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 — 8-30-22

Property owner's signature — 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.

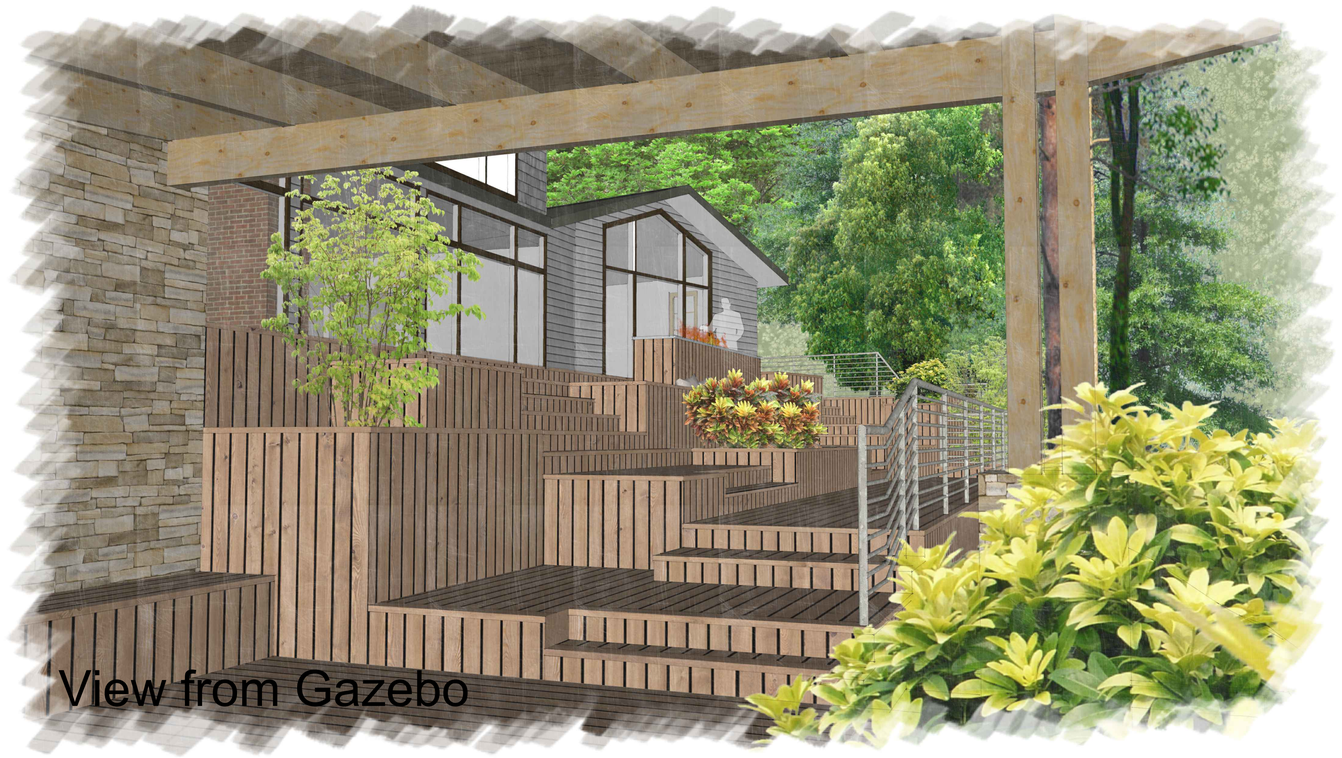
In terms of landscaping, we have utilized an asymmetrical tiered planter system that allows bushes and small trees to be planted all around the new porch structure which keeps nature in very close proximity to the livable area of this porch. The new planter's combined area is 493 SF. No additional landscaping 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.

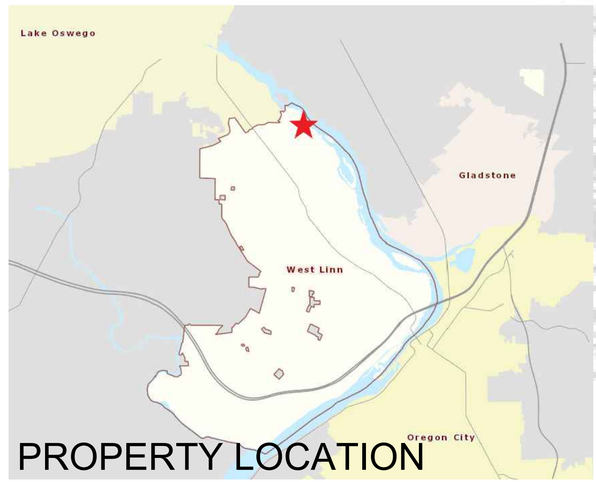
Endres Residence Porch Addition

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

80 70 60 50 40 30 20 10

7.5' SIDE SETBACK LINE
239.34'
N 56d 55' 00"E
DRAINAGE FLOW
UPPER PORCH
BUILT IN JACUZZI
WOOD PLANTER
65'
PLANTER
10.86
EROSION CONTROL BLANKETS ON EXCAVATED SLOPES
SOLID WASTE DUMPSTER LOCATION
CONCRETE / PAINT WASHOUT BIN
(E) 5/8" WATER SUPPLY LINE
(E) WATER METER
GRAVEL TRENCH
69'
WOOD PLATFORM/WALKWAY
BUILT IN BENCH
WOOD STAIRS TO WATER
(E) 6" STORM WATER DRAIN TO RIVER
(N) STEEL PILONS
(N) 10' x 30' BOAT DOCK
(N) RAMP TO DOCK
8'-5 3/4"
14'-3 3/4"
20' FRONT SETBACK LINE
EX'G DRIVEWAY & WALKWAY SLOPE: 1%
(N) GAS FIREPIT
EX'G RESIDENCE
S 59d 54' 00"E
131.63'
CITY WATER MAIN
CALAROGA DRIVE
64'-7.5"
PLANTER
7.5' SIDE SETBACK LINE
(N) GAZEBO
56.85
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
DRAINAGE FLOW
12.05
APPROXIMATE WATERLINE BASED ON WEST LINN GIS
0
50 40 30 20 10
FEMA 100 YR FLOOD LINE

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

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

N

1 SITE PLAN

0 10 20 50 75

General Notes

No.	Revision/Issue	Date

Firm Name and Address

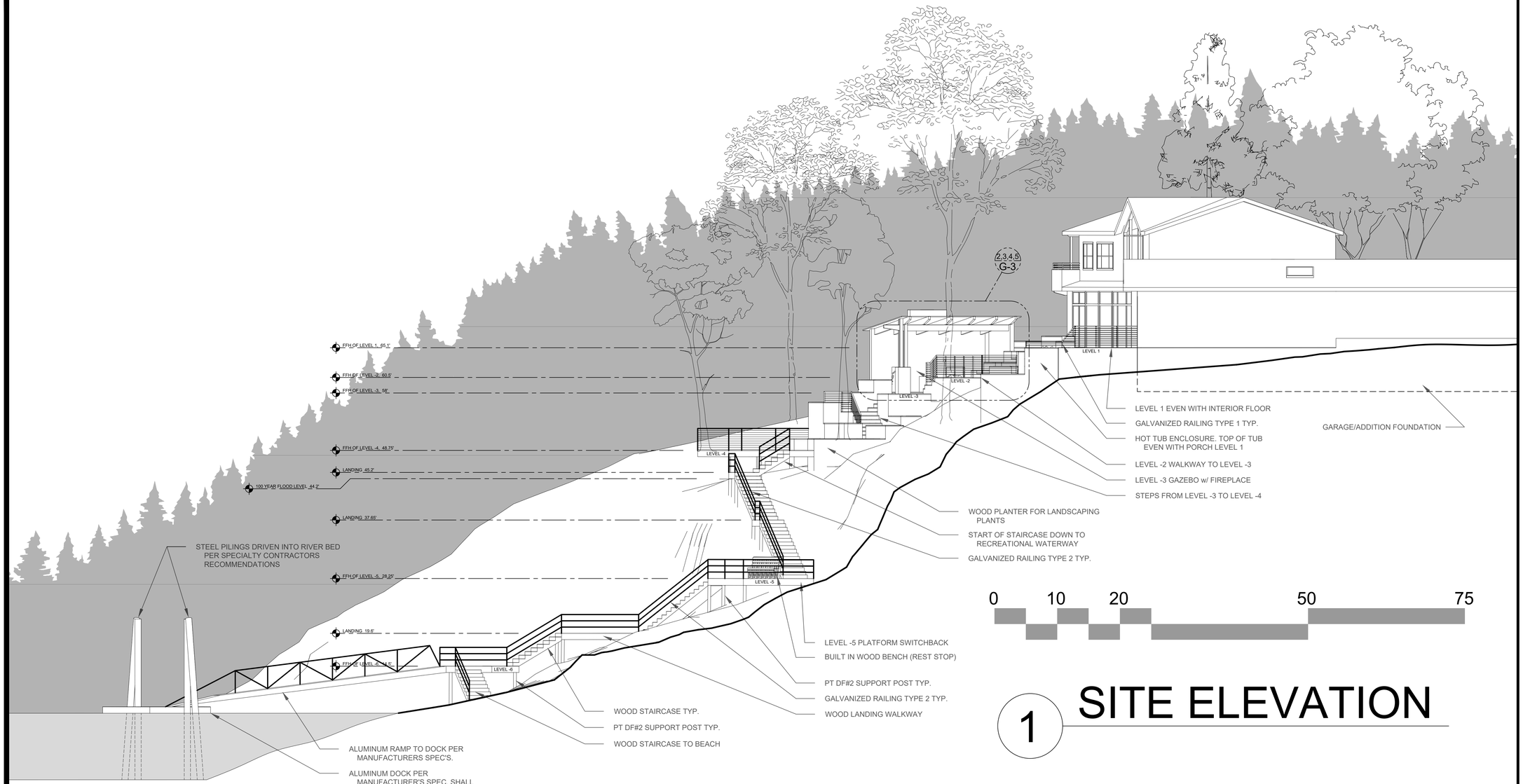
STEEL & TIMBER
1661 SE 2ND ST.
ASTORIA, OR 97103

DRAWN BY: SC

Project Name and Address

ENDRES RESIDENCE
3801 CALAROGA DR.
WESTLINN, OR 97068

Project: 21-05-05	Sheet: G-2
Date: 8/28/22	
Scale: 3/32" = 1'	

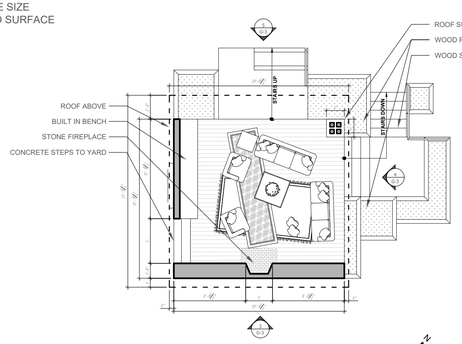


0 10 20 50 75

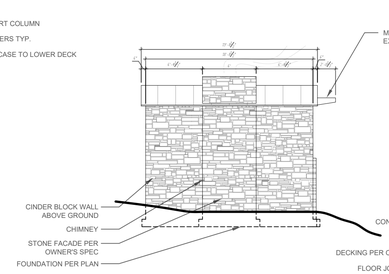
1 SITE ELEVATION

FLOOD PLAIN NOTE:

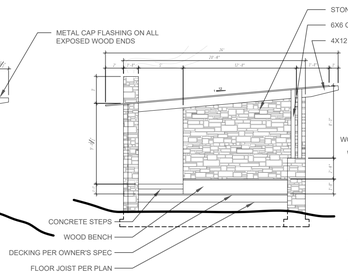
100 YEAR FLOOD PLAIN ELEVATION = 44.2 FEET
FLOOD INSURANCE RATE MAP NO. 41005C0019D
EFFECTIVE DATE : JUNE 17, 2008



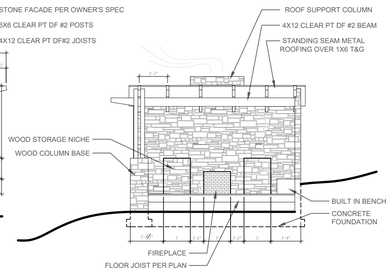
2 GAZEBO PLAN VIEW



3 NORTH EAST ELEVATION



4 NORTH EAST ELEVATION



5 NORTH EAST ELEVATION

General Notes

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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).

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Appendix A. Maps

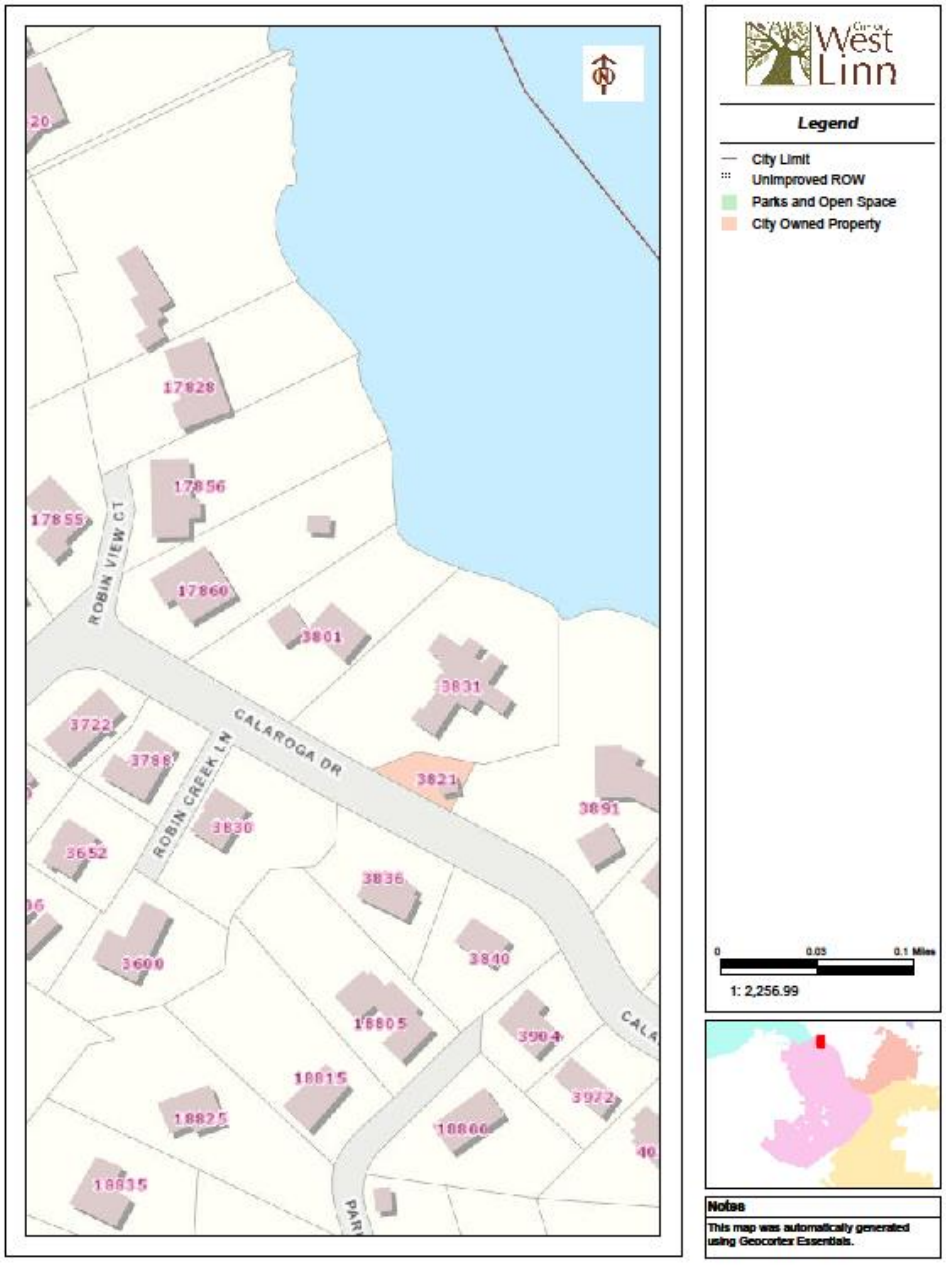

Figure 1. Location Map from City of West Linn GIS.

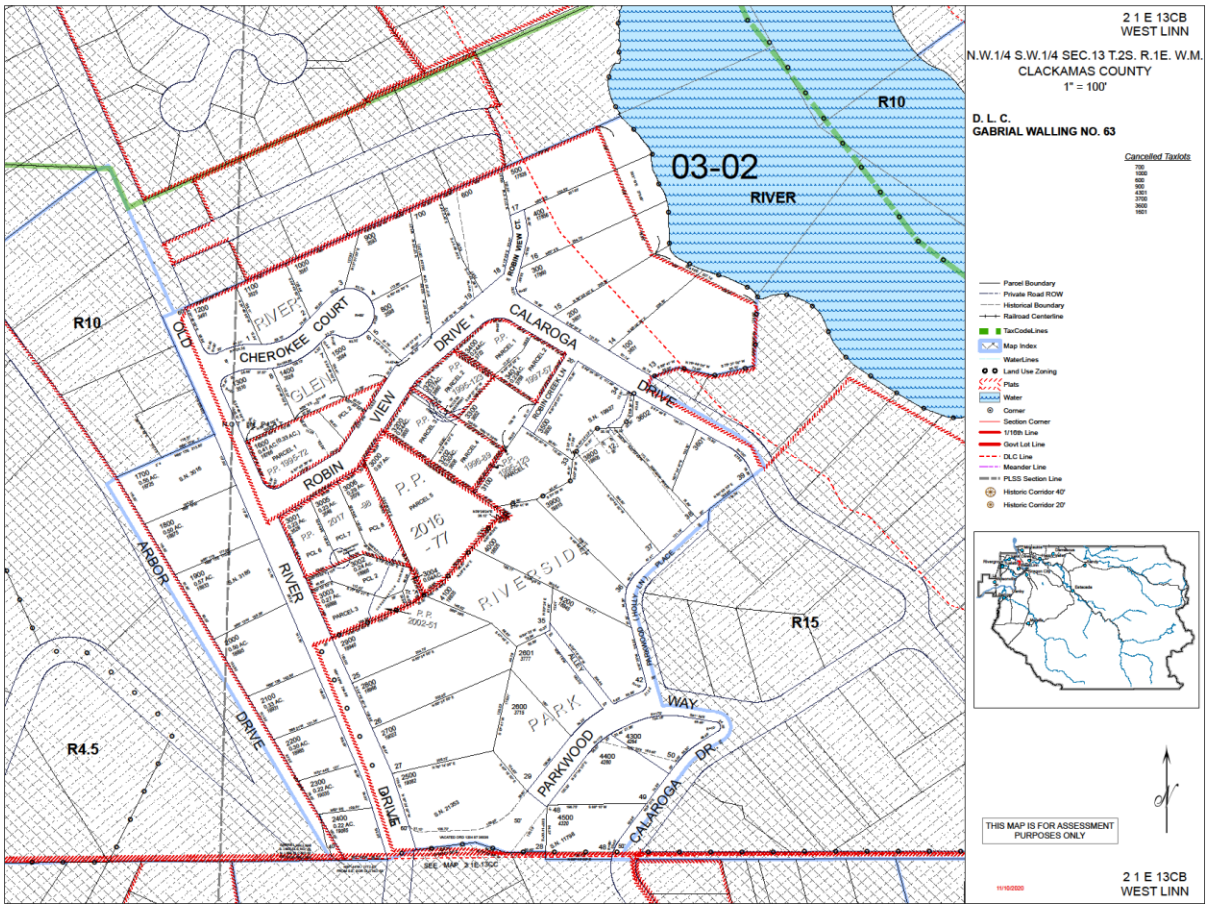

Figure 2. Clackamas County Tax Lot Map.

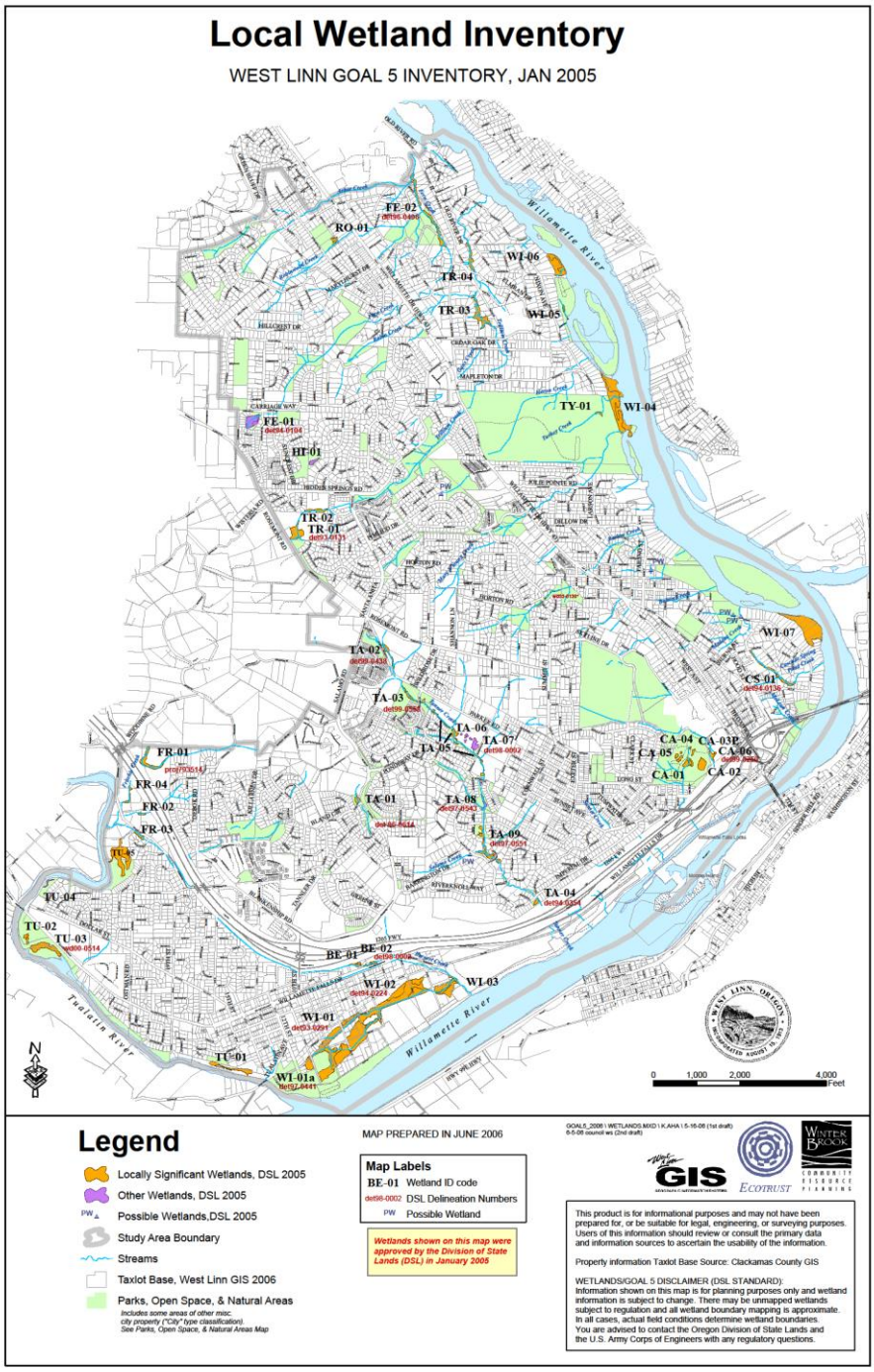

Figure 3a. Local Wetland Inventory Map West Linn.

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.

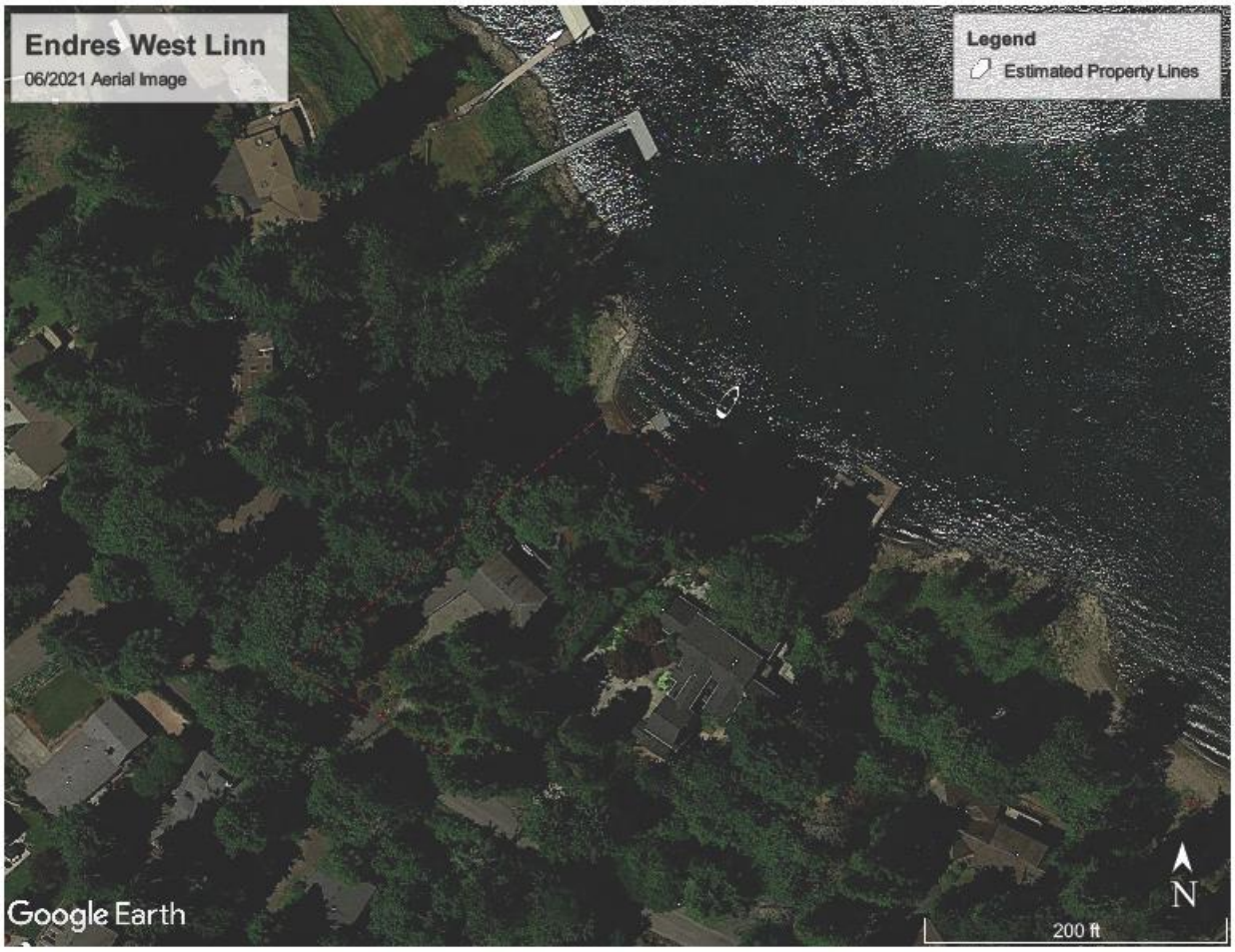

Figure 5. Google Earth Aerial Photograph from 06/2021.

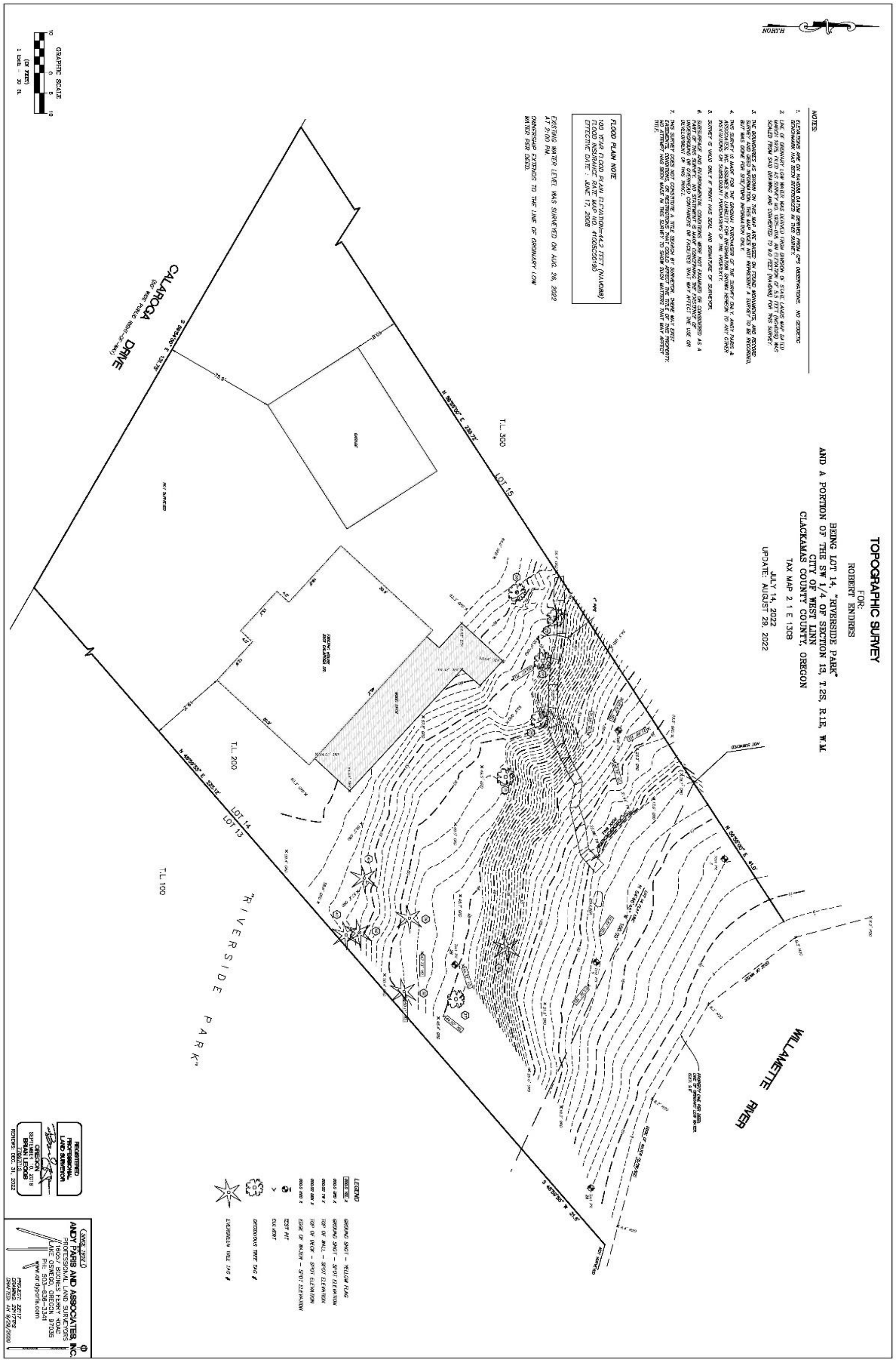

Figure 6. Test Pit Location and Wetland Delineation Map.

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.

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.

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

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)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features 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.

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-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.

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:

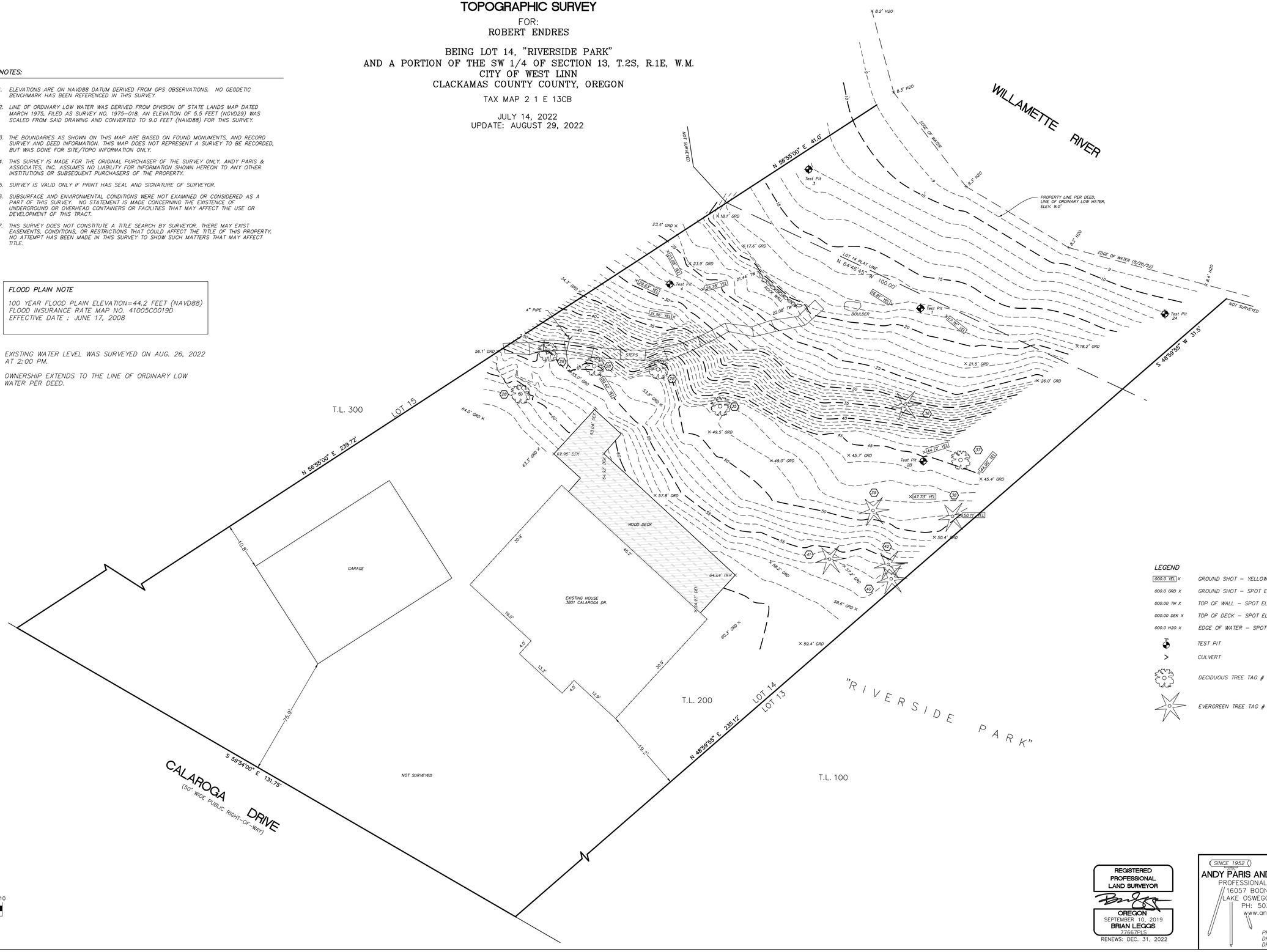
1. *ELEVATIONS ARE ON NAVD88 DATUM DERIVED FROM GPS OBSERVATIONS. NO GEODETIC BENCHMARK HAS BEEN REFERENCED IN THIS SURVEY.*
2. *LINE OF ORDINARY LOW WATER WAS DERIVED FROM DIVISION OF STATE LANDS MAP DATED MARCH 1975, FILED AS SURVEY NO. 1975-018. AN ELEVATION OF 5.5 FEET (NGVD29) WAS SCALED FROM SAID 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 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
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PROJECT: 22117
DRAWING: 22117TP2
DRAFTED: AH 8/29/2020

NIDUS Consulting

Data and Maps

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June 1, 2022

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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

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

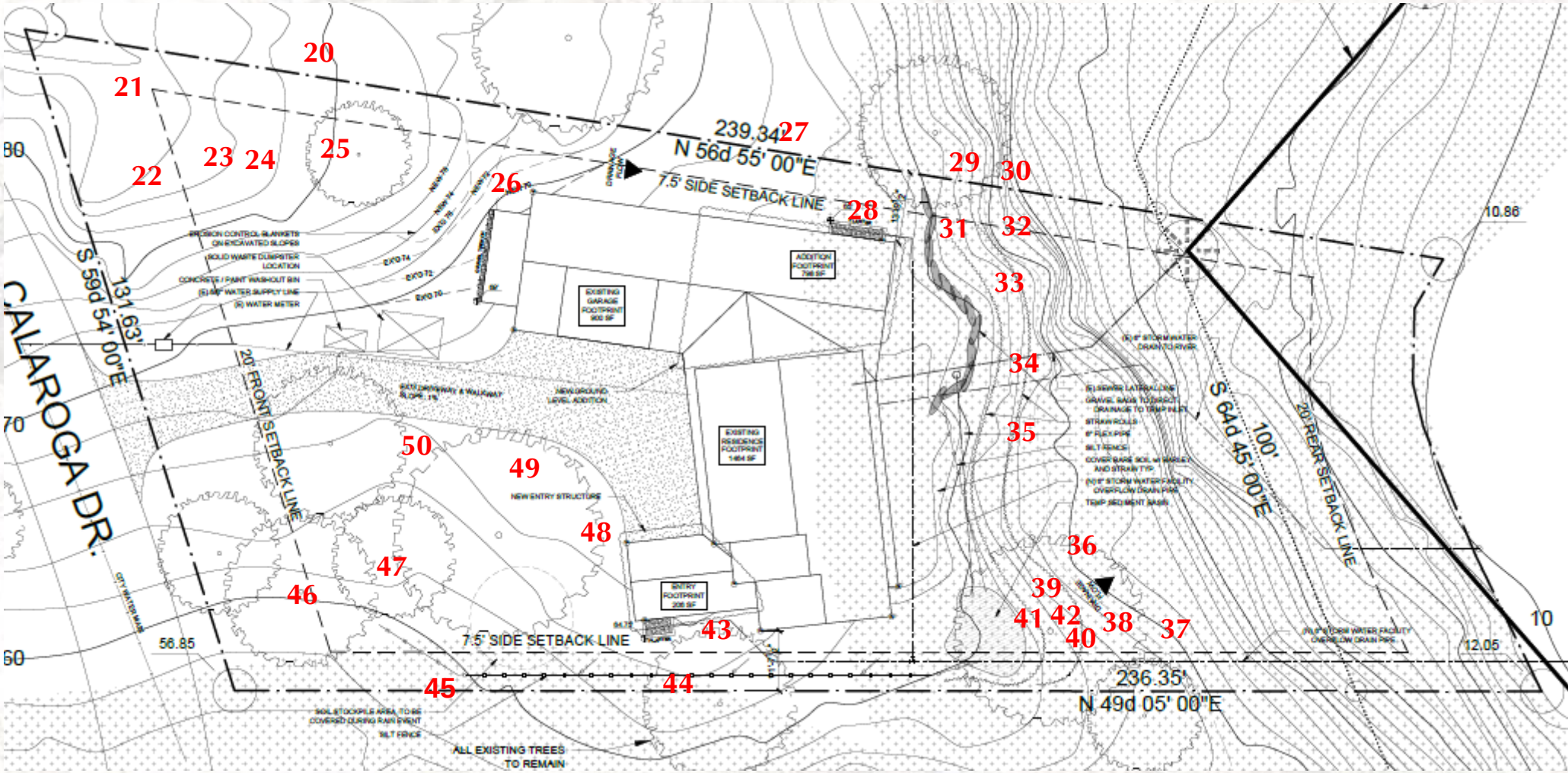
Tree Data

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