road, a local street. Extension of streets through this site would not enhance future subdivision of adjoining land. The purpose of a local street, such as Weatherhill Road, is to provide direct access to parcels, including residential lots. These local streets then access collector streets at strategic locations so as to improve safety and the flow of the transportation system.

The requirements of this section have been satisfied.

**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 public local street will intersect Weatherhill Road approximately at the location of the existing driveway and as near to a right angle as practical. The curb radii at the intersection will exceed 25 feet.

The requirements of this section have been satisfied.

**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 Weatherhill Road and the new public local street, as discussed above, will be dedicated at time of subdivision.

The requirements of this section have been satisfied.

**11. Cul-de-sacs.** Cul-de-sacs are not allowed except as required by topography, slope, site limitations, and lot shapes. Cul-de-sacs shall have maximum lengths of 400 feet and serve no more than 12 dwelling units, unless by variance per Chapter 75 CDC. All cul-de-sacs 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:** The Applicant proposes to construct a single hammerhead styled street to access the proposed lots. The hammerhead is necessary in order to account for the steep grades present on the site and to allow for the retention of significant groves of trees on the

property.

The requirements of this section have been satisfied.

**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 Applicant proposes the name Prince George Court for the new street within the development.

The requirements of this section have been satisfied.

**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 new local public street will not exceed 15 percent, per this standard. No street will have a centerline radius of less than 50 feet.

The requirements of this section have been satisfied.

**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** The subject property does not abut nor contain an existing or proposed Major Arterial

**Finding:** Street, nor is an intersection of a Local Residential Street with an Arterial Street proposed.

The requirements of this section have been satisfied.

**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** No alleys are proposed with this subdivision.

**Finding:** The requirements of this section have been satisfied.

**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** The applicant proposes to install a 6-foot sidewalk plus planter strip along the Weatherhill Road frontage of this property, and along the new public street within the development, per this standard.

**Finding:** The requirements of this section have been satisfied.

The requirements of this section have been satisfied.

**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 curblines. 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** The applicant proposes to install a 6-foot planter strip between all proposed sidewalks and paved street sections on Weatherhill Road and the new local public street.

**Finding:** The requirements of this section have been satisfied.

The requirements of this section have been satisfied.

**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:** All lots in the subdivision will have access to the new public street proposed.

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.

The requirements of this section have been satisfied.

**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 curblines, except for landscaping. Landscaped islands shall be set back a minimum of 24 feet from the curblines 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.

The requirements of this section have been satisfied.

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 eleven new lots. Off-site improvements are not necessary or proportionate to mitigate impacts from this 11-lot subdivision.

The requirements of this section have been satisfied.

**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 proposed public street intersects Weatherhill Road where an existing driveway is located. This access provides the best option for traffic safety, convenience, access, circulation and control. All 11 proposed lots will take access from the new public street, which will then connect to Weatherhill Road.

The requirements of this section have been satisfied.

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:** Weatherhill Road currently extends from Salamo Road on the east to Bland Circle on the West. The new public street proposed with this subdivision application will intersection Weatherhill Road near the middle of the distance between Salamo and Bland. However, due to topographical constraints (steep slope) and legal constraints (Fircrest Drive to the south is a private tract without public access), the new public street will terminate within the subdivision. Pedestrian/bicycle paths are proposed to extend to the east and west of the terminus of the new public street.

The requirements of this section have been satisfied.

3. **Lot size and shape.** Lot size, width, shape, and orientation shall be appropriate for the location of the subdivision, 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 shall be dimensioned to contain part of an existing or proposed street. All lots shall be buildable, and the buildable depth should not exceed two and one-half times the average width. "Buildable" describes lots that are free of constraints such as wetlands, drainageways, etc., that would make home construction impossible. Lot 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	50 feet
Lot Depth	Less than 2.5x Width and greater than Average Depth of 90 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 11 proposed lots exceed the minimum requirements for front lot line length, lot width and lot depth

The requirements of this section have been satisfied.

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

**Applicant's Finding:** The proposed access to the subdivision conforms to the provisions of CDC Chapter 48 because all lots will take access from a Local Street. No more than one driveway per lot is proposed.

The requirements of this section have been satisfied.

5. **Through lots and parcels.** Through lots have frontage on a street at the front and rear of the lot. They are also called double-frontage lots. Through 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** No through lots are proposed with this application.

**Finding:**

The requirements of this section have been satisfied.

**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 right angles to the streets upon which they face as far as practicable.

The requirements of this section have been satisfied.

**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. \*\*\*

- a. Setbacks applicable to the underlying zone shall apply to the flag lot.
- b. Front yard setbacks may be based on the rear property line of the parcel which substantially separates the flag lot from the street from which the flag lot gains access. Alternately, the house and its front yard may be oriented in other directions so long as some measure of privacy is ensured, or it is part of a pattern of development, or it better fits the topography of the site.
- c. The lot size shall be calculated exclusive of the accessway; the access strip may not be counted towards the area requirements.
- d. The lot depth requirement contained elsewhere in this code shall be measured from the rear property line of the parcel which substantially separates the flag lot from the street from which the flag lot gains access.
- e. As per CDC 48.030, the accessway shall have a minimum paved width of 12 feet.
- f. If the use of a flag lot stem to access a lot is infeasible because of a lack of adequate existing road frontage, or location of existing structures, the proposed lot(s) may be accessed from the public street by an access easement of a minimum 15-foot width across intervening property.

**Applicant's  
Finding:**

Lots 4, 5, 6 7 and 8 are proposed as flag lots. The street frontage of the accessway serving the 4 lots is 32 feet wide (8 feet per lot). All setback, lot size, lot depth and access requirements are met.

The requirements of this section have been satisfied.

**8. Large lots.** In dividing tracts into large lots or parcels which, at some future time, are likely to be redivided, the approval authority may 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. Alternately, in order to prevent further partition of oversized lots, restrictions may be imposed on the subdivision or partition plat.

**Applicant's Finding:** The lots of the proposed subdivision, ranging in size from 7,092 square feet to 11,296 square feet, are not large enough for future division in the R-7 zone.

The requirements of this section have been satisfied.

### C. Pedestrian and bicycle trails.

1. Trails or multi-use pathways shall be installed, consistent and compatible with federal ADA requirements and with the Oregon Transportation Planning Rule, between subdivisions, cul-de-sacs, and streets that would otherwise not be connected by streets due to excessive grades, significant tree(s), and other constraints natural or manmade. Trails shall also accommodate bicycle or pedestrian traffic between neighborhoods and activity areas such as schools, libraries, parks, or commercial districts. Trails shall also be required where designated by the Parks Master Plan.
2. The all-weather surface (asphalt, etc.) trail should be eight feet wide at minimum for bicycle use and six feet wide at minimum for pedestrian use. Trails within 10 feet of a wetland or natural drainageway shall not have an all-weather surface, but shall have a soft surface as approved by the Parks Director. These trails shall be contained within a corridor dedicated to the City that is wide enough to provide trail users with a sense of defensible space. Corridors that are too narrow, confined, or with vegetative cover may be threatening and discourage use. Consequently, the minimum corridor width shall be 20 feet. Sharp curves, twists, and blind corners on the trail are to be avoided as much as possible to enhance defensible space. Deviations from the corridor and trail width are permitted only where topographic and ownership constraints require it.
3. Defensible space shall also be enhanced by the provision of a three- to four-foot-high matte black chain link fence or acceptable alternative along the edge of the corridor. The fence shall help delineate the public and private spaces.
4. The bicycle or pedestrian trails that traverse multi-family and commercial sites should follow the same defensible space standards but do not need to be defined by a fence unless required by the decision-making authority.
5. Except for trails within 10 feet of a wetland or natural drainageway, soft surface or gravel trails may only be used in place of a paved, all-weather surface where it can be shown to the Planning Director that the principal users of the path will be recreational, non-destination-oriented foot traffic, and that alternate paved routes are nearby and accessible.
6. The trail grade shall not exceed 12 percent except in areas of unavoidable topography, where the trail may be up to a 15 percent grade for short sections no longer than 50 feet. In any location where topography requires steeper trail grades than permitted by this section, the trail shall incorporate a short stair section to traverse the area of steep grades.

**Applicant's  
Finding:**

The applicant is proposing a 10 foot pedestrian access easement with 6-foot all-weather surface path from the new public street within the subdivision to both the east and west property lines.

The requirements of this section have been satisfied.

**D. Transit facilities.**

1. The applicant shall consult with Tri-Met and the City Engineer to determine the appropriate location of transit stops, bus pullouts, future bus routes, etc., contiguous to or within the development site. If transit service is planned to be provided within the next two years, then facilities such as pullouts shall be constructed per Tri-Met standards at the time of development. More elaborate facilities, like shelters, need only be built when service is existing or imminent. Additional rights-of-way may be required of developers to accommodate buses.
2. The applicant shall make all transit-related improvements in the right-of-way or in easements abutting the development site as deemed appropriate by the City Engineer.
3. Transit stops shall be served by striped and signed pedestrian crossings of the street within 150 feet of the transit stop where feasible. Illumination of the transit stop and crossing is required to enhance defensible space and safety. ODOT approval may be required.
4. Transit stops should include a shelter structure bench plus eight feet of sidewalk to accommodate transit users, non-transit-related pedestrian use, and wheelchair users. Tri-Met must approve the final configuration.

**Applicant's  
Finding:**

Transit facilities have not been identified by Tri-Met or the City Engineer adjacent to this property.

The requirements of this section have been satisfied.

**E. Lot 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. Where landslides have actually occurred, where the area is identified as a hazard site in the West Linn Comprehensive Plan Report, or where field investigation by the City Engineer confirms the existence of a severe landslide hazard, development shall be prohibited unless satisfactory evidence is additionally submitted by a registered geotechnical engineer which certifies that methods of rendering a known hazard site safe for construction are feasible for a given site. The City Engineer's field investigation shall include, but need not be limited to, the following elements:

- a. Occurrences of geotropism.
- b. Visible indicators of slump areas.
- c. Existence of known and verified hazards.
- d. Existence of unusually erosive soils.
- e. Occurrences of unseasonably saturated soils.

The City Engineer shall determine whether the proposed methods or designs are adequate to prevent landslide or slope failure. The City Engineer may impose conditions consistent with the purpose of these ordinances and with standard engineering practices including limits on type and intensity of land use, which have been determined necessary to assure landslide or slope failure does not occur.

6. All cuts and fills shall conform to the Uniform Building Code.

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:**

All grading on site will be done in conformance with these standards.

The requirements of this section have been satisfied.

**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 subject property is located in the Horton and Rosemont water pressure zone. The City Engineering Department's comments in the pre-application notes dated April 4, 2013 indicate that there is a surplus in supply capacity during normal conditions and that there is no storage volume deficit during normal conditions in the Horton pressure zone. The applicant will connect all lots to public water per the submitted public improvement plans. This plan is consistent with the adopted Comprehensive Water System Plan.

The requirements of this section have been satisfied.

**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 proposed sanitary sewer system is consistent with the Sanitary Sewer Master Plan, is in the correct basin and allows for full gravity service.

The requirements of this section have been satisfied.

#### 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 is designed to meet city standards, as detailed in the submitted stormwater report.

The requirements of this section have been satisfied.

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.

The requirements of this section have been satisfied.

**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 drainageways.

The requirements of this section have been satisfied.

**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 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.

The requirements of this section have been satisfied.

**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.

The requirements of this section have been satisfied.

**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 with the subdivision will utilize high or low pressure sodium light bulbs.

The requirements of this section have been satisfied.

**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 an 11-lot subdivision. Additional dedication and/or public improvements would exceed rough proportionality of this development.

The requirements of this section have been satisfied.

**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.

The requirements of this section have been satisfied.

**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 2.34 acres. At 6.2 dwelling units per net acre, the maximum number of dwelling units on this site is 14. The proposed 11 dwelling units would be 78 percent of the maximum density.

The requirements of this section have been satisfied.

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

**Applicant's Finding:** This property is zoned R-7 and, therefore, the use of the parcel as an entirely residential development is permitted.

The requirements of this section have been satisfied.

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.

The requirements of this section have been satisfied.

10. **Annexation and street lights.** Developer and/or homeowners association shall, as a condition of approval, pay for all expenses related to street light energy and maintenance costs until annexed into the City, and state that: "This approval is contingent on receipt of a final order by the Portland Boundary Commission, approving annexation of the subject property." This means, in effect, that any permits, public improvement agreements, final plats, and certificates of occupancy may not be issued until a final order is received. (Ord. 1377, 1995; Ord. 1382, 1995; Ord. 1401, 1997; Ord. 1403, 1997; Ord. 1408, 1998; Ord. 1425, 1998; Ord. 1442, 1999; Ord. 1463, 2000; Ord. 1526, 2005; Ord. 1544, 2007; Ord. 1584, 2008; Ord. 1590 § 1, 2009; Ord. 1604 § 64, 2011)

**Applicant's Finding:** This property is within the City limits.

The requirements of this section have been satisfied.

## CHAPTER 33. STORMWATER QUALITY AND DETENTION

### 33.040 APPROVAL CRITERIA

The Planning Director and City Engineer shall make written findings with respect to the following criteria when approving, approving with conditions, or denying applications for stormwater detention permits and stormwater quality permits.

A. Stormwater quality facilities shall meet non-point source pollution control standards required by the Public Works Design Standards.

**Applicant's Finding:** The proposed stormwater design meets non-point source pollution control standards, as shown in the stormwater report.

The requirements of this section have been satisfied.

**B. Design of stormwater detention and pollution reduction facilities and related detention and water quality calculations shall meet Public Works Design Standards and shall be prepared by a professional engineer licensed to practice in the State of Oregon.**

**Applicant's Finding:** The stormwater detention and pollution reduction facilities and related calculations were prepared by a professional engineer licensed to practice in the state of Oregon.

The requirements of this section have been satisfied.

**C. Soil stabilization techniques, erosion control, and adequate improvements to accommodate the intended drainage through the drainage basin shall be used. Storm drainage shall not be diverted from its natural watercourse unless no feasible alternatives exist. Interbasin transfers of storm drainage will not be permitted.**

**Applicant's Finding:** Soil stabilization techniques, erosion control and adequate improvements to accommodate drainage are detailed in the stormwater report and meet all standards.

The requirements of this section have been satisfied.

**D. Stormwater detention and treatment facilities shall encroach no further than 25 feet into the outside boundary of a water quality resource area. The area of encroachment must be replaced by adding an equal area to the water quality resource area on the subject property.**

**Applicant's Finding:** No stormwater detention or treatment facilities are proposed near or encroaching into the boundary of a water quality resource area.

The requirements of this section have been satisfied.

**E. Stormwater detention and treatment facilities shall be vegetated with plants from the Metro's Native Plant List as described in CDC 33.070.**

**Applicant's Finding:** All stormwater detention and treatment facilities will be vegetated with plants from Metro's Native Plant List.

The requirements of this section have been satisfied.

**F. Projects must either stockpile existing topsoil for reuse on the site or import topsoil, rather than amend subsoils. Soil amendments are allowed only where the applicant can demonstrate they are the only practical alternative for enabling the soil to support healthy plantings, promoting better stormwater treatment, or improving soil infiltration capacity (where appropriate).**

**Applicant's Finding:** No soil amendments are proposed.

The requirements of this section have been satisfied.

**G. Interim erosion control measures, such as mulching, shall be placed immediately upon completion of grading of the facilities. (Ord. 1463, 2000)**

**Applicant's** Interim erosion control measures will be used as necessary.

**Finding:**

The requirements of this section have been satisfied.

**33.060 MAINTENANCE AND ACCESS REQUIREMENTS**

Maintenance and access requirements shall meet Public Works Design Standards. (Ord. 1463, 2000)

**Applicant's Finding:** The stormwater report includes maintenance and access pursuant to Public Works Design Standards.

The requirements of this section have been satisfied.

**33.070 PLANT MATERIAL FOR WATER QUALITY FACILITIES**

Metro's Native Plant List is incorporated by reference as a part of this chapter. The applicant shall submit a detailed planting plan using species from Metro's Native Plant List. The intent of this plan is to establish native vegetation to protect against erosion and sediment infiltration. A mix of low maintenance trees, shrubs, and groundcover is preferred with an even distribution.

A. The planting plan shall be prepared by a professional landscape architect if the development site contains more than 5,000 square feet of impervious area. The planting plan shall include a table listing the scientific names, size, and quantity of plants.

B. The plan shall include plant location, species, size, and quantity for stormwater detention and treatment facilities. Evergreen trees shall have a minimum height of four feet and deciduous trees shall be at least one-inch caliper in size at the time of planting. Shrubs shall be a minimum of one gallon in size at the time of planting. Spaces shall be filled at mature growth but not so that overplanting occurs and overcrowding results. Temporary irrigation systems or other means of ensuring establishment of the plantings must be specified.

C. Plantings shall be designed to minimize or eliminate the need for herbicides, fertilizers, pesticides, or soil amendments at any time before, during, or after construction, or on a long-term basis. Plantings shall be designed to minimize or eliminate the need for frequent mowing and irrigation.

D. The applicant is responsible for implementing the planting plan during the next fall or spring planting season following permit approval. Prior to planting, noxious vegetation shall be removed. All soil areas must be covered with specified plants and mulch to prevent erosion.

E. Plantings shall be incorporated into a public improvement guarantee agreement, which includes a maintenance bond as required by CDC 91.010(C). The maintenance bond is required for any project involving stormwater quality and detention facilities. (Ord. 1463, 2000)

**Applicant's Finding:** The planting plan for the water quality tract is included within the stormwater report and meets the requirements of this section.

The requirements of this section have been satisfied.

**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.

The requirements of this section have been satisfied.

**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.

The requirements of this section have been satisfied.

**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** Any fences built will meet these standards.  
**Finding:** The requirements of this section have been satisfied.

**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** This subdivision application includes a tree inventory and preservation plan focused on  
**Finding:** maintaining significant trees and clusters.  
 The requirements of this section have been satisfied.

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** No parking areas, aside from driveways, are required for residential subdivisions. No  
**Finding:** parking reduction is requested.  
 The requirements of this section have been satisfied.

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

**Applicant's** The developer will comply with all municipal code requirements for tree protection.  
**Finding:** The requirements of this section have been satisfied.

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 new street right-of-way and along Weatherhill Road.

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.

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.

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.

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 parcel is blocked by a row or screen of significant trees or tree clusters.

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.

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.

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 has inventoried all trees and tree clusters on the site. The applicant is proposing tree preservation consistent with these requirements, as detailed in the tree plan.

A total of 122,874 square feet of canopy area plus ten feet exists in the area surrounding the significant trees on site. The Applicant has proposed to retain a total of 59,080 square feet of significant tree canopy on site which achieves nearly 50% retention of the existing significant canopy on site. Of the canopy areas retained on site, the significant canopy area to be located within easements for preservation is 13,664 square feet or roughly 23% of the retained tree canopies on site.

The Applicant's proposed roadways and access drives will result in the removal of 170 caliper inches therefore mitigation for 170 inches is required. The Applicant has provided a planting plan showing the installation of 85 trees on the property. All trees installed will be 2 inches

in caliper size or greater, therefore meeting the inch for inch mitigation requirement.

The requirements of this section have been satisfied.

## 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.

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.

The requirements of this section have been satisfied.

#### 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.

Finding: The requirements of this section have been satisfied.

#### CHAPTER 99 PROCEDURES FOR DECISION MAKING: QUASI-JUDICIAL

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

##### A. Who may apply.

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.

Finding: The requirements of this section have been satisfied.

##### B. Pre-application conferences.

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

Applicant's Finding: A pre-application meeting was held March April 4, 2013.

Finding:

The requirements of this section have been satisfied.

**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.

The requirements of this section have been satisfied.

**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.

The requirements of this section have been satisfied.

**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, commercial, office, or industrial development 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 certified mail, return receipt requested, 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 May 7, 2013 and with the Willamette Neighborhood Association on May 8, 2013. 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.

A series of follow-up meetings were held on Tuesday, July 2, with the Savannah Oaks neighborhood association and on July 10, with the Willamette neighborhood association. A revised and more detailed plan was provided to the neighborhood association.

This section does not contain any requirements for the presentation or the materials used to make the presentation. The section describes when a neighborhood meeting is required, how notice of the meeting is to be accomplished and what the application must include from the neighborhood meeting. Some changes have occurred in the proposed plan since the neighborhood meeting; however, the basic information of the subdivision (location, general lot layout, street connections, etc.) was presented to and discussed with the neighborhood association members.

The requirements of this section have been satisfied.



## **SUMMARY AND CONCLUSION**

Based upon the materials submitted herein, the Applicant respectfully requests that the City's Planning Commission approve this 11-lot subdivision.

## DEVELOPMENT REVIEW APPLICATION

For Office Use Only		
STAFF CONTACT	PROJECT No(s).	
NON-REFUNDABLE FEE(S)	REFUNDABLE DEPOSIT(S)	TOTAL

**Type of Review** (Please check all that apply):

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

<b>Site Location/Address:</b> 22882 WEATHERHILL, WEST LINN	Assessor's Map No.: 21E35B
	Tax Lot(s): 00301, 402, 200
	Total Land Area: 2.58 Acres

**Brief Description of Proposal:** APPLICANT PROPOSES AN 11 LOT SUBDIVISION

<b>Applicant Name:</b> JT SMITH COMPANIES <small>(please print)</small>	Phone: 503-209-7555
<b>Address:</b> 5285 MEADOWS ROAD, SUITE 171	Email: jwyland@jtsmithco.com
<b>City State Zip:</b> LAKE OSWEGO, OR 97035	

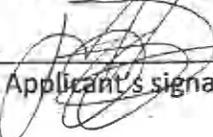
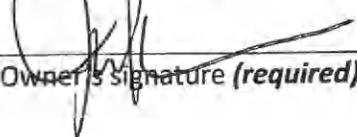
<b>Owner Name</b> (required): JOESPH MONAHAN <small>(please print)</small>	Phone:
<b>Address:</b> 22882 WEATHERHILL	Email:
<b>City State Zip:</b> WEST LINN, OR 97068	

<b>Consultant Name:</b> ANDREW TULL, 3J CONSULTING, INC. <small>(please print)</small>	Phone: 503-545-1907
<b>Address:</b> 10445 SW CANYON ROAD, SUITE 245	Email: andrew.tull@3j-consulting.com
<b>City State Zip:</b> 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

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.

 Applicant's signature	Date	 Owner's Signature (required)	Date	7/25/13
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City of West Linn  
**PRE-APPLICATION CONFERENCE MEETING**  
**Notes**  
**April 4, 2013**

**SUBJECT:** Nine lot subdivision at 22882 Weatherhill Road

**ATTENDEES:** Applicants: Jeff Smith, John Wyland, Brian Feeney, Heather Austin, Andrew Tull  
Staff: Peter Spir (Planning Department), Khoi Le (Engineering Division)  
Neighborhood representative: Ed Schwarz, Savanna Oaks N.A.

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

### General Overview

The site address is 22882 Weatherhill Road in the Savanna Oaks neighborhood. It comprises two tax lots (21E 35B tax lots 301 at the front and 402 at the rear) which total 87,940 square feet or 2.01 acres. The zoning is R-7 (single family residential/ 7,000 square foot minimum lot size). The applicant is proposing 9 lots ranging from 7,000 to 8,152 square feet. The irregular form of the parcel has a maximum lot depth of 390 feet from Weatherhill Road to Fircrest Drive and a maximum lot width of 329 feet. Total frontage on Weatherhill Road is 123 feet.



The notable physical characteristics of the site include a near constant downhill slope from Weatherhill Road to Fircrest Drive and a varied and extensive collection of trees, many of them seemingly significant. A single family home is located on the property 200 feet from Weatherhill Road with an adjacent swimming pool and tennis court.



## Specific Proposal

Nine lots are proposed for this subdivision. The lots are arranged on either side of T-shaped private driveway. No stubout or connection to adjacent properties or other streets are proposed. Per the R-7 zoning, all lots are over 7,000 square feet in size. To accommodate a storm water treatment and detention pond, tract A is established at the low point adjacent to a private section of Fircrest Drive.



### Surrounding Land Uses and Zoning

To the east of the property is a single family home on a 2.58 acre parcel. That property is unincorporated. It is heavily forested in its southern portion which is the origin of an intermittent stream. To the west is a similarly forested vacant .56 acre parcel. To the south is a private driveway which is an extension of Fircrest Drive. Because no part of the subject property is contiguous to a public section of Fircrest Drive, the connection of this subdivision southwards is not possible. To the north, across Weatherhill Road is an unincorporated 3.7 acre parcel occupied by a single family home.

Table 1: Surrounding Land Use and Zoning

DIRECTION FROM SITE	LAND USE	ZONING
North	Single family residential north of Weatherhill Drive	Unincorporated
East	Single family residential	Unincorporated
South	Private Driveway (extension of Fircrest Drive) with Single family residential south of the driveway	R-7
West	Vacant	R-7
Southwest	Single family residential	R-7

## Site Analysis

### Slopes

The land drops 60 feet from the north edge of the lot to south edge for an average slope of 16 percent. The slopes worsen south of the existing house with a drop down to the private driveway (extension of Fircrest Drive) of 25-28 percent. These steep sloped areas need to be inventoried. If over 25 percent of the site is over 25 percent then this application needs to be processed as a Planned Unit Development (PUD) in addition to the subdivision application. Although the north portion of the site has less severe grades the applicant should be mindful of the maximum allowable driveway grade of 15 percent. No geotechnical report is required.



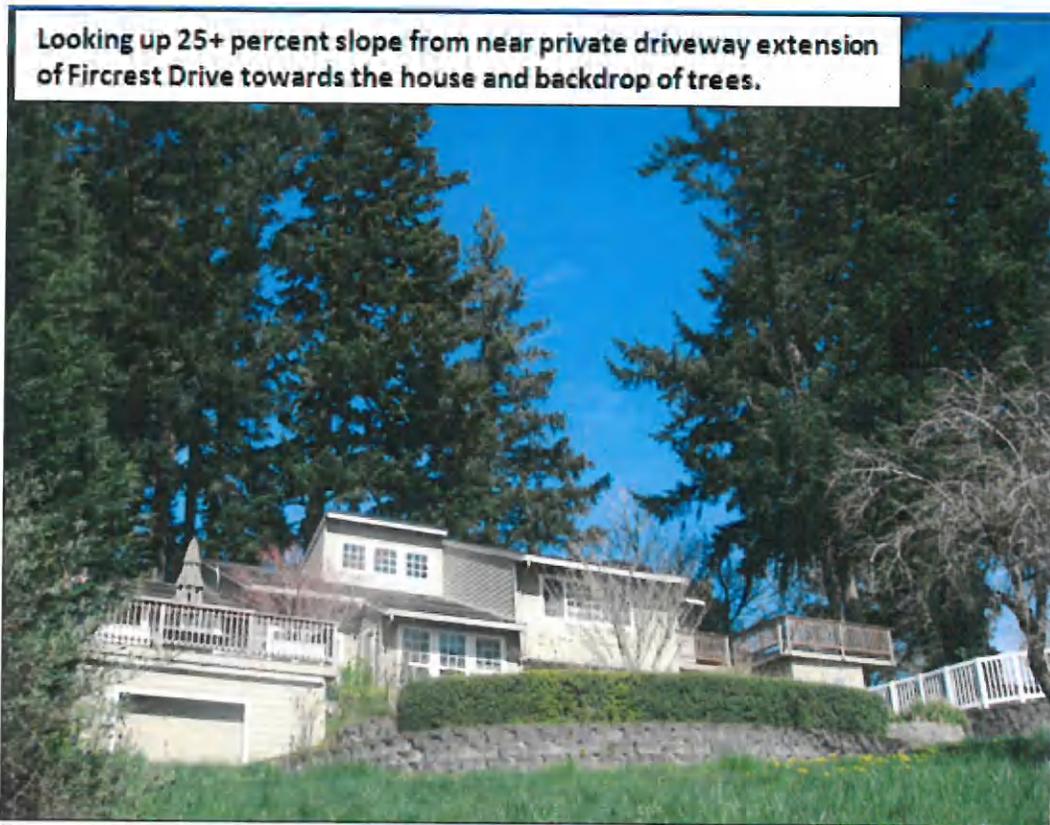
Dark lines are 10 foot contour intervals. Light lines are two foot contour intervals

Trees and Vegetation

The property is dominated by an extensive collection of Oak, Madrone and Douglas Fir trees. There are additional ornamental trees. The dominant ground cover is grass.

Section 55.100(B)(2) provides for significant tree preservation and can require that up to 20 percent of the non-type I and II lands be set aside for their protection. Significant trees on Type I and II lands are given complete protection. The code makes accommodation for the removal of trees in anticipated street alignments (see 55.100(B)(2) exemptions) but the applicant should anticipate being required to mitigate for their loss on an inch by inch basis exclusive of normal street tree requirements. The mitigation can be on or off-site, or can be satisfied by a fee-in-lieu payment, if the Parks Department agrees to this.

The applicant's arborist should contact City Arborist Mike Perkins (503-723-2554 or [mperkins@westlinnoregon.gov](mailto:mperkins@westlinnoregon.gov)) once the preliminary tree inventory is complete to verify which trees are significant. Generally speaking, the protection of tree groves that can support each other, over individual trees, is preferred.





### Streams

There are no streams, wetlands or other Goal 5 protected resources on the property.

### **Subdivision of Property and Lot Layout**

The lots are shown on both sides of a T-shaped access driveway. All lots exceed the 7,000 square foot minimum lot size of the R-7 zone. All lots meet the shape and dimensional standards of the R-7 zone. Tract "A" at the south edge of the site will accommodate a water treatment/detention facility. Tract "B" is for a landscaped entryway to the subdivision. The applicant is providing 13 feet of dedicated right of way for Weatherhill Road along the project frontage.

The applicant must provide the necessary calculations to demonstrate that the development is attaining at least 70 percent of the maximum allowable density of the R-7 zone.

### **Expected Development Pattern/Street Connectivity**

The recent increase in development interest in the Bland Circle/Weatherhill Road area has brought to the forefront the need to develop this area in a comprehensive manner that allows for the extension of connecting streets per the Transportation Planning Rule and the Regional Transportation Functional Plan (see Title 1 section 3.08.110(D) (E) (F)). Allowing each property to be developed with flag lots or individual private driveways off Weatherhill Road, as this plan does, would violate the functional plan. Connecting development in this area also positively responds to the approval criteria of 85.200(A) (1):

*"...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."*

Approval criteria of 85.200(A) (8):

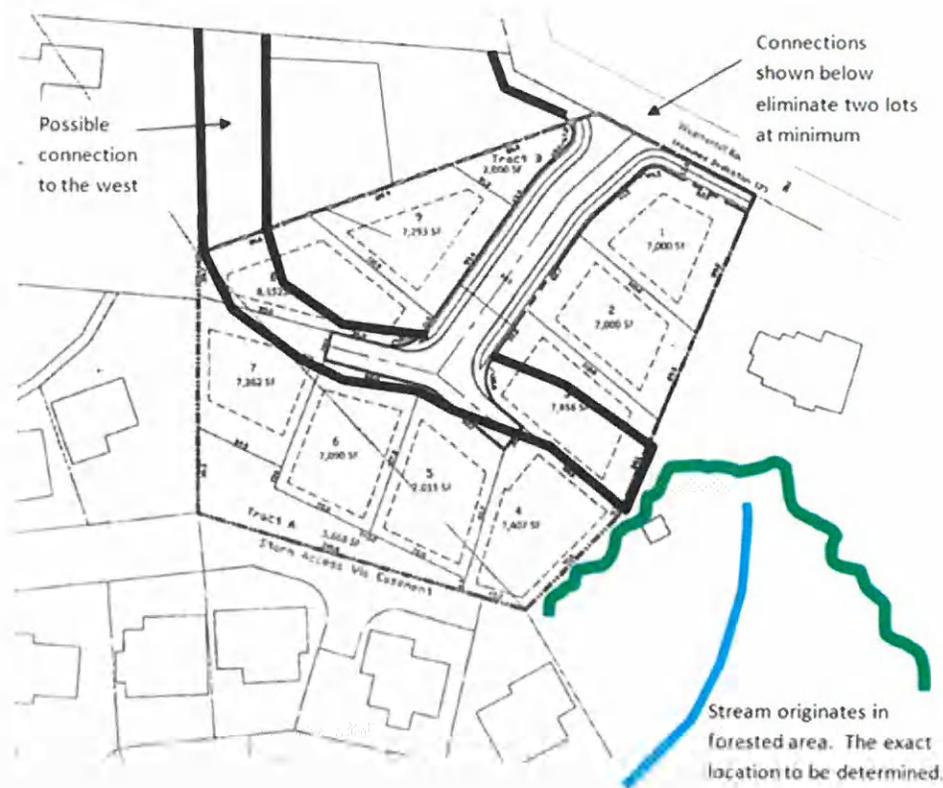
*8. Future extension of streets. Where necessary to give access to or permit a satisfactory future subdivision of adjoining land, streets shall be extended to the boundary of the subdivision and the resulting dead-end streets may be approved without turnarounds.*

Ideally, the properties south of Weatherhill Road will be connected with a road that runs parallel to Weatherhill Road and prevailing contours about 70-100 feet down the hill so that the internal streets could provide access to lots that would otherwise directly access Weatherhill Road. And, consistent with the functional plan, there would be at no more than 530 feet between driveways or streets intersecting Weatherhill Road. There would be a maximum 800-1200 feet spacing between roads that traverse WRAs and in all cases, pedestrian and bicycle links should be more than 330 feet apart.

A recent pre-application conference for the Maslen property at the northwest end of Weatherhill Road produced a street layout that terminates at the north edge of tax lot 200 which is next to this property. (See also the addendum to these notes which include the approved subdivision (SUB-07-06) for the Maslen property which was never platted.) The applicant should provide a new design which shows connections to properties to the west and east. The proposed street connection to Weatherhill Road is appropriate in that it will be about 560 feet from the street intersection to the northwest. That is close enough to be considered consistent with the functional plan distance of 530 feet.



It is acknowledged that the applicant may not have control over the development of adjacent or nearby properties or when that development may occur. Nonetheless, the applicant should propose a design that shows a more comprehensive accommodation of the functional plan and the City's approval criteria.



In a telephone conversation on April 4, 2013, staff had the opportunity to discuss connectivity with David Dean, the owner of the property immediately to the east of the site (tax lot 405). Mr. Dean stated support for the concept of connectivity rather than seeing a pattern of flaglots or individual cul de sacs off Weatherhill Drive. He stated that he had been in talks with other property owners to the east. One issue staff had with connecting to the east is the location of the stream that is shown on Mr. Dean's property. Mr. Dean explained that it originates at a spring about 15 feet north of his south property line. The stream is intermittent. Assuming these facts to be true, the stream would not pose a barrier to connection eastwards but there would still be the concern about significant trees nearby.

**Staff also discussed the minimum connectivity standard which would require a street stub out to the northwest through tax lot 200 and a 20 foot wide pedestrian/bicycle corridor to the east (tax lot 405). To facilitate these connections, the applicant may propose that interior streets be the minimum street widths per City standards.**

Meanwhile, connectivity to the south of the subject property is frustrated by the lack of legal access to Fircrest Drive. That area was platted with a private driveway adjacent to the subject property.



Legal access aside, the 20-25 percentage slope below the house and pool far exceeds the City's maximum street grade of 15 percent. If the opportunity presented itself to obtain a pedestrian access to Fircrest Drive, the applicant would be encouraged to do so.

Subsection 48.025(B) (6) requires access driveways to meet the standards in Chapter 8 of the Transportation System Plan (TSP). Specifically, it states, "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, private drives, and non-traversable medians." (staff's emphasis) If a public street is proposed using the existing alignment of the driveway it would not be a newly established private drive, and therefore the TSP Chapter 8 standards would not be applicable. From that intersection to the nearest access driveway (Falcon Place) on the north side of Bland Circle is 440 feet so the access separation standards of 150 feet for driveways are met. The nearest public intersection is 1200 feet away so the access separation and 200 feet for public intersections is also met.



Weatherhill Road looking east (above).  
Weatherhill Road looking west (below)



Subsection 85.170(B) (2) (c) (1) lists the circumstances that require a traffic impact analysis (TIA).

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

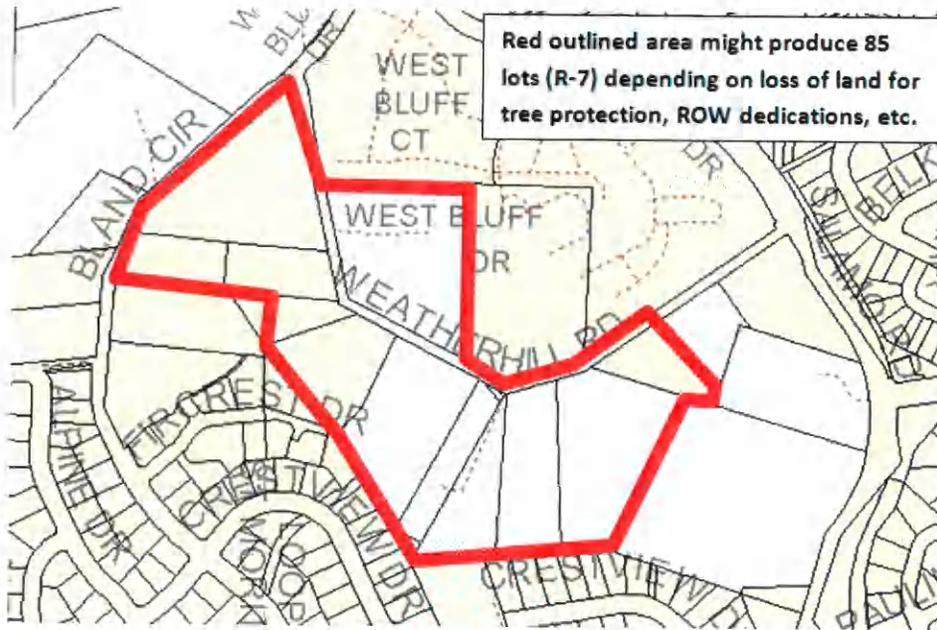
- (B) Any proposed development or land use action that ODOT states may have operational or safety concerns along a State highway; and
- (C) The development shall cause one or more of the following effects, which can be determined by field counts, site observation, traffic impact analysis or study, field 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
  - (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
  - (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
  - (4) The location of the access driveway does not meet the access spacing standard of the roadway on which the driveway is located; or
  - (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.

The proposal does not meet any of the criteria that trigger a TIA. There will be no new or additional points of access to Weatherhill Road. The trip generation of eight new lots (excluding the trip generation of the existing single family home) will not exceed 250 trips per day. Per the Institute of Traffic Engineers (ITE) tables, single family homes are expected to generate 9-10 trips per weekday meaning that this subdivision would produce 80 weekday trips. The PM peak hour (5-6 PM) trip generation of 1.01 will yield 8.08 trips.

The applicant will be required to provide a study by a traffic engineer that addresses, at minimum, trip generation and a discussion of the Weatherhill Road safety (e.g. lines of sight). (The specific study requirements will be determined by the City Engineer.)

Mr. Ed Schwarz asked later whether this project, and more importantly, subsequent development of the Weatherhill corridor, will require a traffic light at Weatherhill Road and Salamo Road. Staff estimates that about 85 homes could occupy lots along

Weatherhill Road at full build out. The applicant's traffic engineer will be asked to comment on whether that would warrant a light at the Salamo Road and Weatherhill Road intersection. Preliminarily, staff anticipates that the answer will be "no" given that Bland Circle has far more homes and still there are no warrants for lights at the Bland Circle/Salamo Road intersection.



## Engineering Notes

### I. TRANSPORTATION

#### WEATHERHILL ROAD

	EXISTING CONDITIONS	POTENTIAL POST DEVELOPMENT CONDITIONS
Classification	Local	Local
Zone	R-7	R-7
Right of Way Width	30	56'
Full Pavement Width	16' with no parking	32' with parking
Curb and Gutter	None	Yes
Planter Strip	None	5.5' Planter
Sidewalk	None	6' Sidewalk
Street Light	None	Yes – Cobra Head
Street Tree	None	Yes

ADA Ramps	None	None
Post Speed	25 MPH	25 MPH
Stripe	None	None

**A. MINIMUM REQUIRED IMPROVEMENTS**

1. Provide at least 56' of dedication for a complete new street connection.
2. Provide a minimum 32' pavement improvement with the following sections:
  - 10" of 1-1/2"-0 Crush Rock
  - 2" of ¾" -0 Leveling Course
  - 4" of AC Pavement consisting of 2" Class "C" over 2" Class "B"
  - See Public Works Standards Section 5.0030 Pavement Design for design requirements.
3. Provide curb and gutter. See WL-501 Detail for technical and construction specifications. See Public Works Standards Section 5.0040 Concrete Curb for design requirements.
4. Provide 6' wide concrete sidewalk with sidewalk ramp at each end to allow access for disability. See WL-508 for sidewalk technical and construction specifications. See WL-507A and WL-507B for ADA technical and construction specifications. See Public Works Standards Section 5.0050 Sidewalks and Section 5.0051 Sidewalk Ramps for design requirements.
5. Provide illumination analysis of the existing conditions. Install street lights as recommended in accordance to the followings:
  - Average Maintained Illumination: 0.6 foot-candles (Residential)
  - Uniformity Average to Minimum: 4 to 1
  - Street Light should match with existing surrounding lights – Shoe Box on Bronze Pole.
  - Bulb: Flat lens 100 watts maximum
6. Provide Street Tree. Coordinate with Parks Department for requirements.
7. All new and existing overhead utilities along the development must be placed underground.

**NEW ROAD**

	EXISTING CONDITIONS	POTENTIAL POST DEVELOPMENT CONDITIONS
Classification	Local	Local
Zone	R-7	R-7

Right of Way Width		48'
Full Pavement Width		24' with no parking
Curb and Gutter		Yes
Planter Strip		5.5' Planter
Sidewalk		6' Sidewalk
Street Light		Yes – Acorn
Street Tree		Yes
ADA Ramps		Yes
Post Speed		25 MPH
Stripe		None

**B. MINIMUM REQUIRED IMPROVEMENTS**

8. Provide at least 48' of dedication for a complete new street connection.
  
9. Provide a minimum 32' pavement improvement with the following sections:
  - 10" of 1-1/2"-0 Crush Rock
  - 2" of ¾" -0 Leveling Course
  - 4" of AC Pavement consisting of 2" Class "C" over 2" Class "B"
  - See Public Works Standards Section 5.0030 Pavement Design for design requirements.
  
10. Dead end road must design for future East and West connection.
  
11. Provide curb and gutter. See WL-501 Detail for technical and construction specifications. See Public Works Standards Section 5.0040 Concrete Curb for design requirements.
  
12. Provide 6' wide concrete sidewalk with sidewalk ramp at each end to allow access for disability. See WL-508 for sidewalk technical and construction specifications. See WL-507A and WL-507B for ADA technical and construction specifications. See Public Works Standards Section 5.0050 Sidewalks and Section 5.0051 Sidewalk Ramps for design requirements.
  
13. Provide illumination analysis of the existing conditions. Install street lights as recommended in accordance to the followings:
  - Average Maintained Illumination: 0.6 foot-candles (Residential)
  - Uniformity Average to Minimum: 4 to 1
  - Street Light should match with existing surrounding lights – Acorn
  - Bulb: Flat lens 100 watts maximum
  
14. Provide Street Tree. Coordinate with Parks Department for requirements.

15. All new and existing overhead utilities along the development must be placed underground.

**C. CITY TRANSPORTATION MASTER PLAN**

**PEDESTRIAN MASTER PLAN**

Weatherhill Road is not indicated in the City Pedestrian Master Plan as one of the roadways with sidewalk deficient.

**BICYCLE MASTER PLAN**

Weatherhill Road is not indicated in the City Bicycle Master Plan as one of the roadways with bicycle deficient. No bicycle lane improvement was listed on Bicycle Master Plan.

**MOTOR VEHICLE MASTER PLAN**

**Existing Operations Conditions**

None of the intersections nearby Weatherhill Road was analyzed in TSP Existing Operation Conditions Section.

**D. STREET SDC AND BIKE/PEDESTRIAN EFFECTIVE JULY 1<sup>ST</sup> 2012**

Type of Use	Trip per Use	Factor	Reimbursement	Improvement	Administrative	Total
Per Factor of 1		1.00	\$2,146	\$4,597	\$175	\$6,918
Single Family	Per House	1.01	\$2,115	\$4,643	\$177	\$6,987

Type of Use	Trip per Use	Factor	Reimbursement	Improvement	Administrative	Total
Per Factor of 1		1.00	\$0	\$1,503	\$39	\$1,542
Single Family	Per House	1.00	\$0	\$1,503	\$39	\$1,542

**I. STORM DRAINAGE**

**A. MINIMUM REQUIRED IMPROVEMENTS**

1. Provide treatment for new impervious of 500 square feet or more.
2. Provide detention for new impervious of 5000 square feet or more.
3. Storm Drainage Analysis Report is required.
4. New storm main shall be 12". Catch basins shall be placed at 400 feet maximum.
5. Impervious area created from street widening on Weatherhill Road must be collected, treated and detained as need.
6. Provide City with public easement with hard surface or public road for utility connection.

7. As-Built: Ridgeview Estate Phase II and III and City GIS available per request.

**B. SURFACE WATER SDC EFFECTIVE JULY 1<sup>ST</sup> 2012**

Unit		Factor	Reimbursemen t	Improvement t	Administrativ e	Total
Per Factor of 1		1.00	\$773	\$232	\$51	\$1,056
Single Family	Per House	1.00	\$773	\$232	\$51	\$1,056

**II. SANITARY SEWER**

**A. MINIMUM REQUIRED IMPROVEMENTS**

1. New sanitary sewer system installing to serve the development must be 8" main.
2. Existing public sanitary sewer system is available on Firecrest Drive for connection.
3. Provide City with public easement with hard surface or public road for utility connection.
4. As-Built: Ridgeview Estate Phase II and III and City GIS available per request.

**B. SANITARY SEWER SDC EFFECTIVE JULY 1<sup>ST</sup> 2012**

Unit	Mete r Size	Facto r	Reimbursemen t	Improvement t	Administrativ e	Total
Per Factor of 1		1.00	\$597	\$2,325	\$108	\$3,030
Single Family	Per House	1.00	\$597	\$2,325	\$108	\$3,030

**Tri-City Service District Sewer SDC 1 EDU = \$2,020**

**III. WATER**

**A. PRESSURE ZONE**

1. Zone: Horton
2. Overflow Elevation: 730      Upper Elevation: 620      Lower Elevation: 475
3. Sub pressure zone serves customer at ground elevation as low as 340.
4. Zone Rosemont
5. Overflow Elevation: 860      Upper Elevation: 750      Lower Elevation: 620

**B. RESERVOIR AND PUMP STATION**

1. Reservoir: Horton is located at the intersection of Horton Rd and Santa Anita Dr. The reservoir usable capacity is approximate 1.5 million gallon. The reservoir is filled by Bolton Pump Station. Horton Reservoir also supplies water to Rosemont Reservoir through Horton Pump Station.
2. Pump Station: Horton Pump Station consists of 4 pumps. Two can pump 900 gpm and two can pump 1,300 gpm with total capacity of 4,400 gpm and a

nominal capacity of 3,100 gpm. There is an emergency standby diesel generator onsite in case power failure.

**C. EXISTING POPULATION AND PROJECTED POPULATION AT SATURATION**

1. Existing Population: 6,192
2. Projected Population at Saturation: 7,843

**D. WATER DEMAND AT SATURATION**

Average Day Demand (mgd)	Maximum Day Demand (mgd)	Peak Hour Demand (mgd)
1.1	2.3	12.6

**E. RESERVOIR AND PUMP STATION CURRENT OPERATING CONDITIONS**

1. In accordance with Water System Plan, both the reservoir and pump station are listed in good conditions.

**F. HORTON PRESSURE ZONE PERFORMANCE**

Year	MD D (mg)	Fire Flow (mg)	Total Supply Need (mg)	Normal Supply Capacity (mg)	Emergency Supply Capacity (mg)	Normal Supply Deficit (mg)	Emergency Supply Deficit (mg)
Current	3.1	0.5	3.6	4.3	1.3	(0.7)	1.3
2015	3.2	0.5	3.7	4.3	1.3	(0.6)	1.4
2030	3.6	0.5	4.1	4.3	1.3	(0.2)	1.7
Saturation	3.8	0.5	4.3	4.3	1.3	0	1.8

1. The table above indicates that there is a surplus in supply capacity during a normal condition.

**G. HORTON PRESSURE ZONE SUPPLY AND STORAGE DEFICIT**

Year	Normal Conditions			Emergency Conditions		
	Supply Deficit (mgd)	Storage Volume (mg)	Overall Deficit (mgd)	Supply Deficit (mgd)	Storage Deficit (mgd)	Overall Deficit (mgd)
Current	0	1.1	0	1.3	1.1	0.2
2015	0	1.1	0	1.4	1.1	0.3
2030	0	1.1	0	1.7	1.1	0.6
Saturation	0	1.1	0	1.8	1.1	0.7

1. The table above indicates that there is no storage volume deficit during a normal condition.

**H. HORTON PRESSURE ZONE MASTER PROJECT LIST**

Number	Location	Ex. Diameter (inches)	Proposed Diameter (inches)	Priority	Length (ft)	SDC Allocation	Unit Cost (\$/lf)	Estimated Project Cost (\$)
29	Weatherhill Rd. from Salamo Rd to S Bland Cir. and then South		8	4	2,312	100%	125	\$289,000
31	Sussex St. south of Sunset Ave.	4	8	5	248	0%	125	\$31,000
32	From River View Ave. to Falls View Dr.	4	8	5	213	0%	125	\$26,625
39	Clark St. south of Skyline	6	8	5	425	0%	125	\$53,125
42	North of Linn Ln.	6	8	5	369	0%	125	\$46,125
43	Parkview Ter. And Rosepark Dr.	6	8	5	765	0%	125	\$95,625
47	Apollo Rd. west of Athena Rd.	6	8	5	385	0%	125	\$48,125
48	Palomino Wy. from Saddle Ct. to Palomino Cir.	6	8	4	246	100%	125	\$30,750

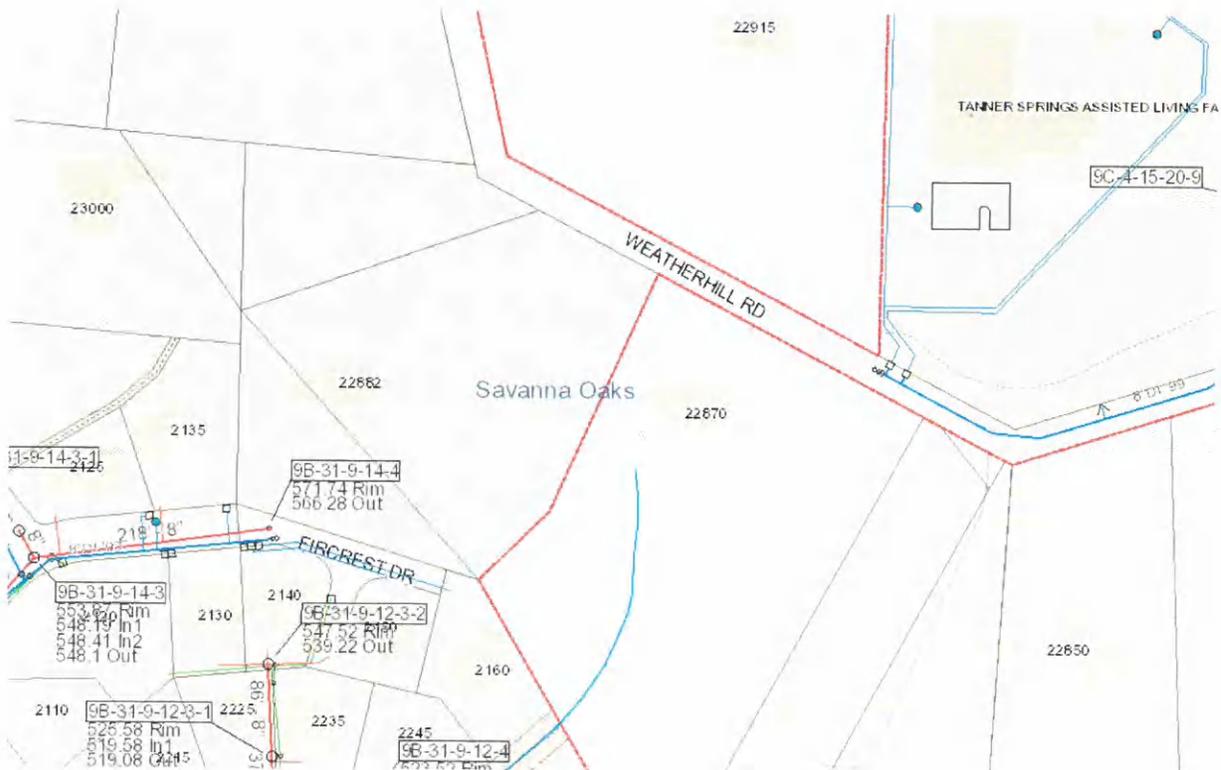
1. The table above indicates that there is no improvement required along the proposed project frontage.

**I. MINIMUM REQUIRED IMPROVEMENTS**

1. New water system installing to serve the development must be 8" main.
2. Loop system is recommended if possible. Dead end main will only be supported with review and approval from City Water Consultants after a hydraulic model run and mitigation provided appropriately. If not looped, extend dead end main to Weatherhill for City future connection.
3. Houses located above elevation of 620 must be on Rosemont pressure zone.
4. Provide City with public easement with hard surface or public road for utility connection.
5. As-Built: As-Built: Ridgeview Estate Phase II and III and City GIS available per request.

**J. WATER SDC EFFECTIVE JULY 1ST 2012**

Unit	Meter Size	Factor	Reimbursement	Improvement	Administrative	Total
Per Factor of 1		1.00	\$571	\$6,793	\$191	\$7,555
5/8" Meter	1		\$571	\$6,793	\$191	\$7,555



## Process

A subdivision approval is required. A neighborhood meeting is required for a subdivision approval per 99.038. Follow the requirements of that code section explicitly. The site is within the Savanna Oaks neighborhood but is also within 500 feet of the Willamette neighborhood. Contact Ed Schwarz, President of the Savanna Oaks Neighborhood Association, at [savannaoaksNA@westlinnoregon.gov](mailto:savannaoaksNA@westlinnoregon.gov) and Beth Smolens, President of the Willamette Neighborhood Association at [willametteNA@westlinnoregon.gov](mailto:willametteNA@westlinnoregon.gov). The applicant is required to provide the neighborhood associations with conceptual plans and other material at least 10 days prior to the meeting. **Because of the time and scheduling requirements of 99.038, the applicant should address this requirement as soon as possible.**

Follow 85.150-170 strictly and completely regarding submittal requirements (including plans, maps, etc.). Submittal requirements may be waived but the applicant must first identify the specific submittal requirement and request, in writing, that it be waived by the Planning Director and must identify the specific grounds for that waiver. The waiver may or may not be granted by the Planning Director. Waivers may also be subsequently overruled by the decision making body.

The approval criteria of 85.200 shall be responded to in a narrative.

Submit the application to the Planning Department with a signed application form. The deposit for a Subdivision application is \$4,200, plus \$200 per lot, for a total initial deposit of \$6,400 in this case. The final plat fee is \$2,000. There is also a \$500 fee for final site inspection.

**PLEASE NOTE** that the deposits are initial deposits, and staff time is charged against the deposit account. It is common for there to be more staff time spent on development applications than deposits cover, and therefore additional billing may be likely to occur.

Once the submittal is deemed complete, the staff will schedule a hearing with the Planning Commission. Staff will send out public notice of the Planning Commission hearing at least 20 days before it occurs. The Planning Commission's decision may be appealed to City Council by the applicant or anyone with standing.

The CDC is online at <http://westlinnoregon.gov/planning/community-development-code-cdc>.

There is the option to process the subdivision under the expedited land division procedures. Section 99.060(E) provides for expedited land division applications whereby the decision making authority is the Planning Commission and shall be processed by the Planning Commission without a public hearing pursuant to Oregon Revised Statutes (ORS) 197.360 through 197.380. Appeals of the Planning Commission decision on an expedited land division shall be review pursuant to Chapter 197 ORS.

Pre-application notes are void after 18 months and 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. Staff responses are based on limited material presented at this pre-application meeting. New issues, requirements, etc. could emerge as the application is developed. Thus, there is no "shelf life" for pre-apps.

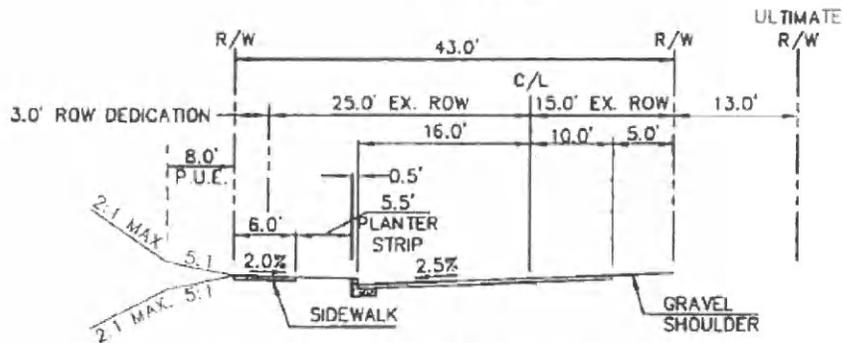
Pre-app2011/Pre-app April 4 2013-Pre-app notes newest WEATHERHILL subdivision

**ADDENDUM**

Excerpted site plans and COAs from file SUB-07-06  
 Weatherhill Heights: a 20 lot subdivision approved in 2007 on the "Maslen" property

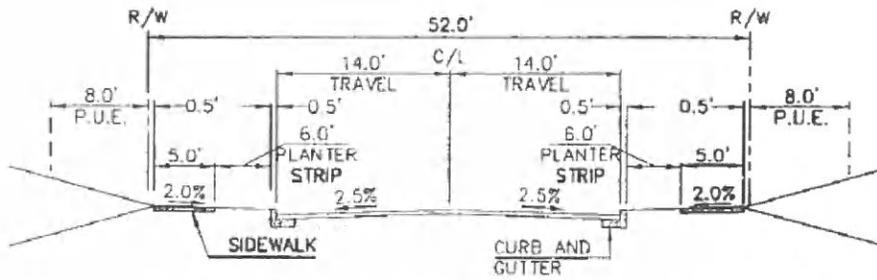






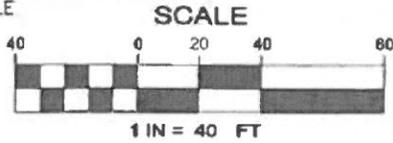
**WEATHERHILL ROAD SECTION**

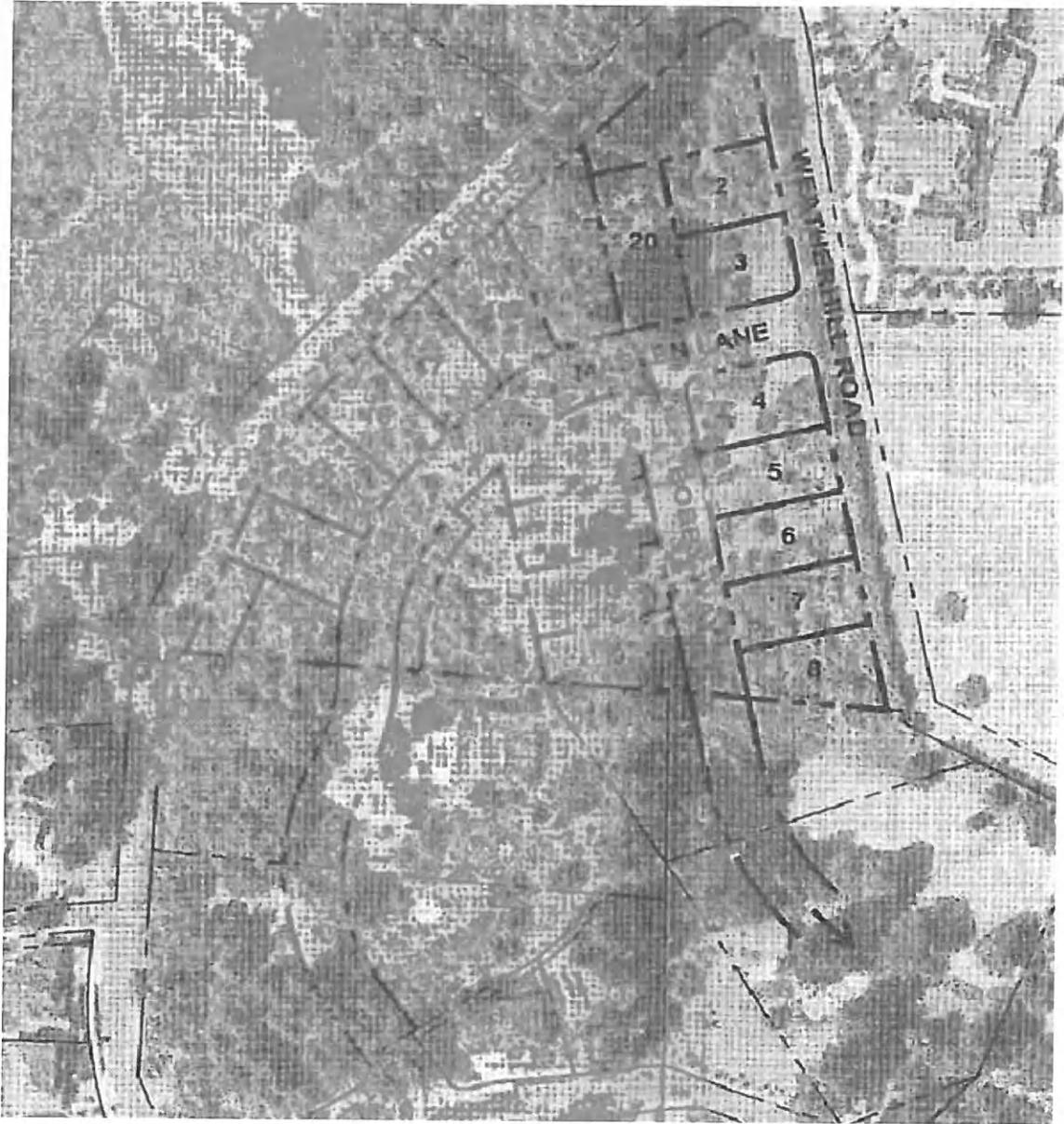
NOT TO SCALE



**MASLEN LANE & BOBBY WAY SECTION**

NOT TO SCALE





**WEST LINN PLANNING COMMISSION  
FINAL DECISION NOTICE  
SUB-07-06**

IN THE MATTER OF THE PROPOSAL OF A 20-LOT SINGLE-FAMILY SUBDIVISION AT 22910 WEATHERHILL ROAD

At their meeting of August 9, 2007, the West Linn Planning Commission held a public hearing to consider the request by Palmer & Associates to approve a subdivision at 22910 Weatherhill Road. The proposal would result in the conversion of three parcels containing one existing house and a three associated outbuildings into a 20-lot subdivision of all new single-family houses. The approval criteria for land division are found within Chapter 85 of the CDC. The hearing was conducted pursuant to the provisions of CDC Chapter 99.

The hearing commenced with a staff report presented by Tom Soppe, Associate Planner. Kirsten Van Loo and Jeff Vanderdasson of Alpha Community Development presented for the applicant. Robert Musalo spoke in opposition to the application. No one else spoke regarding the application. Applicant's rebuttal was provided by Ms. Van Loo.

A motion was made, seconded, and passed to approve the application with three additional findings, an addition to Condition of Approval 6 regarding vehicular access to the lots from Bland Circle, and with rewording to conditions of approval 2 and 5. The additional findings and final complete list of conditions of approval, as approved, are as follows:

**Additional Findings**

1. Condition of Approval 2, as worded in the staff report, may lead to interbasin transfers of stormwater or other undesirable outcomes related to stormwater collection. If changes are needed regarding the applicant's stormwater main placement plans, these can be discovered through further review by the City's Engineering Department.
2. TVF&R has communicated to staff that, for a subdivision with stub streets where sprinklers are to be installed, the sprinklers are required by TVF&R policy to be installed in all units. This includes units that front to existing through streets.
3. The topographical constraints along the site frontage of Bland Circle require a prohibition on vehicular access between Bland Circle and any lot fronting this street. All lots fronting Bland Circle also front Maslen Lane or Weatherhill Road. These lots will be able to have vehicular access from these streets more easily.

The final conditions of approval are as follows:

1. The applicant shall provide street trees along the west side of Weatherhill Road similar to what is proposed for Maslen Lane and Bobby Way.
2. Applicant shall construct a storm drainage main to the approval of the City Engineer.
3. Pedestrian ramps shall be provided at every intersection.

4. Applicant shall contribute to future construction of signalization of the Rosemont/Salamo/Santa Anita intersection, with the current amount of \$1,072.00/peak hour trip as of 11/16/2004 inflation adjusted by ENR CCI at time of building permit issuance.
5. Applicant shall install NFPA 13d sprinkler systems in all houses.
6. No lot in the subdivision will provide direct vehicular access to Bland Circle.



April 17, 2013

**23150 Bland Circle and 22882 Weatherhill Road  
Proposed Residential Subdivisions**

To Our Neighbors,

3J Consulting acts on behalf of JT Smith Companies regarding two subdivision projects which are located within the Savannah Oaks and Willamette Neighborhood Associations. The first proposed subdivision is a small property located off of Bland Circle and is identified as 23150 Bland Circle. The second proposed subdivision is located on a property which takes access off of Weatherhill Road and is listed as 22882 Weatherhill Road. The location of each property is shown on the attached maps. Both properties are located inside the City of West Linn's boundaries and both properties are zoned R-7 or Single Family Residential.

The Sunbreak Subdivision will create 11 new residential lots. The property currently contains one existing home which will be removed in order to allow for the proposed development. Each of the proposed lots will exceed 7,000 square feet which is the minimum lot size within the R-7 zoning district. The proposed site improvements will include a small extension of Tannler Street, north into the property and the completion of Sunbreak Street and Crestview Drive, which have long been anticipated by the City and the surrounding community. A series of small pedestrian trails may also be included within the development to provide pedestrian connectivity to the surrounding neighborhoods.

The Weatherhill Subdivision will create a total of 9 new residential lots. The property also currently contains one existing home which will be removed in order to allow for the proposed development. Each of the proposed lots within the development will exceed 7,000 square feet which is the minimum lot size within the R-7 zoning district. The proposed improvements will likely involve the installation of a new public road and potential pedestrian network.

Before finalizing and delivering the two subdivision applications to the City's Planning Department, we would like to take the opportunity to discuss this proposal with the members of the Savannah Oaks Neighborhood Association, members of the Willamette Neighborhood Association, and property owners residing within 500 feet of the property.

Two presentations to discuss this proposal have been scheduled to allow interested individuals to learn more about these projects. The presentations have been scheduled during the Savannah Oaks and Willamette Neighborhood Association's regularly scheduled meetings and those presentations will be made in addition to the agendas set by the associations. The meetings are to be held at the following dates and times:

**Savannah Oaks Neighborhood Association Meeting  
May 7, 2013 at 7:00 pm  
Willamette Fire Station 59  
1860 Willamette Falls Drive, West Linn, OR 97068**

or

**Willamette Neighborhood Association Meeting  
May 8, 2013 at 7:00 pm  
Pacific West Bank in Willamette Marketplace  
2000 SW 8th Ave, West Linn, OR 97068**

The purpose of these meetings is to provide a forum for surrounding property owners and residents to review both projects and to identify issues so they can be given proper consideration. These meetings will provide the opportunity to share with the project team any special information you know 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 these will be informational meetings based upon preliminary development plans and that these plans may change slightly before the application is submitted to the City. Additional information may be available from each respective association's President and/or officers and any concerned citizens are encouraged to contact the relevant neighborhood association with any comments or concerns.

We look forward to discussing this proposal with you. Please feel free to contact us at 503-545-1907 or at [andrew.tull@3j-consulting.com](mailto:andrew.tull@3j-consulting.com) if you have any questions.

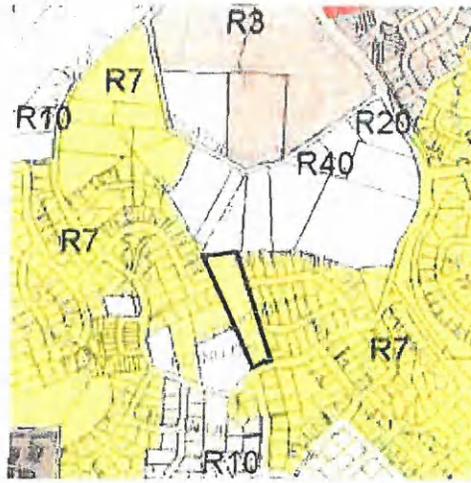
Sincerely,



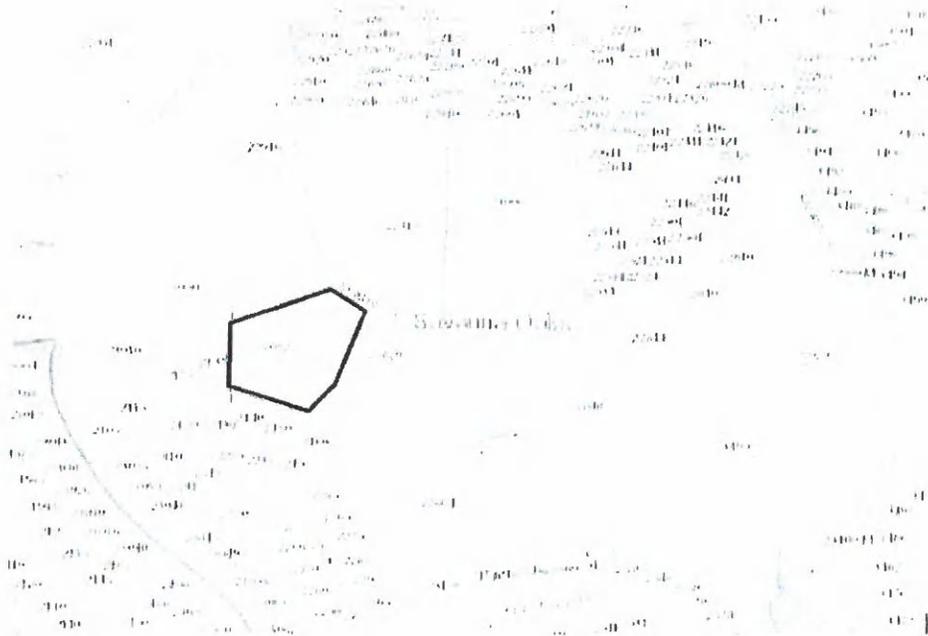
Andrew Tull  
Principal Planner  
3J Consulting, Inc.

copy: File





Site Location Map I | Sunbreak Subdivision - 23150 Bland Circle



Site Location Map II | Weatherhill Subdivision - 22882 Weatherhill Road

31

## Meeting Minutes - Weatherhill Subdivision

Date: May 7 & May 8, 2012  
 Group: Neighborhood Meetings with Willamette and Savannah Oaks  
 Project: Weatherhill Subdivision  
 3J No.: 13113

Presenters	Company
Jeff Smith	JT Smith Companies
Andrew Tull	3J
John Wyland	JT Smith Companies
Mike Robinson	Perkins Coie

In preparation for the submission of a land use application for the subdivision, the applicant conducted a two neighborhood meetings. The first was with the Savannah Oaks Neighborhood Association, the Second was with the Willamette neighborhood association.

Both meetings began with presentations by Andrew Tull, Mike Robison, and Jeff Smith. 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, from both meetings.

Item	Question	Response
1	A comment was made that the neighborhood plan was less clear to understand than the Sunbreak Plan	The Sunbreak Plan was two months ahead of the Weatherhill plan in detailing and design. The Applicant agreed to attend a second neighborhood meeting to show the revised plans. The Second meeting occurred on July 2, and July 10.
2	A discussion ensued regarding the need to connect roads to adjoining properties.	The Applicant explained that on the property to the east, the property had an existing, unmapped drainage. Because of the unconfirmed location of the drainage, it would be unwise to route a future roadway within that area. To the west, the City's arborist had identified a grove of significant trees. Aligning a road to the west would almost certainly result in the ultimate removal of the trees on the site.
3	What will be the SF of the houses? Value?	Probably 3,000 sf to 3,500 sf. Homes will be valued at probably near \$700,000.
4	Residents along Fircrest mentioned that they liked the trees along the northern edge of fircrest and that they would like to see those	The applicant mentioned that the stormwater system was being proposed within that area and that it was likely that those trees would need to

	trees retained. If they needed to be removed, the residents expressed an interest in seeing them replaced.	be removed. The Applicant then explained that replacement trees might be installed there as part of the overall mitigation strategy. The trees which would be used in that area would be western red cedars because of their ability to provide year-round screening.
6	What are the timeframes before you start work	We will submit a land use application. Then the builder will start building. The intent is to start in the spring.
8	The lower part of Tannler is starting to fail. Do you have money budgeted to fix these streets.	The developer will fix what they damage and they will improve the frontages along the project.
9	Will a light come in along Salamo as a result of the development?	The light would be triggered by traffic counts. We do not believe that the City will require a signal.
10	Will the property next door develop?	The Applicant explained that the properties next door do hold development potential. There is always the possibility of the properties next door developing.
11	What are the next steps?	We will submit to the City a formal application for Land Use Approvals.



**PUBLIC NOTICE  
OF TWO NEIGHBORHOOD MEETINGS**

**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 ONE OF THE**

**TWO SCHEDULED NEIGHBORHOOD MEETINGS:  
3J CONSULTING, INC. C/O ANDREW TULL  
503-946-9365**

**NEIGHBORHOOD MEETING 1:  
SAVANNAH OAKS NEIGHBORHOOD  
ASSOCIATION MEETING  
MAY 7, 2013 AT 7:00 PM  
WILLAMETTE FIRE STATION 59  
1860 WILLAMETTE FALLS DRIVE,  
WEST LINN, OR 97068**

**NEIGHBORHOOD MEETING 2:  
WILLAMETTE NEIGHBORHOOD  
ASSOCIATION MEETING  
MAY 8, 2013 AT 7:00 PM  
PACIFIC WEST BANK IN  
WILLAMETTE MARKETPLACE  
2000 SW 8TH AVE,  
WEST LINN, OR 97068**

NEIGHBORHOOD MEETING

AFFIDAVIT OF MAILING

STATE OF OREGON     )

SS

County of Clackamas    )

I, Andrew Tull, being duly sworn, state that on the 17th day of April, 2013 I caused to have mailed, to each of the persons on the attached list, a notice of a meeting to discuss a proposed development at 22882 Weatherhill Road. A copy of the notice so mailed is attached hereto and made a part thereof.

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

This 10<sup>TH</sup> day of MAY, 2013.

Signature

Subscribed and sworn to, or affirmed, before me this 10 day of MAY, 2013.



Notary Public for the State of OREGON  
County of WASHINGTON  
My Commission Expires: 2/3/14

NEIGHBORHOOD MEETING  
AFFIDAVIT OF POSTING NOTICE

STATE OF OREGON )

SS

County of Clackamas )

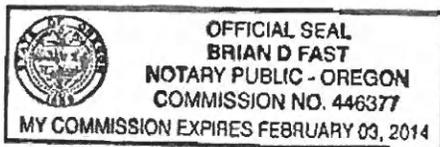
I, Andrew Tull, being duly sworn, state that I represent the party initiating interest in a proposed subdivision affecting the land located at 22882 Weatherhill Road in West Linn, Oregon and that pursuant to Community Development Code Section 99, did on the 17th day of April, 2013 personally post notice indicating that the site may be proposed for a subdivision application.

The sign was posted along the northern boundary of the property along Weatherhill Road.

This 10<sup>th</sup> day of MAY, 2013.

  
\_\_\_\_\_  
Signature

Subscribed and sworn to, or affirmed, before me this 10 day of MAY, 2013.



  
\_\_\_\_\_  
Notary Public for the State of OREGON  
County of WASHINGTON  
My Commission Expires: 2/3/14



**500 Foot Radius**  
**21E35B 001 & 402**

Subject Property  
 Metrolink Area  
 Transit  
 Railroads

This information is deemed reliable but is not guaranteed.



21E26C 01400  
Kenneth & Victoria Pepperling  
995 Bland Cir  
West Linn, OR 97068

21E26C 01500  
Bobby Lynn & John Maslen  
4325 SW 34th Ave  
Portland, OR 97239

21E26C 01501  
Bobby Lynn & John Maslen  
4325 SW 34th Ave  
Portland, OR 97239

21E26C 01502  
Bobby Lynn & John Maslen  
4325 SW 34th Ave  
Portland, OR 97239

21E26D 01001  
Srp I - Cascade Summit LLC  
8110 E Union Ave  
Denver, CO 80237

21E35A 01200  
Virginia Devries  
22850 Weatherhill Rd  
West Linn, OR 97068

21E35A 01201  
Li Wei  
22864 Weatherhill Rd  
West Linn, OR 97068

21E35A 01202  
Virginia Devries  
22850 Weatherhill Rd  
West Linn, OR 97068

21E35A 01300  
John & Rachel Omlor  
23150 Bland Cir  
West Linn, OR 97068

21E35B 00100  
Sequoia Heights Capital Partners LLC  
1101 5th Ave #300  
San Rafael, CA 94901

21E35B 00101  
William & Ethel Hardy  
22915 Weatherhill Rd  
West Linn, OR 97068

21E35B 00200  
Harold & Linda Elrod  
375 Twilight Trl  
West Linn, OR 97068

21E35B 00201  
Robert & Cameron Bauer  
23000 Bland Cir  
West Linn, OR 97068

21E35B 00400  
John & Lynn Nilsen  
23010 Bland Cir  
West Linn, OR 97068

21E35B 00401  
Li Wei  
22864 Weatherhill Rd  
West Linn, OR 97068

21E35B 00403  
Li Wei  
22864 Weatherhill Rd  
West Linn, OR 97068

21E35B 00404  
Robert & Cameron Bauer  
23000 Bland Cir  
West Linn, OR 97068

21E35B 00405  
David & Diana Dean  
22870 Weatherhill Rd  
West Linn, OR 97068

21E35B 00493  
Li Wei  
22864 Weatherhill Rd  
West Linn, OR 97068

21E35BA05300  
Neil & Mary D'Autremont  
23008 Bland Cir  
West Linn, OR 97068

21E35BA05400  
David Moore  
23012 Bland Cir  
West Linn, OR 97068

21E35BA06200  
Margaret Marshall  
23040 Bland Cir  
West Linn, OR 97068

21E35BA06300  
John & Mary Percin Sr.  
23036 Bland Cir  
West Linn, OR 97068

21E35BA06400  
Robert Bissell  
23030 Bland Cir  
West Linn, OR 97068

21E35BA06500  
Habib Shekarriz  
21633 Johnson Rd  
West Linn, OR 97068

21E35BA06600  
Jeff & Margaret Beachy  
23020 Bland Cir  
West Linn, OR 97068

21E35BA06700  
William Johnson  
23016 Bland Cir  
West Linn, OR 97068

21E35BA06800  
Robert Musalo  
2115 Fircrest Dr  
West Linn, OR 97068

21E35BA06900  
Kristina Musalo  
2115 Fircrest Dr  
West Linn, OR 97068

21E35BA07000  
Margaret Snow  
2125 Fircrest Dr  
West Linn, OR 97068

21E35BA07100  
Stacee Rae Malcolm  
225 Fircrest Dr  
West Linn, OR 97068

21E35BA07200  
Jiang Yu  
2150 Fircrest Dr  
West Linn, OR 97068

21E35BA07300  
Genevieve Harris  
2140 Fircrest Dr  
West Linn, OR 97068

21E35BA07400  
Thomas & Shelley Corry  
2130 Fircrest Dr  
West Linn, OR 97068

21E35BA07500  
David Huberty  
2120 Fircrest Dr  
West Linn, OR 97068

21E35BA07600  
David Huberty  
2120 Fircrest Dr  
West Linn, OR 97068

21E35BA07700  
Elsie Brigham  
23025 Bland Cir  
West Linn, OR 97068

21E35BA07800  
Yang Zhuang  
23035 Bland Cir  
West Linn, OR 97068

21E35BA07900  
Amanda & Keith Hwang  
23043 Bland Cir  
West Linn, OR 97068

21E35BA08000  
Robert Mays II  
2211 Crestview Dr  
West Linn, OR 97068

21E35BA08100  
Theron Jensen  
2215 Crestview Dr  
West Linn, OR 97068

21E35BA08200  
Donald & Kristi Gabel  
2225 Crestview Dr  
West Linn, OR 97068

21E35BA08300  
Richard & Jeanne Glatt  
12492 SE 155th Ave  
Happy Valley, OR 97086

21E35BA08400  
Avian Charles Newton  
2245 Crestview Dr  
West Linn, OR 97068

21E35BA08500  
Le Hong  
2160 Fircrest Dr  
West Linn, OR 97068

21E35BA08600  
Jessica Mehta  
2255 Crestview Dr  
West Linn, OR 97068

21E35BA08700  
Darren & Leslie Karr  
2265 Crestview Dr  
West Linn, OR 97068

21E35BA08800  
David & Sandra Quesnel  
2275 Crestview Dr  
West Linn, OR 97068

21E35BA08900  
David & Jillian Smith  
2285 Crestview Dr  
West Linn, OR 97068

21E35BA09000  
Tamara Butler  
2295 Crestview Dr  
West Linn, OR 97068

21E35BA09400  
Edison & Tamara Ghorbani-Elizeh  
2280 Crestview Dr  
West Linn, OR 97068

21E35BA09500  
Heather Sobotta  
2270 Crestview Dr  
West Linn, OR 97068

21E35BA09600  
Maria Xavier  
2260 Crestview Dr  
West Linn, OR 97068

21E35BA09700  
John Chan  
2250 Crestview Dr  
West Linn, OR 97068

21E35BA09800  
David & Julie Almodovar  
2220 Crestview Dr  
West Linn, OR 97068

21E35BA09900  
David & Kari Ritter  
23045 Bland Cir  
West Linn, OR 97068

21E35BA10000  
Richard Mreen  
23049 Bland Cir  
West Linn, OR 97068

21E35BA10100  
Cory & Jodi Huot  
23055 Bland Cir  
West Linn, OR 97068

21E35BA10200  
James & Jennifer Meagher  
23063 Bland Cir  
West Linn, OR 97068

21E35BA11200  
City Of West Linn  
22500 Salamo Rd #600  
West Linn, OR 97068

21E35BA11300  
City Of West Linn  
22500 Salamo Rd #600  
West Linn, OR 97068

21E35BA11400  
Genevieve Harris  
2140 Fircrest Dr  
West Linn, OR 97068

21E35BA11500  
City Of West Linn  
22500 Salamo Rd #600  
West Linn, OR 97068

# STORMWATER REPORT

## WEATHER HILL WEST LINN, OR

July 31, 2013

*Prepared For:*

LF7, LLC  
West Linn, OR



*Prepared By:*  
**3J Consulting, Inc.**  
10445 SW Canyon Rd, Suite 245  
Beaverton, Oregon 97005  
Project No: 13118  
BCH

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## EXECUTIVE SUMMARY

The existing site is located on private property at 22882 Weatherhill Road in West Linn, Oregon (See Figure 2). The property is approximately 2.6 acres and currently contains a single family home, asphalt driveway, asphalt recreation court, swimming pool, and numerous small and large trees along the west, east, and southern borders of the property. The proposed development will consist of subdividing the property to create 11 lots with minimum area of 7,000 ft<sup>2</sup>. Additionally, the 11 proposed lots will be connected to Weatherhill Road via the proposed Prince George Court. Half-street improvements to Weatherhill Road, along the property frontage will be constructed as well.

Stormwater runoff from the proposed development will be conveyed to planters for water quality treatment and detention. The planters have 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 April 2013 showing that infiltration rate on the site is 0.1 in/hr at 3.0 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 22882 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.

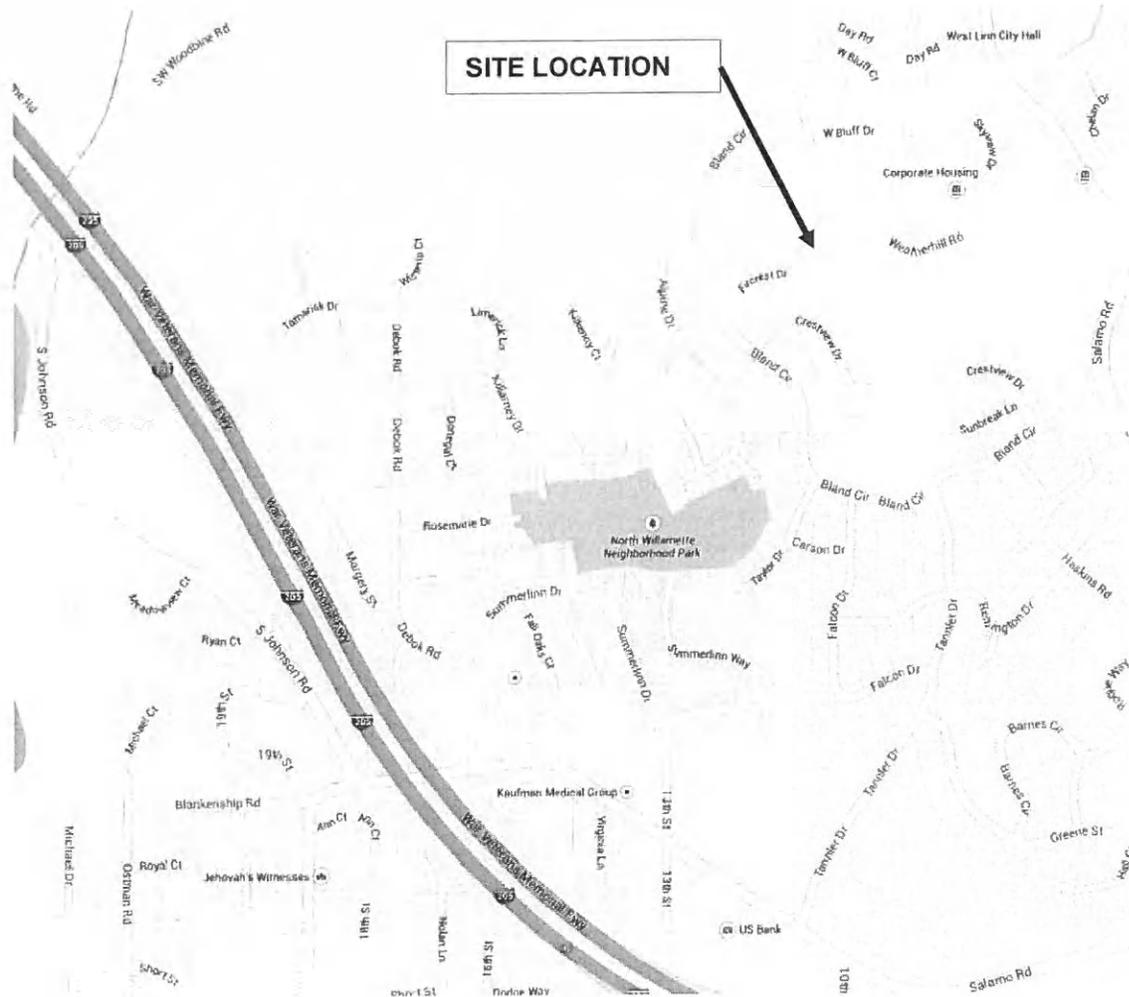
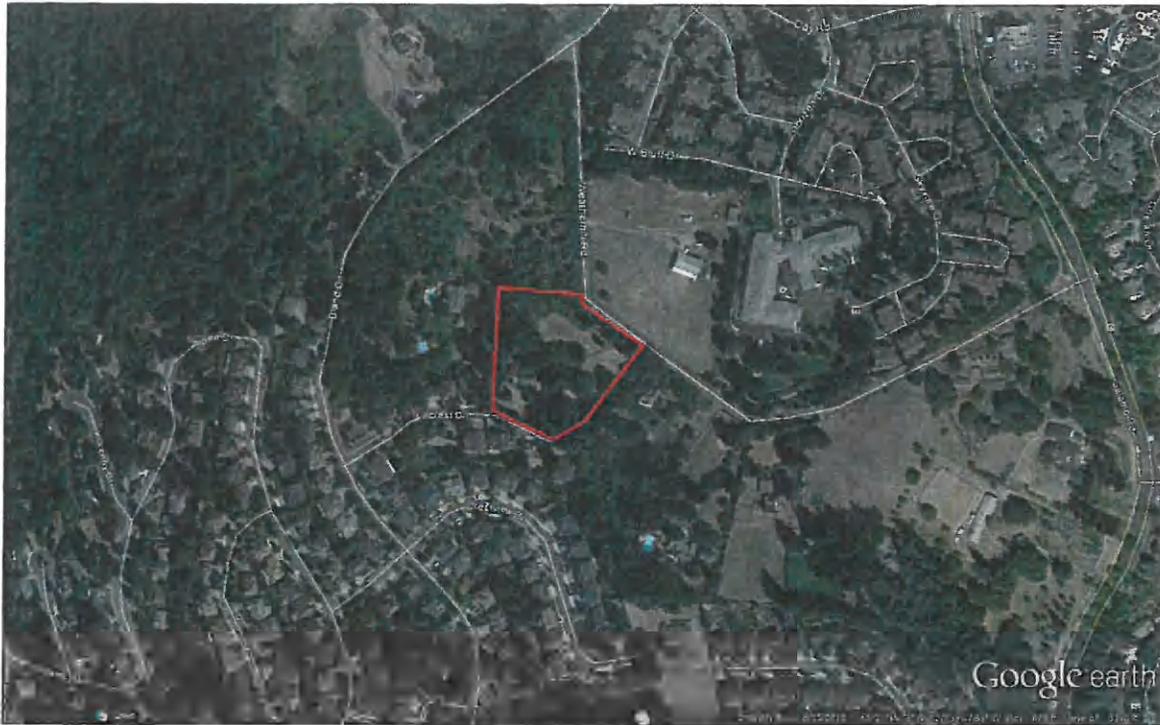


Figure 1 - Vicinity Map



**Figure 2 - Site Location**

## EXISTING CONDITIONS

### **Site**

The topography on the site is sloping down to the south at an average grade of approximately 15% to 25%. Elevations range from a maximum of 640 feet on the northeast side of the property to a minimum of 570 feet on the southwest side. Small portions of the site, between the level areas, have been steepened to grades of approximately 50%. Vegetation on the site consists primarily of grass, brush, and small to large trees. Currently the property contains a single family home, asphalt driveway, asphalt recreation court, swimming pool and numerous small and large trees along the west, east, and southern borders of the property.

### **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
Saum silt loam (3-8%)	C
Saum silt loam (8-15%)	C

**Table 1 - Soil Characteristics**

The soil on the proposed site consists of approximately 20% Saum silt loam (3-8%) and 80% Saum silt loam (8-15%). Both soil types are classified as hydrologic group C. Group C soils generally have slow infiltration rates.

A geotechnical investigation was completed in April 2013 showing that the infiltration rate on the site is 0.1 in/hr at 3 feet below ground surface, (See Technical Appendix: Geotechnical Report).

**Existing Drainage**

**Existing Site**

The existing site does not contain a stormwater management system. Stormwater runoff from the site sheet flows generally to the south and southwest, towards and Fircrest Drive.

**Basin Areas**

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

Existing Basin Area	sq. ft.	acres
Impervious Area	20,813	0.48
Pervious Area	92,086	2.11
Total Existing Basin Area	112,899	2.59

**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 open space, trees, a house, driveway, recreation court and pool. The pervious area was considered to be 1/3 open space (CN=74), and 2/3 woods (CN=70) and the impervious surface has CN=98. The post-developed pervious area was considered to be open space, with conditions assumed to be good (CN=74, grass cover >75%) and poor (CN=86, grass cover < 50%) with a corresponding composite curve number of 84.6.

**Time of Concentration**

The time of concentration was calculated for the existing site using the TR-55 Method. The time of concentration of 19 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**

All storm events up to and including the 25-year will be treated, detained, and released to the existing storm system in Fircrest Drive. Out of the 11 lots within the site, 4 lots will have individual planters to handle and treat the runoff for each of the 4 lots. For the remaining 7 lots, a larger planter facility (Tract A) will accommodate the runoff, including all right-of-way area. The proposed planters will treat and detain the stormwater, releasing it to the existing storm system in Fircrest Drive.

### **Basin Areas**

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

<b>Post-Developed Basin Area</b>	<b>sq. ft.</b>	<b>acres</b>
<b><u>LOTS (Lots 4, 5, 8 &amp; 9)</u></b>		
Assumed Impervious Area (2,640 sf/lot)	10,559	0.24
Landscaping on lots	25,811	0.59
<b>Total Post Developed Area (Lots 4,5,8,9)</b>	<b>36,370</b>	<b>0.83</b>
<b><u>TRACT A (Remaining lots &amp; ROW)</u></b>		
Impervious area (includes roof, driveways, sidewalks)	22,084	0.51
Shared paved access	3,687	0.08
R.O.W. (includes road and sidewalk)	9,193	0.21
Landscaping on lots & R.O.W.	41,565	0.95
<b>Total Post Developed Area (TRACT A)</b>	<b>76,529</b>	<b>1.76</b>

**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 planters for water quality treatment and detention. Each planter 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.

Due to the low infiltration rate of 0.1 in/hr, as stated in the April 2013 Geotechnical Report prepared by GeoPacific, infiltration was not accounted for while calculating allowable release rates within the planters.

**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 XPSTORM 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.)
2	2.50
5	3.00
10	3.40
25	3.90
100	4.50

**Table 4 - Design Storms**

**Basin Runoff**

The existing runoff rates were computed to compare the runoff rates generated for post-developed conditions Basin (LOTS 4, 5, 8 & 9) and for the Basin (TRACT A). The post-developed runoff rate for lots (4, 5, 8 & 9), shown below, are the same for each lot. For simplicity, the values for an individual lot are shown in the table below. These values are the same for the remaining three lots. Table 5 shows the runoff rates for the existing and post-developed conditions (See Technical Appendix: Hydrographs –Existing and Post-Developed Runoff hydrographs).

Recurrence Interval (years)	Existing Runoff Rate (cfs)	Post-Developed Runoff Rate Basin (LOTS) (cfs)	Post-Developed Runoff Rate Basin (TRACT A) (cfs)
PR	N/A	0.011	0.141
2	0.283	0.037	0.482
5	0.403	0.046	0.589
10	0.512	0.054	0.695
25	0.661	0.062	0.801
100	0.853	N/A	N/A

**Table 5 - Basin Runoff Rates**

HYDRAULIC ANALYSIS AND DESIGN CHARACTERISTICS

**System Capacities**

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**

As mentioned previously, lots 4, 5, 8 & 9 will be required to provide water quality treatment. The stormwater facility design follows West Linn's design standards and the City of Portland's Stormwater Management Manual guidelines. The stormwater facilities will be designed for flow control and pollution reduction. The City of Portland's Presumptive Approach Calculator (PAC) was utilized to size a larger planter, which accommodates 7 out of the 11 lots, including all runoff within the newly proposed right of way. The 4 lots mentioned above were also sized using the City of Portland's PAC, and will have individual planters to detain and treat the runoff for each lot.

All basin planters have 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.

### **Water Quality Facilities Basin (LOTS 4, 5, 8, 9)**

Preliminary sizing for water quality and quantity facilities have been included in this report; however, each lot owner will be required to finalize the sizing with specific impervious areas. For the preliminary sizing, each lot was assumed to have impervious area of 2,640 square feet. The City of Portland's PAC was used to size the planters for each individual lot (See Technical Appendix: Calculations – Presumptive Approach Calculator). Each planter was sized to treat and detain all storm events up to and including the 25-year storm event.

### **Water Quality Facilities Basin (TRACT A & R.O.W.)**

The City of Portland's PAC was used to size the larger planter for the remaining portion of the site, and the proposed development within the newly proposed right-of-way. (See Technical Appendix: Calculations – Presumptive Approach Calculator). The planter was sized to treat and detain all storm events up to and including the 25-year storm event.

### **Planter Volume**

Table 6 shows the dimensions used to size the Planters for the above mentioned basins.

Facility	Bottom Area (sf)	Bottom Withdth (ft)	Storage Depth (in)	Growing Medium Depth (in)
Flat Planter (lots 4,5,8,9)	245	14	18	18
Flat Planter (TRACT A & R.O.W.)	2,248	22	18	18

**Table 6 – Stormwater Water Quality/Quantity Facilities**

### **Post-Developed Peak Release Rates**

As stated above, the stormwater conveyance system and flow control structures will be sized in the final design phase of the project to ensure the 2, 5, 10 and 25-year release rates during the post-developed conditions do not exceed the existing runoff rates for the same storm events.

## SUMMARY

The stormwater design for the proposed Weather Hill Subdivision 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 257 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 Plan"
- Sheet C3.0 "Composite Utility Plan"

### **Hydrographs**

- Existing Runoff Hydrograph
- Presumptive Approach Calculator: Post Developed Runoff Hydrographs

### **Calculations**

- Time of Concentration
- Presumptive Approach Calculator Facility Design Outputs

### **Geotechnical Reports**

- Geotechnical Engineering Report, GeoPacific Engineering, Inc., April 29, 2013

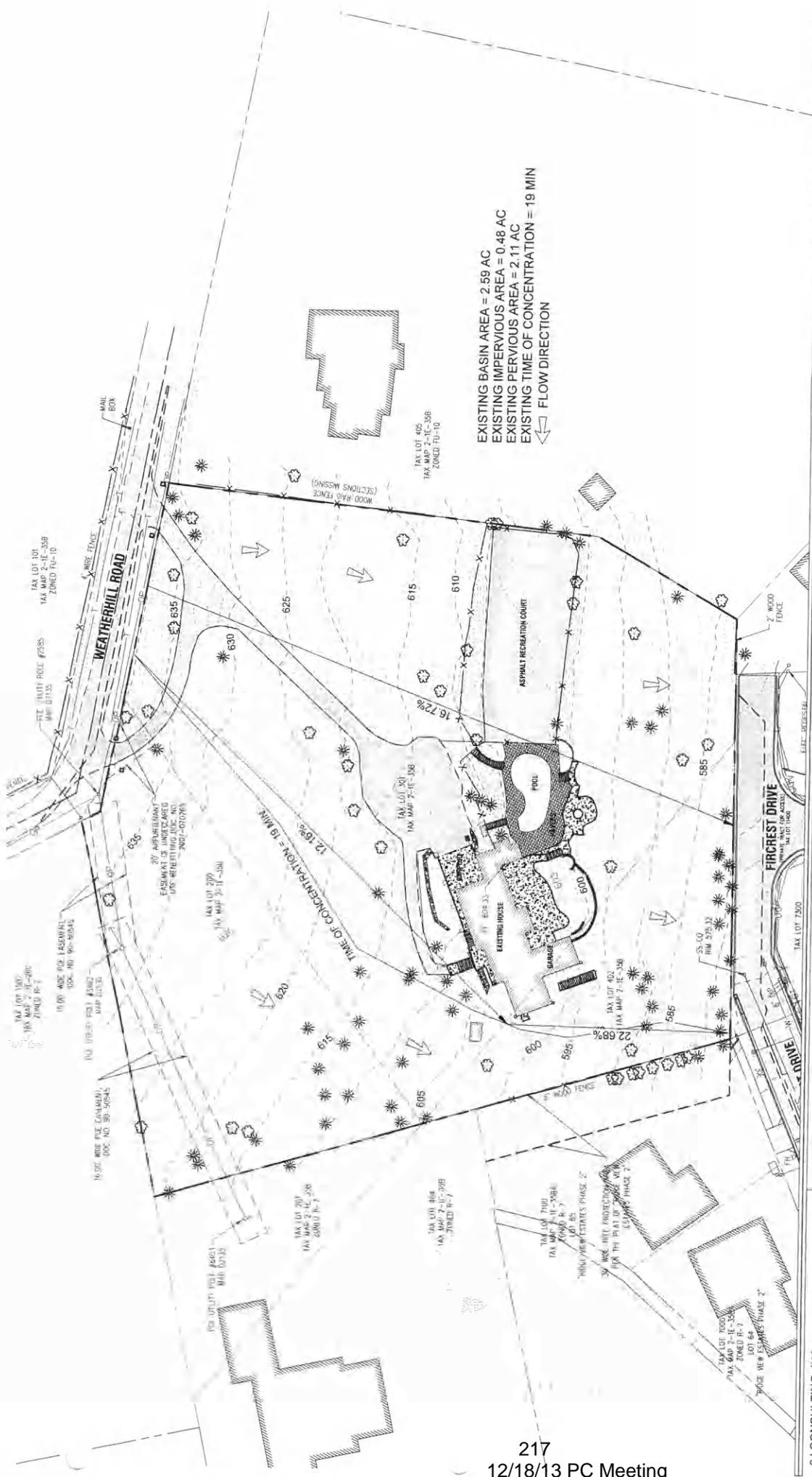
### **Operations and Maintenance**

- 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 August 2008
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



EXISTING BASIN AREA = 2.59 AC  
 EXISTING IMPERVIOUS AREA = 0.48 AC  
 EXISTING PERVIOUS AREA = 2.11 AC  
 EXISTING TIME OF CONCENTRATION = 19 MIN  
 ↓ FLOW DIRECTION

3J CONSULTING, INC



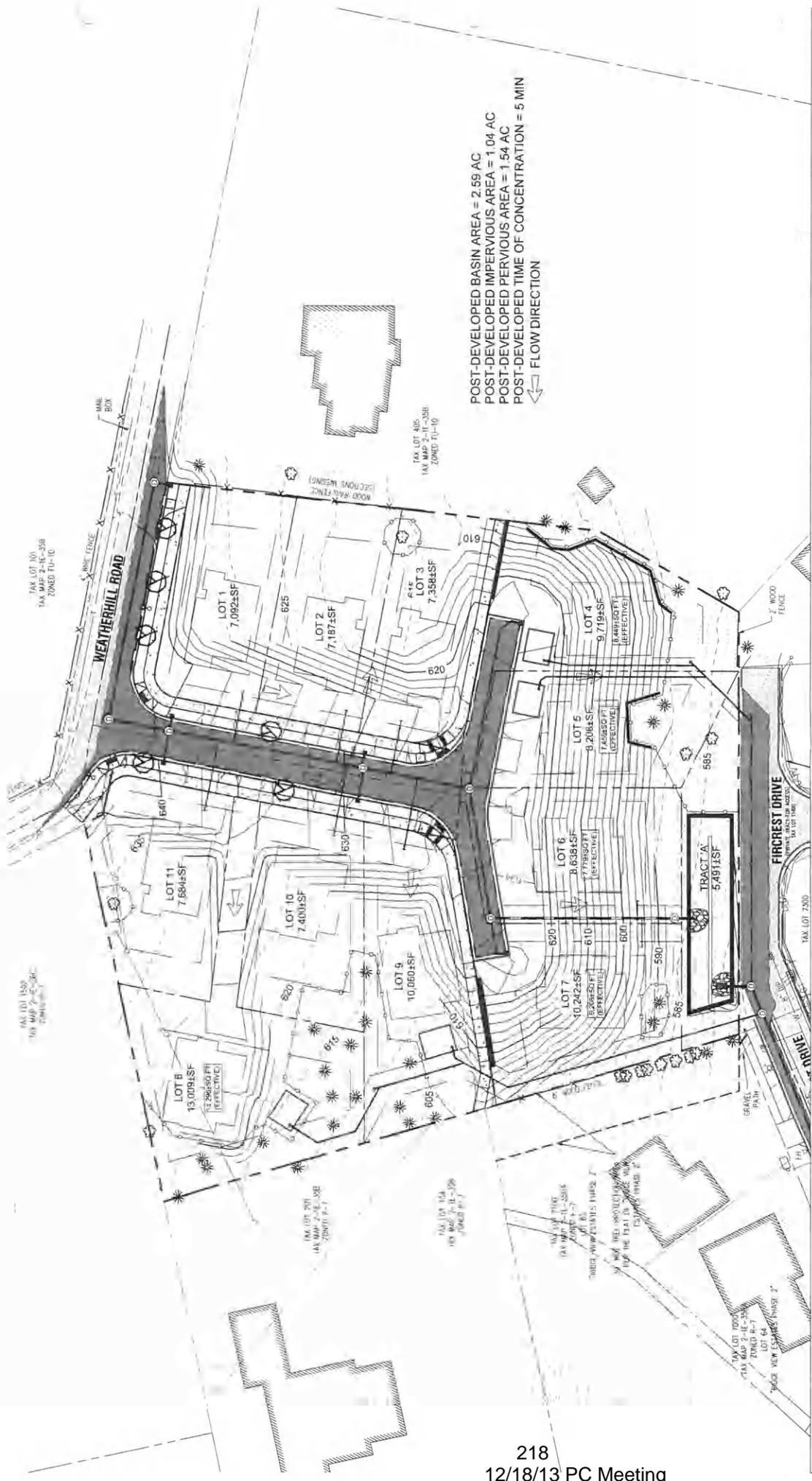
# EXISTING SITE CONDITIONS WEATHER HILL SUBDIVISION

Storm Report

## Exhibit 1

Date: 07/30/13

By: BCH



POST-DEVELOPED BASIN AREA = 2.59 AC  
 POST-DEVELOPED IMPERVIOUS AREA = 1.04 AC  
 POST-DEVELOPED PERVIOUS AREA = 1.54 AC  
 POST-DEVELOPED TIME OF CONCENTRATION = 5 MIN  
 ← FLOW DIRECTION

Storm Report

# Exhibit 2

Date: 07/30/13  
 By: BCH

## POST-DEVELOPED SITE CONDITIONS WEATHER HILL SUBDIVISION



3J CONSULTING, INC

**EXISTING CONDITIONS PLAN**

THIS PLAN IS INTENDED FOR USE AS AN EXISTING CONDITIONS PLAN SHOWING THE CONDITIONS OF THE SITE PRIOR TO CONSTRUCTION. THE PLAN WAS DEVELOPED FROM THE TOPOGRAPHIC SURVEY, AERIAL PHOTOS, AND SITE OBSERVATIONS AT THE TIME OF THE SURVEY. THE LOCATION OF UTILITIES OR OTHER FEATURES NOT SHOWN ON THIS PLAN SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.



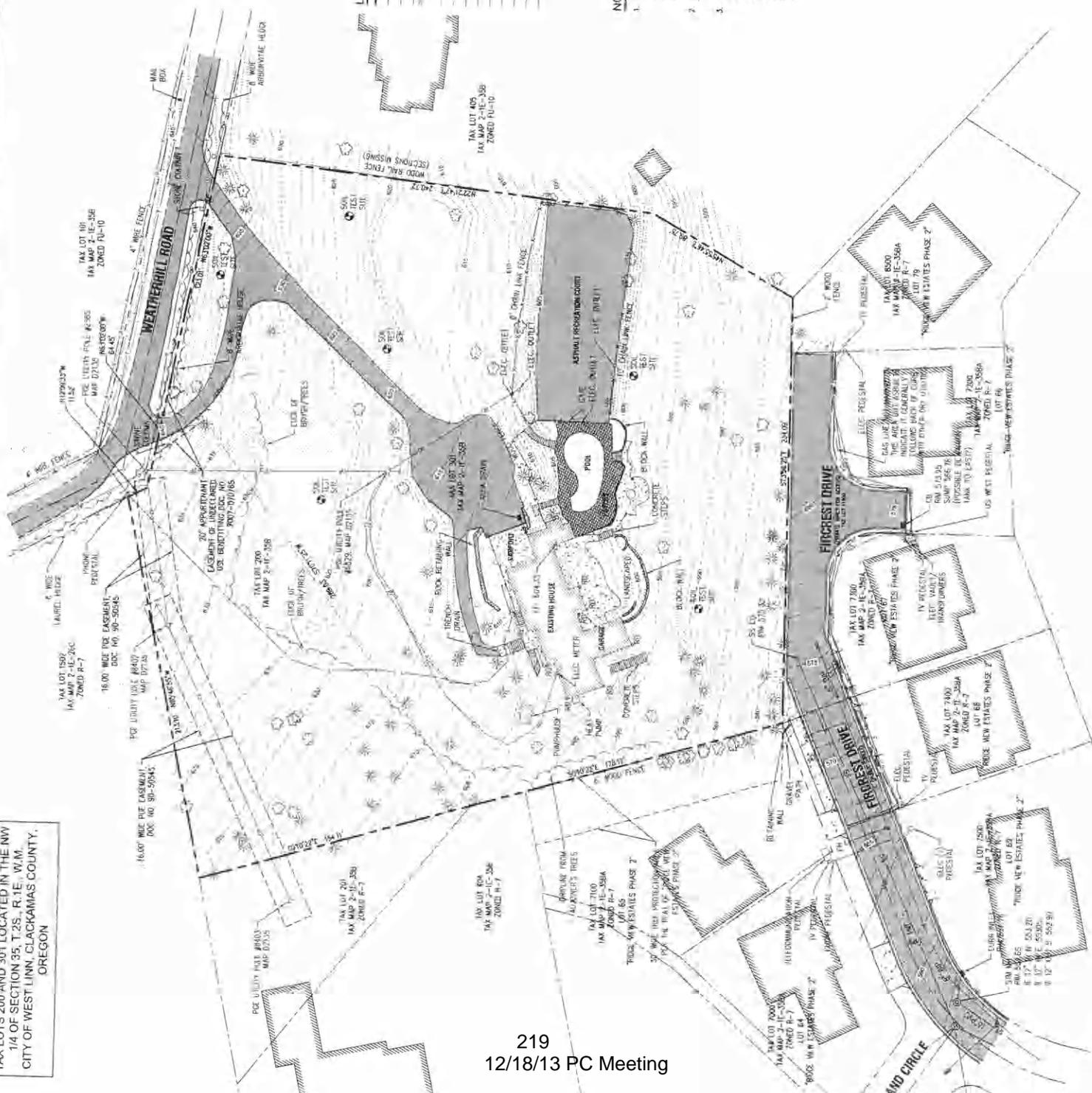
**LEGEND**

	BOUNDARY LINE		ASPHALT
	RIGHT-OF-WAY		CONCRETE
	CENTERLINE		GRAVEL
	LOT LINE		EXISTING TREES
	BUILDING		LIGHT POLE
	1 FT CONTOUR		WATER VALVE
	5 FT CONTOUR		WATER METER
	SANITARY SEWER		FIRE HYDRANT
	STORM SEWER		
	WATER LINE		
	GAS LINE		
	UNDERGROUND POWER		
	UNDERGROUND PHONE LINE		
	OVERHEAD POWER		

**NOTES**

- UTILITY INFORMATION SHOWN ON THIS MAP IS BASED UPON OBSERVED FEATURES, RECORD DATA AND TOWN MAPS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
- VERTICAL CURVES (MVD) 50' UTILIZING GPS POSITIONING DATA TO THE CLOSEST NEAR REAL TIME CORRECTORS REFERENCED TO NAVD 83(2011).
- TOPOGRAPHIC FEATURES SHOWN ON THIS MAP WERE LOCATED USING STANDARD PRECISION TOPOGRAPHIC MAPPING TECHNIQUES. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.

TAX LOTS 200 AND 301 LOCATED IN THE NW 1/4 OF SECTION 35, T.2S., R.1E., W.1M. CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON





**LEGEND**

- BOUNDARY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING LOT LINE
- EXISTING CURB
- EXISTING ASPHALT
- EXISTING SIDEWALK
- EXISTING LIGHT POLE
- PROPOSED RIGHT-OF-WAY
- PROPOSED LOT LINE
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED SETBACK LINE
- SANITARY SEWER LINE AND MANHOLE
- STORM DRAIN LINE AND MANHOLE
- DOMESTIC WATER SERVICE & METER
- SANITARY SEWER LATERAL AS NOTED
- STORM SEWER LATERAL AS NOTED
- PROPOSED STREET LIGHT
- PROPOSED RETAINING WALL

**STORM SEWER CONSTRUCTION NOTES**

1. CONNECT PROPOSED 12" STORM LINE TO EXISTING MANHOLE.
2. CONSTRUCT FLOW CONTROL STRUCTURE FOR POND OUTLET.
3. CONSTRUCT WET DETENTION POND PER APPROX. D. CODE #1 STANDARD SURFACE WATER SPECIFICATIONS. MAX POND STAGE: XXXXX'. POND BOTTOM: XXXXX'.
4. CONSTRUCT STANDARD 48" STORM SEWER MANHOLE.
5. CONSTRUCT SHALLOW 48" STORM SEWER MANHOLE.
6. CONSTRUCT CURB INLET WITH 10" STORM LINE.
7. PROVIDE PRIVATE STORM DRAIN LATERAL CONNECTION FOR INDIVIDUAL LOT SERVICE IMPROVEMENTS. MAX POND STAGE: XXXXX'. POND BOTTOM: XXXXX'.
8. STORMWATER DETENTION PLANTER FOR MANAGEMENT OF FUTURE PROPERTY IMPROVEMENTS.
9. ROUTE WATER QUALITY PAINTER-OVERLAYS TO ULTIMATE STORMWATER OUTLET.
10. INSTALL 6" OR 8" CLEANOUT AS SPECIFIED.

**SANITARY SEWER CONSTRUCTION NOTES**

1. CONNECT PROPOSED SEWER LINE TO NEW MANHOLE OVER EXISTING SEWER LINE.
2. CONSTRUCT STANDARD 48" SANITARY SEWER MANHOLE.
3. PROVIDE NEW 4" SANITARY SEWER LATERAL FOR INDIVIDUAL LOT SERVICE. EXTEND SERVICE LATERAL 3' BEYOND PUE.
4. INSTALL 4" CLEANOUT.

**WATER CONSTRUCTION NOTES**

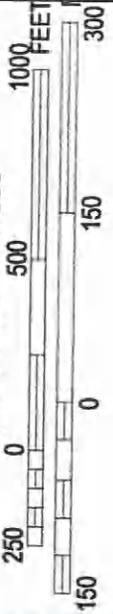
1. INSTALL FIRE HYDRANT.
2. HOT TAP EXISTING WATER MAIN. COORDINATE WITH CITY OF WEST Linn PUBLIC WORKS.
3. INSTALL STANDARD BLOW-OFF.
4. INSTALL SINGLE WATER METER FOR INDIVIDUAL LOT SERVICE. EXTEND 1" SERVICE LATERAL 3' BEYOND PUE.

TAX LOTS 200 AND 301 LOCATED IN THE NW 1/4 OF SECTION 35, T.2S., R.1E., W.1M. CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON





MAP SCALE 1" = 500'



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	415688	0257	D
OREGON CITY, CITY OF	410071	0257	D
WEST LON, CITY OF	410024	0257	D

Note to User: The Map Number shown below should be used when requesting a Flood Insurance 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.fema.gov](http://www.fema.gov)



50,000m N 23  
JOINS PANEL 0260

Custom Soil Resource Report  
Map—Hydrologic Soil Group



### MAP LEGEND

- Area of Interest (AOI)
  - Area of Interest (AOI)
- Soils
  - A
  - A/D
  - B
  - B/D
  - C
  - C/D
  - D
  - Not rated or not available
- 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
- 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 7, Aug 20, 2012

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

Date(s) aerial images were photographed: Jul 8, 2010—Sep 4, 2011

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

## Map Unit Legend

Clackamas County Area, Oregon (OR610)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
78B	Saum silt loam, 3 to 8 percent slopes	0.5	19.8%
78C	Saum silt loam, 8 to 15 percent slopes	2.2	80.2%
<b>Totals for Area of Interest</b>		<b>2.8</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

## Clackamas County Area, Oregon

### 78B—Saum silt loam, 3 to 8 percent slopes

#### Map Unit Setting

*Elevation:* 250 to 800 feet

*Mean annual precipitation:* 40 to 50 inches

*Mean annual air temperature:* 52 to 54 degrees F

*Frost-free period:* 165 to 210 days

#### Map Unit Composition

*Saum and similar soils:* 80 percent

#### Description of Saum

##### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Material silty and colluvium

##### Properties and qualities

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* 40 to 60 inches to lithic bedrock

*Drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water capacity:* Moderate (about 8.4 inches)

##### Interpretive groups

*Farmland classification:* All areas are prime farmland

*Land capability classification (irrigated):* 2e

*Land capability (nonirrigated):* 2e

*Hydrologic Soil Group:* C

##### Typical profile

*0 to 8 inches:* Silt loam

*8 to 26 inches:* Silty clay loam

*26 to 50 inches:* Gravelly silty clay loam

*50 to 54 inches:* Unweathered bedrock

### 78C—Saum silt loam, 8 to 15 percent slopes

#### Map Unit Setting

*Elevation:* 250 to 800 feet

*Mean annual precipitation:* 40 to 50 inches

## Custom Soil Resource Report

*Mean annual air temperature:* 52 to 54 degrees F  
*Frost-free period:* 165 to 210 days

### Map Unit Composition

*Saum and similar soils:* 80 percent

### Description of Saum

#### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Foothlope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Material silty and colluvium

#### Properties and qualities

*Slope:* 8 to 15 percent  
*Depth to restrictive feature:* 40 to 60 inches to lithic bedrock  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water capacity:* Moderate (about 8.4 inches)

#### Interpretive groups

*Farmland classification:* Farmland of statewide importance  
*Land capability classification (irrigated):* 2e  
*Land capability (nonirrigated):* 2e  
*Hydrologic Soil Group:* C

#### Typical profile

*0 to 8 inches:* Silt loam  
*8 to 26 inches:* Silty clay loam  
*26 to 50 inches:* Gravelly silty clay loam  
*50 to 54 inches:* Unweathered bedrock

**Table 2-2a** Runoff curve numbers for urban areas <sup>1/</sup>

Cover description	Average percent impervious area <sup>2/</sup>	Curve numbers for hydrologic soil group			
		A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) <sup>3/</sup> :					
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) <sup>4/</sup> .....		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
<i>Developing urban areas</i>					
Newly graded areas					
(pervious areas only, no vegetation) <sup>5/</sup> .....		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

<sup>1/</sup> Average runoff condition, and  $I_a = 0.2S$ .<sup>2/</sup> 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.<sup>3/</sup> CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.<sup>4/</sup> 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.<sup>5/</sup> 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 <sup>1/</sup>

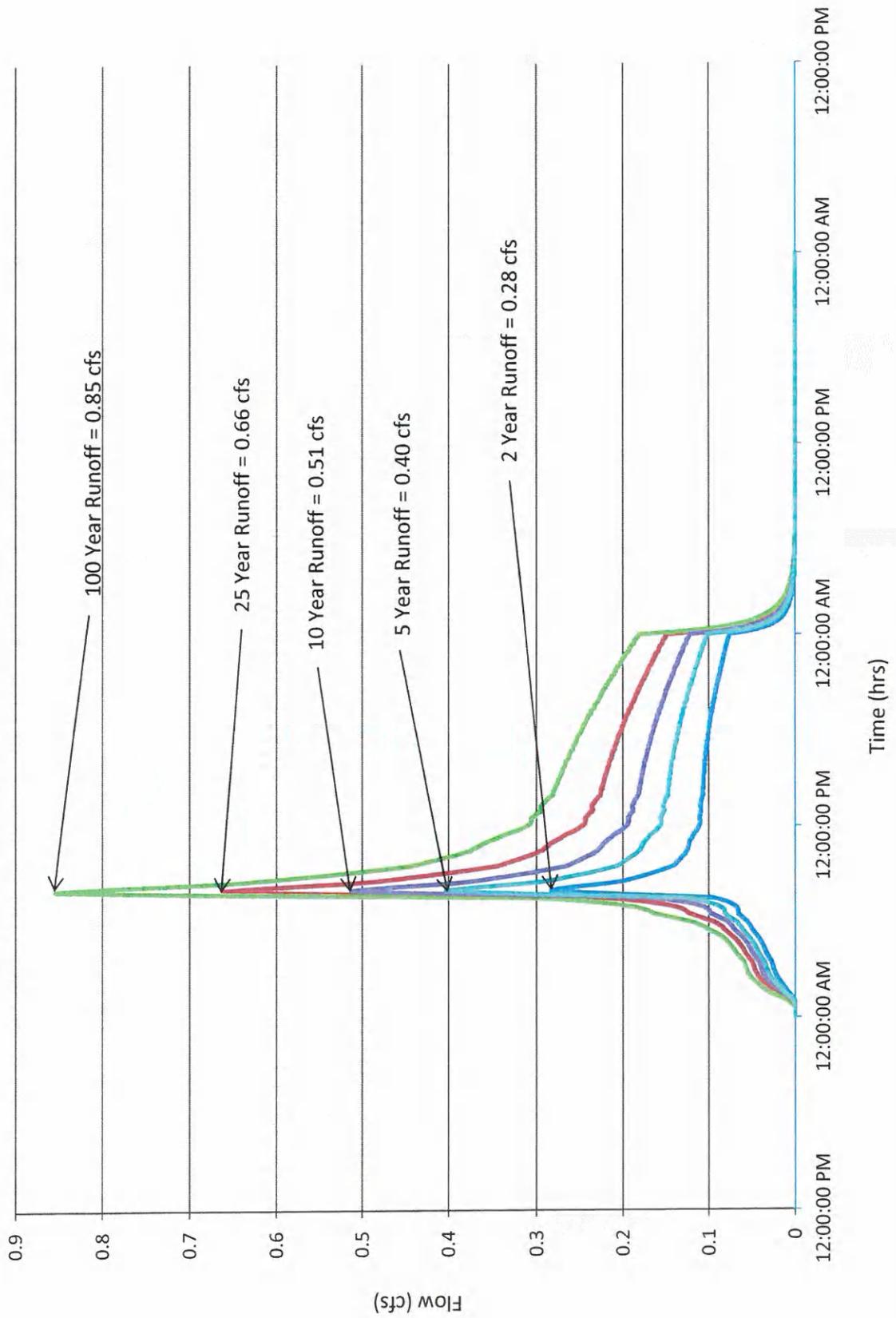
Cover description	Hydrologic condition	Curve numbers for hydrologic soil group			
		A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. <sup>2/</sup>	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30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

<sup>1</sup> Average runoff condition, and  $I_a = 0.2S$ .<sup>2</sup> *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.<sup>3</sup> *Poor*: <50% ground cover.*Fair*: 50 to 75% ground cover.*Good*: >75% ground cover.<sup>4</sup> Actual curve number is less than 30; use CN = 30 for runoff computations.<sup>5</sup> 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.<sup>6</sup> *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.

# HYDROGRAPHS

3J

# EXISTING RUNOFF HYDROGRAPH





# Presumptive Approach Calculator ver. 1.2

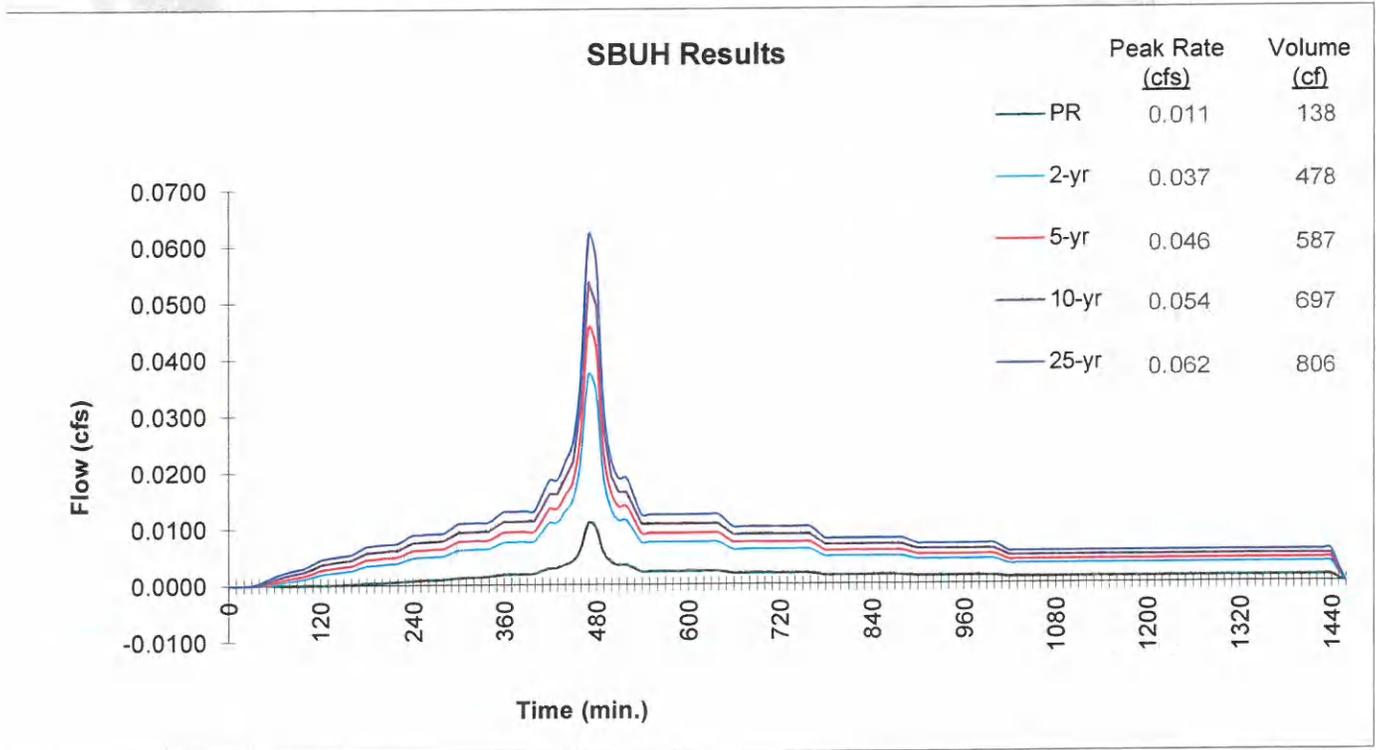
Catchment Data

Project Name: **Weather Hill**  
 Project Address: **22882 Weatherhill Road**  
**West Linn, OR**  
 Designer: **BCH**  
 Company: **3J Consulting**

Catchment ID: **LOTS**  
 Date: **07/31/13**  
 Permit Number: **0**  
 Run Time 7/31/2013 11:38:28 AM

Drainage Catchment Information	
Catchment ID	LOTS
Catchment Area	
Impervious Area	2,640 SF
Impervious Area	0.06 ac
Impervious Area Curve Number, CN <sub>imp</sub>	98
Time of Concentration, T <sub>c</sub> , minutes	5 min.
Site Soils & Infiltration Testing Data	
Infiltration Testing Procedure:	Open Pit Falling Head
Native Soil Field Tested Infiltration Rate (I <sub>test</sub> ):	0.0001 in/hr
Bottom of Facility Meets Required Separation From High Groundwater Per BES SWMM Section 1.4:	Yes
Correction Factor Component	
CF <sub>test</sub> (ranges from 1 to 3)	2
Design Infiltration Rates	
I <sub>dsgn</sub> for Native (I <sub>test</sub> / CF <sub>test</sub> ):	0.00 in/hr <b>Design infiltration rate &lt; 0.5 in/hr</b>
I <sub>dsgn</sub> for Imported Growing Medium:	2.00 in/hr

**Execute SBUH**





# Presumptive Approach Calculator ver. 1.2

Catchment Data

**Project Name:** Weather Hill  
**Project Address:** 22882 Weatherhill Road  
 West Linn, OR  
**Designer:** BCH  
**Company:** 3J Consulting

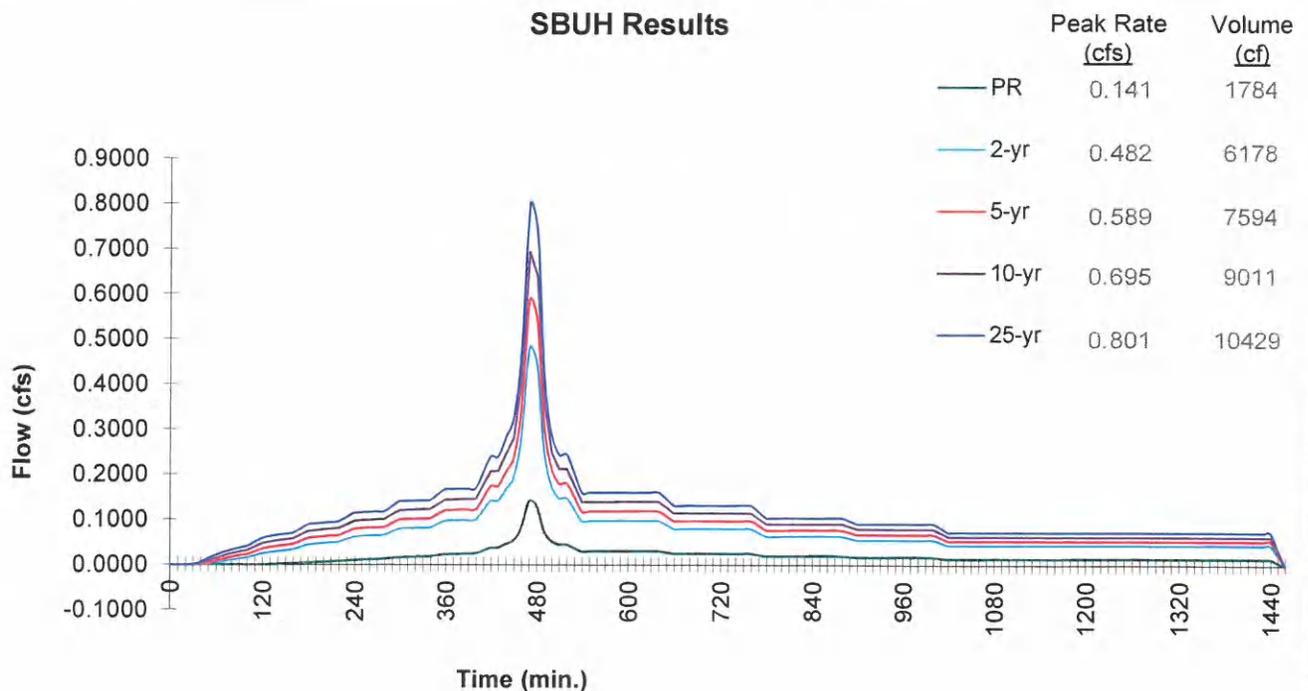
**Catchment ID:** SITE  
**Date:** 07/31/13  
**Permit Number:** 0  
 Run Time 7/31/2013 11:40:35 AM

Drainage Catchment Information	
Catchment ID	SITE
<b>Catchment Area</b>	
Impervious Area	34,145 SF
Impervious Area	0.78 ac
Impervious Area Curve Number, $CN_{imp}$	98
Time of Concentration, $T_c$ , minutes	5 min.
Site Soils & Infiltration Testing Data	
Infiltration Testing Procedure:	Open Pit Falling Head
Native Soil Field Tested Infiltration Rate ( $I_{test}$ ):	0.0001 in/hr
Bottom of Facility Meets Required Separation From High Groundwater Per BES SWMM Section 1.4:	Yes
Correction Factor Component	
$CF_{test}$ (ranges from 1 to 3)	2
Design Infiltration Rates	
$I_{dsgn}$ for Native ( $I_{test} / CF_{test}$ ):	0.00 in/hr
$I_{dsgn}$ for Imported Growing Medium:	2.00 in/hr

Design infiltration rate < 0.5 in/hr

**Execute SBUH**

## SBUH Results



# CALCULATIONS



# Time of Concentration

<b>PROJECT NO.</b>	13118 Weatherhill	<b>BY</b>	KEF	<b>DATE</b>	7/24/2013
--------------------	-------------------	-----------	-----	-------------	-----------

Existing			
<b>SHEET FLOW</b>			
INPUT	VALUE	VALUE	VALUE
Surface Description	Type 6 Grass (dense)	Type 4 Cultivated (residue > 20%)	Type 5 Grass (short prairie)
Manning's "n"	0.24	0.17	0.15
Flow Length, L (<300 ft)	300 ft	0 ft	0 ft
2-Yr 24 Hour Rainfall, P <sub>2</sub>	2.5 in	2.5 in	2.5 in
Land Slope, s	0.1216 ft/ft	0.005 ft/ft	0.0025 ft/ft
OUTPUT			
Travel Time	0.31 hr	0.00 hr	0.00 hr
<b>SHALLOW CONCENTRATED FLOW</b>			
INPUT	VALUE	VALUE	VALUE
Surface Description	Unpaved	Unpaved	Unpaved
Flow Length, L	125 ft	0 ft	0 ft
Watercourse Slope*, s	0.2268 ft/ft	0.01 ft/ft	0.027 ft/ft
OUTPUT			
Average Velocity, V	7.68 ft/s	1.61 ft/s	2.65 ft/s
Travel Time	0.005 hr	0.000 hr	0.000 hr
<b>CHANNEL FLOW</b>			
INPUT	VALUE	VALUE	VALUE
Cross Sectional Flow Area, a	7.5 ft <sup>2</sup>	7.5 ft <sup>2</sup>	15.05 ft <sup>2</sup>
Wetted Perimeter, P <sub>w</sub>	11.28 ft	11.28 ft	7.69 ft
Channel Slope, s	0.003 ft/ft	0.003 ft/ft	0.00 ft/ft
Manning's "n"	0.24	0.24	0.24
Flow Length, L	0 ft	0 ft	0 ft
OUTPUT			
Average Velocity	0.26 ft/s	0.26 ft/s	0.53 ft/s
Hydraulic Radius, r = a / P <sub>w</sub>	0.66 ft	0.66 ft	1.96 ft
Travel Time	0.00 hr	0.00 hr	0.00 hr
<b>Watershed or Subarea T<sub>c</sub> =</b>	<b>0.32 hr</b>	<b>0.00 hr</b>	<b>0.00 hr</b>
<b>Watershed or Subarea T<sub>c</sub> =</b>	<b>19 minutes</b>	<b>0 minutes</b>	<b>0 minutes</b>





**Presumptive Approach Calculator ver. 1.2**

Catchment ID: **LOTS**

Run Time 7/31/2013 8:56:20 AM

Project Name: Weather Hill

Catchment ID: LOTS

Date: 7/31/2013

imported file PAC LOTS data.xls - 7/31/2013 8:56:22 AM

**Instructions:**

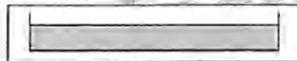
1. Identify which Stormwater Hierarchy Category the facility.
2. Select Facility Type.
3. Identify facility shape of surface facility to more accurately estimate surface volume, except for Swales and sloped planters that use the PAC Sloped Facility Worksheet to enter data.
4. Select type of facility configuration.
5. Complete data entry for all highlighted cells.

Catchment facility will meet Hierarchy Category: 3

**Goal Summary:**

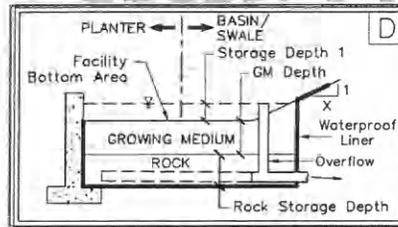
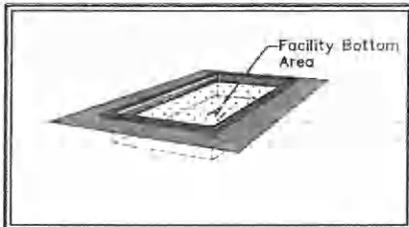
Hierarchy Category	SWMM Requirement	RESULTS box below needs to display..	
		Pollution Reduction as a	10-yr (aka disposal) as a
3	Off-site flow to drainageway, river, or storm-only pipe system.	PASS	N/A

Facility Type = Planter (Flat)



Facility Shape: Rectangle/Square

Facility Configuration: D



Calculation Guide
Max. Rock Stor.
Bottom Area
<b>245 SF</b>

**DATA FOR ABOVE GRADE STORAGE COMPONENT**

Facility Bottom Area = 245 sf  
 Bottom Width = 14.0 ft  
 Facility Side Slope = 0 to 1  
 Storage Depth 1 = 18 in  
 Growing Medium Depth = 18 in  
 Freeboard Depth = N/A in

**BELOW GRADE STORAGE**

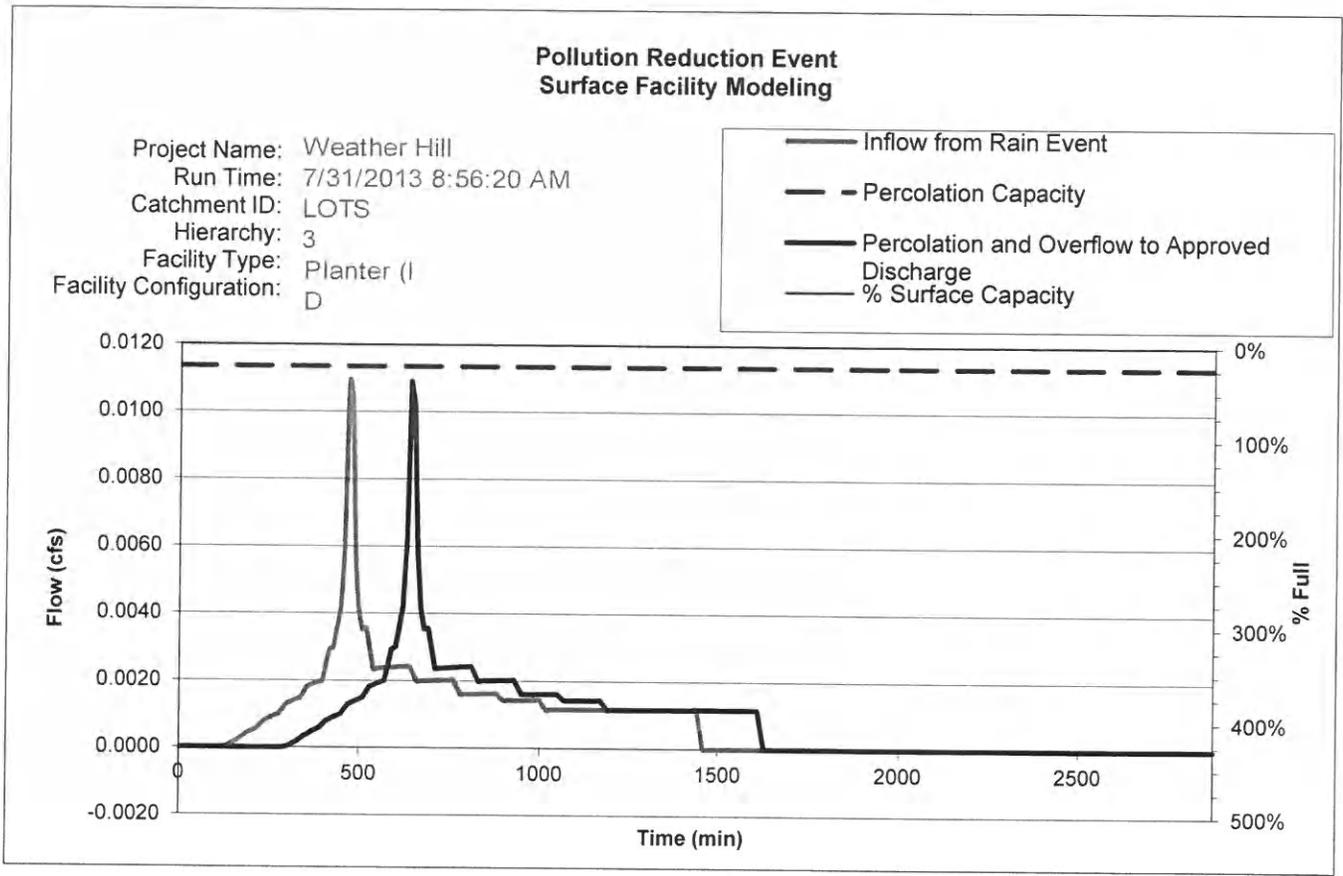
Surface Capacity at Depth 1 = 368 cf  
 GM Design Infiltration Rate = 2.00 in/hr  
 Infiltration Capacity = 0.011 cfs

Rock Storage Capacity = \_\_\_\_\_ cf  
 Native Design Infiltration Rate = \_\_\_\_\_ in/hr  
 Infiltration Capacity = \_\_\_\_\_ cfs

<b>RESULTS</b>	Overflow Volume			
	Pollution Reduction	<b>PASS</b>	0 CF	0% Surf. Cap. Used
Run PAC				
Output File				
	2-yr	5-yr	10-yr	25-yr
Peak cfs	0.011	0.011	0.011	0.011

Current data has been imported:  
 PAC LOTS data.xls 7/31/2013 8:56:22 AM

<b>FACILITY FACTS</b>	
Total Facility Area Including Freeboard =	<b>245 SF</b>
Sizing Ratio (Total Facility Area / Catchment Area) =	<b>0.093</b>





**Presumptive Approach Calculator ver. 1.2**

Catchment ID: **SITE**

Run Time 7/31/2013 8:59:34 AM

Project Name: Weather Hill

Catchment ID: SITE

Date: 7/31/2013

Imported file PAC SITE data.xls - 7/31/2013 8:59:36 AM

**Instructions:**

1. Identify which Stormwater Hierarchy Category the facility.
2. Select Facility Type.
3. Identify facility shape of surface facility to more accurately estimate surface volume, except for Swales and sloped planters that use the PAC Sloped Facility Worksheet to enter data.
4. Select type of facility configuration.
5. Complete data entry for all highlighted cells.

Catchment facility will meet Hierarchy Category: 3

Goal Summary:

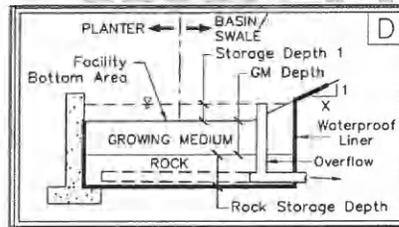
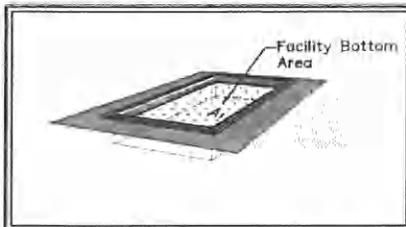
Hierarchy Category	SWMM Requirement	RESULTS box below needs to display:	
		Pollution Reduction as a	10-yr (aka disposal) as a
3	Off-site flow to drainageway, river, or storm-only pipe system.	PASS	N/A

Facility Type = Planter (Flat)



Facility Shape: Rectangle/Square

Facility Configuration: D



Calculation Guide
Max. Rock Stor.
Bottom Area
2,248 SF

**DATA FOR ABOVE GRADE STORAGE COMPONENT**

Facility Bottom Area = 2,248 sf  
 Bottom Width = 21.5 ft  
 Facility Side Slope = 0 to 1  
 Storage Depth 1 = 18 in  
 Growing Medium Depth = 18 in  
 Freeboard Depth = N/A in

**BELOW GRADE STORAGE**

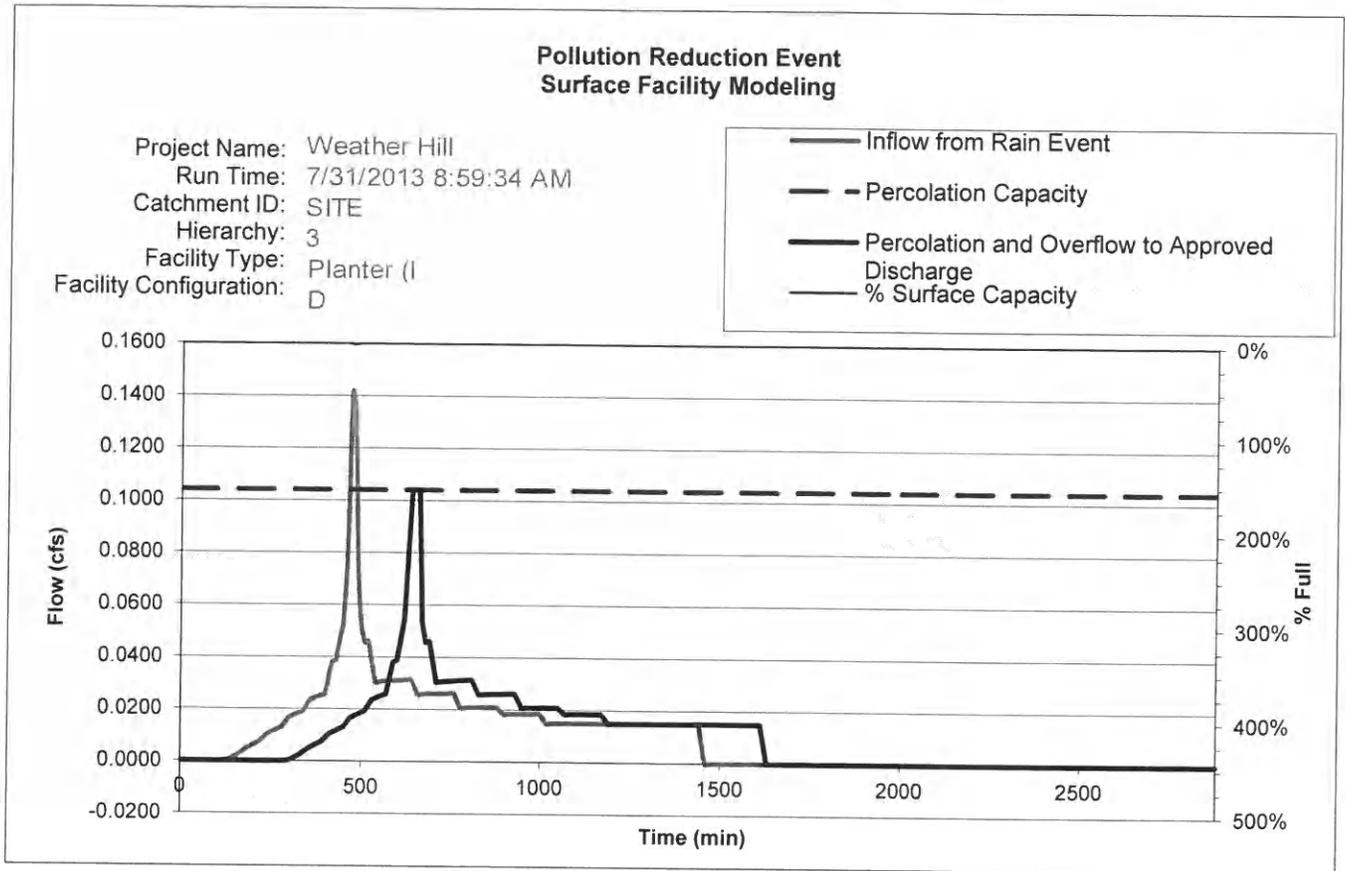
Surface Capacity at Depth 1 = 3,372 cf  
 GM Design Infiltration Rate = 2.00 in/hr  
 Infiltration Capacity = 0.104 cfs

Rock Storage Capacity = \_\_\_\_\_ cf  
 Native Design Infiltration Rate = \_\_\_\_\_ in/hr  
 Infiltration Capacity = \_\_\_\_\_ cfs

RESULTS		Overflow Volume		Run PAC	
Pollution Reduction	<b>PASS</b>	0 CF	1%	Surf. Cap. Used	
Output File					
Peak cfs	<u>0.104</u>	<u>0.104</u>	<u>0.104</u>	<u>0.104</u>	

Current data has been imported:  
 PAC SITE data.xls 7/31/2013 8:59:36 AM

FACILITY FACTS	
Total Facility Area Including Freeboard =	<b>2,248 SF</b>
Sizing Ratio (Total Facility Area / Catchment Area) =	<b>0.066</b>



# GEOTECHNICAL REPORTS



**Real-World Geotechnical Solutions**  
**Investigation • Design • Construction Support**

April 30, 2013  
GeoPacific Project No. 13-2969

John Wyland  
**J.T. Smith Companies**  
5282 Meadows Road, Suite 171  
Lake Oswego, Oregon 97035

Copy: Brian Feeney (brian.feeney@3j-consulting.com)

Via e-mail with hard copies mailed

Subject: **GEOTECHNICAL ENGINEERING REPORT**  
**WEATHERHILL PROPERTIES**  
**22882 WEATHERHILL ROAD**  
**WEST LINN, OREGON**

This report presents the results of a geotechnical engineering study conducted by GeoPacific Engineering, Inc. (GeoPacific) for the above referenced project. The purpose of this study was to evaluate subsurface conditions at the site and to provide geotechnical recommendations for site development. This geotechnical study was performed in accordance with GeoPacific proposal No. P-4459, dated April 3, 2013, and your subsequent authorization of our agreement and *General Conditions for Geotechnical Services*.

#### **SITE DESCRIPTION AND PROPOSED DEVELOPMENT**

The site is located on the south side of Weatherhill Road in West Linn, Oregon (Figure 1). The area of the planned development totals approximately 2.0 acres. A single family residence is present in the center of the site. There are signs of previous grading activity across the site, creating several level areas. The topography on the site is sloping down to the south at an average grade of approximately 15 to 20 percent. Small portions of the site, between the level areas, have been steepened to grades of approximately 50 percent. Vegetation on the site consists primarily of grass, brush, and small to large trees.

It is our understanding that the proposed development includes grading the site to support lots for new single-family homes, approximately 350 feet of new private streets, and associated underground utilities. The current site plan (Figure 2) shows a total of 11 lots and two tracts. The existing residence is to be demolished and removed from the site. We anticipate that the maximum depth of cut and height of fill will be about 5 feet or less.

#### **REGIONAL GEOLOGIC SETTING**

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.

The site is underlain by the Columbia River Basalt Formation (Beeson et al., 1989). The Miocene aged (about 14.5 to 16.5 million years ago) Columbia River Basalts are a thick sequence of lava flows. 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.

Underlying the Columbia River Basalt Formation is the Skamania Volcanics Formation. The Oligocene aged (about 37 to 26 million years ago) Skamania Volcanics extend to depth of several thousand feet and form the crystalline basement of the basin (Schlicker 1963).

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

#### **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 about 17.3 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 recent 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 or Newberg Faults (the faults 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).

#### **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 about 3.6 miles northeast of the site. The Oatfield Fault occurs along the western side of the Portland Hills, and is about 2.4 miles northeast of the site. 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).

#### **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 20 and 40 kilometers below the ocean surface.

**FIELD EXPLORATION**

Subsurface conditions were explored on April 13, 2013 by excavating 6 test pits to depths of 3 to 10 feet below the ground surface, using a John Deer 310E backhoe with a 2-foot-wide toothed bucket. The approximate test pit locations are shown on the attached site plan (Figure 2). It should be noted that exploration locations were determined in the field by pacing or taping distances from apparent property corners and other site features shown on the plans provided. As such, the locations of the explorations should be considered approximate.

During excavation of the test pits, a GeoPacific engineer observed and recorded soil information such as color, stratigraphy, strength, and soil moisture. Soils were classified in general accordance with the Unified Soil Classification System (USCS). Rock hardness was classified in accordance with Table 1, modified from the ODOT Rock Hardness Classification Chart.

**Table 1. Rock Hardness Classification Chart**

<b>ODOT Rock Hardness Rating</b>	<b>Field Criteria</b>	<b>Unconfined Compressive Strength</b>	<b>Typical Equipment Needed For Excavation</b>
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

At the completion of each test pit, the excavation was backfilled using the excavated soils, and tamped with the excavator bucket. This backfill should not be expected to behave as engineered fill and some settling and/or erosion of the ground surface may occur.

**SUBSURFACE CONDITIONS**

**Soil and Rock**

The following report sections summarize subsurface conditions anticipated at the site, based on our exploration program. On-site soils consist of topsoil, undocumented fill, residual soil, and Columbia River Basalt materials, as described below.

**Topsoil:** In all test pits, the ground surface was directly underlain by topsoil consisting of dark brown, moderately organic SILT (OL-ML) with fine roots throughout. Topsoil thickness in test pits ranged from about 3 to 4 inches. There is the potential for some tree roots or thicker topsoil zones in forested areas on site.

**Undocumented Fill:** Underlying the topsoil, test pits TP-1, TP-2, TP-4, TP-5, and TP-6 encountered undocumented fill material. The fill generally consisted of medium stiff SILT (ML) with varying amounts of gravel. Table 2 summarizes the depths of undocumented fill encountered in our explorations.

**Table 2. Depth of Undocumented Fill**

<b>Location</b>	<b>Depth of Undocumented Fill (feet)</b>
TP-1	3
TP-2	1.5
TP-4	1.5
TP-5	5
TP-6	1

**Residual Soil:** Underlying the undocumented fill material in test pit TP-1 and TP-4 and the topsoil in test pit TP-2, the test pits encountered stiff clayey silt residual soil derived from the in-place weathering of the underlying Columbia River Basalt Formation. The residual soil transitioned to less weathered basalt bedrock as discussed below. Where encountered, the residual soil ranged from approximately 2 to 4 feet in thickness.

**Columbia River Basalt:** Underlying the residual soil, test pits encountered weathered basalt bedrock materials belonging to the Columbia River Basalt Formation. The basalt encountered was typically highly weathered and ranged from extremely soft (R0) to medium hard (R3). The hardness generally increased with depth. The explorations resulted in practical refusal on medium hard (R3) basalt in all test pits except test pit TP-6 at depths of 3 to 7 feet, using a John Deer 310E backhoe with 2-foot-wide toothed bucket. Very soft (R1) basalt extended beyond the maximum depth of exploration in test pit TP-6.

### **Groundwater**

On April 13, 2013, groundwater seepage was not encountered in the test pits. The groundwater conditions reported are for the specific date and locations indicated, and therefore may not necessarily be indicative of other times and/or locations. It is anticipated that groundwater conditions will vary depending on the time of year, rainfall, local subsurface conditions, changes in site utilization, and other factors. During periods of heavy and prolonged precipitation, shallow perched groundwater conditions often occur over fine-grained native deposits such as those beneath the site, particularly during the wet season.

### **INFILTRATION TESTING**

On April 13, 2013, GeoPacific performed one pushed-pipe falling head infiltration tests at the approximate location shown on Figure 2. The test was conducted in a 6-inch diameter pipe pushed into the native soil at an approximate depth of 3 feet below the ground surface. The infiltration test was performed at or near the location of test pit TP-4. The soil encountered at the depth of the infiltration test consisted of reddish brown clayey SILT (ML) residual soil.

The test hole was pre-saturated for 4 hours prior to performing the test. During the test, the water level was measured over 30 minute intervals with approximate head pressures ranging between 4 and 8 inches until three successive measurements showing a consistent infiltration rate were achieved. Approximate test locations are shown in Figure 2. Table 3 presents a summary of our infiltration test measurement results.

**Table 3. Results of Infiltration Testing**

Location	Depth	Infiltration Rate
TP-4	3 feet	0.1 in/hr

The test results indicate very low infiltration rates. The measured rates reflect vertical flow pathways only.

### **CONCLUSIONS AND RECOMMENDATIONS**

Results of this study indicate that the proposed development is geotechnically feasible, provided that the recommendations of this report are incorporated into the design and construction phases of the project. In our opinion, the greatest geotechnical constraints for project development are the presence of medium hard rock underlying much of the site. The proposed structures may be supported on shallow foundations bearing on competent undisturbed native soils, or engineered fill, designed and constructed as recommended in this report.

Recommendations are presented below for site preparation and undocumented fill removal, engineered fill, wet weather earthwork, seismic design, structural foundations, footing drains, storm water systems, permeable pavement systems, excavation conditions and utility trench backfill, erosion control considerations, and asphalt pavement sections. The recommendations of this report assume the single-family structures will have raised floors and crawlspaces.

#### **Site Preparation and Undocumented Fill Removal**

Within the areas to receive fill, proposed building footprints, or other settlement-sensitive areas, undocumented fill, vegetation, and debris should be completely removed and replaced with engineered fill. Debris from clearing should be removed from the site. Undocumented fill was encountered in test pits TP-1, TP-2, TP-4, TP-5, and TP-6 to depths ranging from 1 to 5 feet. The depths of undocumented fill are summarized in Table 2.

Organic-rich topsoil should be stripped to the relatively inorganic native soils. We anticipate that the depth of stripping will be an average of roughly 6 to 8 inches over most of the site. Deeper stripping will be needed in areas that have been tilled in the past, areas of localized fill deposits, etc. The final depth of stripping removal may vary depending on local subsurface conditions and the contractor's methods, and should be determined on the basis of a site inspection after the initial stripping has been performed.

Stripped organic soil should be stockpiled only in designated areas or removed from the site and stripping operations should be observed and documented by GeoPacific. Any existing subsurface structures (tile drains, old utility lines, septic leach fields, etc.) beneath structures and pavements should be removed and the excavations backfilled with engineered fill.

In construction areas, once stripping is approved, the area should be ripped or tilled to a depth of 12 inches, moisture conditioned, and compacted in-place prior to the placement of engineered fill or crushed aggregate base for pavement (dry weather conditions). Exposed subgrade soils should be evaluated by GeoPacific. 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, and during wet weather, 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 or over-excavated and replaced with engineered fill, as described below. The depth of overexcavation, if required, should be evaluated by GeoPacific at the time of construction.

### **Engineered Fill**

In general, we anticipate that soils from planned cuts and utility trench excavations will be suitable for use as engineered fill during dry weather conditions, provided they are adequately moisture conditioned prior to compacting and are free of highly organic material and debris. Imported fill material should be reviewed by GeoPacific 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 conventional compaction equipment. We recommend that engineered fill be compacted to at least 90 percent of the maximum dry density determined by ASTM D1557 (Modified Proctor) or equivalent. On-site soils may be wet or dry of optimum; therefore, we anticipate that moisture conditioning of native soil will be necessary for compaction operations.

Proper test frequency and earthwork documentation usually requires daily observation and testing during stripping, rough grading, and placement of engineered fill. Field density testing should generally conform to ASTM D2922 and D3017, or D1556. Engineered fill should be periodically observed and tested by the project geotechnical engineer or his representative. Typically, one density test is performed for at least every 2 vertical feet of fill placed or every 500 cubic yards, 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.

### **Wet Weather Earthwork**

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

- Earthwork should be performed in small areas to minimize exposure to wet weather. Excavation or the removal of unsuitable soils should be followed promptly by the placement and compaction of clean engineered fill. The size and type of construction equipment used may have to be limited to prevent soil disturbance. Under some circumstances, it may be necessary to excavate soils with a backhoe to minimize subgrade disturbance caused by equipment traffic;
- The ground surface within the construction area should be graded to promote run-off of surface water and to prevent the ponding of water;
- Material used as engineered fill should consist of clean, granular soil containing less than 5 percent fines. The fines should be non-plastic. Alternatively, cement treatment of on-site soils may be performed to facilitate wet weather placement;

- The ground surface within the construction area should be sealed by a smooth drum vibratory roller, or equivalent, and under no circumstances should be left uncompacted and exposed to moisture. Soils which become too wet for compaction should be removed and replaced with clean granular materials;
- Excavation and placement of fill should be observed by the geotechnical engineer to verify that all unsuitable materials are removed and suitable compaction and site drainage is achieved; and
- 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.

### Seismic Design

Structures should be designed to resist earthquake loading in accordance with the methodology described in the 2009 International Building Code (IBC) with applicable 2010 Oregon Structural Specialty Code (OSSC) revisions. We recommend Site Class D be used for design per the OSSC, Table 1613.5.2. Design values determined for the site using the USGS (United States Geological Survey) *Earthquake Ground Motion Parameters* utility are summarized below.

**Table 4. Recommended Earthquake Ground Motion Parameters (2009 IBC / 2010 OSSC)**

Parameter	Value
Location (Lat, Long), degrees	45.360, -122.652
Mapped Spectral Acceleration Values (MCE, Site Class D):	
Short Period, $S_s$	0.915 g
1.0 Sec Period, $S_1$	0.327 g
Soil Factors for Site Class D:	
$F_a$	1.134
$F_v$	1.746
$SD_s = 2/3 \times F_a \times S_s$	0.692 g
$SD_1 = 2/3 \times F_v \times S_1$	0.381 g

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. Following development, on-site soils will consist predominantly of medium stiff to very stiff silt and engineered fill, which 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.

### Structural Foundations

Based on our understanding of the proposed project and the results of our exploration program, and assuming our recommendations for site preparation are followed, medium stiff to stiff native soil or engineered fill soils should be encountered at or near the foundation level of the proposed structures.

Shallow, conventional isolated or continuous spread footings may be used to support the proposed structures, provided they are founded on competent native soils. We recommend a maximum allowable bearing pressure of 2,000 pounds per square foot (psf) for designing footings on native soil near existing grade. The recommended maximum allowable bearing pressure may be increased by a factor of 1.33 for short term

transient conditions such as wind and seismic loading. Exterior footings should be founded at least 18 inches below the lowest adjacent finished grade. Minimum footing widths should be determined by the project engineer/architect in accordance with applicable design codes.

Assuming construction is accomplished as recommended herein, and for the foundation loads anticipated, we estimate total settlement of spread foundations of less than about 1 inch and differential settlement between two adjacent load-bearing components supported on competent soil of less than about ½ inch. We anticipate that the majority of the estimated settlement will occur during construction, as loads are applied.

Wind, earthquakes, and unbalanced earth loads will subject the proposed structure to lateral forces. Lateral forces on a structure will be resisted by a combination of sliding resistance of its base or footing on the underlying soil and passive earth pressure against the buried portions of the structure. For use in design, a coefficient of friction of 0.5 may be assumed along the interface between the base of the footing and subgrade soils. Passive earth pressure for buried portions of structures may be calculated using an equivalent fluid weight of 390 pounds per cubic foot (pcf), assuming footings are cast against dense, natural soils or engineered fill. The recommended coefficient of friction and passive earth pressure values do not include a safety factor. The upper 12 inches of soil should be neglected in passive pressure computations unless it is protected by pavement or slabs on grade.

Footing excavations should be trimmed neat and the bottom of the excavation should be carefully prepared. Loose, wet or otherwise softened soil should be removed from the footing excavation prior to placing reinforcing steel bars. GeoPacific should observe foundation excavations prior to placing formwork and reinforcing steel, to verify that adequate bearing soils have been reached.

The above foundation recommendations are for dry weather conditions. Due to the high moisture sensitivity of on-site soils, construction during wet weather may require overexcavation of footings and backfill with compacted, crushed aggregate.

### **Footing and Roof Drains**

To minimize the fluctuation of soil moisture content near structural foundations, we recommend that the structures be constructed with perimeter footing drains. Footing drains should consist of 4-inch minimum diameter perforated plastic pipe embedded in a minimum of 1 ft<sup>3</sup> per lineal foot of clean, crushed drain rock or 1"- ¼" rounded 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 into the local storm drain system or other suitable outlet. A minimum 0.5 percent fall should be maintained throughout the drain and non-perforated pipe outlet. The footing drains should include clean-outs to allow periodic maintenance and inspection.

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.

### **Storm Water Management**

We understand that on-site storm water systems may include pervious pavement, shallow infiltration facilities, and/or deep infiltration facilities. Infiltration test results indicate that infiltration rates in the near surface residual soils are on the order of 0.1 inches per hour at a depth of 3 feet. The designer should select an appropriate infiltration value based on our test results and the location of the proposed infiltration facility. The infiltration rates do not incorporate a factor of safety. For the design infiltration rate, the system

designer should incorporate an appropriate factor of safety against slowing of the rate over time due to biological and sediment clogging.

Infiltration test methods and procedures attempt to simulate the as-built conditions of the planned disposal system. However, due to natural variations in soil properties, actual infiltration rates may vary from the measured and/or recommended design rates. All systems should be constructed such that potential overflow is discharged in a controlled manner away from structures, and all systems should include an adequate factor of safety. Infiltration rates presented in this report should not be applied to inappropriate or complex hydrological models such as a closed basin without extensive further studies. Evaluating environmental implications of stormwater disposal at this site are beyond the scope of this study.

### **Permeable Pavement Design Recommendations**

We understand that permeable pavements may be incorporated in project design. We recommend pervious Portland cement concrete (PCC), or manufactured permeable paver blocks such as Anchor Holland Permeable with integrated spacer gaps (or similar). Pervious asphalt pavement is not recommended due to its tendency for raveling and insufficient durability. A typical detail for permeable pavement sections is attached to this report.

For use in sizing calculations, we recommend an ultimate infiltration rate of 0.1 inch per hour be used for the near surface silt soils. For the design infiltration rate, the system designer/builder should incorporate an appropriate factor of safety against slowing of the rate over time due to biological and sediment clogging. Stormwater exceeding soil infiltration and/or soil storage capacities will need to be directed to a suitable discharge location. We suggest the pervious pavement designer assume a void ratio of 30 percent for the crushed rock / reservoir course. The crushed rock / reservoir course material should consist of Open-Graded Aggregate per ODOT Standard Specifications Section 02630.11. Care should be taken to avoid overcompaction of the subgrade soils and reservoir course, which could limit the void ratio of these materials and reduce the functionality as a pervious pavement.

We do not recommend a density specification for the crushed rock / reservoir course material beneath pervious pavements, due to concerns about overcompaction as discussed above. During placement of the base rock / reservoir course material, visual observations should be made to verify the material has been compacted to a relatively firm and unyielding condition.

We assume that the private driveway will accommodate primarily passenger vehicles and light trucks. Consequently, our design was formulated using design methods prescribed by AASHTO for light-duty roads.

Table 5 presents our recommended minimum section for construction of a permeable paver private driveway section in dry-weather conditions. The driveway should be constructed on firm, unyielding subgrade soil. The edges of permeable pavement sections should be retained by concrete curbs extending to subgrade below the base of the section, or as specified by the project civil engineer.

**Table 5. Recommended Permeable Paver Section for Dry-Weather Construction**

Material Layer	Minimum Thickness (in.)
Pervious PCC / Manufactured Paver Blocks	4 inches / 3.125 inches
Open Graded Crushed Aggregate (washed) 1" - 1/10" ODOT Table 02630-2	1 inch
Open Graded Crushed Aggregate (washed) (2" - 3/4" diameter)	11 inches (see Note)
Non-woven Geotextile Filter Fabric (Mirafi 160N or Equivalent)	-
Unyielding Native Subgrade Soil	-

**Note:** Thickness of reservoir section may need to be increased by the storm water system designer, due to storm water detention or other requirements.

Subgrade strength be verified visually by GeoPacific prior to section placement; soft areas may need to be stabilized or overexcavated prior to pavement section construction. Overexcavations should be backfilled using additional crushed drain rock.

If pavement areas are to be constructed during wet weather, GeoPacific should review the subgrade and proposed construction methods immediately prior to the placement of base course so that specific recommendations can be provided. Wet-weather construction is likely to require additional crushed aggregate base course thickness.

**Excavating Conditions and Utility Trench Backfill**

Subsurface test pit exploration indicates that soft (R2) to medium hard (R3) basalt underlies the site at shallow depths. We expect utility trenches less than about 3 feet below existing grade can be excavated in the soft basalt using conventional large trackhoe equipment. Practical refusal on medium hard (R3) basalt bedrock was reached in all test pits except for test pit TP-6 at the depths summarized in Table 6, with the medium-sized backhoe used in our exploration.

**Table 6. Depth of Practical Refusal on Weathered Bedrock**

Location	Depth of Practical Refusal (feet)
TP-1	7
TP-2	3
TP-3	5.5
TP-4	6.5
TP-5	6.5

Medium hard Columbia River Basalt typically contains clay seams and fractures, and can be excavated employing a rock bucket and ripper tooth. Some use of pneumatic rock breaker attachments may be necessary, particularly in deeper utility trench excavations.

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 Health Administration (OSHA) regulations (29 CFR Part 1926), or be shored. The existing native soils classify as Type B Soil and temporary excavation side slope inclinations as steep as 1H:1V may be assumed for planning purposes. This cut slope inclination is applicable to excavations above the water table only.

Shallow, perched groundwater should be anticipated in excavations and utility trenches. The depth of groundwater will likely be less during the wet weather season and greater during the dry weather season. Vibrations created by traffic and construction equipment may cause some caving and raveling of excavation walls. In such an event, lateral support for the excavation walls should be provided by the contractor to prevent loss of ground support and possible distress to existing or previously constructed structural improvements.

PVC pipe should be installed in accordance with the procedures specified in ASTM D2321. We recommend that structural trench backfill be compacted to at least 90% of the maximum dry density obtained by Modified Proctor (ASTM D1557) or equivalent. Initial backfill lift thicknesses 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, at least one density test is taken for every 4 vertical feet of backfill on each 200-lineal-foot section of trench.

### **Asphalt Pavement Sections**

Table 7 presents recommended minimum pavement sections for on-site public streets that are to be completed as part of the project, under dry weather construction conditions. For on-site streets, a subgrade soil R-value of 15 was assumed for design purposes. The recommended pavement sections were formulated using the Crushed Base Equivalent method and assuming a Traffic Index of 4 for on-site streets. The Traffic Index is generally appropriate for minor residential streets and cul-de-sacs. The project engineer or architect should review the assumed traffic indices to evaluate their suitability for this project. Changes in anticipated traffic levels will affect the corresponding pavement section.

**Table 7. Recommended Minimum Dry Weather Pavement Section**

<b>Material Layer</b>	<b>Minimum Thickness (inches)</b>	<b>Compaction Standard</b>
Asphaltic Concrete (AC)	3	92% of Rice Density (top lift) 91% of Rice Density (lower lifts) AASHTO T-209
Crushed Aggregate Base ¾"-0 (leveling course)	2	95% of Modified Proctor ASTM D1557
Crushed Aggregate Base 1½"-0	8	95% of Modified Proctor ASTM D1557
Recommended Subgrade	12	90% of Modified Proctor or approved native

In new pavement areas, native soil subgrade in pavement areas should be ripped or tilled to a minimum depth of 12 inches, moisture conditioned, and recompacted in-place to at least 90 percent of ASTM D1557 (Modified Proctor) or equivalent. 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, GeoPacific should review subgrade at the time of construction so that condition specific recommendations can be provided. Wet weather pavement construction is likely to require soil amendment or geotextile fabric and an increase in base course thickness.

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 AC compaction test is performed for every 100 to 200 linear feet of paving.

### **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.

### **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. 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 executed these services in accordance with generally accepted professional principles and practices in the field of geotechnical engineering 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,

**GEO PACIFIC ENGINEERING, INC.**

Benjamin G. Anderson  
Staff Engineer



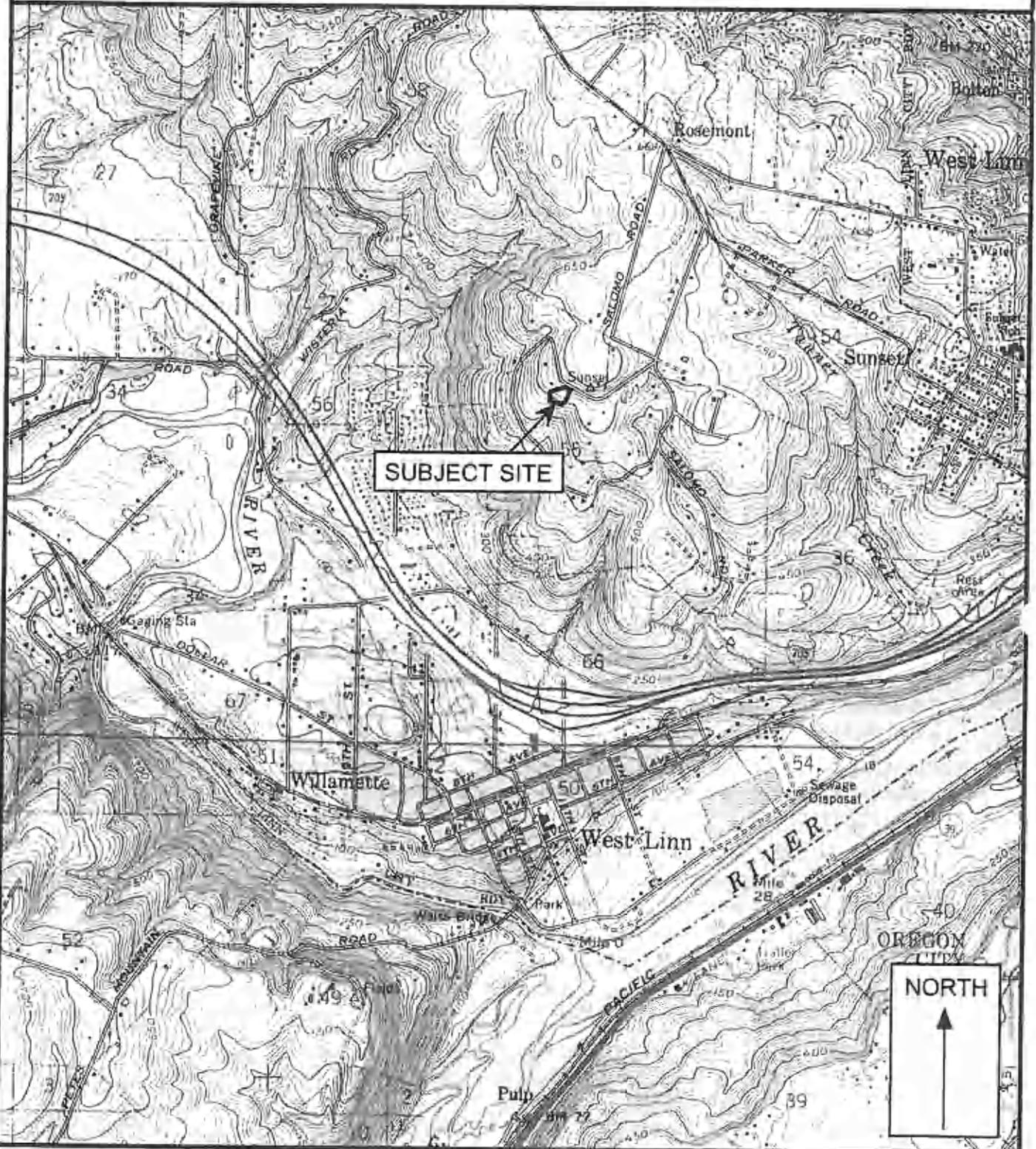
**EXPIRES: 06-30-20 13**

Scott L. Hardman, G.E., P.E.  
Principal Geotechnical Engineer

- Attachments:   References  
                  Figure 1 – Vicinity Map  
                  Figure 2 – Site and Exploration Plan  
                  Pervious Pavement (SW-110) Typical Detail  
                  Test Pit Logs (TP-1 through TP-6)

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**Legend**

Approximate Scale 1 in = 2,000 ft

Date: 04/24/13

Drawn by: BGA

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

Project: Weatherhill Properties  
West Linn, Oregon

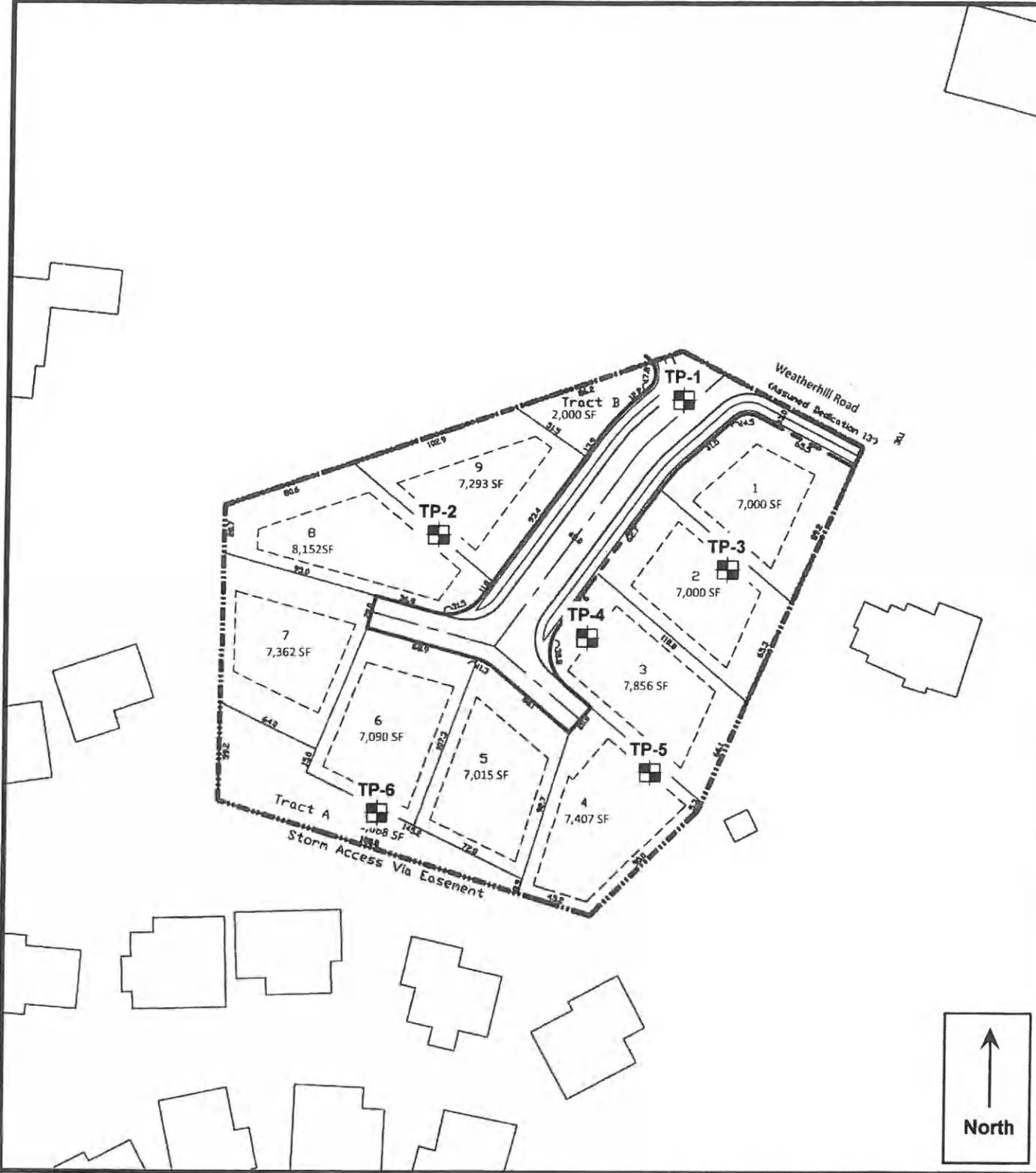
Project No. 13-2969

FIGURE 1



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

# SITE PLAN AND EXPLORATION LOCATIONS



### Legend

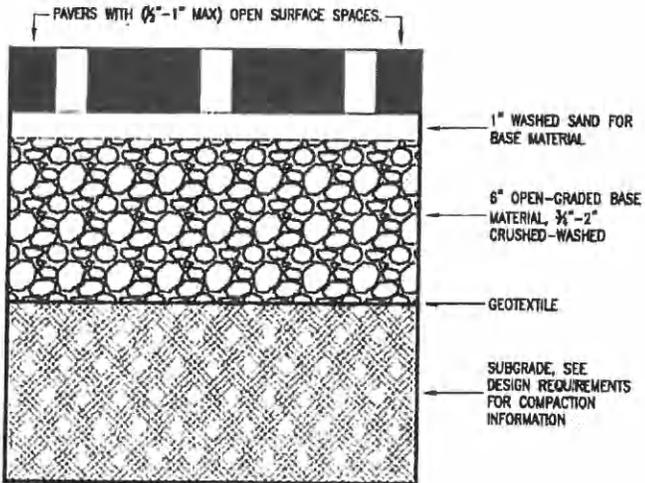
- TP-1
- Test Pit Designation and Approximate Location

Date: 04/24/13  
 Drawn by: BGA  
 0 80'  
 APPROXIMATE SCALE 1"=80'

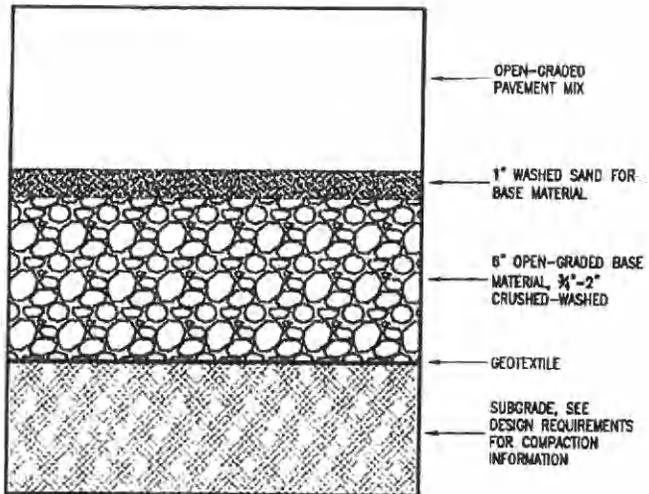
Project: Weatherhill Properties West Linn, Oregon	Project No. 13-2969	FIGURE 2
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	RESIDENTIAL DRIVEWAY OR PEDESTRIAN ONLY	PRIVATE STREET, PARKING LOT, OR FIRE LANE	PUBLIC STREET
CONCRETE	4"	4"	7"
ASPHALT	2 1/2"	3"	6"
PAVERS	2 3/8"	3 1/8"	3 1/8"
ENGINEERING REQ'D	NO	YES	YES
COMPACTION REQ'D	NO	YES	95%

**EXHIBIT 2-8**  
**PERVIOUS PAVEMENT REQUIREMENTS**  
**FOR TOP LIFT DEPTH, ENGINEERING,**  
**AND COMPACTION.**



**PERMEABLE CONCRETE BLOCK**  
**OR "PAVER" SYSTEMS**



**PERVIOUS (OPEN GRADED) CONCRETE**  
**AND ASPHALT SYSTEMS**

- DRAWING NOT TO SCALE -

**STORMWATER MANAGEMENT MANUAL TYPICAL DETAILS**

- Simplified / Presumptive / Performance Design Approach -

**Pervious Pavement**

NUMBER

**SW-110**



Bureau of Environmental Services





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

# TEST PIT LOG

Project: Weatherhill Properties  
 West Linn, Oregon

Project No. 13-2969

Test Pit No. **TP- 1**

Depth (ft)	Pocket Penetrometer (tons/ft <sup>2</sup> )	Sample Type	In-Situ Dry Density (lb/ft <sup>3</sup> )	Moisture Content (%)	Water Bearing Zone	Material Description
1	2.0					3" moderately organic SILT (OL-ML), brown, fine roots throughout, soft, moist (Topsoil)
2	2.5					Medium stiff, clayey SILT (ML), brown, with occasional gravel and cobbles, moist (Undocumented Fill)
3	3.0					
4	3.0					Stiff, clayey SILT (ML), reddish brown, moist (Residual Soil)
5	3.0					
6						Very soft to soft (R1-R2), highly weathered BASALT, gray, moist (Columbia River Basalt)
7						Test pit terminated at 7 feet due to practical refusal on medium hard to hard (R3-R4), moderately weathered BASALT, vesicular, gray and reddish brown, black staining, moist (Columbia River Basalt)
8						Note: No seepage or groundwater encountered.
9						
10						
11						
12						
13						
14						
15						
16						
17						

LEGEND



100 to 1,000 g  
Bag Sample



5 Gal. Bucket  
Bucket Sample



Shelby Tube Sample



Seepage



Water Bearing Zone



Water Level at Abandonment

Date Excavated: 04/13/13

Logged By: BGA

Surface Elevation:



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

# TEST PIT LOG

Project: Weatherhill Properties  
 West Linn, Oregon

Project No. 13-2969

Test Pit No. **TP-2**

Depth (ft)	Pocket Penetrometer (tons/ft <sup>2</sup> )	Sample Type	In-Situ Dry Density (lb/ft <sup>3</sup> )	Moisture Content (%)	Water Bearing Zone	Material Description
1						4" moderately organic SILT (OL-ML), dark brown, fine roots throughout, soft, moist (Topsoil)
2						Medium stiff, gravelly SILT (ML), brown, moist (Undocumented Fill)
3						Extremely soft to very soft (R0-R1), highly weathered BASALT, gray, moist (Columbia River Basalt) Grades to soft
4						Test pit terminated at 3 feet due to practical refusal on medium hard to hard (R3-R4), moderately weathered BASALT, vesicular, gray and reddish brown, black staining, moist (Columbia River Basalt)  Note: No seepage or groundwater encountered.
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						

**LEGEND**



100 to 1,000 g  
Bag Sample



5 Gal. Bucket Sample



Shelby Tube Sample



Seepage



Water Bearing Zone



Water Level at Abandonment

Date Excavated: 04/13/13

Logged By: BGA

Surface Elevation:



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

# TEST PIT LOG

Project: Weatherhill Properties  
 West Linn, Oregon

Project No. 13-2969

Test Pit No. **TP-3**

Depth (ft)	Pocket Penetrometer (tons/ft <sup>2</sup> )	Sample Type	In-Situ Dry Density (lb/ft <sup>3</sup> )	Moisture Content (%)	Water Bearing Zone	Material Description
1						4" moderately organic SILT (OL-ML), dark brown, fine roots throughout, soft, moist (Topsoil)
2						Medium stiff, clayey SILT (ML), reddish brown, with occasional gravel size basalt clasts (Residual Soil)
3						
4						
5						Extremely soft to very soft (R0-R1), highly weathered BASALT, gray, moist (Columbia River Basalt)
6						Test pit terminated at 5.5 feet due to practical refusal on medium hard to hard (R3-R4), moderately weathered BASALT, vesicular, gray and reddish brown, black staining, moist (Columbia River Basalt)  Note: No seepage or groundwater encountered.
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						

**LEGEND**



100 to 1,000 g  
Bag Sample



5 Gal. Bucket  
Bucket Sample



Shelby Tube Sample



Seepage



Water Bearing Zone



Water Level at Abandonment

Date Excavated: 04/13/13

Logged By: BGA

Surface Elevation:



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

# TEST PIT LOG

Project: Weatherhill Properties  
 West Linn, Oregon

Project No. 13-2969

Test Pit No. **TP-4**

Depth (ft)	Pocket Penetrometer (tons/ft <sup>2</sup> )	Sample Type	In-Situ Dry Density (lb/ft <sup>3</sup> )	Moisture Content (%)	Water Bearing Zone	Material Description
1						4" moderately organic SILT (OL-ML), dark brown, fine roots throughout, soft, moist (Topsoil)
2	2.5					Medium stiff, SILT (ML), brown (Undocumented Fill)
3	2.0					Stiff, clayey SILT (ML), reddish brown, with occasional gravel size basalt clasts (Residual Soil)
4	2.0					Extremely soft to very soft (R0-R1), highly weathered BASALT, gray, moist (Columbia River Basalt)
5	>4.5					Grades to soft (R2)
6						[very hard digging below 6 feet]
7						Test pit terminated at 6.5 feet due to practical refusal on medium hard to hard (R3-R4), moderately weathered BASALT, vesicular, gray and reddish brown, black staining, moist (Columbia River Basalt)
8						Note: No seepage or groundwater encountered.
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: 04/13/13

Logged By: BGA

Surface Elevation:



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

# TEST PIT LOG

Project: Weatherhill Properties  
 West Linn, Oregon

Project No. 13-2969

Test Pit No. **TP-5**

Depth (ft)	Pocket Penetrometer (tons/ft <sup>2</sup> )	Sample Type	In-Situ Dry Density (lb/ft <sup>3</sup> )	Moisture Content (%)	Water Bearing Zone	Material Description
1						3" moderately organic SILT (OL-ML), brown, fine roots throughout, soft, moist (Topsoil)
2						Soft to medium stiff, gravelly SILT (ML), brown, moist (Undocumented Fill)
3						[Drain rock and perforated 3" diameter pipe encountered from 3 to 4 feet]
4						
5						
6						Very soft to soft (R1-R2), highly weathered BASALT, gray, moist (Columbia River Basalt)
7						Test pit terminated at 6.5 feet due to practical refusal on medium hard to hard (R3-R4), moderately weathered BASALT, vesicular, gray and reddish brown, black staining, moist (Columbia River Basalt)
8						Note: No seepage or groundwater encountered. Termination depth is 6.5 feet from the top of the fill embankment and 4.5 feet from the bottom of the fill embankment
9						
10						
11						
12						
13						
14						
15						
16						
17						

**LEGEND**



100 to 1,000 g  
Bag Sample



5 Gal Bucket  
Bucket Sample



Shelby Tube Sample



Seepage



Water Bearing Zone



Water Level at Abandonment

Date Excavated: 04/13/13

Logged By: BGA

Surface Elevation:



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

# TEST PIT LOG

Project: Weatherhill Properties  
 West Linn, Oregon

Project No. 13-2969

Test Pit No. **TP-6**

Depth (ft)	Pocket Penetrometer (tons/ft <sup>2</sup> )	Sample Type	In-Situ Dry Density (lb/ft <sup>3</sup> )	Moisture Content (%)	Water Bearing Zone	Material Description
1						4" moderately organic SILT (OL-ML), dark brown, fine roots throughout, soft, moist (Topsoil)
2						Soft, gravelly SILT (ML), brown, moist (Undocumented Fill)
3						Extremely soft to very soft (R0-R1), highly weathered BASALT, gray, moist (Columbia River Basalt)
4						Grades to soft (R2)
5						Grades to very soft (R1)
6						
7						
8						
9						
10						Test pit terminated at 10 feet.
11						Note: No seepage or groundwater encountered.
12						
13						
14						
15						
16						
17						

**LEGEND**



100 to 1,000 g  
Bag Sample



5 Gal. Bucket Sample



Shelby Tube Sample



Seepage



Water Bearing Zone



Water Level at Abandonment

Date Excavated: 04/13/13

Logged By: BGA

Surface Elevation:

July 31, 2013

LF 7, LLC  
c/o John Wyland  
5285 Meadows Road  
Lake Oswego, OR 97045

RE: *Weatherhill Road Subdivision  
Transportation Analysis Letter*

Dear Mr. Wyland,

We have completed our transportation analysis for the proposed Weatherhill Road subdivision in West Linn, Oregon. Based on comments from the city, a Transportation Analysis Letter (TAL) addressing the trip generation and the proposed access configuration is required for this project.

#### LOCATION AND PROJECT DESCRIPTION

The subject property is located on the south side of the roadway at 22882 Weatherhill Road in West Linn, Oregon. The proposed eleven-lot subdivision will take access from a private drive near a bend on Weatherhill Road and will serve access to all eleven lots.

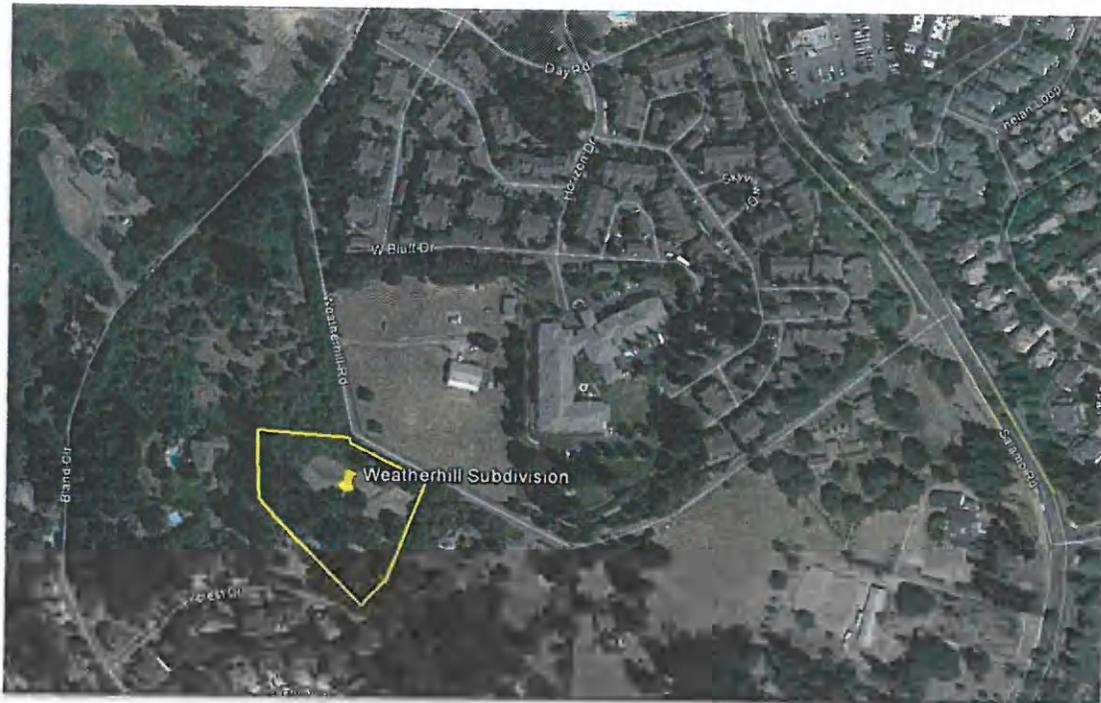
Weatherhill Road is under the jurisdiction of the City of West Linn and is classified as a Local Street. It is a two-lane roadway with a statutory residential speed limit of 25 mph. No roadway improvements such as curbs or sidewalks are provided along the facility. On-street parking would be difficult due to the narrow roadway but is not explicitly prohibited.

Presently, one single-family dwelling exists on the southern edge of the subject property. This home takes access from Weatherhill Road via two driveways. The eastern access will be removed and the private street will intersect Weatherhill Road at the western access location.

Figure 1 shows the vicinity of the site, and a copy of the project site plan is included in the Technical Appendix of this report. Several figures that follow show various views from the project site.



321 SW 4<sup>th</sup> Ave., Suite 400  
Portland, OR 97204  
phone: 503.248.0313  
fax: 503.248.9251  
lancasterengineering.com



**Figure 1:** Aerial view of the site and nearby vicinity (Image from Google Earth).

### **TRIP GENERATION & DISTRIBUTION**

To estimate the trips generated by the construction of ten additional single family homes associated with the proposed subdivision, trip rates from the manual *TRIP GENERATION*, Ninth Edition, published by the Institute of Transportation Engineers (ITE) were used. The land-use code utilized was #210, *Single-Family Detached Housing*, with trip rates based on the number of dwelling units.

The trip generation calculations show that the proposed subdivision with ten additional single-family homes will generate a total of eight additional trips during the morning peak hour with two trips entering the site and six trips exiting the site. During the evening peak hour a total of ten additional trips are to be expected with six trips entering the site and four exiting. A weekday total of 96 trips are expected with half entering and half exiting the site. The following table offers a summary of the trip generation calculations and detailed trip generation calculations are included in the technical appendix of this report.



TRIP GENERATION						
Morning Peak Hour			Evening Peak Hour			Weekday
Entering	Exiting	Total	Entering	Exiting	Total	Total
2	6	8	6	4	10	96

It is expected that the majority of the new trips will travel to and from the east along Weatherhill Road to where it intersects with Salamo Road. With the minimal number of trips associated with the proposed project, none of the surrounding transportation facilities are expected to see a significant increase in traffic or change in operation.



**Figure 2:** View looking northwest from the proposed access on Weatherhill Road, with the northern frontage of the site on the left side of the road.



## SIGHT DISTANCE

Intersection sight distance requirements were taken from *A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS*, published in 2011 by the American Association of State Highway and Transportation Officials (AASHTO). Sight distance requirements are based on the speed of traffic on the major street and the sight distance measurements are based on an eye height of 3.5 feet and an approaching driver's eye height of 3.5 feet above the road, with the driver's eye 15 feet behind the edge of the near-side travel lane<sup>1</sup>.

Based on a statutory speed limit at the subject property, the required intersection sight distance for traffic is 280 feet<sup>2</sup>. Due to vegetation along the roadway on the frontage of the property, sight distance could only be measured seven feet from the edge of the pavement. Sight distance from this location is 250 feet to the northwest before being obstructed by the fence of the property across the street. If the vegetation is cleared and the measurement is made at 15 feet back from the edge of the roadway, sight distance would improve with a better angle looking around the obstruction.

Viewing east, line of sight is currently obstructed by the vegetation on the frontage of the property. If the vegetation was to be removed, sight distance would be at least 302 feet, instead obstructed by vegetation on the neighboring property. This measurement accounts for the driver's eye being 15 feet behind the edge of the pavement.

Since the available sight distance northwest of the proposed access is less than the minimum intersection sight distance for uninterrupted flow along the roadway, a more detailed analysis was conducted to determine what impacts could be expected if the driveway were to operate with the available sight distance.

As stated within AASHTO's *A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS*:

*"Intersection sight distance criteria for stop-controlled intersections are longer than stopping sight distance to allow the intersection to operate smoothly. Minor-road vehicle operators can wait until they can proceed safely without forcing a major-road vehicle to stop."*<sup>3</sup>

*"If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. However, in some cases, a major-road vehicle may need to stop or slow to accommodate the maneuver by a minor-road vehicle. To enhance traffic operations, intersection sight distances that exceed stopping sight distance are desirable along the major road."*<sup>4</sup>

<sup>1</sup> (American Association of State Highway and Transportation Officials (AASHTO) Page 3-14 - 3-15)

<sup>2</sup> (AASHTO Table 9-6 Page 9-38)

<sup>3</sup> (AASHTO Page 9-36)

<sup>4</sup> (AASHTO Page 9-29)



The available stopping sight distance for vehicles approaching from the northwest is adequate for speeds up to 34 mph. The statutory residential speed limit of the roadway is 25 mph. The available stopping sight distance is adequate for vehicles traveling up to 9 mph faster than the speed limit. Accordingly, the available sight distance is adequate for safe operation of the proposed intersection; however, occasional interruptions to the flow of through traffic may be expected as minor street drivers enter the roadway.



**Figure 3:** Northern frontage of the site, looking east on Weatherhill Road.

#### **ACCESS SPACING**

Access spacing was observed at the subject property and compared to the minimum requirements found in West Linn's Transportation System Plan (TSP). According to Table 8-3 in the TSP, private driveways along a local residential street should be spaced 50 feet apart and 100 feet from public intersections. The subject property's proposed driveway location has spacing in excess of these requirements in both directions.

#### **TRAFFIC SIGNAL WARRANTS**

The intersection of Salamo Road at Weatherhill Road was observed in multiple site visits to the subject property. Due to the low volumes on both the major and minor street approaches, signal warrants are not projected to be met with the build-out of the proposed subdivision.

LF 7, LLC  
July 31, 2013  
Page 6 of 6

## CONCLUSIONS

The impact to the existing infrastructure created by the trips generated as a result of the proposed subdivision and eventual construction of ten additional single family residences will be minimal and is not expected to significantly alter the operation of the existing facilities.

No significant safety issues arise due to the development of the subdivision. With the clearing of the vegetation along the property frontage, sufficient stopping sight distance can be made available for eastbound and westbound traffic allowing the proposed driveway to operate safely. No other mitigations are recommended as part of the proposed preliminary subdivision plan.

If you have any questions regarding this report or if you need any further assistance, please don't hesitate to contact us.

With Best Regards,

William Farley, EI  
Transportation Analyst

1e

*TECHNICAL APPENDIX*

2e

## TRIP GENERATION CALCULATIONS

*Land Use:* Single-Family Detached Housing  
*Land Use Code:* 210  
*Variable:* Dwelling Units  
*Variable Value:* 10

### AM PEAK HOUR

*Trip Rate:* 0.75

	Enter	Exit	Total
Directional Distribution	25%	75%	
Trip Ends	2	6	8

### PM PEAK HOUR

*Trip Rate:* 1

	Enter	Exit	Total
Directional Distribution	63%	37%	
Trip Ends	6	4	10

### WEEKDAY

*Trip Rate:* 9.52

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	48	48	96

### SATURDAY

*Trip Rate:* 9.91

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	50	50	100

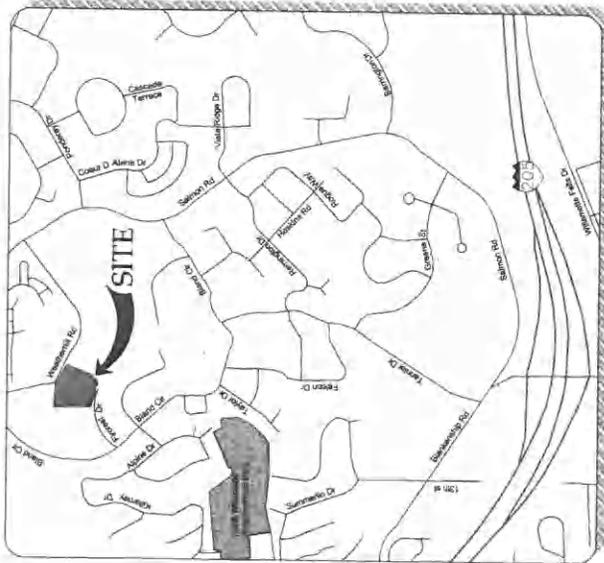
Source: TRIP GENERATION, Ninth Edition

# LAND USE DOCUMENTS

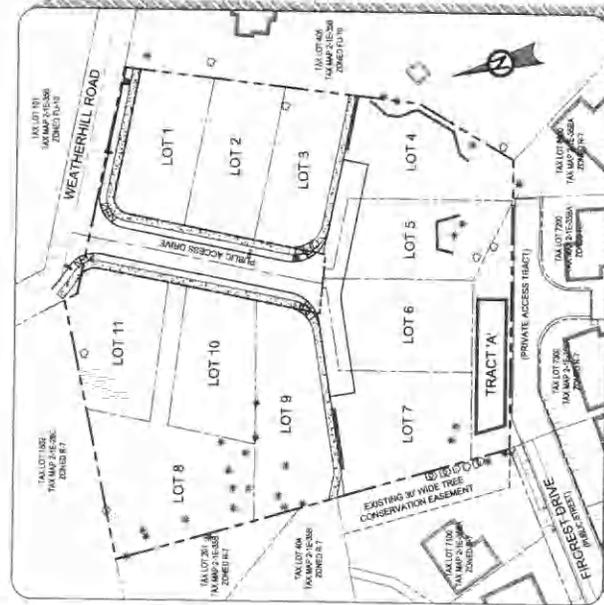
FOR

## WEATHERHILL SUBDIVISION

PREPARED FOR  
LF 7, LLC



VICINITY MAP  
NOT TO SCALE



SITE MAP  
Scale: 1 inch = 30 feet

TAX LOTS 200, 301, AND 402 LOCATED IN THE  
NW 1/4 OF SECTION 35, T.2S., R.1E., W.M.  
CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

**PROJECT TEAM**

**OWNER/APPLICANT**  
LF 7, LLC  
520 MEADOWS ROAD, SUITE #111  
WEST LINN, OREGON 97141  
CONTACT: JAHMYLAN  
PHONE: (503) 865-4400  
EMAIL: jahmylan@lf7.com

**PLANNING CONSULTANT**  
3J CONSULTING, INC.  
1044 SW CANTON ROAD, SUITE 200  
PORTLAND, OREGON 97201  
PHONE: (503) 253-1111  
FAX: (503) 253-1112  
EMAIL: info@3jconsulting.com

**GEOTECHNICAL CONSULTANT**  
M&S ENGINEERING, INC.  
1400 NE INTERNATIONAL AVE, SUITE 100  
PORTLAND, OREGON 97232  
PHONE: (503) 253-1111  
FAX: (503) 253-1112  
EMAIL: info@m&s-engineering.com

**LAND SURVEYOR**  
SOPHUS SURVEYING  
4701 NE INTERNATIONAL AVE, SUITE 100  
PORTLAND, OREGON 97232  
CONTACT: DON KILMUCK PLS  
PHONE: (503) 933-6000  
EMAIL: don@kilduck.com

**CIVIL ENGINEER**  
3J CONSULTING, INC.  
1044 SW CANTON ROAD, SUITE 200  
PORTLAND, OREGON 97201  
PHONE: (503) 253-1111  
FAX: (503) 253-1112  
EMAIL: info@3jconsulting.com

**LAND SURVEYOR**  
SOPHUS SURVEYING  
4701 NE INTERNATIONAL AVE, SUITE 100  
PORTLAND, OREGON 97232  
CONTACT: DON KILMUCK PLS  
PHONE: (503) 933-6000  
EMAIL: don@kilduck.com

**SITE INFORMATION**

**SITE ADDRESS**  
WEATHERHILL ROAD  
WEST LINN, OR 97130

**TAX LOT(S)**  
20 (SHEET 20), 301 (402)

**FLOOD HAZARD**  
MAP NUMBER 410002020G ZONE F (UNSHADDED)

**JURISDICTION**  
CITY OF WEST LINN

**ZONING**  
FV-10

**UTILITIES & SERVICES**

WATER, STORM, SEWER  
CITY OF WEST LINN

POWER  
PSE

GAS  
NORTHWEST NATURAL

CABLE  
COMCAST

FIRE  
TUALATIN VALLEY FIRE & RESCUE

POLICE, SCHOOLS, ROADS, PARKS  
CITY OF WEST LINN

**SHEET INDEX**

C00	COVER SHEET
C10	EXISTING CONDITIONS PLAN
C11	DEMOLITION PLAN
C12	TREE PROTECTION AND REMOVAL PLAN
C13	TREE PROTECTION AND REMOVAL DETAILS
C14	SCAPE ARCHITECTURE PLAN
C21	IRrigATION PLAN
C22	IRrigATION AND EROSION CONTROL PLAN
C31	COMPOSITE UTILITY PLAN
C32	STREET LIGHTING PLAN
L10	IRrigATION PLANTING PLAN

LAND USE REGION SUMMARY  
DATE: 08/01/13

COVER SHEET  
WEATHERHILL SUBDIVISION  
WEST LINN, OR  
LF 7, LLC



3J CONSULTING, INC.  
CIVIL ENGINEERING  
LAND SURVEYING  
WATER RESOURCES  
LAND USE PLANNING  
1044 SW CANTON ROAD, SUITE 200  
PORTLAND, OREGON 97201  
PHONE & FAX: (503) 253-1111

COVER SHEET  
SHEET NUMBER  
**C0.0**







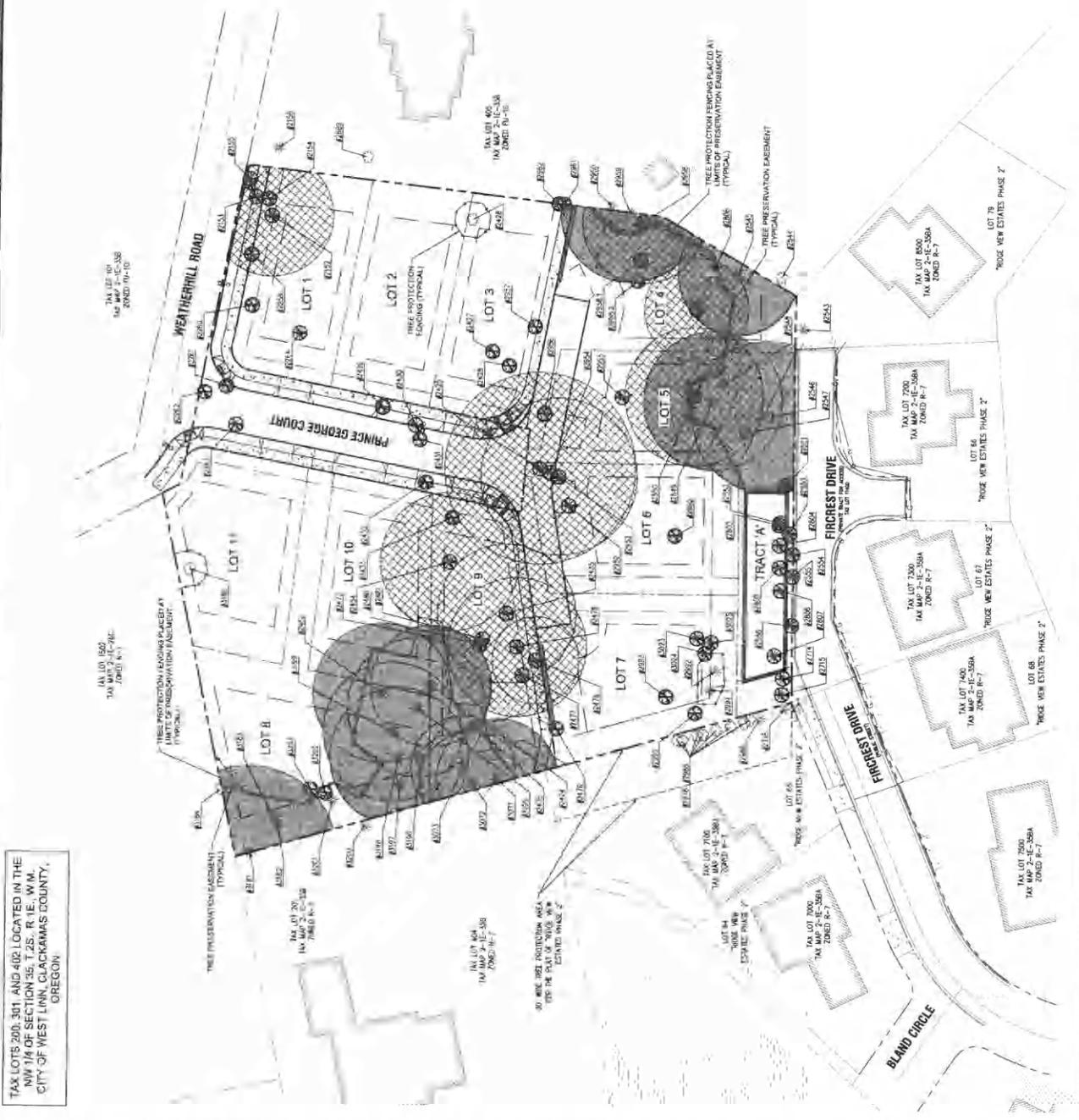
- LEGEND**
- EXISTING DECIDUOUS TREE
  - EXISTING CONIFEROUS TREE
  - TREE POINT, TYPE, CALIPER AND DBH IN IN.
  - SIGNIFICANT TREE CANOPY TO REMAIN (DBH IN. + 10 FT)
  - ▨ SIGNIFICANT TREE CANOPY TO BE REMOVED (DBH IN. + 10 FT)
  - TREE TO BE REMOVED
  - ⊕ TREE PROTECTION FENCING
  - ⊖ TREE PRESERVATION EASEMENT

**GENERAL TREE INVENTORY STATISTICS**

TOTAL PROPERTY AREA	137,868 SQ. FT. = 3.15 AC.
TOTAL TREE INVENTORY (PROJECT BOUNDARY)	81 trees
TOTAL TREES RETAINED	77 trees
TOTAL TREES REMOVED	4 trees
TOTAL TREE CALIPER INCHES	1,967 inches
TOTAL CALIPER INCHES RETAINED	252 inches
TOTAL CALIPER INCHES REMOVED	1,715 inches

**SIGNIFICANT TREE STATISTICS**

SIGNIFICANT TREE INVENTORY:	29 trees
SIGNIFICANT TREES RETAINED:	13 trees
SIGNIFICANT TREES REMOVED:	16 trees
SIGNIFICANT TREE CALIPER INCHES:	844 inches
SIGNIFICANT CALIPER INCHES RETAINED:	490 inches
SIGNIFICANT CALIPER INCHES REMOVED:	354 inches
SIGNIFICANT TREE CANOPY COVERAGE:	48,873 SQ. FT.
SIGNIFICANT TREE CANOPY COVERAGE:	24,133 SQ. FT.
SIGNIFICANT TREE CANOPY REMOVED:	24,740 SQ. FT.
SIGNIFICANT TREE CANOPY REMOVED:	18,193 SQ. FT.
TREE PRESERVATION EASEMENT AREA REQUIRED DUE TO ROW IMPROVEMENTS:	9,033 SQ. FT.
TREE PRESERVATION EASEMENT AREA REQUIRED (20% OF EXISTING CANOPY):	13,873 SQ. FT.



TAX LOTS 200, 301, AND 402 LOCATED IN THE NW 1/4 OF SECTION 35, T.2S., R.1E., W.M. CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

SURVEY POINT NUMBER	TREE SPECIES	DIAMETER @ 4.5 FT	HEIGHT	PROPOSED ACTION	REASON FOR ACTION	REMARKS
2152	DOUGLASS FIR	18"	28'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2153	DOUGLASS FIR	18"	28'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2154	NORWAY SPRUCE	18"	28'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2155	MAHOGNE	18"	28'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2156	ADJACENT	8"	15'	SAVE	NO SIGNIFICANT IMPROVEMENTS	
2159	ADJACENT	8"	15'	SAVE	NO SIGNIFICANT IMPROVEMENTS	
2259	BIGLEAF MAPLE	15"	20'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2260	BIGLEAF MAPLE	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2261	OREGON WHITE OAK	8"	15'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2262	OREGON WHITE OAK	8"	15'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2263	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2264	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2265	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2266	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2267	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2268	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2269	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2270	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2271	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2272	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2273	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2274	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2275	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2276	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2277	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2278	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2279	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2280	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2281	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2282	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2283	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2284	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2285	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2286	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2287	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2288	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2289	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2290	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2291	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2292	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2293	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2294	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2295	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2296	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2297	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2298	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2299	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2300	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	

SURVEY POINT NUMBER	TREE SPECIES	DIAMETER @ 4.5 FT	HEIGHT	PROPOSED ACTION	REASON FOR ACTION	REMARKS
2301	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2302	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2303	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2304	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2305	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2306	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2307	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2308	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2309	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2310	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2311	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2312	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2313	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2314	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2315	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2316	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2317	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2318	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2319	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2320	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2321	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2322	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2323	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2324	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2325	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2326	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2327	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2328	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2329	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2330	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2331	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2332	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2333	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2334	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2335	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2336	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2337	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2338	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2339	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2340	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2341	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2342	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2343	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2344	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2345	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2346	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2347	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2348	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2349	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	
2350	ADJACENT	20"	25'	REMOVE	NO SIGNIFICANT IMPROVEMENTS	

WEATHERHILL SUBDIVISION WEST LINN, OR  
TREE PROTECTION AND REMOVAL DETAILS  
L7, LLC

3J CONSULTING, INC.  
3100 S.W. CANTON ROAD SUITE 201 BEAVERTON, OREGON  
PHONE 503.638.1111 FAX 503.638.1112  
LAND USE # 11118  
TAX LOTS # 12888-201-42  
DESIGNED BY: CJF  
CHECKED BY: BFG

SUBMIT TITLE SHEET NUMBER  
TREE PLAN DETAIL  
C1.3

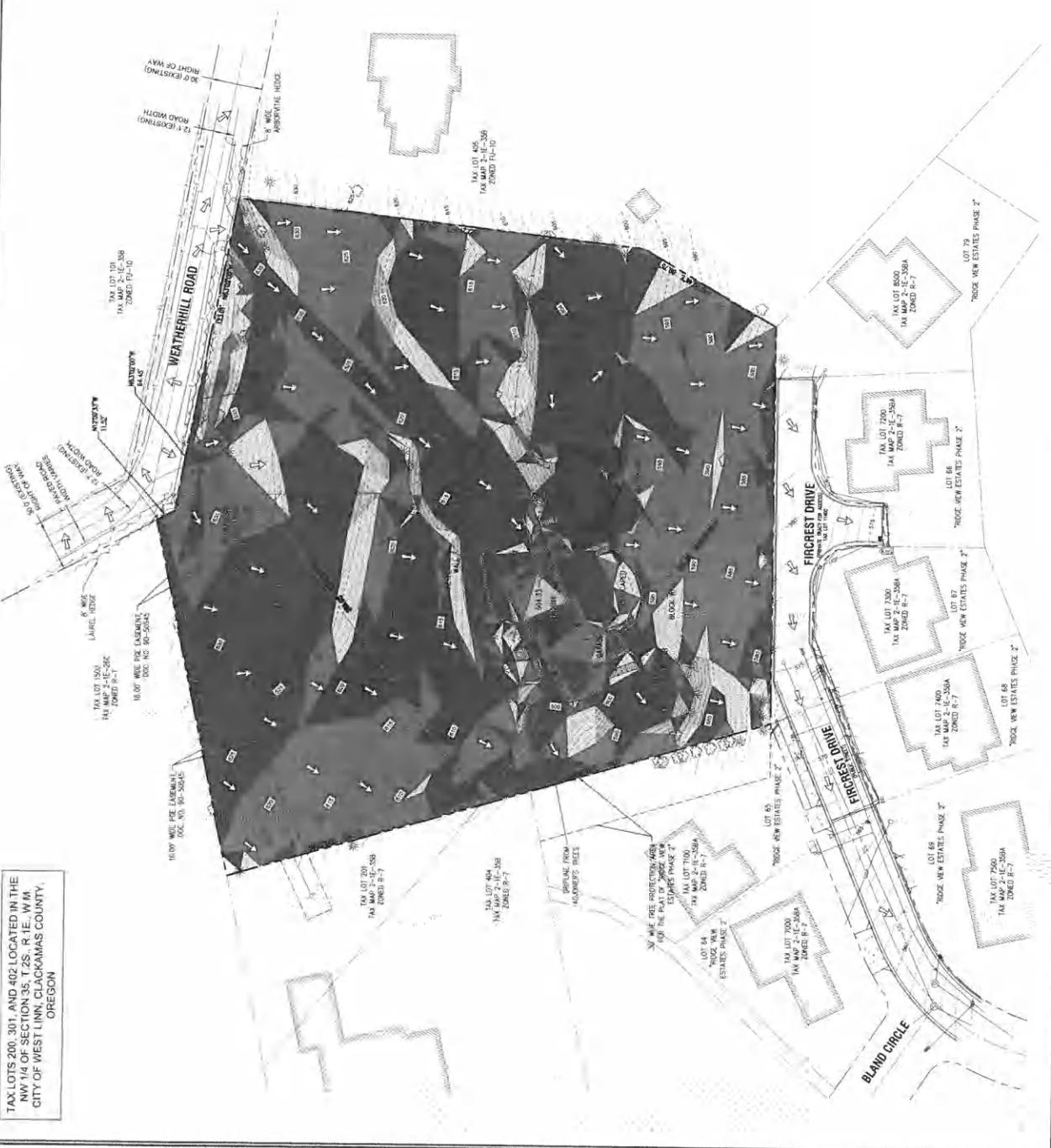


**LEGEND**

- BOUNDARY LINE
- 5 FOOT CONTOUR
- EXISTING TREES
- RUNOFF FLOW DIRECTION

**SITE SLOPE ANALYSIS TABLE**

Minimum Slope	Maximum Slope	Area (sf)	Cost
0%	15%	52,779	█
16%	20%	42,710	█
20%	30%	5,510	█
30%	50%	4,664	█
>50%	—	2,271	█



TAX LOTS 200, 301, AND 402 LOCATED IN THE NW 1/4 OF SECTION 35, T2S, R1E, W1A, CITY OF WEST LINN, CLATSOP COUNTY, OREGON

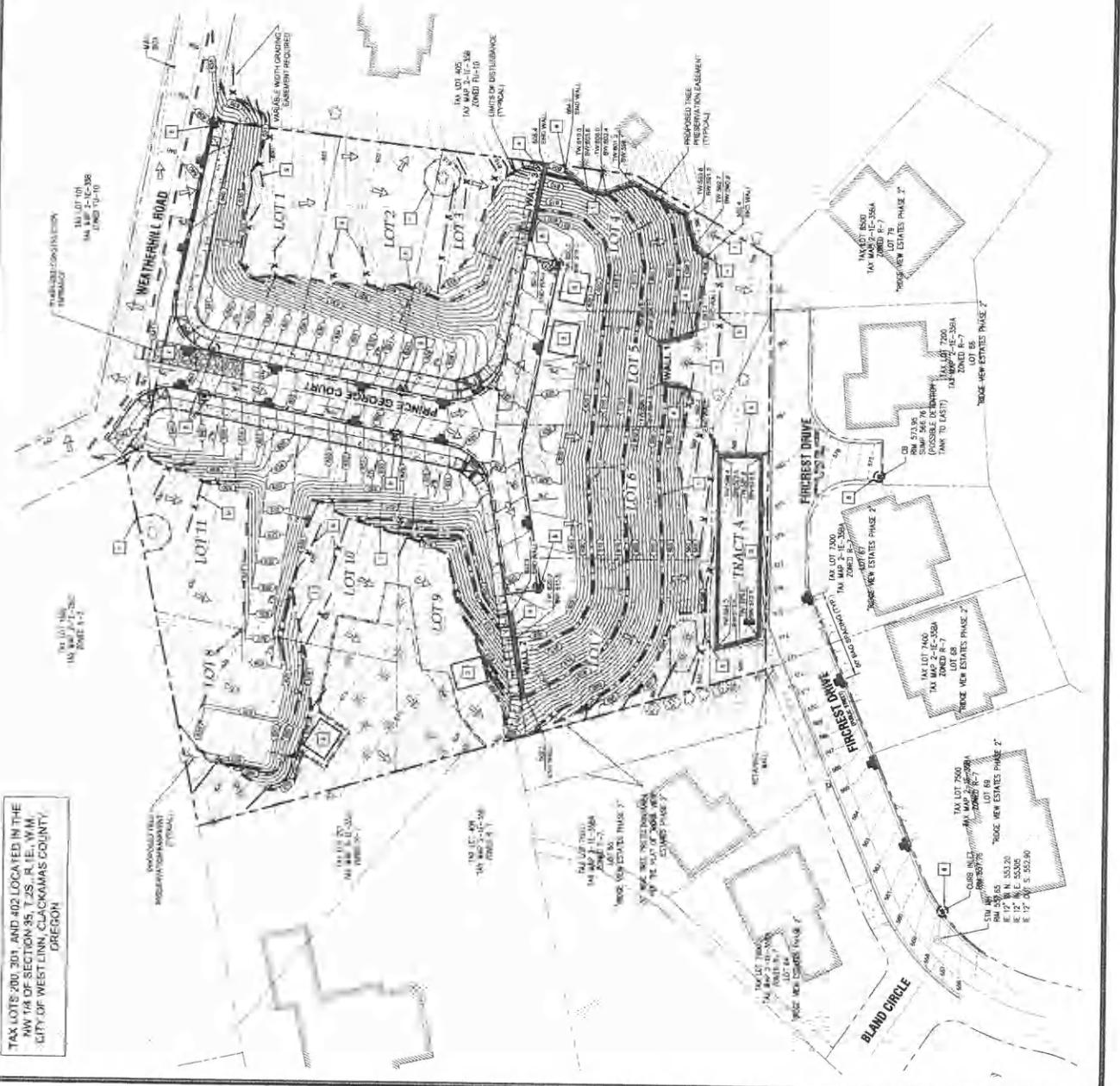






J3 CONSULTING, INC. CIVIL ENGINEERING LAND USE PLANNING

PROJECT TITLE: GRADING / ESCPT SHEET NUMBER: C2.2



TAX LOTS 700, 701 AND 402 LOCATED IN THE NW 1/4 SECTION 35, T2S, R1E, W1M, CITY OF WEST LINN, CLATSOP COUNTY, OREGON

**LEGEND**

- BOUNDARY LINE
- RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING EASEMENT LINE
- EXISTING LOT LINE
- EXISTING CURB AND GUTTER
- EXISTING SIDE WALK
- EXISTING LIGHT POLL
- EXISTING FIRE HYDRANT
- EXISTING TREE TO REMAIN
- EXISTING LOT CENTERLINE
- EXISTING UTILITY LOCATION
- PROPOSED LOT LINE
- PROPOSED CURB AND GUTTER
- PROPOSED SIDEWALK
- PROPOSED CONCRETE
- PROPOSED MAIN GARDEN
- PROPOSED RETAINING WALL
- PROPOSED 8 FT COUNTER
- PROPOSED 4 FT INLET COUNTER
- EROSION CONTROL SILT FENCING (BLACK)
- EROSION CONTROL TESSIE STRAW WATTLE
- EROSION CONTROL BIO CHECK DAM
- EROSION CONTROL CONSTRUCTION ENTRANCE
- LIMITS OF DISTURBANCE
- SURFACE RUN-OFF FLOW ARROW
- EROSION CONTROL INLET PROTECTION
- TREE PROTECTION FENCING

**SITE GRADING INFORMATION**

FINISHED FLOOR	755.00'
NEAR FLOOR FINISH	755.00'
STRONGEST	755.00'
MINIMUM CUT DEPTH	1.00 FT
MAXIMUM FILL DEPTH	2.00 FT
MAXIMUM PROPOSED SLOPE	2:1 (H:V)
TOTAL AREA OF DISTURBANCE	0.24 ACRES

\* BASE MET. RET. ASSESSMENT (STOCKPILE ON SITE, GUTTER BUILDING ENVELOPE)

- GRADING KEY NOTES**
- 1 PLACE TREE PROTECTION FENCING AT LIMITS OF GRADING AND/OR CONSTRUCTION WHERE SHOWN.
  - 2 CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AT LOCATION SHOWN.
  - 3 CONSTRUCT STONEMATERIAL AND QUANTITY AS NOTED.
  - 4 CONSTRUCT MODULAR BLOCK RETAINING WALL HEIGHT AS NOTED.
  - 5 CONSTRUCT STONEMATERIAL FACILITY CART RAMP CONCRETE RETAINING WALL HEIGHT AS NOTED.
  - 6 PLACE BIOCHECK DAM FOR EROSION CONTROL ADJACENT TO ALL NEW CONCRETE WORK WITHIN RIGHT OF WAY.
  - 7 INSTALL STRAW WATTLE.
  - 8 INSTALL INLET PROTECTION.
  - 9 PLACE RET FENCING AT LIMITS OF GRADING AND CONSTRUCTION WHERE SHOWN.

**GRADING GENERAL NOTES:**

- 1 ALL GRADING ACTIVITIES SHALL COMPLY WITH THE INFORMATION BUILDING CODE AND THE OREGON SPECIALLY CODE AMENDMENTS, INCLUDING APPENDIX B.

Keep what's below. Call before you dig.







- LEGEND**
- SUBDIVISION BOUNDARY LINE
  - EXISTING DRAINAGE WAY
  - EXISTING PROPERTY LINE
  - PROPOSED RIGHT-OF-WAY
  - PROPOSED LOT LINE
  - PROPOSED SETBACK LINE
  - PROPOSED SETBACK LINE
  - TREE PROTECTION FENCING
  - PROPOSED ASPHALT PAVING
  - PROPOSED CONCRETE PAVING
  - PROPOSED TREE PRESERVATION EASEMENT

**PLANT MATERIALS SCHEDULE**

COMMON NAME	BOTANICAL NAME	SIZE	SPACING	QUANTITY
SCARLET OAK	QUERCUS COCCINIA	2" CAL	27" MN	6
VINE MAPLE	ACER CIRCINATUM	8 1/2" CAL	10" MN	28
WESTERN RED CEDAR	THUJA PLICATA	2" CAL	17" MN	53

TOTAL PROPOSED TREE COUNT: 87  
 TOTAL MITIGATION REQUIREMENT: 110' (CALCULATED MEASUREMENT)

**GENERAL LANDSCAPING NOTES**

- LANDSCAPE PLANTING SHALL CONFORM TO THE STANDARDS ESTABLISHED UNDER THE CITY OF WEST LINN LANDSCAPE DESIGN ORDINANCE.
- ALL PLANT BEDS SHALL HAVE A 3" DEPTH OF BARK MULCH.
- PLANTING SHALL BE DONE IN ACCORDANCE WITH THE AMERICAN NURSERYMAN'S ASSOCIATION STANDARDS.
- PLANTING SHALL BE DONE WITH WRITTEN APPROVAL FOR ALL PLANT MATERIAL SUBSTITUTIONS WITHOUT PRIOR WRITTEN APPROVAL. PLANT DO NOT COMPLY WITH THE STANDARDS SHALL BE REPLACED WITH THE SAME SPECIES AND SIZE. IT IS THE RESPONSIBILITY OF THE OWNER TO OBTAIN THE NECESSARY PERMITS AND TO ENSURE THAT ALL PLANT MATERIALS ARE IN COMPLIANCE WITH THESE DRAWINGS.

