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

STAFF REPORT
FOR THE PLANNING COMMISSION

FILE NUMBER:	SUB-17-01
HEARING DATE:	May 17, 2017
REQUEST:	6-lot Subdivision at 4096 Cornwall Street
APPROVAL CRITERIA:	Community Development Code (CDC) Chapter 11, Single-Family Residential Detached, R-10; Chapter 28, Willamette and Tualatin River Protection; Chapter 48, Access, Egress and Circulation; Chapter 54, Landscaping; Chapter 55, Design Review; Chapter 85 Land Division General Provisions; Chapter 92, Required Improvements.
STAFF REPORT PREPARED BY:	Jennifer Arnold, Associate Planner

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

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GENERAL INFORMATION

OWNER/ Applicant:	Icon Construction & Development, LLC 1980 Willamette Falls Drive STE: 200 West Linn, OR 97068
CONSULTANT:	Rick Givens, Planning Consultant 18680 Sunblaze Drive Oregon City, OR 97045
SITE LOCATION:	4096 Cornwall Street
LEGAL DESCRIPTION:	Clackamas County Assessor's Map 21E36BA06300
SITE SIZE:	2.17 acres
ZONING:	R-10, Single-Family Residential Detached. (10,000 square foot minimum lot size for single family detached homes)
COMP PLAN DESIGNATION:	Low-Density Residential
120-DAY PERIOD:	This application became complete on April 10, 2017. The 120-day maximum application-processing period ends on August 18, 2017.
PUBLIC NOTICE:	Public notice was mailed to the all neighborhood associations and affected property owners on April 27, 2017. The property was posted with a notice sign on May 3, 2017. The notice was published in the West Linn Tidings on May 4, 2017. The notice requirements of CDC Chapter 99 have been met. In addition, the application was posted on the City's website.

EXECUTIVE SUMMARY

The applicant seeks approval of an application for Subdivision Preliminary Plat for the development of 6 residential lots (Willow Ridge Subdivision) on the 2.17 acre site. All lots will exceed 10,000 square feet in size per the underlying R-10 zone. The property is located in the Sunset neighborhood on the south end of Cornwall Street and the east end of Landis Street. The existing single-family home will be removed. The applicant is proposing to extend Landis Street to Cornwall Street. All lots will take access directly off Landis Street.

The property slopes to the south and all stormwater lines are proposed to run along the southern boundary of the property to an existing facility on Fairhaven Drive to the southeast of the proposed site. Grading will be required for the public street improvements, as well as for the stormwater improvements. The applicant's Arborist Report and Tree Preservation Plan identified 40 significant trees and proposes to retain 13 (42%) during site development. Mitigation will be provided for the removed significant trees.

The applicable approval criteria include:

- Chapter 11, Single-Family Residential Detached and Attached, R-10 zone;
- Chapter 28, Willamette and Tualatin River Protection;
- Chapter 48, Access, Egress and Circulation
- Chapter 54, Landscaping;
- Chapter 55, Design Review;
- Chapter 85, Land Division General Provisions;
- Chapter 92, Required Improvements

Site Conditions: The site is approximately 398.9 feet wide and 232.07 feet deep. From the north property line, the existing site slopes to the south to a maximum of 20+ percent. There are 40 significant trees located over most of the property. There is a single family home in the northeast corner of the property proposed to be removed.

Public comments:

Tualatin Valley Fire and Rescue submitted comments dated March 3, 2017 (see Exhibit PC-4).

5 public comments received prior to the publication of the Staff Report can be found in Exhibit PC-5.

RECOMMENDATION

Staff recommends approval of application SUB-17-01, based on: 1) the findings submitted by the applicant, which are incorporated by this reference, 2) supplementary staff findings included in the Addendum below, and 3) the addition of conditions of approval below. With these findings, the applicable approval criteria are met. The conditions are as follows:

1. **Site Plan. With the exception of modifications required by these conditions, the project shall conform to the Tentative Subdivision Plat stamped received February 21, 2017.**
2. **Engineering Standards. All public improvements and facilities associated with public improvements including street improvements, utilities, grading, onsite stormwater**

design, street lighting, easements, and easement locations are subject to the City Engineer's review, modification, and approval. These must be designed, constructed, and completed prior to final plat approval. (See Staff Findings 7, 16, 17, 26, 46, 48, 49, 72, 73, & 75)

3. **Street Improvements. The applicant shall construct full street improvements along the extension of Landis Street to Cornwall Street including curb, planter strip and sidewalks, and street trees. Dedication of this right-of-way is required on the face of the plat. In addition, the applicant shall dedicate on the face of the plat additional ROW and complete half street improvements including curb, planter strip and sidewalks, and street trees for the portion of Cornwall Street abutting the subject property. Alternatively, the applicant may apply for a waiver of street improvements and pay a fee in lieu for those improvements along Cornwall Street. All improvements must be installed or fee in lieu must be paid prior to the approval of the final plat. (See Staff Findings 9, 10, 31, 32, 33, 39, 40, 48, 49, 50, 67, & 72)**
4. **No Parking Signs. The applicant shall install signs reading "No Parking – Fire Lane" on both sides of the shared access drive. The signs shall be 12 inches wide by 18 inches high and shall have red letters on a white reflective background. The signs shall be installed with a clear space above grade level of 7 feet.**
5. **Fire Flow. The applicant shall perform a fire flow test and submit a letter from Tualatin Valley Fire and Rescue showing adequate fire flow is present. (See Staff Findings 61)**
6. **Tree Protection. The applicant shall coordinate with the City's Arborist to obtain any necessary tree permits for the significant trees proposed to be removed. The applicant also must get approval from the City's Arborist that the tree protection is correctly in place. (See Staff Finding 25)**
7. **Public Utilities. The applicant shall upgrade the water main in Cornwall Street to serve this proposed subdivision. The upgrade and paving mitigation shall be approved by the City Engineer. (See Staff Finding 61 & 63)**
8. **Street Lights. The applicant shall install street lights on Landis Street according to City of West Linn Public Works Standards and Portland General Electric Standards. (See Staff Finding 66)**
9. **Access. All access points for the proposed subdivision shall be via the extension of Landis Street. (See Staff Finding 15, 18, 20)**
10. **Building Sites. All building sites exceeding 25% slopes (proposed Lots 3, 4, 5, & 6) shall require geotechnical conformation stating the proposed lots are buildable prior to the final plat approval. Additional analysis at the time of a building permit application as it relates to Type I and Type II lands may be required by the City's Building Official. (See Staff Finding 61)**
11. **Public Utility Easement. The applicant shall record, on the face of the plat, an 8' wide Public Utility Easement per Engineering Standards on each proposed lot frontage along Landis Street. (See Staff Finding 63 & 64)**

ADDENDUM

PLANNING COMMISSION STAFF REPORT

May 17, 2017

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

I. CHAPTER 11, SINGLE-FAMILY RESIDENTIAL DETACHED, R-10

11.030 PERMITTED USES

The following uses are permitted outright in this zone.

1. Single-family detached residential unit.

(...)

11.070 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:

1. The minimum lot size shall be 10,000 square feet for a single-family detached unit.

(...)

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

3. The average minimum lot width shall be 50 feet.

4. 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 1: The only use proposed on site is single-family detached residential units. All other standards above are also met or exceeded by each lot. Staff determines the criterion is met.

CHAPTER 28, WILLAMETTE AND TUALATIN RIVER PROTECTION

28.030 APPLICABILITY

A. The Willamette and Tualatin River Protection Area is an overlay zone. The zone boundaries are identified on the City's zoning map, and include:

1. All land within the City of West Linn's Willamette River Greenway Area.

2. All land within 200 feet of the ordinary low water mark of the Tualatin River, and all land within the 100-year floodplain of the Tualatin River.

3. In addition to the Willamette Greenway and Tualatin River Protection Area boundaries, this chapter also relies on the HCA Map to delineate where development should or should not occur. Specifically, the intent is to keep out of, or minimize disturbance of, the habitat conservation areas (HCAs). Therefore, if all, or any part, of a lot or parcel is in the Willamette Greenway and Tualatin River Protection Area boundaries, and there are HCAs on the lot or parcel, a Willamette and Tualatin River Protection Area permit shall be required unless the development proposal is exempt per CDC 28.040.

(...)

Staff Finding 2: See Staff Finding 65. These criteria are satisfied.

CHAPTER 48, ACCESS CONTROL

48.025 ACCESS CONTROL
B. Access Control Standards
1. Traffic impact analysis requirements. The City or other agency with access jurisdiction may require a traffic study prepared by a qualified professional to determine access, circulation and other transportation requirements. (See also CDC 55.125, Traffic Impact Analysis.)

Staff Finding 3: No traffic impact analysis (TIA) is required since none of the criteria of 85.170(B) (2) are met. For example, an Average Daily Trip count (ADT) of 250 is required before a TIA is needed. The addition of 5 additional/new homes should only generate an ADT of 50 new trips per day according to the Institute of Traffic Engineers (ITE) trip generation tables at 9.57 trips per household. This criterion is met.

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

Staff Finding 4: Access to this site will be via the extension of Landis Street. All proposed driveways will be reviewed by the City Engineer at the time of building permit review. This criterion is met.

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

a) Option 1. Access is from an existing or proposed alley or mid-block lane. If a property has access to an alley or lane, direct access to a public street is not permitted.
b) Option 2. Access is from a private street or driveway connected to an adjoining property that has direct access to a public street (i.e., "shared driveway"). A public access easement covering the driveway shall be recorded in this case to assure access to the closest public street for all users of the private street/drive.
c) Option 3. Access is from a public street adjacent to the development lot or parcel. If practicable, the owner/developer may be required to close or consolidate an existing access point as a condition of approving a new access. Street accesses shall comply with the access spacing standards in subsection (B) (6) of this section.

Staff Finding 5: The applicant proposes access to all lots by use of Option 3. All access points will be made from within the subdivision directly from the extension of Landis Street per Condition of Approval 9. No shared driveways or private roads are proposed. These criteria are met.

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

Staff Finding 6: This subdivision does not front on an arterial. There are no double frontage lots proposed. These criteria do not apply.

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

Staff Finding 7: The proposal will create a new intersections at Cornwall Street and Landis Street. The intersection meets the City's engineering standards. No other intersections are proposed and the nearest intersection (Cornwall St. and Sunset Ave.) is over 500 feet away. These criteria are met.

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

Staff Finding 8: Staff incorporates applicant findings. These criteria are met.

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

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

Staff Finding 9: The applicant's proposal completes the street connection of Landis Street to Cornwall Street. The proposed block does not exceed 800 feet. This criterion is met.

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

Staff Finding 10: All street designs and improvements shall be consistent with the provisions of CDC Chapters 92 and 85, and the West Linn Transportation System Plan. This criterion is met.

48.030 MINIMUM VEHICULAR REQUIREMENTS FOR RESIDENTIAL USES
A. Direct individual access from single-family dwellings and duplex lots to an arterial street (...)
B. When any portion of any house is less than 150 feet from the adjacent right-of-way, access to the home is as follows:
1. One single-family residence, including residences with an accessory dwelling unit as defined in CDC 02.030, shall provide 10 feet of unobstructed horizontal clearance. Dual-track or other driveway designs that minimize the total area of impervious driveway surface are encouraged.
2. Two to four single-family residential homes equals a 14- to 20-foot-wide paved or all-weather surface. Width shall depend upon adequacy of line of sight and number of homes.

Staff Finding 11: Staff incorporates applicant findings. These criteria are met.

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

Staff Finding 12: The applicant shall comply with maximum driveway grades during construction of the homes. This criterion is met.

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

Staff Finding 13: Staff incorporates applicant findings. These criteria are met.

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

1. A turnaround may be required as prescribed by the Fire Chief.
2. Minimum vertical clearance for the driveway shall be 13 feet, six inches.
3. A minimum centerline turning radius of 45 feet is required unless waived by the Fire Chief.
4. There shall be sufficient horizontal clearance on either side of the driveway so that the total horizontal clearance is 20 feet

Staff Finding 14: The applicant does not propose any portions of the homes to be further than 150 feet from the right-of-way. Each proposed lot will have a driveway and the distances of the proposed homes to the right-of-way will be verified at the time of building permit review. These criteria are met.

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

Staff Finding 15: The applicant proposes all lots to have direct access from the extension of Landis Street. This criterion is met.

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

Staff Finding 16: The applicant proposal is for single-family homes with no gated access points. No arterial roadways are proposed with this application. All driveways shall meet the engineering standards of Condition of Approval number 2. These criteria are met.

48.060 WIDTH AND LOCATION OF CURB CUTS AND ACCESS SEPARATION REQUIREMENTS
A. Minimum curb cut width shall be 16 feet.

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

Staff Finding 17: All driveways and curb cuts shall meet the engineering standards of Condition of Approval number 2. These criteria are met.

C. No curb cuts shall be allowed any closer to an intersecting street right-of-way line than the following:
1. On an arterial when intersected by another arterial, 150 feet.
(...)
6. On a local street when intersecting any other street, 35 feet.

Staff Finding 18: The applicant proposes curb cuts on Landis Street, a local street. All lots will have direct access to the right of way of Landis Street. All driveway locations will be reviewed for compliance with engineering standards at the time of building permit review. See Staff Finding 17. These criteria are met.

D. There shall be a minimum distance between any two adjacent curb cuts on the same side of a public street, except for one-way entrances and exits, as follows:
1. On an arterial street, 150 feet.
2. On a collector street, 75 feet.
3. Between any two curb cuts on the same lot or parcel on a local street, 30 feet.

(...)

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

Staff Finding 19: See Staff Finding 17-18. These criteria are met.

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

Staff Finding 20: The applicant proposes to provide access to Landis Street for each lot. No shared driveways are proposed. This criterion is met.

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

Staff Finding 21: The City Engineer has verified compliance with Chapter 48 requirements. This criterion is met.

48.070 PLANNING DIRECTOR'S AUTHORITY TO RESTRICT ACCESS APPEAL PROVISIONS

(...)

48.080 BICYCLE AND PEDESTRIAN CIRCULATION

(...)

Staff Finding 22: Staff incorporates applicant findings. These criteria are met.

CHAPTER 54, LANDSCAPING

Staff Finding 23: Staff incorporates applicant findings. See applicant submitted plans sheet ½ "Tentative Plan" for landscaping detail. These criteria are met.

CHAPTER 55, DESIGN REVIEW

55.100 APPROVAL STANDARDS – CLASS II DESIGN REVIEW

B. Relationship to the natural and physical environment.

1. The buildings and other site elements (...)

2. All heritage trees (...)

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

Staff Finding 24: Staff incorporates applicant findings. These criteria are met.

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

Staff Finding 25: There are no heritage trees on the subject property. The applicant has provided an Arborist Report that identifies 40 significant trees, on the site. The City Arborist concurred with the Report. The applicant proposes to retain 13 (32.5%) of the significant

trees. The applicant proposal used a careful layout of the development to avoid significant trees and still meet minimum density requirements. The applicant shall protect the retained significant trees, not already protected by required setbacks, through coordination with the City's Arborist per Condition of Approval 8. This criterion is met.

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

Staff Finding 26: Landis Street is currently stubbed out to the subject property. In order to comply with the Transportation System Plan, the extension of Landis Street is required. The proposed street extension meets the engineering standards of Condition of Approval 2. This criterion is met.

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

Staff Finding 27: The subject property is 2.17 acres (94,808 sq. ft.) and contains 20,587 square feet of Type I or II lands. The subject property contains 55,153 square feet of Type III and IV lands. 19,068 square feet of the property is proposed right of way for the extension of Landis Street. See page 12 of the applicant's submitted narrative for detailed density calculations. The applicant finds 70 percent density is met at 5.51 units, and the proposal is for 6 residential units. This criterion is met.

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

Staff Finding 28: Both Landis Street and Cornwall Street are designated local streets. This criterion does not apply.

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

Staff Finding 29: The applicant proposes to retain 13 (32.5%) of the significant trees. The applicant proposal used a careful layout of the development to avoid significant trees and still meet minimum density requirements. See the applicant's submitted arborist report. No proposed protected portions of the site will be impacted by grading. No mitigation is required for the removal of significant trees. This criterion is met.

CHAPTER 85, GENERAL PROVISIONS

85.200 APPROVAL CRITERIA

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

A. Streets.

1. General. The location, width and grade of streets shall be considered in their relation to existing and planned streets, to the generalized or reasonable layout of streets on adjacent undeveloped parcels, to topographical conditions, to public convenience and safety, to accommodate various types of transportation (automobile, bus, pedestrian, bicycle), and to the proposed use of land to be served by the streets.

(....)

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

Staff Finding 30: Staff incorporates applicant findings (see pages 2-3 of the applicant's submittal). This criterion is met.

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

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

(....)

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

Staff Finding 31: The applicant proposes to extend Landis Street to Cornwall Street to City Engineer Standards for a local street. The proposed road width is 24 feet and the proposed right of way width is 48 feet. All sidewalks will be located within the rights-of-way. Subject to the completion of Conditions of Approval, this criterion is met.

3. Street widths. Street widths shall depend upon which classification of street is proposed. The classifications and required cross sections are established in Chapter 8 of the adopted TSP.
(...)

Staff Finding 32: The proposed road width is 24 feet and the proposed right of way width is 48 feet for the extension of Landis Street, which meets the required travel lane standards for a local street with no parking. Subject to the completion of Conditions of Approval, this criterion is met.

4. The decision-making body shall consider the City Engineer's recommendations on the desired right-of-way width, pavement width and street geometry of the various street types within the subdivision after consideration by the City Engineer of the following criteria:
a. The type of road as set forth in the Transportation Master Plan.
(...)
h. Street Trees.
l. Street furniture needs, hydrants.

Staff Finding 33: The applicant is proposing 22 new street trees along the extension of Landis Street. The street trees will be located in the planter strip associated with the sidewalk. There is no proposed open space with room for additional landscaping for this subdivision. There is an existing hydrant within 100 feet from the proposed subdivision on Landis Street. Subject to the Conditions of Approval, these criteria are met.

5. Additionally, when determining appropriate street width, the decision-making body shall consider the following criteria:
a. When a local street is the only street serving a residential area and is expected to carry more than the normal local street traffic load, the designs with two travel and one parking lane are appropriate.
b. Streets intended to serve as signed but unstriped bike routes should have the travel lane widened by two feet.
c. Collectors should have two travel lanes and may accommodate some parking. Bike routes are appropriate.
d. Arterials should have two travel lanes. On-street parking is not allowed unless part of a Street Master Plan. Bike lanes are required as directed by the Parks Master Plan and Transportation Master Plan.

Staff Finding 34: Landis Street, a local street, will not carry more than normal traffic loads and does not require a parking lane. The extension of Landis Street is not a proposed bike route nor are any arterials adjacent to the proposed subdivision. These criteria are met.

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

Staff Finding 35: No reserve strips are proposed so this criterion does not apply.

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

Staff Finding 36: Landis Street is a local street and no cul-de-sacs are proposed or encouraged per CDC Chapter 85. The construction of Landis Street is a continuation that intersects/terminates with Cornwall Street (a local street). This criterion has been met.

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

Staff Finding 37: The applicant proposes to extend Landis Street to connect to Cornwall Street, but does not propose any internal streets that would have future connections to adjoining lands. This criterion is met.

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

Staff Finding 38: The proposed extension of Landis Street intersects Cornwall Street at an angle greater than 60 degrees. The intersection of Cornwall and Landis is approximately 90 degrees. This criterion is met.

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

Staff Finding 39: The applicant proposes to extend Landis Street to the required rights-of-way width meeting the Engineer approved standards. Full street improvements will be required to be constructed for the extension of Landis Street. Half street improvements are required for the section of Cornwall Street adjacent to the subject property. Alternatively, a fee-in-lieu can be paid with the Development Engineer's approval for the Cornwall Street half street improvements. Condition of Approval 3 ensures the provision is adequate. Subject to the completion of Conditions of Approval, this criterion is met.

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

Staff Finding 40: In this circumstance, a cul-de-sac is not allowed because there are no physical constraints, easements, or leases. In addition, the applicant does not propose any cul-de-sacs with this subdivision (see Staff Finding 37). The applicant proposes to extend Landis Street to meet Cornwall Street. The property has steep slopes and the proposed extension of Landis Street will follow the contours of the property. The maximum street grade is 15%. These criteria are met.

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

Staff Finding 41: The applicant is not proposing any new cul-de-sacs, other closed end streets, or shared accesways (see Staff Finding 37). This criterion does not apply.

d. Applicants for a proposed subdivision, partition or a multifamily, commercial or industrial development accessed by an existing cul-de-sac/closed-end street shall demonstrate that the proposal is consistent with all applicable traffic standards and TVFR access standards.

Staff Finding 42: The applicant is not proposing any new cul-de-sacs or shared accesways. Each lot will have one access point for a driveway. The proposed driveway spaces must meet they City's Engineering Standards and will be reviewed at the time of application for a building permit. This criterion is met.

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

Staff Finding 43: The applicant is not proposing any new cul-de-sacs or shared accesways. The proposed extension of Landis Street will connect with Cornwall Street and no closed-end streets are proposed. Cornwall Street is an existing closed-end street with the topography not allowing for access down to Fairhaven Drive. No bicycle or pedestrian accessways are proposed. This criterion is met.

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

Staff Finding 44: The applicant is not proposing any new cul-de-sacs or shared accesways. The proposed extension of Landis Street will connect with Cornwall Street and no closed-end streets are proposed. This criterion 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.

Staff Finding 45: The applicant proposes to extend Landis Street to Cornwall Street. The applicant does not propose any additional street names. This criterion is met.

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

Staff Finding 46: The proposed grade of the Landis Street extension, a local street, is a maximum of 15% percent, which doesn't exceed the 15 percent maximum requirement. Subject to condition of approval 2, the criterion is met.

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

Staff Finding 47: Staff incorporates applicant findings. These criteria are met.

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

Staff Finding 48: The applicant proposes to install six-foot sidewalks and six-foot planter strips along the extension of Landis Street. Subject to the Conditions of Approval 2 and 3, this criterion is met.

17. Planter strip. The planter strip is between the curb and sidewalk providing space for a grassed or landscaped area and street trees. The planter strip shall be at least 6 feet wide…or in response to right-of-way limitations.

Staff Finding 49: The applicant proposes to install six-foot sidewalks and six-foot planter strips along the extension of Landis Street. Subject to the Conditions of Approval 2 and 3, this criterion is met.

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

Staff Finding 50: The applicant proposes to dedicate the streets without any reservations or restrictions. Subject to condition of approval 3, the criterion is met.

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

Staff Finding 51: Please see staff findings 3 to 22. The criterion is met.

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

Staff Finding 52: Staff incorporates applicant findings. These criteria are met.

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

Staff Finding 53: Full street improvements are required for the extension of Landis Street. Half street improvements or the applicant may apply for a waiver of street improvements

and pay a fee-in-lieu are required for the section of Cornwall Street that fronts the subject property. The City Engineer has concluded no off-site improvements are required to mitigate impacts. The criterion is met.

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

Staff Finding 54: Staff incorporates applicant findings. These criteria are met.

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

Staff Finding 55: Please see staff findings 3 to 22. The criterion is met.

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

Staff Finding 56: Staff incorporates applicant findings. These criteria are met.

7. Flag lots. Flag lots can be created where it can be shown that no other reasonable street access is possible to achieve the requested land division. A single flag lot shall have a minimum street frontage of 15 feet for its accessway. Where two to four flag lots share a common accessway, the minimum street frontage and accessway shall be eight feet in width per lot. Common accessways shall have mutual maintenance agreements and reciprocal access and utility easements. The following dimensional requirements shall apply to flag lots:
a. Setbacks applicable to the underlying zone shall apply to the flag lot.
(...)
e. As per CDC 48.030, the accessway shall have a minimum paved width of 12 feet.

Staff Finding 57: No flag lots are proposed with this application. All lots will have direct access onto Landis Street, a local street. These criteria does not apply.

8. Large lots or parcels.

Staff Finding 58: Staff incorporates applicant findings. This criterion is met.

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

(...)

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

E. Grading. Grading of building sites shall conform to the following standards unless physical conditions demonstrate the propriety of other standards:
1. All cuts and fills shall comply with the excavation and grading provisions of the Uniform Building Code and the following:
a. Cut slopes shall not exceed one and one-half feet horizontally to one foot vertically (i.e., 67 percent grade).
b. Fill slopes shall not exceed two feet horizontally to one foot vertically (i.e., 50 percent grade). Please see the following illustration.
2. The character of soil for fill and the characteristics of lot and parcels made usable by fill shall be suitable for the purpose intended.
3. If areas are to be graded (more than any four-foot cut or fill), compliance with CDC 85.170(C) is required.
4. The proposed grading shall be the minimum grading necessary to meet roadway standards, and to create appropriate building sites, considering maximum allowed driveway grades.
5. Type I lands shall require a report submitted by an engineering geologist, and Type I and Type II lands shall require a geologic hazard report.
6. Repealed by Ord. 1635.
7. On land with slopes in excess of 12 percent, cuts and fills shall be regulated as follows:
a. Toes of cuts and fills shall be set back from the boundaries of separate private ownerships at least three feet, plus one-fifth of the vertical height of the cut or fill. Where an exception is required from that requirement, slope easements shall be provided.
b. Cuts shall not remove the toe of any slope where a severe landslide or erosion hazard exists (as described in subsection (G)(5) of this section).
c. Any structural fill shall be designed by a registered engineer in a manner consistent with the intent of this code and standard engineering practices, and certified by that engineer that the fill was constructed as designed.
d. Retaining walls shall be constructed pursuant to Section 2308(b) of the Oregon State Structural Specialty Code.
e. Roads shall be the minimum width necessary to provide safe vehicle access, minimize cut and fill, and provide positive drainage control.
8. Land over 50 percent slope shall be developed only where density transfer is not feasible. The development will provide that:
a. At least 70 percent of the site will remain free of structures or impervious surfaces.
b. Emergency access can be provided.
c. Design and construction of the project will not cause erosion or land slippage.
d. Grading, stripping of vegetation, and changes in terrain are the minimum necessary to construct the development in accordance with subsection J of this section.

Staff Finding 60: The proposed subdivision site contains 20,587 square feet of Type I or II lands. The City Development Engineer has reviewed the applicant's plans and geotechnical

report and finds the grading and fill plans to meet the criteria. A geotechnical hazard report shall be required to insure buildability. Subject to condition of approval 10 regarding building sites, these criteria are met.

F. Water.

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

2. Adequate location and sizing of the water lines.

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

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

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

Staff Finding 61: Water is available in Landis Street and Cornwall Street to serve this subdivision. The existing water line in Cornwall Street is substandard. The applicant is required per condition of approval 8 to upgrade the existing water line in Cornwall Street to serve this development. The applicant shall complete and submit a fire flow test from a hydrant within 600 feet of the subdivision per Condition of Approval 5. Subject to the Conditions of Approval, these criteria are met.

G. Sewer.

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

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

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

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

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

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

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

8. The sanitary sewer system shall be built pursuant to DEQ, City, and Tri-City Service District sewer standards. The design of the sewer system should be prepared by a licensed engineer, and the applicant must be able to demonstrate the ability to satisfy these submittal requirements or standards at the pre-construction phase.
9. A written statement, signed by the City Engineer, that sanitary sewers with sufficient capacity to serve the proposed development and that adequate sewage treatment plant capacity is available to the City to serve the proposed development

Staff Finding 62: There is an existing sewer line stubbed out at the end of Landis Street. With the extension of Landis Street the applicant proposes to extend the sanitary sewer line to Cornwall Street. Proposed Lots 5 and 6 will be served from the south via the extension of a sewer line from an existing sewer manhole located in an easement between tax lot 4700 and tax lot 4800. No wetlands or drainageways exist on the property. The system will be built to appropriate standards and the City Engineer has confirmed the sufficient capacity of the sanitary system and sewage treatment facility. These criteria are met.

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

Staff Finding 63: The applicant proposes to provide a 15 foot utility easement to serve proposed lots 2-6 of the subdivision for stormwater. Lot 1 will have connection directly from the utilities identified in the right of way of Landis Street. Water and Sanitary Sewer will both be in the right of way of Landis Street. The applicant shall upgrade the main water line in Cornwall Street to serve this subdivision per condition of approval 7. The applicant shall record on the face of the plat, a Public Utility Easement on each lot frontage along Landis Street (see condition of approval 11). Subject to the Conditions of Approval, this criterion is met.

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

Staff Finding 64: The property is mapped to have a small portion of proposed lot 6 within the Willamette and Tualatin Greenway; Habitat Conservation Area (HCA) (see Staff Finding 2). The applicant submitted a report by an environmental specialist indicating an error in the Metro HCA map for this property. The property does not contain any wetlands or natural drainageways. See the applicant's supplemental submittal dated April 6, 2017 for the environmental specialist's report. Staff adopts the applicant's findings. These criteria are met.

3. Street trees.

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

Staff Finding 65: Staff incorporates applicant findings and the street trees shall be installed as required in the West Linn Public Works Standards. These criteria are met.

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

Staff Finding 66: The applicant shall provide and install street lighting to meet the West Linn Public Works Standards and Portland General Electric Standards per Condition of Approval 8. Subject to the Conditions of Approval, this criterion is met.

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

Staff Finding 67: The applicant will dedicate additional right of way (ROW) as needed per engineering standards along Cornwall Street and install improvements. Alternatively, the applicant may apply for a waiver of street improvements and pay a fee in lieu for improvements along the subject property. Subject to condition of approval 3 this criterion is met.

6. Underground utilities.
All utilities, such as electrical, telephone, and television cable, that may at times be above ground or overhead shall be buried underground in the case of new development.

Staff Finding 68: The applicant shall underground utilities to meet the West Linn Public Works Standards. This criterion is met.

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

Staff Finding 69: The subject property is 2.17 acres (94,808 sq. ft.) and contains 20,587 square feet of Type I or II lands. The subject property contains 55,153 square feet of Type III and IV lands. 19,068 square feet of the property is proposed right of way for the extension of Landis

Street. See page 12 of the applicant's submitted narrative for detailed density calculations. The applicant finds 70 percent density is met at 5.51 units, and the proposal is for 6 residential units. This criterion is met.

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

Staff Finding 70: The property is zoned R-10, so this criteria does not apply.

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

Staff Finding 71: Please see Staff Findings 72 to 75. This criterion is met.

CHAPTER 92, REQUIRED IMPROVEMENTS

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

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

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

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

Staff Finding 73: The applicant has submitted a Preliminary Stormwater Report that complies with City of West Linn Public Works Standards. The applicant shall install improvements to meet the Standards. Subject to condition of approval 2, this criterion is met.

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

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

92.030 IMPROVEMENT PROCEDURES
(...)

Staff Finding 75: The applicant shall comply with the requirements and install improvements to meet the West Linn Public Works Standards. Subject to condition of approval 2, these criteria are met.

PC-1 AFFIDAVIT AND NOTICE PACKET

AFFIDAVIT OF NOTICE

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

GENERAL
File No. SVB-17-01 Applicant's Name Icon Construction
Development Name Willow Ridge
Scheduled Meeting/Decision Date 5-17-17

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) 4-27-17	(signed)	S. Shroyer
B.	Affected property owners (date) 4-27-17	(signed)	S. Shroyer
C.	School District/Board (date) 4-27-17	(signed)	S. Shroyer
D.	Other affected gov't. agencies (date) 4-27-17	(signed)	S. Shroyer
E.	Affected neighborhood assns. (date) 4-27-17 ALL	(signed)	S. Shroyer
F.	All parties to an appeal or review (date)_____	(signed)	_____

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

Tidings (published date) 5-4-17 (signed) S. Shroyer
City's website (posted date) 4-27-17 (signed) S. Shroyer

SIGN

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

(date) 5-3-17 (signed) Jamie Arnold

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) 5-3-17 (signed) S. Shroyer

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

(date) _____ (signed) _____

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

CITY OF WEST LINN PLANNING COMMISSION

PUBLIC HEARING NOTICE

FILE NO. SUB-17-01

The West Linn Planning Commission will hold a public hearing on Wednesday, **May 17, 2017, starting at 6:30 p.m.** in the Council Chambers in City Hall, 22500 Salamo Road, West Linn, to consider a request for a six-lot Subdivision at 4096 Cornwall Street.

The criteria applicable to subdivision are found in Chapters 11 and 85 of the West Linn Community Development Code (CDC). The decision by the Planning Commission to approve or deny this request will be based upon the applicable criteria. At the hearing, it is important that comments relate specifically to the applicable criteria.

You have been notified of this proposal because County records indicate that you own property within 500 feet of the subject property (tax lot 6300, Assessor's Map 21E36BA), or as otherwise required by Chapter 99 of the CDC. The site is further identified as 4096 Cornwall Street. The complete application for SUB-17-01 is available for inspection at no cost at City Hall or via the City of West Linn's website at http://westlinnoregon.gov/planning/4096-cornwall-street-6-lot-subdivision-and-willamette-river-greenway-permit. Printed copies of these documents may be obtained at City Hall for a minimal charge per page.

At least ten days prior to the hearing, a copy of the staff report will be available for inspection at no cost or copies can be obtained for a minimal charge per page For further information, please contact Associate Planner Jennifer Arnold at jarnold@westlinnoregon.gov or 503-723-2542. 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. **It is important to submit all evidence (in writing or at the hearing) to the Planning Commission. City Council review of any appeal is on the record.** Failure to raise an issue in person or by letter at some point prior to the close of the hearing, or failure to provide sufficient specificity to afford the decision maker an opportunity to respond to the issue, precludes an appeal to the Land Use Board of Appeals (LUBA) based on that issue.

4096 Cornwall Street Notification Map

CITY OF West Linn

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

Map created by: SSHROYER
Date Created: 24-Apr-17 11:38 AM

WEST LINN GIS

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

CITY OF West Linn

CITY OF WEST LINN
NOTICE OF UPCOMING
PLANNING COMMISSION PUBLIC HEARING

PROJECT # SUB-17-01/WRG-17-01
MAIL: 4/27/17 TIDINGS: 5/4/17

CITIZEN CONTACT INFORMATION

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

Citizen Contact Information Agenda Packets and Project Files

PC-2 COMPLETENESS LETTER

City of West Linn

April 10, 2017

Mark Handris
ICON Construction and Development LLC
1980 Willamette Falls Drive
Suite 200
West Linn, OR 97068

SUBJECT: Determination of Completeness SUB-17-01& WRG-17-01 at 4096 Cornwall Street

Dear Mark:

Your original submittal of February 21, 2017 was declared incomplete on March 14, 2017. Additional information was subsequently provided by you on April 6, 2017 and confirmed by the City on April 10, 2017 to the extent that the application is now **complete**. The City has 120 days to exhaust all local review; that period ends on August 18, 2017.

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

Twenty day public notice will be prepared and mailed. The notice will identify the Planning Commission hearing date.

Please contact me at 503-723-2542, or by email at jarnold@westlinnoregon.gov if you have any questions or comments

Sincerely,

Jennifer Arnold

Jennifer Arnold
Associate Planner

PC-3 APPLICANT'S SUBMITTAL

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

MEMO

RE: Willow Ridge at Cornwall Street HCA Mapped Boundaries

March 30, 2017

This memo is being provided as the applicant believes that the Metro HCA mapped boundaries are in error on the subject property containing Tax lot 6300 located at the street address of 4096 Cornwall Street, West Linn, Oregon.

The City of West Linn uses the Metro's Urban Growth Management Functional Plan (UGMFP) Title 13 Habitat Conservation Areas (HCA) map to identify habitat conservation areas in the City. The above subject property contains HCA mapped as Riparian Class II within the southeastern corner of the tax lot.

Per Chapter 28 Willamette and Tualatin River Protection 28.070 Planning Director Verification of Metro Habitat Protection Map Boundaries:

A) *The HCA Map is the basis for identifying and designating the habitat conservation areas in the City. It is inevitable, given the large area that Metro's HCA Map covers, that there may be some errors. In cases where, for example, three properties share the same contours and the same natural features but the map shows the middle lot with an HCA designation on it, it is reasonable to question the accuracy of that HCA designation. Using tree overstory as the sole basis for HCA designation will also allow a change in designation since trees are already protected in the municipal code and Chapters 55 and 85 CDC.*

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

Metro designation was based solely on tree overstory and a boundary correction is appropriate. A site visit and delineation were completed by Schott & Associates, Inc. on March 10, 2017 on the subject property. The entire property was walked and a natural resource assessment was done to determine the actual extent of the HCA overlay.

The rectangular shaped tax lot is situated at the terminus of Cornwall Street, west of Sessex Street and north of Fairhaven Drive. Residential houses are located on all sides of the project area. An

existing house is located in the northeastern corner of the lot, with associated outbuildings to the west. The southern half of the lot is steeply sloped to the south.

The vegetation in the undeveloped portion of the lot was dominated by Himalayan blackberry (*Rubus armeniacus*). There was a small patch of reed canary grass (*Phalaris arundinacea*) within the middle of the sloped hill in the southern half of the lot. Sample plots were taken and conditions did not meet the three wetland criteria; hydrophytic vegetation, hydric soils and wetland hydrology. For an area to be a wetland it has to meet all three criteria. The soils on this site were not hydric. Rose (*Rosa pisocarpa*) was prevalent along the southeastern extent of the lot where the slopes level out. A few larger locust trees were located on the property.

An unidentified tributary to Salamo Creek is located east of the site. The landscape surrounding the tributary was steeply sloped and dominated by non-native Himalayan blackberry. The tributary is approximately 170 feet off site to the southeast located in the bottom of a draw. Slopes within 50 feet of the creek were digitally measured and found to range from 16 to 28 percent.

Per Metro Title 13: Nature in Neighborhoods

3.07.1340 (d.) Administering the Habitat Conservation Areas Map and Site Level Verification of Habitat Location

(4.) Habitat Boundaries

(A.)Locating riparian habitat and determining its habitat class is a five step process.

(i) Step 1. Locate the water feature that is the basis for identifying riparian habitat:

1) Locate the top of bank of all streams, rivers, and open water within 200feet of the property.

No access was obtained for the adjacent property. The creek was identified as approximately 170 feet south east of the site, outside of the tax lot boundary.

2) Locate all flood areas within 100 feet of the property.

Slopes surrounding the creek ranged from 16 to 28 percent. No flood areas were identified within 100 feet of the property.

3) Locate all wetlands within 150 feet of the property based on the local wetland inventory map (if completed) and on the Metro 2004 Wetland Inventory Map. Identified wetlands shall be further delineated consistent with methods currently accepted by the Oregon Division of State Lands and the US Army Corps of Engineers.

No wetlands were located within the study area boundary. An unidentified tributary to Salamo Creek is located approximately 170 feet to the southeast of the site. The tributary is offsite and

identified on the Significant Riparian Corridors map for West Linn Goal 5 Inventory. The landscape surrounding the tributary was steeply sloped ranging from 16 to 28 percent slopes and dominated by non-native Himalayan blackberry.

(ii.) Step 2. Identify the vegetative cover status of all areas on the property that are within 200 feet of the top of bank of streams, rivers and open water, are wetlands or are within 150 feet of wetlands, and are flood areas and within 100 feet of flood areas.

Only a small portion of the property in the southeastern corner is identified as HCA habitat. The HCA defines the area as within 200 feet of the top of bank to the offsite stream. No wetlands were identified within the HCA mapped corner of the lot. The vegetation was dominated by Himalayan blackberry. The slopes were steep and sloped off site to the southeast.

1.) Vegetative cover status shall be as identified on the Metro Vegetative Cover Map, attached hereto and incorporated herein by reference. The vegetative cover type assigned to any particular area was based on two factors: The type of vegetation observed in aerial photographs and the size of the overall continuous area of vegetative cover to which a particular piece of vegetation belonged. As an example of how the categories were assigned, in order to qualify as "forest canopy" the forested area had to be part of a larger patch of forest of at least one acre in size; and

2.) In terms of mapping the location of habitat, the only allowed corrections to the vegetative cover status of a property are those based on an area being developed prior to the local program effective date and those based on errors made at the time the vegetative cover status was determined based on analysis of the aerial photographs used to create the Metro Vegetative Cover Map (for the original map, the aerial photos used were Metro's summer 2002 photos) and application of the vegetative cover definitions provided in the footnotes to Table 3.07-13d.

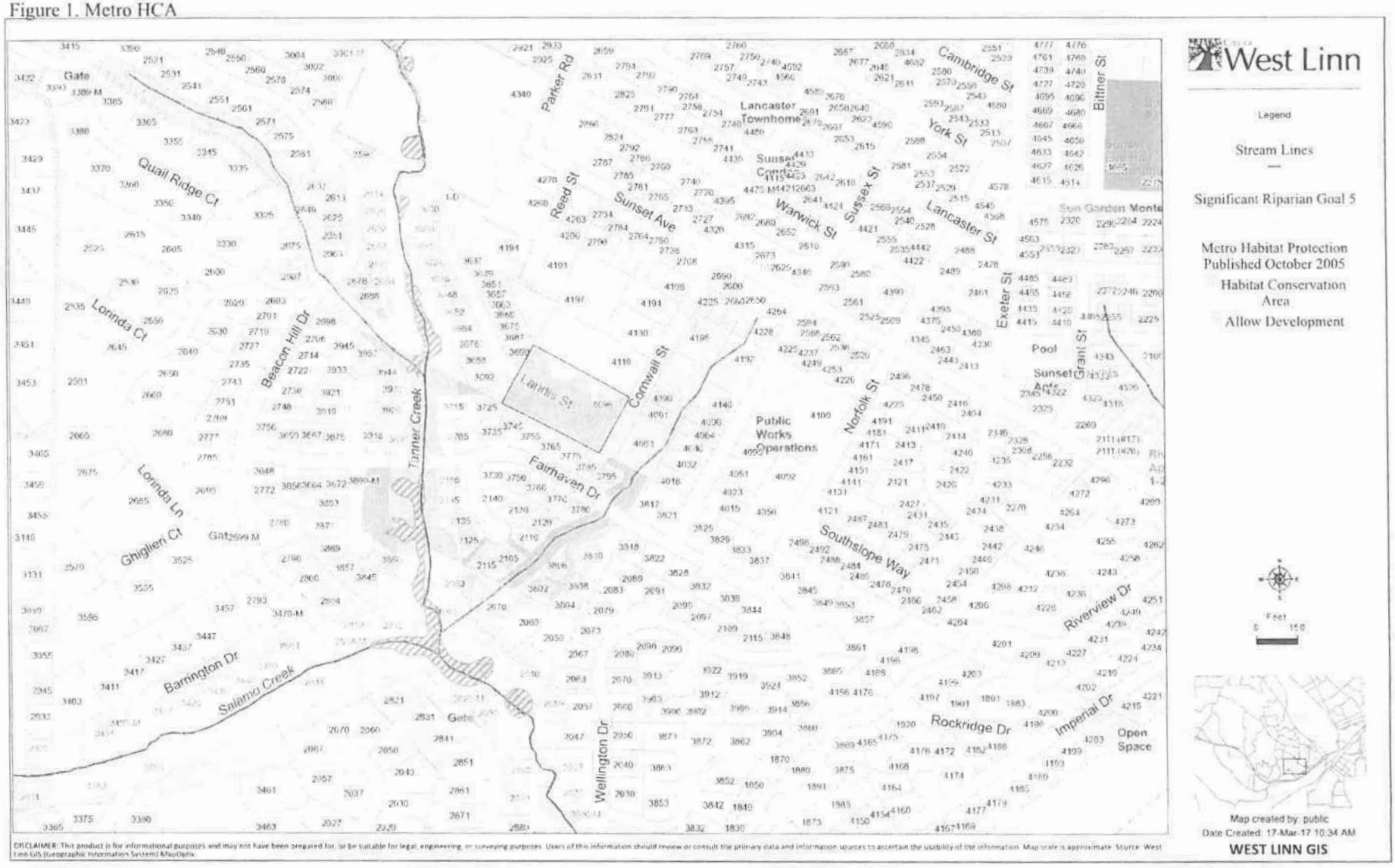
Through observation of the summer 2002 Google Earth aerials we believe the HCA boundary was mapped using the vegetative cover of the scrub/shrub canopy. The shape of the boundary basically matches the aerial (see Figure 1: Metro HCA, Figure 4: 2002 Aerial Photo). While the

mapping of the habitat may be scrub/shrub, the cover was predominantly Himalayan Blackberry, which is considered an invasive species and offers little ecological function. Additionally, the area was not found to be a Riparian Zone. Adjacent properties identified within the HCA overlay had existing buildings.

In conclusion, the mapped HCA is low quality due to the non-native, invasive vegetation and lack of significant tree cover. The tributary to Salamo Creek is approximately 170 feet from the eastern tax lot boundary. A request is being made to correct the boundary within the tax lot boundary based the lack of significant habitat and lack of tree habitat associated with the tributary to the southeast of the site. The vegetation is non-native, invasive and of very low value and these areas should not be mapped as HCA.

Attachements:
Figure 1. Metro HCA
Figure 2. HCA Stream Detail Area
Figure 3. Stream Detail with Topographic
Figure 4. Overall existing Conditions
Figure 5. 2002 Aerial Photograph

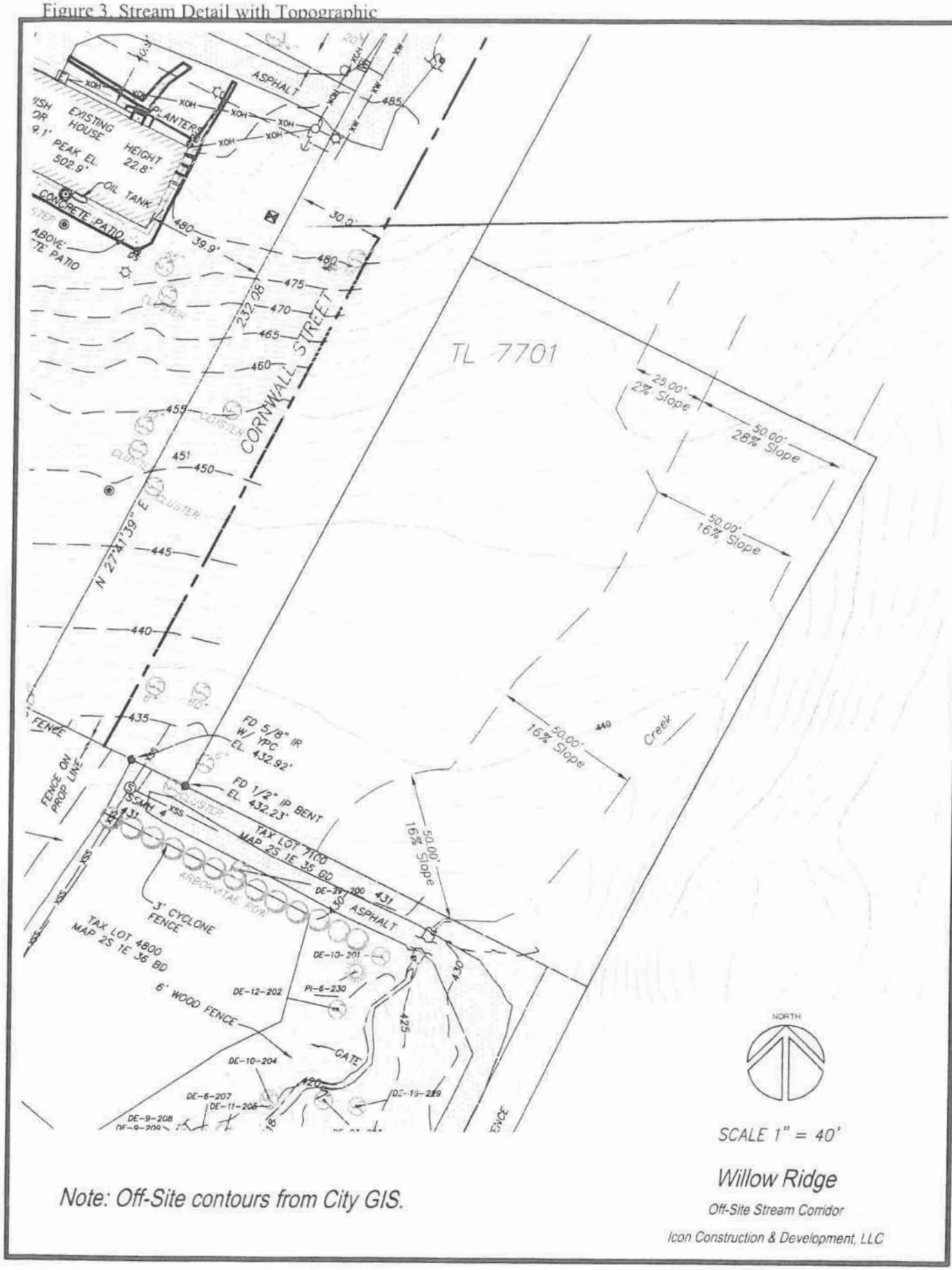
Figure 1. Metro HCA



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

Figure 2. HCA Stream Detail Area

Figure 3. Stream Detail with Topographic



Note: Off-Site contours from City GIS.

Figure 4. Overall Existing Conditions Map


Figure 2: 2002 Aerial Photograph
6/2002
Landis St
Cornwall St
Sussex St
Norfolk St
Fairhaven Ct
Fairhaven Dr
Image © 2016 Metro, Portland Oregon
312 ft
1994
Imagery Date: 7/31/2002 lat 45.356515° lon -122.632558° elev 445 ft eye alt 1661 ft
Google Earth

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

DEVELOPMENT REVIEW APPLICATION

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

Type of Review (Please check all that apply):

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

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

Site Location/Address:
4096 Cornwall St.
West Linn, OR

Assessor's Map No.: 21E36BA
Tax Lot(s): 6300
Total Land Area: 2.18 acres

Brief Description of Proposal:
Subdivision application to divide the subject property into six lots for construction of single-famiy detached homes. Willamette & Tualatin River Greenway application to adjust HCA boundary.

Applicant Name: (please print)	Icon Construction and Development, LLC	Phone:	(503) 657-0406
Address:	1980 Willamette Falls Drive, Suite 200	Email:	mark@iconconstruction.net
City State Zip:	West Linn, OR 97068		
Owner Name (required): (please print)	Same as applicant.	Phone:	
Address:		Email:	
City State Zip:			
Consultant Name: (please print)	Rick Givens, Planning Consultant	Phone:	503-479-0097
Address:	18680 Sunblaze Dr.	Email:	rickgivens@gmail.com
City State Zip:	Oregon City, OR 97045		

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 _____

WILLOW RIDGE

Six-Lot Subdivision Application

Icon Construction & Development, LLC

Proposal: This application requests approval of a 6-lot subdivision to be developed on property located at 4096 Cornwall St. in West Linn. The property is located on the west side of, and at the terminus of, the Cornwall Street right-of-way. Landis Street is stubbed to the west property line of the subject site.

The subject property is described as Tax Lot 6300 of Assessor's Map 21E36BA. The site is 2.18 acres (94,808 square feet) in area. It is presently developed with a single-family detached home. This home will be removed to allow for the construction of the extension of Landis Street to Cornwall Street. The subject property is zoned R-10.

Figure 1: Vicinity Map

Figure 2: Aerial Photograph

The proposed development conforms to the applicable provisions of the CDC as follows:

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*.

Comment: The subject property fronts on Cornwall Street and Landis Street is stubbed to the west property line of the site. The development of the site will provide for the extension of Landis Street through the site to connect with Cornwall Street. Both Landis and Cornwall are local streets intended to serve the immediate neighborhood.

No reserve strips are warranted as there are no stub streets proposed. No stub streets are proposed as the properties to the south and west are already developed. The proposed alignment of Landis Street abuts the property to the north and would allow for a private street to be extended to serve the rear yard of that property. The unbuilt right-of-way of Cornwall Street that extends to the southerly border of the subject property is too steep to allow for construction and existing development precludes its extension to the west.

No cul-de-sac streets are proposed so the provisions of Section 85.200(A)11 are not applicable.

No new street names are proposed. The maximum street grade proposed is 15%, which is consistent with City standards. The minimum centerline curve radius proposed is 100 feet, which exceeds the minimum standard of 50 feet. No alleys are proposed. All proposed streets have sidewalks and planter strips, consistent with City standards. All proposed streets will be dedicated without any reservations or restrictions. All lots in the subdivision have access to a public street, as shown on the Tentative Plan. No gated streets or special entry designs are proposed.

B. *Blocks and lots*.

Comment: No new blocks having a length of more than 800 feet are proposed. The proposed street simply completes the connection of Landis through to Cornwall Street. Due to terrain and surrounding development patterns, it is not practicable to make blocks that are shorter. The proposed lot have property lines that are perpendicular to the street; contain sufficient area to meet the requirements of the R-10 zone, and provide for building envelopes that will meet required setbacks. The lots have buildable depths that do not exceed 2.5 times their width.

The development conforms to the provisions of Chapter 48, as discussed below in this report.

85.200(B) (5). No double frontage lots are proposed. The proposed lot lines within the development are approximately at right angles to the streets on which they front, as required by Section 85.200(B)(6). No flag lots are proposed. The proposed lots are not large enough to allow for future re-division under the provisions of the R-10 zone.

C. *Pedestrian and bicycle trails*.

Comment: No pedestrian or bicycle trails are proposed in this development. No bicycle improvements were listed on the Bicycle Master Plan.

D. *Transit facilities*.

Comment: Not applicable. No transit facilities are proposed or required as there is no TriMet service in this area.

E. *Lot grading*.

Comment: Grading of the proposed building site will conform to City standards. Preliminary grading plans for the street area is shown on the Preliminary Grading Plan submitted with this application. Compliance for individual homes will be reviewed at the time of building permit application.

F. *Water*.

Comment: City water is available in both Landis Street and Cornwall Street. The waterline in Cornwall Street, however, is substandard and will need to be upgraded in conjunction with the proposed development

G. *Sewer*.

Comment: As shown on the Preliminary Utility Plan, there is an existing public sewer line stubbed in Landis Street to the west boundary of the site. This sewer line will be extended through the property to Cornwall Street. Lots 5 through 6 will be served from the south via the extension of a sewer line from an existing sewer manhole located in an easement between Tax Lots 4700 and 4800.

H. Storm.

Comment: As shown on the Preliminary Utility Plan, storm sewer will be installed in the new street and piped to a detention and treatment facility to be developed in the City-owned tract on the north side of Fairhaven Street. Treated storm water will be discharged at pre-development levels, in accordance with City standards.

I. Utility easements. Utility easements are shown on the plans submitted with this application.

J. Supplemental provisions.

1. Wetland and natural drainageways. Comment: There are no wetlands or natural drainageways on or abutting the subject property.

2. Willamette and Tualatin Greenways. Comment: See discussion of Chapter 48, below

3. Street trees. Comment: Street trees will be provided as required, as shown on the Tentative Plan.

4. Lighting. Comment: Prior to final plat approval, an analysis of existing street lighting will be conducted and, if necessary, improvements made to comply with these standards. The preliminary design for streetlight placement within the subdivision is shown on the preliminary utility plan. To reduce ambient light and glare, high or low pressure sodium light bulbs will be provided for all streetlights within the subdivision. The lights will be shielded so that the light is directed downwards rather than omni-directional.

5. Dedications and exactions. Comment: No new dedications or exactions to service off-site properties are anticipated in conjunction with this application.

6. Underground utilities. Comment: All utilities within the development will be placed underground, as required by this section.

7. Density requirement. Comment: The density calculations submitted with this application demonstrate that the maximum density permitted on this site is 6 units. The proposed density of 6 units satisfies the minimum density standard.

8. Mix requirement. Comment: Not applicable. This requirement only applies in the R-2.1 and R-3 zones. The subject property is zoned R-10.

9. Heritage trees/significant tree and tree cluster protection. Comment: No heritage trees, as defined in the Municipal Code, are present on the site. Other existing trees are mapped on the Tree Plan, including those identified by the City Arborist as "significant". Please see discussion of Chapter 55, below.

10. Annexation and street lights. Comment: Not applicable. The subject property is within the city limits.

Chapter 48 - ACCESS, EGRESS AND CIRCULATION

48.025 ACCESS CONTROL

B. Access control standards.

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

determine access, circulation and other transportation requirements. (See also CDC 55.125, Traffic Impact Analysis.)

Comment: The trip generation rate for single-family homes is approximately 10 vehicle trips per day according to Institute of Transportation Engineers data. One of these trips will occur in the am peak hour and one will occur in the pm peak hour. The proposed subdivision will add five new dwellings (additionally, the existing home on the property will be replaced with a new dwelling, which will generate the same traffic as the existing home would). A total of 50 new trips per day would be expected from this development, with 5 occurring in the am peak hour and 5 occurring in the pm peak hour. Because of the small size and limited amount of traffic to be generated by this development, a Traffic Impact Analysis is not required for this project.

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

Comment: Access to the site will be via extension of Landis Street to Cornwall Street. The driveway serving the existing home on the property will be removed when the home is demolished, and the new driveway will be reviewed at the time of building permit application.

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

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

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

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

Comment: All lots will take access from Landis/Cornwall Streets system within the subdivision.

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

Comment: The site plan provides local street access for all lots. The site does not abut an arterial street.

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

Comment: No double-frontage lots are proposed.

6. Access spacing.

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

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

Comment: The intersection of Landis with Cornwall Street, both of which are local streets, complies with these standards. There are no other intersections near the subject property.

7. Number of access points. For single-family (detached and attached), two-family, and duplex housing types, one street access point is permitted per lot or parcel, when alley access cannot otherwise be provided; except that two access points may be permitted corner lots (i.e., no more than one access per street), subject to the access spacing standards in subsection (B)(6) of this section. The number of street access points for multiple family, commercial, industrial, and public/institutional developments shall be minimized to protect the function, safety and operation of the street(s) and sidewalk(s) for all users. Shared access may be required, in conformance with subsection (B)(8) of this section, in order to maintain the required access spacing, and minimize the number of access points.

Comment: Each proposed lot will have one access point, as specified in this section.

8. Shared driveways. The number of driveway and private street intersections with public streets shall be minimized by the use of shared driveways with

adjoining lots where feasible. The City shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes in accordance with the following standards:

Comment: Not applicable. No shared accesses are proposed.

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

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

Comment: No block lengths in excess of 800 feet are proposed. The proposed development simply completes the local street connection between Landis and Cornwall Streets.

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

Comment: Proposed streets will comply with the public street standards of Chapter 92 (see below).

3. Exception. Exceptions to the above standards may be granted when blocks are divided by one or more pathway(s), in conformance with the provisions of CDC 85.200(C), Pedestrian and Bicycle Trails, or cases where extreme topographic (e.g., slope, creek, wetlands, etc.) conditions or compelling functional limitations preclude implementation, not just inconveniences or design challenges. (Ord. 1635 § 25, 2014; Ord. 1636 § 33, 2014)

Comment: No exceptions to block length are necessary.

48.030 MINIMUM VEHICULAR REQUIREMENTS FOR RESIDENTIAL USES

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

Comment: All lots will take access from the internal local street system. No arterial streets are located in this area.

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

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

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

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

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

Comment: All lots will have individual driveways that conform to these standards. Driveways will be reviewed at the time of building permit application.

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

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

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

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

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

Comment: No lots will have portions of the homes located more than 150 feet for the adjacent right-of-way.

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

Comment: All proposed streets will be built to full City standards for local streets.

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

Comment: Not applicable. No multi-family dwellings are proposed.

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

Comment: Not applicable. All lots are for single-family homes and all parking will be provided on the home's driveway.

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

Comment: No driveways onto arterial or collector streets are proposed.

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

Comment: Not applicable. No multi-family development is proposed.

I. Gated accessways to residential development other than a single-family home are prohibited. (Ord. 1408, 1998; Ord. 1463, 2000; Ord. 1513, 2005; Ord. 1584, 2008; Ord. 1590 § 1, 2009; Ord. 1636 § 34, 2014)

Comment: Not applicable. No gated accesses are proposed.

Chapter 55 - DESIGN REVIEW

As required by this chapter, the applicant retained the services of an arborist (Multnomah Tree Experts) to identify the size, species, and condition of existing trees on the subject property. The trees were surveyed and mapped by Centerline Concepts, Inc., as shown on the Existing Conditions Map submitted with this application. Subsequently, the City Arborist visited the site and determined that 38 of these trees are significant trees. These trees are shown on the Tree Preservation Plan submitted with this application. The following provisions of Chapter 55 relating to tree preservation are applicable to this proposal:

B. <u>Relationship to the natural and physical environment</u>.

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.

Comment: No heritage trees are located on the subject property.

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.*

Comment: Five of the significant trees identified by the City Arborist are located on Type I or II lands outside of the street right-of-way. These trees are all on Lots 3 and 4 and fall within the fill slope of grading associated with the extension of Landis Street and must be removed. See comment on subsection 55.B.2.f, below.

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.*

Comment: The Tentative Plan shows two areas being protected: the western portion of Lot 1 and the rear yard areas of 2 to 6. A total of 40 significant trees are located on the property. The plan would retain 13 of these trees, or 32.5% of the total significant trees on the site.

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

Comment: Landis Street is stubbed to the west property line of the subject property. This street must be extended through the site to connect with Cornwall Street in order to comply with the City's Transportation System Plan. This extension will result in the loss of 13 trees on the property that are located within the street right-of-way or in areas that will be filled to allow for the extension of the street.

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.*

Comment: The density calculations submitted with this application demonstrate that the project will achieve more than 70% of maximum density.

Density Calculations:	Area in Sq. Ft.
Gross Site Area	94,808
Land in a boundary street right-of-way, water course, or planned open space where density transfer is not requested	0
Area in street rights-of-way:	19,068
Net Site Area:	75,740
Type 1 & II Slopes Developed: 20,587 sq.ft. /10,000 x .5 =	1.03 Units
Water Resource Area:	None
Open space (Type III and IV lands)	None
Type III & IV lands developed: 55,153 sq. ft./10,000 =	5.51 Units
Total allowable base density:	6 Units

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.

Comment: Not applicable. The site does not abut an arterial or collector street.

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.*

Comment: Trees located in the protected portions of the site will not be impacted by site grading.

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:*

   Comment: As shown on the Tentative Plan, the developer proposes to construct Landis/Cornwall Streets to full City standards.

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

   Comment: Not applicable. This subsection applies only when an applicant is proposing to construct less than full standard streets.

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.*

Comment: As shown on the Grading Plan submitted with this requirement will be met.

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.

Comment: As shown on the Grading Plan submitted with this application, the proposed streets will be graded for the full right-of-way and improved to City standards.

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.*

Comment: Monumentation will be installed and/or reestablished at street intersections in accordance with this subsection.

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.*

Comment: The project engineer has prepared a storm drainage plan, as shown on the Utility Plan, and a storm report for this project. Please refer to those documents.

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.*

Comment: Sanitary sewers are available to this project from an existing line in Landis Street. This sewer will be extended to service all lots within the development, as required by this subsection, and will be stubbed into the Cornwall Street right-of-way to provide for future service to other properties in this area.

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.*

Comment: Water lines will be installed within the proposed development and will connect to existing lines in Landis St. and Cornwall St. Additionally; the developer will replace and upgrade the existing water line in Cornwall St. to City standards. Tying these lines together will improve the water system in this area by providing looping that will aid in maintaining appropriate flows and will avoid sedimentation associated with dead-end lines.

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.*

   Comment: As required by this subsection, sidewalks will be installed along all street *frontages* in this development.

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).*

   Comment: Sidewalks will be constructed during home construction on each lot. The required letter of credit will be provided.

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.

Comment: Sidewalks will be installed to City specifications.

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.*

Comment: Not applicable. The site does not abut an arterial or collector street.

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.*

Comment: Sidewalks are proposed on both sides of all streets within this subdivision.

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.*

Comment: No bicycle routes are called for on the local streets within this subdivision.

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.*

Comment: The developer will provide all required signs, consistent with City standards.

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.*

Comment: Not applicable. No dead-end streets are proposed.

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.*

Comment: Not applicable. No public dedications are proposed.

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.

Comment: Street lights will be installed by the developer, consistent with the requirements of this subsection.

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.*

Comment: The developer will coordinate with utility companies for the installation of underground facilities for electrical, cable, natural gas, telephone, and street lighting. As required by this section.

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.*

Comment: Curb cuts will be installed at the time of home construction and will be installed to City standards.

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

Comment: The developer will coordinate with the City Parks and Recreation Department regarding installation of street trees and will be responsible for paying the appropriate fee.

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.*

Comment: The developer will coordinate with the US Postal Service and the City Engineer regarding the location of joint mailbox clusters and will install them in accordance with this section.

CHAPTER 28 - WILLAMETTE AND TUALATIN RIVER PROTECTION

City Planning staff indicate that they have adopted a new policy determining that the provisions of Chapter 28 are applicable to developments containing Habitat Conservation Areas shown on City mapping. The applicant disagrees with this interpretation. These provisions have never been applied to other developments outside of the Willamette River and Tualatin River Greenways, and we believe that this interpretation is in direct conflict with the plain language of that section.

28.030 APPLICABILITY

A. The Willamette and Tualatin River Protection Area is an overlay zone. The zone boundaries are identified on the City's zoning map, and include:

1. All land within the City of West Linn's Willamette River Greenway Area.

2. All land within 200 feet of the ordinary low water mark of the Tualatin River, and all land within the 100-year floodplain of the Tualatin River.

3. In addition to the Willamette Greenway and Tualatin River Protection Area boundaries, this chapter also relies on the HCA Map to delineate where development should or should not occur. Specifically, the intent is to keep out of, or minimize disturbance of, the habitat conservation areas (HCAs). Therefore, if all, or any part, of a lot or parcel is in the Willamette Greenway and Tualatin River Protection Area boundaries, and there are HCAs on the lot or parcel, a Willamette and Tualatin River Protection Area permit shall be required unless the development proposal is exempt per CDC 28.040.

Comment: The subject property is not within the identified Willamette River Greenway or within 200 feet of the ordinary low water mark of the Tualatin River. The Planning staff interpretation is based upon subsection 28.030(A)3. The site contains a minor area of HCA outside of the Water Resource Area boundary and staff's opinion is that the language of this subsection makes these provisions applicable to this project. However, we note that the plain language states that "*if all, or any part, of a lot or parcel is in the Willamette Greenway and Tualatin River Protection Area boundaries,* ***and*** *there are HCAs on the lot or parcel, a Willamette and Tualatin River Protection Area permit shall be required*" (emphasis added). The property must be within one of the river areas and have an HCA before the provisions of subsection 28.030(A)3 apply. This has been the consistent policy of the City of West Linn for years since the adoption of this Chapter. The property is not in either river resource area and, therefore, this chapter is not applicable despite there being Habitat Conservation Area on the property.

28.040 EXEMPTIONS/USES PERMITTED OUTRIGHT

The use of Habitat Conservation Areas for residential purposes is not listed as a use that is exempt or permitted outright. However CDC 28.040AA does apply to this proposal:

AA. Lands that are designated as an HCA only due to a forested canopy shall be exempted since trees are already protected in the municipal code and Chapters 55 and 85 CDC. Development of lands that are designated as HCA due to other variables such as wetlands, flood areas and steep slopes shall still be regulated by the provisions of this chapter and not exempted.

Please see discussion of this provision under section 28.070, below.

28.050 PROHIBITED USES

The following are prohibited:

1. *Residential floating structures, also known as floating homes or houseboats.*
2. *Permanent ski jumps.*
3. *More than one dock with or without a boat house per riverfront lot of record, except City-owned tax lots 100, 200, 300, 400, and 500 of Assessor's Map 21 East 24.*
4. *The location of any dock under any water condition that prevents what would otherwise be historic, safe, uninterrupted water passage.*
5. *Any new lawn area or garden area consisting primarily of non-native vegetation within HCA lands. A lawn area in the "Allowed Development" area is permitted.*
6. *Planting of any species identified as nuisance or prohibited plants on the Metro Native Plant List.*
7. *Non-permitted storage of hazardous materials as defined by the Oregon Department of Environmental Quality and dumping of any materials of any kind.*
8. *Excessive trimming or removal of existing native vegetation within the HCA unless it is to reestablish native vegetation in place of non-native or invasive vegetation. (Ord. 1576, 2008)*

Comment: None of the uses listed in this section are proposed within the Habitat Conservation Area.

28.060 ADMINISTRATION AND APPROVAL PROCESS

An application for a protection area permit shall be processed pursuant to the provisions of Chapter 99 CDC, Procedures for Decision-Making: Quasi-Judicial.

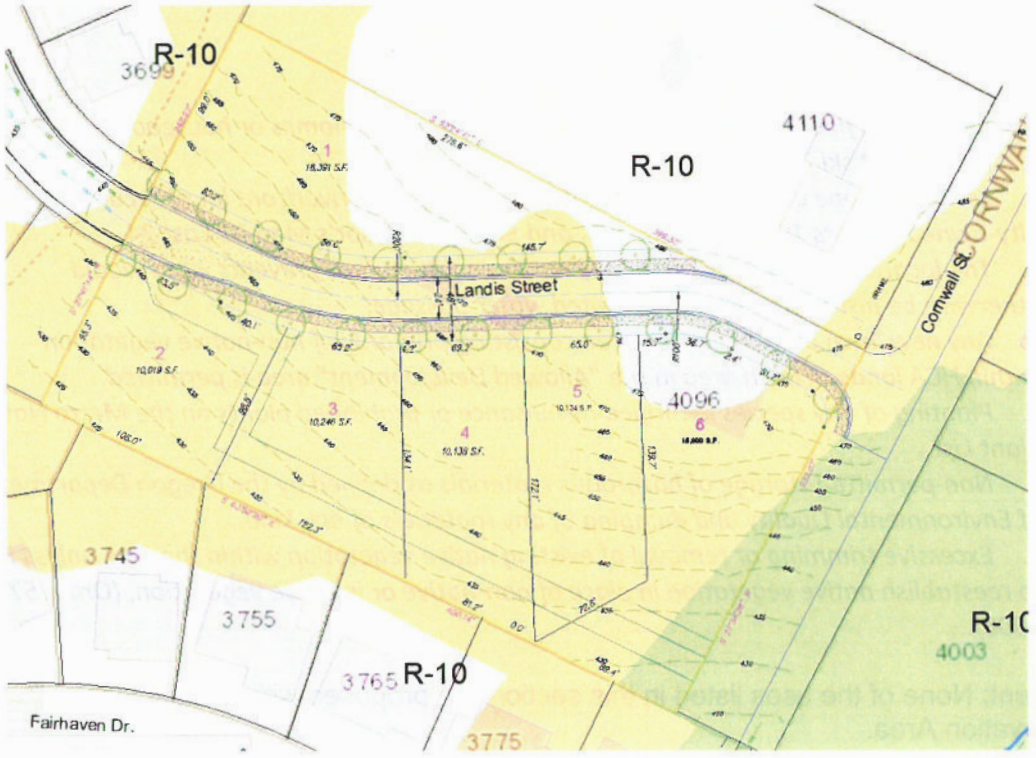
Comment: The application is being processed quasi-judicially, in accordance with the provisions of Chapter 99 of the CDC.

28.070 PLANNING DIRECTOR VERIFICATION OF METRO HABITAT PROTECTION MAP BOUNDARIES

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

It is inevitable, given the large area that Metro's HCA Map covers, that there may be some errors. In cases where, for example, three properties share the same contours and the same natural features but the map shows the middle lot with an HCA designation on it, it is reasonable to question the accuracy of that HCA designation. Using tree overstory as the sole basis for HCA designation will also allow a change in designation since trees are already protected in the municipal code and Chapters 55 and 85 CDC.

The map below shows the location of the HCA per the City of West Linn GIS mapping system.



The areas that are designated HCA due strictly to forested tree canopy are shown in tan. As noted in section 28.070(F) "Lands that are designated as an HCA only due to a forested overstory are exempt under CDC 28.040, Exemptions, since trees are already protected in the municipal code and Chapters 55 and 85 CDC." Therefore, the areas mapped in tan are not subject to the provisions of Chapter 28.

The HCA area mapped in green is a moderate value HCA associated with a seasonal drainageway on property to the east of Cornwall Street.

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

Comment: We do not believe that there are any HCA resources on the subject property and are submitting a letter from Schott and Associates confirming that this area should not be designated as HCA.

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

Comment: The required notice will be provided.

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

Comment: If approved, this requirement will be met by the City.

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

Comment: The applicant recognizes that the determination is appealable.

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

Comment: The areas shown in tan are exempt due to this provision as there are no habitat resources in those areas other than forested overstory.

28.110 APPROVAL CRITERIA

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

Comment: Upon approval of the change in designation, these provisions will no longer apply.

Preliminary storm drainage report for

Willow Ridge

Site Conditions:

This parcel is a rectangular tract with one existing house with access of the end of Cornwall Street and containing approximately 2.18 acres. Landis Street dead ends at the westerly limit of the property. The property slopes, generally from north to south with a maximum slope of approximately 20+%. The Cornwall Street unimproved right-of-way is along the easterly boundary of the property. The preliminary plans sites six (6) single family residential lots and connects Landis with Cornwall.

There is a natural drainage way to the east and open space tract that connects to the Cornwall right-of-way. A detention pond with water quality is proposed in the open space tract.

Hydrologic Soils Group:

The Oregon Soil Survey was used to determine the soil type and Hydrologic Soil Group.

Map unit Symbol	Map unit name	Rating
76B	Saum silt loam	C
78D	Saum silt loam	C

Regulatory

West Linn Public Works Design Standards
2.0013 Minimum design criteria

Summary:

Willow Ridge			
Event	Pre-development	Post-development	Release rate
2-year	0.32 cfs	0.84cfs	0.31 cfs
5-year	0.50 cfs	1.10 cfs	0.35 cfs
10-year	0.62 cfs	1.31 cfs	0.65 cfs
25-year	0.97 cfs	1.58 cfs	0.97 cfs
100-year	N/A	1.91 cfs	1.91 cfs

Time of Concentration

$T = 0.42(n\ L)^{.8}/(P_2)^{0.5}(S_0)^{0.4}$ & $T = L/60k(s_0)^{05}$

Pre-Development: $(.42)[(0.24(280)]^{0.8}/(2.6)^{0.5}(0.20)^{.4} = 14.4$ min

Post-Development $(.42)[(0.15(109)]^{0.8}/(2.6)^{0.5}(0.21)^{.4} = 4.5$ min + $278/(60)(42)(0.018)^{5} = 0.8$ min + $429/(60)(42)(0.01)^{5} = 1.7$ = total 7.0 minutes

HYDROGRAPH RESULTS

KING COUNTY DEPARTMENT OF PUBLIC WORKS
Surface Water Management Division
HYDROGRAPH PROGRAMS
Version 4.21B

1 - INFO ON THIS PROGRAM
2 - SBUHYD
3 - MODIFIELD SBUHYD
4 - ROUTE
5 - ROUTE2
6 - ADDHYD
7 - BASEFLOW
8 - PLOTHYD
9 - DTATA
10 - REFAC
11 - RETURN TO DOS

ENTER OPTION:
2
SBUN/SCS METHOD FOR COMPUTING RUNOFF HYDROGRAPH
STORM OPTIONS:
1 - S.C.S. TYPE-1A
2 - 7-DAY DESIGN STORM
3 - STORM DATA FILE
SPECIFY STORM OPTION:
1
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ENTER; FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
2,24,2.5
Xxxxxxxxxxxxxxxxxxxxxx S.C.S.TYPE-1A DISTRIBUTION xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
XXXXXXXXXXXX 2-YEAR 24-HOUR STORM xxxx 2.50 "TOTAL PRECIP Xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx/

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SPECIFY: C - CONTINUE, N - NEWSTORM, P - PRINT, S – STOP
C
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1.55,86,0.62,98,7
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PEAK-Q(CFS) T-PEAK(HRS) VOL(CU-FT)
.84 7.83 12105
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N
STORM OPTIONS:
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2 - 7-DAY DESIGN STORM
3 - STORM DATA FILE
SPECIFY STORM OPTION:
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S.C.S. TYPE - 1A RAINFALL DISTRIBUTION
ENTER; FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
5,24,3.0
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XXXXXXXXXXXX 5-YEAR 24-HOUR STORM xxxx 3.00" TOTAL PRECIP Xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

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AREA(ACRES)	PERVIOUS		IMPERVIOUS		TC(MINUTES)
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PEAK-Q(CFS) T-PEAK(HRS) VOL(CU-FT)
.50 7.83 9445
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AREA(ACRES)	PERVIOUS		IMPERVIOUS		TC(MINUTES)
	A	CN	A	CN	

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   2.2                  1.5      86.0            .6       98.0              7.0
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3 - STORM DATA FILE
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S.C.S. TYPE - 1A RAINFALL DISTRIBUTION
ENTER; FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
10,24,3.4
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STORM OPTIONS:
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2 - 7-DAY DESIGN STORM
3 - STORM DATA FILE
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25,24,3.9
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2.09,78,0.09,98,14.4
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SPECIFY: C – CONTINUE, N – NEWSTORM, P – PRINT, S – STOP
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STORM OPTIONS:
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2 - 7-DAY DESIGN STORM
3 - STORM DATA FILE
SPECIFY STORM OPTION:
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ENTER; FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
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	A	CN	A	CN	

```
  2.2                    1.5      86.0          .6       98.0                  7.0
PEAK-Q(CFS)              T-PEAK(HRS)           VOL(CU-FT)
  1.91                     7.83                  26491
ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
C:100wr
SPECIFY: C – CONTINUE, N – NEWSTORM, P – PRINT, S – STOP
S


1 - INFO ON THIS PROGRAM
2 - SBUHYD
3 - MODIFIELD SBUHYD
4 - ROUTE
5 - ROUTE2
6 - ADDHYD
7 - BASEFLOW
8 - PLOTHYD
9 - DTATA
10 - REFAC
11 - RETURN TO DOS
ENTER OPTION:
DETENTION SIZING
ENTER OPTION
10
R/D FACILITY DESIGN ROUTINE
SPEFICY TYPE OF R/D FACILTY
1 - POND          4 - INFILTRATION POND
2 - TANK          5 - INFILTRATION TANK
3 -VAULT          6 - GRAVEL TRENCH/BED
1
ENTER: POND SIDE SLOPE (HORIZ. COMPOENT)
4
ENTER: EFFECTIVE STORAGE DEPTH(ft) BEFORE OVERFLOW
3
ENTER [d:][path]filename[.ext] OF PRIMARY DESIGN INFLOW HYDROGRAPH:
C:25wr
PRELIMINARY DESIGN INFLOW PEAK = 1.68 CFS
ENTER PRIMARY DESIGN RELEASE RATE(cfs)
.97
ENTER NUMBER OF INFLOW HYDROGRAPHS TO BE TESTED FOR PERFORMANCE (5 MAXIMUM)
3
ENTER [d:][path]filename[ext] OF HYDROGRAPH 1:
C:10wr
ENTER TARGET RELEASE RATE(cfs)
.66
ENTER [d:][path]filename[ext] OF HYDROGRAPH 2:
```

C:5wr
ENTER TARGET RELEASE RATE(cfs)
.50
ENTER [d:][path]filename[ext] OF HYDROGRAPH 3:
C:2wr
ENTER TARGET RELEASE RATE(cfs)
0.32
ENTER: NUMBER OF ORIFICES, RISER-HEAD(ft), RISER-DIAMETER(in)
3,3,12
RISER OVERFLOW DEPTH FOR PRIMARY PEAK INFLOW= .30FT
SPECIFY ITERATION DISPLAY: Y -YES, N - NO
N
SPECIFY: R - REVIEW/REVISE INPUT, C - CONTINUE
C
INITIAL STORAGE VALUE FOR ITERATION PURPOSES: 6930 CU-FT
BOTTOM ORIFICE: ENTER Q-MAX(cfs)
0.38
DIA.= 2.84 INCHES
MIDDLE ORIFICE: ENTER Q-MAX(cfs), HEIGHT (ft)
0.49,2.7
DIA. = 5.74 INCHES
TOP ORIFICE: ENTER HEIGHT (ft)
2.8
DIA.= 5.87 INCHES

PERFORMANCE:	INFLOW	TARGET-OUTFLOW	ACTUAL-OUTFLOW	PK-STAGE	STORAGE
DESIGN HYD:	1.58	.97	.97	3.00	2814
TEST HYD 1:	1.31	.66	.65	2.80	2470
TEST HYD 2:	1.10	.50	.35	2.58	2140
TEST HYD 3:	.84	.32	.31	2.01	1380

SPECIFY: D - DOCUMENT, R -REVISE, A - ADJUST ORIF, E -ENLARGE, S –STOP

A proposed detention facility will be constructed within the existing open space track at the northerly side of Fairhaven. This will become a regional storm facility. The preliminary plan illustrates a facility with sufficient volume as indicated in the calculations. Water quality will be provided in the bottom on the pond. The 100-year event flow will be addressed in the final design.

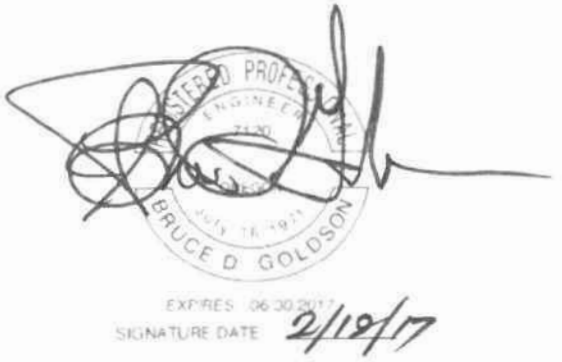
This preliminary analysis of the storm water collection and discharge for the Willow Ridge development demonstrates feasibility and to meet the minimum standards of the City of West Linn. Calculations and preliminary drawings show that the storm water can be collected and discharged per standard engineering practice and City standards for the 2, 5, 10, & 25 year storm events with detention facilities that control the flow to the pre-design rates. A final report will be prepared with the design phase that will provide necessary detail and final sizing.

Prepared By:

Bruce D. Goldson, PE

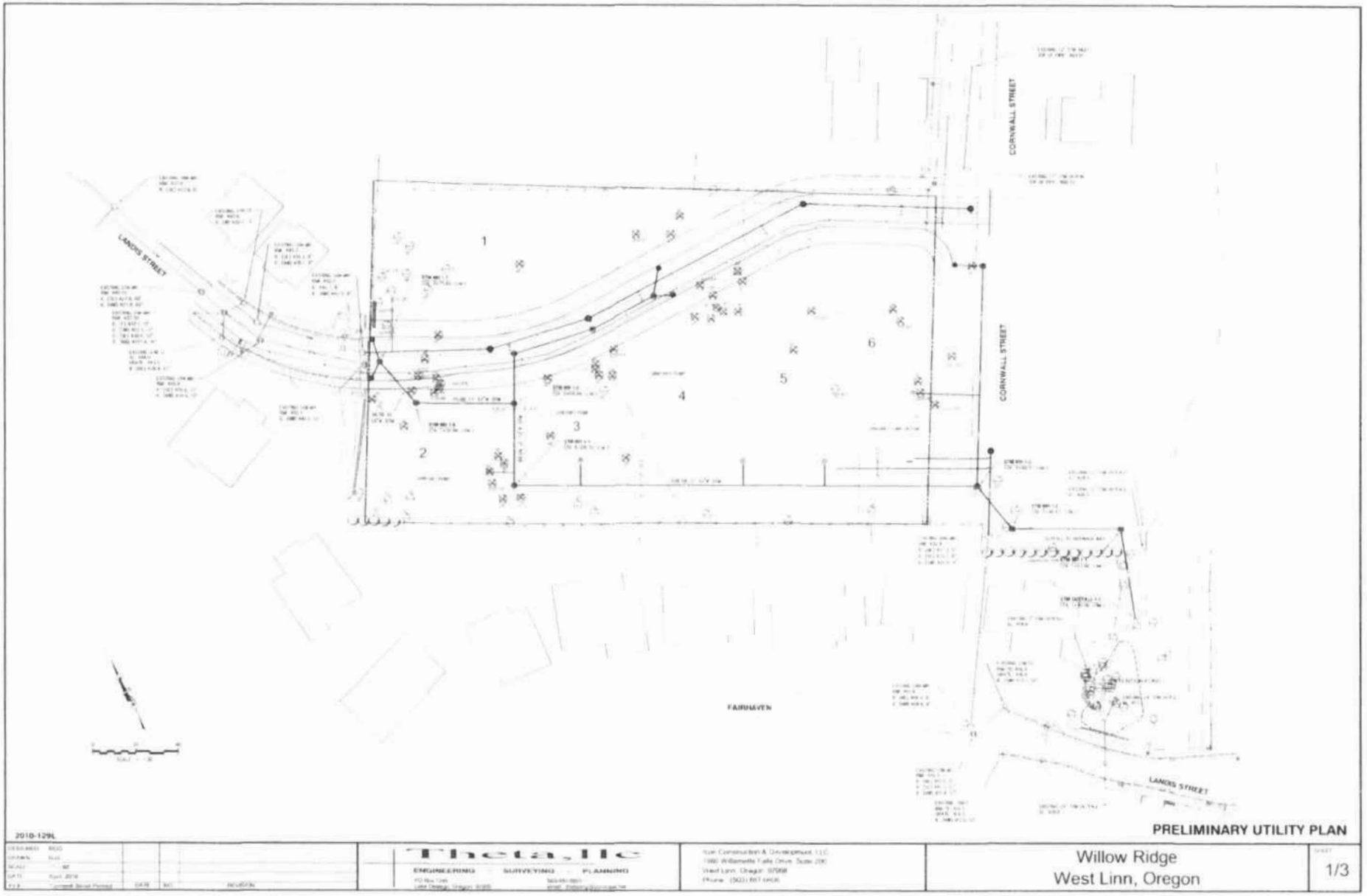
Theta

January 9, 2017



EXPIRES 06/30/2017

SIGNATURE DATE 2/10/17



2010-129L

PRELIMINARY UTILITY PLAN

Tiedtke
ENGINEERING SURVEYING PLANNING

Willow Ridge
West Linn, Oregon

1/3

Table 4-3 MODIFIED CURVE NUMBERS

SCS Western Washington Runoff Curve Numbers

Runoff curve numbers for selected agricultural, suburban, and urban land use for Type 1A rainfall distribution, 24-hour storm duration. (Published by SCS in 1982)

LAND USE DESCRIPTION		CURVE NUMBERS BY HYDROLOGIC SOIL GROUP			
		A	B	C	D
Cultivated land[1]	Winter Condition	86	91	94	95
Mountain Open Areas:	Low growing brush and grassland.	74	82	89	92
Meadow or pasture:		65	78	85	89
Wood or forest land:	Undisturbed	42	64	76	81
	Established second growth[2]	48	68	78	83
	Young second growth or brush	55	72	81	86
Orchard:	With over crop	81	88	92	94
Open spaces, lawns, parks, golf courses, cemeteries, landscaping					
Good Condition:	Grass cover on > =75% of area	68	80	86	90
Fair Condition:	Grass cover on 50-75% of area	77	85	90	92
Gravel Roads and Parking Lots:		76	85	89	91
Dirt Roads and Parking Lots:		72	82	87	89
Impervious surfaces, pavement, roofs, etc.		98	98	98	98
Open water bodies:	Lakes, wetlands, ponds, etc.	100	100	100	100
Single Family Residential [3]:					
Dwelling unit/gross acre	% Impervious[4]				
1.0 DU/GA	15				
1.5 DU/GA	20				
2.0 DU/GA	25				
2.5 DU/GA	30				
3.0 DU/GA	34				
3.5 DU/GA	38				
4.0 DU/GA	42				
4.5 DU/GA	46				
5.0 DU/GA	48				
5.5 DU/GA	50				
6.0 DU/GA	52				
6.5 DU/GA	54				
7.0 DU/GA	56				
Planned Unit Developments, condominiums, apartments, commercial businesses & industrial areas[3]	% impervious[4] Must be computed				

Select a separate curve number for pervious and impervious portions of the site or basin.

Select a separate curve number for pervious and impervious portions of the site or basin.

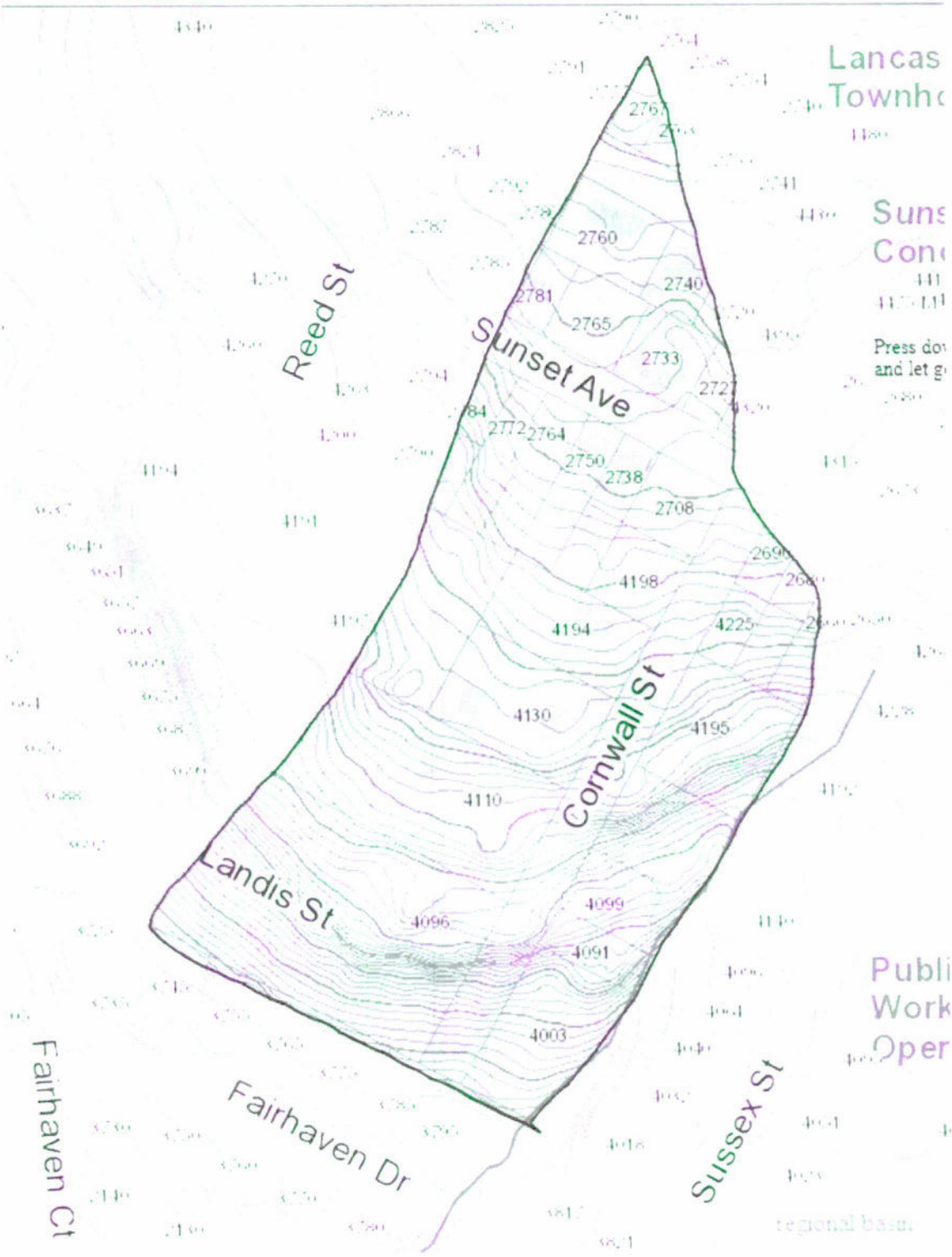
[1] For a more detailed description of agricultural land use curve numbers, refer to National Engineering Handbook, Sec. 4, Hydrology, Chapter 9, August 1972.

[2] Modified by KCFW, 1995.

[3] Assumes roof and driveway runoff is directed into street/storm system.

[4] The remaining pervious areas (lawn) are considered to be in good condition for these curve numbers.

Table 4-4 MANNING'S COEFFICIENTS/"K" FACTORS		
"n" AND "k" Value Used in Time Calculations for Hydrographs "n_s" Sheet Flow Equation Manning's Values (for initial 300 ft. of travel)		n_s
Smooth surfaces (concrete, asphalt, gravel, or bare hand packed soil)		0.01
Fallow fields or loose soil surface (no residue)		0.05
Cultivated soil with residue cover (s # 0.20 ft/ft)		0.06
Cultivated soil with residue cover (s > 0.20 ft/ft)		0.17
Short prairie grass and lawns		0.15
Dense grasses		0.24
Bermuda grass		0.41
Range (natural)		0.13
Woods or forest with light underbrush		0.40
Woods or forest with dense underbrush		0.80
* Manning values for sheet flow only, from Overton and Meadows 1976 (See SCS's TR-55, 1986) "k" Values Used in Travel Time/Time of Concentration Calculations Shallow Concentrated Flow (After the initial 300 ft. of sheet flow, R = 0.1)		k_s
1.	Forest with heavy ground litter and meadows (n = 0.10)	3
2.	Brushy ground with some trees (n = 0.060)	5
3.	Fallow or minimum tillage cultivation (n=0.040)	8
4.	High grass (n=0.035)	9
5.	Short grass, pasture, and lawns (n=0.030)	11
6.	Nearly bare ground (n=0.025)	13
7.	Paved and gravel areas (n=0.012)	27
** Channel flow (intermittent) (At beginning of visible channels R=0.2)		k_c
1.	Forested swale with heavy ground litter (n=0.10)	5
2.	Forested drainage course/ravine with defined channel bed (n=0.050)	10
3.	Rock-lined waterway (n=0.035)	15
4.	Grassed waterway (n=0.030)	17
5.	Earth-lined waterway (n=0.025)	20
6.	CMP pipe (n=0.024)	21
7.	Concrete pipe (0.012)	42
8.	Other waterways and pipe 0.508/n	
Channel flow (Continuous stream, R=0.4)		k_c
9.	Meandering stream with some pools (n=0.040)	20
10.	Rock-lined stream (n=0.035)	23
11.	Grass-lined stream (n=0.030)	27
12.	Other streams, man-made channels and pipe 0.807/n **	
** See Table 6-3 for additional Mannings "n" values for open channels.		


Reed St
Sunset Ave
Cornwall St
Landis St
Fairhaven Dr
Fairhaven Ct
Sussex St
2760
2740
2781
2765
2733
2727
2764
2750
2738
2708
4198
4194
4225
4130
4195
4110
4099
4096
4091
4003

Carlson Geotechnical

A Division of Carlson Testing, Inc.
Phone: (503) 601-8250
Fax: (503) 601-8254

Bend Office	(541) 330-9155
Eugene Office	(541) 345-0289
Salem Office	(503) 589-1252
Tigard Office	(503) 684-3460

Report of
Geotechnical Investigation
Cornwall Street Subdivision
4096 Cornwall Street
West Linn, Oregon

CGT Project Number G1504283

Prepared for

Mr. Darren Gusdorf
ICON Construction & Development
1980 Willamette Falls Drive, Suite 200
West Linn, Oregon 97068

January 7, 2016

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1980 Willamette Falls Drive, Suite 200
West Linn, Oregon 97068

Report of
Geotechnical Investigation
Cornwall Street Subdivision
4096 Cornwall Street
West Linn, Oregon

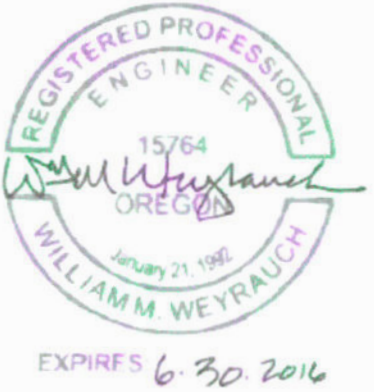
CGT Project Number G1504283

Dear Mr. Gusdorf:

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing our Geotechnical Investigation for the proposed Cornwall Street Subdivision project. The site is located at 4096 Cornwall Street in West Linn, Oregon. We performed our work in general accordance with CGT Proposal GP6901, dated December 3, 2015. Written authorization for our services was provided on December 3, 2015.

We appreciate the opportunity to work with you on this project. Please contact us at 503.601.8250 if you have any questions regarding this report.

Respectfully Submitted,
CARLSON GEOTECHNICAL



Kyle Smetana, EIT
Geotechnical Project Manager
ksmetana@carlsontesting.com

William M. Weyrauch, P.E., G.E.
Senior Geotechnical Engineer
bweyrauch@carlsontesting.com

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ATTACHMENTS

Doc ID: G:\GEOTECH\PROJECTS\2015 Projects\Cornwall St Subdivision\008 - Deliverables\Report G1504283.docx

1.0 INTRODUCTION

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing our Geotechnical Investigation for the proposed Cornwall Street Subdivision. The site is located at 4096 Cornwall Street in West Linn, Oregon, as shown on the attached Site Location, Figure 1.

1.1 Project Description

CGT developed an understanding of the proposed project based on our correspondence with ICON Construction & Development and a preliminary site plan prepared by Richard E. Givens, Planning Consultant, dated March 2015. Based on our review, we understand the project will include:

- Demolition and removal of the existing single-family residence and accessory structures.
- Partitioning the site into seven residential lots.
- Development within each lot will include construction of a single-family residence with appurtenant driveways and underground utilities. Although no lot-specific plans have been provided, we have assumed each structure will be two stories in height, wood-framed, and include daylight basements/garages. We anticipate the living space of the structures will incorporate post-and-beam floors (crawlspaces), while basements/garages will incorporate a slab-on-grade floor.
- Construction of extensions to Landis Street and Cornwall Street to provide vehicular access to the residential lots.
- Although no grading plans have been provided, we anticipate permanent grade changes at the site will include cuts and fills on the order of up to 5 feet within the new roadway.
- We understand infiltration testing is not needed as part of this assignment.

1.2 Scope of Work

The purpose of our work was to explore shallow subsurface conditions at the site in order to provide geotechnical recommendations for design and construction of the proposed development. Our scope of work included the following:

- Contact the Oregon Utilities Notification Center and subcontract a private utility locator to mark the locations of public utilities within a 20-foot radius of our explorations at the site.
- Explore subsurface conditions at the site by observing the excavation of seven test pits to depths of about 6 to 10 feet below ground surface (bgs).
- Classify the materials encountered in the explorations in accordance with American Society for Testing and Materials (ASTM) Soil Classification Method D2488 (visual-manual procedure).
- Collect representative soil samples from within the explorations in order to perform laboratory testing and to confirm our field classifications.
- Perform laboratory testing on selected samples collected during our subsurface exploration.
- Provide a technical narrative describing surface and subsurface deposits, and local geology of the site, based on the results of our explorations and published geologic mapping.
- Provide a site vicinity map and a site plan showing the locations of the explorations relative to existing site features.
- Provide logs of the explorations, including results of laboratory testing on selected soil samples.
- Provide preliminary geotechnical recommendations for site preparation and earthwork.
- Provide preliminary geotechnical engineering recommendations for design and construction of shallow spread foundations, retaining walls, floor slabs, and flexible pavements.

- Provide recommendations for the Seismic Site Class, mapped maximum considered earthquake spectral response accelerations, and site seismic coefficients.
- Provide a qualitative evaluation of seismic hazards at the site, including liquefaction potential, earthquake-induced settlement and landsliding, and surface rupture due to faulting or lateral spread.
- Provide this written report summarizing the results of our Geotechnical Investigation and preliminary recommendations for the project. This report is considered preliminary, as we have not reviewed final grading plans, finished floor elevations, and/or detailed structural information for the development. An addendum indicating that this report is final, and including supplemental recommendations, if warranted, can be issued after we have reviewed those items.

2.0 SITE INVESTIGATION

2.1 Site Geology

The site is located at the southeast end of the Tualatin Mountains. The Tualatin Mountains separate the Tualatin Valley to the west, the Portland Basin to the northeast, and the Willamette Valley to the southwest. Based on available geologic mapping of the area, the site is underlain by Columbia River Basalt. The Columbia River Basalt consists of numerous fine-grained lava flows that primarily erupted from fissures in present day eastern Washington and Oregon and western Idaho during the Miocene (23.8 to 5.3 million years ago). A thick, clay-rich residual soil often forms on the upper portion of the Columbia River Basalt from the in-place weathering of the rock. The Columbia River Basalt is several thousand feet thick in the vicinity of the site.

2.2 Site Surface Conditions

The site consists of one tax lot totaling approximately 2 acres. A single-family residence and accessory structures were located within the northeast portion of the site. The site was bordered by residential development on all sides. Landis Street and Cornwall Street terminate at the site boundaries. Vegetation on the northeastern portion of the site consists of grasses and scattered deciduous trees. The site generally descended to the south at maximum gradients up to about 2½ horizontal to 1 vertical (2½H:1V).

2.3 Field Investigation

2.3.1 Test Pits

CGT observed the excavation of seven test pits (TP-1 through TP-7) at the site on December 10, 2015, to depths of up to about 10 feet bgs. The test pits were excavated using a John Deere 50G, tracked excavator provided and operated by ICON Construction. The approximate test pit locations are shown on the attached Site Plan, Figure 2. The test pits were located in the field using approximate measurements from existing site features shown on the Site Plan. Upon completion of logging, the test pits were loosely backfilled by ICON Construction with the excavated materials.

Pocket penetrometer readings were taken within the upper 4 feet of selected test pits, where fine-grained soils were present. The pocket penetrometer is a hand-held instrument that provides an approximation of the unconfined compressive strength of cohesive, fine-grained soils. The correlation between pocket penetrometer readings and the consistency of cohesive, fine-grained soils is provided on the attached Figure 3.

2.3.2 Soil Classification & Sampling

Members of CGT's staff logged the soils observed within the explorations in general accordance with the Unified Soil Classification System (USCS) and collected representative samples of the materials encountered. An explanation of the USCS is presented on the attached Soil Classification Criteria and Terminology, Figure 4. Rock encountered within the test pits was logged in accordance with the Oregon Department of Transportation (ODOT) Soil and Rock Classification Manual[1]. An explanation of the rock classification is shown on the attached ODOT Rock Classification Criteria and Terminology, Figure 5. The soil samples were stored in sealable plastic bags and transported to our laboratory for further examination and testing. Our staff visually examined all samples returned to our laboratory in order to refine the field classifications. Logs of the explorations are presented on the attached Exploration Logs, Figures 6 through 12. Surface elevations indicated on the logs and shown on the attached Figure 2 were estimated based on the topographic contours from the MetroMap web application. Elevations shown on the logs should be considered approximate.

2.4 Laboratory Testing

Laboratory testing was performed on samples collected in the field to refine our initial field classifications and determine in-situ parameters. Results of the laboratory tests are shown on the attached Exploration Logs, Figures 6 through 12. Laboratory testing included:

- Seven moisture content determinations (ASTM D2216)
- One Atterberg limits (plasticity index) test (ASTM D4318)

2.5 Subsurface Materials

The following paragraphs provide a description of each of the subsurface materials encountered at the site.

2.5.1 Silty Sand Fill (SM FILL)

Silty sand fill was encountered at the surface of TP-1 and TP-2. This material extended to depths of about 2 feet bgs. The silty sand fill was generally brown, moist, fine- to medium-grained, contained roots (less than 3-inch diameter), and contained fine to coarse angular gravel (up to 4-inch diameter).

2.5.2 Sandy Silt Fill (SM FILL)

Sandy silt fill was encountered beneath the silty sand fill within TP-1 and extended to a depth of about 4½ feet bgs. This material was generally gray, moist, exhibited low plasticity, contained fine to coarse angular gravel, and contained brick and asphalt debris (up to 2-inch diameter).

2.5.3 Native Silty Sand (SM)

Native silty sand was encountered beneath the sandy silt fill within TP-1 and at the surface of TP-3 and TP-4. This material extended to depths up to about 8½ feet bgs. The silty sand was generally medium dense, gray to brown, damp to moist, fine- to medium-grained, and contained gravel and boulders (up to 20-inch diameter).

---

[1] Oregon Department of Transportation, 1987. Soil and Rock Classification Manual.

2.5.4 Native Sandy Silt (ML)

Native sandy silt was encountered at the surface of TP-5 through TP-7 and extended to depths up to about 2 feet bgs. This material was generally medium stiff to stiff, gray to brown, moist, exhibited low plasticity, contained roots (up to 3-inch diameter), and contained gravel and cobbles (up to 10-inch diameter).

2.5.5 Native Lean Clay (CL)

Native lean clay was encountered beneath the silty sand fill within TP-2, beneath the native silty sand within TP-4, and beneath the sandy silt within TP-5 through TP-7. The lean clay extended to depths up to about 5 feet bgs within TP-2and TP-4through TP-76. The lean clay was generally medium stiff to very stiff, gray-brown, moist, exhibited medium plasticity, and contained sand, gravel, and cobbles (up to 9 inches in diameter).

2.5.6 Predominantly Weathered Basalt

Predominantly weathered basalt was encountered beneath the silty sand within TP-1 and TP-3, and beneath the lean clay within TP-2 and TP-4 through TP-7. The predominantly weathered basalt extended to the full depths explored within these test pits, up to about 10 feet bgs. The weathered basalt was generally very soft (R1), red, gray, brown, tan, and moist.

2.6 Groundwater

Groundwater was not encountered within depths explored on December 10, 2015. Based on our review of available groundwater mapping provided by the United States Geological Survey[2] (USGS), groundwater in the immediate vicinity of the site is estimated to be at a depth in excess of 200 feet bgs. We anticipate groundwater levels will fluctuate due to seasonal and annual variations in precipitation, changes in site utilization, or other factors. In addition, the native sandy silt (ML), native lean clay (CL), and weathered basalt are conducive to the formation of perched water tables.

3.0 SEISMIC CONSIDERATIONS

3.1 Seismic Design

Section 1613.3.2 of the 2014 Oregon Structural Specialty Code (2014 OSSC) requires that the determination of the seismic site class be based on subsurface data in accordance with Chapter 20 of the American Society of Civil Engineers Minimum Design Loads for Buildings and Other Structures (ASCE 7). Based on the results of the explorations and review of geologic mapping, we have assigned the site as Site Class D for the subsurface conditions encountered. Earthquake ground motion parameters for the site were obtained based on the United States Geological Survey (USGS) Seismic Design Values for Buildings - Ground Motion Parameter Web Application[3]. The site Latitude 45.356965° North and Longitude 122.633618° West were input as the site location. The following table shows the recommended seismic design parameters for the site.

---

[2] "USGS: Estimated Depth to Ground Water and Configuration of the Water Table in the Portland, Oregon Area" http://or.water.usgs.gov/projs_dir/puz/

[3] United States Geological Survey, 2015. Seismic Design Parameters determined using:, "U.S. Seismic Design Maps Web Application - Version 3.1.0," from the USGS website *http://geohazards.usgs.gov/designmaps/us/application.php*.

Table 1 Seismic Ground Motion Values (Section 1613.5 of 2014 OSSC)

Parameter		Value
Mapped Acceleration Parameters	Spectral Acceleration, 0.2 second (S_s)	0.944g
	Spectral Acceleration, 1.0 second (S_1)	0.407g
Coefficients (Site Class D)	Site Coefficient, 0.2 sec. (F_A)	1.122
	Site Coefficient, 1.0 sec. (F_V)	1.593
Adjusted MCE Spectral Response Parameters	MCE Spectral Acceleration, 0.2 sec. (S_{MS})	1.060g
	MCE Spectral Acceleration, 1.0 sec. (S_{M1})	0.648g
Design Spectral Response Accelerations	Design Spectral Acceleration, 0.2 seconds (S_{DS})	0.706g
	Design Spectral Acceleration, 1.0 second (S_{D1})	0.432g
Seismic Design Category		D

3.2 Seismic Hazards

3.2.1 Liquefaction

In general, liquefaction occurs when deposits of loose/soft, saturated, cohesionless soils, generally sands and silts, are subjected to strong earthquake shaking. If these deposits cannot drain quickly enough, pore water pressures can increase, approaching the value of the overburden pressure. The shear strength of a cohesionless soil is directly proportional to the effective stress, which is equal to the difference between the overburden pressure and the pore water pressure. When the pore water pressure increases to the value of the overburden pressure, the shear strength of the soil approaches zero, and the soil can liquefy. The liquefied soils can undergo rapid consolidation or, if unconfined, can flow as a liquid. Structures supported by the liquefied soils can experience rapid, excessive settlement, shearing, or even catastrophic failure.

For fine-grained soils, susceptibility to liquefaction is evaluated based on penetration resistance and plasticity, among other characteristics. Criteria for identifying non-liquefiable, fine-grained soils are constantly evolving. Current practice[4] to identify non-liquefiable, fine-grained soils is based on plasticity characteristics of the soils, as follows: (1) liquid limit greater than 47 percent, (2) plasticity index greater than 20 percent, and (3) moisture content less than 85 percent of the liquid limit. The susceptibility of sands, gravels, and sand-gravel mixtures to liquefaction is typically assessed based on penetration resistance, as measured using SPTs, CPTs, or Becker Hammer Penetration tests (BPTs).

Based on the shallow depth to weathered basalt, the relative plasticity of the clay soils and the estimated depth to groundwater, the soils encountered at the site are considered non-liquefiable within the depths explored.

3.2.2 Slope Instability

Due to the relatively minimal planned changes in site grade and the generally gently-sloping topography, we conclude the risk of seismically-induced slope instability at the site is low.

[4] Seed, R.B. et al., 2003. Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework. Earthquake Engineering Research Center Report No. EERC 2003-06.

3.2.3 Surface Rupture

3.2.3.1 Faulting

Although the site is situated in a region of the country with known active faults and historic seismic activity, no known faults exist on or immediately adjacent to the site. Therefore, the risk of surface rupture at the site due to faulting is considered low.

3.2.3.2 Lateral Spread

Surface rupture due to lateral spread can occur on sites underlain by liquefiable soils that are located on or immediately adjacent to slopes steeper than about 3 degrees (20H:1V), and/or adjacent to a free face, such as a stream bank or the shore of an open body of water. During lateral spread, the materials overlying the liquefied soils are subject to lateral movement downslope or toward the free face. Given the lack of liquefiable soils at the site and the absence of a free face, the risk of surface rupture due to lateral spread is considered negligible.

4.0 CONCLUSIONS

Based on the results of our field explorations and analyses, the site may be developed as described in Section 1.1 of this report, provided the recommendations presented in this report are incorporated into the design and development. The primary geotechnical considerations for this project include:

- Cobbles and Boulders at Foundation/Floor Slab/Pavement Subgrade: Based on our explorations, cobbles and boulders may be encountered at design subgrade elevations for shallow foundations, floor slabs, or pavements. Structural elements placed directly on boulders and cobbles can result in uneven ground response. To minimize this potential, CGT recommends:
  - Boulders encountered during foundation, floor slab, and pavement subgrade preparation be removed in their entirety and replaced with granular structural fill.
  - Foundation subgrades should be covered with a minimum of 6 inches of angular structural fill compacted to a well-keyed condition.
- Existing Structures: Existing structures should be removed prior to redevelopment of the site.
- Moisture Sensitive Soils: The near-surface, native, silty sand (SM), native sandy silt (ML), and native lean clay (CL) are sensitive to small changes in moisture content, and can pose challenges for earthwork performed during wet weather.

5.0 PRELIMINARY RECOMMENDATIONS

The following paragraphs present specific geotechnical recommendations for design and construction of the proposed residential structures at the site. The recommendations presented in this report are based on the information provided to us, results of the field investigation, laboratory data, and professional judgment. CGT has observed only a small portion of the pertinent subsurface conditions. The recommendations are based on the assumption that the subsurface conditions do not deviate appreciably from those found during the field investigation. CGT should be consulted for further recommendations if variations and/or undesirable geotechnical conditions are encountered at the site.

This report is considered preliminary, as we have not reviewed final grading plans, finished floor elevations, and detailed structural information for the development. An addendum indicating that this report is final, and including supplemental recommendations, if warranted, can be issued after we have reviewed those items.

5.1 Site Preparation

5.1.1 Site Stripping

Existing vegetation, topsoil, and fill (SM FILL and ML FILL) should be removed from within, and for a minimum 5-foot margin around, proposed building pad and pavement areas. Based on the results of our field explorations, stripping depths at the site are anticipated to be about 2 to 4½ foot bgs where fill is present and about ½ to 1 foot bgs where fill is not present. These materials may be deeper or shallower at locations away from the completed explorations. A geotechnical representative from CGT should provide recommendations for actual stripping depths based on observations during site stripping. Stripped surface vegetation and rooted soils should be transported off-site for disposal or stockpiled for later use in landscaped areas. Stripped pavements and demolition debris should be transported off site for disposal.

5.1.2 Grubbing

Grubbing of trees should include the removal of the root mass and roots greater than ½-inch in diameter. Grubbed materials should be transported off-site for disposal. Root masses from larger trees may extend greater than 3 feet bgs. Where root masses are removed, the resulting excavation should be properly backfilled with structural fill in conformance with Section 5.4 of this report.

5.1.3 Existing Utilities & Below-Grade Structures

All existing utilities at the site should be identified prior to excavation. Abandoned utility lines beneath new residential structures, pavements, and hardscaping should be completely removed or grouted full. Soft, loose, or otherwise unsuitable soils encountered in utility trench excavations should be removed and replaced with structural fill as described in Section 5.4 of this report. No below-grade structures were encountered in our explorations. If encountered during site preparation, buried structures (i.e. footings, foundation walls, slabs-on-grade, tanks, etc.) should be completely removed and disposed of off-site except for concrete which may, alternatively, be processed for re-use as described in Section 5.4.1.1. Resulting excavations should be backfilled with structural fill as described in Section 5.4 of this report, as needed to achieve design grades.

5.1.4 Erosion Control

Erosion and sedimentation control measures should be employed in accordance with applicable City, County and State regulations regarding erosion control.

5.2 Temporary Excavations

5.2.1 Overview

Conventional earthmoving equipment in proper working condition should be capable of making necessary excavations into the on-site soils. Excavations into the basalt, if needed, may require the use of special excavation methods and/or equipment. Please contact the geotechnical engineer for further evaluation if excavation into the basalt is anticipated based on final plans.

All excavations should be in accordance with applicable OSHA and state regulations. It is the contractor's responsibility to select the excavation methods, to monitor site excavations for safety, and to provide any shoring required to protect personnel and adjacent improvements. A "competent person", as defined by OR-OSHA, should be on site during construction in accordance with regulations presented by OR-OSHA. CGT's current role on the project does not include review or oversight of excavation safety.

5.2.2 OSHA Soil Class

For use in the planning and construction of temporary excavations up to 8 feet in depth at the site, an OSHA soil type "C" should be used for the native, silty sand (SM), native sandy silt (ML), and native lean clay (CL). Special consideration may be required where boulders are encountered during excavation or are present within excavation sidewalls.

5.2.3 Utility Trenches

Temporary trench cuts in native soils described earlier should stand near vertical to depths of approximately 4 feet. Caving should be expected where the native soils contain boulders. Some instability may occur if groundwater seepage is encountered. If seepage undermines the stability of the trench, or if caving of the sidewalls is observed during excavation, the sidewalls should be flattened or shored. Depending on the time of year trench excavations occur, trench dewatering may be required in order to maintain dry working conditions, particularly if the invert elevations of the proposed utilities are below the groundwater level. Pumping from sumps located within the trench will likely be effective in removing water resulting from seepage. If groundwater is present at the base of utility excavations, we recommend placing trench stabilization material at the base of the excavations. Trench stabilization material should be in conformance with Section 5.4.4 of this report.

5.2.4 Excavations Near Existing Foundations

Temporary excavations near existing footings should not extend within a 1½H:1V (horizontal to vertical) plane projected out and down from the outside, bottom edge of the footings. In the event that excavation needs to extend below the referenced plane, temporary shoring of the excavation and/or underpinning of the footing may be required. The geotechnical engineer should be consulted to review proposed excavation plans for this design case to provide specific recommendations.

5.3 Wet Weather Considerations

For planning purposes, the wet season should be considered to extend from late September to late June. It is our experience that dry weather working conditions should prevail between early July and the middle of September. Notwithstanding the above, soil conditions should be evaluated in the field by the geotechnical engineer or his representative at the initial stage of site preparation to determine whether the recommendations within this section should be incorporated into construction.

5.3.1 General Considerations

The near-surface, native, silty sand (SM), native sandy silt (ML), and native lean clay (CL) encountered within our explorations are susceptible to disturbance during wet weather. Trafficability of these soils may be difficult, and significant damage to subgrade soils will likely occur, if earthwork is undertaken without proper precautions at times when the exposed soils are more than a few percentage points above optimum moisture content. For construction that occurs during the wet season, methods to limit soil disturbance should be employed. Site preparation activities may need to be accomplished using track-mounted equipment, loading removed material onto trucks supported on granular haul roads. Soils that have been disturbed during site preparation activities should be over-excavated to firm, stable subgrade, and replaced with imported granular structural fill.

5.3.2 Geotextile Separation Fabric

We recommend placing geotextile separation fabric to serve as a barrier between the fine-grained subgrade and imported fill in areas of repeated or heavy construction traffic. The geotextile fabric should be in conformance with Section 02320 of the current Oregon Department of Transportation (ODOT) Standard Specification for Construction. Please refer to Table 02320-4 of the 2015 ODOT specifications for specific requirements.

5.3.3 Granular Working Surfaces (Haul Roads & Staging Areas)

Haul roads subjected to repeated heavy, tire-mounted, construction traffic (e.g. dump trucks, concrete trucks, etc.) will require a minimum of 18 inches of imported granular material. The prepared subgrade should be covered with geotextile fabric prior to placement of the imported granular material. The imported granular material should be placed in a single lift (up to 24 inches deep) and compacted using a smooth-drum, non-vibratory roller until well-keyed.

For light staging areas, 12 inches of imported granular material should be sufficient. Additional granular material or geo-grid reinforcement may be recommended based on site conditions and/or loading at the time of construction. The imported granular material should be in conformance with Section 5.4.2 of this report and have less than 5 percent material passing the U.S. Standard No. 200 Sieve.

5.3.4 Footing Subgrade Protection

A minimum of 3 inches of imported granular material is recommended to protect fine-grained, footing subgrades from foot traffic during inclement weather. The imported granular material should be in conformance with Section 5.4.2 of this report. The maximum particle size should be limited to 1 inch. The imported granular material should be placed in one lift over the prepared, undisturbed subgrade, and compacted using non-vibratory equipment until well keyed.

5.4 Structural Fill

The geotechnical engineer should be provided the opportunity to review all materials considered for use as structural fill a minimum of five business days prior to placement. If the gradation and proctor test results are not available or are more than three months old, samples of the proposed structural fill materials should be submitted to the geotechnical engineer for testing a minimum of five business day prior to use on site.

The geotechnical engineer or his representative should be contacted to evaluate compaction of structural fill as the material is being placed. Evaluation of compaction may take the form of in-place density tests and/or proof-roll tests with suitable equipment. Compaction of structural fill should be evaluated at intervals not exceeding every 2 vertical feet as the fill is being placed.

5.4.1 On-Site Soils (General Use)

5.4.1.1 Concrete Debris

Concrete debris resulting from the demolition of existing structures (foundations, floor slabs, etc.) can be re-used as structural fill if processed/crushed into material that is fairly well graded between coarse and fine particle sizes. The processed/crushed concrete should contain no organic matter, debris, or particles larger than 4 inches in diameter. Moisture conditioning (wetting) should be expected in order to achieve adequate compaction. When used as structural fill, this material should be placed and compacted in general accordance with Section 5.4.2 of this report. Such materials should be "capped" with a minimum of 12 inches

of ¾ -inch-minus (or finer) granular fill under all structural elements (footings, and, pavements, etc.). The capping material below slabs-on-grade (base rock) should consist of material as described in Section 5.4.3.

5.4.1.2 Silty sand (SM), Sandy Silt (ML) and Lean Clay (CL)

Re-use of on-site soils with fines contents over about 5 percent as structural fill may be difficult because these soils are sensitive to small changes in moisture content and are difficult, if not impossible, to adequately compact during wet weather. We anticipate the moisture content of these soils will be higher than the optimum moisture content for satisfactory compaction. Therefore, moisture conditioning (drying) should be expected in order to achieve adequate compaction. If used as structural fill, these soils should be free of organic matter, debris, and particles larger than 4 inches. Processing of the clay should include removal of boulders in excess of 4 inches in diameter. When used as structural fill, these soils should be placed in lifts with a maximum loose thickness of about 8 inches at moisture contents within –1 and +3 percent of optimum, and compacted to not less than 93 percent of the material's maximum dry density, as determined in general accordance with ASTM D1557 (Modified Proctor). If these soils cannot be properly moisture-conditioned and processed, we recommend using imported granular material for structural fill.

5.4.2 Imported Granular Structural Fill (General Use)

Imported granular structural fill should consist of angular pit or quarry run rock, crushed rock, or crushed gravel that is fairly well graded between coarse and fine particle sizes. The granular fill should contain no organic matter, debris, or particles larger than 1½ inches, and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. The percentage of fines can be increased to 12 percent of the material passing the U.S. Standard No. 200 Sieve if placed during dry weather, and provided the fill material is moisture-conditioned, as necessary, for proper compaction. Granular fill material should be placed in lifts with a maximum loose thickness of about 12 inches, and compacted to not less than 93 percent of the material's maximum dry density, as determined in general accordance with ASTM D1557 (Modified Proctor). Proper moisture conditioning and the use of vibratory equipment will facilitate compaction of these materials.

Compaction of granular fill materials with high percentages of particle sizes in excess of 1½ inches should be evaluated by periodic proof-roll observation or continuous observation by the CGT geotechnical representative during fill placement, since it cannot be tested conventionally using a nuclear densometer. Such materials should be "capped" with a minimum of 12 inches of 1½-inch-minus (or finer) granular fill under all structural elements (footings, concrete slabs, pavements, etc.).

5.4.3 Floor Slab Base Rock

Floor slab base rock should consist of well-graded granular material (crushed rock) containing no organic matter or debris, have a maximum particle size of ¾-inch, and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. Floor slab base rock should be placed in one lift and compacted to not less than 90 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor).

5.4.4 Trench Base Stabilization Material

If groundwater is present at the base of utility excavations, stabilization material should be placed to help stabilize the base of the trench. Trench base stabilization material should consist of at least 1 foot of well-graded granular material with a maximum particle size of 4 inches and less than 5 percent material passing the U.S. Standard No. 4 Sieve. The material should be free of organic matter and other deleterious material, placed in one lift, and compacted until well-keyed.

5.4.5 Trench Backfill Material

Trench backfill for the utility pipe base and pipe zone should consist of granular material as recommended by the utility pipe manufacturer. Trench backfill above the pipe zone should consist of well-graded granular material containing no organic matter or debris, have a maximum particle size of ¾ inch, and have less than 8 percent material passing the U.S. Standard No. 200 Sieve. As a guideline, trench backfill should be placed in maximum 12-inch thick lifts. The earthwork contractor may elect to use alternative lift thicknesses based on their experience with specific equipment and fill material conditions during construction in order to achieve the required compaction. The following table presents recommended relative compaction percentages for utility trench backfill.

Table 2 Utility Trench Backfill Compaction Recommendations

Backfill Zone	Recommended Minimum Relative Compaction	
	Structural Areas[1]	Landscaping Areas
Pipe Base and Within Pipe Zone	90% ASTM D1557 or pipe manufacturer's recommendation	85% ASTM D1557 or pipe manufacturer's recommendation
Above Pipe Zone	92% ASTM D1557	88% ASTM D1557
Within 3 Feet of Design Subgrade	93% ASTM D1557	88% ASTM D1557
[1]Includes proposed residential structures, driveways, hardscaping, roadways, etc.		

5.5 Permanent Slopes

5.5.1 Overview

Permanent cut or fill slopes constructed at the site should be graded at 2H:1V or flatter. Constructed slopes should be overbuilt by a few feet depending on their size and gradient so that they can be properly compacted prior to being cut to final grade. The surface of all slopes should be protected from erosion by seeding, sodding, or other acceptable means. Adjacent on-site and off-site structures should be located at least 5 feet from the top of slopes.

5.5.2 Placement of Fill on Slopes

New fill should be placed and compacted against horizontal surfaces. Where fill is placed on existing slopes which exceed 5H:1V (horizontal to vertical), the existing slopes should be keyed and benched prior to structural fill placement in general accordance with the attached Fill Slope Detail, Figure 13. If subdrains are needed on benches, subject to the review of the CGT geotechnical representative, they should be placed as shown on the attached Fill Slope Detail, Figure 13. In order to achieve well-compacted slope faces, slopes should be overbuilt by a few feet and then trimmed back to proposed final grades. A representative from CGT should observe the benches, keyways, and associated subdrains, if needed, prior to placement of structural fill.

5.6 Shallow Spread Foundations

5.6.1 Subgrade Preparation

Satisfactory subgrade support for shallow foundations associated with the planned building addition can be obtained from the native medium dense to better, silty sand (SM), the native, medium stiff to better, sandy silt (ML), and native, medium stiff to better, lean clay (CL), or on structural fill that is properly placed and

compacted on this material during construction. These materials were encountered at depths of about 0 to 4½ feet bgs in the explorations.

Boulders encountered during foundation excavation should be removed and replaced with granular structural fill. The geotechnical engineer or his representative should be contacted to observe subgrade conditions prior to placement of forms, reinforcement steel, or granular backfill (if required). If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with imported granular structural fill in conformance with Section 5.4.2 of this report. The maximum particle size of over-excavation backfill should be limited to 1½ inches and ¾ inch within 12 inches of the bottom of new structural elements, (footings, concrete slabs, pavements, etc.). All granular pads for footings should be constructed a minimum of 6 inches wider on each side of the footing for every vertical foot of over-excavation.

5.6.2 Minimum Footing Width & Embedment

Minimum footing widths should be in conformance with the most recent, Oregon Structural Specialty Code (OSSC). As a guideline, CGT recommends individual spread footings should have a minimum width of 24 inches. Similarly, for one-story, light-framed structures, we recommend continuous wall footings have a minimum width of 12 inches. For two-, three-, and four-story, light-framed structures, we recommend continuous wall footings have a minimum width of 15, 18, and 24 inches, respectively. All footings should be founded at least 18 inches below the lowest, permanent adjacent grade.

5.6.3 Bearing Pressure & Settlement

The minimum footing dimensions described above will likely govern footing sizes. Nonetheless, footings founded as recommended above, should be proportioned for a maximum allowable soil bearing pressure of 1,500 pounds per square foot (psf). This bearing pressure is a net bearing pressure, applies to the total of dead and long-term live loads, and may be increased by one-third when considering seismic or wind loads. For the recommended design bearing pressure, total settlement of footings is anticipated to be less than 1 inch. Differential settlements between adjacent columns and/or bearing walls should not exceed ½-inch. Based on the soils encountered in the explorations and soils encountered during excavation, limited (less than 1-foot) over-excavation/backfill should be anticipated in some areas in order to achieve the indicated allowable soil bearing pressure.

5.6.4 Lateral Capacity

A maximum passive (equivalent-fluid) earth pressure of 150 pounds per cubic foot (pcf) is recommended for design for footings confined by the native soils described earlier or imported granular structural fill that is properly placed and compacted during construction. The recommended earth pressure was developed using a factor of safety of 1½, which is appropriate due to the amount of movement required to develop full passive resistance. In order to develop the above capacity, the following should be understood:

1. Concrete must be poured neat in the excavation or the perimeter of the foundation must be backfilled with imported granular structural fill,
2. The adjacent grade must be level or rising away from the footing,
3. The static ground water level must remain below the base of the foundation throughout the year, and
4. Adjacent development (e.g. slabs, pavements, etc.) and/or the upper 12 inches of adjacent unpaved, structural fill areas should not be considered when calculating passive resistance.

An ultimate coefficient of friction equal to 0.45 may be used when calculating resistance to sliding for footings founded on a minimum of 6 inches of imported granular structural fill (crushed rock) that is properly placed and compacted during construction.

5.6.5 Subsurface Drainage

Recognizing the fine-grained soils encountered at this site, placement of foundation drains is recommended at the outside base elevations of perimeter continuous wall footings. Foundation drains should consist of a minimum 4-inch diameter, perforated, PVC drainpipe wrapped with a non-woven geotextile filter fabric. The drains should be backfilled with a minimum of 2 cubic feet of open graded drain rock per lineal foot of pipe. The drain rock should also be encased in a geotextile fabric in order to provide separation from the surrounding clayey soils. Foundation drains should be positively sloped and should outlet to a suitable discharge point. The geotechnical engineer or his representative should observe the drains prior to backfilling. Roof drains should not be tied into foundation drains.

5.7 Floor Slabs

5.7.1 Subgrade Preparation

Satisfactory subgrade support for floor slabs constructed on grade, supporting up to 150 psf area loading, can be obtained from native medium dense to better, silty sand (SM), the native, medium stiff to better, sandy silt (ML), and native, medium stiff to better, lean clay (CL), or on structural fill that is properly placed and compacted on this material during construction. Boulders encountered during floor slab excavation should be removed and replaced with granular structural fill. The geotechnical engineer or his representative should observe floor slab subgrade soils to evaluate surface consistencies. If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the CGT geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with imported granular structural fill as described in Section 5.4.2 of this report.

5.7.2 Crushed Rock Base

Concrete floor slabs should be supported on a minimum 6-inch thick layer of crushed rock base in conformance with Section 5.4.3 of this report. We recommend "choking" the surface of the base rock with sand just prior to concrete placement. Choking means the voids between the largest aggregate particles are filled with sand, but does not provide a layer of sand above the base rock. Choking the base rock surface reduces the lateral restraint on the bottom of the concrete during curing. Choking the base rock also reduces punctures in overlying vapor retarding membranes due to foot traffic where such membranes are used.

5.7.3 Design Considerations

For floor slabs constructed as recommended, an equivalent modulus of subgrade reaction of 75 pounds per cubic inch (pci) is recommended for the design of the floor slab. If a higher equivalent modulus of subgrade reaction value is required, this can be achieved with a thicker base rock section below the slab. For example, on this project, the use of a 12-inch thick base rock section below the slab would allow the use of an equivalent modulus of subgrade reaction value of 100 pci. Please consult the geotechnical engineer if alternative values are needed. Floor slabs constructed as recommended will likely settle less than ½-inch. For general floor slab construction, slabs should be jointed around columns and walls to permit slabs and foundations to settle differentially.

5.7.4 Subgrade Moisture Considerations

Liquid moisture and moisture vapor should be expected at the subgrade surface. The crushed rock base recommended above typically serves as a capillary break and provides protection against liquid moisture. Where moisture vapor emission through the slab must be minimized, e.g. impervious floor coverings, storage of moisture sensitive materials directly on the slab surface, etc., a vapor retarding membrane or vapor barrier below the slab should be considered. Factors such as cost, special considerations for construction, floor coverings, and end use suggest that the decision regarding a vapor retarding membrane or vapor barrier be made by the architect and owner.

If a vapor retarder or vapor barrier is placed below the slab, its location should be based on current American Concrete Institute (ACI) guidelines, ACI 302 Guide for Concrete Floor and Slab Construction. In some cases, this indicates placement of concrete directly on the vapor retarder or barrier. Please note that the placement of concrete directly on impervious membranes increases the risk of plastic shrinkage cracking and slab curling in the concrete. Construction practices to reduce or eliminate such risk, as described in ACI 302, should be employed during concrete placement.

5.8 Pavements

5.8.1 Subgrade Preparation

In general, the subgrade soils encountered should be suitable for pavement support. However, depending on final subgrade elevations, weather conditions and soils encountered at the time of construction, a contingency for limited over-excavation and replaced with imported granular structural fill in conformance with Section 5.4.2 of this report, and the use of geotextile fabric should be planned. When evaluating its suitability as a pavement subgrade, the presence of stress concentrators (large cobbles and boulders) within 12 inches of the design pavement section should also be precluded whenever possible.
Additional subgrade improvement may be required based on the subgrade conditions encountered during construction. Where silt or clay soils are exposed at the subgrade surface, geotextile fabric should be placed at the subgrade surface prior to placing the base rock section.

5.8.1.1 Dry Weather Construction
After site preparation as recommended above, but prior to placement of fill and/or base rock, the geotechnical engineer or his representative should observe a proof roll test of the exposed subgrade soils in order to identify areas of excessive yielding. Proof rolling of subgrade soils is typically conducted during dry weather conditions using a fully-loaded, 10- to 12-cubic-yard, tire-mounted, tandem-axle dump truck or equivalent weighted water truck. Areas that appear too soft and wet to support proof rolling equipment should be prepared in general accordance with the recommendations for wet weather construction presented in Section 5.3 of this report. If areas of soft soil or excessive yielding are identified, the affected material should be over-excavated to firm, stable subgrade, and replaced with imported granular structural fill in conformance with Section 5.4.2 of this report.

5.8.1.2 Wet Weather Construction
Preparation of pavement subgrade soils during wet weather should be in conformance with Section 5.3 of this report. As indicated therein, increased base rock sections and a geotextile separation fabric may be required in wet conditions.

5.8.2 Input Parameters

Design of the flexible pavement sections presented below was based on the parameters presented in the following table, procedures in the American Association of State Highway and Transportation Officials (AASHTO) 1993 "Design of Pavement Structures" manual, ODOT Pavement Design Guide 2011, and the Asphalt Pavement Association of Oregon Asphalt Pavement Design Guide. If any of the items listed need revised, please contact us and we will reassess the provided design sections.

Table 3 Input Parameters Assigned for Pavement Design

Input Parameter	Design Value[1]	Input Parameter		Design Value[1]
Pavement Design Life	20 years	Resilient Modulus[4]	Suitable Silt, Silty Sand, Lean Clay Subgrade	5,000 psi
Annual Percent Growth	0 percent		Crushed Aggregate Base	22,500 psi
Serviceability	4.2 initial, 2.5 terminal	Structural Coefficient[2]	Crushed Aggregate Base	0.08
Reliability[2]	75 percent		Asphalt	0.42
Standard Deviation[2]	0.49	Vehicle Traffic[5]	APAO Level I "Residential Driveways"	Less than 10,000 ESAL
Drainage Factor[3]	1.0		APAO Level II "Residential Streets"	Less than 50,000 ESAL

[1] If any of the above parameters are incorrect, please contact us so that we may revise our recommendations, if warranted.
[2] Value based on guidelines presented in Section 5.3 of the 2011 ODOT Pavement Design Manual for flexible pavements, local streets.
[3] Assumes good drainage away from pavement, base, and subgrade is achieved by proper crowning of subgrades.
[4] Values based on experience with similar soils prepared as recommended in this report.
[5] ESAL = Total 18-Kip equivalent single axle load. Traffic levels taken from Table 3.1 of APAO manual. If an increased traffic load is estimated, please contact us so that we may refine the traffic loading and revise our recommendations, if warranted.
[6] Suitability of subgrade at the time of construction and may require limited over-excavation as described in Section 5.8.1 of this report. A contingency for such over-excavation is recommended. Evaluation of actual requirements should be made at the time of construction based on actual subgrade soils encountered.

5.8.3 Recommended Minimum Sections

The following table presents the minimum recommended flexible pavement sections for the traffic levels indicated in the preceding table, based on the referenced AASHTO procedures.

Table 4 Recommended Minimum Pavement Sections

Material	Minimum Thickness (inches)[1]	
	APAO Level I (Residential Driveways)	APAO Level II (Residential Streets)
Asphalt Pavement (inches)	3	4
Crushed Aggregate Base (inches)[2]	12	12
Subgrade Soils	Prepared in accordance with Section 5.8.1 of this report. Silt or clay subgrade soils should be covered with geotextile fabric prior to placing base rock materials.	

[1] Subject to review of Clackamas County standard structural sections and functional classification of subject roadway.
[2] Thickness shown assumes dry weather construction. Geotextile separation fabric required regardless of weather conditions. Additional granular over-excavation/backfill (sub-base) section may be required in wet weather or otherwise unsuitable subgrade conditions. Refer to Section 5.3 and for additional discussion.

5.8.4 Asphalt & Base Course Materials

Asphalt pavement and base course material should conform to the most recent State of Oregon Standard Specifications for Highway Construction. Place aggregate base in one lift, and compact to not less than 95 percent of the material's maximum dry density, as determined in general accordance with ASTM D1557 (Modified Proctor). Asphalt pavement should be compacted to at least 91 percent of the material's theoretical maximum density, as determined in general accordance with ASTM D2041 (Rice Specific Gravity).

5.8.5 Rigid Retaining Walls

At this time, we are not aware of final grading plans and the presence or absence of retaining walls within the overall development except those that might be related to basement walls. The following preliminary recommendations are provided for preliminary design purposes and are based on the assumption that silt or clay soils will be the predominant soil retained by the basement walls.

5.8.5.1 Footings

Retaining wall footings should be designed and constructed in conformance with the recommendations presented in Section 8.5 of this report, as applicable.

5.8.5.2 Wall Drains

We recommend retaining wall drains consist of a minimum 4-inch diameter, perforated, HDPE (High Density Poly-Ethylene) drainpipe wrapped with a non-woven geotextile filter fabric. The drains should be backfilled with a minimum of 2 cubic feet of open graded drain rock per lineal foot of pipe. The drain rock should be encased in a geotextile fabric in order to provide separation from the surrounding soils. Retaining wall drains should be positively sloped and should outlet to a suitable discharge point. The geotechnical engineer or his representative should be contacted to observe the drains prior to backfilling.

5.8.5.3 Backfill

Retaining walls should be backfilled with imported granular structural fill in conformance with Section **Error! Reference source not found.** of this report and contain less than 5 percent passing the U.S. Standard No. 200 Sieve. The backfill should be compacted to a minimum of 90 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor). When placing fill behind walls, care must be taken to minimize undue lateral loads on the walls. Heavy compaction equipment should be kept at least "H" feet from the back of the walls, where "H" is the height of the wall. Light mechanical or hand tamping equipment should be used for compaction of backfill materials within "H" feet of the back of the walls.

5.8.5.4 Design Considerations

For rigid retaining walls founded, backfilled, and drained as recommended above, the following table presents parameters recommended for design.

Table 5 Design Parameters for Rigid Retaining Walls

Retaining Wall Condition	Modeled Backfill Condition	Static Equivalent Fluid Pressure (S_A)	Additional Seismic Equivalent Fluid Pressure (S_{AE})	Surcharge from Uniform Load, q, Acting on Backfill Behind Retaining Wall
Not Restrained from Rotation	Level (i = 0)	34 pcf	12 pcf	0.30*q
Restrained from Rotation	Level (i = 0)	58 pcf	6 pcf	0.50*q
Note 1. Refer to the attached Figure 14 for a graphical representation of static and seismic loading conditions. Seismic component of active thrust acts at 0.6H above the base of the wall. Note 2. Seismic (dynamic) lateral loads were computed using the Mononobe-Okabe Equation as presented in the 1997 Federal Highway Administration (FHWA) design manual.				

The above design recommendations are based on the assumptions that:

(1) the walls consist of concrete cantilevered retaining walls (β = 0 and δ = 24 degrees, see Figure 14).
(2) the walls are 10 feet or less in height.
(3) the backfill is drained and consists of imported granular structural fill (ϕ = 38 degrees).
(4) no line load, point, or area load surcharges are imposed behind the walls.
(5) the grade behind the wall is level, or sloping down and away from the wall, for a distance of 10 feet or more from the wall.
(6) the grade in front of the walls is level or sloping up for a distance of at least 5 feet from the wall.

Re-evaluation of our recommendations will be required if the retaining wall design criteria for the project vary from these assumptions.

5.9 Additional Considerations

5.9.1 Drainage

Subsurface drains should be connected to the nearest storm drain, on-site infiltration system (if selected and designed by others), or other suitable discharge point. Paved surfaces and ground near or adjacent to the buildings should be sloped to drain away from the buildings. Surface water from paved surfaces and open spaces should be collected and routed to a suitable discharge point. Surface water should not be directed into foundation drains or onto site slopes.

5.9.1 Expansive Potential

The near surface native soils consisted of silty sand (SM), sandy silt (ML), and lean clay (CL), with boulders noted in some areas. Based on experience with similar soils in the area of the site, these soils are considered to have a low susceptibility to volume change due to changes in moisture content.

6.0 RECOMMENDED ADDITIONAL SERVICES

Satisfactory earthwork, foundation, floor slab, and pavement performance depends to a large degree on the quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during subsurface explorations, and recognition of changed conditions often requires experience. We recommend that qualified

personnel visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those observed to date and anticipated in this report.

The project geotechnical engineer or their representative should provide observations and/or testing of at least the following earthwork elements during construction:

- Site Stripping & Grubbing
- Subgrade Preparation for Structural Fills, Shallow Foundations, Floor Slabs, and Pavements
- Compaction of Structural Fill and Utility Trench Backfill
- Compaction of Base Rock for Floor Slabs and Pavements

It is imperative that the owner and/or contractor request earthwork observations and testing at a frequency sufficient to allow the geotechnical engineer to provide a final letter of compliance for the earthwork activities.

7.0 LIMITATIONS

We have prepared this report for use by the owner/developer and other members of the design and construction team for the proposed development. The opinions and recommendations contained within this report are not intended to be, nor should they be construed as a warranty of subsurface conditions, but are forwarded to assist in the planning and design process.

We have made observations based on our explorations that indicate the soil conditions at only those specific locations and only to the depths penetrated. These observations do not necessarily reflect soil types, strata thickness, or water level variations that may exist between or away from our explorations. If subsurface conditions vary from those encountered in our site explorations, CGT should be alerted to the change in conditions so that we may provide additional geotechnical recommendations, if necessary. Observation by experienced geotechnical personnel should be considered an integral part of the construction process.

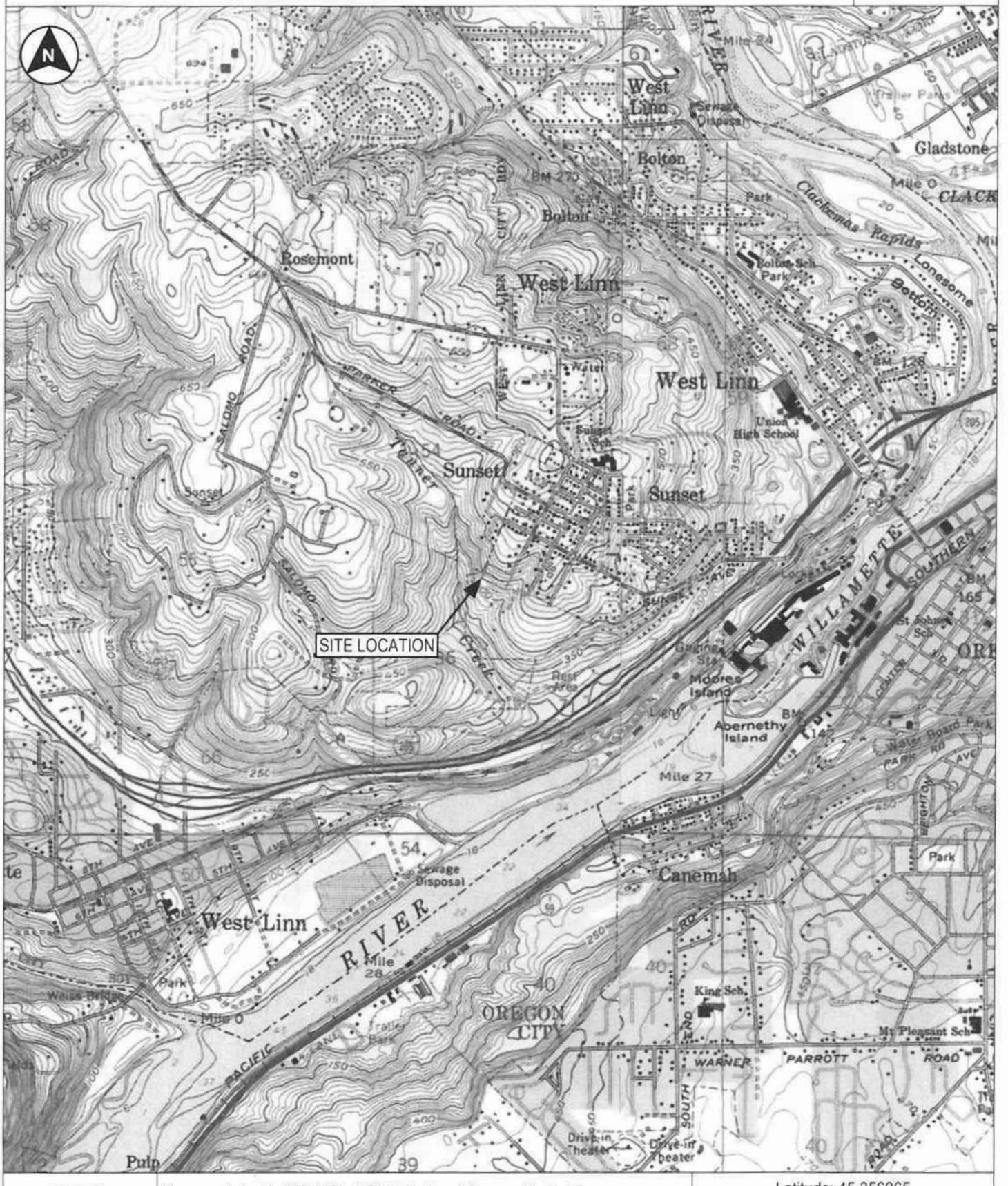
The owner/developer is responsible for ensuring that the project designers and contractors implement our recommendations. When the design has been finalized, prior to releasing bid packets to contractors, we recommend that the design drawings and specifications be reviewed by our firm to see that our recommendations have been interpreted and implemented as intended. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification. Design review and construction phase testing and observation services are beyond the scope of our current assignment, but will be provided for an additional fee.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design.

Geotechnical engineering and the geologic sciences are characterized by a degree of uncertainty. Professional judgments presented in this report are based on our understanding of the proposed construction, familiarity with similar projects in the area, and on general experience. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared; no warranty, expressed or implied, is made. This report is subject to review and should not be relied upon after a period of three years.

CORNWALL STREET SUBDIVISION - WEST LINN, OREGON
Project Number G1504283

FIGURE 1
Site Location



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Map created with TOPO!™, © 2006 National Geographic Holdings
USGS 7.5 Minute Topographic Map Series, Canby, Oregon Quadrangle.

Township 2 South, Range 1 East, Section 36 Willamette Meridian

Latitude: 45.356965
Longitude: -122.633618

1 Inch = 2,000 feet

0 2000 4000

CORNWALL STREET SUBDIVISION - WEST LINN, OREGON
Project Number G1504283

FIGURE 2
Site Plan

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LEGEND

TP-1 Test pit

1 Orientation of site photographs shown on Figure 3

1 Inch = 100 Feet

0 100 200

NOTES: Drawing based on observations made while on site and site plans provided by client. All exploration locations should be considered approximate.

Photograph 1: Looking southwest towards the south margin of the site from just south of the existing residence.

Photograph 2: Looking south from the southeast towards the south-east corner of the site from just south of the existing residence.

Photograph 3: Looking northwest along the south margin of the site from within Lot 7.

Photograph 4: Looking north-northwest towards the northwest margin of the site from the proposed alignment of Landis Street.

CORNWALL STREET SUBDIVISION - WEST LINN, OREGON
Project Number G1504283

FIGURE 4
USCS

Classification of Terms and Content

NAME: MINOR Constituents (12-50%); MAJOR Constituents (>50%); Slightly (5-12%)
Relative Density or Consistency
Color
Moisture Content
Plasticity
Trace Constituents (0-5%)
Other: Grain Shape, Approximate Gradation, Organics, Cement, Structure, Odor...
Geologic Name or Formation: Fill, Willamette Silt, Till, Alluvium, etc.

USCS Grain Size

Fines		<#200 (.075 mm)
Sand	Fine	#200 - #40 (.425 mm)
	Medium	#40 - #10 (2 mm)
	Coarse	#10 - #4 (4.75)
Gravel	Fine	#4 - 0.75 inch
	Coarse	0.75 inch - 3 inches
Cobbles		3 to 12 inches; scattered <15% est. numerous >15% est.
Boulders		> 12 inches

Relative Density or Consistency

Granular Material		Fine-Grained (cohesive) Materials				
SPT N-Value	Density	SPT N-Value	Torvane tsf Shear Strength	Pocket Pen tsf Unconfined	Consistency	Manual Penetration Test
		<2	<0.13	<0.25	Very Soft	Thumb penetrates more than 1 inch
0 - 4	Very Loose	2 - 4	0.13 - 0.25	0.25 - 0.50	Soft	Thumb penetrates about 1 inch
4 - 10	Loose	4 - 8	0.25 - 0.50	0.50 - 1.00	Medium Stiff	Thumb penetrates about ¼ inch
10 - 30	Medium Dense	8 - 15	0.50 - 1.00	1.00 - 2.00	Stiff	Thumb penetrates less than ¼ inch
30 - 50	Dense	15 - 30	1.00 - 2.00	2.00 - 4.00	Very Stiff	Readily indented by thumbnail
>50	Very Dense	>30	>2.00	>4.00	Hard	Difficult to indent by thumbnail

Moisture Content

Dry: Absence of moisture, dusty, dry to the touch
Damp: Some moisture but leaves no moisture on hand
Moist: Leaves moisture on hand
Wet: Visible free water, likely from below water table

	Plasticity	Dry Strength	Dilatancy	Toughness
ML	Non to Low	Non to Low	Slow to Rapid	Low, can't roll
CL	Low to Medium	Medium to High	None to Slow	Medium
MH	Medium to High	Low to Medium	None to Slow	Low to Medium
CH	Medium to High	High to Very High	None	High

Structure

Stratified: Alternating layers of material or color >6 mm thick
Laminated: Alternating layers < 6 mm thick
Fissured: Breaks along definite fracture planes
Slickensided: Striated, polished, or glossy fracture planes
Blocky: Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Lenses: Has small pockets of different soils, note thickness
Homogeneous: Same color and appearance throughout

Unified Soil Classification Chart (Visual-Manual Procedure) (Similar to ASTM Designation D-2487)

Major Divisions			Group Symbols	Typical Names
Coarse Grained Soils: More than 50% retained on No. 200 sieve	Gravels: 50% or more *retained* on the No. 4 sieve	Clean Gravels	GW	Well-graded gravels and gravel/sand mixtures, little or no fines
			GP	Poorly-graded gravels and gravel/sand mixtures, little or no fines
		Gravels with Fines	GM	Silty gravels, gravel/sand/silt mixtures
			GC	Clayey gravels, gravel/sand/clay mixtures
	Sands: More than 50% *passing* the No. 4 sieve	Clean Sands	SW	Well-graded sands and gravelly sands, little or no fines
			SP	Poorly-graded sands and gravelly sands, little or no fines
		Sands with Fines	SM	Silty sands, sand/silt mixtures
			SC	Clayey sands, sand/clay mixtures
Fine-Grained Soils: 50% or more Passes No. 200 Sieve	Silt and Clays Low Plasticity Fines		ML	Inorganic silts, rock flour, clayey silts
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
			OL	Organic silt and organic silty clays of low plasticity
	Silt and Clays High Plasticity Fines		MH	Inorganic silts, clayey silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
Highly Organic Soils			PT	Peat, muck, and other highly organic soils

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Additional References:
ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes and
ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)

Table 22: Scale of Relative Rock Weathering

Designation	Field Identification
Fresh	Crystals are bright. Discontinuities may show some minor surface staining. No discoloration in rock fabric.
Slightly Weathered	Rock mass is generally fresh. Discontinuities are stained and may contain clay. Some discoloration in rock fabric. Decomposition extends up to 1-inch into rock.
Moderately Weathered	Rock mass is decomposed 50% or less. Significant portions of rock show discoloration and weathering effects. Crystals are dull and show visible chemical alteration. Discontinuities are stained and may contain secondary mineral deposits.
Predominantly Weathered	Rock mass is more than 50% decomposed. Rock can be excavated with geologist's pick. All discontinuities exhibit secondary mineralization. Complete discoloration of rock fabric. Surface of core is friable and usually pitted due to washing out of highly altered minerals by drilling water.
Decomposed	Rock mass is completely decomposed. Original rock fabric may be evident. May be reduced to soil with hand pressure.

Table 23: Scale of Relative Rock Hardness

Term	Hardness Designation	Field Identification	Approximate Unconfined Compressive Strength
Extremely Soft	R0	Can be indented with difficulty by thumbnail. May be moldable or friable with finger pressure.	<100 psi
Very Soft	R1	Crumbles under firm blows with point of geology pick. Can be peeled by pocket knife. Scratched with finger nail.	100-1000 psi
Soft	R2	Can be peeled by pocket knife with difficulty. Cannot be scratched with finger nail. Shallow indention made by firm blow of geology pick.	1000-4000 psi
Medium Hard	R3	Can be scratched by knife or pick. specimen can be fractured with a single firm blow of hammer/geology pick.	4000-8000 psi
Hard	R4	Can be scratched with knife or pick only with difficulty. Several hard blows required to fracture specimen.	8000-16000 psi
Very Hard	R5	Cannot be scratched by knife or sharp pick. Specimen requires many blows of hammer to fracture or chip. Hammer rebounds after impact.	>16000 psi

Table 24: Stratification Terms

Term	Characteristics
Laminations	Thin beds (<1cm).
Fissle	Tendency to break along laminations.
Parting	Tendency to break parallel to bedding, any scale.
Foliation	Non-depositional, e.g., segregation and layering of minerals in metamorphic rock.

Tables adapted from the 1987 Soil and Rock Classification Manual, Oregon Department of Transportation.

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7185 SW Sandburg Street
Tigard, OT 97281
Telephone: 503-601-8250
Fax: 503-601-8254

FIGURE 6

Test Pit TP-1

CLIENT Icon Construction - Darren Gusdorf
PROJECT NAME Cornwall Street Subdivision
PROJECT NUMBER G1504283
PROJECT LOCATION 4096 Cornwall Street, West Linn, Oregon
DATE STARTED 12/10/15 **GROUND ELEVATION** 486 ft
ELEVATION DATUM See Figure 2
EXCAVATION CONTRACTOR Icon Construction
LOGGED BY BLN **REVIEWED BY** KJS
EQUIPMENT John Deere 50G
SEEPAGE ---
EXCAVATION METHOD Excavator
GROUNDWATER AT END ---
NOTES
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ PL LL MC; ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
					0						
		SM FILL	**SILTY SAND FILL with gravel:** Brown, moist, with roots (less than ¼-inch diameter), and with fine to coarse angular gravel (up to 1-inch diameter).			GRAB TP1-1			0.5 1 0.5		
484					2				1		
		ML FILL	**SANDY SILT FILL:** Gray, moist, exhibited low plasticity, and with fine to coarse angular gravel, brick and asphalt debris (up to 2-inch diameter), and roots (up to 1-inch diameter).			GRAB TP1-2			1.5 2 2.5		
482					4				2.5		
		SM	**SILTY SAND:** Medium dense, red-brown, damp to moist, fine- to medium-grained, with roots, and with gravel and boulders (up to 20 inch-diameter).								
480					6						
						GRAB TP1-3					20
478					8						
			PREDOMINANTLY WEATHERED BASALT: Very soft (R1), red and black, moist.			GRAB TP1-4					36
476					10						

- Test pit terminated at about 10 feet bgs.
- No groundwater or caving observed within the depth explored.
- Test pit loosely backfilled by Icon Construction with cuttings upon completion.

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7185 SW Sandburg Street
Tigard, OT 97281
Telephone: 503-601-8250
Fax: 503-601-8254

FIGURE 7

Test Pit TP-2

CLIENT Icon Construction - Darren Gusdorf
PROJECT NAME Cornwall Street Subdivision
PROJECT NUMBER G1504283
PROJECT LOCATION 4096 Cornwall Street, West Linn, Oregon
DATE STARTED 12/10/15 **GROUND ELEVATION** 486 ft
ELEVATION DATUM See Figure 2
EXCAVATION CONTRACTOR Icon Construction
LOGGED BY BLN **REVIEWED BY** KJS
EQUIPMENT John Deere 50G
SEEPAGE ---
EXCAVATION METHOD Excavator
GROUNDWATER AT END ---
NOTES
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ / PL LL MC / ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
					0				0.5		
		SM FILL	**SILTY SAND FILL with gravel:** Brown, moist, with roots (less than 3-inch diameter), and with fine to coarse angular gravel (up to 4-inch diameter).						0.5		
									1		
484					2				1.5		
			LEAN CLAY with gravel: Medium stiff to very stiff, gray-brown, exhibited medium plasticity, with roots (less than ¼-inch diameter), and with fine to coarse gravel (up to 2-inch diameter).						1.5		
		CL							2.5		
									3		
482					4	GRAB TP2-1			4		● 35
			PREDOMINANTLY WEATHERED BASALT: Very soft (R1), red, black, gray and tan, and moist.								
480					6						
						GRAB TP2-2					● 43
478			• Test pit terminated at about 7½ feet bgs due to practical refusal on a boulder. • No groundwater or caving observed within the depth explored. • Test pit loosely backfilled by Icon Construction with cuttings upon completion.								
476											

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7185 SW Sandburg Street
Tigard, OT 97281
Telephone: 503-601-8250
Fax: 503-601-8254

FIGURE 8

Test Pit TP-3

CLIENT Icon Construction - Darren Gusdorf
PROJECT NAME Cornwall Street Subdivision
PROJECT NUMBER G1504283
PROJECT LOCATION 4096 Cornwall Street, West Linn, Oregon
DATE STARTED 12/10/15 **GROUND ELEVATION** 486 ft
ELEVATION DATUM See Figure 2
EXCAVATION CONTRACTOR Icon Construction
LOGGED BY BLN **REVIEWED BY** KJS
EQUIPMENT John Deere 50G
SEEPAGE ---
EXCAVATION METHOD Excavator
GROUNDWATER AT END ---
NOTES
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ PL LL MC; ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
			SILTY SAND: Medium dense, gray-brown, damp to moist, fine- to medium-grained, with roots (less than, and with cobbles (up to 8-inch diameter).		0				1		
									1.5		
		SM							2.5		
484					2				2		
									2.5		
									3.5		
			PREDOMINANTLY WEATHERED BASALT: Very soft (R1), moist, gray, red, brown, and tan						4		
482					4				4		
480					6						
478					8						
			• Test pit terminated at about 8 feet bgs due to practical refusal on basalt. • No groundwater or caving observed within the depth explored. • Test pit loosely backfilled with cuttings upon completion.								
476											

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Fax: 503-601-8254

FIGURE 9
Test Pit TP-4

CLIENT Icon Construction - Darren Gusdorf
PROJECT NAME Cornwall Street Subdivision
PROJECT NUMBER G1504283
PROJECT LOCATION 4096 Cornwall Street, West Linn, Oregon
DATE STARTED 12/10/15 **GROUND ELEVATION** 468 ft
ELEVATION DATUM See Figure 2
EXCAVATION CONTRACTOR Icon Construction
LOGGED BY BLN **REVIEWED BY** KJS
EQUIPMENT John Deere 50G
SEEPAGE ---
EXCAVATION METHOD Excavator
GROUNDWATER AT END ---
NOTES
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ / PL LL MC / FINES CONTENT (%) 0 20 40 60 80 100
					0				0.5		
		SM	**SILTY SAND:** Medium dense, gray-brown, damp to moist, fine- to medium-grained, with roots (less than, and with gravel and boulders (up to 20-inch diameter).						1		
466									1		
					2				1.5		
		CL	**LEAN CLAY with gravel:** Medium stiff to very stiff, gray-brown, exhibited medium plasticity, and with cobbles (up to 9-inch diameter). Light to moderate groundwater seepage observed at about 3 feet bgs.			GRAB TP4-1			1.5		22 45 31
			PREDOMINANTLY WEATHERED BASALT: Very soft (R1), moist, gray, red, brown, and tan						2.5		
									3.5		
464					4				4		
462					6						
460			• Test pit terminated at about 7 feet bgs due to practical refusal on a boulder. • No caving observed within the depth explored. • Test pit loosely backfilled with cuttings upon completion.								
458											

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Tigard, OT 97281
Telephone: 503-601-8250
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FIGURE 10

Test Pit TP-5

CLIENT Icon Construction - Darren Gusdorf
PROJECT NAME Cornwall Street Subdivision
PROJECT NUMBER G1504283
PROJECT LOCATION 4096 Cornwall Street, West Linn, Oregon
DATE STARTED 12/10/15 **GROUND ELEVATION** 446 ft
ELEVATION DATUM See Figure 2
EXCAVATION CONTRACTOR Icon Construction
LOGGED BY BLN **REVIEWED BY** KJS
EQUIPMENT John Deere 50G
SEEPAGE ---
EXCAVATION METHOD Excavator
GROUNDWATER AT END ---
NOTES
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ PL LL MC; ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
					0						
		ML	**SANDY SILT:** Medium stiff to stiff, gray to brown, moist, exhibited low plasticity, with fine to coarse gravel and cobbles (up to 10-inch diameter), and with roots (up to 3-inch diameter).						0.5 0.5 1		
444					2				2		
		CL	**LEAN CLAY with gravel:** Medium stiff to very stiff, gray-brown, exhibited medium plasticity, and with cobbles (up to 9-inch diameter).						2.5 3.5		
442			**PREDOMINANTLY WEATHERED BASALT:** Very soft (R1), moist, gray, red, brown, and tan Moderate groundwater seepage observed at about 4 feet bgs.		4				4 4		
440					6						
438					8						
			• Test pit terminated at about 8 feet bgs. • No caving observed within the depth explored. • Test pit loosely backfilled with cuttings upon completion.								
436											

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Fax: 503-601-8254

FIGURE 11

Test Pit TP-6

CLIENT Icon Construction - Darren Gusdorf
PROJECT NAME Cornwall Street Subdivision
PROJECT NUMBER G1504283
PROJECT LOCATION 4096 Cornwall Street, West Linn, Oregon
DATE STARTED 12/10/15 **GROUND ELEVATION** 450 ft
ELEVATION DATUM See Figure 2
EXCAVATION CONTRACTOR Icon Construction
LOGGED BY BLN **REVIEWED BY** KJS
EQUIPMENT John Deere 50G
SEEPAGE ---
EXCAVATION METHOD Excavator
GROUNDWATER AT END ---
NOTES
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ / PL LL MC / ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
		ML	**SANDY SILT:** Medium stiff to stiff, gray to brown, moist, exhibited low plasticity, with fine to coarse gravel, and with roots (up to 2-inch diameter).		0				0.5 0.5		
448		CL	**LEAN CLAY with gravel:** Medium stiff to very stiff, gray-brown, exhibited medium plasticity, and with cobbles (up to 9-inch diameter).		2	GRAB TP6-1			0.5 1.5 1.5 2.5		33
446			**PREDOMINANTLY WEATHERED BASALT:** Very soft (R1), moist, gray, red, brown, and tan Moderate groundwater seepage observed at about 4 feet bgs.		4				3 4		
444					6						30
442			• Test pit terminated at about 7 feet bgs. • No groundwater or caving observed within the depth explored. • Test pit loosely backfilled with cuttings upon completion.								
440											

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FIGURE 12
Test Pit TP-7

CLIENT Icon Construction - Darren Gusdorf
PROJECT NAME Cornwall Street Subdivision
PROJECT NUMBER G1504283
PROJECT LOCATION 4096 Cornwall Street, West Linn, Oregon
DATE STARTED 12/10/15 **GROUND ELEVATION** 460 ft
ELEVATION DATUM See Figure 2
EXCAVATION CONTRACTOR Icon Construction
LOGGED BY BLN **REVIEWED BY** KJS
EQUIPMENT John Deere 50G
SEEPAGE ---
EXCAVATION METHOD Excavator
GROUNDWATER AT END ---
NOTES
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ / PL LL MC / ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
		ML	**SANDY SILT:** Medium stiff to stiff, gray to brown, moist, exhibited low plasticity, with fine to coarse gravel, and with roots (up to 2-inch diameter).		0				0.5		
									0.5		
									0.5		
458		CL	**LEAN CLAY with gravel:** Medium stiff to very stiff, gray-brown, exhibited medium plasticity, and with cobbles (up to 9-inch diameter).		2				1		
									1.5		
									3.5		
			PREDOMINANTLY WEATHERED BASALT: Very soft (R1), moist, gray, red, brown, and tan						4		
456					4				4		
454			• Test pit terminated at about 6 feet bgs. • No groundwater or caving observed within the depth explored. • Test pit loosely backfilled with cuttings upon completion.		6						
452											
450											

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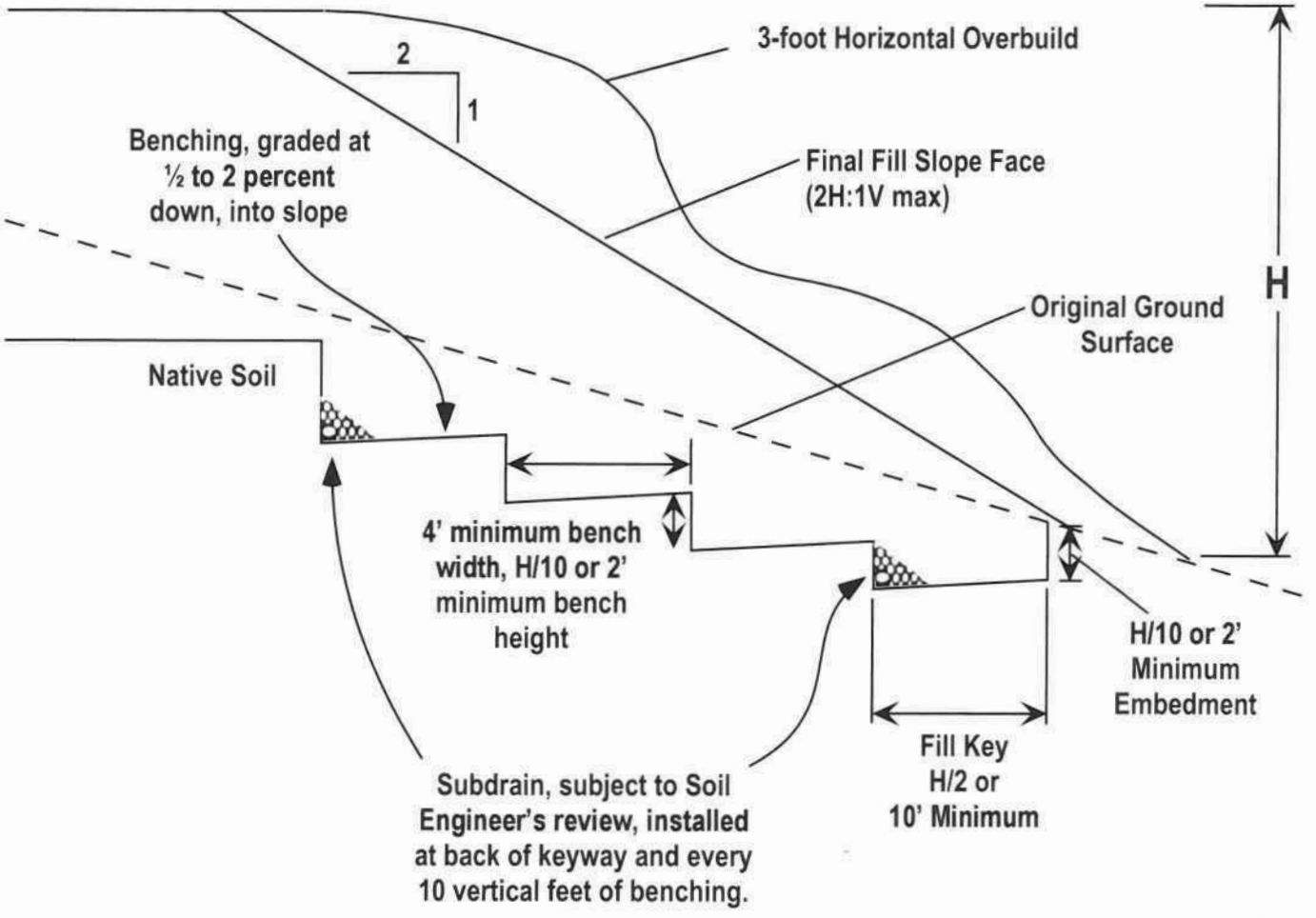
FIGURE 13
FILL SLOPE DETAIL



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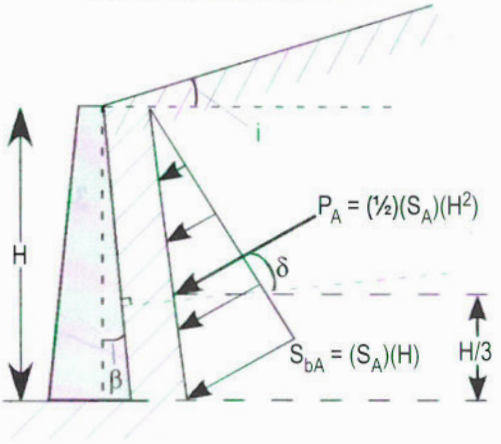
NOTE: Surfaces to receive fill with slopes steeper than 5H:1V (horizontal:vertical) should be benched and keyed as shown.

CORNWALL STREET SUBDIVISION - WEST LINN, OREGON
CGT Project No. G1504283

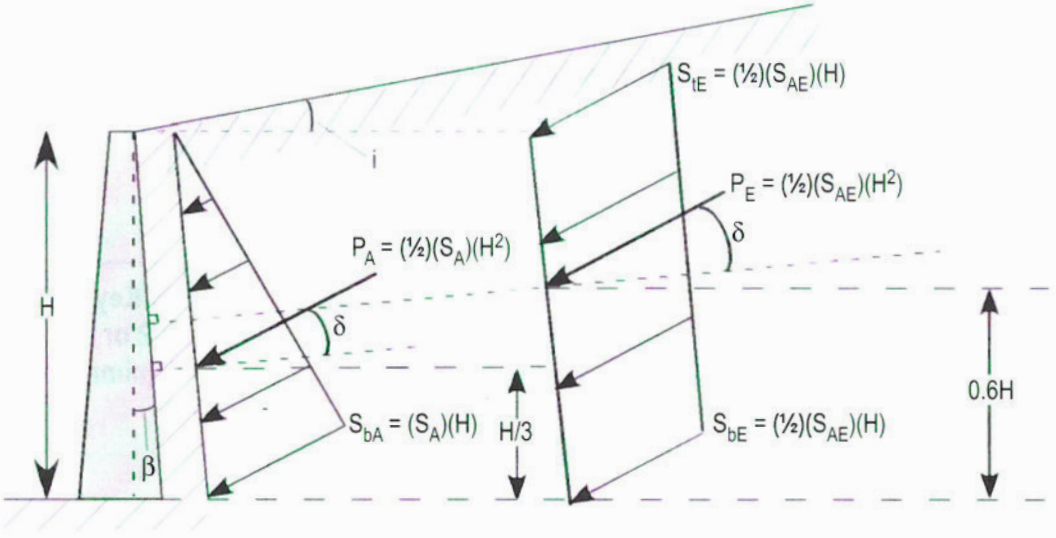
FIGURE 14
RETAINING WALLS

ACTIVE LATERAL PRESSURE DISTRIBUTION

STATIC LOADING CONDITIONS



SEISMIC LOADING CONDITIONS



LEGEND

P_A = Static active thrust force acting at a triangular distribution on wall (lb/ft^3)

P_E = Dynamic component of active thrust force acting at a uniform distribution on wall (lb/ft)

i = Slope of backfill (degrees)**

S_A = Active (static) component of equivalent fluid pressure (lb/ft^3)*

S_{tE} = Active earth pressure (dynamic) at the top of the wall (lb/ft^3)

S_{bA} = Active earth pressure (static) at the bottom of the wall (lb/ft^3)

ϕ = Internal angle of friction for backfill (degrees)**

δ = Angle from normal of back of wall (degrees). Based on friction developing between wall and backfill**

β = Slope of back of wall (degrees)**

S_{AE} = Dynamic component of equivalent fluid pressure (lb/ft^3)*

S_{bE} = Active earth pressure (dynamic) at bottom of the wall (lb/ft^3)*

*Refer to report text for calculated values **Refer to report text for modeled/assumed values

CARLSON CGT GEOTECHNICAL 503-601-8250

Notes

1. Uniform pressure distribution of seismic loading is based on empirical evaluations [Sherif et al, 1982 and Whitman, 1990].
2. Placement of seismic resultant force at 0.6H is based on wall behavior and model test results [Whitman, 1990].

SIGNED ON: 20FEB17

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JULY 13, 2004
TOBY G. BOLDEN
60377LS

RENEWS: DECEMBER 31, 2017

Design by: Richard E. Givens, Planning Consultant
Survey Work by: Centerline Concepts, Inc.

Applicant/Owner:
Icon Construction & Development, LLC
1980 Willamette Falls Drive, Suite 200
West Linn, OR 97068
PH: (503) 657-0406

Legal: 2-1E-36BA TL 6300

Water: City of West Linn

Sewer: City of West Linn

Contours: Centerline Concepts, Inc.

Site Area: 2.176 Acres

Engineer:
Theta Engineering, Inc.
PO Box 1345
Lake Oswego, OR 97035
PH: (503) 481-8822

Surveyor:
Centerline Concepts, Inc.
700 Molalla Ave.
Oregon City, OR 97045
PH: (503) 650-0188

Zoning: R-10

NORTH

0 10' 20' 30' 40' 50' 100

Scale: 1" = 40'

Vicinity Map

Density Calculations

	Area (sq. ft.)	Allowable Density	Units @1 per 10,000 sq.ft.
Gross Site Area	94,808		
Land in a boundary street right-of-way, water course, or planned open space where density transfer is not requested:	0		
Area in street right-of-way:	19,068		
Net Site Area:	75,740		
Area within Type I or II slopes where Developed:	20,587	50%	1.03
Area within Type I or II slopes where Density Will be Transferred:	0	75%	0
Area within Water Resource Area-all development transferred.	0	50%	0
Open Space (Type III and IV Lands)	0	100%	0.00
Type III & IV Land Developed:	55,153	100%	5.5
Base Density Allowed:			6
TOTAL ALLOWED DENSITY:			6 UNITS

DESIGNED:	REG			
DRAWN:	REG			
SCALE:	1" = 30'			
DATE:	Oct. 2017			
FILE:	15-ICN-112	DATE	NO.	REVISION

Richard E. Givens, Planning Consultant
18680 Sunblaze Dr.
Oregon City, OR 97045
PH: (503) 479-0097

APPLICANT: Icon Construction & Development, LLC
1980 Willamette Falls Drive, Suite 200
West Linn, OR 97068
PH: (503) 657-0406

Willow Ridge
Tentative Plan

SHEET: 1/2

NORTH

0 10' 20' 30' 40' 50' 100'

SCALE: 1" = 30'

Slopes 0-15% (Type IV Land)
13,978 sq. ft. (14.8% of site)
8,984 sq. ft. of this is within street

Slopes 15-25% (Type III Land)
57,578 sq. ft. (61% of site)
7,291 sq. ft. of this is within street

Slopes 25-35% (Type II Land)
11,108 sq. ft. (11.7% of site)
1,167 sq. ft. of this is within street

Slopes 35% Plus (Type I Land
11,891 sq. ft. (12.6% of site)
1,245 sq. ft. of this is within street

Significant Trees per City Arborist.
Drip Line
Drip Line Plus 10'

Significant Trees to be removed.

Landis Street

LANDIS STREET

Cornwall St.

CORNWALL STREET

Fairhaven Dr.

S 62°24'41" E 399.50'

S 27°41'44" W 242.27'

S 63°52'20" E 400.14'

S 27°34'28" W 232.07'

1 2 3 4 5 6

DESIGNED:	REG			
DRAWN:	REG			
SCALE:	1" = 30'			
DATE:	January 2017			
FILE:	15-ICN-112	DATE	NO.	REVISION

Richard E. Givens, Planning Consultant
18680 Sunblaze Dr.
Oregon City, OR 97045
PH: (503) 479-0097

APPLICANT: Icon Construction & Development, LLC
1980 Willamette Falls Drive, Suite 200
West Linn, OR 97068
PH: (503) 657-0406

Willow Ridge
Trees & Slope Analysis Plan

SHEET: 2/2

2010-129L

EXISTING CONDITIONS

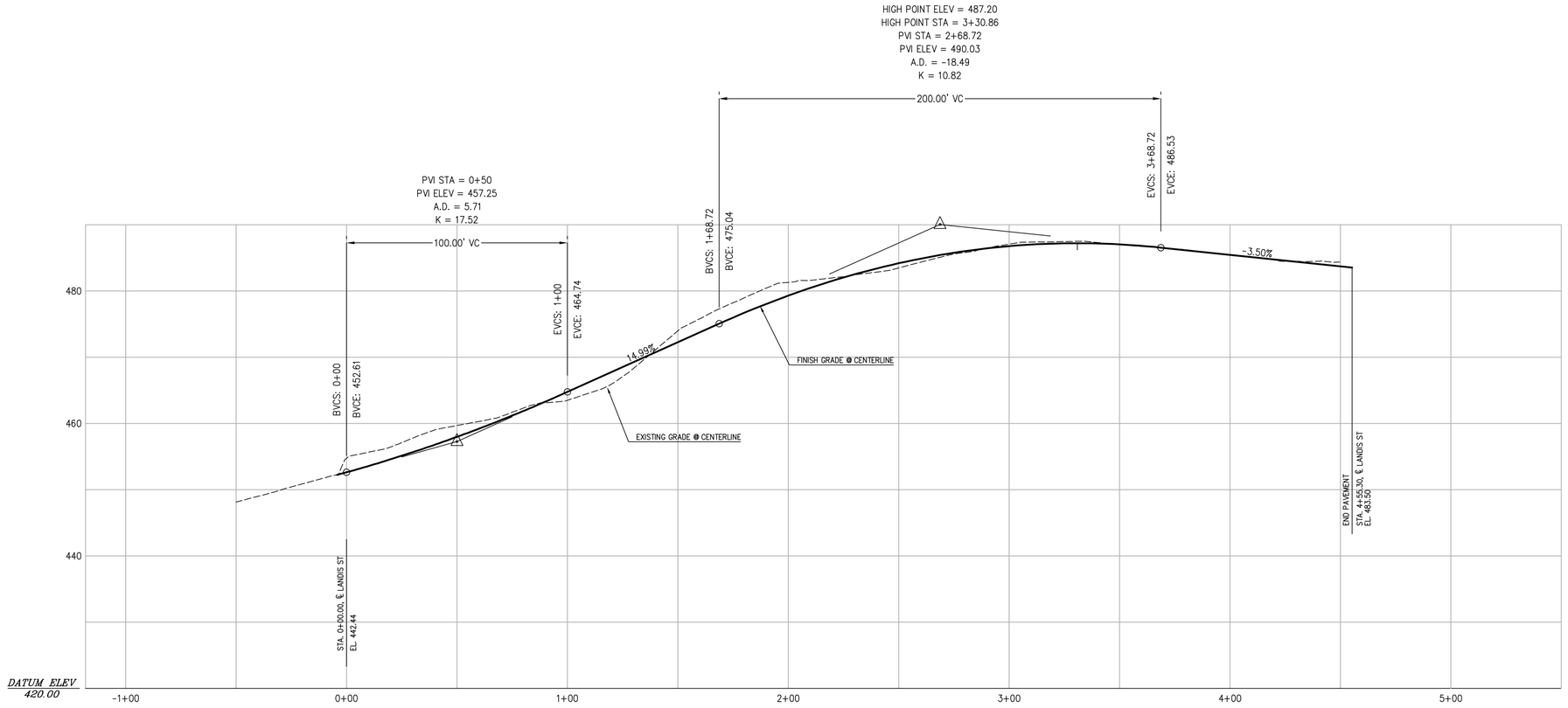
DESIGNED:	BDG			
DRAWN:	BJS			
SCALE:	1" = 30'			
DATE:	April, 2016			
FILE:	Cornwall Street Prelim3	DATE	NO.	REVISION

Theta,llc
ENGINEERING - SURVEYING - PLANNING
PO Box 1345
Lake Oswego, Oregon 97035
503/481-8822
email: thetaeng@comcast.net

Icon Construction & Development, LLC
1980 Willamette Falls Drive, Suite 200
West Linn, Oregon 97068
Phone: (503) 657-0406

Willow Ridge
West Linn, Oregon

SHEET: 1/4



LANDIS STREET
CENTERLINE PROFILE 1/3

SCALE: 1" = 30' HORIZONTAL
1" = 10' VERTICAL

PRELIMINARY STREET PROFILE

2010-129L

DESIGNED:	BDG			
DRAWN:	BJS			
SCALE:	1" = 30'			
DATE:	April, 2016			
FILE:	Cornwall Street Prelim3	DATE	NO.	REVISION

Theta, llc
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PO Box 1345
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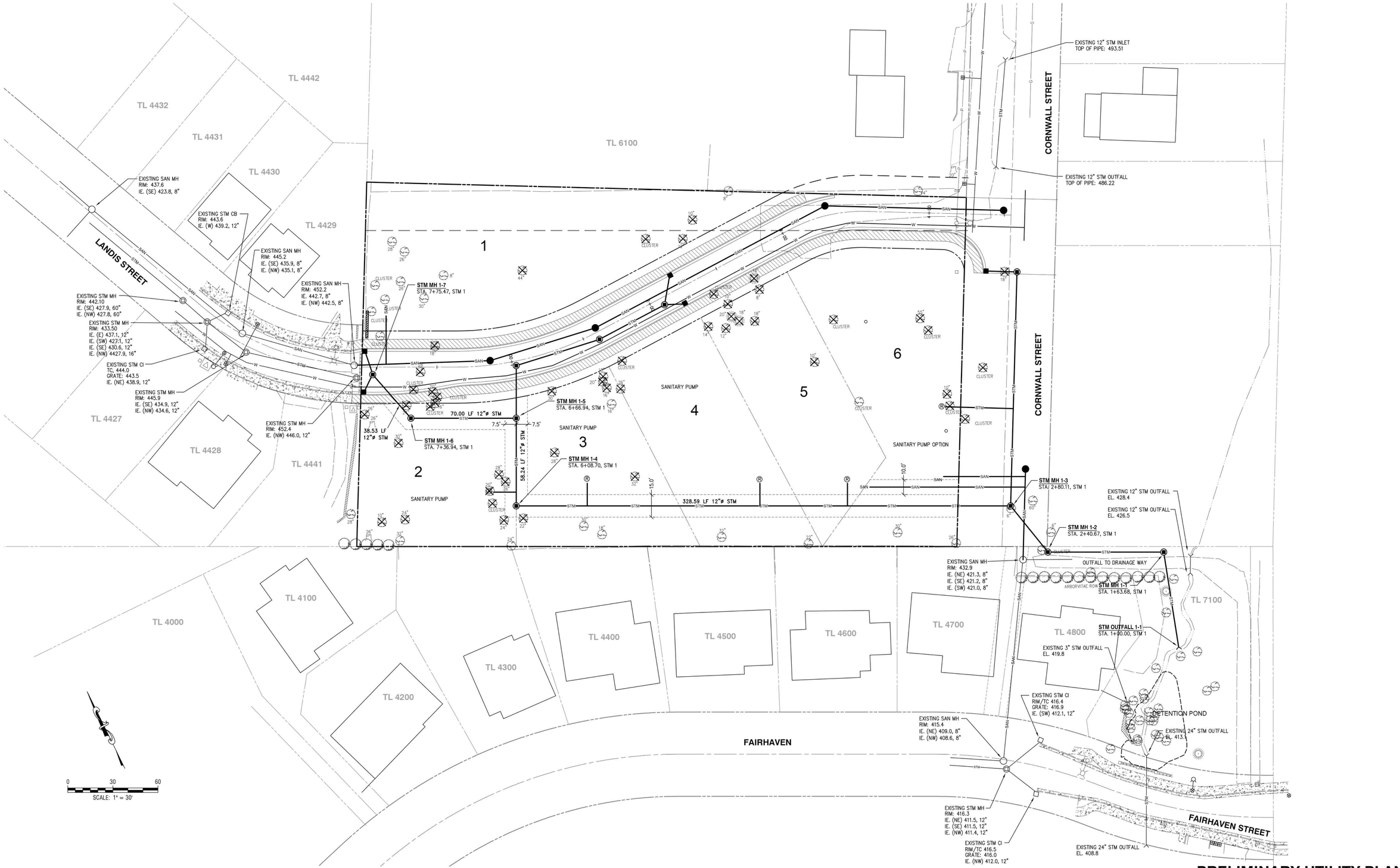
West Linn, Oregon 97068
Phone: (503) 657-0406

Willow Ridge
West Linn, Oregon

SHEET: 2/4



PRELIMINARY UTILITY PLAN

2010-129L

DESIGNED:	BDG			
DRAWN:	BJS			
SCALE:	1" = 30'			
DATE:	April, 2016			
FILE:	Cornwall Street Prelim3	DATE	NO.	REVISION

Theta, llc
ENGINEERING - SURVEYING - PLANNING
PO Box 1345
Lake Oswego, Oregon 97035
503/481-8822
email: thetaeng@comcast.net

Icon Construction & Development, LLC
1980 Willamette Falls Drive, Suite 200
West Linn, Oregon 97068
Phone: (503) 657-0406

Willow Ridge
West Linn, Oregon

SHEET: 3/4

2010-129L

PRELIMINARY GRADING PLAN

DESIGNED:	BDG			
DRAWN:	BJS			
SCALE:	1" = 30'			
DATE:	April, 2016			
FILE:	Cornwall Street Prelim3	DATE	NO.	REVISION

Theta, llc
ENGINEERING - SURVEYING - PLANNING
PO Box 1345
Lake Oswego, Oregon 97035
503/481-8822
email: thetaeng@comcast.net

Icon Construction & Development, LLC
1980 Willamette Falls Drive, Suite 200
West Linn, Oregon 97068
Phone: (503) 657-0406

Willow Ridge
West Linn, Oregon

SHEET: 4/4

Fidelity National Financial, Inc.
Customer Service
900 SW 5th Ave, Mezzanine
Portland, OR 97204
tel: 503-796-6663 fax: 503-796-6631
csrequest@fnf.com

Wednesday, March 02, 2016

The enclosed radius search was created using data purchased from Core Logic and Metro. This data is derived from county tax records and is deemed reliable, but is not guaranteed. Fidelity National Title cannot be held liable for any additions, deletions, or errors in this search.

This research was completed on the date stated above.

Thank you.

Enclosures:

- Data summary of parcels to be notified
- Map of subject parcel, radius, and parcels to be notified
- County assessor maps for parcels to be notified
- Labels

Fidelity National Title

Company Of Oregon

Prepared By : **Sherri Michl**
Date : 3/2/2016

900 SW 5th Ave, Mezzanine Level Portland, Oregon 97204
Phone: (503) 227-LIST (5478) E-mail: csrequest@fnf.com

OWNERSHIP INFORMATION

Owner	: **Icon Construction;Dev LLC**	Ref Parcel Number	: 21E36BA06300
Co Owner	:	Parcel Number	: 00415321
Site Address	: 4096 Cornwall St West Linn 97068	T: 02S R: 01E S: 36 Q: NW QQ: NE	
Mail Address	: 1980 Willamette Falls Dr West Linn Or 97068	County	: Clackamas (OR)
Taxpayer	: Linderman Karen	Telephone	:

TRANSFER HISTORY

Owner(s)	Date	Doc #	Price	Deed	Loan	Type
:Icon Construction;Dev LLC	:12/21/2015	15 083964	:$650,000	:Warranty	:$250,000	:Conventi
:Gunter Brent L/Sheryl K	:12/14/2015	15 081971	:$390,000	:Partnership	:$390,000	:Construct
:Brosig Daryl L	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:

PROPERTY DESCRIPTION

Map Page & Grid	:
Census Tract	: 206.00 Block: 3
Improvement Type	: 132 Sgl Family,R1-3,1-Story (Basement)
Subdivision/Plat	: Glenesk
Neighborhood Code	: West Linn/Willamette Old Town
Land Use	: 101 Res,Residential Land,Improved
Legal	: 584 GLENESK PT LT 2
	:
	:

ASSESSMENT AND TAX INFORMATION

Mkt Land	: $279,520
Mkt Structure	: $200,910
Mkt Total	: $480,430
% Improved	: 42
15-16 Taxes	: $6,157.38
Exempt Amount	:
Exempt Type	:
Levy Code	: 003002
Millage Rate	: 18.6361
M50AssdValue	: $331,004

PROPERTY CHARACTERISTICS

Bedrooms	: 3	Building SF	: 2,878	BldgTotSqFt	: 1,498
Bathrooms	: 2.00	1st Floor SF	: 1,498	Lot Acres	: 2.17
Full Baths	: 2	Upper Finished SF	:	Lot SqFt	: 94,678
Half Baths	:	Finished SF	: 1,498	Garage SF	: 590
Fireplace	: Stacked	Above Ground SF	: 1,498	Year Built	: 1964
Heat Type	: Forced Air-Oil	Upper Total SF	:	School Dist	: 003
Floor Cover	: Hardwd	UnFinUpperStorySF	:	Foundation	: Concrete
Stories	: 1 Story-Bsmt	Basement Fin SF	:	Roof Type	: Composition
Int Finish	: Drywall	Basement Unfin SF	: 1,380	Roof Shape	: Gable
Ext Finsh	: Bevel Siding	Basement Total SF	: 1,380		

Fidelity National Title Company Of Oregon / Clackamas (OR)

Ref Parcel #	Owner Name	Site Address	Phone #
21E36AC01500	Porter Jason M	4095 Sussex St West Linn 97068	
21E36AC01600	Martin Joncile Oden Trustee	4051 Sussex St West Linn 97068	
21E36AC01601	Froescher Kenneth M & Lynn M	4023 Sussex St West Linn 97068	
21E36AC01700	Kays Robert F & Kristina M	4015 Sussex St West Linn 97068	
21E36BA03600	Whitcher John L & Susan G	4260 Reed St West Linn 97068	
21E36BA03900	Pitzer Carl F & Angela	4194 Reed St West Linn 97068	
21E36BA04000	Clackamas County	*no Site Address*	
21E36BA04100	Kimsey Randall J & Jeanne M	4191 Reed St West Linn 97068	
21E36BA08200	Parker Nancy	4200 Reed St West Linn 97068	
21E36BA04300	Shephard Elaine	*no Site Address*	
21E36BA04500	Smith Elbert M & Roberta M	*no Site Address*	
21E36BA04700	Jones Nate R	2784 Sunset Ave West Linn 97068	
21E36BA04800	Petersen James C Trustee	2772 Sunset Ave West Linn 97068	
21E36BA04900	Lorenzen Matthew N & Allison E	2764 Sunset Ave West Linn 97068	
21E36BA05000	Breed Kimberlee Anne	2750 Sunset Ave West Linn 97068	
21E36BA05100	Sramek Teri A	2738 Sunset Ave West Linn 97068	
21E36BA05200	Mize Joan L	2708 Sunset Ave West Linn 97068	
21E36BA05300	Eppelsheimer Gary L & Janet E	4198 Cornwall St West Linn 97068	
21E36BA05500	Sramek John M	*no Site Address*	
21E36BA05900	Farrell David	2790 Sunset Ave West Linn 97068	
21E36BA06000	Tenison Michael D & Heidi E Schuman	4197 Reed St West Linn 97068	
21E36BA06100	Clark Doris D Trustee	4110 Cornwall St West Linn 97068	
21E36BA06300	Icon Construction/Dev LLC	4096 Cornwall St West Linn 97068	
21E36BA06400	Imholt Charlene N	4130 Cornwall St West Linn 97068	
21E36BA06500	Still Carol A Trustee	4194 Cornwall St West Linn 97068	
21E36BA06600	McLaughlin Denise L	2690 Sunset Ave West Linn 97068	
21E36BA06800	Mills Bruce A & Elaine M	2660 Sunset Ave West Linn 97068	
21E36BA07000	Olmstead Julie	4228 Sussex St West Linn 97068	
21E36BA07100	Wiens Chelsea	2650 Sunset Ave West Linn 97068	
21E36BA07300	Fales Keith Patrick	2680 Sunset Ave West Linn 97068	
21E36BA07400	Devogele Val & Beth	4225 Cornwall St West Linn 97068	
21E36BA07500	Dewey Gregory A & Lara J	4195 Cornwall St West Linn 97068	
21E36BA07600	Pedracini Charles W	*no Site Address*	
21E36BA07601	Eells Mary	4091 Cornwall St West Linn 97068	
21E36BA07700	Longstreet Valerie L	4018 Sussex St West Linn 97068	
21E36BA07701	Pedracini Charles W	4003 Cornwall St West Linn 97068	
21E36BA07800	Deason Peter	4096 Sussex St West Linn 97068	
21E36BA07900	Gefroh I S & Katherine M	4140 Sussex St West Linn 97068	
21E36BA08000	Gefroh Gordon A	4192 Sussex St West Linn 97068	
21E36BA08100	City of West Linn	4100 Norfolk St West Linn 97068	
21E36BD00500	Barnum Bruce T & Yvonne	2091 Wellington Dr West Linn 97068	
21E36BD00600	Perkins Zachary M & Gina M	2089 Wellington Dr West Linn 97068	
21E36BD00700	Hawblitzel Tony & Vanessa Briseno	2083 Wellington Dr West Linn 97068	
21E36BD00800	Shin Sung H/Eun Y	2079 Wellington Dr West Linn 97068	
21E36BA07602	Turkisher Edward A Trustee	4099 Cornwall St West Linn 97068	
21E36AC02700	Ems Robert E & Charisse M	3829 Fairhaven Dr West Linn 97068	
21E36AC02800	Schmitt Neal A & Tori	3825 Fairhaven Dr West Linn 97068	
21E36AC02900	Willams Stephen E & Linay A	3821 Fairhaven Dr West Linn 97068	
21E36AC03000	Snyder John J & Pia M	3817 Fairhaven Dr West Linn 97068	
21E36AC03100	Ludwigsen Scott J & Susan J	3818 Fairhaven Dr West Linn 97068	
21E36AC03200	Carter Bradley & Sarah	3822 Fairhaven Dr West Linn 97068	
21E36AC03300	Morrow Terry & Peggy Eurman	3828 Fairhaven Dr West Linn 97068	
21E36BA07702	Laguna Holdings LLC	4032 Sussex St West Linn 97068	
21E36BA07703	Christensen Todd A/Sandra I	4040 Sussex St West Linn 97068	
21E36BD03900	Brashear Gary T	3705 Fairhaven Dr West Linn 97068	
21E36BD04000	Macmillan Cameron H & Leann M	3715 Fairhaven Dr West Linn 97068	
21E36BD04100	Fuchs Kenneth P	3725 Fairhaven Dr West Linn 97068	

Fidelity National Title Company Of Oregon / Clackamas (OR)

Ref Parcel #	Owner Name	Site Address	Phone #
21E36BD04200	Phillips Steven L & Beverly A	3735 Fairhaven Dr West Linn 97068	
21E36BD04300	Cobban Betty	3745 Fairhaven Dr West Linn 97068	
21E36BD04400	Tegemoller Darin T & G G Stegemoller	3755 Fairhaven Dr West Linn 97068	
21E36BD04500	Lee Jeannie C Trustee	3765 Fairhaven Dr West Linn 97068	
21E36BD04600	Corey David B Trustee	3775 Fairhaven Dr West Linn 97068	
21E36BD04700	Renouf Brian	3785 Fairhaven Dr West Linn 97068	
21E36BD04800	Henry Christine B	3795 Fairhaven Dr West Linn 97068	
21E36BD04900	Bartell Ann R Trustee	3810 Fairhaven Dr West Linn 97068	
21E36BD05000	Henriot Philippe	3808 Fairhaven Dr West Linn 97068	
21E36BD05200	Dillingham Roger Scott & Jana E	3802 Fairhaven Dr West Linn 97068	
21E36BD05300	Grelewicz David E & Ivy M	3806 Fairhaven Dr West Linn 97068	
21E36BD05400	Sorenson Jon R & Angeline M	3780 Fairhaven Dr West Linn 97068	
21E36BD05500	Parker Kennon G & Terry A	3770 Fairhaven Dr West Linn 97068	
21E36BD05600	Yokubaitis Mark Alan Trustee	3760 Fairhaven Dr West Linn 97068	
21E36BD05700	Bear Jeffrey S & Constance A	3750 Fairhaven Dr West Linn 97068	
21E36BD05800	Harrop James & Linda	3730 Fairhaven Dr West Linn 97068	
21E36BD05900	Gray Ann Stein & Charles H	2140 Fairhaven Ct West Linn 97068	
21E36BD06000	Guthner Paul J & Rebecca	2130 Fairhaven Ct West Linn 97068	
21E36BD06100	Astete-Rocha Gloria	2120 Fairhaven Ct West Linn 97068	
21E36BD06200	Steirer Joseph P & Rebel L	2110 Fairhaven Ct (No Mail) West Linn 9	
21E36BD06300	Gill John	2105 Fairhaven Ct West Linn 97068	
21E36BD06400	Philouze Marc & Marie-Helene	2115 Fairhaven Ct West Linn 97068	
21E36BD06500	Wolfe Maribeth M Trustee	2125 Fairhaven Ct West Linn 97068	
21E36BD06600	Wong So Hin Trste	2135 Fairhaven Ct West Linn 97068	
21E36BD06700	Barber Alf	2145 Fairhaven Ct West Linn 97068	
21E36BD06800	Stotz Eric	2155 Fairhaven Ct West Linn 97068	
21E36BD06900	City of West Linn	*no Site Address*	
21E36BD07000	City of West Linn	*no Site Address*	
21E36BD07100	City of West Linn	*no Site Address*	
21E36BD07200	City of West Linn	*no Site Address*	
21E36BD07300	City of West Linn	*no Site Address*	
21E36BD07400	Tanner Creek Estates IV LLC	*no Site Address*	
21E36BC06000	Schulberg David A & Nancy	3957 Northhampton Ct West Linn 97068	
21E36BC06100	Stauffer Peter O & Janecke B	3944 Northhampton Ct West Linn 97068	
21E36BC06200	Johnson David & Shannon	3932 Northhampton Ct West Linn 97068	
21E36BC06300	Freeman Richard J & B A Loughman	3920 Northhampton Ct West Linn 97068	
21E36BC06400	Stuart Robert Andre	3918 Northhampton Ct West Linn 97068	
21E36BC06500	Perkins Robert S & Beth A	3691 Fairhaven Dr West Linn 97068	
21E36BC07700	City of West Linn	*no Site Address*	
21E36BC07800	City of West Linn	*no Site Address*	
21E36BA07801	Simon Hiedi D	4064 Sussex St West Linn 97068	
21E36BB04420	Thornton Stephen B & Michele M	3612 Landis St West Linn 97068	
21E36BB04421	Smith Lori Lynne	3624 Landis St West Linn 97068	
21E36BB04422	Wihksne Shiloh D & Kelly D Rogers	3636 Landis St West Linn 97068	
21E36BB04423	Takano Travis S & Lina M A	3648 Landis St West Linn 97068	
21E36BB04424	Lee Chong W & Joy R	3652 Landis St West Linn 97068	
21E36BB04425	Wolthuis John & Brittney	3664 Landis St West Linn 97068	
21E36BB04426	Winther Glenn D	3676 Landis St West Linn 97068	
21E36BB04427	Eaton Dan Clair Trustee	3688 Landis St West Linn 97068	
21E36BB04428	Johnson Dianne C Trustee	3692 Landis St West Linn 97068	
21E36BB04429	Shiiki Sarah	3699 Landis St West Linn 97068	
21E36BB04430	Diaz Christopher P & Chelsea A	3687 Landis St West Linn 97068	
21E36BB04431	Tresvant Ravelle D	3675 Landis St West Linn 97068	
21E36BB04432	Reed Melinda C	3669 Landis St West Linn 97068	
21E36BB04433	Potter Matthew C & Courtney	3663 Landis St West Linn 97068	
21E36BB04434	Fabrycki Leon W	3657 Landis St West Linn 97068	
21E36BB04435	Gorelov Sergey V	3651 Landis St West Linn 97068	

Fidelity National Title Company Of Oregon / Clackamas (OR)

Ref Parcel #	Owner Name	Site Address	Phone #
21E36BB04436	Bennett Patrick/Ashley	3649 Landis St West Linn 97068	
21E36BB04437	Gillingham Joshua David Trustee	3637 Landis St West Linn 97068	
21E36BB04440	Tanners Stonegate Homeowners Assn	*no Site Address*	
21E36BB04441	Tanners Stonegate Homeowners Assn	*no Site Address*	
21E36BB04442	Tanners Stonegate Homeowners Assn	*no Site Address*	
21E36BB04443	Tanners Stonegate Homeowners Assn	*no Site Address*	
21E36BA04501	Carroll Sean Michael	2794 Sunset Ave West Linn 97068	

Rick Givens
Planning Consultant
18680 Sunblaze Dr.
Oregon City, Oregon 97045

January 23, 2017

Mr. Patrick Noe, President
Sunset Neighborhood Association
4412 Simpson St.
West Linn, OR 97068

Dear Mr. Noe:

I'd like to thank you for your assistance in arranging a neighborhood meeting date for the proposed development of property located at 4096 Cornwall Street. Our correspondence to date has been via email, but this letter is being sent to you to fulfill the technical requirements of Section 99.038C of the West Linn Community Development Code that we contact you via certified mail to arrange the date for the meeting. Just to confirm, the date of the Sunset NA meeting is January 24, 2017 at the Sunset Primary School library at 7:00 pm and our proposal for a 6-lot subdivision will be on the agenda. We will be sending out the required neighborhood notice letters for that time and place.

Thanks again,

Rick Givens

Rick Givens

cc: Leslie Bowlin, Secretary-Treasurer Sunset NA
Meredith Olmstead, President BHT NA
Robert Jester, Vice President

phone: 503-479-0097 | fax: 503-479-0097 | e-mail: rickgivens@gmail.com

Notice of Neighborhood Meeting Regarding
A Proposed 6-Lot Subdivision
Located at 4096 Cornwall Street

Hello,

You are invited to attend a neighborhood meeting to discuss a proposed development in your area. Icon Construction & Development, LLC is proposing to construct a 6 Lot subdivision on property located at 4096 Cornwall Street in West Linn.

As required by the West Linn Community Development Code, prior to the submittal of an application to the City of West Linn for preliminary approval of this project, a meeting with neighbors will be held to present the conceptual plan for the project, to answer questions and for the developer to receive feedback from those in attendance. This notice of the meeting is being mailed to owners of property located within 500 feet of the boundaries of the subject property. The notice is also being mailed to officers of the Sunset and BHT Neighborhood Associations. The property is located within the Sunset Neighborhood Association boundary and is within 500 feet of the BHT Neighborhood Association boundary.

The proposed development is scheduled to be presented at the January 24, 2017 meeting of the Sunset Neighborhood Association. There may be other items on the agenda in addition to this project. Meeting time and place are:

7:00 PM, Tuesday, January 24th, 2017
Sunset Primary School Library
2351 Oxford St.
West Linn, Oregon

We look forward to meeting with you. If you cannot attend in person but have questions regarding the project, please feel free to contact the project planning consultant, Rick Givens. You may phone him at (503) 479-0097 or contact him via email at rickgivens@gmail.com.

Notice of Neighborhood Meeting Regarding
A Proposed 6-Lot Subdivision
Located at 4096 Cornwall Street

Hello,

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The proposed development is scheduled to be presented at the January 24, 2017 meeting of the Sunset Neighborhood Association. There may be other items on the agenda in addition to this project. Meeting time and place are:

7:00 PM, Tuesday, January 24th, 2017
Sunset Primary School Library
2351 Oxford St.
West Linn, Oregon

We look forward to meeting with you. If you cannot attend in person but have questions regarding the project, please feel free to contact the project planning consultant, Rick Givens. You may phone him at (503) 479-0097 or contact him via email at rickgivens@gmail.com.

SNA Quarterly Meeting Sign In Sheet

Name	Street	Email
Dorri Clark	Cornwall	✓
Dave Craig	Tigard	
D. Dobroth	Exeter	✓
Joslyan Smith	Sunset	
H Wingard	Cornwall	✓
FRED GROVES	OC BLVD	SEVORGDERF@GMAIL.COM
Amanda Callahan	2380 Long St	✓
DOUG VOKES	4972 PROSPECT	✓
Victoria Meier	4669 Exeter	meier235@gmail.com
Bill Dahl	OC Blvd.	dahlbv@hotmail
Pam & Mark Y.	Fairhaven Drive	pam@yokubaitis.com
Charlene Imhoff	Cornwall	
[illegible]		
[illegible]	Oregon City Blvd	Kmlepiane@comcast.net
Kent Carol Fuchs	FAIRHAVEN Dr.	cvfuchs@gmail.com
Pia Snyder	Fairhaven Dr	piasnyder@comcast.net
PATRICK KATHY BENNETT	LANDIS' PK	BENNETTP0821@GMAIL.com
JEANNIE LEE	Fairhaven Dr	[illegible]
Sherman Pauly	"	Shermpauly@Yahoo.com
Wayne Tilley	Oregon City Blvd	tilleybw@gmail.com

Name	Street	Email
Carrie Hansen	Bittner St	Carriehansen1@yahoo.com
Noelle Bledy	Bittner St	robnoelle@comcast.net
Rebel Steiner	Fairhaven Ct	RebelSteiner@gmail.com
JAKE BOWLIN	SUSSEX	n.bowl@gmail.com
T. Christensen	SUSSEX	

Theta, llc
ENGINEERING - SURVEYING - PLANNING

503/481-8822

4260 Country Woods Ct.
Lake Oswego, Oregon 97035

e-mail: thetaeng@comcast.net

Memorandum

To: file

From: Bruce Goldson

Date: January 24, 2017

Subject: **Neighborhood Meeting for Willow Ridge (Cornwall) 2014-129L**

MEETING HGIHLIGHTS:

- Approximately 25 in attendance for the Sunset and Barrington groups
- Storm water, neighborhood flooding and springs in yards
  - Home owners on Fairhaven Drive with backyards have complaints about springs and surface water. All have collections systems in the backyards with connections to the storm sewer in the street
  - Has Icon conducted a geotechnical investigation? Unknown
  - Concerned about runoff from Cornwall. Even with getting a regional facility next to Fairhaven Drive
  - Some fear of settlement on houses on Fairhaven if underground flow is stopped.
  - Some feel that there is a wetlands on the property.
- Concerns about through traffic on Landis, would prefer cul-de-sacs
- Concerns about intersection at Cornwall and Sunset.
- Vote to have the City do a presentation about the possible stormwater facility.
- Handout from Barrington Neighborhood with concerns.

Sunset Neighborhood Association Quarterly Meeting
Sunset Primary, 2351 Oxford Street, West Linn, OR 97068
Tuesday, January 24, 2017
Agenda

1. Call to order
2. Approval of Minutes from September 2016
3. Old Business
    a. Election of new Officers
    b. Disaster Preparedness discussion
4. New Business
    a. West Linn Refuse and Recycling PCD notice
    b. Rick Givens to present about new neighborhood on Cornwall proposal
        i. To give input on the application of the new neighborhood contact the City of West Linn
        ii. City of West Linn, Planning Dept and/or City Council
        22500 Salamo Road
        West Linn, OR 97068
        503-656-4211
    c. David Dodds to present about Land Use Board Association (LUBA) decisions
        i. to give input on the redrawing of the storm water plans contact City of West Linn Planning Dept and/or City Council
    d. Carrie Hansen to speak about cost for Save Our Sunset specialist
        i. http://www.save-our-sunset.org/
    e. Doug Vokes to present about Disaster Preparedness for Sunset
        i. Map your neighborhood
        (http://westlinnoregon.gov/MapYourNeighborhood)
        ii. MYN Youtube educational videos
        (https://www.youtube.com/playlist?list=PLA218D92E24E04C53)
5. Adjourn

www.facebook.com/sunsetneighborhoodwestlinn

https://westlinnoregon.gov/sunset

Proposed development at 4096 Cornwall Street, West Linn, Oregon

People

Robert Jester <jtjester@comcast.net>
To: rickgivens@gmail.com
CC: Jere McLaurin; art2noe@yahoo.com

Today at 4:40 PM

Dear mr Givens

I appreciate your outreach regarding the above proposed 6 lot subdivision. I unfortunately will be unable the attend the Sunset Neighborhood Association meeting tonight as we also are scheduled for our annual homeowner association meeting at the same time. Therefore I am submitting our NA concerns in writing.

1. We have concerns about the construction traffic using Barrington Heights as access to the development. Barrington Drive is a road in dire need of paving and we believe it will further deteriorate under the stress of construction trucks. To my knowledge there is not a current plan to repave this road.

2. We have experienced damage from trucks entering the neighborhood as the is no way into the neighborhood without an island to navigate around. The cost of repair to the islands owned by the HOA is our responsibility unless we "catch" a truck doing the damage.

3. We have grave concerns about the unsafe condition at the intersection of Barrington Drive and Salamo Road. The speeding traffic going downhill has a blind spot prior to the intersection of Barrington Drive which makes turning left a heart pounding experience. The city has been made aware of our concerns but is yet to act.

4. Salamo Road is a heavily traveled Road that cannot manage the amount of existing traffic. There seems to be no fix in sight from the city or ODOT to better manage this ever increasing safety issue.

5. There are currently no through sidewalks connecting Salamo Rd. to 10th St./ Blankenship Rd. nor are there through sidewalks on Sunset from Willamette Falls Drive up the hill. Therefore foot traffic must walk in or on the edge of the roadways which is unsafe in both locations.

6. We have had homeowners on Fairhaven Drive express concern about run off water as the property is sloping down hill behind their houses. This is currently mitigated to some extent by foliage and trees on the undeveloped portion of the property.

We thank you in advance for having these concerns addressed as part of the public input phase of this process.

Robert Jester
Barrington on NA Vice President

503-557-7575
3475 Riverknoll Way
West Linn, Or. 97068

Sent from my iPad

Reply Reply to All Forward More

AFFIDAVIT OF NOTICE

STATE OF OREGON)
) SS
County of Clackamas)

I, Richard Givens, Planning Consultant for Icon Construction and Development, LLC, declare that on January 4, 2017 notice of a neighborhood meeting was provided, in the case of the Willow Ridge subdivision, pursuant to Chapter 99.083 of the West Linn Community Development Code. Notice was mailed to property owners within 500 feet of the project site, and to the Sunset and BHT neighborhood associations. This notice was for a 6-lot subdivision.

Richard Givens 2/20/2017

RICHARD GIVENS
PLANNING CONSULTANT

DATE

SUBSCRIBED AND SWORN TO before me this 20th day of FEBRUARY, 2017.
by RICHARD GIVENS.

OFFICIAL STAMP
MICHAEL PATRICK WILSON
NOTARY PUBLIC-OREGON
COMMISSION NO. 944384
MY COMMISSION EXPIRES NOVEMBER 05, 2019

NOTARY PUBLIC FOR OREGON
My Commission Expires: NOVEMBER 5, 2019

AFFIDAVIT OF POSTING

STATE OF OREGON)
) SS
County of Clackamas)

I, Richard Givens, Planning Consultant for Icon Construction and Development, LLC, in the case of Willow Ridge subdivision, declare that on January 4, 2017, pursuant to Chapter 99.083 of the West Linn Community Development Code, Signs were posted providing notice of a neighborhood meeting to discuss the proposed 6 lot project. The signs met the required 11" x 17" standard and were posted on the subject property's frontage at 4096 Cornwall Street, as well as its frontage on Landis Street.

Richard Givens 2-20-2017

RICHARD GIVENS DATE
PLANNING CONSULTANT

SUBSCRIBED AND SWORN TO before me this 20th day of FEBRUARY, 2017,
by RICHARD GIVENS.

OFFICIAL STAMP
MICHAEL PATRICK WILSON
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COMMISSION NO. 944384
MY COMMISSION EXPIRES NOVEMBER 05, 2019

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e-mail: thetaeng@comcast.net

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        (https://www.youtube.com/playlist?list=PLA218D92E24E04C53)
5. Adjourn

www.facebook.com/sunsetneighborhoodwestlinn

https://westlinnoregon.gov/sunset

Proposed development at 4096 Cornwall Street, West Linn, Oregon

Reply

Robert Jester <jjtester@comcast.net> Today at 4:40 PM
To: rickgivens@gmail.com
CC: Jere McLaurin, art2noe@yahoo.com

Dear mr Givens

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We thank you in advance for having these concerns addressed as part of the public input phase of this process.

Robert Jester
Barrington on NA Vice President

503-557-7575
3475 Riverknoll Way
West Linn, Or. 97068

Sent from my iPad

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

Patrick Noe
4412 Simpson St
West Linn, OR 97068

9590 9402 2357 6249 7826 05

2. Article Number *(Transfer from service label)*

7016 0910 0000 7688 1891

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Noe ☐ Agent ☐ Addressee

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

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

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

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

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

Robert Jester
3475 River knoll Way
West Linn, OR 97068

9590 9402 2357 6249 7925 29

2. Article Number *(Transfer from service label)*

7016 0910 0000 7688 1877

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X [signature] ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* Jan Jester | C. Date of Delivery 1-6-17

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

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
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- ☐ ıured Mail Restricted Delivery ver $500)
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- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

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

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

Meredith Olmstead
3560 Riverknoll Way
West Linn, OR 97068

9590 9402 2357 6249 7925 12

2. Article Number *(Transfer from service label)*

7016 0910 0000 7688 [illegible]

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

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

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

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
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PS Form 3811, July 2015 PSN 7530-02-000-9053

7016 0910 0000 7688 1907

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$ $2.70	11
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy) $ $0.00	
☐ Return Receipt (electronic) $ $0.00	Postmark Here
☐ Certified Mail Restricted Delivery $ $0.00	
☐ Adult Signature Required $ $0.00	
☐ Adult Signature Restricted Delivery $	
Postage $0.47	01/04/2017
$	
Total Postage and Fees $6.47	
$	

Sent To: Leslie Bowlin
Street and Apt. No., or PO Box No.: 4023 Sussex St
City, State, ZIP+4®: West Linn, OR 97068

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

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$ $2.70	11
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$	
Total Postage and Fees $6.47	
$	

Sent To: Patrick Noe
Street and Apt. No., or PO Box No.: 4412 Simpson St
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PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Postage $0.47	01/04/2017
$	
Total Postage and Fees $6.47	
$	

Sent To: Robert Wester
Street and Apt. No., or PO Box No.: 3475 Riverknoll Way
City, State, ZIP+4®: West Linn, OR 97065

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

7016 0910 0000 7688 1860

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
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OFFICIAL USE

Certified Mail Fee $3.30	0155
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Postage $0.47	01/04/2017
$	
Total Postage and Fees $6.47	
$	

Sent To: Meredith Olmsted
Street and Apt. No., or PO Box No.: 3560 Riverknoll Way
City, State, ZIP+4®: West Linn, OR 97065

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

Notice of Neighborhood Meeting

Regarding A Proposed
6-Lot Subdivision for Property
Located at 4096 Cornwall Street

You are invited to attend a neighborhood meeting to discuss a proposed development on this property. The project will be presented at the **Jan. 24, 2017** meeting of the Sunset Neighborhood Association. Other items may be on the agenda in addition to this one.

The applicant for this project is Icon Construction & Development, LLC. Additional information may be obtained by telephoning the project planning consultant, Rick Givens, at (503) 479-0097 or by email at rickgivens@gmail.com.

The meeting time and place are:

7:00 PM on Tuesday, January 24, 2017
Sunset Primary School library
2351 Oxford St.
West Linn, Oregon

PC-4 TUALATIN VALLEY FIRE & RESCUE COMMENTS

Tualatin Valley Fire & Rescue

www.tvfr.com

March 3, 2017

Associate Planner
City of West Linn
Attn: Jennifer Arnold
22500 Salamo Rd
West Linn, OR 97068

Re: SUB-17-01

Dear Jennifer,

Thank you for the opportunity to review the proposed site plan surrounding the above named development project. Tualatin Valley Fire & Rescue endorses this proposal predicated on the following criteria and conditions of approval:

1. **FIRE APPARATUS ACCESS ROAD DISTANCE FROM BUILDINGS AND FACILITIES:** Access roads shall be within 150 feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building or facility. (OFC 503.1.1))

2. **SINGLE FAMILY DWELLINGS - REQUIRED FIRE FLOW:** The minimum available fire flow for one and two-family dwellings served by a municipal water supply shall be 1,000 gallons per minute. If the structure(s) is (are) 3,600 square feet or larger, the required fire flow shall be determined according to OFC Appendix B. (OFC B105.2)

3. **FIRE FLOW WATER AVAILABILITY:** Applicants shall provide documentation of a fire hydrant flow test or flow test modeling of water availability from the local water purveyor if the project includes a new structure or increase in the floor area of an existing structure. Tests shall be conducted from a fire hydrant within 400 feet for commercial projects, or 600 feet for residential development. Flow tests will be accepted if they were performed within 5 years as long as no adverse modifications have been made to the supply system. (OFC Appendix B)

4. **FIRE HYDRANTS – ONE- AND TWO-FAMILY DWELLINGS & ACCESSORY STRUCTURES:** Where a portion of a structure is more than 600 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the structure(s), on-site fire hydrants and mains shall be provided. (OFC 507.5.1)

If you have questions or need further clarification, please feel free to contact me at (503) 649-8577.

Sincerely,

Ty Darby

Ty Darby
Deputy Fire Marshal II

Cc: file

North Operating Center
20665 SW Blanton Street
Aloha, Oregon 97078
503-649-8577

Command & Business Operations Center and Central Operating Center
11945 SW 70th Avenue
Tigard, Oregon 97223-9196
503-649-8577

South Operating Center
8445 SW Elligsen Road
Wilsonville, Oregon
97070-9641
503-649-8577

Training Center
12400 SW Tonquin Road
Sherwood, Oregon
97140-9734
503-259-1600

PC-5 PUBLIC COMMENTS

Cornwall Development by ICON Construction called "Willow Ridge"

My name is Ed Turkisher. I live at 4099 Cornwall Street in West Linn directly across the street from the proposed development at 4096. I truly regret that I cannot attend the meeting of the planning commission scheduled this 17th of May. Please accept my written testimony and allow my designee to present testimony on behalf of myself and the concerned residents impacted by this development plan.

A short history of this development is as follows. The 2.17 acre plot located at the dead end of the south end of Cornwall Street in West Linn was purchased by ICON Construction (started and owned by Mark Handris of Handris Realty) for $390,000 sometime in 2015. The property has one single two story home that has been connected to the West Linn sewer system shortly after purchase by ICON as the existing septic system had failed beyond repair.

On November 24th, 2015 ICON submitted a pre-application proposal for a 7 lot development at the Cornwall site.

On April 26th, 2016 an informational meeting was held by the ICON consultant Rick Givens at Sunset Elementary Library regarding the Cornwall site. More than 50 residents attended this meeting and almost all of the questions being asked at present were put forth at this same meeting. Motioning for a vote on the feasibility of approving the development as presented, 50 out of 51 residents present rejected the proposed plan and asked for answers to the many questions and concerns.

On January 24th, 2017 another informational meeting was held by ICON at the Sunset Elementary Library regarding a new plan for the Cornwall site. No materials were distributed regarding the new plan but a presentation was held and basically the same questions asked in April 2016 were reiterated again by concerned residents.

On February 21st, 2017 ICON submitted a new proposal for development of the Cornwall site which modified the original plan. Basically, the new plan adjusted the plan from 7 lots to 6 lots and realigned the road connection between Landis Street and Cornwall Street.

To date, ***NONE*** OF THE MANY QUESTIONS ASKED BY RESIDENTS IMPACTED BY THE PROPOSED DEVELOPMENT HAVE BEEN ADDRESSED OR ANSWERED BY EITHER ICON Development ***OR*** THE CITY OF WEST LINN.

Due mostly to the failure of the City or ICON to respond to the many questions generated over more than a year of citizen interests, it has become necessary for residents to seek additional investigations to try and answer questions about this development. We have many many questions but most queries fit into basically four areas of concern.

1: Water, runoff, springs, and possible wetland designation.

2: Slope analysis and environmental impact.

3: Flora, Fauna, and significant tree removal.

4: Traffic and road improvements.

Often, there is overlap between areas of concern and questions are generated that have impact across more than one or two categories.

While I have interest in ALL of the concerns listed, because I live closest to the proposed development site I will limit my testimony to basically the proposed connection of Cornwall Street to Landis Street and the impact that connection will have on the entire project.

TRAFFIC:

Why has every question regarding a possible cul-de-sac on Cornwall been ignored? It is legal and has many benefits for a development. There is NO law or code that says the streets must be connected – only a *preference* to connect where feasible. And this connection is NOT feasible.

How is the bulldozing and modification of the steep slope for a through road to Landis going to affect the issues of water, possible land movement (see Map 11 Potential Landslides PDF) and new home foundations? ICON identifies 25% of the site as in excess of a 25 degree slope and 12 ½ % of the site in excess of 35% slope – some even 40%! Four of the six homes proposed are right in the middle of the 35% slopes and the proposed road also crosses the 35% slope. (reference page 91 of the ICON plan)

Why is the following being ignored?

A through route connection between Landis and Cornwall has many unanswered conflicts. If permitted, the through route opens Cornwall Street as an arterial that cannot handle the increased traffic. ICON identifies the increased traffic of the 6 proposed new homes using Cornwall Street, but disregards the existing homes which would now have more direct access to I205 Northbound and Oregon City. These homes include Landis Street (20 homes), Willow Street (6 homes), existing Cornwall Street (9 homes), upper Beacon Hill (18 homes), Sabo Lane (32 homes) and other nearby residences which account for over one hundred homes that would now have shorter access to their destinations via Cornwall and Sunset . More residences would undoubtedly make use of the new connection as well. If we use ICON's own estimate of 5 trips per day per household to various destinations, the approximate increase of traffic would go from about 30 or so car trips on the street today, to **500** additional trips on Cornwall – an increase of over a thousand percent! ICON's own engineering report claims that NO traffic study is required because the six new homes would have minimal impact on existing traffic – completely ignoring the new access to Cornwall and Sunset Streets by more than a hundred homes.

New roads are required to be a minimum of 24' wide with two sidewalks 6' wide on either side. Why is this new road being connected to an obsolete Cornwall Street that is less than 18' wide with NO sidewalks?

The average PCI in West Linn is 69. Cornwall is rated with a PCI of 8! (**P**avement **C**ondition **I**ndex-Pavement Management Report for 2015). The report rates Cornwall with a "remaining life" estimate of ZERO! Why is this road condition being ignored? An overlay is being planned on Cornwall to widen the

street to 20' but makes neither plan for sub-strata repair nor ANY sidewalks – still woefully short of standard code.

Where is the formidable increase in pedestrian traffic going to walk with NO planned sidewalks?

What safety concerns are going to be proposed for our children with no sidewalks and no bus stops?

How is traffic going to enter Sunset Street at the uncontrolled intersection of Cornwall and Sunset with NO plans for improvement? (...and Sunset is a substandard street as well according to the City PCI index)

Cornwall is going to be dug up to increase potable water infrastructure with a new "looped" water supply of greater diameter to feed the new homes. Six existing homes on Cornwall Street are still on septic systems. There is NO sewer line on Cornwall. If the street is going to be dug up to install new potable water service, why isn't the foundation of Cornwall and a sewer line being put in place at the same time? It is only too obvious that it would be much less expensive to do the upgrade NOW than to wait and dig up the street at least three times again and again to try and save what?

Why isn't upgrading Cornwall Street being considered? The existing street is one of the WORST roads identified in all of West Linn yet this proposal will allow a development that comes nowhere near to meeting code and defers critical infrastructure repair into an uncertain and undefined future.

Quite frankly, without attention to substantial redesign and repair, this proposal is not only wrong; it is dangerous and opens a Pandora's Box of injury, infrastructure failure and liability.

Hopefully, other citizens will elaborate on the myriad of other failings in this poorly conceived plan and address the questions concerning water, trees, plants, animals, slope, and traffic issues that make this plan a huge mistake. Unless a MAJOR modification of the proposed "Willow Ridge" subdivision is presented, I ask that the Planning Commission reject this plan in its entirety.

Thank You for you consideration,

Sincerely, Ed Turkisher

Ed Turkisher - May 2, 2017

To: Jennifer Arnold, Project Manager, City of West Linn
From: Meredith Olmsted, President, BHTNA
CC: Robert Jester, Vice President, Larry Meese, Treasurer, Amy Reese, Secretary, Jere McLaurin, President, Barrington Heights Homeowners Association, Pam Yokubaitis, Hidden Creek Estates Homeowners Association Laison,

Date: March 22, 2017

As the 30 day completeness review of the proposed Willow Ridge subdivision application approaches, the residents in Barrington Heights Hidden Creek Estates Tanner Woods Neighborhood Association (BHTNA) continue to have grave concerns about said proposed subdivision and request support from the City prior to this application being ruled "complete".

BHTNA is comprised of three separate HOA's. All three are affected in impactful ways by this proposed construction, particularly due to water runoff and displacement concerns. One subdivision, Hidden Creek Estates, directly borders Willow Ridge, and yet the City expressed to me that the developer, ICON, was not obligated to meet with BHTNA, only the Sunset NA, in which the development will be constructed. When given an impossibly short time frame in which to submit questions to ICON, BHTNA complied, then was denied a meeting with ICON.

Simply put, the BHTNA strongly feels their residents deserve an opportunity to address their concerns about this project with the developer prior to the application being sent on to the Planning Commission. These concerns include:

1) As President, I receive notices from the City about proposed construction City-wide. Since I had a long term trip out of town I called the City in October, 2016, and requested that my Vice President, Robert Jester, receive such correspondence in my absence. I was assured that was no issue, and that notices would be sent to him. They were not.

2) Due solely to the diligence of our residents, public notices about the proposed subdivision came to the attention of these homeowners. When I called the City to inquire about this pre-application, I was assured from City staff that "really nothing was going on at this time". Upon my return in Late February 2017 I met with the planner and the engineer at the City. They were open with me about the project, and pledged to work with me to address ongoing concerns by my neighborhood. Since that time my phone calls have not been returned by the engineer.

3) It is my understanding that one requirement in the application is public notification and opportunity to meet with adjacent residents. Two NA's will be significantly impacted by the Willow Ridge subdivision: Sunset and BHTNA. Sunset has had two meetings with ICON. BHTNA has had none.

4) There are three subdivisions within BHTNA: Barrington Heights (BHT), Hidden Creek Estates (HCE), and Tanner Woods. All three will be affected by water condition impacts from this proposed subdivision, particularly those 60+ homes positioned directly below the construction site.

I) There are 8 homes directly positioned contiguously to Willow Ridge. These residents have grave concern about water runoff and landslide issues that could negatively impact these existing residences.

II) There are 12+ homes in Barrington Heights/Hidden Creek Estates positioned next to the creek through which water from Willow Ridge will be directed. Erosion and water flow are grave concerns to these residents.

III) There are 7 homes in the Tanner Woods subdivision whose properties may be affected by the amount of water runoff collected in their retention pond. How the increased amount of water collected in these ponds will be managed is a concern to these homeowners.

5) The volume of water that now erodes soil down through Hidden Creek Estates properties along Fairhaven Drive, adjacent to Willow Creek, will be redirected to the creek. This will result in an increased amount of water because a) the removal of several trees which currently absorb water, b) footprints of new homesteads, sidewalks, roads, and driveways will increase runoff because soil absorption will be reduced significantly, and c) above and below ground water sources (springs) will continue to produce their own levels of runoff.

6) Another concern is that if water runoff is directed to the creek, surface and underground Water sources can dry up. This can result in the collapse of the soil of the former underground springs, thus affecting the foundations of the 60+ homes below the proposed 6 site subdivision. Since this entire hillside has homes built over underground springs, ensuring no foundation damage to the existing homes is a major concern to MANY residents.

7) Plans posted online indicate the developer intends to direct water from the Hidden Creek Estates spring fed creek into a detention pond. There is no existing detention pond, as the City previously stated to me. If one is to be constructed, should not the developer position it on his own land and not reduce property values of existing homes by placing it next to those residences?

8) Hidden Creek Estates residents have observed as many as six turtles at a time in their own backyard ponds. Other wildlife has been documented by these residents, as well. Has this area been evaluated as a potential "wetland"?

The real issues for us all are clear, reliable, and unbiased clarifications to the above issues, a willingness by the City to hear those concerns and work with existing homeowners to seek responses and an overall concern for the continued safety of 60+ established, stable homes and their inherently consistent property values. If these issues can be thoroughly addressed, we will not stand in opposition to this subdivision.

Please weigh these concerns vs the expedited addition of 6 homes. Our pleas can be addressed with one scheduled meeting with the developer prior to this application moving on to the Planning Commission. It is in everyone's best interests to confront these issues prior to City approval or the start of construction.

Let our residents be heard. Require ICON to meet with the residents of BHTNA prior to granting a complete status to their application.

I look forward to your timely response.

Sincerely,

Meredith Olmsted, President, BHTNA

Arnold, Jennifer

From: Pam Yokubaitis <pam@yokubaitis.com>
Sent: Monday, March 06, 2017 7:05 PM
To: Axelrod, Russell
Cc: Meredith Olmsted; Patrick Noe; Ed Turkisher; Arnold, Jennifer
Subject: Re: Thank you!/Suggestion

Hello, Russ,

Thank you for your prompt reply and the direction you have provided me. Below are some points of clarification I wanted to share with you.

The Icon development project I was referring to just had an application submitted to the city in late February I believe, regarding a newly proposed development named **Willow Ridge**. Sunset Neighborhood residents on Cornwall and Landis Streets are significantly impacted by this development with traffic, environmental, construction, water, safety and potential health hazard issues to address. Cornwall's concerns have been summarized by Ed Turkisher and emailed to you separately with photos attached. Ed was the gentleman I was speaking with at the library when you came to join in our conversation. Ed is a Cornwall resident and knows a great deal about this small piece of property.

The residents in my Hidden Creek Estates subdivision at the back of Barrington Heights on Fairhaven Drive are seriously concerned about how the copious amounts of water continuously draining from this steep property, with drenched soil from numerous springs, will be managed. **We don't want another Sunset school situation where all water problems aren't addressed in the beginning that results in property values plummeting.** We are not against construction, but we DO question if this land can be developed due to the steep pitch, excessive of water draining onto Fairhaven drive and into the creek, and the deep natural springs below this steep slope upon which 50+ homesteads below in Hidden Creek Estates, Tanner Woods, Barrington Heights and Stonegate subdivisions are built. If the slope water in Willow Ridge is re-routed, all of our foundations could be affected with soil collapsing where water use to run under our homes. The Hidden Creek Estates residents adjacent to this proposed development already have significant water drainage on their property from this undeveloped land, so collecting and redirecting this water to our creek, then adding a detention pond *within the creek* is a highly questionable solution. Additionally, the removal of trees from this small parcel of land will increase the volume of water rolling down hill because some of this water will no longer be absorbed, thus making the slope even wetter.

I willI find out who is the appropriate connection point and learn the times for interaction. I will also attend tomorrows CCI meeting to propose my FAQ idea to the group. Thank you for your feedback and direction.

Pam Yokubaitis

On Mar 5, 2017, at 5:59 PM, Axelrod, Russell <RAxelrod@westlinnoregon.gov> wrote:

Hi Pam,
I don't know where the project you mention is in the process at the city, but the planning department should be able to inform you or anyone else in the community about the process and the appropriate connection points/times for interaction.

Please note that our committee for citizen involvement (CCI) is beginning an analysis and plan to make recommendations to improve the community process for this very kind of collaboration/communication. The CCI meets the 1st and 3rd Tuesdays at 5:30 pm at city hall (usually Bolton Rm), and public comments can be made at the CCI meeting if you want to also come and raise the issue/concern.

Russ

From: Pam Yokubaitis <pam@yokubaitis.com>
Sent: Saturday, March 4, 2017 7:55 PM
To: Axelrod, Russell
Cc: Meredith Olmsted; Patrick Noe
Subject: Fwd: Thank you!/Suggestion

Russ,

As a follow-up to my email below, I thought you should know that the questions from 3 residents (listed below) and all others who have yet to ask their questions about this Cornwall development will most likely go unanswered by Icon. Icon has rejected meeting with residents for a 3rd meeting, *however*, this 3rd request would be the *first meeting since their application has been officially submitted*. If Icon doesn't want to meet with Sunset and BHT residents, it's doubtful they will respond in writing to the questions below where we can hold them accountable. This avoidance is what angers West Linn citizens. Residents have to live with the decisions made by others (city and developer) yet their input is not welcomed. Because we already had 2 meetings with Icon *prior to their application being submitted*, the developers application plan now reflects changes *because of our input*! Maybe Icon doesn't want to address the questions below because it would require changes to their already submitted application. Regardless I felt you should know how this attempt to improve communications has soured at the beginning of the application process. To accomplish getting our questions addressed in another way, **Please forward the questions below to the planning committee to have them consider these questions when reviewing Icon's Willow Ridge application so that our concerns are considered.**

I know the city has a process for citizen involvement, yet not everyone gets to be heard due to time limitations. Sunset and BHT Neighborhood Association Presidents (copied on this email) aren't aware of the next steps. So please advise Patrick Noe and Meredith Olmstead how resident input should be given from this point forth. Patrick Noe has been told by the city "we just received the application", and "talk with the developer". He tried as you can see from his email below, so where do we go from here?

If the developer won't consider our concerns in his newest plan/applicaton, hopefully the planning committee will. Thank you for listening.

Pam Yokubaitis

Begin forwarded message:

From: Patrick Noe <art2noe@yahoo.com>

Subject: Cornwall / Icon meeting
Date: March 3, 2017 at 8:51:36 PM PST
To: Pam Yokubaitis <pam@yokubaitis.com>
Reply-To: Patrick Noe <art2noe@yahoo.com>

Hi Pam,
Unfortunately Icon isn't going to meet with us right now... we will see if they will answer our questions in writing.. The city has not volunteered to come either after nearly 3 weeks of asking, so I want to meet with BHT's President, Meredith Olmstead next week when she is back, hopefully on Mon. or Tues. and see what she thinks and says about where to go from here.

Please let the residents know that there is no meeting scheduled for the dates we talked about, but we'll let them know of any new developments.
Sorry we hit another roadblock.

Patrick Noe
Sunset Neighborhood Association

Begin forwarded message:

From: Pam Yokubaitis <pam@yokubaitis.com>
Subject: Thank you!/Suggestion
Date: March 2, 2017 at 6:26:57 PM PST
To: raxelrod@westlinnoregon.gov
Reply-To: Pam Yokubaitis <pam@yokubaitis.com>

Hello Russ,

I want to thank you for your excellent presentation at the library this week, and your positive changes in our community. When I first met you and your wife at Meredith Olmstead's house before your election, and then saw you both again this week at the State of West Linn, it was apparent to me that you are improving the city in many reasonable ways, so I'm glad I voted for you. What impressed me the most was *you returning to continue our conversation* with Ed Turkisher and myself about Icon's Willow Ridge Development off of Cornwall Street. You left our conversation for other business, but you then returned to resume in our discussion. This truly impressed me. Either your past Planning Department experience made you curious to want to know more, or you're just a genuinely interested leader, but regardless, I was grateful that you showed such interest and were very polite by returning to our conversation.

Just to clarify, the proposed area for development that Ed and I were discussing is between Sunset and Fairhaven Drive, at the end of Cornwall Street. Cornwall Street is very near the intersection of Summit Street and Sunset. It is the land at the end of Cornwall Street that an application for a proposed development has been submitted.

This email is *not* about this development. I just want to make a suggestion to you, and if you agree, pass this idea on to the planning department to consider. Since I am involved as a representative for my Hidden Creek Estates subdivision on Fairhaven Drive, which is adjacent to this proposed development, it has become apparent that a lot of residents have concerns about developing this very wet and steep parcel of land. As you *very well* know, community involvement in proposed developments is always an issue for the developer and the city to deal with, but how to handle the questions, concerns and complaints most effectively and efficiently is cumbersome.

That said, as I am dealing with this very issue right now with Icon, it became apparent to me that all residents need to be able to ask their questions and express their concerns, but only small group out of many can make it to meetings. So I thought how can this process be improved so all neighbors can get their questions answered from the developer/city during the application phase, because when this doesn't occur, *residents become unhappy, feeling the city or developer are untrustworthy.* The thought came to me that it would be most efficient if on the city website there was a link to each proposed development where any resident can ask a question, and the developer and/or city staff could reply...like an ongoing Frequently Asked Questions (FAQ) thread. Having a thread of Q&A on each project would enable: 1) more residents questions to be asked, 2) allow other residents to learn from the same question, 3) give timely responses to residents, 4) serve as a reference (for the city/developer), and 5) reduce the need for multiple residential/developer meetings. Icon has had 2 neighborhood meetings to date about the proposed Willow Ridge development, and they are *considering* having a third next week because BHT and Sunset Neighborhood Association residents in 4 separate subdivisions have concerns about building on this wetlands. However, not all questions have been answered, some questions have not been answered to their satisfaction with a credible response, and most importantly, there isn't enough time during a meeting to get all questions answered!

A communication forum such as I'm suggesting would foster greater communication between the city, residents, and the developer. It would also be an efficient and effective means of keeping all interested parties informed, in addition to enabling the residents of West Linn to provide their input in a constructive manner. After all, doesn't collaboration/sharing of ideas always result in a better final product, especially in the planning phase? Because of the unfortunate history West Linn has with embezzlement and waste of tax payers dollars, I believe such an open forum would greatly improve community relations with city government.

To further my point, Icon asked for a list of questions they could address at our *potentially* 3rd meeting next week. They unreasonably requested the residents provide them with their

questions in advance with a 5 hour deadline to comply. Only 3 residents had time to create their list of questions below to provide Icon:

HILLSIDE and WATER DRAINAGE:

1. The pitch of this hillside is steep. How do you proposed to stabilize the hillside? Explain how you will level the land for the Willow Ridge homes?
2. Explain how the hillside water run off has been measured/quantified based on heavy rains. What are the geotechnical investigation results? How does this calculation take into consideration that there will be less ground surface and trees to absorb water after construction?
3. How deep is the surface water and how deep are the springs on this slope?
4. Is only surface water drainage being collected at the bottom of the slope? What about hidden springs water?
5. With all this water re-routed on the hillside, there is concern that underground springs are redirected and the water channels dry up under adjacent properties, foundation settling could be a serious matter, so what will be done to prevent foundation settling problems? It is the belief of many residents that the surface water is minimal compared to the underground springs.
6. The proposal as written claims that NO wetland exists. Has a hydrologist or hydro-geologist visited the site? Residents are standing in mud nearly to their knees at the site in question and it would seem that this qualifies for wetland designation.
7. What will be done to prevent major erosion at the creek where all this running water will be funneled into?
8. Why isn't the *lowest spot in the creek*, in Tanner Woods subdivision, used as the detention pond?

DETENTION POND:

1. Explain how a detention pond works, how does it accommodate heavy rains, and if it reaches it's banks, then will water there be controlled in heavy runoff conditions?
2. Does stagnant water remain in the pond, or will the running creek recycle all water since its moving? How will insect and other pests be controlled in standing water and marshy conditions?
3. To where will water from the proposed pond be released? How will it affect Tanner Creek and the residents surrounding it?
4. How will the proposed pond affect the adjacent houses? Will the proposed pond be visible to the neighborhood? Will it displace earth or substantial amounts of vegetation during or post construction?
5. How will the exterior treatments around the pond support the level of aesthetics currently enjoyed by the existing neighborhood?
6. Is there such a pond in WL with a running creek, like the one proposed here for us to go see?

CORNWALL STREET :

1. Cornwall Street is a minimal road with serious repair and infrastructure improvements needed. How will those concerns be addressed?
2. Inadequate fresh water piping exists on Cornwall Street. ICON identifies the existing pipe as 2". This may be in error and the actual fresh water pipe only 1 ½". Is the fresh water feed going to be upgraded? If a new more substantial pipe is placed underground along Cornwall Street to provide water to the new development, since the street needs to be dug up for that purpose anyway, Why can't the trench be enlarged or duplicated to include new sewer service connecting to either the Fairhaven of Landis sewers?

3. What is being considered to upgrade Cornwall to provide sidewalks on what will become a major thoroughfare for traffic accessing the hundreds of homes West and North of the proposed development? Cornwall is extremely narrow and pedestrians will be forced into the street. What about school bus stops?
4. It is proposed that Cornwall will be widened to 20' and topped with an additional asphalt overlay. 20' is minimal and makes NO allowance for pedestrian traffic. Additionally, an overlay of asphalt will fail in a very short time. NO section of Cornwall Street is without serious patches, pot holes, and cracked pavement. It will NOT survive an overlay. Why isn't the street being torn up , substrate put down, regraded, and the street brought up to long lasting standards?
5. We assume that construction traffic for the new development will have to use Cornwall Street as well. How is the heavy construction equipment and considerable traffic going to negotiate the narrow steep Street? What is being considered for noise and dust abatement?
6. Finally, as per state regulation, a cul-de-sac cannot be an option at the end of Landis Street because fire and emergency vehicle limits exceed what is permissible – no more than 20 homes at the end of any dead end street. However, If Cornwall became a cul-de-sac ending at the new development, the number of homes would amount to only 13 and still allow another 7 homes for future development. Why isn't a Cornwall cul-de-sac being considered? This would also limit traffic on poor narrow streets and virtually eliminate the danger to pedestrians and kids who currently play in both Landis AND Cornwall.
7. Many riparian and valuable trees should be protected. Several trees have ALREADY been knocked down or damaged by disturbing the soils with the minimal excavation which has already taken place. When a new road is contemplated to access the development, what is being done to protect the remaining trees from damage and soils from erosion?

If this lengthy list of questions was generated *by only 3 people*, it would take an entire meeting to discuss just this, *but what about all the other resident's questions*? No developer can perpetually keep meeting with everyone, but the residents should get their questions answered instead of silencing them because their property values are at stake. A one hour meeting with a developer is woefully insufficient, multiple meetings are time consuming for all and often poorly attended, so a lot of resident's feedback/input/ideas get ignored. It's not that people don't care to get involved; a few meetings are just not an efficient manner for residents to get their concerns addressed.

If you think this suggestion has merit, *we could pilot this idea with the Icon/Willow Ridge development right now* if the city's website could implement an FAQ thread. Sunset's NA President will be forwarding the above questions to Icon because they solicited questions for the potential meeting next week. However, we have no guarantee that they will agree to have another meeting next week, so if they don't, the above questions (and many more) will go unanswered, making many residents feel frustrated and angry. My suggestion is made to keep lines of communication open, improve the image of city hall's planning committee process, and improve the residents feeling about city government. I appreciate you taking this into consideration because being the facilitator of communications right now about this proposed development is taking a lot of my time and others. A Q&A thread would eliminate my being a middle man, make everyone happier to get their own questions answered, and because residents must live with the decisions made by the developer and city staff, they deserve the opportunity to be heard.

Thanks for listening, and again, for your interest in our conversation at the library,

Pam Yokubaitis, MPH, RHIA, FAHIMA
BHTNA Past President
pam@yokubaitis.com
503-656-5881 (H)

Russell Axelrod
Mayor
City Council

22500 Salamo Rd
West Linn, OR 97068
RAxelrod@westlinnoregon.gov
westlinnoregon.gov
503-568-2804

Click to Connect!

Arnold, Jennifer

From: Edward A. Turkisher <castle-wing@comcast.net>
Sent: Sunday, March 05, 2017 3:51 PM
To: Axelrod, Russell
Cc: Arnold, Jennifer; 'Pam Yokubaitis'
Subject: ICON Willow Ridge development
Attachments: Cornwall Chart 1.pdf; Cornwall Wetland 1.jpg; Cornwall Wetland 2.jpg; Cornwall Wetland 3.jpg; Down Cornwall end to Fairhaven w downed Willows.jpg; Down Cornwall from 4099.jpg; Down Cornwall from 4194.jpg; Down Cornwall from 4195.jpg; Down Cornwall from Sunset.jpg; Downed Oak end of Cornwall.jpg; Looking up to end of Cornwall 1.jpg; Looking up to end of Cornwall 2 w downed Willows.jpg; Looking up to end of Cornwall 3.jpg; Looking up to end of Cornwall w downed Willows.jpg; Up Cornwall from 4110.jpg; Up Cornwall from 4130 N.jpg; Up Cornwall from 4130 S.jpg; Up Cornwall from 4130.jpg; Up Cornwall from 4194.jpg; Up Cornwall from 4195.jpg; Up Cornwall from blue house (ICON).jpg; Up Cornwall from end.jpg

March 5,2017

Dear Mayor Axelrod,

I am contacting you regarding the proposed development of 6 new homes by ICON at the West end of Cornwall Street at the top of the Sunset Neighborhood.

First of all, let me thank you for taking the time to talk with me and Pam Yokubaitis at the conclusion of the State of the City address on the evening of February 28th at the West Linn Library. None of the information provided here is considered exclusionary or privileged and I encourage you to share it with any and all concerned parties *including* ICON Development.

The current development plan was submitted to the City Planning Department on February 21st of this year. However, the actual plan has been in the works far longer than that and public meetings were held concerning a previous plan back on April 26th 2016. That plan was rejected. Please note the synopsis of that meeting from an email sent last year. Rereading that email, I must admit that it is somewhat contentious and possibly poorly received. I apologize for the tone of that letter and can only suggest that it is felt by many that this project is fairly arbitrary and relies on outdated and irrelevant information that recognizes very little of the ACTUAL physical attributes of the land in question nor the concerns of the surrounding neighborhoods and neighbors.

April 29th, 2016
City of West Linn
Planning Department
Icon Development
On Tuesday, April 26th ay 7:oo PM an informational meeting of the Sunset Neighborhood Committee took place in the library of Sunset Elementary School regarding the proposed development of approximately 2 ½ acres of land at the south end of Cornwall St. The presentation of this proposed development was presented by a Mr. Givens who represented Icon Development – the owner and developer of this parcel. This meeting was very well attended with 51 residents present representing hundreds of West Linn residents.
Unfortunately, Mr. Givens was ill prepared and knew little of the concerns of the surrounding residents or the issues regarding previous land use proposals, street conditions, favorability of street extensions, nor whether hydrology studies had been made regarding the land in question. Knowing almost nothing of any of these concerns, Mr. Givens relied predominantly on having "met the existing state requirements" for a development on this site. Any other issues addressed to Mr. Givens amounted to a non sequitur.

Paraphrasing the meeting from a perspective of the end to the beginning, a motion was advanced questioning whether the development, as presented, should be approved or rejected. The residents in attendance OVERWHELMINGLY rejected this development by a vote of 50 to 1.
This vote was arrived at after more than an hour of spirited discussion with some of the following concerns;
1: the extension of Landis St. to connect with Cornwall is vigorously rejected. It is the generally accepted modification, that Landis St. should end in a cul-de-sac on the property in question with NO access to Cornwall St. Cornwall is barely 1 ½ lanes of failed asphalt with no sidewalks, no adequate water, no sewer, no storm drains, and an exceptionally steep slope at the proposed connection point. Additionally, the increased traffic from the numerous residential areas N of Cornwall would undoubtedly use the new connection to access Sunset St. to exit the area. Not only would this increase the traffic on Cornwall tenfold, the corresponding increase in traffic on Sunset is unacceptable. Sunset itself is a poorly conceptualized two lane street with almost NO sidewalks where the current traffic ignores the posted 25 mph speed limit and numerous school bus stops . At present, the traffic N of Cornwall uses mostly Salamo, Rosemont, or Skyline to egress from the area – ALL streets more adequately designed to handle this traffic. Finally, other than a speculated "overlay" on Cornwall with a slight improvement in water transmission, there are purportedly NO plans to actually repair or improve Cornwall St. at all. It is the City's idea to pass on further improvements to future developers as current residents die, move away, sell their lots, or otherwise vacate what Mr. Givens refers to as "underdeveloped" land. In other words, these residents have no business being there in the first place.
2: ALL of the land in question is rife with springs. This includes not only the Icon land, but the Pedracini land, Turkisher land, and Clark land. These springs drain an area of well over 5 acres but little attention has been paid to these virtual "wetlands" in this plan except to say "we are planning to improve" the water flow. As it currently stands, water in rainy weather flows off the hillside in a sheet more than 60 feet wide on the subject property and in rivulets and seasonal freshets on the adjoining properties. The last time Pedracini hired a tractor to try and eradicate the blackberry and other invasive plants; the tractor sank up to its axels and had to be towed out of the property. The residents on Fairhaven St. below the proposed development complain that many of their basements and crawl spaces flood NOT inches, but FEET deep as this uncontrolled runoff permeates their properties. The Icon notion that "we are going to take care of it" with ZERO specifics is a carte blanche proposal with no guarantees. It cannot be allowed.
3: The slope of the land in question is exceptionally steep. This poses problem both for a street extension and disturbance of the springs. Just the fact that the connection between Landis and Cornwall is on a slope exceeding 20 degrees means that huge volumes of soil will have to be carved into, filled in, and otherwise moved to succeed in placing a street where none should be. The threat of landslides, opening of subterranean springs, and physical modification of the strata make this a dubious and potentially hazardous undertaking. How is all this heavy equipment supposed to access the area? Undoubtedly this machinery will have to use one of the most forgotten and unmaintained streets in West Linn – Cornwall St.
4: Flora and fauna will certainly be negatively impacted. It is the expressed determination by city fathers that we do everything possible to maintain especially the riparian oaks, of which there are many on the property. The road as platted will require cutting many of these down. Only five years ago, deer, raccoons, skunks, pheasant, quail and other species called this land home. No more. Except for the skunks (they must be city employees) all are gone.
As a summary of the meeting, this is a very minimal paraphrasing of the serious concerns regarding this ill conceived, poorly planned, and arbitrary development – almost exactly like the status quo for our city government and the many dubious performances we bear witness to on a regular basis. (Wilderness Park pipe line, Salamo Vineyard/ Housing development, High School diversion of funds for pet projects, Hiring of family members by Superintendent, outright stealing of thousands of $ City Funds by unscrupulous employees, etc.) This one WILL NOT GET BY.
Sincerely, Edward A Turkisher, 4099 Cornwall, email: castle-wing@comcast.net

Obviously ICON had been making plans much earlier than that, as is their right, and I believe most everyone would agree that development of this land is inevitable. I, and many neighbors adjacent to or impacted by this development, only ask that our concerns be addressed and every opportunity taken to insure that this development is done in a responsible and inclusive manner that takes into account the many issues regarding this land and the surrounding neighborhoods. Many of those concerns have already been provided to you by Pam Yokubaitis and others so I need not repeat them here except minimally.

The current plan is very complete. I complement ICON for the thoroughness of the preparation of their 95 page development plan. Unfortunately however, much of the information provided either conflicts with the development

particulars or is merely a collection of receipts or reports to show that certain legal state and city requirements have been met to satisfy current regulations. I do not think it is unfair to call some of the legalese "mumbo-jumbo" which, while meeting regulations, does not really meet neighborhood or property criteria germane to those who live on, nearby, or adjacent to this development. So, starting at the beginning of the currently submitted plan, respectfully note certain concerns that come to mind.

I think most of our concerns can be broken loosely into 3 broad areas with some overlap. Roads, Water, and Environment.

Following is a loose order of where I noticed discrepancies in the plan.:

Page 6 of the submitted plan states that (sic) no traffic Impact study is required due to the small size and limited effect on traffic.

This statement completely minimizes the ACTUAL impact on Landis, Cornwall, and Sunset streets. Cornwall is a dead end with 7 homes currently using the street. Landis is another dead end with 20 homes exiting in another direction. ICON states that the increase of "trips" will amount to 50 new trips per day split between morning and evening when Landis Street connects with Cornwall street. Even if we accept that each new home will generate 5 trips per household per day (ICON's estimate), the estimate completely ignores that a new shorter route will be created to exit Sunset, Stonegate, Beaconhill, and neighboring streets in favor of the proposed Cornwall connection. I have driven the surrounding neighborhoods and at least **FIFTY** homes will now have a shorter route to Sunset, the Arch Bridge, Oregon City, and Interstate 205. It is more likely that the increase in traffic will go from ***not*** 50 trips, but more likely several **HUNDRED** trips on a street that is NEVER maintained and has NO plans for upgrading other than an overlay and widening to 20'.

Regarding the connection of Landis with Cornwall, Page 12 of the plan references the "City Transportation System Plan" that someone drew an a piece of paper God knows how long ago. This "System Plan" perhaps while well intentioned, doesn't really take into consideration the actual character of the neighborhood. Fire, Police, and other emergency access can all be satisfied by the consideration of maintaining Cornwall as a cul-de-sac that incorporates the ICON homes, the existing homes, and still leave room for 7 more for future development without compromising existing state, county, and city regulations.

Even if the development of the property is approved, the Landis extension demands a street with sidewalks 6' wide and a street 24' wide until it connects with Cornwall. According to the ICON plan on page 13, the minimum right of way for a new street is 24'. Suddenly, Cornwall Street narrows down to 20' with NO sidewalks AFTER Cornwall is widened with an overlay - even though the Cornwall right of way would easily permit a much more comprehensive rehabilitation. Please note the enclosed photos of Cornwall as it now exists.

Page 14 of the plan addresses a couple of concerns. The development must justify sewer improvements to existing connections. There are two connections available – one near Landis Street, and the other near Fairhaven Street. Since all but ONE home on Cornwall Street are currently on septic systems, why can't a new sewer line be placed under Cornwall at the same time that the fresh water feed on Cornwall must be upgraded? A piecemeal improvement of the Cornwall infrastructure is not only time consuming and redundant, it is needlessly expensive and ignores the city's desire to retire ALL the antiquated septic systems. Additionally, page 14 makes reference to creating a development that satisfies a 100 year storm event. This brings us to the issue of water.

Pages 33 through 41 calculate storm water runoff from a formula developed in King County, Seattle. These calculations have very little to do with the actual conditions at the Cornwall site and instead refer to soil densities, types, rock formations, and general slope numbers that may OR MAY NOT be relevant to the development site. It is a FORMULA ***not*** a site observation. Even if the plan correlates to the development site, it references a 25 year storm event and defers the 100 year requirement to future consideration.

Pages 62 through 64 reference a report submitted to ICON by Carson Geotechnical Co. that identify most of the onsite soils as "moisture sensitive" and "pose considerable challenges to earthwork.... Susceptible to wet weather from late September to early July" every year.

Finally, pages 90 and 91 find that nearly 23% of the property has a slope in excess of 25% and more than 11% of the property has a slope in excess of 35%! Much steeper and it would be not a slope, but a cliff! Trees have already fallen where the soil was disturbed and water oozes from each open sore in the earth. Many of us consider this land a

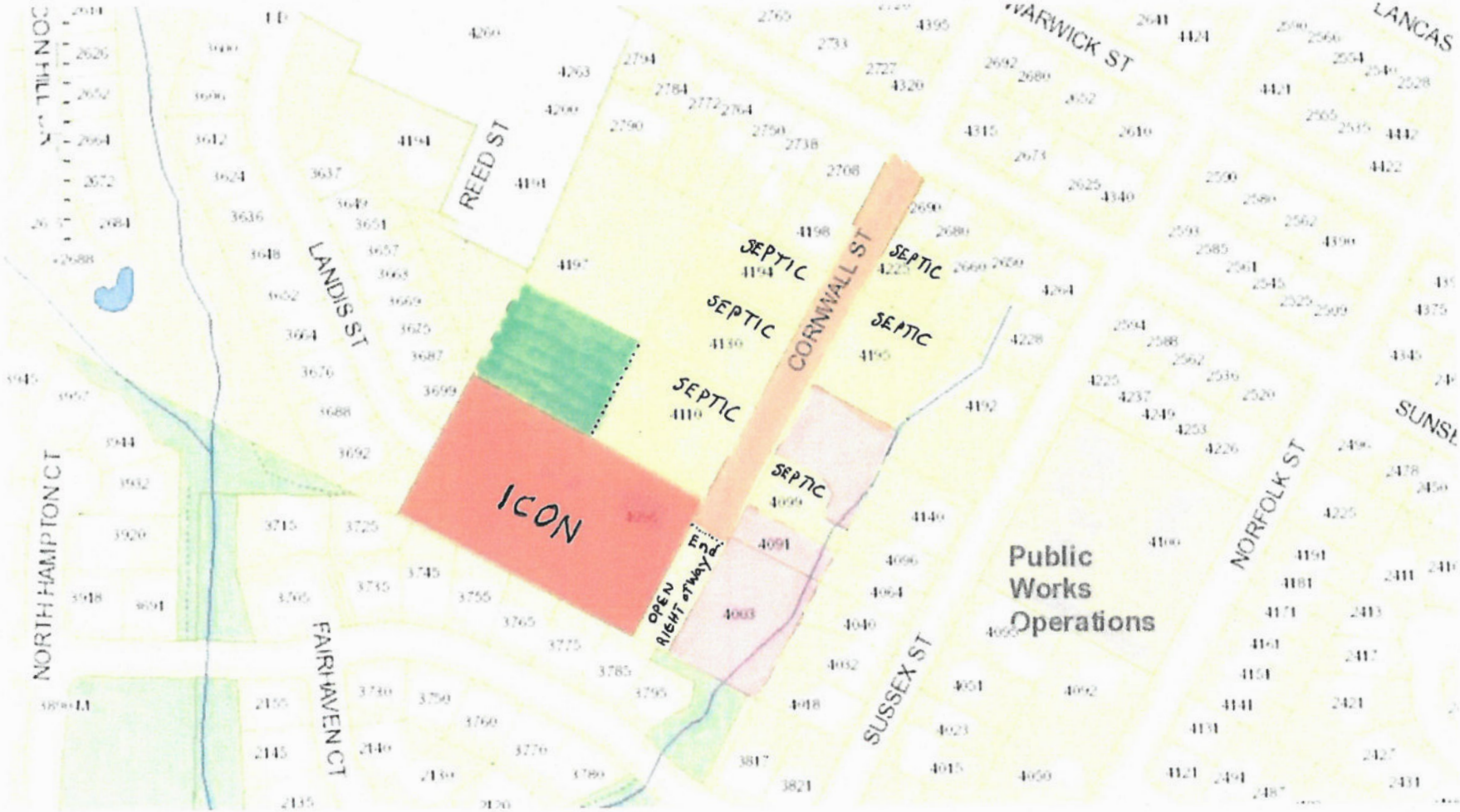
wetland even though no agency identifies it as such...possibly because no proper hydrographic agency has ever visited the site as far as we know. Please note further photos all appropriately labeled.

Certainly there are other concerns that will be realized as this project develops, but this is enough to suggest that we have many unanswered questions that deserve consideration.

Thank You for taking the time to peruse this rather long query.

Sincerely, Edward A Turkisher
4099 Cornwall St.
Castle-wing@comcast.net

CHART 1



- undeveloped - Pedracini
- undeveloped - Clark
- septic systems
- extent of lower Cornwall St.
- ICON Willow Ridge

To: Jennifer Arnold, Project Manager, City of West Linn
From: Meredith Olmsted, President, BHTNA
CC: Robert Jester, Vice President, Larry Meese, Treasurer, Amy Reese, Secretary,
Jere McLaurin, President, Barrington Heights Homeowners Association,
Pam Yokubaitis, Hidden Creek Estates Homeowners Association Laison,

Date: March 22, 2017

As the 30 day completeness review of the proposed Willow Ridge subdivision application approaches, the residents in Barrington Heights Hidden Creek Estates Tanner Woods Neighborhood Association (BHTNA) continue to have grave concerns about said proposed subdivision and request support from the City prior to this application being ruled "complete".

BHTNA is comprised of three separate HOA's. All three are affected in impactful ways by this proposed construction, particularly due to water runoff and displacement concerns. One subdivision, Hidden Creek Estates, directly borders Willow Ridge, and yet the City expressed to me that the developer, ICON, was not obligated to meet with BHTNA, only the Sunset NA, in which the development will be constructed. When given an impossibly short time frame in which to submit questions to ICON, BHTNA complied, then was denied a meeting with ICON.

Simply put, the BHTNA strongly feels their residents deserve an opportunity to address their concerns about this project with the developer prior to the application being sent on to the Planning Commission. These concerns include:

1) As President, I receive notices from the City about proposed construction City-wide. Since I had a long term trip out of town I called the City in October, 2016, and requested that my Vice President, Robert Jester, receive such correspondence in my absence. I was assured that was no issue, and that notices would be sent to him. They were not.

2) Due solely to the diligence of our residents, public notices about the proposed subdivision came to the attention of these homeowners. When I called the City to inquire about this pre-application, I was assured from City staff that "really nothing was going on at this time". Upon my return in Late February 2017 I met with the planner and the engineer at the City. They were open with me about the project, and pledged to work with me to address ongoing concerns by my neighborhood. Since that time my phone calls have not been returned by the engineer.

3) It is my understanding that one requirement in the application is public notification and opportunity to meet with adjacent residents. Two NA's will be significantly impacted by the Willow Ridge subdivision: Sunset and BHTNA. Sunset has had two meetings with ICON. BHTNA has had none.

4) There are three subdivisions within BHTNA: Barrington Heights (BHT), Hidden Creek Estates (HCE), and Tanner Woods. All three will be affected by water condition impacts from this proposed subdivision, particularly those 60+ homes positioned directly below the construction site.

I) There are 8 homes directly positioned contiguously to Willow Ridge. These residents have grave concern about water runoff and landslide issues that could negatively impact these existing residences.

II) There are 12+ homes in Barrington Heights/Hidden Creek Estates positioned next to the creek through which water from Willow Ridge will be directed. Erosion and water flow are grave concerns to these residents.

III) There are 7 homes in the Tanner Woods subdivision whose properties may be affected by the amount of water runoff collected in their retention pond. How the increased amount of water collected in these ponds will be managed is a concern to these homeowners.

5) The volume of water that now erodes soil down through Hidden Creek Estates properties along Fairhaven Drive, adjacent to Willow Creek, will be redirected to the creek. This will result in an increased amount of water because a) the removal of several trees which currently absorb water, b) footprints of new homesteads, sidewalks, roads, and driveways will increase runoff because soil absorption will be reduced significantly, and c) above and below ground water sources (springs) will continue to produce their own levels of runoff.

6) Another concern is that if water runoff is directed to the creek, surface and underground Water sources can dry up. This can result in the collapse of the soil of the former underground springs, thus affecting the foundations of the 60+ homes below the proposed 6 site subdivision. Since this entire hillside has homes built over underground springs, ensuring no foundation damage to the existing homes is a major concern to MANY residents.

7) Plans posted online indicate the developer intends to direct water from the Hidden Creek Estates spring fed creek into a detention pond. There is no existing detention pond, as the City previously stated to me. If one is to be constructed, should not the developer position it on his own land and not reduce property values of existing homes by placing it next to those residences?

8) Hidden Creek Estates residents have observed as many as six turtles at a time in their own backyard ponds. Other wildlife has been documented by these residents, as well. Has this area been evaluated as a potential "wetland"?

The real issues for us all are clear, reliable, and unbiased clarifications to the above issues, a willingness by the City to hear those concerns and work with existing homeowners to seek responses and an overall concern for the continued safety of 60+ established, stable homes and their inherently consistent property values. If these issues can be thoroughly addressed, we will not stand in opposition to this subdivision.

Please weigh these concerns vs the expedited addition of 6 homes. Our pleas can be addressed with one scheduled meeting with the developer prior to this application moving on to the Planning Commission. It is in everyone's best interests to confront these issues prior to City approval or the start of construction.

Let our residents be heard. Require ICON to meet with the residents of BHTNA prior to granting a complete status to their application.

I look forward to your timely response.

Sincerely,

Meredith Olmsted, President, BHTNA