CITY OF West Linn

Planning & Development • 22500 Salamo Rd #1000 • West Linn, Oregon 97068
Telephone 503.656-3535 • westlinnoregon.gov

DEVELOPMENT REVIEW APPLICATION

For Office Use Only			
STAFF CONTACT Chris Myers	PROJECT NO(S). WRG-23-03/FMA-23-05		PRE-APPLICATION NO. PA-22-26
NON-REFUNDABLE FEE(S) $1,425 +$2,850.00	REFUNDABLE DEPOSIT(S)	TOTAL $4,275	

Type of Review (Please check all that apply):

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

Pre-Application, Home Occupation, Sidewalk Use, Addressing, and Sign applications require different forms, available on the City website.

Site Location/Address:
3801 Calaroga Drive, West Linn, OR 97068

Assessor's Map No.: 2 1 E 13CB
Tax Lot(s): 200
Total Land Area: ±0.57 acres

Brief Description of Proposal:

Removal of an existing rear deck to be replaced with a new tiered deck structure, covered gazebo, and staircase to provide a safe and sturdy route to a new gangway and dock in the recreational waters of the Willamette River.

Applicant Name: (please print) Shaun Catlin
Address: 1661 SE 2nd Street
City State Zip: Astoria, OR 97103
Phone: Contact Applicant's
Email: Consultant

Owner Name (required): (please print) Robert and Robin Endres
Address: 509 NW 3rd Avenue
City State Zip: Canby, OR 97103
Phone: Contact Applicant's
Email: Consultant

Consultant Name: (please print) AKS Engineering & Forestry
Address: ATTN: Grace Wolff
3700 River Road, Suite 1
City State Zip: Keizer, OR 97303
Phone: (503) 400-6028
Email: WolffG@aks-eng.com

1. All application fees are non-refundable (excluding deposit). **Any overruns to deposit will result in additional billing.**
2. The owner/applicant or their representative should be present at all public hearings.
3. A decision may be reversed on appeal. The permit approval will not be effective until the appeal period has expired.
4. Submit this form and supporting documents through the Submit a Land Use Application web page: https://westlinnoregon.gov/planning/submit-land-use-application

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.

Shaun Catlin — Applicant's signature
10/11/23 — Date
Robert J. Endres — Owner's signature *(required)*
10-11-23 — Date

3801 Calaroga Drive
Flood Management Area Development Permit

Date: October 2023

Submitted to: City of West Linn
22500 Salamo Road
West Linn, OR 97068

Applicant: Shaun Catlin
1661 SE 2nd Street
Astoria, OR 97103

AKS ENGINEERING & FORESTRY
3700 River Road North, Suite 1
Keizer, OR 97303
(503) 400-6028

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Exhibit G: Tree Evaluation
Exhibit H: Pre-Application Conference Meeting Summary Notes
Exhibit I: Verification of Property Ownership

3801 Calaroga Drive
Flood Management Area Development Permit

Submitted to:	City of West Linn 22500 Salamo Road West Linn, OR 97068
Applicant:	Shaun Catlin 1661 SE 2nd Street Astoria, OR 97103
Property Owners:	Robert and Robin Endres 509 NW 3rd Avenue Canby, OR 97103
Applicant's Consultant:	3700 River Road, Suite 1 Keizer, OR 97303 (503) 400-6028 Contact(s): Grace Wolff Email: wolffg@aks-eng.com Phone: (503) 400-6028
Site Location:	3801 Calaroga Drive, West Linn, OR 97068
Clackamas County Assessor's Map:	Map 2-1E-13CB, Tax Lot 200
Site Size:	±0.57 acres
Land Use Districts:	Single-Family Residential Detached (R-10)

I. Executive Summary

AKS Engineering & Forestry, LLC is pleased to submit this application on behalf of Shaun Catlin (Applicant) to gain approval for a Flood Management Area (FMA) Development Permit for Tax Lot 200 of Clackamas County Assessor's Map 2-1E-13CB. The Applicant plans to remove an existing rear deck and wooden staircase providing access to the Willamette River and replace it with a new tiered deck, covered gazebo, and staircase to provide safe access to a new gangway and dock in the recreational waters of the Willamette River.

The subject property is zoned Single-Family Residential Detached (R-10) and is partially within the Willamette River Greenway (WRG) Overlay Zone. The planned improvements are exempt from the requirement to obtain a WRG Permit approval per the City of West Linn (City) Community Development Code (CDC) 28.040, however, responses to the provisions of CDC Chapter 28 are included in this narrative to demonstrate the planned improvements meet the indicated exemptions and comply with the applicable criteria of CDC Chapter 28.

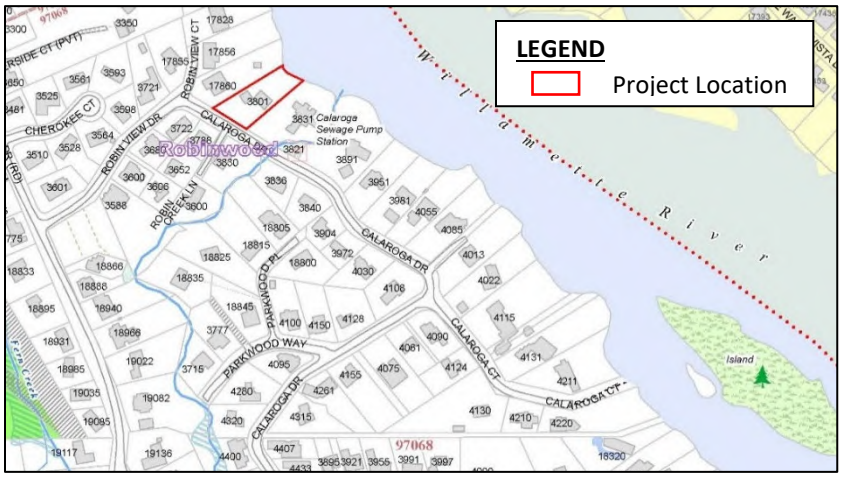
This application package outlines how the standards for natural resource protection, flood management, and access can be met for the planned improvements. Careful consideration for reducing impacts to the protection areas was made in preparation of the layout for the development because it is located within the 100-year floodplain and floodway.

This application includes the City application forms, written materials, and preliminary plans necessary for staff to review and determine compliance with the applicable approval criteria. The evidence is substantial and supports the City's approval of the application.

II. Site Description/Setting

The subject property is located at 3801 Calaroga Drive, within West Linn's Robinwood neighborhood, along the Willamette River (Figure 1). The property is located partially within the Federal Emergency Management Agency (FEMA) 100-year floodplain and partially within the regulatory floodway which comprise the City's Flood Management Area. Additionally, the property is within the WRG Overlay Zone. The property is developed with an existing home. Site grades drain northeast to the Willamette River. A wooden staircase and rock wall currently accommodate access between the home and the riverfront.

Figure 1: Vicinity Map



City of West Linn GIS (2018). West Linn Street and Address Map, Map Page: 4833.

III. Applicable Review Criteria

CITY OF WEST LINN COMMUNITY DEVELOPMENT CODE

Chapter 11 – Residential, R-10

[…]

11.030 Permitted Uses

The following are uses permitted outright in this zoning district:

1. **Single-family attached or detached residential unit.**
   a. **Duplex residential units.**
   b. **Triplex residential units.**
   c. **Quadplex residential units.**
2. **Cottage clusters.**
3. **Townhouse.**
4. **Community recreation.**
5. **Family day care.**
6. **Residential home.**
7. **Utilities, minor.**
8. **Transportation facilities (Type I).**
9. **Manufactured home**
10. **Community building on City-owned property at 3706 Cedaroak Drive and indicated on the map below.**

Response: This application includes a request to construct a new tiered deck, covered gazebo, and staircase to provide a safe route to a new gangway and dock in the recreational waters of the Willamette River. The planned improvements are considered as an accessory to the existing residence which is a permitted use within the R-10 Zoning District.

11.040 Accessory Uses

Accessory uses are allowed in this zone as provided by Chapter 34 CDC.

Response: This application includes a request to construct a new tiered deck, covered gazebo, and staircase to provide a safe route to a new gangway and dock in the recreational waters of the Willamette River. The planned improvements are considered as an accessory to the existing residence as provided by Chapter 34 of the West Linn Community Development Code (CDC) which is addressed in this narrative.

11.050 Uses and Development Permitted Under Prescribed Conditions

The following uses are allowed in this zone under prescribed conditions.

1. **Home occupations, subject to the provisions of Chapter 37 CDC.**
2. **Sign, subject to the provisions of Chapter 52 CDC.**
3. **Temporary uses, subject to the provisions of Chapter 35 CDC.**
4. **Water-dependent uses, subject to the provisions of Chapters 28 and 34 CDC.**

5. Agricultural or horticultural use; provided, that no retail or wholesale business sales office is maintained on the premises; and provided, that poultry or livestock shall not be permitted within 100 feet of any residence other than a dwelling on the same lot, nor on a lot of less than one acre, or which has less than 20,000 feet per head of livestock. These uses are subject to the nuisance provisions found in Section 5.400 et seq. of the West Linn Municipal Code.

6. Wireless communication facilities, subject to the provisions of Chapter 57 CDC.

Response: This application includes a request to construct water-dependent accessory uses including a new staircase to provide a safe route to a new gangway and dock in the recreational waters of the Willamette River. The prescribed conditions within Chapters 28 and 34 of the CDC are addressed in this narrative.

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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:

Standard	Requirement	Additional Notes
Minimum lot size Average minimum lot or parcel size for a townhouse project	10,000 sf 1,500 sf	For a single-family attached or detached unit
Minimum lot width at front lot line	35 ft	Does not apply to townhouses or cottage clusters
Average minimum lot width	50 ft	Does not apply to townhouses or cottage clusters
Minimum yard dimensions or minimum building setbacks		Except as specified in CDC 25.070(C)(1) through (4) for the Willamette Historic District. Front, rear, and side yard setbacks in a cottage cluster project are 10 ft. There are no additional setbacks for individual structures on individual lots, but minimum distance between structures shall follow applicable building code requirements.
Front yard	20 ft	Except for steeply sloped lots where the provisions of CDC 41.010 shall apply
Interior side yard	7.5 ft	Townhouse common walls that are attached may have a 0-ft side setback.
Street side yard	15 ft	
Rear yard	20 ft	
Maximum building height	35 ft	
Maximum lot coverage	35%	
Minimum accessway width to a lot which does not abut a street or a flag lot	15 ft	
Maximum floor area ratio Duplex, triplex, and quadplex	0.45 0.60	Maximum FAR does not apply to cottage clusters. 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.

Response: This project conforms to the dimensional requirements as shown on the Preliminary 100-Year Flood Elevation, Gangway Profile and Site Plan in Exhibit B. The planned improvements will result in a total lot coverage of ±6,600 square feet (27 percent), which is less than the maximum allowable lot coverage of 35 percent. Per CDC 34.050, only side yard setback requirements apply to boat houses and docks. The planned improvements are outside of the 7.5-foot side yard setback and the new tiered deck and covered gazebo are outside the 20-foot rear yard setback. Excluding Type I and II lands, the maximum allowable floor to area ratio for the subject property is approximately 8,800 square feet ((total site area – area in 100-year floodplain) * (0.45)). The existing total FAR is approximately 2,500 square feet. The application does not include any new areas subject to FAR standards. These standards are met.

Chapter 27 – Flood Management Areas

27.020 Applicability

This chapter shall apply to all flood management areas within the jurisdiction of West Linn. A flood management area permit is required for all development in the flood management area overlay zone. The standards that apply to flood management areas apply in addition to State or federal restrictions governing floodplains or flood hazard areas.

A. Basis for Establishing the Special Flood Hazard Areas (SFHA). The special flood hazard areas identified by the Federal Insurance Administrator in a scientific and engineering report entitled "Flood Insurance Study: Clackamas County, Oregon and Incorporated Areas," dated 06/2008 and revised 01/2019, FIRM Panels 41005C0018D, 41005C0019D, 41005C0038D, 41005C0257D, 41005C0259D, 41005C0260D, and 41005C0276D are hereby adopted by reference and declared to be a part of this chapter. The FIS and FIRM panels are on file at West Linn City Hall with the Community Development Department.

B. Coordination with State of Oregon Specialty Codes. Pursuant to the requirement established in ORS 455 that the City of West Linn administers and enforces the State of Oregon Specialty Codes, the City of West Linn does hereby acknowledge that the Oregon Specialty Codes contain certain provisions that apply to the design and construction of buildings and structures located in special flood hazard areas. Therefore, this chapter is intended to be administered and enforced in conjunction with the Oregon Specialty Codes.

Response: The subject property is located partially within the FMA Overlay Zone. The Applicant is aware of the requirements for development in this overlay zone. An FMA Development Permit application is included in this submittal.

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27.030 Exemptions

This chapter does not apply to work necessary to protect, repair, or maintain existing public or private structures, utility facilities, roadways, driveways, accessory uses, and exterior improvements, or replace small public structures, utility facilities, or roadways in response to emergencies. Within 30 days after the work has been completed, the party responsible for the work shall initiate a flood management permit designed to analyze any changes effectuated during the emergency and mitigate adverse impacts.

Response: This application does not relate to work performed in response to emergencies. This exemption does not apply.

27.040 Prohibited Uses

Prohibited uses in flood management areas include the following:

A. Any use prohibited in the base zone.

B. Uncontained areas of hazardous materials as defined by the Oregon Department of Environmental Quality.

Response: This application includes a request to construct a new tiered deck, covered gazebo, and staircase to provide a safe route to a new gangway and dock in the recreational waters of the Willamette River. The planned improvements are considered accessory to the existing residence which is a permitted use within the R-10 Zoning District.

[…]

27.060 Administration

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C. Establishment of Development Permit.

1. A development permit shall be obtained before construction or development begins within any area horizontally within the special flood hazard area established in CDC 27.020(A). The development permit shall be required for all structures, including manufactured dwellings, and for all other development, as defined in Chapter 2 CDC, including fill and other development activities.

Response: The subject property is located partially within the special flood hazard area. An FMA Development Permit is included in this application.

2. Application for a development permit may be made on forms furnished by the Floodplain Administrator and may include, but not be limited to, plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities, and the location of the foregoing. Specifically, the following information is required:

a. In riverine flood zones, the proposed elevation (in relation to mean sea level), of the lowest floor (including basement) and all attendant utilities of all new and substantially improved structures; in accordance with the requirements of subsection (B)(2) of this section.

b. Proposed elevation in relation to mean sea level to which any nonresidential structure will be floodproofed.

c. Certification by a registered professional engineer or architect licensed in the State of Oregon that the floodproofing methods proposed for any nonresidential structure meet the floodproofing criteria for nonresidential structures in CDC 27.080(C)(3).

d. Description of the extent to which any watercourse will be altered or relocated.

e. Base flood elevation data for subdivision proposals or other development when required per subsection (B) of this section and CDC 27.070(F).

f. Substantial improvement calculation for any improvement, addition, reconstruction, renovation, or rehabilitation of an existing structure.

g. The amount and location of any fill or excavation activities proposed.

Response: The applicable information is included in the Preliminary 100-Year Flood Elevation, Gangway Profile and Site Plan in Exhibit B. These requirements are met.

The planned improvements are within the R-10 zoning district and include a new tiered deck, covered gazebo, and staircase to provide a safe route to a new gangway and dock in the recreational waters of the Willamette River, not a nonresidential structure. Nevertheless, the gangway and dock are designed to be buoyant and will float with changing water levels, and the deck and staircase are designed to be water permeable. A letter from a professional civil engineer licensed to practice in the State of Oregon is provided in Exhibit E and provides certification that the planned improvements will maintain flood storage and conveyance capacity and not increase design flood elevations.

[…]

27.070 General Standards

In all special flood hazard areas, the following standards shall be adhered to:

A. Alteration of Watercourses.

1. Require that the flood carrying capacity within the altered or relocated portion of said watercourse is maintained. Require that maintenance is provided within the altered or relocated portion of said watercourse to ensure that the flood carrying capacity is not diminished. Require compliance with CDC 27.060(B)(3)(b) and (c).

Response: No alteration of watercourses is anticipated as a result of this project. A letter from a professional civil engineer licensed to practice in the State of Oregon is provided in Exhibit E and provides certification that the planned improvements will maintain flood storage and conveyance capacity and not increase design flood elevations. This requirement is not applicable.

B. Anchoring.

1. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

Response: The planned improvements are designed to be anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy. The planned improvements will include four piles with

a diameter of 12 inches. Floodwater will be allowed to infiltrate the piles and the gangway and dock will utilize float boxes to self-adjust to changing water elevations. The planned improvements are engineered to prevent collapse or lateral movement of the structure. The design is to withstand the hydrodynamic and hydrostatic load resulting from the 100-year flood event and keep the planned improvements secured to the riverbank. This standard is met.

2. All manufactured dwellings shall be anchored per CDC 27.080(C)(4).

Response: This project does not involve manufactured dwellings. This standard is not applicable.

C. Construction Materials and Methods.

1. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

Response: Exhibit C includes Architectural Plans detailing the materials of the planned improvements. The materials are resistant to flood damage including open joint decking paired with a structural pier system that allows the structure to sit lightly on the terrain and allows water to drain through the surface. This criterion is met.

2. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.

Response: Final construction plans will include notes to the contractors to ensure that they use methods and practices during construction that will minimize flood damage. This criterion can be met.

D. Utilities and Equipment.

1. Water Supply, Sanitary Sewer and On-Site Waste Disposal Systems.

a. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.

b. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters.

c. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding consistent with the Oregon Department of Environmental Quality.

Response: This project does not include any new or replacement water supply systems, sanitary sewage systems, or waste disposal systems. This standard is not applicable.

2. Electrical, Mechanical, Plumbing, and Other Equipment.

a. Electrical, heating, ventilating, air conditioning, plumbing, duct systems, and other equipment and service facilities shall be elevated at or above one foot above the base flood level or shall be designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during conditions of flooding. In addition, electrical, heating, ventilating, air conditioning, plumbing, duct systems, and other equipment and service facilities, if replaced as part of a substantial improvement, shall meet all the requirements of this section.

Response: This project does not include any electrical, heating, ventilating, air conditioning, plumbing, duct systems, or other equipment and service facilities. This standard is not applicable.

E. Tanks.

1. Underground tanks shall be anchored to prevent flotation, collapse and lateral movement under conditions of the base flood.

2. Above-ground tanks shall be installed at or above one foot above the base flood level or shall be anchored to prevent flotation, collapse, and lateral movement under conditions of the base flood.

Response: This project does not include any tanks. This standard is not applicable.

F. Subdivision Proposals and Other Proposed Developments.

1. All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) greater than 50 lots or five acres, whichever is the lesser, shall include within such proposals base flood elevation data.

2. Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for any land division proposal.

3. All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) shall:

a. Be consistent with the need to minimize flood damage.

b. Have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize or eliminate flood damage.

c. Have adequate drainage provided to reduce exposure to flood hazards.

Response: This project does not include a subdivision or any other proposed new developments. These standards are not applicable.

G. Use of Other Base Flood Elevation Data.

1. When base flood elevation data has not been provided in accordance with CDC 27.020, the local floodplain administrator shall obtain, review, and reasonably utilize any base flood elevation data available from a federal, State, or other source, in order to administer this section and CDC 27.080, 27.090, and 27.100. All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) must meet the requirements of subsection (F) of this section.

2. Base flood elevations shall be determined for development proposals that are five acres or more in size or are 50 lots or more, whichever is lesser, in any A zone that does not have an established base flood elevation. Development proposals located within a riverine unnumbered A zone shall be reasonably safe from flooding; the test of reasonableness includes use of historical data, high water marks, FEMA provided base level engineering data, and photographs of past flooding. When no base flood elevation data is available, the elevation requirement for development proposals within a riverine unnumbered A zone is a minimum of two feet above the highest adjacent

grade, to be reasonably safe from flooding. Failure to elevate at least two feet above grade in these zones may result in higher insurance rates.

Response: The base flood elevation is identified on FIRM Panel 41005C0019D as 44.2 feet, therefore, the use of other base flood elevation data is not required. These standards are not applicable.

H. Structures Located in Multiple or Partial Flood Zones. In coordination with the State of Oregon Specialty Codes:

1. When a structure is located in multiple flood zones on the community's flood insurance rate maps (FIRM) the provisions for the more restrictive flood zone shall apply.

2. When a structure is partially located in a special flood hazard area, the entire structure shall meet the requirements for new construction and substantial improvements.

Response: This project does not involve the construction of a structure, as defined in the Floodplain definitions in CDC 2.030; however, the planned improvements are located partially within Flood Zone AE and partially within Flood Zone X. The planned development will meet the applicable requirements for new construction within the AE Zone. These standards are met.

I. Balanced Cut and Fill.

1. Development, excavation, and fill shall be performed in a manner to maintain or increase flood storage and conveyance capacity and not increase design flood elevations.

Response: The Preliminary 100-Year Flood Elevation, Gangway Profile and Site Plan included in Exhibit B provides an evaluation of cuts and fills. Additionally, this application includes a letter, attached as Exhibit E, certifying that the construction of the planned improvements in the floodway will not result in an increase in flood levels. The planned improvements will create approximately 48 cubic feet of fill within the floodway which will be compensated for by an equivalent cut volume during construction. This standard is met.

2. No net fill increase in any floodplain is allowed. All fill placed in a floodplain shall be balanced with an equal amount of soil material removal. Excavation areas shall not exceed fill areas by more than 50 percent of the square footage. Any excavation below the ordinary high water line shall not count toward compensating for fill.

Response: The planned piles and approximate soil removal amounts are included on the Preliminary 100-Year Flood Elevation, Gangway Profile and Site Plan in Exhibit B. The estimated cut and fill amount within the 100-year flood boundary is ±48 cubic feet; however, this value is highly variable and depends on subsurface soil conditions. This application includes a letter, attached as Exhibit E, certifying that the construction of the planned improvements in the floodway will not result in an increase in flood levels. This standard is met.

3. Excavation to balance a fill shall be located on the same lot or parcel as the fill unless it is not reasonable or practicable to do so. In such cases, the excavation shall be located in the same drainage basin and as close as possible to the fill site, so long as the proposed excavation and fill will not increase flood impacts for surrounding properties as determined through hydrologic and hydraulic analysis.

Response: All excavation to balance fill is planned to be located on the same lot as the fill. This standard is met.

J. Minimum Finished Floor Elevation.

1. Minimum finished floor elevations must be at least one foot above the design flood height or highest flood of record, whichever is higher, for new habitable structures in the flood area.

Response: This application is for the construction of a new tiered deck, covered gazebo, and staircase to provide a safe route to a new gangway and dock in the recreational waters of the Willamette River, not a habitable structure. This standard is not applicable.

K. Other Requirements.

1. New culverts, stream crossings, and transportation projects shall be designed as balanced cut and fill projects or designed not to significantly raise the design flood elevation. Such projects shall be designed to minimize the area of fill in flood management areas and to minimize erosive velocities. Stream crossings shall be as close to perpendicular to the stream as practicable. Bridges shall be used instead of culverts wherever practicable.

2. Excavation and fill required for the construction of detention facilities or structures, and other facilities, such as levees, specifically shall be designed to reduce or mitigate flood impacts and improve water quality. Levees shall not be used to create vacant buildable land.

Response: This project does not include any new culverts, stream crossings, transportation projects, or excavation and fill required for the construction of detention facilities or structures. These standards are not applicable.

27.080 Specific Standards for Riverine Flood Zones

These specific standards shall apply to all new construction and substantial improvements in addition to the general standards contained in CDC 27.070.

[…]

C. For Riverine Special Flood Hazard Areas With Base Flood Elevations. In addition to the general standards listed in CDC 27.070 the following specific standards shall apply in riverine (noncoastal) special flood hazard areas with base flood elevations (BFE): zones A1-30, AH, and AE.

1. Before Regulatory Floodway. In areas where a regulatory floodway has not been designated, no new construction, substantial improvement, or other development (including fill) shall be permitted within zones A1-30 and AE on the community's flood insurance rate map (FIRM), unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

Response: The regulatory floodway is designated on the property; therefore, this standard is not applicable. Nevertheless, the cumulative effect of the project will not increase the water surface elevation of the base flood more than one foot as shown Exhibit E.

2. Residential Construction

a. New construction, conversion to, and substantial improvement of any residential structure shall have the lowest floor, including

basement, elevated at or above one foot above the base flood elevation.

b. Enclosed areas below the lowest floor shall comply with the flood opening requirements in subsection (A) of this section.

Response: The planned improvements are not a residential structure, nor do they enclose areas below a residential structure. These criteria do not apply.

[…]

27.090 Standards for Floodways

Located within the special flood hazard areas established in CDC 27.020(A) are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of the floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

A. Prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless:

1. Certification by a registered professional civil engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment shall not result in any increase in flood levels within the community during the occurrence of the base flood discharge; or

2. A community may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations; provided, that a conditional letter of map revision (CLOMR) is applied for and approved by the Federal Insurance Administrator, and the requirements for such revision as established under 44 CFR 65.12 are fulfilled.

Response: A letter from a professional civil engineer licensed to practice in the State of Oregon providing certification that the planned improvements will maintain flood storage and conveyance capacity and not increase design flood elevations is provided in Exhibit E. This requirement is met.

B. If the requirements of subsection (A) of this section are satisfied, all new construction, substantial improvements, and other development shall comply with all other applicable flood hazard reduction provisions of CDC 27.070, 27.080, this section, and CDC 27.100.

Response: The requirements of subsection (A) of this section are satisfied, as indicated above. This narrative addresses the applicable flood hazard reduction provisions of CDC 27.070 and 27.080. The provisions of CDC 27.100 are not applicable as the planned improvements are not within a shallow flooding area. This requirement is met.

Chapter 28 - Willamette and Tualatin River Protection

28.030 Applicability

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

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

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

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

Response: The subject property is located partially within the Willamette River Greenway (WRG) Area and the high and moderate habitat conservation areas (HCAs) are present on the site. The planned improvements are exempt per CDC 28.040. A WRG Protection Area Permit approval under the provisions of this chapter is not required as demonstrated below and in Exhibits B and C.

B. At the confluence of a stream or creek with either the Tualatin or Willamette River, the standards of this chapter shall apply only to those portions of the lot or parcel fronting the river. Meanwhile, development in those portions of the property facing or adjacent to the stream or creek shall meet the transition, setbacks and other provisions of Chapter 32 CDC, Water Resource Area Protection.

Response: This project does not include development of a property at the confluence of a stream or creek with the river. There is a stream located more than 100 feet south of the project area, placing the work outside of the applicable Water Resource Area (WRA) protection area. Therefore, the transition, setbacks, and other provisions of Chapter 32 CDC are not applicable.

C. All uses permitted under the provisions of the underlying base zone and within the Willamette and Tualatin River Protection Area zone are allowed in the manner prescribed by the base zone subject to applying for and obtaining a permit issued under the provisions of this chapter unless specifically exempted per CDC 28.040.

Response: The planned accessory use is permitted under the provisions of the underlying base zone and is exempted by CDC 28.040. A WRG Protection Area Permit approval under the provisions of this chapter is not required as demonstrated below and in Exhibits B and C.

D. The construction of a structure in the HCA or the expansion of a structure into the HCA when the new intrusion is closer to the protected water feature than the pre-existing structure.

Response: The planned improvements extend no closer to the Willamette River than the existing wooden staircase that currently provides property owner access to the river. The planned improvements result in safer access to the river and improved bank stability. A WRG Protection Area Permit approval under the provisions of this chapter is not required as demonstrated in the narrative responses below and in Exhibits B and C.

28.040 Exemptions/Uses Permitted Outright

The following development activities do not require a permit under the provisions of this Chapter. (Other permits may still be required.):

[…]

U. **Maintenance, alteration, expansion, repair and replacement of existing structures are exempt, provided impermeable surfaces do not exceed 5,000 square feet and that it complies with the provisions of Chapters 27 and 28 CDC. The following standards shall also apply:**

[…]

2. The alteration, expansion, repair and replacement of a house or structure per the standards of CDC 28.110(E) not to exceed 5,000 square feet of impermeable surface per that section; or

[…]

Response: The planned improvements are partially characterized as an expansion of an existing structure (existing deck and single-family residence) where the sum of existing and new impermeable surfaces is less than 5,000 square feet (existing impermeable surfaces in HCA areas equal approximately 2,790 square feet; new impermeable surfaces in HCA areas is planned to equal approximately 475 square feet). Responses to the applicable criteria in CDC 28.110(E) are included below and demonstrate that the planned improvements do not require a permit under the provisions of this Chapter.

[…]

CC. A new dock subject to the approval criteria of this chapter.

Response: The planned improvements are partially characterized as a new dock, and gangway access. Responses to the applicable criteria in CDC 28.110(E) are included below and demonstrate that the planned improvements do not require a permit under the provisions of this Chapter.

28.050 Prohibited Uses

The following are prohibited:

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

Response: This project involves a new tiered deck, covered gazebo, and staircase to provide a safe route to a new gangway and dock in the recreational waters of the Willamette River. The planned improvements are not prohibited per CDC 28.050.

[…]

28.090 Submittal Requirements: Application

A. An application for a protection area permit shall be initiated by the property owner or the owner's authorized agent. Evidence shall be provided to demonstrate that the applicant has the legal right to use the land above the OLW. The property owner's signature is required on the application form.

Response: Application forms signed by the property owner is included in Exhibit A. Property owner verification is provided as Exhibit I. These requirements are met.

B. A prerequisite to the filing of an application is a pre-application conference at which time the Planning Director shall explain the provisions of this chapter and provide appropriate forms as set forth in CDC 99.030(B).

Response: The Applicant met with City staff for a pre-application conference on September 15, 2022. A copy of the Pre-Application Summary is attached as Exhibit H. This requirement is met.

C. An application for a protection area permit shall include the completed application and:

1. Narrative which addresses the approval criteria of CDC 28.110.

Response: This narrative and supporting documentation address the applicable approval criteria of CDC 28.110. This requirement is met.

2. A site plan, with HCA boundaries shown and by low, moderate, high type shown (CDC 28.120).

Response: A Site Plan illustrating the Habitat Conservation Areas Overlay is provided in Exhibit B and shows the high, moderate, and areas not designated as HCA boundaries. There are no areas of low value HCA on the subject site. This requirement is met.

3. A grading plan if applicable (CDC 28.130).

Response: Per CDC 28.130, a grading plan is required for the planned improvements; however, only minimal grading will occur to place minor footings for the deck and stairs and four pylons for the gangway and dock. A Construction Management and Erosion and Sediment Control Plan is provided in Exhibit B, and which indicates the extent of the grading necessary for the planned improvements. Additionally, the site is considered Type III land per the definition in CDC Chapter 02; therefore, a geologic report is required and will be completed prior to building permit submittal. This requirement is met.

4. Architectural drawings if applicable (CDC 28.140).

Response: Architectural Plans of the planned improvements are provided as Exhibit C. This requirement is met.

5. A landscape plan if applicable (CDC 28.150).

Response: No landscaping is planned other than the required enhancement area plantings to mitigate the permanent disturbance area. A Mitigation Plan is provided in Exhibit D which

includes the applicable information required for a landscape per CDC 28.150. This requirement is met.

6. A mitigation plan if applicable (CDC 28.160).

Response: A mitigation plan is required per CDC 28.160 because a portion of the HCA will be permanently disturbed as a result of the planned improvements. The mitigation plan is attached as Exhibit D. This requirement is met.

7. A storm detention and treatment plan and narrative statement pursuant to CDC 92.010(E).

Response: A storm detention and treatment plan is not required for this application because minimal increase in runoff is anticipated (application will result in approximately 475 square feet of new impermeable area), and all runoff will continue to flow according to the existing conditions shown on the Construction Management and Erosion and Sediment Control Plan provided in Exhibit B. The materials for the planned improvements will include open joint decking paired with a structural pier system that allows the structure to sit lightly on the terrain and allows water to drain through the surface. The planned improvements will add ±475 square feet of impermeable surface to the site. Per the City's Public Works Design Standards, section 2.0041, only development creating 1,000 square feet or more of impervious area requires stormwater detention. This criterion does not apply.

One original application form must be submitted. One copy at the original scale and one copy reduced to 11 inches by 17 inches or smaller of all drawings and plans must be submitted. One copy of all other items, including the narrative, must be submitted. The applicant shall also submit one copy of the complete application in a digital format acceptable to the city. When the application submittal is determined to be complete, additional copies may be required as determined by the Planning Director.

Response: One original application form and one copy of all drawings and plans and other items including this narrative is included with this submittal. A digital copy of the complete application is also included. The Applicant understands that additional copies may be required. This requirement is met.

D. The applicant shall pay the requisite fees.

Response: Requisite fees are included with this submittal. This criterion is met.

E. The applicant shall be responsible for, and shall apply for, all applicable State and/or federal permits.

Response: The Applicant understands the responsibility to apply for any applicable state and/or federal permits. This criterion can be met.

F. The applicant shall include a map, approved or acknowledged by DSL, of the preference rights and authorized areas if a water surface structure is proposed.

Response: An application will be submitted to the Department of State Lands (DSL) to authorize the use of state-owned submerged and submersible lands for the new residential dock. The dock is centered in the area that will be requested for approval by DSL. Documentation of DSL approval will be provided to the City prior to placement of the dock. This criterion will be met.

[…]

28.110 Approval Criteria

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

A. Development: All sites.

1. Sites shall first be reviewed using the HCA Map to determine if the site is buildable or what portion of the site is buildable. HCAs shall be verified by the Planning Director per CDC 28.070 and site visit. Also, "tree canopy only" HCAs shall not constitute a development limitation and may be exempted per CDC 28.070(A). The municipal code protection for trees and Chapters 55 and 85 CDC tree protection shall still apply.

2. HCAs shall be avoided to the greatest degree possible and development activity shall instead be directed to the areas designated "Habitat and Impact Areas Not Designated as HCAs," consistent with subsection (A)(3) of this section.

3. If the subject property contains no lands designated "Habitat and Impact Areas Not Designated as HCAs" and development within HCA land is the only option it shall be directed towards the low HCA areas first, then medium HCA areas and then to high HCA as the last choice. The goal is to, at best, avoid or, at least, minimize disturbance of the HCAs. (Water-dependent uses are exempt from this provision.)

Response: The subject property is approximately 25,000 square feet in area. Seventy-three percent of the total site area comprises areas that are designated as moderate and/or high HCA. Three areas of "Non-HCA" designation occur in the area near the residences' existing driveway and along the Calaroga Drive frontage, and a small area just west of the existing retaining wall near the river.

Existing impermeable surfaces in the moderate and high HCA designated areas on the subject site equal approximately 2,790 square feet, and new impermeable surfaces in the moderate and high HCA designated areas include approximately 475 square feet for a total of 3,265 square feet of impermeable surface in total. Due to the nature of their use (new deck, stairs, and dock/gangway) the planned improvements must be located between the existing home and the river in order to improve safe access to the river and stabilize the existing riverbank. As such, it is not possible to locate the planned improvements within the non-HCA designated areas nearer the Calaroga Drive frontage.

For this reason, Applicant has selected water permeable materials for almost all of the planned deck area, stairs, and dock/gangway and which per 28.040(U)(2) is exempt from the requirement to obtain a permit under this section, provided the improvements meet the applicable standards in CDC Section 28.110(E). Responses to the applicable criteria in CDC 28.110(E) are provided below. Additionally, access to the river is a water dependent use and therefore exempt from this provision. These criteria do not apply.

Nevertheless, the planned improvements meet the goal of this provision to minimize disturbance of the HCAs through the use of water-permeable materials as stated above, and the implementation of a mitigation and re-vegetation plan as shown in Exhibit B.

4. **All development, including exempted activities of CDC 28.040, shall have approved erosion control measures per Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual, rev. 2008, in place prior to site disturbance and be subject to the requirements of CDC 32.070 and 32.080 as deemed applicable by the Planning Director.**

Response: The Construction Management, Erosion, and Sediment Control Plan in Exhibit B shows that the site design is configured to accommodate the installation of the planned improvements with the least amount of impact to the HCA. The City's Building Department will ensure that all applicable erosion control measures are in place prior to site construction during review of final construction plans. This criterion is met.

B. Single-family or attached residential. Development of single-family homes or attached housing shall be permitted on the following HCA designations and in the following order of preference with "a" being the most appropriate and "d" being the least appropriate:

- **a "Habitat and Impact Areas Designated as HCAs"**
- **b Low HCA**
- **c Moderate HCA**
- **d High HCA**

1. **Development of land classifications in "b," "c" and "d" shall not be permitted if at least a 5,000-square-foot area of buildable land ("a") exists for home construction, and associated impermeable surfaces (driveways, patios, etc.).**
2. **If 5,000 square feet of buildable land ("a") are not available for home construction, and associated impermeable surfaces (driveways, patios, etc.) then combinations of land classifications ("a," "b" and "c") totaling a maximum of 5,000 square feet shall be used to avoid intrusion into high HCA lands. Development shall emphasize area "a" prior to extending construction into area "b," then "c" lands.**

Response: CDC Chapter 2 defines "development" as,

> *"Any manmade change defined as the construction of buildings or other structures… grading or site clearing… in amounts greater than 10 cubic yards on any lot, parcel, or lot of record… Within the Willamette and Tualatin River Protection Areas, this term shall also include any change of use or intensification of the use of land or water, including construction of structures (such as houses, structures, docks and associated pilings or piers), significant grading, or removal or addition of vegetation and groundcover unless specifically exempted per CDC 28.040. Development shall not include grading, site clearing, grubbing or filling where it is part of a submitted land use application that includes the restoration of grades and replanting the affected area with native vegetation per a re-vegetation plan…"*

The planned accessory structure will have minimal ground disturbance due to its construction atop pier-type supports and will reduce the overall ground disturbing impacts as compared with the existing surface-mounted stairs that currently provide access to the river. Per this definition, and because the planned use is specifically exempted per CDC 28.040, the activity may not be characterized as development.

Additionally, the improvements are part of a submitted land use application which includes a plan to restore grades, stabilize the riverbank, and re-vegetate affected areas which, per this definition, also classify the improvements as non-development.

Moreover, the subject application does not include a request for new single-family attached or detached housing. These criteria do not apply.

A 5,000 square foot area of buildable non-HCA designated land that is suitable for the planned improvements does not exist on the subject site. Due to the nature of their use (new deck, stairs, and dock/gangway) the planned improvements must be located between the existing home and the river in order to improve safe access to the river and stabilize the existing riverbank. A large portion of the property between the existing home and the Willamette river is comprised of high HCA lands. No improved access to the river would be possible without crossing HCA land.

For this reason, Applicant has selected water permeable materials for almost all of the planned deck area, stairs, and dock/gangway and which per 28.040(U)(2) is exempt from the requirement to obtain a permit under this section, provided the improvements meet the applicable standards in CDC Section 28.110(E). Responses to the applicable criteria in CDC 28.110(E) are provided below.

3. **The underlying zone FAR shall also apply as well as allowable lot coverage.**

Response: Excluding Type I and II lands, the maximum allowable floor to area ratio for the subject property, per CDC 11.070, is approximately 8,800 square feet ((total site area – area in 100-year floodplain) * (0.45)). The existing total FAR is approximately 2,500 square feet. The application does not include any new areas subject to FAR standards.

The existing home and the impermeable areas of the planned improvements (per subsection (5) below) will result in a total lot coverage of ±15 percent, which is less than the maximum allowable lot coverage of 35 percent. This criterion is met.

4. **Development may occur on legal lots and non-conforming lots of record located completely within the HCA areas or that have the majority of the lot in the HCA to the extent that the applicant has less than 5,000 square feet of non-HCA land.**

   Development shall disturb the minimum necessary area to allow the proposed use or activity, shall direct development to any available non-HCA lands and in any situation shall create no more than 5,000 square feet of impervious surface. (Driveways, paths, patios, etc., that are constructed of approved water-permeable materials will not count in calculating the 5,000-square-foot lot coverage.) The underlying zone FAR and allowable lot coverage shall also apply and may result in less than 5,000 square feet of lot coverage.

   When only HCA land is available then the structure shall be placed as far away from the water resource area or river as possible. To facilitate this, the front setback of the structure or that side which is furthest away from the water resource or river may be reduced to a five-foot setback from the front property line without a variance. Any attached garage must provide a 20-foot by 20-foot parking pad or driveway so as to provide off-street parking exclusive of the garage. The setbacks of subsection C of this section shall still apply.

Response: As previously discussed, the application may not be characterized as development, and the subject application does not include a request for new single-family attached or detached housing.

Only HCA land is available to accommodate the planned use and the nature of such use requires a connection to the river. Because only HCA land is available and because the improvements are necessary to improve safe access to the Willamette River and to stabilize the riverbank, the structure must extend to the river and through the HCA setback outlined above. The CDC anticipates this situation through the exemptions established in CDC 28.040.U and CC. To the extent that any portion of this criterion is applicable, the above response demonstrates that such are met.

5. Driveways, paths, patios, etc., that are constructed of approved water-permeable materials will be exempt from the lot coverage calculations of subsections (B)(1) through (4) of this section and the underlying zone.

Response: The planned improvements, including the new tiered deck, staircase, and gangway, are designed to be water-permeable and are not counted in the lot coverage calculations above.

6. Table showing development allowed by land classification:

	Development Allowed
Non-HCA ("a")	Yes
Low-Medium HCA ("b" and "c")	Yes, if less than 5,000 sq. ft. of non-HCA land available. Avoid "d."
High HCA ("d")	Yes, but only if less than 5,000 sq. ft. of "a," "b" and "c" land available.
Non-conforming Structures (structures on HCA land)	Yes: vertically, laterally and/or away from river. Avoid "d" where possible.

(The underlying zone FAR and allowable lot coverage shall also apply.)

Response: A large portion of the property between the existing home and the Willamette river is comprised of high HCA lands. No access to the river would be possible without crossing the high HCA land.

For this reason, Applicant has selected water permeable materials for almost all of the planned deck area, stairs, and dock/gangway and which per 28.040(U)(2) is exempt from the requirement to obtain a permit under this section, provided the improvements meet the applicable standards in CDC Section 28.110(E). Responses to the applicable criteria in CDC 28.110(E) are provided below. Additionally, the deck will not be directed further towards the river than the existing deck and staircase, as shown on the Existing Conditions Plan in Exhibit B. These criteria do not apply.

C. Setbacks from top of bank.

1. Development of single-family homes or attached housing on lands designated as "Habitat and Impact Areas Not Designated as HCAs" shall require a

structural setback of 15 feet from any top of bank that represents the edge of the land designated as "Habitat and Impact Areas Not Designated as HCAs."

2. At-grade water-permeable patios or decks within 30 inches of grade may encroach into that setback but must keep five feet from top of bank and cannot cantilever over the top of bank or into the five-foot setback area.

3. For properties that lack a distinct top of bank the applicant shall identify the boundary of the area designated as "Habitat and Impact Areas Not Designated as HCAs" which is closest to the river. A structural setback of 15 feet is required from that boundary line. That 15-foot measurement extends from the boundary line away from the river. At-grade water-permeable patios or decks within 30 inches of grade may encroach into that setback 10 feet but must keep five feet from the boundary and cannot cantilever into the five-foot setback area. For vacant lots of record that comprise no lands with "Habitat and Impact Areas Not Designated as HCAs" designation or insufficient lands with those designations so that the above setbacks cannot be met, the house shall be set back as far from river as possible to accommodate house as part of the allowed 5,000 square feet of impermeable surfaces.

Response: As above, the subject application does not include "development" as that term is defined by the CDC, nor does it include a request for new single-family attached or detached housing. Additionally, per 28.040(U)(2) and (CC), the planned improvements are exempt from the requirement to obtain a permit under this section, provided the improvements meet the applicable standards in CDC Section 28.110(E). Responses to the applicable criteria in CDC 28.110(E) are provided below. These criteria do not apply.

Nevertheless, the boundary of areas designated as "Habitat and Impact Areas Not Designated as HCAs" as well as the 5-foot structural setback for water-permeable decks within 30 inches of grade is shown on the plans in Exhibit B. Applicant's plans demonstrate that new structures adhere to the applicable structural setback. The subject site is not vacant.

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

Response: The subject property is located within a residential (R-10) zoning district. This criterion does not apply.

[…]

E. Hardship provisions and non-conforming structures.

1. For the purpose of this chapter, non-conforming structures are existing structures whose building footprint is completely or partially on HCA lands. Any additions, alterations, replacement, or rehabilitation of existing non-conforming non-water-related structures (including decks), roadways, driveways, accessory uses and accessory structures shall avoid encroachment upon the HCAs, especially high HCAs, except that:

a. A 10-foot lateral extension of an existing building footprint is allowed if the lateral extension does not encroach any further into the HCA or closer to the river or water resource area than the portion of the existing footprint immediately adjacent.

Response: The Existing Conditions plan in Exhibit B confirms the presence of an existing staircase, log steps, and two separate rock walls that extend through the HCA toward the bank of

the river. With the exception of a new elevated gangway and dock (which are exempt from these provisions per 28.040(CC)), the planned improvements will not be directed further into the HCA or towards the river than the existing development.

Existing impermeable surfaces in the HCA designated areas on the subject site equal approximately 2,790 square feet, and new impermeable surfaces in the moderate and high HCA designated areas include approximately 475 square feet for a total of 3,265 square feet of impermeable surface, under the maximum 5,000 square feet of impervious area permitted within the HCA area. Due to the nature of their use (new deck, stairs, and dock/gangway) the planned improvements must be located between the existing home and the river in order to improve safe access to the river and stabilize the existing riverbank. The CDC anticipates this situation through the allowance up to 5,000 square feet of impermeable surface within the HCA and the exemptions established in CDC 28.040.U and CC.

The planned accessory structure will have minimal ground disturbance due to its construction atop pier-type supports and will reduce the overall ground disturbing impacts as compared with the existing development adjacent to the planned improvements. This criterion is met.

b. An addition to the existing structure on the side of the structure opposite to the river or water resource area shall be allowed. There will be no square footage limitation in this direction except as described in subsection (E)(1)(c) of this section.

Response: This application does not include additions to the side of the existing home opposite the river. This criterion does not apply.

c. The same allowance for the use of, and construction of, 5,000 square feet of total impervious surface for sites in HCAs per subsections (B)(2) through (4) of this section shall apply to lots in this section.

Response: As provided above, the total area of existing impervious surface in HCA designated areas on-site equals approximately 2,790 square feet. Because the Applicant has designed the improvements using primarily water-permeable materials, the planned improvements result in approximately 475 square feet of additional impervious area. The total impervious surface within designated HCA areas on-site following construction of the planned improvements is approximately 3,265 square feet, well below the Applicant's 5,000 square foot right established here. This criterion is met.

d. Vertical additions are permitted including the construction of additional floors.

Response: No vertical additions to the existing home are planned. This criterion does not apply.

e. The provisions of Chapter 66 CDC, Non-conforming Structures, shall not apply.

Response: This provision is understood.

F. Access and property rights.

1. Private lands within the protection area shall be recognized and respected.

Response: All land within the protection area is privately owned and Applicant understands that the City will recognize and respect the rights of the private property owner.

2. Where a legal public access to the river or elsewhere in the protection area exists, that legal public right shall be recognized and respected.

Response: The subject property does not contain legal public access to the river or elsewhere. This criterion does not apply.

3. To construct a water-dependent structure such as a dock, ramp, or gangway shall require that all pre-existing legal public access or similar legal rights in the protection area be recognized and respected. Where pre-existing legal public access, such as below the OLW, is to be obstructed by, for example, a ramp, the applicant shall provide a reasonable alternate route around, over or under the obstruction. The alternate route shall be as direct as possible. The proposed route, to include appropriate height clearances under ramps/docks and specifications for safe passage over or around ramps and docks, shall be reviewed and approved by the Planning Director for adequacy.

Response: The subject property does not contain legal public access or similar legal rights in the protection area. This criterion does not apply.

4. Any public or private water-dependent use or facility shall be within established DSL-authorized areas.

Response: An application will be submitted to the Department of State Lands (DSL) to authorize the use of state-owned submerged and submersible lands for the new residential dock. The dock is centered in the area that will be requested for approval by DSL. Documentation of DSL approval will be provided to the City prior to placement of the dock. This criterion will be met.

5. Legal access to, and along, the riverfront in single-family residential zoned areas shall be encouraged and pursued especially when there are reasonable expectations that a continuous trail system can be facilitated. The City recognizes the potential need for compensation where nexus and proportionality tests are not met. Fee simple ownership by the City shall be preferred. The trail should be dimensioned and designed appropriate to the terrain it traverses and the user group(s) it can reasonably expect to attract. The City shall be responsible for signing the trail and delineating the boundary between private and public lands or access easements.

Response: The subject property does not contain a legal public access or similar legal rights and is not identified on the City of West Linn 20 Year Master Plan for West Linn Parks, Recreation, and Open Space (2019) or the West Linn Transportation System Plan (2021) as being near any existing or planned pedestrian paths/trails. Therefore, there are no reasonable expectations that a continuous trail system can be facilitated on the site. This criterion does not apply.

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

Response: The subject property is located within the R-10 zoning district. This criterion does not apply.

[…]

H. Partitions, subdivisions and incentives.

Response: This application does not include a request for a partition or subdivision. This criterion does not apply.

[…]

I. Docks and other water-dependent structures.

1. Once the preference rights area is established by DSL, the property owner identifies where the water-dependent use will be located within the authorized portion of the preference rights area. The water-dependent use should be centered or in the middle of the preference rights/authorized area or meet the side yard setbacks of the underlying zone.

Private and public non-commercial docks are permitted where dredging is required so long as all applicable federal and State permits are obtained. Dredging is encouraged if deposits silt up under an existing dock. Dredging is seen as preferable to the construction of longer docks/ramps.

Response: An application will be submitted to the Department of State Lands (DSL) to authorize the use of state-owned submerged and submersible lands for the new residential dock. The dock is centered in the area that will be requested for approval by DSL. Documentation of DSL approval will be provided to the City prior to placement of the dock. This criterion will be met. Dredging is not required for this project.

2. Both joint and single use docks shall not extend into the water any further than necessary to provide four feet between the ship's keel or fixed propeller/rudder and the bottom of the water at any time during the water's lowest point.

Response: The new dock is planned to be extended no farther than necessary to meet applicable distance requirements and provide four feet between the ship's keel or fixed propeller/rudder and the bottom of the water at any time during the water's lowest point as shown on the Preliminary 100-Year Flood Elevation, Gangway Profile, and Site Plan provided in Exhibit B. This criterion is met.

3. In no case except as provided in this section shall a private ramp and private dock extend more than 100 feet from OLW towards the center of the river or slough. In the case of L-shaped docks, the 100 feet shall be measured from the OLW to the furthest part of the private dock closest to the center of the river.

Response: The new gangway and dock extend only ±66 feet from the OLW towards the center of the river as shown on the Preliminary 100-Year Flood Elevation, Gangway Profile, and Site Plan provided in Exhibit B. This criterion is met.

4. Docks on sloughs and similar channels shall not extend more than 30 percent of the distance between two land masses at OHW, such as between the mainland and an island or peninsula, measured in a lineal manner at right angle to the dominant shoreline. In no way shall a dock impede existing public usage or block navigation of a channel.

Response: The planned dock will not be located on a slough or similar channel and no additional land mass is present fronting the planned dock location as shown on the Existing Conditions Plan provided in Exhibit B. This criterion does not apply.

5. Boat storage associated with a rail launch facility shall be located above the OHW, either vertically raised above the ordinary high water line or set back behind the OHW. Such boat storage structure will be natural wood colors or similar earth tones. Private railed launch facilities are permitted for individual boat owners. The onshore setback of the storage structure is equal distance on both sides as extended perpendicular to the thread of the stream, or seven and one-half feet, whichever is the greater setback.

Response: This application does not include a request for a new boat storage structure as outlined above. This criterion does not apply.

6. The width of each deck section shall be no more than 12 feet wide.

Response: The width of the new gangway and dock does not exceed more than 12 feet at any point, as shown on the Preliminary 100-Year Flood Elevation, Gangway Profile, and Site Plan provided in Exhibit B. The max width of the new gangway and dock is 4 feet and 10 feet respectively. This criterion is met.

7. For only single-user and joint-user docks, pilings shall not exceed a maximum height of eight feet above the 100-year flood elevation.

Response: None of the planned pilings for the new single-user dock will exceed the maximum height of eight feet above the 100-year flood elevation (44.20 feet). As shown on the Path and Gangway Profile detail on the Preliminary 100-Year Flood Elevation, Gangway Profile, and Site Plan provided in Exhibit B, the max height of the planned pilings is ±49.20 feet. This criterion is met.

8. A single user non-commercial dock shall not exceed 400 square feet in deck area. The boat slip is not included in the calculation of this square footage limitation.

Response: The new floating boat dock is planned to be ±335 square feet in deck area as shown on the Preliminary 100-Year Flood Elevation, Gangway Profile, and Site Plan provided in Exhibit B. This criterion is met.

9. Private non-commercial boat houses are allowed but only if they are within 50 feet of OLW and/or in locations sufficiently screened from view so that they do not have a significant visual impact on views from adjacent and nearby homes. Building and roof colors shall be brown, gray, beige, natural or similar earth tones. Non-commercial boat houses shall not exceed 12 feet in height measured from the boat house deck level to the roof peak. The size of the boat house shall be sized to accommodate one boat only and shall not exceed a footprint greater than 500 square feet. Boatlifts are permitted within the boat house. The above provisions also apply to open-walled boat shelters with or without boatlifts.

Response: This application does not include a request to construct a boat house. This criterion does not apply.

J. Joint docks.

1. Joint use boat docks may be permitted by the reviewing authority where the applicants are riverfront property owners, ideally owners of adjacent lots of record.

2. Co-owners of the joint dock use shall be prohibited from having their own non-joint dock.

3. A joint use agreement shall be prepared which will be included in the application for review by the reviewing authority and subsequently recorded. A copy of the recorded document with the County Recorder's stamp shall be submitted to the City.

4. A condition of approval for any joint use permit shall be that the dock must be used to serve the same lots of record for which the dock permit was issued. Joint use cannot be transferred to, or used by, any party other than the original applicants or the future owners of those properties.

5. Joint docks may go on the common property line between the two landowners who are sharing the dock. Unless agreed to by the adjoining owner, joint docks not being shared with the adjacent property owner must be at least 15 feet from the preference rights area side lines or centered in the middle of the preference rights area.

Response: This application is for a new single-user dock. The above criteria do not apply.

K. Non-conforming docks and other water-related structures. Pre-existing non-conforming structures, including docks, ramps, boat houses, etc., as defined in this chapter may remain in place. Replacement in kind (e.g., replacement of decking and other materials) will be allowed provided the replacement meets the standards of this chapter. However, if any non-conforming structure that is damaged and destroyed or otherwise to be replaced to the extent that the rebuilding or replacing (including replacement in kind) would exceed 50 percent of the current replacement cost of the entire structure, the owner shall be required to meet all the standards of this chapter.

Response: This application is for a new tiered deck, covered gazebo, and staircase to provide a safe route to a new gangway and dock in the recreational waters of the Willamette River. No pre-existing non-conforming structures are involved. This criterion does not apply.

L. Roads, driveways, utilities, or passive use recreation facilities. Roads, driveways, utilities, public paths, or passive use recreation facilities may be built in those portions of HCAs that include wetlands, riparian areas, and water resource areas when no other practical alternative exists but shall use water-permeable materials unless City engineering standards do not allow that. Construction to the minimum dimensional standards for roads is required. Full mitigation and revegetation is required, with the applicant to submit a mitigation plan pursuant to CDC 32.070 and a revegetation plan pursuant to CDC 32.080. The maximum disturbance width for utility corridors is as follows:

1. For utility facility connections to utility facilities, no greater than 10 feet wide.

2. For upgrade of existing utility facilities, no greater than 15 feet wide.

3. For new underground utility facilities, no greater than 25 feet wide, and disturbance of no more than 200 linear feet of water quality resource area, or 20 percent of the total linear feet of water quality resource area, whichever is greater.

Response: No utility facilities are included in the planned improvements. These criteria do not apply.

M. Structures. All buildings and structures in HCAs and riparian areas, including all exterior mechanical equipment, should be screened, colored, or surfaced so as to blend with the riparian environment. Surfaces shall be non-polished/reflective or at least expected to lose their luster within a year. In addition to the specific standards and criteria applicable to water-dependent uses (docks), all other provisions of this chapter shall apply to water dependent uses, and any structure shall be no larger than necessary to accommodate the use.

Response: No buildings or exterior mechanical equipment are included in the planned improvements. The surfaces of the planned improvements will not be reflective or otherwise visually disruptive to the natural environment as detailed in the Architectural Plans provided in Exhibit C. This criterion is met.

N. Water-permeable materials for hardscapes. The use of water-permeable materials for parking lots, driveways, patios, and paths as well as flow-through planters, box filters, bioswales and drought tolerant plants are strongly encouraged in all "a" and "b" land classifications and shall be required in all "c" and "d" land classifications. The only exception in the "c" and "d" classifications would be where it is demonstrated that water-permeable driveways/hardscapes could not structurally support the axle weight of vehicles or equipment/storage load using those areas. Flow through planters, box filters, bioswales, drought tolerant plants and other measures of treating and/or detaining runoff would still be required in these areas.

Response: No hardscapes are planned. Nevertheless, the materials for the planned improvements will include open joint decking paired with a structural pier system that allows the structure to sit lightly on the terrain and allows water to drain through the surface. This criterion is met.

O. Signs and graphics. No sign or graphic display inconsistent with the purposes of the protection area shall have a display surface oriented toward or visible from the Willamette or Tualatin River. A limited number of signs may be allowed to direct public access along legal routes in the protection area.

Response: No signs or graphic displays are included in this project. This criterion is met.

P. Lighting. Lighting shall not be focused or oriented onto the surface of the river except as required by the Coast Guard. Lighting elsewhere in the protection area shall be the minimum necessary and shall not create off-site glare or be omni-directional. Screens and covers will be required.

Response: No lighting is proposed with the planned improvements. This criterion does not apply.

Q. Parking. Parking and unenclosed storage areas located within or adjacent to the protection area boundary shall be screened from the river in accordance with Chapter 46 CDC, Off-Street Parking, Loading and Reservoir Areas. The use of water-permeable material to construct the parking lot is either encouraged or required depending on HCA classification per CDC 28.110(N)(4).

Response: This application does not include additional parking or unenclosed storage areas. This criterion does not apply.

R. Views. Significant views of the Willamette and Tualatin Rivers shall be protected as much as possible as seen from the following public viewpoints: Mary S. Young Park, Willamette Park, Cedar Oak Park, Burnside Park, Maddox Park, Cedar Island, the Oregon City Bridge, Willamette Park, and Fields Bridge Park.

Where options exist in the placement of ramps and docks, the applicant shall select the least visually intrusive location as seen from a public viewpoint. However, if no options exist, then the ramp, pilings and dock shall be allowed at the originally proposed location.

Response: The subject property is in northern West Linn with frontage along the Willamette River. None of the public viewpoints listed above are within sight of the project. This criterion is met.

S. Aggregate deposits. Extraction of aggregate deposits or dredging shall be conducted in a manner designed to minimize adverse effects on water quality, fish and wildlife, vegetation, bank stabilization, stream flow, visual quality, noise and safety, and to promote necessary reclamation.

Response: This application does not seek approval for extraction of aggregate deposits. This criterion does not apply.

T. Changing the landscape/grading.

1. Existing predominant topographical features of the bank line and escarpment shall be preserved and maintained except for disturbance necessary for the construction or establishment of a water related or water dependent use. Measures necessary to reduce potential bank and escarpment erosion, landslides, or flood hazard conditions shall also be taken.

   Any construction to stabilize or protect the bank with rip rap, gabions, etc., shall only be allowed where there is clear evidence of erosion or similar hazard and shall be the minimum needed to stop that erosion or to avoid a specific and identifiable hazard. A geotechnical engineer's stamped report shall accompany the application with evidence to support the proposal.

Response: Existing predominant topographical features of the bank line and escarpment shall be preserved and maintained. Minimal grading will occur only to place minor footings for the deck and stairs and four pylons for the gangway and dock. A Construction Management and Erosion and Sediment Control Plan is provided in Exhibit B to indicate the extent of the grading necessary for the planned improvements. No measures to stabilize or protect the bank will be necessary. This criterion is met.

2. The applicant shall establish to the satisfaction of the approval authority that steps have been taken to minimize the impact of the proposal on the riparian environment (areas between the top of the bank and the low water mark of the river including lower terrace, beach and river edge).

Response: The planned improvements will not substantially impact the riparian environment as detailed in this narrative. This criterion is met.

3. The applicant shall demonstrate that stabilization measures shall not cause subsequent erosion or deposits on upstream or downstream properties.

Response: Stabilization measures are not required for this project. This criterion does not apply.

4. Prior to any grading or development, that portion of the HCA that includes wetlands, creeks, riparian areas and water resource area shall be protected with an anchored chain link fence (or approved equivalent) at its perimeter and shall remain undisturbed except as specifically allowed by an approved Willamette and Tualatin River Protection and/or water resource area (WRA) permit. Such fencing shall be maintained until construction is complete. That portion of the HCA that includes wetlands, creeks, riparian areas and water resource area shall be identified with City-approved permanent markers at all boundary direction changes and at 30- to 50-foot intervals that clearly delineate the extent of the protected area.

5. Full erosion control measures shall be in place and approved by the City Engineer prior to any grading, development or site clearing.

Response: As shown in the Preliminary Construction Management, Erosion, and Sediment Control Plan, included in Exhibit B, a sediment fence and straw wattle will be installed prior to

construction. This fencing will be maintained throughout the duration of site construction. Additionally, the Preliminary Construction Management, Erosion, and Sediment Control Plan illustrates the extent of all required erosion control measures. This criterion is met.

U. Protect riparian and adjacent vegetation. Vegetative ground cover and trees upon the site shall be preserved, conserved, and maintained according to the following provisions:

1. Riparian vegetation below OHW removed during development shall be replaced with indigenous vegetation, which shall be compatible with and enhance the riparian environment and approved by the approval authority as part of the application.

Response: No riparian vegetation below the ordinary high water (OHW) line is planned to be removed during development, therefore no migration is proposed. Any unanticipated disruption of the native riparian environment will be restored by planting native vegetation species in accordance with code requirements.

2. Vegetative improvements to areas within the protection area may be required if the site is found to be in an unhealthy or disturbed state by the City Arborist or their designated expert. "Unhealthy or disturbed" includes those sites that have a combination of native trees, shrubs, and groundcover on less than 80 percent of the water resource area and less than 50 percent tree canopy coverage in the primary and secondary habitat conservation area to be preserved. "Vegetative improvements" will be documented by submitting a revegetation plan meeting CDC 28.160 criteria that will result in the primary and secondary habitat conservation area to be preserved having a combination of native trees, shrubs, and groundcover on more than 80 percent of its area, and more than 50 percent tree canopy coverage in its area. The vegetative improvements shall be guaranteed for survival for a minimum of two years. Once approved, the applicant is responsible for implementing the plan prior to final inspection.

Response: A mitigation plan is required per CDC 28.160 because the vegetation within the HCA will be permanently disturbed as a result of the planned improvements. The mitigation plan, which includes the required elements of a revegetation plan, is attached as Exhibit D. This criterion is met.

3. Tree cutting shall be prohibited in the protection area except that:

a. Diseased trees or trees in danger of falling may be removed with the City Arborist's approval; and

b. Tree cutting may be permitted in conjunction with those uses listed in CDC 28.030 with City Arborist approval; to the extent necessary to accommodate the listed uses;

c. Selective cutting in accordance with the Oregon Forest Practices Act, if applicable, shall be permitted with City Arborist approval within the area between the OHW and the greenway boundary provided the natural scenic qualities of the greenway are maintained.

Response: This project does not include the cutting and/or removal of trees or significant vegetation in the protection area. This criterion does not apply. Two trees are planned for removal that are outside of the Willamette Rive Greenway. A Tree Evaluation was completed for

the site which indicated the trees planned for removal are in Poor or Fair condition and have a low suitability for preservation (Exhibit G).

28.120 Site Plan

A. All site plans and maps shall include the name, address and telephone number of the applicant, a lineal scale of the plot plan, a north arrow and a vicinity map.

Response: The first page of this narrative and the Preliminary 100-Year Flood Elevation, Gangway Profile, and Site Plan in Exhibit B include all required information above. This requirement is met.

B. The applicant shall submit a site plan drawn to an appropriate scale (in order of preference: one inch equals 10 feet to one inch equals 30 feet), which contains the following information:

1. Assessor's Map number and tax lot number.

2. The lot or parcel boundaries, dimensions and gross area.

3. The applicant's property and the surrounding property to a distance sufficient to determine the relationship between the applicant's property and proposed development to the adjacent property and development.

4. The location, dimensions, and names of all existing and platted streets and other public ways and easements on adjacent property and on the site.

5. The location, dimensions and setback distances of all:

a. Existing structures, improvements, utility facilities and drainageways on site and on adjoining properties;

b. Proposed structures or changes to existing structures, improvements, utility facilities and drainageways on the site.

6. All developments shall define and map existing public access rights on, and adjacent to, the subject property.

7. A slope contour map at minimum two-foot intervals showing slope classifications of zero to 25 percent and greater than 25 percent.

8. If a wetland on the West Linn Local Wetland Inventory is identified on the property and the proposed activity is expected to encroach within 25 feet of the wetland, a delineation of the precise boundaries of that wetland prepared by a wetland biologist.

9. The location of the ordinary high water mark and the ordinary low water mark on the property and on abutting properties.

10. The delineation of areas designated "Habitat and Impact Areas Not Designated as HCAs" and HCA areas by low, medium and high designation shall be mapped based on the HCA Map and any necessary verification shall be done by the Planning Director.

Response: The Preliminary 100-Year Flood Elevation, Gangway Profile, and Site Plan in Exhibit B includes all required information above. Additionally, a Wetland Delineation is provided in Exhibit F that concludes no wetlands are present on the site. These requirements are met.

28.130 Grading Plan

The grading plan shall be at the same scale as the site plan (CDC 28.120) and shall show or attach:

A. **The location and extent to which grading will take place indicating general contour lines, slope ratios, slope stabilization proposals, and location and height of retaining walls, if proposed.**

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

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

2. **Assessment of engineering geological conditions and factors;**

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

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

C. **Sufficient factual data to support the conclusions of the plan.**

D. **Identification information, including the name and address of the owner, developer, project designer, and the project engineer.**

Response: Minimal grading will occur only to place minor footings for the deck and stairs and four pylons for the gangway and dock. A Construction Management and Erosion and Sediment Control Plan is provided in Exhibit B to indicate the extent of the grading necessary for the planned improvements. Additionally, the site is considered Type III land per the definition in Chapter 02 CDC; therefore, a geologic report is required and will be completed prior to building permit submittal. This requirement is met.

28.140 Architectural Drawings

A. **Architectural drawings shall be submitted at the same scale as the site plan scale, as described in the site plan, showing:**

1. **Elevations of structure(s). For additions, the drawings should clearly distinguish between existing structure and proposed addition and show distance from addition and existing structure to the protected water resource.**

2. **The exterior building materials: type, color, and texture.**

3. **For docks, all pilings and their heights shall be shown. The applicant shall indicate the depth from the end of the dock to the river bottom during typical summer months. The applicant shall also provide any available product literature and photographs from the manufacturer or installer.**

4. **For docks, the applicant shall provide a plan view of the structure in relation to the shoreline and river. The plans shall also indicate graphically the OLW and the OHW and the DSL's preference rights and authorized areas.**

Response: Architectural Plans, provided in Exhibit C, show the elevations of the planned improvements and specify the building materials. Product literature on the material to be used for the gangway and dock is also provided in Exhibit C. The gangway and dock will be installed with aluminum plank grating similar to the "Rectangular Punched" pattern as shown on the product literature. The remaining information listed above is shown on the Preliminary 100-Year Flood Elevation, Gangway Profile, and Site Plan provided in Exhibit B. An application will be submitted to the Department of State Lands (DSL) to authorize the use of state-owned submerged and submersible lands for the new residential dock. Documentation of DSL approval, including graphic representation of the preference rights and authorized areas, will be provided to the City prior to placement of the dock. These requirements are met.

28.150 Landscape Plan

A. The landscape plan shall be prepared per site plan standards (CDC 28.120) and in addition shall show:

1. The location, size and type of existing trees and location and type of vegetation to be removed and to be retained;
2. The location and design of landscaped areas;
3. The varieties and sizes of trees and materials to be planted;
4. The location and height of fences and other buffering or screening materials; and
5. The location, materials, dimensions and design of terraces, decks, patios, shelters, footpaths, retaining walls and play areas.

B. Revegetation plan per CDC 32.080.

Response: No landscaping is planned other than the required enhancement area plantings to mitigate the permanent disturbance area from the planned improvements. A Mitigation Plan is provided in Exhibit D which includes the applicable vegetation information listed above. Additionally, the Architectural Plans in Exhibit C include the information requested in subsection 5. above. This requirement is met.

28.160 Mitigation Plan

If any HCA is permanently disturbed as a result of the proposed development of any uses or structures, the applicant shall prepare and implement a revegetation and mitigation plan pursuant to the provisions of CDC 32.070 and 32.080.

Response: The planned development will result in permanent disturbance to portions of high and moderate HCAs on the subject property. A re-vegetation and mitigation plan pursuant to the provisions of CDC 32.090 (Mitigation Plan) and 32.100 (Re-Vegetation Plan Requirements) is included in Exhibit D. The applicable code provisions are also discussed in this narrative. This criterion is met.

Chapter 32 – Water Resource Area Protection

[…]

32.090 Mitigation Plan

A. A mitigation plan shall only be required if development is proposed within a WRA (including development of a PDA). (Exempted activities of CDC 32.040 do not require mitigation unless specifically stated. Temporarily disturbed areas, including TDAs associated with exempted activities, do not require mitigation, just grade and soil restoration and re-vegetation.) The mitigation plan shall satisfy all applicable provisions of CDC 32.100, Re-Vegetation Plan Requirements.

Response: A mitigation plan is required per CDC 28.160 because the HCA will be permanently disturbed as a result of the planned improvements. Although the planned improvements are designed to be mainly water permeable, will have minimal ground disturbance due to its construction atop pier-type supports, and will reduce the overall ground disturbing impacts as compared with the existing development, the decreased sunlight to the areas under the planned improvements will permanently disturb any existing vegetation. The permanently disturbed area will be mitigated as detailed in the Mitigation Plan provided in Exhibit D.

B. Mitigation shall take place in the following locations, according to the following priorities (subsections (B)(1) through (4) of this section):

1. On-site mitigation by restoring, creating or enhancing WRAs.

2. Off-site mitigation in the same sub-watershed will be allowed, but only if the applicant has demonstrated that:

a. It is not practicable to complete mitigation on-site, for example, there is not enough area on-site; and

b. The mitigation will provide equal or superior ecological function and value.

3. Off-site mitigation outside the sub-watershed will be allowed, but only if the applicant has demonstrated that:

a. It is not practicable to complete mitigation on-site, for example, there is not enough area on-site; and

b. The mitigation will provide equal or superior ecological function and value.

4. Purchasing mitigation credits though DSL or other acceptable mitigation bank.

Response: All mitigation will take place on-site as shown on the Mitigation Plan provided in Exhibit D. Permanent High Value HCA and Moderate Value HCA impact areas totaling ±2,255 square feet will be mitigated with a ±2,255 square foot HCA enhancement area. This requirement is met.

C. Amount of mitigation.

1. The amount of mitigation shall be based on the square footage of the permanent disturbance area by the application. For every one square foot of non-PDA disturbed area, on-site mitigation shall require one square foot of WRA to be created, enhanced or restored.

2. For every one square foot of PDA that is disturbed, on-site mitigation shall require one half a square foot of WRA vegetation to be created, enhanced or restored.

3. For any off-site mitigation, including the use of DSL mitigation credits, the requirement shall be for every one square foot of WRA that is disturbed, two square feet of WRA shall be created, enhanced or restored. The DSL mitigation credits program or mitigation bank shall require a legitimate bid on the cost of on-site mitigation multiplied by two to arrive at the appropriate dollar amount.

Response: As detailed in the Mitigation Plan provided in Exhibit D, permanent High Value HCA and Moderate Value HCA impact areas totaling ±2,255 square feet will be mitigated with a ±2,255 square foot on-site HCA enhancement area. This requirement is met.

D. The Planning Director may limit or define the scope of the mitigation plan and submittal requirements commensurate with the scale of the disturbance relative to the resource and pursuant to the authority of Chapter 99 CDC. The Planning Director may determine that a consultant is required to complete all or a part of the mitigation plan requirements.

Response: This provision is understood.

E. A mitigation plan shall contain the following information:

1. A list of all responsible parties including, but not limited to, the owner, applicant, contractor, or other persons responsible for work on the development site.

2. A map showing where the specific adverse impacts will occur and where the mitigation activities will occur.

3. A re-vegetation plan for the area(s) to be mitigated that meets the standards of CDC 32.100.

4. An implementation schedule, including timeline for construction, mitigation, mitigation maintenance, monitoring, and reporting. All in-stream work in fish bearing streams shall be done in accordance with the Oregon Department of Fish and Wildlife.

5. Assurances shall be established to rectify any mitigation actions that are not successful within the first three years. This may include bonding or other surety.

Response: The Mitigation Plan provided in Exhibit D includes the applicable information listed above. A list of responsible parties, including the owner and the applicant, is included on page 1 of this narrative. These requirements are met.

32.100 Re-Vegetation Plan Requirements

A. In order to achieve the goal of re-establishing forested canopy, native shrub and ground cover and to meet the mitigation requirements of CDC 32.090 and vegetative enhancement of CDC 32.080, tree and vegetation plantings are required according to the following standards:

1. All trees, shrubs and ground cover to be planted must be native plants selected from the Portland Plant List.

2. Plant size. Replacement trees must be at least one-half inch in caliper, measured at six inches above the ground level for field grown trees or above the soil line for container grown trees (the one-half inch minimum size may be an average caliper measure, recognizing that trees are not uniformly round), unless they are oak or madrone which may be one gallon size. Shrubs must be in at least a one-gallon container or the equivalent in ball and burlap and must be at least 12 inches in height.

Response: As detailed in the Mitigation Plan provided in Exhibit D, all plant species were selected from the Portland Plant List. All trees will be at least one-half inch caliper and all shrubs will be one-gallon size. These requirements are met.

3. Plant coverage.

   a. Native trees and shrubs are required to be planted at a rate of five trees and 25 shrubs per every 500 square feet of disturbance area (calculated by dividing the number of square feet of disturbance area by 500, and then multiplying that result times five trees and 25 shrubs, and rounding all fractions to the nearest whole number of trees and shrubs; for example, if there will be 330 square feet of disturbance area, then 330 divided by 500 equals 0.66, and 0.66 times five equals 3.3, so three trees must be planted, and 0.66 times 25 equals 16.5, so 17 shrubs must be planted). Bare ground must be planted or seeded with native grasses or herbs. Non-native sterile wheat grass may also be planted or seeded, in equal or lesser proportion to the native grasses or herbs.

   b. Trees shall be planted between eight and 12 feet on center and shrubs shall be planted between four and five feet on center, or clustered in single species groups of no more than four plants, with each cluster planted between eight and 10 feet on center. When planting near existing trees, the dripline of the existing tree shall be the starting point for plant spacing measurements.

Response: Permanent High Value HCA and Moderate Value HCA impact areas totaling ±2,255 square feet will be mitigated with a ±2,255 square foot HCA enhancement area. Per the requirements above, the enhancement area requires 22 trees ((2,255/500) x 5 = 22.55) and 110 shrubs ((2,255/500) x 25 = 112.75). As detailed in Table 1 of the Mitigation Plan provided in Exhibit D, 23 trees and 113 shrubs will be planted in the HCA enhancement area. The trees and shrubs will be planted according to the standards in this section. The on-site mitigation plan has been designed to improve the ecological functions within the marginal/degraded condition HCA that is generally dominated by bare ground and invasive species. The native shrub plantings will provide a significant increase in on-site ecological functions and values by providing erosion control, native cover, and wildlife and pollinator habitat. These requirements are met.

4. Plant diversity. Shrubs must consist of at least two different species. If 10 trees or more are planted, then no more than 50 percent of the trees may be of the same genus.

5. Invasive vegetation. Invasive non-native or noxious vegetation must be removed within the mitigation area prior to planting.

Response: As detailed in Table 1 of the Mitigation Plan provided in Exhibit D, three different types of trees and five species of shrubs are planned to be planted. No invasive vegetation is present or planned to be planted. These requirements are met.

6. Tree and shrub survival. A minimum survival rate of 80 percent of the trees and shrubs planted is expected by the third anniversary of the date that the mitigation planting is completed.

7. Monitoring and reporting. Monitoring of the mitigation site is the ongoing responsibility of the property owner. Plants that die must be replaced in kind.

8. To enhance survival of tree replacement and plantings, the following practices are required:

a. Mulching. Mulch new plantings a minimum of three inches in depth and 18 inches in diameter to retain moisture and discourage weed growth.

b. Irrigation. Water new plantings one inch per week between June 15th to October 15th, for the three years following planting.

c. Weed control. Remove, or control, non-native or noxious vegetation throughout maintenance period.

d. Planting season. Plant bare root trees between December 1st and February 28th, and potted plants between October 15th and April 30th.

e. Wildlife protection. Use plant sleeves or fencing to protect trees and shrubs against wildlife browsing and resulting damage to plants.

B. When weather or other conditions prohibit planting according to schedule, the applicant shall ensure that disturbed areas are correctly protected with erosion control measures and shall provide the City with funds in the amount of 125 percent of a bid from a recognized landscaper or nursery which will cover the cost of the plant materials, installation and any follow up maintenance. Once the planting conditions are favorable the applicant shall proceed with the plantings and receive the funds back from the City upon completion, or the City will complete the plantings using those funds.

Response: These provisions are understood and are noted within the Mitigation Plan provided in Exhibit D.

Chapter 34 – Accessory Structures, Accessory Dwelling Units, and Accessory Uses

34.020 Accessory Uses

Accessory uses are permitted uses which are customary and incidental to principal uses permitted in the zone and shall be permitted outright, or by prescribed conditions as identified below, and may be either attached or separated from the principal dwelling. Accessory uses on designated historic resources are subject to additional regulations in CDC 25.060(B).

Response: The planned improvements are an accessory use to the existing home on the property.

[…]

34.050 Boat Houses and Docks

Only side yard setback requirements apply to boat houses and docks.

Response: This provision is understood. The new gangway and dock are outside of all side yard setbacks as shown on the Preliminary 100-Year Flood Elevation, Gangway Profile, and Site Plan provided in Exhibit B.

34.060 Setback Provisions for Accessory Structures (Non-Dwelling)

C. Attached accessory structures. When an accessory structure is attached to the main structure (wall to wall or by any permanent attachment), including via a covered walkway, such accessory structure shall be considered as part of the main structure.

Response: This provision is understood. The planned improvements will be attached to the existing home through the Level 1 Deck as shown on the Architectural Plans in Exhibit C. The

addition of the planned improvements will not impact the existing structure's conformance to the applicable code requirements, including not exceeding the maximum lot coverage as addressed in the response to SRC 11.070 in this narrative.

Chapter 38 – Additional Yard Area Required; Exceptions To Yard Requirements; Storage In Yards; Projections Into Yards

38.060 Projections into Required Yards

[…]

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.

Response: The planned improvements are outside of the 7.5-foot side yard setback and the new tiered deck, covered gazebo, and stairs leading to the new gangway and dock are outside the 20-foot rear yard setback. No encroachments are necessary. These standards are met.

Chapter 92 – Required Improvements

92.010 Public Improvements for all Development

[…]

E. Storm detention and treatment. For Type I, II and III lands (refer to definitions in Chapter 02 CDC), a registered civil engineer must prepare a storm detention and treatment plan, at a scale sufficient to evaluate all aspects of the proposal, and a statement that demonstrates:

1. The location and extent to which grading will take place indicating general contour lines, slope ratios, slope stabilization proposals, and location and height of retaining walls, if proposed.

2. All proposed storm detention and treatment facilities comply with the standards for the improvement of public and private drainage systems located in the West Linn Public Works Design Standards.

3. There will be no adverse off-site impacts, including impacts from increased intensity of runoff downstream or constrictions causing ponding upstream.

4. There is sufficient factual data to support the conclusions of the plan.

5. Per CDC 99.035, the Planning Director may require the information in subsections (E)(1), (2), (3) and (4) of this section for Type IV lands if the information is needed to properly evaluate the proposed site plan.

Response: A storm detention and treatment plan is not required for this application because only a minimal increase in runoff is anticipated, and all runoff will continue to flow according to the existing conditions shown on the Construction Management and Erosion and Sediment Control Plan provided in Exhibit B. Additionally, minimal grading will occur only to place minor footings for the deck and stairs and four piles for the gangway and dock. The materials for the planned improvements will include open joint decking paired with

a structural pier system that allows the structure to sit lightly on the terrain and allows water to drain through the surface. The planned covered gazebo's roof will add ±370 square feet of impervious surface. Per the City's Public Works Design Standards, section 2.0041, only development creating 1,000 square feet or more of impervious area requires stormwater detention. This criterion does not apply.

[…]

Chapter 99 – Procedures for Decision Making: Quasi-Judicial

[…]

99.030 Application Process: Who May Apply, Pre-Application Conference, Requirements, Refusal of Application, Fees

A. Who may apply.

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

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

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

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

d. Motion by the Planning Commission or City Council.

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

Response: This application is initiated by the property owner. An application form signed by the property owner is included in the attached Exhibit A.

B. Pre-application conferences.

1. Subject to subsection (B)(4) of this section, a pre-application conference is required for, but not limited to, each of the following applications:

[…]

q. Development subject to Chapter 27 CDC, Flood Management Areas;

r. Development subject to Chapter 28 CDC, Willamette and Tualatin River Protection;

Response: A pre-application conference is required for an FMA Development Permit application. A pre-application meeting was held on September 15, 2022. A summary of the meeting is provided in Exhibit H.

[…]

C. The requirements for making an application.

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

Response: The required application forms are signed by the property owner and provided in Exhibit A. This requirement is met.

2. **The application shall be complete and shall contain the information requested on the form, shall address the appropriate submittal requirements and approval criteria in sufficient detail for review and action, and shall be accompanied by the deposit or fee required by CDC 99.033. No application will be accepted if not accompanied by the required fee or deposit. In the event an additional deposit is required by CDC 99.033 and not provided within the time required, the application shall be rejected without further processing or deliberation and all application materials shall be returned to the applicant, notwithstanding any determination of completeness.**

Response: This application contains all requested information on the application forms provided in Exhibit A. Responses to the applicable submittal requirements and approval criteria are included within this narrative. All required fees will be paid. These requirements are met.

IV. Conclusion

The required findings have been made and this written narrative and accompanying documentation demonstrate that the application is consistent with the applicable provisions of the West Linn Community Development Code. The evidence in the record is substantial and supports approval of the application. Therefore, the Applicant respectfully requests that the City approve this land use application.

Exhibit A: Application Forms

CITY OF West Linn

Planning & Development • 22500 Salamo Rd #1000 • West Linn, Oregon 97068
Telephone 503.656-3535 • westlinnoregon.gov

DEVELOPMENT REVIEW APPLICATION

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

Type of Review (Please check all that apply):

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

Pre-Application, Home Occupation, Sidewalk Use, Addressing, and Sign applications require different forms, available on the City website.

Site Location/Address:
3801 Calaroga Drive, West Linn, OR 97068

Assessor's Map No.: 2 1 E 13CB
Tax Lot(s): 200
Total Land Area: ±0.57 acres

Brief Description of Proposal:

Removal of an existing rear deck to be replaced with a new tiered deck structure, covered gazebo, and staircase to provide a safe and sturdy route to a new gangway and dock in the recreational waters of the Willamette River.

Applicant Name: (please print) Shaun Catlin
Address: 1661 SE 2nd Street
City State Zip: Astoria, OR 97103
Phone: Contact Applicant's Consultant
Email:

Owner Name (required): (please print) Robert and Robin Endres
Address: 509 NW 3rd Avenue
City State Zip: Canby, OR 97103
Phone: Contact Applicant's Consultant
Email:

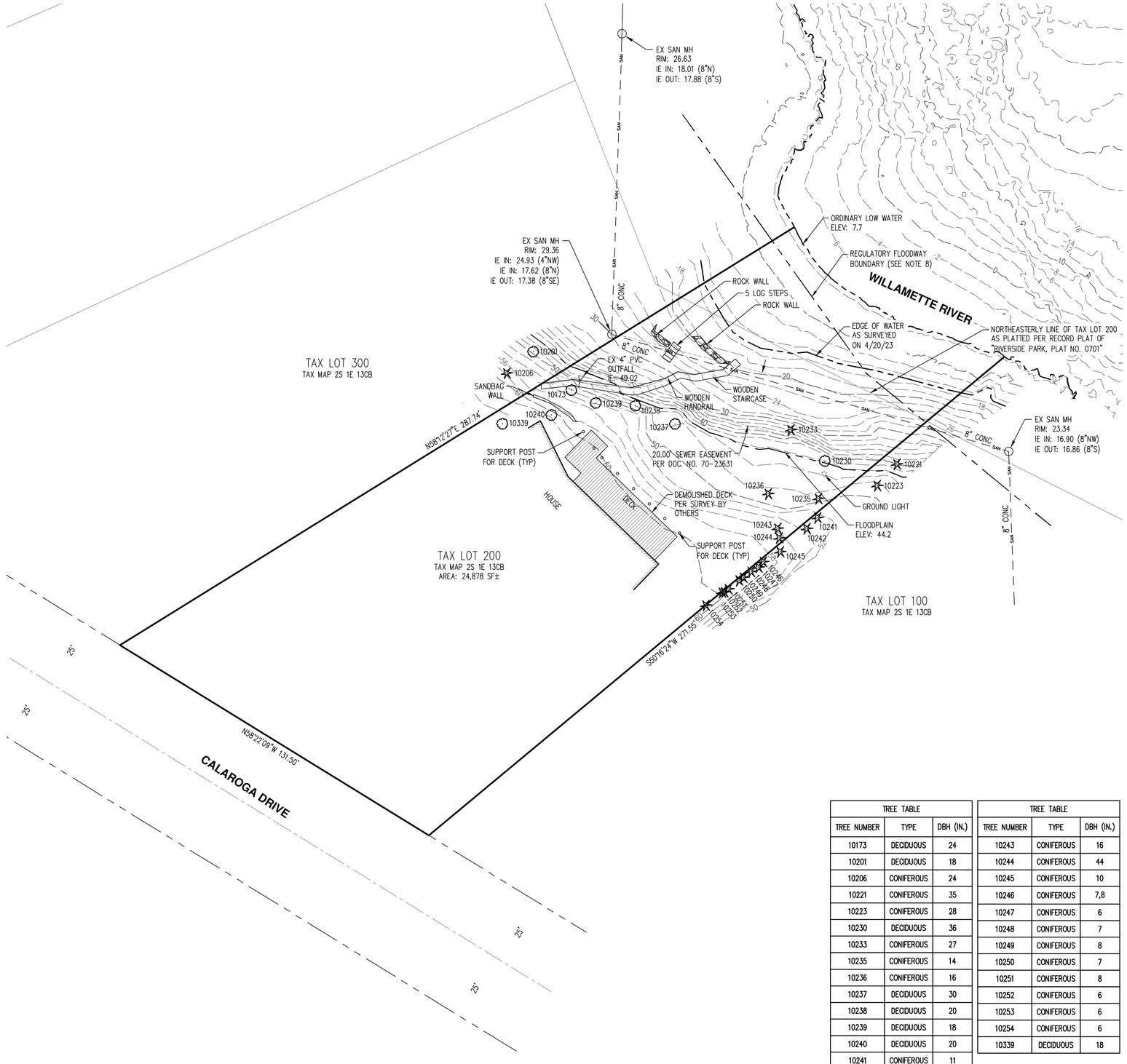
Consultant Name: (please print) AKS Engineering & Forestry
Address: ATTN: Grace Wolff
3700 River Road, Suite 1
City State Zip: Keizer, OR 97303
Phone: (503) 400-6028
Email: WolffG@aks-eng.com

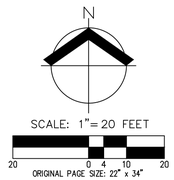
1. All application fees are non-refundable (excluding deposit). **Any overruns to deposit will result in additional billing.**
2. The owner/applicant or their representative should be present at all public hearings.
3. A decision may be reversed on appeal. The permit approval will not be effective until the appeal period has expired.
4. Submit this form and supporting documents through the Submit a Land Use Application web page: https://westlinnoregon.gov/planning/submit-land-use-application

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.

Shaun Catlin — Applicant's signature
10/11/23 — Date
Robert J. Endres — Owner's signature *(required)*
10-11-23 — Date

Exhibit B: Preliminary Land Use Plans





NOTES:

1. UTILITIES SHOWN ARE BASED ON UNDERGROUND UTILITY LOCATE MARKINGS AS PROVIDED BY OTHERS, PROVIDED PER UTILITY LOCATE TICKET NUMBER 23090575. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND LOCATES REPRESENT THE ONLY UTILITIES IN THE AREA. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
2. FIELD WORK WAS CONDUCTED APRIL 13 AND 20, 2023.
3. VERTICAL DATUM: ELEVATIONS ARE BASED ON NATIONAL GEODETIC SURVEY BENCHMARK PID RD1497. LOCATED IN OREGON CITY AT THE JUNCTION OF INTERSTATE HIGHWAY 205 AND STATE HIGHWAY 99E, SET VERTICALLY IN THE EAST FACE OF THE MOST SOUTHERLY ONE OF FIVE COLUMNS OF THE FIRST PIER WEST OF THE EAST ABUTMENT OF THE INTERSTATE HIGHWAY OVERPASS OF STATE HIGHWAY, 99E AND 20.7 FEET EAST OF THE CENTER OF THE MOST EAST LANES OF STATE HIGHWAY 99E. THE MARK IS 4.5 FEET ABOVE THE GROUND. ELEVATION = 62.48 FEET (NAVD 88).
4. THIS IS NOT A PROPERTY BOUNDARY SURVEY TO BE RECORDED WITH THE COUNTY SURVEYOR. BOUNDARIES MAY BE PRELIMINARY AND SHOULD BE CONFIRMED WITH THE STAMPING SURVEYOR PRIOR TO RELYING ON FOR DETAILED DESIGN OR CONSTRUCTION.
5. BUILDING FOOTPRINTS ARE MEASURED TO SIDING UNLESS NOTED OTHERWISE. CONTACT SURVEYOR WITH QUESTIONS REGARDING BUILDING TIES.
6. CONTOUR INTERVAL IS 2 FEET.
7. TREES WITH DIAMETER OF 6" AND GREATER ARE SHOWN. TREE DIAMETERS WERE MEASURED UTILIZING A DIAMETER TAPE AT BREAST HEIGHT. TREE INFORMATION IS SUBJECT TO CHANGE UPON ARBORIST INSPECTION.
8. REGULATORY FLOODWAY SHOWN IS PER FEMA GIS DATA AND IS APPROXIMATE.

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
10173	DECIDUOUS	24
10201	DECIDUOUS	18
10206	CONIFEROUS	24
10221	CONIFEROUS	35
10223	CONIFEROUS	28
10230	DECIDUOUS	36
10233	CONIFEROUS	27
10235	CONIFEROUS	14
10236	CONIFEROUS	16
10237	DECIDUOUS	30
10238	DECIDUOUS	20
10239	DECIDUOUS	18
10240	DECIDUOUS	20
10241	CONIFEROUS	11
10242	CONIFEROUS	11

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
10243	CONIFEROUS	16
10244	CONIFEROUS	44
10245	CONIFEROUS	10
10246	CONIFEROUS	7,8
10247	CONIFEROUS	6
10248	CONIFEROUS	7
10249	CONIFEROUS	8
10250	CONIFEROUS	7
10251	CONIFEROUS	8
10252	CONIFEROUS	6
10253	CONIFEROUS	6
10254	CONIFEROUS	6
10339	DECIDUOUS	18

LEGEND

EXISTING		EXISTING	
DECIDUOUS TREE		STORM DRAIN CLEAN OUT	
CONIFEROUS TREE		STORM DRAIN CATCH BASIN	
		STORM DRAIN AREA DRAIN	
FIRE HYDRANT		STORM DRAIN MANHOLE	
WATER BLOWOFF		GAS METER	
WATER METER		GAS VALVE	
WATER VALVE		GUY WIRE ANCHOR	
DOUBLE CHECK VALVE		UTILITY POLE	
AIR RELEASE VALVE		POWER VAULT	P
SANITARY SEWER CLEAN OUT		POWER JUNCTION BOX	
SANITARY SEWER MANHOLE		POWER PEDESTAL	
SIGN		COMMUNICATIONS VAULT	C
STREET LIGHT		COMMUNICATIONS JUNCTION BOX	
MAILBOX	MB	COMMUNICATIONS RISER	

EXISTING	
RIGHT-OF-WAY LINE	
BOUNDARY LINE	
PROPERTY LINE	
CENTERLINE	
DITCH	
CURB	
EDGE OF PAVEMENT	
EASEMENT	
FENCE LINE	
GRAVEL EDGE	
POWER LINE	PWR
OVERHEAD WIRE	OHW
COMMUNICATIONS LINE	COM
FIBER OPTIC LINE	OFO
GAS LINE	GAS
STORM DRAIN LINE	STM
SANITARY SEWER LINE	SAN
WATER LINE	WAT

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3801 CALAROGA DRIVE

WEST LINN
TAX LOT 200

OREGON
CLACKAMAS COUNTY TAX MAP 2S 1E 13CB

EXISTING CONDITIONS PLAN

DESIGNED BY:
DRAWN BY: CC
MANAGED BY: MB
CHECKED BY: RR
DATE: 9/6/2023

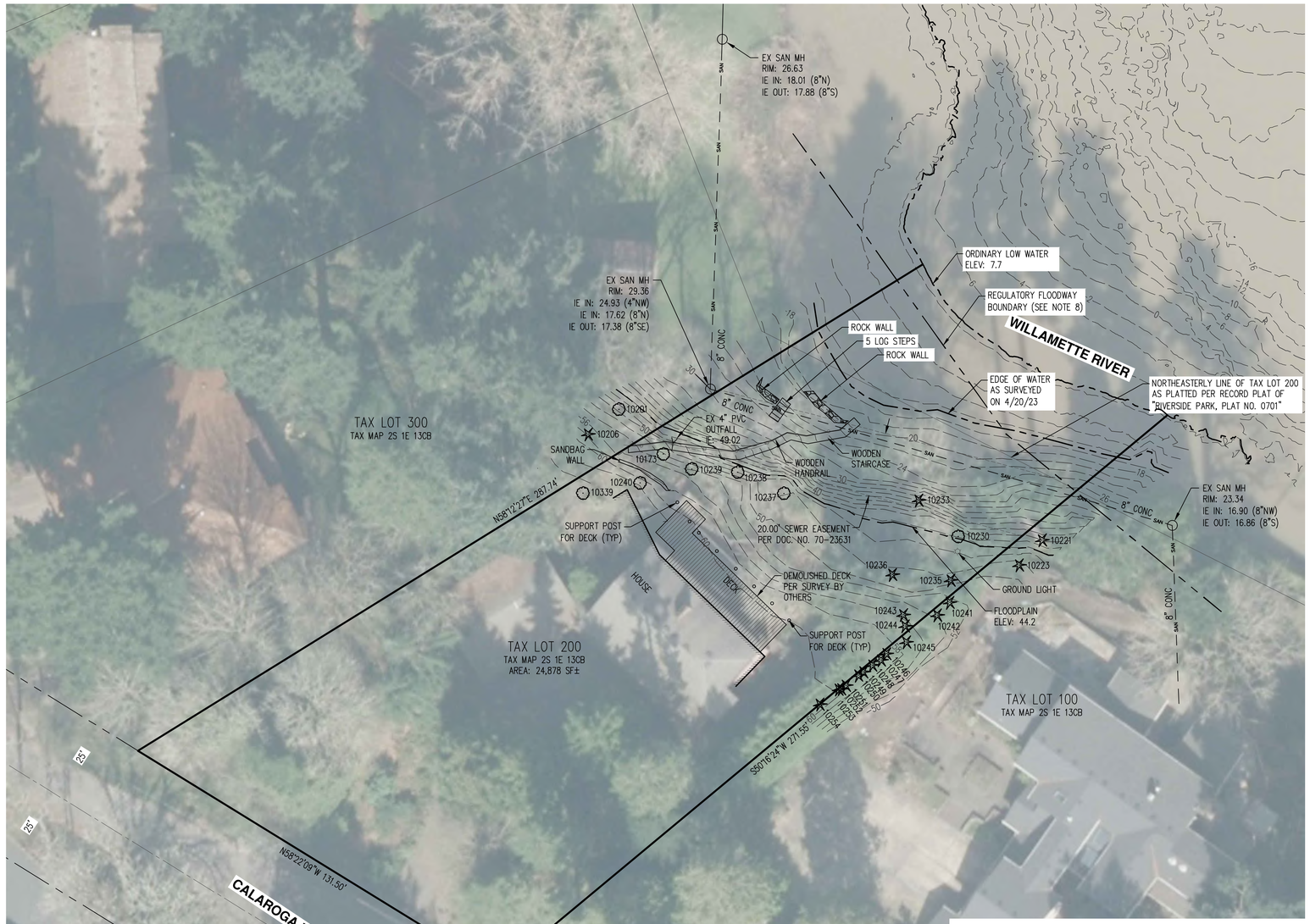
REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JANUARY 11, 2005
ROBERT D. RETTIG
60124LS
RENEWS: 12/31/24
PRELIMINARY

REVISIONS

JOB NUMBER
10072

SHEET
P01

AKS DRAWING FILE: 10072EXCOND.DWG | LAYOUT: P01



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N

SCALE: 1"= 20 FEET

20 0 4 10 20

ORIGINAL PAGE SIZE: 22" x 34"

LEGEND

EXISTING		EXISTING
DECIDUOUS TREE		STORM DRAIN CLEAN OUT
CONIFEROUS TREE		STORM DRAIN CATCH BASIN
FIRE HYDRANT		STORM DRAIN AREA DRAIN
WATER BLOWOFF		STORM DRAIN MANHOLE
WATER METER		GAS METER
WATER VALVE		GAS VALVE
DOUBLE CHECK VALVE		GUY WIRE ANCHOR
AIR RELEASE VALVE		UTILITY POLE
SANITARY SEWER CLEAN OUT		POWER VAULT
SANITARY SEWER MANHOLE		POWER JUNCTION BOX
SIGN		POWER PEDESTAL
STREET LIGHT		COMMUNICATIONS VAULT
MAILBOX	MB	COMMUNICATIONS JUNCTION BOX
		COMMUNICATIONS RISER

EXISTING	
RIGHT-OF-WAY LINE	
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CENTERLINE	
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EDGE OF PAVEMENT	
EASEMENT	
FENCE LINE	
GRAVEL EDGE	
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OVERHEAD WIRE	OHW
COMMUNICATIONS LINE	COM
FIBER OPTIC LINE	OFO
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WATER LINE	WAT

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3801 CALAROGA DRIVE

WEST LINN
TAX LOT 200

OREGON
CLACKAMAS COUNTY TAX MAP 2S 1E 13CB

EXISTING CONDITIONS PLAN WITH AERIAL IMAGE OVERLAY

DESIGNED BY:
DRAWN BY: CC
MANAGED BY: MB
CHECKED BY: RR
DATE: 9/6/2023

REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY
OREGON
JANUARY 11, 2005
ROBERT D. RETTIG
60124LS
RENEWS: 12/31/24

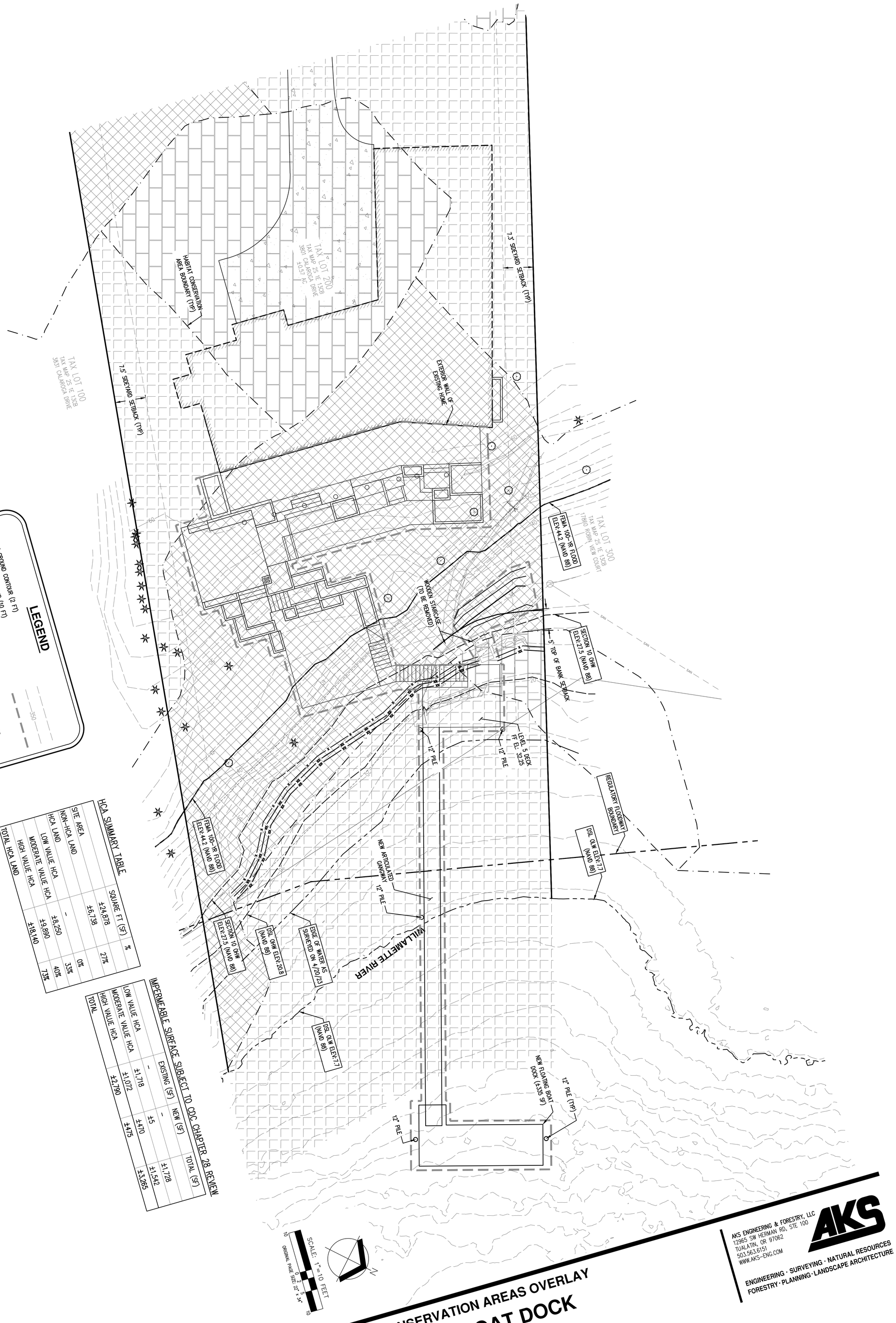
REVISIONS

JOB NUMBER
10072

SHEET
P02

AKS DRAWING FILE: 10072EXCOND.DWG | LAYOUT: P02

AKS DRAWING FILE: 10072 ESC AND CM.DWG | LAYOUT: P03



LEGEND

- EXISTING GROUND CONTOUR (2 FT)
- EXISTING GROUND CONTOUR (10 FT)
- LIMITS OF DISTURBANCE (±4,369 SF)
- HIGH VALUE HCA AREA
- MODERATE VALUE HCA AREA
- NOT DESIGNATED AS HCA
- HABITAT CONSERVATION AREA (HCA) BOUNDARIES ARE PER CITY OF WEST LINN GIS MAPS

HCA SUMMARY TABLE

	SQUARE FT (SF)	%
SITE AREA	±24,878	
NON-HCA LAND	±6,738	27%
HCA LAND		
LOW VALUE HCA	-	0%
MODERATE VALUE HCA	±8,250	33%
HIGH VALUE HCA	±9,890	40%
TOTAL HCA LAND	±18,140	73%

IMPERMEABLE SURFACE SUBJECT TO CDC CHAPTER 28 REVIEW

	EXISTING (SF)	NEW (SF)	TOTAL (SF)
LOW VALUE HCA	-	-	
MODERATE VALUE HCA	±1,718	±5	±1,728
HIGH VALUE HCA	±1,072	±470	±1,542
TOTAL	±2,790	±475	±3,265

SCALE: 1" = 10 FEET
ORIGINAL PAGE SIZE: 22" x 34"

SITE PLAN WITH HABITAT CONSERVATION AREAS OVERLAY

3801 CALAROGA DRIVE - BOAT DOCK

WEST LINN, OREGON

REVIEW COPY
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 31, 2007
JOHN M. MORGAN

RENEWAL DATE: 12/31/2024

JOB NUMBER:	10072
DATE:	10/24/2023
DESIGNED BY:	GSH
DRAWN BY:	GSH
CHECKED BY:	JMM

P03

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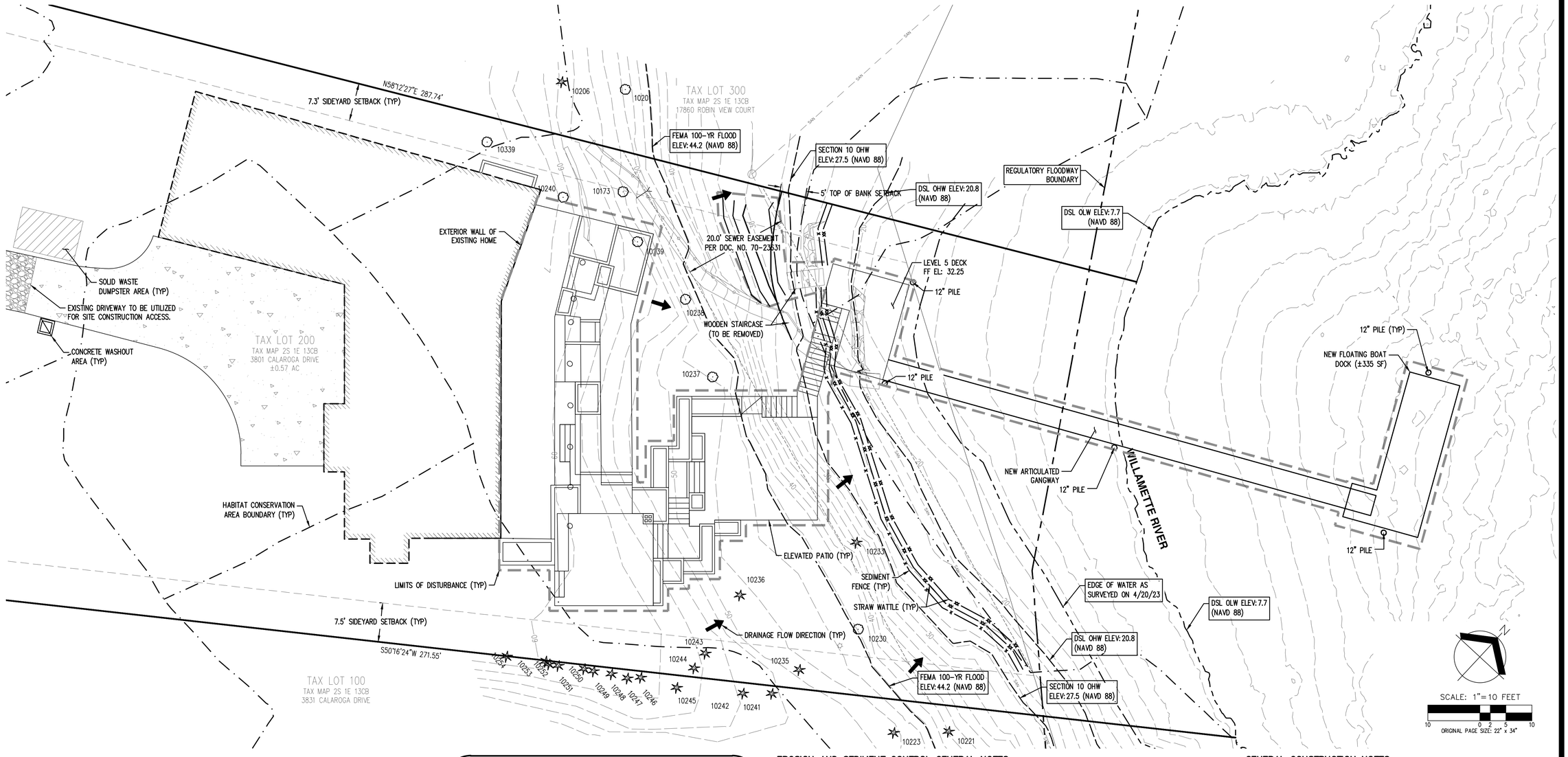

LEGEND

- EXISTING GROUND CONTOUR (2 FT)
- EXISTING GROUND CONTOUR (10 FT)
- SEDIMENT FENCE (TO BE INSTALLED PRIOR TO CONSTRUCTION)
- STRAW WATTLE (TO BE INSTALLED PRIOR TO CONSTRUCTION)
- CONCRETE WASHOUT AREA
- DRAINAGE FLOW DIRECTION
- CONSTRUCTION ENTRANCE
- LIMITS OF DISTURBANCE
- HABITAT CONSERVATION AREA (HCA) BOUNDARY

HABITAT CONSERVATION AREA (HCA) BOUNDARIES ARE PER CITY OF WEST LINN GIS MAPS

EROSION AND SEDIMENT CONTROL GENERAL NOTES:

1. APPROVAL OF THIS EROSION AND SEDIMENT CONTROL PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.)
2. THE IMPLEMENTATION OF THIS ESPCP AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESPCP FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/ LANDSCAPING IS ESTABLISHED.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. THE ESPCP FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
5. THE ESPCP FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESPCP FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
6. THE ESPCP FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
7. THE ESPCP FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 24 HOURS FOLLOWING A STORM EVENT.
8. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

GENERAL CONSTRUCTION NOTES:

1. CONSTRUCTION MATERIAL STAGING, SOLID WASTE DUMPSTER, AND CONCRETE WASHOUT AREA WILL BE LOCATED IN THE FRONT YARD AREA OF THE EXISTING HOME (ADJACENT TO THE EXISTING DRIVEWAY).
2. EXISTING CONCRETE DRIVEWAY TO BE UTILIZED FOR SITE CONSTRUCTION ACCESS. SHOULD TRACKING OF SEDIMENT OCCUR, INSTALL GRAVEL CONSTRUCTION ENTRANCE PER DETAILS.
3. DSL ORDINARY LOW WATER ELEVATION IS 7.70' (NAVD 88) AND WAS UNDERWATER AT THE TIME OF THE SITE TOPOGRAPHIC SURVEY.
4. EQUIPMENT MANEUVERING AREAS SHALL BE DELINEATED VIA TEMPORARY ORANGE CONSTRUCTION FENCING TO MINIMIZE SOIL AND VEGETATION DISTURBANCE OUTSIDE OF THE PROJECTS WORK LIMITS.
5. SEE CONSTRUCTION PLANS PREPARED BY STEEL & TIMBER CONSTRUCTION FOR ADDITIONAL CONSTRUCTION INFORMATION.

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CONSTRUCTION MANAGEMENT, AND EROSION AND SEDIMENT CONTROL PLAN

3801 CALAROGA DRIVE - BOAT DOCK

WEST LINN, OREGON

REVIEW COPY

REGISTERED PROFESSIONAL ENGINEER
OREGON
JONATHON M. MOSER

RENEWAL DATE: 12/31/2024

JOB NUMBER:	10072
DATE:	10/24/2023
DESIGNED BY:	GSH
DRAWN BY:	GSH
CHECKED BY:	JMM

P04

AKS DRAWING FILE: 10072 ESC AND CMDWG | LAYOUT: P04

PRELIMINARY 100-YR FLOOD ELEVATION, GANGWAY PROFILE & SITE PLAN

3801 CALAROGA DRIVE - BOAT DOCK

WEST LINN, OREGON

REVISED PROFESSIONAL ENGINEER — OREGON — JONATHON M. MADSEN

RENEWAL DATE: 12/31/2024

JOB NUMBER:	10072
DATE:	10/24/2023
DESIGNED BY:	GSH
DRAWN BY:	GSH
CHECKED BY:	JMM

P05

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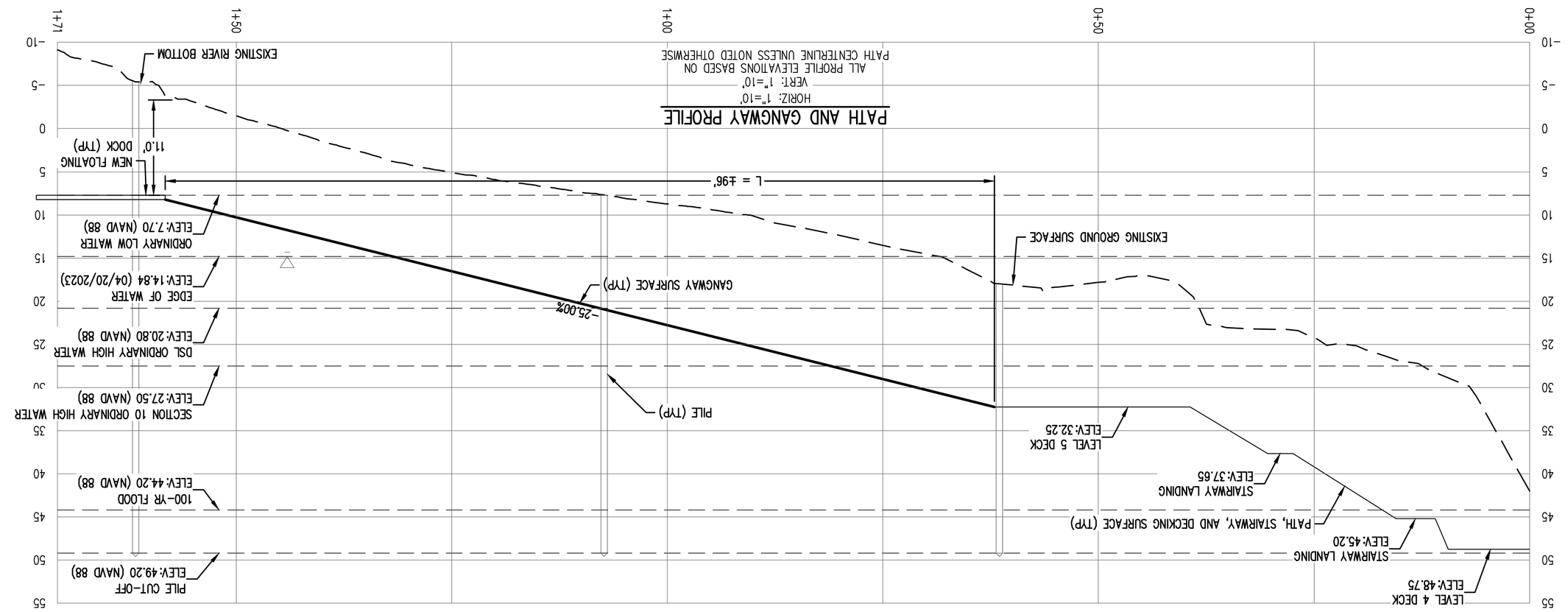
AKS DRAWING FILE: 10072 ESC AND CMDWG LAYOUT: P05

GENERAL NOTES:

1. TOTAL ESTIMATED FILL WITHIN THE 100-YEAR FLOOD ELEVATION: 48.3 CY
   TOTAL ESTIMATED FILL WITHIN THE DSL OWM ELEVATION: 47.4 CY
   ESTIMATED INCLUDES DECKING SUPPORTS, HANDRAILS, STAIRWAY AND LANDING, AND ASSOCIATED SUPPORT FOOTINGS.
2. FLOATING DOCK AND ARTICULATED GANGWAY ARE NOT INCLUDED IN ESTIMATED FILL VOLUMES.
3. DECKING MATERIAL BELOW THE FEMA 100-YEAR FLOOD ELEVATION WILL CONSIST OF THE FOLLOWING.
   ARTICULATED GANGWAY – ALUMINUM (50% OPEN GRATING)
   STAIRWAYS AND LANDINGS – COMPOSITE DECKING/WOOD
4. CONSTRUCTION & STAGING WILL BE FROM A BARGE AND WILL AT NO TIME BE GROUNDED IN THE BED OR BANKS PER OAR 141-089-0695(7).
5. SEE CONSTRUCTION PLANS PREPARED BY STEEL & TIMBER CONSTRUCTION FOR ADDITIONAL CONSTRUCTION INFORMATION.

LEGEND

- EXISTING GROUND CONTOUR (2 FT)
- EXISTING GROUND CONTOUR (10 FT) — 350 —
- LIMITS OF DISTURBANCE
- HABITAT CONSERVATION AREA (HCA) BOUNDARY
- HABITAT CONSERVATION AREA (HCA) BOUNDARIES ARE PER CITY OF WEST LINN GIS MAPS



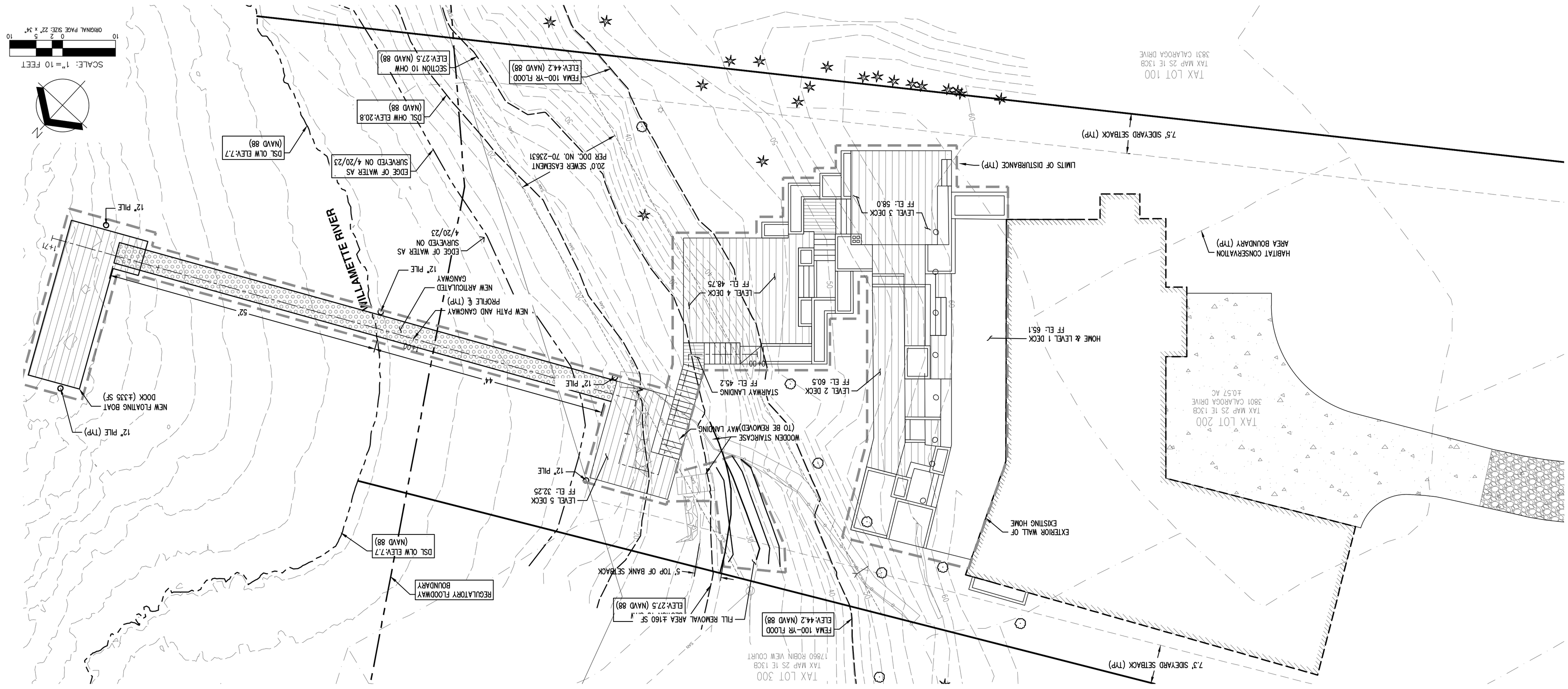
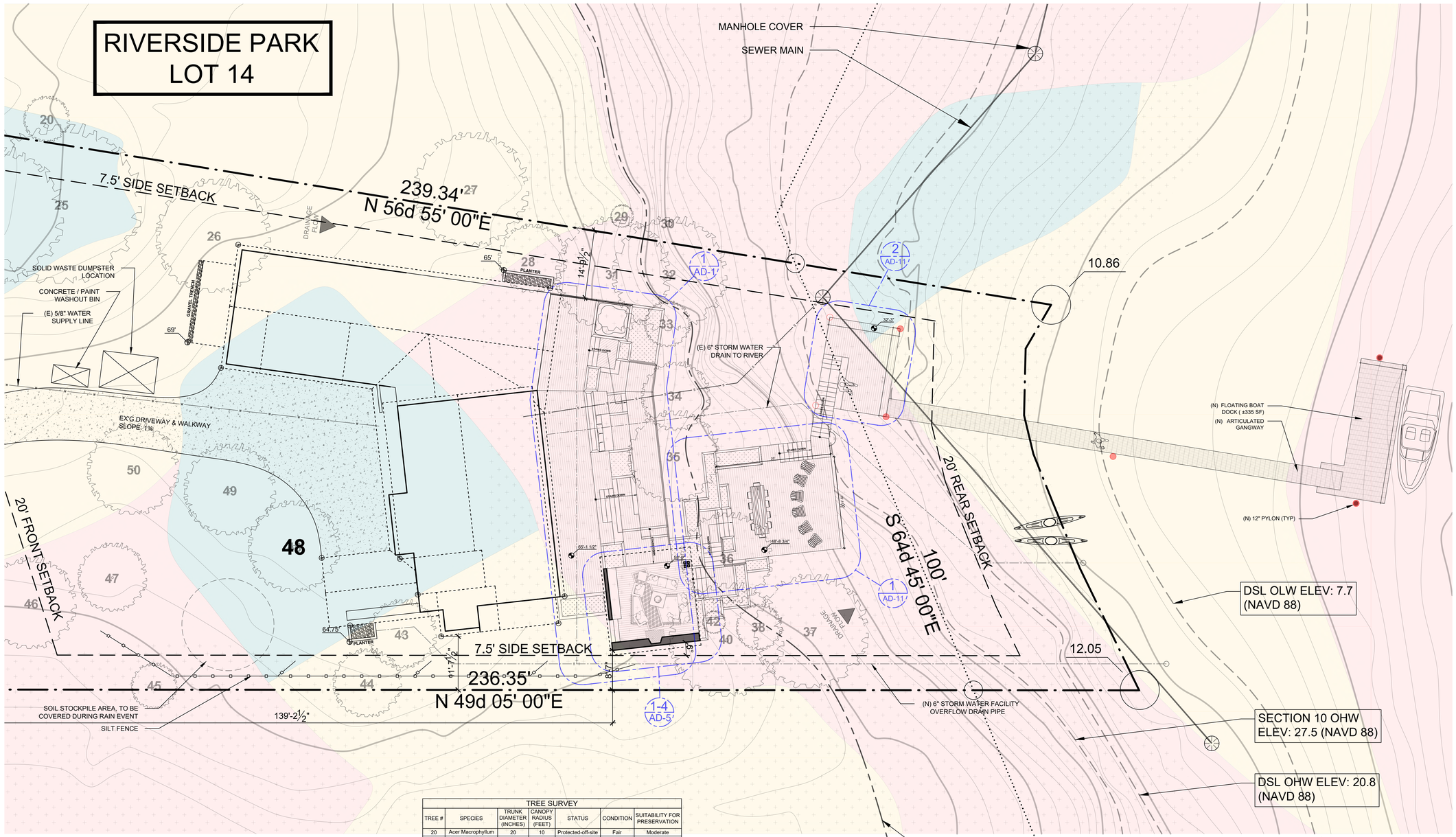


Exhibit C: Architectural Plans

RIVERSIDE PARK
LOT 14



LEGEND

# TREE NUMBER	HIGH HCA
PLANTER	MEDIUM HCA
RIPARIAN CORRIDOR	LOW HCA
NEW DECK	NOT DESIGNATED AS HCA

TREE SURVEY

TREE #	SPECIES	TRUNK DIAMETER (INCHES)	CANOPY RADIUS (FEET)	STATUS	CONDITION	SUITABILITY FOR PRESERVATION
20	Acer Macrophyllum	20	10	Protected-off-site	Fair	Moderate
21	Acer Macrophyllum	24	30	Protected	Fair	Moderate
22	Acer Macrophyllum	18	20	Protected	Very Poor	Low
23	Abies Grandis	26	15	Protected	Good	Moderate
24	Acer Macrophyllum	24	30	Protected	Fair	Moderate
25	Acer Macrophyllum	33	35	Protected	Fair	Moderate
26	Acer Macrophyllum	23	25	Protected	Fair	Moderate
27	Pseudotsuga Menziesii	35	25	Protected-off-site	Fair	Moderate
28	Acer Macrophyllum	16	15	Protected	Fair	Moderate
29	Pseudotsuga Menziesii	30	5	Protected-off-site	Fair	Moderate
30	Acer Macrophyllum	14	1	Protected-off-site	Poor	Low
31	Acer Macrophyllum	19	25	Protected	Fair	Moderate
32	Acer Macrophyllum	30	25	Protected	Poor	Low
33	Acer Macrophyllum	18	10	Protected	Very Poor	Low
34	Acer Macrophyllum	22	15	Protected	Poor	Low
35	Acer Macrophyllum	30	20	Protected	Very Poor	Low
36	Pseudotsuga Menziesii	30	20	Protected	Fair	Moderate
37	Acer Macrophyllum	34	25	Protected	Fair	Moderate
38	Abies Grandis	13	10	Protected	Poor	Low
40	Pseudotsuga Menziesii	43	25	Protected	Good	Moderate
42	Thuja Plicata	15	5	Protected	Fair	Low
43	Abies Grandis	33	15	Protected	Poor	Low
44	Pseudotsuga Menziesii	18	15	Line	Good	High
45	Abies Grandis	18	10	Line	Fair	Moderate
46	Abies Grandis	23	20	Protected	Fair	Moderate
47	Abies Grandis	32	16	Protected	Good	High
48	Tsuga Heterophylla	19	20	Protected	Good	High
49	Thuja Plicata	22	20	Protected	Fair	Low
50	Thuja Plicata	24	20	Protected	Fair	Low

N

1 SITE PLAN

0 10 20 50 75

General Notes

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No.	Revision/Issue	Date

Firm Name and Address

STEEL & TIMBER
1661 SE 2ND ST.
ASTORIA, OR 97103

DRAWN BY: SHAUN CATLIN

Project Name and Address

ENDRES RESIDENCE
3801 CALAROGA DR.
WESTLINN, OR 97068

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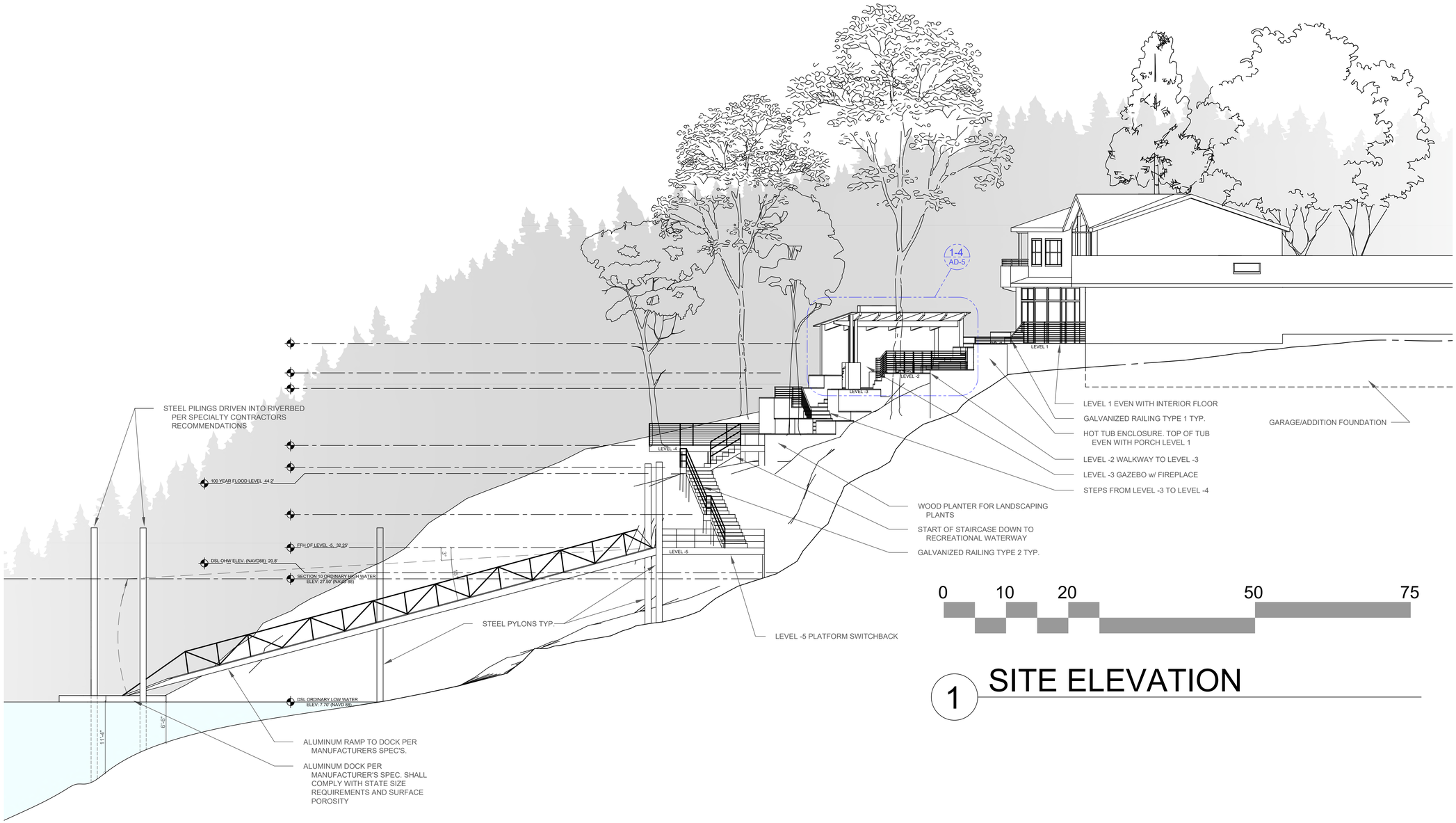

0 10 20 50 75

1 SITE ELEVATION

FLOOD PLAIN NOTE:

100 YEAR FLOOD PLAIN ELEVATION = 44.2 FEET
FLOOD INSURANCE RATE MAP NO. 41005C0019D
EFFECTIVE DATE : JUNE 17, 2008

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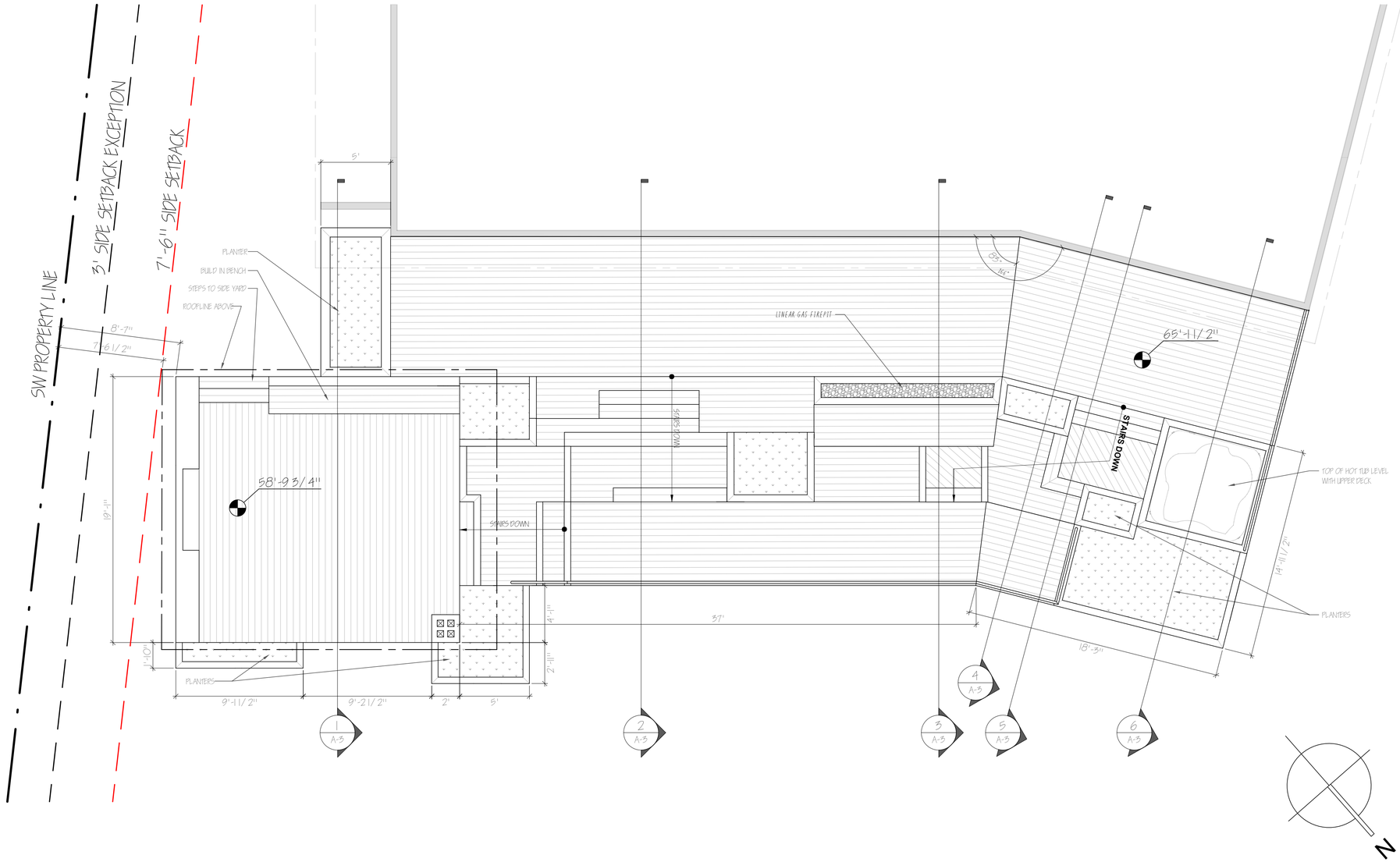

1 PLAN VIEW LAYOUT

General Notes

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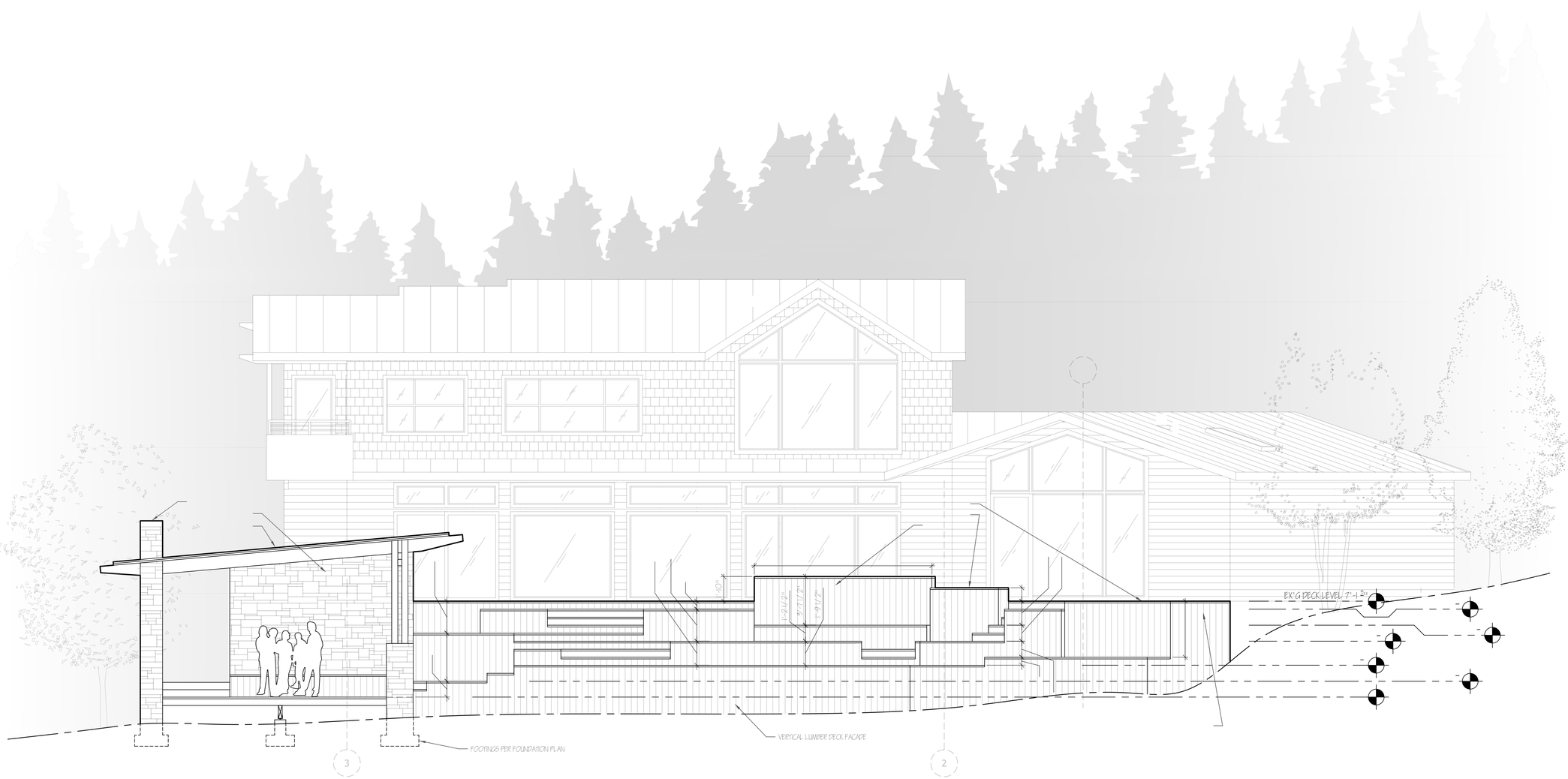

1 PLAN VIEW LAYOUT

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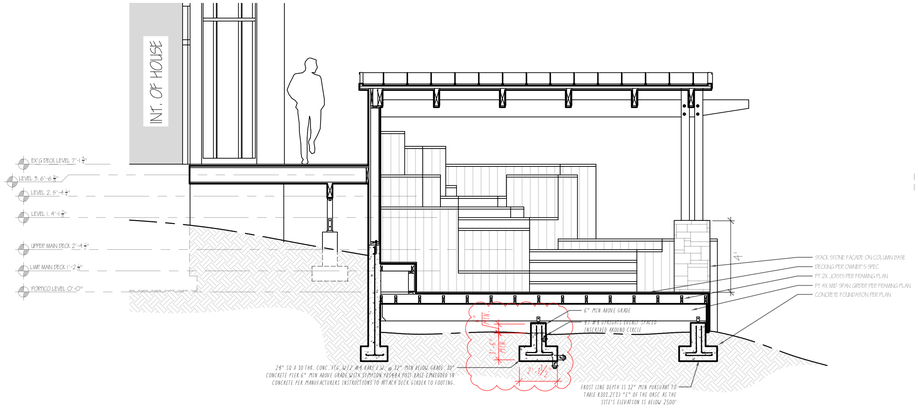
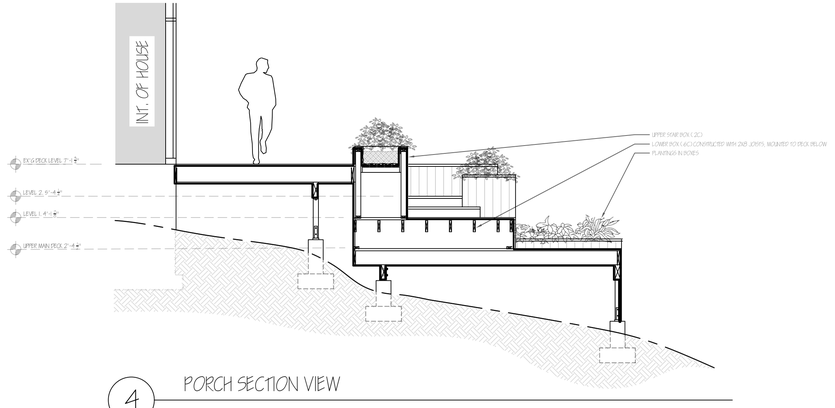


1 PORCH SECTION VIEW



4 PORCH SECTION VIEW

2 PORCH SECTION VIEW

5 PORCH SECTION VIEW

3 PORCH SECTION VIEW

6 PORCH SECTION VIEW

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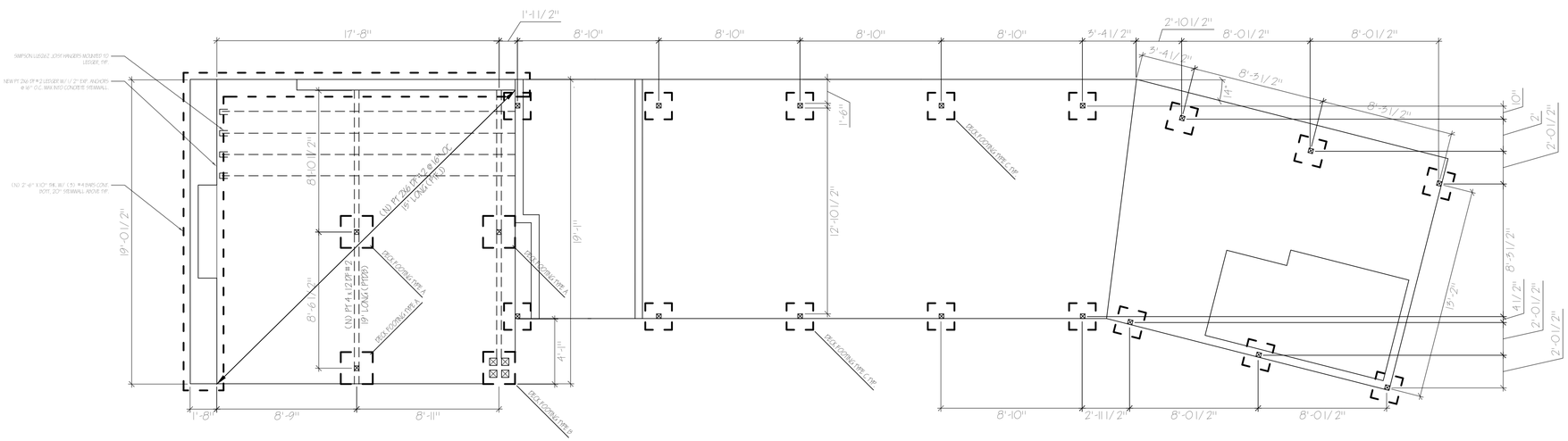
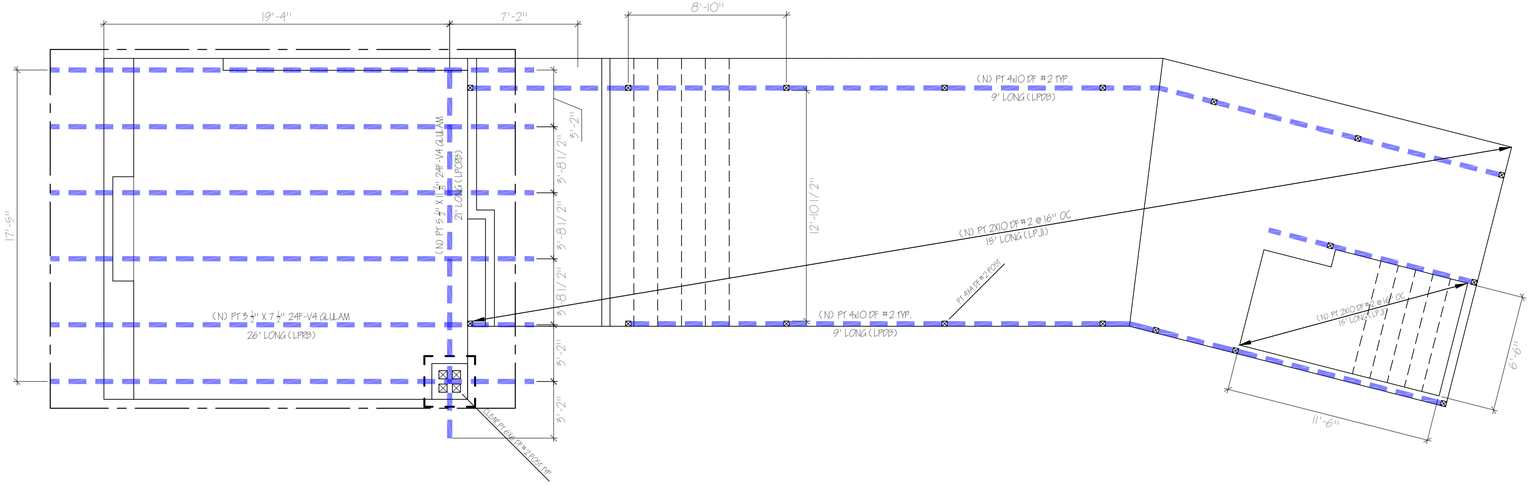


1 FOUNDATION / FRAMING PLAN



2 ROOF & DECK FRAMING PLAN

DECK FOOTING TYPE A

FLOOR DROP BEAM LOADS: 9,163 LBS (PTDD)

$\frac{9,163}{1100} = 8.64$

$\sqrt{8.64} = 1.96$

1.96 X 12 = 24"

$As = \sqrt{\frac{9,163}{60,000}}\,(.24)(.7) = 0.42$

$\frac{0.42}{0.20} = 2.1 \rightarrow (2)$ #4 BARS E.W.

24" SQ X 10" THK. CONC. FTG W/ 2 #4 BARS E.W.

DECK FOOTING TYPE B

COMBINED LOADS: (LPDB) + (PTDD) = 9,462 LBS

$\frac{9,462}{1100} = 8.6$

$\sqrt{8.6} = 1.90$

1.90 X 12 = 25"

$As = \sqrt{\frac{9,462}{60,000}}\,(.25)(.7) = 0.40$

$\frac{0.40}{0.20} = 2.0 \rightarrow (2)$ #4 BARS E.W.

25" SQ X 10" THK. CONC. FTG W/ 2 #4 BARS E.W.

DECK FOOTINGS TYPE C

COMBINED BEAM LOADS: 5,990 LBS (LPDB)

$\frac{5,990}{1100} = 2.66$

$\sqrt{2.66} = 1.65$

1.7 X 12 = 20"

$As = \sqrt{\frac{5,990}{60,000}}\,(.20)(.7) = 0.56$

$\frac{0.56}{0.20} = 1.79 \rightarrow (2)$ #4 BARS E.W.

20" SQ X 10" THK. CONC. FTG W/ 2 #4 BARS E.W.

GENERAL FRAMING PLAN NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE. DO NOT SCALE. FOLLOW DIMENSIONS SHOWN ON DRAWINGS AND FIELD VERIFY EXISTING CONDITIONS.
2. DIMENSIONS ON PLAN SHEETS ARE TO FINISH FACE UNO.
3. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
4. REFER TO SHEARWALL SCHEDULE FOR FRAMING REQUIREMENTS AT SHEARWALLS. WALLS SHALL BE CONSTRUCTED PER SHEARWALL TYPE 'A ' UNO.

FRAMING PLAN LEGEND

- SHEAR WALL
- PLATFORM
- ROOF OUTLINE ABOVE
- BEAM/ GIRDER/ HEADER
- ROOF TRUSS / PLATFORM JOIST
- MINOR FRAMING

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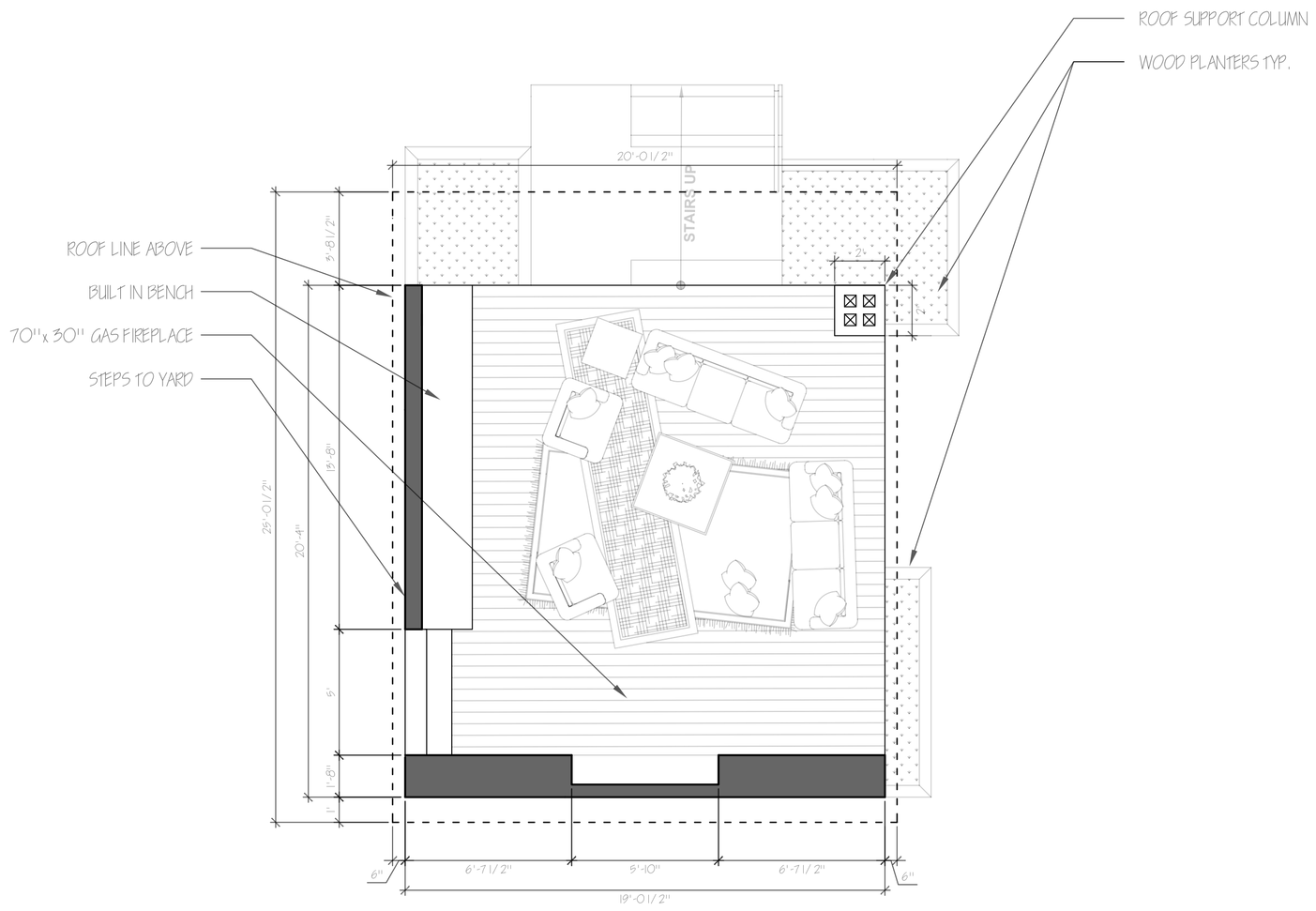
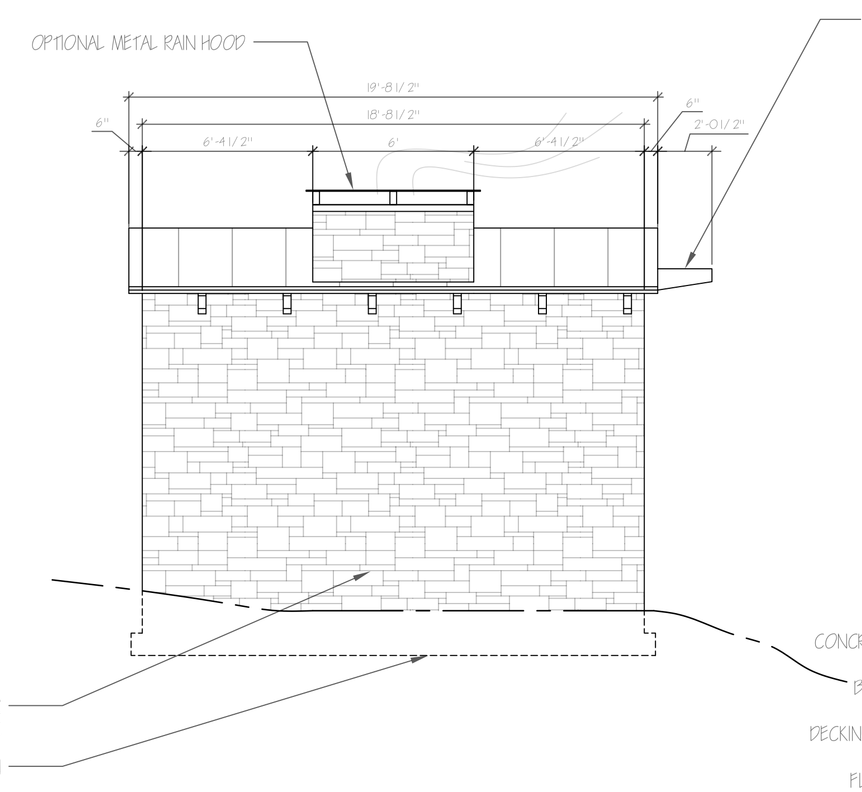
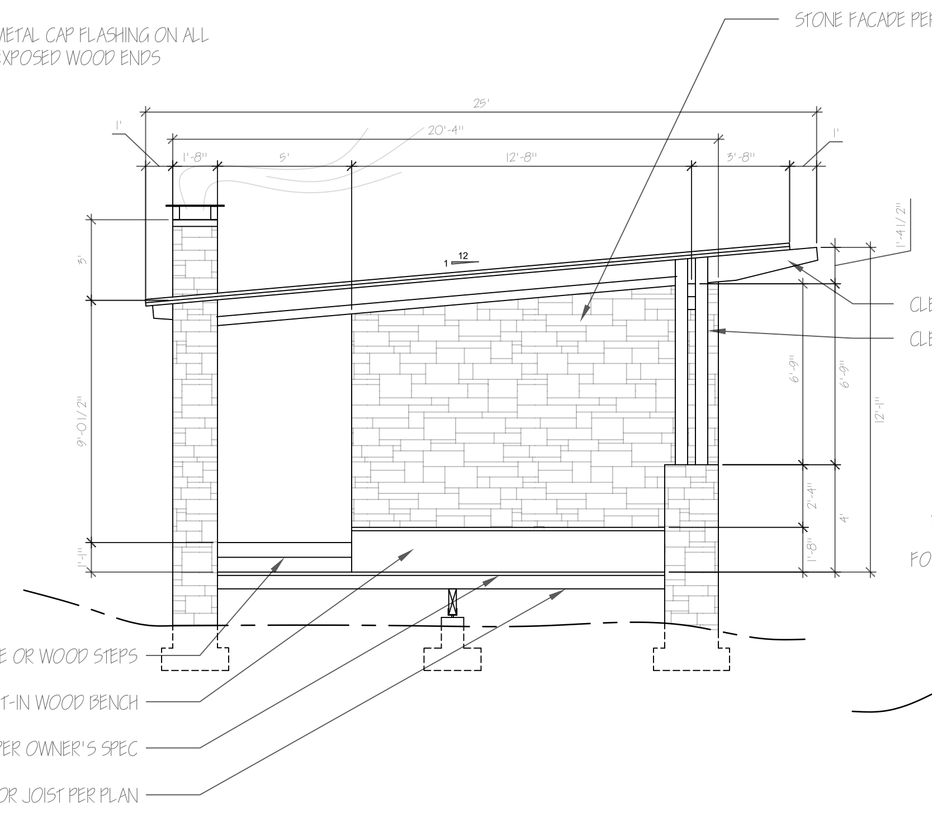


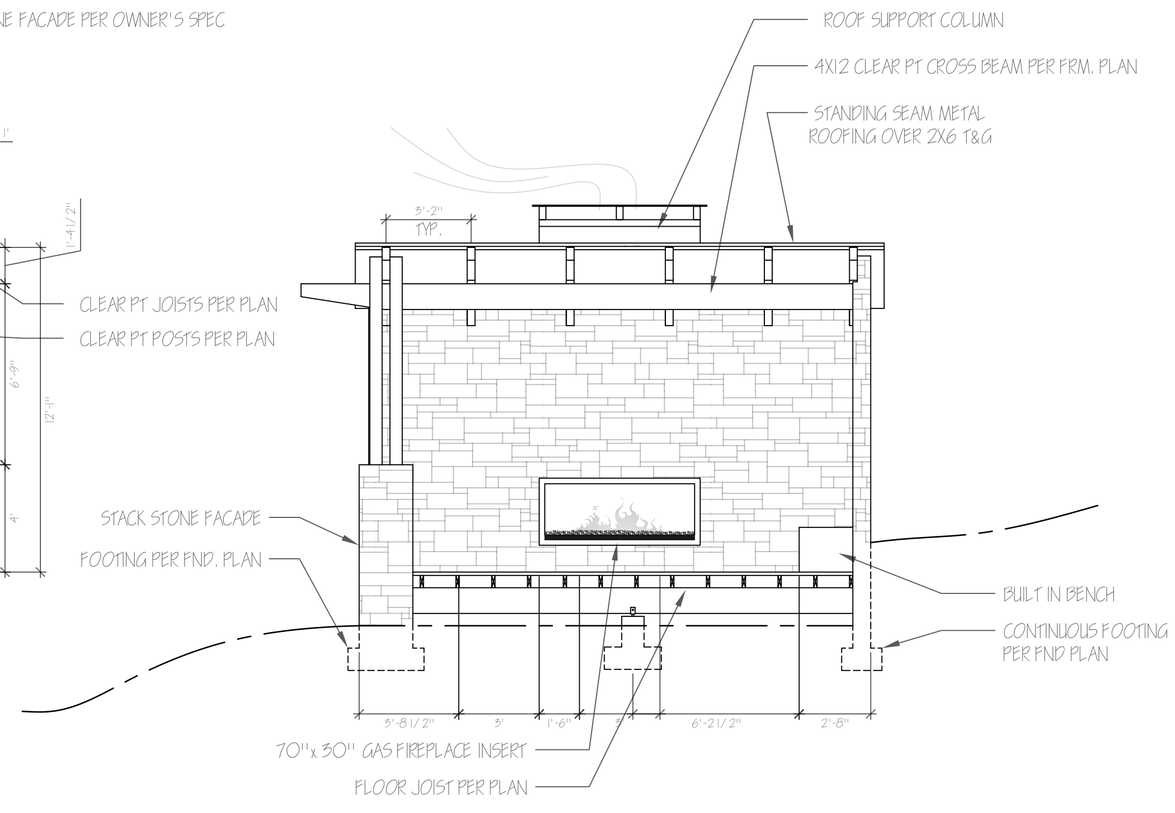
1 GAZEBO PLAN VIEW



2 NORTH EAST ELEVATION



3 NORTH EAST ELEVATION



4 NORTH EAST ELEVATION

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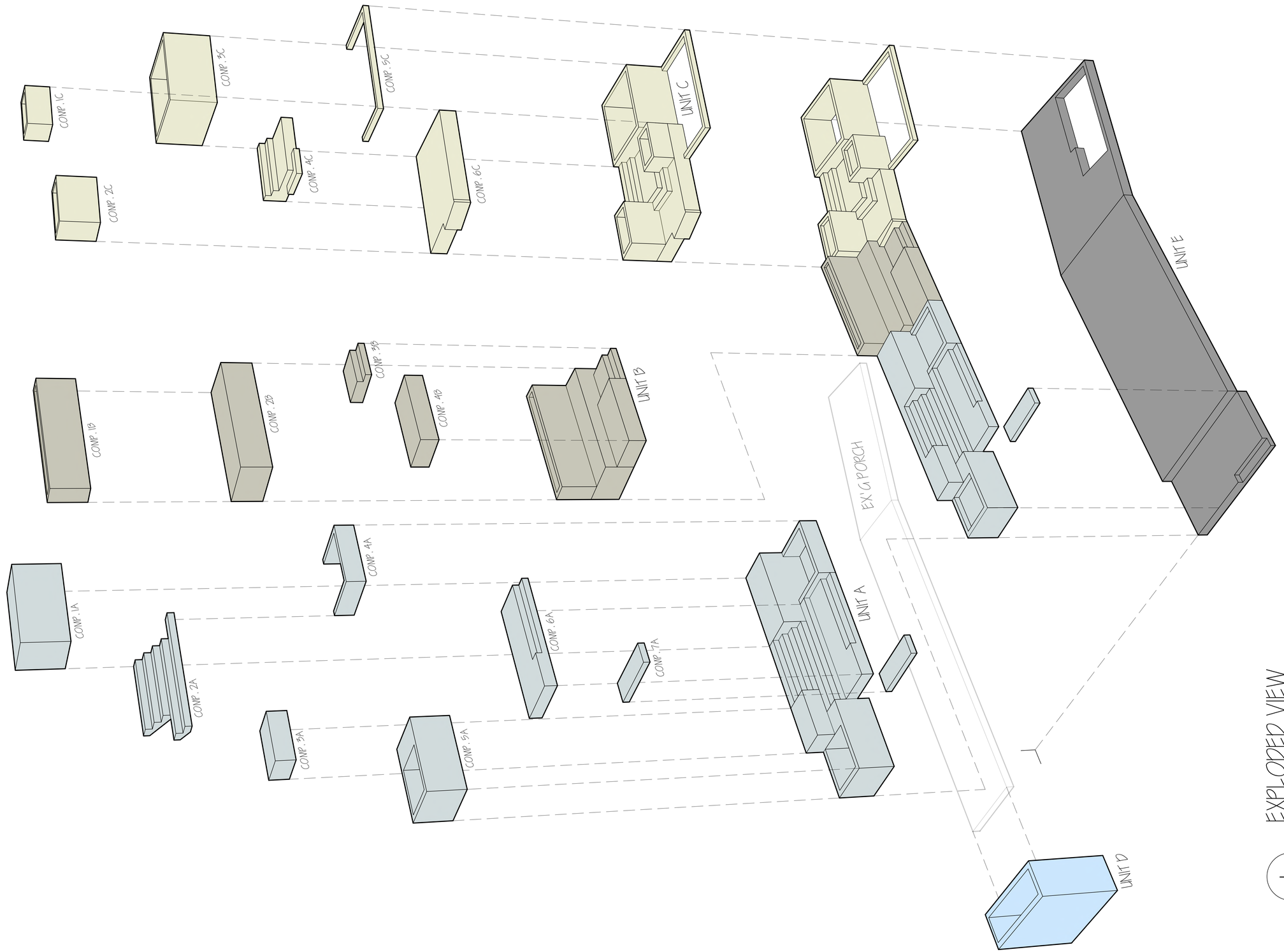

EXPLODED VIEW

1

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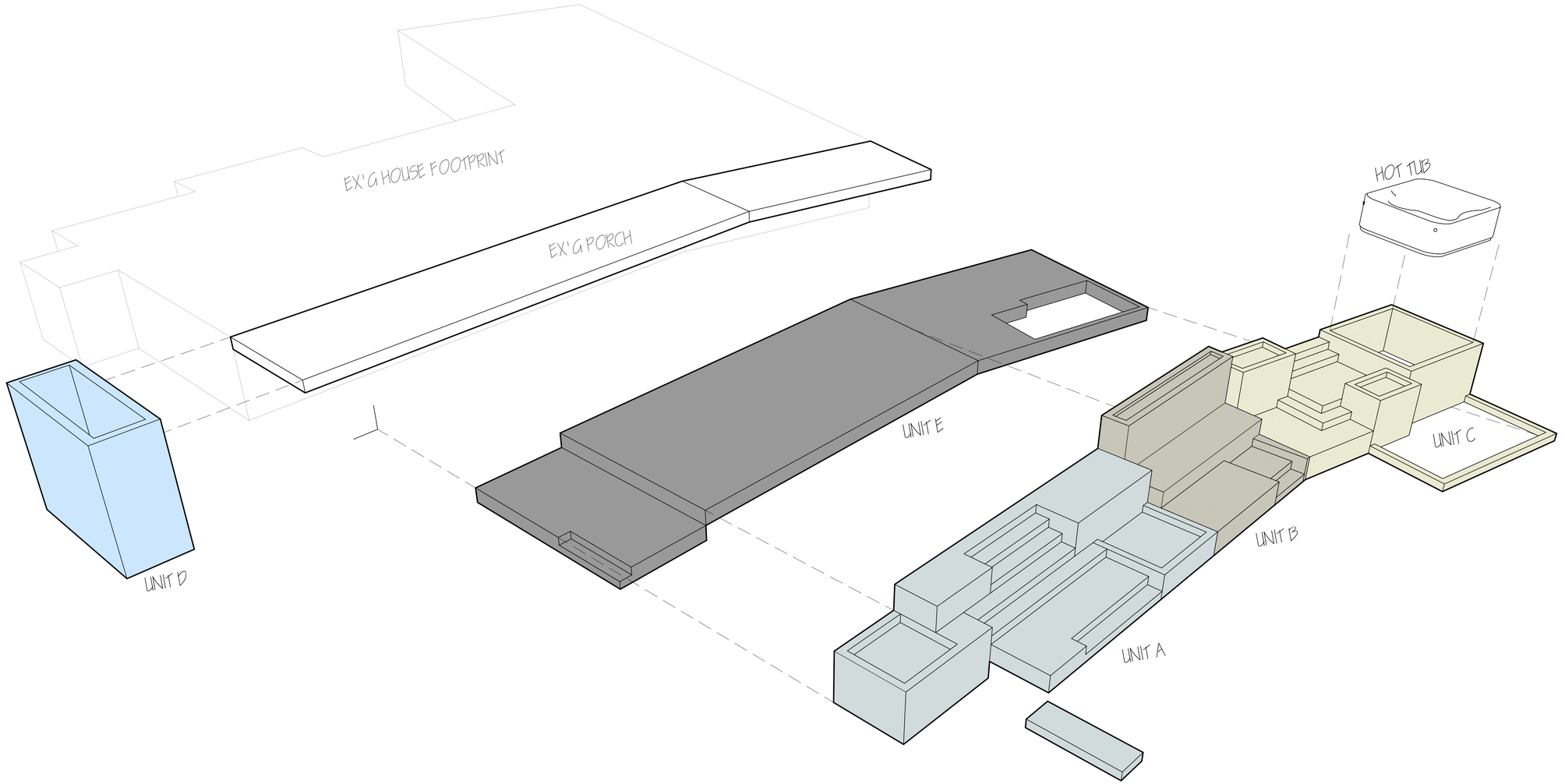

1 EXPLODED VIEW

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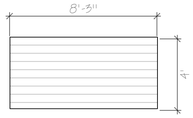

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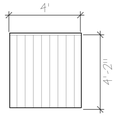

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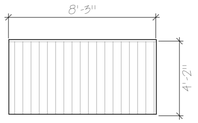
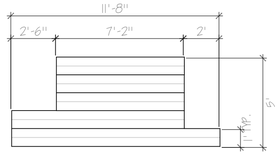


3 1A FRONT

UNIT A



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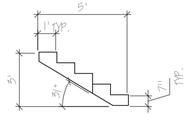

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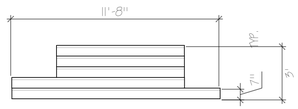

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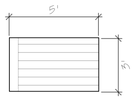
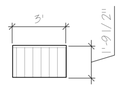


7 3A TOP



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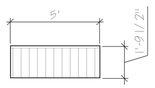

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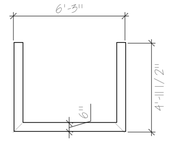

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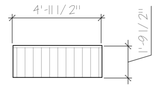

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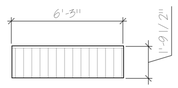

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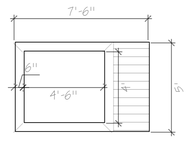

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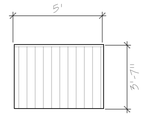
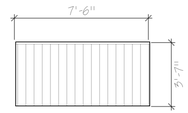


14 5A SIDE



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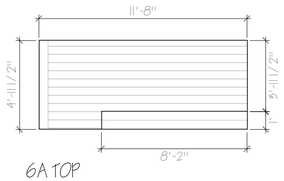
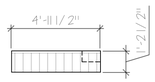
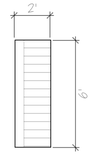


16 6A TOP



17 6A SIDE

18 6A FRONT



19 7A TOP

20 7A SIDE

21 7A FRONT

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STEEL & TIMBER
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DRAWN BY: SHAUN CATLIN

Project Name and Address
ENDRES RESIDENCE
3801 CALAROGA DR.
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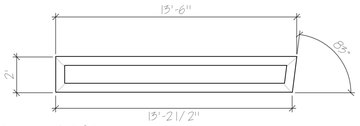
Project 23-06-03	Sheet AD-8
Date 4/24/23	
Scale 1/4"=1'	



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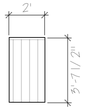

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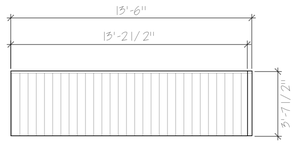
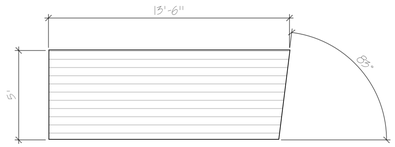


3 1B FRONT

UNIT B



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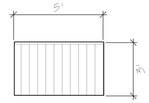

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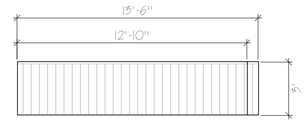

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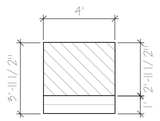

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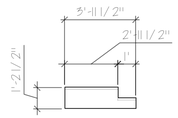

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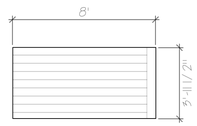

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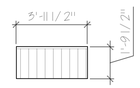

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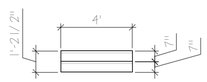

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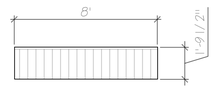
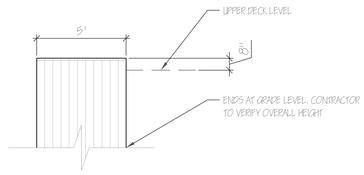


12 4B FRONT

7 UNIT D TOP



8 UNIT D SIDE

9 UNIT D FRONT

UNIT D

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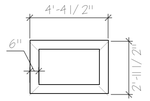
Project 23-06-03	Sheet AD-9
Date 4/24/23	
Scale 1/4"=1'	



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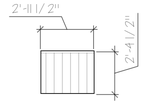

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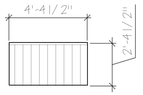
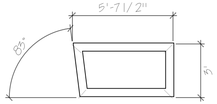


3 1C FRONT

UNIT C



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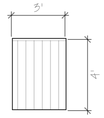

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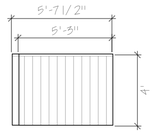

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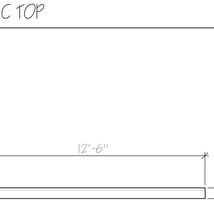

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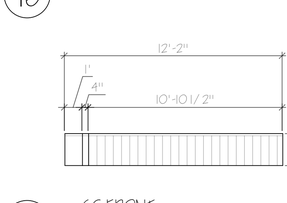
8 3C SIDE

9 3C FRONT



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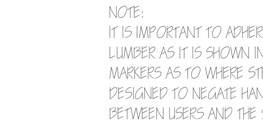

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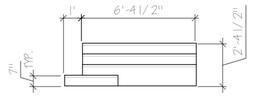

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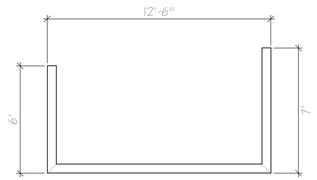

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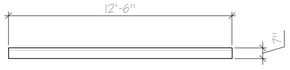
14 5C SIDE



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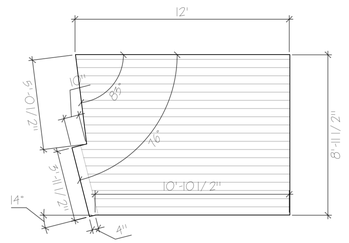

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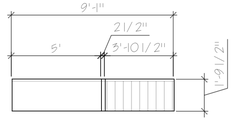

17 6C SIDE

18 6C FRONT

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Project 23-06-03	Sheet AD-10
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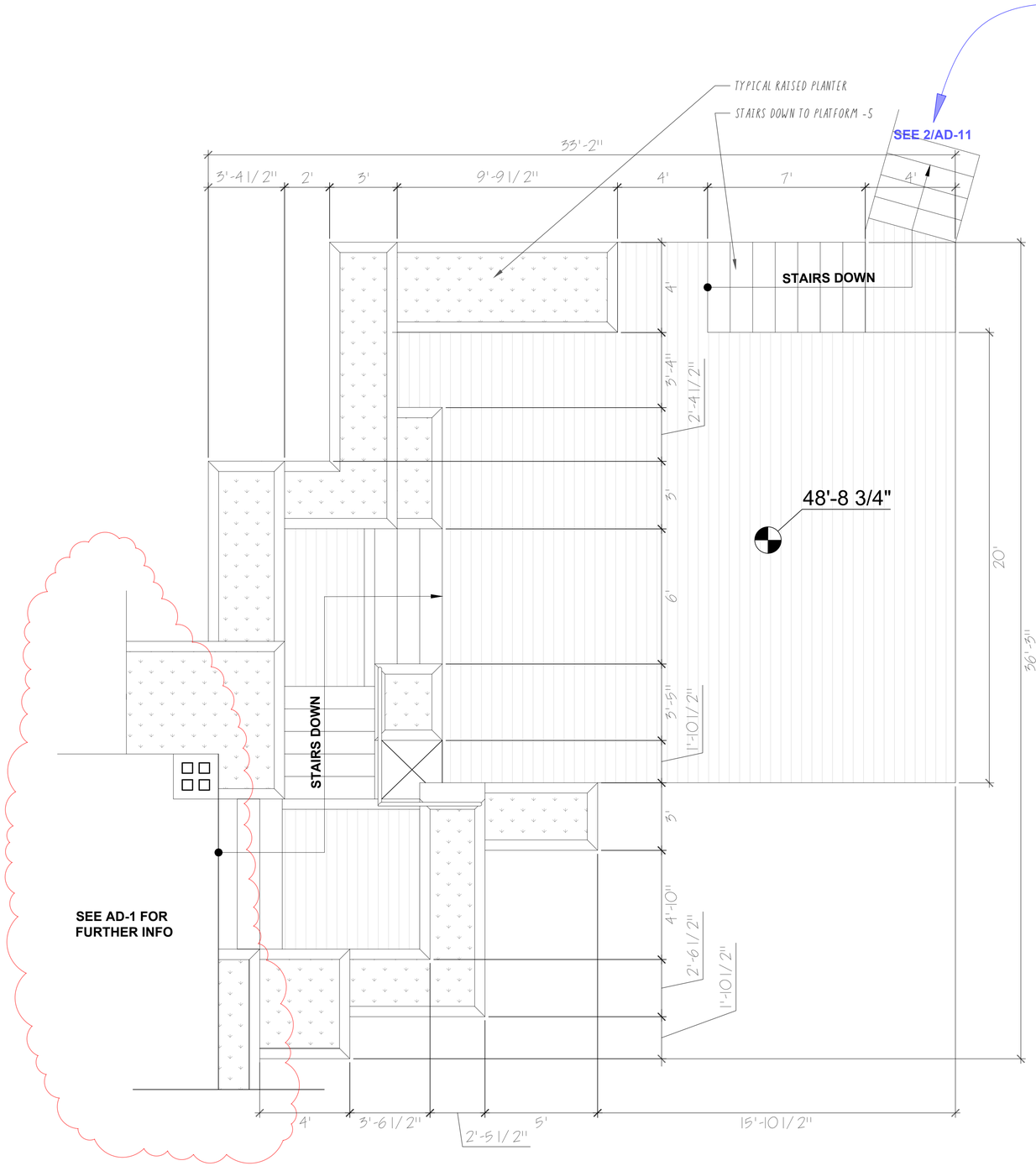
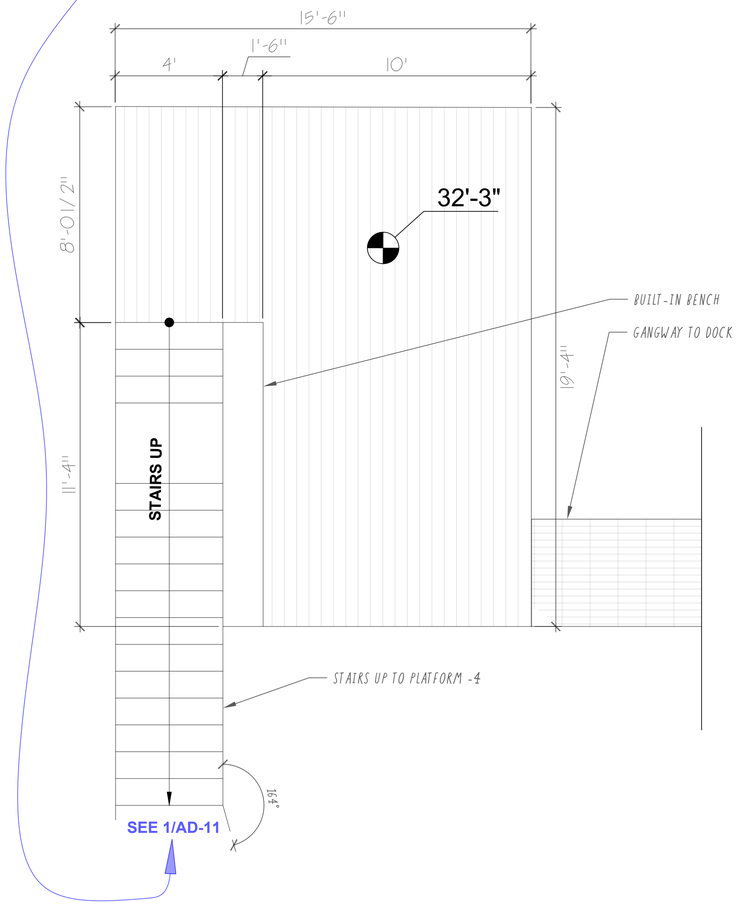


1 LEVEL -4 PLAN



2 LEVEL -5 PLAN

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Project 23-06-03	Sheet AD-11
Date 4/24/23	
Scale 3/8"=1'	

GENERAL FRAMING PLAN NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE; DO NOT SCALE. FOLLOW DIMENSIONS SHOWN ON DRAWINGS AND FIELD VERIFY EXISTING CONDITIONS

2. DIMENSIONS ON PLAN SHEETS ARE TO FINISH FACE U.N.O.

3. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION

4. REFER TO SHEARWALL SCHEDULE FOR FRAMING REQUIREMENTS AT SHEARWALLS. WALLS SHALL BE CONSTRUCTED PER SHEARWALL TYPE 'A' U.N.O.

FRAMING PLAN LEGEND

- SHEAR WALL
- PLATFORM
- ROOF OUTLINE ABOVE
- BEAM/ GIRDER/ HEADER
- ROOF TRUSS / PLATFORM JOIST
- MINOR FRAMING

DECK FOOTING TYPE D

FLOOR DROP BEAM LOAD 4,856 LBS (LPDB2)

$\frac{4856}{1500} = 3.22$

$\sqrt{3.22} = 1.79$

1.79 X 12 = 22"

$A_S = \frac{\sqrt{1500}}{60,000}(22)(7) = 0.59$

$\frac{0.59}{0.20} = 1.99$ (2) #4 BARS E.W.

22" SQ X 10" THK. CONC. FTG W/ 2 #4 BARS E.W.

DECK FOOTING TYPE E

FLOOR DROP BEAM LOAD 2,978 LBS (LP,12)

$\frac{2978}{1500} = 1.98$

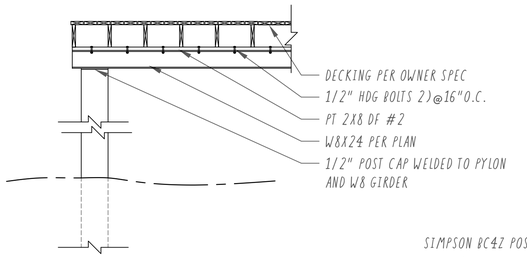
$\sqrt{1.98} = 1.41$

1.41 X 12 = 17"

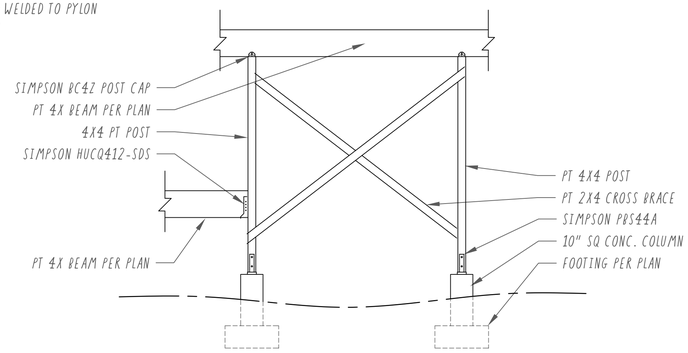
$A_S = \frac{\sqrt{1500}}{60,000}(17)(7) = 0.50$

$\frac{0.50}{0.20} = 1.5$ (2) #4 BARS E.W.

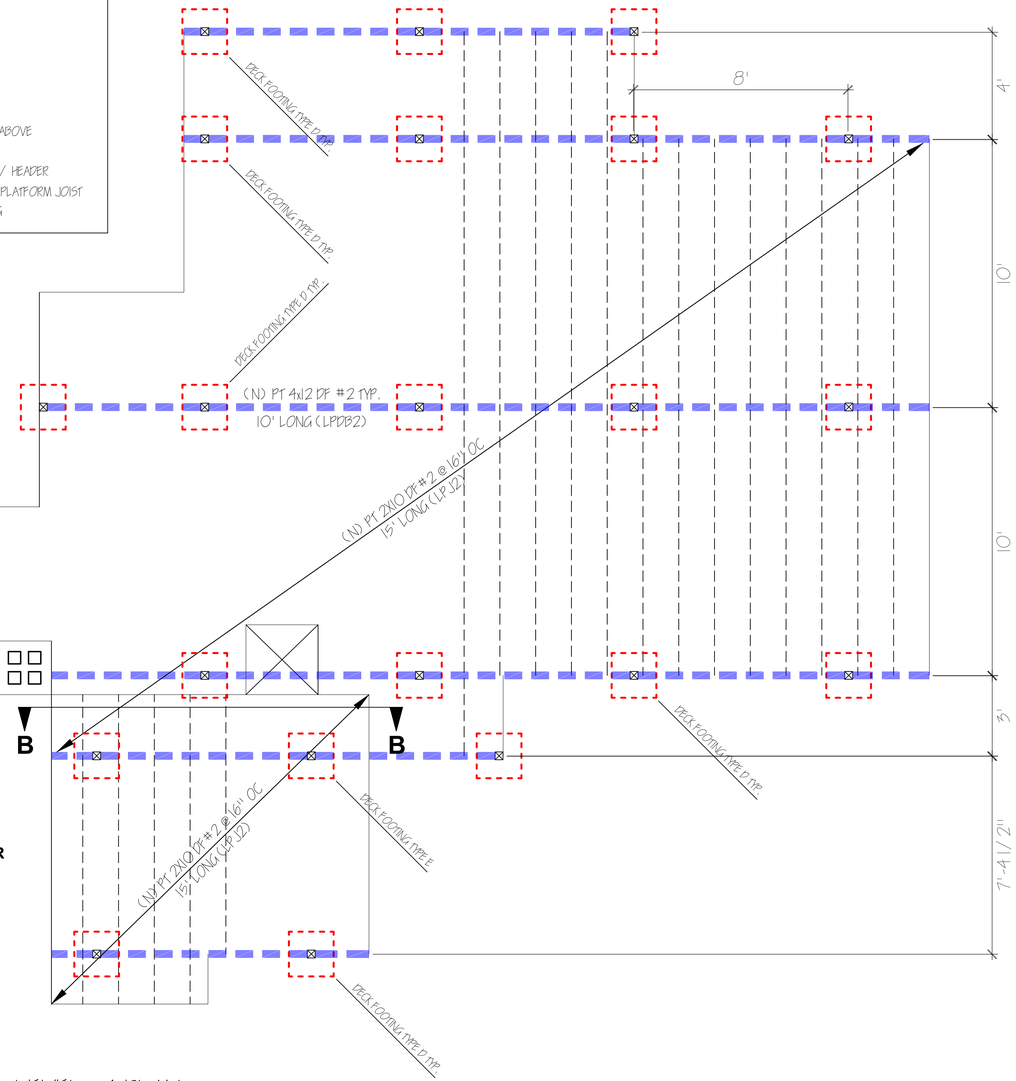
17" SQ X 10" THK. CONC. FTG W/ 2 #4 BARS E.W.



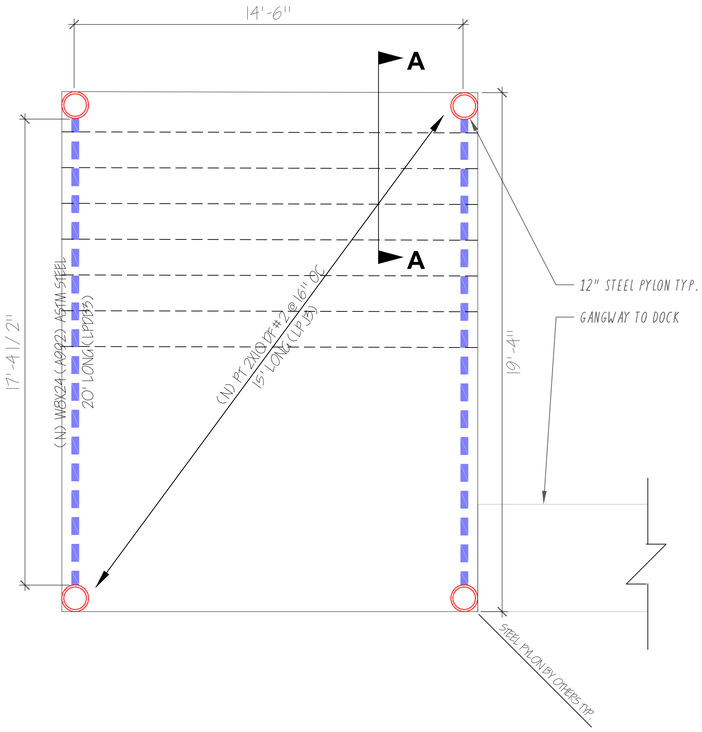
3 SECTION A-A



4 SECTION B-B



1 LEVEL -4 PLAN



2 LEVEL -5 PLAN

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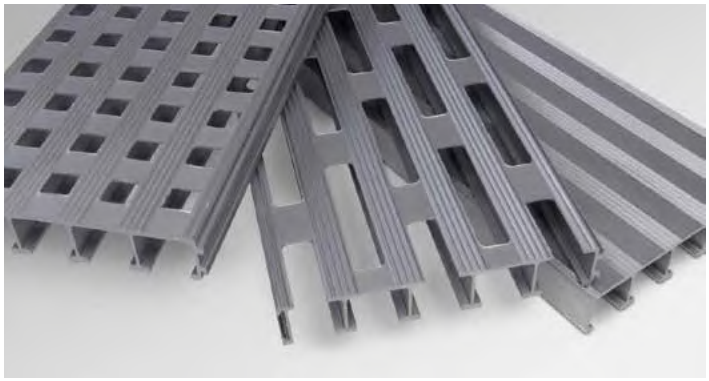
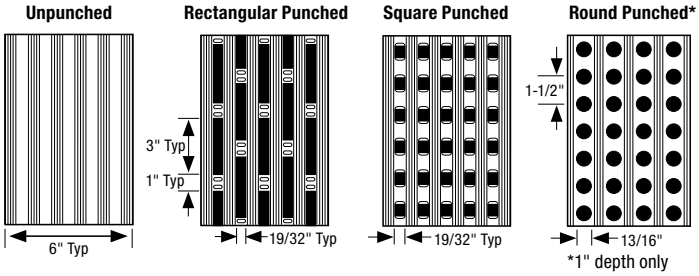
23-06-03	AD-12
Date: 4/24/23	
Scale: 3/8"=1'	

ALUMINUM PLANK GRATING

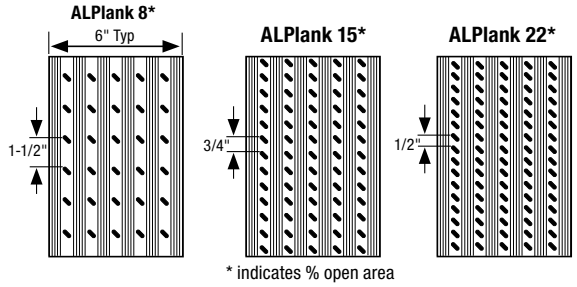
Aluminum plank grating is extruded in 6" and 3" wide sections that measure up to 26' long. Available with a striated walking surface that is solid or punched in a variety of patterns. The solid walking surface aids in odor containment and restricts the passage of debris; the punched hole patterns are available to allow the passage of air, light, heat, or moisture.



Punch Patterns



ADA Conforming Punch Patterns



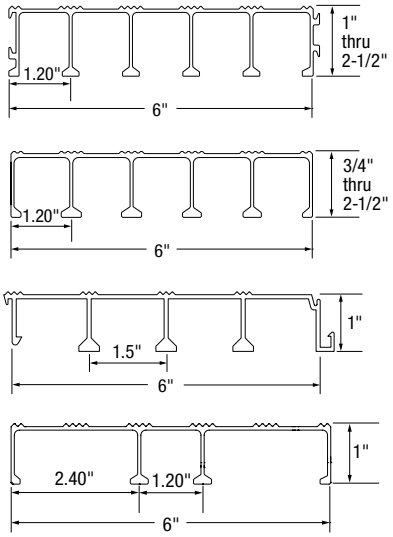
Plank Options

Heavy Duty – Slide Lock
Heavy duty aluminum planks with male-female interlocking side channels. Planks are available 6" wide in depths ranging from 1" to 2-1/2".

Heavy Duty – Plain Sides
Heavy duty aluminum plank is available with plain sides in depths ranging from 3/4" to 2-1/2".

Heavy Duty – Snap Lock
Male-female interlocking side channels snap together into modular panels with minimal welding. Available in 6" wide planks, 1" deep.

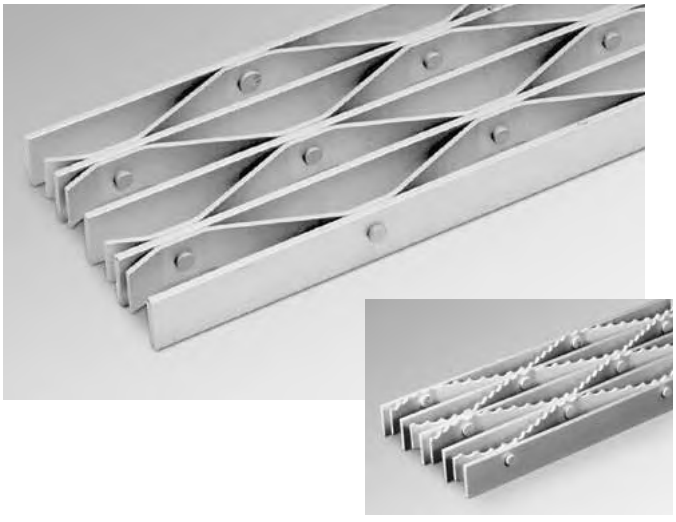
Light Series – Plain Sides
Available in 6" wide, plain side planks only.



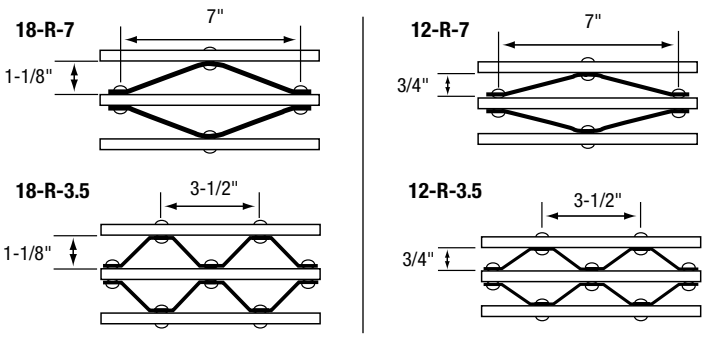
RIVETED BAR GRATING

Riveted gratings are the oldest form of grating and offer superior resistance to impact. Ideal for applications where high strength and stiffness are required. Manufactured by cold press riveting straight bearing bars to crimped rectangular flat bars, riveted gratings are available in carbon steel, 6000 series aluminum, and 300 series stainless steel. Bearing bars are spaced either 1-1/8" or 3/4" apart and the standard rivet spacing is 7 inches on center. Optional close rivet spacing of 3-1/2" on center is also available.

Standard serration includes serration of the reticuline bars which are raised slightly above the top plane of the bearing bars. Users may specify 100% serrated where both the bearing bars and cross members are provided with serration.



Riveted Grating Table of Spacings Available



The part numbers shown above are for carbon steel riveted gratings.
To specify aluminum or stainless steel products, replace the alpha character "R" with "AR" for aluminum products or "SR" for stainless steel products.

For additional information click link: Riveted Bar Grating

Exhibit D: Mitigation Plan

3801 Calaroga Drive– HCA Enhancement Planting Specifications

Mitigation Planting

Planting specifications for ±2,255 square feet of on-site HCA enhancement area, as shown on Figures 1A and 1B attached, are in equal amounts with permanent disturbance area (PDA) from the planned improvements. Native trees and shrubs are prescribed at a rate of 5 trees and 25 shrubs per every 500 square feet. Specified native shrub spacing is prescribed in accordance with City requirements.

No native riparian vegetation species below the ordinary high water mark (OHWM) are planned to be removed during development. Any potential disturbed areas that require removal of native vegetation below the OHWM are to be re-vegetated in kind per code requirements.

Table 1. Permanent High Value HCA Enhancement Area: ±2,255 SF

Scientific Name	Common Name	Size[1]	Spacing/Seeding Rate[2]	Quantity
Trees (total 23)				
Alnus rubra	red alder	2 gallon	10 feet on center	8
Frangula purshiana	cascara	2 gallon	10 feet on center	8
Prunus emarginata	bitter cherry	2 gallon	10 feet on center	7
Shrubs (total 113)				
Symphoricarpus albus	snowberry	1 gallon	4-5 feet on center	23
Polystichum munitum	sword fern	1 gallon	4-5 feet on center	23
Corylus cornuta	beaked hazelnut	1 gallon	4-5 feet on center	23
Rosa gymnocarpa	baldhip rose	1 gallon	4-5 feet on center	22
Ribes sanguineum	red flowering currant	1 gallon	4-5 feet on center	22
Seed Mix/Plug				
Festuca californica	California fescue	NA	Per supplier recommendation	As needed for bare ground areas
Elymus glaucus ssp. glaucus	Blue wild rye	NA		
Linnaea borealis	Twinflower	Plug		

[1]Bare-root plants may be substituted for container plants based on availability. If bare-root plants are used, they must be planted during the late winter/early spring dormancy period. Tree plantings must be at least 0.5 inches in caliper size

[2]Clustered - Clusters of no more than 4 plants of a single species, with each cluster planted between 8 and 10 feet on center.

Planting Notes (per City of West Linn Community Development Code (CDC) Chapter 32, Water Resource Area Protection, Section 32.100, Re-Vegetation Plan Requirements):

1) Plantings should preferably be installed between December 1 and February 28 for bare roots and seeds and between October 15 and April 30 for containers.

2) Tree plantings must be at least 0.5 inches in caliper size at 6 inches above the ground level or soil line. Shrub plantings must be in at least a 1-gallon container, or the equivalent in ball and burlap, and must be at least 12 inches in height. All plantings must be selected from the Portland Plant List.

3) All non-native, invasive, or noxious vegetation shall be removed from mitigation planting area prior to installing native enhancement plantings. Invasive species control shall continue throughout the maintenance period.

4) Irrigation may be necessary for the survival of the enhancement plantings. Irrigation or other water practices (i.e., polymer plus watering) are recommended during the three-year monitoring period following planting. Watering shall be provided at a rate of at least 1 inch per week between June 15 and October 15.

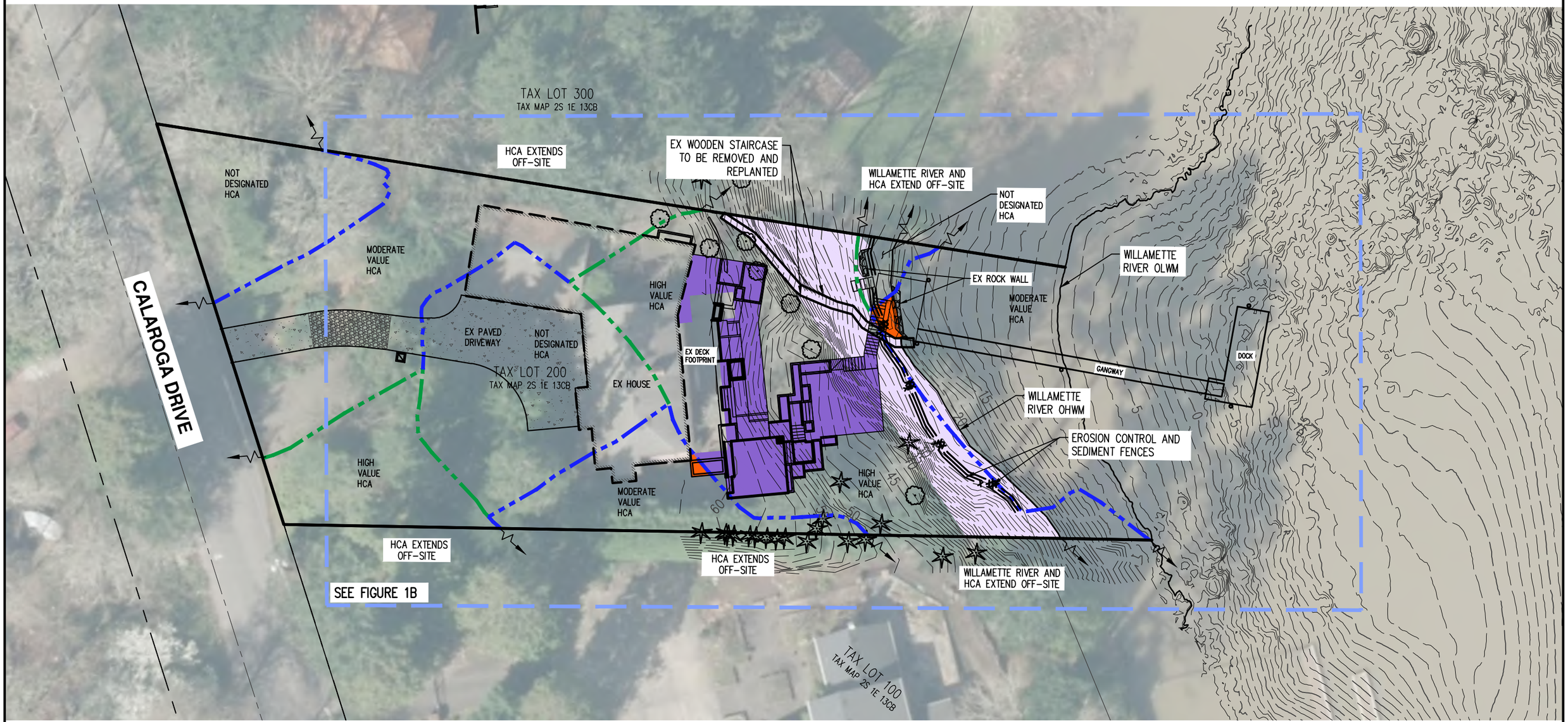
5) Plantings shall be mulched a minimum of 3 inches in depth and 18 inches in diameter to retain moisture and discourage weed growth around newly installed plant material.

6) When weather or other conditions prohibit planting according to schedule, the applicant will ensure that disturbed areas are correctly protected with erosion control measures and provide the City with funds in the amount of 125% of a bid from a recognized landscaper or nursery to cover the cost of the plant materials, installation, and any follow-up maintenance. Once the planting conditions are favorable, the applicant will proceed with the plantings and receive the funds back from the City upon completion, or the City will complete the plantings using those funds.

Maintenance and Monitoring Plan

1) **Monitoring and Reporting:** The City requires a three-year maintenance period for the HCA/Willamette River Greenway mitigation enhancement area. Monitoring of the mitigation site is the ongoing responsibility of the property owner. Plants that die must be replaced in kind.

2) **Plant Survival:** The City's success criterion for re-vegetation 80% survival of tree and shrub plantings expected by the third anniversary of the date the mitigation planting was installed. If any mortality is noted on the site, the factor likely to have caused mortality of the plantings is to be determined and corrected if possible. If survival falls below 80% at any time during the three-year maintenance period, the plantings shall be replaced and other corrective measures, such as mulching or irrigation, may need to be implemented.



LEGEND (COLOR COPY)

- HIGH VALUE HCA
- MODERATE VALUE HCA
- PERMANENT HIGH VALUE HCA IMPACT AREA: 2,152 SF± (0.05 ACRES±)
- PERMANENT MODERATE VALUE HCA IMPACT AREA: 103 SF±
- HCA ENHANCEMENT AREA: 2,255 SF± (0.05 ACRES±)

HABITAT CONSERVATION AREA BOUNDARIES DERIVED FROM CITY OF WEST LINN GIS MAPPING.

1-FOOT INTERVAL GROUND CONTOURS AND PARTIAL TREE SURVEY OF TREES >6" DBH DERIVED FROM AKS PROFESSIONAL LAND SURVEY.

NO NATIVE RIPARIAN VEGETATION BELOW THE OWH IS PLANNED TO BE REMOVED DURING DEVELOPMENT, THEREFORE NO MITIGATION IS PROPOSED.

SCALE: 1"= 30 FEET

30 0 6 15 30

ORIGINAL PAGE SIZE: 22" x 34"

DATE: 10/23/2023

MITIGATION SITE PLAN

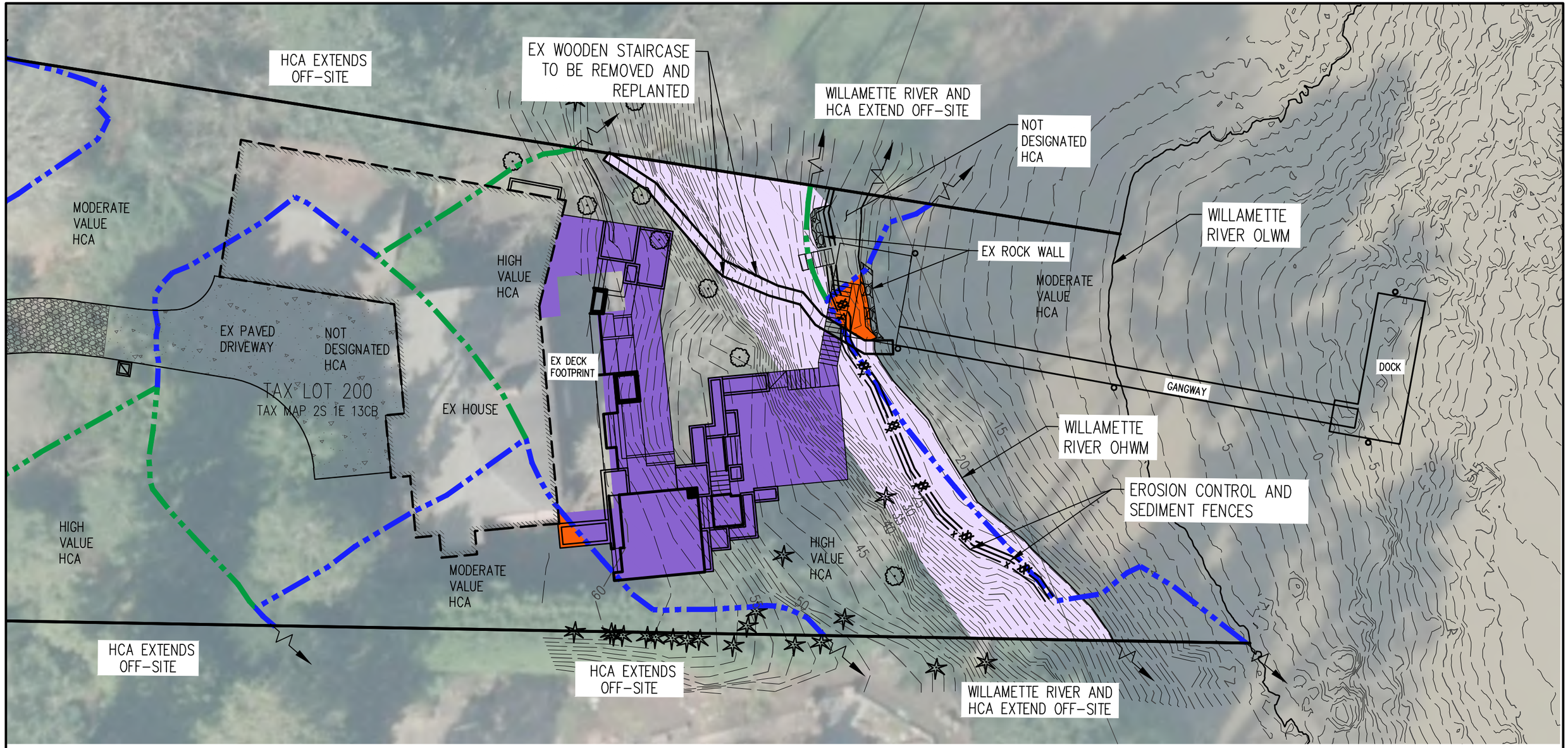
FIGURE 1A

3801 CALAROGA DRIVE MITIGATION PLAN

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: JWM
AKS JOB: 10072

DWG: 10072 NRA MITIGATION PLAN | FIGURE 1A



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SCALE: 1"= 20 FEET

20 0 4 10 20

ORIGINAL PAGE SIZE: 22" x 34"

DATE: 10/23/2023

MITIGATION SITE PLAN

FIGURE 1B

3801 CALAROGA DRIVE MITIGATION PLAN

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SKT
CHKD: JWM
AKS JOB: 10072

DWG: 10072 NRA MITIGATION PLAN | FIGURE 1B

Exhibit E: No-Rise Analysis

October 11, 2023

City of West Linn
Planning Department
22500 Salamo Road
West Linn, OR 97068

RE: 3801 Calaroga Drive – Deck, Dock, and Gangway Improvements Qualitative No Rise Analysis

Dear Planning Staff:

The purpose of this letter is to address the City's no-rise analysis requirement (see section from the West Linn Community Development Code (CDC) below) as it relates to the planned rear yard improvements for an existing home located at 3801 Calaroga Drive in West Linn OR along the Willamette River.

CDC 27.060 A.1. Prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless: Certification by a registered professional civil engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment shall not result in any increase in flood levels within the community during the occurrence of the base flood discharge.

The planned rear yard improvements generally include the construction of an elevated wooden deck as well as a gangway leading down to a new boat dock within the Willamette River. The elevated deck will be supported by wood columns with concrete footings while the gangway and dock will require approximately 5 steel piles to secure the structures in place. The planned dock and gangway as well as portions of the elevated deck structure will be constructed below the base flood elevation. The cross-sectional dimensions of the dock, gangway, and deck structure will create a negligible cross-sectional impact to the greater Willamette River floodway. Balancing fills associated with the steel piles placed in the floodway with a compensatory cut volume will not be necessary since river water will be allowed to infiltrate the interior of the pile, therefore fill volume is negligible. However, the wood deck structure will create approximately 48 cubic feet of fill within the floodway which will be compensated by an equivalent cut volume during construction.

Additionally, the new piles installed to secure the planned gangway will utilize float boxes to allow the gangway to self-adjust with the existing dock and changing water elevations to further minimize floodway impacts.

AKS Engineering staff has reviewed existing site conditions and FEMA Flood Maps to analyze the potential impacts of the new gangway structure on the 100-year floodway for the Willamette River. AKS has determined that the cross-sectional impact to the floodway is very minor, and it is reasonable to conclude that any rise would be negligible and outside the tolerances of a typical HEC-RAS model.

Sincerely,

AKS ENGINEERING & FORESTRY, LLC

Jonathon Morse, PE
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
(503) 563-6151 | jonm@aks-eng.com

Exhibit F: Wetland Delineation

ENVIRONMENTAL
MANAGEMENT
SYSTEMS, INC.

OR: 503-353-9691
FAX: 503-353-9695
WA: 360-735-1109
www.envmgtsys.com
4080 SE International Way
Suite B-112
Milwaukie, OR 97222

Wetland Delineation

Section 13, Township 2 South, Range 1 East, Tax Lot 200
Parcel number: 00296959
West Linn, OR

Prepared for:

Robert Endres
3801 Calaroga Dr.
West Linn, OR 97068

Project:

Endres West Linn

Prepared By:

Environmental Management Systems, Inc.
4080 SE International Way Ste. B-112
Milwaukie, OR 97222

EMS Project Number: 22-0065

August 30, 2022

Table of Contents

A) Landscape Setting and Land Use

The study area (see Appendix A.), referred to hereafter as "Site", is the portion of the tax lot 200 (roughly .59-acres) in Township 2S, Range 1E of the NW ¼ of the SW ¼ of Section 13. The study area consisted of the landscape east of the house on Site, including the cliff and the area east of the cliff adjacent to the Willamette River. The Site is situated on a hillslope facing northeast that is adjacent to the Willamette River in West Linn, Oregon. The Site is developed with a single-family dwelling that sits roughly in the center of the property and contains a detached garage to the west. The Willamette River lies roughly 80 to 90 feet east and northeast of the dwelling. Site elevations run from 10 feet to 65 feet above sea level (see Appendix D. Figure 8).

The landscape setting for a large part of the Site is disturbed soil and disturbed vegetation that has been cleared of native vegetation. The landscape to the east and northeastern portion of the property, east of the cliff, is altered soil and vegetation that includes rock overlay and soil grading. A portion of the property along the Willamette River is a sandy beach. The landscape to the west of the cliff on the Site is altered soil and vegetation that includes mulch overlay over the soil and plant removal/addition.

According to the mapping by the Natural Resource Conservation Service (NRCS), the soil on the Site is 91C-Woodburn silt loam, 8 to 15 percent slopes, and W-Water. Both are classified as hydric.

The current land use was previously and is currently residential, and the property is zoned within the urban growth boundary.

B) Site Alterations

According to historic aerial photographs reviewed on Google Earth, the Site alterations appeared to have occurred prior to the first legible historic aerial dating back to July 2001 (see Appendix D, Figure 9). Landscape alterations on the Site were taking place during the Site visit EMS conducted on May 25th,2022; this included soil grading and alteration in the northeast portion of the study area adjacent to the Willamette River.

The western portion of the Site, to the west of the cliff, has been mostly cleared of native vegetation and had mulch overlayed on the soil. The northeastern portion of the Site along the Willamette River has been mostly cleared of native vegetation and the soil has been graded and had a rock overlay at some point to alter the topography of the section. The eastern portion of the Site along the Willamette River appears to be unaltered.

C) Precipitation Data and Analysis

The Portland KGW-TV weather station WETS table for the years 2000 through 2022 was used to analyze precipitation data. The station is located approximately 11 miles northwest of the Site at 45.5181°, -122.6894°. Daily data for the month was used to summarize the rainfall data that recorded approximately 1.52 inches of rainfall for the two weeks preceding and the days of the initial field investigation (see Table 1). 0.06 inches of precipitation occurred the day of the initial field investigation on May 25th, 2022.

Table 1. Portland KGW TV weather station daily summarized precipitation data for May 2022.

Climatological Data for PORTLAND KGW-TV, OR - May 2022

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2022-05-01	65	48	56.5	17	7	0.00	M	M
2022-05-02	57	45	51.0	11	1	0.33	M	M
2022-05-03	60	46	53.0	13	3	0.00	M	M
2022-05-04	74	45	59.5	20	10	0.00	M	M
2022-05-05	60	45	52.5	13	3	0.44	M	M
2022-05-06	58	47	52.5	13	3	0.80	M	M
2022-05-07	55	45	50.0	10	0	0.34	M	M
2022-05-08	49	41	45.0	5	0	0.19	M	M
2022-05-09	53	39	46.0	6	0	0.01	M	M
2022-05-10	60	41	50.5	11	1	0.01	M	M
2022-05-11	60	41	50.5	11	1	0.00	M	M
2022-05-12	53	42	47.5	8	0	0.29	M	M
2022-05-13	56	37	46.5	7	0	0.24	M	M
2022-05-14	69	48	58.5	19	9	0.48	M	M
2022-05-15	67	55	61.0	21	11	0.22	M	M
2022-05-16	63	53	58.0	18	8	0.00	M	M
2022-05-17	65	45	55.0	15	5	0.00	M	M
2022-05-18	61	46	53.5	14	4	0.18	M	M
2022-05-19	56	44	50.0	10	0	0.10	M	M
2022-05-20	60	42	51.0	11	1	0.00	M	M
2022-05-21	71	44	57.5	18	8	0.00	M	M
2022-05-22	75	48	61.5	22	12	0.00	M	M
2022-05-23	70	54	62.0	22	12	0.00	M	M
2022-05-24	68	47	57.5	18	8	T	M	M
2022-05-25	73	53	63.0	23	13	0.06	M	M
2022-05-26	73	56	64.5	25	15	0.20	M	M
2022-05-27	61	52	56.5	17	7	0.22	M	M
2022-05-28	60	50	55.0	15	5	0.31	M	M
2022-05-29	59	49	54.0	14	4	0.24	M	M
2022-05-30	64	47	55.5	16	6	0.03	M	M
2022-05-31	78	50	64.0	24	14	0.00	M	M
Average|Sum	63.0	46.6	54.8	467	171	4.69	M	M

The Natural Resources Conservation Service (NRCS) WETS table for the period from 2000-2022 shows the observed rainfall at the KGW-TV station in Portland for February 2022 was 2.86 inches, March 2022 was 4.42 inches, and April 2022 was 6.22 inches. According to the WETS table (see Table 2) in February, the 30% and 70% exceedance values were 2.81 inches and 4.98 inches; For March, the 30% and 70% exceedance values were 3.53 inches and 5.62 inches. For April, the 30% and 70% exceedance values were 2.48 inches and 4.13 inches.

Table 2. WETS Station table for Portland KGW-TV for years 2000-2022.

WETS Station: PORTLAND KGW-TV, OR

Requested years: 2000 - 2022

Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	47.2	37.7	42.4	6.14	4.47	7.23	13	1.3
Feb	49.9	38.2	44.1	4.16	2.81	4.98	10	1.1
Mar	55.2	40.7	48.0	4.79	3.53	5.62	12	0.1
Apr	60.9	43.7	52.3	3.49	2.48	4.13	10	0.1
May	68.1	49.2	58.6	2.43	1.46	2.94	7	0.0
Jun	73.7	53.8	63.8	1.47	0.88	1.78	5	-
Jul	80.8	58.0	69.4	0.33	0.21	0.40	1	0.0
Aug	81.0	58.7	69.9	0.47	0.11	0.49	1	0.0
Sep	74.7	54.9	64.8	1.86	0.79	2.27	4	0.0
Oct	62.7	48.0	55.4	3.70	2.23	4.48	9	0.0
Nov	52.4	41.7	47.0	6.10	4.25	7.26	13	0.0
Dec	45.7	37.0	41.3	7.41	5.27	8.77	14	1.3
Annual:					-	-		
Average	62.7	46.8	54.7	-	-	-	-	-
Total	-	-	-	42.35			98	-

The observed rainfall for the water year of October 2021 through May 26, 2022, for the KGW TV weather station was 45.01 inches. The Water Year Precipitation Table was obtained from the Northwest River Forecast Center (see Table 3) for October 1st, 2021, through May 25th, 2022. The amount of water for the water year was 54.9 inches at 92% normal for the Willamette River Basin above Portland.

Table 3. NOAA Northwest River Forecast Center Water Year Precipitation Table for October 1st, 2021, through May 25th, 2022.

Western Oregon

DIVISION NAME	OBSERVED (in)	NORMAL (in)	DEPARTURE (in)	PERCENT of NORMAL
Coastal River Basins	78.6	82.7	-4.1	95
Clackamas River Basin	70.2	65.1	5.2	108
Willamette Headwater River Basins	56.3	56.6	-0.3	100
Willamette River Basin abv Harrisburg	49.4	63.3	-13.9	78
Santiam River Basin	70.0	71.4	-1.4	98
Willamette River Basin above Portland	54.9	59.7	-4.8	92
Coquille River Basin	38.7	62.9	-24.2	62
Umpqua River Basin	30.9	46.3	-15.5	67
Rogue-Illinois River Basins	30.3	45.1	-14.8	67

Report created 05/26/2022

D) Methods

The field investigation was conducted on May 25th and May 26th of 2022 and additional field visit was done on August 18th, 2022, to observe the NWI mapped wetland during the dry season to allow safe access to the area, due to a lower water level for the Willamette River. Before visiting the Site, EMS gathered and analyzed data about the property that included tax lot maps, soil surveys, National Wetland inventory maps,

Local Wetland Inventory Maps, surveys, aerial photography, and climate The investigation utilized methodologies defined in The Army Corps of Engineers Wetlands Delineation Manual, January 1987 and in the Regional Supplement for Western Mountains, Valleys, and Coast region[4]. The Regional Supplement recognizes the differences in climate, geology, hydrology, soils, and vegetation that varies regionally and provides wetland indicators, delineation guidance, and other information specific to the western mountains, valleys, and coastal regions of the western United States. The project Site lies in USDA Land Resource Region (LRR) A.

Wetland data was recorded on United States Army Corps of Engineers (USACE) wetland determination field forms (see Appendix D.) which served as worksheets for determining the presence or absence of wetland hydrology, hydric soils, and hydrophytic vegetation (see Appendix A, Maps). Vegetation species were rated using the 2016 and 2020 National Wetland Plants List for the Western Mountains, Valleys, and Coast Region.

Prior to conducting quantitative data, the study area was explored for a visual assessment of plant communities, hydrological conditions, topography, and property boundaries. Exploratory soil samples and plant transects were taken to search for hydric soil and hydrophytic plant indicators. Data was collected for the two Data Sets that best represented upland and wetland conditions at the proposed wetland boundary. One additional wetland plot was taken in an area suspected to be a wetland because of its topographic setting in the landscape with proximity to the Willamette River. At least one test pit sample plot was taken within each soil map unit and within the NWI mapped wetland area.

Data set sample plots were chosen based on transitions in the plant communities and topographical changes. Site topography was also taken into account, as portions of the Site were inaccessible due to the Willamette River, the cliff on the Site, and unstable ground. Boundaries of the river adjacent to the Site and any wetlands present were determined using visual water marks and water table analysis via pits at the time of the Site visit.

Transect sizes were chosen to best represent the study area based on plant communities and topography. Tree and Sapling/Shrub transects were approximately 15 feet by 15 feet squares. The Herb transects were approximately 10 feet by 10 feet squares. Boundaries of the 10 feet by 10 feet sample plot vegetation transects were marked in the field using green flagging. Pink flagging was used to mark paired test pits, referred to as Data Sets (DS): DS-1 (proposed wetland plot) and DS-2b (proposed upland plot), DS-3 (proposed wetland plot) & DS-4 (proposed upland plot). Soil test pits were excavated to 14-16 inches below grade within the Data Sets. Pink wetland survey tape was used to mark the boundary of any wetland on the Site.

Due to the inability to access the NWI mapped wetland area in May of 2022, an additional field investigation was done by EMS on August 18th, 2022, to conduct additional wetland plot in the vicinity of NWI mapped wetland location (see Appendix B, Data Form 2a). DS-1 was as close as the investigation could safely get to the wetland mapped on Site per the NWI Mapper at the time of the initial investigation in May of 2022. A total of 2 proposed upland plots and 3 proposed wetland plots were completed (see Appendix A, Figure 6).

Additional soil test pits were also excavated to observe soil characteristics, redoximorphic features, and a visible water table or saturation that aided in locating wetland boundaries. Data set GPS coordinates were taken using a Garmin handheld GPS device.

E) Description of All Wetlands and Other Non-Wetland Waters

The United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Wetland Mapper[5], has a Riverine mapped on the Site, classified as R1UBV (see Appendix A., Figure 3b). A Freshwater Forested/Shrub Wetland was mapped in the eastern corner of the Site and adjacent to the Site to the east on parcel number 00296940; classified as PFO1C (see Appendix A, Figure 3b).

The Local Wetland Inventory (LWI) for West Linn[6] has no wetlands mapped on or adjacent to the Site (see Appendix A, Figure 3a).

Wetlands

No wetland conditions were found on the Project Site.

Uplands

All of the Data Sets DS-1, DS-2a, DS-2b, DS-3, and DS-4 documented upland conditions. Plot DS-1 contained soils that had a restrictive layer at 1 inch below grade, preventing identification of hydric soil indicators. Plot DS-1 contained hydrophytic vegetation dominated by *Rubus armeniacus* (FAC), *Populus balsamifera* (FAC), and *Hedera helix* (FACU) but was determined upland due to no wetland hydrology indicators and the inability to determine the presence of hydric soil indicators. DS-2a soils had a restrictive boulder/cobble layer and prevented soil analysis; the NRCS soil map listed 91C-Woodburn silt loam, 8 to 15 percent slopes, as hydric and wetland hydrology indicators were present. DS-2a was dominated by *Hedera helix* (FACU) and *Rubus armeniacus* (FAC) and determined to be non-hydrophytic, therefore it was determined to be upland. DS-2b was dominated by *Acer macrophyllum* (FACU), *Abies grandis* (FACU), *Hedera helix* (FACU), and *Polystichum munitum* (FACU). DS-2b had no hydric soil indicators and no wetland hydrology indicators, therefore it was determined to be upland.

DS-3 was dominated by *Populus balsamifera* (FAC) and *Holcus lanatus* (FAC) with the majority of the plot containing no species of any stratum due to the presence of surface water and proximity to the Willamette River; on an additional Site visit on May 26th,

2022, the plot was submerged with water from the Willamette River. DS-3 contained wetland hydrology indicators with a water table present at 12 inches, saturation present at 10 inches, and surface water present due to around 1 inch of Willamette River surface water presence within the transect. DS-3 did not contain hydric soil indicators and was therefore determined to be upland.

DS-4 was dominated by *Geranium lucidum* (Presumed FACU), *Rubus armeniacus* (FAC) and *Hedera helix* (FACU) with no species in the tree stratum present in the sample plot. DS-4 contained no hydric soil indicators and no wetland hydrology indicators, therefore it was determined to be upland.

F) Deviation from LWI or NWI

No deviation from the LWI mapping was found. The Riverine was observed adjacent to the Site and no other wetland was observed on the Site, in line with the LWI West Linn mapping.

The NWI lists a PFO1C Freshwater Forested/ Shrub Wetland approximately in the far eastern corner of the Site. Due to the unsafe conditions of the cliff and topographic constraints where the NWI contained a mapped wetland, DS-1 was as close as the investigation could allow for the initial site visit on May 25th, 2022. On August 18th, 2022, EMS conducted an additional field investigation to access the area the NWI mapped wetland was located. It was determined the area did not contain a wetland. See data determination forms in Appendix B.

G) Mapping Method

Proposed parcel boundaries were marked by wooden stakes at the time of EMS's initial visit on May 25th, 2022. These markers were used to estimate approximate property lines for the determination data sets. Data Set test pits and wetland boundaries, if found, were professionally land surveyed by Andy Paris and Associates in August of 2022, with submeter accuracy.

H) Additional Information

A detailed topographic survey was conducted by Andy Paris and Associates, Inc. in June and July 2022 (see Figure 8, Appendix D).

Table 4. Vegetation observed in the study area on Site.

Species	Indicator Status
Abies grandis	FACU
Acer macrophyllum	FACU
Bromus species	UPL*
Carex lacustris	OBL
Corylus cornuta	FACU
Danthonia californica	FAC
Geranium lucidium	FACU**
Hedera helix	UPL

Holcus lanatus	FACU
Leucanthemum vulgare	FACU
Lotus corniculatus	FAC
Lythrum salicaria	OBL
Maianthemum racemosum	FAC
Polystichum munitum	FACU
Populus balsamifera	FAC
Prosartes trachycarpa	FACU
Rubus armeniacus	FAC
Rubus ursinus	FACU
Schizachne purpurascens	FACU
Symphoriacarpos albus	FACU
Triticum aestivum	UPL
*	Assumed UPL
**	Assumed FACU

I) Results and Conclusions

The field investigation found that no wetland was determined on Site. None of the Data Sets were determined to be Wetland. All Data Sets were determined to be Upland.

J) Disclaimer

This report documents the investigation, best professional judgment and conclusions of the investigator. It is correct and complete to the best of my knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 (Purpose) through 141-090-0055 (Effective Date).

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Appendix A. Maps

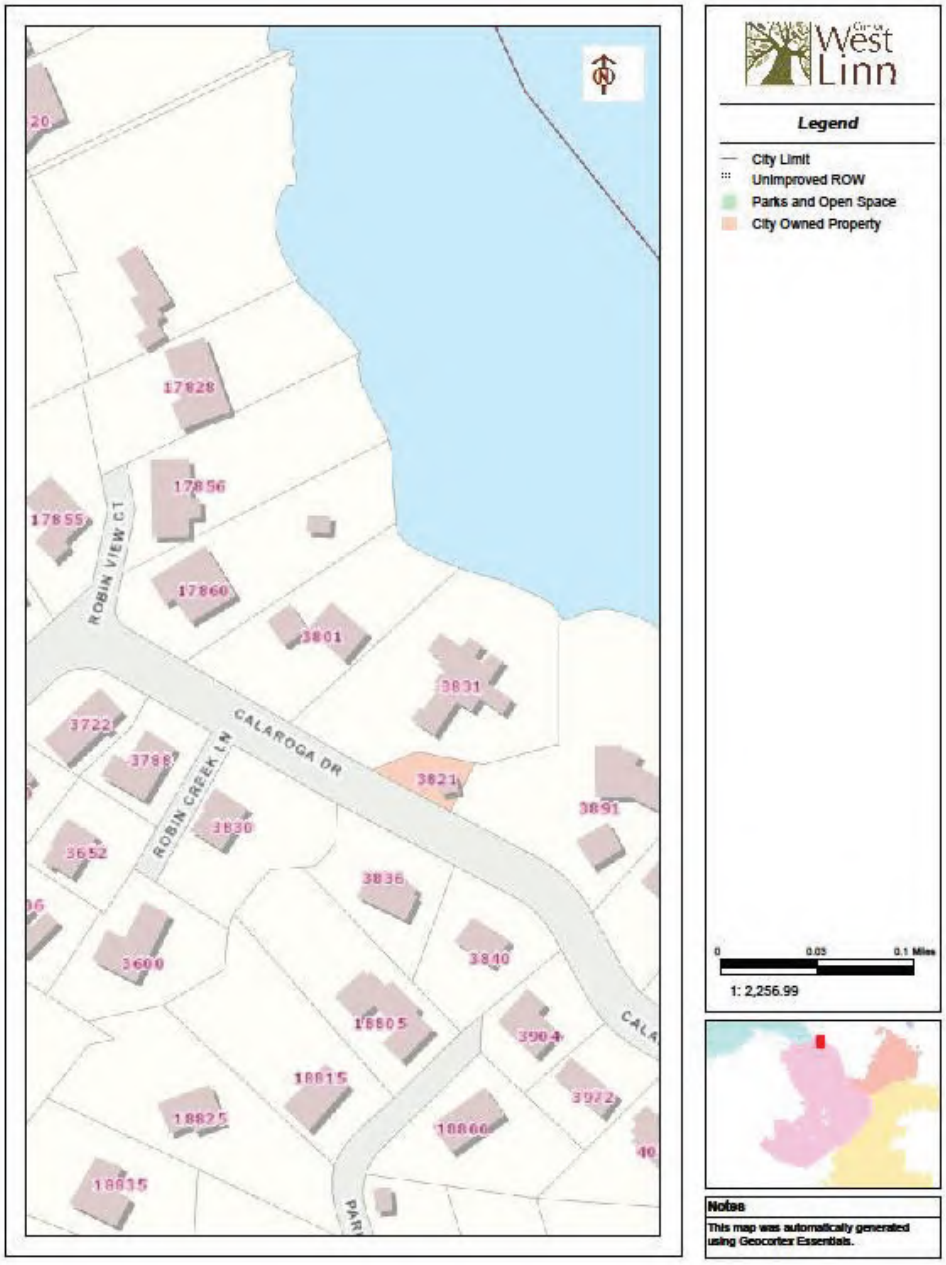

Figure 1. Location Map from City of West Linn GIS.

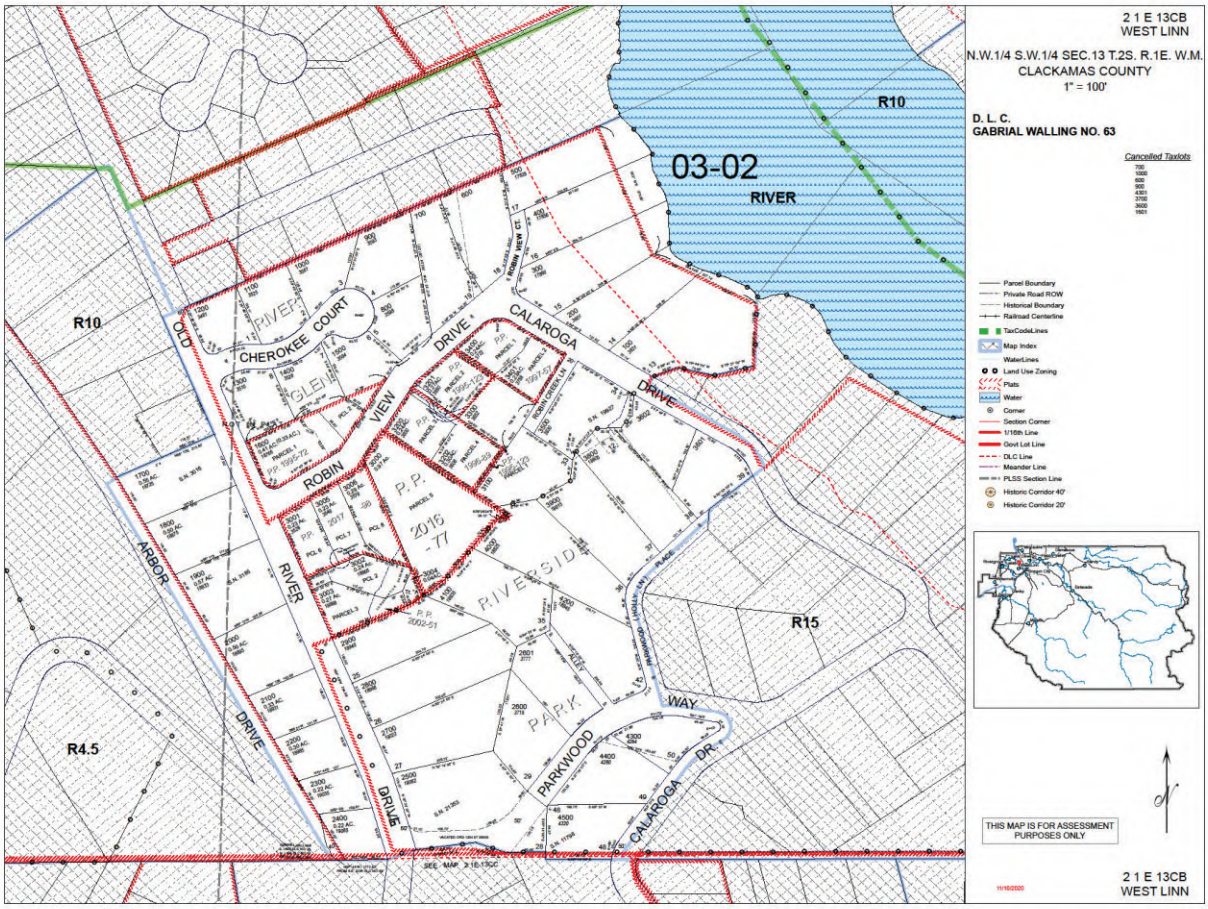

Figure 2. Clackamas County Tax Lot Map.

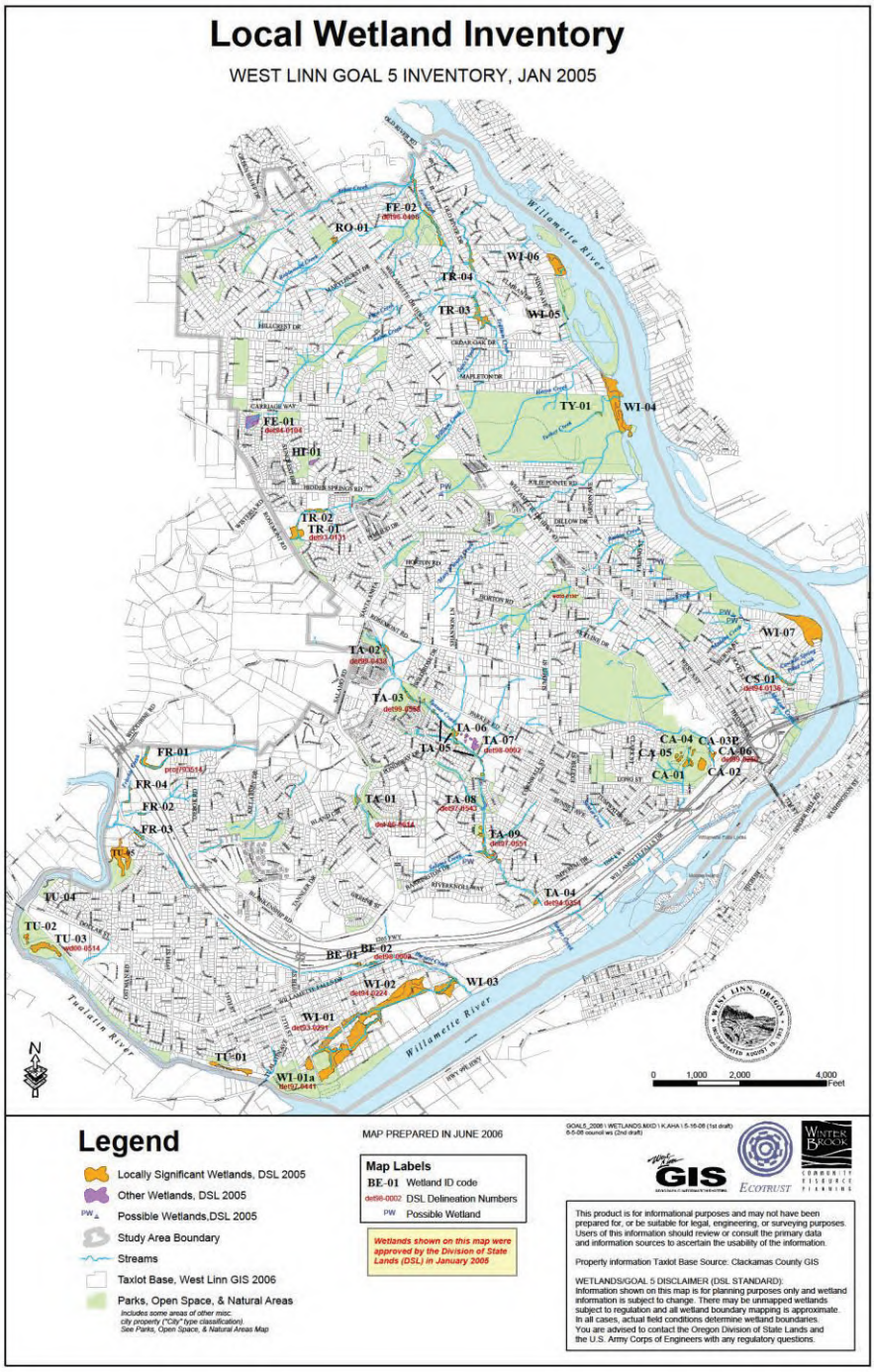

Figure 3a. Local Wetland Inventory Map West Linn.

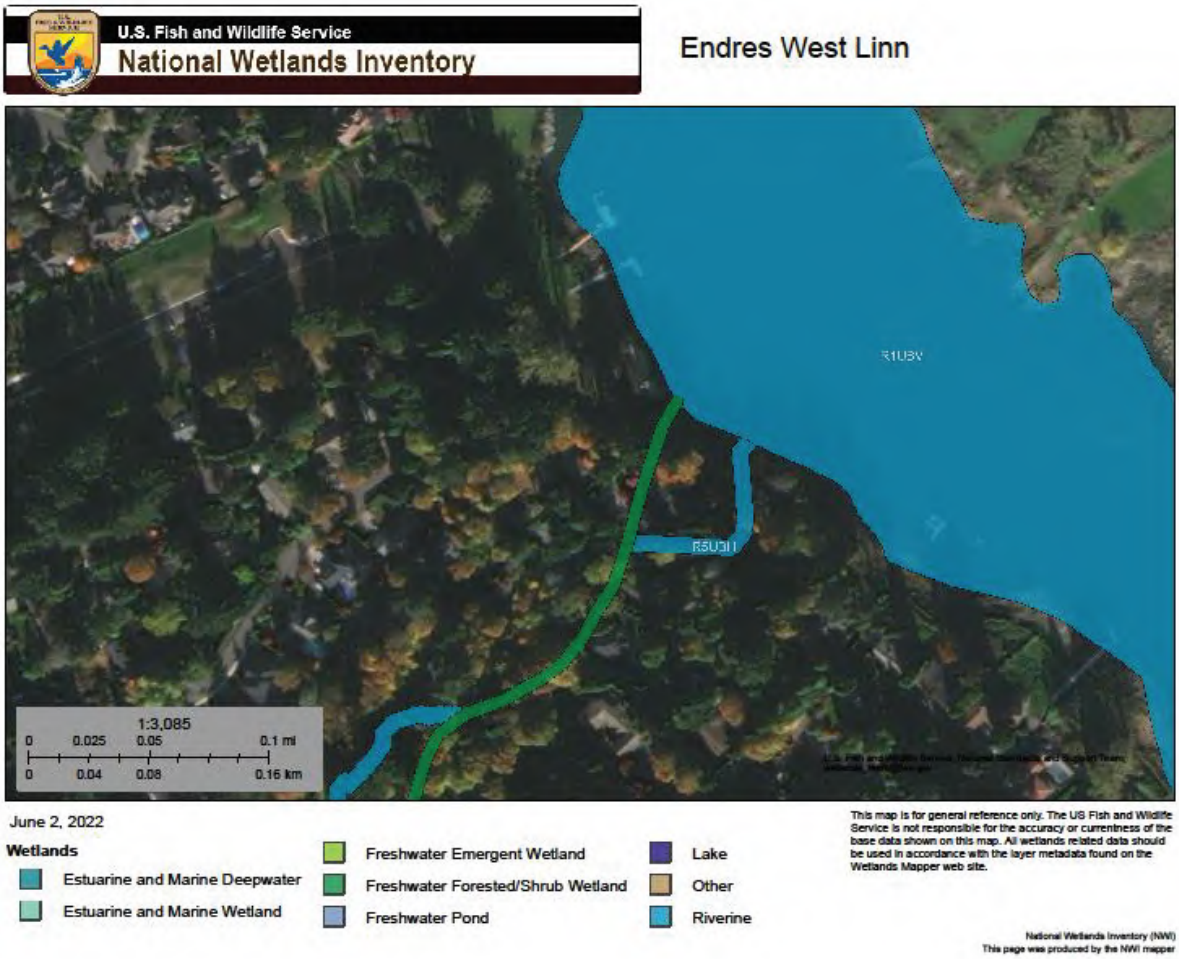

Figure 3b. National Wetlands Inventory Map.

Figure 4a. Natural Resources Conservation Service (NRCS) Web Soil Survey Map.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
91C	Woodburn silt loam, 8 to 15 percent slopes	0.5	98.9%
W	Water	0.0	1.1%
Totals for Area of Interest		**0.5**	**100.0%**

Figure 4b. Natural Resources Conservation Service (NRCS) Web Soil Survey Map Legend.

Figure 5. Google Earth Aerial Photograph from 06/2021.

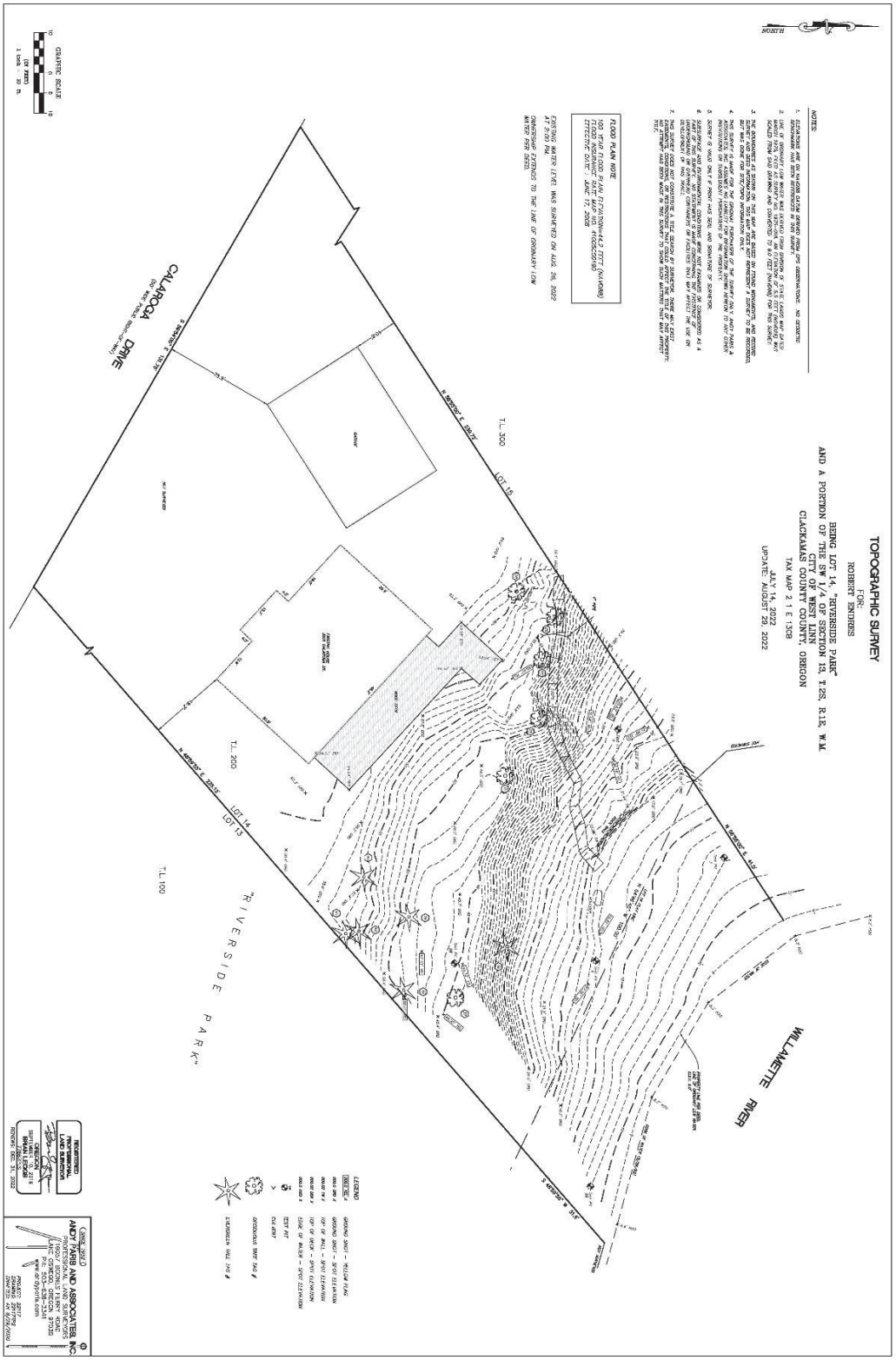

Figure 6. Test Pit Location and Wetland Delineation Map.

Appendix B. Data Forms

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 3801 Calaroga Dr. West Linn, OR 97068 City/County: West Linn/Clackamas Sampling Date: 05/25/22

Applicant/Owner: Robert Endres State: OR Sampling Point: DS-1

Investigator(s): Gus McKinley Section, Township, Range: SEC: 13, T: 2S, R: 1E, TL: 200

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 10

Subregion (LRR): A Lat: 45.396440° Long: -122.637361° Datum: WGS84

Soil Map Unit Name: 91C-Woodburn silt loam, 8 to 15 % slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Hydrophytic vegetation was not present. Hydric soil indicators were not present. Wetland hydrology not present.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15'x15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15'x15')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10'x10')			
1. Geranium lucidum	35	Yes	FACU**
2. Rubus armeniacus	30	Yes	FAC
3. Hedera helix	20	Yes	FACU
4. Triticum aestivum	3		UPL*
5. Danthonia californica	3		FAC
6. Bromus species	1		UPL*
7.			
8.			
9.			
10.			
11.			
	92	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 8

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	_____	x 2 =	_____
FAC species	33	x 3 =	99
FACU species	55	x 4 =	220
UPL species	4	x 5 =	20
Column Totals:	92 (A)		339 (B)

Prevalence Index = B/A = 3.68

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:
Hyrophytic vegetation not present.
*Assumed UPL.
**Assumed FACU.

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SOIL

Sampling Point: DS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10YR 3/3						Silt loam	No redox
3-10	10YR 3/3	98	5YR 4/6	2	C	M	Silt loam	Prominent contrast
10-15	10YR 3/3	93	5YR 4/6	7	C	M	Silt loam	Prominent contrast

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Boulder/Rock

Depth (inches): 15

Hydric Soil Present? Yes _____ No ✔

Remarks:
Boulder and cobble distributed over the soil. Boulders were present at grade for the majority of the sample plot. Restrictive boulder/rock layer was at 15 inches below grade for the test pit.
Does not meet the indicators for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology not present.

The plot is located at the toe of the slope adjacent to the river and fits the D2 indicator.

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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 3801 Calaroga Dr. West Linn, OR 97068 City/County: West Linn/Clackamas Sampling Date: 05/25/22

Applicant/Owner: Robert Endres State: OR Sampling Point: DS-2b

Investigator(s): Gus McKinley Section, Township, Range: SEC: 13, T: 2S, R: 1E, TL: 200

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): A Lat: 45.396385° Long: -122.637544° Datum: WGS84

Soil Map Unit Name: 91C-Woodburn silt loam, 8 to 15 % slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✔	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:

Hydrophytic vegetation was not present. Hydric soil indicators were not present. Wetland hydrology not present.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15'x15')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer macrophyllum	55	Yes	FACU
2. Abies grandis	35	Yes	FACU
3.			
4.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15'x15')			
1. Corylus cornuta	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 10'x10')			
1. Hedera helix	15	Yes	FACU
2. Polystichum munitum	10	Yes	FACU
3. Symphoricarpos albus	5		FACU
4. Prosartes trachycarpa	4		FACU
5. Maianthemum racemosum	4		FAC
6. Schizachne purpurascens	1		UPL
7.			
8.			
9.			
10.			
11.			
	39	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____	= Total Cover	

% Bare Ground in Herb Stratum 61

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	____	x 1 =	____
FACW species	____	x 2 =	____
FAC species	4	x 3 =	12
FACU species	127	x 4 =	508
UPL species	1	x 5 =	5
Column Totals:	132 (A)		525 (B)

Prevalence Index = B/A = 3.98

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ 5 - Wetland Non-Vascular Plants[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks:

Hyrophytic vegetation not present.

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SOIL

Sampling Point: DS-2b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1		100					Organic	Mulch
1-4	2.5YR 3/2	99	5YR 4/4	1	C	M	Silt loam	Prominent contrast.
4-16	7.5YR 3/3	99	5YR 4/4	1	C	M	Silt loam	Prominent contrast.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:
Soil was disturbed with one inch mulch layer over native soil. Hydric soil not present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology not present.

US Army Corps of Engineers

Western Mountains, Valleys, and Coast – Version 2.0

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 3801 Calaroga Dr. West Linn, OR 97068 City/County: West Linn/Clackamas Sampling Date: 05/25/22

Applicant/Owner: Robert Endres State: OR Sampling Point: DS-3

Investigator(s): Gus McKinley Section, Township, Range: SEC: 13, T: 2S, R: 1E, TL: 200

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): A Lat: 45.396537° Long: -122.637565° Datum: WGS84

Soil Map Unit Name: 91C-Woodburn silt loam, 8 to 15 % slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Hydrophytic vegetation was present. Hydric soil indicators were not present. Wetland hydrology was present.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15'x15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15'x15')			
1. Populus balsamifera	15	Yes	FAC
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: 10'x10')			
1. Holcus lanatus	7	Yes	FAC
2. Bromus species	5	Yes	UPL*
3. Lotus corniculatus	4		FAC
4. Geranium lucidum	4		FACU**
5. Rubus armeniacus	3		FAC
6. Leucanthemum vulgare	1		FACU
7.			
8.			
9.			
10.			
11.			
	24 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 76

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species 29	x 3 = 87
FACU species 5	x 4 = 20
UPL species 5	x 5 = 25
Column Totals: 39 (A)	132 (B)

Prevalence Index = B/A = 3.38

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ 5 - Wetland Non-Vascular Plants[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:
Hyrophytic vegetation was present.
*Assumed UPL.
**Assumed FACU.

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SOIL

Sampling Point: DS-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100					Sand	No redox
3-11	10YR 3/1	99	5YR 5/6	1	C	M	Sand	Prominent contrast
11-16	10YR 3/3	98	5YR 4/6	2	C	M	Sand	Prominent contrast

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:
Hydric soil not present.
Portion of plot has had soil graded.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ✔ No ____ Depth (inches): 1

Water Table Present? Yes ✔ No ____ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 10

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology was present.
Sample plot was roughly 3 feet from river at the time of investigation with 1 inch of surface water from the Willamette River present in a portion of the plot.

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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 3801 Calaroga Dr. West Linn, OR 97068 City/County: West Linn/Clackamas Sampling Date: 05/25/22

Applicant/Owner: Robert Endres State: OR Sampling Point: DS-4

Investigator(s): Gus McKinley Section, Township, Range: SEC: 13, T: 2S, R: 1E, TL: 200

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): A Lat: 96460° Long: 122.637706° Datum: WGS84

Soil Map Unit Name: 91C-Woodburn silt loam, 8 to 15 % slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____ No ✔	
Wetland Hydrology Present?	Yes _____ No ✔	

Remarks:

Hydrophytic vegetation was not present. Hydric soil indicators were not present. Wetland hydrology was not present.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 15'x15')			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15'x15')			
1. Corylus cornuta	5	Yes	FACU
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 10'x10')			
1. Hedera helix	15	Yes	FAC
2. Rubus armeniacus	15	Yes	FAC
3. Geranium lucidum	15	Yes	FACU**
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 55

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species 30	x 3 = 90
FACU species 20	x 4 = 80
UPL species _____	x 5 = _____
Column Totals: 50 (A)	170 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Hyrophytic vegetation was not present.

**Assumed FACU.

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SOIL

Sampling Point: DS-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silt loam	No redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:
Hydric soil not present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology not present.

US Army Corps of Engineers — Western Mountains, Valleys, and Coast – Version 2.0

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 3801 Calaroga Dr. West Linn, OR 97068 City/County: West Linn/Clackamas Sampling Date: 08/18/22

Applicant/Owner: Robert Endres State: OR Sampling Point: DS-2a

Investigator(s): Gus McKinley Section, Township, Range: SEC: 13, T: 2S, R: 1E, TL: 200

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 10

Subregion (LRR): A Lat: 45.396435° Long: -122.637257° Datum: WGS84

Soil Map Unit Name: 91C-Woodburn silt loam, 8 to 15 % slopes NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Hydrophytic vegetation was not present. Hydric soil indicators could not be determined due to restricitve boulder/rock layer. Wetland hydrology present.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15'x15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15'x15')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10'x10')			
1. Rubus armeniacus	25	Yes	FAC
2. Hedera helix	20	Yes	FACU
3. Carex lacustris	10		OBL
4. Rubus ursinus	10		FACU
5. Lythrum salicaria	1		OBL
6.			
7.			
8.			
9.			
10.			
11.			
	66	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 24

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	11	x 1 =	11
FACW species		x 2 =	
FAC species	25	x 3 =	75
FACU species	30	x 4 =	120
UPL species		x 5 =	
Column Totals:	66 (A)		201 (B)

Prevalence Index = B/A = 3.12

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Hyrophytic vegetation not present.

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SOIL

Sampling Point: DS-2a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 3/3						Silt loam	No redox
								50% Boulder
								10% Cobble

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Boulder/Rock

Depth (inches): 1

Hydric Soil Present? Yes ✔ No ____

Remarks:
Soil analysis was not possible due to restrictive boulder layer. Hydric soil could not be determined.
NRCS soil map unit is listed as hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No ✔ Depth (inches): ____

Water Table Present? Yes ____ No ✔ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology waspresent.
The plot is located at the toe of the slope adjacent to the river and fits the D2 indicator.
The plot is located in the river in the June 2021 Google Earth Aerial Photograph and fits the C9 indicator.

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Appendix C. Ground Level Color Photographs

Figure 7a. Ground level photograph of cliff on Site between the house and Willamette River facing northeast; DS-1 is located within the toe slope between the cliff and the Willamette River. Flag presence is hard to spot due to vegetation growth. Note the boulders present.

Figure 7b. Ground level photograph of DS-2a facing west.

Figure 7c. Ground level photograph of DS-2b facing east.

Figure 7d. Ground level photograph facing northeast of DS-3 (between the kayaks and the Willamette River) and DS-4 (between the kayaks and the stairway).

Figure 7e. Ground level photograph of DS-3 facing west.

Figure 7f. Ground level photograph of restrictive soil layer at and adjacent to DS-1.

Figure 7g. Ground level photograph of restrictive soil layer at and adjacent to DS-2a.

Appendix D. Additional Tables and Information

Figure 8. Historic Google Earth Aerial Image from July 2001.

TOPOGRAPHIC SURVEY

FOR:
ROBERT ENDRES

BEING LOT 14, "RIVERSIDE PARK"
AND A PORTION OF THE SW 1/4 OF SECTION 13, T.2S, R.1E, W.M.
CITY OF WEST LINN
CLACKAMAS COUNTY COUNTY, OREGON

TAX MAP 2 1 E 13CB

JULY 14, 2022
UPDATE: AUGUST 29, 2022

NORTH

NOTES:

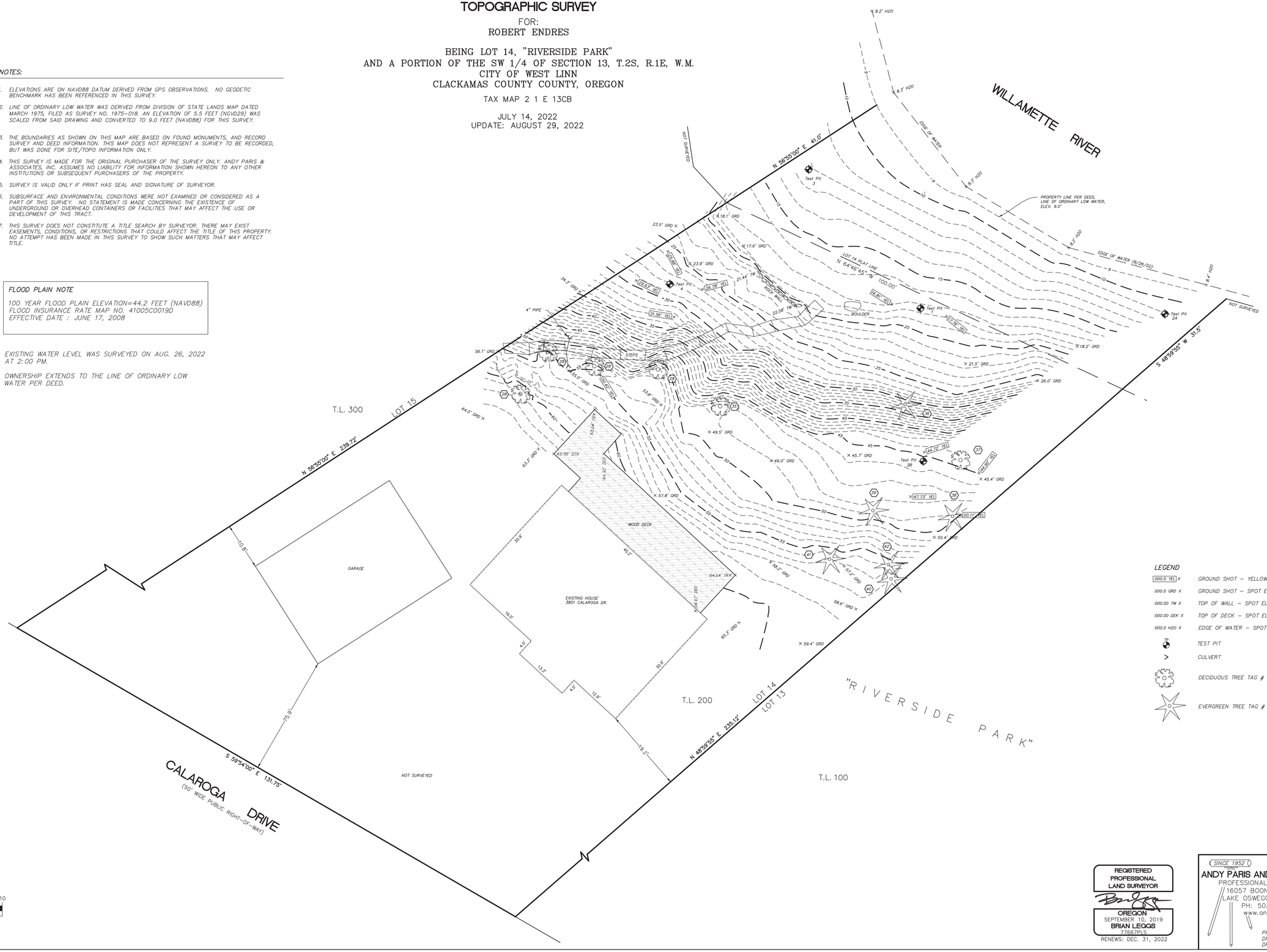
1. *ELEVATIONS ARE ON NAVD88 DATUM DERIVED FROM GPS OBSERVATIONS. NO GEODETIC BENCHMARK HAS BEEN REFERENCED IN THIS SURVEY.*
2. *LINE OF ORDINARY LOW WATER WAS DERIVED FROM DIVISION OF STATE LANDS MAP DATED MARCH 1975, FILED AS SURVEY NO. 1975-018. AN ELEVATION OF 5.5 FEET (NGVD29) WAS SCALED FROM SAID DRAWING AND CONVERTED TO 9.0 FEET (NAVD88) FOR THIS SURVEY.*
3. *THE BOUNDARIES AS SHOWN ON THIS MAP ARE BASED ON FOUND MONUMENTS, AND RECORD SURVEY AND DEED INFORMATION. THIS MAP DOES NOT REPRESENT A SURVEY TO BE RECORDED, BUT WAS DONE FOR SITE/TOPO INFORMATION ONLY.*
4. *THIS SURVEY IS MADE FOR THE ORIGINAL PURCHASER OF THE SURVEY ONLY. ANDY PARIS & ASSOCIATES, INC. ASSUMES NO LIABILITY FOR INFORMATION SHOWN HEREON TO ANY OTHER INSTITUTIONS OR SUBSEQUENT PURCHASERS OF THE PROPERTY.*
5. *SURVEY IS VALID ONLY IF PRINT HAS SEAL AND SIGNATURE OF SURVEYOR.*
6. *SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS TRACT.*
7. *THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY SURVEYOR. THERE MAY EXIST EASEMENTS, CONDITIONS, OR RESTRICTIONS THAT COULD AFFECT THE TITLE OF THIS PROPERTY. NO ATTEMPT HAS BEEN MADE IN THIS SURVEY TO SHOW SUCH MATTERS THAT MAY AFFECT TITLE.*

FLOOD PLAIN NOTE

100 YEAR FLOOD PLAIN ELEVATION=44.2 FEET (NAVD88)
FLOOD INSURANCE RATE MAP NO. 41005C0019D
EFFECTIVE DATE : JUNE 17, 2008

EXISTING WATER LEVEL WAS SURVEYED ON AUG. 26, 2022 AT 2:00 PM.

OWNERSHIP EXTENDS TO THE LINE OF ORDINARY LOW WATER PER DEED.



LEGEND

000.0 YEL x	*GROUND SHOT – YELLOW FLAG*
000.0 GRD x	*GROUND SHOT – SPOT ELEVATION*
000.00 TW x	*TOP OF WALL – SPOT ELEVATION*
000.00 DEK x	*TOP OF DECK – SPOT ELEVATION*
000.0 H2O x	*EDGE OF WATER – SPOT ELEVATION*
TP	*TEST PIT*
>	*CULVERT*
	DECIDUOUS TREE TAG #
	EVERGREEN TREE TAG #

GRAPHIC SCALE
10 0 5 10
(IN FEET)
1 inch = 10 ft.

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
SEPTEMBER 10, 2019
BRIAN LEGGS
77667PLS
RENEWS: DEC. 31, 2022

SINCE 1952
ANDY PARIS AND ASSOCIATES, INC.
PROFESSIONAL LAND SURVEYORS
16057 BOONES FERRY ROAD
LAKE OSWEGO, OREGON 97035
PH: 503-636-3341
www.andyparis.com

PROJECT: 22117
DRAWING: 22117TP2
DRAFTED: AH 8/29/2020

Exhibit G: Tree Evaluation

NIDUS Consulting

Data and Maps

3801 Calaroga Dr.

West Linn, OR

June 1, 2022

ryan@nidusconsulting.com

925-980-1256

www.nidusconsulting.com

Methods

Ryan Gilpin (Principal Consultant, Certified Arborist WE10268A, Tree Risk Assessment Qualified) assessed all Oregon white oaks, pacific madrones and pacific dogwoods 6" and greater and all other species 12" and greater in trunk diameter on or with canopy overhanging the property. The following data were collected for each tree:

1. Tree genus and species
2. Trunk diameter (rounded to inches) at 54" height
3. Canopy radius (estimated in 5-foot increments)
4. Tree condition, see table to right based on the *Guide for Plant Appraisal* (Council of Landscape Appraisers 2019). Health, structure and form were assessed independently, and the lowest rating equals the overall condition rating.
5. Suitability for preservation considers future factors affecting the tree's ability to be an asset to the future site.
    - **High**, tree is likely to be an asset of the future site and should be the focus of preservation efforts.
    - **Moderate**, tree may be an asset of the future site and should be considered for preservation.
    - **Low**, tree is unlikely to be an asset to the project and should be considered for removal when near construction.

    Suitability for preservation starts with the current tree condition and includes species specific factors such as:
    - species success in region,
    - species susceptibility to root loss and other construction impacts,
    - typical species longevity, and
    - species invasiveness

    Suitability for preservation also includes factors of the individual tree such as:
    - existing infrastructure around trees,
    - structural features that do not affect stability today but are likely to in the future, and
    - forest stand dynamics as neighboring trees are removed.

	Health	Structure	Form
Excellent	Vigor nearly perfect with little or no twig dieback, discoloration or defoliation.	Strong branch attachments with few or no features affecting tree or branch stability.	Tree shape highly functional and aesthetic in landscape.
Good	Typical vigor with minor twig dieback, defoliation or discoloration.	Good branch attachments with minor and correctable features affecting tree or branch stability.	Tree shape functional and aesthetic in landscape.
Fair	Reduced vigor with moderate twig dieback, defoliation, and/or discoloration.	A single feature significantly affecting or multiple features moderately affecting tree or branch stability that would not be practical to correct or would require multiple treatments over several years.	Tree shape compromises function and/or aesthetics in landscape.
Poor	Compromised vigor with extensive twig and/or branch dieback and defoliation.	A single feature seriously affecting or multiple features significantly affecting tree stability that cannot be corrected.	Tree shape significantly detracts from function and/or aesthetics to a significant degree.
Very Poor	Poor vigor with little live foliage or branches.	Multiple features seriously affecting tree stability that cannot be corrected.	Tree shape provides little to no function and is visually unappealing in landscape.
Dead	No live foliage or branches	Tree failed.	-

Tree Data

NIDUS Consulting

Tree #	Species	Trunk Diameter (inches)	Canopy Radius (feet)	Status	Condition			Suitability for Preservation
20	*Acer macrophyllum*	20	10	Protected off-site	Fair	Fair health Good structure Good form	Moderate branch dieback Multiple trunks arise from 40 feet Wide spreading crown	Moderate
21	*Acer macrophyllum*	24,21	30	Protected	Fair	Fair health Fair structure Good form	Moderate branch dieback Codominant trunks, swollen base, decay likely Dominant tree	Moderate
22	*Acer macrophyllum*	18	20	Protected	Very poor	Fair health Very poor structure Poor form	Dense crown Topped, poorly attached regrowth One sided crown south	Low
23	*Abies grandis*	26	15	Protected	Good	Good health Good structure Good form	Dense, green crown Strong central leader, minor girdling root Crown one sided east	Moderate On edge of slope
24	*Acer macrophyllum*	24,24	30	Protected	Fair	Good health Fair structure Fair form	Dense, green crown Codominant trunks, swollen base, decay likely Crown one sided west	Moderate
25	*Acer macrophyllum*	33,12	35	Protected	Fair	Good health Fair structure Good form	Dense, green crown Codominant trunks, swollen base, decay likely Dominant tree	Moderate
26	*Acer macrophyllum*	23	25	Protected	Fair	Good health Good structure Fair form	Dense, green crown Codominant trunks Crown one sided east	Moderate
27	*Pseudotsuga menziesii*	35	25	Protected off-site	Fair	Good health Good structure Fair form	Dense, green crown, difficult to see top Strong central leader Crown one sided west	Moderate
28	*Acer macrophyllum*	16	15	Protected	Fair	Good health Fair structure Fair form	Minor dieback Swollen base, decay likely Crown one sided east	Moderate
29	*Pseudotsuga menziesii*	30	5	Protected off-site	Fair	Good health Good structure Fair form	Dense, green crown, difficult to see top Strong central leader Crown one sided west	Moderate

Tree Data

Tree #	Species	Trunk Diameter (inches)	Canopy Radius (feet)	Status	Condition			Suitability for Preservation
30	*Acer macrophyllum*	14	1	Protected off-site	Poor	Fair health Poor structure Poor form	Moderate branch dieback Lost top, poorly attached regrowth Supressed	Low
31	*Acer macrophyllum*	19	25	Protected	Fair	Good health Good structure Fair form	Dense, green crown Strong Central leader Crown one sided west	Moderate
32	*Acer macrophyllum*	30	25	Protected	Poor	Fair health Very poor structure Poor form	Moderate branch dieback Extensive basal cavity, trunk bows Crown one sided north	Low
33	*Acer macrophyllum*	18	10	Protected	Very poor	Poor health Very poor structure Poor form	Dieback & epicormic sprouting Large cavity at 15 feet Supressed	Low
34	*Acer macrophyllum*	22	15	Protected	Poor	Fair health Fair structure Poor form	Minor dieback Multiple trunks arise from 35 feet Supressed	Low
35	*Acer macrophyllum*	30	20	Protected	Very poor	Fair health Very poor structure Fair form	Moderate branch dieback Tree splitting down middle with decay Two dimensional crown	Low
36	*Pseudotsuga menziesii*	30	20	Protected	Fair	Good health Good structure Fair form	Dense, green crown Strong central leader Crown one sided north	Moderate
37	*Acer macrophyllum*	34	25	Protected	Fair	Good health Fair structure Good form	Dense, green crown Codominant trunks with response growth Dominant tree	Moderate
38	*Abies grandis*	13	10	Protected	Poor	Poor health Excellent structure Poor form	Significant dieback Strong central leader One sided east	Low
39	*Abies grandis*	16	10	Protected	Poor	Fair health Good structure Fair form	Moderate branch dieback Strong central leader, girdling root Narrow form, interior tree	Low

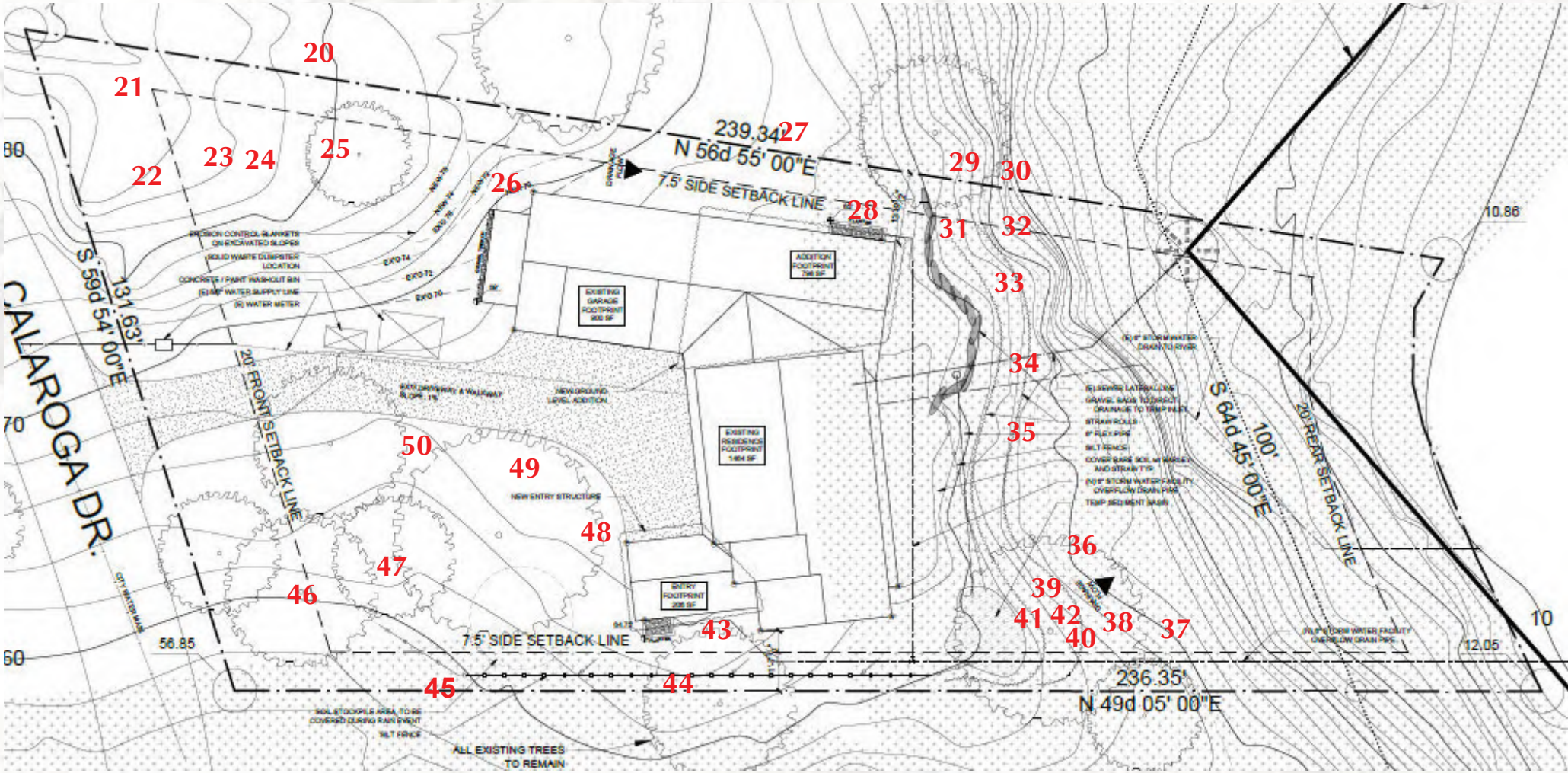
Tree Data

Tree #	Species	Trunk Diameter (inches)	Canopy Radius (feet)	Status	Condition			Suitability for Preservation
40	*Pseudotsuga menziesii*	43	25	Protected	Good	Good health Good structure Good form	Dense, green crown, difficult to see top Trunk sweeps at 10 feet Dominant tree	Moderate Mature/old
41	*Thuja plicata*	17	10	Protected	Fair	Excellent health Fair structure Good form	Dense, green crown Trunk sweeps north Narrow form	Low
42	*Thuja plicata*	15	5	Protected	Fair	Fair health Good structure Fair form	Minor dieback Strong central leader Narrow, upright form	Low Too close to tree #40
43	*Abies grandis*	33	15	Protected	Poor	Poor health Fair structure Fair form	Severe branch dieback Strong central leader Narrow form	Low
44	*Pseudotsuga menziesii*	18	15	Protected Property line	Good	Good health Good structure Good form	Dense green crown Strong central leader Typical, upright form	High
45	*Abies grandis*	18	10	Protected Property line	Fair	Fair health Good structure Fair form	Moderate branch dieback Strong central leader Crown one sided east	Moderate
46	*Abies grandis*	23	20	Protected	Fair	Fair health Good structure Fair form	Thin crown Strong central leader Typica, upright form	Moderate
47	*Abies grandis*	32	16	Protected	Good	Good health Good structure Good form	Dense crown Strong central leader Narrow form	High
48	*Tsuga heterophylla*	19	20	Protected	Good	Good health Good structure Good form	Dense, green crown Strong central leader Typica, upright form	High
49	*Thuja plicata*	22	20	Protected	Fair	Good health Good structure Fair form	Dense, green crown strong central leader Crown one sided east	Low Too hot and dry

Tree Data

Tree #	Species	Trunk Diameter (inches)	Canopy Radius (feet)	Status	Condition			Suitability for Preservation
50	*Thuja plicata*	24	20	Protected	Fair	Fair health Good structure Fair form	Minor dieback Strong central leader Short, wide form	Low Too hot and dry

Tree Map



Legend

\# Tree number

Basemap: *Site Plan* created by Steel & Timber dated May 10, 2022.
Tree locations are approximate.

Photos

Photos

Exhibit H: Pre-Application Conference Meeting Summary Notes

CITY OF WEST LINN
PRE-APPLICATION CONFERENCE MEETING
SUMMARY NOTES
September 15, 2022

SUBJECT: Flood Management Area Development Permit and Willamette River Protection Area Permit at 3801 Calaroga Dr.

FILE: PA-22-26

ATTENDEES:
Applicant: Shaun Catlin
Staff: John Floyd (Planning), Lynn Schroder (Planning); Benjamin Gardner (Planning);
Public: N/A

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

<u>Site Information:</u>

Site Address:	3801 Calaroga Dr.
Legal Description:	Lot 14, Riverside Park (Plat No. 701)
Tax Lot No.:	21E13CB00200
Site Area:	26,741 Square Feet +/- per site plan submitted with application 25,788 Square Feet +/- per Clackamas County Assessor
Neighborhood:	Robinwood Neighborhood Association
Comp. Plan:	Low Density Residential
Zoning:	Residential, R-10
Zoning Overlays:	Habitat Conservation Areas (Moderate to High) Flood Management Area (Floodway and Zone AE) Willamette Greenway

<u>Project Site and Proposed Project</u>

Relevant details of the project and project site include the following:

- The proposal includes the removal of an existing rear porch to be replaced with a new tiered porch structure, stairs and walkways, a covered gazebo, and new dock.
- The site contains numerous large trees and direct frontage along the Willamette River.
- The lot is presently developed with a single-family home constructed circa 1973 per Clackamas County Assessment Records.
- An 8" sewer main crosses the property near the shoreline, with an associated manhole near the northerly property line.
- Per the attached Firmette and West Linn Maps, the project site is located partially within the floodway and partially within the 1% annual flood area.
- A majority of the project area is located within high to Moderate and Low Habitat Conservation Areas.
- The application included a wetland delineation dated August 30, 2022 that concluded there are no wetlands on the project site.

<u>Planning Staff Comments</u>

Planning staff has the following comments on the application:

- Decks, patios, and docks are permitted uses in the zone. Note that structures requiring a building permit are subject to lot coverage limitations.

- Redesign of the easternmost wood platform and walkway should be reconsidered as (1) it is located on top of a sewer manhole, and (2) it appears to be located nearly adjacent to the side property line and a 7.5 foot sideyard setback is required. If the setback cannot be met, a variance may be required per CDC 75.
- A Flood Hazard Development Permit shall be required for the project subject to submittal requirements in CDC 27.060(C) and standards in CDC 27.070-090.
- A Willamette Greenway Permit will be required, subject to the following:
    - Submittal requirements are found in CDC 28.090 and CDC 28.120 - 160
    - Approval Criteria are found in CDC 28.110

Discussion:
Topics of conversation included the following:

- Project goals
- Applicable overlays on the property
- Floodplain and Willamette Greenway permit requirements
- Necessary changes to avoid conflicts with setback standards and existing sewer infrastructure crossing the property.

Engineering:
The Engineering department provided the following comments. For further details, please contact Maryna Asuncion at 503-722-3436 or MAsuncion@westlinnoregon.gov.

> *There is no issue with the Applicant building the deck/walkway structure across the existing sanitary sewer easement and pipe that runs along the shoreline. If maintenance is ever required on that pipe, sections of the walkway may need to be removed at the owner's expense, but the sewer pipe appears to be lined so it's unlikely to need repair soon.*
>
> *Engineering's only concern is the proposed wood platform/walkway is shown to be built over the top of a sanitary sewer manhole cover near the NE property line. Please let the Applicant know that they will need to redesign that section of the platform so that the manhole cover is not covered by any permanent structures.*

Building:
For building code and ADA questions, please contact Adam Bernert at abernert@westlinnoregon.gov or 503-742-6054 or Alisha Bloomfield at abloomfield@westlinnoregon.gov or 503-742-6053.

Tualatin Valley Fire & Rescue:
Please contact Jason Arn at jason.arn@tvfr.com or 503-259-1510 with any questions. **Note that a Service Provider Permit must be presented with the application in order for the application to be deemed complete.**
https://www.tvfr.com/399/Service-Provider-Permit

Process:
For the proposal, address the submittal requirements and standards for decision making in the Community Development Code (CDC) chapters in the compliance narrative, plans, and other submittal requirements:

- Chapter 11: Residential, R-10
- Chapter 27: Flood Management Areas
- Chapter 28: Willamette and Tualatin River Protection
- Chapter 34: Accessory Structures
- Chapter 38: Exceptions to Yard Requirements
- Chapter 99: Procedures for Decision Making: Quasi-Judicial

Compliance Narrative:

When preparing the compliance narrative, 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.

Fees:
The deposit for Willamette and Tualatin River Protection Permit is $1,700. The deposit for a Flood Management Area Permit is $1,050.

Timelines: Once the application and deposit/fee are submitted, the City has 30 days to determine if the application is complete or not. If the application is not complete, the applicant has 180 days to make it complete or provide written notice to staff that no other information will be provided. Once complete, the City has 120 days from the date of completeness to make a final decision on the application.

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

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

National Flood Hazard Layer FIRMette

FEMA

122°38'35"W 45°23'59"N

122°37'57"W 45°23'34"N

Feet

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

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 — Cross Sections with 1% Annual Chance
- 17.5 — Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/2/2022 at 12:15 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

PRE-APPLICATION CONFERENCE

Thursday, September 15, 2022

Webex*

10:00 am: **Proposed Willamette River Greenway and Flood Management Permits**
Applicant: **Robert Endres**
Property Address: **3801 Calaroga Drive**
Neighborhood Assn: **Robinwood Neighborhood Association**
Planner: **John Floyd** Project #: **PA-22-26**

*The pre-application conference will be conducted on Webex.

City of West Linn
Planning & Development • 22500 Salamo Rd #1000 • West Linn, Oregon 97068
Telephone 503.742.6060 • westlinnoregon.gov

PRE-APPLICATION CONFERENCE

THIS SECTION FOR STAFF COMPLETION			
CONFERENCE DATE: 9/15/22	TIME: 10:00am	PROJECT #: PA-22-26	
STAFF CONTACT: John Floyd		FEE: $350	

Pre-application conferences occur on the first and third Thursday of each month. To schedule a conference, submit this this form with the property owner's signature, the fee, and accompanying materials by 4:00pm at least **15** days before the conference date. Twenty-four hour notice is required to reschedule. Pre-application notes are valid for 18 months. After 18 months with no application approved or in process, a new pre-application conference is required.

Address of Subject Property (or map/tax lot): 3801 CALAROGA DR. WESTLINN, OR 97068

Brief Description of Proposal: The project consists of removing the existing rear porch on the North side of the residence. Rebuilding the porch and adding planters, walkways, a lower porch, a covered gazebo with a fireplace, a walkway down to the water and a small dock in the recreational waters of the Willamette River.

Applicant's Name: SHAUN CATLIN

Mailing Address: 1661 SE 2ND ST. ASTORIA, OR 97103

Phone No: 971-222-6631 Email Address: shaun@steelandtimberconstruction.com

Please attach additional materials relating to your proposal including a site plan on paper up to 11 x 17 inches in size depicting the following items:

- North arrow
- Scale
- Property dimensions
- Streets abutting the property
- Conceptual layout, design and/or building elevations
- Easements (access, utility, all others)
- Access to and from the site, if applicable
- Location of existing trees, highly recommend a tree survey
- Location of creeks and/or wetlands, highly recommend a wetland delineation
- Location of existing utilities (water, sewer, etc.)

Please list any questions or issues that you may have for city staff regarding your proposal:
The main question I have is how to submit the DSL and Army Corps joint permit application and what information I need to provide them other than what I have covered here.

By my signature below, I grant city staff right of entry onto the subject property in order to prepare for the pre-application conference.

Robert J. Endres — Property owner's signature

8-30-22 — Date

ROBERT & ROBIN ENDRES (address same as above)
Property owner's printed name and mailing address if different from above.

Endres Residence back yard development proposal statement

The scope of the project consists of:

1. Removing the home's existing porch
2. Building a new tiered porch structure that flows with the terrain, cascading down the hill in close proximity to the existing contours.
3. Building a small gazebo (19'x18') with a fireplace.
4. Building a staircase from the new porch down the hillside to the water. The main goal of this staircase is to provide a safe and sturdy route down to the recreational waters of the Willamette River from the residence.
5. Installing a new boat dock consisting of a few steel pilings that will be driven into the river bed, a 10'x30' boat dock and a ramp from the shore area out to the dock.

Changes to the site are fairly minimal. The new gazebo will have some minor footings on two sides of the structure, but other than that everything else will utilize post hole footings and PT 4x4's as a means of holding the structures upright. All of the surfaces including the gazebo will be an open joint decking material per the owner's specification. The open joint decking paired with the 4x structural pier system allows this large structure to sit very lightly on the terrain and allows water to drain through its permeable surface.

The structure as I mentioned above is a 4x4 post and pier system that will be attached to the undersides of the porches via Simpson brackets topping the posts and attaching to the structural girders. The gazebo structure will consist of two cinderblock walls with a stack stone façade. The floor and roof system will be pressure treated lumber and supported by structural posts opposite the two walls. See page G-3 for Gazebo layout and elevations.

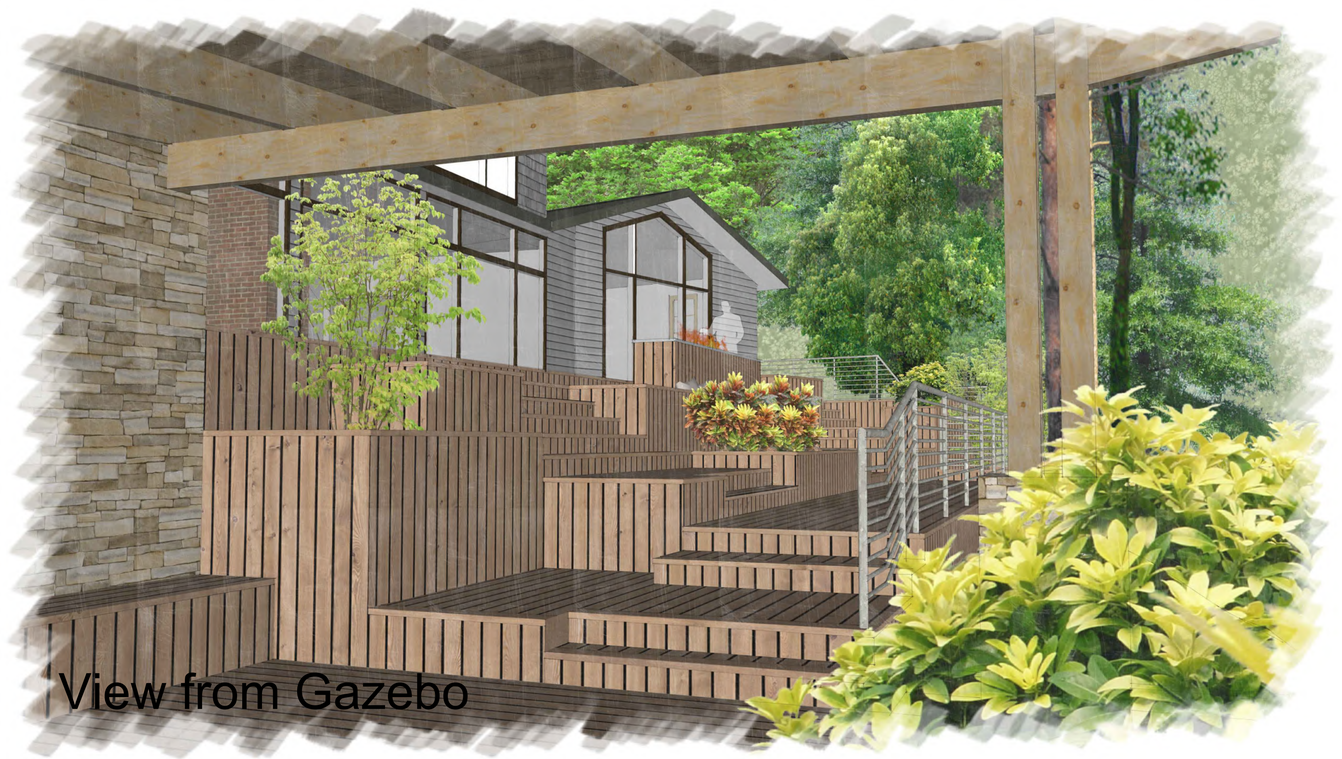
In terms of landscaping, we have utilized an asymmetrical tiered planter system that allows bushes and small trees to be planted all around the new porch structure which keeps nature in very close proximity to the livable area of this porch. The new planter's combined area is 493 SF. No additional landscaping is proposed at this time other than the new planters. We are removing two existing trees, but as you can see from the tree survey included with this application as well as the spreadsheet on Page G-2 of the plan the two trees we plan to remove are in fairly poor condition so we don't think this will affect the landscape much if at all.

The only new parking for the proposed project is boat parking in the form of the new dock. All car parking will remain the same.

The land use will not change much as the areas in which we are adding this new porch are already utilized for porch like functions. The new structure will simply make the area much safer to inhabit by creating level surfaces and installing handrails to help protect against fall hazards near the steep slope. The structure also replaces the current path to the water which has been cut in to the hillside (and is quite treacherous to navigate even when dry) with a new staircase that safely leads people from the house to the recreational waters of the Willamette River and back again.

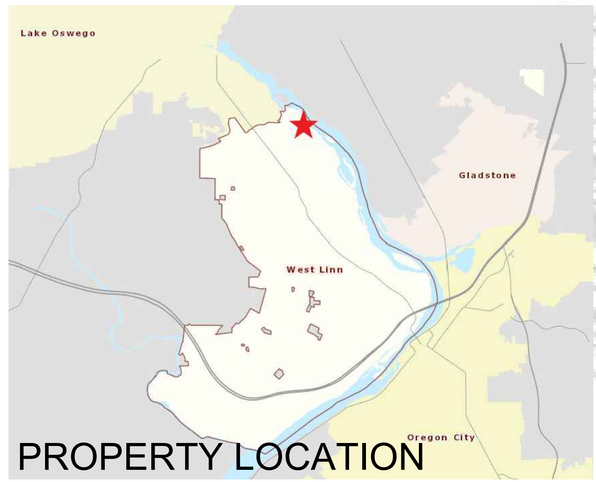
Endres Residence Porch Addition

View from the North



View from Gazebo

PROPERTY OUTLINE



PROPERTY LOCATION

ADDRESS:
3801 CALAROGA DR
WEST LINN, OR 97068

DESCRIPTION OF WORK:
SECOND MASTER BEDROOM ADDITION
AS WELL AS ENTRY CANOPY, AND OTHER COSMETIC EXTERIOR UPGRADES.

BUILDING AREAS:
EXISTING: 2823 SF
ADDITION: 798 SF
TOTAL: 3621 SF

GARAGE: 840 SF
BALCONY: 114 SF

IMPERVIOUS AREAS:
ROOF: 4059 SF
DRIVEWAY: 1963 SF
TOTAL: 6022 SF (22.5% OF LOT AREA)

LEGAL DESCRIPTION
RIVERSIDE PARK, LOT 14
PROPERTY ID: 200
TAX MAP: 2 1 E 13CB

ZONING INFORMATION:
CITY OF WESTLINN
TYPE: R-10
LOT SIZE: 0.61 ACRES (26,741 SF)

REQUIRED SETBACKS
FRONT: 20'
REAR: 20'
SIDE: 7.5'
GARAGE: 18'

MAX ALLOWED BUILDING COVERAGE:
9359 SF (35% OF LOT)
PROPOSED BLDG COVERAGE:
3368 SF (12.59% OF LOT)

MAX BLDG HEIGHT: 30'-0"
PROPOSED BLDG. HEIGHT: 22'-11 1/2"

General Notes

1. ALL DIMENSIONS. TO F.O.S. U.N.O.
2. SMOKE/CARBON MONOXIDE DETECTORS TO BE 110 V, INTERCONNECTED, AND HARDWIRED W/ BATTERY BACKUP.
5. ELECTRICAL OUTLETS TO BE PROVIDED AT NEW ROOMS 8' ON CENTER MAX.
6. BATH EXHAUST FAN TO HAVE MIN. 5 AIR EXCHANGES PER HR.
7. BATH EXHAUST FAN TO BE COVERED W/CORROSION-RESISTANT SCREEN @ EXTERIOR W/ OPENINGS BETWEEN 1/4" TO1/2".
8. TOILET TO USE MAX 1.6 GAL PER. FLUSH.
9. SHOWER ENCLOSURE TO BE MADE OF SAFETY GLASS.
10. ALL CONSTRUCTION TO CONFORM TO CURRENT PRESCRIPTIVE OREGON CODES; ALL DIMENSIONS & NOTES TO BE VERIFIED IN FIELD AND CONFIRMED BY OWNER/CONTRACTOR TO CONFORM TO LEGAL STANDARDS AND BEST PRACTICES FOR CONSTRUCTION.

PAGE DIRECTORY

No.	Revision/Issue	Date

Firm Name and Address
STEEL & TIMBER
1661 SE 2ND ST.
ASTORIA, OR 97103

DRAWN BY: SC

Project Name and Address
ENDRES RESIDENCE
3801 CALAROGA DR.
WESTLINN, OR 97068

Project 21-05-05	Sheet G-1
Date 8/28/22	
Scale NTS	

RIVERSIDE PARK
LOT 14

MANHOLE COVER
SEWER MAIN
FEMA 100 YR FLOOD LINE
WILLAMETTE RIVER
UPPER PORCH
BUILT IN JACUZZI
WOOD PLANTER
WOOD PLATFORM/WALKWAY
BUILT IN BENCH
WOOD STAIRS TO WATER
(E) 6" STORM WATER DRAIN TO RIVER
7.5' SIDE SETBACK LINE
239.34'
N 56d 55' 00"E
DRAINAGE FLOW
65'
PLANTER
69'
GRAVEL TRENCH
EROSION CONTROL BLANKETS ON EXCAVATED SLOPES
SOLID WASTE DUMPSTER LOCATION
CONCRETE / PAINT WASHOUT BIN
(E) 5/8" WATER SUPPLY LINE
(E) WATER METER
20' FRONT SETBACK LINE
S 59d 54' 00"E
131.63'
EX'G DRIVEWAY & WALKWAY SLOPE: 1%
EX'G RESIDENCE
(N) GAS FIREPIT
CITY WATER MAIN
56.85
64.75'
PLANTER
7.5' SIDE SETBACK LINE
(N) GAZEBO
236.35'
N 49d 05' 00"E
SOIL STOCKPILE AREA, TO BE COVERED DURING RAIN EVENT
SILT FENCE
REMOVE TREES 39 & 41
(N) 6" STORM WATER FACILITY OVERFLOW DRAIN PIPE
S 64d 45' 00"E
100'
20' REAR SETBACK LINE
CALAROGA DRIVE
FEMA 100 YR FLOOD LINE
80 70 60 50 40 30 20 10 50 40 30 20 10

Tree #	Species	Trunk Diameter (inches)	Canopy Radius (feet)	Status	Condition	Suitability for Preservation
20	*Acer macrophyllum*	20	10	Protected - off-site	Fair	Moderate
21	*Acer macrophyllum*	24.21	30	Protected	Fair	Moderate
22	*Acer macrophyllum*	18	20	Protected	Very poor	Low
23	*Abies grandis*	26	15	Protected	Good	Moderate
24	*Acer macrophyllum*	24.24	30	Protected	Fair	Moderate
25	*Acer macrophyllum*	33.12	35	Protected	Fair	Moderate
26	*Acer macrophyllum*	23	25	Protected	Fair	Moderate
27	*Pseudotsuga menziesii*	35	25	Protected - off-site	Fair	Moderate
28	*Acer macrophyllum*	16	15	Protected	Fair	Moderate
29	*Pseudotsuga menziesii*	30	5	Protected - off-site	Fair	Moderate
30	*Acer macrophyllum*	14	1	Protected - off-site	Poor	Low
31	*Acer macrophyllum*	19	25	Protected	Fair	Moderate
32	*Acer macrophyllum*	30	25	Protected	Poor	Low
33	*Acer macrophyllum*	18	10	Protected	Very poor	Low
34	*Acer macrophyllum*	22	15	Protected	Poor	Low
35	*Acer macrophyllum*	30	20	Protected	Very poor	Low
36	*Pseudotsuga menziesii*	30	20	Protected	Fair	Moderate
37	*Acer macrophyllum*	34	25	Protected	Fair	Moderate
38	*Abies grandis*	13	10	Protected	Poor	Low
39	*Abies grandis*	16	10	Protected	Poor	Low
40	*Pseudotsuga menziesii*	43	25	Protected	Good	Moderate
41	*Thuja plicata*	17	10	Protected	Fair	Low
42	*Thuja plicata*	15	5	Protected	Fair	Low
43	*Abies grandis*	33	15	Protected	Poor	Low
44	*Pseudotsuga menziesii*	18	15	line	Good	High
45	*Abies grandis*	18	10	line	Fair	Moderate
46	*Abies grandis*	23	20	Protected	Fair	Moderate
47	*Abies grandis*	32	16	Protected	Good	High
48	*Tsuga heterophylla*	19	20	Protected	Good	High
49	*Thuja plicata*	22	20	Protected	Fair	Low
50	*Thuja plicata*	24	20	Protected	Fair	Low

LOT SIZE:	26741 SF
BUILDING (GROSS) FOOTPRINT:	3368 SF
LOT COVERAGE RATIO:	12.59%
NEW PORCH (GROSS) FOOTPRINT:	3354 SF
NEW PORCH COVERAGE:	12.54%
TOTAL BUILT AREA:	25.14%

LEGEND

- # TREE NUMBER
- PLANTER
- RIPARIAN CORRIDOR
- NEW PORCH ADDITION

N

1 SITE PLAN

0 10 20 50 75

General Notes

No.	Revision/Issue	Date

Firm Name and Address

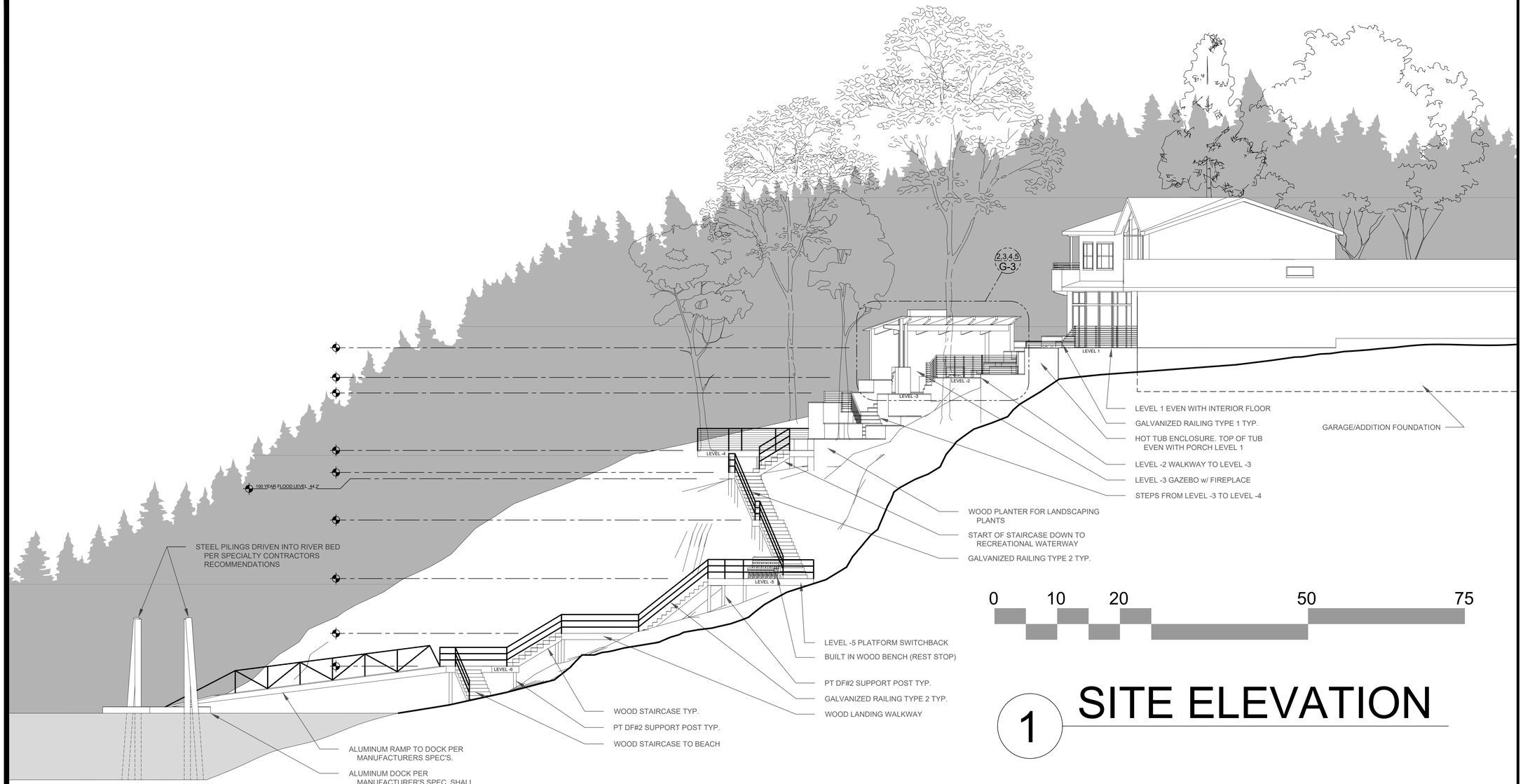
STEEL & TIMBER
1661 SE 2ND ST.
ASTORIA, OR 97103

DRAWN BY: SC

Project Name and Address

ENDRES RESIDENCE
3801 CALAROGA DR.
WESTLINN, OR 97068

Project	Sheet
21-05-05	G-2
Date: 8/28/22	
Scale: 3/32" = 1'	

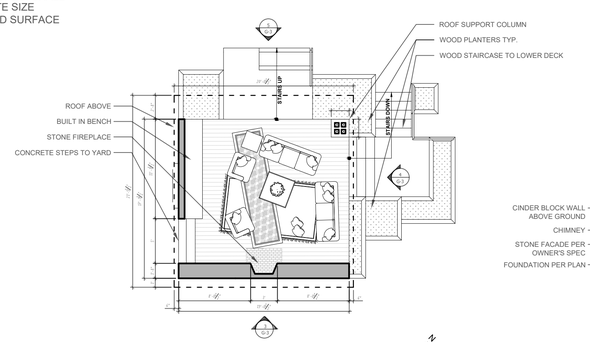


0 10 20 50 75

1 SITE ELEVATION

FLOOD PLAIN NOTE:

100 YEAR FLOOD PLAIN ELEVATION = 44.2 FEET
FLOOD INSURANCE RATE MAP NO. 41005C0019D
EFFECTIVE DATE : JUNE 17, 2008



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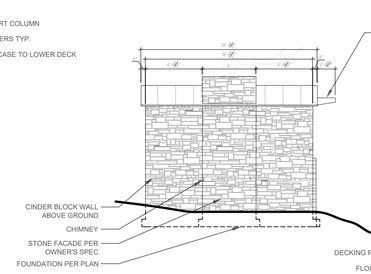

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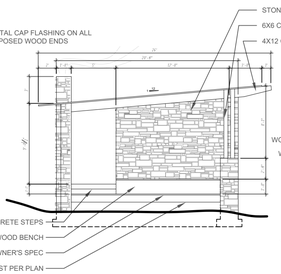
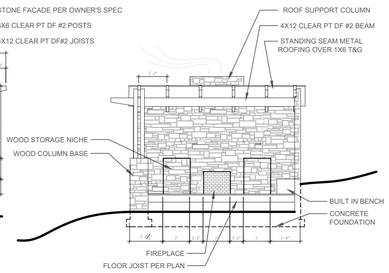


4 NORTH EAST ELEVATION



5 NORTH EAST ELEVATION

General Notes

No.	Revision/Issue	Date

Firm Name and Address

STEEL & TIMBER
1661 SE 2ND ST.
ASTORIA, OR 97103

DRAWN BY: SC

Project Name and Address

ENDRES RESIDENCE
3801 CALAROGA DR.
WESTLINN, OR 97068

Project	Sheet
21-05-05	G-3
Date: 8/28/22	
Scale: 1/8" = 1'	

ENVIRONMENTAL
MANAGEMENT
SYSTEMS, INC.

OR: 503-353-9691
FAX: 503-353-9695
WA: 360-735-1109
www.envmgtsys.com
4080 SE International Way
Suite B-112
Milwaukie, OR 97222

Wetland Delineation

Section 13, Township 2 South, Range 1 East, Tax Lot 200
Parcel number: 00296959
West Linn, OR

Prepared for:

Robert Endres
3801 Calaroga Dr.
West Linn, OR 97068

Project:

Endres West Linn

Prepared By:

Environmental Management Systems, Inc.
4080 SE International Way Ste. B-112
Milwaukie, OR 97222

EMS Project Number: 22-0065

August 30, 2022

Table of Contents

A) Landscape Setting and Land Use

The study area (see Appendix A.), referred to hereafter as "Site", is the portion of the tax lot 200 (roughly .59-acres) in Township 2S, Range 1E of the NW ¼ of the SW ¼ of Section 13. The study area consisted of the landscape east of the house on Site, including the cliff and the area east of the cliff adjacent to the Willamette River. The Site is situated on a hillslope facing northeast that is adjacent to the Willamette River in West Linn, Oregon. The Site is developed with a single-family dwelling that sits roughly in the center of the property and contains a detached garage to the west. The Willamette River lies roughly 80 to 90 feet east and northeast of the dwelling. Site elevations run from 10 feet to 65 feet above sea level (see Appendix D. Figure 8).

The landscape setting for a large part of the Site is disturbed soil and disturbed vegetation that has been cleared of native vegetation. The landscape to the east and northeastern portion of the property, east of the cliff, is altered soil and vegetation that includes rock overlay and soil grading. A portion of the property along the Willamette River is a sandy beach. The landscape to the west of the cliff on the Site is altered soil and vegetation that includes mulch overlay over the soil and plant removal/addition.

According to the mapping by the Natural Resource Conservation Service (NRCS), the soil on the Site is 91C-Woodburn silt loam, 8 to 15 percent slopes, and W-Water. Both are classified as hydric.

The current land use was previously and is currently residential, and the property is zoned within the urban growth boundary.

B) Site Alterations

According to historic aerial photographs reviewed on Google Earth, the Site alterations appeared to have occurred prior to the first legible historic aerial dating back to July 2001 (see Appendix D, Figure 9). Landscape alterations on the Site were taking place during the Site visit EMS conducted on May 25th,2022; this included soil grading and alteration in the northeast portion of the study area adjacent to the Willamette River.

The western portion of the Site, to the west of the cliff, has been mostly cleared of native vegetation and had mulch overlayed on the soil. The northeastern portion of the Site along the Willamette River has been mostly cleared of native vegetation and the soil has been graded and had a rock overlay at some point to alter the topography of the section. The eastern portion of the Site along the Willamette River appears to be unaltered.

C) Precipitation Data and Analysis

The Portland KGW-TV weather station WETS table for the years 2000 through 2022 was used to analyze precipitation data. The station is located approximately 11 miles northwest of the Site at 45.5181°, -122.6894°. Daily data for the month was used to summarize the rainfall data that recorded approximately 1.52 inches of rainfall for the two weeks preceding and the days of the initial field investigation (see Table 1). 0.06 inches of precipitation occurred the day of the initial field investigation on May 25th, 2022.

Table 1. Portland KGW TV weather station daily summarized precipitation data for May 2022.

Climatological Data for PORTLAND KGW-TV, OR - May 2022

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2022-05-01	65	48	56.5	17	7	0.00	M	M
2022-05-02	57	45	51.0	11	1	0.33	M	M
2022-05-03	60	46	53.0	13	3	0.00	M	M
2022-05-04	74	45	59.5	20	10	0.00	M	M
2022-05-05	60	45	52.5	13	3	0.44	M	M
2022-05-06	58	47	52.5	13	3	0.80	M	M
2022-05-07	55	45	50.0	10	0	0.34	M	M
2022-05-08	49	41	45.0	5	0	0.19	M	M
2022-05-09	53	39	46.0	6	0	0.01	M	M
2022-05-10	60	41	50.5	11	1	0.01	M	M
2022-05-11	60	41	50.5	11	1	0.00	M	M
2022-05-12	53	42	47.5	8	0	0.29	M	M
2022-05-13	56	37	46.5	7	0	0.24	M	M
2022-05-14	69	48	58.5	19	9	0.48	M	M
2022-05-15	67	55	61.0	21	11	0.22	M	M
2022-05-16	63	53	58.0	18	8	0.00	M	M
2022-05-17	65	45	55.0	15	5	0.00	M	M
2022-05-18	61	46	53.5	14	4	0.18	M	M
2022-05-19	56	44	50.0	10	0	0.10	M	M
2022-05-20	60	42	51.0	11	1	0.00	M	M
2022-05-21	71	44	57.5	18	8	0.00	M	M
2022-05-22	75	48	61.5	22	12	0.00	M	M
2022-05-23	70	54	62.0	22	12	0.00	M	M
2022-05-24	68	47	57.5	18	8	T	M	M
2022-05-25	73	53	63.0	23	13	0.06	M	M
2022-05-26	73	56	64.5	25	15	0.20	M	M
2022-05-27	61	52	56.5	17	7	0.22	M	M
2022-05-28	60	50	55.0	15	5	0.31	M	M
2022-05-29	59	49	54.0	14	4	0.24	M	M
2022-05-30	64	47	55.5	16	6	0.03	M	M
2022-05-31	78	50	64.0	24	14	0.00	M	M
Average|Sum	63.0	46.6	54.8	467	171	4.69	M	M

The Natural Resources Conservation Service (NRCS) WETS table for the period from 2000-2022 shows the observed rainfall at the KGW-TV station in Portland for February 2022 was 2.86 inches, March 2022 was 4.42 inches, and April 2022 was 6.22 inches. According to the WETS table (see Table 2) in February, the 30% and 70% exceedance values were 2.81 inches and 4.98 inches; For March, the 30% and 70% exceedance values were 3.53 inches and 5.62 inches. For April, the 30% and 70% exceedance values were 2.48 inches and 4.13 inches.

Table 2. WETS Station table for Portland KGW-TV for years 2000-2022.

WETS Station: PORTLAND KGW-TV, OR

Requested years: 2000 - 2022

Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	47.2	37.7	42.4	6.14	4.47	7.23	13	1.3
Feb	49.9	38.2	44.1	4.16	2.81	4.98	10	1.1
Mar	55.2	40.7	48.0	4.79	3.53	5.62	12	0.1
Apr	60.9	43.7	52.3	3.49	2.48	4.13	10	0.1
May	68.1	49.2	58.6	2.43	1.46	2.94	7	0.0
Jun	73.7	53.8	63.8	1.47	0.88	1.78	5	-
Jul	80.8	58.0	69.4	0.33	0.21	0.40	1	0.0
Aug	81.0	58.7	69.9	0.47	0.11	0.49	1	0.0
Sep	74.7	54.9	64.8	1.86	0.79	2.27	4	0.0
Oct	62.7	48.0	55.4	3.70	2.23	4.48	9	0.0
Nov	52.4	41.7	47.0	6.10	4.25	7.26	13	0.0
Dec	45.7	37.0	41.3	7.41	5.27	8.77	14	1.3
Annual:					-	-		
Average	62.7	46.8	54.7	-	-	-	-	-
Total	-	-	-	42.35			98	-

The observed rainfall for the water year of October 2021 through May 26, 2022, for the KGW TV weather station was 45.01 inches. The Water Year Precipitation Table was obtained from the Northwest River Forecast Center (see Table 3) for October 1st, 2021, through May 25th, 2022. The amount of water for the water year was 54.9 inches at 92% normal for the Willamette River Basin above Portland.

Table 3. NOAA Northwest River Forecast Center Water Year Precipitation Table for October 1st, 2021, through May 25th, 2022.

Western Oregon

DIVISION NAME	OBSERVED (in)	NORMAL (in)	DEPARTURE (in)	PERCENT of NORMAL
Coastal River Basins	78.6	82.7	-4.1	95
Clackamas River Basin	70.2	65.1	5.2	108
Willamette Headwater River Basins	56.3	56.6	-0.3	100
Willamette River Basin abv Harrisburg	49.4	63.3	-13.9	78
Santiam River Basin	70.0	71.4	-1.4	98
Willamette River Basin above Portland	54.9	59.7	-4.8	92
Coquille River Basin	38.7	62.9	-24.2	62
Umpqua River Basin	30.9	46.3	-15.5	67
Rogue-Illinois River Basins	30.3	45.1	-14.8	67

Report created 05/26/2022

D) Methods

The field investigation was conducted on May 25th and May 26th of 2022 and additional field visit was done on August 18th, 2022, to observe the NWI mapped wetland during the dry season to allow safe access to the area, due to a lower water level for the Willamette River. Before visiting the Site, EMS gathered and analyzed data about the property that included tax lot maps, soil surveys, National Wetland inventory maps,

Local Wetland Inventory Maps, surveys, aerial photography, and climate The investigation utilized methodologies defined in The Army Corps of Engineers Wetlands Delineation Manual, January 1987 and in the Regional Supplement for Western Mountains, Valleys, and Coast region[4]. The Regional Supplement recognizes the differences in climate, geology, hydrology, soils, and vegetation that varies regionally and provides wetland indicators, delineation guidance, and other information specific to the western mountains, valleys, and coastal regions of the western United States. The project Site lies in USDA Land Resource Region (LRR) A.

Wetland data was recorded on United States Army Corps of Engineers (USACE) wetland determination field forms (see Appendix D.) which served as worksheets for determining the presence or absence of wetland hydrology, hydric soils, and hydrophytic vegetation (see Appendix A, Maps). Vegetation species were rated using the 2016 and 2020 National Wetland Plants List for the Western Mountains, Valleys, and Coast Region.

Prior to conducting quantitative data, the study area was explored for a visual assessment of plant communities, hydrological conditions, topography, and property boundaries. Exploratory soil samples and plant transects were taken to search for hydric soil and hydrophytic plant indicators. Data was collected for the two Data Sets that best represented upland and wetland conditions at the proposed wetland boundary. One additional wetland plot was taken in an area suspected to be a wetland because of its topographic setting in the landscape with proximity to the Willamette River. At least one test pit sample plot was taken within each soil map unit and within the NWI mapped wetland area.

Data set sample plots were chosen based on transitions in the plant communities and topographical changes. Site topography was also taken into account, as portions of the Site were inaccessible due to the Willamette River, the cliff on the Site, and unstable ground. Boundaries of the river adjacent to the Site and any wetlands present were determined using visual water marks and water table analysis via pits at the time of the Site visit.

Transect sizes were chosen to best represent the study area based on plant communities and topography. Tree and Sapling/Shrub transects were approximately 15 feet by 15 feet squares. The Herb transects were approximately 10 feet by 10 feet squares. Boundaries of the 10 feet by 10 feet sample plot vegetation transects were marked in the field using green flagging. Pink flagging was used to mark paired test pits, referred to as Data Sets (DS): DS-1 (proposed wetland plot) and DS-2b (proposed upland plot), DS-3 (proposed wetland plot) & DS-4 (proposed upland plot). Soil test pits were excavated to 14-16 inches below grade within the Data Sets. Pink wetland survey tape was used to mark the boundary of any wetland on the Site.

Due to the inability to access the NWI mapped wetland area in May of 2022, an additional field investigation was done by EMS on August 18th, 2022, to conduct additional wetland plot in the vicinity of NWI mapped wetland location (see Appendix B, Data Form 2a). DS-1 was as close as the investigation could safely get to the wetland mapped on Site per the NWI Mapper at the time of the initial investigation in May of 2022. A total of 2 proposed upland plots and 3 proposed wetland plots were completed (see Appendix A, Figure 6).

Additional soil test pits were also excavated to observe soil characteristics, redoximorphic features, and a visible water table or saturation that aided in locating wetland boundaries. Data set GPS coordinates were taken using a Garmin handheld GPS device.

E) Description of All Wetlands and Other Non-Wetland Waters

The United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Wetland Mapper[5], has a Riverine mapped on the Site, classified as R1UBV (see Appendix A., Figure 3b). A Freshwater Forested/Shrub Wetland was mapped in the eastern corner of the Site and adjacent to the Site to the east on parcel number 00296940; classified as PFO1C (see Appendix A, Figure 3b).

The Local Wetland Inventory (LWI) for West Linn[6] has no wetlands mapped on or adjacent to the Site (see Appendix A, Figure 3a).

Wetlands

No wetland conditions were found on the Project Site.

Uplands

All of the Data Sets DS-1, DS-2a, DS-2b, DS-3, and DS-4 documented upland conditions. Plot DS-1 contained soils that had a restrictive layer at 1 inch below grade, preventing identification of hydric soil indicators. Plot DS-1 contained hydrophytic vegetation dominated by *Rubus armeniacus* (FAC), *Populus balsamifera* (FAC), and *Hedera helix* (FACU) but was determined upland due to no wetland hydrology indicators and the inability to determine the presence of hydric soil indicators. DS-2a soils had a restrictive boulder/cobble layer and prevented soil analysis; the NRCS soil map listed 91C-Woodburn silt loam, 8 to 15 percent slopes, as hydric and wetland hydrology indicators were present. DS-2a was dominated by *Hedera helix* (FACU) and *Rubus armeniacus* (FAC) and determined to be non-hydrophytic, therefore it was determined to be upland. DS-2b was dominated by *Acer macrophyllum* (FACU), *Abies grandis* (FACU), *Hedera helix* (FACU), and *Polystichum munitum* (FACU). DS-2b had no hydric soil indicators and no wetland hydrology indicators, therefore it was determined to be upland.

DS-3 was dominated by *Populus balsamifera* (FAC) and *Holcus lanatus* (FAC) with the majority of the plot containing no species of any stratum due to the presence of surface water and proximity to the Willamette River; on an additional Site visit on May 26th,

2022, the plot was submerged with water from the Willamette River. DS-3 contained wetland hydrology indicators with a water table present at 12 inches, saturation present at 10 inches, and surface water present due to around 1 inch of Willamette River surface water presence within the transect. DS-3 did not contain hydric soil indicators and was therefore determined to be upland.

DS-4 was dominated by *Geranium lucidum* (Presumed FACU), *Rubus armeniacus* (FAC) and *Hedera helix* (FACU) with no species in the tree stratum present in the sample plot. DS-4 contained no hydric soil indicators and no wetland hydrology indicators, therefore it was determined to be upland.

F) Deviation from LWI or NWI

No deviation from the LWI mapping was found. The Riverine was observed adjacent to the Site and no other wetland was observed on the Site, in line with the LWI West Linn mapping.

The NWI lists a PFO1C Freshwater Forested/ Shrub Wetland approximately in the far eastern corner of the Site. Due to the unsafe conditions of the cliff and topographic constraints where the NWI contained a mapped wetland, DS-1 was as close as the investigation could allow for the initial site visit on May 25th, 2022. On August 18th, 2022, EMS conducted an additional field investigation to access the area the NWI mapped wetland was located. It was determined the area did not contain a wetland. See data determination forms in Appendix B.

G) Mapping Method

Proposed parcel boundaries were marked by wooden stakes at the time of EMS's initial visit on May 25th, 2022. These markers were used to estimate approximate property lines for the determination data sets. Data Set test pits and wetland boundaries, if found, were professionally land surveyed by Andy Paris and Associates in August of 2022, with submeter accuracy.

H) Additional Information

A detailed topographic survey was conducted by Andy Paris and Associates, Inc. in June and July 2022 (see Figure 8, Appendix D).

Table 4. Vegetation observed in the study area on Site.

Species	Indicator Status
Abies grandis	FACU
Acer macrophyllum	FACU
Bromus species	UPL*
Carex lacustris	OBL
Corylus cornuta	FACU
Danthonia californica	FAC
Geranium lucidium	FACU**
Hedera helix	UPL

Holcus lanatus	FACU
Leucanthemum vulgare	FACU
Lotus corniculatus	FAC
Lythrum salicaria	OBL
Maianthemum racemosum	FAC
Polystichum munitum	FACU
Populus balsamifera	FAC
Prosartes trachycarpa	FACU
Rubus armeniacus	FAC
Rubus ursinus	FACU
Schizachne purpurascens	FACU
Symphoriacarpos albus	FACU
Triticum aestivum	UPL
*	Assumed UPL
**	Assumed FACU

I) Results and Conclusions

The field investigation found that no wetland was determined on Site. None of the Data Sets were determined to be Wetland. All Data Sets were determined to be Upland.

J) Disclaimer

This report documents the investigation, best professional judgment and conclusions of the investigator. It is correct and complete to the best of my knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 (Purpose) through 141-090-0055 (Effective Date).

Literature Cited and Referenced

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Appendix A. Maps

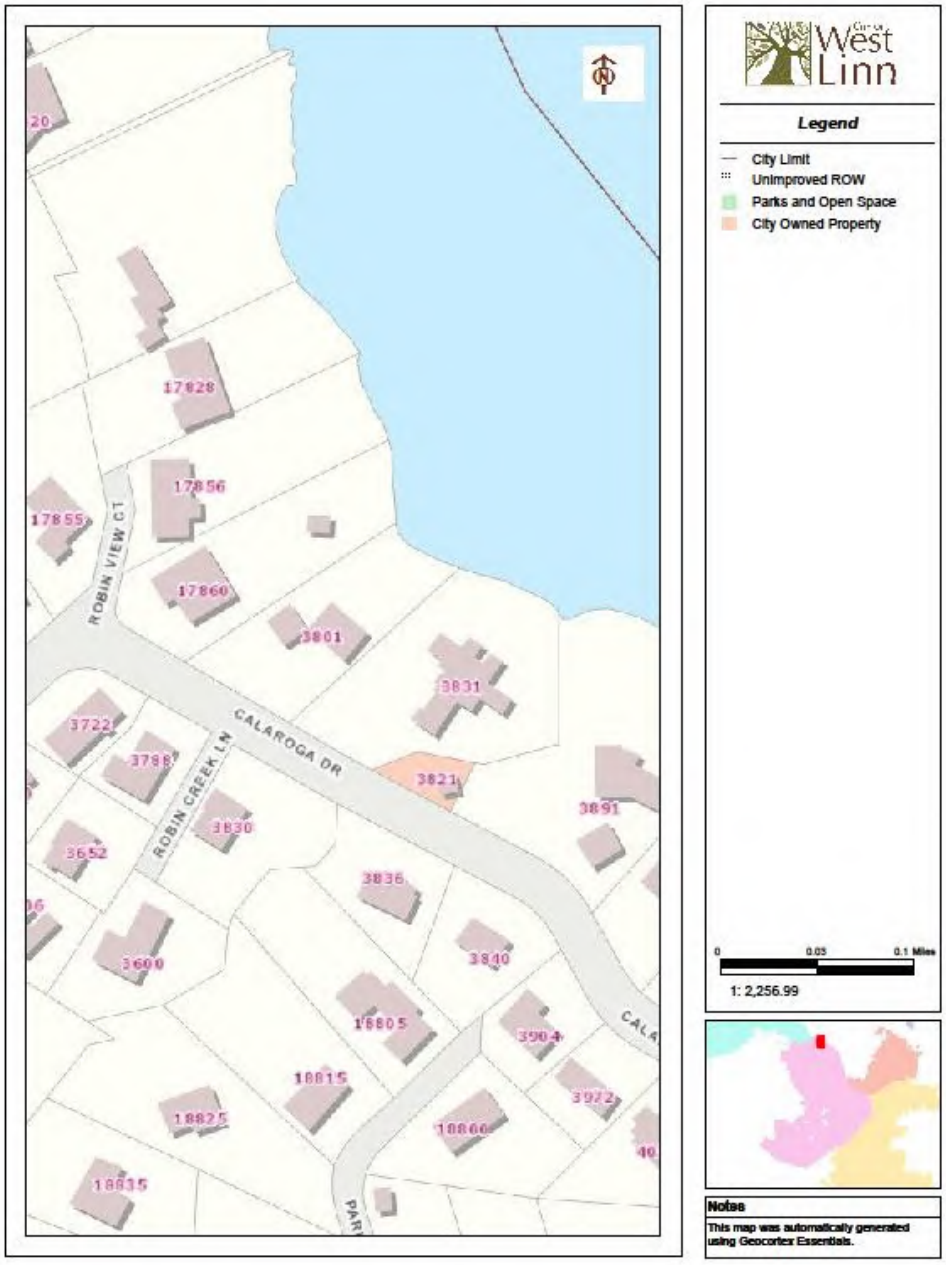

Figure 1. Location Map from City of West Linn GIS.

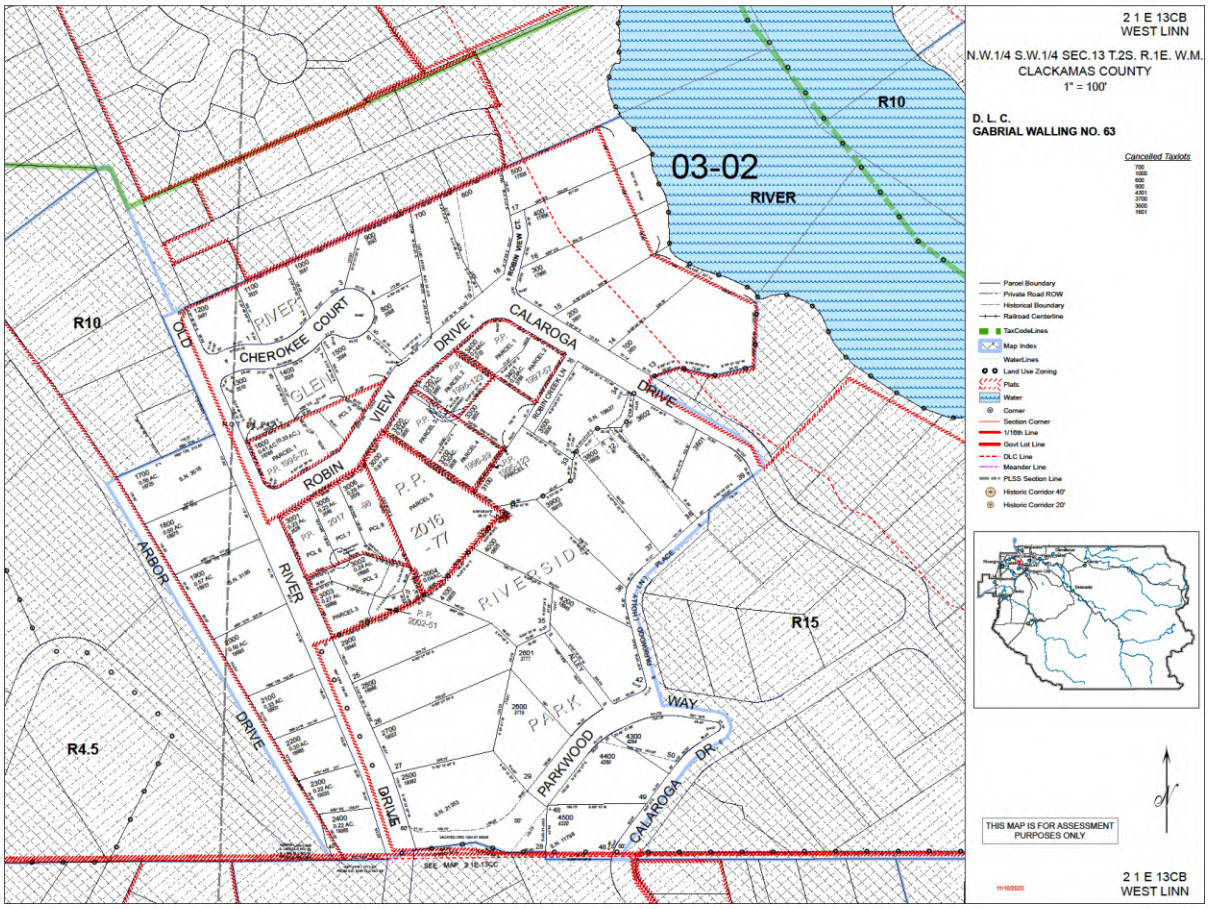

Figure 2. Clackamas County Tax Lot Map.

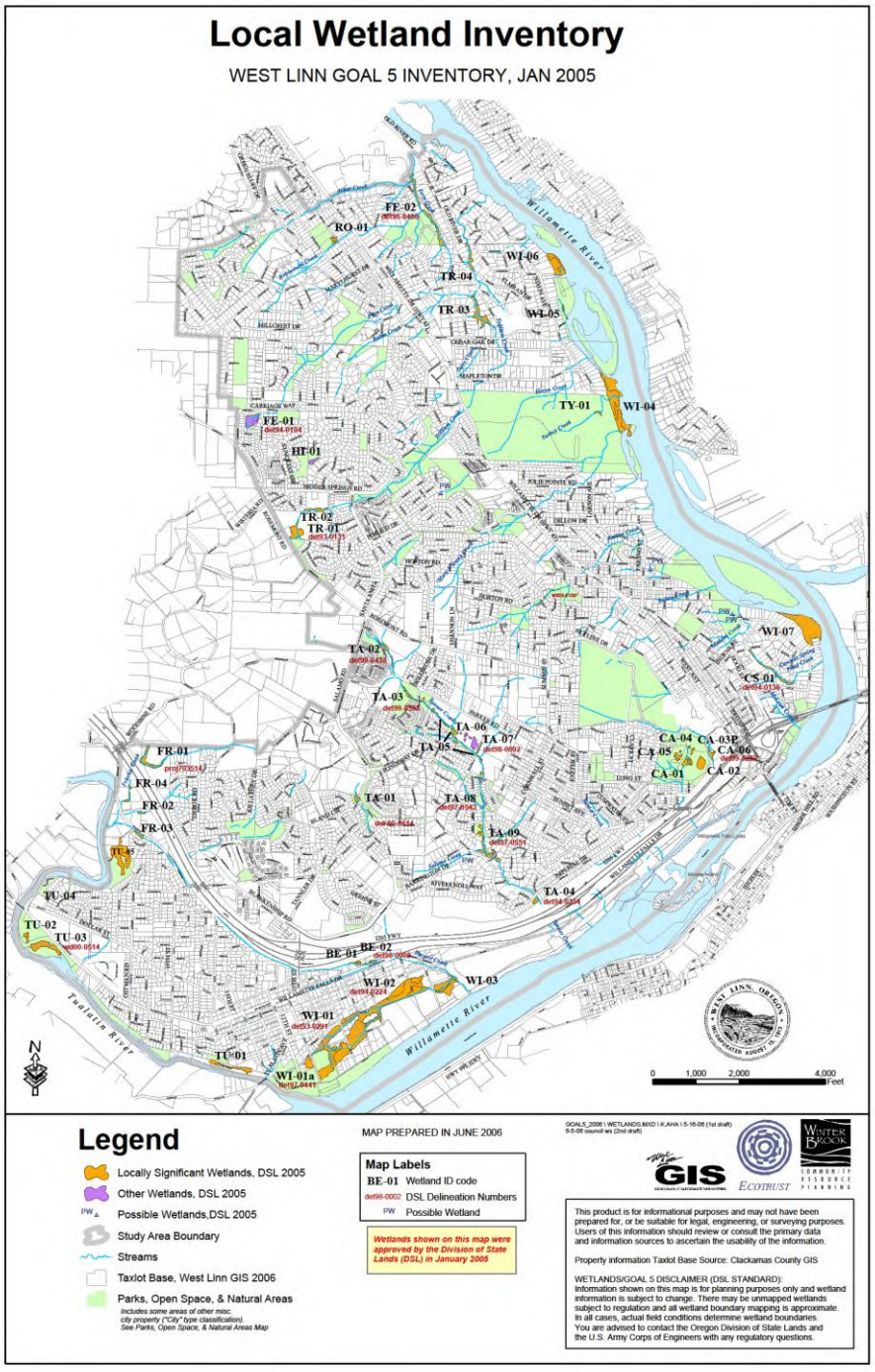

Figure 3a. Local Wetland Inventory Map West Linn.

Figure 3b. National Wetlands Inventory Map.

Figure 4a. Natural Resources Conservation Service (NRCS) Web Soil Survey Map.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
91C	Woodburn silt loam, 8 to 15 percent slopes	0.5	98.9%
W	Water	0.0	1.1%
Totals for Area of Interest		**0.5**	**100.0%**

Figure 4b. Natural Resources Conservation Service (NRCS) Web Soil Survey Map Legend.

Figure 5. Google Earth Aerial Photograph from 06/2021.

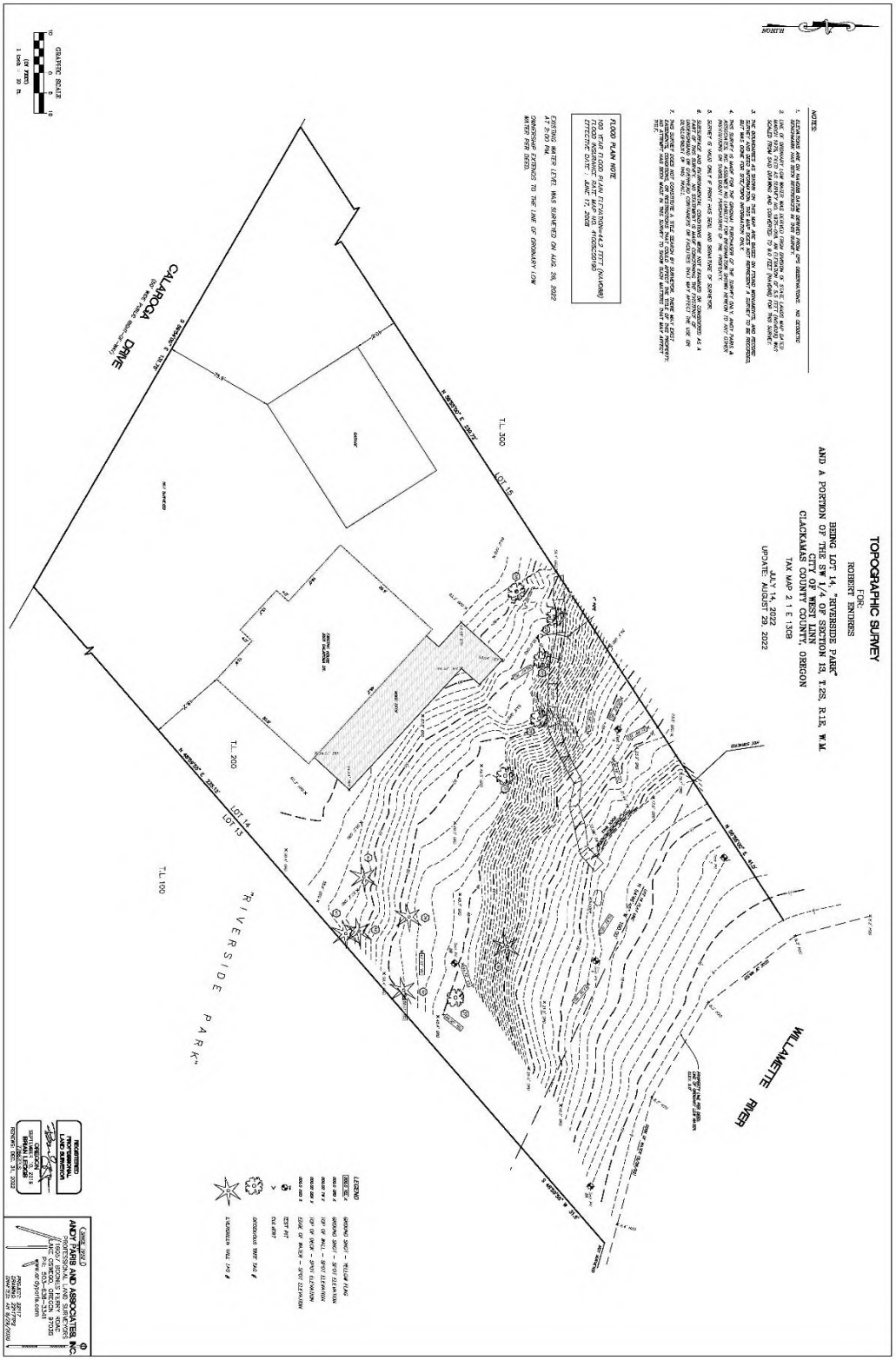

Figure 6. Test Pit Location and Wetland Delineation Map.

Appendix B. Data Forms

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 3801 Calaroga Dr. West Linn, OR 97068 City/County: West Linn/Clackamas Sampling Date: 05/25/22

Applicant/Owner: Robert Endres State: OR Sampling Point: DS-1

Investigator(s): Gus McKinley Section, Township, Range: SEC: 13, T: 2S, R: 1E, TL: 200

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 10

Subregion (LRR): A Lat: 45.396440° Long: -122.637361° Datum: WGS84

Soil Map Unit Name: 91C-Woodburn silt loam, 8 to 15 % slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Hydrophytic vegetation was not present. Hydric soil indicators were not present. Wetland hydrology not present.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15'x15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15'x15')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10'x10')			
1. Geranium lucidum	35	Yes	FACU**
2. Rubus armeniacus	30	Yes	FAC
3. Hedera helix	20	Yes	FACU
4. Triticum aestivum	3		UPL*
5. Danthonia californica	3		FAC
6. Bromus species	1		UPL*
7.			
8.			
9.			
10.			
11.			
	92	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 8

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	33	x 3 =	99
FACU species	55	x 4 =	220
UPL species	4	x 5 =	20
Column Totals:	92 (A)		339 (B)

Prevalence Index = B/A = 3.68

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:
Hyrophytic vegetation not present.
*Assumed UPL.
**Assumed FACU.

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SOIL

Sampling Point: DS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3						Silt loam	No redox
3-10	10YR 3/3	98	5YR 4/6	2	C	M	Silt loam	Prominent contrast
10-15	10YR 3/3	93	5YR 4/6	7	C	M	Silt loam	Prominent contrast

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Boulder/Rock

Depth (inches): 15

Hydric Soil Present? Yes _____ No ✔

Remarks:
Boulder and cobble distributed over the soil. Boulders were present at grade for the majority of the sample plot. Restrictive boulder/rock layer was at 15 inches below grade for the test pit.
Does not meet the indicators for hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology not present.

The plot is located at the toe of the slope adjacent to the river and fits the D2 indicator.

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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 3801 Calaroga Dr. West Linn, OR 97068 City/County: West Linn/Clackamas Sampling Date: 05/25/22

Applicant/Owner: Robert Endres State: OR Sampling Point: DS-2b

Investigator(s): Gus McKinley Section, Township, Range: SEC: 13, T: 2S, R: 1E, TL: 200

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): A Lat: 45.396385° Long: -122.637544° Datum: WGS84

Soil Map Unit Name: 91C-Woodburn silt loam, 8 to 15 % slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Hydrophytic vegetation was not present. Hydric soil indicators were not present. Wetland hydrology not present.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15'x15')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer macrophyllum	55	Yes	FACU
2. Abies grandis	35	Yes	FACU
3.			
4.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15'x15')			
1. Corylus cornuta	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 10'x10')			
1. Hedera helix	15	Yes	FACU
2. Polystichum munitum	10	Yes	FACU
3. Symphoricarpos albus	5		FACU
4. Prosartes trachycarpa	4		FACU
5. Maianthemum racemosum	4		FAC
6. Schizachne purpurascens	1		UPL
7.			
8.			
9.			
10.			
11.			
	39	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 61

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	4	x 3 =	12
FACU species	127	x 4 =	508
UPL species	1	x 5 =	5
Column Totals:	132 (A)		525 (B)

Prevalence Index = B/A = 3.98

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Hyrophytic vegetation not present.

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SOIL

Sampling Point: DS-2b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1		100					Organic	Mulch
1-4	2.5YR 3/2	99	5YR 4/4	1	C	M	Silt loam	Prominent contrast.
4-16	7.5YR 3/3	99	5YR 4/4	1	C	M	Silt loam	Prominent contrast.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:
Soil was disturbed with one inch mulch layer over native soil. Hydric soil not present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology not present.

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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 3801 Calaroga Dr. West Linn, OR 97068 City/County: West Linn/Clackamas Sampling Date: 05/25/22

Applicant/Owner: Robert Endres State: OR Sampling Point: DS-3

Investigator(s): Gus McKinley Section, Township, Range: SEC: 13, T: 2S, R: 1E, TL: 200

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): A Lat: 45.396537° Long: -122.637565° Datum: WGS84

Soil Map Unit Name: 91C-Woodburn silt loam, 8 to 15 % slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____ No ✔	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

Hydrophytic vegetation was present. Hydric soil indicators were not present. Wetland hydrology was present.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15'x15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15'x15')			
1. Populus balsamifera	15	Yes	FAC
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: 10'x10')			
1. Holcus lanatus	7	Yes	FAC
2. Bromus species	5	Yes	UPL*
3. Lotus corniculatus	4		FAC
4. Geranium lucidum	4		FACU**
5. Rubus armeniacus	3		FAC
6. Leucanthemum vulgare	1		FACU
7.			
8.			
9.			
10.			
11.			
	24 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 76

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 = ____	
FACW species ____	x 2 = ____	
FAC species 29	x 3 = 87	
FACU species 5	x 4 = 20	
UPL species 5	x 5 = 25	
Column Totals: 39 (A)	132 (B)	

Prevalence Index = B/A = 3.38

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ 5 - Wetland Non-Vascular Plants[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No ____

Remarks:
Hyrophytic vegetation was present.
*Assumed UPL.
**Assumed FACU.

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SOIL Sampling Point: DS-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100					Sand	No redox
3-11	10YR 3/1	99	5YR 5/6	1	C	M	Sand	Prominent contrast
11-16	10YR 3/3	98	5YR 4/6	2	C	M	Sand	Prominent contrast

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:
Hydric soil not present.
Portion of plot has had soil graded.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ✔ No ____ Depth (inches): 1

Water Table Present? Yes ✔ No ____ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 10

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology was present.
Sample plot was roughly 3 feet from river at the time of investigation with 1 inch of surface water from the Willamette River present in a portion of the plot.

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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 3801 Calaroga Dr. West Linn, OR 97068 City/County: West Linn/Clackamas Sampling Date: 05/25/22

Applicant/Owner: Robert Endres State: OR Sampling Point: DS-4

Investigator(s): Gus McKinley Section, Township, Range: SEC: 13, T: 2S, R: 1E, TL: 200

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): A Lat: 96460° Long: 122.637706° Datum: WGS84

Soil Map Unit Name: 91C-Woodburn silt loam, 8 to 15 % slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____ No ✔	
Wetland Hydrology Present?	Yes _____ No ✔	

Remarks:

Hydrophytic vegetation was not present. Hydric soil indicators were not present. Wetland hydrology was not present.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15'x15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15'x15')			
1. Corylus cornuta	5	Yes	FACU
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 10'x10')			
1. Hedera helix	15	Yes	FAC
2. Rubus armeniacus	15	Yes	FAC
3. Geranium lucidum	15	Yes	FACU**
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 55

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species 30	x 3 = 90
FACU species 20	x 4 = 80
UPL species _____	x 5 = _____
Column Totals: 50 (A)	170 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Hyrophytic vegetation was not present.

**Assumed FACU.

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SOIL

Sampling Point: DS-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silt loam	No redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:
Hydric soil not present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology not present.

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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 3801 Calaroga Dr. West Linn, OR 97068 City/County: West Linn/Clackamas Sampling Date: 08/18/22

Applicant/Owner: Robert Endres State: OR Sampling Point: DS-2a

Investigator(s): Gus McKinley Section, Township, Range: SEC: 13, T: 2S, R: 1E, TL: 200

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 10

Subregion (LRR): A Lat: 45.396435° Long: -122.637257° Datum: WGS84

Soil Map Unit Name: 91C-Woodburn silt loam, 8 to 15 % slopes NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Hydrophytic vegetation was not present. Hydric soil indicators could not be determined due to restricitve boulder/rock layer. Wetland hydrology present.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15'x15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15'x15')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10'x10')			
1. Rubus armeniacus	25	Yes	FAC
2. Hedera helix	20	Yes	FACU
3. Carex lacustris	10		OBL
4. Rubus ursinus	10		FACU
5. Lythrum salicaria	1		OBL
6.			
7.			
8.			
9.			
10.			
11.			
	66	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 24

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	11	x 1 =	11
FACW species		x 2 =	
FAC species	25	x 3 =	75
FACU species	30	x 4 =	120
UPL species		x 5 =	
Column Totals:	66 (A)		201 (B)

Prevalence Index = B/A = 3.12

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Hyrophytic vegetation not present.

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SOIL

Sampling Point: DS-2a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 3/3						Silt loam	No redox
								50% Boulder
								10% Cobble

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Boulder/Rock

Depth (inches): 1

Hydric Soil Present? Yes ✔ No ____

Remarks:
Soil analysis was not possible due to restrictive boulder layer. Hydric soil could not be determined.
NRCS soil map unit is listed as hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No ✔ Depth (inches): ____

Water Table Present? Yes ____ No ✔ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology waspresent.
The plot is located at the toe of the slope adjacent to the river and fits the D2 indicator.
The plot is located in the river in the June 2021 Google Earth Aerial Photograph and fits the C9 indicator.

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Appendix C. Ground Level Color Photographs

Figure 7a. Ground level photograph of cliff on Site between the house and Willamette River facing northeast; DS-1 is located within the toe slope between the cliff and the Willamette River. Flag presence is hard to spot due to vegetation growth. Note the boulders present.

Figure 7b. Ground level photograph of DS-2a facing west.

Figure 7c. Ground level photograph of DS-2b facing east.

Figure 7d. Ground level photograph facing northeast of DS-3 (between the kayaks and the Willamette River) and DS-4 (between the kayaks and the stairway).

Figure 7e. Ground level photograph of DS-3 facing west.

Figure 7f. Ground level photograph of restrictive soil layer at and adjacent to DS-1.

Figure 7g. Ground level photograph of restrictive soil layer at and adjacent to DS-2a.

Appendix D. Additional Tables and Information

Figure 8. Historic Google Earth Aerial Image from July 2001.

TOPOGRAPHIC SURVEY

FOR:
ROBERT ENDRES

BEING LOT 14, "RIVERSIDE PARK"
AND A PORTION OF THE SW 1/4 OF SECTION 13, T.2S, R.1E, W.M.
CITY OF WEST LINN
CLACKAMAS COUNTY COUNTY, OREGON

TAX MAP 2 1 E 13CB

JULY 14, 2022
UPDATE: AUGUST 29, 2022

NORTH

NOTES:

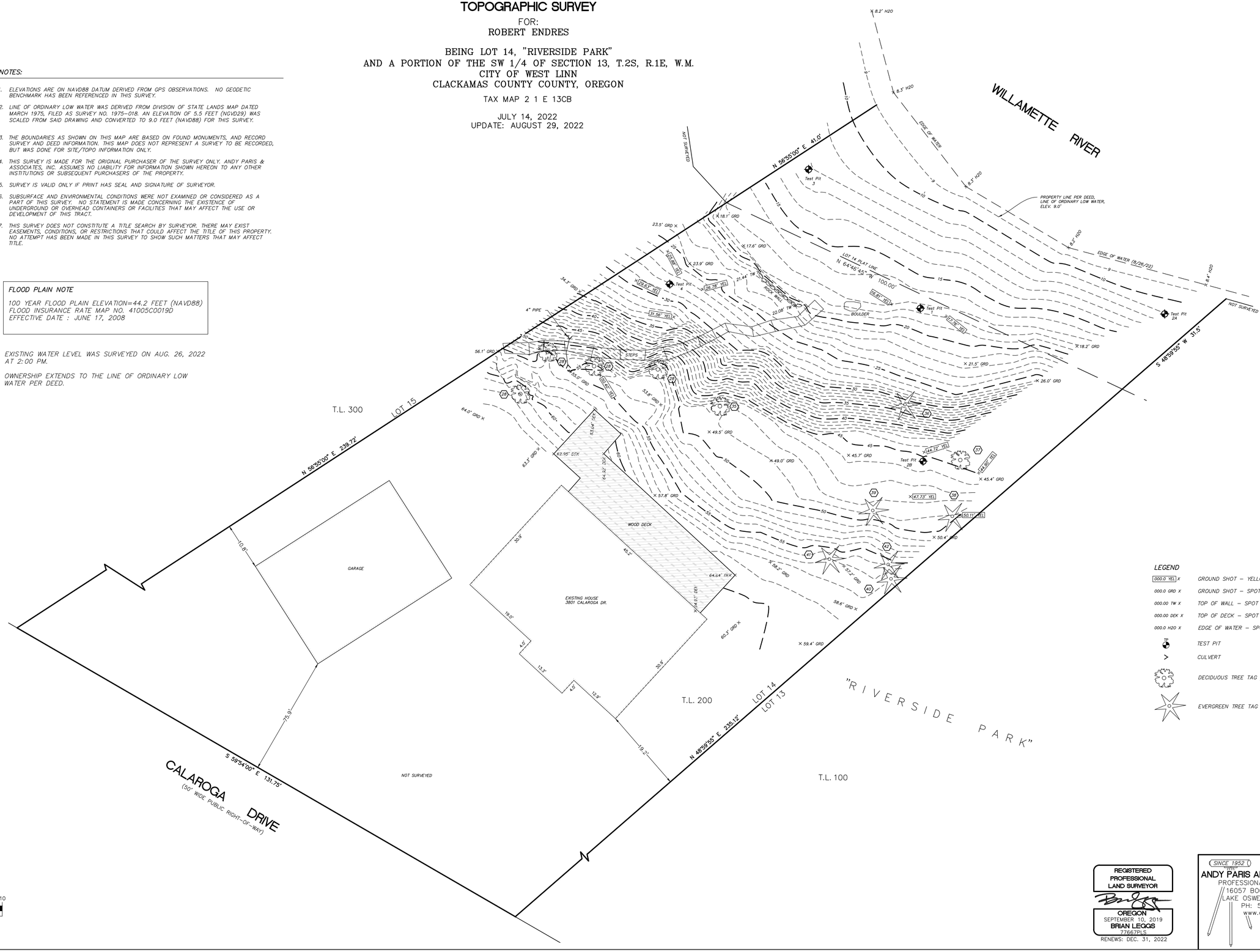
1. *ELEVATIONS ARE ON NAVD88 DATUM DERIVED FROM GPS OBSERVATIONS. NO GEODETIC BENCHMARK HAS BEEN REFERENCED IN THIS SURVEY.*
2. *LINE OF ORDINARY LOW WATER WAS DERIVED FROM DIVISION OF STATE LANDS MAP DATED MARCH 1975, FILED AS SURVEY NO. 1975-018. AN ELEVATION OF 5.5 FEET (NGVD29) WAS SCALED FROM SAID DRAWING AND CONVERTED TO 9.0 FEET (NAVD88) FOR THIS SURVEY.*
3. *THE BOUNDARIES AS SHOWN ON THIS MAP ARE BASED ON FOUND MONUMENTS, AND RECORD SURVEY AND DEED INFORMATION. THIS MAP DOES NOT REPRESENT A SURVEY TO BE RECORDED, BUT WAS DONE FOR SITE/TOPO INFORMATION ONLY.*
4. *THIS SURVEY IS MADE FOR THE ORIGINAL PURCHASER OF THE SURVEY ONLY. ANDY PARIS & ASSOCIATES, INC. ASSUMES NO LIABILITY FOR INFORMATION SHOWN HEREON TO ANY OTHER INSTITUTIONS OR SUBSEQUENT PURCHASERS OF THE PROPERTY.*
5. *SURVEY IS VALID ONLY IF PRINT HAS SEAL AND SIGNATURE OF SURVEYOR.*
6. *SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS TRACT.*
7. *THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY SURVEYOR. THERE MAY EXIST EASEMENTS, CONDITIONS, OR RESTRICTIONS THAT COULD AFFECT THE TITLE OF THIS PROPERTY. NO ATTEMPT HAS BEEN MADE IN THIS SURVEY TO SHOW SUCH MATTERS THAT MAY AFFECT TITLE.*

FLOOD PLAIN NOTE

100 YEAR FLOOD PLAIN ELEVATION=44.2 FEET (NAVD88)
FLOOD INSURANCE RATE MAP NO. 41005C0019D
EFFECTIVE DATE : JUNE 17, 2008

EXISTING WATER LEVEL WAS SURVEYED ON AUG. 26, 2022 AT 2:00 PM.

OWNERSHIP EXTENDS TO THE LINE OF ORDINARY LOW WATER PER DEED.



LEGEND

000.0 YEL x	*GROUND SHOT – YELLOW FLAG*
000.0 GRD x	*GROUND SHOT – SPOT ELEVATION*
000.00 TW x	*TOP OF WALL – SPOT ELEVATION*
000.00 DEK x	*TOP OF DECK – SPOT ELEVATION*
000.0 H20 x	*EDGE OF WATER – SPOT ELEVATION*
TP	*TEST PIT*
>	*CULVERT*
	DECIDUOUS TREE TAG #
	EVERGREEN TREE TAG #

GRAPHIC SCALE
10 0 5 10
(IN FEET)
1 inch = 10 ft.

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
SEPTEMBER 10, 2019
BRIAN LEGGS
77667PLS
RENEWS: DEC. 31, 2022

SINCE 1952
ANDY PARIS AND ASSOCIATES, INC.
PROFESSIONAL LAND SURVEYORS
16057 BOONES FERRY ROAD
LAKE OSWEGO, OREGON 97035
PH: 503-636-3341
www.andyparis.com

PROJECT: 22117
DRAWING: 22117TP2
DRAFTED: AH 8/29/2020

NIDUS Consulting

Data and Maps

3801 Calaroga Dr.

West Linn, OR

June 1, 2022

ryan@nidusconsulting.com 925-980-1256 www.nidusconsulting.com

Methods

Ryan Gilpin (Principal Consultant, Certified Arborist WE10268A, Tree Risk Assessment Qualified) assessed all Oregon white oaks, pacific madrones and pacific dogwoods 6" and greater and all other species 12" and greater in trunk diameter on or with canopy overhanging the property. The following data were collected for each tree:

1. Tree genus and species
2. Trunk diameter (rounded to inches) at 54" height
3. Canopy radius (estimated in 5-foot increments)
4. Tree condition, see table to right based on the *Guide for Plant Appraisal* (Council of Landscape Appraisers 2019). Health, structure and form were assessed independently, and the lowest rating equals the overall condition rating.
5. Suitability for preservation considers future factors affecting the tree's ability to be an asset to the future site.
    - **High**, tree is likely to be an asset of the future site and should be the focus of preservation efforts.
    - **Moderate**, tree may be an asset of the future site and should be considered for preservation.
    - **Low**, tree is unlikely to be an asset to the project and should be considered for removal when near construction.

    Suitability for preservation starts with the current tree condition and includes species specific factors such as:
    - species success in region,
    - species susceptibility to root loss and other construction impacts,
    - typical species longevity, and
    - species invasiveness

    Suitability for preservation also includes factors of the individual tree such as:
    - existing infrastructure around trees,
    - structural features that do not affect stability today but are likely to in the future, and
    - forest stand dynamics as neighboring trees are removed.

	Health	Structure	Form
Excellent	Vigor nearly perfect with little or no twig dieback, discoloration or defoliation.	Strong branch attachments with few or no features affecting tree or branch stability.	Tree shape highly functional and aesthetic in landscape.
Good	Typical vigor with minor twig dieback, defoliation or discoloration.	Good branch attachments with minor and correctable features affecting tree or branch stability.	Tree shape functional and aesthetic in landscape.
Fair	Reduced vigor with moderate twig dieback, defoliation, and/or discoloration.	A single feature significantly affecting or multiple features moderately affecting tree or branch stability that would not be practical to correct or would require multiple treatments over several years.	Tree shape compromises function and/or aesthetics in landscape.
Poor	Compromised vigor with extensive twig and/or branch dieback and defoliation.	A single feature seriously affecting or multiple features significantly affecting tree stability that cannot be corrected.	Tree shape significantly detracts from function and/or aesthetics to a significant degree.
Very Poor	Poor vigor with little live foliage or branches.	Multiple features seriously affecting tree stability that cannot be corrected.	Tree shape provides little to no function and is visually unappealing in landscape.
Dead	No live foliage or branches	Tree failed.	-

Tree Data

NIDUS Consulting

Tree #	Species	Trunk Diameter (inches)	Canopy Radius (feet)	Status	Condition			Suitability for Preservation
20	*Acer macrophyllum*	20	10	Protected off-site	Fair	Fair health Good structure Good form	Moderate branch dieback Multiple trunks arise from 40 feet Wide spreading crown	Moderate
21	*Acer macrophyllum*	24,21	30	Protected	Fair	Fair health Fair structure Good form	Moderate branch dieback Codominant trunks, swollen base, decay likely Dominant tree	Moderate
22	*Acer macrophyllum*	18	20	Protected	Very poor	Fair health Very poor structure Poor form	Dense crown Topped, poorly attached regrowth One sided crown south	Low
23	*Abies grandis*	26	15	Protected	Good	Good health Good structure Good form	Dense, green crown Strong central leader, minor girdling root Crown one sided east	Moderate On edge of slope
24	*Acer macrophyllum*	24,24	30	Protected	Fair	Good health Fair structure Fair form	Dense, green crown Codominant trunks, swollen base, decay likely Crown one sided west	Moderate
25	*Acer macrophyllum*	33,12	35	Protected	Fair	Good health Fair structure Good form	Dense, green crown Codominant trunks, swollen base, decay likely Dominant tree	Moderate
26	*Acer macrophyllum*	23	25	Protected	Fair	Good health Good structure Fair form	Dense, green crown Codominant trunks Crown one sided east	Moderate
27	*Pseudotsuga menziesii*	35	25	Protected off-site	Fair	Good health Good structure Fair form	Dense, green crown, difficult to see top Strong central leader Crown one sided west	Moderate
28	*Acer macrophyllum*	16	15	Protected	Fair	Good health Fair structure Fair form	Minor dieback Swollen base, decay likely Crown one sided east	Moderate
29	*Pseudotsuga menziesii*	30	5	Protected off-site	Fair	Good health Good structure Fair form	Dense, green crown, difficult to see top Strong central leader Crown one sided west	Moderate

Tree Data

Tree #	Species	Trunk Diameter (inches)	Canopy Radius (feet)	Status	Condition			Suitability for Preservation
30	*Acer macrophyllum*	14	1	Protected off-site	Poor	Fair health Poor structure Poor form	Moderate branch dieback Lost top, poorly attached regrowth Supressed	Low
31	*Acer macrophyllum*	19	25	Protected	Fair	Good health Good structure Fair form	Dense, green crown Strong Central leader Crown one sided west	Moderate
32	*Acer macrophyllum*	30	25	Protected	Poor	Fair health Very poor structure Poor form	Moderate branch dieback Extensive basal cavity, trunk bows Crown one sided north	Low
33	*Acer macrophyllum*	18	10	Protected	Very poor	Poor health Very poor structure Poor form	Dieback & epicormic sprouting Large cavity at 15 feet Supressed	Low
34	*Acer macrophyllum*	22	15	Protected	Poor	Fair health Fair structure Poor form	Minor dieback Multiple trunks arise from 35 feet Supressed	Low
35	*Acer macrophyllum*	30	20	Protected	Very poor	Fair health Very poor structure Fair form	Moderate branch dieback Tree splitting down middle with decay Two dimensional crown	Low
36	*Pseudotsuga menziesii*	30	20	Protected	Fair	Good health Good structure Fair form	Dense, green crown Strong central leader Crown one sided north	Moderate
37	*Acer macrophyllum*	34	25	Protected	Fair	Good health Fair structure Good form	Dense, green crown Codominant trunks with response growth Dominant tree	Moderate
38	*Abies grandis*	13	10	Protected	Poor	Poor health Excellent structure Poor form	Significant dieback Strong central leader One sided east	Low
39	*Abies grandis*	16	10	Protected	Poor	Fair health Good structure Fair form	Moderate branch dieback Strong central leader, girdling root Narrow form, interior tree	Low

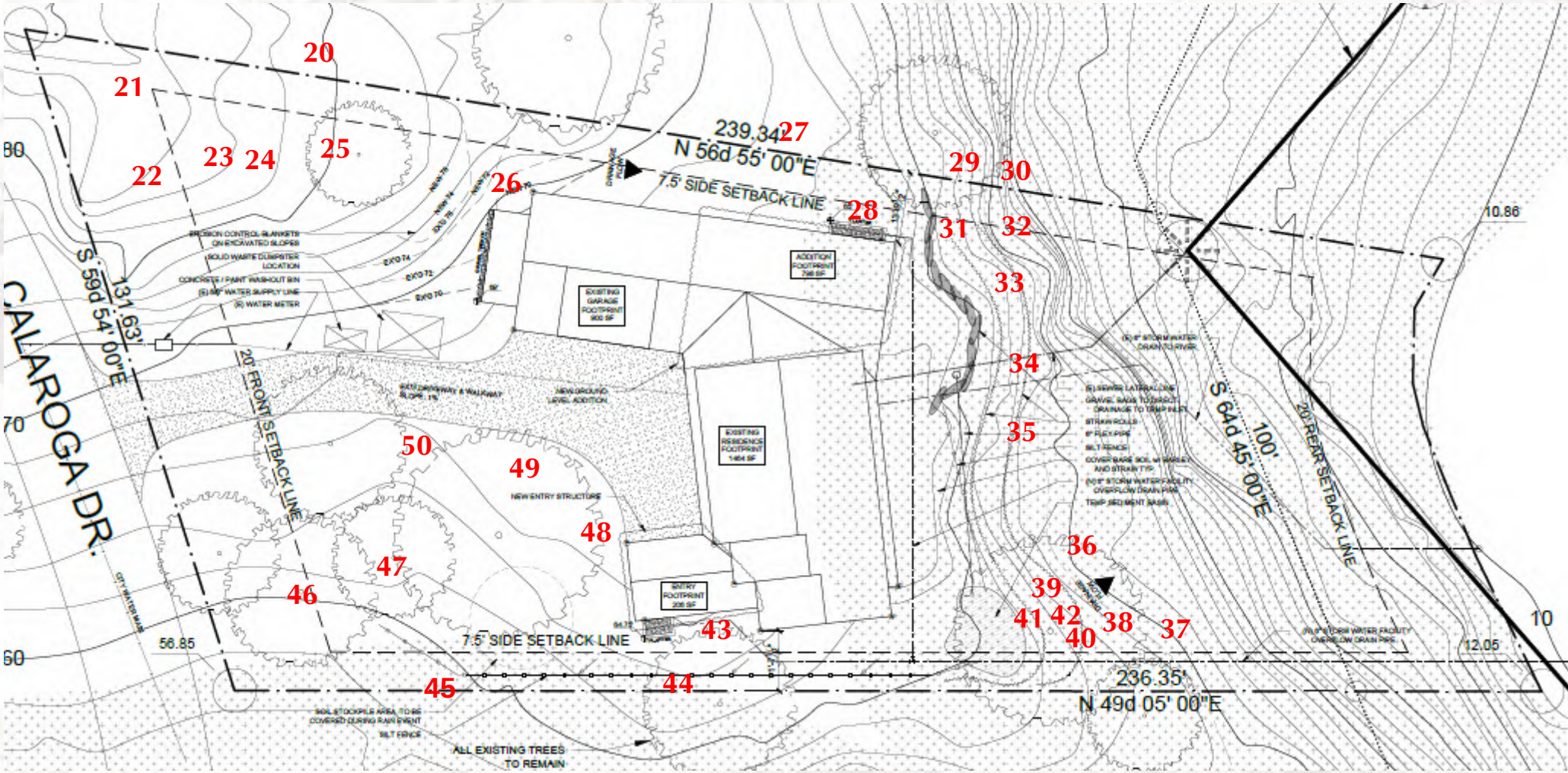
Tree Data

Tree #	Species	Trunk Diameter (inches)	Canopy Radius (feet)	Status	Condition			Suitability for Preservation
40	*Pseudotsuga menziesii*	43	25	Protected	Good	Good health Good structure Good form	Dense, green crown, difficult to see top Trunk sweeps at 10 feet Dominant tree	Moderate Mature/old
41	*Thuja plicata*	17	10	Protected	Fair	Excellent health Fair structure Good form	Dense, green crown Trunk sweeps north Narrow form	Low
42	*Thuja plicata*	15	5	Protected	Fair	Fair health Good structure Fair form	Minor dieback Strong central leader Narrow, upright form	Low Too close to tree #40
43	*Abies grandis*	33	15	Protected	Poor	Poor health Fair structure Fair form	Severe branch dieback Strong central leader Narrow form	Low
44	*Pseudotsuga menziesii*	18	15	Protected Property line	Good	Good health Good structure Good form	Dense green crown Strong central leader Typical, upright form	High
45	*Abies grandis*	18	10	Protected Property line	Fair	Fair health Good structure Fair form	Moderate branch dieback Strong central leader Crown one sided east	Moderate
46	*Abies grandis*	23	20	Protected	Fair	Fair health Good structure Fair form	Thin crown Strong central leader Typica, upright form	Moderate
47	*Abies grandis*	32	16	Protected	Good	Good health Good structure Good form	Dense crown Strong central leader Narrow form	High
48	*Tsuga heterophylla*	19	20	Protected	Good	Good health Good structure Good form	Dense, green crown Strong central leader Typica, upright form	High
49	*Thuja plicata*	22	20	Protected	Fair	Good health Good structure Fair form	Dense, green crown strong central leader Crown one sided east	Low Too hot and dry

Tree Data

Tree #	Species	Trunk Diameter (inches)	Canopy Radius (feet)	Status	Condition			Suitability for Preservation
50	*Thuja plicata*	24	20	Protected	Fair	Fair health Good structure Fair form	Minor dieback Strong central leader Short, wide form	Low Too hot and dry

Tree Map



Legend

\# Tree number

Basemap: *Site Plan* created by Steel & Timber dated May 10, 2022.
Tree locations are approximate.

Photos

Photos

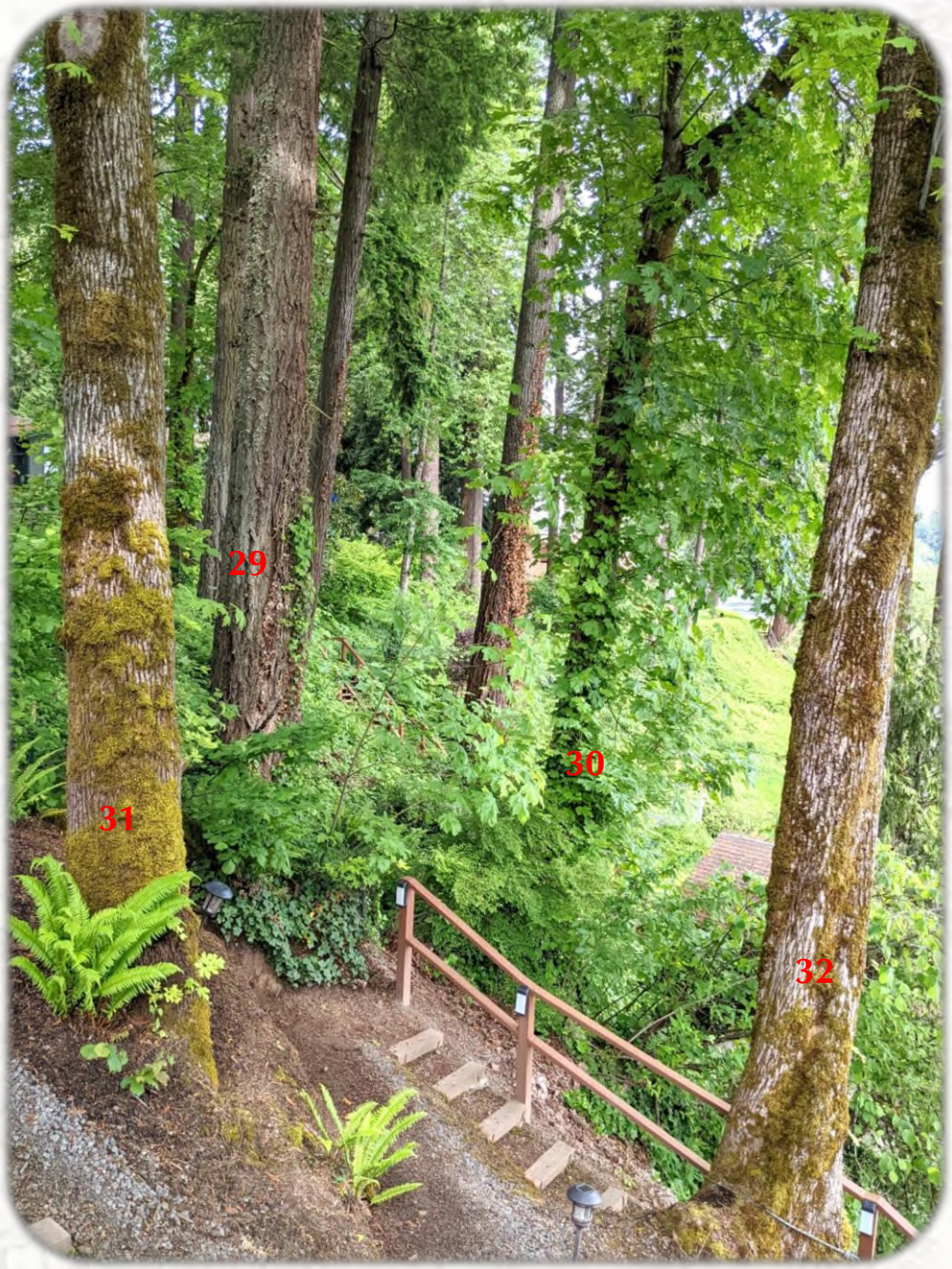


Exhibit I: Verification of Property Ownership

FIRST AMERICAN - 3432566 - HW

After recording return to:
Robert Endres and Robin Endres
450 Main St
Oregon City, OR 97045

Until a change is requested all tax statements shall be sent to the following address:
Robert Endres and Robin Endres
450 Main St
Oregon City, OR 97045

File No.: 7013-3432566 (WH)
Date: March 26, 2020

THIS SPACE RESERVED FOR RECORDER'S USE

Clackamas County Official Records
Sherry Hall, County Clerk

2020-031714

05/01/2020 01:46:02 PM

D-D Cnt=1 Stn=73 LESLIE
$15.00 $16.00 $10.00 $62.00

$103.00

STATUTORY WARRANTY DEED

Berg Properties California, LLC, a Nevada limited liability company, Grantor, conveys and warrants to **Robert Endres and Robin Endres, as tenants by the entirety** , Grantee, the following described real property free of liens and encumbrances, except as specifically set forth herein:

See Legal Description attached hereto as Exhibit A and by this reference incorporated herein.

Subject to:

1. Covenants, conditions, restrictions and/or easements, if any, affecting title, which may appear in the public record, including those shown on any recorded plat or survey.

The true consideration for this conveyance is **$840,000.00.** (Here comply with requirements of ORS 93.030)

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

Dated this 1st day of May, 20 20.

Berg Properties California, LLC, a Nevada limited liability company

By: _____
Name: Arthur H Berg
Title: Manager

STATE OF Oregon)
)ss.
County of Clackamas)

This instrument was acknowledged before me on this 1st day of May, 2020 by Arthur H Berg as Manager of Berg Properties California, LLC, on behalf of the limited liability company.

OFFICIAL STAMP
JENNIE MARIE PEAKES
NOTARY PUBLIC-OREGON
COMMISSION NO. 965137
MY COMMISSION EXPIRES AUGUST 08, 2021

Jennie Peakes
Notary Public for State of Oregon
My commission expires: 8-8-21

EXHIBIT A

LEGAL DESCRIPTION: Real property in the County of Clackamas, State of Oregon, described as follows:

Lot 14, RIVERSIDE PARK, in the City of West Linn, County of Clackamas and State of Oregon.

TOGETHER WITH a strip of land lying between the Northeasterly line of said Lot 14 and the low water mark on the left bank of the Willamette River, bounded by extensions of the Northwesterly and Southeasterly lines of said Lot 14.