

DEVELOPMENT REVIEW APPLICATION

For Office Use Only		
STAFF CONTACT <i>Jennifer Arnold</i>	PROJECT NO(S). <i>MIP-18-02</i>	
NON-REFUNDABLE FEE(S) <i>500</i>	REFUNDABLE DEPOSIT(S) <i>2800</i>	TOTAL <i>3300</i>

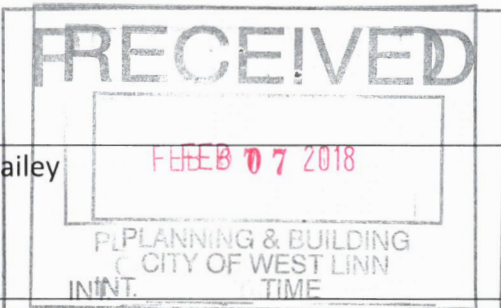
Type of Review (Please check all that apply):

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

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: 19310 Suncrest Drive, West Linn, OR 97068	Assessor's Map No.: 21E23BD
	Tax Lot(s): 6401
	Total Land Area: 0.98 acres

Brief Description of Proposal: Applicant seeks approval of an application for a Minor Partition for the creation of three residential lots each more than 10,000 square feet.

Applicant Name: Kathleen Dailey <small>(please print)</small> Address: 19310 Suncrest Drive City State Zip: West Linn, OR 97068		Phone: 503-705-0634 Email: kathdailey@yahoo.com
Owner Name (required): Kathleen Dailey <small>(please print)</small> Address: 19310 Suncrest Drive City State Zip: West Linn, OR 97068		Phone: 503-705-0634 Email: kathdailey@yahoo.com
Consultant Name: 3J Consulting <small>(please print)</small> Address: 5075 SW Griffith Drive, Suite 150 City State Zip: Beaverton, OR 97005		Phone: 503-545-1907 Email: andrew.tull@3j-consulting.com

- All application fees are non-refundable (excluding deposit). **Any overruns to deposit will result in additional billing.**
- The owner/applicant or their representative should be present at all public hearings.
- A denial or approval may be reversed on appeal. No permit will be in effect until the appeal period has expired.
- 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.

Kathleen Dailey *1/2/18* *Kathleen Dailey* *1/2/18*
 Applicant's signature Date Owner's signature (required) Date

3J CONSULTING

CIVIL ENGINEERING | WATER RESOURCES | LAND USE PLANNING



SUNCREST PARTITION

19310 SUNCREST DRIVE | WEST LINN, OREGON

APPLICANT'S REPRESENTATIVE

3J CONSULTING, INC.
5075 SW GRIFFITH DRIVE, SUITE 150
BEAVERTON, OR 97005
CONTACT: ANDREW TULL
PHONE: 503-946-9365

OWNER | APPLICANT:

KATHLEEN DAILEY
19310 SUNCREST DRIVE
PHONE: 503-705-0634

APPLICATION TYPE

MINOR PARTITION (MIP)

SUBMITTAL DATE

FEBRUARY 5, 2018

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GENERAL INFORMATION

Property Owner and Kathleen Dailey
Applicant: 19310 Suncrest Drive
West Linn, OR 97068
Kathleen Dailey
503-705-0634
kathdailey@yahoo.com

Applicant's Representative: **3J Consulting, Inc.**
5075 SW Griffith Drive, Suite 150
Beaverton, OR 97005
Contact: Andrew Tull
Phone: 503-545-1907
Email: andrew.tull@3j-consulting.com

SITE INFORMATION

Parcel Number: 21E23BD 6401
Address: 19310 Suncrest Drive
Size: 0.98 acres
Zoning Designation: R10
Existing Use: Single-family Residential
Surrounding Zoning: The properties to the north are zoned R15. The properties to the west are zoned R7. The properties to east are zoned R-10. The property to the south is zoned Clackamas County FU-10.

Street Functional Classification: Suncrest Drive is classified as a collector. Ridgebrook Drive is classified as a local street.

INTRODUCTION

APPLICANT'S REQUEST

The Applicant seeks approval of an application for a Minor Partition for the creation of three residential lots. The proposal would create three lots of more than 10,000 square feet. The overall site plans also show construction over a neighboring property to the east of the development. This narrative describes the project and how it complies with the relevant sections of the City of West Linn's Community Development Code ("CDC") and the Oregon Revised Statutes ("ORS").

PROPOSED SITE IMPROVEMENTS

The Project site ("Property") is located at 19310 Suncrest Drive, at the northeast corner of Suncrest Drive and Ridgebrook Drive in West Linn, Oregon. The Property consists of approximately 0.78 acres on one tax lot (21E23BD 6401 Parcel 1). The Property currently contains one single family home with a driveway and grass and trees throughout.

The intent of this Minor Partition is to provide three residential lots on the Property including utilities and driveway approaches. Each of the proposed lots will exceed the minimum 10,000 sf for development with single family detached homes, a use permitted outright in the R10 zone. The Property also includes one remnant lot of less than 10,000 sf. All proposed lots would take access via Ridgebrook Drive. Frontage on Ridgebrook Drive has existing sidewalks and planter strips and Ridgebrook appears to be fully improved to City standards.

APPLICABLE CRITERIA

The following sections of West Linn's Community Development Code (CDC) have been extracted as they have been deemed to be applicable to the proposal. Following each **bold** applicable criteria or design standard, the Applicant has provided a series of draft findings. The intent of providing code and detailed responses and findings is to document, with absolute certainty, that the proposed development has satisfied the approval criteria for a Partition.

WEST LINN COMMUNITY DEVELOPMENT CODE

Chapter 11 SINGLE-FAMILY RESIDENTIAL DETACHED, R-10

11.010 PURPOSE

The purpose of this zone is to provide for urban development at levels which relate to the site development limitations, proximity to commercial development and to public facilities and public transportation. This zone is intended to implement the Comprehensive Plan policies and locational criteria, and is applicable to areas designated as Low Density Residential on the Comprehensive Plan Map and Type I and Type II lands identified under the Buildable Lands Policy.

11.020 PROCEDURES AND APPROVAL PROCESS

A. A use permitted outright, CDC 11.030, is a use which requires no approval under the provisions of this code. If a use is not listed as a use permitted outright, it may be held to be a similar unlisted use under the provisions of Chapter 80 CDC.

11.030 PERMITTED USES

The following are uses permitted outright in this zoning district

- 1. Single-family detached residential unit.**
- 2. Community recreation.**
- 3. Family day care.**
- 4. Residential home.**
- 5. Utilities, minor.**
- 6. Transportation facilities (Type I).**
- 7. Manufactured home.**

Applicant's Facts and Findings: The proposed use is single-family detached residential units, a use permitted outright in the R10 zone.

The requirements of this section have been satisfied.

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. Repealed by Ord. 1622.
5. Except as specified in CDC 25.070(C)(1) through (4) for the Willamette Historic District, the minimum yard dimensions or minimum building setback area from the lot line shall be:
 - a. For the front yard, 20 feet; except for steeply sloped lots where the provisions of CDC 41.010 shall apply.
 - b. For an interior side yard, seven and one-half feet.
 - c. For a side yard abutting a street, 15 feet.
 - d. For a rear yard, 20 feet.
6. The maximum building height shall be 35 feet, except for steeply sloped lots in which case the provisions of Chapter 41 CDC shall apply.
7. The maximum lot coverage shall be 35 percent.
8. The minimum width of an accessway to a lot which does not abut a street or a flag lot shall be 15 feet.
9. The floor area ratio shall be 0.45. Type I and II lands shall not be counted toward lot area when determining allowable floor area ratio, except that a minimum floor area ratio of 0.30 shall be allowed regardless of the classification of lands within the property. That 30 percent shall be based upon the entire property including Type I and II lands. Existing residences in excess of this standard may be replaced to their prior dimensions when damaged without the requirement that the homeowner obtain a non-conforming structures permit under Chapter 66 CDC.
10. The sidewall provisions of Chapter 43 CDC shall apply.

Applicant's Facts and Findings: The sizes of the three lots proposed in the partition are 10,018 square feet, 13,063 square feet and 10,838 square feet. All three exceed the 10,000 square foot minimum. The front lot lines will be 59, 90 and 75 feet in width once the partition is recorded. All three exceed the 35 foot minimum. Minimum lot widths will be 59, 90 and 75 feet, therefore the average minimum lot widths will exceed the 50 foot minimum. Yard dimensions, building height, lot coverage, floor area ratios and sidewall provisions will all meet the requirements of this section and will be verified at time of building permit submittal.

11.090 OTHER APPLICABLE DEVELOPMENT STANDARDS

- A. The following standards apply to all development including permitted uses:**
1. Chapter 34 CDC, Accessory Structures, Accessory Dwelling Units, and Accessory Uses.
 2. Chapter 35 CDC, Temporary Structures and Uses.
 3. Chapter 38 CDC, Additional Yard Area Required; Exceptions to Yard Requirements; Storage in Yards; Projections into Yards.
 4. Chapter 40 CDC, Building Height Limitations, Exceptions.
 5. Chapter 41 CDC, Structures on Steep Lots, Exceptions.
 6. Chapter 42 CDC, Clear Vision Areas.
 7. Chapter 44 CDC, Fences.
 8. Chapter 46 CDC, Off-Street Parking, Loading and Reservoir Areas.
 9. Chapter 48 CDC, Access, Egress and Circulation.
 10. Chapter 52 CDC, Signs.

11. Chapter 54 CDC, Landscaping.

B. The provisions of Chapter 55 CDC, Design Review, apply to all uses except detached single-family dwellings, residential homes and residential facilities.

Applicant's Facts and Findings: The proposed use in this R10 zone is single-family detached housing, and therefore not subject to Design Review. However, provisions in Chapter 55 CDC related to significant trees are addressed later in the application.

Chapter 38 ADDITIONAL YARD AREA REQUIRED; EXCEPTIONS TO YARD REQUIREMENTS; STORAGE IN YARDS; PROJECTIONS INTO YARDS

38.030 SETBACK FROM STREET CENTERLINE REQUIRED

A. To assure improved light, air, and sight distance and to protect the public health, safety and welfare, a setback in addition to the yard requirements of the zone may be required where the right-of-way is inadequate. A determination shall be made based on the street standards contained in CDC 85.200(A).

B. The minimum yard requirement shall be increased to provide for street widening in the event a yard abuts a street having a right-of-way width less than required by its functional classification on the City's Comprehensive Plan Map, and in such case the setback shall be not less than the setback required by the zone plus one-half of the projected road width as required under CDC 85.200(A); however

C. The minimum distance from the wall of any structure to the centerline of an abutting street shall not be less than 25 feet plus the yard required by the zone. This provision shall not apply to rights-of-way of 50 feet or greater in width.

Applicant's Facts and Findings: The site abuts Suncrest Drive and Ridgebrook Drive. Suncrest Drive is a collector with a 60 foot right-of-way using the 58 foot right-of-way option for collectors. Ridgebrook Drive is a local street with a 52 foot right-of-way using the 28 foot street right-of-way option. Right-of-way for both streets meet the width requirements as determined by their functional classifications.

38.040 EXCEPTIONS TO YARD REQUIREMENTS

A. If there are dwellings on both abutting lots with front yard depths less than the required depth for the zone, the depth of the front yard for the intervening lot need not exceed the average depth of the front yards of the abutting lots.

B. If there are garages on both abutting lots with front yard depths less than the required depth for the zone, the depth of the front yard for the garage for the intervening lot need not exceed the average depth of the front yards of the abutting lots.

C. If there is a dwelling on one abutting lot with a front yard of less depth than the required depth for the zone, the front yard for the lot need not exceed a depth one-half way between the depth of the abutting lot and the required front yard depth.

D. If there is a garage on one abutting lot with a front yard of less depth than the required depth for the zone, the front yard for the garage for the lot need not exceed a depth one-half between the depth of the abutting lot and the required front yard depth. (Ord. 1276, 1990)

Applicant's Facts and Findings: No exceptions are requested. Development will meet all requirements of this section and will be verified at time of building permit submittal.

38.060 PROJECTIONS INTO REQUIRED YARDS

A. Repealed by Ord. 1635.

B. Cornices, eaves, belt courses, sills, canopies, or similar architectural features may extend or project into a required yard not more than 36 inches provided the width of such side yard is not reduced to less than three feet. Projections into the side yard may not include living space such as bay windows or overhanging breakfast nooks, etc.

C. Projections that include living space such as bay windows or overhanging breakfast nooks, etc., may extend into the front or rear yard setbacks, but no more than two feet. The footprint or foundation of the house may not encroach into the front or rear setback area.

D. Fireplace chimneys may project into a required front, side or rear yard not more than three feet, provided the width of such side yard is not reduced to less than three feet.

E. The presence of an easement within a required yard is a limitation to projections. Uncovered open porches, decks, or balconies, not more than 30 inches in height above grade and not covered by a roof or canopy, may extend or project into a required front or rear yard until the projection reaches a utility easement or comes within five feet of the property line, whichever provides a greater distance from the property line. The uncovered deck, porch or balcony may go into side yard setback leaving at least three feet to the property line. Encroachment into a utility easement is not allowed, except as provided below:

1. Uncovered open porches, decks, or balconies may extend into an existing utility easement, provided:

a. A minimum vertical clearance of 12 feet is maintained between the lowest point of the deck and the ground; and

b. That no posts are installed within the easement.

2. These provisions do not apply in the Willamette Historic District.

F. Front and rear porches, covered porches, unroofed landings and stairs (over 30 inches in height) may encroach into the front or rear yard setback up to five feet. Homes on corner lots may have a front porch that wraps around to the side street side. The porch on the side street may also encroach five feet into the required street side setback area. Enclosed porches are not permitted to encroach. The roofline of the house may be extended to cover the porch but no living space shall be allowed inside the front yard setback (i.e., dormers). The Planning Director shall determine compliance with this section as provided by CDC 99.060(A)(3). These provisions do not apply in the Willamette Historic District.

Applicant's Facts and Findings: Projections will meet the requirements of this section and will be verified at the time of building permit submittal.

Chapter 42 CLEAR VISION AREAS

42.020 CLEAR VISION AREAS REQUIRED, USES PROHIBITED

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

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

Applicant's Facts and Findings: Clear vision areas will be maintained per the standards of this section and will be verified at the time of building permit submittal.

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

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

Clear vision area for corner lots and driveways 24 feet or more in width:

Applicant's Facts and Findings: The clear vision area at the intersection of Suncrest and Ridgebrook will be free of plantings, fences, walls, structures and obstructions, meeting the requirements for clear vision areas as shown in Sheet C210.

Chapter 44 FENCES

44.020 SIGHT-OBSCURING FENCE; SETBACK AND HEIGHT LIMITATIONS

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

1. The fence is located within:

- a. A required front yard area, and it does not exceed three feet, except pillars and driveway entry features subject to the requirements of Chapter 42 CDC, Clear Vision Areas, and approval by the Planning Director;**
- b. A required side yard which abuts a street and it is within that portion of the side yard which is also part of the front yard setback area and it does not exceed three feet;**
- c. A required side yard which abuts a street and it is within that portion of the side yard which is not also a portion of the front yard setback area and it does not exceed six feet provided the provisions of Chapter 42 CDC are met;**
- d. A required rear yard which abuts a street and it does not exceed six feet; or**
- e. A required side yard area which does not abut a street or a rear yard and it does not exceed six feet.**

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

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

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

Applicant's Facts and Findings: All fences will be constructed to meet these standards and will be verified at the time of building permit submittal.

44.040 LANDSCAPING

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

Applicant's Facts and Findings: Clear vision areas are currently in place at the intersection of Ridgebrook and Suncrest. These clear vision areas will be maintained and verified at the time of building permit submittal.

44.050 STANDARDS FOR CONSTRUCTION

- A. The structural side of the fence shall face the owner's property; and
- B. The sides of the fence abutting adjoining properties and the street shall be maintained.

Applicant's Facts and Findings: Fences will be constructed to meet these standards and will be verified at the time of building permit submittal.

Chapter 46 OFF-STREET PARKING, LOADING AND RESERVOIR AREAS

46.020 APPLICABILITY AND GENERAL PROVISIONS

- A. At the time a structure is erected or enlarged, or the use of a structure or unit of land is changed within any zone, parking spaces, loading areas and reservoir areas shall be provided in accordance with the requirements of this chapter unless other requirements are otherwise established as a part of the development approval process.
- B. The provision and maintenance of off-street parking and loading spaces are the continuing obligation of the property owner.
- C. No building or other permit shall be issued until plans are approved that show the property that is and will remain available for exclusive use as off-street parking and loading space as required by this chapter.
- D. Required parking spaces and loading areas shall be improved to the standards contained in this chapter and shall be available for use at the time of the final building inspection except as provided in CDC 46.150.

Applicant's Facts and Findings: Residential homes will be constructed on the site with driveways and off-street parking as required by this subsection.

46.030 SUBMITTAL REQUIREMENTS

For any application requiring design review approval, which includes parking areas, the applicant shall submit, within the design review package, a plan drawn to scale showing all the elements necessary to indicate that the requirements of Chapter 55 CDC are met and it shall include but not be limited to:

- A. The delineation of individual parking and loading spaces and their dimensions;
- B. The identification of compact parking spaces;
- C. The location of the circulation area necessary to serve spaces;
- D. The access point(s) to streets, alleys, and properties to be served;
- E. The location of curb cuts;
- F. The location and dimensions of all landscaping, including the type and size of plant material to be used, as well as any other landscape material incorporated into the overall plan;
- G. The proposed grading and drainage plans and the slope (percentage) of parking lot;
- H. Specifications as to signs and bumper guards;
- I. Identification of disabled parking spaces;
- J. Location of pedestrian walkways and crossings; and
- K. Location of bicycle racks.

Applicant's Facts and Findings: Single family detached residential units are proposed for this site. The Applicant is not submitting a design review application and therefore this subsection is not applicable.

46.040 APPROVAL STANDARDS

Approval shall be based on the standards set forth in this chapter and Chapter 48 CDC, Access, Egress and Circulation; Chapter 52 CDC, Signs; and Chapter 54 CDC, Landscaping.

Applicant's Facts and Findings: The development has met or will meet all standards related to access, egress and circulation, signs and landscaping.

46.050 JOINT USE OF A PARKING AREA

A. Joint use of required parking spaces may occur where two or more uses on the same or separate sites are able to share the same parking spaces because their parking demands occur at different times. Joint use of required parking spaces is allowed if the following documentation is submitted in writing to the Planning Director as part of a building or zoning permit application or land use review:

1. The names and addresses of the owners or tenants that are sharing the parking and the uses at those locations;
2. The location and number of parking spaces that are being shared;
3. An analysis showing that the peak parking times of the uses occur at different times and that the parking area will be large enough for the anticipated demands of both uses; and
4. A legal instrument such as an easement or deed restriction that guarantees access to the parking for all uses.

B. If a joint use arrangement is subsequently terminated, the requirements of this chapter will apply to each use separately.

Applicant's Facts and Findings: This subsection is not applicable as each lot will have its own driveway and garage.

46.060 STORAGE IN PARKING AND LOADING AREAS PROHIBITED

Required parking spaces shall be available for the parking of passenger automobiles of residents, customers, patrons and employees only, and the required parking spaces shall not be used for storage of vehicles or materials or for the parking of trucks connected with the business or use with the exception of small (under one-ton) delivery trucks or cars.

Applicant's Facts and Findings: This section is not applicable for single family detached residential development.

46.070 MAXIMUM DISTANCE ALLOWED BETWEEN PARKING AREA AND USE

A. Off-street parking spaces for single- and two-family dwellings shall be located on the same lot with the dwelling.

B. Off-street parking spaces for uses not listed in subsection A of this section shall be located not farther than 200 feet from an entryway to the building or use they are required to serve, measured in a straight line from the building, with the following exceptions:

- 1. Shared parking areas for commercial uses which require more than 40 parking spaces may provide for the spaces in excess of the required 40 spaces up to a distance of 300 feet from the entryway to the commercial building or use.**
- 2. Industrial and manufacturing uses which require in excess of 40 spaces may locate the required spaces in excess of the 40 spaces up to a distance of 300 feet from the entryway to the building.**
- 3. Employee parking areas for carpools and vanpools shall be located closer to the entryway to the building than general employee parking.**
- 4. Stacked or valet parking is allowed if an attendant is present to move vehicles. If stacked parking is used for required parking spaces, the applicant shall ensure that an attendant will always be present when the lot is in operation. The requirements for minimum or maximum spaces and all parking area development standards continue to apply for stacked parking.**
- 5. All disabled parking shall be placed closest to building entrances than all other parking. Appropriate ADA curb cuts and ramps to go from the parking lot to the ADA-accessible entrance shall be provided unless exempted by ADA code.**

Applicant's Facts and Findings: Each lot will have off-street parking spaces for use of residents.

46.090 MINIMUM PARKING SPACE REQUIREMENTS

A. Residential parking space requirements.

- | | |
|--|---|
| 1. Single-family residences (attached or detached). | 1 off-street space for each dwelling unit; may or may not be in garage or carport. |
|--|---|

Applicant's Facts and Findings: Each lot will have a minimum of one off-street parking space.

Chapter 48 ACCESS, EGRESS AND CIRCULATION

48.020 APPLICABILITY AND GENERAL PROVISIONS

A. The provisions of this chapter do not apply where the provisions of the Transportation System Plan or land division chapter are applicable and set forth differing standards.

B. All lots shall have access from a public street or from a platted private street approved under the land division chapter.

C. No building or other permit shall be issued until scaled plans are presented to the City and approved by the City as provided by this chapter, and show how the access, egress, and circulation requirements are to be fulfilled. Access to State or County roads may require review, approval, and permits from the appropriate authority.

D. Should the owner or occupant of a lot, parcel or building enlarge or change the use to which the lot, parcel or building is put, resulting in increasing any of the requirements of this chapter, it shall be unlawful and a violation of this code to begin or maintain such altered use until the provisions of this chapter have been met, and, if required, until the appropriate approval authority under Chapter 99 CDC has approved the change.

E. Owners of two or more uses, structures, lots, parcels, or units of land may agree to utilize jointly the same access and egress when the combined access and egress of both uses, structures, or parcels of land satisfies the requirements as designated in this code; provided, that satisfactory legal evidence is presented to the City Attorney in the form of deeds, easements, leases, or contracts to establish joint use. Copies of said instrument shall be placed on permanent file with the City Recorder.

F. Property owners shall not be compelled to access their homes via platted stems of flag lots if other driveways and easements are available and approved by the City Engineer.

Applicant's Facts and Findings: This subsection is applicable regarding subsection B above.

48.025 ACCESS CONTROL

A. **Purpose.** The following access control standards apply to public, industrial, commercial and residential developments including land divisions. Access shall be managed to maintain an adequate level of service and to maintain the functional classification of roadways as required by the West Linn Transportation System Plan.

B. **Access control standards.**

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

Applicant's Facts and Findings: The City has not required a traffic impact analysis due to the small size and low impacts of this development.

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

Applicant's Facts and Findings: Each lot on the property will include a driveway to provide access to/from Ridgebrook Drive, a public street adjacent to the site with a local designation. No new access will be provided via Suncrest Drive. The City's spacing standards for driveways along residential streets has been maintained for all new driveway access locations. The proposed configuration will create a safe and efficient access configuration for each new driveway.

3. **Access options. When vehicle access is required for development (i.e., for off-street parking, delivery, service, drive-through facilities, etc.), access shall be provided by one of the following methods (planned access shall be consistent with adopted public works standards and TSP). These methods are "options" to the developer/subdivider.**
 - a) **Option 1. Access is from an existing or proposed alley or mid-block lane. If a property has access to an alley or lane, direct access to a public street is not permitted.**
 - b) **Option 2. Access is from a private street or driveway connected to an adjoining property that has direct access to a public street (i.e., "shared driveway"). A public access easement covering the driveway shall be recorded in this case to assure access to the closest public street for all users of the private street/drive.**
 - c) **Option 3. Access is from a public street adjacent to the development lot or parcel. If practicable, the owner/developer may be required to close or consolidate an existing access point as a condition of approving a new access. Street accesses shall comply with the access spacing standards in subsection (B)(6) of this section.**

Applicant's Facts and Findings: The Applicant is proposing access to the site via Option 3. The proposed design limits curb cuts for access to the new lots proposed within this development. No new access will be provided to Suncrest Drive. Each lot will take access to Ridgebrook Drive via individual driveways. The City's spacing standards for driveways along residential streets has been maintained for all new driveway access locations. The proposed configuration will create a safe and efficient access configuration for each new driveway.

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

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

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

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

6. **Access spacing.**
 - a. **The access spacing standards found in the adopted Transportation System Plan (TSP) shall be applicable to all newly established public street intersections and non-traversable medians. Deviation from the access spacing standards may be granted by the City Engineer if conditions are met as described in the access spacing variances section in the adopted TSP.**
 - b. **Private drives and other access ways are subject to the requirements of CDC 48.060.**

Applicant's Facts and Findings: The Applicant's proposed driveway locations are shown on the site plan Sheet C210. The City's access spacing requirements for new driveways onto a residential local street have been maintained.

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

Applicant's Facts and Findings: The Applicant is proposing only one access point for each single family lot. Lot 2 currently has driveway access to Ridgebrook Drive. New driveways will be created for lots 1 and 3 and for the remnant lot.

8. **Shared driveways. The number of driveway and private street intersections with public streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The City shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes in accordance with the following standards:**

- a. **Shared driveways and frontage streets may be required to consolidate access onto a collector or arterial street. When shared driveways or frontage streets are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway or street temporarily ends at the property line, but may be extended in the future as the adjacent lot or parcel develops. "Developable" means that a lot or parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).**
- b. **Access easements (i.e., for the benefit of affected properties) shall be recorded for all shared driveways, including pathways, at the time of final plat approval or as a condition of site development approval.**
- c. **Exception. Shared driveways are not required when existing development patterns or physical constraints (e.g., topography, lot or parcel configuration, and similar conditions) prevent extending the street/driveway in the future.**

Applicant's Facts and Findings: The Applicant is not proposing any shared driveways for the development.

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

- 1. **Block length and perimeter. The maximum block length shall not exceed 800 feet or 1,800 feet along an arterial.**
- 2. **Street standards. Public and private streets shall also conform to Chapter 92 CDC, Required Improvements, and to any other applicable sections of the West Linn Community Development Code and approved TSP.**
- 3. **Exception. Exceptions to the above standards may be granted when blocks are divided by one or more pathway(s), in conformance with the provisions of CDC 85.200(C), Pedestrian and Bicycle Trails, or cases where extreme topographic (e.g., slope, creek, wetlands, etc.) conditions or compelling functional limitations preclude implementation, not just inconveniences or design challenges.**

Applicant's Facts and Findings: The Applicant requests an exemption from the block length and perimeter standards due to existing development patterns. No new roads are proposed as part of the lot partition. Existing development patterns preclude the extension of any new roadways through the site or within close proximity which could logically provide for future connectivity. Furthermore, Figure 12 of the West Linn Transportation System Plan – Recommended Local Street Connectivity Projects – does not identify a new street connection within or adjacent to this site. All street standards will be met as shown in Sheet C210.

48.030 MINIMUM VEHICULAR REQUIREMENTS FOR RESIDENTIAL USES

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

In the event that alternate access is not available as determined by the Planning Director and City Engineer, access may be permitted after review of the following criteria:

- 1. Topography.**
- 2. Traffic volume to be generated by development (i.e., trips per day).**
- 3. Traffic volume presently carried by the street to be accessed.**
- 4. Projected traffic volumes.**
- 5. Safety considerations such as line of sight, number of accidents at that location, emergency vehicle access, and ability of vehicles to exit the site without backing into traffic.**
- 6. The ability to consolidate access through the use of a joint driveway.**
- 7. Additional review and access permits may be required by State or County agencies.**

Applicant's The Applicant is not proposing new access to any arterials, therefore this subsection does
Facts **and** not apply.
Findings:

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

- 1. One single-family residence, including residences with an accessory dwelling unit as defined in CDC 02.030, shall provide 10 feet of unobstructed horizontal clearance. Dual-track or other driveway designs that minimize the total area of impervious driveway surface are encouraged.**
- 2. Two to four single-family residential homes equals a 14- to 20-foot-wide paved or all-weather surface. Width shall depend upon adequacy of line of sight and number of homes.**
- 3. Maximum driveway grade shall be 15 percent. The 15 percent shall be measured along the centerline of the driveway only. Variations require approval of a Class II variance by the Planning Commission pursuant to Chapter 75 CDC. Regardless, the last 18 feet in front of the garage shall be under 12 percent grade as measured along the centerline of the driveway only. Grades elsewhere along the driveway shall not apply.**
- 4. The driveway shall include a minimum of 20 feet in length between the garage door and the back of sidewalk, or, if no sidewalk is proposed, to the paved portion of the right-of-way.**

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

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

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

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

- 1. With a minimum of 24-foot width when accommodating two-way traffic; or**
- 2. With a minimum of 15-foot width when accommodating one-way traffic. Horizontal clearance shall be two and one-half feet wide on either side of the driveway.**
- 3. Minimum vertical clearance of 13 feet, six inches.**
- 4. Appropriate turnaround facilities per Fire Chief's standards for emergency vehicles when the drive is over 150 feet long. Fire Department turnaround areas shall not exceed seven percent grade unless waived by the Fire Chief.**
- 5. The grade shall not exceed 10 percent on average, with a maximum of 15 percent.**
- 6. A minimum centerline turning radius of 45 feet for the curve.**

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

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

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

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

Applicant's Facts and Findings: Access to each lot will be provided to/from a Ridgebrook Drive, a local street, and will meet the minimum vehicular requirements of this subsection. No access to Suncrest Drive is proposed.

48.060 WIDTH AND LOCATION OF CURB CUTS AND ACCESS SEPARATION REQUIREMENTS

A. Minimum curb cut width shall be 16 feet.

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

C. No curb cuts shall be allowed any closer to an intersecting street right-of-way line than the following:

- 1. On an arterial when intersected by another arterial, 150 feet.**
- 2. On an arterial when intersected by a collector, 100 feet.**
- 3. On an arterial when intersected by a local street, 100 feet.**
- 4. On a collector when intersecting an arterial street, 100 feet.**
- 5. On a collector when intersected by another collector or local street, 35 feet.**
- 6. On a local street when intersecting any other street, 35 feet.**

D. There shall be a minimum distance between any two adjacent curb cuts on the same side of a public street, except for one-way entrances and exits, as follows:

- 1. On an arterial street, 150 feet.**
- 2. On a collector street, 75 feet.**
- 3. Between any two curb cuts on the same lot or parcel on a local street, 30 feet.**

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

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

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

Applicant's Facts and Findings: Proposed curb cuts on Ridgebrook Drive for lots 1 and 3 and the remnant lot are 18 feet each. All driveway curb cuts will meet the spacing requirements of this section as shown on Sheet C210.

Chapter 85 GENERAL PROVISIONS

B. Transportation.

- 1. Centerline profiles with extensions shall be provided beyond the limits of the proposed subdivision to the point where grades meet, showing the finished grade of streets and the nature and extent of street construction. Where street connections are not proposed within or beyond the limits of the proposed subdivision on blocks exceeding 330 feet, or for cul-de-sacs, the tentative plat or partition shall indicate the location of easements that provide connectivity for bicycle and pedestrian use to accessible public rights-of-way.**
- 2. Traffic Impact Analysis (TIA).**
 - a. Purpose. The purpose of this section of the code is to implement Section 660-012-0045(2)(e) of the State Transportation Planning Rule that requires the City to adopt a process to apply conditions to development proposals in order to minimize adverse impacts to and protect transportation facilities. This section establishes the standards for when a proposal must be reviewed for potential traffic impacts; when a Traffic Impact Analysis must be submitted with a development application in order to determine whether conditions are needed to minimize impacts to and protect transportation facilities; what must be in a Traffic Impact Study; and who is qualified to prepare the study.**

- b. **Typical average daily trips.** The latest edition of the Trip Generation manual, published by the Institute of Transportation Engineers (ITE) shall be used as the standards by which to gauge average daily vehicle trips.
- c. **Traffic impact analysis requirements.**
 - 1) **Preparation.** A Traffic Impact Analysis shall be prepared by a professional engineer qualified under OAR 734-051-0040. The City shall commission the traffic analysis and it will be paid for by the applicant.
 - 2) **Transportation Planning Rule compliance.** See CDC 105.050(D), Transportation Planning Rule Compliance.
 - 3) **Pre-application conference.** The applicant will meet with West Linn Public Works prior to submitting an application that requires a traffic impact application. This meeting will determine the required elements of the TIA and the level of analysis expected.

Applicant's Facts and Findings: The Applicant is not proposing a change in zoning or a plan amendment designation as a part of this land use application, therefore a Traffic Impact Analysis is not required per this subsection.

C. Grading.

- 1. **If areas are to be graded, a plan showing the location of cuts, fill, and retaining walls, and information on the character of soils shall be provided. The grading plan shall show proposed and existing contours at intervals per CDC 85.160(E)(2).**
- 2. **The grading plan shall demonstrate that the proposed grading to accommodate roadway standards and create appropriate building sites is the minimum amount necessary.**

Applicant's Facts and Findings: Minor house and stormwater facility grading will occur onsite. A large amount of hardscape is being removed and reinstalled on Ridgebrook, but all at or near the same grade.

D. Water.

- 1. **A plan for domestic potable water supply lines and related water service facilities, such as reservoirs, etc., shall be prepared by a licensed engineer consistent with the adopted Comprehensive Water System Plan and most recently adopted updates and amendments.**
- 2. **Location and sizing of the water lines within the development and off-site extensions. Show on-site water line extensions in street stubouts to the edge of the site, or as needed to complete a loop in the system.**
- 3. **Adequate looping system of water lines to enhance water quality.**
- 4. **For all non-single-family developments, calculate fire flow demand of the site and demonstrate to the Fire Chief. Demonstrate to the City Engineer how the system can meet the demand.**

Applicant's Facts and Findings: The existing house on the property has water service provided via Suncrest Drive. Following the partition, this line would cross lot lines. Therefore, four new services are proposed off Ridgebrook to service Lots 1, 2 and 3 and the remnant lot. All proposed water improvements are included on the utility plan Sheet C300 of the land use application.

E. Sewer.

- 1. A plan prepared by a licensed engineer shall show how the proposal is consistent with the Sanitary Sewer Master Plan and subsequent updates and amendments. Agreement with that plan must demonstrate how the sanitary sewer proposal will be accomplished and how it is efficient. The sewer system must be in the correct zone.**
- 2. Sanitary sewer information will include plan view of the sanitary sewer lines, including manhole locations and depths. Show how each lot or parcel would be sewerred.**
- 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 minimize disturbance of natural areas and, in those cases where that is unavoidable, disturbance shall be mitigated pursuant to the appropriate chapters (e.g., Chapter 32 CDC, Water Resource Area Protection).**
- 7. Sanitary sewer shall be extended or stubbed out to the next developable subdivision or a point in the street that allows for reasonable connection with adjacent or nearby properties.**
- 8. The sanitary sewer system shall be built pursuant to Department of Environmental Quality (DEQ), City, and Tri-City Service District sewer standards. This report should be prepared by a licensed engineer, and the applicant must be able to demonstrate the ability to satisfy these submittal requirements or standards at the pre-construction phase.**

Applicant's Facts and Findings: The existing house has a sanitary lateral connecting to a public sewer main located in the region of Lot 3. This main line will be abandoned at the upstream manhole and service for the existing home will be abandoned. A public sewer extension is proposed along Ridgebrook Drive. Four new sewer laterals will connect to the public sewer in Ridgebrook Drive. All proposed sewer improvements are included on the utility plan Sheet C300 of the land use application.

F. Storm. A proposal shall be submitted for storm drainage and flood control including profiles of proposed drainageways with reference to the most recently adopted Storm Drainage Master Plan.

Applicant's Facts and Findings: The existing storm main in Ridgebrook Drive will be extended. Lots 1 and 3 and the remnant lot will include a LIDA storm planter for treatment and detention for the proposed home according to City requirements. The existing home and lot will not have a LIDA planter installed. No public storm treatment/detention systems are proposed. All proposed storm drainage improvements are included on the utility plan Sheet C300 of the land use application.

CHAPTER 55. DESIGN REVIEW

55.100 APPROVAL STANDARDS - CLASS II DESIGN REVIEW

B. Relationship to the natural and physical environment.

- 1. The buildings and other site elements shall be designed and located so that all heritage trees, as defined in the municipal code, shall be saved. Diseased heritage trees, as determined by the City Arborist, may be removed at his/her direction.**

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

- 2. All heritage trees, as defined in the municipal code, all trees and clusters of trees ("cluster" is defined as three or more trees with overlapping driplines; however, native oaks need not have an overlapping dripline) that are considered significant by the City Arborist, either individually or in consultation with certified arborists or similarly qualified professionals, based on accepted arboricultural standards including consideration of their size, type, location, health, long term survivability, and/or numbers, shall be protected pursuant to the criteria of subsections (B)(2)(a) through (f) of this section. In cases where there is a difference of opinion on the significance of a tree or tree cluster, the City Arborist's findings shall prevail. It is important to acknowledge that all trees are not significant and, further, that this code section will not necessarily protect all trees deemed significant.**

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

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

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

- b. Non-residential and residential projects on non-Type I and II lands shall set aside up to 20 percent of the area to protect trees and tree clusters that are determined to be significant, plus any heritage trees. Therefore, in the event that the City Arborist determines that a significant tree cluster exists at a development site, then up to 20 percent of the non-Type I and II lands shall be devoted to the protection of those trees, either by dedication or easement. The exact percentage is determined by establishing the driplines of the trees or tree clusters that are to be protected. In order to protect the roots which typically extend further, an**

additional 10-foot measurement beyond the dripline shall be added. The square footage of the area inside this “dripline plus 10 feet” measurement shall be the basis for calculating the percentage (see figure below). The City Arborist will identify which tree(s) are to be protected. Development of non-Type I and II lands shall also require the careful layout of streets, driveways, building pads, lots, and utilities to avoid significant trees, tree clusters, heritage trees, and other natural resources pursuant to this code. Exemptions of subsections (B)(2)(c), (e), and (f) of this section shall apply. Please note that in the event that more than 20 percent of the non-Type I and II lands comprise significant trees or tree clusters, the developer shall not be required to save the excess trees, but is encouraged to do so.

Applicant's Finding: The applicant has inventoried all trees on site and has consulted with the City’s arborist to determine which trees on site are significant. The applicant is proposing tree preservation consistent with these requirements, as detailed in the tree protection plan (Sheet C110). The one tree identified as significant on this site will be retained for 100% retention of significant trees.
The requirements of this section have been satisfied.

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

Applicant's Finding: No street stubouts are proposed on abutting properties.
The requirements of this section have been satisfied.

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

Applicant's Finding: The R10 zone permits a maximum density of 4.4 dwelling units per net acre. Net acre is defined as “The total gross acres less the public right-of-way and other acreage deductions, as applicable. The net acreage of this site after removal of dedicated right-of-way is 0.78 acres. At 4.4 dwelling units per net acre, the maximum number of dwelling units on this site is 3.4. This proposal is for a 3 lot partition. The proposed density for the site is within 70 percent of the maximum allowable density.
The requirements of this section have been satisfied.

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

Applicant's Finding: Suncrest Drive is a collector adjacent to the site, but no changes are proposed for Suncrest Drive.

The requirements of this section have been satisfied.

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

Applicant's Finding: The Applicant's proposed improvements will result in removing 23 trees from the site. None of the trees proposed for removal have been identified as significant. 21 additional trees will be retained on site, including one tree identified as significant. 11 off-site trees will be protected, none of which are identified as significant.

The requirements of this section have been satisfied.

85.180 REDIVISION PLAN REQUIREMENT

A redivision plan shall be required for a partition or subdivision, where the property could be developed at a higher density, under existing/proposed zoning, if all services were available and adequate to serve the use.

Applicant's Facts and Findings: The property is being developed at the highest density allowed under applicable zoning, therefore a redivision plan is not required.

85.200 APPROVAL CRITERIA

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

A. Streets.

- 1. 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 lots or parcels, to topographical conditions, to public convenience and safety, to accommodate various types of transportation (automobile, bus, pedestrian, bicycle), and to the proposed use of land to be served by the streets. The functional class of a street aids in defining the primary function and associated design standards for the facility. The hierarchy of the facilities within the network in regard to the type of traffic served (through or local trips), balance of function (providing access and/or capacity), and the level of use (generally measured in vehicles per day) are generally dictated by the functional class. The street system shall assure an adequate traffic or circulation system with intersection**

angles, grades, tangents, and curves appropriate for the traffic to be carried. Streets should provide for the continuation, or the appropriate projection, of existing principal streets in surrounding areas and should not impede or adversely affect development of adjoining lands or access thereto.

To accomplish this, the emphasis should be upon a connected continuous pattern of local, collector, and arterial streets rather than discontinuous curvilinear streets and cul-de-sacs. Deviation from this pattern of connected streets should only be permitted in cases of extreme topographical challenges including excessive slopes (35 percent-plus), hazard areas, steep drainageways, wetlands, etc. In such cases, deviations may be allowed but the connected continuous pattern must be reestablished once the topographic challenge is passed. Streets should be oriented with consideration of the sun, as site conditions allow, so that over 50 percent of the front building lines of homes are oriented within 30 degrees of an east-west axis.

Internal streets are the responsibility of the developer. All streets bordering the development site are to be developed by the developer with, typically, half-street improvements or to City standards prescribed by the City Engineer. Additional travel lanes may be required to be consistent with adjacent road widths or to be consistent with the adopted Transportation System Plan (TSP) and any adopted updated plans.

An applicant may submit a written request for a waiver of abutting street improvements if the TSP prohibits the street improvement for which the waiver is requested. Those areas with numerous (particularly contiguous) under-developed or undeveloped tracts will be required to install street improvements. When an applicant requests a waiver of street improvements and the waiver is granted, the applicant shall pay an in-lieu fee equal to the estimated cost, accepted by the City Engineer, of the otherwise required street improvements. As a basis for this determination, the City Engineer shall consider the cost of similar improvements in recent development projects and may require up to three estimates from the applicant. The amount of the fee shall be established prior to the Planning Commission's decision on the associated application. The in-lieu fee shall be used for in kind or related improvements.

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

Applicant's This site is located northeast of the intersection of Ridgebrook Drive and Suncrest Drive.
Facts and Ridgebrook Drive is designated a local street and Suncrest Drive is a designated collector.
Findings: The development of this site will not affect the connectivity of these two streets. Figure

12 of the West Linn Transportation System Plan – Recommended Local Street Connectivity Projects – does not identify a new street connection within or adjacent to this site.

2. Right-of-way widths shall depend upon which classification of street is proposed. The right-of-way widths are established in the adopted TSP.

Applicant's Facts and Findings: The site abuts Suncrest Drive and Ridgebrook Drive. Suncrest Drive is a collector with a 60 foot right-of-way using the 58 foot right-of-way option for collectors. Ridgebrook Drive is a local street with a 52 foot right-of-way using the 28 foot street right-of-way option. Right-of-way for both streets meet the width requirements as determined by their functional classifications.

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

The following table identifies appropriate street width (curb to curb) in feet for various street classifications. The desirable width shall be required unless the applicant or his or her engineer can demonstrate that site conditions, topography, or site design require the reduced minimum width. For local streets, a 12-foot travel lane may only be used as a shared local street when the available right-of-way is too narrow to accommodate bike lanes and sidewalks.

Applicant's Facts and Findings: No new streets or roads are proposed with this land use application. Ridgebrook Road and Suncrest Road will continue to meet street width requirements.

4. The decision-making body shall consider the City Engineer's recommendations on the desired right-of-way width, pavement width and street geometry of the various street types within the subdivision after consideration by the City Engineer of the following criteria:

- a. The type of road as set forth in the Transportation Master Plan.
- b. The anticipated traffic generation.
- c. On-street parking requirements.
- d. Sidewalk and bikeway requirements.
- e. Requirements for placement of utilities.
- f. Street lighting.
- g. Drainage and slope impacts.
- h. Street trees.
- i. Planting and landscape areas.
- j. Existing and future driveway grades
- k. Street geometry.
- l. Street furniture needs, hydrants.

Applicant's Facts and Findings: The pre-application conference notes do not identify the need for any further improvements along Suncrest and Ridgebrook drives.

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

Applicant's Facts and Findings: The proposed development will result in two new homes taking access to Ridgebrook Drive via two access points, no more than a normal Local Street traffic load. No arterials are adjacent to this proposal.

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

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

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

Applicant's Facts and Findings: Ridgebrook Drive and Suncrest Drive form an existing T intersection. No new streets or roads are proposed as part of this application.

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

Applicant's Facts and Findings: The Applicant does not propose any future extension of streets.

9. **Intersection angles. Streets shall be laid out to intersect angles as near to right angles as practical, except where topography requires lesser angles, but in no case less than 60 degrees unless a special intersection design is approved. Intersections which are not at right angles shall have minimum corner radii of 15 feet along right-of-way lines which form acute angles.**

Right-of-way lines at intersections with arterial streets shall have minimum curb radii of not less than 35 feet. Other street intersections shall have curb radii of not less than 25 feet. All radii shall maintain a uniform width between the roadway and the right-of-way lines. The intersection of more than two streets at any one point will not be allowed unless no alternative design exists.

Applicant's Suncrest Drive and Ridgebrook Drive currently intersect at an angle greater than 60
Facts and degrees. The curb radii at the intersection exceeds 25 feet.
Findings:

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

Applicant's Existing street rights-of-way are adequate based on the standards of this chapter.
Facts and
Findings:

11. Cul-de-sacs.

- a. **New cul-de-sacs and other closed-end streets (not including stub streets intended to be connected) on sites containing less than five acres, or sites accommodating uses other than residential or mixed use development, are not allowed unless the applicant demonstrates that there is no feasible alternative due to:**
 - 1) **Physical constraints (e.g., existing development, the size or shape of the site, steep topography, or a fish bearing stream or wetland protected by Chapter 32 CDC), or**
 - 2) **Existing easements or leases.**
- b. **New cul-de-sacs and other closed-end streets, consistent with subsection (A)(11)(a) of this section, shall not exceed 200 feet in length or serve more than 25 dwelling units unless the design complies with all adopted Tualatin Valley Fire and Rescue (TVFR) access standards and adequately provides for anticipated traffic, consistent with the Transportation System Plan (TSP).**
- c. **New cul-de-sacs and other closed-end streets (not including stub streets intended to be connected) on sites containing five acres or more that are proposed to accommodate residential or mixed use development are prohibited unless barriers (e.g., existing development, steep topography, or a fish bearing stream or wetland protected by Chapter 32 CDC, or easements, leases or covenants established prior to May 1, 1995) prevent street extensions. In that case, the street shall not exceed 200 feet in length or serve more than 25 dwelling units, and its design shall comply with all adopted TVFR access standards and adequately provide for anticipated traffic, consistent with the TSP.**
- d. **Applicants for a proposed subdivision, partition or a multifamily, commercial or industrial development accessed by an existing cul-de-**

sac/closed-end street shall demonstrate that the proposal is consistent with all applicable traffic standards and TVFR access standards.

- e. All cul-de-sacs and other closed-end streets shall include direct pedestrian and bicycle accessways from the terminus of the street to an adjacent street or pedestrian and bicycle accessways unless the applicant demonstrates that such connections are precluded by physical constraints or that necessary easements cannot be obtained at a reasonable cost.
- f. All cul-de-sacs/closed-end streets shall terminate with a turnaround built to one of the following specifications (measurements are for the traveled way and do not include planter strips or sidewalks).

Applicant's No cul-de-sacs are proposed as part of this land use application.
Facts and
Findings:

- 12. **Street names.** No street names shall be used which will duplicate or be confused with the names of existing streets within the City. Street names that involve difficult or unusual spellings are discouraged. Street names shall be subject to the approval of the Planning Commission or Planning Director, as applicable. Continuations of existing streets shall have the name of the existing street. Streets, drives, avenues, ways, boulevards, and lanes shall describe through streets. Place and court shall describe cul-de-sacs. Crescent, terrace, and circle shall describe loop or arcing roads.

Applicant's No new streets are proposed as part of this land use application.
Facts and
Findings:

- 13. **Grades and curves.** Grades and horizontal/vertical curves shall meet the West Linn Public Works Design Standards.

Applicant's Any grades and/or horizontal/vertical curves will meet West Linn Public Works Design
Facts and Standards.
Findings:

- 14. **Access to local streets.** Intersection of a local residential street with an arterial street may be prohibited by the decision-making authority if suitable alternatives exist for providing interconnection of proposed local residential streets with other local streets. Where a subdivision or partition abuts or contains an existing or proposed major arterial street, the decision-making authority may require marginal access streets, reverse-frontage lots with suitable depth, visual barriers, noise barriers, berms, no-access reservations along side and rear property lines, and/or other measures necessary for adequate protection of residential properties from incompatible land uses, and to ensure separation of through traffic and local traffic.

Applicant's The property does not abut nor contain an existing or proposed arterial street.
Facts and
Findings:

15. Alleys. Alleys shall be provided in commercial and industrial districts unless other permanent provisions for access to off-street parking and loading facilities are made as approved by the decision-making authority. While alley intersections and sharp changes in alignment should be avoided, the corners of necessary alley intersections shall have radii of not less than 10 feet. Alleys may be provided in residential subdivisions or multi-family projects. The decision to locate alleys shall consider the relationship and impact of the alley to adjacent land uses. In determining whether it is appropriate to require alleys in a subdivision or partition, the following factors and design criteria should be considered:

- a. The alley shall be self-contained within the subdivision. The alley shall not abut undeveloped lots or parcels which are not part of the project proposal. The alley will not stub out to abutting undeveloped parcels which are not part of the project proposal.
- b. The alley will be designed to allow unobstructed and easy surveillance by residents and police.
- c. The alley should be illuminated. Lighting shall meet the West Linn Public Works Design Standards.
- d. The alley should be a semi-private space where strangers are tacitly discouraged.
- e. Speed bumps may be installed in sufficient number to provide a safer environment for children at play and to discourage through or speeding traffic.
- f. Alleys should be a minimum of 14 feet wide, paved with no curbs.

**Applicant's
Facts and
Findings:**

No alleys are proposed as part of this land use application.

16. Sidewalks. Sidewalks shall be installed per CDC 92.010(H), Sidewalks. The residential sidewalk width is six feet plus planter strip as specified below. Sidewalks in commercial zones shall be constructed per subsection (A)(3) of this section. See also subsection C of this section. Sidewalk width may be reduced with City Engineer approval to the minimum amount (e.g., four feet wide) necessary to respond to site constraints such as grades, mature trees, rock outcroppings, etc., or to match existing sidewalks or right-of-way limitations.

**Applicant's
Facts and
Findings:**

The applicant proposes to replace the existing 5-foot sidewalk plus planter strip along the Ridgebrook Drive frontage of this property, where required for driveway construction or utility extensions.

17. Planter strip. The planter strip is between the curb and sidewalk providing space for a grassed or landscaped area and street trees. The planter strip shall be at least 6 feet wide to accommodate a fully matured tree without the boughs interfering with pedestrians on the sidewalk or vehicles along the curblines. Planter strip width may be reduced or eliminated, with City Engineer approval, when it cannot be corrected by site plan, to the minimum

amount necessary to respond to site constraints such as grades, mature trees, rock outcroppings, etc., or in response to right-of-way limitations.

Applicant's Facts and Findings: The applicant proposes to maintain the existing 5.5-foot planter strip along the Ridgebrook Drive frontage of this property. The Applicant also proposes to maintain the existing planter strip located along Suncrest.

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

Applicant's Facts and Findings: No reservations or restrictions are proposed with the street dedication.

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

Applicant's Facts and Findings: The proposed lots created by partition in this land use application have access to a public street via an access easement per City requirements.

20. Gated streets. Gated streets are prohibited in all residential areas on both public and private streets. A driveway to an individual home may be gated.

Applicant's Facts and Findings: Gated streets are not proposed in this land use application.

21. Entryway treatments and street isle design. When the applicant desires to construct certain walls, planters, and other architectural entryway treatments within a subdivision, the following standards shall apply:

- a. **All entryway treatments except islands shall be located on private property and not in the public right-of-way.**
- b. **Planter islands may be allowed provided there is no structure (i.e., brick, signs, etc.) above the curblines, except for landscaping. Landscaped islands shall be set back a minimum of 24 feet from the curblines of the street to which they are perpendicular.**
- c. **All islands shall be in public ownership. The minimum aisle width between the curb and center island curbs shall be 14 feet. Additional width may be required as determined by the City Engineer.**
- d. **Brick or special material treatments are acceptable at intersections with the understanding that the City will not maintain these sections except with asphalt overlay, and that they must meet the Americans with Disabilities Act (ADA) standards. They shall be laid out to tie into existing sidewalks at intersections.**
- e. **Maintenance for any common areas and entryway treatments (including islands) shall be guaranteed through homeowners association agreements, CC&Rs, etc.**

- f. **Under Chapter 52 CDC, subdivision monument signs shall not exceed 32 square feet in area.**

**Applicant's
Facts and
Findings:**

No entryway treatments are proposed in this land use application.

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

Applicant's Facts and Findings: The City Manager has not identified the need for any off-site improvements related to the development of this property.

B. Blocks and lots.

- 1. **General. The length, width, and shape of blocks shall be designed with due regard for the provision of adequate building sites for the use contemplated; consideration of the need for traffic safety, convenience, access, circulation, and control; and recognition of limitations and opportunities of topography and solar access.**

Applicant's Facts and Findings: No new roads are proposed as part of this land use application and the block pattern is already established.

- 2. **Sizes. The recommended block size is 400 feet in length to encourage greater connectivity within the subdivision. Blocks shall not exceed 800 feet in length between street lines, except for blocks adjacent to arterial streets or unless topographical conditions or the layout of adjacent streets justifies a variation. Designs of proposed intersections shall demonstrate adequate sight distances to the City Engineer's specifications. Block sizes and proposed accesses must be consistent with the adopted TSP. Subdivisions of five or more acres that involve construction of a new street shall have block lengths of no more than 530 feet. If block lengths are greater than 530 feet, accessways on public easements or right-of-way for pedestrians and cyclists shall be provided not more than 330 feet apart. Exceptions can be granted when prevented by barriers such as topography, rail lines, freeways, pre-existing development, leases, easements or covenants that existed prior to May 1, 1995, or by requirements of Titles 3 and 13 of the UGMFP. If streets must cross water features protected pursuant to Title 3 UGMFP, provide a crossing every 800 to 1,200 feet unless habitat quality or the length of the crossing prevents a full street connection.**

Applicant's Facts and Findings: No new roads are proposed as part of this land use application and the block pattern is already established.

- 3. Lot size and shape. Lot or parcel size, width, shape, and orientation shall be appropriate for the location of the subdivision or partition, for the type of use contemplated, for potential utilization of solar access, and for the protection of drainageways, trees, and other natural features. No lot or parcel shall be dimensioned to contain part of an existing or proposed street. All lots or parcels shall be buildable. "Buildable" describes lots that are free of constraints such as wetlands, drainageways, etc., that would make home construction impossible. Lot or parcel sizes shall not be less than the size required by the zoning code unless as allowed by planned unit development (PUD).**

Applicant's Facts and Findings: The three lots created through this partition are each a minimum of 10,000 square feet in size to accommodate single family detached dwelling units in the R10 zone. All three proposed lots exceed the minimum requirements for front lot line length, lot width and lot depth.

- 4. Depth and width of properties reserved or laid out for commercial and industrial purposes shall be adequate to provide for the off-street parking and service facilities required by the type of use proposed.**

Applicant's Facts and Findings: The Applicant is proposing residential development for this site, so this requirement is not applicable.

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

Applicant's Facts and Findings: The partition conforms to the provisions of Chapter 48 CDC.

- 6. Double frontage lots and parcels. Double frontage lots and parcels have frontage on a street at the front and rear property lines. Double frontage lots and parcels shall be avoided except where they are essential to provide separation of residential development from arterial streets or adjacent non-residential activities, or to overcome specific disadvantages of topography and orientation. A planting screen or impact mitigation easement at least 10 feet wide, and across which there shall be no right of access, may be required along the line of building sites abutting such a traffic artery or other incompatible use.**

Applicant's Facts and Findings: This land use application does not include double frontage lots.

- 7. Lot and parcel side lines. The lines of lots and parcels, as far as is practicable, should run at right angles to the street upon which they face, except that on curved streets they should be radial to the curve.**

Applicant's Facts and Findings: Lot lines and side parcel lines run at right angles to the street.

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

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

Applicant's Facts and Findings: The land use application does not include flag lots.

9. **Large lots or parcels.** In dividing tracts into large lots or parcels which, at some future time, are likely to be redivided, the approval authority may:

- a. Require that the blocks be of such size and shape, and be so divided into building sites, and contain such easements and site restrictions as will provide for extension and opening of streets at intervals which will permit a subsequent division of any tract into lots or parcels of smaller size; or
- b. Alternately, in order to prevent further subdivision or partition of oversized and constrained lots or parcels, restrictions may be imposed on the subdivision or partition plat.

Applicant's Facts and Findings: The proposed lots are not likely to be redivided as the density proposed and the lot sizes proposed are consistent with the maximum allowable density per the site's zoning.

C. Pedestrian and bicycle trails.

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

Applicant's Facts and Findings: Sidewalk is provided along the frontage of the property. No pedestrian or bicycle trails are required.

D. Transit facilities.

1. The applicant shall consult with Tri-Met and the City Engineer to determine the appropriate location of transit stops, bus pullouts, future bus routes, etc., contiguous to or within the development site. If transit service is planned to be provided within the next two years, then facilities such as pullouts shall be constructed per Tri-Met standards at the time of

development. More elaborate facilities, like shelters, need only be built when service is existing or imminent. Additional rights-of-way may be required of developers to accommodate buses.

2. The applicant shall make all transit-related improvements in the right-of-way or in easements abutting the development site as deemed appropriate by the City Engineer.
3. Transit stops shall be served by striped and signed pedestrian crossings of the street within 150 feet of the transit stop where feasible. Illumination of the transit stop and crossing is required to enhance defensible space and safety. ODOT approval may be required.
4. Transit stops should include a shelter structure bench plus eight feet of sidewalk to accommodate transit users, non-transit-related pedestrian use, and wheelchair users. Tri-Met must approve the final configuration.

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

E. Grading. Grading of building sites shall conform to the following standards unless physical conditions demonstrate the propriety of other standards:

1. All cuts and fills shall comply with the excavation and grading provisions of the Uniform Building Code and the following:
 - a. Cut slopes shall not exceed one and one-half feet horizontally to one foot vertically (i.e., 67 percent grade).
 - b. Fill slopes shall not exceed two feet horizontally to one foot vertically (i.e., 50 percent grade). Please see the following illustration.
2. The character of soil for fill and the characteristics of lot and parcels made usable by fill shall be suitable for the purpose intended.
3. If areas are to be graded (more than any four-foot cut or fill), compliance with CDC 85.170(C) is required.
4. The proposed grading shall be the minimum grading necessary to meet roadway standards, and to create appropriate building sites, considering maximum allowed driveway grades.
5. Type I lands shall require a report submitted by an engineering geologist, and Type I and Type II lands shall require a geologic hazard report.
6. Repealed by Ord. 1635.
7. On land with slopes in excess of 12 percent, cuts and fills shall be regulated as follows:
 - a. Toes of cuts and fills shall be set back from the boundaries of separate private ownerships at least three feet, plus one-fifth of the vertical height of the cut or fill. Where an exception is required from that requirement, slope easements shall be provided.
 - b. Cuts shall not remove the toe of any slope where a severe landslide or erosion hazard exists (as described in subsection (G)(5) of this section).
 - c. Any structural fill shall be designed by a registered engineer in a manner consistent with the intent of this code and standard

engineering practices, and certified by that engineer that the fill was constructed as designed.

- d. Retaining walls shall be constructed pursuant to Section 2308(b) of the Oregon State Structural Specialty Code.
 - e. Roads shall be the minimum width necessary to provide safe vehicle access, minimize cut and fill, and provide positive drainage control.
8. Land over 50 percent slope shall be developed only where density transfer is not feasible. The development will provide that:
- a. At least 70 percent of the site will remain free of structures or impervious surfaces.
 - b. Emergency access can be provided.
 - c. Design and construction of the project will not cause erosion or land slippage.
 - d. Grading, stripping of vegetation, and changes in terrain are the minimum necessary to construct the development in accordance with subsection J of this section.

Applicant's Facts and Findings: A geotechnical engineering report is included with this submittal. A grading report is included in the submitted plans which complies with all criteria of this subsection.

F. Water.

1. A plan for domestic water supply lines or related water service facilities shall be prepared consistent with the adopted Comprehensive Water System Plan, plan update, March 1987, and subsequent superseding revisions or updates.
2. Adequate location and sizing of the water lines.
3. Adequate looping system of water lines to enhance water quality.
4. For all non-single-family developments, there shall be a demonstration of adequate fire flow to serve the site.
5. A written statement, signed by the City Engineer, that water service can be made available to the site by the construction of on-site and off-site improvements and that such water service has sufficient volume and pressure to serve the proposed development's domestic, commercial, industrial, and fire flows.

Applicant's Facts and Findings: The Applicant proposes one replacement and two new water service connections off Ridgebrook Drive to service the three lots which will be created as part of this application. The Applicant plans a third water service lateral to serve the adjacent parcel as shown on the attached plans. This proposal is consistent with the adopted Comprehensive Water System Plan. All proposed water improvements are included on the utility plan Sheet C300 of the land use application

G. Sewer.

1. A plan prepared by a licensed engineer shall show how the proposal is consistent with the Sanitary Sewer Master Plan (July 1989). Agreement with that plan must demonstrate how the sanitary sewer proposal will be accomplished and how it is gravity-efficient. The sewer system must be in the correct basin and should allow for full gravity service.
2. Sanitary sewer information will include plan view of the sanitary sewer lines, including manhole locations and depth or invert elevations.

3. Sanitary sewer lines shall be located in the public right-of-way, particularly the street, unless the applicant can demonstrate why the alternative location is necessary and meets accepted engineering standards.
4. Sanitary sewer line should be at a depth that can facilitate connection with down-system properties in an efficient manner.
5. The sanitary sewer line should be designed to minimize the amount of lineal feet in the system.
6. The sanitary sewer line shall avoid disturbance of wetland and drainageways. In those cases where that is unavoidable, disturbance shall be mitigated pursuant to Chapter 32 CDC, Water Resource Area Protection, all trees replaced, and proper permits obtained. Dual sewer lines may be required so the drainageway is not disturbed.
7. Sanitary sewer shall be extended or stubbed out to the next developable subdivision or a point in the street that allows for reasonable connection with adjacent or nearby properties.
8. The sanitary sewer system shall be built pursuant to DEQ, City, and Tri-City Service District sewer standards. The design of the sewer system should be prepared by a licensed engineer, and the applicant must be able to demonstrate the ability to satisfy these submittal requirements or standards at the pre-construction phase.
9. A written statement, signed by the City Engineer, that sanitary sewers with sufficient capacity to serve the proposed development and that adequate sewage treatment plant capacity is available to the City to serve the proposed development.

Applicant's Facts and Findings: A public sewer extension is proposed along Ridgebrook Drive. Four new sewer laterals will connect to the public sewer in Ridgebrook Drive. All proposed sewer improvements are included on the utility plan Sheet C300 of the land use application. The proposed sanitary sewer system is consistent with the Sanitary Sewer Master Plan, is in the correct basin and allows for full gravity service.

H. Deleted during July 2014 supplement.

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

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

J. Supplemental provisions.

1. **Wetland and natural drainageways. Wetlands and natural drainageways shall be protected as required by Chapter 32 CDC, Water Resource Area Protection. Utilities may be routed through the protected corridor as a last resort, but impact mitigation is required.**

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

2. Willamette and Tualatin Greenways. The Willamette and Tualatin River Greenways shall be protected as required by Chapter 28 CDC, Willamette and Tualatin River Protection.

Applicant's Facts and Findings: No greenways exist on this site or have been identified for dedication on this property. This property is not adjacent to the Willamette or Tualatin River and, therefore, a River Greenway is not feasible on this site.

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

Applicant's Facts and Findings: There are no existing street trees along the frontage of Ridgebrook Drive. The applicant will install four street trees as a component of the front improvements on Ridgebrook Drive.

4. Lighting. All subdivision street or alley lights shall meet West Linn Public Works Design Standards.

Applicant's Facts and Findings: The applicant proposed to install one new light fixture along Ridgebrook Drive to provide adequate lighting per current City standards. A photometric plan has been provided for review on Sheet C290.

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

Applicant's Facts and Findings: Right-of-way is adequate for the classification of Ridgebrook Drive and Suncrest Drive. No dedications have been proposed or required.

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

Applicant's Facts and Findings: The Applicant requests an exception to this requirement as the area is substantially built out and because the site is less than one acre. An overhead powerline exists along the site's Suncrest Drive frontage. The southern pole for this line is located at 19240 Suncrest Drive. Because the property has less than 200 feet of frontage along Suncrest Drive and because the poles associated with this line front neighboring properties, the applicant is exempt from undergrounding the existing overhead line.

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

Applicant's Facts and Findings: The proposed minor partition is for three lots, therefore this subsection is not applicable.

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

Applicant's Facts and Findings: This property is zoned R10 and, therefore, the use of the parcel as an entirely residential development is permitted.

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

Applicant's Facts and Findings: The applicant has inventoried all trees on site and has consulted with the City's arborist to determine which trees on site are significant. The applicant is proposing tree preservation consistent with these requirements, as detailed in the tree protection plan (Sheet C110). The one tree identified as significant on this site will be retained.

Chapter 92 REQUIRED IMPROVEMENTS

92.010 PUBLIC IMPROVEMENTS FOR ALL DEVELOPMENT

The following improvements shall be installed at the expense of the developer and meet all City codes and standards:

A. Streets within subdivisions.

1. **All streets within a subdivision, including alleys, shall be graded for the full right-of-way width and improved to the City's permanent improvement standards and specifications which include sidewalks and bicycle lanes, unless the decision-making authority makes the following findings:**
 - a. **The right-of-way cannot be reasonably improved in a manner consistent with City road standards or City standards for the protection of wetlands and natural drainageways.**
 - b. **The right-of-way does not provide a link in a continuous pattern of connected local streets, or, if it does provide such a link, that an alternative street link already exists or the applicant has proposed an alternative street which provides the necessary connectivity, or the**

applicant has proven that there is no feasible location on the property for an alternative street providing the link.

2. When the decision-making authority makes these findings, the decision-making authority may impose any of the following conditions of approval:
 - a. A condition that the applicant initiate vacation proceedings for all or part of the right-of-way.
 - b. A condition that the applicant build a trail, bicycle path, or other appropriate way.
3. If the applicant initiates vacation proceedings pursuant to subsection (A)(2)(a) of this section, and the right-of-way cannot be vacated because of opposition from adjacent property owners, the City Council shall consider and decide whether to process a City-initiated street vacation pursuant to Chapter 271 ORS.
4. Construction staging area shall be established and approved by the City Engineer. Clearing, grubbing, and grading for a development shall be confined to areas that have been granted approval in the land use approval process only. Clearing, grubbing, and grading outside of land use approved areas can only be approved through a land use approval modification and/or an approved Building Department grading permit for survey purposes. Catch basins shall be installed and connected to pipe lines leading to storm sewers or drainageways.

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

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

D. Monuments. Upon completion of the first pavement lift of all street improvements, monuments shall be installed and/or reestablished at every street intersection and all points of curvature and points of tangency of street centerlines with an iron survey control rod. Elevation benchmarks shall be established at each street intersection monument with a cap (in a monument box) with elevations to a U.S. Geological Survey datum that exceeds a distance of 800 feet from an existing benchmark.

E. Surface drainage and storm sewer system. A registered civil engineer shall prepare a plan and statement which shall be supported by factual data and comply

with the standards for the improvement of public and private drainage systems located in the West Linn Public Works Design Standards. Developers are encouraged to adapt storm water management approaches that make use of natural systems and infiltration to manage storm runoff, including the use of vegetated swales, rain gardens, and other like systems where appropriate.

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

- 1. If the area outside the subdivision to be directly served by the sewer line has reached a state of development to justify sewer installation at the time, the Planning Commission may recommend to the City Council construction as an assessment project with such arrangement with the subdivider as is desirable to assure financing his or her share of the construction.**
- 2. If the installation is not made as an assessment project, the City may reimburse the subdivider an amount estimated to be a proportionate share of the cost for each connection made to the sewer by property owners outside of the subdivision for a period of 10 years from the time of installation of the sewers. The actual amount shall be determined by the City Administrator considering current construction costs.**

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

H. Sidewalks.

- 1. Sidewalks shall be installed on both sides of a public street and in any special pedestrian way within the subdivision, except that in the case of primary or secondary arterials, or special type industrial districts, or special site conditions, the Planning Commission may approve a subdivision without sidewalks if alternate pedestrian routes are available. In the case of the double-frontage lots, provision of sidewalks along the frontage not used for access shall be the responsibility of the developer. Providing front and side yard sidewalks shall be the responsibility of the land owner at the time a request for a building permit is received. Additionally,**

deed restrictions and CC&Rs shall reflect that sidewalks are to be installed prior to occupancy and it is the responsibility of the lot or homeowner to provide the sidewalk, except as required above for double-frontage lots.

2. On local streets serving only single-family dwellings, sidewalks may be constructed during home construction, but a letter of credit shall be required from the developer to ensure construction of all missing sidewalk segments within four years of final plat approval pursuant to CDC 91.010(A)(2).
3. The sidewalks shall measure at least six feet in width and be separated from the curb by a six-foot minimum width planter strip. Reductions in widths to preserve trees or other topographic features, inadequate right-of-way, or constraints, may be permitted if approved by the City Engineer in consultation with the Planning Director.
4. Sidewalks should be buffered from the roadway on high volume arterials or collectors by landscape strip or berm of three and one-half-foot minimum width.
5. The City Engineer may allow the installation of sidewalks on one side of any street only if the City Engineer finds that the presence of any of the factors listed below justifies such waiver:
 - a. The street has, or is projected to have, very low volume traffic density;
 - b. The street is a dead-end street;
 - c. The housing along the street is very low density; or
 - d. The street contains exceptional topographic conditions such as steep slopes, unstable soils, or other similar conditions making the location of a sidewalk undesirable.

I. Bicycle routes. If appropriate to the extension of a system of bicycle routes, existing or planned, the Planning Commission may require the installation of separate bicycle lanes within streets and separate bicycle paths.

J. Street name signs. All street name signs and traffic control devices for the initial signing of the new development shall be installed by the City with sign and installation costs paid by the developer.

K. Dead-end street signs. Signs indicating "future roadway" shall be installed at the end of all discontinued streets. Signs shall be installed by the City per City standards, with sign and installation costs paid by the developer.

L. Signs indicating future use shall be installed on land dedicated for public facilities (e.g., parks, water reservoir, fire halls, etc.). Sign and installation costs shall be paid by the developer.

M. Street lights. Street lights shall be installed and shall be served from an underground source of supply. The street lighting shall meet IES lighting standards. The street lights shall be the shoe-box style light (flat lens) with a 30-foot bronze pole in residential (non-intersection) areas. The street light shall be the cobra head style (drop lens) with an approximate 50-foot (sized for intersection width) bronze

pole. The developer shall submit to the City Engineer for approval of any alternate residential, commercial, and industrial lighting, and alternate lighting fixture design. The developer and/or homeowners association is required to pay for all expenses related to street light energy and maintenance costs until annexed into the City.

N. Utilities. The developer shall make necessary arrangements with utility companies or other persons or corporations affected for the installation of underground lines and facilities. Electrical lines and other wires, including but not limited to communication, street lighting, and cable television, shall be placed underground.

O. Curb cuts and driveways. Curb cuts and driveway installations are not required of the subdivider at the time of street construction, but, if installed, shall be according to City standards. Proper curb cuts and hard-surfaced driveways shall be required at the time buildings are constructed.

Applicant's Facts and Findings: All curb cuts and driveways installed according to city standards

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

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.

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

92.020 IMPROVEMENTS IN PARTITIONS

The same improvements shall be installed to serve each parcel of a partition as are required of a subdivision. However, if the approval authority finds that the nature of development in the vicinity of the partition makes installation of some improvements unreasonable, at the written request of the applicant those improvements may be waived. If the street improvement requirements are waived, the applicant shall pay an in-lieu fee for off-site street improvements, pursuant to the provisions of CDC 85.200(A)(1).

In lieu of accepting an improvement, the Planning Director may recommend to the City Council that the improvement be installed in the area under special assessment financing or other facility extension policies of the City.

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

92.030 IMPROVEMENT PROCEDURES

In addition to other requirements, improvements installed by the developer, either as a requirement of these regulations or at the developer's own option, shall conform to the requirements of this title and permanent improvement standards and specifications adopted by the City and shall be installed in accordance with the following procedure:

A. Improvement work shall not be commenced until plans have been checked for adequacy and approved by the City. To the extent necessary for evaluation of the proposal, the improvement plans may be required before approval of the tentative plan of a subdivision or partition. Plans shall be prepared in accordance with the requirements of the City.

B. Improvement work shall not be commenced until the City has been notified in advance, and if work has been discontinued for any reason, it shall not be resumed until the City has been notified.

C. Improvements shall be constructed under the Engineer. The City may require changes in typical sections and details in the public interest if unusual conditions arise during construction to warrant the change.

D. All underground utilities, sanitary sewers, and storm drains installed in streets by the subdivider or by any utility company shall be constructed prior to the surfacing of the streets. Stubs for service connections for underground utilities and sanitary sewers shall be placed to a length obviating the necessity for disturbing the street improvements when service connections are made.

E. A digital and mylar map showing all public improvements as built shall be filed with the City Engineer upon completion of the improvements. (Ord. 1408, 1998)

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

SUMMARY AND CONCLUSION

Based upon the materials submitted herein, the Applicant respectfully requests approval from the City's Planning Department of this application for a Partition.

City of West Linn
PRE-APPLICATION CONFERENCE MEETING
SUMMARY NOTES
May 18, 2017

SUBJECT: Three lot minor partition and lot line adjustment at 19310 Suncrest Drive

FILE: PA-17-19

ATTENDEES: Applicant: Brian Lee, David Poulson and Bill Buckley
Staff: Jennifer Arnold (Planning) Erich Lais (Engineering)

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

Site Information

Site Address: 19310 Suncrest Drive (Tax Lot 6401 map 21E 23BD)
Site Area: 42,832 square feet
Neighborhood: Hidden Springs NA
Comp. Plan: Low density residential
Zoning: R-10 (Single family residential detached / 10,000 square foot minimum lot size)
Applicable code: Community Development Code (CDC) Chapter 85: Land Division; CDC Chapter 11: R-10

Project Details

There is a single family home near the middle of the property. The proposal would remove the existing home, adjust an existing historical lot line to create one 10,000+ sq. ft. lot and one additional 30,000+ square foot lot, then partition the larger lot into three 10,000+ sq. ft. lots.

All proposed lots would take access via Ridgebrook Drive. Frontage on Suncrest Drive and Ridgebrook Drive have existing sidewalks and planter strips. Frontage on Suncrest Drive has overhead utilities that will need to be placed underground. Alternatively, the applicant may pay a fee in lieu for the undergrounding of utilities with the City Engineer approval. Public utilities for storm, sewer, and water are available nearby, but may need to be extended to serve each lot. An arborist report will be required to identify significant trees, and the site plan must indicate those proposed to be removed.

Engineering Division Comments

Contact Erich Lais at elais@westlinnoregon.gov or 503-722-5500 for engineering requirements. Contact Ty Darby from Tualatin Valley Fire and Rescue (TVF&R) at ty.darby@tvfr.com for their requirements.

Process

For a minor partition and lot line adjustment, address the submittal requirements and approval criteria of CDC Chapter 85. The fee is \$2,800 (minor partition) with a final plat fee of \$1,500 and an inspection fee of \$500. The lot line adjustment application fee is \$800. The CDC is online at <http://westlinnoregon.gov/cdc>.

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

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

Once the submittal is deemed complete, staff will provide notice per CDC Chapter 99 and schedule a decision date by the Planning Manager. Appeals of the Planning Manager's decision are heard by City Council.

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

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

DISCLAIMER: This summary discussion covers issues identified to date. It does not imply that these are the only issues. The burden of proof is on the applicant to demonstrate that all approval criteria have been met. These notes do not constitute an endorsement of the proposed application **or provide any assurance of potential outcomes**. Staff responses are based on limited material presented at this pre-application meeting. New issues, requirements, etc. could emerge as the application is developed. **A new pre-application conference would have to be scheduled one that period lapses and these notes would no longer be valid. Any changes to the CDC standards may require a different design or submittal.**

Arborist Report to be
submitted at a later date.

3J CONSULTING

CIVIL ENGINEERING | WATER RESOURCES | LAND USE PLANNING

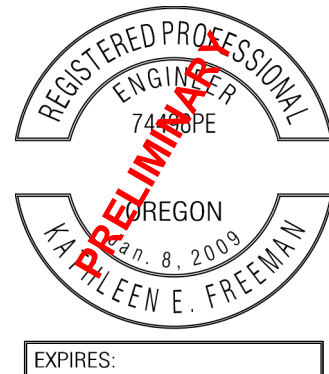
PRELIMINARY STORM WATER REPORT

SUNCREST PARTITION
19310 SUNCREST DRIVE
WEST LINN, OR

November 22, 2017

Prepared For:

Kathleen Dailey
West Linn, OR



Prepared By:
3J Consulting, Inc.
5075 Griffith Drive, Suite 150
Beaverton, Oregon 97005
Project No: 17414
KEF

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I hereby certify that this Stormwater Management Report for the Suncrest Partition has been prepared by me or under my supervision and meets minimum standards of the City of West Linn and normal standards of engineering practice. I hereby acknowledge and agree that the jurisdiction does not and will not assume liability for the sufficiency, suitability, or performance of drainage facilities designed by me.

EXECUTIVE SUMMARY

The existing site is located at 19310 Suncrest Drive on one tax lot (21E23BD 6401 Parcel 1) in West Linn, Oregon (See Figure 2). The property is approximately 0.78 acres and currently contains a single family home and driveway, and grass and trees throughout the property. The proposed development will consist of partitioning the property to create 3 lots including utilities and driveway approaches.

Each individual lot will be required to treat and infiltrate all stormwater runoff up to and including the 10-year storm event, while providing the necessary detention for the 25-year storm event. An infiltration planter for each lot has been designed following the City of Portland's Presumptive Approach Calculator.

A geotechnical investigation has been conducted showing that infiltration rates on the site are between 0.5 in/hr and 0.2 in/hr at depths of 3 and 8 feet, respectively. The geotechnical report has been included in the Technical Appendix.

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

PROJECT DESCRIPTION

The existing site is located at 19310 Suncrest Drive on one tax lot (21E23BD 6401 Parcel 1) in West Linn, Oregon (See Figure 2). The property is approximately 0.78 acres and currently contains a single family home and driveway, and grass and trees throughout the property. The proposed development will consist of partitioning the property to create 3 lots including utilities and driveway approaches.

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



Figure 1 - Vicinity Map



Figure 2 - Site Location

EXISTING CONDITIONS

Site

The topography on the site is sloping towards the east at an average grade of approximately 7% to 16%. Elevations range from a maximum of 677 feet near the corner of Ridgebrook Drive and Suncrest Drive to a minimum of 639 feet in the northeast corner of the property. Vegetation on the site consists primarily of grass, brush, and small to large trees. The site currently contains a single family home and driveway, and grass and trees throughout the property.

Flood Map

The flood plain map shows that the site resides in Zone X, where no base flood elevations have been determined (See Technical Appendix: Exhibits – FIRM Panel 19 of 1175).

Site Geology

The soil type as classified by the United States Department of Agriculture Soil Survey of

Clackamas County is Cornelius silt loam (See Technical Appendix: Exhibits - Hydrologic Soil Group for Clackamas County Area, Oregon). The soil type is classified as hydrologic group C. Group C soils generally have slow infiltration rates.

A geotechnical investigation was completed in September 2017 with two test pits at 3 and 8 feet deep. The resulting infiltration rate at each depth was 0.5 and 0.2 in/hr, respectively (See Technical Appendix: Geotechnical Report).

Existing Drainage

Existing Site

There is an existing 12 inch stormwater conveyance line in Ridgebrook Drive with associated curb inlets and manholes. The storm line discharges into a dissipator located approximately 300' east of the cul-de-sac on Ridgebrook Drive (See Technical Appendix: Exhibits - Ridgebrook Dr Storm (City of West Linn GIS)). The property is part of the Fern Creek watershed basin.

Basin Areas

Table 1 shows the current impervious and pervious areas for the property (See Technical Appendix: Exhibits - Existing Site Conditions).

Existing Basin Area	ft²	Acres
Impervious Area	4,305	0.10
Pervious Area	29,614	0.68
Total Existing Basin Area	33,919	0.78

Table 1 - Existing Basin Areas

Curve Number

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

The existing pervious portion of the site consists of brush, trees, landscaping and grass. The pervious area was considered to be in open space in good condition (CN=74) and the impervious surface has CN=98. The proposed lots will consist of homes on fully landscaped properties. The proposed pervious landscape and open space area is assumed to be open space in poor condition (grass covering <50% of pervious area) with a corresponding curve number of 86.

Time of Concentration

The time of concentration was calculated for the existing site using the TR-55 Method, the existing contours and assuming the site was woods with light underbrush. A time of concentration was calculated to be 29 minutes (See Technical Appendix: Calculations – Time of Concentration). A time of concentration for the post-developed site was assumed to be 5 minutes.

POST-DEVELOPED CONDITIONS

Post-Developed Site

Each individual lot, excluding lot 2 since there is no change in the impervious area, will be required to provide treatment and infiltration of stormwater. All storm events up to and including the 25-year will be infiltrated through a low impact design approach following the City of Portland’s Stormwater Management Manual issued in 2016. Each planter will have an overflow drain to convey high flows to the storm line in Ridgebrook Drive.

Basin Areas

Table 2 shows the post-developed impervious and pervious areas (See Technical Appendix: Exhibits – Post-Developed Site Conditions). Lots 1 and 3 were assumed to have a 3,000 sf roof for future development.

Post-Developed Basin Area	ft²	Acres
¹ Impervious Area	10,305	0.24
Pervious Area	23,614	0.54
Total Post-Developed Basin Area	33,919	0.78

¹Includes unchanged impervious area from lot 2

Table 2 – Post-Developed Basin Areas

HYDROLOGIC ANALYSIS DESIGN GUIDELINES

Design Guidelines

The site is located within the jurisdiction of the City of West Linn, which follows the City of Portland’s Stormwater Management Manual for the design of stormwater facilities.

Hydrograph Method

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

Design Storm

The rainfall distribution to be used for this area is the design storm of 24-hour duration based on the standard Type 1A rainfall distribution. Table 3 shows total precipitation depths for the various storm events, which were used as a multiplier for the Type 1A 24-hour rainfall distribution.



Recurrence Interval (years)	Current Total Precipitation Depth (inches)
2	2.50
10	3.40
25	3.90

Table 3 - Design Storms

Basin Runoff

Table 4 shows the runoff rates for the existing and post-developed conditions (See Technical Appendix: Hydrographs – Hydrograph). The values for post-developed release rates were calculated using the software XPSTORM.

Recurrence Interval (years)	¹ Existing Runoff (cfs)	Post-Developed Runoff (cfs)	Lot 2 Runoff (unchanged throughout development) (cfs)	Allowable Release Rates from Lots 1 & 3 (cfs)
2	0.08	0.21	0.08	0.00
10	0.16	0.33	0.13	0.00
25	0.21	0.40	0.16	0.05

¹Maximum post-developed release

Table 4 - Basin Runoff Rates

System Capacities

The stormwater conveyance system will be sized in the final design phase of the project.

WATER QUALITY/QUANTITY

Water Quality Guidelines

As mentioned previously, each lot will be required to provide water quality treatment and infiltration. The City of Portland’s Stormwater Management Manual provides guidance on sizing water quality and detention facilities using their Presumptive Approach Calculator (PAC).

Water Quality/Quantity Facilities

A maximum impervious area of 3,000 sf was assumed for lots 1 and 3. Table 5 shows the dimensions provided for the infiltration planters on each lot (See Technical Appendix: Calculations – Presumptive Approach Calculator). An overflow structure will be constructed to convey high flow events to the storm line in Ridgebrook Dr.

Lot	Bottom Basin Area (sf)	Side Slope (H:V)	Depth (in)	Growing Medium Depth (in)	Rock Storage Depth (in)
1	300	0	18	18	30
3	300	0	18	18	30

Table 5 - Stormwater Quality/Quantity Facilities



S U M M A R Y

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

TECHNICAL APPENDIX

Exhibits

- FIRM Panel 19 of 1175
- Hydrologic Soil Group-Clackamas County Area, Oregon
- Table 2-2a Runoff Curve Numbers
- Existing Site Conditions
- Post-Developed Site Conditions
- Ridgebrook Dr Storm

Drawings

- Sheet C100 "Existing Conditions Plan and Demolition Plan"
- Sheet C210 "Site Plan"
- Sheet C300 "Utility Plan"

Hydrographs

- Existing Runoff Hydrograph
- Post Developed Runoff Hydrograph

Calculations

- Time of Concentration
- Presumptive Approach Calculator

Geotechnical Report

- Geotechnical Engineering Report, GeoPacific Engineering, Inc., September 14, 2017

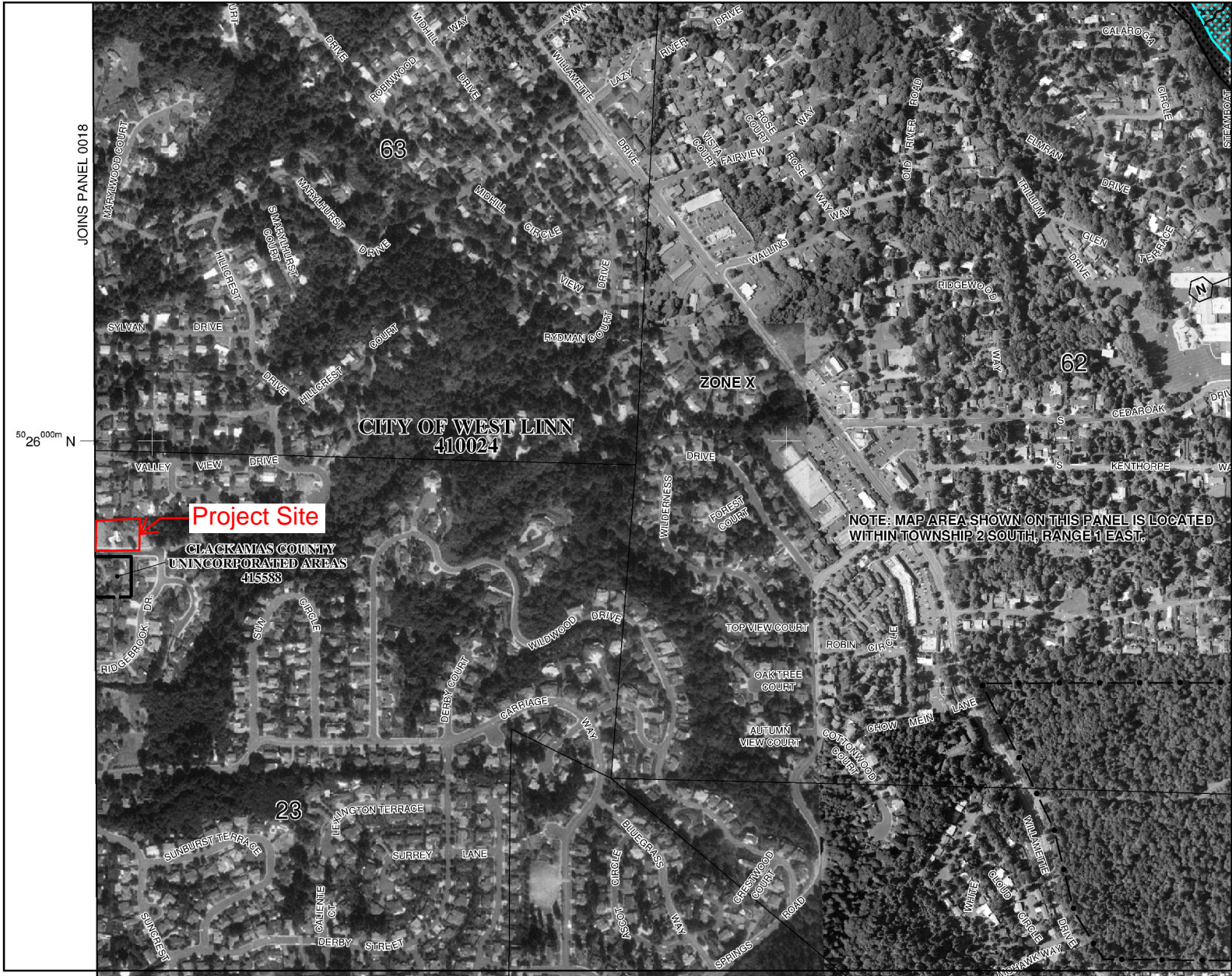
Operations and Maintenance

- To be included in Final Stormwater Report

REFERENCES

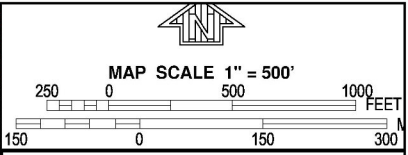
1. City of West Linn's Public Works Design Standards Issued in 2010
2. City of Portland's Stormwater Management Manual Issued in January 2014
3. Soil Survey of Clackamas County Area. National Resource Conservation Service
4. Urban Hydrology for Small Watersheds – TR-55 Issued in June 1986 – U.S. Department of Agriculture, Natural Resources Conservation Service, Conservation Engineering Division

EXHIBITS



JOINS PANEL 0018

50' 26" 000m N



N F I P

PANEL 0019D

FIRM
FLOOD INSURANCE RATE MAP
CLACKAMAS COUNTY,
OREGON
AND INCORPORATED AREAS

PANEL 19 OF 1175
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLACKAMAS COUNTY	415585	0019	D
LANE COUNTY, CITY OF	410018	0019	D
WEST LINN, CITY OF	410024	0019	D

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

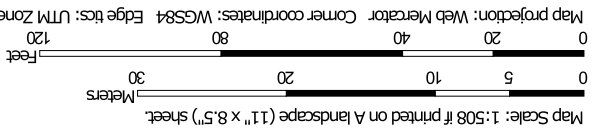
MAP NUMBER
41005C0019D
EFFECTIVE DATE
JUNE 17, 2008

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 2 SOUTH, RANGE 1 EAST.

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



526900 526910 526920 526930 526940 526950 526960 526970 526980 526990 527000
122° 39' 23" W 122° 39' 18" W



45° 23' 7" N 45° 23' 9" N
5025830 5025840 5025850 5025860 5025870 5025880 5025890 5025900

Hydrologic Soil Group—Clackamas County Area, Oregon

Soil Map may not be valid at this scale.


Ridgebrook Dr

23C

23D

MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





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

Soil Rating Lines


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

Soil Rating Points






 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Clackamas County Area, Oregon
 Survey Area Data: Version 11, Sep 16, 2016

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

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

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
23C	Cornelius silt loam, 8 to 15 percent slopes	C	0.2	22.2%
23D	Cornelius silt loam, 15 to 30 percent slopes	C	0.8	77.8%
Totals for Area of Interest			1.0	100.0%

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Table 2-2a Runoff curve numbers for urban areas ^{1/}

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

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

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

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

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

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

TAX LOT 506
MAP 2-1E-23BD

LOT 7
TAX LOT 507
MAP 2-1E-23BD

RAMP

6' WOOD FENCE

3' CHAIN LINK FENCE

6' WOOD FENCE

PARCEL 1
PARTITION PLAT
NO. 1997-63

TC = 29 MIN

A PORTION OF PARCEL 2
PARTITION PLAT
NO. 1997-63

EDGE OF BRUSH

LOT 1:
 EXISTING IMPERVIOUS AREA = 0 SF
 EXISTING PERVIOUS AREA = 10,018 SF
 TOTAL EXISTING AREA = 10,018 SF

LOT 2: UNCHANGED THROUGH DEVELOPMENT
 EXISTING IMPERVIOUS AREA = 4,305 SF
 EXISTING PERVIOUS AREA = 8,758 SF
 TOTAL EXISTING AREA = 13,063 SF

LOT 3:
 EXISTING IMPERVIOUS AREA = 0 SF
 EXISTING PERVIOUS AREA = 10,838 SF
 TOTAL EXISTING AREA = 10,838 SF

TIME OF CONCENTRATION = 29 MINUTES

➔ SURFACE RUN-OFF FLOW ARROW

STM CI
 RIM 636.35'
 IE 12" PVC 628.25
 IE 12" PVC 627.85
 SUMP 627.35

RIDGEBROOK DRIVE

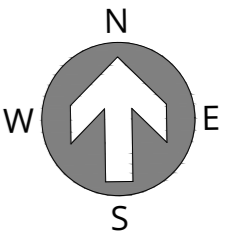
SUNCREST DRIVE

TAX LOT 6500
MAP 2-1E-23BD

ST CI
 RIM 656.11
 IE 12" PVC 651.21
 SUMP 649.81

ST CI
 RIM 651.90
 IE 12" PVC SW. 646.60
 IE 12" PVC E. 646.25
 SUMP 645.40

LOT 9
 "ALDERBROOK PARK ESTATES"
 TAX LOT 6619
 MAP 2-1E-23BD



SCALE: 1" = 30'
 0 30'

SUNCREST PARTITION

KATHLEEN DAILEY

EXISTING CONDITIONS

11/06/2017

3J CONSULTING

CIVIL ENGINEERING | WATER RESOURCES | LAND USE PLANNING

TAX LOT 506
MAP 2-1E-23BD

LOT 7
TAX LOT 507
MAP 2-1E-23BD

LOT 1:
*PROPOSED IMPERVIOUS AREA = 3,000 SF
PROPOSED PERVIOUS AREA = 7,018 SF
TOTAL PROPOSED AREA = 10,018 SF

LOT 2: UNCHANGED THROUGH DEVELOPMENT
EXISTING IMPERVIOUS AREA = 4,305 SF
EXISTING PERVIOUS AREA = 8,758 SF
TOTAL EXISTING AREA = 13,063 SF

LOT 3:
*PROPOSED IMPERVIOUS AREA = 3,000 SF
PROPOSED PERVIOUS AREA = 7,838 SF
TOTAL PROPOSED AREA = 10,838 SF

TIME OF CONCENTRATION = 5 MINUTES
*ASSUMED 3,000 SF FOR LOTS 1&3 AND LOT 2
IMPERVIOUS AREA WILL REMAIN

RAMP
6' WOOD FENCE

3' CHAIN LINK FENCE

6' WOOD FENCE

LOT 1

EDGE OF BRUSH

LOT 2

LOT 3

SUNCREST DRIVE

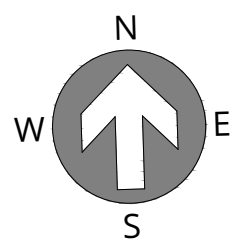
RIDGEBROOK DRIVE

STM CI
RIM 636.35'
IE 12" PVC 628.25
IE 12" PVC 627.85
SUMP 627.35

ST CI
RIM 651.90
IE 12" PVC SW. 646.60
IE 12" PVC E. 646.25
SUMP 645.40

TAX LOT 6500
MAP 2-1E-23BD

LOT 9
"ALDERBROOK PARK ESTATES"
TAX LOT 6619
MAP 2-1E-23BD



SCALE: 1" = 30'
0 30'

SUNCREST PARTITION

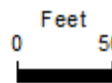
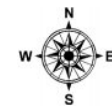
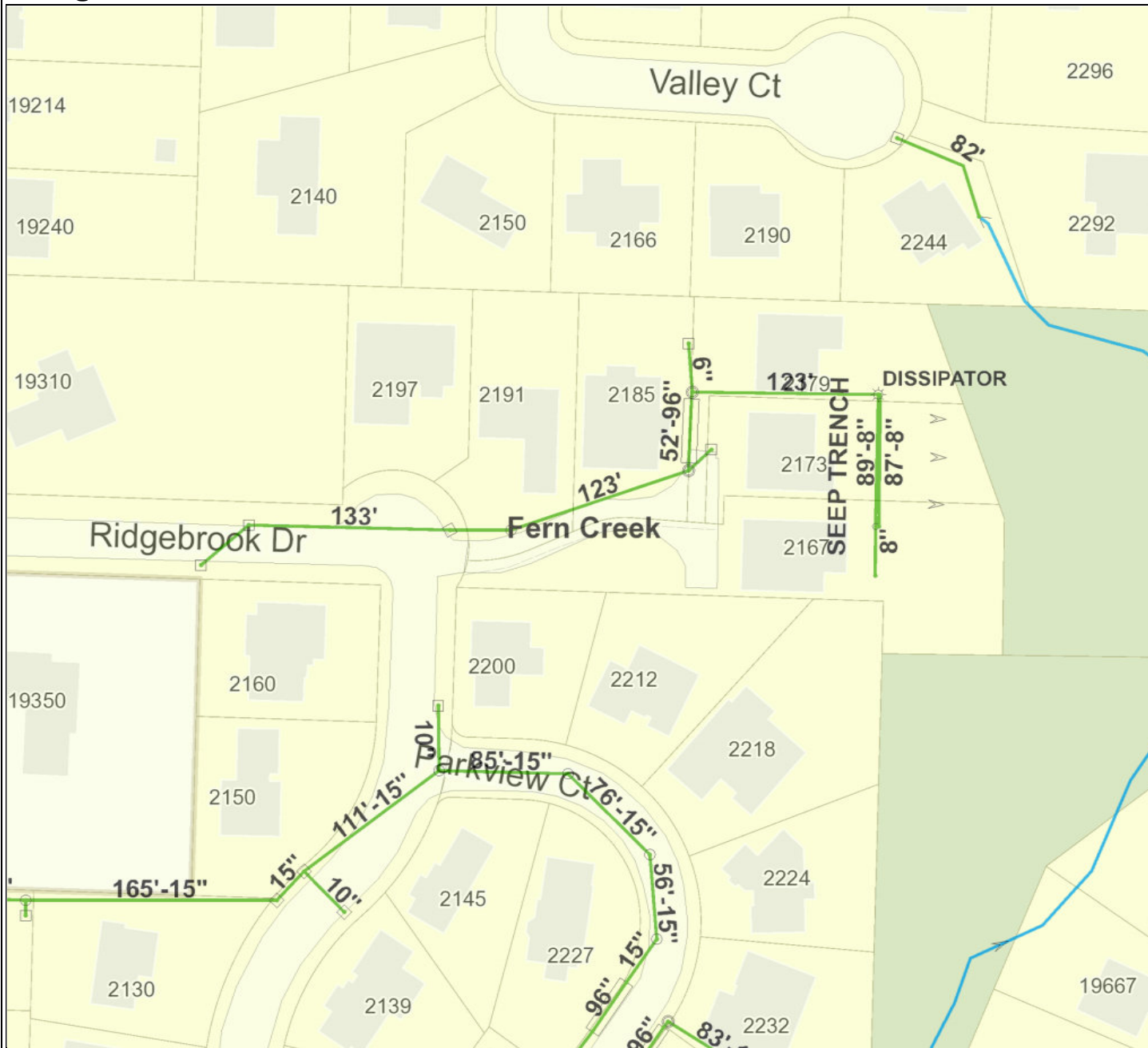
KATHLEEN DAILEY

POST DEVELOPED CONDITIONS

11/06/2017

3J CONSULTING
CIVIL ENGINEERING | WATER RESOURCES | LAND USE PLANNING

Ridgebrook Dr Storm



Scale 1:1,200 - 1 in = 100 ft
Scale is based on 8-1/2 x 11 paper size



Map created by: public
Date Created: 06-Nov-17 09:42 AM

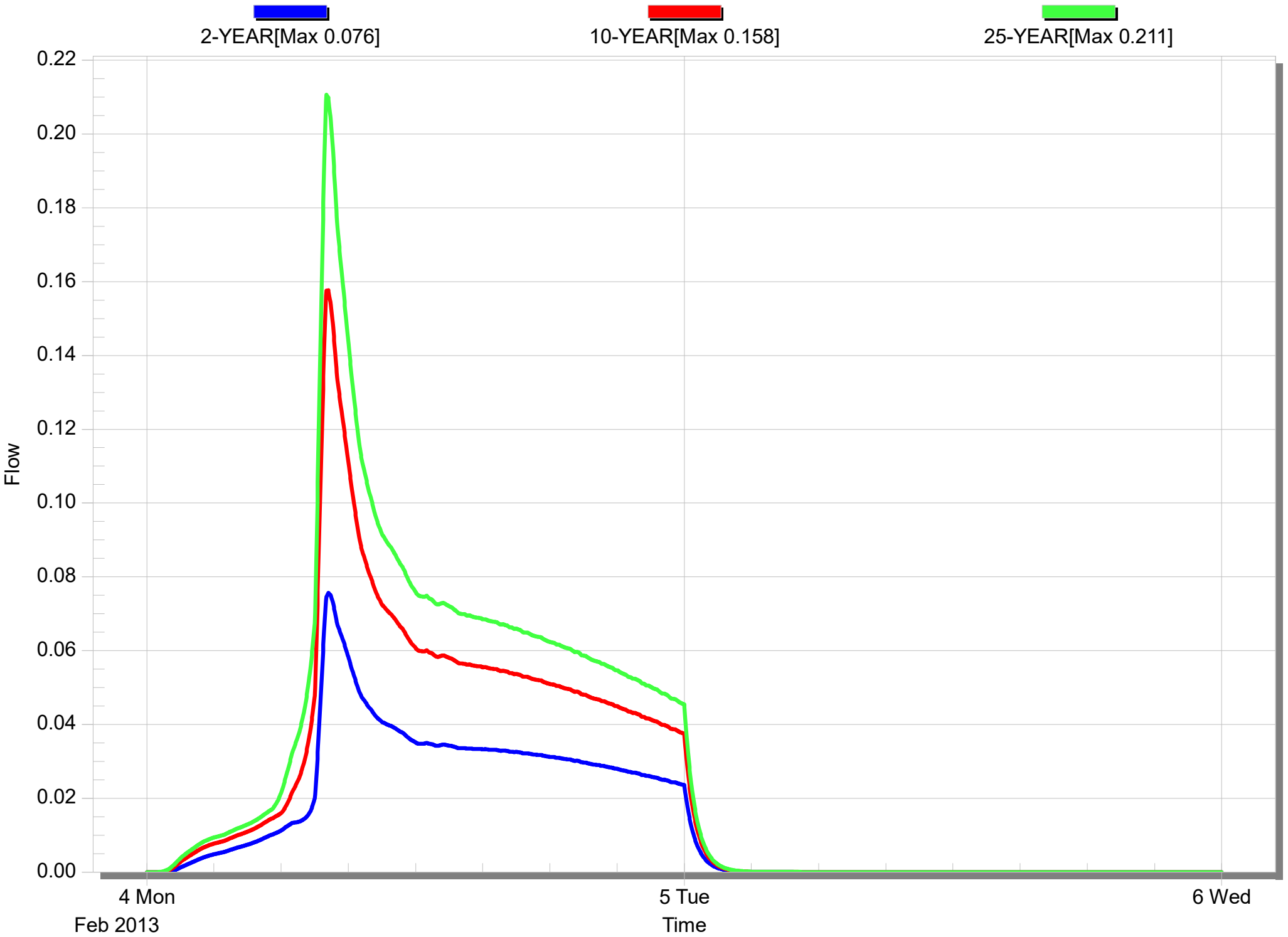
WEST LINN GIS

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.

DRAWINGS

HYDROGRAPHS

Node - EXIST

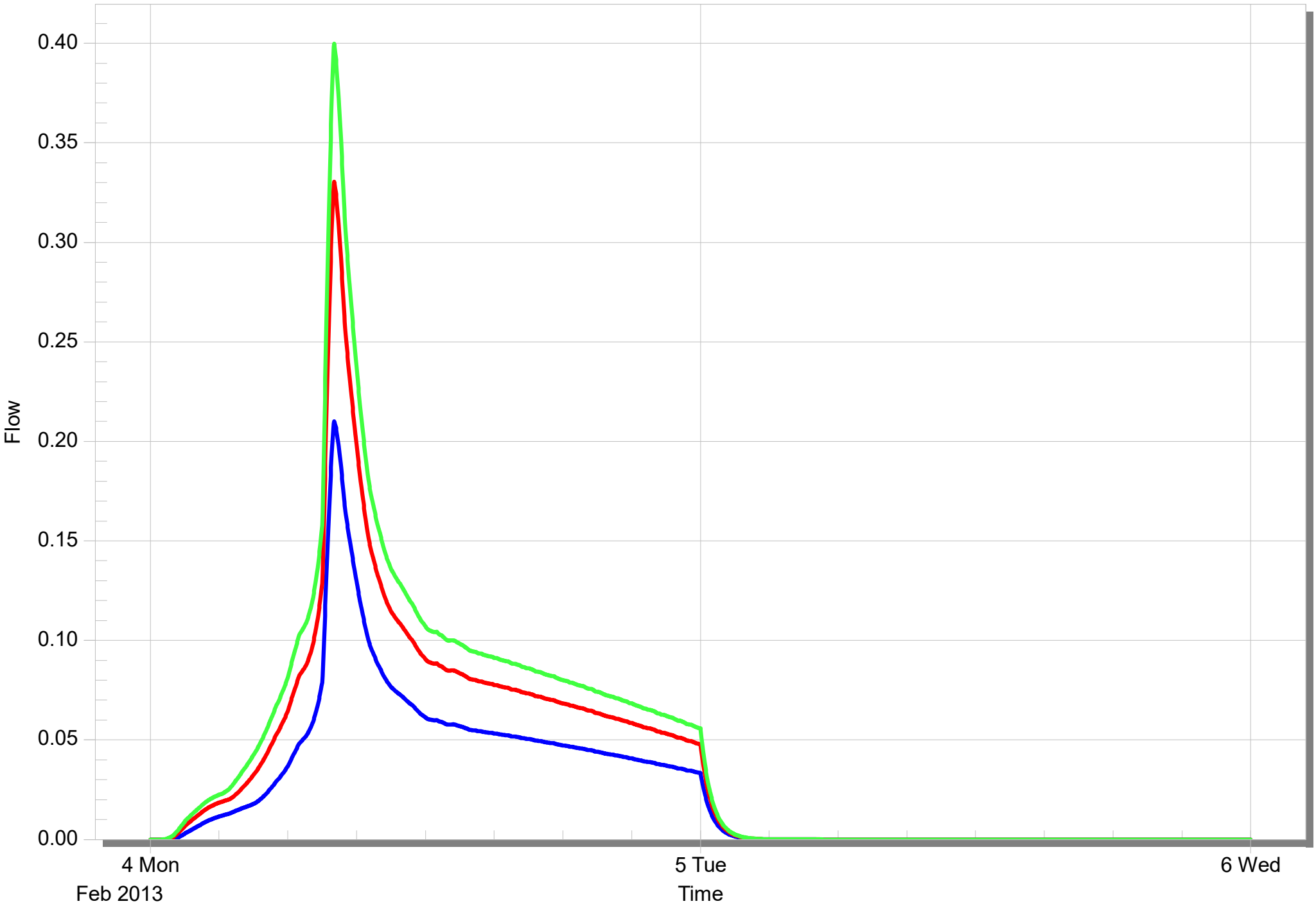


Node - POST

2-YEAR[Max 0.210]

10-YEAR[Max 0.331]

25-YEAR[Max 0.400]



CALCULATIONS



TIME OF CONCENTRATION

PROJECT NO. 17414	BY kef	DATE 11/6/2017
-------------------	--------	----------------

SHEET FLOW			
INPUT	VALUE	VALUE	VALUE
Surface Description	Type 9 Woods (light_underbrush)	Type 9 Woods (light_underbrush)	Type 5 Grass (short prairie)
Manning's "n"	0.4	0.4	0.15
Flow Length, L	273.01 ft	0 ft	0 ft
2-Yr 24 Hour Rainfall, P ₂	2.5 in	2.5 in	2.5 in
Land Slope, s	0.100 ft/ft	0 ft/ft	0 ft/ft
OUTPUT			
Travel Time	0.48 hr	0.00 hr	0.00 hr
SHALLOW CONCENTRATED FLOW			
INPUT	VALUE	VALUE	VALUE
Surface Description	Unpaved	Unpaved	Unpaved
Flow Length, L	0 ft	0 ft	0 ft
Watercourse Slope*, s	0 ft/ft	0 ft/ft	0 ft/ft
OUTPUT			
Average Velocity, V	0.00 ft/s	0.00 ft/s	0.00 ft/s
Travel Time	0.000 hr	0.000 hr	0.000 hr
CHANNEL FLOW			
INPUT	VALUE	VALUE	VALUE
Cross Sectional Flow Area, a	0 ft ²	0 ft ²	15.05 ft ²
Wetted Perimeter, P _w	0 ft	0 ft	7.69 ft
Channel Slope, s	0 ft/ft	0 ft/ft	0.00 ft/ft
Manning's "n"	0.24	0.24	0.24
Flow Length, L	0 ft	0 ft	0 ft
OUTPUT			
Average Velocity	0.00 ft/s	0.00 ft/s	0.53 ft/s
Hydraulic Radius, r = a / P _w	1.00 ft	1.00 ft	1.96 ft
Travel Time	0.00 hr	0.00 hr	0.00 hr
Watershed or Subarea T _c =	0.48 hr	0.00 hr	0.00 hr
Watershed or Subarea T _c =	29 minutes	0 minutes	0 minutes



Presumptive Approach Calculator ver. 1.2

Catchment Data

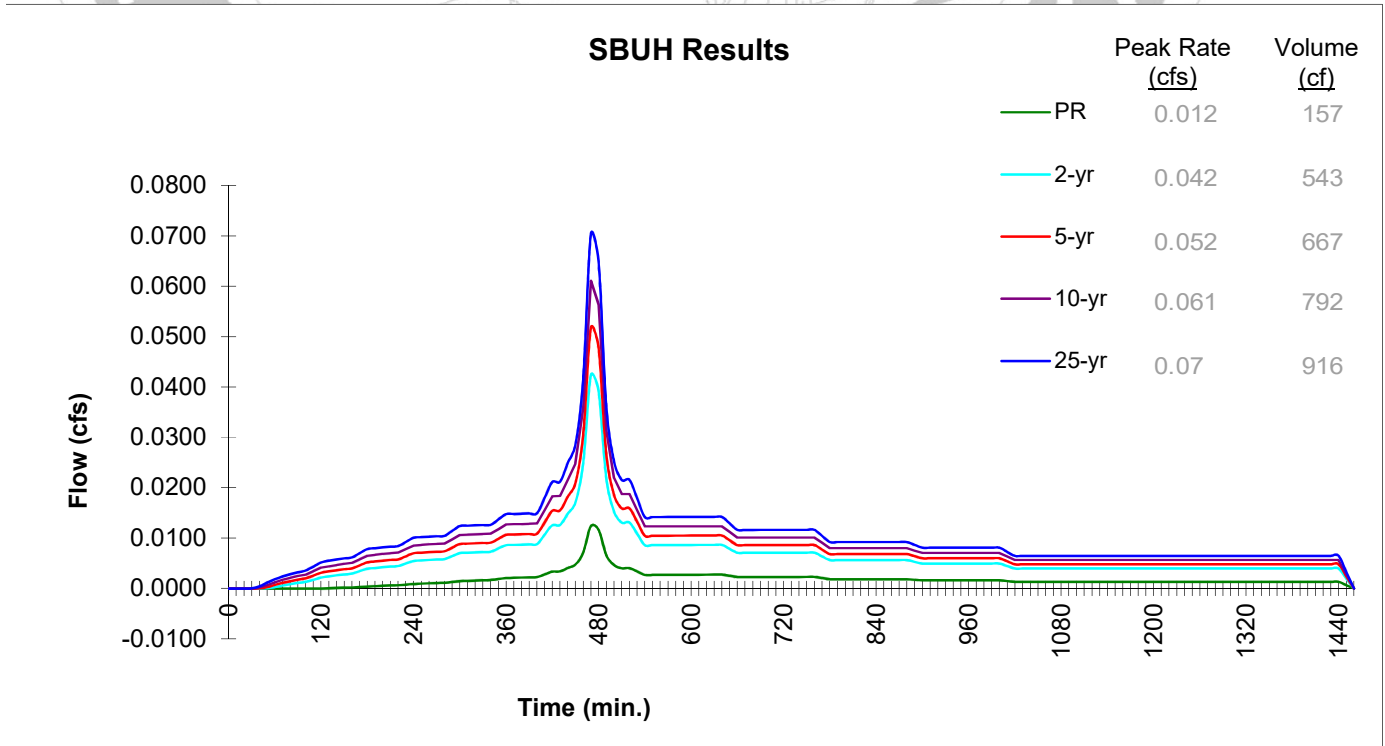
Project Name: **Suncrest Partition**
 Project Address: **19310 Suncrest Dr**
West Linn, OR
 Designer: **Kathleen Freeman, PE**
 Company: **3J Consulting, Inc**

Catchment ID: **Post Lots**
 Date: **11/14/17**
 Permit Number: **N/A**

Run Time 11/14/2017 8:14:01 AM

Drainage Catchment Information		
Catchment ID	Post Lots	
	Catchment Area	
Impervious Area	3,000	SF
Impervious Area	0.07	ac
Impervious Area Curve Number, CN_{imp}	98	
Time of Concentration, T_c , minutes	5	min.
Site Soils & Infiltration Testing Data		
Infiltration Testing Procedure:	Open Pit Falling Head	
Native Soil Field Tested Infiltration Rate (I_{test}):	0.5	in/hr
Bottom of Facility Meets Required Separation From High Groundwater Per BES SWMM Section 1.4:	Yes	
Correction Factor Component		
CF_{test} (ranges from 1 to 3)	2	
Design Infiltration Rates		
I_{dsgn} for Native (I_{test} / CF_{test}):	0.25	in/hr Design infiltration rate < 0.5 in/hr
I_{dsgn} for Imported Growing Medium:	2.00	in/hr

Execute SBUH Calculations





Presumptive Approach Calculator ver. 1.2

Catchment ID: **Post Lots**

Run Time 11/14/2017 8:14:01 AM

Project Name: **Suncrest Partition**

Catchment ID: **Post Lots**

Date: **11/14/2017**

Instructions:

1. Identify which Stormwater Hierarchy Category the facility.
2. Select Facility Type.
3. Identify facility shape of surface facility to more accurately estimate surface volume, except for Swales and sloped planters that use the PAC Sloped Facility Worksheet to enter data.
4. Select type of facility configuration.
5. Complete data entry for all highlighted cells.

Catchment facility will meet Hierarchy Category: **1**

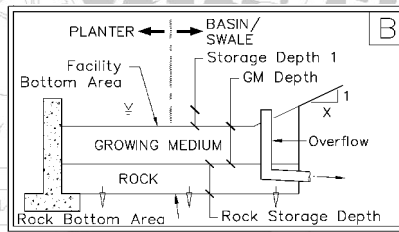
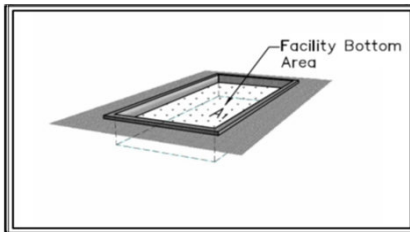
Goal Summary:

Hierarchy Category	SWMM Requirement	RESULTS box below needs to display...	
		Pollution Reduction as a	10-yr (aka disposal) as a
1	On-site infiltration with a surface infiltration facility.	PASS	PASS

Facility Type = **Planter (Flat)**

Facility Shape: **Rectangle/Square**

Facility Configuration: **B**



Calculation Guide
Max. Rock Stor.
Bottom Area
300 SF

DATA FOR ABOVE GRADE STORAGE COMPONENT

Facility Bottom Area = **300** sf
 Bottom Width = **10.0** ft
 Facility Side Slope = **0** to 1
 Storage Depth 1 = **18** in
 Growing Medium Depth = **18** in
 Freeboard Depth = **N/A** in

BELOW GRADE STORAGE

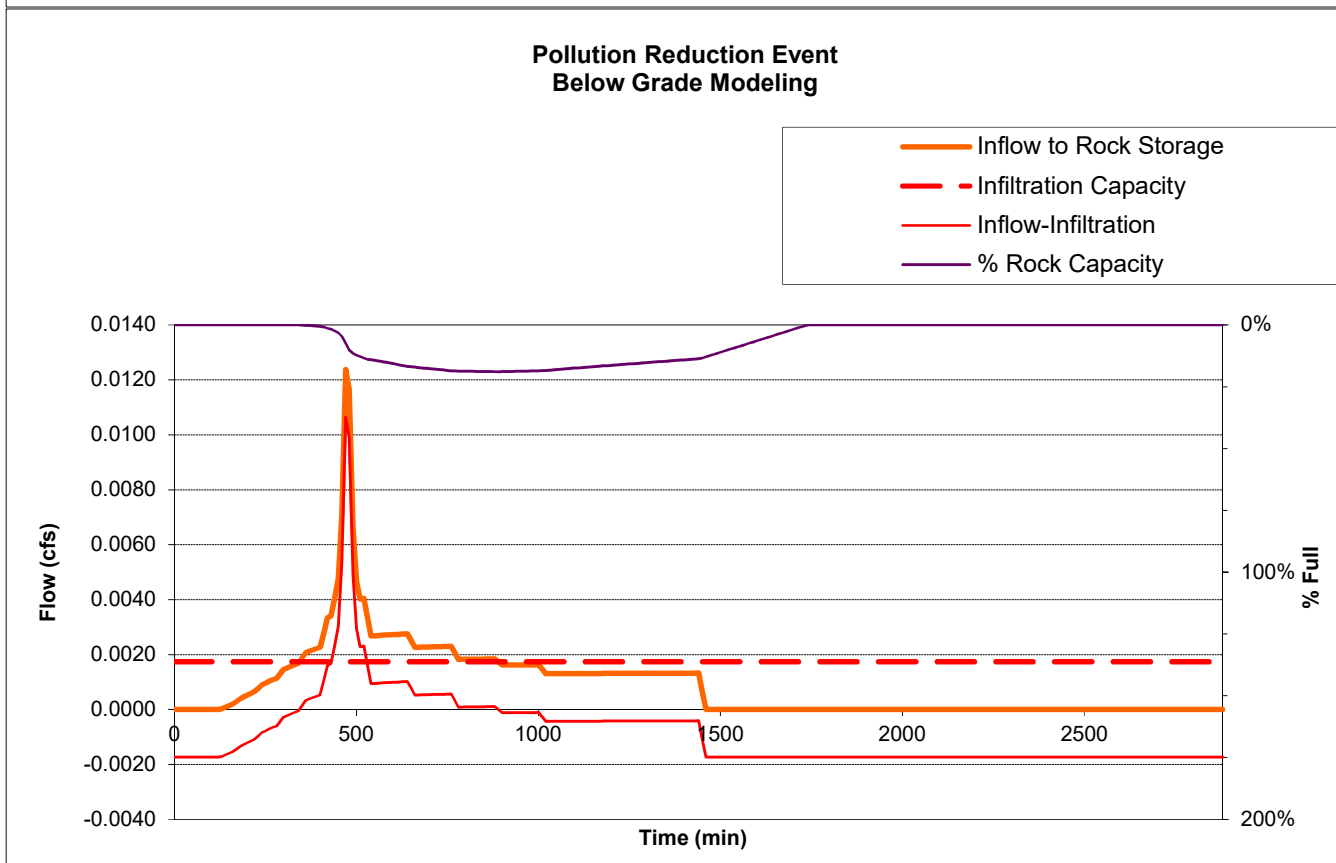
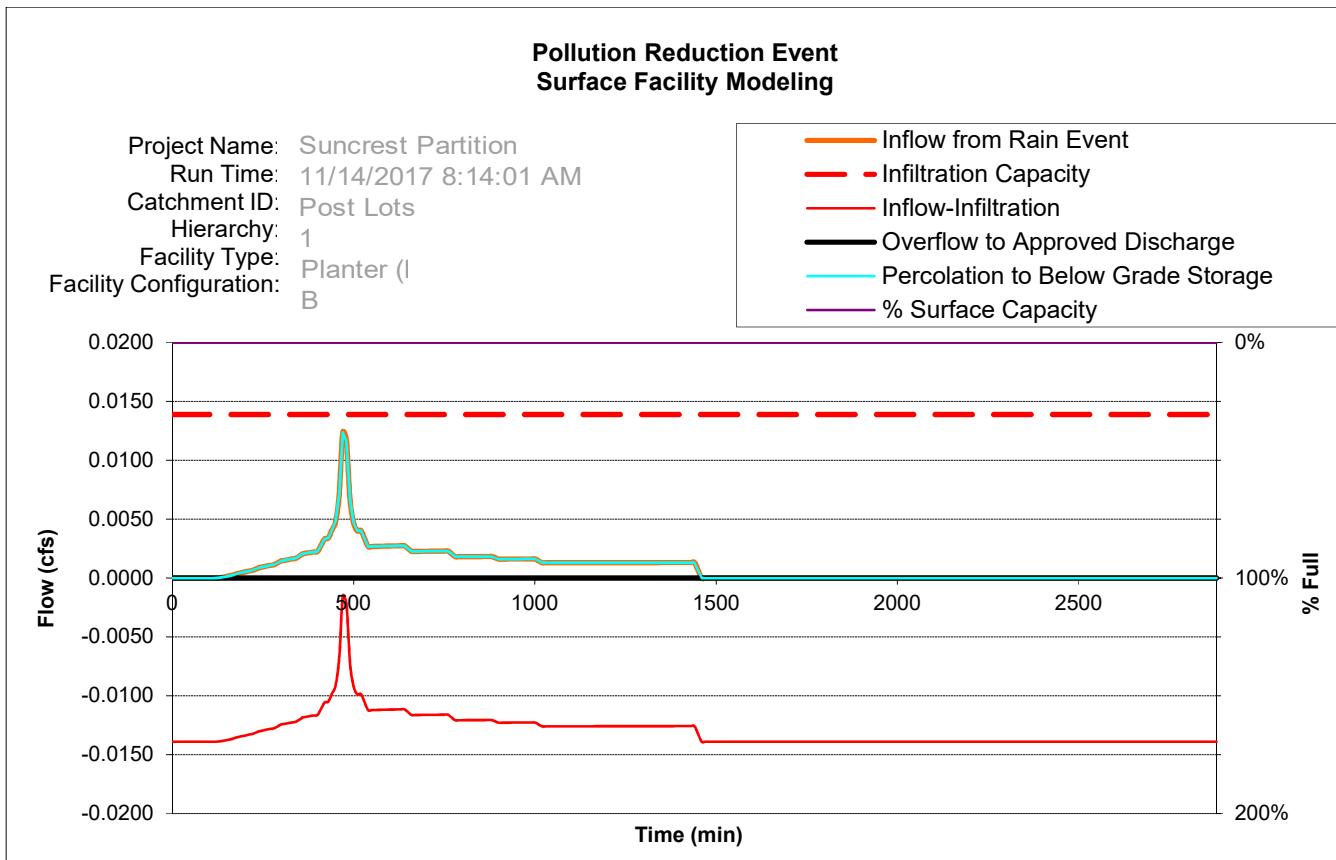
Rock Storage Bottom Area = **300** sf
 Rock Storage Depth = **30** in
 Rock Void Ratio = **0.3**

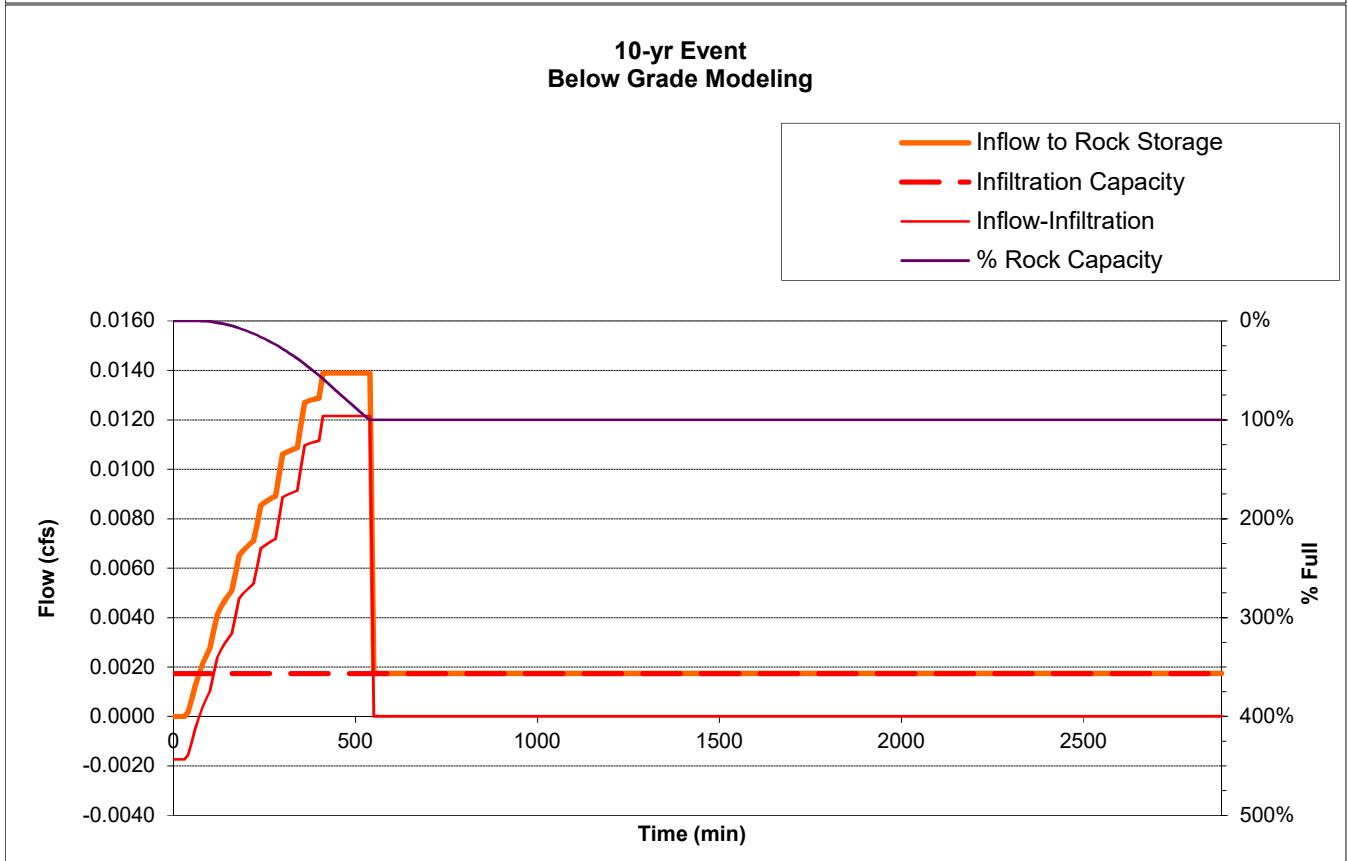
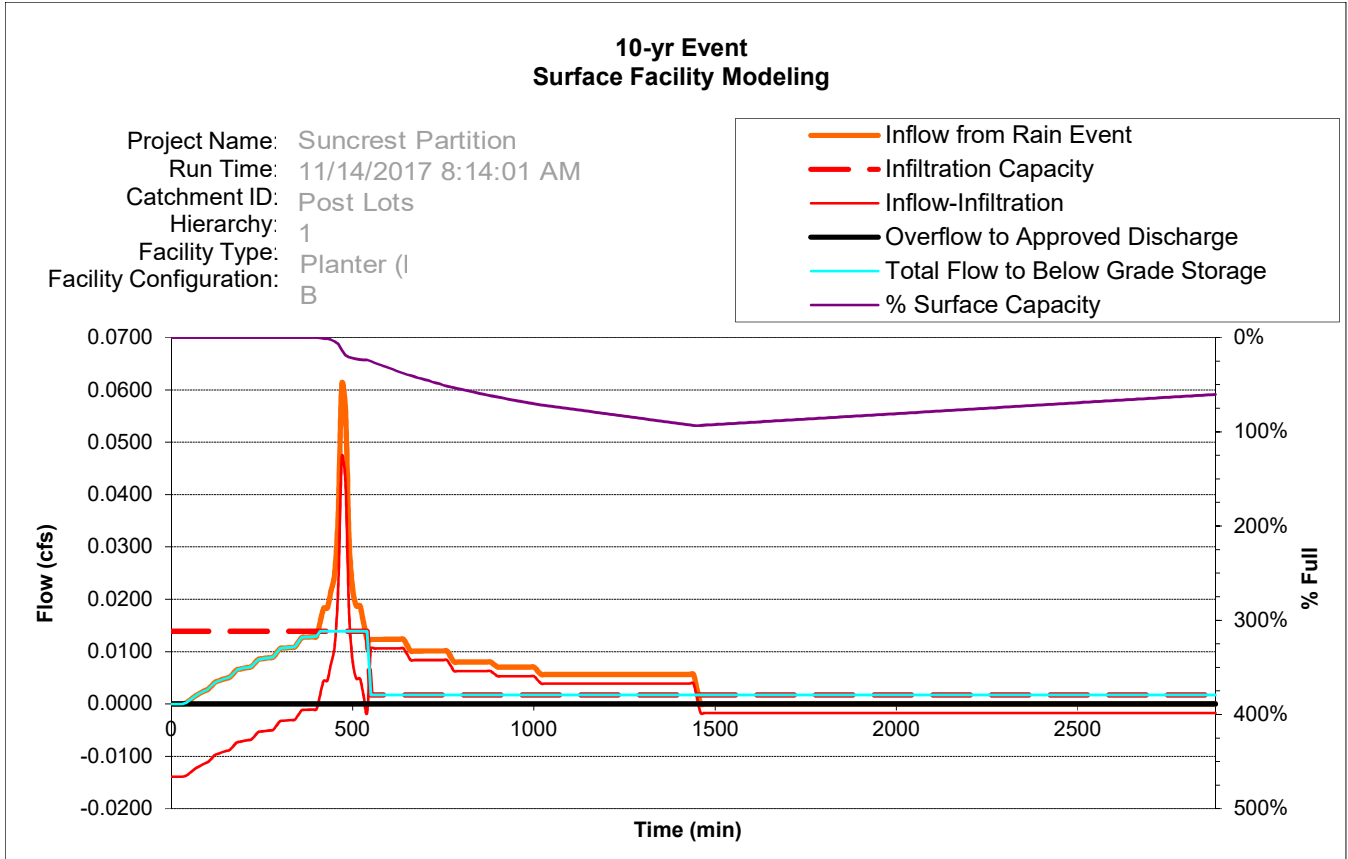
Surface Capacity at Depth 1 = **450** cf
 GM Design Infiltration Rate = **2.00** in/hr
 Infiltration Capacity = **0.014** cfs

Rock Storage Capacity = **225** cf
 Native Design Infiltration Rate = **0.25** in/hr
 Infiltration Capacity = **0.002** cfs

RESULTS		Overflow Volume	
Pollution Reduction	PASS	0 CF	0% Surf. Cap. Used
			19% Rock Cap. Used
10-yr	PASS	0 CF	93% Surf. Cap. Used
			100% Rock Cap. Used

FACILITY FACTS	
Total Facility Area Including Freeboard =	300 SF
Sizing Ratio (Total Facility Area / Catchment Area) =	0.100





GEOTECHNICAL REPORT



Real-World Geotechnical Solutions
Investigation • Design • Construction Support

September 14, 2017
Project No. 17-4706

Kathleen Dailey
19310 Suncrest Drive
West Linn, Oregon 97068

CC: Andrew Tull, 3J Consulting, Inc. via e-mail: Andrew.tull@3j-consulting.com

**SUBJECT: GEOTECHNICAL ENGINEERING REPORT AND RESULTS OF
INFILTRATION TESTING
19310 SUNCREST DRIVE
WEST LINN, OREGON**

This report presents the results of a geotechnical engineering study conducted by GeoPacific Engineering, Inc. (GeoPacific) for the above-referenced project. The purpose of our investigation was to evaluate subsurface conditions at the site and to provide geotechnical recommendations for site development. This geotechnical study was performed in accordance with GeoPacific Proposal No. P-6171, dated July 25, 2017, and your subsequent authorization of our proposal and *General Conditions for Geotechnical Services*.

SITE DESCRIPTION AND PROPOSED DEVELOPMENT

The subject site is located on the northeast corner of Suncrest Drive and Ridgebrook Drive in the City of West Linn, Clackamas County, Oregon. The site is approximately 1 acre in size and topography slopes eastward at approximately 14 percent grade. A single-family home exists on the center of the lot with large to medium shrubs, landscaped areas, and mature trees throughout the property.

Preliminary site plans indicate the proposed development will consist of a 4 lot subdivision for single family homes, stormwater facilities, and associated underground utilities. A grading plan has not been provided for our review, however, we anticipate cuts and fills will be minimal.

REGIONAL AND LOCAL GEOLOGIC SETTING

The project site is located on the southwestern margin of the Portland West Hills, in the northwest portion of the Tualatin Basin. The Tualatin Basin is an east/west trending structural feature produced by broad regional down warping of the area. Regionally, the subject site lies within the Willamette Valley/Puget Sound lowland, a broad structural depression situated between the Coast Range on the west and the Cascade Range on the east. A series of discontinuous faults subdivide the Willamette Valley into a mosaic of fault-bounded, structural blocks (Yeats et al., 1996). Uplifted structural blocks form bedrock highlands, while down-warped structural blocks form sedimentary basins.

The site is underlain by the Quaternary age (last 1.6 million years) loess, a windblown silt deposit that mantles uplands in the Tualatin Basin (Madin, 1990). The loess, included as a member of the Willamette Formation, generally consists of massive silt with localized buried paleosols indicating numerous depositional episodes which most likely followed catastrophic flooding events in the Willamette Valley, the last of which occurred about 10,000 years ago.

The loess is underlain by the Columbia River Basalt Formation (Madin, 1990). The Miocene aged (about 14.5 to 16.5 million years ago) Columbia River Basalts are a thick sequence of lava flows which form the crystalline basement of the Tualatin Valley. The basalts are composed of dense, finely crystalline rock that is commonly fractured along blocky and columnar vertical joints. Individual basalt flow units typically range from 25 to 125 feet thick and interflow zones are typically vesicular, scoriaceous, brecciated, and sometimes include sedimentary rocks.

REGIONAL SEISMIC SETTING

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

Portland Hills Fault Zone

The Portland Hills Fault Zone is a series of NW-trending faults that include the central Portland Hills Fault, the western Oatfield Fault, and the eastern East Bank Fault. These faults occur in a northwest-trending zone that varies in width between 3.5 and 5.0 miles. The combined three faults vertically displace the Columbia River Basalt by 1,130 feet and appear to control thickness changes in late Pleistocene (approx. 780,000 years) sediment (Madin, 1990). The Portland Hills Fault occurs along the Willamette River at the base of the Portland Hills, and is about 3.5 miles northeast of the site. The Oatfield Fault occurs along the western side of the Portland Hills, and is about 2.2 miles northeast of the site. The accuracy of the fault mapping is stated to be within 500 meters (Wong, et al., 2000). No historical seismicity is correlated with the mapped portion of the Portland Hills Fault Zone, but in 1991 a M3.5 earthquake occurred on a NW-trending shear plane located 1.3 miles east of the fault (Yelin, 1992). Although there is no definitive evidence of recent activity, the Portland Hills Fault Zone is assumed to be potentially active (Geomatrix Consultants, 1995).

Gales Creek-Newberg-Mt. Angel Structural Zone

The Gales Creek-Newberg-Mt. Angel Structural Zone is a 50-mile-long zone of discontinuous, NW-trending faults that lies about 16.3 miles southwest of the subject site. These faults are recognized in the subsurface by vertical separation of the Columbia River Basalt and offset seismic reflectors in the overlying basin sediment (Yeats et al., 1996; Werner et al., 1992). A geologic reconnaissance and photogeologic analysis study conducted for the Scoggins Dam site in the Tualatin Basin revealed no evidence of deformed geomorphic surfaces along the structural zone (Unruh et al., 1994). No seismicity has been recorded on the Gales Creek Fault or Newberg Fault (the fault closest to the subject site); however, these faults are considered to be potentially active because they may connect with the seismically active Mount Angel Fault and the rupture plane of the 1993 M5.6 Scotts Mills earthquake (Werner et al. 1992; Geomatrix Consultants, 1995).

Cascadia Subduction Zone

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

FIELD EXPLORATION

Our site-specific exploration for this report was conducted on September 5, 2017. A total of 4 exploratory test pits were excavated with a small trackhoe to depths ranging between 5 and 10 feet at the approximate locations shown on Figure 2. Test pit locations were located in the field by pacing or taping distances from apparent property corners and other site features shown on the plans provided. As such, the locations of the explorations should be considered approximate.

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

Table 1. Rock Hardness Classification Chart

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

SUBSURFACE CONDITIONS

Results of the field exploration program indicate the site is underlain by undocumented fill, buried topsoil horizon, soils belonging to the Willamette Formation, and Basalt. The observed soil and groundwater conditions are summarized below.

Soil

Undocumented Fill – Undocumented fill was encountered directly at the ground surface in test pits TP-1 through TP-4. In test pits TP-1, TP-3, and TP-4, the fill generally consisted of medium stiff, silt (ML) with trace gravel that extended to a depth of 1 to 2 feet. In test pit TP-2, the fill consisted of medium dense to very dense silty gravel (GM). The fill contained abundant amounts of inorganic debris. In test pit TP-2, the undocumented fill extended beyond the maximum depth of exploration (5 feet) and was terminated at 5 feet below ground surface due to encountering a drain field. Other areas of undocumented fill may be present outside our explorations – especially in the vicinity of the existing structures and driveway.

Buried Topsoil – The undocumented fill in test pits TP-1, TP-3, and TP-4 was directly underlain by a buried topsoil horizon generally consisting of light brown, low to moderately organic silt (ML-OL). The buried topsoil horizon was loose, contained trace fine roots and extended to a depth of about 1 to 2.75 feet below the ground surface.

Willamette Formation - Loess – Underlying the buried topsoil horizon in test pits TP-1, TP-3, and TP-4 was silty clay (CL) loess belonging to the Willamette Formation. These soils were typically very stiff and gray to brown in color with subtle orange and gray mottling and black staining. In test pit TP-1 the loess extended beyond the maximum depth of exploration (10 feet). In test pits TP-3 and TP-4, the loess extended to the maximum depth of exploration, (7.5 feet) when refusal was hit on R2 (soft) basalt.

Groundwater

On September 5, 2017, neither static groundwater nor groundwater seepage was encountered in test pits to a depth of 10 feet below the ground surface. Regional geologic mapping indicates static groundwater is present at a depth of 310 to 320 feet below the ground surface (Snyder, 2008). Experience has shown that temporary perched groundwater conditions often occur over fine-grained native deposits such as those beneath the site, particularly during the wet season. It is anticipated that groundwater conditions will vary depending on the season, local subsurface conditions, changes in site utilization, and other factors.

INFILTRATION TESTING

Soil infiltration testing was performed using the open hole infiltration method in test pit TP-1 at depths of 3 and 8 feet. The soil was pre-saturated for a period of over 4 hours. The water level was measured to the nearest tenth of an inch every fifteen minutes to half hour with reference to the ground surface. The above reported rates do not incorporate a factor of safety. An appropriate factor of safety should be applied by the system designer. Table 2 presents the results of our falling head infiltration testing.

Table 2. Summary of Infiltration Test Results

Test Pit	Depth (feet)	Soil Type	Infiltration Rate (in/hr)	Hydraulic Head Range (inches)
TP-1	3	Silty Clay (CL)	0.5	8-18
	8	Silty Clay (CL)	0.2	9-19

CONCLUSIONS AND RECOMMENDATIONS

Results of this study indicate that the proposed development is geotechnically feasible, provided that the recommendations of this report are incorporated into the design and construction phases of the project. The primary geotechnical constraint to development is the presence of undocumented fill and low permeable soils. Test pits indicate 1 to in excess of 5+ feet of undocumented fill present on the site. Our explorations indicate the undocumented fill and soils on site are medium stiff to very stiff and are suitable for reuse as engineered fill. Practical refusal was experienced on basalt at depths of 6.5 and 7.5 feet below the ground surface in test pits TP-3 and TP-4, respectively, with the medium sized backhoe utilized for our subsurface explorations. Use of heavy excavation equipment and rock chippers may be needed to excavate below these depths.

Site Preparation

Areas of proposed buildings, streets, and areas to receive fill should be cleared of vegetation and any organic and inorganic debris. Existing fill should be completely removed. Explorations indicate between 1 to in excess of 5+ feet of fill is present in the vicinity of test pits TP-1 through TP-4. Existing buried structures such as septic tanks, should be demolished and any cavities structurally backfilled. Inorganic debris should be removed from the site.

Organic-rich topsoil should then be stripped from native soil areas of the site. The estimated depth range necessary for removal of topsoil in cut and fill areas is approximately 9 to 12 inches, respectively. Deeper removals may be necessary in highly treed areas of the site. The final depth of soil removal will be determined on the basis of a site inspection after the stripping/excavation has been performed. Stripped topsoil should preferably be removed from the site due to the high density of the proposed development. Any remaining topsoil should be stockpiled only in designated areas and stripping operations should be observed and documented by the geotechnical engineer or his representative.

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

Engineered Fill

In general, we anticipate that soils from planned cuts and utility trench excavations will be suitable for use as engineered fill provided they are adequately moisture conditioned prior to compacting. Imported fill material should be reviewed by GeoPacific prior to being imported to the site. Oversize material greater than 6 inches in size should not be used within 3 feet of foundation footings, and material greater than 12 inches in diameter should not be used in engineered fill.

Engineered fill should be compacted in horizontal lifts not exceeding 8 inches using standard compaction equipment. We recommend that engineered fill be compacted to at least 95 percent of the maximum dry density determined by ASTM D698 (Standard Proctor). On-site soils may be wet or dry of optimum; therefore, we anticipate that moisture conditioning of native soil will be necessary for compaction operations.

Proper test frequency and earthwork documentation usually requires daily observation and testing during stripping, rough grading, and placement of engineered fill. Field density testing should generally conform to ASTM D2922 and D3017, or D1556. Engineered fill should be periodically observed and tested by the project geotechnical engineer or his representative. Typically, one density test is performed for at least every 2 vertical feet of fill placed or every 500 cubic yards, whichever requires more testing. Because testing is performed on an on-call basis, we recommend that the earthwork contractor be held contractually responsible for test scheduling and frequency.

Spread Foundations

The proposed residential structures may be supported on shallow foundations bearing on competent undisturbed, native soils and/or engineered fill, appropriately designed and constructed as recommended in this report. Foundation design, construction, and setback requirements should conform to the applicable building code at the time of construction. For maximization of bearing strength and protection against frost heave, spread footings should be embedded at a minimum depth of 18 inches below exterior grade. The recommended minimum widths for continuous footings supporting wood-framed walls without masonry are 12 inches for single-story, 15 inches for two-story, and 18 inches for three-story homes. Minimum foundation reinforcement should consist of one No. 4 bar at the top of stem wall, and one No. 4 bar at the bottom of the footing. Concrete slab-on-grade reinforcement should consist of No. 4 bars placed on 24-inch centers in a grid pattern.

The anticipated allowable soil bearing pressure is 1,500 lbs/ft² for footings bearing on competent, native soil and/or engineered fill. A maximum chimney and column load of 50 kips is recommended for the site. The recommended maximum allowable bearing pressure may be increased by 1/3 for short-term transient conditions such as wind and seismic loading. For heavier loads, the geotechnical engineer should be consulted. The coefficient of friction between on-site soil and poured-in-place concrete may be taken as 0.42, which includes no factor of safety. The maximum anticipated total and differential footing movements (generally from soil expansion and/or settlement) are 1 inch and ¾ inch over a span of 20 feet, respectively. We anticipate that the majority of the estimated settlement will occur during construction, as loads are applied. Excavations near structural footings should not extend within a 1H:1V plane projected downward from the bottom edge of footings.

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

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

Footing and Roof Drains

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

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

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

Where necessary, perimeter footing drains should consist of 3 or 4-inch diameter, perforated plastic pipe embedded in a minimum of 1 ft³ per lineal foot of clean, free-draining drain rock. The drain pipe and surrounding drain rock should be wrapped in non-woven geotextile (Mirafi 140N, or approved equivalent) to minimize the potential for clogging and/or ground loss due to piping. A minimum 0.5 percent fall should be maintained throughout the drain and non-perforated pipe outlet. In our opinion, footing drains may outlet at the curb, or on the back sides of lots where sufficient fall is not available to allow drainage to meet the street.

Excavating Conditions and Utility Trenches

Subsurface test pit exploration indicates that, in general, utility trenches can be excavated using conventional heavy equipment such as dozers and trackhoes to a depth of 10 feet. All temporary cuts in excess of 4 feet in height should be sloped in accordance with U.S. Occupational Safety and Health Administration (OSHA) regulations (29 CFR Part 1926), or be shored. The existing, near surface, native soils classify as Type B Soil and shallow, temporary excavation side slope inclinations as steep as 1H:1V may be assumed for planning purposes. This cut slope inclination is applicable to excavations above the water table only. Maintenance of safe working conditions, including temporary excavation stability, is the responsibility of the contractor. Actual slope inclinations at the time of construction should be determined based on safety requirements and actual soil and groundwater conditions.

As indicated on the attached test pit logs, soft (R2) basalt was encountered in test pits, TP-3 and T-4 at relatively shallow depths which may increase the difficulty of excavation in portions of the site where large cuts or deep underground utilities are proposed. Practical refusal was experienced on the basalt at depths of 6.5 and 7.5 feet below the ground surface with the medium sized backhoe utilized for our subsurface explorations. Use of heavy excavation equipment and rock chippers may be needed to excavate below these depths.

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

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

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

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

Erosion Control Considerations

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

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

Wet Weather Earthwork

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

- Earthwork should be performed in small areas to minimize exposure to wet weather. Excavation or the removal of unsuitable soils should be followed promptly by the placement and compaction of clean engineered fill. The size and type of construction equipment used may have to be limited to prevent soil disturbance. Under some circumstances, it may be necessary to excavate soils with a backhoe to minimize subgrade disturbance caused by equipment traffic;
- The ground surface within the construction area should be graded to promote run-off of surface water and to prevent the ponding of water;

- Material used as engineered fill should consist of clean, granular soil containing less than 5 percent fines. The fines should be non-plastic. Alternatively, cement treatment of on-site soils may be performed to facilitate wet weather placement;
- The ground surface within the construction area should be sealed by a smooth drum vibratory roller, or equivalent, and under no circumstances should be left uncompacted and exposed to moisture. Soils which become too wet for compaction should be removed and replaced with clean granular materials;
- Excavation and placement of fill should be observed by the geotechnical engineer to verify that all unsuitable materials are removed and suitable compaction and site drainage is achieved; and
- Geotextile silt fences, straw wattles, and fiber rolls should be strategically located to control erosion.

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

Seismic Design

The Oregon Department of Geology and Mineral Industries (Dogami), Oregon HazVu: 2017 Statewide GeoHazards Viewer indicates that the site is in an area where *very strong* ground shaking is anticipated during an earthquake (Dogami HazVu, 2017). Structures should be designed to resist earthquake loading in accordance with the methodology described in the 2015 International Building Code (IBC) with applicable Oregon Structural Specialty Code (OSSC) revisions (current 2014). We recommend Site Class D be used for design per the OSSC, Table 1613.5.2 and as defined in ASCE 7, Chapter 20, Table 20.3-1. Design values determined for the site using the USGS (United States Geological Survey) 2017 Seismic Design Maps Summary Report are summarized in Table 3, and are based upon existing soil conditions.

Table 3. Recommended Earthquake Ground Motion Parameters (2010 ASCE-7)

Parameter	Value
Location (Lat, Long), degrees	45.386, -122.657
Mapped Spectral Acceleration Values (MCE):	
Peak Ground Acceleration PGA_M	0.453
Short Period, S_s	0.968 g
1.0 Sec Period, S_1	0.415 g
Soil Factors for Site Class D:	
F_a	1.113
F_v	1.585
Residential Site Value = $2/3 \times F_a \times S_s$	0.7189 g
Residential Seismic Design Category	D

Soil liquefaction is a phenomenon wherein saturated soil deposits temporarily lose strength and behave as a liquid in response to earthquake shaking. Soil liquefaction is generally limited to loose, granular soils located below the water table. According to the Oregon HazVu: Statewide Geohazards Viewer, the subject site is regionally characterized as having a low risk of soil liquefaction (DOGAMI: HazVu, 2017).

UNCERTAINTIES AND LIMITATIONS

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

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

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

We appreciate this opportunity to be of service.

Sincerely,

GEOPACIFIC ENGINEERING, INC.



Staci R. Shub
Geotechnical Staff



EXPIRES: 06/30/2019

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

Attachments: References
Figure 1 – Vicinity Map
Figure 2 – Site Plan and Exploration Locations
Figure 3 – Typical Perimeter Footing and Drain Detail
Test Pit Logs (TP-1 – TP-4)

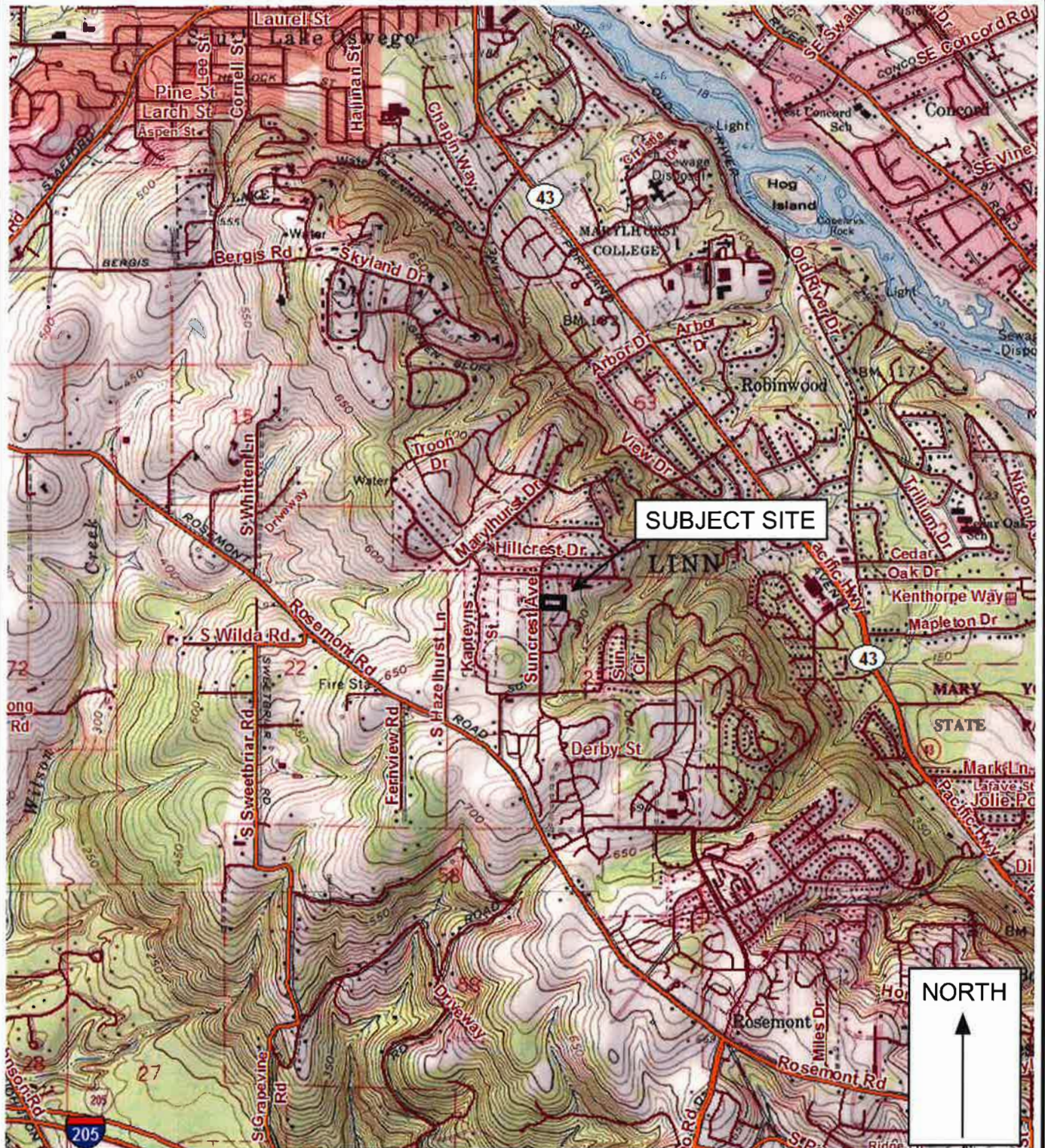
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VICINITY MAP



Legend

Approximate Scale 1 in = 2,000 ft

Date: 9/5/2017
 Drawn by: SRS

Base map: U.S. Geological Survey 7.5 minute Topographic Map Series, Lake Oswego, Oregon Quadrangle, 1961 (Photorevised 1984)

Project: Suncrest Drive Subdivision
 West Linn, Oregon

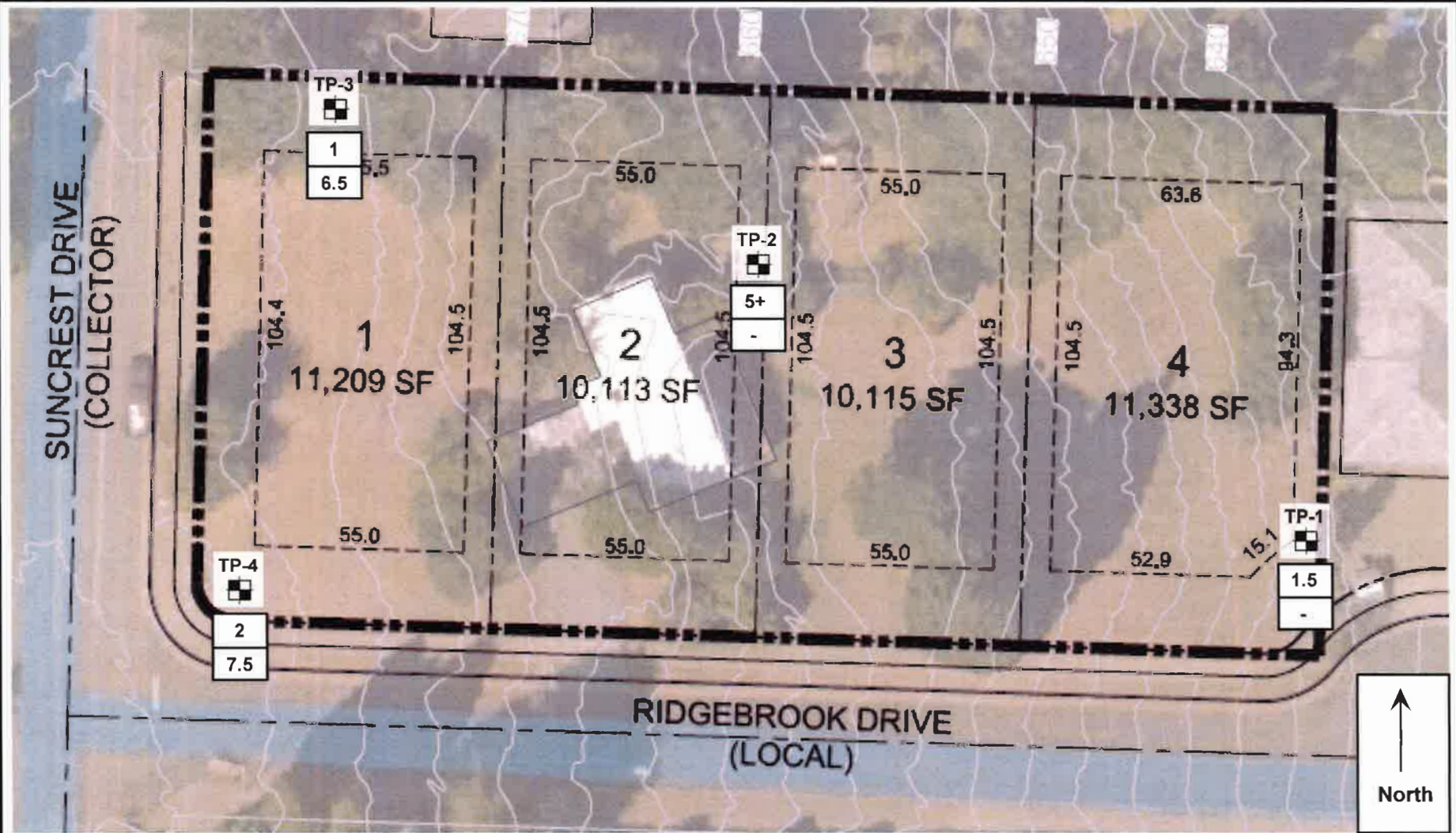
Project No. 17-4706

FIGURE 1



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SITE PLAN AND EXPLORATION LOCATIONS



Legend

TP-1  Test Pit Designation and Approximate Location

 Fill Depths and Depth to Rock and Refusal

0 40'
 APPROXIMATE SCALE 1"=40'

Date: 9/5/2017
 Drawn by: SRS

Project: Suncrest Drive Subdivision
 West Linn, Oregon

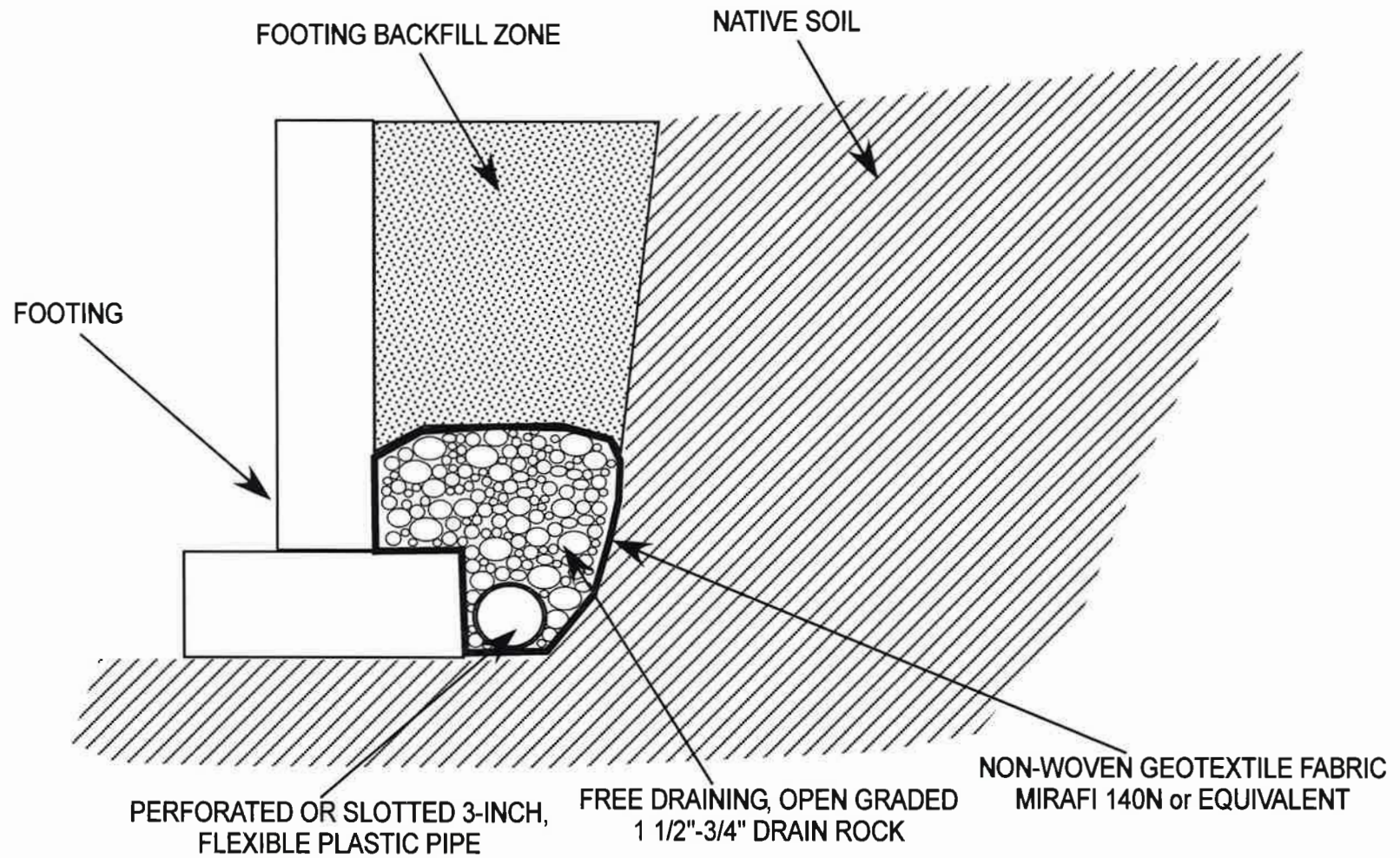
Project No. 17-4706

FIGURE 2



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TYPICAL PERIMETER FOOTING DRAIN DETAIL



Notes:

- 1) Drain rock should contain no more than 5 percent fines passing the U.S. No. 200 Sieve.
- 2) Trench bottom and drain pipe should be sloped to drain to approved discharge location.

Date: 4/29/2016

Drawn by: BLC

Project: Suncrest Drive Subdivision
West Linn, Oregon

Project No. 17-4706

FIGURE 3



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TEST PIT LOG

Project: Suncrest Drive Subdivision
 West Linn, Oregon

Project No. 17-4706

Test Pit No. **TP-1**

Depth (ft)	Pocket Penetrometer (tons/ft ²)	Sample Type	In-Situ Dry Density (lb/ft ³)	Moisture Content (%)	Water Bearing Zone	Material Description
1	4.5					Medium stiff, SILT (ML), trace gravel, light brown, abundant fine roots throughout, abundant inorganic debris, orange mottling, micaceous, dry, (Undocumented Fill)
2	4.5					Low to moderately organic SILT (OL-ML), light brown, trace fine roots throughout, subtle orange mottling, trace black staining, micaceous, loose, moist (Buried Topsoil)
3	4.5					Very stiff, silty CLAY (CL), brown, trace roots to 6.5 feet below ground surface, orange and gray mottling, black staining, micaceous, dry to damp (Loess - Willamette Formation)
4	4.5					
5						
6						
7						
8						
9						
10						Test Pit Terminated at 10 Feet.
11						
12						Note: No seepage or groundwater encountered.

LEGEND



100 to 1,000 g
Bag Sample



5 Gal. Bucket
Bucket Sample



Shelby Tube Sample



Seepage



Water Bearing Zone



Water Level at Abandonment

Date Excavated: 9/5/2017

Logged By: S. Shub

Surface Elevation:



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TEST PIT LOG

Project: Suncrest Drive Subdivision
 West Linn, Oregon

Project No. 17-4706

Test Pit No. **TP-2**

Depth (ft)	Pocket Penetrometer (tons/ft ²)	Sample Type	In-Situ Dry Density (lb/ft ³)	Moisture Content (%)	Water Bearing Zone	Material Description
1						Medium dense to very dense silty GRAVEL (GM), light gray to brown, trace fine roots throughout, subtle orange mottling, dry, (Undocumented Fill)
2						
3						
4						
5						
6						<p>Test Pit Terminated at 5 Feet.</p> <p>Note: No seepage or groundwater encountered.</p>
7						
8						
9						
10						
11						
12						

LEGEND



Bag Sample



5 Gal. Bucket Sample



Shelby Tube Sample



Seepage



Water Bearing Zone



Water Level at Abandonment

Date Excavated: 9/5/2017

Logged By: S. Shub

Surface Elevation:



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TEST PIT LOG

Project: Suncrest Drive Subdivision
 West Linn, Oregon

Project No. 17-4706

Test Pit No. **TP-3**

Depth (ft)	Pocket Penetrometer (tons/ft ²)	Sample Type	In-Situ Dry Density (lb/ft ³)	Moisture Content (%)	Water Bearing Zone	Material Description
1	4.5					Medium stiff, SILT (ML), trace gravel, light brown, abundant fine roots throughout, abundant inorganic debris, orange mottling, micaceous, dry, (Undocumented Fill)
2	4.5					Low to moderately organic SILT (OL-ML), light brown, trace roots throughout, subtle orange mottling, trace black staining, micaceous, loose, moist (Buried Topsoil)
3	4.5					Very stiff, silty CLAY (CL), gray to brown, subtle orange and gray mottling, black staining, micaceous, damp (Loess - Willamette Formation)
4	4.5					
5						
6						Soft (R2), BASALT, light gray, black staining, damp to moist (Columbia River Basalt)
7						<p>Test Pit Terminated at 6.5 Feet due to practical refusal on R2 (soft) basalt.</p> <p>Note: No seepage or groundwater encountered.</p>
8						
9						
10						
11						
12						

LEGEND



100 to 1,000 g
Bag Sample



5 Gal. Bucket
Bucket Sample



Shelby Tube Sample



Seepage



Water Bearing Zone



Water Level at Abandonment

Date Excavated: 9/5/2017

Logged By: S. Shub

Surface Elevation:



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TEST PIT LOG

Project: Suncrest Drive Subdivision
 West Linn, Oregon

Project No. 17-4706

Test Pit No. **TP-4**

Depth (ft)	Pocket Penetrometer (tons/ft ²)	Sample Type	In-Situ Dry Density (lb/ft ³)	Moisture Content (%)	Water Bearing Zone	Material Description
1	4.5					Medium stiff, SILT (ML), trace gravel, light brown, abundant fine roots throughout, abundant inorganic debris, orange mottling, micaceous, dry, (Undocumented Fill)
2	4.5					Low to moderately organic SILT (OL-ML), light brown, trace roots throughout, subtle orange mottling, trace black staining, micaceous, loose, moist (Buried Topsoil)
3	4.5					Very stiff, silty CLAY (CL), gray to brown, subtle orange and gray mottling, black staining, micaceous, damp (Loess - Willamette Formation)
4	4.5					
5						
6						
7						Soft (R2), BASALT, light gray, black staining, damp to moist (Columbia River Basalt)
8						<p>Test Pit Terminated at 7.5 Feet due to practical refusal on R2 (soft) basalt.</p> <p>Note: No seepage or groundwater encountered.</p>
9						
10						
11						
12						

LEGEND



100 to 1,000 g
Bag Sample



5 Gal. Bucket Sample



Shelby Tube Sample



Seepage



Water Bearing Zone



Water Level at Abandonment

Date Excavated: 9/5/2017

Logged By: S. Shub

Surface Elevation:

OPERATIONS AND
MAINTENANCE

TO BE INCLUDED IN FINAL STORMWATER REPORT

LAND USE DOCUMENTS

FOR

SUNCREST PARTITION 19310 SUNCREST DRIVE

PREPARED FOR
KATHLEEN DAILEY



PUBLISH DATE
02-03-18

ISSUED FOR
LAND USE SET

REVISIONS

PROJECT TEAM

OWNER/APPLICANT

KATHLEEN DAILEY
19310 SUNCREST DRIVE
WEST LINN, OR 97068
PHONE: (503) 705-0634
EMAIL: kathdailey@yahoo.com

LAND SURVEYOR

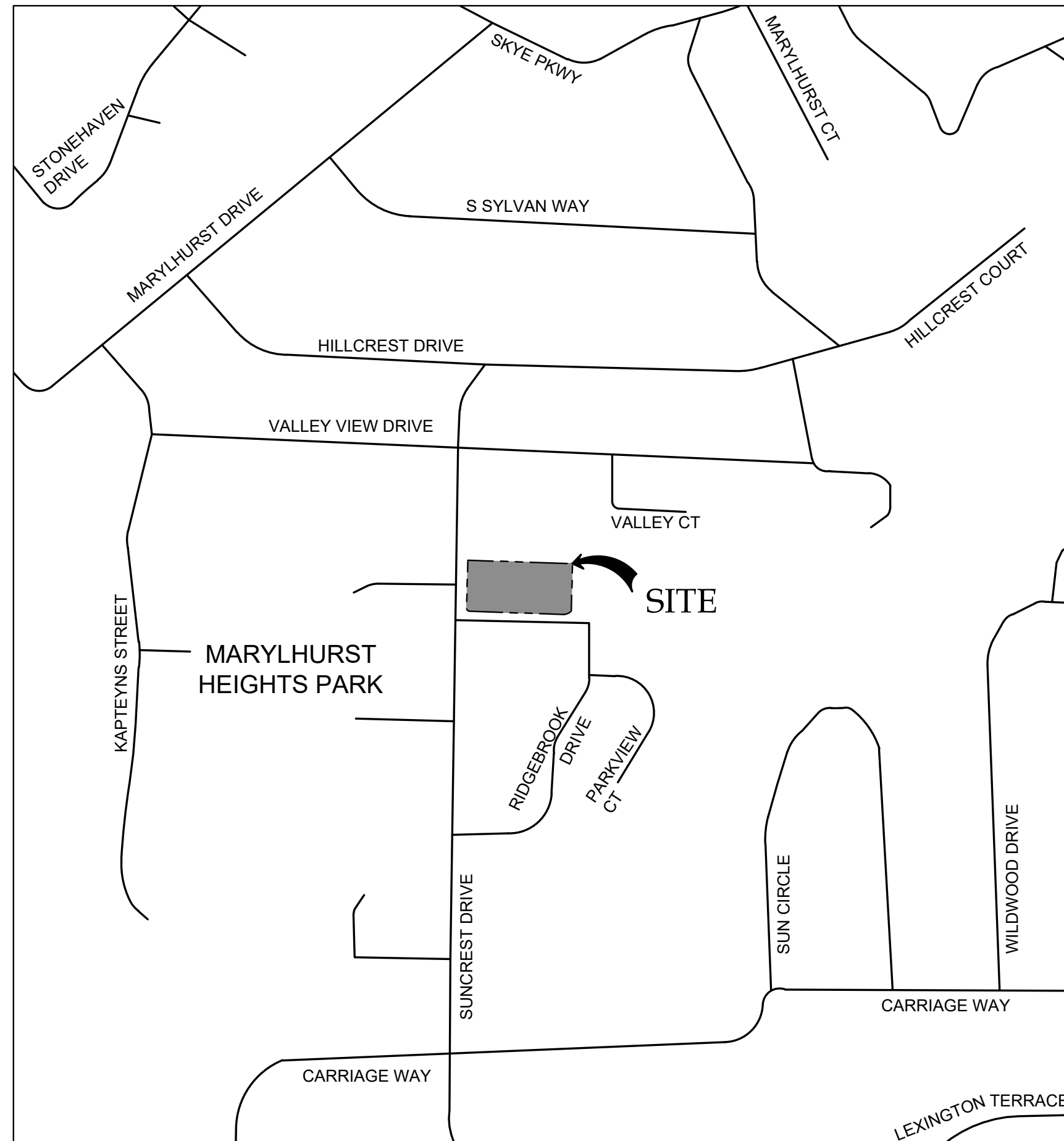
COMPASS LAND SURVEYORS
4107 SE INTERNATIONAL WAY, SUITE 705
MILWAUKIE, OR 97222
CONTACT: DON DEVLAMINCK, PLS
PHONE: (503) 653-9093
EMAIL: dond@compass-landsurveyors.com

CIVIL ENGINEER

3J CONSULTING, INC.
5075 SW GRIFFITH DRIVE, SUITE 150
BEAVERTON, OR 97005
CONTACT: CHASE WELBORN, PE
PHONE: (503) 946-9365
EMAIL: chase.welborn@3j-consulting.com

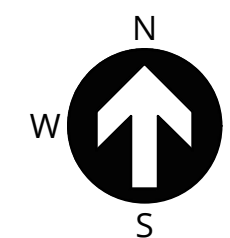
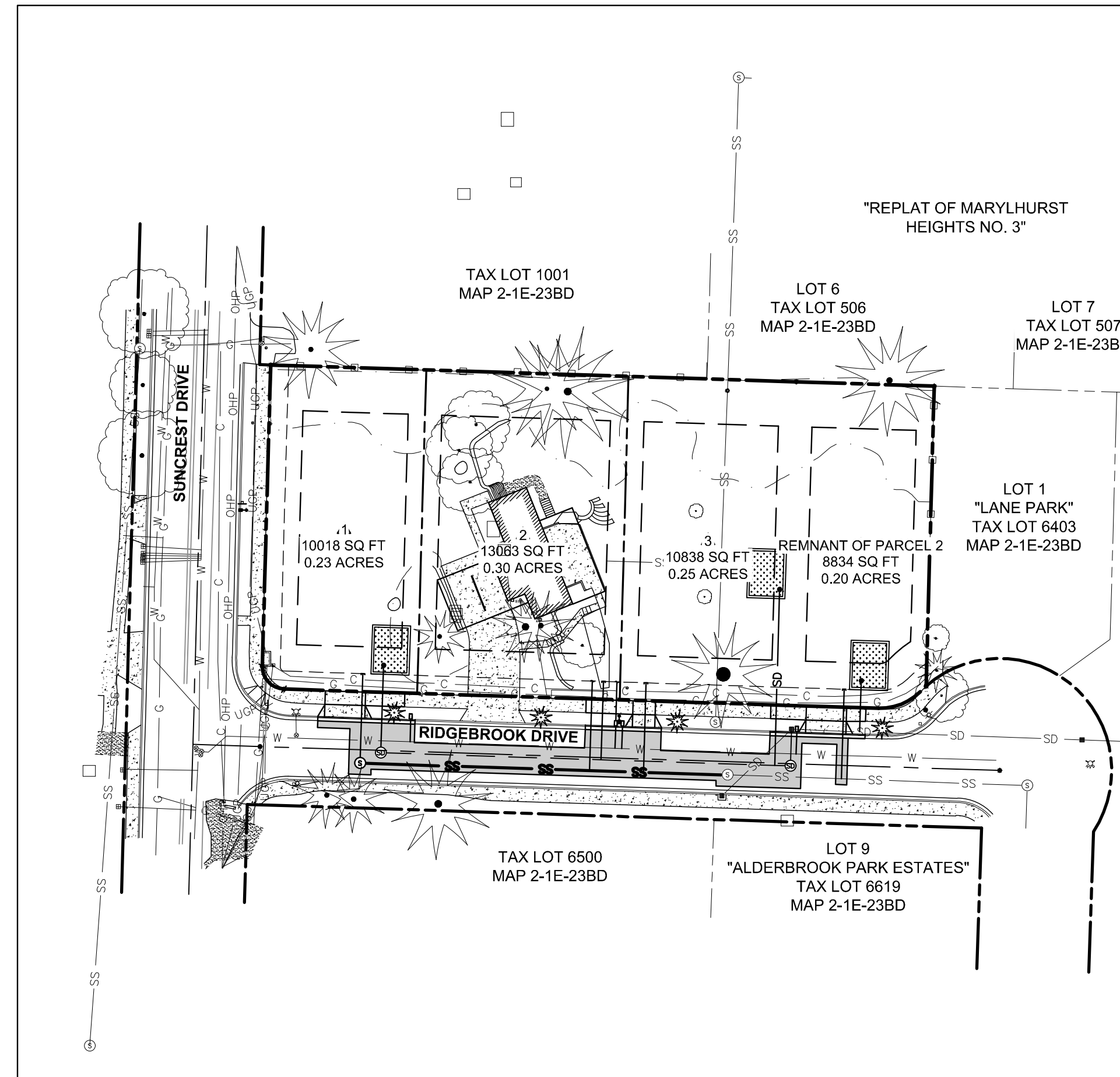
PLANNING CONSULTANT

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

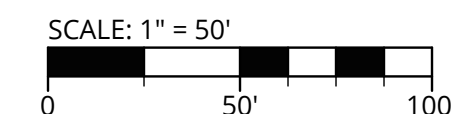


VICINITY MAP
NOT TO SCALE

PARCEL 1 OF TAXLOT 6401 LOCATED IN THE
SE 1/4 NW 1/4 OF SECTION 23, T.2S., R.1E., W.M.
CLACKAMAS COUNTY, OREGON



SITE MAP
1" = 50'



SITE INFORMATION

SITE ADDRESS
19310 SUNCREST DRIVE
WEST LINN, OR

TAX LOT(S)
21E23BD 6401 PARCEL 1

FLOOD HAZARD
41005C0019D (ZONE X)

JURISDICTION
CITY OF WEST LINN

ZONING
R-10

UTILITIES & SERVICES

WATER, STORM, SEWER
CITY OF WEST LINN

POWER
PGE

GAS
NORTHWEST NATURAL GAS

CABLE
COMCAST, CENTURYLINK

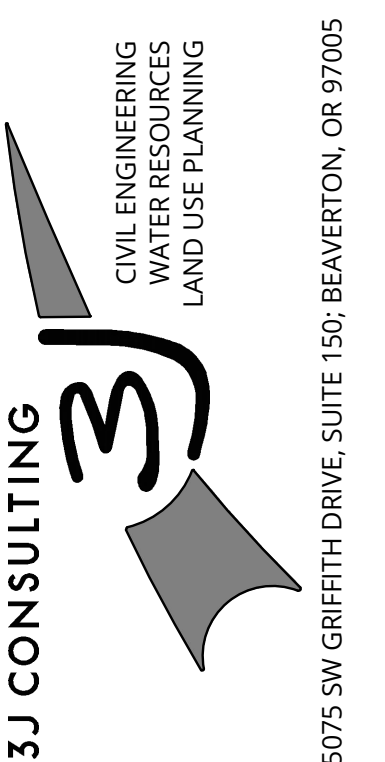
FIRE
TUALATIN VALLEY FIRE & RESCUE

POLICE, SCHOOLS, ROADS, PARKS
CITY OF WEST LINN

SHEET LIST TABLE

Sheet Number	Sheet Title
C000	COVER SHEET
C100	EXISTING CONDITIONS AND DEMOLITION PLAN
C110	TREE PROTECTION PLAN
C200	TENTATIVE PLAT
C210	SITE PLAN
C290	PHOTOMETRIC PLAN
C300	UTILITY PLAN

COVER SHEET
SUNCREST PARTITION
19310 SUNCREST DRIVE
 KATHLEEN DAILEY
 WEST LINN, OREGON



PROJECT INFORMATION
3J PROJECT # | 17414
TAX LOT(S) | 21E23BD 6401
LAND USE # | N/A
DESIGNED BY | CKW
CHECKED BY | AJM

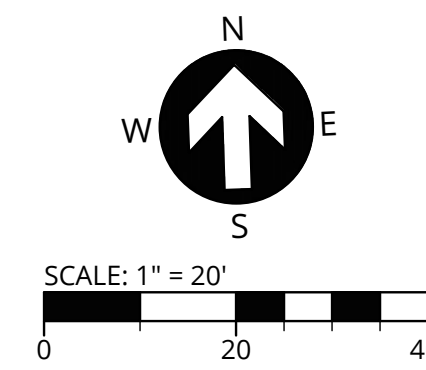
SHEET NUMBER
C000

FLOOD PLAIN NOTES

ZONE X (UN-SHADED) THE SITE IS LOCATED WITHIN ZONE AE (SHADED) PER FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY-PANEL NUMBER 41005C 0019D. FEMA'S DEFINITION OF ZONE X (UN-SHADED) IS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. IN COMMUNITIES THAT PARTICIPATE IN THE NFIP, FLOOD INSURANCE IS AVAILABLE TO ALL PROPERTY OWNERS AND RENTERS IN THESE ZONES.

PARCEL 1 OF TAXLOT 6401 LOCATED IN THE SE 1/4 OF SECTION 23, T.2S., R.1E., W.M. CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

SAN MH
RIM 649.16
IE 8" S. 644.16
IE W. 645.16
IE E. 643.96



LEGEND

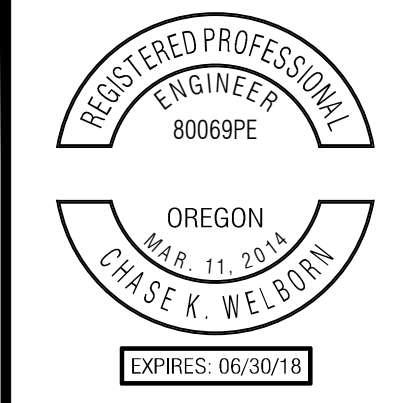
- EXISTING BUILDING
- PROJECT BOUNDARY
- RIGHT-OF-WAY LINE
- RIGHT-OF-WAY CENTERLINE
- EASEMENT LINE
- EXISTING LOT LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING CONCRETE
- EXISTING GRAVEL
- PAVEMENT REMOVAL LIMITS
- EXISTING CURB
- EXISTING OVERHEAD POWER
- EXISTING UNDERGROUND POWER
- EXISTING CABLE
- EXISTING GAS
- EXISTING VEGETATION LIMITS LINE
- EXISTING SANITARY SEWER
- EXISTING STORM DRAIN
- EXISTING WATER MAIN
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- SAWCUT DEMOLITION LIMITS
- EXISTING FENCE
- EXISTING CONIFEROUS TREE
- EXISTING DECIDUOUS TREE
- EXISTING SIGN
- EXISTING MAILBOX
- EXISTING UTILITY POLE
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY CLEANOUT
- EXISTING STORM MANHOLE
- EXISTING STORM INLET
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING WATER VALVE

DEMOLITION KEY NOTES

- 1 REMOVE EXISTING TREE/VEGETATION.
- 2 SAWCUT EXISTING ASPHALT/CONCRETE SURFACING AT LOCATION SHOWN.
- 3 REMOVE EXISTING ASPHALT/CONCRETE SURFACING AND DISPOSE OFF-SITE.
- 4 REMOVE EXISTING WATER METER AND ABANDON ASSOCIATED PIPES.
- 5 EXISTING UNDERGROUND UTILITIES TO BE RELOCATED. PROVIDE PHASED DISCONNECTION PLAN TO MAINTAIN SERVICE TO EXISTING RESIDENCE THROUGHOUT CONSTRUCTION. **CONTRACTOR TO COORDINATE WITH PGE, CABLE PROVIDER, AND OWNERS FOR RELOCATION OF EXISTING UTILITIES.**
- 6 REMOVE EXISTING SANITARY SEWER MANHOLE AT LOCATION SHOWN.
- 7 ABANDON EXISTING SANITARY SEWER LINE IN PLACE.

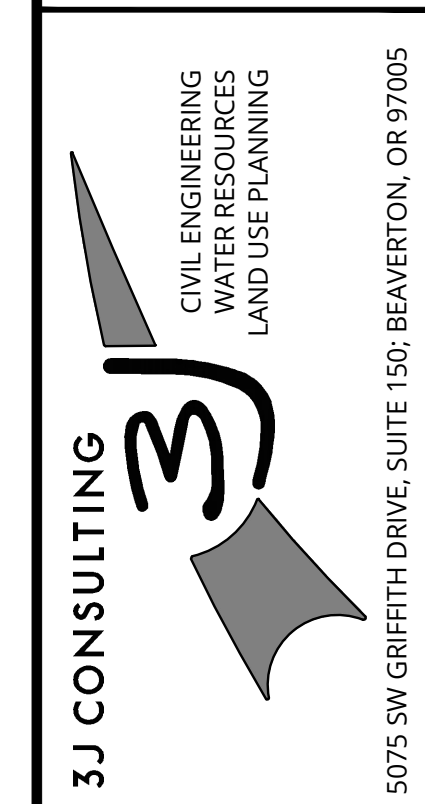
CONSTRUCTION KEY NOTES

- 1 PROTECT EXISTING TREE/VEGETATION TO REMAIN.
- 2 PROTECT EXISTING ASPHALT/CONCRETE TO REMAIN.
- 3 MAILBOX TO REMAIN IN USE THROUGHOUT CONSTRUCTION WORK WITH HOMEOWNER TO DETERMINE PERMANENT LOCATION.
- 4 PROTECT EXISTING HOUSE AND ALL ASSOCIATED BUILDINGS, CARPORTS, COVERED AREAS, SHEDS, DECKS, CONCRETE AREAS AND GRAVEL DRIVES TO REMAIN UNLESS OTHERWISE NOTED.
- 5 PROTECT EXISTING WATER LINE THROUGHOUT CONSTRUCTION.
- 6 PROTECT EXISTING STORM DRAIN AND LINE THROUGHOUT CONSTRUCTION.
- 7 PROTECT EXISTING STREET LIGHT AND POLE THROUGHOUT CONSTRUCTION.
- 8 PROTECT EXISTING STREET SIGN AND POLE THROUGHOUT CONSTRUCTION.
- 9 PROTECT EXISTING SANITARY SEWER LINE THROUGHOUT CONSTRUCTION.
- 10 APPROXIMATE LOCATION OF EXISTING SANITARY LATERAL SHOWN FOR REFERENCE ONLY.



PUBLISH DATE
02-03-18
ISSUED FOR
LAND USE SET
REVISIONS

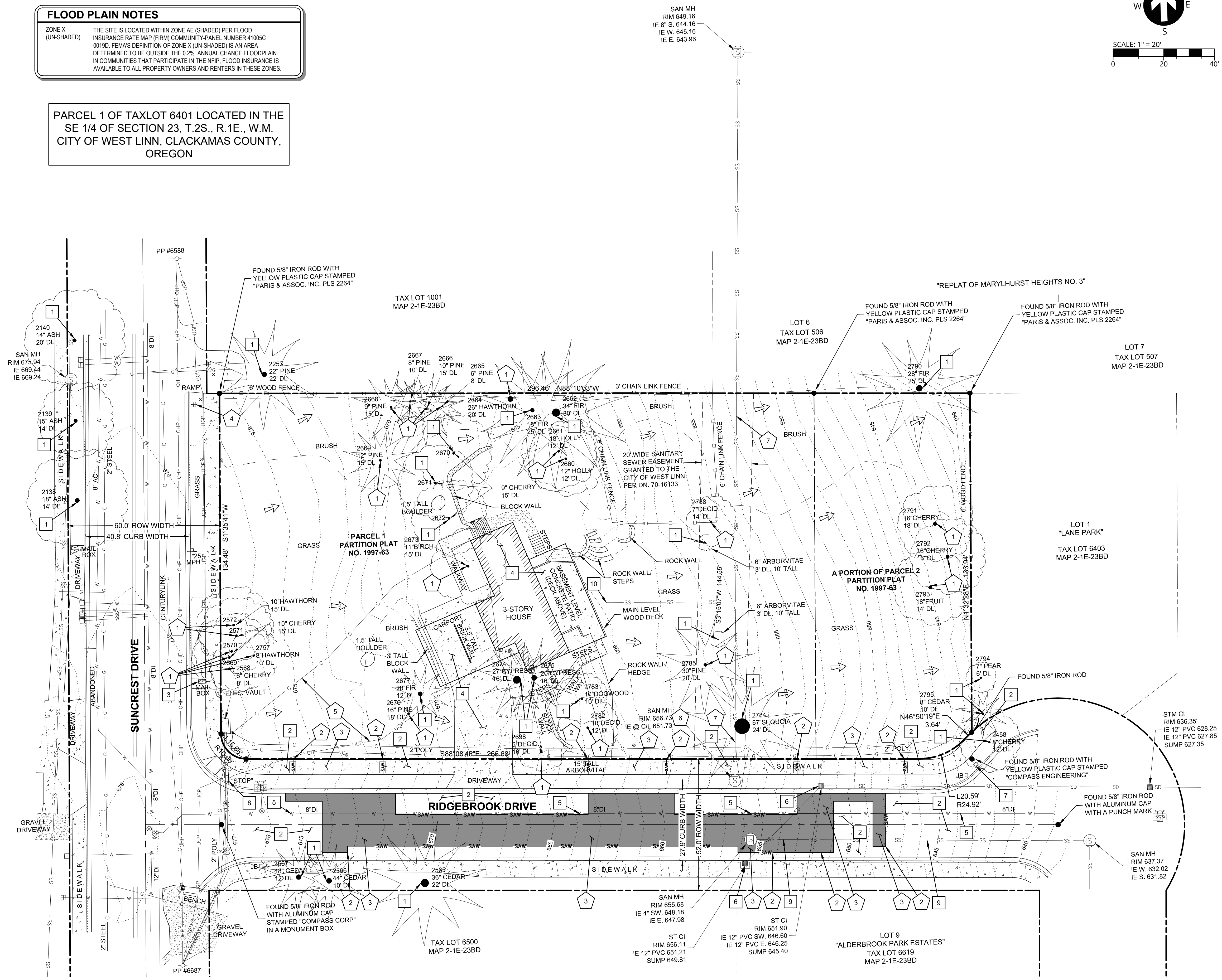
EXISTING CONDITIONS AND DEMOLITION PLAN
SUNCREST PARTITION
19310 SUNCREST DRIVE
 KATHLEEN DALLEY
 WEST LINN, OREGON



PROJECT INFORMATION
 3J PROJECT # | 17414
 TAX LOT(S) | 21E23BD 6401
 LAND USE # | N/A
 DESIGNED BY | CKW
 CHECKED BY | AJM

SHEET NUMBER
C100

P:\17414\SUNCREST PARTITION\ADD\17414-C100-EXISTING CONDITIONS.DWG

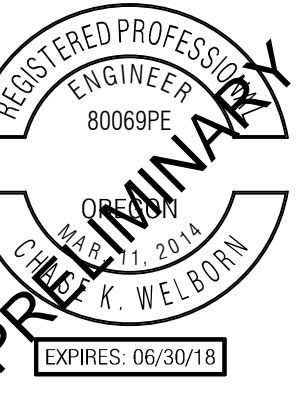


SAN MH
RIM 655.68
IE 4" SW. 648.18
IE E. 647.98

ST CI
RIM 651.90
IE 12" PVC SW. 645.60
IE 12" PVC E. 645.25
SUMP 645.40

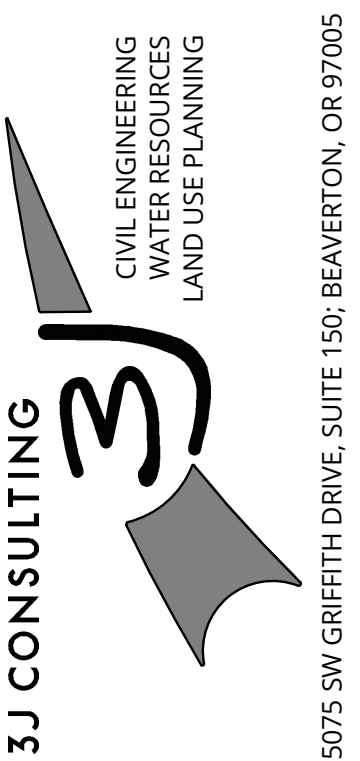
SAN MH
RIM 637.37
IE W. 632.02
IE S. 631.82

STM CI
RIM 636.35
IE 12" PVC 628.25
IE 12" PVC 627.85
SUMP 627.35



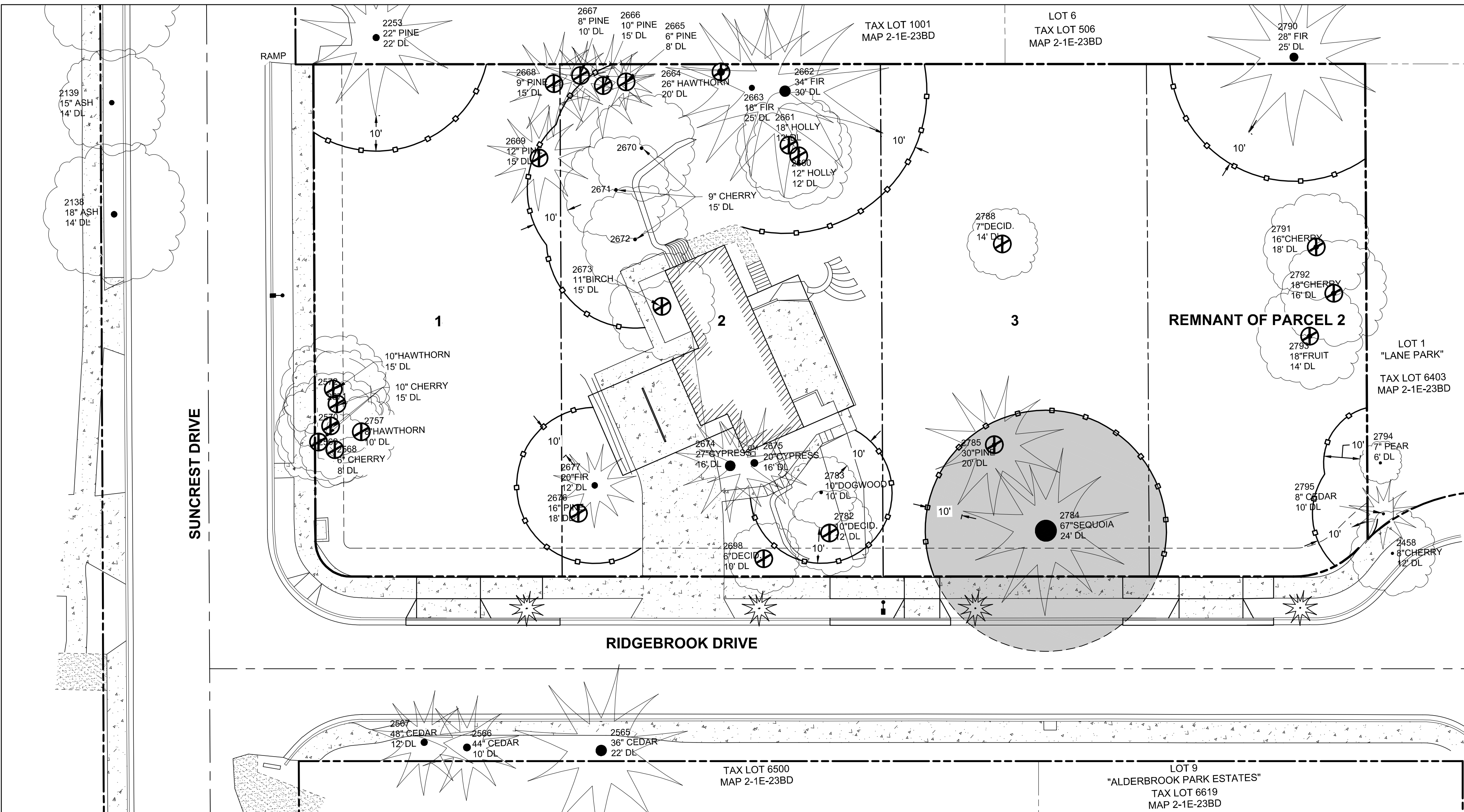
PUBLISH DATE
02-03-18
ISSUED FOR
LAND USE SET
REVISIONS

TREE PROTECTION PLAN
SUNCREST PARTITION
19310 SUNCREST DRIVE
 KATHLEEN DAILEY
 WEST LINN, OREGON



PROJECT INFORMATION
 3J PROJECT # | 17414
 TAX LOT(S) | 21E23BD 6401
 LAND USE # | N/A
 DESIGNED BY | CKW
 CHECKED BY | AJM

SHEET NUMBER
C110



LEGEND

- EXISTING BUILDING
- PROJECT BOUNDARY
- RIGHT-OF-WAY LINE
- RIGHT-OF-WAY CENTERLINE
- EASEMENT LINE
- EXISTING LOT LINE
- EXISTING ADJACENT PROPERTY LINE
- SIGNIFICANT TREE CANOPY TO REMAIN (DRIPLINE + 10 FT)
- EXISTING CONIFEROUS TREE
- EXISTING DECIDUOUS TREE
- TREE TO BE REMOVED

No.	Common Name	DBH (inches)	Dripline Radius (feet)	Significant Designation	Proposed Action
2138	Ash	18	14	No	Protect (Offsite)
2139	Ash	15	14	No	Protect (Offsite)
2140	Ash	14	20	No	Protect (Offsite)
2253	Austrian Pine	22	22	No	Protect (Offsite)
2458	Cherry	8	12	No	Protect (Offsite)
2565	Deodar Cedar	36	22	Yes	Protect (Offsite)
2566	Incense Cedar	44	10	Yes	Protect (Offsite)
2567	Incense Cedar	48	12	Yes	Protect (Offsite)
2568	Cherry	6	8	No	Remove
2569	Sweet Cherry	10	15	No	Remove
2570	Sweet Cherry	10	15	No	Remove
2571	Sweet Cherry	10	15	No	Remove
2572	English Hawthorn	10	15	No	Remove
2660	English Holly	12	12	No	Remove
2661	English Holly	18	12	No	Remove
2662	Douglas Fir	34	30	No	Retain
2663	Douglas Fir	18	25	No	Retain
2664	English Hawthorn	26	20	No	Remove
2665	Scots Pine	6	8	No	Remove
2666	Scots Pine	10	15	No	Remove
2667	Scots Pine	8	10	No	Remove
2668	Scots Pine	9	15	No	Remove
2669	Scots Pine	12	15	No	Remove
2670	Cherry	9	15	No	Retain
2671	Cherry	9	15	No	Retain
2672	Cherry	9	15	No	Retain
2673	European White Birch	11	15	No	Remove
2674	Falsecypress	27	16	No	Retain
2675	Falsecypress	20	16	No	Retain
2676	Lodgepole Pine	16	18	No	Remove
2677	Noble Fir	20	12	No	Retain
2698	Deciduous	6	10	No	Remove
2757	English Hawthorn	8	10	No	Remove
2782	Deciduous	10	12	No	Remove
2783	Dogwood	10	10	No	Retain
2784	Giant Sequoia	67	24	Yes	Retain
2785	Lodgepole Pine	30	20	No	Remove
2788	Deciduous	7	14	No	Remove
2790	Douglas Fir	28	25	No	Protect (Offsite)
2791	Cherry	16	18	No	Remove
2792	Cherry	18	16	No	Remove
2793	Fruit	18	14	No	Remove
2794	Flowering Pear	7	6	No	Protect (Offsite)
2795	Atlas Cedar	8	10	No	Protect (Offsite)

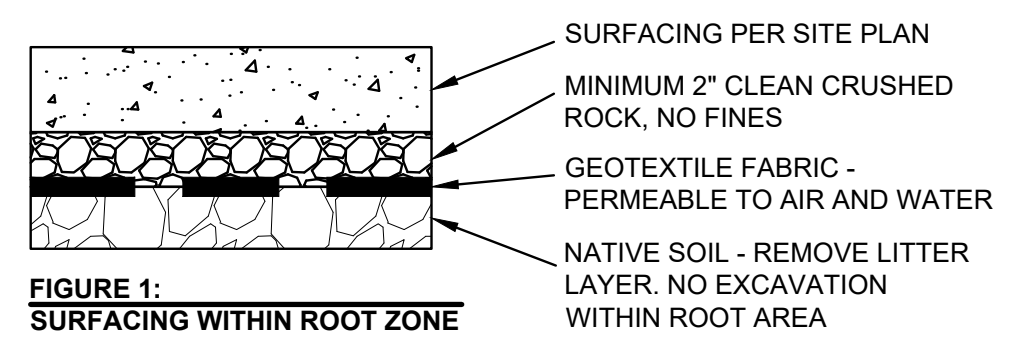
TREE PROTECTION NOTES

- TREE PROTECTION ZONE. THE STANDARD TREE PROTECTION ZONE (TPZ) FOR EACH TREE TO BE PROTECTED SHALL BE ESTABLISHED AT THE DRIPLINE OF THE TREE PLUS 10-FEET. THE LOCATION OF TPZS SHALL BE SHOWN ON CONSTRUCTION DRAWINGS.
- PROTECTION FENCING. PROTECTION FENCING SHALL BE ERCTED AT THE TPZ, OR AS OTHERWISE DIRECTED BY THE PROJECT ARBORIST IN COORDINATION WITH THE CITY ARBORIST, BEFORE DEMOLITION, GRUBBING, GRADING, OR CONSTRUCTION BEGINS. ALL TREES TO BE RETAINED SHALL BE PROTECTED BY SIX-FOOT-HIGH CHAIN LINK FENCES INSTALLED AT THE EDGE OF THE TPZ. PROTECTION FENCING SHALL BE SECURED TO TWO-INCH DIAMETER GALVANIZED IRON POSTS, DRIVEN TO A DEPTH OF A LEAST TWO FEET, PLACED NO FURTHER THAN 10-FOOT APART. IF FENCING IS LOCATED ON PAVEMENT, POSTS MAY BE SUPPORTED BY AN APPROPRIATE GRADE LEVEL CONCRETE BASE. PROTECTION FENCING SHALL REMAIN IN PLACE UNTIL FINAL INSPECTION OF THE PROJECT PERMIT, OR IN CONSULTATION WITH THE PROJECT ARBORIST. WHERE INFRASTRUCTURE MUST BE INSTALLED CLOSER TO THE TREE(S), PROTECTION FENCING MAY BE ESTABLISHED WITHIN THE TPZ IF THE PROJECT ARBORIST, IN COORDINATION WITH THE CITY ARBORIST, DETERMINES THAT THE TREE(S) WILL NOT BE UNLUDY DAMAGED. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ARBORIST PRIOR TO OPENING, ADJUSTING, OR REMOVING TREE PROTECTION FENCING.
- SIGNAGE. AN 8.5X11 -INCH SIGN STATING, "WARNING: TREE PROTECTION ZONE," SHALL BE DISPLAYED ON EACH PROTECTION FENCE AT ALL TIMES.
- DESIGNATION OF CUT TREES. TREES TO BE REMOVED SHALL BE CLEARLY MARKED WITH CONSTRUCTION FLAGGING, TREE-MARKING PAINT, OR OTHER METHODS APPROVED IN ADVANCED BY THE PROJECT ARBORIST. TREES SHALL BE CAREFULLY REMOVED SO AS TO AVOID EITHER ABOVE OR BELOW GROUND DAMAGE TO THOSE TREES TO BE PRESERVED. WHERE STUMPS OF REMOVED TREES ARE LOCATED WITHIN THE TPZ OF A PROTECTED TREE, STUMPS SHALL REMAIN IN THE GROUND OR ELSE BE EXTRACTED FROM THE GROUND UNDER THE PROJECT ARBORIST'S SUPERVISION.

GENERAL NOTES

- INSTALL TREE PROTECTION FENCING PR CITY OF WEST LINN STANDARD DETAIL WL-219.
- CONTRACTOR SHALL COORDINATE CITY APPROVAL OF TREE PROTECTION PRIOR TO ANY TREE CUTTING OR CLEARING ACTIVITIES.
- LOT 3 WILL REQUIRE CONSIDERATION FOR HOME DESIGN AND CONSTRUCTION IN ACCORDANCE WITH PROTECTION OF THE SIGNIFICANT GIANT SEQUOIA, TREE #2784. COORDINATE WITH THE PROJECT ARBORIST TO PROVIDE SUPPLEMENTAL TREE PROTECTION RECOMMENDATIONS BASED ON THE ACTUAL BUILDING FOOTPRINT. ENCROACHMENT WITHIN THE TREE PROTECTION ZONE MAY REQUIRE A PIER AND BEAM FOUNDATION OR OTHER APPROACHES TO MINIMIZE TREE ROOT AND CROWN IMPACTS.
- THE FINAL LOCATION OF THE PRIVATE LIDA STORMWATER PLANTER AT LOT 3 SHOULD REMAIN BEYOND THE DRIPLINE PLUS 10- FEET TREE PROTECTION ZONE OF TREE #2784, AND THE NEW STORM SEWER LATERAL SHOULD BE LOCATED BEYOND THE DRIPLINE OF THE TREE AT A MINIMUM.

- PRECONSTRUCTION CONFERENCE. THE PROJECT ARBORIST SHALL BE ON SITE TO DISCUSS METHODS OF TREE REMOVAL AND TREE PROTECTION PRIOR TO ANY CONSTRUCTION.
- VERIFICATION OF TREE PROTECTION MEASURES. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE PROJECT ARBORIST SHALL VERIFY IN WRITING TO THE CITY ARBORIST THAT TREE PROTECTION FENCING HAS BEEN SATISFACTORILY INSTALLED.
- PRUNING. THE PROJECT ARBORIST CAN HELP IDENTIFY IF AND WHERE PRUNING IS NECESSARY ONCE TREES PLANNED FOR REMOVAL HAVE BEEN REMOVED AND THE SITE IS STAKED AND PREPARED FOR CONSTRUCTION. PRUNING SHALL BE PERFORMED BY A QUALIFIED TREE SERVICE.
- TREE PROTECTION ZONE MAINTENANCE. THE PROTECTION FENCING SHALL NOT BE MOVED, REMOVED, OR ENTERED BY EQUIPMENT EXCEPT UNDER DIRECTION OF THE PROJECT ARBORIST, IN COORDINATION WITH THE CITY ARBORIST.
- STORAGE OF MATERIAL OR EQUIPMENT. THE CONTRACTOR SHALL NOT STORE MATERIALS OR EQUIPMENT WITHIN THE TPZ.
- EXCAVATION WITHIN THE TPZ. EXCAVATION WITHIN THE TPZ SHALL BE AVOIDED IF ALTERNATIVES ARE AVAILABLE. IF EXCAVATION WITHIN THE TPZ IS UNAVOIDABLE, INCLUDING INSTALLATION OF A NEW STORM SEWER LATERAL AT LOT 3, THE PROJECT ARBORIST SHALL EVALUATE THE PROPOSED EXCAVATION TO DETERMINE METHODS TO MINIMIZE IMPACTS TO TREES. THIS CAN INCLUDE TUNNELING, HAND DIGGING OR OTHER APPROACHES. ALL CONSTRUCTION WITHIN THE TPZ SHALL BE UNDER THE ON-SITE TECHNICAL SUPERVISION OF THE PROJECT ARBORIST, IN COORDINATION WITH THE CITY ARBORIST.
- SURFACING. WHERE SURFACING IS PROPOSED WITHIN THE TPZ, INCLUDING LOT 3 DRIVEWAY CONSTRUCTION ADJACENT TO TREE #2784, COORDINATE WITH THE PROJECT ARBORIST TO PROVIDE RECOMMENDATIONS FOR ADJUSTMENTS TO PROTECTION FENCING AND TO MONITOR CONSTRUCTION. AVOID EXCAVATION AND USE A MODIFIED PROFILE TO BUILD UP FROM EXISTING GRADE (FIGURE 1). THIS PROFILE INCLUDES A LAYER OF PERMEABLE GEOTEXTILE FABRIC ON THE GROUND SURFACE AND CRUSHED ROCK TO RAISE THE GRADE AS NEEDED. SURFACING MAY INCLUDE ASPHALT, CONCRETE, OR OTHER MATERIALS.

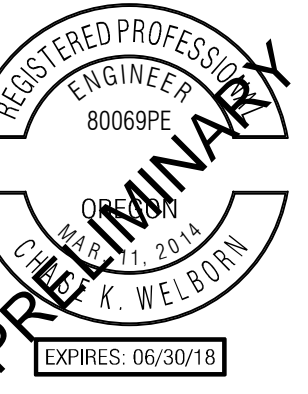


GENERAL TREE INVENTORY STATISTICS

TOTAL PROPERTY AREA	33,919 SQ FT = 0.78 AC
TOTAL TREE INVENTORY	44 EA
TOTAL OFFSITE TREES PROTECTED	11 EA
TOTAL TREES RETAINED (ONSITE)	10 EA
TOTAL TREES REMOVED (ONSITE)	23 EA
TOTAL TREE CALIPER INCHES (ONSITE)	510 INCHES
TOTAL CALIPER INCHES RETAINED (ONSITE)	223 INCHES
TOTAL CALIPER INCHES REMOVED (ONSITE)	287 INCHES

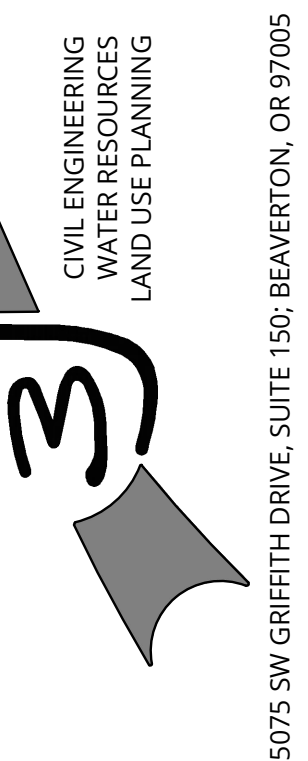
SIGNIFICANT TREE STATISTICS ONSITE

SIGNIFICANT TREE INVENTORY	1 EA
SIG. TREES RETAINED	1 EA
SIG. TREES REMOVED	0 EA
SIG. TREE CALIPER INCHES	67 INCHES
SIG. CALIPER INCHES RETAINED	67 INCHES
SIG. CALIPER INCHES REMOVED	0 INCHES
SIG. TREE CANOPY COVERAGE	1,810 SQ. FT.
SIG. TREE CANOPY RETAINED	1,810 SQ. FT.
SIG. TREE CANOPY REMOVED	0 SQ. FT.
TREE PRESERVATION AREA REQ'D (20% OF EXISTING CANOPY)	362 SQ. FT.
PRESERVATION AREA PROVIDED (100% OF EXISTING CANOPY)	1,810 SQ. FT.



PUBLISH DATE
02-03-18
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LAND USE SET
REVISIONS

TENTATIVE PLAT
SUNCREST PARTITION
19310 SUNCREST DRIVE
 KATHLEEN DAILEY
 WEST LINN, OREGON



PROJECT INFORMATION
 3J PROJECT # | 17414
 TAX LOT(S) | 21E23BD 6401
 LAND USE # | N/A
 DESIGNED BY | CKW
 CHECKED BY | AJM

SHEET NUMBER
C200

LEGEND

	PROJECT BOUNDARY
	RIGHT-OF-WAY LINE
	RIGHT-OF-WAY CENTERLINE
	EASEMENT LINE
	EXISTING LOT LINE
	EXISTING ADJACENT PROPERTY LINE
	PROPOSED SETBACK LINE
	PROPOSED LOT LINE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	50.0' LINEAR DIMENSION
	L50.0' LENGTH AROUND CURVE

SITE STATISTICS

SITE ADDRESS	19310 SUNCREST DRIVE WEST LINN, OR 97068
TAXLOT	21E23BD 6401
JURISDICTION	CITY OF WEST LINN
BUILDABLE SITE AREA	0.78 ACRES
PROPERTY ZONING	R-10
FLOOD HAZARD MAP NUMBER	41005C 0019D ZONE X

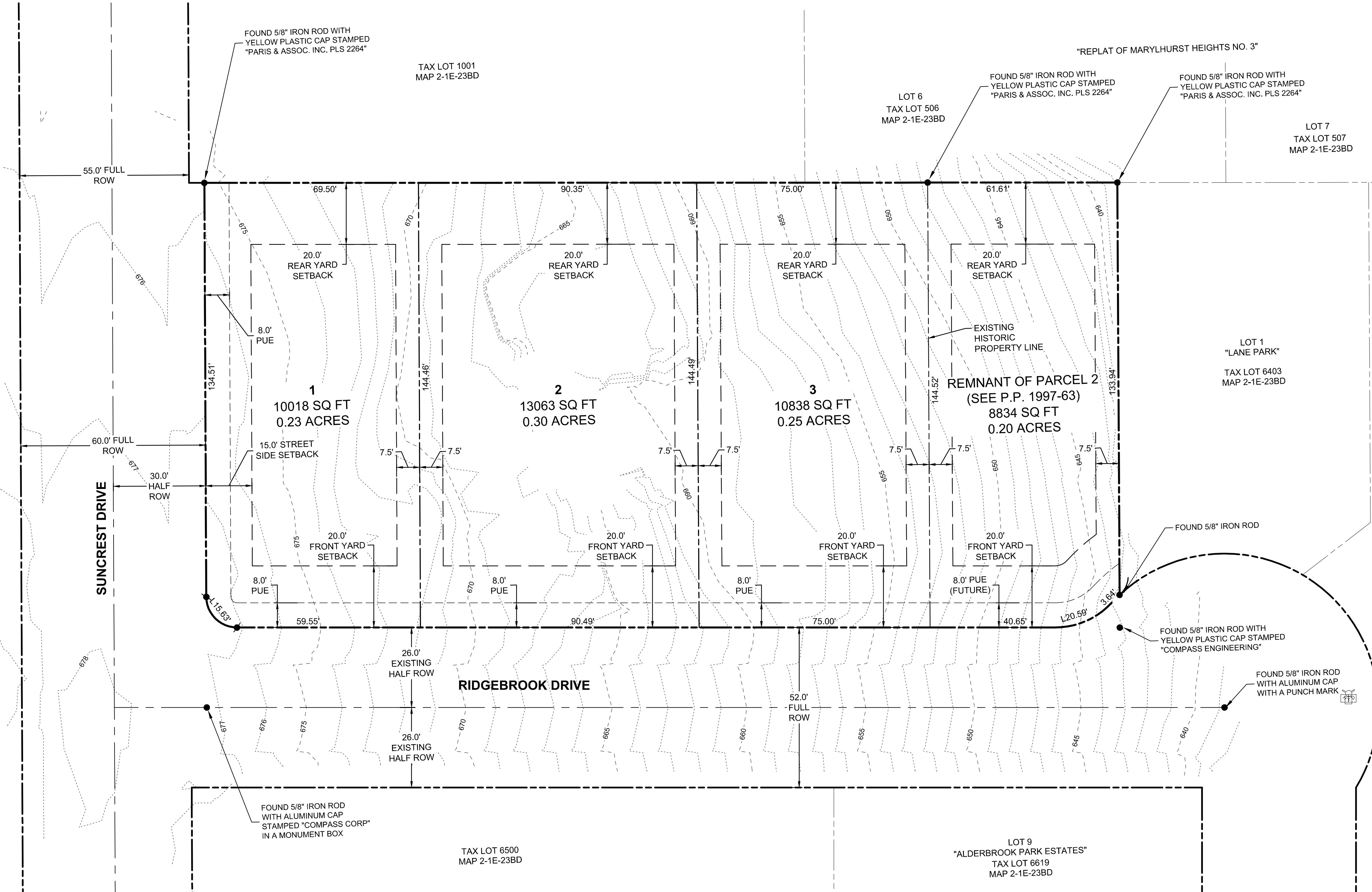
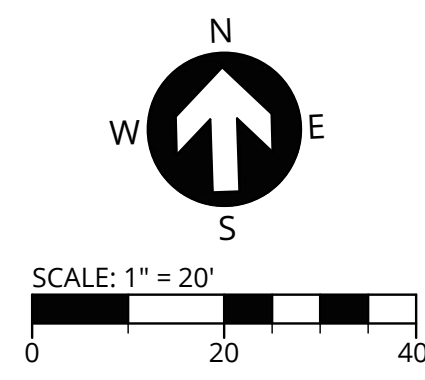
SUBDIVISION STATISTICS

MINIMUM LOT SIZE	10,000 SF
MAXIMUM LOT COVERAGE	35%
MINIMUM LOT WIDTH	35 FT
REQUIRED AVG. LOT WIDTH	50 FT
SETBACKS:	
FRONT	20 FEET
SIDE	7.5 FEET
REAR	20 FEET
STREET SIDE	15 FEET
MAX. HEIGHT	35 FEET

PROJECT TEAM

OWNER/APPLICANT KATHLEEN DAILEY 19310 SUNCREST DRIVE WEST LINN, OR 97068 PHONE: (503) 705-0634 EMAIL: kathdailey@yahoo.com	LAND SURVEYOR COMPASS LAND SURVEYORS 4107 SE INTERNATIONAL WAY, SUITE 705 MILWAUKIE, OR 97222 CONTACT: DON DEVLAEINCK, PLS PHONE: (503) 653-9093 EMAIL: dond@compass-landsurveyors.com
CIVIL ENGINEER 3J CONSULTING, INC. 5075 SW GRIFFITH DRIVE, SUITE 150 BEAVERTON, OR 97005 CONTACT: CHASE WELBORN, PE PHONE: (503) 946-9365 EMAIL: chase.welborn@3j-consulting.com	PLANNING CONSULTANT 3J CONSULTING, INC. 5075 SW GRIFFITH DRIVE, SUITE 150 BEAVERTON, OR 97005 CONTACT: ANDREW TULL PHONE: (503) 946-9365 EMAIL: andrew.tull@3j-consulting.com

PARCEL 1 OF TAXLOT 6401 LOCATED IN THE
 SE 1/4 OF SECTION 23, T.2S., R.1E., W.M.
 CITY OF WEST LINN, CLACKAMAS COUNTY,
 OREGON



FOUND 5/8" IRON ROD WITH
 YELLOW PLASTIC CAP STAMPED
 "PARIS & ASSOC. INC. PLS 2264"

TAX LOT 1001
 MAP 2-1E-23BD

"REPLAT OF MARYLHURST HEIGHTS NO. 3"

LOT 6
 TAX LOT 506
 MAP 2-1E-23BD

FOUND 5/8" IRON ROD WITH
 YELLOW PLASTIC CAP STAMPED
 "PARIS & ASSOC. INC. PLS 2264"

FOUND 5/8" IRON ROD WITH
 YELLOW PLASTIC CAP STAMPED
 "PARIS & ASSOC. INC. PLS 2264"

LOT 7
 TAX LOT 507
 MAP 2-1E-23BD

1
 10018 SQ FT
 0.23 ACRES

2
 13063 SQ FT
 0.30 ACRES

3
 10838 SQ FT
 0.25 ACRES

REMNANT OF PARCEL 2
 (SEE P.P. 1997-63)
 8834 SQ FT
 0.20 ACRES

LOT 1
 "LANE PARK"
 TAX LOT 6403
 MAP 2-1E-23BD

RIDGEBROOK DRIVE

SUNCREST DRIVE

FOUND 5/8" IRON ROD
 WITH ALUMINUM CAP
 STAMPED "COMPASS CORP"
 IN A MONUMENT BOX

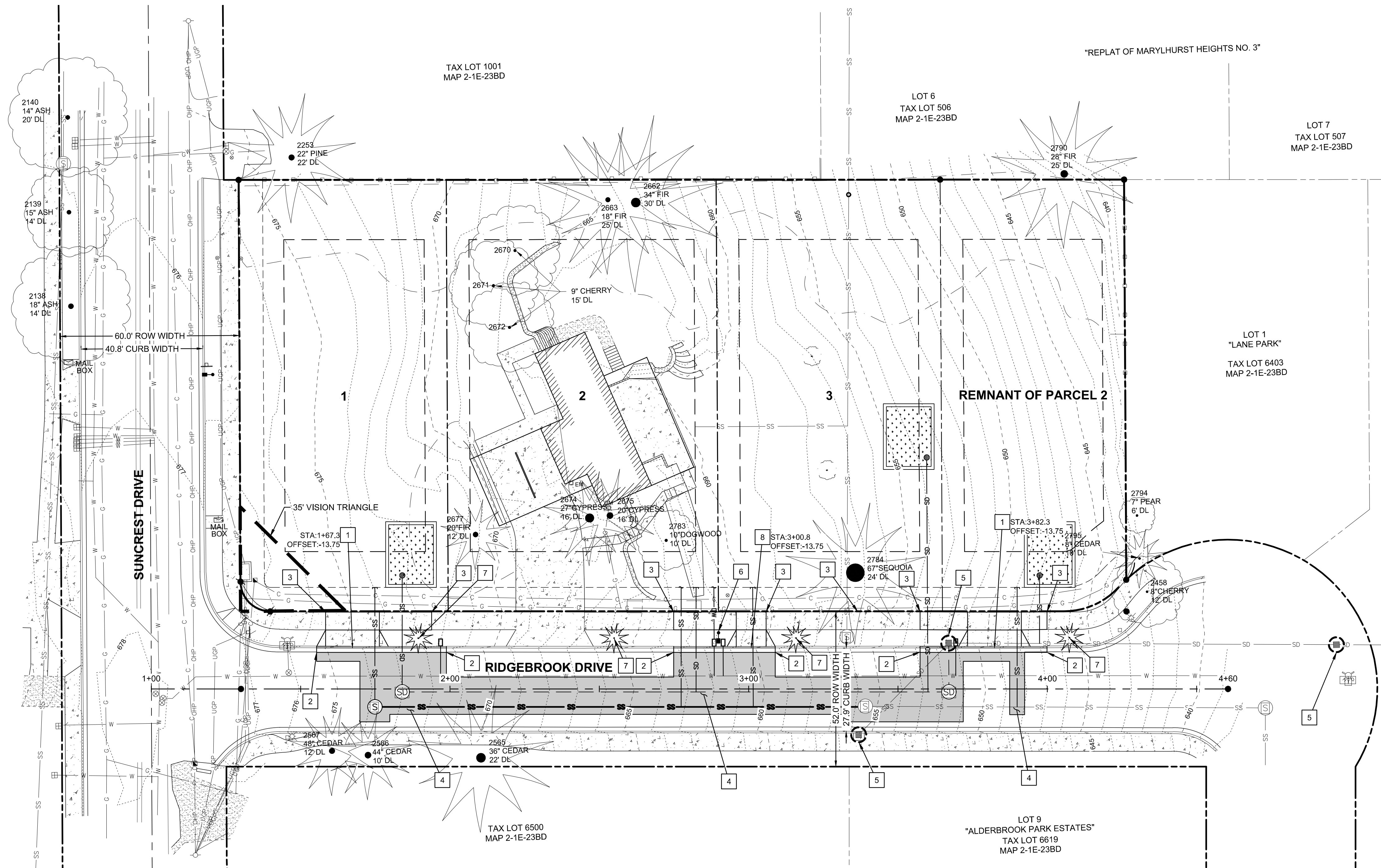
TAX LOT 6500
 MAP 2-1E-23BD

LOT 9
 "ALDERBROOK PARK ESTATES"
 TAX LOT 6619
 MAP 2-1E-23BD

FOUND 5/8" IRON ROD

FOUND 5/8" IRON ROD WITH
 YELLOW PLASTIC CAP STAMPED
 "COMPASS ENGINEERING"

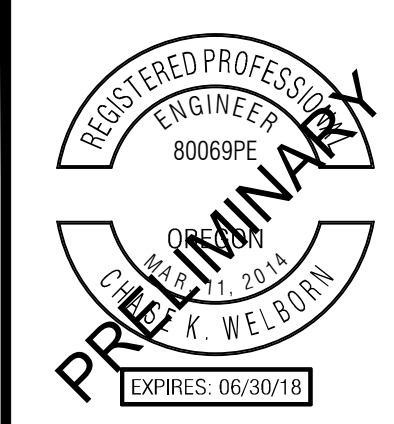
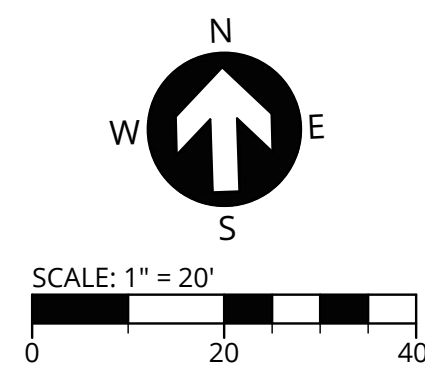
FOUND 5/8" IRON ROD
 WITH ALUMINUM CAP
 WITH A PUNCH MARK



LEGEND

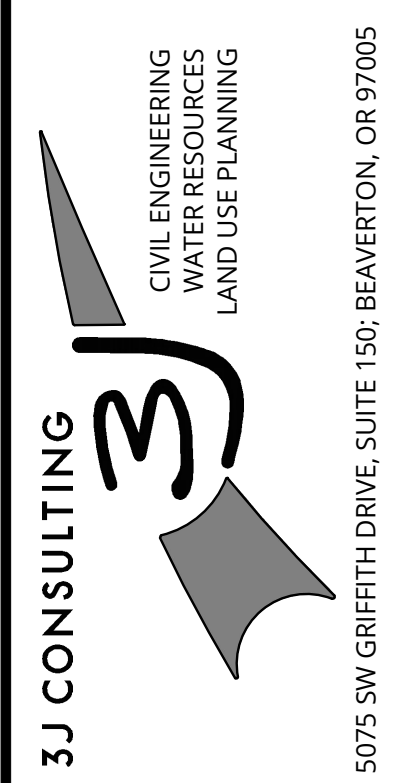
	EXISTING BUILDING
	PROJECT BOUNDARY
	RIGHT-OF-WAY LINE
	RIGHT-OF-WAY CENTERLINE
	EASEMENT LINE
	EXISTING LOT LINE
	EXISTING ADJACENT PROPERTY LINE
	EXISTING CONCRETE
	EXISTING GRAVEL
	EXISTING CURB
	PROPOSED SETBACK LINE
	PROPOSED CURB FACE
	PROPOSED CURB BACK
	PROPOSED LIP OF GUTTER
	PROPOSED ASPHALT
	PROPOSED CONCRETE
	EXISTING OVERHEAD POWER
	EXISTING UNDERGROUND POWER
	EXISTING CABLE
	EXISTING VEGETATION LIMITS LINE
	EXISTING SANITARY SEWER
	EXISTING STORM DRAIN
	EXISTING WATER MAIN
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED INLET PROTECTION
	PROPOSED STORMWATER PLANTER

- CONSTRUCTION KEY NOTES**
- 1 CONSTRUCT 18" WIDE DRIVEWAY APRON
 - 2 CONSTRUCT STANDARD CURB AND GUTTER. MATCH TO EXISTING CURB AT LOCATION SHOWN
 - 3 CONSTRUCT 5-FT SIDEWALK. CONSTRUCT IMPROVEMENTS TO THE NEAREST FULL PANEL
 - 4 CONSTRUCT NEW PAVEMENT WITHIN LIMITS OF SAWCUT LINE SHOWN
 - 5 INSTALL INLET PROTECTION AT LOCATION SHOWN
 - 6 PROPOSED STREET LIGHT. SEE C290 FOR FURTHER DETAIL.
 - 7 INSTALL STREET TREE AT LOCATION SHOWN. PROPOSED TREE SHALL BE INCLUDED ON CITY ARBORIST'S APPROVED SPECIES LIST.
 - 8 CONSTRUCT 10" WIDE DRIVEWAY APRON



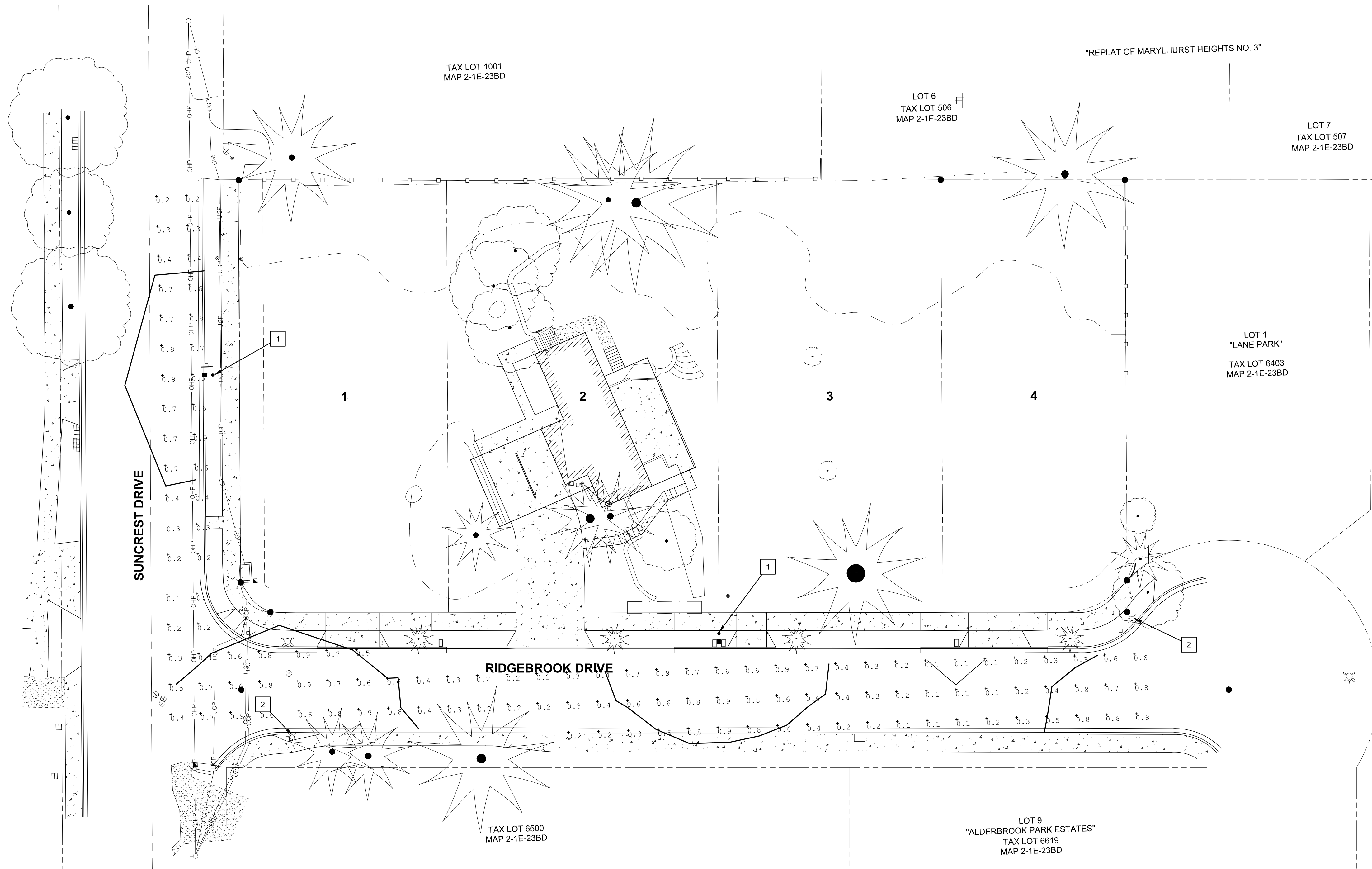
PUBLISH DATE
02-03-18
ISSUED FOR
LAND USE SET
REVISIONS

SITE PLAN
SUNCREST PARTITION
19310 SUNCREST DRIVE
KATHLEEN DAILEY
WEST LINN, OREGON



PROJECT INFORMATION
3J PROJECT # | 17414
TAX LOT(S) | 21E23BD 6401
LAND USE # | N/A
DESIGNED BY | CKW
CHECKED BY | AJM

SHEET NUMBER
C210



LEGEND

- 0.5 FC ISO-ILLUMINATION CONTOUR
- 0.1 FC ISO-ILLUMINATION CONTOUR
- 0.7 FC - ILLUMINATION ANALYSIS POINT (FC)
- FOOT CANDLE UNIT
- PROPOSED LUMINAIRE

RIDGEBROOK DRIVE	PROPOSED	REQUIRED*
EXISTING LIGHT(S) INCLUDED	2 EA	
NEW LIGHTS PROPOSED	1 EA	
MAX. ILLUMINATION	0.9 FC	
MIN. ILLUMINATION	0.1 FC	
AVERAGE ILLUMINATION	0.47 FC	0.40 FC (MIN)
UNIFORMITY (AVG/MIN)	4.70	6.00 (MAX)

*PER CITY OF WEST LINN PUBLIC WORKS DESIGN STANDARDS (2010)

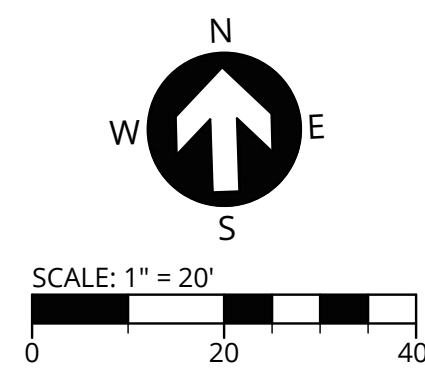
SUNCREST DRIVE	PROPOSED	REQUIRED*
EXISTING LIGHT(S) INCLUDED	0 EA	
NEW LIGHTS PROPOSED	1 EA	
MAX. ILLUMINATION	0.9 FC	
MIN. ILLUMINATION	0.2 FC	
AVERAGE ILLUMINATION	0.52 FC	0.50 FC (MIN)
UNIFORMITY (AVG/MIN)	2.60	4.00 (MAX)

*PER CITY OF WEST LINN PUBLIC WORKS DESIGN STANDARDS (2010)

LUMINAIRE
 CREE LEDWAY IP66 STREET LIGHT - TYPE 2 MEDIUM
 STR-LWY-2M-HT-02-E-UL-BZ-700-40K-R-UTL-SPX

POST AND ARM
 30 FT BRONZE POLE / 25 FT MOUNTING HEIGHT
 6' BRONZE MAST ARM

- SITE NOTES**
- 1 INSTALL NEW BRONZE POLE, 6-FT MAST ARM, AND LED BETA FIXTURE.
 - 2 EXISTING LUMINAIRE. SHOWN FOR REFERENCE ONLY.



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PHOTOMETRIC PLAN
SUNCREST PARTITION
19310 SUNCREST DRIVE
 KATHLEEN DAILEY
 WEST LINN, OREGON

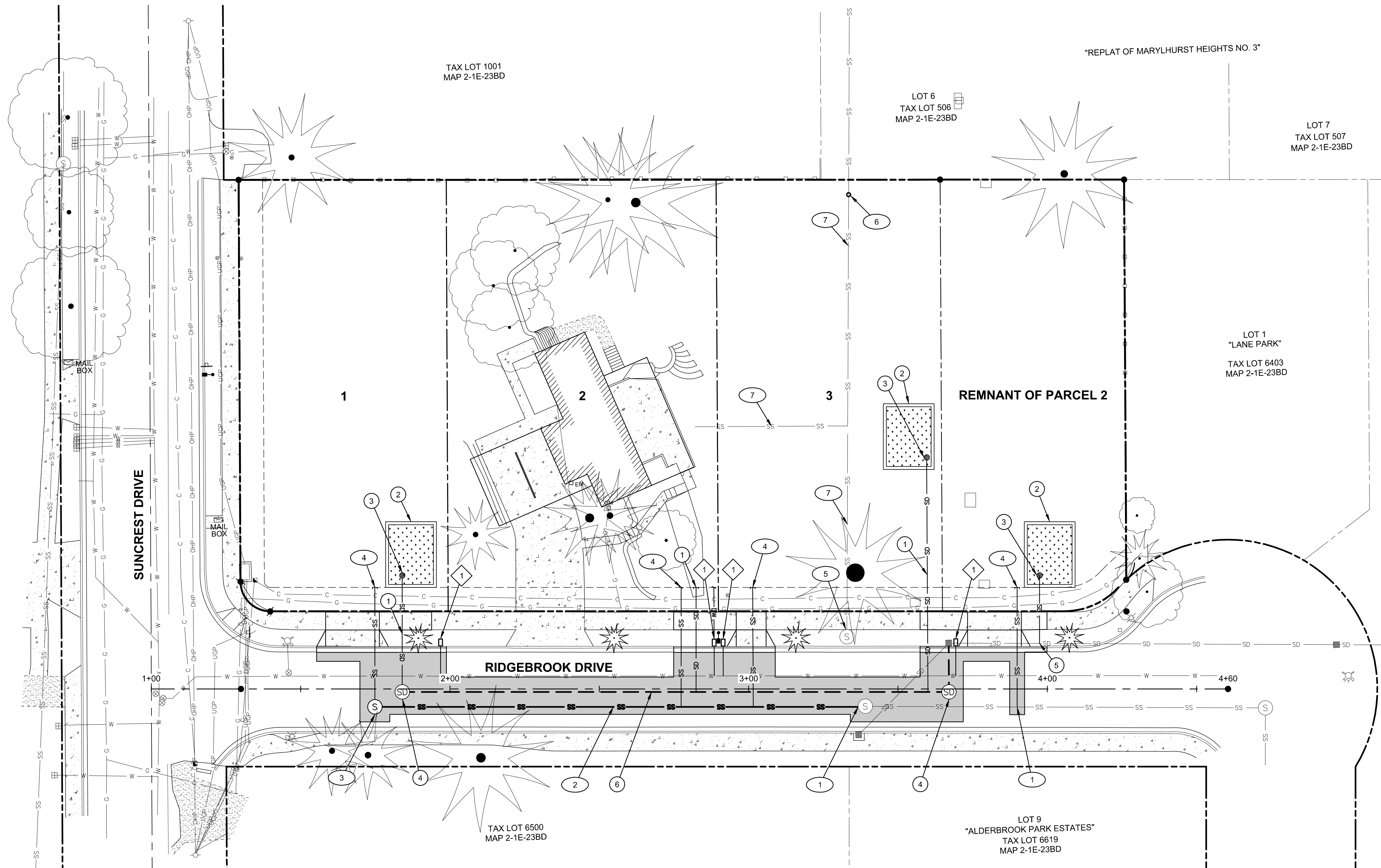
3J CONSULTING
 CIVIL ENGINEERING
 WATER RESOURCES
 LAND USE PLANNING

5075 SW GRIFFITH DRIVE, SUITE 150, BEAVERTON, OR 97005

PROJECT INFORMATION
 3J PROJECT # | 17414
 TAX LOT(S) | 21E23BD 6401
 LAND USE # | N/A
 DESIGNED BY | CKW
 CHECKED BY | AJM

SHEET NUMBER
C290

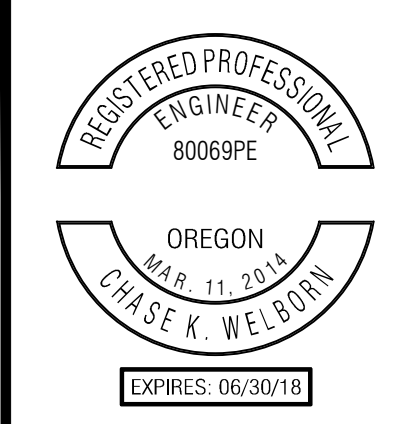
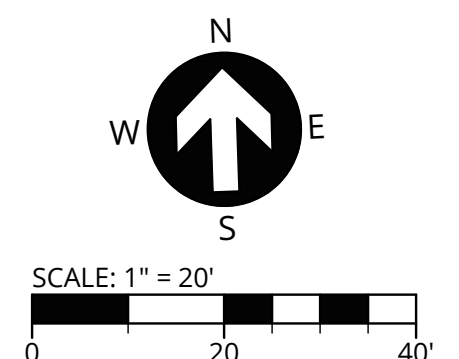
P:\17414-SUNCREST PARTITION\17414-C300-UTILITY PLAN.DWG



LEGEND	
	EXISTING BUILDING
	PROJECT BOUNDARY
	RIGHT-OF-WAY LINE
	RIGHT-OF-WAY CENTERLINE
	EASEMENT LINE
	EXISTING LOT LINE
	EXISTING ADJACENT PROPERTY LINE
	EXISTING CONCRETE
	EXISTING GRAVEL
	EXISTING CURB
	PROPOSED SETBACK LINE
	PROPOSED CURB FACE
	PROPOSED CURB BACK
	PROPOSED LIP OF GUTTER
	PROPOSED ASPHALT
	PROPOSED CONCRETE
	EXISTING OVERHEAD POWER
	EXISTING UNDERGROUND POWER
	EXISTING CABLE
	EXISTING VEGETATION LIMITS LINE
	EXISTING SANITARY SEWER
	EXISTING STORM DRAIN
	EXISTING WATER MAIN
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED INLET PROTECTION
	PROPOSED STORM MAIN
	PROPOSED STORM LATERAL / LEAD
	PROPOSED SANITARY MAIN
	PROPOSED SANITARY LATERAL
	PROPOSED WATER DOMESTIC SERVICE
	PROPOSED WATER METER
	PROPOSED PIPE CAP / STUB
	PROPOSED OVERFLOW DRAIN
	PROPOSED STORMWATER PLANTER

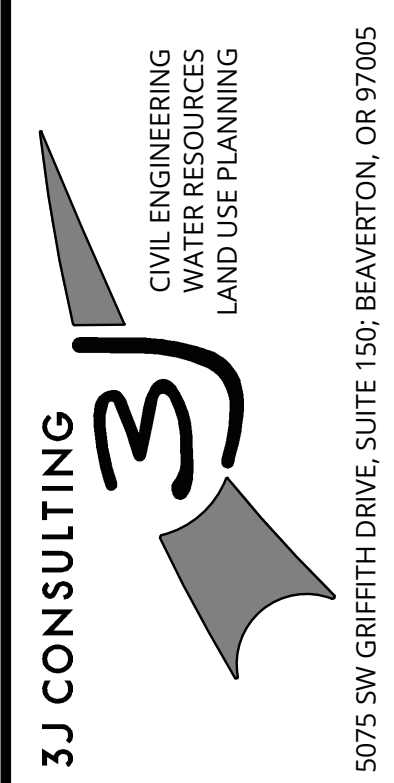
- WATER SYSTEM KEY NOTES**
- 1 INSTALL WATER METER AND SERVICE CONNECTION.
- SANITARY SEWER KEY NOTES**
- 1 CONNECT PROPOSED SEWER LINE TO EXISTING SANITARY NETWORK AT LOCATION SHOWN
 - 2 INSTALL SANITARY SEWER MAIN
 - 3 CONSTRUCT STANDARD SANITARY SEWER MANHOLE
 - 4 INSTALL NEW SANITARY SEWER LATERAL
 - 5 REMOVE EXISTING SANITARY MANHOLE AND CAP LINE TO BE ABANDONED IN PLACE.
 - 6 INSTALL NEW SANITARY SEWER CLEANOUT
 - 7 SANITARY LINE TO BE ABANDONED IN-PLACE. SHOWN FOR REFERENCE ONLY.

- STORM DRAIN KEY NOTES**
- 1 INSTALL NEW STORM SEWER LATERAL
 - 2 PRIVATE LIDA STORMWATER PLANTER. *SHOWN FOR REFERENCE ONLY. DEFER FINAL LOCATION AND CONSTRUCTION TO HOMEBUILDER.*
 - 3 PLANTER OVERFLOW DRAIN. *SHOWN FOR REFERENCE ONLY. DEFER FINAL LOCATION AND CONSTRUCTION TO HOMEBUILDER.*
 - 4 CONSTRUCT STANDARD STORM SEWER MANHOLE OVER EXISTING STORM LINE.
 - 5 CONNECT PROPOSED STORM LATERAL INTO EXISTING STORM NETWORK AT LOCATION SHOWN.
 - 6 INSTALL NEW STORM SEWER MAIN



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UTILITY PLAN
SUNCREST PARTITION
19310 SUNCREST DRIVE
KATHLEEN DAILEY
WEST LINN, OREGON



PROJECT INFORMATION
3J PROJECT # | 17414
TAX LOT(S) | 21E23BD 6401
LAND USE # | N/A
DESIGNED BY | CKW
CHECKED BY | AJM

SHEET NUMBER
C300