

15661 SE 11th St

0 128 255

Scale 1: 1,530 Feet

Map Generated on: 01/20/2026

The City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on an "as is" basis and disclaims all warranties.

Land Use Application 1732922
15661 SE 11th St, Bellevue, WA 98008**

Project Description

The project includes construction of a new rear-yard deck and installation of an aluminum pergola above the deck to enhance outdoor living space for the existing single-family residence.

Scope of Work

1. Deck Construction

- Build a new wood-framed deck at the rear of the home.
- Use pressure-treated lumber for framing with beams, joists, and posts sized per structural design.
- Install footings per structural plans.
- Finish the deck surface with composite or exterior-rated wood decking.
- Install guardrails and handrails where required.

2. Aluminum Pergola

- Install an aluminum pergola system mounted on or integrated with the new deck per manufacturer specs and engineered drawings.
- Structure will have motorized louvers to provide rain and shield on demand.

Purpose

The improvements provide functional outdoor space while maintaining the residential use of the property.

Standard Report

Estimate ID:	ALLENDE JOSE M + UTKIN LYDIA
Property Owner:	ALLENDE JOSE M + UTKIN LYDIA
Address:	15661 SE 11TH ST
City:	BELLEVUE, 98008
State/Province:	WA
ZIP/Postal Code:	98008
Surveyed By:	RUSLAN B.
Survey Date:	07/30/2025

Single-family Residence		Floor Area:	1,265
Effective Age:	N/A	Quality:	3
Good			
Cost As Of:	07/30/2025	Condition:	Good
Style:	Two Story		
Exterior Wall:	Frame, Lap Siding 100%		
Plumbing Fixtures:	N/A		

	SF	Cost	Total
Deck Addition	312	$35,000.00	
Pergola Addition	312	$55,000.00	
TOTAL:			$90,000.00

DECK REMODEL & PERGOLA ADDITION
DESIGN SET
12/26/24

A L
DRAFTING
12527 SE 172nd Place,
Renton, WA 98058
P (206) 412-4173
AVLDRAFTING.COM

DESIGN CONSULTANT

DECK REMODEL

& PERGOLA ADDITION

15661 SE 11TH ST
BELLEVUE, 98008

SUBMITTAL DRAWINGS
DATE DRAWN:
12/26/24

REVISION DATE:

2
REV - 2 6-7-2025
25_100110_BR_Marked_Up_Plans_3-14-2025_25-100110_BR_(Revision_Request_2nd_Review)

3
REV - 3 7-3-2025
25_100110_BR_Marked_Up_Plans_7-10-2025_25-100110_BR_(Revision_Request_3rd_Review_Letter)

24x36 ARCH D

A0.00
SHEET

ABBREVIATIONS

A
AC Architectural Concrete
AV Audio Visual
ACST Acoustical
ACT Acoustical Ceiling Tile
AD Area Drain
ADDL Additional
ADJ Adjacent
ADR Access Door
AF Access Floor
AFF Above Finished Floor
AGGR Aggregate
AHU Air Handling Unit
ALT Alternate
ALUM Aluminum
ANOD Anodized
APPROX Approximate(ly)
APT Apartment
ARCH Architect(ural)
AUTO Automatic
AUX Auxiliary
AVG Average

B
BO Bottom of
BD Board
BEV Beveled
BG Bumper Guard
BLDG Building
BLKG Block(ing)
BM Beam
BMK Benchmark
BOC Bottom of Curb
BR Bedroom
BRK Brick
BRZ Bronze
BSMT Basement
BS Brass
BTU British Thermal Unit(s)

C
CAP Capacity
CB Catch Basin
CCTV Closed Circuit Television
CFMF Cold Formed Metal Framing
CFM Cubic Feet Per Minute
CG Corner Guard(s)
CI Cast Iron
CJ Control Joint
CL Center Line
CLG Ceiling
CLG HT Ceiling Height
CLO Closet
CLR OPNG Clear Opening
CMU Concrete Masonry Unit(s)
CO Cleanout
COL Column
CONC Concrete
CONF Conference
CONN Connect(ion)
CONSTR Construction
CONT Continuous / Continue
CONV Convector
CORR Corridor
CPT Carpet(ed)
CSK Countersink / Countersunk
CSWK Casework
CT Ceramic Tile
CTR Center(ed)
CU Cubic
CW Cold Water

E
EA Each
EC Exposed Construction
EEWS Emergency Eye Wash Shower
EFTR Existing Finish to Remain
EIFS Exterior Insulated Finish System
EJ Expansion Joint
EL Elevation (Grade)
ELAST Elastomeric
ELEC lectric(al)
ELEC CL Electric Closet
ELEV Elevator
ELEV Elevation (Bldg)
EM Entrance Mat
EMER Emergency
ENCL Enclosure / Enclose(d)
ENTR Entrance
EOS Edge of Slab
EQ Equal
EQUIP Equipment
ESCAL Escalator
ETR Existing to Remain
EW Each Way
EWC Electric Water Cooler
EXH Exhaust
EXIST Existing
EXP Exposed
EXPN Expansion
EXT Exterior

F
F Fahrenheit
FA Fire Alarm
FAAP Fire Alarm Annunciator Panel
FAB Fabric
FD Floor Drain
FDTN Foundation
FE Fire Extinguisher
FEC Fire Extinguisher Cabinet
FF Finish Floor
FG Finish Grade
FH Fire Hydrant
FHC Fire Hose Cabinet
FHR Fire Hose Rack (Reel)
FIN Finish(ed)
FIN FL Finish Floor
FIN GR Finish Grade
FLEX Flexible
FL Flashing
FLMT Flush Mounted
FLR Floor(s)
FLS Floor Sealer
FLUOR Fluorescent
FO Face Of
FP Fireproofing
FPM Feet per Minute
FR Fire Retardant / Rating / Resist.

G
G Gas
GA Gauge
GAL Gallon(s)
GALV Galvanized
GFRC Glass Fiber Reinforced Concrete
GFRG Glass Fiber Reinforced Gypsum
GI Galvanized Iron
GL Glass
GL BLK Glass Block

G (CONT)
GL BLK Glass Block
GBMC Green Building Material Certification
GND Ground
GPH Gallons per Hour
GPM Gallons per Minute
GRD Grade
GR Grille
GWB Gypsum Wallboard

H
HB Hose Bib
HD Head
HDW Hardware
HEX Hexagon(al)
HM Hollow Metal
HNDRL Handrail
HO Hold Open
HORIZ Horizontal
HP High Point
HR Hour(s) (Fire Resistance Rating)
HT Height
HVAC Heating, Ventilating, Air Conditioning
HWY Highway

I
IC Intercom
ID Inside Diameter
INCL Include(d) / Inclusive / Including
INFO Information
INS Insulation / Insulate(d)
INT Interior
INV Invert

J
JC Janitor Closet
JF Joint Filler
JG Joint Gasket
JT Joint

K
KD Knockdown
KIT Kitchen
KO Knockout
KPL Kickplate

L
L Angle
LAB Laboratory
LAM Laminate(d)
LAV Lavatory
LBS Pound(s)
LD Linear Diffuser
LEED Leadership in Energy and Environmental Design
LH Left Hand
LIN Linear
LONG Longitudinal
LP Low Point
LR Living Room
LTG Lighting
LVR Louver(ed)

M
MACH Machine
MAINT Maintain / Maintenance
MATL Material
MAX Maximum
MB Metal Base
MECH Mechanical
MED Medium
MEZZ Mezzanine
MFR Manufacturer
MH Manhole
MIN Minimum
MISC Miscellaneous
ML Metal Lath
ML WK Millwork
MLDG Molding
MO Masonry Opening
MP Metal Panel
MTD Mounted
MTL Metal
MUL Mullion

N
N North
NA Not Applicable
NC Noise Criteria
NIC Not in Contract
NO Number
NOM Nominal
NTS Not to Scale

O
OA Outside Air
OC On Center
OD Outside Diameter
OF Outside Face
OFD Overflow Drain
OH Opposite Hand
OPNG Opening
OPP Opposite
OPR Operating / Operable
ORD Overflow Roof Drain

P
PA Public Address
PAR Parallel
PART Partial
PAV Pavers
PB Particle Board
PC Precast Concrete
PERF Perforated
PERP Perpendicular
PLA Plaster
PLBG Plumbing
PLYWD Plywood

PREFAB Prefabricate(d)
PROJ Project(s)
PROP Property
PSF Pounds per Square Foot
PSI Pounds per Square Inch
PT Paint(ed)
PTN Partition
PVG Paving
PWR Power

Q
QTY Quantity

R
R Riser
RA Return Air
RAD Radius
RB Resilient Base
RC Reinforced Concrete
RD Roof Drain
REF Reference
REINF Reinforce(d, -ing, -ment)
REQD Required
REV Revised / Revision
RF Resilient Flooring
RFA Roofing Accessories
RO Rough Opening
ROT Rotated
ROW Right of Way
RR Railroad
RS Roofing System

S
SA Supply Air
SB Splash Block
SCHED Schedule(d)
SE Sealant
SECT Section
SHR Shower
SHT Sheet
SHTHG Sheathing
SIM Similar
SLDG Slide / Sliding
SMR Sheet Metal Roofing
SPEC Specification(s)
SQ Square
SQ FT Square Foot / Feet
SST Stainless Steel
ST Stone
STD Standard
STL Steel
STOR Storage
STRUCT Structure / Structural
SURF MTD Surface Mounted
SUSP Suspend(ed) / Suspension

T
T Tread
T&G Tongue and Groove
TO Top of
TA Toilet Accessory(ies)
TB Tie Back
TBD To Be Determined
TD Trench Drain
TEL Telephone
TEMP Temperature
TER Terrazzo
THK Thick(ness)
THRES Threshold
TOC Top of Curb
TOPO Topography Map
TRANS Transom
TV Television
TYP Typical

U
UC Undercut
UNFIN Unfinished
UON Unless Otherwise Noted
UPS Uninterrupted Power Supply

V
VAC Vacuum
VERT Vertical
VEST Vestibule
VIF Verify in Field
VNR Veneer
VOL Volume

W
W/ With
W/O Without
WB Wood Base
WCV Wall Covering
WD Wood
WDF Wood Door and Frame
WH Wall Hydrant
WI Wrought Iron
WL Wall
WP Work Point
WPM Waterproofing Membrane
WPS Waterproofing System
WR Weather Resistant
WRB Wardrobe
WS Weatherstrip(ping)
WT Weight
WTR Window Treatment
WV Wood Veneer
WWF Welded Wire Fabric

SYMBOL LEGEND

TITLE
SCALE: 1/4" = 1'-0"
00
DRAWING TITLE
DRAWING NAME
DRAWING NUMBER
DRAWING SCALE

ROOM NAME
101
150 SF
ROOM TAG
ROOM NAME INDICATOR
ROOM NUMBER
AREA

ROOM NAME
101
ROOM TAG
ROOM NAME INDICATOR
ROOM NUMBER

01 SIM
A3.01
DETAIL INDICATOR
DETAIL IDENTIFICATION
DRAWING NUMBER

01
A3.01
SECTION INDICATOR
SECTION IDENTIFICATION
DRAWING NUMBER

LEVEL NAME
EL: ELEVATION
ELEVATION DATUM; REFERENCE POINT; WORK POINT; DIMENSION POINT; START POINT

0
COLUMN LINE INDICATOR

101
DOOR NUMBER

1
REVISION TAG

NORTH SYMBOL

0 /1 A101
VIEW / REFERENCE

0' - 0"
LEVEL
ELEVATION INDICATOR
ELEVATION IDENTIFICATION

#
NAME
DRAWING NUMBER

XX
PARTITION TYPE
SEE PARTITION SCHEDULE

XX
MATERIAL TAG

9' - 0"
ACT-1
CEILING TAG
CEILING HEIGHT (AFF)
CEILING FINISH

ALIGN
WALL JOINTS SHOW CHANGE IN PARTITION TYPE

SYMBOL LEGEND

SEMI-RIGID MINERAL FIBER INSULATION
GYPSUM BOARD
WATERPROOFING WHERE NOTED AS WRB
EARTH / COMPACT FILL
POROUS FILL / GRAVEL - COARSE
CONCRETE / PRECAST CONCRETE
ALUMINUM
STEEL OTHER METALS
PLYWOOD - LARGE SCALE
FINISH WOOD FOR ARCH WOODWORK
BATT / LOOSE FILL INSULATION
RIGID PLASTIC INSULATION
NON FOAM INSULATION BOARD

PROJECT TEAM

DESIGN CONSULTANT
AVL DRAFTING & DETAILING
12527 SE 172ND ST,
RENTON, WA 98058
CONTACT: ANDREY LOMOV
EMAIL: INFO@AVLDRAFTING.COM
TEL: (206) 412-4173

CONTRACTOR
STAR CONSTRUCTION WA
2220 164TH PL SE,
BOTHELL, WA 98012
CONTACT: RUSLAN BENCHECI
EMAIL: INFOSTARCONSTRUCTIONWA@GMAIL.COM
TEL: (253) 232-6335

ENGINEERING CONSULTANT - PERGOLA
ENGINEERING EXPRESS
401 WEST ATLANTIC AVENUE R10 BOX 219
DELRAY BEACH, FL 33444
CONTACT: RAMEZ SAYED, PE
EMAIL: RAMEZS@ENGINEERINGEXPRESS.COM
TEL OFFICE: 954 354-0660 | DIRECT: 954-526-1689

ENGINEERING CONSULTANT - DECK
CUSTOM DESIGN & ENGINEERING, LLC
6021 ROOSEVELT WAY NE
SEATTLE, WA, 98115
CONTACT: KYRIAKOS MOROSEOS, PE
EMAIL: KAM@CDENGR.COM
TEL OFFICE: (425) 268-5946

SCOPE OF WORK / PROJECT NARRATIVE

AT THE BACK FACADE OF THE HOUSE:
- PPSD DECK REMODEL AND PERGOLA ON DECK CONSTRUCTION WITH ROOF TOP CONNECTION

APPLICABLE CODES:

BUILDING: 2021 INTERNATIONAL BUILDING CODE (IBC) – WAC 51-50
RESIDENTIAL: 2021 INTERNATIONAL RESIDENTIAL CODE (IRC) – WAC 51-51
FIRE: 2021 INTERNATIONAL FIRE CODE (IFC) – WAC 51-54
NDS: 2021 NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS)

NOTE: ALL WORK SHALL CONFORM TO ALL APPLICABLE BUILDING CODES AND ORDINANCES. ANY CONFLICT WHERE THE METHOD OR STANDARDS OF INSTALLATION OF THE MATERIAL SPECIFIED DO NOT EQUAL OR EXCEED THE REQUIREMENTS OF THE APPLICABLE CODE OR ORDINANCES, THE CODE OR ORDINANCES SHALL GOVERN, IN THE EVENT THIS OCCURS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY. SUBSECTIONS OF THE CODE ARE LISTED HERE FOR GENERAL REFERENCE, BUT DO NOT RELEASE THE CONTRACTOR FROM CONFORMING TO ALL APPLICABLE BUILDING CODES AND ORDINANCES.

DRAWING INDEX

DESIGN PLANS

A0.0	PROJECT INFO
A1.0	LEGENDS, DRAWING INDEX
A2.0 -A2.1	SITE PLAN
A3.0	O.A. DECK REMODEL & PERGOLA PLAN AND OLD DECK DEMO NOTES
A4.0	O.A. DECK REMODEL & PERGOLA ELEVATIONS

STRUCTURAL PLANS

S1.0	STR. FOOTING PLAN
S2.0	STR. FRAMING PLAN
SD1.0	STR. SECTIONS AND DETAILS
SD2.0	STR. SECTIONS AND DETAILS
S00 OR S0.0	STR. SPECS BY ENGINEER

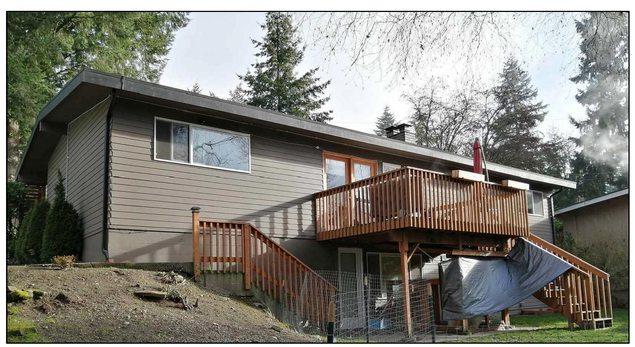
PARCEL, LAND AND BUILDING INFO

PROPERTY INFORMATION

PARCEL NUMBER: 403680-0650
PROPERTY OWNER: ALLENDE JOSE M + UTKIN LYDIA
JURISDICTION: CITY OF BELLEVUE
SITE ADDRESS: 15661 SE 11TH ST
POSTAL CITY: BELLEVUE, 98008
LOT SIZE: 8,539 SF
ZONING: R-5 SINGLE FAMILY RESIDENTIAL

LEGAL DESCRIPTION

LAKE HILLS # 1, PLAT BLOCK: 6, PLAT LOT: 8



EXISTING BACK VIEW

A L
DRAFTING
12527 SE 172nd Place,
Renton, WA 98058
P (206) 412-4173
AVLDRAFTING.COM

DESIGN CONSULTANT

—THESE PLANS ARE EXCLUSIVE PROPERTY OF AVL DRAFTING & DETAILING (AVL) AND MAY NOT BE SOLD TO ANY PERSON OR BUSINESS WITHOUT EXPRESSED WRITTEN CONSENT FROM AVL. THEY ARE NOT TO BE USED FOR ANY PROJECT OTHER THAN THE ONE SHOWN IN TITLE AND TO BE BUILT ON THE CUSTOMER'S SITE AT SPECIFIED ADDRESS ON PLANS —COPYRIGHT NOTICE: THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTION AS AN "ARCHITECTURAL WORK" UNDER SEC. 102 OF THE COPYRIGHT ACT. IT USE AS AMENDED DECEMBER 1990. THE PROTECTION INCLUDES BUT IS NOT LIMITED TO THE OVERALL FORM AS WELL AS THE ARRANGEMENT AND COMPOSITION OF SPACES AND ELEMENTS OF DESIGN. UNDER SUCH PROTECTION, ANY UNAUTHORIZED USE OF THESE PLANS, THE DESIGN IN WHOLE OR PART, CAN LEGALLY RESULT IN MONETARY COMPENSATION TO AVL. WRITTEN PERMISSION MUST BE OBTAINED AND GRANTED PRIOR TO ANY USE AND/OR DESIGN CHANGES TO THESE PLANS. CONTRACTOR: ALL DIMENSIONS AND DIMENSIONS SHOWN ON THE DRAWING SHALL BE REPORTED TO THE DESIGNER FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COSTS OF ANY NECESSARY REMEDIAL WORK.

DECK REMODEL

& PERGOLA ADDITION

15661 SE 11TH ST
BELLEVUE, 98008

SUBMITTAL DRAWINGS
DATE DRAWN:
12/26/24

REVISION DATE:

2
REV - 2 6-7-2025
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24x36 ARCH D

A0.10
SHEET

LEGAL DESCRIPTION

(PER STATUTORY WARRANTY DEED RECORDING #20160616001536)

LOT 8, BLOCK 6, LAKE HILLS NO. 1, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 56 OF PLATS, PAGES 86 TO 88, RECORDS OF KING COUNTY, WASHINGTON.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

BASIS OF BEARINGS

N 08°02'57" W BETWEEN FOUND CENTERLINE MONUMENTATION – CALCULATED PER R1

REFERENCES

R1. LAKE HILLS NO. 1 PLAT, VOL. 56, PG. 86, RECORDS OF KING COUNTY, WASHINGTON.
R2. RECORD OF SURVEY, VOL. 315, PG. 43, RECORDS OF KING COUNTY, WASHINGTON.

VERTICAL DATUM

NAVD88 PER CITY OF BELLEVUE BENCHMARK #503
ELEV: 267.284'

GENERAL NOTES

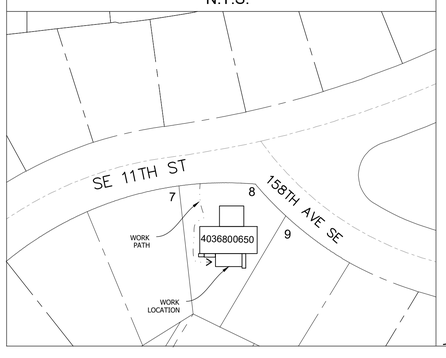
1. SITE BOUNDARY LINES, PROPERTY LINES, SETBACK LINES, GRADE ELEVATIONS AND DIMENSIONS ARE BASED ON COUNTY GIS PUBLIC DATA AND MOST RECENT SURVEY INFORMATION AVAILIABLE. CONTRACTOR TO VERIFY ALL INFORMATION PRIOR TO WORK COMMENCEMENT.
2. QUARTER MAP: NE 02-24-05
3. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, MEMBER SIZES, AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED.
4. VERIFY EXISTING UTILITY LOCATIONS PRIOR TO COMMENCEMENT OF WORK (CALL 811).
5. CONTRACTOR SHALL VERIFY EXISTING STORM DRAINAGE AND SEWER CONNECTION LINES ON SITE BEFORE ANY DIGGING OR EXCAVATION.
6. CONNECT FOOTING DRAINS (AS REQ'D) TO EXISTING DRAIN SYSTEM OR MUNICIPAL STORM CATCH BASIN.
7. EXPOSED SOIL SHALL BE WORKED DURING THE WEEK UNTIL THEY HAVE BEEN STABILIZED. SOIL EXCAVATED FOR FOUNDATION SHALL BE BACKFILLED AGAINST THE FOUND AND GRADED TO DRAIN AWAY FROM THE BUILDING.
8. EXCESS EXCAVATED MATERIAL TO BE RELOCATED OFF-SITE TO COUNTY APPROVED OR PERMITTED SITE OR TO A COMMERCIAL TOPSOIL COMPANY.
9. NO TREE REMOVAL IS PROPOSE
10. COMPLETE ALL OUTSTANDING BUILDING INSPECTIONS AS NEEDED FOR FINAL APPROVAL OF ALL EXISTING STRUCTURES AND NEW DECK AND PERGOLA ADDITION PERMIT ISSUANCE.
11. FOR PERGOLA ASSEMBLY AND CONSTRUCTION REFER TO THE APPROVED MANUFACTURER SHOP DRAWINGS:
DS-25-82673 - Motorized Pergola on Deck
FOR DECK CONSTRUCTION REFER TO APPROVED ARCH., AND STRUCTURAL DRAWINGS

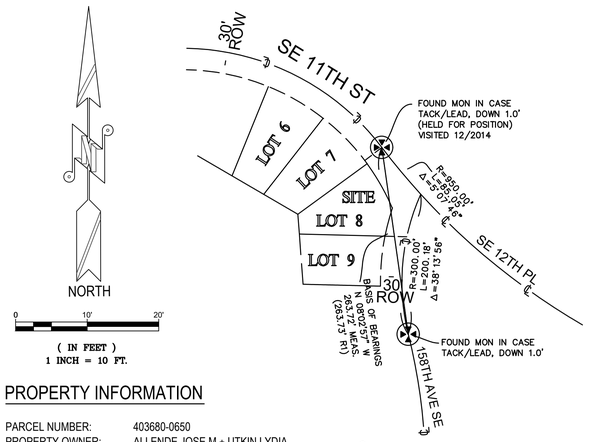
811 Know what's below. Call before you dig.

LEGEND

- ASPHALT SURFACE
- BRICK SURFACE
- BUILDING
- CENTERLINE ROW
- CONCRETE SURFACE
- RETAINING WALL
- DECK
- FENCE LINE (CHAIN LINK)
- FENCE LINE (WIRE)
- FENCE LINE (WOOD)
- GAS METER
- SETBACK LINE
- TREE ROOT DIA.
- MONUMENT IN CASE (FOUND)
- POWER METER
- REBAR AS NOTED (FOUND)
- ROCKERY
- SEWER LINE
- SEWER MANHOLE
- SIZE TYPE TREE (AS NOTED)
- WM WATER METER
- WV WATER VALVE
- ACU AC UNIT
- ROOF EAVE LINE
- PROPERTY LINE
- STRUCTURE SETBACK AND WETLAND BUFFERS

VICINITY MAP
N.T.S.





CONTROL MAP
N.T.S.

NW 1/4 OF NE 1/4 SEC 02, TWP. 24N., RGE 05E., W.M.
PARCEL NO. 4036800650

PROPERTY INFORMATION

PARCEL NUMBER:	403680-0650
PROPERTY OWNER:	ALLENDE JOSE M + UTKIN LYDIA
JURISDICTION:	CITY OF BELLEVUE
SITE ADDRESS:	15661 SE 11TH ST
POSTAL CITY:	BELLEVUE, 98008
LOT SIZE:	8,539 SF
ZONING:	R-5 SINGLE FAMILY RESIDENTIAL

LEGAL DESCRIPTION

LAKE HILLS # 1, PLAT BLOCK: 6, PLAT LOT: 8

APPLICABLE CODE PER SCOPE OF WORK IN ARCH., AND ENGINEERING PLANS

LOT COVERAGE

MAX 40% ALLOWED

LOT AREA:	8,526 SF
EXISTING BUILDING FOOTPRINT:	1,265 SF
EXISTING GARAGE FOOTPRINT:	782 SF
TOTAL BUILDING FOOTPRINT HOUSE AND GARAGE :	2,047 SF (24.0%)
NEW DECK, PERGOLA & STAIRS ABOVE GRADE:	312 SF
TOTAL BUILDING FOOTPRINT HOUSE , GARAGE AND DECK W/ STAIRS:	2,359 SF (27.6%)

IMPERVIOUS SURFACES

MAX 55% ALLOWED

LOT AREA:	8,526 SF
ROOF AREA:	2,336 SF
DRIVEWAY / WALK BEYOND ROOF:	658 SF
DECK, PERGOLA & STAIR BEYOND ROOF:	275 SF
TOTAL IMPERVIOUS AREA:	3,269 SF (38.3%)

FRONT SETBACK GREEN SPACE (Exst.)

MIN 50% REQUIRED

FRONT SETBACK AREA:	2,105 SF
GREEN SPACE AREA:	1,693 SF (80.4%)

TREE CREDITS & CANOPY SITE AREA - SCALE: 1" = 10'-0"

AVERAGE GRADE CALCULATION
N.T.S.

A(287.9) + B(284) + C(281.9) + D(281.9) + E(281.7) + F(281.3) + G(281.3) + H(281.3) + J(281.4) + K(285.0) + L(286.5) + M(287.2) + N(288.1) + P(288.5) + Q(288.6) + R(289.1) + S(289.1) + T(289.1) + U(289.1) + V(288.6) + W(288.0) = 5,999.6 / 21 = 285.6' (AVERAGE GRADE)

3 MAX BUILDING HEIGHT (HOUSE)
FLAT ROOF 285.6 + 30 = 315.6'
PITCHED ROOF 285.6 + 35 = 320.6'

3 EXST., BUILDING HEIGHT (HOUSE)
PITCHED ROOF AS BUILT 285.6 + 35 = 320.6'
(35' - FROM AGE)

3 PPSD DECK HEIGHT
285.6' + 3.8' = 289.4'
(3.8' - FROM AGE)

3 PPSD PERGOLA HEIGHT
SLOPED ROOF - RIDGE 285.6' + 13.9' = 299.5'
(13.9' - FROM AGE)

A L DRAFTING
INFO@AVLDRAFTING.COM
Ph. (206) 412-4173
AVLDRAFTING.COM
CUSTOM DESIGN AND DRAFTING SERVICES

SITE PLAN
DECK AND PERGOLA ADDITION
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DATE: 6/7/2025
DRAFTED BY: AVL

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ARCH D (24x36)
SHEET NUMBER

A 2.0

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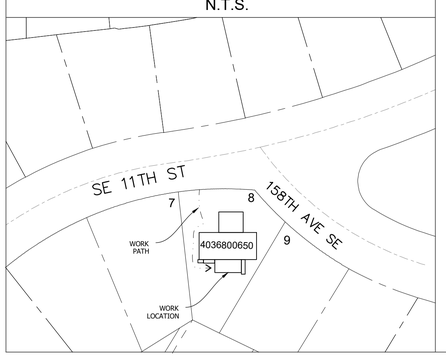
1. SITE BOUNDARY LINES, PROPERTY LINES, SETBACK LINES, GRADE ELEVATIONS AND DIMENSIONS ARE BASED ON COUNTY GIS PUBLIC DATA AND MOST RECENT SURVEY INFORMATION AVAILIABLE. CONTRACTOR TO VERIFY ALL INFORMATION PRIOR TO WORK COMMENCEMENT.
2. QUARTER MAP: NE 02-24-05
3. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, MEMBER SIZES, AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED.
4. VERIFY EXISTING UTILITY LOCATIONS PRIOR TO COMMENCEMENT OF WORK (CALL 811).
5. CONTRACTOR SHALL VERIFY EXISTING STORM DRAINAGE AND SEWER CONNECTION LINES ON SITE BEFORE ANY DIGGING OR EXCAVATION.
6. CONNECT FOOTING DRAINS (AS REQ'D) TO EXISTING DRAIN SYSTEM OR MUNICIPAL STORM CATCH BASIN.
7. EXPOSED SOIL SHALL BE WORKED DURING THE WEEK UNTIL THEY HAVE BEEN STABILIZED. SOIL EXCAVATED FOR FOUNDATION SHALL BE BACKFILLED AGAINST THE FOUND AND GRADED TO DRAIN AWAY FROM THE BUILDING.
8. EXCESS EXCAVATED MATERIAL TO BE RELOCATED OFF-SITE TO COUNTY APPROVED OR PERMITTED SITE OR TO A COMMERCIAL TOPSOIL COMPANY.
9. NO TREE REMOVAL IS PROPOSE
10. COMPLETE ALL OUTSTANDING BUILDING INSPECTIONS AS NEEDED FOR FINAL APPROVAL OF ALL EXISTING STRUCTURES AND NEW DECK AND PERGOLA ADDITION PERMIT ISSUANCE.
11. FOR PERGOLA ASSEMBLY AND CONSTRUCTION REFER TO THE APPROVED MANUFACTURER SHOP DRAWINGS:
D5-25-82673 - Motorized Pergola on Deck
FOR DECK CONSTRUCTION REFER TO APPROVED ARCH., AND STRUCTURAL DRAWINGS

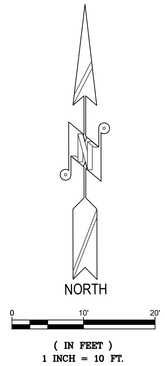
811 Know what's below. Call before you dig.

LEGEND

- ASPHALT SURFACE
- BRICK SURFACE
- BUILDING
- CENTERLINE ROW
- CONCRETE SURFACE
- RETAINING WALL
- DECK
- FENCE LINE (CHAIN LINK)
- FENCE LINE (WIRE)
- FENCE LINE (WOOD)
- GAS METER
- SETBACK LINE
- TREE ROOT DIA.
- MONUMENT IN CASE (FOUND)
- POWER METER
- REBAR AS NOTED (FOUND)
- ROCKERY
- SEWER LINE
- SEWER MANHOLE
- SIZE TYPE TREE (AS NOTED)
- WATER METER
- WATER VALVE
- AC UNIT
- ROOF EAVE LINE
- PROPERTY LINE
- STRUCTURE SETBACK AND WETLAND BUFFERS

VICINITY MAP
N.T.S.





PROPERTY INFORMATION

PARCEL NUMBER: 403680-0650
PROPERTY OWNER:
JURISDICTION: CITY OF BELLEVUE
SITE ADDRESS: 15661 SE 11TH ST
POSTAL CITY: BELLEVUE, 98008
LOT SIZE: 8,539 SF
ZONING:

LEGAL DESCRIPTION

LAKE HILLS # 1, PLAT BLOCK: 6, PLAT LOT: 8

APPLICABLE CODE PER SCOPE OF WORK IN ARCH., AND ENGINEERING PLANS

TREE CANOPY SITE CALCULATION

TREE CANOPY SITE AREA: 7,976 SF
WETLAND BUFFER SUM: 550 SF
SITE REMAINING AFTER WETALND BUFFER: 7,976 SF:

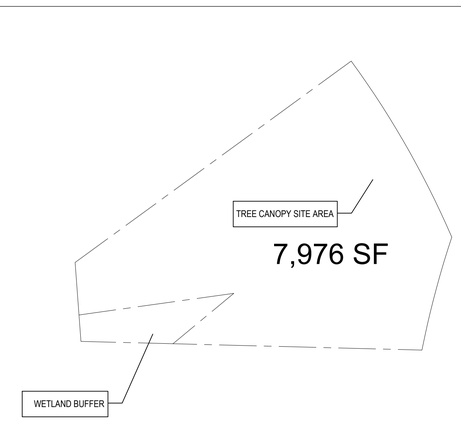
MINIMUM REQUIRED CREDITS CALC: 15.9

EXST. TREE CREDITS: 50 tree credits

EXISTING TREES TABLE

"DEC" - Deciduous
"EVG" – Evergreen

TREE NUMBER	DBH	SPECIES NAME	LOCATION	RETAINED
1#	28"	DEC - BIRCH	BACK YARD	YES
#2	20"	EVG - FIR	BACK YARD	YES
#3	28"	DEC - MAPLE	BACK YARD	YES
#4	28"	DEC - MAPLE	BACK YARD	YES
#5	28"	DEC - MAPLE	SIDE YARD	YES

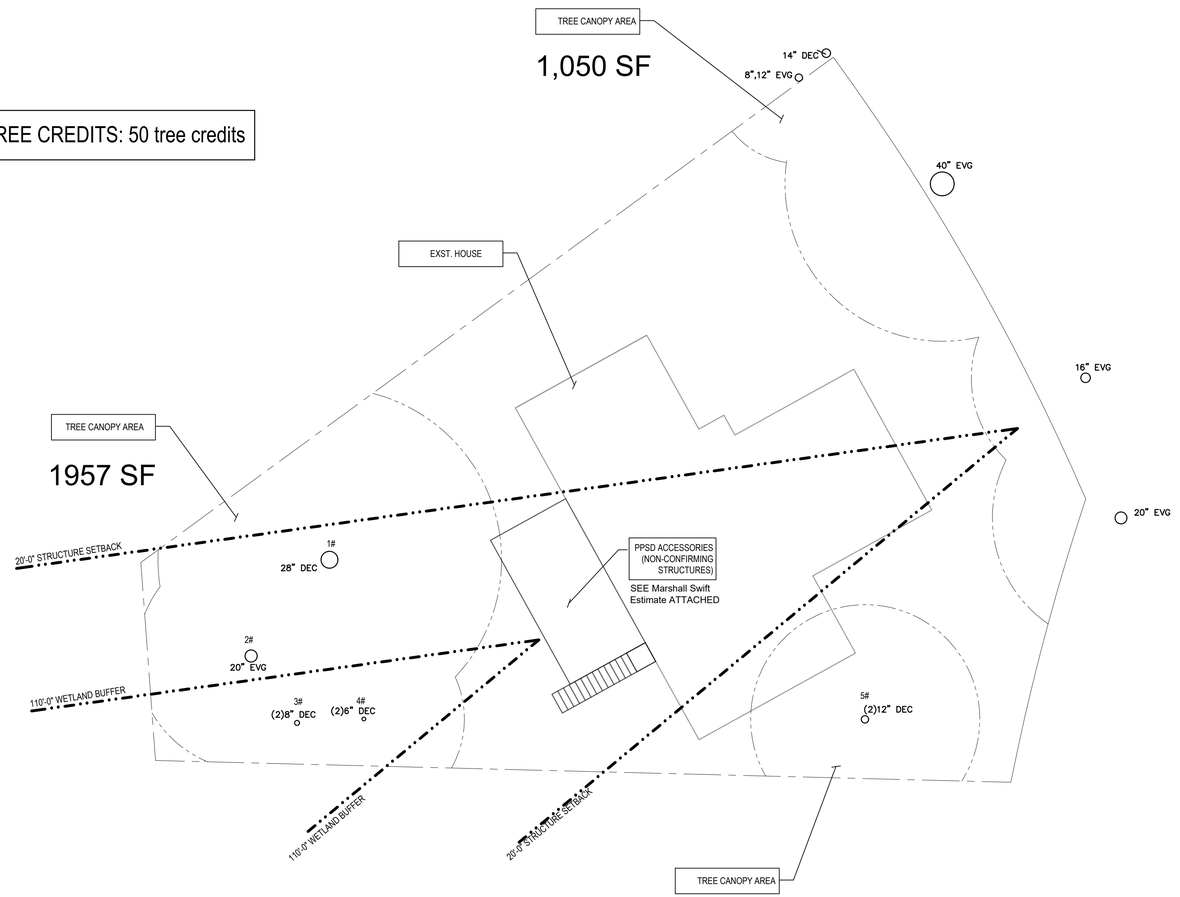


N.T.S.

NW 1/4 OF NE 1/4 SEC 02, TWP. 24N., RGE 05E., W.M.
PARCEL NO. 4036800650

Table 20.20.900.E.1.
Minimum Tree Credits per 1,000 Square Feet of Tree Canopy Site Area

Land Use District	One Dwelling Unit per Lot	Two or More Dwelling Units per Lot	Commercial, Office, Light Industrial, and All Other Nonresidential Land Uses
R-1 R-1.8 R-2.5	5	4	1
R-3.5 R-4 R-5	2	1.5	0.75
All Other Land Use Districts	1	0.75	0.5



TREE CREDITS & CANOPY SITE AREA - SCALE: 1" = 10'-0"

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Ph. (206) 412-4173
AVLDRAFTING.COM
CUSTOM DESIGN AND DRAFTING SERVICES

TREE CREDITS & CANOPY SITE AREA

UTKIN / ALLENDE RESIDENCE
15661 SE 11TH ST
BELLEVUE, WA 98008

DATE: 6/7/2025
DRAFTED BY: AVL
REVISION HISTORY

2
REV - 2 6-7-2025
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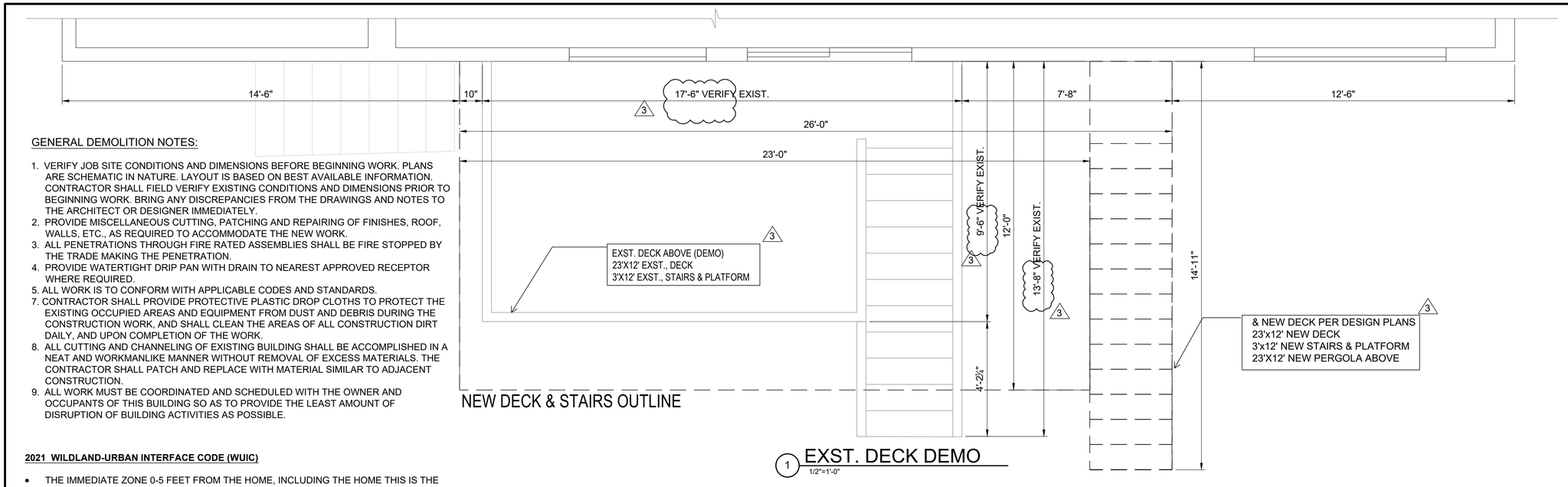
ARCH D (24x36)
SHEET NUMBER

A 2.1



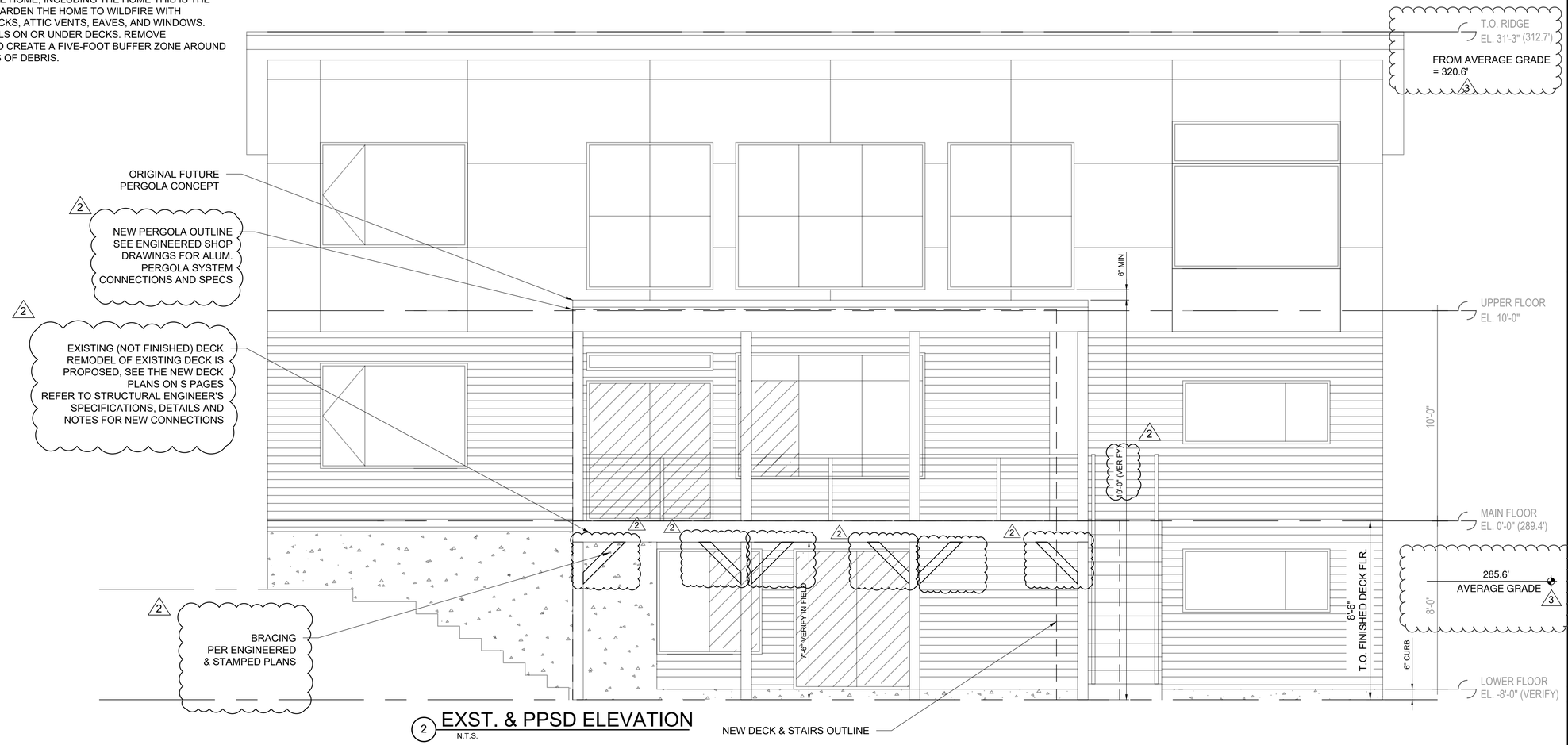
1 EXST. DECK DEMO
1/2"=1'-0"

GENERAL DEMOLITION NOTES:

1. VERIFY JOB SITE CONDITIONS AND DIMENSIONS BEFORE BEGINNING WORK. PLANS ARE SCHEMATIC IN NATURE. LAYOUT IS BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING WORK. BRING ANY DISCREPANCIES FROM THE DRAWINGS AND NOTES TO THE ARCHITECT OR DESIGNER IMMEDIATELY.
2. PROVIDE MISCELLANEOUS CUTTING, PATCHING AND REPAIRING OF FINISHES, ROOF, WALLS, ETC., AS REQUIRED TO ACCOMMODATE THE NEW WORK.
3. ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE FIRE STOPPED BY THE TRADE MAKING THE PENETRATION.
4. PROVIDE WATERTIGHT DRIP PAN WITH DRAIN TO NEAREST APPROVED RECEPTOR WHERE REQUIRED.
5. ALL WORK IS TO CONFORM WITH APPLICABLE CODES AND STANDARDS.
7. CONTRACTOR SHALL PROVIDE PROTECTIVE PLASTIC DROP CLOTHS TO PROTECT THE EXISTING OCCUPIED AREAS AND EQUIPMENT FROM DUST AND DEBRIS DURING THE CONSTRUCTION WORK, AND SHALL CLEAN THE AREAS OF ALL CONSTRUCTION DIRT DAILY, AND UPON COMPLETION OF THE WORK.
8. ALL CUTTING AND CHANNELING OF EXISTING BUILDING SHALL BE ACCOMPLISHED IN A NEAT AND WORKMANLIKE MANNER WITHOUT REMOVAL OF EXCESS MATERIALS. THE CONTRACTOR SHALL PATCH AND REPLACE WITH MATERIAL SIMILAR TO ADJACENT CONSTRUCTION.
9. ALL WORK MUST BE COORDINATED AND SCHEDULED WITH THE OWNER AND OCCUPANTS OF THIS BUILDING SO AS TO PROVIDE THE LEAST AMOUNT OF DISRUPTION OF BUILDING ACTIVITIES AS POSSIBLE.

2021 WILDLAND-URBAN INTERFACE CODE (WUIC)

- THE IMMEDIATE ZONE 0-5 FEET FROM THE HOME, INCLUDING THE HOME THIS IS THE ZONE MOST VULNERABLE TO EMBERS. HARDEN THE HOME TO WILDFIRE WITH IGNITION-RESISTANT SIDING, ROOFS, DECKS, ATTIC VENTS, EAVES, AND WINDOWS. AVOID STORING COMBUSTIBLE MATERIALS ON OR UNDER DECKS. REMOVE VEGETATION AND FLAMMABLE MULCH TO CREATE A FIVE-FOOT BUFFER ZONE AROUND THE HOME. CLEAN GUTTERS AND ROOFS OF DEBRIS.



2 EXST. & PPSD ELEVATION
N.T.S.

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—VERIFICATION OF CONDITIONS AND DIMENSIONS SHOWN ON THE DRAWING SHALL BE REPORTED TO THE DESIGNER FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COSTS OF ANY NECESSARY REMEDIAL WORK.

DECK REMODEL

& PERGOLA ADDITION

15661 SE 11TH ST
BELLEVUE, 98008

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12/26/24

REVISION DATE:

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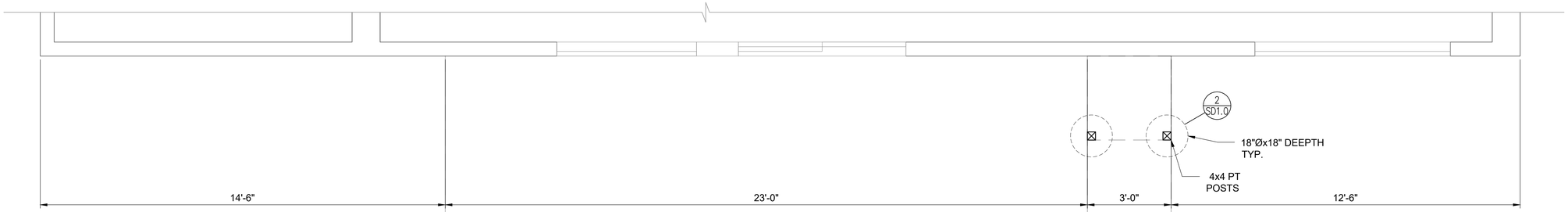
24x36 ARCH D

A0.30
SHEET

GENERAL FOUNDATION NOTES

1.THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INVESTIGATION, DESIGN, SAFETY, ADEQUACY AND INSPECTION OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC FOR THE STRUCTURE DURING CONSTRUCTION.
2.USE THIS DRAWING IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL/FRAMING AND OTHER DISCIPLINES.
3.ELEVATIONS & DIMENSIONS SHOWN ON THIS DRAWINGS SHALL BE FOR THE PURPOSES OF PLACING REINFORCING BARS ONLY, NOT FOR CONSTRUCTION UNLESS VERIFIED BY THE CONTRACTOR.
4.REFER TO SHEET S00 FOR ADDITIONAL REQUIREMENTS & SHEET SD01 FOR FOUNDATION DETAILS. U.N.O.
5.CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL HOLD DOWNS SHOWN.
6.ALL FOOTINGS SHALL BEAR ON UNDISTURBED, FIRM NATURAL SOIL OR COMPACTED FILL CAPABLE OF SUPPORTING A DESIGN BEARING PRESSURE OF 1,500 PSF.
7.CONCRETE WORK SHALL CONFORM TO ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY"; CONCRETE SPECIFICATIONS SHALL CONFORM TO ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE".
8.ALL DETAILS SHALL BE IN ACCORDANCE WITH ACI 315 & ACI DETAILING MANUAL.
9.REIN. STEEL BARS SHALL CONFORM TO ASTM 615/GRADE 60.
10.SPECIFIED CONCRETE STRENGTH SHALL BE F`C=3,000PSI @ 28 DAYS FOR FOOTINGS & WALLS. U.N.O.
11.MAX. AGGREGATE SIZE SHALL BE 3/4IN, MIN. AIR CONTENT SHALL BE 5% (TOLERANCE -+1.5%) (BY VOLUME), MAX. SLUMP SHALL BE 6".
12.ALL REIN. BAR SPLICES ARE TO BE CLASS B TENSION SPLICES. WALL HORIZONTALS ARE TO BE CONSIDERED "TOP BARS".
13.E.W.=EACH WAY, E.F.=EACH FACE.

ALL DECK HARDWARE TO BE CORROSION RESISTANT

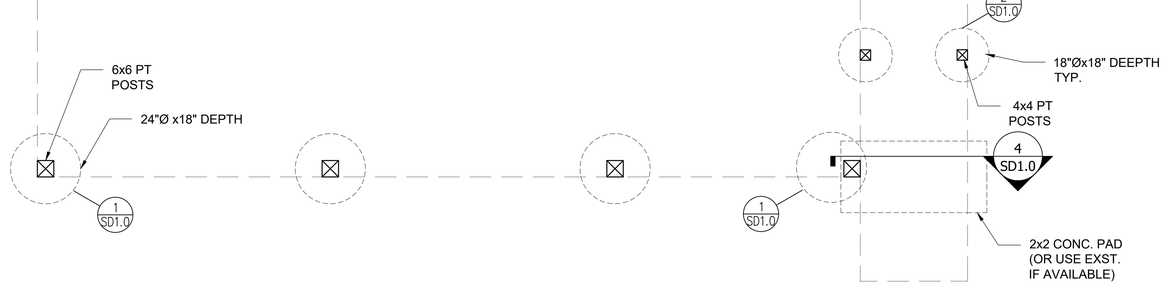


DECK FOOTING NOTES

6x6 PT POST
W/ CBSQ66
24"Ø PIER FOOTINGS
18" DEEP (TYP.)

4x4 PT POST
W/ CBSQ44
24"Ø PIER FOOTINGS
18" DEEP (TYP.)

STAIR LANDING (TYP)
4" CONC. PAD ON
4" COMPACTED GRAVEL
SEE STR. SECTION FOR
REINFORCEMENT



1 DECK FOOTING PLAN
1/2"=1'-0"

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DECK REMODEL

& PERGOLA ADDITION

15661 SE 11TH ST
BELLEVUE, 98008

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24x36 ARCH D

S1.0
SHEET

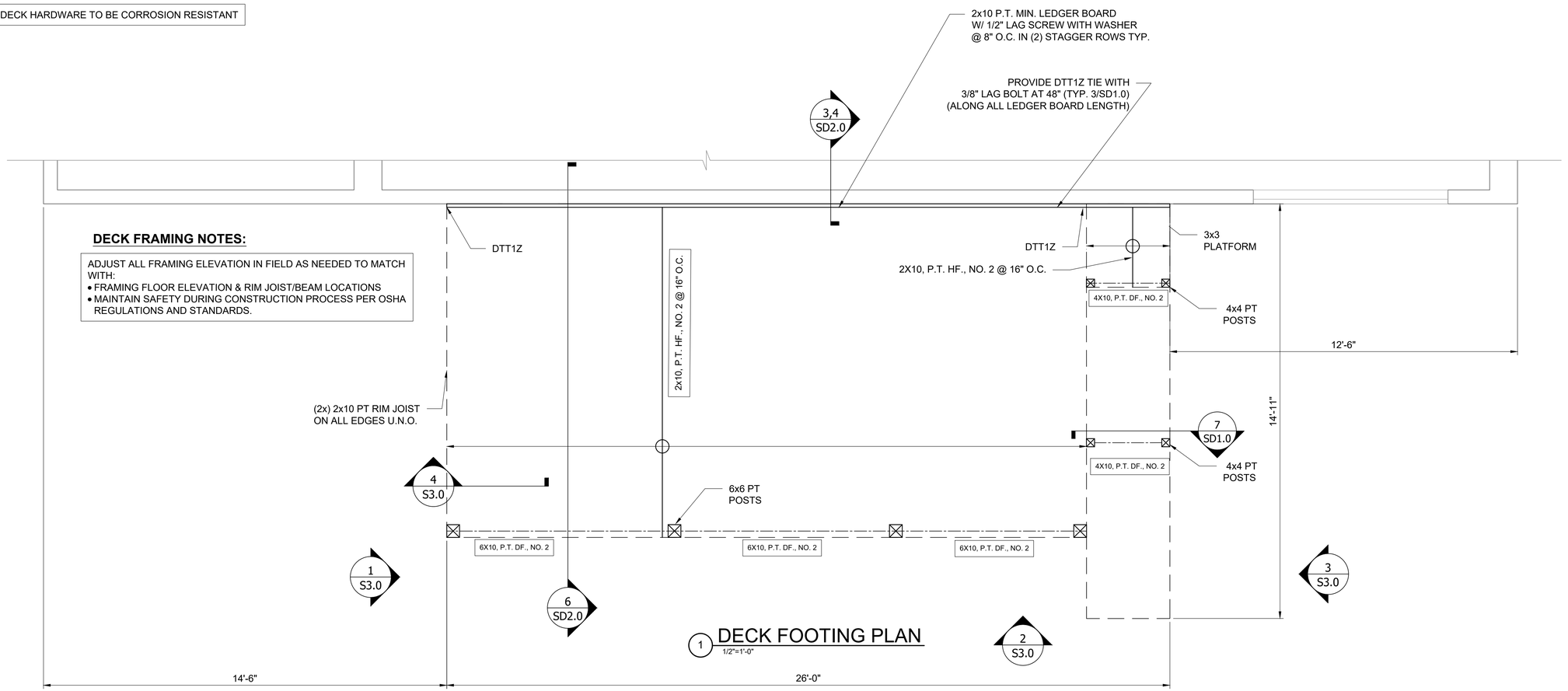
GENERAL FRAMING NOTES

1.THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INVESTIGATION, DESIGN, SAFETY, ADEQUACY AND INSPECTION OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC FOR THE STRUCTURE DURING CONSTRUCTION.
2.USE THIS DRAWING IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL/FRAMING AND OTHER DISCIPLINES.
3.ELEVATIONS & DIMENSIONS SHOWN ON THIS DRAWINGS SHALL BE FOR THE PURPOSES OF PLACING FRAMING & SHEAR WALL LOCATIONS ONLY, NOT FOR CONSTRUCTION UNLESS VERIFIED BY THE CONTRACTOR.
4.SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS & TOP PLATE ELEVATIONS.
5.REFER TO SHEET S00 FOR ADDITIONAL REQUIREMENTS.
6.WORK & MATERIALS SHALL CONFORM TO IBC 2018 BUILDING CODE.
7.BEAMS SHOWN SHALL BE DROP U.N.O. ON PLANS.
8.POSTS OR ASSEMBLED STUDS SHALL TRANSFER CONTINUOUS LOAD PATH TO FOUNDATION.
9.ALL LUMBER IN CONTACT WITH SOIL, CONCRETE OR MASONRY SHALL BE PRESSURE TREATED LUMBER.
10.ALL HANGERS AND NAILS IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE SIMPSON Z-MAX HANGERS OR STAINLESS STEEL.
11.PROVIDE POSITIVE CONNECTION TO ALL COLUMNS FOR LATERAL FORCES RESISTANCE.

ALL DECK HARDWARE TO BE CORROSION RESISTANT

DECK FRAMING NOTES:

ADJUST ALL FRAMING ELEVATION IN FIELD AS NEEDED TO MATCH WITH:
- FRAMING FLOOR ELEVATION & RIM JOIST/BEAM LOCATIONS
- MAINTAIN SAFETY DURING CONSTRUCTION PROCESS PER OSHA REGULATIONS AND STANDARDS.



1 DECK FOOTING PLAN
1/2"=1'-0"

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DECK REMODEL

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24x36 ARCH D

S2.0
SHEET

STAIRS
(IRC R311.7.5)
Stair risers shall be 7-3/4" max.
Tread depth shall be 10" min.
Riser height and tread depth must not vary by more than 3/8"

HANDRAILS
(IRC R311.7.8)
Are required at stairs with four or more risers. All handrails to be located 34" to 38" above tread nosing. Open sides of stairs more than 30" above adjacent floor shall have handrails & guardrails. The hand-grip portion shall have a cross sectional dimension of 1-1/4" to 2"

GUARDRAILS
(IRC R312.1)
Shall be min. 36" in height where the adjacent surface or grade is 30" or more below. Railing shall be spaced to not allow the passage of a 4" sphere.

3

DECKS
(IRC R317.1 & R317.2)
Deck construction to consist of approved woods of natural resistance to decay or be treated wood an labeled accordingly.

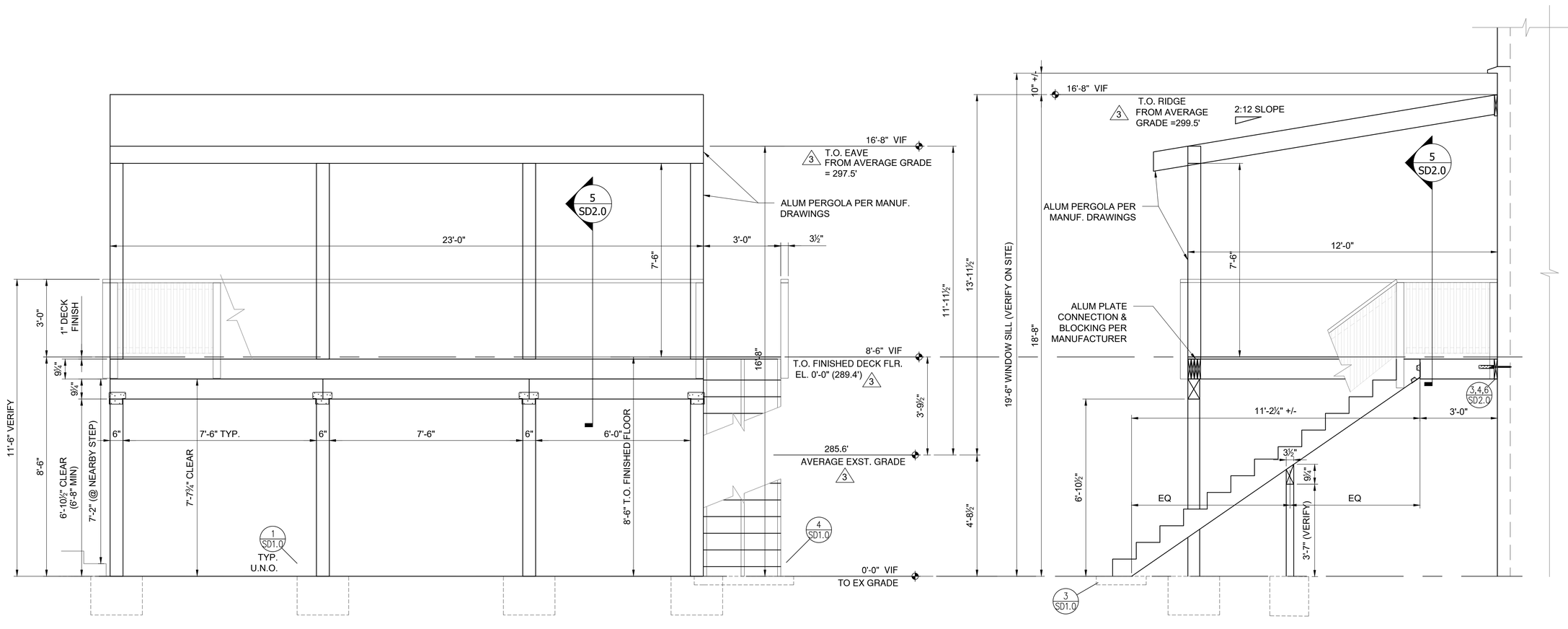
DECK FASTENERS
(IRC R317.3)
Fasteners for preservative-treated and fire-retardant-treated wood shall be of hot-dipped zinc-coated galvanized steel, stainless steel, silicon bronze or copper. Coating weights for zinc-coated fasteners shall be in accordance with ASTM A153.

WOOD COLUMNS
(IRC R407.3 & R502.9)
Wood columns shall be less than 4"x4" nominal and shall be restrained to prevent lateral displacement at the top and bottom.

3

APPLICABLE UNLESS NOTED OTHERWISE IN THE SEALED STRUCTURAL ENGINEER PLANS AND DETAILS

SEE SEALED, ENGINEERED DETAILS AND PLANS



2 PPSD DECK & PERGOLA ELEVATION
1/2"=1'-0"

1 PPSD DECK & PERGOLA ELEVATION
1/2"=1'-0"

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DECK REMODEL
& PERGOLA ADDITION

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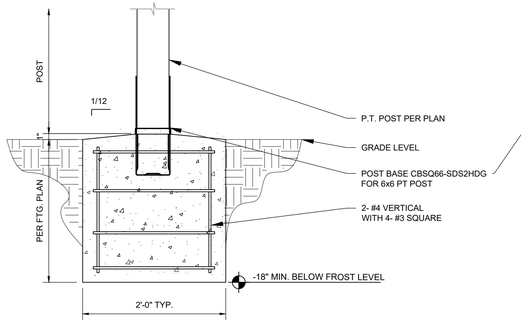
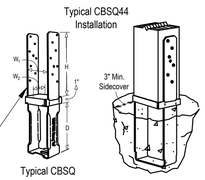
24x36 ARCH D

S3.0
SHEET



1 DECK POST BASE
1"=1'-0"



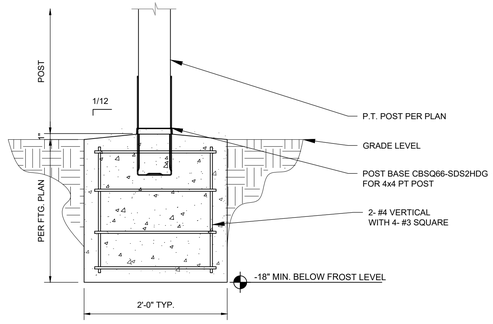
Installation:

- Install Simpson Strong-Tie SDS ¼" x 2" wood screws, which are provided with the column base, with a ½" hex head driver. *(Lag screws will not achieve the same load.)*
- Allow concrete to cure before installation of the post.
- For full loads, a minimum of 3" side cover shall be provided.

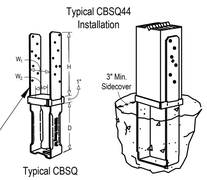
Model No.	Post Size	Dimensions (in.)				Number of SDS Screws
		W1	W2	D	H	
CBSQ44-SDS2HDG	4x4	3 9/16	3 1/2	7 1/8	8 3/8	14-SDS ¼"x2"
CBSQ46-SDS2HDG	4x6	3 9/16	5 5/16	7 13/16	8 11/16	14-SDS ¼"x2"
CBSQ66-SDS2HDG	6x6	5 1/2	5 1/2	6 7/8	8 3/4	14-SDS ¼"x2"
CBSQ86-SDS2HDG	6x8	7 1/2	5 3/8	6 1/8	8 11/16	12-SDS ¼"x2"
CBSQ88-SDS2HDG	8x8	7 1/2	7 3/8	6 1/8	8 11/16	12-SDS ¼"x2"

Refer to current *Wood Construction Connectors* catalog for additional information.

- CBSQ Post Bases
N.T.S



2 STAIR SUPPORT POST BASE
1"=1'-0"



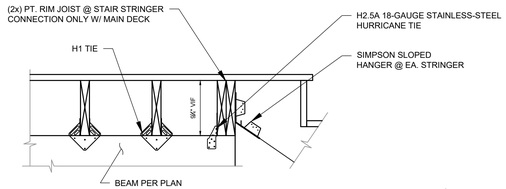
Installation:

- Install Simpson Strong-Tie SDS ¼" x 2" wood screws, which are provided with the column base, with a ½" hex head driver. *(Lag screws will not achieve the same load.)*
- Allow concrete to cure before installation of the post.
- For full loads, a minimum of 3" side cover shall be provided.

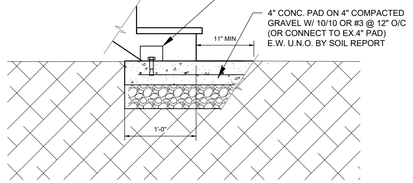
Model No.	Post Size	Dimensions (in.)				Number of SDS Screws
		W1	W2	D	H	
CBSQ44-SDS2HDG	4x4	3 9/16	3 1/2	7 1/8	8 3/8	14-SDS ¼"x2"
CBSQ46-SDS2HDG	4x6	3 9/16	5 5/16	7 13/16	8 11/16	14-SDS ¼"x2"
CBSQ66-SDS2HDG	6x6	5 1/2	5 1/2	6 7/8	8 3/4	14-SDS ¼"x2"
CBSQ86-SDS2HDG	6x8	7 1/2	5 3/8	6 1/8	8 11/16	12-SDS ¼"x2"
CBSQ88-SDS2HDG	8x8	7 1/2	7 3/8	6 1/8	8 11/16	12-SDS ¼"x2"

Refer to current *Wood Construction Connectors* catalog for additional information.

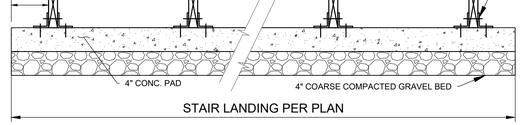
- CBSQ Post Bases
N.T.S



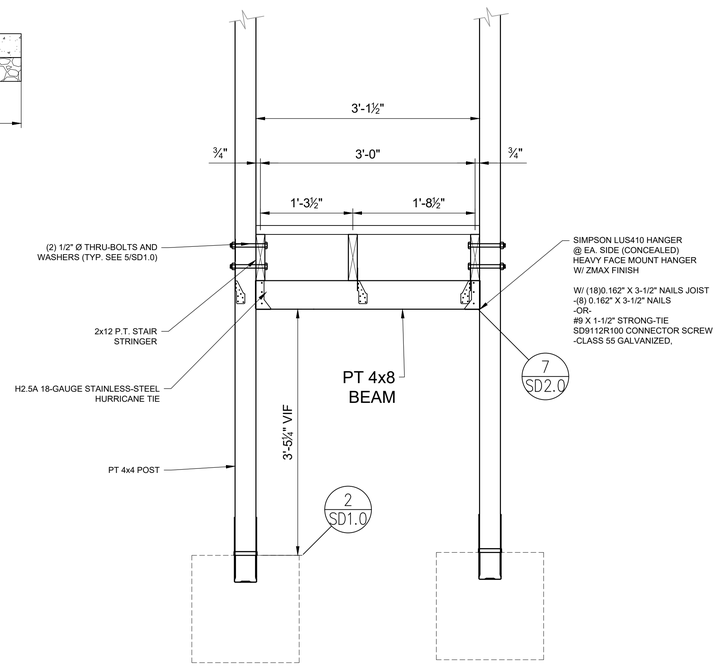
5 STAIR CONNECTIONS
1"=1'-0"



3 STAIR LANDING CONNECTION DETAILS
1"=1'-0"



4 CONC. LANDING CONNECTIONS
1"=1'-0"



7 STAIR SUPPORT SECTION
1/4"=1'-0"

3

APPLICABLE UNLESS NOTED OTHERWISE IN THE SEALED STRUCTURAL ENGINEER PLANS AND DETAILS

SEE SEALED, ENGINEERED DETAILS AND PLANS

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P (206) 412-4173
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DECK REMODEL

& PERGOLA ADDITION

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BELLEVUE, 98008

SUBMITTAL DRAWINGS
DATE DRAWN:
12/26/24

REVISION DATE:

2
REV - 2 6-7-2025
25_100110_BR_Marked_Up_Plans_3-14-2025_25-100110_BR_(Revision_Request_2nd_Review)

3
REV - 3 7-3-2025
25_100110_BR_Marked_Up_Plans_7-10-2025_25-100110_BR_(Revision_Request_3rd_Review_Letter)

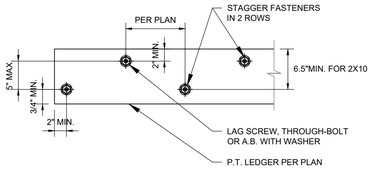
24x36 ARCH D

SD1.0
SHEET

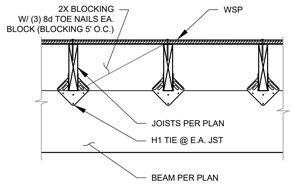
IMPORTANT NOTES ON FIELD VERIFICATIONS:

1. CONTRACTOR SHALL REVIEW STRUCTURAL DRAWINGS AND FIELD VERIFY ALL RELATED EXISTING FRAMING & DIMENSIONS PRIOR TO ANY FIELD WORK. NOTIFY THE ENGINEER/OWNER ANY DISCREPANCIES FOUND IN THE FIELD. STRUCTURAL DRAWINGS MAY NOT CORRECTLY REFLECT ALL EXISTING FRAMING DUE TO LIMITED ACCESS TO THE SITE AND EXISTING DRAWINGS.

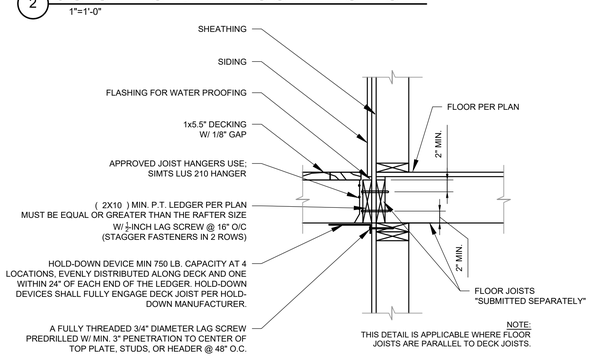
2. CONTRACTOR SHALL FIELD VERIFY AND NOTIFY THE EXISTING MECHANICAL DUCTS, PLUMBING PIPES, ELECTRICAL WIRES THAT MAY INTERFERE WITH STRUCTURAL WORKS FOR COST CONSIDERATIONS PRIOR TO ANY FIELD WORK.



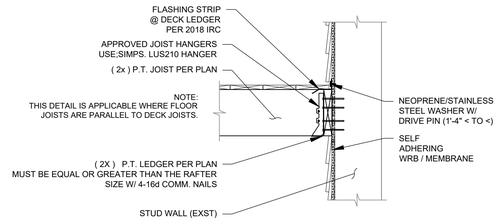
1 LEDGER BOARD DETAILS
1"=1'-0"



2 JOIST TO BEAM CONNECTION
1"=1'-0"



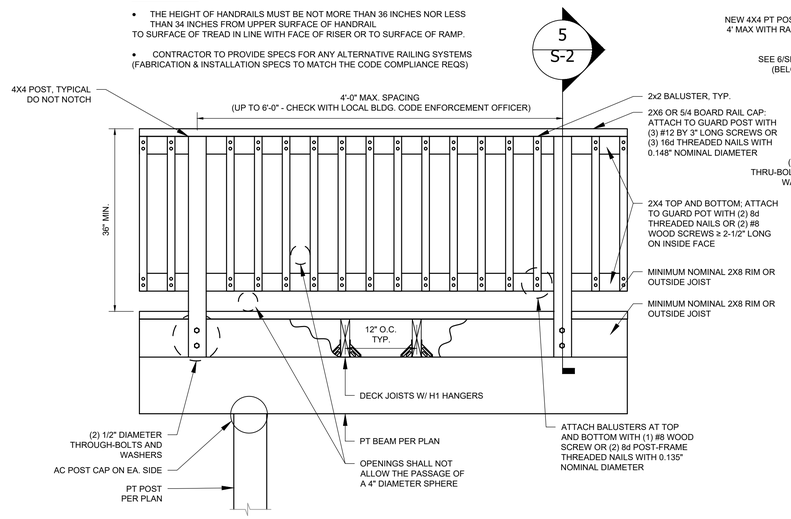
3 DECK ATTACHMENT FOR LATERAL LOADS
1"=1'-0"



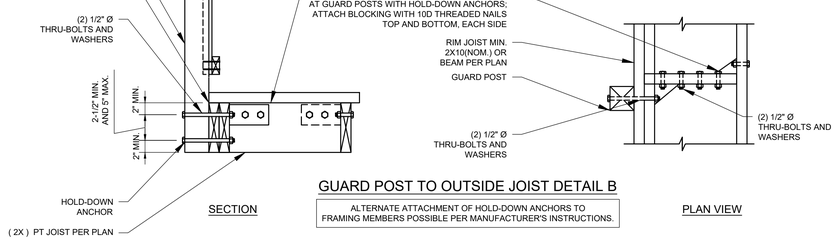
4 LEDGER BOARD TO STUD WALL CONNECTION
1"=1'-0"

RAILING NOTES:

- THE HEIGHT OF HANDRAILS MUST BE NOT MORE THAN 36 INCHES NOR LESS THAN 34 INCHES FROM UPPER SURFACE OF HANDRAIL TO SURFACE OF TREAD IN LINE WITH FACE OF RISER OR TO SURFACE OF RAMP.
- CONTRACTOR TO PROVIDE SPECS FOR ANY ALTERNATIVE RAILING SYSTEMS (FABRICATION & INSTALLATION SPECS TO MATCH THE CODE COMPLIANCE REQS)



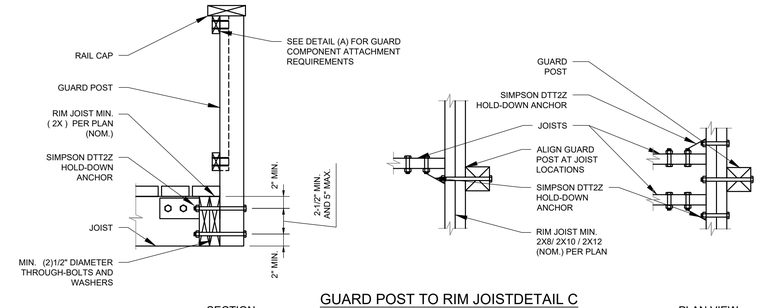
PROPOSED GUARD RAIL DETAIL A



SECTION — PLAN VIEW

GUARD POST TO OUTSIDE JOIST DETAIL B

ALTERNATE ATTACHMENT OF HOLD-DOWN ANCHORS TO FRAMING MEMBERS POSSIBLE PER MANUFACTURER'S INSTRUCTIONS.

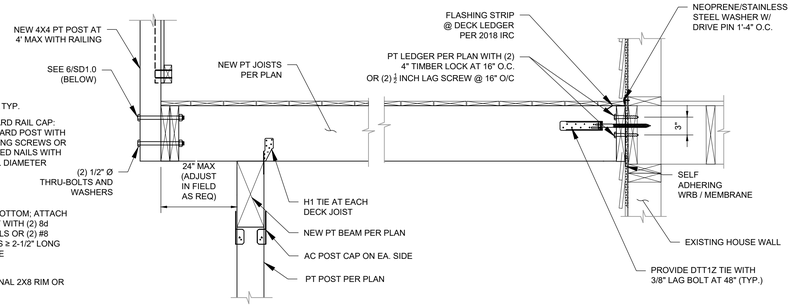


SECTION — PLAN VIEW

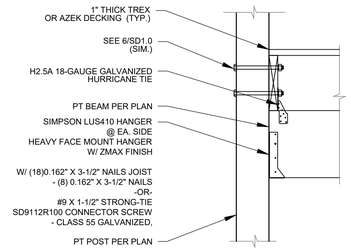
GUARD POST TO RIM JOISTDETAIL C

ALTERNATE ATTACHMENT OF HOLD-DOWN ANCHORS TO FRAMING MEMBERS POSSIBLE PER MANUFACTURER'S INSTRUCTIONS.

5 WOOD DECK GUARD RAIL DETAIL - OUTSIDE
3/4"=1'-0"



6 DECK SECTION DETAIL
1"=1'-0"



7 THROUGH COLUMN CONNECTION
3/4"=1'-0"

3

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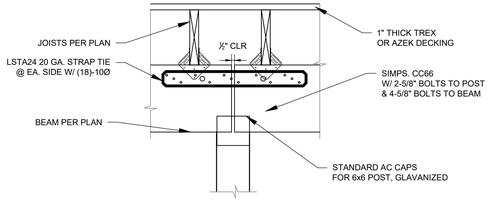

9 CENTER COLUMN CONNECTION
1"=1'-0"

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24x36 ARCH D

SD2.0
SHEET

GENERAL STRUCTURAL NOTES:

PROJECT SPECIFIC DESIGN CRITERIA

Snow Loads

Flat-roof snow load, pf = 25.0 psf
Snow exposure factor, Ce = 1.00
Snow load important factor, Is = 1.00
Thermal factor, Ct = 1.00

Gravity Loads*

Roof Dead Load = 15 psf + 5 psf (SOLAR PANELS)
Roof Live Load = 25 psf
Floor Live Load (Office) = 50 psf
Floor Live Load (Residential) = 40 psf, Balcony & Roof Decks = 60 psf
Floor live Load (Corridor) = 100 psf
Partition Loads = 10 psf (residential)
Partition Loads = 20 psf (office)
Floor Dead Loads = 12 psf (residential)
At rest earth pressure = 60 pcf
*As Applicable

GENERAL

1. ALL CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE 2021 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
2. THE ARCHITECT/ENGINEER (ARCH/ENGR) IS NOT RESPONSIBLE FOR THE LOCATION OF PROPERTY LINES AND/OR EASEMENT, SOIL CONDITIONS, MECHANICAL AND ELECTRICAL WORK, AND THE PRESENCE OF UTILITIES NOT REPORTED TO THE ARCH/ENGR IN WRITING BY THE OWNER.
3. THE ENGINEER IS NOT RESPONSIBLE FOR FIELD REVIEW OF CONSTRUCTION UNLESS SPECIFICALLY RETAINED FOR THAT PURPOSE.
4. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. ALL DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE INTENDED FOR REFERENCE ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
5. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, MEMBER SIZES, AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE STRUCTURAL DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED. CONTRACTOR SHALL COMPARE THE DRAWINGS AND NOTIFY THE ARCH/ENGR OF ANY DISCREPANCIES PRIOR TO COMMENCING WITH THE WORK.
6. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES REQUIRED TO PERFORM HIS WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES OF THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.
8. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.
9. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED, BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.
10. ALL STRUCTURAL SYSTEMS WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE, AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY
THE SUPPLIER.

GEOTECHNICAL

11. GEOTECHNICAL FOUNDATION NOTES: SUBGRADE PREPARATION INCLUDING DRAINAGE, EXCAVATION, COMPACTION, AND FILLING REQUIREMENTS, SHALL CONFORM STRICTLY WITH RECOMMENDATIONS GIVEN IN THE SOILS REPORT OR AS DIRECTED BY THE SOILS ENGINEER. FOOTINGS SHALL BEAR ON SOLID UNDISTURBED EARTH (CONTROLLED, COMPACTED STRUCTURAL FILL OR BOTH) AT LEAST 18" BELOW LOWEST ADJACENT FINISHED GRADE. FOOTING DEPTHS/ELEVATIONS SHOWN ON PLANS (OR IN DETAILS) ARE MINIMUM AND FOR GUIDANCE ONLY; THE ACTUAL ELEVATIONS OF FOOTINGS MUST BE ESTABLISHED BY THE CONTRACTOR IN THE FIELD WORKING WITH THE TESTING LAB AND SOILS ENGINEER. BACKFILL BEHIND ALL RETAINING WALLS WITH FREE DRAINING GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE AS NOTED IN THE SOILS REPORT.

IN THE ABSENCE OF A SOILS REPORT THE FOLLOWING VALUES ARE USED:

ALLOWABLE SOIL PRESSURE	1,500 PSF
LATERAL EARTH PRESSURE (RESTRAINED/UNRESTRAINED)	55 PCF/35 PCF
LATERAL EARTH PRESSURE (SEISMIC)	8H (ULTIMATE LOAD)
PASSIVE EARTH PRESSURE (INCLUDES FACTOR OF SAFETY = 1.5)	350 PCF
COEFFICIENT OF FRICTION (INCLUDES FACTOR OF SAFETY = 1.5)	0.35

SOILS REPORT REFERENCE: (N/A)

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CONCRETE

12. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED, AND PLACED IN ACCORDANCE WITH ACI 318-16 AND ACI 301-16. CONCRETE SHALL ATTAIN A 28-DAY STRENGTH (f'c) OF 3000 PSI, SHALL CONTAIN NO LESS THAN 5-1/2 SACKS OF CEMENT, HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.45, AND A SLUMP OF 5 INCHES OR LESS. CONCRETE HAS BEEN DESIGNED BASED ON A CONCRETE STRENGTH (f'c) OF 2500 PSI PER INTERNATIONAL BUILDING CODE SECTION 1705.3 EXCEPTION 2.3 TO AVOID SPECIAL INSPECTIONS AND MATERIAL TESTING.

13. PERFORMANCE MIX DESIGNS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. THE PERFORMANCE MIX DESIGN SHALL INCLUDE THE AMOUNTS OF CEMENT, FINE AND COARSE AGGREGATE (3/4" MAXIMUM), WATER AND ADMIXTURES AS WELL AS THE WATER CEMENT RATIO, SLUMP, TARGET CONCRETE STRENGTH. SUBSTANTIATING STRENGTH DATA CONFORMING TO CURRENT ACI AND ASTM STANDARDS SHALL BE SUBMITTED WITH THE PERFORMANCE MIX DESIGN. THE USE OF A PERFORMANCE MIX REQUIRES BATCH PLANT INSPECTION, THE COST OF WHICH SHALL BE PAID BY THE GENERAL CONTRACTOR. REVIEW OF MIX SUBMITTALS BY THE ENGINEER OF RECORD INDICATES ONLY THAT INFORMATION PRESENTED CONFORMS GENERALLY WITH CONTRACT DOCUMENTS. CONTRACTOR OR SUPPLIER MAINTAINS FULL RESPONSIBILITY FOR SPECIFIED PERFORMANCE.

14. ALL CONCRETE WITH SURFACES EXPOSED TO STANDING WATER SHALL BE AIR-ENTRAINED WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260, C494M, AND C618. UNLESS OTHERWISE NOTED THE TOTAL AIR CONTENT SHALL BE 5%. AIR CONTENT SHALL BE SAMPLED IN ACCORDANCE WITH ASTM C172 ABD ARI CONTENT MEASURED IN ACCORDANCE WITH ASTM C231 OR C173.

15. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENTS S1), GRADE 60, Fy = 60,000 PSI.
WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185

16. DETAILING OF REINFORCING STEEL (INCLUDING HOOKS AND BENDS) SHALL BE IN ACCORDANCE WITH ACI SP-66-04 AND ACI 318-14 CHAPTER 25. UNLESS OTHERWISE NOTED LAP REINFORCEMENT A MINIMUM OF 48 X BAR DIAMETER AND EMBED STANDARD 90 DEGREE HOOKS A MINIMUM OF 6-INCHES. LAP SPLICES SHALL BE STAGGERED SUCH THAT A MAXIMUM OF 50% OF THE TOTAL REINFORCEMENT IS SPLACED AT ANY ONE LOCATION. PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS.

LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.

NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY SO DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER. FIELD BENDING OF GRADE 60 REINFORCEMENT SHALL NOT BE ALLOWED.

17. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

FOOTINGS AND OTHER UNFORMED SURFACES CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
ALL OTHER SURFACES	1½"

18. SLABS-ON-GRADE: UNLESS NOTED OTHERWISE SHALL BE 4" CONCRETE, REINFORCED WITH 6X6 W1.4XW1.4 WELDED WIRE FABRIC CENTERED IN SLAB. UNLESS OTHERWISE DIRECTED BY SOILS REPORT PROVIDE MINIMUM 10 MIL VAPOR BARRIER OVER 4" OF COMPACTED SAND OR GRAVEL.

19. CAST-IN-PLACE CONCRETE: SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF DOOR AND WINDOW OPENINGS IN ALL CONCRETE WALLS. SEE ARCHITECTURAL DRAWINGS FOR ALL GROOVES, NOTCHES, CHAMFERS, FEATURE STRIPS, COLOR, TEXTURE, AND OTHER FINISH DETAILS AT ALL EXPOSED CONCRETE SURFACES.

WOOD

20. FRAMING LUMBER SHALL BE KILN DRIED OR MC-19, AND GRADED AND MARKED IN CONFORMANCE WITH WCLIB STANDARD GRADING RULES FOR WEST COAST LUMBER NO. 17, LATEST EDITION. FURNISH TO THE FOLLOWING MINIMUM STANDARDS.

JOISTS: (2X, 3X, AND 4X MEMBERS)	HEM-FIR NO. 2 MINIMUM BASIC DESIGN STRESS, F_b = 850 PSI
BEAM AND STRINGERS: (6 X AND LARGER MEMBERS)	DOUGLAS FIR LARCH NO. 1 MINIMUM BASIC DESIGN STRESS, F_b = 1,350 PSI
STUDS PLATES & MISCELLANEOUS LIGHT FRAMING	DOUGLAS FIR LARCH OR HEM-FIR NO. 2, MINIMUM BASIC DESIGN STRESS F_b = 850PSI, F_C = 1,300 PSI

21. GLUED LAMINATED MEMBERS SHALL BE FABRICATED AND IDENTIFIED AS REQUIRED BY ASTM D3737 AND A.I.T.C. A190.1. EACH MEMBER SHALL BEAR AN A.I.T.C. IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN A.I.T.C. CERTIFICATE OF CONFORMANCE. IN ADDITION ALL GLULAMS SHALL CONFORM TO APA PERFORMANCE STANDARD PRG-305. ALL SIMPLE SPAN BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V4, F_b = 2,400 PSI, F_V = 240 PSI, E = 1,800,000 PSI. ALL CANTILEVERED BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V8, F_b = 2,400 PSI, F_v= 240 PSI, E = 1,800,000 PSI. UNLESS OTHERWISE NOTED CAMBER ALL GLULAM BEAMS TO 2,000 FOOT RADIUS. WHERE REQUIRED BEAMS AND COLUMNS SHALL BE PRESSURE TREATED AFTER MANUFACTURE IN ACCORDANCE WITH AMERICAN WOOD-PRESERVATIVES ASSOCIATION STANDARD U1.

22. PARALLEL STRAND LUMBER (PSL): EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, PRODUCT DESIGNATION OR TYPE, THE PRODUCTION DATE, SPECIES OR SPECIES GROUP DESIGNATION, AND THE QUALITY CONTROL AGENCY. MEMBERS SHALL BE GLUED WITH A WATERPROOF ADHESIVE MEETING THE REQUIREMENTS OF ASTM D2559 WITH ALL GRAIN PARALLEL WITH THE LENGTH OF THE MEMBER. STRUCTURAL CAPACITIES SHALL BE ESTABLISHED IN ACCORDANCE WITH ASTM D5456 AND PRODUCT SHALL HAVE AN APPROVED I.C.C.-E.S. EVALUATION REPORT. MEMBERS SHALL BE TRANSPORTED AND STORED PER MANUFACTURERS RECOMMENDATIONS AND SHALL NOT BE EXPOSED TO PROLONGED MOISTURE. MINIMUM REQUIRED DESIGN PROPERTIES: F_b = 2900 PSI, E = 2200,000 PSI, Fv = 290 PSI.

DESIGN SHOWN ON PLANS IS BASED ON LUMBER MANUFACTURED BY THE WEYERHAEUSER. ALTERNATE MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH MEMBERS PROVIDED.

WOOD CONTINUED

23. LAMINATED STRAND LUMBER (LSL): EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, PRODUCT DESIGNATION OR TYPE, THE PRODUCTION DATE, SPECIES OR SPECIES GROUP DESIGNATION, AND THE QUALITY CONTROL AGENCY. MEMBERS SHALL BE GLUED WITH A WATERPROOF ADHESIVE MEETING THE REQUIREMENTS OF ASTM D2559 WITH ALL GRAIN PARALLEL WITH THE LENGTH OF THE MEMBER. STRUCTURAL CAPACITIES SHALL BE ESTABLISHED IN ACCORDANCE WITH ASTM D5456 AND PRODUCT SHALL HAVE AN APPROVED I.C.C.-E.S. EVALUATION REPORT. MEMBERS SHALL BE TRANSPORTED AND STORED PER MANUFACTURERS RECOMMENDATIONS AND SHALL NOT BE EXPOSED TO PROLONGED MOISTURE. MINIMUM REQUIRED DESIGN PROPERTIES: F_b = 2325 PSI, Fv = 310 PSI, E = 1,550,000 PSI,

LSL RIM JOISTS SHALL CONFORM TO ANSI/APA PRR 410 AND SHALL BE MARKED IN ACCORDANCE WITH THE STANDARD.

DESIGN SHOWN ON PLANS IS BASED ON LUMBER MANUFACTURED BY WEYERHAEUSER. ALTERNATE MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER, ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH MEMBERS PROVIDED.

24. PREFABRICATED PLYWOOD WEB JOIST DESIGN SHOWN ON PLANS IS BASED ON JOIST MANUFACTURED BY THE WEYERHAEUSER. ALTERNATE PLYWOOD WEB JOIST MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH PLYWOOD WEB JOIST PROVIDED.

30. PLYWOOD SHEATHING SHALL BE GRADE C-D, EXTERIOR GLUE OR STRUCTURAL II, EXTERIOR GLUE IN CONFORMANCE WITH DOC PS 1-09 OR PS 2-10 AND AMERICAN PLYWOOD ASSOCIATION PERFORMANCE STANDARD PRP-108. ORIENTED STRAND BOARD OF EQUIVALENT THICKNESS, EXPOSURE RATING AND PANEL INDEX MAY BE USED IN LIEU OF PLYWOOD. SEE PLANS FOR THICKNESS, PANEL IDENTIFICATION INDEX AND NAILING REQUIREMENTS. EACH PANEL SHALL BE IDENTIFIED FOR GRADE AND GLUE TYPE BY THE TRADEMARKS OF AN APPROVED TESTING AND GRADING AGENCY.

31. ALL WOOD PLATES IN DIRECT CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE-TREATED WITH AN APPROVED PRESERVATIVE, PROVIDE 2 LAYERS OF ASPHALT IMPREGNATED BUILDING PAPER BETWEEN UNTREATED LEDGERS, BLOCKING, ETC. AND CONCRETE OR MASONRY.

PRESSURE TREATED LUMBER SHALL COMPLY WITH THE AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) STANDARD U1, COMMODITY SPECIFICATION A.
ALL TREATED LUMBER SHALL BEAR THE QUALITY MARK OF AN ACCREDITED INSPECTION AGENCY. THE QUALITY MARK SHALL INCLUDE:

A. IDENTIFICATION OF TREATING MANUFACTURER
B. TYPE OF PRESERVATIVE USED
C. MINIMUM PRESERVATIVE RETENTION (PCF)
D. END USE FOR WHICH THE PRODUCT IS TREATED
E. IDENTITY OF THE ACCREDITED INSPECTION AGENCY
F. STANDARD TO WHICH THE PRODUCT IS TREATED

32. TIMBER CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, AS SPECIFIED IN THEIR CATALOG NUMBER C-C-2019. EQUIVALENT DEVICES BY OTHER MANUFACTURERS MAY BE SUBSTITUTED, PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. PROVIDE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE ONE-HALF OF THE NAILS OR BOLTS IN EACH MEMBER. SHIMS, WHERE REQUIRED, SHALL BE SEASONED AND DRIED AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED.

ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. ALL LAG SCREWS SHALL BE INSTALLED IN PRE-DRILLED HOLES.

UNLESS NOTED OTHERWISE, ALL NAILS SHALL BE COMMON AND MAXIMUM NUMBER OF NAILS AS SPECIFIED BY THE MANUFACTURER SHALL BE PROVIDED.

UNLESS NOTED OTHERWISE ALL SAWN LUMBER JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "LUS" SERIES JOIST HANGERS AND ALL PREFABRICATED PLYWOOD WEB JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "IUS" SERIES JOIST HANGERS UNLESS NOTED OTHERWISE.

ALL CONNECTIONS IN CONTACT WITH PRESERVATIVE-TREATED OR FIRE-RETARDANT-TREATED WOOD, SHALL BE OF HOT DIPPED ZINC-COATED GALVANIZED STEEL OR STAINLESS STEEL. HOT DIPPED GALVANIZED FASTENERS SHOULD CONFORM TO ASTM STANDARD 153, AND HOT DIPPED GALVANIZED CONNECTORS SHOULD CONFORM TO ASTM STANDARD A653 (CLASS G-185). STAINLESS STEEL FASTENERS AND CONNECTORS SHOULD BE TYPE 304 OR 316. NOTE: ELECTROPLATED GALVANIZED FASTENERS AND CONNECTORS ARE NOT TO BE USED WITH PRESSURE TREATED WOOD. SIMPSON PRODUCT FINISHES CORRESPONDING TO THE ABOVE REQUIREMENTS ARE ZMAX (HOT DIPPED GALVANIZED) AND SST300 (STAINLESS STEEL). STAINLESS STEEL HARDWARE AND FASTENERS SHALL NOT BE COMBINED WITH UNTREATED OR GALVANIZED MATERIAL.

33. WOOD FASTENERS:

A. NAIL SIZES SPECIFIED ON DRAWINGS ARE BASED ON THE FOLLOWING SPECIFICATIONS:

SIZE	LENGTH	DIAMETER
6d	2"	0.113"
8d	2-1/2"	0.131"
10d	3"	0.148"
12d	3-1/4"	0.148"
16d	3-1/2"	0.162"

DESIGN IS BASED ON COMMON STEEL WIRE NAILS MEETING THE REQUIREMENTS OF ASTM F1667. USE OF ALTERNATE FASTENERS MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO THE START OF CONSTRUCTION.

B. NAILS – PLYWOOD (APA RATED SHEATHING) FASTENERS TO FRAMING SHALL BE DRIVEN FLUSH TO FACE OF SHEATHING WITH NO COUNTERSINKING PERMITTED.

WOOD CONTINUED

34. WOOD FRAMING NOTES – THE FOLLOWING APPLY UNLESS OTHERWISE SHOWN ON THE PLANS:

A. ALL WOOD FRAMING DETAILS NOT SHOWN OTHERWISE SHALL BE CONSTRUCTED TO THE MINIMUM STANDARDS OF THE INTERNATIONAL BUILDING CODE WITH WASHINGTON STATE AMENDMENTS. MINIMUM NAILING, UNLESS OTHERWISE NOTED, SHALL CONFORM TO TABLE 2304.10.1 OF THE INTERNATIONAL BUILDING CODE. UNLESS NOTED OTHERWISE, ALL NAILS SHALL BE AS SPECIFIED ABOVE. COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. INSTALLATION OF BOLTS AND LAG SCREWS SHALL CONFORM TO SECTIONS 12.1.3 AND 12.1.4 OF THE 2021 NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. NATURALLY DURABLE OR PRESSURE TREATED WOOD SHALL BE PROVIDED WHERE REQUIRED BY SECTION 2304.12 OF THE INTERNATIONAL BUILDING CODE.

B. WALL FRAMING: ALL STUD WALLS SHOWN AND NOT OTHERWISE NOTED SHALL BE 2X6 AT 16" O.C. TWO STUDS MINIMUM SHALL BE PROVIDED AT THE END OF ALL WALLS AND AT EACH SIDE OF ALL OPENINGS. TWO 2 x 8 HEADERS SHALL BE PROVIDED OVER ALL OPENINGS NOT OTHERWISE NOTED AND SHALL BEAR FULLY ON A MINIMUM OF TWO STUDS. SOLID BLOCKING FOR WOOD COLUMNS SHALL BE PROVIDED THROUGH FLOORS TO SUPPORTS BELOW. PROVIDE SOLID BLOCKING BETWEEN STUDS AT MID-HEIGHT OF ALL STUD WALLS OVER 10' IN HEIGHT.

STUDS MAY BE NOTCHED, CUT, OR PENETRATED WITH ROUND BORED HOLES AS FOLLOWS:

STUD SIZE	MAXIMUM NOTCH / CUT	MAXIMUM BORED HOLE
2X4	7/8"	1-3/8"
2X6	1-3/8"	2-1/8"

BORED HOLES SHALL NOT BE LOCATED WITH 5/8" FROM THE EDGE OF THE STUD OR AT THE SAME LOCATION AS A NOTCH OR CUT.

WALLS SHALL HAVE A SINGLE BOTTOM PLATE AND A DOUBLE TOP PLATE. END NAIL TOP PLATE TO EACH STUD WITH TWO 16d NAILS, AND TOENAIL OR END NAIL EACH STUD TO BOTTOM PLATE WITH TWO 16d NAILS. FACE NAIL DOUBLE TOP PLATE WITH 16d AT 12" O.C. AND LAP MINIMUM 4'-0" AT JOINTS AND PROVIDE EIGHT 16d NAILS AT 4" O.C. EACH SIDE OF JOINT.

ALL STUD WALLS SHALL HAVE THEIR LOWER WOOD PLATES ATTACHED TO WOOD FRAMING BELOW WITH 16d NAILS AT 12" O.C. STAGGERED OR BOLTED TO CONCRETE WITH 5/8" DIAMETER ANCHOR BOLTS (WITH 7" MINIMUM EMBEDMENT) @ 4'-0" O.C. UNLESS INDICATED OTHERWISE. PROVIDE 3"x3" x1/4" HOT-DIPPED GALVANIZED PLATE WASHERS AT ALL ANCHOR BOLTS. INDIVIDUAL MEMBERS OF BUILT-UP POSTS SHALL BE NAILED TO EACH OTHER WITH 16d NAILS @ 12" O.C. STAGGERED. REFER TO THE PLANS AND SHEAR WALL SCHEDULE FOR REQUIRED SHEATHING AND NAILING. WHEN NOT OTHERWISE NOTED, PROVIDE GYPSUM WALLBOARD ON INTERIOR SURFACES NAILED TO ALL STUDS, TOP AND BOTTOM PLATES AND BLOCKING WITH NAILS AT 7" O.C. USE 5d COOLER NAILS FOR 1/2" GWB AND 6d COOLER NAILS FOR 5/8" GWB. PROVIDE 15/32" APA RATED SHEATHING (SPAN RATING 24/0) ON EXTERIOR SURFACES NAILED AT ALL PANEL EDGES (BLOCK UNSUPPORTED EDGES), TOP AND BOTTOM PLATES WITH 8d NAILS @ 6" O.C. AND TO ALL INTERMEDIATE STUDS AND BLOCKING WITH NAILS @ 12" O.C. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS.

C. FLOOR AND ROOF FRAMING: PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL PARTITIONS THAT EXTEND OVER MORE THAN HALF THE JOIST LENGTH AND AROUND ALL OPENINGS IN FLOORS OR ROOFS UNLESS OTHERWISE NOTED. PROVIDE SOLID BLOCKING AT ALL BEARING POINTS.

NOTCHES AT THE END OF JOISTS AND RAFTERS SHALL NOT EXCEED 1/4 THE DEPTH OF THE MEMBER. NOTCHES IN THE TOP OR BOTTOM SHALL NOT EXCEED 1/6 THE DEPTH OF THE MEMBER AND SHALL NOT BE LOCATED WITHIN THE MIDDLE 1/3 OF THE SPAN. THE DIAMETER OF ROUND HOLES BORED IN JOISTS AND RAFTERS SHALL NOT EXCEED 1/3 OF THE DEPTH OF THE MEMBER AND SHALL NOT BE LOCATED WITHIN 2" FROM THE TOP OR BOTTOM EDGE.

TOENAIL JOISTS TO SUPPORTS WITH TWO 16d NAILS. ATTACH TIMBER JOISTS TO FLUSH HEADERS OR BEAMS WITH SIMPSON METAL JOIST HANGERS IN ACCORDANCE WITH NOTES ABOVE. NAIL ALL MULTI-JOIST BEAMS TOGETHER WITH TWO ROWS OF 16d @ 12" O.C. ATTACH RAFTERS AND ROOF TRUSSES AT BEARING LINES WITH H2.5 @ 24" O.C. UNLESS OTHER METAL CONNECTIONS ARE PROVIDED.

UNLESS OTHERWISE NOTED ON THE PLANS, APA RATED ROOF AND FLOOR SHEATHING SHALL BE LAID UP WITH STRENGTH AXIS PERPENDICULAR TO SUPPORTS AND NAILED WITH NAILS @ 6" O.C. TO FRAMED PANEL EDGES AND OVER STUD WALLS AS SHOWN ON PLANS AND @ 12" O.C. TO INTERMEDIATE SUPPORTS. PROVIDE APPROVED PLYWOOD EDGE CLIPS CENTERED BETWEEN JOISTS/TRUSSES AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED TONGUE-AND-GROOVE JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS OF ALL ROOF AND FLOOR SHEATHING. TOENAIL BLOCKING TO SUPPORTS WITH 16d @ 12" O.C. UNLESS OTHERWISE NOTED. AT BLOCKED FLOOR AND ROOF DIAPHRAGMS PROVIDE FLAT 2X BLOCKING AT ALL UNFRAMED PLYWOOD PANEL EDGES AND NAIL WITH EDGE NAILING SPECIFIED.

POST INSALLED ANCHORS

35. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER–OF-RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REINFORCEMENT. HOLES SHALL BE DRILLED AND CLEANED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND ICC-ES REPORT. SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE SPECIFIED BELOW SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER-OF-RECORD. SUBSTITUTIONS SHALL HAVE CURRENT ICC-ES APPROVAL.

A. CONCRETE ANCHORS
1. MECHANICAL ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC-ES AC193. PRE-APPROVED MECHANICAL ANCHORS INCLUDE:
   a. SIMPSON STRONG-TIE "STRONG-BOLT" (ICC-ES ESR-1771)
   b. SIMPSON STRONG-TIE "TITEN-HD" (ICC-ES ESR-2713)

2. ADHESIVE ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC308. PRE-APPROVED ADHESIVE ANCHORS INCLUDE:
   a. SIMPSON STRONG-TIE "SET-XP" (ICC-ES ESR-2508)
   b. SIMPSON STRONG-TIE "AT-XP" (IAPMO UES ER-263)

CUSTOM DESIGN & ENGINEERING, INC
Custom Design and Engineering, Inc
6021 Roosevelt Way Ne
Seattle, WA 98115
www.cdengr.com
email: kam@cdengr.com

PROJECT NAME: UTKIN PATIO ADDITION
PROJECT ADDRESS: 15661 SE 11TH ST BELLEVUE, WA 98008

DWG TITLE: GENERAL NOTES

Number	Revision	Date

KAREN A. MOORE, 56097, REGISTERED PROFESSIONAL ENGINEER
12/3/2024

PROJECT # A3-3403

SHEET NO S1.0

FOUNDATION PLAN NOTES: (TYPICAL UNLESS NOTED OTHERWISE)

1. SLAB ON GRADE ELEVATION VARIES PER ARCHITECTURAL PLAN. SLAB SHALL BE 4" THICK WITH 6x6 W1.4xW1.4 WWM CENTERED, U.O.N. PREPARE SOILS AND PROVIDE MINIMUM 6-MIL VISQUEEN VAPOR BARRIER UNDER ALL SLABS. SLABS SHALL BE SUPORTED ON MINIMUM 4 INCHES OF FREE DRAINING MATERIAL.

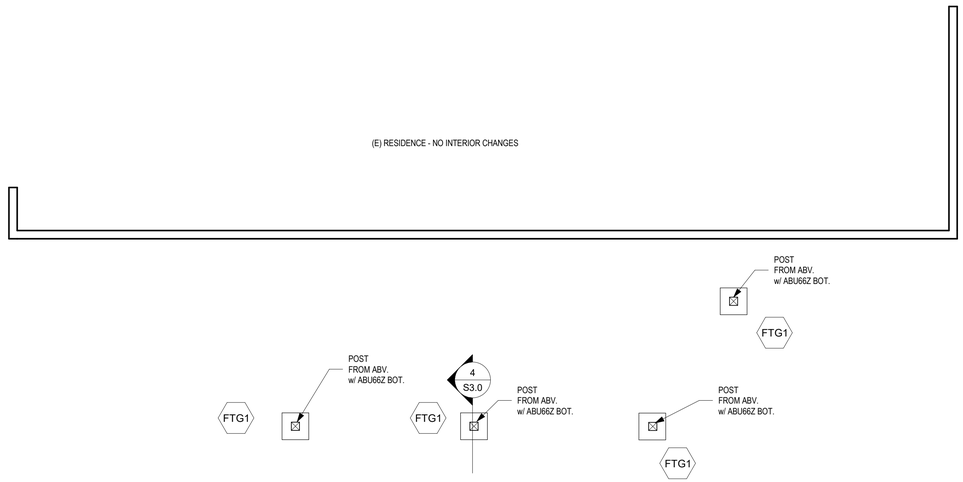
2. REFER ARCHITECTURAL SHEETS FOR DIMENSIONS AND ADDITIONAL TOP OF SLAB/CURB ELEVATIONS.

FRAMING PLAN NOTES: (TYPICAL UNLESS NOTED OTHERWISE)

1. FLOOR SHEATHING SHALL BE 23/32" TONGUE AND GROOVE APA RATED SHEATHING (SPAN RATING 40/20). NAIL @ ALL FRAMED PANEL EDGES AND OVER SHEARWALLS w/10d @ 6"oc AND 12"oc TO ALL INTERMEDIATE FRAMING.
2. ROOF SHEATHING SHALL BE 15/32" APA RATED SHEATHING (SPAN RATING 24/0). NAIL @ ALL FRAMED PANEL EDGES AND OVER SHEARWALLS w/ 8d @ 6"oc AND 12"oc TO ALL INTERMEDIATE FRAMING. ENTIRE ROOF HAS BEEN DESIGNED FOR ADDITIONAL 5 PSF SOLAR PANELS.
3. SW-_ INDICATES STRUCTURAL WALL TYPE PER SCHEDULE 12/S6.0b. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL WALL INFORMATION.
4. ALL HEADERS AND BEAMS ARE MARKED ON PLAN. REFER NOTE 5 FOR SUPPORT REQUIRMENTS.
5. THE NUMBER OF COLUMN STUD PLIES ARE INDICATED GRAPHICALLY ON THE PLANS. TIMBER POST CALLOUTS ARE LISTED WHERE REQUIRED. A MINIMUM OF (2) STUDS ARE REQUIRED FOR ALL BEAMS & HEADERS.

LEGEND

⊓ ⊓	HANGER	SW-x	INDICATES SHEARWALL PER SCHEDULE 12/S6.0b
⊠	COLUMNS BELOW	TDX	INDICATES CAST IN PLACE HOLDOWN. REFER DETAIL 10/S6.0b SECTION A FOR REQUIRED NUMBER OF STUDS, THREADED ROD CALLOUT & EMBEDMENT INTO CONCRETE.
⬚	COLUMNS ABOVE		
	ABRUPT CHANGE IN SLAB/ FRAMING ELEVATION	MSTCXX	INDICATES SIMPSON STRAP HOLDOWN. REFER DETAIL 10/S6.0b SECTION B FOR INSTALLATION REQUIRMENTS
FB	INDICATES FLUSH BEAM		
	SPAN AND EXTENTS	HDUXX	INDICATES EPOXY EMBEDED HOLDOWN. REFER DETAIL 10/S6.0b SECTION C FOR REQUIRED NUMBER OF STUDS & EMBEDMENT INTO CONCRETE.
FTGX	SPOT FOOTING - SIZE AND REQUIRED REINFORCING PER FOOTING SCHEDULE		



FOOTING SCHEDULE

FOOTING ID	SIZE (WIDTH X LENGTH X DEPTH)	REINFORCING	NOTES (IF APPLICABLE)
FTG1	1'-6" X 1'-6" X 10"	(3) #4 E.W	

FOUNDATION PLAN
1/4" = 1'-0"

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CUSTOM DESIGN & ENGINEERING, INC

Custom Design and Engineering, Inc
6021 Roosevelt Way Ne
Seattle, WA 98115
www.cdengr.com
email: kam@cdengr.com

PROJECT NAME:
UTKIN PATIO ADDITION

PROJECT ADDRESS:
15661 SE 11TH ST
BELLEVUE, WA 98008

DWG TITLE
FOUNDATION PLAN

Number | Revision | Date

KYRIAKOS A. MICHAELIDES
56997
REGISTERED
PROFESSIONAL ENGINEER
12/3/2024

PROJECT #
A3-3403

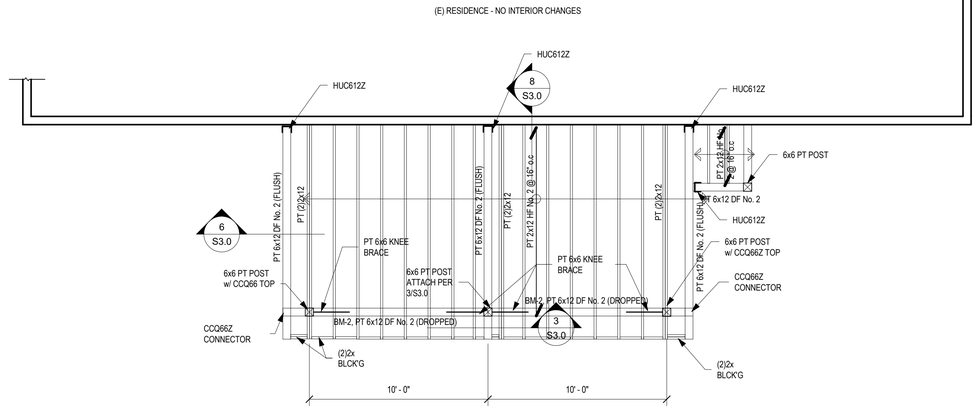
SHEET NO
S2.0

FRAMING PLAN NOTES: (TYPICAL UNLESS NOTED OTHERWISE)

1. FLOOR SHEATHING SHALL BE 23/32" TONGUE AND GROOVE APA RATED SHEATHING (SPAN RATING 40/20). NAIL @ ALL FRAMED PANEL EDGES AND OVER SHEARWALLS w/10d @ 6"oc AND 12"oc TO ALL INTERMEDIATE FRAMING.
2. ROOF SHEATHING SHALL BE 15/32" APA RATED SHEATHING (SPAN RATING 24/0). NAIL @ ALL FRAMED PANEL EDGES AND OVER SHEARWALLS w/ 8d @ 6"oc AND 12"oc TO ALL INTERMEDIATE FRAMING. ENTIRE ROOF HAS BEEN DESIGNED FOR ADDITIONAL 5 PSF SOLAR PANELS.
3. SW-_ INDICATES STRUCTURAL WALL TYPE PER SCHEDULE 12/S6.0b. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL WALL INFORMATION.
4. ALL HEADERS AND BEAMS ARE MARKED ON PLAN. REFER NOTE 5 FOR SUPPORT REQUIRMENTS.
5. THE NUMBER OF COLUMN STUD PLIES ARE INDICATED GRAPHICALLY ON THE PLANS. TIMBER POST CALLOUTS ARE LISTED WHERE REQUIRED. A MINIMUM OF (2) STUDS ARE REQUIRED FOR ALL BEAMS & HEADERS.

LEGEND

- HANGER
- COLUMNS BELOW
- COLUMNS ABOVE
- ABRUPT CHANGE IN SLAB/ FRAMING ELEVATION
- FB — INDICATES FLUSH BEAM
- SPAN AND EXTENTS
- FTGX — SPOT FOOTING - SIZE AND REQUIRED REINFORCING PER FOOTING SCHEDULE
- SW-x — INDICATES SHEARWALL PER SCHEDULE 12/S6.0b
- TDx — INDICATES CAST IN PLACE HOLDOWN. REFER DETAIL 10/S6.0b SECTION A FOR REQUIRED NUMBER OF STUDS, THREADED ROD CALLOUT & EMBEDMENT INTO CONCRETE.
- MSTCXX — INDICATES SIMPSON STRAP HOLDOWN. REFER DETAIL 10/S6.0b SECTION B FOR INSTALLATION REQUIRMENTS
- HDUX — INDICATES EPOXY EMBEDED HOLDOWN. REFER DETAIL 10/S6.0b SECTION C FOR REQUIRED NUMBER OF STUDS & EMBEDMENT INTO CONCRETE.



DECK FRAMING PLAN

1/4" = 1'-0"

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CUSTOM DESIGN & ENGINEERING, INC

Custom Design and Engineering, Inc
6021 Roosevelt Way Ne
Seattle, WA 98115
www.cdengr.com
email: kam@cdengr.com

PROJECT NAME:
UTKIN PATIO ADDITION

PROJECT ADDRESS:
15661 SE 11TH ST
BELLEVUE, WA 98008

DWG TITLE
DECK FRAMING PLAN

Number | Revision | Date

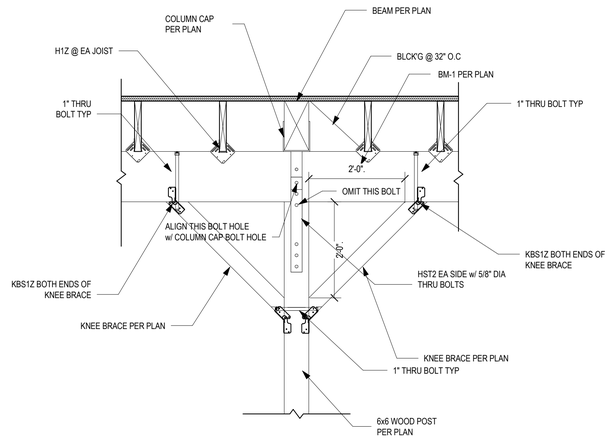
KYRIAKOS A. MORFOPOULOS — 54097 — REGISTERED PROFESSIONAL ENGINEER

12/3/2024

PROJECT #
A3-3403

SHEET NO
S2.1

1



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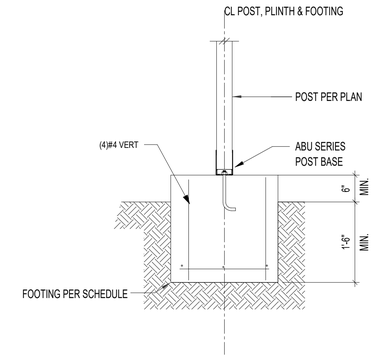

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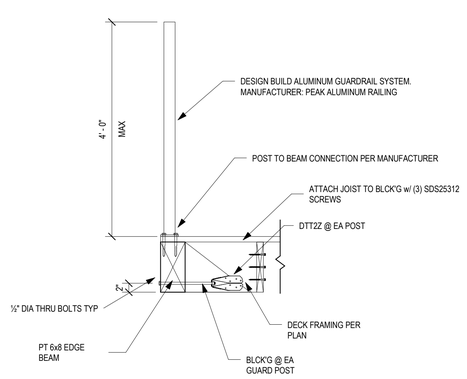
NOTE: GUARDRAIL & BOTTOM ATTACHMENT MUST BE DESIGNED FOR 200lb LATERAL THRUST FORCE



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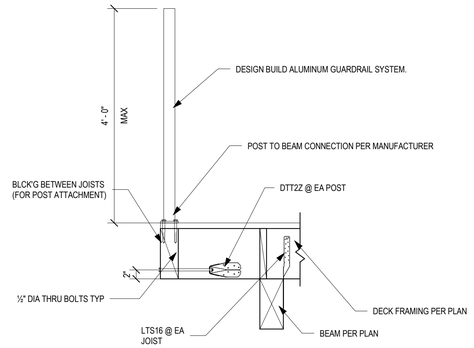
NOTE: GUARDRAIL & BOTTOM ATTACHMENT MUST BE DESIGNED FOR 200lb LATERAL THRUST FORCE



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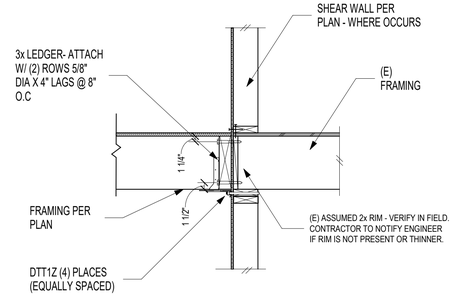

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CUSTOM DESIGN & ENGINEERING, INC

Custom Design and Engineering, Inc
6021 Roosevelt Way Ne
Seattle, WA 98115
www.cdengr.com
email: kam@cdengr.com

PROJECT NAME:
UTKIN PATIO ADDITION

PROJECT ADDRESS:
15661 SE 11TH ST
BELLEVUE, WA 98008

DWG TITLE
DETAILS

Number | Revision | Date

KYRIAKOS M. MICHAELIDES
56997
REGISTERED
PROFESSIONAL ENGINEER
STATE OF WASHINGTON

12/3/2024

PROJECT #
A3-3403

SHEET NO
S3.0

TOPOGRAPHIC & BOUNDARY SURVEY

LEGAL DESCRIPTION

(PER STATUTORY WARRANTY DEED RECORDING #20160616001536)

LOT 8, BLOCK 6, LAKE HILLS NO. 1, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 56 OF PLATS, PAGES 86 TO 88, RECORDS OF KING COUNTY, WASHINGTON.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

BASIS OF BEARINGS

N 08°02'57" W BETWEEN FOUND CENTERLINE MONUMENTATION – CALCULATED PER R1

REFERENCES

R1. LAKE HILLS NO. 1 PLAT, VOL. 56, PG. 86, RECORDS OF KING COUNTY, WASHINGTON.
R2. RECORD OF SURVEY, VOL. 315, PG. 43, RECORDS OF KING COUNTY, WASHINGTON.

VERTICAL DATUM

NAVD88 PER CITY OF BELLEVUE BENCHMARK #503
ELEV: 267.284'

SURVEYOR'S NOTES

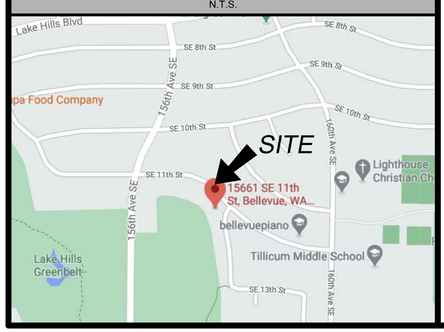
1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN NOVEMBER AND DECEMBER OF 2020. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVENIENCE ONLY. DESIGN SHOULD RELY ON SPOT ELEVATIONS.
2. ALL MONUMENTS SHOWN HEREON WERE LOCATED DURING THE COURSE OF THIS SURVEY UNLESS OTHERWISE NOTED.
3. THE TYPES AND LOCATIONS OF ANY UTILITIES SHOWN ON THIS DRAWING ARE BASED ON INFORMATION PROVIDED TO US, BY OTHERS OR GENERAL INFORMATION READILY AVAILABLE IN THE PUBLIC DOMAIN INCLUDING, AS APPLICABLE, IDENTIFYING MARKINGS PLACED BY UTILITY LOCATE SERVICES AND OBSERVED BY TERRANE IN THE FIELD. AS SUCH, THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS ARE FOR INFORMATIONAL PURPOSES ONLY AND SHOULD NOT BE RELIED ON FOR DESIGN OR CONSTRUCTION PURPOSES; TERRANE IS NOT RESPONSIBLE OR LIABLE FOR THE ACCURACY OR COMPLETENESS OF THIS UTILITY INFORMATION. FOR THE ACCURATE LOCATION AND TYPE OF UTILITIES NECESSARY FOR DESIGN AND CONSTRUCTION, PLEASE CONTACT THE SITE OWNER AND THE LOCAL UTILITY LOCATE SERVICE (800-424-5555).
4. SUBJECT PROPERTY TAX PARCEL NO. 4036800650.
5. SUBJECT PROPERTY AREA PER THIS SURVEY IS 8,526± S.F. (0.20 ACRES)
6. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST THAT ARE NOT SHOWN HEREON.
7. FIELD DATA FOR THIS SURVEY WAS OBTAINED BY DIRECT FIELD MEASUREMENTS WITH A CALIBRATED ELECTRONIC 5-SECOND TOTAL STATION AND/OR SURVEY GRADE GPS OBSERVATIONS. ALL ANGULAR AND LINEAR RELATIONSHIPS ARE ACCURATE AND MEET THE STANDARDS SET BY WAC 332-130-090.

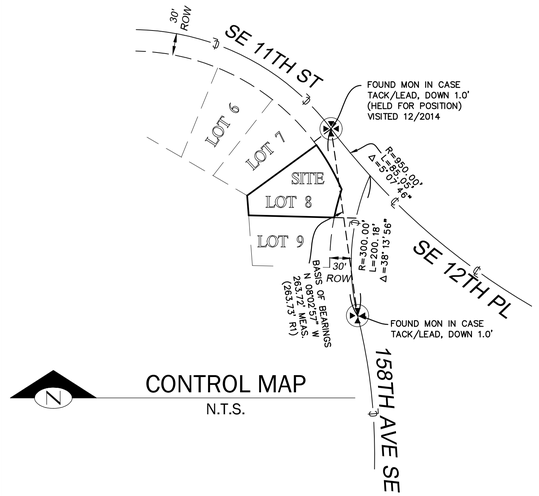
LEGEND

- ASPHALT SURFACE
- BRICK SURFACE
- BUILDING
- CENTERLINE ROW
- CONCRETE SURFACE
- RETAINING WALL
- DECK
- FENCE LINE (CHAIN LINK)
- FENCE LINE (WIRE)
- FENCE LINE (WOOD)
- GAS METER
- MONUMENT IN CASE (FOUND)
- POWER METER
- REBAR AS NOTED (FOUND)
- ROCKERY
- SEWER LINE
- SEWER MANHOLE
- SIZE TYPE TREE (AS NOTED)
- WATER METER
- WATER VALVE
- AC UNIT

VICINITY MAP

N.T.S.





CONTROL MAP
N.T.S.

STEEP SLOPE/BUFFER DISCLAIMER:

THE LOCATION AND EXTENT OF STEEP SLOPES SHOWN ON THIS DRAWING ARE FOR INFORMATIONAL PURPOSES ONLY AND CANNOT BE RELIED ON FOR DESIGN AND/OR CONSTRUCTION. THE PITCH, LOCATION, AND EXTENT ARE BASED SOLELY ON OUR GENERAL OBSERVATIONS ON SITE AND OUR CURSORY REVIEW OF READILY AVAILABLE PUBLIC DOCUMENTS; AS SUCH, TERRANE CANNOT BE LIABLE OR RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY STEEP SLOPE INFORMATION. ULTIMATELY, THE LIMITS AND EXTENT OF ANY STEEP SLOPES ASSOCIATED WITH ANY SETBACKS OR OTHER DESIGN OR CONSTRUCTION PARAMETERS MUST BE DISCUSSED AND APPROVED BY THE REVIEWING AGENCY BEFORE ANY CONSTRUCTION CAN OCCUR.

(IN FEET)
1 INCH = 10 FT.

measure success

TOPOGRAPHIC & BOUNDARY SURVEY
NW 1/4 OF NE 1/4 SEC 02, TWP. 24N., RGE 05E., W.M.
PARCEL NO. 4036800650

UTKIN / ALLENDE RESIDENCE
15661 SE 11TH ST
BELLEVUE, WA 98008

JACOB GOODMAN MILLER — REGISTERED LAND SURVEYOR — WASHINGTON — 38654 — 3/17/15 — PROFESSIONAL LAND SURVEYOR
12/04/20

Terrane
10801 Main Street, Suite 102, Bellevue, WA 98004
phone 425.458.4488 support@terrane.net
www.terrane.net

JOB NUMBER:	202124
DATE:	12/04/20
DRAFTED BY:	RSN
CHECKED BY:	JGM/CSP
SCALE:	1" = 10'

REVISION HISTORY

SHEET NUMBER
1 OF 1

City Response Memo

To: Lydia and Jose Rady-Utkin

From: Jennifer Marriott

Date: 3 November 2025

Property: 25 100110 BR - RFI

The following discusses how the Project meets the requirements of BLUC 20.30P.140 *Decision criteria*.

BLUC 20.30P.140 notes that "the *Director* may approve or approve with modifications an application for a *Critical Areas Land Use* Permit if" the following items are addressed. Please see each item with the discussion following.

A. The proposal obtains all other permits required by the *Land Use* Code; and

Noted. City to verify which other City permits are required.

B. The proposal utilizes to the maximum extent possible the best available construction, design and *development* techniques which result in the least impact on the *critical area* and *critical area* buffer; and

See critical areas report.

C. The proposal incorporates the performance standards of Part *20.25H* LUC to the maximum extent applicable; and

See critical areas report.

D. The proposal will be served by adequate public facilities including streets, fire protection, and utilities; and

Noted. This Project is an existing home so presumably these items are already met.

E. The proposal includes a *mitigation* or restoration plan consistent with the requirements of LUC *20.25H.210*; except that a proposal to modify or remove vegetation pursuant to an approved Vegetation Management Plan under LUC *20.25H.055.C.3.i* shall not require a *mitigation* or restoration plan; and

See critical areas report.

F. The proposal complies with other applicable requirements of this code. (Ord. 5683, 6-26-06, § 27)

The Project was designed to meet the applicable codes.

Critical Areas Report

15661 SE 11th Street

Bellevue, Washington

24 October 2025

PREPARED FOR:
Lydia and Jose Rady-Utkin

PREPARED BY:
Wet.land, LLC
206-309-8100
Wet.land



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3. Proposed Site Plan and Mitigation
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Appendix D: Agency Database Results
Appendix E: Photodocument

DISCLAIMER

This consulting report has been prepared by Wet.land, LLC based on our best professional judgment. Any delineations, wetland ratings, stream typings, or general characterizations were completed in accordance with the applicable regulations at the time field work was completed. Where information was provided by Others and not collected directly by Wet.land, LLC, such is stated within the report. Conclusions presented within this report are based on the information available at the time of report preparation, and are accurate and true to the best of our knowledge. The opinions and conclusions contained within this report are a reflection of our interpretation of applicable regulations and are not final until concurrence is provided by the appropriate agencies.

1. Report Purpose

1.1 Project Name and Purpose

The Project is a small 0.20-acre parcel in Bellevue. No critical areas occur onsite except for a wetland buffer that extends onto the Site from an offsite wetland. The buffer is proposed to be modified to accommodate a patio remodelling project.

1.2 Applicant

The Applicant for the Project is Lydia and Jose Rady-Utkin.

Email: *radyutkin7@gmail.com*

1.3 Report Purpose

This report has been prepared in accordance with the requirements of the Bellevue Land Use Code (LUC) Part 20.25H *Critical Areas Overlay District* in light of State and Federal regulations.

1.4 Preparer Qualifications

Field investigations and reporting were completed by Jennifer Marriott, PWS (**Appendix A**).

Jennifer Marriott has a Bachelor's Degree and a Master's Degree in Biology from University of Central Florida, and a second Master's Degree in Soil and Environmental Science from the University of Florida. She has over 20 years of experience in wetland delineations and environmental permitting.

2. Project Site

2.1 Project Location

The Project Site is Parcel 4036800650 located at 15661 SE 11th Street in Bellevue, Washington (**Appendix B, Figure 1**). The latitude/longitude for the center is 47.59989, -122.12954.

2.2 Project Site Description

The parcel is zoned for Single Family Residential. The Site is currently developed with a single-family home, driveway, and managed backyard that backs up to a large public open space (Lake Hills Greenbelt).

The parcel slopes downhill from east to west. A large wetland complex is located on the adjacent public property that is associated with Kelsey Creek. This wetland system was evaluated as part of a City sewer line upgrade project that is being completed now. This project will be discussed in more detail below as it pertains to critical areas on the property.

More detail on the existing conditions of these parcels is provided below in **Chapter 3**.

3. Existing Site Conditions

In-depth analysis of existing conditions within the Project Site is described below.

3.1 Previous Studies

The City is in the middle of completing a sewer line upgrade through the area of the Site, that includes the back of this parcel. Jacobs evaluated critical areas for the sewer line project that are outlined in their report *Critical Areas Report – Bogline Sanitary Sewer Rehabilitation Project*, dated 25 May 2022. Jacobs identified two (2) wetlands that occur in the vicinity of the Site, including their Wetlands A and B. Wetland A was also called Wetland 1 in this report, and was identified as a Category II wetland with a 110-foot buffer that extends over the Site. Wetland B, also labeled as Wetland 2, was identified as a Category III wetland with a standard 60-foot buffer that does not extend over the Site.



Figure 2. Stream and Wetlands Adjacent to Construction Limits

6 May 2022

Image 1. *Figure 2 from Jacobs CAR*

The Jacobs report shows the Wetland A/1 buffer extending all the way to 158th Avenue SE. However, it is unclear why the buffer was extended so far. There are steep slopes at the rear of this house/parcel, however, the slopes at the back of the lot do not meet the City's requirements of a steep slope where the slope is 40% or more with a rise of at least 10 feet and exceed 1,000 square feet in area. The slopes onsite that are 40% or more do not exceed 10 feet in rise, though the total area is more than 1,000 square feet. In light of the lack of rise exceeding 10 feet where slopes are 40% or more, the buffer is extended off the wetland edge.

3.2 Methodology

Prior to field investigations of the Site, a thorough review of existing publicly available databases was completed to determine what has been previously mapped over the Site. These findings are outlined in Section 3.2 below. During field investigations, the routine approach described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (U.S. Army Corps of Engineers, 2010) was used as a baseline for evaluating the Site for the presence of wetlands. This supplement is in addition to the 1987 Corps of Engineers Wetlands Delineation Manual, which serves as the baseline on which the regional supplements build. Wetlands were rated using the Washington State Wetland Rating System for Western Washington (Hruby 2014). The presence of streams onsite was determined using the methodology described in *Determining the Ordinary High Water Mark on Streams in Washington State* (Olson and Stockdale, 2010).

3.3 Database Review Summary

An in-depth review of Agency database results for this Project Site follows in **Table 1**, below. Databases were reviewed for features on the site and within 225 feet of the site. Copies of database results are provided in **Appendix D**. Databases referenced include:

- Natural Resource Conservation Service (NRCS), Websoils Survey (NRCS)
- US Fish and Wildlife (USFWS), Wetlands Online Mapper (National Wetlands Inventory, NWI) (USFWS)
- Washington State Department of Ecology (ECY) Water Quality Atlas
- Washington State Department of Fish and Wildlife (WDFW) Priority Species and Habitats
- Washington State Department of Natural Resources (WDNR) Forest Practices Application Mapping Tool (FPAMT)
- Statewide Integrated Fish Distribution (SWIFD) Web Map
- Salmonscape
- StreamNet
- Fish Passage Culverts Map
- Google Earth
- Historic Aerials, www.historicaerials.com
- Bellevue GIS

Table 1. Agency Database Results

Database	Agency (Database Manager)	Results
Township, Range, Section Map	WSDOT	NE ¼ of Section 2, Township 24 North, Range 5 East, Willamette Meridian
Watershed Boundaries	ECY	HUC 8 (12) – 17110012(0202) WRIA 8: Cedar – Sammamish Cedar River/Lake Washington Kelsey Creek Drainage Basin
Websoils	NRCS	Onsite: AmC – Arents, Alderwood material, 6 – 15% slopes Offsite: Sk – Seattle muck (hydric)
National Wetlands Inventory	USFWS	PSSA – palustrine scrub shrub temporary flooded
Map Service Center	FEMA	The 100 and 500-year FEMA floodplain are mapped west of the property within the study area – in association with Kelsey Creek offsite
Washington State Water Quality Atlas	ECY	The Site does not drain to a 303(d) listed water within one mile. Project not located within a TMDL.
Priority Habitats and Species (PHS)	WDFW	Wetland mapped within study area.
Forest Practices Application Mapping Tool	WDNR	No features mapped within study area.
Statewide Integrated Fish Distribution (SWIFD) Web Map	NWIFC	No features mapped within study area.
Washington State Fish Passage	WDFW	Culvert (922408) identified west of the site. Culvert is mapped as total fish passage blockage.
Bellevue Map Viewer	City of Bellevue	Stream mapped west of the property.

3.4 Field Investigation Results

No wetlands or streams were identified within the Site, but do occur offsite to the west. The Jacobs report was used to document the offsite critical areas. A photodocument is included in **Appendix E**, and a summary of these findings is provided below.

3.4.1 Wetlands

No wetlands were identified onsite. One wetland (Wetland A) was observed off-site to the west that was documented by Jacobs in their report for the Bogline Sewerline project (**Figure 2**).

3.4.2 Streams

No streams occur on the Site. One stream, Kelsey Creek Tributary, was observed off-site to the west beyond the limits of the study area.

3.5 Habitat Assessment

General observations on expected and observed wildlife usage is below.

3.5.1 Native Vegetation

Native vegetation is dominant in the backyard around the maintained lawn with native species occurring at the back of the property.

The City's sewer line project passes through the back of this lot, and as part of the sewer line project's mitigation, new plantings of native species are being added this summer to the back of the site. The plants were laid out but not installed at the time of the site evaluation.

3.5.2 General Wildlife Usage

Common urban wildlife such as small to medium mammals and birds are expected to use the Site. Opportunities for listed species is very limited given the dearth of available habitat on the Site.

3.5.3 Species of Local Importance

Species of Local Importance are defined in LUC 20.25H.150 and includes a list of 23 species (provided below). There is the possibility that birds of prey could use the large trees onsite for perching, but no evidence was observed of active, regular usage by any of these bird species. Suitable habitat is lacking onsite that would support these species, given the lack of mature, native vegetation broadly located on-site, except for a handful of trees, and general disturbed (urban) condition of the property.

1. Bald eagle (*Haliaeetus leucocephalus*);
2. Peregrine falcon (*Falco peregrinus*);
3. Common loon (*Gavia immer*);
4. Pileated woodpecker (*Dryocopus pileatus*);
5. Vaux's swift (*Chaetura vauxi*);
6. Merlin (*Falco columbarius*);
7. Purple martin (*Progne subis*);
8. Western grebe (*Aechmophorus occidentalis*);
9. Great blue heron (*Ardea herodias*);
10. Osprey (*Pandion haliaetus*);
11. Green heron (*Butorides striatus*);
12. Red-tailed hawk (*Buteo jamaicensis*);
13. Western big-eared bat (*Plecotus townsendii*);
14. Keen's myotis (*Myotis keenii*);
15. Long-legged myotis (*Myotis volans*);
16. Long-eared myotis (*Myotis evotis*);
17. Oregon spotted frog (*Rana pretiosa*);
18. Western toad (*Bufo boreas*);
19. Western pond turtle (*Clemmys marmorata*);
20. Chinook salmon (*Oncorhynchus tshawytscha*);
21. Bull trout (*Salvelinus confluentus*);
22. Coho salmon (*Oncorhynchus kisutch*);
23. River lamprey (*Lampetra ayresi*).

4. Regulatory Review

The Site falls under the jurisdiction of the City of Bellevue. A summary of the relevant regulations follows.

4.1 Federal Regulations

Waters of the US, including the wetlands and watercourses, occur adjacent to the Site and may be subject to applicable Federal regulations. Wetland and stream (watercourse) impacts are regulated at the Federal level by Sections 404 and 401 of the Clean Water Act. The US Army Corps of Engineers (USACE) is responsible for administering compliance with Section 404 via the issuance of Nationwide or Individual Permits for any fill or dredging activities within wetlands under Corps jurisdiction. If no actions are proposed that would directly impact the offsite stream, then no coordination with the USACE is necessary for Section 404 compliance.

4.2 State Regulations

Wetlands on the Site are subject to applicable State regulations. However, City regulations retaining to wetlands and streams are based on state guidelines and will dictate critical areas protections.

4.2.1 Washington State Department of Ecology (ECY)

Any project that is subject to Section 404 permitting is also required to comply with Section 401 Water Quality Certification, which is administered by the Washington State Department of Ecology (ECY). If no actions are proposed that would directly impact a water of the US, then no coordination with the USACE is necessary for Section 404 compliance, which would also include Section 401 compliance.

4.2.2 Washington State Department of Fish and Wildlife (WDFW)

Hydraulic Project Application (HPA) permits are only required where impacts that have the potential to affect the bed, bank, and flow of streams or other waterbodies.

4.3 Local Regulations

The Site falls within the City of Bellevue limits and is subject to the regulations of LUC Part 20.25H *Critical Areas Overlay District*.

4.3.1 Shoreline Jurisdiction

The Site does not occur within Shoreline jurisdiction.

4.3.2 Non-Shoreline Jurisdiction

Wetlands and Streams

Wetland A was rated as a Category II wetland with a Habitat Score of 6. The standard buffer is 110 feet with a structure setback of 15 feet (**Figure 2-3**). No other critical areas occur close enough to extend a buffer onto the Site.

4.3.3 Flood Hazard Area

No 100-year floodplains are mapped on the Site.

5. Proposed Project

The project proposes to remodel an existing deck off the back of this existing single-family residence (**Appendix B, Figure 3**). A portion of the patio is existing. This existing patio was previously partially expanded into the buffer at the back of the house, and is proposed to be expanded further into the outer portion of the wetland buffer. This buffer impact is intended to remain adjacent to the back of the house to reduce intrusions into the onsite buffer. Mitigation efforts onsite to compensate for these buffer encroachments are hindered by the presence of the sewer line. However, to offset the patio encroachments, especially in light of the habitat restoration work completed in conjunction with the City's sewer line project, this Project will provide almost 400 square feet of habitat enhancement onsite that will back up to the work completed by the City's project for a net gain through this area. This exceeds the minimum 1:1 ratio required by the City (BLUC 20.25H.105.C.3).

The buffer enhancement will include removing invasive species through the remainder of the backyard outside the limits of the City's sewer project, and add enhancement plantings within this outer portion of the buffer where a native canopy exists. Given the existing native canopy, the enhancement plantings will involve the installation of 15 native shrubs intended to enhance the species diversity of this area for a net improvement of buffer function over the heavily managed backyard. Monitoring would be completed for three (3) years targeting survival of the installed species.

5.1 Standard Mitigation Measures

The project will apply the standard mitigation measures as outlined in BLUC 20.25H.100 *Performance Standards*.

A. Lights shall be directed away from the wetland.

All lights will be aimed away from the critical areas at the back of the property, and directed either towards the road or at the ground.

B. Activity that generates noise such as parking lots, generators, and residential uses shall be located away from the wetland, or any noise shall be minimized through use of design and insulation techniques.

This is a single-family residence. The back patio is facing the critical areas. No parking areas or generators will be located in the backyard. The plantings proposed will add a dense layer of vegetation at the upper limits of the buffer that should serve to insulate the wetland, which is some distance down the hill, from any activities on the back patio of this single-family home.

C. Toxic runoff from new impervious area shall be routed away from the wetlands.

Stormwater from the proposed project will meet the necessary City regulations.

D. Treated water may be allowed to enter the wetland critical area buffer.

Stormwater from the proposed project will meet the necessary City regulations.

E. The outer edge of the wetland critical area buffer shall be planted with dense vegetation to limit pet or human use.

Noted. Dense plantings of understory species are proposed at the upper limits of the buffer, uphill of the sewer line plantings, to provide a dense buffer to separate the back patio from the remainder of the buffer and other critical areas.

F. Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the stream buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended.

Noted. The use of pesticides, insecticides, and fertilizers will be used consistent with the City's *Environmental Best Management Practices*. Generally application is restricted within critical areas except as determined necessary to manage invasive plant species. Any use of pesticides, insecticides, and fertilizers will meet City standards.

G. All applicable standards of Chapter 24.06 BCC, Storm and Surface Water Utility Code, are met. (Ord. 6417, 5-21-18, § 34; Ord. 5680, 6-26-06, § 3)

Stormwater from the proposed project will meet the necessary City regulations.

5.2 Buffer Reduction

The onsite wetland buffer is proposed to be reduced beyond what the code would allow because modifying the buffer consistent with the code for buffer averaging is not feasible on this Site. The standard buffer for this wetland currently encumbers roughly half of this existing single-family parcel. The parcel is laid out in a way that does not allow for reasonable use of the unencumbered portion of the lot – nearest the road – for the intended use as a patio/deck area. The parcel is located at the intersection of two (2) local roads and is recessed lower than the road elevations. The garage is located between the house and the front yard and extends to the toe of slope. Beyond the constraints of the front yard (between the house and the road), a small deck is already existing off the rear of the house that is targeted for expansion.

There are no alternatives to this Project other than not to build the project. However, the no-build alternative is irrelevant with this property as the project proposes to expand an existing deck over areas that are at least partially already pre-existing non-conforming uses – a concrete pad. The home is on two (2) levels at the rear of the house, so there is a concrete pad for the lower level, and a small deck at the upper level. The Project will expand the deck to roughly the dimensions of the lower concrete pad such that impacts to native vegetation are zero.

The onsite critical areas were damaged more through the adjacent sewer line project than would be affected by this deck expansion. The City allows for buffer modifications beyond what the code allows through justification of those impacts and appropriate mitigation to offset. For this Project, an existing deck off the back of the home totaled 134 square feet (approximate as this value was estimated off aerial imagery). There was a concrete pad under this deck that was later expanded without permits by 171 square feet (for a total deck/concrete/disturbance area of 305 square feet). The new deck will occur mostly over this previously expanded concrete pad, such that the current impact for the proposed deck will be 279 square feet, which includes the previous unpermitted deck concrete pad expansion. The total disturbance area is now 413 square feet, of which 134 square feet was the

original deck off the back of the home. Of these current impacts proposed for the new deck, the majority occurs over the concrete pad, and the remainder occurs to area managed as lawn that are within the upper limits of the buffer.

The applicable City regulations that pertain to the critical areas code accommodation are outlined below.

BLUC 20.25H.250.C.4. outlines the submittal requirements for critical areas reports, specifically additional reporting requirements for Projects requesting reductions to the regulated critical area buffer.

> *BLUC 20.25H.250.C.4. Proposals to obtain reductions in regulated critical area buffers below the buffers required by this part shall include the following information in addition to the minimum critical areas report contents described in subsection B of this section. The restoration proposed to improve existing function included in the proposal must be separate from any impact mitigation proposal:*
>
> *a. The specific restoration actions proposed and the specific regulated buffer dimensions proposed.*
>
> **The standard buffer extends over a portion of the home, including an existing deck and underlying concrete slab over which the new deck will be constructed, while expanding the footprint of disturbance by 279 square feet. The mitigation action includes buffer enhancement of 395 square feet to compensate for both the buffer impact area where the footprint of disturbance is expanding over existing conditions, as well as to compensate for the requested reduced buffer.**
>
> *b. The functions that will be enhanced by the restoration actions, addressing at minimum habitat, hydrology, water quality and (where applicable) stream process functions.*
>
> **The backyard currently contains a native canopy with a lawn understory. The Bogline Sewer Replacement project will enhance, if the actions aren't already completed, the rear quarter of the lot onsite. This public project is proposing to plant shrubs along the sewer corridor. This mitigation effort will add to the sewer project mitigation by adding a dense understory under an existing native canopy, and removing the mitigation area from the active lawn as it currently is used. The combined effort of ceasing maintaining this area as mowed lawn, planting a variety of understory species, retaining and protecting the existing canopy, all adjacent to the public project that is also enhancing buffer adjacent to this same area, will provide a significant improvement to the onsite buffer quality and functions.**
>
> *c. Functions that will be provided outside of the reduced regulated buffer dimension proposed by the project, if any (for example, stormwater quality and quantity controls or low impact development features).*
>
> **No change will occur outside of the reduced regulated buffer except for the small expansion of deck area. The new staircase will overlap the existing concrete pad. The Project does not trigger stormwater requirements.**

d. The relative importance of the enhanced functions to the ecosystem in which they exist.

The enhanced functions onsite are no more or less important than the mitigation completed for the adjacent public project. This small area of mitigation will provide a small pocket of native forest adjacent to a large open space adjacent to other homes that often have more disturbed backyards.

e. A description of the net gain in functions by the restoration actions in the reduced regulated buffer area and the proposal, compared to the functions that would be preserved under standard buffer provisions of the CAO without restoration.

If this Project were not allowed to proceed, then the areas onsite targeted for mitigation would remain within the area of maintained lawn. In a comparison between mowed lawn, even with a canopy present, and densely planted understory species, there is no question that dense understory plantings provide superior habitat for all buffer functions.

BLUC 20.25H.255.A and .B outline the decision criteria for City staff to approve the requested buffer reduction with the above outlined mitigation. These items are listed and discussed below in line.

BLUC 20.25H.255.A & .B Critical areas report – Decision criteria

A. General.

Except for the proposals described in subsection B of this section, the Director may approve, or approve with modifications, the proposed modification where the applicant demonstrates:

1. The modifications and performance standards included in the proposal lead to levels of protection of critical area functions and values at least as protective as application of the regulations and standards of this code;

The reduced buffer requested with the proposed mitigation will provide better buffer functions than applying the standard code because this is the modification of an existing structure offsetting enhancement of an area legally maintained as lawn.

2. Adequate resources to ensure completion of any required mitigation and monitoring efforts;

The mitigation plan clearly outlines the required elements of the mitigation, including a detailed species list. The Project Biologist will remain available to the Applicant through to installation of the mitigation plan, as necessary.

3. The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site; and

The buffer modifications requested and performance standards proposed will not be detrimental to the buffer functions or values. The proposed mitigation will provide a net improvement to buffer functions and values.

4. The resulting development is compatible with other uses and development in the same land use district.

The proposed development is fully inline with the existing uses onsite and in the surrounding properties that are all single-family residences. This project is only modifying an existing deck that predates the expansive buffers currently applied to the offsite wetland.

B. Decision Criteria – Proposals to Reduce Regulated Critical Area Buffer.

The Director may approve, or approve with modifications, a proposal to reduce the regulated critical area buffer on a site where the applicant demonstrates:

1. The proposal includes plans for restoration of degraded critical area or critical area buffer functions which demonstrate a net gain in overall critical area or critical area buffer functions;

A small area of mitigation is proposed onsite adjacent to the mitigation for the Bogline Sewer project. Mitigation cannot extend further west because of the City's sewer line that runs through the back of this parcel. However, the mitigation area is targeting areas with an existing native canopy and a mowed lawn understory.

2. The proposal includes plans for restoration of degraded critical area or critical area buffer functions which demonstrate a net gain in the most important critical area or critical area buffer functions to the ecosystem in which they exist;

The proposed mitigation will provide a net gain to the buffer functions through the addition of densely planted understory species.

3. The proposal includes a net gain in stormwater quality function by the critical area buffer or by elements of the development proposal outside of the reduced regulated critical area buffer;

The Project does not trigger stormwater requirements, but the dense understory plantings will serve to further address any runoff coming from uphill.

4. Adequate resources to ensure completion of any required restoration, mitigation and monitoring efforts;

The mitigation plan clearly outlines the required elements of the mitigation, including a detailed species list. The Project Biologist will remain available to the Applicant through to installation of the mitigation plan, as necessary.

5. The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site; and

The buffer modifications requested and performance standards proposed will not be detrimental to the buffer functions or values. The proposed mitigation will provide a net improvement to buffer functions and values.

6. The resulting development is compatible with other uses and development in the same land use district. (Ord. 5680, 6-26-06, § 3)

The proposed development is fully in-line with the existing uses onsite and in the surrounding properties that are all single-family residences. This project is only modifying an existing deck that predates the expansive buffers currently applied to the offsite wetland.

6. Proposed Mitigation Plan

6.1 Agency Policies and Guidance

The proposed mitigation plan was designed in accordance with the policies and guidance provided in the following documents:

- BLUC, Chapter 20.25H – *Critical Areas Overlay District*; and
- The Washington State Department of Ecology (ECY) Publication #06-06-011a, Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance, and Part 2: Developing Mitigation Plans (Version 1), dated March 2006 (Washington State Department of Ecology, U.S. Army Corps of Engineers Seattle District, and U.S. Environmental Protection Agency Region 10 2006a, 2006b).

All proposed mitigation shall be based on best available science and shall demonstrate no net loss of critical area functions and values.

6.2 Mitigation Sequencing

Pursuant to BLUC 20.25H.215, *Applicants shall demonstrate that all reasonable efforts have been examined with the intent to avoid and minimize impacts to the critical area and/or critical area buffer. When an alteration to a critical area is proposed, such alteration shall be avoided, minimized, or compensated for in the following order of preference:*

A. Avoiding the impact altogether by not taking a certain action or parts of an action;

The property contains an existing home with a driveway, sidewalks, and other impervious surfaces as the existing condition. The impact to the buffer cannot be avoided as the existing condition of the house with a back deck predate the wide buffers that are currently being applied to this Property, and any impacts to the deck for any reason will occur within the standard buffer of the offsite wetland.

B. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts;

The deck expansion proposed is mostly occurring over areas that are already impervious surfaces, thus preventing any impacts to the vegetated portions of the buffer except for mowed lawn.

C. Performing the following types of mitigation (listed in order of preference):

1. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

A small area of the buffer will be enhanced with native vegetation through supplemental plantings of native species. The plantings will add to an understory currently missing from this portion of the buffer. Invasive species will be removed prior to native plant installation.

2. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or

The mitigation plantings are located outside of the active area of the property, and will be located adjacent to the Bogline Sewer mitigation plantings to prevent disturbance.

3. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments;

The supplemental plantings proposed within the buffer will ensure there is no net loss of buffer function in terms of habitat quality or functions provided by these areas.

D. Monitoring the hazard or other required mitigation and taking remedial action when necessary.

Mitigation for individual actions may include a combination of the above measures.

Three (3) years of performance monitoring will take place.

6.3 Proposed Mitigation Components

The mitigation plan includes the following elements to compensate for the project impacts to critical areas:

- Buffer Enhancement **395 square feet**

6.3.1 Buffer Enhancement

Proposed setback enhancement measures include:

1. Remove all invasive, non-native weedy species in the buffer restoration areas;
2. Install 3 inches of bark mulch in all bare soil areas; and
3. Plant native tree and shrub species.

6.4 Mitigation Design Elements

6.4.1 Irrigation

Mitigation plantings will be hand watered as needed during the summer months until plants are established. The plating area is located under an existing canopy. If temporary irrigation is necessary, irrigation lines will be extended.

6.4.2 Invasive Species

Note that invasive species will only be removed and managed within the targeted planting area. English ivy dominates the remainder of the steep slope and provides a measure of stability that will not be disturbed. English ivy will be removed from within the mitigation area and maintained to ensure ivy remains absent within the mitigation area. The ivy elsewhere on the property will remain as is.

6.4.3 Plantings

A total of four (4) native trees and 16 native shrubs will be planted in the indicated area. Species were selected based on their status as a native species to this area that will perform well in the targeted habitat in which plantings are proposed. Plantings will be installed around the existing trees and understory after invasive species are removed. It is expected that natural recruitment of species occurring in the area will also occur and contribute to the species diversity and cover in the mitigation area.

6.5 Mitigation Goals, Objectives, and Performance Standards

The primary goal of the mitigation is to compensate for impacts to the wetland buffer onsite. To accomplish this goal, the proposed project will **enhance 395 square feet of wetland buffer**.

Mitigation actions will be evaluated through the following objectives and performance standards. See next section for a full description of the monitoring methods that will be used to evaluate the approved performance standards. Mitigation monitoring will be performed by a qualified biologist.

Objective A: Create plant species diversity in the mitigation area.

Performance Standard A1: Percent survival of all installed species must be at least 90% at the end of Year 1 (per contactor warranty), and at least 80% at the end of Years 2 and 3.

Performance Standard A2: At least 4 species of desirable native plant species will be present in the enhancement areas. Species may be comprised of both planted and naturally colonized vegetation.

Objective B: Remove and control invasive plants to less than 10% cover in mitigation area.

Performance Standard B1: After construction, aerial coverage by non-native invasive plant species shall be maintained at 10% or less throughout the mitigation site. These species include, but are not limited to: Scot's broom, Himalayan and evergreen blackberry, purple loosestrife, hedge bindweed, and bittersweet nightshade. Cherry laurel is excluded from this performance objective.

7. Construction Sequencing

7.1 Mitigation Construction Sequencing

The following provides the general sequence of activities anticipated to construct this mitigation project. Some of these activities may be conducted concurrently as the project progresses.

1. Conduct a site meeting between the Contractor, project Biologist or Ecologist, and the Owner's Representative to review the project plans, staging/stockpile areas, and material disposal areas.
2. A pre-construction meeting with City staff will be required in advance of beginning any construction activities.
3. Survey clearing limits.
4. Install silt fence and any other erosion and sedimentation control BMPs necessary for work in the project areas.
5. Remove non-native, invasive species within area to be planted.
6. Plant designated area per the planting plan.
7. Mulch planting area and provide a three-inch-deep mulch ring around all container-planted material.
8. Complete site cleanup.

7.2 Post-Construction Approval

Once construction is approved, a qualified wetland ecologist shall conduct a post-construction assessment. The purpose of this assessment will be to establish baseline conditions at Year 0 of the required monitoring period. A Baseline Assessment report including “as-built” drawings will be submitted to all of the required agencies. The as-built plan set will identify and describe any changes in grading, planting, or other constructed features in relation to the original approved plan.

7.3 Post-Construction Assessment

The Permittee or representative shall notify the permitting agencies (City of Bellevue) when the mitigation plan has been fully installed and is ready for a final site inspection and subsequent final approval. Once final approval is obtained in writing, and “as-built” plans are approved, the monitoring period will begin.

8. Monitoring Plan

Performance monitoring of the mitigation areas will be conducted according to all applicable code/regulatory requirements and permit conditions. Monitoring will be conducted according to BLUC for up to three (3) years for the City. Monitoring will be conducted according to the schedule presented in the table below, and will be performed by a qualified biologist or ecologist. The performance monitoring period will be complete when the mitigation site meets all performance standards, at which point one can conclude that the goals and objectives for the mitigation site have been met.

Table 2. *Performance Monitoring Timeline*

Year	Date	Maintenance Review	Performance Monitoring	Report Due to Agencies
Year 0 As-built and Baseline Assessment	Fall	X	X	X
1	Spring	X	X	
	Fall	X	X	X
2	Spring	X	X	
	Fall	X	X	X
3	Spring	X		
	Fall	X	X	X*

* Final approvals from the City may be requested to facilitate release of any financial guarantees assuming performance criteria are met.

8.1 Monitoring Reports

Each monitoring report will adhere to the requirements of BLUC 20.25H. The reports will include: 1) Project Overview, 2) Requirements, 3) Summary Data, 4) Maps and Plans, and 5) Conclusions. Monitoring reports will be submitted to the City Planning Director by December 1st during the years in which monitoring is conducted.

8.2 Monitoring Methods

The following monitoring methods will be used to evaluate the mitigation site for compliance with the approved performance standards.

8.2.1 Vegetation Monitoring

Vegetation monitoring methods may include counts; photo-points; random sampling; sampling plots, quadrats, or transects; stem density; visual inspection; and/or other methods deemed appropriate by the permitting agencies.

Vegetation monitoring components shall include general appearance, health, mortality, colonization rates, percent cover, percent survival, volunteer plant species, and invasive weed cover.

Permanent vegetation sampling plots, quadrats, and/or transects will be established at selected locations to adequately sample and represent all of the plant communities within the mitigation project areas. The number, exact size, and location of transects, sampling plots, and quadrats will be determined at the time of the baseline assessment and shown on a map for use in the baseline assessment report, as well as future annual monitoring reports.

Percent aerial cover of woody vegetation will be evaluated through the use of point-intercept sampling methodology. Using this methodology, a tape will be extended between two permanent markers at each end of an established transect. Trees and shrubs intercepted by the tape will be identified, and the intercept distance recorded. Percent cover by species will then be calculated by adding the intercept distances and expressing them as a total proportion of the tape length.

The established vegetation sampling locations will be monitored and compared to the baseline data during each performance monitoring event to aid in determining the success of plant establishment. Percent survival of shrubs and trees will be evaluated in a 10-foot-wide strip along each established transect. The species and location of all shrubs and trees within this area will be recorded at the time of the baseline assessment and will be evaluated during each monitoring event to determine percent survival.

8.2.2 Photo Documentation

Permanent photo stations will be established at a minimum of three (3) locations within the mitigation site from which panoramic photographs will be taken throughout the monitoring period. Photo-point locations will be shown on a map and submitted with the baseline assessment report and yearly performance monitoring reports. These photographs will document general appearance and relative changes within the plant community. Review of the photos over time will provide a semi-quantitative representation of success of the planting plan.

8.2.3 Wildlife

Direct and indirect observations of wildlife usage will be recorded during scheduled monitoring events. Direct observations entail actual sightings of the animal, while indirect observations include noticing tracks, scat, nests, or other indications of a species using the area.

8.2.4 Water Quality

Water quality will be visually observed during scheduled monitoring events for a qualitative assessment that is only intended to notice obvious discrepancies from expected conditions. No water quality sampling is proposed in conjunction with this parameter. Qualitative water quality assessment parameters include oil sheens (or other surface films); abnormal color or odor of water; stressed or dead vegetation or aquatic fauna, if present; or obvious turbidity.

8.2.5 Site Stability

General observations of slope stability in the mitigation site will be made during each scheduled monitoring event. Any observations of unexpected erosion will be recorded and discussed with appropriate Team members or Agency staff to determine any necessary corrective measures.

9. Maintenance Plan and Contingency Measures

Regular maintenance reviews will be performed according to schedule presented in **Table 2** as part of the performance monitoring program to address any conditions that could jeopardize the success of the mitigation project. Required maintenance on the site will be implemented within ten (10) business days of submission of a maintenance memo to the maintenance contractor and permittee.

The established performance standards identified in Section 6.5 (above) will be compared to the yearly monitoring results to evaluate the success of the mitigation. Adjustments to the mitigation will be made as needed based on these regular evaluations to bring the mitigation back on track for success.

The following list includes examples of maintenance (M) actions that may be implemented during the course of the monitoring period. This list is not intended to be exhaustive, and other actions may be implemented as deemed necessary.

- Replace all dead woody plant material during Year One (M).
- Remove/control weedy or exotic invasive plants in a manner consistent with current Agency guidelines and recommendations. Use of herbicides or pesticides within the mitigation area would only be implemented if other measures failed or were considered unlikely to be successful and would require prior agency approval. All non-native vegetation must be removed and disposed of off-site (M).
- Weed all trees and shrubs to the dripline and provide 3-inch deep mulch rings 24 inches in diameter for shrubs and 36 inches in diameter for trees (M).
- Remove trash and other debris from the mitigation areas twice a year (M).
- Selectively prune woody plants at the direction of Project Ecologist or Biologist to meet the mitigation plan's goal and objectives (e.g., thinning and removal of dead or diseased portions of trees/shrubs) (M).

If, during the course of the monitoring period, there appears to be a significant problem with achieving the performance standards, the permittee shall work with the City and other permitting agencies to develop a Contingency Plan in order to get the project back into compliance with the performance standards. Contingency plans can include, but are not limited to, the following actions: additional plant installation, erosion control, bank stabilization, modifications to hydrology, and plant substitutions of type, size, quantity, and/or location. If required, a Contingency Plan shall be submitted to the City by December 1st of any year when deficiencies are discovered.

The following list includes examples of contingency (C) actions that may be implemented during the course of the monitoring period. This list is not intended to be exhaustive, and other actions may be implemented as deemed necessary.

- Replace dead plants with the same species or a substitute that meets mitigation plan goals and objectives, subject to project Biologist/Ecologist and agency approval (C).
- Re-plant area after reason for failure has been identified (e.g., moisture regime, poor plant stock, disease, shade/sun conditions, wildlife damage, etc.) (C).

After consulting with City staff and other permitting agencies, minor excavations, if deemed to be more beneficial to the existing conditions than currently exists, will be made to correct surface drainage patterns (C).

10. Summary

The property located at 15661 SE 11th Street is developed with a single-family residence. One wetland (Wetland A) associated with Kelsey Creek was identified off-site to the west and described by Jacobs in their critical areas report for the Bogline Sewer Rehabilitation Project. Wetland A requires a 110-foot standard buffer that will encumber the western half of the parcel. The project proposes to expand an existing deck off the rear of the house that will extend into the wetland buffer onsite.

As compensation for this minor buffer encroachment of 279 square feet, 395 square feet of buffer enhancement will be completed onsite to offset the expanded patio area. The mitigation area will be cleared of invasive species and replanted with a dense native shrub layer to enhance the existing native canopy. This area will be monitored for three (3) years.

11. References

1. Anderson, P. S., Meyer, S., Olsen, P., & Stockdale, E. (2016). *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State*. Lacey, WA: Washington Department of Ecology, Shorelines & Environmental Assistance Program.
2. City of Bellevue Land Use Code (LUC) Part 20.25H Critical Areas Overlay District.
3. Cowardin, L. M., Carter, V., Golet, F. C., & LaRoe, E. T. (1979). *Classification of Wetlands and Deepwater Habitats of the United States*. Washington, DC: U.S. Department of the Interior, Fish and Wildlife Service.
4. Environmental Laboratory. (1987). "*Corps of Engineers Wetlands Delineation Manual*," Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
5. Hruby, T. (2014). *Washington State Wetland Rating System for Western Washington*: 2014 Update (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.
6. Lichvar, R. (2012). The National Wetland Plant List. Hanover, NH: U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory. Retrieved from http://acwc.sdp.sirsi.net/client/search/asset:asset?t:ac=$N/1012381
7. U.S. Army Corps of Engineers. (2010, May). Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). U. S. Army Corps of Engineers. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

APPENDIX A

Jennifer Marriott, PWS – Resume

Jennifer M. Marriott, PWS

PO Box 155, Redmond, WA 98073
jen@wet.land
Work: 206-309-8100 | Cell: 813-846-1684

QUALIFICATIONS

- Master of Science, Soil Science, University of Florida, Gainesville, FL, 2010
- Master of Science, Biology (Ecology), University of Central Florida, Orlando, FL, 2003
- Bachelor of Science, Biology, University of Central Florida, Orlando, FL, 2001
- Professional Wetland Scientist (No. 1891)

FOCUS AND EXPERTISE

- Project Management
- Project Summaries and Rapid Environmental Due Diligence Reports
- Wetland and Stream Delineations/Habitat Evaluation
- Wetland (Critical Areas) Permitting
- Mitigation Planning
- Wetland Functional Assessment
- Hydric Soil Determinations
- Training and Mentoring

EXPERIENCE

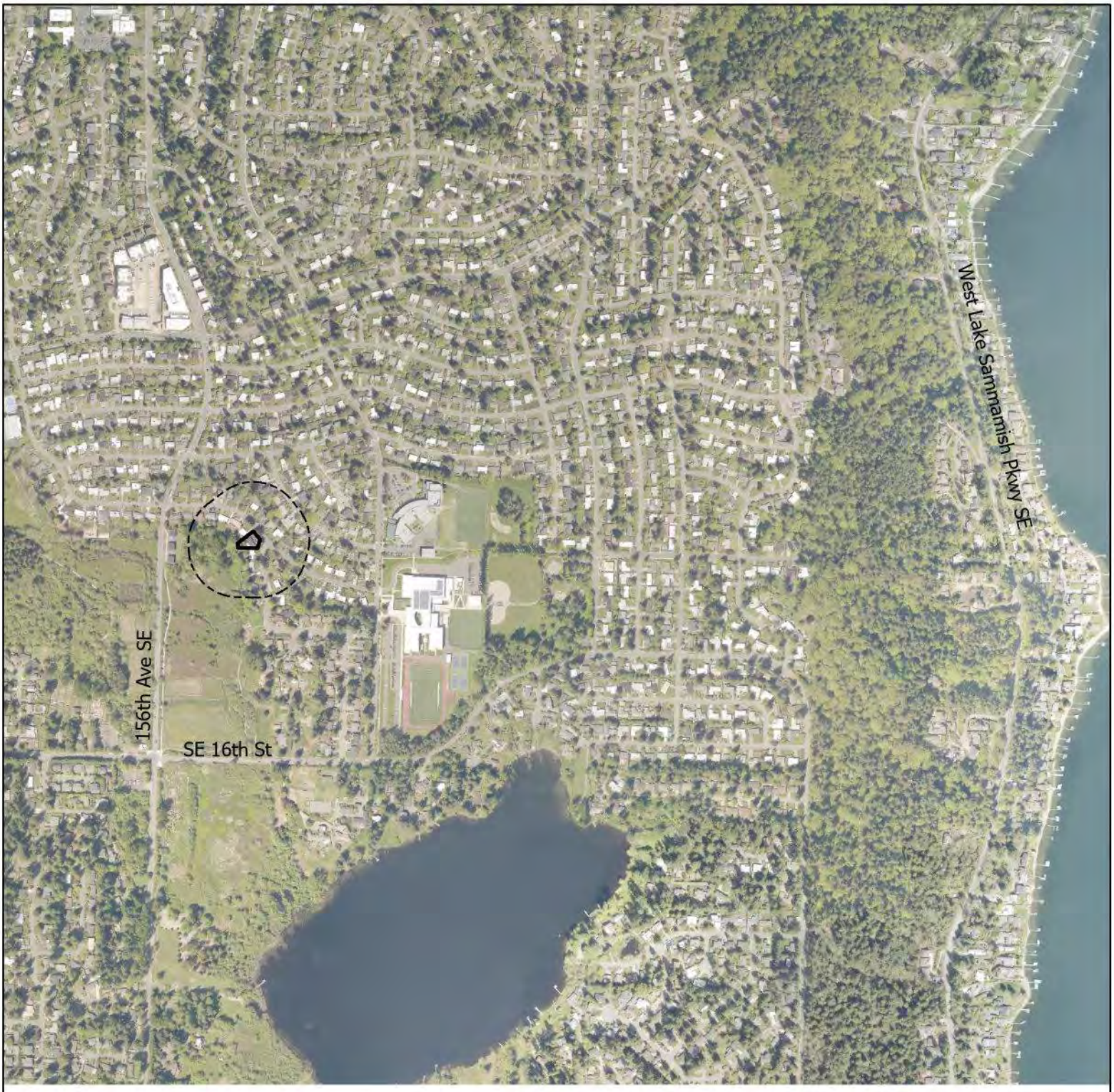
- Senior Ecologist/Owner; Wet.land, LLC; March 2020 - Present
- Senior Ecologist/Project Manager; Talasaea Consultants, Inc.; June 2015 – March 2020
- Senior Project Scientist; BL Companies, Inc.; July 2012 – July 2014
- Environmental Scientist 3; RETTEW Associates, Inc.; March 2011 – February 2012
- Ecologist; Cardno-ENTRIX, Inc. (formerly known as ENTRIX, Inc., fka Biological Research Associates); July 2003 – March 2011

SKILLS, TRAINING & PROFESSIONAL MEMBERSHIPS

- Washington (Coastal Training Program Workshops)
    - Multiple hydric soils training workshops (2008 to present; Florida, Pennsylvania, Ohio, Washington)
    - Revised Washington State Wetland Rating System, 2014 (April 2015, October 2022)
    - Using the Credit-Debit Method for Estimating Mitigation Needs (October 2015)
    - Using Field Indicators for Hydric Soils (November 2015)
    - Grass, Sedge, and Rush Identification for Western WA Puget Lowland Habitats (March 2016)
    - How to Determine the Ordinary High Water Mark (September 2016)
    - WSDOT Biological Assessment Training (2022)
    - Salmon Ecology and Habitat Restoration (NWETC, 2023)

APPENDIX B

FIGURES



LEGEND

Project Area

Study Area (300ft)

N

0 500 1,000 Feet

SOURCE: King County Aerial

wet.land

VICINITY MAP

Rudy-Utkin Property

Parcel #403680-0650

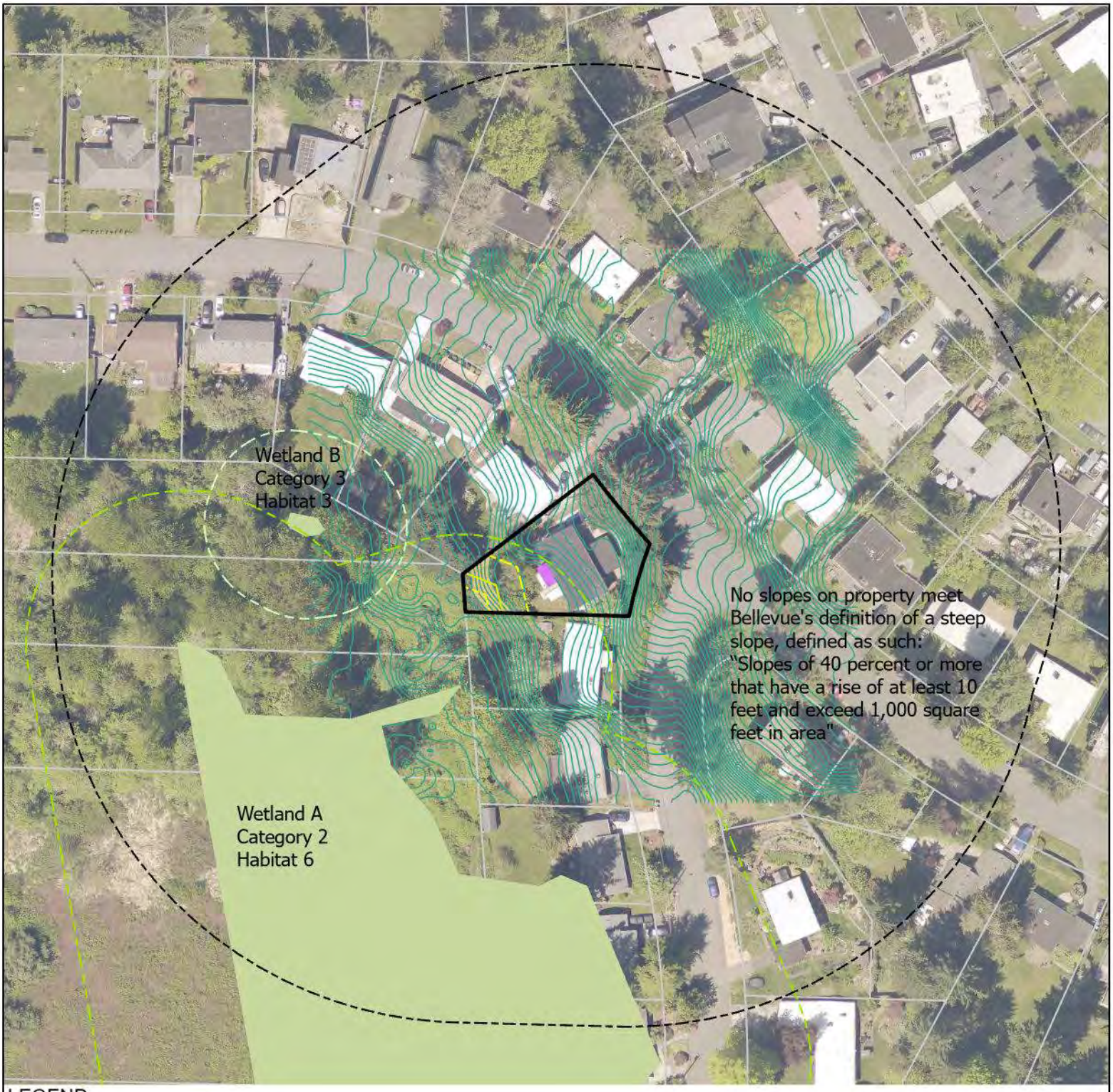
15661 SE 11th Street, Bellevue, Washington

#0255

SEPT 2025

FIGURE 1

Path: C:\Users\minib\Wet.Land\Wet.land Corporate - Documents\Projects\255 - Bellevue - 15661 SE 11th Street\255 - Bellevue\255 - Bellevue.aprx



LEGEND

- King County Parcels
- Project Area
- Study Area (300ft)
- Wetlands (Deliniated by Jacobs May 25, 2022)
- Slope (597sqft)
- Existing Patio
- Contours (1ft)

Wetland Buffers

- 110ft Buffer
- 60ft Buffer
- Sewer Line Construction Limit
- Sewer Line

N

0 30 60 120 Feet

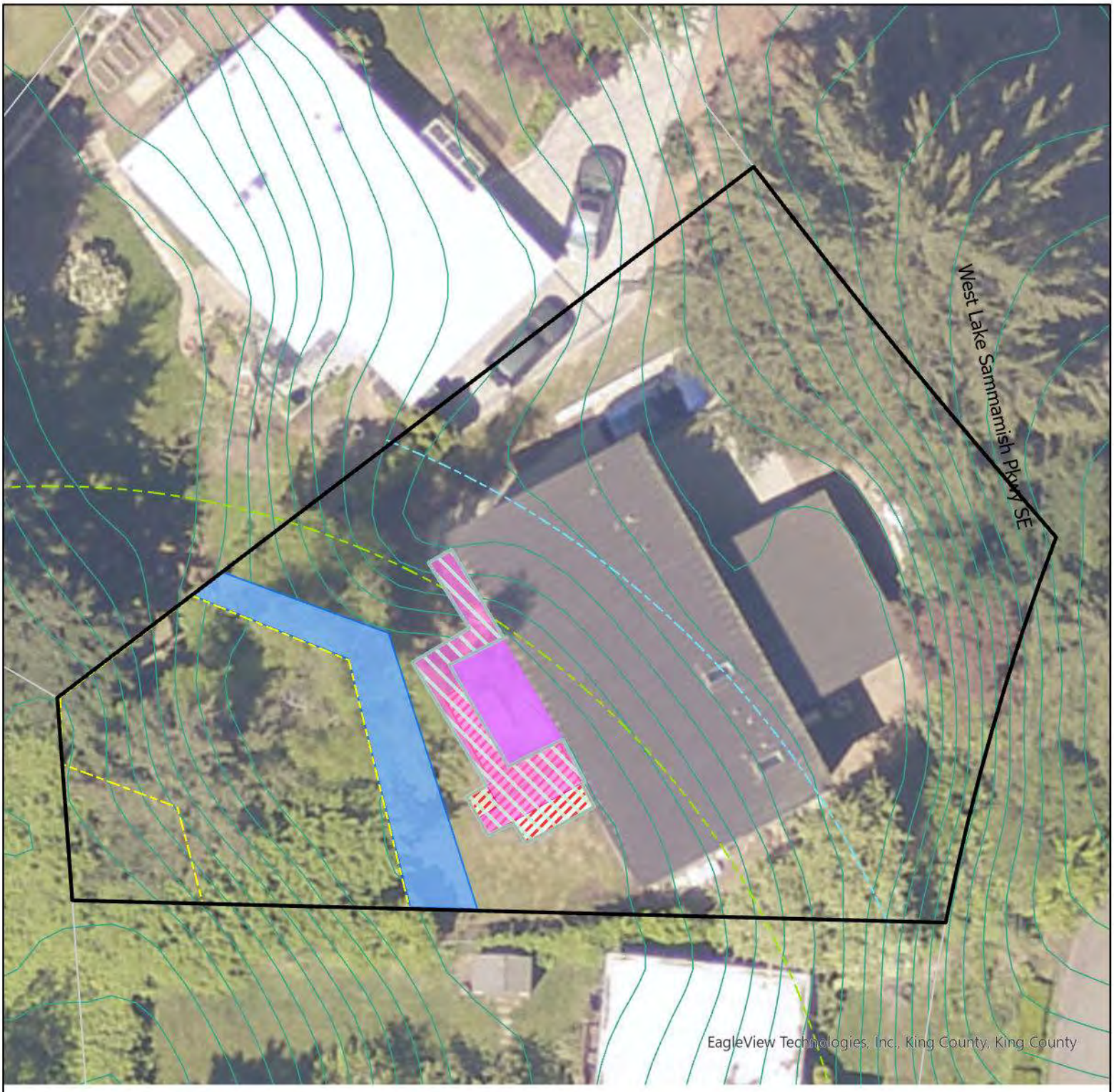
SOURCE: King County Aerial, Jacobs Report (May 25, 2022)

wet.land

EXISTING CONDITIONS MAP
Rudy-Utkin Property
Parcel #403680-0650
15661 SE 11th Street, Bellevue, Washington

#0255
SEPT 2025

FIGURE 2



LEGEND

- King County Parcels
- Project Area
- Contours (1ft)
- Wetlands (Deliniated by Jacobs May 25, 2022)
- 110ft Wetland Buffer
- 60ft Wetland Buffer
- 15' BSBL
- Sewer Line Construction Limit
- Buffer Enhancement (395sqft)
- Impacts (279sqft)
- New Patio (233sqft)
- Current Non-conforming Impact (171sqft)
- Existing Patio (134sqft)

N

0 12.5 25 Feet

SOURCE: King County Aerial, Jacobs Report (May 25, 2022)

wet.land

IMPACT MAP
Rudy-Utkin Property
Parcel #403680-0650
15661 SE 11th Street, Bellevue, Washington

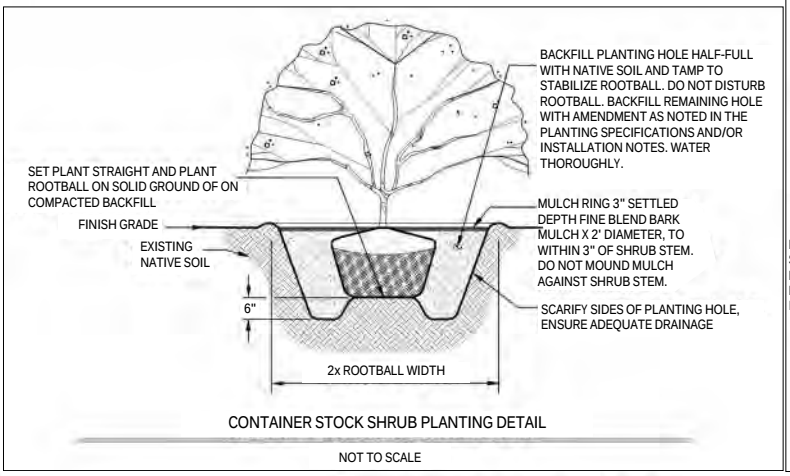
#0255
OCT 2025

FIGURE 3

BUFFER ENHANCEMENT - PLANT SCHEDULE

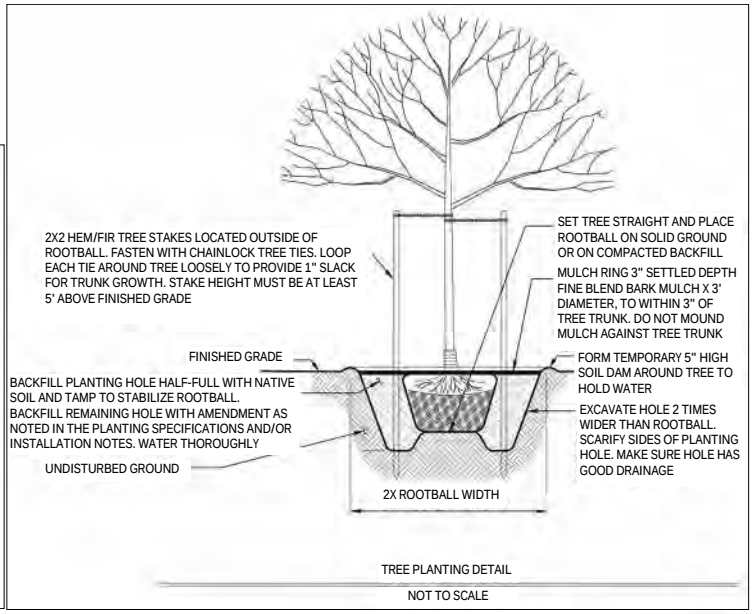
SCIENTIFIC NAME	COMMON NAME	WIS	QUANTITY	SPACING	SIZE (MIN)	NOTES
Pseudotsuga menziesii	Douglas fir	FACU	4	10' O.C.	2 - 3'	1-2 gal, full & bushy
Amelanchier alnifolia	Serviceberry	FAC	2	8' O.C.	24" Ht	Full & bushy
Holodiscus discolor	Oceanspray	FACU	2	8' O.C.	24" Ht	Full & bushy
Symphoricarpos albus	Common snowberry	FACU	6	4' O.C.	24" Ht	Full & bushy
Sambucus racemosa	Red elderberry	FACU	6	4' O.C.	24" Ht	Full & bushy

*Install erosion and sediment control measures as determined necessary during plant installation to prevent sediment impacts downhill.
*A minimum of 12" of suitable soil must be present in all planting sites - amendments can be added concurrently with the .
*Non-native and invasive species must be removed prior to plantings.
*Mulch - a coarser mulch product must be used. No dyed mulches.
*Plant material:
- All plant material should be locally grown for the Pacific Northwest.
- No cultivars will be used.
- All plant material will be well-rooted with normal growth, and disease/infestation-free
*Space trees and large shrubs (serviceberry and oceanspray) out across the planting area.
*Cluster the snowberry and elderberry in groups of 2.



CONTAINER STOCK SHRUB PLANTING DETAIL

NOT TO SCALE



TREE PLANTING DETAIL

NOT TO SCALE

wet.land

PLANTING DETAILS
Rudy-Utkin Property
Parcel #403680-0650
15661 SE 11th Street, Bellevue, Washington

#0255
OCT 2025
FIGURE 4

APPENDIX C

JACOBS – CRITICAL AREAS REPORT – Bogline Sewer Rehabilitation Project – 25 May 2022

JACOBS

Critical Areas Report

Bogline Sanitary Sewer Rehabilitation Project

City of Bellevue

May 25, 2022

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APPENDICES

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Acronyms and Abbreviations

City	City of Bellevue
FEMA	Federal Emergency Management Agency
LUC	City of Bellevue Land Use Code
NWI	National Wetland Inventory
NWIFC	Northwest Indian Fisheries Commission (SWIFD)
PHS	Priority Habitats and Species
Project	Bogline Sanitary Sewer Rehabilitation Project
RCW	Revised Code of Washington
SWIFD	Statewide Integrated Fish Distribution
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WRIA	Water Resource Inventory Area
WDFW	Washington Department of Fish and Wildlife

1. Introduction

This critical areas report describes the critical area impacts of the Bogline Sanitary Sewer Rehabilitation Project (Project), and how the project will meet the City of Bellevue's (City's) Land Use Code (LUC) requirements to avoid, minimize and mitigate for these impacts. The project takes place in Bellevue and includes impacts to the following critical areas: wetland buffers, habitat associated with species of local importance, trees, and frequently flooded areas. The project is a repair of a failing sewer section of sewer pipeline located behind single-family residences located near the intersection of 158th Avenue SE and SE 11th Street within the City of Bellevue City Limits. The repair is highly prioritized due to reversely settled pipes needing monthly maintenance by the City.

The following sections describe the project, assess the project's impacts to the categories of critical areas protected by the City, and describe restoration and monitoring plans. The overall impacts and proposed restoration in all critical areas are presented in Table 1.

Table 1. Summary of Project Impacts to Critical Areas

Critical Area Type	Present in Construction Limits?	Impacts	Mitigation Proposed
Streams	No	N/A	N/A
Wetlands	Yes	Wetland: Up to 170 square feet temporary impact. Wetland Buffer: 10 square feet permanent impact; up to 23,100 square feet (0.5 acre) temporary impact.	Vegetation restoration at 1:1 ratio in all areas disturbed. Vegetation enhancement in disturbed areas of wetland and up to 3,000 square feet of non-landscaped wetland buffer.
Shorelines	No	N/A	N/A
Geologic Hazard Areas	Yes	Repair will occur where City of Bellevue maps low to moderate liquefaction zones.	Bellevue does not require mitigation for work in liquefaction zones, and liquefaction risks are assessed in the geological report prepared for the project.
Habitat Associated with Species of Local Importance	Yes	Tree and shrub removal on up to 0.5 acre (including about 3,000 square feet of non-landscaped ground)	Addressed through wetland buffer restoration, which will replace existing non-native blackberry with a more diverse native plant community, and through tree replacements.
Trees	Yes	Up to 15 significant trees removed	Trees replaced on site at 1:1 ratio; additional tree plantings in restoration areas.
Frequently Flooded Areas	Yes	4,300 square feet of potential clearing and surface-soil disturbance; 12 cubic feet of excavation in 100-year floodplain	None; no net rise in elevation will occur.

This report was prepared by qualified professionals. Emily Drew and Michelle Brownell are co-authors of this report. Emily has 26 years of experience in the Pacific Northwest as a biologist, permitting specialist, and trained wetland scientist, and Michelle has 3 years of applicable experience and is a certified Wetland Professional in Training.

1.1 Project Purpose and Description

The Bogline Sanitary Sewer Rehabilitation Project (Project) will replace the City's existing sanitary sewer pipeline and manholes in a section of pipeline located in public easements in 17 private properties in the vicinity of 158th Avenue SE and SE 11th Street within the City of Bellevue City Limits.

The existing alignment consists of about 1225 linear feet of sanitary sewer piping in 16 residential properties and two City of Bellevue properties. The portion of the existing sewer conveyance system west of 158th Avenue SE has reversely settled pipes due to poor soils. This section of pipeline needs frequent maintenance (monthly maintenance) to avoid backups and to keep the customers in service. This monthly work significantly exceeds the current performance standards for a functional sewer system which is flushing every 10 years.

Replacing the existing sewer system is necessary to eliminate the need for costly monthly maintenance and ensure the sewer system will efficiently provide the necessary service to the adjacent residences. Approximately 1225 linear feet of sewer pipe is expected to be rehabilitated and out of that length of pipe about 810 linear feet is west of 158th Avenue SE and the rest is along 158th Avenue SE and along SE 13th Street; the remainder is along a public easement along three private properties east of 158th Ave SE.

Rehabilitation will occur by using an excavator or small backhoe to dig a trench, and replacing pipe sections. Most pipe will be replaced; a small section will be rerouted with the old pipe being decommissioned in place. To access the pipe, some landscaping vegetation, non-native vegetation (Himalayan blackberry and reed canarygrass) and trees will need to be removed within wetland buffer. Some portions of pipe will require better support than the existing conditions. Excavated peat fill will be replaced with imported fill that will better support the pipe. In addition, pile supports will be buried under the pipe where needed. Three new manholes will be placed along the pipe. Finally, disturbed areas will be replanted to meet City restoration requirements.

Work is proposed to occur in the spring and/or summer of 2023. See Appendix A for 30% design plans for the project.

1.2 Project Location

The project is located in the northeastern portion of the Lake Hills Greenbelt behind single-family residences along 158th Avenue SE and SE 11th Street (Figure 1). The project is entirely within the City of Bellevue city limits. Kelsey Creek flows through the Lake Hills Greenbelt, approximately 250 feet west of and entirely outside of the project area. Phantom Lake is approximately 0.3 mile south of the project area. Larsen Lake is approximately 0.6 mile northwest of the project area.

The project is in Section 2 of Township 24 North, Range 5 East. The Project is within Water Resource Inventory (WRIA) 8 – Cedar-Sammamish and U.S. Geological Survey Hydrological Unit Code #171100120202 – Lake Sammamish-Sammamish River.



Figure 1. Vicinity Map

2. Critical Areas Impact Assessment

2.1 Study Area

The study area for the purposes of the critical areas study includes the project limits, plus areas located within 300 feet of the project corridor.

2.2 Streams

2.2.1 Definition

LUC 20.25H.075 defines a stream as follows:

An aquatic area where surface water produces a channel, not including a wholly artificial channel, unless the artificial channel is:

1. *Used by salmonids; or*
2. *Used to convey a stream that occurred naturally before construction of the artificial channel.*

It further classifies the stream critical areas as:

1. *"Type S water" means all waters, within their bankfull width, as inventoried as "shorelines of the state" under Chapter 90.58 Revised Code of Washington (RCW) and the rules promulgated pursuant to Chapter 90.58 RCW including periodically inundated areas of their associated wetlands. As of May 21, 2018, the only known Type S waters are Lower Kelsey Creek and Mercer Slough.*
2. *"Type F water" means all segments of waters that are not type S waters and that contain fish or fish habitat, including waters diverted for use by a federal, state, or tribal fish hatchery from the point of diversion for 1,500 feet or the entire tributary if the tributary is highly significant for protection of downstream water quality.*
3. *"Type N water" means all segments of waters that are not type S or type F waters and that are physically connected to a type S or F waters by an aboveground channel system, stream, or wetland.*
4. *"Type O water" means all segments of waters that are not type S, F, or N waters and that are not physically connected to type S, F, or N waters by an aboveground channel system, stream, or wetland.*

2.2.2 Background Review

Jacobs biologists collected and reviewed background information pertaining to the Project area. Information sources included the following:

- Northwest Indian Fisheries Commission (NWIFC) Statewide Integrated Fish Distribution (SWIFD) Map Tool (NWIFC no date [n.d.]).
- King County iMap (King County n.d.)
- City of Bellevue Map Viewer (City of Bellevue n.d.)

There are no streams present in the study area. The nearest stream is a tributary to Kelsey Creek which flows through Wetland 1; its closest point is approximately 250 feet west of and entirely outside of the construction limits (see Figure 2). The tributary links Phantom Lake to the south with Kelsey creek to the west. Kelsey Creek ultimately flows into Lake Washington. Under LUC 20.25H.075, this tributary would be a Type F stream (WDFW maps it as containing fish use [WDFW n.d.-a], and would have a 100-foot buffer. This buffer does not overlap the construction limits.

2.2.3 Stream Impacts

There will be no impacts to streams or stream buffer, as there are no streams or stream buffers present in the construction limits or the study area

2.2.4 Mitigation

There will be no impacts to streams or stream buffers; therefore no mitigation is required.

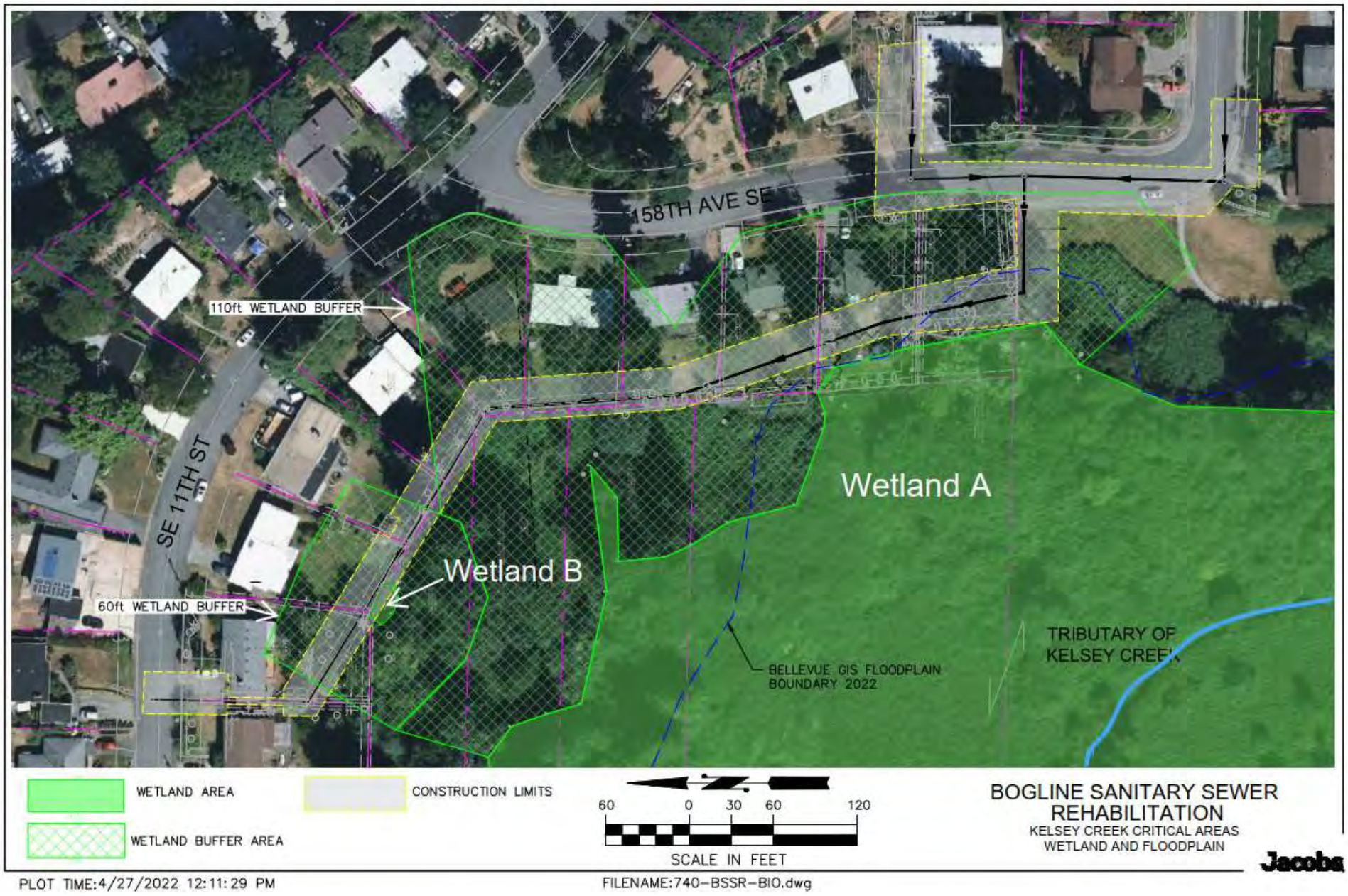

Figure 2. Stream and Wetlands Adjacent to Construction Limits

2.3 Wetlands

2.3.1 Definition

LUC 20.25H.095 defines wetlands as:

> *Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands.*

It further classifies wetlands based on the Update to the Washington State Wetland Rating System for Western Washington (Hruby 2014) as:

1. *Category I Wetlands. Category I wetlands are those that (a) represent a unique or rare wetland type; or (b) are more sensitive to disturbance than most wetlands; or (c) are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or (d) provide a high level of functions.*

2. *Category II Wetlands. Category II wetlands are difficult, though not impossible, to replace and provide high levels of some functions. These wetlands occur more commonly than Category I wetlands but still need a relatively high level of protection. Category II wetlands in western Washington include: wetlands scoring between 20 and 22 points (out of 27) on the questions related to the functions present. Wetlands scoring 20 to 22 points were judged to perform most functions relatively well, or performed one group of functions very well and the other two moderately well.*

3. *Category III Wetlands. Category III wetlands are wetlands with a moderate level of functions (score between 16 and 19 points). Wetlands scoring between 16 and 19 points generally have been disturbed in some ways and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands.*

4. *Category IV Wetlands Over 2,500 Square Feet. Category IV wetlands have the lowest levels of functions (score less than 16 points) and are often heavily disturbed. These are wetlands that we should be able to replace and, in some cases, be able to improve. However, experience has shown that replacement cannot be guaranteed in any specific case. These wetlands may provide some important functions and also need to be protected.*

2.3.2 Background Review

Background information pertaining to the Project area was collected and reviewed for its usefulness. These information sources included the following:

- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Wetlands Mapper (USFWS 2022)

- U.S. Department of Agriculture (USDA) Web Soil Survey (USDA n.d.-a)
- King County iMap Wetlands Layer (King County n.d)
- City of Bellevue GIS mapping (n.d.)
- Bogline Sanitary Sewer Rehabilitation Project Wetland Delineation Technical Memorandum (Jacobs 2022)
- WDFW Priority Habitat and Species (PHS) on the Web (WDFW 2022b)

The National Wetlands Inventory (USFWS n.d.) shows a small (0.58 acre) freshwater forested/shrub wetland (PSSC) is mapped adjacent to the eastern edge of the project area. This wetland is connected to a small 0.05-acre freshwater emergent (PEM1C) wetland. There are no wetlands mapped on King County iMap. Kelsey Creek is mapped outside the project area and flows through the Lake Hills Greenbelt.

A previous delineation was conducted by The Watershed Company and mapping resulting from this effort indicate a large wetland adjacent to and overlapping with the project area as shown on internal City of Bellevue maps. The project manager, Vanaja S. Rajah stated that the City's internal mapping database shows sensitive wetland present within the construction limits, approximately equivalent to the floodplain in the southwest corner of the construction limits.

The USDA lists soil types in the study area as Seattle Muck which are very poorly drained and are listed as hydric soils (USDA n.d.). The Natural Resources Conservation Service (NRCS n.d.) Agricultural Applied Climate Information System's Precipitation Data Wetlands Table was reviewed to determine if precipitation occurring in the 3 months prior to the site visit was normal, drier than normal, or wetter than normal when comparing actual rainfall to the 30-year average. Prior to the November 23 and 24, 2021, site visit, normal precipitation conditions were present (NRCS, n.d.).

2.3.3 Fieldwork and Results

Jacobs scientists visited the Project site on November 23 and 24, 2021 and March 4, 2022 to perform a wetland assessment and to delineate wetlands in or adjacent to the project area. This delineation clarified the discrepancies in the City, NWI, and King County wetland mapping on site with a field-verified delineation.

The field team identified two wetlands in the study area. One large depressional wetland (Wetland 1, approximately 9 acres) was partially delineated during the November 2021 site visits. This wetland stretches south and west from the study area. A second small depressional wetland (Wetland 2, approximately 350 square feet) was delineated during the March 2022 site visit. The results of the site visits are described in detail in the Bogline Sanitary Sewer Rehabilitation Project Wetland Delineation Technical Memorandum, included as Appendix B. The results are also summarized below.

Wetland 1

Wetland 1 is a large, depressional Category II wetland that is approximately 9 acres in size and extends west and south into City of Bellevue parks property from the project area (See Figure 2). Jacobs only delineated the northern and northeastern boundaries adjacent to the project area, where it overlaps with private residential parcels (see Figure 3). However, Jacobs based the wetland rating on the entire wetland, based on a walkthrough and aerial photo analysis.

Wetland conditions: Hydrologic sources to Wetland 1 include surface flows from Kelsey Creek, stormwater runoff, and groundwater. A tributary to Kelsey Creek flows through Wetland 1 (see Figure 4). Outside of the study area, topographic maps indicate that the tributary is connected to Phantom Lake and to Kelsey Creek which ultimately drains to Lake Washington.

Wetland 1's vegetation is dominated by western red cedar (*Thuja plicata),* Sitka willow (*Salix sitchensis*), Douglas spirea (*Spiraea douglasii*), Himalayan blackberry (*Rubus armeniacus*) and reed canarygrass (*Phalaris arundinacea*). Where the wetland crossed onto residential parcels in the project area, vegetation was dominated by lawn grasses and landscaping shrubs and trees. Cowardin classes observed in Wetland 1 are palustrine emergent (PEM), palustrine scrub shrub (PSS) and palustrine forested (PFO). Vegetation in the adjacent upland (within the study area) is dominated by Douglas fir (*Pseudotsuga menziesii*), Sitka willow, red alder (*Alnus rubra*), and Himalayan blackberry in undeveloped areas, and by landscaping lawn and shrubs in developed areas.

The Natural Resources Conservation Service (NRCS) maps soils in the vicinity of Wetland 1 as Seattle muck which is classified as hydric soil (NRCS, n.d.-a). Soils observed in the test pits were generally characterized as black (10YR 2/1) silt loam or 10YR 2.2 sandy loam and met hydric soil indicator A1 Histosol. NRCS maps soils in the adjacent uplands as Arents, Alderwood material, 6 – 15% slope which is not classified as hydric soil. Soils in upland test pits were characterized by very dark brown (10YR 2/2) loam with no hydric soil indicators or wetland hydrology indicators were present in these test pits.

Wetland rating: Using the 2014 Wetland Rating System (Hruby 2014), Wetland 1 scored 6 points for improving water quality, 8 points for hydrologic function, and 6 points for habitat function for a total of 20 points.

Wetland 1 provides moderate to high water quality function and hydrologic function. A tributary to Kelsey Creek flows through a portion of the wetland. The wetland contains organic soils and persistent, ungrazed plants for 95% or more of the wetland area. The wetland receives stormwater discharges and is situated in an urban area, which provides the wetland with high landscape potential to support the water quality functions.

Wetland 1 provides moderate habitat function. Wetland 1 contains emergent, scrub shrub and forested (with canopy, shrubs and herbaceous strata) Cowardin classes. Wetland 1 contains seasonally flooded or inundated and saturated only hydroperiods, as well as a seasonally flowing stream (the tributary to Kelsey Creek) in the wetland. The wetland has high habitat interspersion and high biodiversity of native plants. Special habitat features present are large downed woody debris, standing snags and thin-stemmed persistent plants which provide egg-laying structures for amphibians. There are 3 WDFW priority habitat types within 100 meters: biodiversity areas and corridors, riparian habitat adjacent to the tributary to Kelsey Creek and snags and logs.



Figure 3. Wetland 1 within Residential Properties.



Figure 4. Stream within Wetland 1 (outside project area)

Wetland 2

Wetland 2 is a small (350-square-foot) depressional Category III wetland that is located at the northern end of the study area, west of the project area. It is directly adjacent to a fenceline (see Figures 2 and 5).

Wetland conditions: Hydrologic sources to Wetland 2 consist of stormwater runoff and groundwater. No outlet was observed.

Wetland 2 vegetation is dominated by sparce Himalayan blackberry and dense reed canary grass. Upland areas surrounding the wetland are dominated by dense Himalayan blackberry in undeveloped areas, and lawn and landscaping shrubs in developed areas.

Soils in the test pit excavated by the Jacobs biologists were characterized as very dark brown (10YR 2/2) silt loam, underlain by yellowish brown (10YR 5/4) from 8 to 10 inches. From 10 to 18 inches, the soil was black (10YR 2/1)). These soils met hydric soil indicator A1 Histosol.

A soil test pit was excavated in upland areas adjacent to the wetland. Soils in the upland pit were very dark brown (10YR 2/2) silt loam in the upper 9 inches, underlain by dark yellowish brown (10YR 4/4) silt loam to a depth of 12 inches. From 12 to 18 inches, the soils are characterized by a very dark brown (10YR 2/2) silt loam to a depth of 18 inches. The test pit adjacent to Wetland 2 met the hydric soil indicator A1 Histosol but no wetland hydrology indicators were present.



Figure 5. Wetland 2 (in foreground, left) and Wetland 2 Buffer (right; construction limits follow fenceline)

Wetland rating and functions: Using the 2014 Wetland Rating System (Hruby 2014), Wetland 2 scored 7 points for improving water quality, 6 points for hydrologic function, and 3 points for habitat function for a total of 16 points. The only Cowardin class observed in Wetland 2 was scrub-shrub (PSS).

Wetland 2 provides relatively low habitat function. It is very small, does not contain any native vegetation, is surrounded by non-native vegetation, and contains no special features aside from downed wood within the water and its proximity to habitat within the Wetland 1 area. However, it has moderate ability to improve water quality and hydrology by impounding stormwater flowing from adjacent residential areas.

2.3.4 Wetland Impacts

The project will have no permanent impacts on wetlands. The project may have temporary impacts (via vegetation clearing and excavation) to Wetland 2 if it cannot be avoided during construction.

There will be temporary impacts to the buffers of both Wetlands 1 and 2. The excavated trench will be about 6 feet wide through the corridor (this may range from 3 to 8 feet wide in places), and the construction limits of potential clearing are in a 30-foot-wide corridor. The excavated areas will be refilled with native soil or imported fill, and restored to existing conditions or better once construction is complete.

Three new manhole covers will be installed within wetland buffer of Wetland 1, in currently landscaped areas, to allow future access to the repaired sewer line. These constitute the only permanent impact to the buffers.

These impacts are summarized in Table 2.

Table 2. Summary of Wetland Impacts.

Wetland	Wetland Category	Wetland Size	Permanent Wetland Impacts (square feet)	Temporary Wetland Impacts (square feet)	Permanent Wetland Buffer Impacts (square feet)	Temporary Wetland Buffer Impacts (square feet)
Wetland 1	Category II	9 acres	0	0	10[a]	23,100 (0.5 acre)
Wetland 2	Category III	350 square feet	0	170	0	
Total			**0**	**170**	**10[a]**	23,100 (0.5 acre)

Note:

a Impacts are from new manhole covers.

Note that the approximately 0.5 acre of temporary wetland buffer impact described in Table 2 represents the overlap of the construction limits with wetland buffer. Not all of the soils and vegetation within these limits may be disturbed. The excavation trench itself will be about 6 feet wide. The remainder of the 30-foot-wide construction corridor will be impacted by vegetation clearing where needed, and minor soil disturbance as equipment such as excavators are moved through the unpaved area. Where soils are soft, logs, rock or other supportive surface may be temporarily placed to prevent damage to the ground from the equipment's wheels or tracks.

A restoration planting plan will be employed to stabilize areas of disturbed soil and replace grass, shrubs and trees removed during the work. This is described in the mitigation section below.

2.3.5 Avoidance and Minimization

Per LUC 20.25H.110, critical areas reports are to discuss measures, including avoidance, minimization and mitigation, proposed to preserve existing wetlands and restore any wetlands that were degraded prior to the current proposed land use activity.

The project purpose is a necessary repair of the existing sewer line, which is present in wetland buffer and wetland. Thus some impacts to these critical areas cannot be avoided. Utility system repair is an allowable use in wetlands per LUC 20.25H.055. However, during such work, removal of significant trees is prohibited per LUC 20.25H.055.C1. Up to 14 significant trees will need to be removed within the wetland buffer, as they or their critical root zone are directly above the trench that needs to be excavated to replace the sewer line. These trees are further discussed in Section 2.7.

To minimize impacts to the wetlands and wetland buffer, the construction limits have been narrowed to the extent practicable to perform the work. Also, the corner of the originally planned construction limits have been reduced to avoid work occurring directly in the large wetland (Wetland 1).

2.3.6 Restoration / Mitigation

The project aims to avoid all impacts to wetlands. However, up to 170 square feet of Wetland 2 may be temporarily affected by clearing, dewatering, or temporary excavation. Clearing and excavating in wetland buffer is also unavoidable, and placement of 3 permanent features (manholes) in the buffer is also unavoidable.

Unavoidable impacts to the wetland and wetland buffer must meet the provisions outlined in LUC 20.25H.105. This code chapter provides ratios that must apply to replacement or altered wetlands (LUC 20.25H.105.C.1). In addition, *Critical area buffer disturbed or impacted under this part shall be replaced at a ratio of one-to-one* (LUC 20.25H.105.C.3).

The project will restore areas of wetland and buffer temporarily impacted, and will mitigate for the permanent impacts (10 square feet of manhole covers) by enhancing at least 20 square feet of restoration area with a more diverse native plant community than the existing condition. See summary of impacts in Table 3.

Table 3. Summary of Wetland Restoration and Mitigation

Activity	Wetland/ Stream Name	Rating/ Category	Impact Area	Proposed Mitigation Type	Restoration Area
Permanent Impacts – Wetland Buffer					
Manhole covers	Wetland 1 Buffer	Category II and III	10 square feet	On-site restoration/ enhancement of buffer	20 square feet
Temporary Impacts - Wetland					
Vegetation clearing, dewatering or excavation	Wetland 2	Category III	170 square feet	On-site restoration	170 square feet
Temporary Impacts – Wetland Buffer					
Vegetation clearing/ surface soil disturbance	Wetland 1 and 2	Category II and III	Up to 18,900 square feet[1]	On-site restoration	Up to 18,900 square feet
Excavation	Wetland 1 and 2	Category II and III	4,200 square feet	On-site restoration	4,200 square feet

Note:

1. This area represents estimated construction limits overlapping with wetland buffer, excluding the excavation area. Actual clearing within this area may be less where existing vegetation can be avoided.

Restoration plantings will follow three planting mixes, depending on the existing condition of where the disturbance takes place. Plant species proposed are listed in Table 4.

Area A: Landscaped Areas *(Up to 19,100 square feet)*

Where landscaped areas are disturbed through vegetation clearing or excavation, these areas will be restored at a 1:1 ratio with a focus on similar conditions of lawn, shrubs and trees. Shrub species shown in Table 4 may be replaced by ornamental species such as rhododendron.

Area B: Non-landscaped Areas *(Up to about 4,000 square feet).*

This area represents undeveloped portions of Park land and the private parcels west of the fenceline. These areas are currently dominated with Himalayan blackberry. Where these areas are disturbed through vegetation clearing or excavation, they will be restored at a 1:1 ratio with a focus on replacing non-native blackberry with a native tree and shrub mix.

By focusing on fast-growing, taller tree species such as alders and willows, these species may establish a shaded area that reduces the ability for blackberry to reestablish once weed control ends.

Area C: Wetland 2 *(Up to 170 square feet).*

Wetland 2's vegetation will be restored using hydrophylic trees and shrubs. Regardless of whether the wetland's current vegetation is disturbed, this wetland's existing monoculture of Himalayan blackberry will be removed and replaced with native plantings to create wetland

enhancement. Greater species diversity will increase the habitat functions of this wetland, meeting LUC 20.25H.105.D, in which wetland mitigation can be in the form of enhancing significantly degraded wetlands.

Table 4. Plant Schedule

Tree Species	Scientific Name	Form	Areas	Quantity	Spacing[1,2]	Notes
Douglas fir	*Pseudotsuga menzeisii*	Conifer tree	A,B	TBD; min 7	12 ft oc	On parks and private property
Western red-cedar	*Thuja plicata*	Conifer tree	A,B	TBD: min 2	12 ft oc	On parks and private property
Paper birch	*Betula papyrifera*	Deciduous tree	A,B	TBD: min 2	12 ft oc	On private property
Red alder	*Alnus rubra*	Deciduous tree	A,B	2	N/A	On private property in developed area
Pacific willow	*Salix lucida*	Deciduous tree	A,B	TBD	4 ft oc	In upland portions of undeveloped parks and private property
Salix willow	*Salix sitchensis*	Deciduous tree	B, C	TBD	4 ft oc	In lowest areas of parks and private property near Wetland 1 and 2
Vine maple	*Acer circinatum*	Tall shrub	A,B	TBD	4 ft oc	
Red osier dogwood	*Cornus sericea*	Tall shrub	B, C	TBD	4 ft oc	In lowest areas near Wetland 1 and 2
Clustered wild rose	*Rosa pisocarpa*	Shrub	A,B	TBD	4 ft oc	
Twinberry	*Lonicera involucrata*	Shrub	C	TBD	4 ft oc	In lowest areas near Wetland 1 and 2
Salmonberry	*Rubus spectabilis*	Shrub	A,B	TBD	4 ft oc	
Snowberry	*Symphoricarpos albus*	Shrub	A,B	TBD	4 ft oc	

1. City of Bellevue parks has requested prioritizing coniferous trees, tight spacing and smaller root stock where restoration work occurs on parks property.
2. Spacing is approximate and will be refined in final plans.

2.4 Shorelines

2.4.1 Definition

Shorelines are defined per the Shoreline Master Program (SMP) overlay in LUC 20.25E.010.C.2:

The SMP applies to shorelines of the state, which included shorelines of statewide significance and shorelines defined in RCW 90.58.030 and this subsection. The Shoreline Overlay District jurisdiction encompasses those lake waters 20 acres in size or greater and those stream waters with a mean annual water flow exceeding 20 cubic feet per second; the shorelands underlying them; the lands extending landward for 200 feet in all directions from the Ordinary High Water Mark (OHWM) on a horizontal plane to a point that results in the required 200-foot dimension; floodways and contiguous floodplain areas landward 200 feet from such floodways associated with such streams and lakes; and all wetlands associated with such streams and lakes. Specifically included in the Shoreline Overlay District jurisdiction are the following:

a. *Lake Washington, including Mercer Slough upstream to Interstate 405 – The lake waters, underlying lands, and the area 200 feet landward of the ordinary high water mark, plus associated floodways, floodplains, and wetlands*
b. *Lake Sammamish – The lake waters, underlying lands, and the area 200 feet landward of the ordinary high water mark, plus associated wetlands*
c. *Lower Kelsey Creek – The creek waters, underlying lands, and territory between 200 feet on either side of the top of banks, plus associated floodways, floodplains, and wetlands*
d. *Phantom Lake – The lake waters, underlying lands, and the area 200 feet landward of the ordinary high water mark, plus associated floodways, floodplains, and wetlands*
e. *On Lakes Sammamish and Washington, waterward from the ordinary high water mark or specified vertical elevation representing the ordinary high water mark to the City's jurisdictional boundary*

2.4.2 Background Review and Results

The Bellevue Shoreline Master Program Update (2018) was reviewed to assess regulated shorelines in relation to the Project area. Shoreline Master Program maps and Bellevue's internal mapping shows jurisdictional shorelines (Urban Conservancy – Open Space) in the study area. The shoreline area is approximately equivalent to the floodplain on the southwest corner of the project area shown in Figure 2. See Figure 6 for shoreline near the project site as mapped in the Shoreline Master Program (City of Bellevue 2018).

As stated in the City's Shoreline Master Program, the purpose of Urban Conservancy – Open Space Environment is as follows:

To protect, retain, or restore those shoreline areas that are relatively free of urban development or that include intact or minimally degraded shoreline functions intolerant of urban development. These systems require limitations on use and development intensity to maintain the ecological functions and ecosystem wide processes. The primary management goal is to focus restoration where benefits to overall functions and processes

can be realized while allowing a range of less intensive recreational uses than found on land designated as Urban Conservancy. (City of Bellevue 2018).

The master program states the following management policies for Urban Conservancy – Open Space Environment:

SH-4. Limit uses to those that sustain the shoreline area's physical and biological resources or to uses that do not substantially degrade ecological processes and functions while providing a range of dispersed low intensity recreational opportunities.

SH-5. Avoid commercial activities except those that facilitate low-intensity recreational opportunities such as dispersed, non-motorized personal watercraft access, walking, and science education or research.

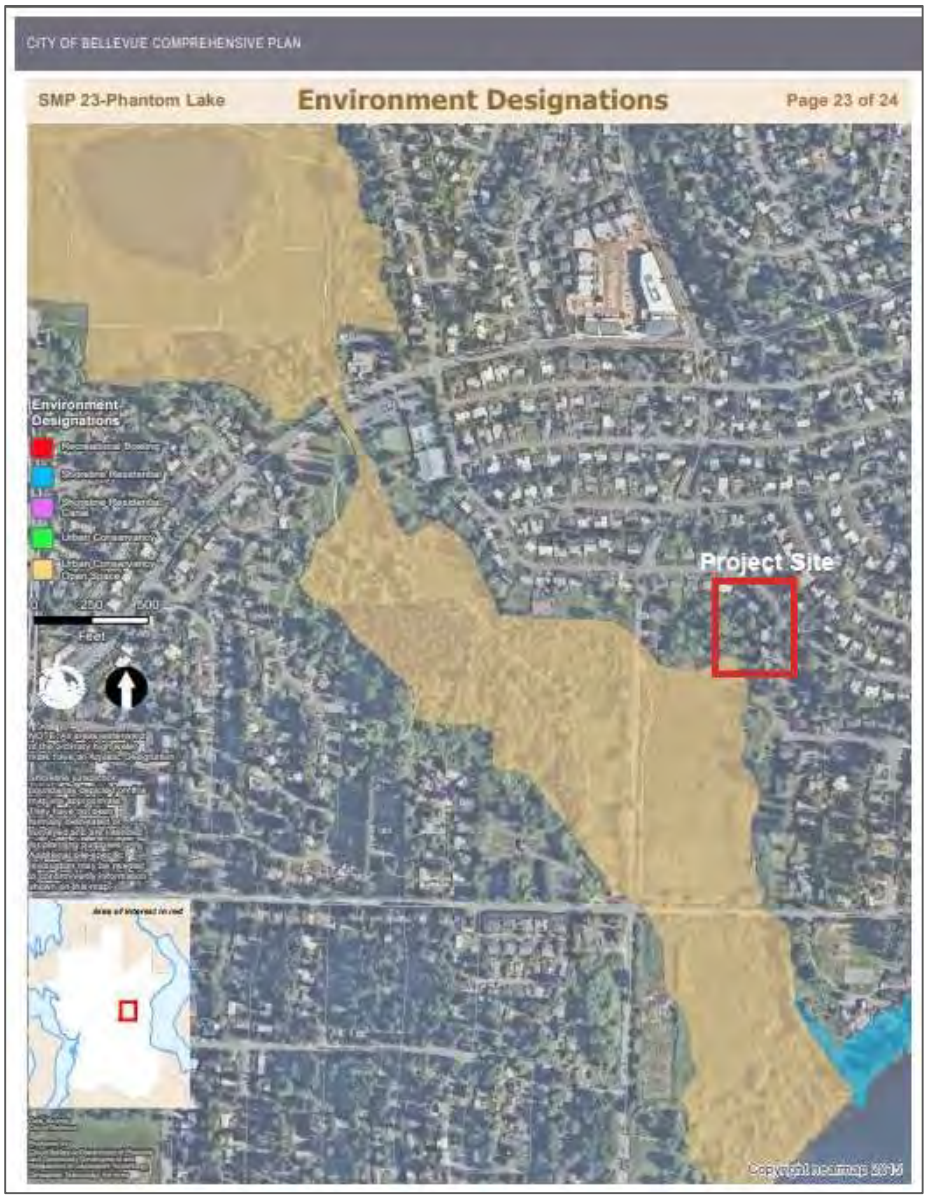

Figure 6. Shoreline mapped in the City of Bellevue Shoreline Master Program (2018)

2.4.3 Shoreline Impacts

Shoreline impacts will entail temporary soil disturbance, shrub clearing, and tree removal within the shoreline area overlapping the construction limits. Approximately three significant trees will be removed in this area. All areas will be restored after construction.

2.4.4 Mitigation

According to the Shoreline Master Program (City of Bellevue 2018), critical areas within shoreline jurisdiction are to be regulated in accordance to the provisions of the Bellevue Critical Areas Regulations. Therefore, the restoration provided for wetlands and wetland buffers (Section 2.3) and wildlife habitat (Section 2.6), which meet the Bellevue Critical Areas Regulations, have adequately addressed shoreline requirements in kind.

These mitigation plans also meet management policies SH-4 and SH-5 listed above. No commercial activities or new recreational opportunities are being introduced, and the restoration work is intended to maintain and improve upon existing natural functions of the site.

There are no impacts to flood hazard areas within the shoreline jurisdiction that require mitigation, as described in Section 2.8.

2.5 Geologic Hazard Areas

2.5.1 Definition

The City of Bellevue defines Geologic Hazard Areas in LUC 20.25H.120(A):

1. *Landslide Hazards. Areas of slopes of 15 percent or more with more than 10 feet of rise, which also display any of the following characteristics:*
    a. *Areas of historic failures, including those areas designated as quaternary slumps, earthflows, mudflows, or landslides*
    b. *Areas that have shown movement during the Holocene Epoch (past 13,500 years) or that are underlain by landslide deposits*
    c. *Slopes that are parallel or subparallel to planes of weakness in subsurface materials*
    d. *Slopes exhibiting geomorphological features indicative of past failures, such as hummocky ground and back-rotated benches on slopes*
    e. *Areas with seeps indicating a shallow groundwater table on or adjacent to the slope face*
    f. *Areas of potential instability because of rapid stream incision, stream bank erosion, and undercutting by wave action*
2. *Steep Slopes. Slopes of 40 percent or more that have a rise of at least 10 feet and exceed 1,000 square feet in area.*
3. *Coal Mine Hazards. Areas designated on the Coal Mine Area Maps or in the City's coal mine area regulations, LUC* 20.25H.130*, as potentially affected by abandoned coal mines; provided, that compliance with the coal mine area regulations shall constitute compliance with the requirements of this chapter in regard to coal mines*
4. *Seismic Hazards. Areas of known faults or Holocene displacement, based on the most up-to-date information, or areas mapped as areas of "moderate to high" or "high" hazard liquefaction susceptibility by the Washington Department of Natural Resources Liquefaction Susceptibility Map of King County, Washington, 2004, as amended*

2.5.2 Background Review and Results

Background information pertaining to the Project area was collected and reviewed. These information sources included:

- City of Bellevue Map Viewer (City of Bellevue n.d.)
- King County iMap (King County n.d.)
- Geotechnical Report for the Bogline Sanitary Sewer Rehabilitation Project (Draft, April 15, 2022; Jacobs 2022). Included as Appendix C.

The City of Bellevue Map Viewer and King County iMap did not show any mapped geologic hazard areas in the project area (see Figure 7). The project manager, Vanaja S. Rajah stated that the City of Bellevue's internal map database shows low to moderate liquefaction-prone soils (seismic hazards) are present in the construction limits. These soils are approximately equivalent to the floodplain on the southwest corner of the construction limits. The geotechnical assessment performed by Jacobs in 2022 determined that conditions on site were consistent with mapped geology, and that based on available data and soil sampling, liquefaction triggering is not anticipated. Jacobs identified areas on site with potential for settlement under the proposed pipes, especially if a seismic event occurred.

2.5.3 Geologic Hazard Area Impacts

The nearest geologic hazard areas are steep slopes located at 15661 SE 11th Street and 1205 158th Avenue SE, near the intersection of SE 11th Street and 158th Street, approximately 120 feet east of the project corridor (see Figure 7), and liquefaction-prone soils in the construction limits. There will be no impacts to steep slopes from this project.

Seismic hazards such as liquefaction are not subject to buffers, structure setbacks, performance standards, mitigation or monitoring (LUC20.25H.035).

2.5.4 Mitigation for Geologic Hazard Area Impacts

There are no impacts to steep slopes, therefore no mitigation is required. The geotechnical report prepared for the project informs the engineering to ensure a stable pipeline replacement in liquefaction-prone areas. Bellevue's municipal code does not require mitigation for seismic hazards including liquefaction.



Figure 7. Steep Slopes and Floodplain in Study Area.

2.6 Habitat Associated with Species of Local Importance

2.6.1 Definition

The City of Bellevue defines habitat associated with species of local importance as designated in LUC 20.25H.150:

A. Definition of a Species of Local Importance.

The following species are hereby designated as species of local importance:

1. *bald eagle (*Haliaeetus leucocephalus*)*
2. *peregrine falcon (*Falco peregrinus*)*
3. *common loon (*Gavia immer*)*
4. *pileated woodpecker (*Dryocopus pileatus*)*
5. *Vaux's swift (*Chaetura vauxi*)*
6. *merlin (*Falco columbarius*)*
7. *purple martin (*Progne subis*)*
8. *western grebe (Aechmophorus occidentalis)*
9. *great blue heron (Ardea herodias)*
10. *osprey (Pandion haliaetus)*
11. *green heron (Butorides striatus)*
12. *red-tailed hawk (Buteo jamaicensis)*
13. *western big-eared bat (Plecotus townsendii)*
14. *Keen's myotis (Myotis keenii)*
15. *long-legged myotis (*Myotis volans*)*
16. *long-eared myotis (*Myotis evotis*)*
17. *Oregon spotted frog (*Rana pretiosa*)*
18. *western toad (*Bufo boreas*)*
19. *western pond turtle (*Clemmys marmorata*)*
20. *Chinook salmon (*Oncorhynchus tshawytscha*)*
21. *bull trout (*Salvelinus confluentus*)*
22. *coho salmon (*Oncorhynchus kisutch*)*
23. *river lamprey (*Lampetra ayresi*)*

B. Habitat (other than the critical areas and critical area buffers otherwise designated in LUC 20.25H.025*) associated with species of local importance is hereby designated a critical area; provided, that compliance with these species of local importance regulations, LUC* 20.25H.150 *through LUC* 20.25H.170 *inclusive, shall constitute compliance with the requirements of this part where such habitat is located outside of other critical areas designated in this part.*

C. Naturally occurring ponds of under 20 acres (see LUC 20.50.036*) are hereby designated critical areas.*

2.6.2 Background Review

Per LUC 20.25H.165, critical area reports are to include a habitat assessment of the site to evaluate the potential presence or absence of designated species of local importance or habitat for these species. The following discussion provides this review. The review included background information collected and reviewed from the following sources:

- USFWS NWI Wetlands Mapper internet mapping service (USFWS 2022a)

- NWIFC SWIFD Map Tool (NWIFC n.d.).
- WDFW PHS on the Web (WDFW 2022b)
- USFWS Information for Planning and Consultation (IPaC) Tool (USFWS 2022b)
- Cornell Lab of Ornithology eBird list for Lake Hills Greenbelt (eBird n.d.)

2.6.3 Fieldwork and Results

An Information for Planning and Consultation list from USFWS and subsequent site-specific research determined that there are no ESA-listed species or ESA designated critical habitat within the study area (USFWS 2022). There are no priority habitats or species mapped by WDFW in the Project area (WDFW 2022b). Jacobs mapped two wetlands in the study area. Photos of typical habitat within the construction limits are shown in Figures 8, 9 and 10. Habitat suitability for Species of Local Importance is summarized in Table 5.

The portion of Wetland 1 in the study area contained large downed woody debris and standing snags. Outside of the study area, Wetland 1 contains and thin-stemmed persistent plants or woody branches in areas that are permanently or seasonally inundated that provide structures for egg-laying by amphibians. Wetland 1 may provide habitat for common loon (*Gavia immer*), western grebe (*Aechmophorus occidentalis*), green heron (*Butorides striatus*) western pond turtle (*Clemmys marmorata*), Oregon spotted frog (*Rana pretiosa*), western toad (*Bufo boreas*). Common loon, western grebe and green heron have been observed in Phantom Lake and documented on Cornell Lab of Ornithology's eBird . There have been no confirmed sightings documenting western pond turtle, Oregon spotted frog or western toad in the study area.



Figure 8. Typical Habitat in Southern Portion of Construction Limits (includes trees along fencelines)



Figure 9. Typical Habitat in Southern Portion of Construction Limits (foreground only)

Wetland 2 is entirely within the construction limits. This small wetland contains a few hundred square feet of Himalayan blackberry stems and reed canarygrass within a small inundated area. Its small size limits its usefulness as wildlife habitat, though some amphibians could be present.

The greenbelt contains second growth trees and a few snags were observed in the study area outside of the work limits. These features may provide habitat for bald eagle (*Haliaeetus leucocephalus*), pileated woodpecker (*Drycopus pileatus*), merlin (*Falco columbarius*) and red-tailed hawk (*Buteo jamaicensis*). These species have been observed in Lake Hills Greenbelt and documented on Cornell Lab of Ornithology's eBird (eBird n.d.).



Figure 10. Typical Habitat in Northern Portion of Construction Limits (sewerline follows fenceline; some trees in background may need to be removed.)

Table 5. Habitat Suitability for Species of Local Importance

Species	Documented (WDFW PHS)	Habitat Requirements	Habitat Present in Study Area?
Species requiring bodies of water or wetlands (lakes/ponds/wetlands): common loon (*Gavia immer*), western grebe (*Aechmophorus occidentalis*), western pond turtle (*Clemmys marmorata*),	No	Lives/breeds in or directly adjacent to bodies of standing water or wetlands.	None. These species require open standing water which was not observed in the study area. The closest habitat for common loon and western grebe is Phantom Lake (approximately 0.3 mile south of the study area). (eBird n.d.). There are no documented observations of western pond turtle in the study area.
Oregon spotted frog (*Rana pretiosa*)	No	Relatively large wetlands associated with lakes, ponds, and slow-moving streams with a shallow emergent component, typically in the floodplains of larger water bodies. Requires a complex mosaic of aquatic habitats.	None. There are no known occurrences of Oregon spotted frog in the Lake Hills Greenbelt.
green heron (*Butorides striatus*)	No	Small freshwater wetlands, ponds, and stream-sides with thick vegetation; coastal areas and mangrove swamps	Limited habitat outside of construction limits. Green heron have been observed in Lake Hills Greenbelt and Phantom Lake and documented on eBird.
western toad (*Bufo boreas*)	No	Wetlands, ponds, lakes, reservoir coves, and still water off-channel habitats of rivers; associated forests. Require still waters of lakes and ponds for breeding.	Possible. Outside of the study area, Wetland 1 contains and thin-stemmed persistent plants or woody branches in areas that are permanently or seasonally inundated that provide structures for egg-laying by amphibians. Wetland 1 is assumed to provide habitat to western toad though none have been documented in the study area.
bald eagle (*Haliaeetus leucocephalus*)	No	Nests and roosts in large mature trees near large bodies of water.	Possible. Phantom Lake and Larsen Lake are near the study area. Bald eagle have been observed flying above Larsen Lake and documented on E-bird on March 27, 2022 (eBird n.d.). No evidence of eagle nests or prominent mature roost trees in study area.
peregrine falcon (*Falco peregrinus*)	No	Islands, sea stacks, shoreline cliffs; occasionally forested slopes or cliffs; occasionally tall man-made structures such as buildings or bridges.	None. No tall buildings, bridges, or cliffs that would provide nesting habitat present in the study area.
pileated woodpecker (*Drycopus pileatus*)	No	Mature and old-growth forests; second growth forests with large snags and fallen trees; in Western WA, typically conifers with an average diameter-at-breast-height of 27 inches	Marginal habitat present. Marginal habitat is present adjacent to the study area (second growth trees within the greenbelt, some snags present outside study area). Pileated woodpecker have been observed in the Lake Hills Greenbelt and documented on eBird on March 27, 2022.

Species	Documented (WDFW PHS)	Habitat Requirements	Habitat Present in Study Area?
Vaux's swift (*Chaetura vauxi)*	No	Old growth forests, often in cavities previously occupied by pileated woodpeckers.	None. No old growth present in the study area.
merlin (*Falco columbarius*)	No	Coniferous forest or greenbelts. Commonly found in urban areas where abundant prey is available.	Potentially suitable habitat. Potentially suitable habitat present within greenbelt including trees in construction limits. The portion of the wetland in the study area contains standing snags. Merlin have been observed in the Lake Hills Greenbelt and documented on eBird on March 5, 2022 (eBird, n.d.).
purple martin (*Progne subis*)	No	Roosts in artificial structures like nest boxes; snags. Forages in open areas including meadows, grasslands and over lakes, ponds and flooded pastures.	No suitable habitat documented or observed in the study area.
great blue heron (*Ardea herodias*)	No	Forages in freshwater or saltwater shorelines; marshes; grassy areas. Nests in colonies in trees near open water.	Marginal foraging habitat in study area. No nesting colonies in or near study area. Great blue heron have been observed at Larsen Lake approximately 0.6 mile northwest of the study area.
osprey (*Pandion haliaetus*)	No	Wide range of habitat near rivers, estuaries, salt marshes, lakes, reservoirs, and other large bodies of water.	No suitable habitat within the study area. Osprey have been observed near Phantom Lake (approximately 0.3 mile south of the study area) which provides suitable foraging (eBird n.d.).
red-tailed hawk (*Buteo jamaicensis*)	No	Open areas interspersed with patches of trees or other elevated perches	Yes. Study area contains snags and mature trees. Lake Hills Greenbelt contains open areas interspersed with tall trees which may provide suitable habitat for red-tailed hawk. Red-tailed hawk have been observed and documented within Lake Hills Greenbelt.
Bat species: Townsend's big-eared bat (*Corynorhinus townsendii*, formerly *Plecotus townsendii*); Keen's myotis ((*Myotis keenii*); long-legged myotis (*Myotis volans*); long-eared myotis (*Myotis evotis*)	No	Caves and mines; cliffs, talus, and boulders; buildings and bridges. Some species may be associated with old woodpecker cavities.	No suitable habitat documented or observed in study area.
Fish species: coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*Oncorhynchus tshawytscha*), bull trout (*Salvelinus confluentus*), river lamprey (*Lampetra ayresi*)	No	Rivers that flow to marine waters.	No rivers or streams documented in study area.

2.6.4 Impacts to Habitat for Species of Local Importance

Specific to species of local importance: a small portion of potential habitat for western toad would be removed and temporarily inaccessible. Several trees would be removed which would reduce available habitat in this location for bald eagle (perching), pileated woodpecker (perching/foraging), merlin (nesting) and red-tailed hawk (perching). However, the work is in a very small area, with hundreds of similar trees that would be available to these species.

Impacts would be temporary, would primarily occur in areas that are currently landscaped or occupied by a fenceline or Himalayan blackberry, and the impacted area would be restored upon completion of construction. However, it will take time for the replacement tree plantings to grow back to the size of the removed trees.

Overall the project would result in a beneficial change to wildlife habitat. The restoration work will replace the existing non-native weed monoculture within the non-landscaped areas with more diverse native vegetation and, long-term, a more multilayered habitat. These plantings will provide food and shelter for wildlife.

Indirect impacts may be limited to reducing the number of times the City of Bellevue needs to come out to the site for maintaining the existing sewer line.

2.6.5 Avoidance and Minimization

The project purpose is a necessary repair of the existing sewer line, which is present in vegetated habitat. Thus some impacts to these critical areas cannot be avoided. As described in Section 2.7, impacts to significant trees (which could serve as perching or foraging habitat for raptors and woodpeckers) have been avoided where possible. In addition, ground disturbance will be minimized during construction by placing mats or other protection on the ground to support heavy equipment, and existing native or ornamental shrubs will be preserved wherever possible.

2.6.6 Restoration / Mitigation

The planting plan that will be installed as part of restoration for the wetland and wetland buffer impacts and for tree removals will also function to restore wildlife habitat. The goal will be no net loss of habitat. The replacement plantings within the currently undeveloped area on parks property and on the parks side of the fenceline is intended also to improve habitat value in these areas. These areas are currently a monoculture of two non-native species: reed canarygrass and Himalayan blackberry. These species will be replaced with a more diverse collection of native shrubs and trees that will provide sources of food, shelter and nesting habitat for native species of wildlife. Restoration on currently landscaped backyards may contain native and non-native species selected with a goal of matching the current value to wildlife.

By using fast-growing alders and willows as part of the plantings, these species may help create a shaded area that reduces the density of blackberries in the area once the 3-year maintenance period is complete.

LUC 20.25H.165 requires an analysis of management recommendations for the species, including WDFW's habitat management recommendations. This mitigation plan matches the management recommendations for priority species listed in WDFW 2004, as follows:

- Pileated Woodpecker (removed from WDFW's PHS list in 2021). Management recommendations focus on providing and maintaining a sufficient number of appropriate snags and large decaying live trees for nesting and roosting (WDFW 2004). The 2015 State Wildlife Action Plan (WDFW 2015) notes that general concerns relate only to industrial forest lands. For the Bogline project, where possible, some of the felled trees may be left in place on site (likely within the undeveloped area on the Park side of the fence), which would provide foraging habitat for woodpeckers. No snags will be felled as part of the project.

- Bald Eagle. WDFW no longer provides management recommendations for bald eagles and no longer requires bald eagle management plans (WDFW 2004). Federal guidelines for bald eagle habitat focus on avoiding disturbance to foraging areas, roost trees, and nest trees (USFWS 2007). As the site does not contain foraging areas or prominent roost or nest trees (typically very large conifers taller than surrounding trees, and in proximity to open water), these recommendations are not applicable to the study area.

- Merlin. WDFW does not currently provide established management recommendations for merlin, and the merlin is not listed in the state's wildlife action plan (WDFW 2015).

- Western Toad. WDFW is a WDFW priority species. In the state's wildlife action plan (WDFW 2015), recommended management actions focus on preserving known pockets of abundance and breeding habitat, as well as solving issues with road building, fungal infections, and loss of upland habitat near breeding areas. The Bogline project would improve western toad habitat through restoring non-native wetland buffer with more diverse, native species.

2.7 Trees

2.7.1 Definitions and Background Review

The study area includes a greenbelt with deciduous and coniferous trees. Removal of significant trees is prohibited in critical areas per LUC 20.25.H.055.C, except as allowed through a land use permit approval process. LUC defines a significant tree as a healthy evergreen or deciduous tree measuring 8 inches in diameter or greater at 4 feet above existing grade.

2.7.2 Tree Removals and Protections

Up to 15 significant trees will be removed. This is unavoidable due to the proximity of the trees or their critical root zones to the sewer line that must be repaired. See Table 6 for a summary of the potentially removed trees based on 30% design. These trees are also shown in annotated project plans in Appendix D; tree locations are based on City of Bellevue survey.

In addition to these trees, a cluster of 4 significant Douglas-fir trees near the sewer line may also need to be removed, on landscaped ground. However, if site conditions allow, the contractor may be able to preserve these trees if the sewer line can be excavated without interfering with the critical root zone of these trees.

Table 6. Summary of Anticipated Tree Removals

Tree Species	Scientific Name	Total # Significant Trees Removed	Diameter at Breast Height	# Removed in Wetland	# Removed in Wetland Buffer	# Removed in 100-year Floodplain and Shoreline - Urban Conservancy
Douglas fir	*Pseudotsuga menzeisii*	**7**	26", 24", 24", 22", 22", 14", 8"	0	7	2
Western red-cedar	*Thuja plicata*	**2**	8", 8"	0	2	0
Paper birch	*Betula papyrifera*	**2**	12", 18"	0	2	1
Red alder	*Alnus rubra*	**1**	8"	0	1	0
Unk deciduous	*TBD*	**3**	8", 8", 20"	0	3	0
Totals		**15**	--	0	15	3

Tree protection measures of remaining trees will be implemented as required by City LUC 20.20.900 and include the following:

- Work performed within the critical root zone of retained trees shall be performed in accordance with the approved tree protection plan.
- Construction limits will be clearly marked, and trees not subject to removal within limits of work will be protected by tree protective fencing and/or any excavation within the tree protection zone will be done by hand.
- No equipment shall be stored or operated inside the protective fencing unless approved by the City arborist including during fence installation or removal.

- No storage of materials shall occur inside the protective fencing.
- Unauthorized activities in the tree protection zone shall require evaluation by the Project arborist to identify impacts and mitigation required.

2.7.3 Avoidance and Minimization

The sewer line's location below several large trees requires that they be removed in order to access the failing sewer line. However, wherever possible the construction limits have been narrowed or shifted to avoid clumps of trees. For instance, the construction limits are planned to shift 25 feet south of 1229 158th Ave SE's southern property line to avoid several significant trees on that property. An approximately 16 significant trees within the construction limits will be protected per the tree protection measures listed above, and through shifting construction work within the limits to avoid these trees where possible.

2.7.4 Mitigation for Tree Removal

The restoration plantings after construction of the long-term repairs will also address tree mitigation required by the City of Bellevue. Significant trees with a diameter of 8 inches or greater will be replaced at a minimum of a 1:1 ratio per LUC 20.20.900E.4.

As part of the restoration planting for the project, an estimated 15 trees at a minimum will be planted as summarized in Table 7. This will meet the required 1:1 replacement ratio. These plantings will also meet the requirements for wetland mitigation and mitigation for impacts to species of local importance, as described in sections 2.3 and 2.6.

In addition, multiple additional red alders and willow plantings will be established wherever existing non-landscaped vegetation is temporarily cleared. These areas will

Table 7: Anticipated Tree Replacement Plantings

Tree Species[1]	Scientific Name	Approximate Quantity
Douglas fir	*Pseudotsuga menzeisii*	**7**
Western red-cedar	*Thuja plicata*	**2**
Paper birch	*Betula papyrifera*	**2**
Red alder	*Alnus rubra*	**2 (minimum)**
Pacific willow	*Salix lucida*	**TBD**
Salix willow	*Salix sitchensis*	**TBD**
Totals		**15 (minimum)**

2.8 Frequently Flooded Areas

2.8.1 Definition

The City of Bellevue defines Frequently Flooded Areas in LUC 20.25H.175 as:

1. *Land Subject to One-Hundred-Year Flood. The land in the floodplain subject to the flood having a one percent chance or greater of being equaled or exceeded in any given year as determined by customary methods of statistical analysis defined in the City of Bellevue Storm and Surface Water Engineering Standards, January 2016, or as hereafter amended. Also referred to as the 100-year flood.*

2. *Areas Identified on the Flood Insurance Rate Map(s). Those areas identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study for King County" dated April 19, 2005, with an accompanying flood insurance map(s) and any revisions thereto. The Flood Insurance Study and accompanying map(s) are hereby adopted by reference, declared part of this part, and are available for public review at the City of Bellevue.*

3. *Additional Areas. Other areas designated by the Director pursuant to this section shall be considered frequently flooded areas.*

2.8.2 Background Review

Background information pertaining to the Project area was collected and reviewed for its usefulness. These information sources included:

- City of Bellevue Map Viewer (City of Bellevue n.d.)
- Federal Emergency Management Agency (FEMA) Flood Map Service Center (FEMA 2022)

The City of Bellevue maintains a GIS shapefile of the 100-year floodplains, as determined by the Federal Emergency Management Agency (FEMA). The 100-year floodplain has been mapped in Kelsey Creek by the Federal Emergency Management Agency. The southern portion of the project area is within the 100-year floodplain of Kelsey Creek (see Figures 2 and 7).

2.8.3 Frequently Flooded Area Impacts

The work limits overlap with approximately 4,300 square feet of FEMA-mapped floodplain. Work in the floodplain will include approximately 12 cubic yards of excavation, to excavate the existing sewer line. Work will also include vegetation clearing, temporary placement of excavated materials, and placement of temporary supports for the excavator. The original topography will be restored after excavation, and verified by a specialist. The project would not result in a change in elevation within the 100-year floodplain.

Work is most likely expected to occur during the dry season. Should work occur during the late fall or winter when flooding is a concern, all excavated materials would be stored outside of the floodplain.

2.8.4 Mitigation for Frequently Flooded Area Impacts

The project will not result in a rise in elevation within the 100-year floodplain; therefore no mitigation is required.

3. Monitoring and Maintenance Plan

Upon completion of the sewer repair, all disturbed areas will be restored in accordance to the restoration/planting plans, and will be monitored to ensure the success of the restoration. The proposed monitoring and maintenance frequencies are shown in Table 8, and methods are further detailed below.

Table 8: Monitoring and Maintenance Plan

Tasks	Area	Timing during Year												Annual Frequency
		J	F	M	A	M	J	J	A	S	O	N	D	
Maintenance														
* Weed Control – Non-landscaped Areas and Wetland 2	Up to 4,170 square feet			X			X			X				Years 1, 2 and 3, as needed
Monitoring and Reporting														
As-built Review (All disturbed areas)	Up to 23,240 square feet										X			Year 0
*Inspection/ Reporting – Landscaped Areas	Up to 19,070 square feet									X				Year 1
*Inspection/ Reporting – Non-landscaped Areas and Wetland 2	Up to 4,170 square feet									X				Years 1, 2 and 3
Non-routine														
** Establishment Watering	Up to 23,100 square feet						X	X	X	X				Years 1 and 2 if needed
*** Plant Replacement	Up to 23,240 square feet											X		Year 1

Notes:

* Estimated only. For Parks property impacts, weed management processes and frequencies will be detailed within the Special Use Agreement developed by the City of Bellevue Utilities and Bellevue Parks. Some schedules may vary on landscaped areas of private properties and will be finalized during discussions with homeowners.

** Watering frequencies are depending on weather and groundwater conditions and are estimated. Many areas on site may not require supplemental watering due to high water table. Plantings in Wetland 2 would not require watering.

*** Plant replacement is dependent on mortality rates.

3.1 As-built Monitoring

Following completion of pipe installation, restoration of soil, and installation of plantings, a site visit will be conducted to confirm the as-built conditions and establish the site baseline conditions for monitoring. Photo points will be established to track progress of restoration plantings.

3.2 Annual Monitoring

The Utilities Department shall be responsible for monitoring the restoration plantings per the applicable environmental permits including, but not limited to providing the monitoring results to the City of Bellevue by the end of the monitoring year. The monitoring will meet the requirements of LUC 20.25H.220, and will occur for 3 years per LUC 20.25H.220(D) for restoration projects. Expected performance standards are shown in Table 9.

Table 9: Performance Standards

Performance Standard	Year 1	Year 2	Year 3
In non-landscaped, restored areas			
Tree/shrub planting survival (percent)	100%	--	--
Native woody vegetation cover (percent)	--	30%	40%
Species diversity	Minimum 2 native tree species (planted), 4 native shrub species (including volunteers)		
Invasive species	20% or less cover of Washington state-listed or county-listed Class B or C noxious weeds; 0% Class A weeds		
In landscaped restored areas[1]			
Tree/shrub planting survival (percent)	100%	--	--

3.3 Maintenance

Maintenance will be performed regularly to address conditions that could jeopardize the success of the planting effort. During regular inspections, any necessary maintenance actions will be identified and reported to the landscape maintenance contractor. Typical maintenance activities will include the following:

- Replacing dead plantings after Year 1 and as recommended in subsequent years.
- Irrigating during the first 1 to 2 years during summer months if needed at locations along the sewer alignment where groundwater is deep, to establish plantings and as needed subsequently during drought years.
- Removing noxious vegetative species by hand, or with hand-operated equipment (as allowed per LUC 20.25H.055.C.3.i).

3.4 Reporting

The City or City-appointed designee will prepare and submit a monitoring report describing general site conditions, vegetation health, photo documentation, restoration performance assessment, maintenance recommendations, and any necessary remedial recommendations after the annual performance monitoring visit.

4. Limitations

This report was prepared for the exclusive use of the City of Bellevue and their representatives. The findings and conclusions documented in this report have been prepared for specific application to this Project. They have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. The conclusions and recommendations presented in this report are professional opinions based on interpretation of information currently available to Jacobs and made within the operational scope, budget, and schedule constraints of this Project. No warranty, express or implied, is made.

5. References

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Appendix A. 30% Design Plans

CITY OF BELLEVUE
UTILITIES DEPARTMENT

CITY MANAGER
BRAD MIYAKE

MAYOR
LYNNE ROBINSON

DEPUTY MAYOR
JARED NIEUWENHUIS

UTILITIES DIRECTOR
NAV OTAL

CITY COUNCIL
JEREMY BARKSDALE
CONRAD LEE
JENNIFER ROBERTSON
JOHN STOKES
JANICE ZAHN

BOGLINE SANITARY SEWER REHABILITATION
SANITARY SEWER LINE
CIP NO. X-XX
BID NO. XXXXX

SHEET INDEX TABLE		
SHEET NO	DWG NAME	SHEET TITLE
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2		
3		
4		
5		
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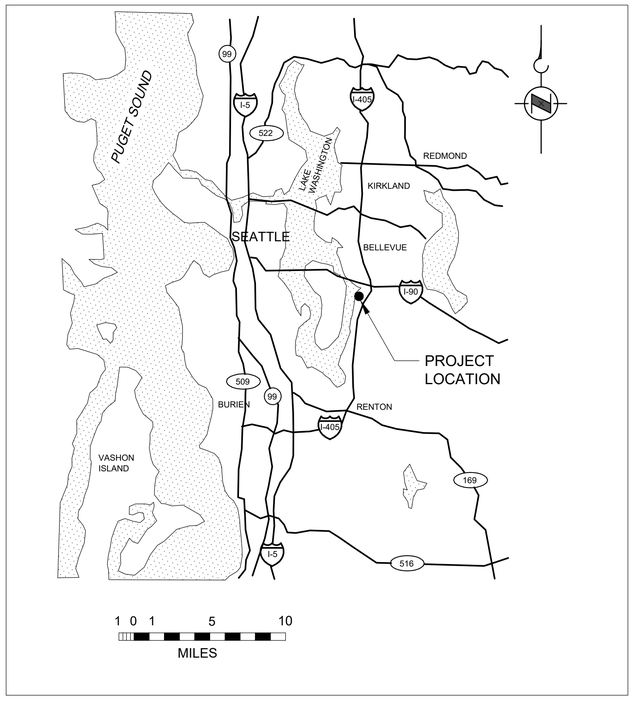
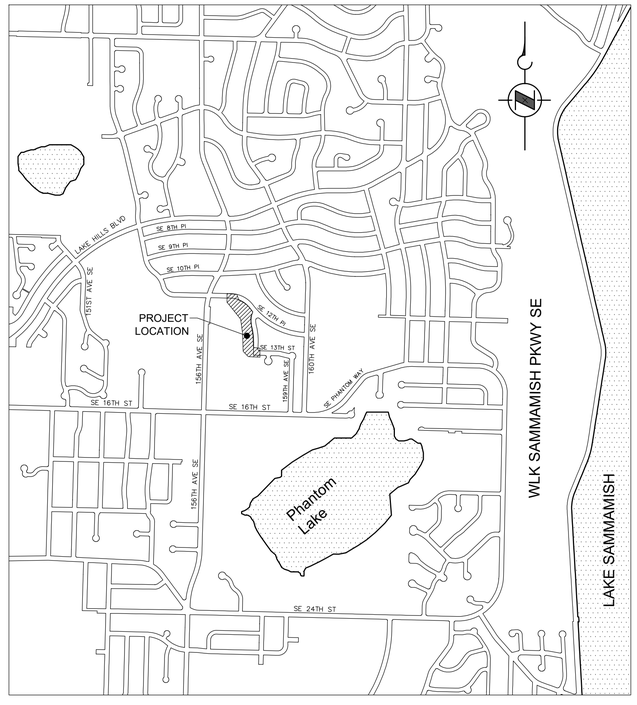
10		



LOCATION MAP
SCALE: AS SHOWN



VICINITY MAP
SCALE: NONE

PRELIMINARY
NOT FOR CONSTRUCTION

30% REVIEW SUBMITTAL

Approved By

UTILITIES PROJECT MANAGEMENT SECTION MANAGER DATE

PROJECT MANAGER DATE

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SANITARY SEWER GENERAL NOTES

(* AT THE END OF NOTE INDICATES THAT IT HAS BEEN MODIFIED FROM THE CITY OF BELLEVUE STANDARD NOTE)

1. ALL WORK SHALL CONFORM TO THE 2021 CITY OF BELLEVUE UTILITY ENGINEERING STANDARDS, UNLESS OTHERWISE SHOWN.*
2. ALL NEW MANHOLES SHALL HAVE A MINIMUM INSIDE DIAMETER OF 48"AND SHALL CONFORM TO THE STANDARD DETAILS.
3. SANITARY SEWER PIPE SHALL BE PVC CONFORMING TO ASTM D-3034 SDR 35 (4"-15") OR ASTM F-679 (18"-27"). BEDDING AND BACKFILL SHALL BE AS SHOWN IN THE STANDARD DETAILS.
4. WHERE SHOWN AS C900 PVC, THE SEWER PIPE SHALL HAVE A MAXIMUM DIMENSION RATIO (DR) OF 18 AND CONFORM TO AWWA C900 OR AWWA C905.
5. WHERE SHOWN AS DUCTILE IRON, THE PIPE SHALL BE CLASS 52 DUCTILE IRON WITH PROTECTO 401 LINING AND COATED WITH 8 MIL POLYETHENE ENCASEMENT IN ACCORDANCE WITH AWWA C105.
6. ALL SIDE SEWERS SHALL BE 6" DIAMETER PIPE AT A MINIMUM 2% SLOPE, UNLESS OTHERWISE NOTED ON THE STANDARD DETAILS.
7. SIDE SEWER STATIONS ARE REFERENCED FROM NEAREST DOWNSTREAM MANHOLE.
8. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN ESTABLISHED BY FIELD SURVEY OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD THEREFORE BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN, AND TO FURTHER DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN HEREIN WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN. IMMEDIATELY NOTIFY THE ENGINEER IF ANY CONFLICTS ARE DISCOVERED.*
9. ALL TESTING AND CONNECTIONS TO EXISTING MAINS SHALL BE DONE IN THE PRESENCE OF A REPRESENTATIVE OF THE CITY OF BELLEVUE UTILITIES DEPARTMENT.
10. ALL TRENCHES SHALL BE COMPACTED, AND HMA IN PLACE IN PAVED AREAS, PRIOR TO TESTING SEWER LINES FOR ACCEPTANCE.
11. SIDE SEWER STUBS SHALL BE TESTED FOR ACCEPTANCE AT THE SAME TIME THE MAIN SEWER IS TESTED..
12. TOPS OF MANHOLES WITHIN PUBLIC RIGHTS-OF-WAY SHALL NOT BE ADJUSTED TO FINAL GRADE UNTIL JUST PRIOR TO PAVING.
13. ALL MANHOLES IN UNPAVED AREAS SHALL INCLUDE A CONCRETE SEAL AROUND ADJUSTING RINGS PER STANDARD DETAIL.
14. CONTRACTOR SHALL ADJUST ALL MANHOLE RIMS TO FLUSH WITH FINAL FINISHED GRADES, UNLESS OTHERWISE SHOWN.
15. ALL SEWER MAIN CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY OR IN EASEMENTS MUST BE "STAKED"BY A SURVEYOR LICENSED IN WASHINGTON STATE FOR "LINE AND GRADE"AND CUT SHEETS PROVIDED TO THE ENGINEER, PRIOR TO STARTING CONSTRUCTION.*
16. CONTRACTOR SHALL INSTALL, AT ALL CONNECTIONS TO EXISTING DOWNSTREAM MANHOLES, SCREENS OR PLUGS TO PREVENT FOREIGN MATERIALS FROM ENTERING EXISTING SANITARY SEWER SYSTEM. SCREENS OR PLUGS SHALL REMAIN IN PLACE THROUGHOUT THE DURATION OF CONSTRUCTION AND SHALL BE REMOVED ALONG WITH COLLECTED DEBRIS AT THE TIME OF FINAL INSPECTION AND IN THE PRESENCE OF A REPRESENTATIVE OF THE CITY OF BELLEVUE UTILITIES DEPARTMENT.
17. SURFACE RESTORATION OF EXISTING ASPHALT PAVEMENT SHALL BE AS REQUIRED BY THE RIGHT-OF-WAY USE PERMIT.
18. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF TEN FEET (10') HORIZONTAL SEPARATION BETWEEN ALL WATER AND SEWER LINES. ANY CONFLICTS SHALL BE REPORTED TO THE UTILITY AND THE ENGINEER PRIOR TO CONSTRUCTION.
19. THE CONTRACTOR SHALL ENSURE AND VERIFY THAT NO CONFLICTS EXIST BETWEEN SANITARY SEWER LINES AND PROPOSED OR EXISTING UTILITIES PRIOR TO CONSTRUCTION.
20. MINIMUM COVER OVER SEWER PIPE SHALL BE 5 FEET, UNLESS OTHERWISE SHOWN.
21. THE CONTRACTOR SHALL USE A VACUUM STREET SWEEPER TO REMOVE DUST AND DEBRIS FROM PAVEMENT AREAS AS DIRECTED BY THE ENGINEER.
22. AVOID CROSSING WATER OR SEWER MAINS AT HIGHLY ACUTE ANGLES. THE SMALLEST ALLOWABLE ANGLE BETWEEN UTILITIES IS 45 DEGREES, UNLESS OTHERWISE APPROVED BY ENGINEER.*
23. AT POINTS WHERE EXISTING THRUST BLOCKING IS FOUND, MINIMUM CLEARANCE BETWEEN THE CONCRETE BLOCKING AND OTHER BURIED UTILITIES OR STRUCTURES SHALL BE 5 FEET.
24. WHERE NEW UTILITY LINE CROSSES BELOW AN EXISTING AC MAIN, THE AC PIPE SHALL BE REPLACED WITH DI PIPE TO 3 FEET PAST EACH SIDE OF THE TRENCH AS SHOWN ON STANDARD DETAIL W-8. ALTERNATIVELY, WHERE DIRECTED BY THE ENGINEER, THE TRENCH MAY BE BACKFILLED WITH CONTROLLED DENSITY FILL (CDF, AKA FLOWABLE FILL) FROM BOTTOM OF TRENCH TO BOTTOM OF THE AC MAIN.
25. CALL 1-800-424-5555, OR 811, 72 HOURS BEFORE CONSTRUCTION FOR UTILITY LOCATES.
26. MANHOLES, CATCH BASINS AND VAULTS ARE CONSIDERED TO BE PERMIT-REQUIRED CONFINED SPACES. ENTRY INTO THESE SPACES SHALL BE IN ACCORDANCE WITH CHAPTER 296-809 WAC.
27. THE CONTRACTOR SHALL PROVIDE COLOR CCTV EQUIPMENT, SHALL INCLUDE TELEVISION CAMERAS, A TELEVISION MONITOR, CABLES, POWER SOURCES, SIDE-LAUNCH CAPABLE IF NECESSARY, AND OTHER EQUIPMENT. FOCAL DISTANCE SHALL BE ADJUSTABLE THROUGH A RANGE FROM 6 INCHES TO INFINITY. THE CCTV EQUIPMENT SHALL INCLUDE A DISTANCE MEASURING INSTRUMENT (DMI) TO MEASURE THE HORIZONTAL DISTANCE TRAVELED BY THE CAMERA. THE DMI READOUT SHALL APPEAR CONTINUOUSLY ON THE VIDEO PRODUCED BY THE INSPECTION AND SHALL BE ACCURATE TO LESS THAN 1 PERCENT ERROR OVER THE LENGTH OF THE SECTION OF PIPELINE BEING INSPECTED. FOR STORM OR SANITARY SEWERS, THE LENGTH SHALL BE MEASURED FROM THE CENTERLINE OF THE MANHOLE OR CATCH BASIN TO THE CENTERLINE OF THE NEXT MANHOLE OR CATCH BASIN. *

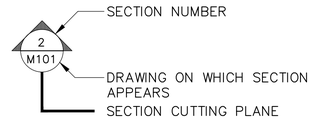
    SEE SECTION S5-13 CLOSED CIRCUIT TELEVISION (CCTV) INSPECTION FOR VIDEO FORMATTING, NAMING, AND DELIVERY REQUIREMENTS.

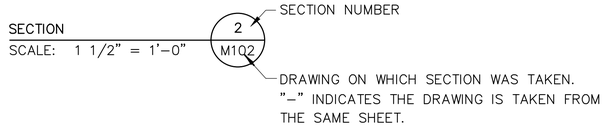
    THE CCTV INSPECTION SYSTEM SHALL BE PERFORMED UTILIZING ONE OF THE FOLLOWING VIDEO CAMERA SYSTEMS:

    REMOTE-FOCUS STATIONARY LENS CAMERAS;
    ROTATING LENS CAMERAS; OR PAN-AND-TILT CAMERAS.

    THE CCTV CAMERA SHALL BE MOUNTED ON A SKID, FLOATABLE RAFT SYSTEM, OR TRANSPORTER BASED ON THE CONDITIONS OF THE PIPELINE TO BE TELEVISED. TELEPHONES, RADIOS, OR OTHER SUITABLE MEANS OF COMMUNICATION SHALL BE UTILIZED TO ENSURE COMMUNICATION EXISTS BETWEEN MEMBERS OF THE CREW. THE CONTRACTOR SHALL INSPECT THE PIPELINE DURING OPTIMUM LOW-FLOW LEVEL CONDITIONS, AS PRE-APPROVED BY THE UTILITY INSPECTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY INSPECTOR PRIOR TO VIDEO INSPECTION. THE TELEVISION CAMERA UTILIZED SHALL BE SPECIFICALLY DESIGNED AND CONSTRUCTED FOR SEWER INSPECTION. THE CAMERA SHALL BE OPERATIVE IN 100 PERCENT HUMIDITY CONDITIONS. LIGHTING FOR THE CAMERA SHALL MINIMIZE REFLECTIVE GLARE. LIGHTING AND PICTURE QUALITY SHALL BE SUITABLE TO PROVIDE A CLEAR, IN-FOCUS PICTURE OF THE ENTIRE PERIPHERY OF THE PIPELINE FOR ALL CONDITIONS ENCOUNTERED DURING THE WORK. IF THE QUALITY OF THE VIDEO IS DEEMED TO BE UNACCEPTABLE BY THE UTILITY INSPECTOR, THE PIPELINE SHALL BE RE-TELEVISED AT NO COST TO THE CITY. THE CAMERA SHALL BE MOVED THROUGH THE PIPELINE AT A UNIFORM RATE, STOPPING WHEN NECESSARY TO ENSURE PROPER DOCUMENTATION OF THE PIPELINE CONDITION, BUT IN NO CASE SHALL THE TELEVISION CAMERA BE PULLED AT A SPEED GREATER THAN 30 FEET PER MINUTE, STOPPING WHEN NECESSARY TO ENSURE PROPER DOCUMENTATION OF THE PIPE CONDITION. THE VIDEO SHALL BE TAKEN AFTER INSTALLATION, CLEANING, AND PRESSURE TEST TO INSURE THAT NO DEFECTS EXIST. THE PROJECT WILL NOT BE ACCEPTED UNTIL ALL DEFECTS HAVE BEEN REPAIRED.*
28. WHEN WORK IS TO OCCUR IN EASEMENTS, THE CONTRACTOR SHALL NOTIFY THE EASEMENT GRANTOR AND BELLEVUE UTILITIES IN WRITING A MINIMUM OF 48 HOURS IN ADVANCE OF BEGINNING WORK (NOT INCLUDING WEEKENDS OR HOLIDAYS). FAILURE TO NOTIFY GRANTOR AND BELLEVUE UTILITIES WILL RESULT IN A STOP WORK ORDER BEING POSTED UNTIL THE MATTER IS RESOLVED TO THE SATISFACTION OF BELLEVUE UTILITIES. A WRITTEN RELEASE FROM THE EASEMENT GRANTOR SHALL BE FURNISHED TO THE UTILITY INSPECTOR PRIOR TO PERMIT SIGN-OFF.
29. THE CONTRACTOR SHALL RESTORE THE RIGHT-OF-WAY AND EXISTING PUBLIC SEWER EASEMENT(S) AFTER CONSTRUCTION TO A CONDITION EQUAL OR BETTER THAN THE CONDITION PRIOR TO ENTRY. THE CONTRACTOR SHALL FURNISH A SIGNED RELEASE FROM ALL AFFECTED PROPERTY OWNERS AFTER RESTORATION HAS BEEN COMPLETED.*

SECTION AND DETAIL NUMBERING SYSTEM





DETAILS ARE CROSS-REFERENCED IN A SIMILAR MANNER.

UTILITY GRID # X-XX, X-XX,

SEC 2 TWP 24N RGE 5E

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AT HALF SIZE. IF NOT ONE INCH SCALE ACCORDINGLY

NO	DATE	BY	APPR	REVISIONS

Jacobs

NOT FOR CONSTRUCTION
PRELIMINARY
30% REVIEW
FEBRUARY 2022

Approved By

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UTILITIES PROJECT MANAGEMENT SECTION MANAGER DATE

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PROJECT MANAGER DATE

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City of Bellevue
UTILITIES

BOGLINE SANITARY SEWER REHABILITATION
SANITARY SEWER LINE
LEGEND AND ABBREVIATIONS 1 OF 2

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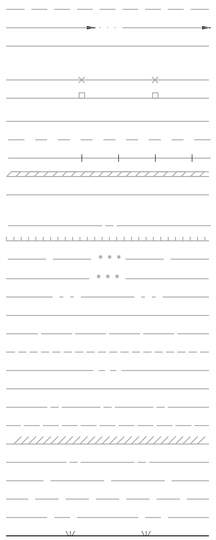
Plot By: Coan, Wesley

STANDARD LINETYPES

EXISTING



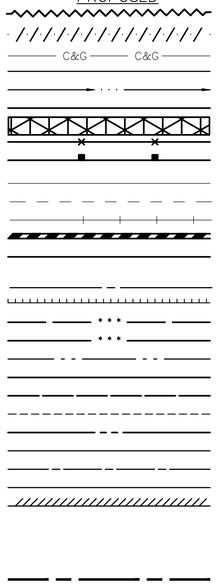
SURFACE FEATURES

ABANDON
REMOVE
CLEARING AND GRUBBING LIMITS
BUILDING LINE
CREEK/DITCH CENTERLINE
CURB/PAVEMENT/SIDEWALK
PROPOSED ECOLOGY BLOCK FENCE
GUARDRAIL
LAKE/POND
MARSH/SWAMP PERIMETER
RAILROAD
RETAINING WALL
RIVERBANK/SHORELINE

SURVEY

CENTERLINE
CONTOUR (DEPRESSION)
CONTOUR
CONTOUR (INDEX)
DONATION LAND CLAIM
EASEMENT (PERMANENT)
EASEMENT (TEMPORARY)
MEANDER LINE
PROPERTY LINE
RANGE/TOWNSHIP LINE
RESERVATION/PARK/FOREST
RIGHT-OF-WAY (EXISTING)
RIGHT-OF-WAY (LIMITED ACCESS)
SECTION LINE
QUARTER SECTION LINE
SIXTEENTH SECTION LINE
STATE/COUNTY/CORPORATE LIMIT
WETLAND LINE

PROPOSED



UTILITIES (EXISTING)

CABLE TELEVISION (AERIAL)
CABLE TELEVISION (BURIED)
FORCE MAIN
GAS
OIL
POWER (AERIAL)
POWER (BURIED)
SANITARY SEWER
STEAM
STORM DRAINAGE
TELEPHONE (AERIAL)
TELEPHONE (BURIED)
UTILITY SERVICE LINE (GENERAL)
WATER

UTILITIES (PROPOSED)

MAIN LINE (LIST TYPE, SIZE, ETC.)

SERVICE (LIST TYPE, SIZE, ETC.)

ABBREVIATIONS

AC	ASBESTOS CEMENT
ACP	ASPHALT CONCRETE PAVEMENT
ADA	AMERICANS WITH DISABILITIES ACT
AP	ANGLE POINT
ATB	ASPHALT TREATED BASE
AVE	AVENUE
AWG	AMERICAN WIRE GAGE
BEG	BEGIN
BERG	BEARING
BNSF	BURLINGTON NORTHERN SANTA FE
CB	CATCH BASIN
CCP	CYLINDER CONCRETE PIPE
CDF	CONTROLLED DENSITY FILL
C&G	CLEARING AND GRUBBING
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
COB	CITY OF BELLEVUE
COMM	COMMUNICATION(S)
CONC	CONCRETE
CONT	CONTINUOUS
CP	CONTROL POINT
CSBC	CRUSHED SURFACING BASE COURSE
CSTC	CRUSHED SURFACING TOP COURSE
CY	CUBIC YARDS
DET	DETAIL
DEMO	DEMOLISH
DIP	DUCTILE IRON PIPE
DIA	DIAMETER
DIFF	DIFFERENTIAL
DIPS	DUCTILE IRON PIPE SIZE
DIV	DIVISION
DR	DIMENSION RATIO
DWG	DRAWING
E	EAST
EB	EAST BOUND
EG	EXISTING GROUND
EL	ELEVATION
ELEC	ELECTRICAL
EOP	EDGE OF PAVEMENT
EXIST	EXISTING
FE	FLANGE END
FL	FLANGE
FM	FORCE MAIN
FOC	FACE OF CURB
GALV	GALVANIZED
GDR	GEOTECHNICAL DATA REPORT
GRAV	GRAVEL
HDPE	HIGH DENSITY POLYETHYLENE
HDD	HORIZONTAL DIRECTIONAL DRILL
HMA	HOT MIX ASPHALT
HORIZ	HORIZONTAL
HR	HANDRAIL
HSS	HALO STEEL SECTION
I	INTERSTATE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INV	INVERT ELEVATION
IN	INCH
IPS	IRON PIPE SIZE
KC	KING COUNTY
KWH	KILOWATT HOUR
L	LENGTH
LF	LINEAL FEET
MAX	MAXIMUM
MFG	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
N	NORTH
NO	NUMBER
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OHW	ORDINARY HIGH WATER
OT	OPEN TRENCH
P&R	PARK AND RIDE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PE	PLAIN END
PERM	PERMANENT
PIV	POST INDICATOR VALVE
PL	PLATE
PLCS	PLACES
PSE	PUGET SOUND ENERGY
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REF	REFERENCE
REQD	REQUIRED
RJ	RESTRAINED JOINT
R/W	RIGHT OF WAY
S	SOUTH
SD	STORM DRAIN
SE	SOUTHEAST
SHT	SHEET
SIM	SIMILAR
SS	SANITARY SEWER, STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
S/W	SIDEWALK
TEMP	TEMPORARY
THD	THREADED
TMA	TRUCK MOUNTED ATTENUATOR
TOC	TOP OF CONCRETE
TRANS	TRANSITION
TYP	TYPICAL
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
W	WEST, WATER
W/	WITH
WB	WEST BOUND
W/O	WITHOUT

SYMBOLS LEGEND

- FOUND MONUMENT IN CASE
- UTILITY POTHOLE LOCATION
- CATCH BASIN/CURB INLET
- CLEAN OUT
- SIGN POST
- STORM DRAIN MANHOLE
- ELECTRICAL MANHOLE
- COMMUNICATIONS MANHOLE
- STANDARD SEWER MANHOLE (COB DET S-1)
- TYPE 2 SEWER MANHOLE (COB DET S-2)
- OTHER MANHOLE
- WATER MANHOLE
- WATER METER
- COUPLING
- WATER VALVE
- FIRE HYDRANT ASSEMBLY
- GAS METER
- GAS VALVE
- INVERT/CULVERT
- HAND HOLE (HH)
- IRRIGATION CONTROL VALVE
- POST INDICATOR VALVE
- TRAFFIC CONTROL CABINET
- POWER VAULT
- VAULT
- POWER POLE
- POLE ANCHOR
- STREET LAMP
- POLE WITH LUMINAIRE
- TREE, CONIFEROUS
- TREE, DECIDUOUS
- WATER SURFACE
- @ AT
- & AND
- Ø ROUND OR DIAMETER
- ℄ CENTER LINE
- ℙ PLATE
- WETLAND

UTILITY GRID # X-XX, X-XX,

SEC 2 TWP 24N RGE 5E

ONE INCH
AT HALF SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

NO	DATE	BY	APPR	REVISIONS

Jacobs

NOT FOR CONSTRUCTION
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Approved By

XXXXX XXXXX
UTILITIES PROJECT MANAGEMENT SECTION MANAGER DATE

XXXXX XXXXX
PROJECT MANAGER DATE

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City of Bellevue
UTILITIES

BOGLINE SANITARY SEWER REHABILITATION
SANITARY SEWER LINE
LEGEND AND ABBREVIATIONS 2 OF 2

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SCALE IN FEET

UTILITY GRID # X-XX, X-XX,

SEC 2 TWP 24N RGE 5E

ONE INCH
AT HALF SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

NO	DATE	BY	APPR	REVISIONS

Jacobs

NOT FOR CONSTRUCTION
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UTILITIES PROJECT MANAGEMENT SECTION MANAGER DATE

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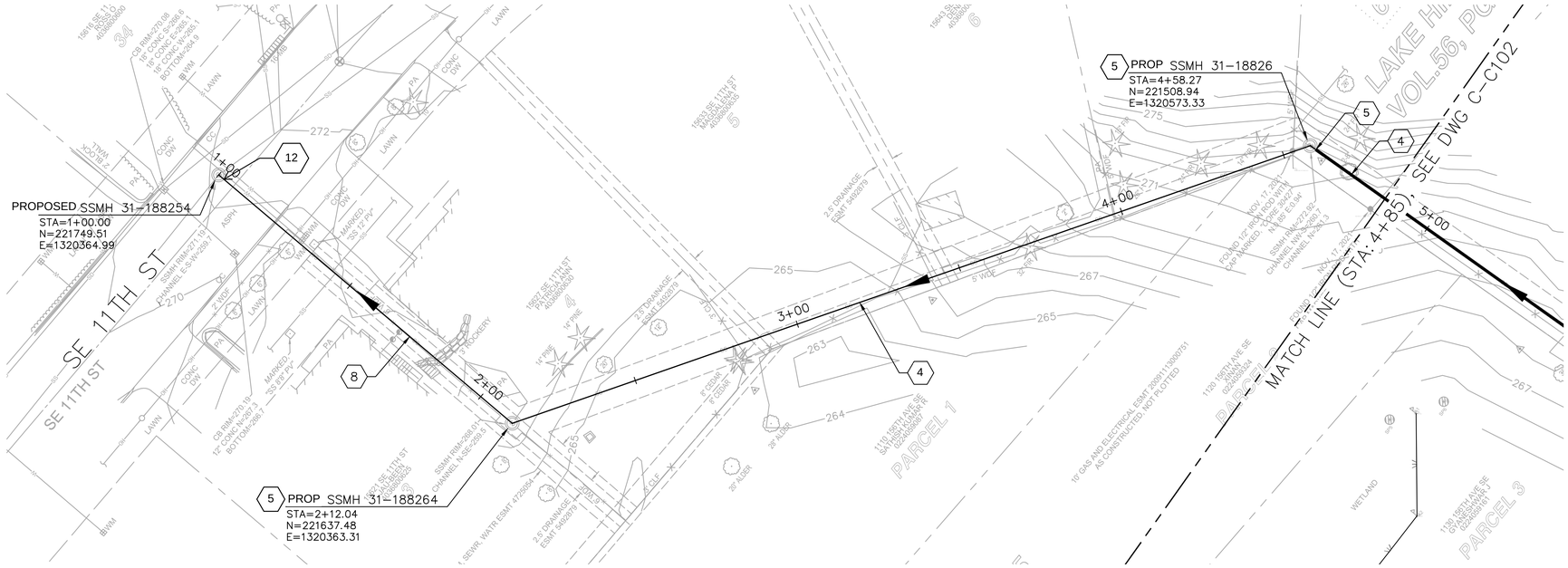
City of Bellevue
UTILITIES

BOGLINE SANITARY SEWER REHABILITATION
SANITARY SEWER LINE
OVERALL KEY MAP

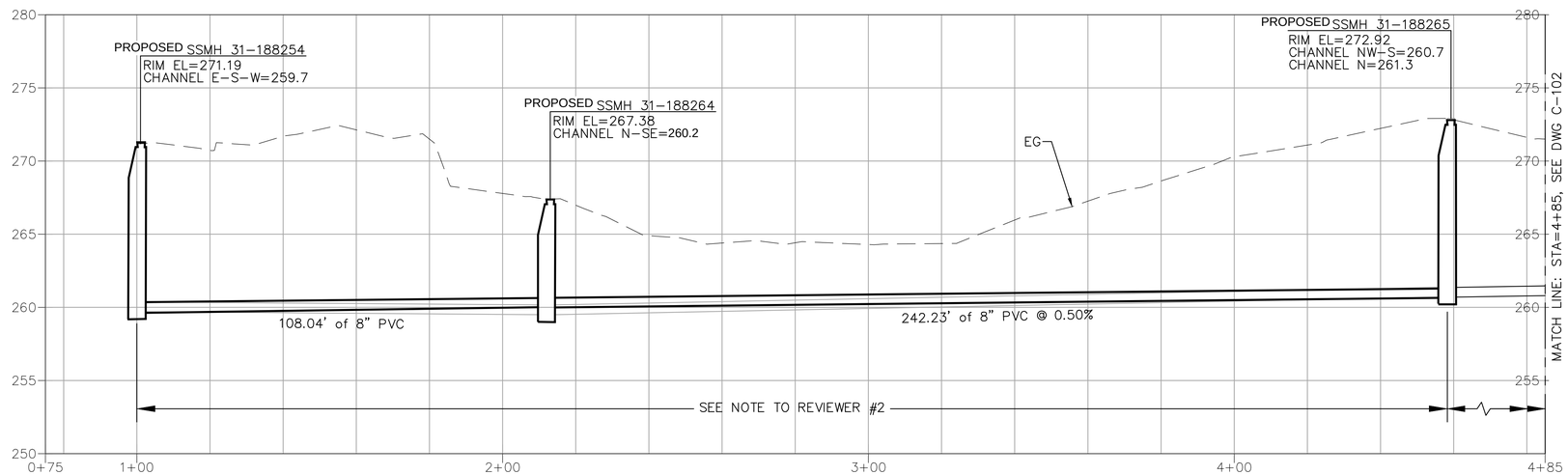
DRAWING C-001 | SHT VALUE OF 00

Location: C:\pwworking\jacobs_b&i\coanwa\d0414168
Dwg.File: 740-BSSR-C-SITE.dwg
Layout: C-001
Plot By: Coon, Wesley
Plot Date: 2/22/2022 2:27 PM

A PORTION OF NE 1/4 SECTION 2, TOWNSHIP 24 N, RANGE 5 E, W.M. KING COUNTY, WA



PLAN
SCALE: 1"=20'



PROFILE
SCALE: H: 1"=20' V: 1"=5'

NOTES:

1. SEWER MAIN LINE TO HAVE APPROXIMATELY 3' COVER EXCEPT WHERE NOTED OTHERWISE.
2. LISTED PIPE LENGTHS ARE ALL HORIZONTAL FROM CENTERLINE TO CENTERLINE OF FITTINGS, STRUCTURES, AND CHANGE IN SLOPE.
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KEY NOTES:

1. REMOVE EXISTING SANITARY SEWER
2. REMOVE EXISTING SANITARY SEWER MANHOLE
3. REMOVE EXISTING SANITARY SEWER CLEANOUT
4. REPLACE EXISTING 8" SANITARY SEWER
5. REPLACE EXISTING 48" SANITARY SEWER MANHOLE
6. CONSTRUCT NEW 8" SANITARY SEWER
7. CONSTRUCT NEW 48" SANITARY SEWER MANHOLE
8. SEE NOTE TO REVIEWER #2
9. REHABILITATE EXISTING 48" SANITARY SEWER MANHOLE
10. RECONNECT EXISTING SERVICE
11. REPLACE EXISTING HOUSE SERVICE AS NECESSARY TO MEET PROPOSED SANITARY SEWER GRADE
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14. SIDE SEWER CONNECTION, SEE DETAIL/XXX. RELAY EXISTING SIDE SEWER AS NECESSARY TO MEET NEW SEWER PROFILE ELEVATION
15. ABANDON SEWER PER CITY OF BELLEVUE
16. BUILDING OUTLINE INFORMATION SHOWN BASED ON CITY OF BELLEVUE GIS DATA.

UTILITY GRID # X-XX, X-XX

SEC 2 TWP 24N RGE 5E

AT HALF SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

ONE INCH

20 0 10 20 40
SCALE IN FEET

NO	DATE	BY	APPR	REVISIONS

Jacobs

NOT FOR CONSTRUCTION
PRELIMINARY
30% REVIEW
FEBRUARY 2022

Approved By

XXXXX XXXXX
UTILITIES PROJECT MANAGEMENT SECTION MANAGER DATE

XXXXX XXXXX
PROJECT MANAGER DATE

XXX	XX/XXXX
DESIGNED BY	DATE
XXX	XX/XXXX
DRAWN BY	DATE
XXX	XX/XXXX
CHECKED BY	DATE

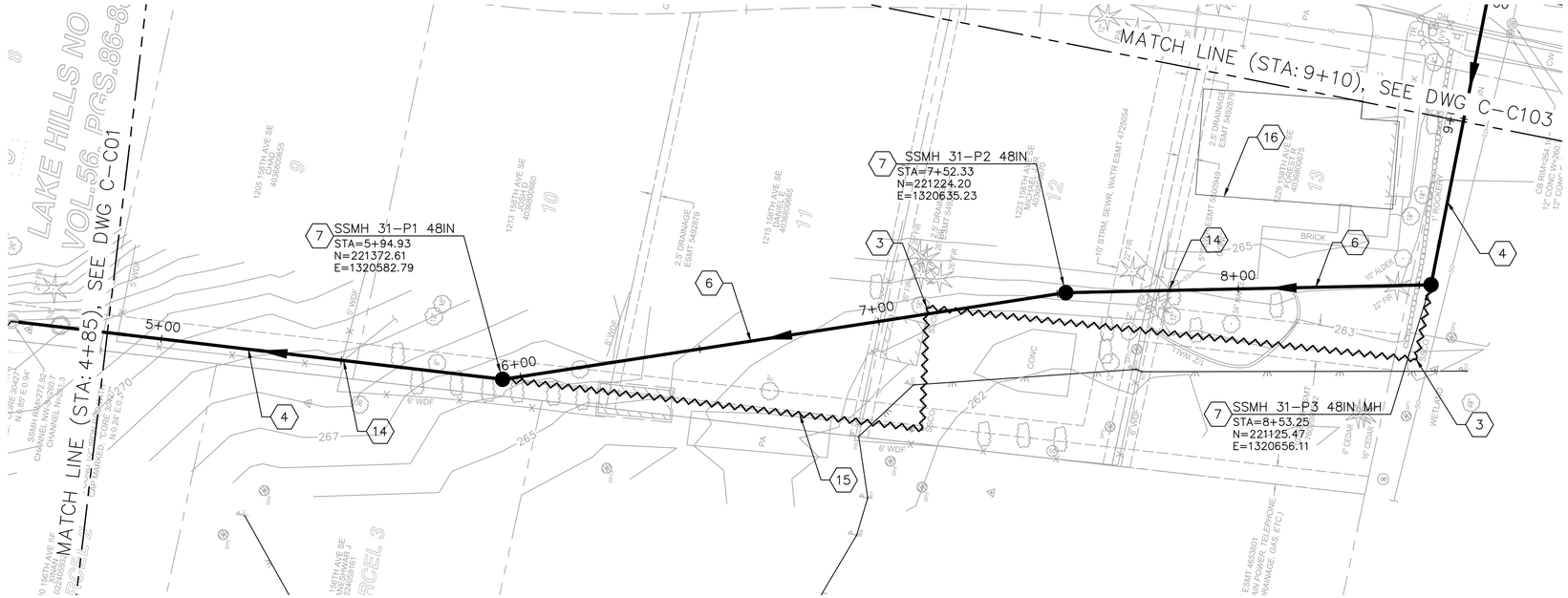
City of Bellevue
UTILITIES

BOGLINE SANITARY SEWER REHABILITATION
SANITARY SEWER LINE
SANITARY SEWER PLAN AND PROFILE

DRAWING C-101 SHT — OF 00

Location: C:\pwworking\jacobs_b&i\coanwa\d0414168
Dwg.File: 740-BSSR-C-SITE.dwg
Layout: C-101
Plot Date: 2/22/2022 2:27 PM
Plot By: Coon, Wesley

A PORTION OF NE 1/4 SECTION 2, TOWNSHIP 24 N, RANGE 5 E, W.M. KING COUNTY, WASHINGTON



PLAN
SCALE: 1"=20'

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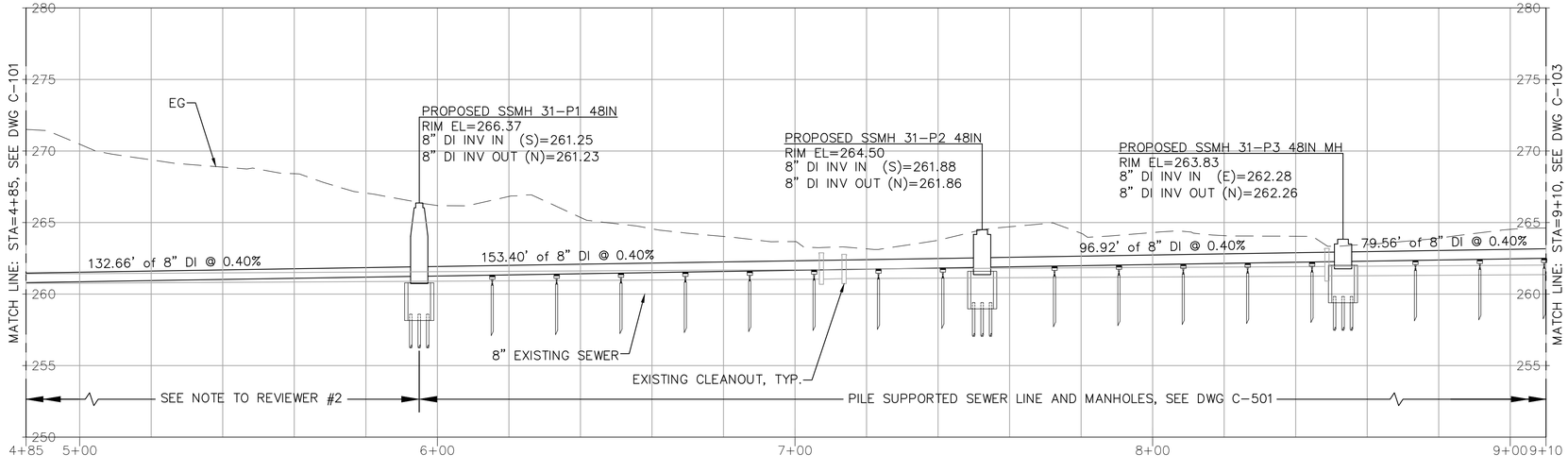
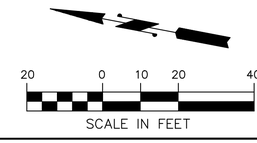


PROFILE
SCALE: H: 1"=20' V: 1"=5'



ONE INCH
AT HALF SIZE IF NOT ONE INCH SCALE ACCORDINGLY

UTILITY GRID # X-XX, X-XX,

SEC 2 TWP 24N RGE 5E

NO	DATE	BY	APPR	REVISIONS

Jacobs

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30% REVIEW
FEBRUARY 2022

Approved By

XXXXX XXXXX
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XXXXX XXXXX
PROJECT MANAGER DATE

XXX	XX/XXXX
DESIGNED BY	DATE
XXX	XX/XXXX
DRAWN BY	DATE
XXX	XX/XXXX
CHECKED BY	DATE

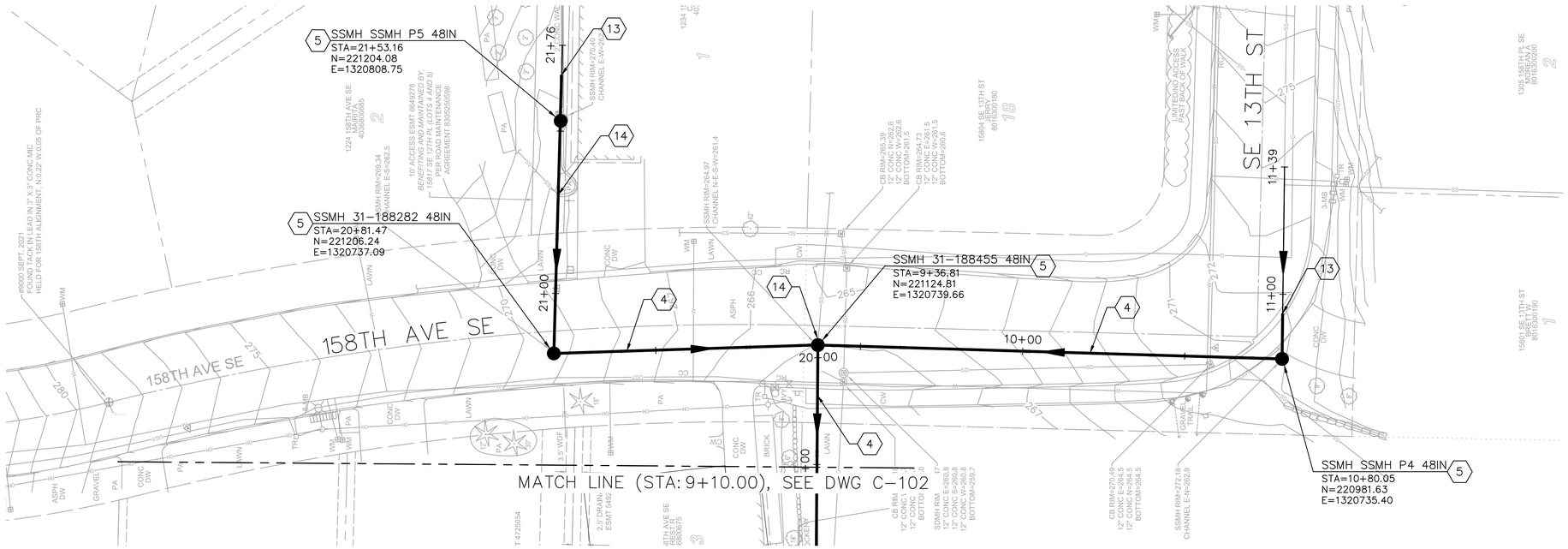
City of Bellevue
UTILITIES

BOGLINE SANITARY SEWER REHABILITATION
SANITARY SEWER LINE
SANITARY SEWER PLAN AND PROFILE

DRAWING C-102 | SHT — OF 00

Location: C:\pwworking\jacobs_b&i\coanwa\d0414168
Dwg.File: 740-BSSR-C-SITE.dwg
Layout: C-102
Plot Date: 2/22/2022 2:23 PM
Plot By: Coan, Wesley

A PORTION OF NE 1/4 SECTION 2, TOWNSHIP 24 N, RANGE 5 E, W.M. KING COUNTY, WASHINGTON



PLAN
SCALE: 1"=20'

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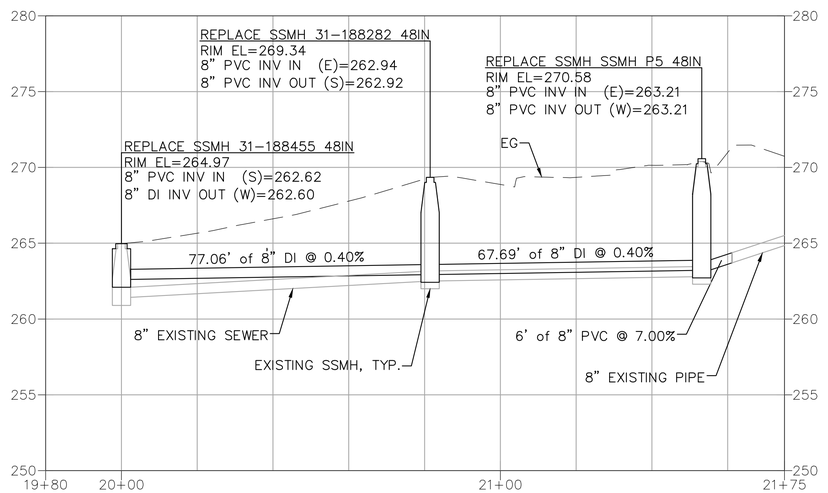

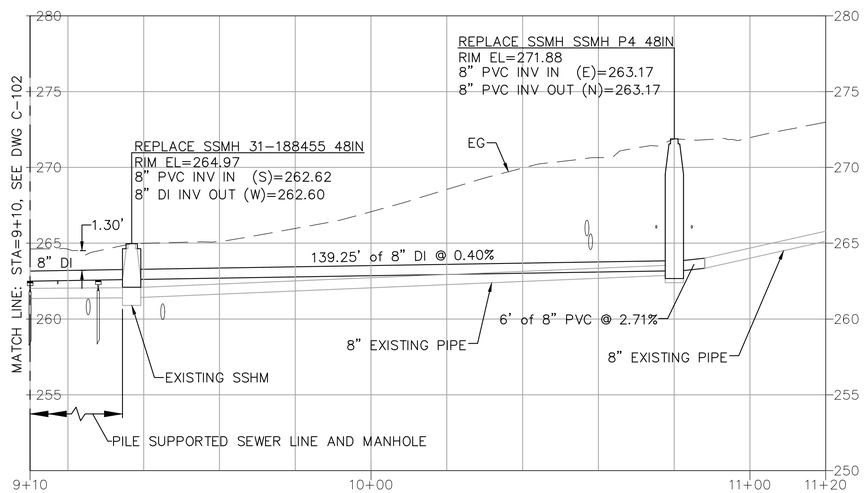

PROFILE
SCALE: H: 1"=20' V: 1"=5'

UTILITY GRID # X-XX, X-XX

SEC 2 TWP 24N RGE 5E

AT HALF SIZE, IF NOT ONE INCH SCALE ACCORDINGLY
ONE INCH

20 0 10 20 40
SCALE IN FEET

NO	DATE	BY	APPR	REVISIONS

Jacobs

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Approved By

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UTILITIES PROJECT MANAGEMENT SECTION MANAGER DATE

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XXX	XX/XXXX
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XXX	XX/XXXX
DRAWN BY	DATE
XXX	XX/XXXX
CHECKED BY	DATE

City of Bellevue
UTILITIES

BOGLINE SANITARY SEWER REHABILITATION
SANITARY SEWER LINE
SANITARY SEWER PLAN AND PROFILE

DRAWING C-103 SHT — OF 00

Location: C:\pwworking\jacobs_b&i\coanwa\d0414168
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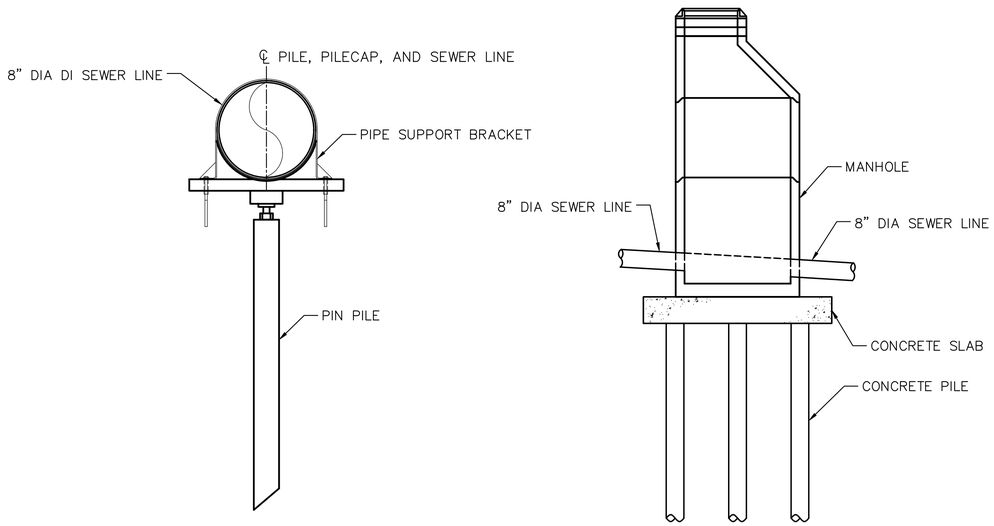
Plot By: Coon, Wesley



PILE SUPPORTED PIPE SECTION

SCALE: 1/2"=1'-0"

ONE INCH
AT HALF SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

SEC 2 TWP 24N RGE 5E

UTILITY GRID # X-XX, X-XX

NO	DATE	BY	APPR	REVISIONS

Jacobs

NOT FOR CONSTRUCTION
PRELIMINARY
30% REVIEW
FEBRUARY 2022

Approved By

XXXXX XXXXX
UTILITIES PROJECT MANAGEMENT SECTION MANAGER DATE

XXXXX XXXXX
PROJECT MANAGER DATE

XXX DESIGNED BY	XX/XXXX DATE
XXX DRAWN BY	XX/XXXX DATE
XXX CHECKED BY	XX/XXXX DATE

City of Bellevue
UTILITIES

BOGLINE SANITARY SEWER REHABILITATION
SANITARY SEWER LINE
PILE SUPPORTED DETAILS

DRAWING C-501 SHT — OF 00

Location: C:\pwworking\jacobs_b&i\coanwo\d0414168
Dwg File: 740-BSSR-C-DETAILS.dwg
Layout: C-501
Plot Date: 2/22/2022 2:18 PM
Plot By: Coon, Wesley

Appendix B. Wetland Delineation Report

Appendix C. Geotechnical Report Draft

Appendix D. Anticipated Tree Removal Locations

A PORTION OF NE 1/4 SECTION 2, TOWNSHIP 24 N, RANGE 5 E, W.M. KING COUNTY, WA



60 0 30 60 120

SCALE IN FEET

ONE INCH
AT HALF SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

UTILITY GRID # X-XX, X-XX,

SEC 2 TWP 24N RGE 5E

NO	DATE	BY	APPR	REVISIONS

Jacobs

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XXXXX XXXXX
UTILITIES PROJECT MANAGEMENT SECTION MANAGER DATE

XXXXX XXXXX
PROJECT MANAGER DATE

XXX	XX/XXXX
DESIGNED BY	DATE
XXX	XX/XXXX
DRAWN BY	DATE
XXX	XX/XXXX
CHECKED BY	DATE

City of Bellevue
UTILITIES

BOGLINE SANITARY SEWER REHABILITATION
SANITARY SEWER LINE
OVERALL KEY MAP

DRAWING C-001 SHT VALUE OF 00

Plot By: Al Ali, Qays
Plot Date: 3/29/2022 12:46 PM
Layout: C-001
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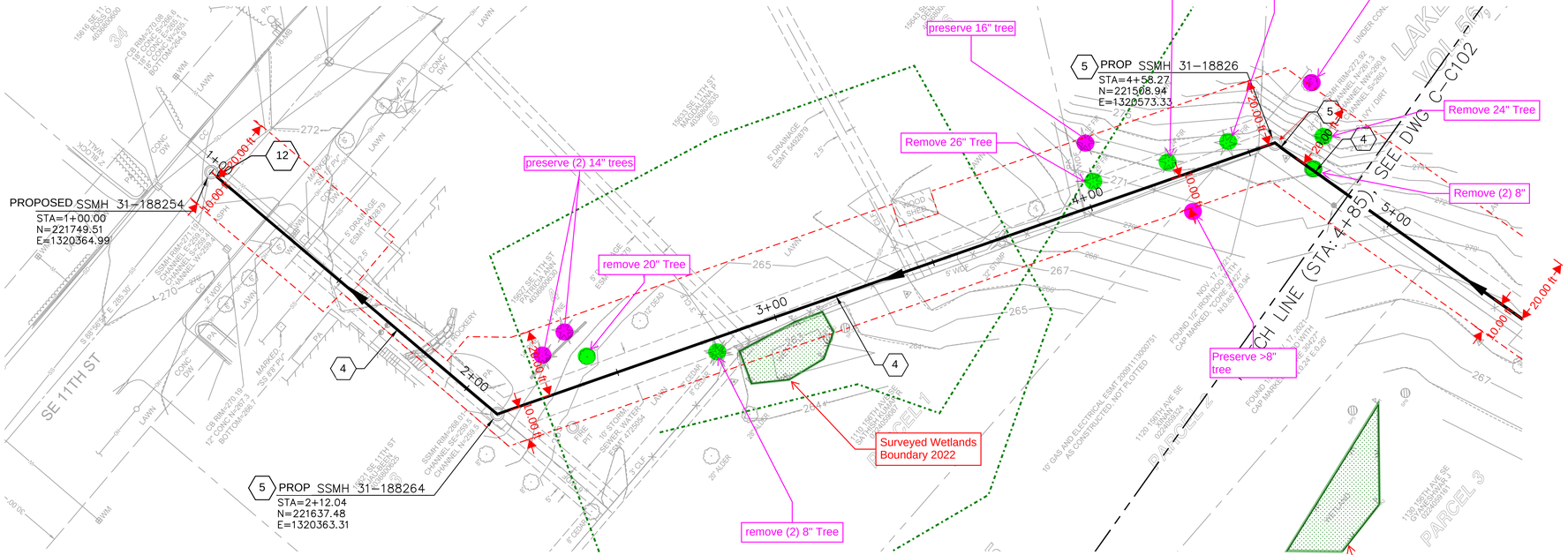
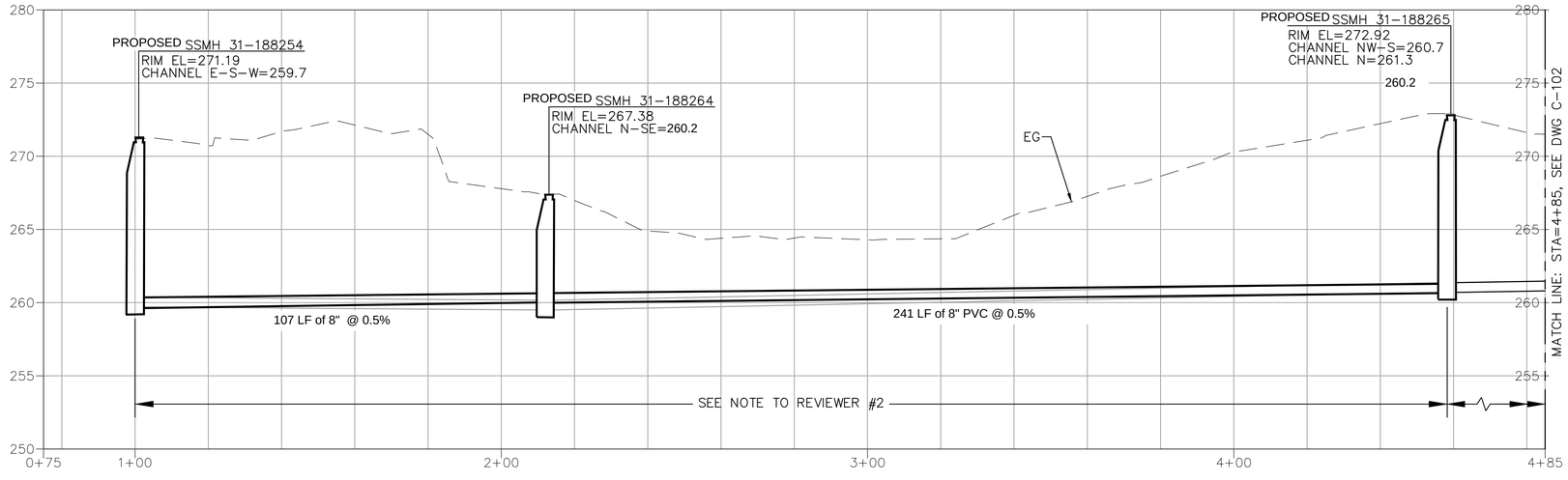
Dwg File: 740-BSSR-C-SITE.dwg

A PORTION OF NE 1/4 SECTION 2, TOWNSHIP 24 N, RANGE 5 E, W.M. KING COUNTY, WA



PLAN
SCALE: 1"=20'

- Significant Tree to be preserved
- Significant Tree to be removed
- Construction limits
- Wetland area
- Wetland Buffer



PROFILE
SCALE: H: 1"=20' V: 1"=5'

NOTES:

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20 0 10 20 40
19.97 ft SCALE IN FEET

AT HALF SIZE, IF NOT ONE INCH SCALE ACCORDINGLY
ONE INCH

UTILITY GRID # X-XX, X-XX,
SEC 2 TWP 24N RGE 5E

NO	DATE	BY	APPR	REVISIONS

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XXXXX XXXXX
PROJECT MANAGER DATE

XXX	XX/XXXX
DESIGNED BY	DATE
XXX	XX/XXXX
DRAWN BY	DATE
XXX	XX/XXXX
CHECKED BY	DATE

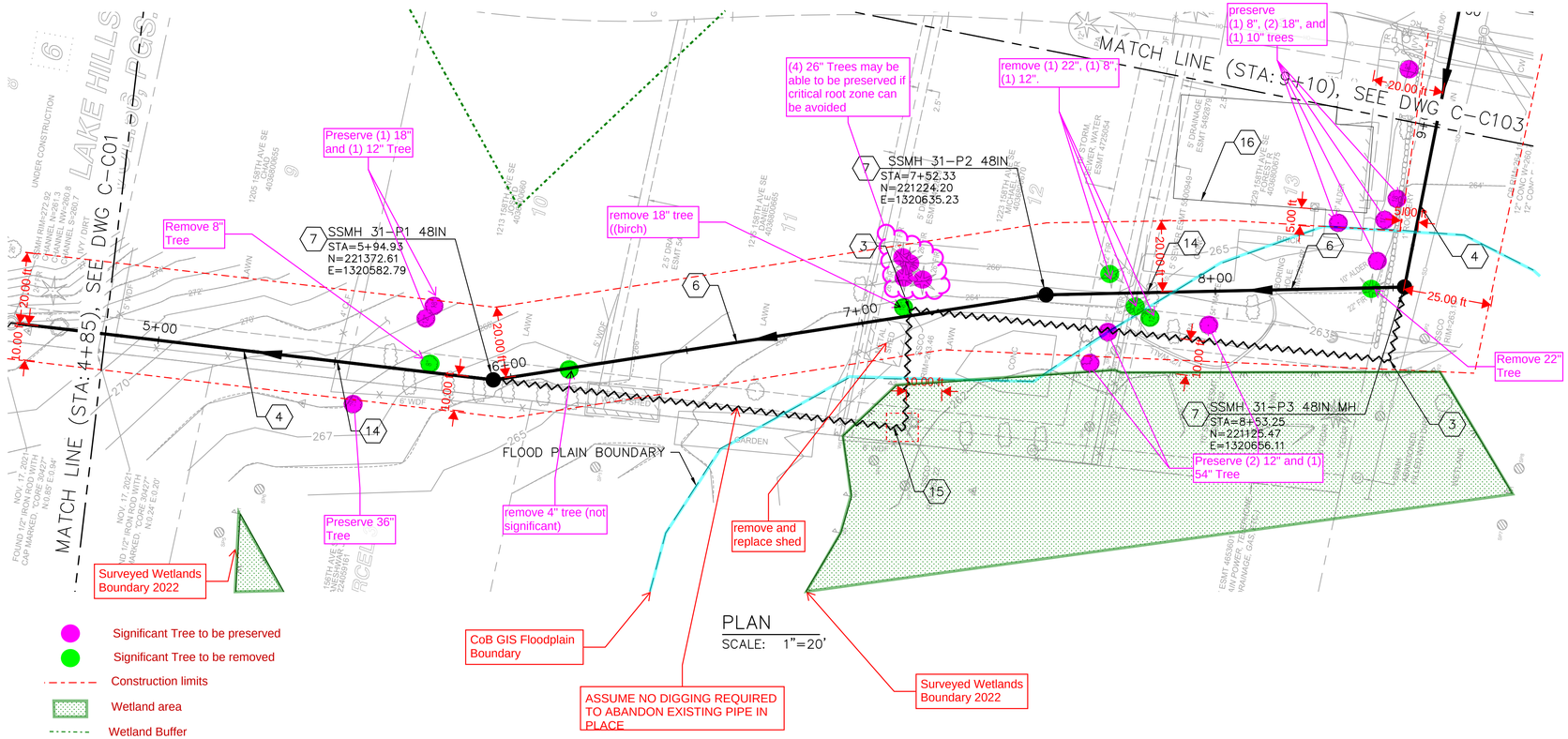
City of Bellevue
UTILITIES

BOGLINE SANITARY SEWER REHABILITATION
SANITARY SEWER LINE
SANITARY SEWER PLAN AND PROFILE

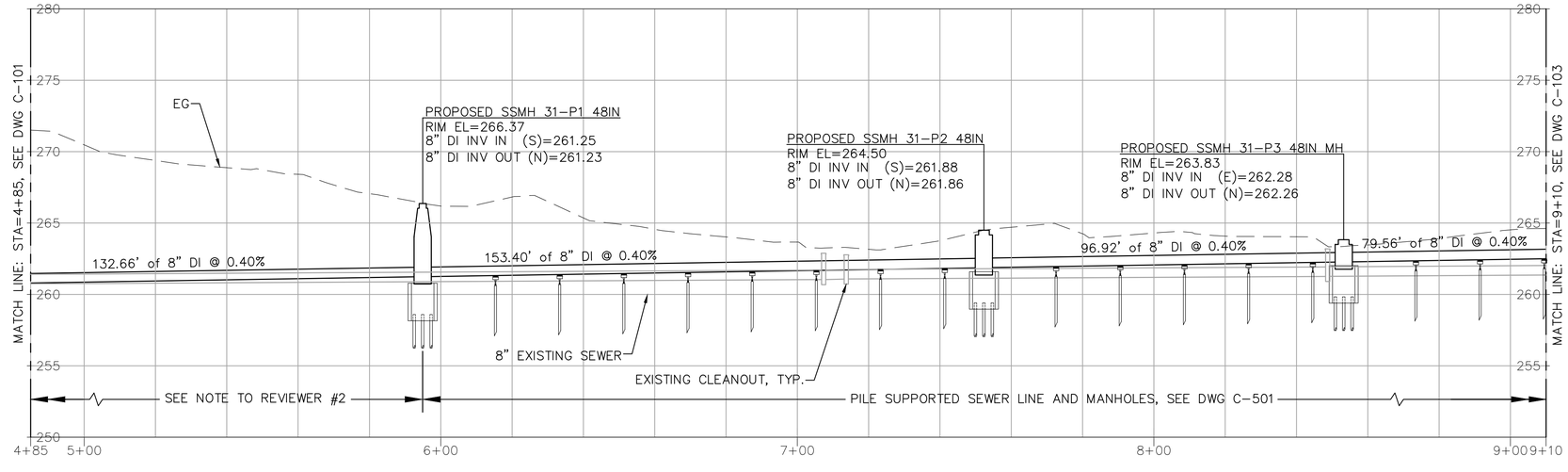
DRAWING C-101 SHT – OF 00

Location: C:\pwworking\jacobs_b&i\jeg_aloliq\d0414168
Dwg.File: 740-BSSR-C-SITE.dwg
Layout: C-101
Plot Date: 3/29/2022 12:47 PM
Plot By: Ali, Qays

A PORTION OF NE 1/4 SECTION 2, TOWNSHIP 24 N, RANGE 5 E, W.M. KING COUNTY, WASHINGTON



PLAN
SCALE: 1"=20'



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20 0 10 20 40
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ONE INCH
AT HALF SIZE IF NOT ONE INCH SCALE ACCORDINGLY

UTILITY GRID # X-XX, X-XX,
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City of Bellevue
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BOGLINE SANITARY SEWER REHABILITATION
SANITARY SEWER LINE
SANITARY SEWER PLAN AND PROFILE

DRAWING C-102 SHT — OF 00

Location: C:\pwworking\jacobs_b&i\jeg_dalia\d0414168
Dwg.File: 740-BSSR-C-SITE.dwg
Layout: C-102
Plot Date: 3/29/2022 12:47 PM
Plot By: Al Ali, Qays

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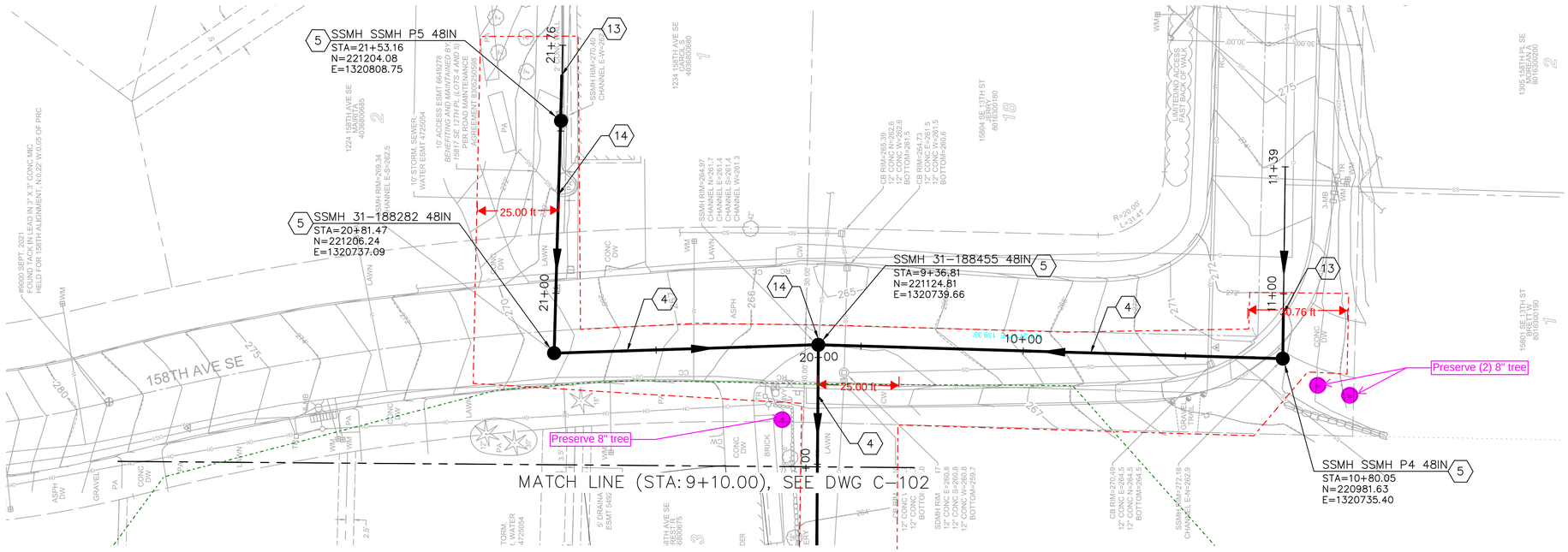

PLAN
SCALE: 1"=20'

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- Significant Tree to be removed
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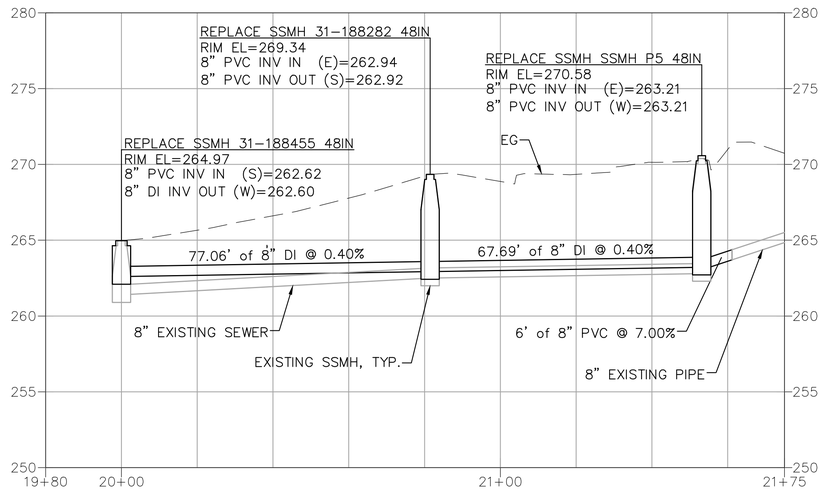

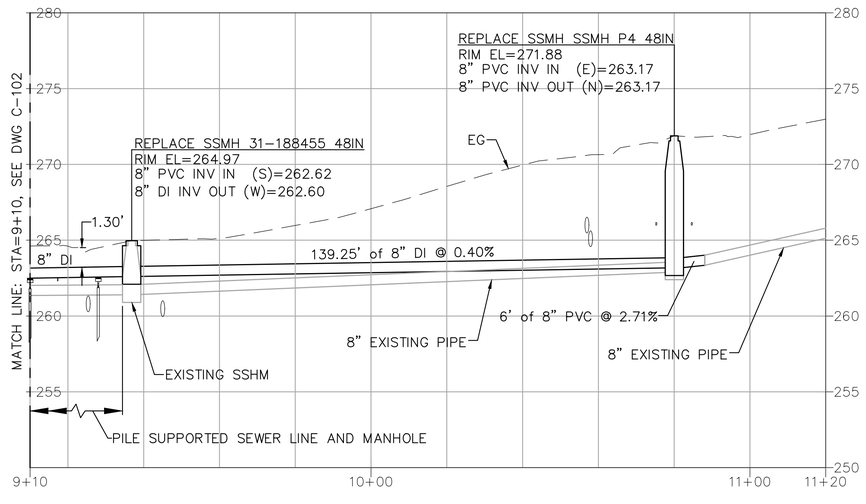

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AT HALF SIZE, IF NOT ONE INCH SCALE ACCORDINGLY
ONE INCH

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SCALE IN FEET

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XXX DRAWN BY	XX/XXXX DATE
XXX CHECKED BY	XX/XXXX DATE

City of Bellevue
UTILITIES

BOGLINE SANITARY SEWER REHABILITATION
SANITARY SEWER LINE
SANITARY SEWER PLAN AND PROFILE

DRAWING C-103 SHT – OF 00

Location: C:\pwworking\jacobs_b&i\jeg_alolia\d0414168
Dwg.File: 740-BSSR-C-SITE.dwg
Layout: C-103
Plot Date: 3/29/2022 12:48 PM
Plot By: Al Ali, Qays

APPENDIX D

BACKGROUND REVIEW

Agency Database Websites

Database	Agency (Database Manager)	Website
Township, Range, Section Map	WSDOT	https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=97a5ae98d8d04458860f64e201d155c4
Watershed Boundaries	ECY	https://apps.ecology.wa.gov/waterqualityatlas/wqa/map
Websoils	NRCS	https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx
National Wetlands Inventory	USFWS	https://www.fws.gov/wetlands/data/Mapper.html
Map Service Center	FEMA	https://msc.fema.gov/portal/home
Washington State Water Quality Atlas	ECY	https://apps.ecology.wa.gov/waterqualityatlas/wqa/map
Priority Habitats and Species (PHS)	WDFW	https://geodataservices.wdfw.wa.gov/hp/phs/
Forest Practices Application Mapping Tool	WDNR	https://fpamt.dnr.wa.gov/default.aspx
Statewide Integrated Fish Distribution (SWIFD) Web Map	NWIFC	https://geo.nwifc.org/swifd/
Washington State Fish Passage	WDFW	https://geodataservices.wdfw.wa.gov/hp/fishpassage/index.html

U.S. Fish and Wildlife Service

National Wetlands Inventory



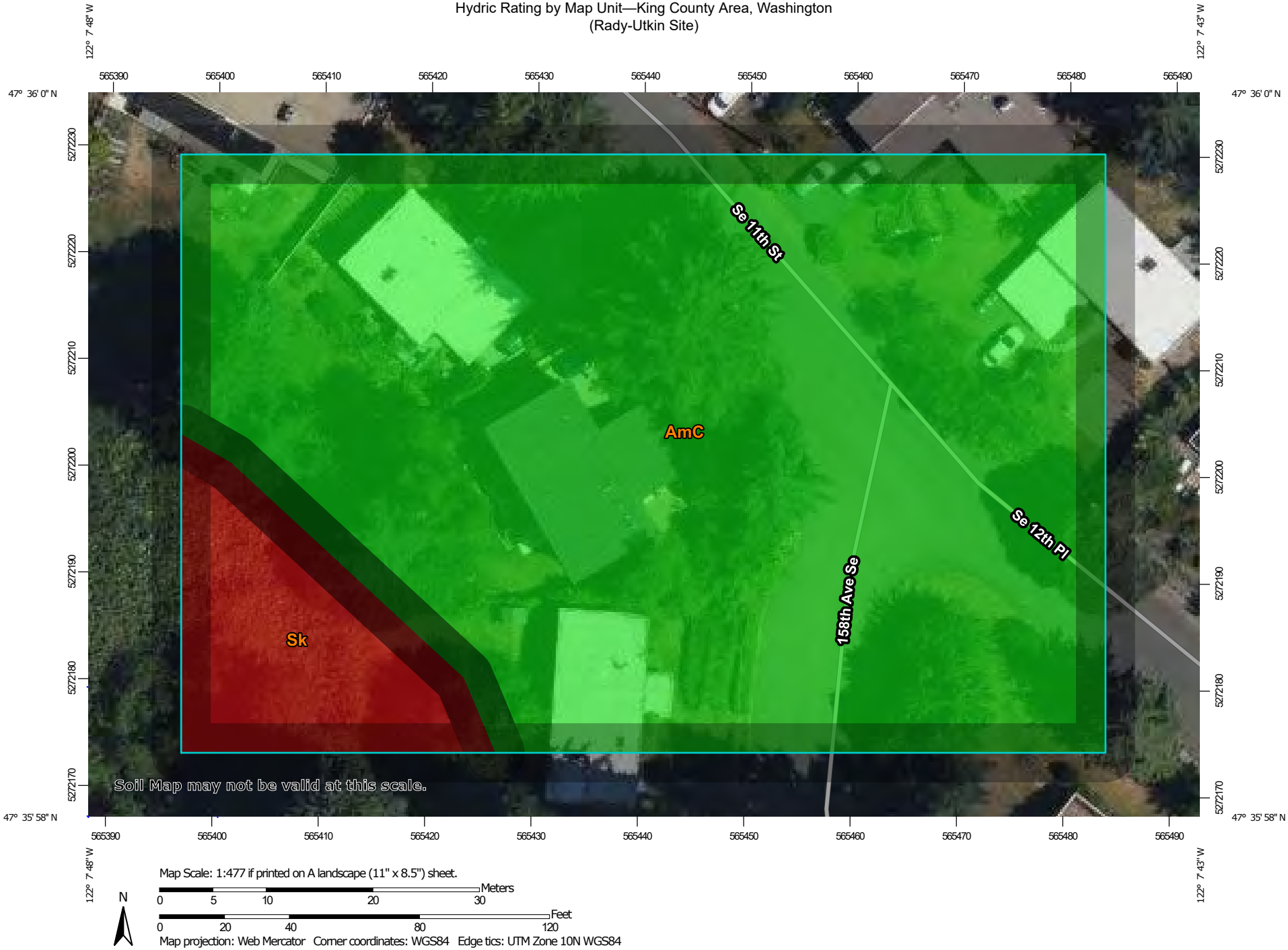
September 4, 2025

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Hydric Rating by Map Unit—King County Area, Washington
(Rady-Utkin Site)



Map Scale: 1:477 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 5 10 20 30

Feet
0 20 40 80 120

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: King County Area, Washington
Survey Area Data: Version 20, Aug 27, 2024

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

Date(s) aerial images were photographed: Mar 1, 2023—Sep 1, 2023

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

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AmC	Arents, Alderwood material, 6 to 15 percent slopes	0	1.1	89.4%
Sk	Seattle muck	100	0.1	10.6%
Totals for Area of Interest			**1.2**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

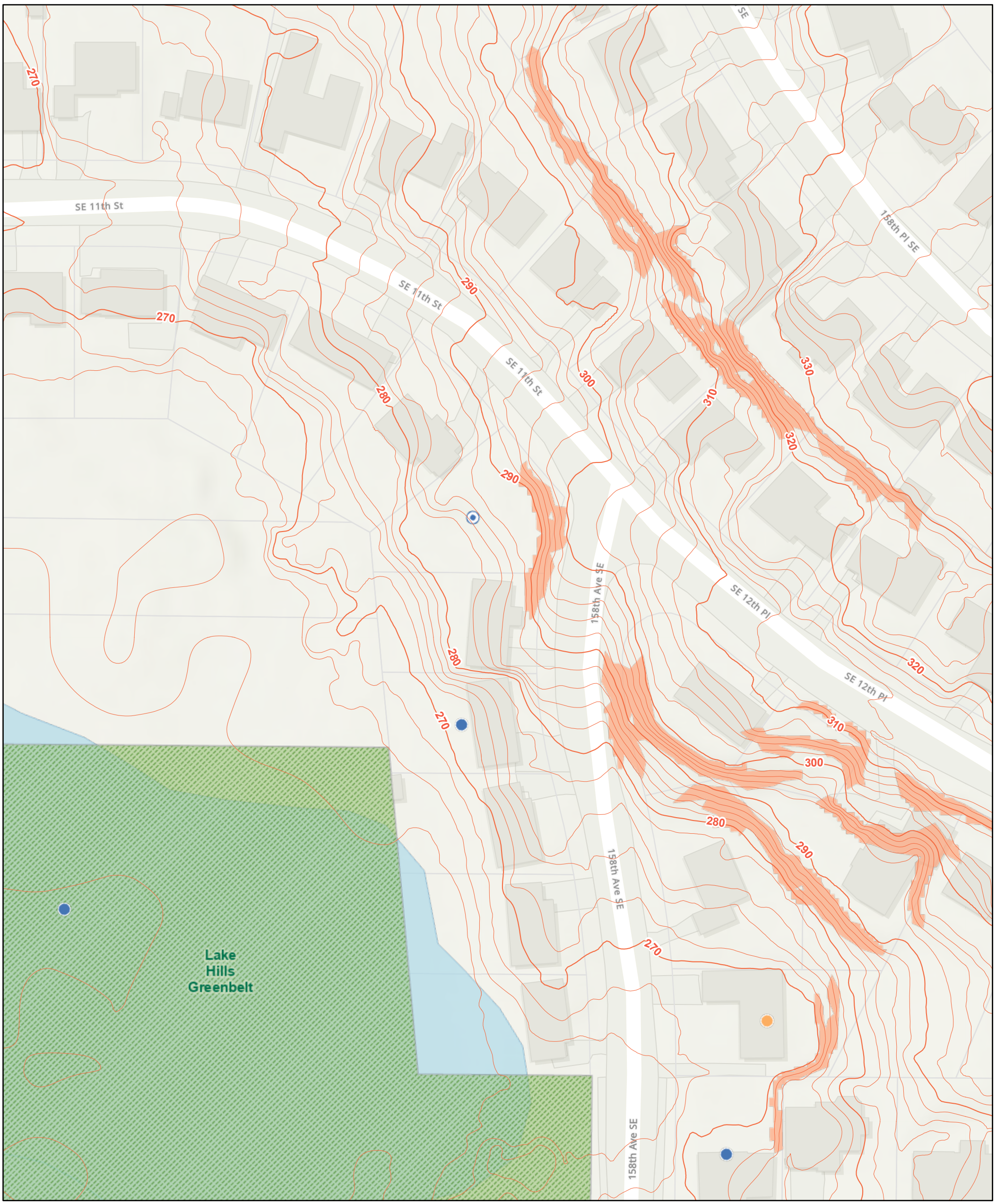
Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

My Map



9/29/2025, 12:45:02 PM

Clear & Grade
- Issued

Right of Way Permits
- Issued

Mechanical/Electrical/Plumbing
- Issued

Single Family Alterations
- In Review

City Parks

Floodplain Boundaries

Steep Slopes

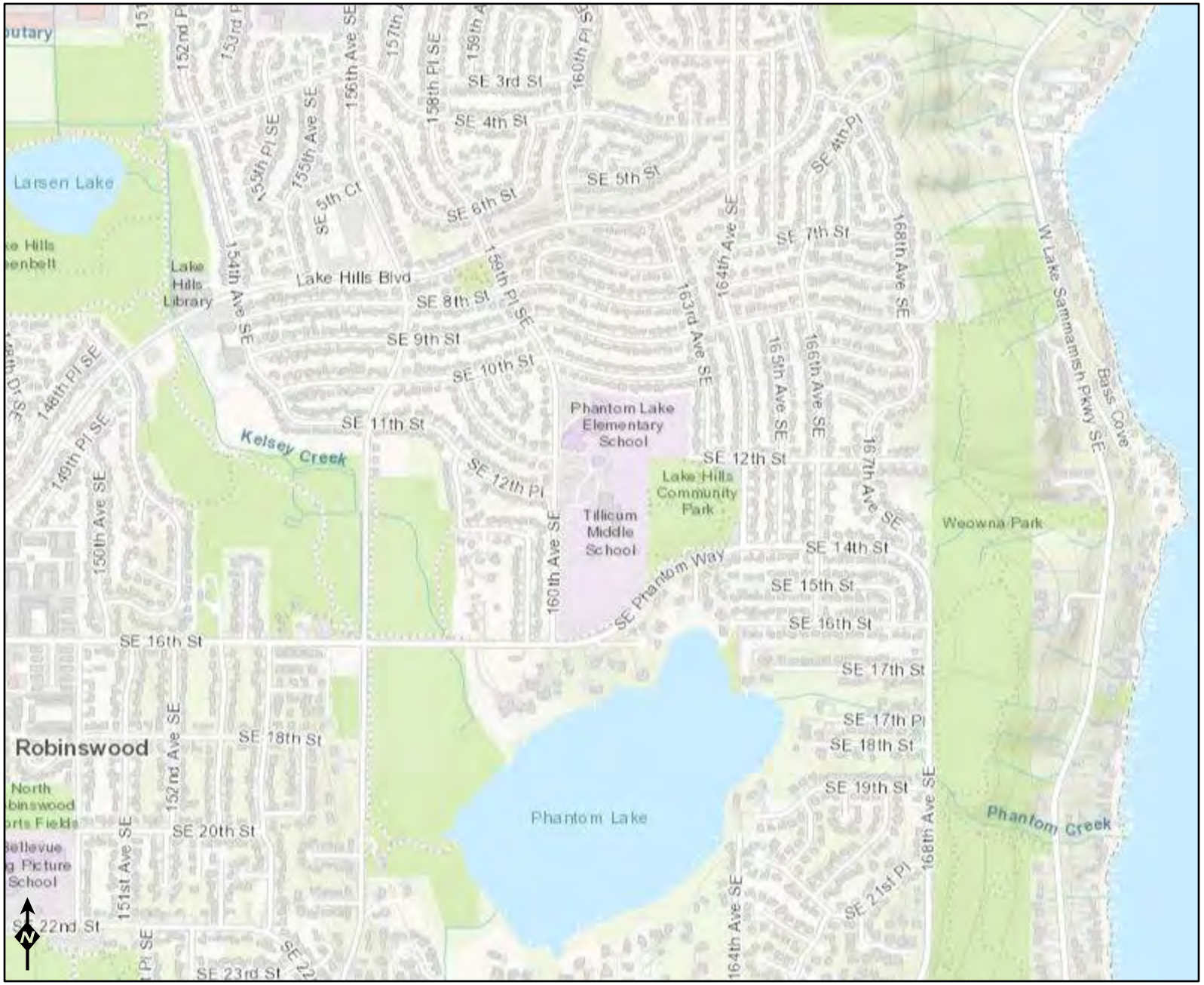
1:1,128

0 0.01 0.01 0.03 mi

0 0.01 0.03 0.05 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Sources: Esri, Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA,

The City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on an "as is" basis and disclaims all warranties.



Assessed Water/Sediment

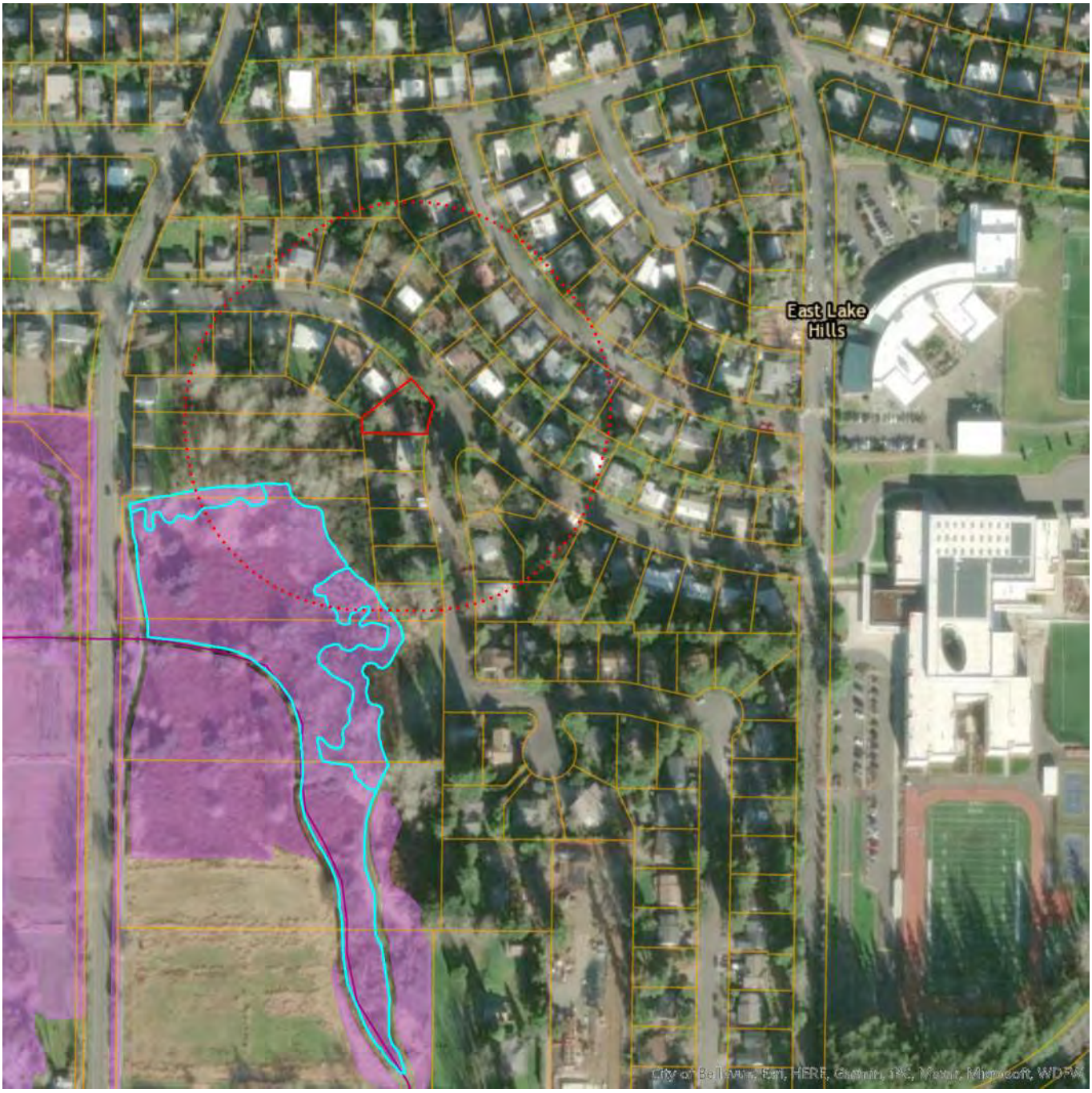
Water
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Miles
0 0.1 0.2 0.4

Esri Community Maps Contributors, WSU Facilities Services GIS, City of Bellevue, WA, King County, WA State Parks GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land

Priority Habitats and Species on the Web



Buffer radius: 330 Feet

Report Date: 09/29/2025, Parcel ID: [4036800650]

PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Sensitive Location
Freshwater Forested/Shrub Wetland	N/A	N/A	No

PHS Species/Habitats Details:

Freshwater Forested/Shrub Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Forested/Shrub Wetland - NWI Code: PFO1B
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Forested/Shrub Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Forested/Shrub Wetland - NWI Code: PFO1B
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Forested/Shrub Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Forested/Shrub Wetland - NWI Code: PSS1B
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necesssary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

APPENDIX E

PHOTODOCUMENT



Existing patio off back of house



View of backyard with sewer line project in distance—note lack of understory species



Plantings laid out for sewer line mitigation plantings



View of back of lot where sewer line impacts occurred with their adjacent plants for installation.

Jacobs

Technical Memorandum
1100 112th Avenue NE, Suite 500
Bellevue, Washington 98004
425.453.5000
www.jacobs.com

To:	Vanaja Rajah, Project Manager, City of Bellevue
From:	Michelle Brownell, Biologist and Emily Drew, Senior Biologist
Date:	May 1 2022
Copies to:	Reilly Pittman, Permit Reviewer, City of Bellevue
Subject:	**Bogline Sanitary Sewer Rehabilitation Project - Wetland Delineation**

This memorandum summarizes the Jacobs Engineering Group Inc. (Jacobs) wetland delineation efforts that were completed on November 23 and 24, 2021 and March 4, 2022 for the Bogline Sanitary Sewer Rehabilitation Project (Project).

The project is located in the northeastern portion of the Lake Hills Greenbelt behind single-family residences along 158th Avenue SE and SE 11th Street (**Figure 1**). The project is entirely within the City of Bellevue city limits. Kelsey Creek flows through the Lake Hills Greenbelt, approximately 250 feet west of and entirely outside of the project area. Phantom Lake is approximately 0.3 mile south of the project area. Larsen Lake is approximately 0.6 mile northwest of the project area.

The project is in Section 2 of Township 24 North, Range 5 East. The Project is within Water Resource Inventory (WRIA) 8 – Cedar-Sammamish and U.S. Geological Survey Hydrological Unit Code #171100120202 – Lake Sammamish-Sammamish River.

Jacobs biologists Michelle Brownell and Emily Drew conducted a site visit on November 23 and 24, 2021 and delineated a portion of the eastern boundary of one large wetland, referred to as Wetland 1 for the purposes of this memorandum. A follow up site visit was conducted on March 4 to complete the delineation for the portion of Wetland 1 that is adjacent to the project corridor. During the March 4 site visit, a second small wetland was identified and delineated.

METHODS

Background Review

Jacobs biologists reviewed the following data sources to gather information about environmental conditions:

- Environmentally Sensitive Areas mapped on King County iMap (n.d.)
- City of Bellevue Critical Areas Mapping (n.d.)
- U.S. Fish and Wildlife Service National Wetlands Inventory mapping service (n.d.)

- Washington Department of Fish and Wildlife Priority Habitats and Species (PHS) Web Mapper (n.d.)
- NRCS Web Soil Survey of King County, Washington (n.d.-a)

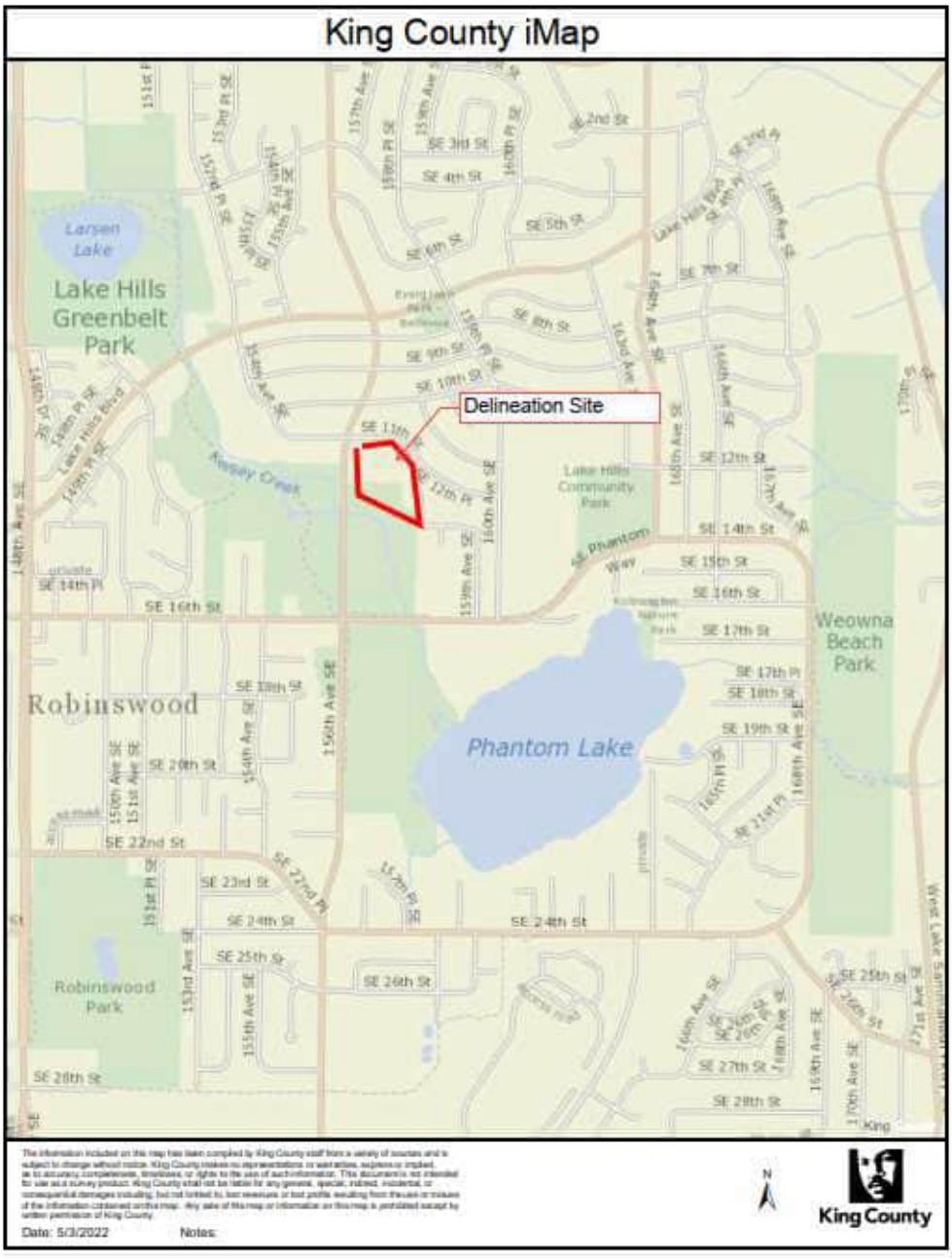


Figure 1. Vicinity Map of Delineation

Field Work

During the November 2021 and March 2022 field visits, Jacobs biologists marked the wetland boundary and sampling points using flagging, which the City later mapped via GPS. Wetland 1 was delineated using the methodology described in the U.S. Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987) and the regional supplement to this manual (USACE 2010). This methodology evaluates vegetation types, soil indicators, and hydrology indicators. For an area to be considered a wetland, it must contain a vegetation community with the majority of dominant species considered hydrophytic, soils that meet the definition of "hydric", and indicators of wetland hydrology per Corps definitions. Jacobs' biologists recorded sample plots (SP) to characterize vegetation, soils, hydrology, and other general conditions at the site during fieldwork. Wetland determination forms are in **Attachment 1**. Wetland rating forms are included in **Attachment 2**.

Vegetation is described herein by common name with scientific name and indicator status in parentheses. Indicator status represents the probability that a particular plant occurs in a wetland or upland (USACE 2020). Soils are described with the associated *Munsell Soil Color Charts* color in parentheses (2015). Hydric soil criteria are based on the U.S. Department of Agriculture guidance, *Field Indicators of Hydric Soils in the United States, Version 8.1* (2017).

Photos of the site are presented in **Attachment 3.**

RESULTS

Background Review

The National Wetlands Inventory (U.S. Fish and Wildlife Service, n.d.) maps a small (0.58 acre) freshwater forested/shrub wetland (PSSC) adjacent to the eastern edge of the project area, and shows this wetland to be connected to a small 0.05-acre freshwater emergent (PEM1C) wetland. There are no wetlands mapped on King County iMap. Kelsey Creek is mapped outside the project area and flows through the Lake Hills Greenbelt (City of Bellevue 2017).

The NRCS (n.d.-a) lists soil types in the study area as Seattle Muck which are very poorly drained and are listed as hydric soils . The NRCS (n.d.-b) Agricultural Applied Climate Information System's Precipitation Data Wetlands Table was reviewed to determine if precipitation occurring in the 3 months prior to the site visit was normal, drier than normal, or wetter than normal when comparing actual rainfall to the 30-year average. Prior to the November 23 and 24, 2021 and March 4, 2022, site visits, normal precipitation conditions were present (NRCS, n.d.-b).

Wetland 1

Wetland 1 is a large, depressional Category II wetland that is approximately 9 acres in size and extends west and south from the project area. Jacobs only delineated the northern and

northeastern boundaries adjacent to the project area. However, Jacobs based the wetland rating on the entire wetland, based on a walkthrough and aerial photo analysis.

Using the 2014 Wetland Rating System (Hruby 2014), Wetland 1 scored 6 points for improving water quality, 8 points for hydrologic function, and 6 points for habitat function for a total of 20 points. Cowardin classes observed in Wetland 1 are palustrine emergent (PEM), palustrine scrub shrub (PSS) and palustrine forested (PFO).

A tributary to Kelsey Creek flows through Wetland 1 (**Photograph 1**). Outside of the study area, topographic maps indicate that the tributary is connected to Phantom Lake and to Kelsey Creek which ultimately drains to Lake Washington (City of Bellevue 2017). Hydrologic sources to Wetland 1 include surface flows from Kelsey Creek, stormwater runoff, and groundwater.

Wetland 1 vegetation is dominated by western red cedar (*Thuja plicata*, FAC), Sitka willow (*Salix sitchensis*, FACW), Douglas spirea (*Spiraea douglasii*, FACW), Himalayan blackberry (*Rubus armeniacus*, FAC) and reed canarygrass (*Phalaris arundinacea*, FACW) (**Photograph 2**). Where the wetland crossed onto residential parcels in the project area, vegetation was dominated by lawn grasses and landscaping shrubs trees (**Photographs 3, 4, and 1-14**).

The Natural Resources Conservation Service (NRCS) maps soils in the vicinity of Wetland 1 as Seattle muck which is classified as hydric soil (NRCS, n.d.-a). Soils were generally characterized as black (10YR 2/1) silt loam and met hydric soil indicator A1 Histosol (SP-3, SP-5, SP-7, SP-9). Soils at SP-1 were characterized by very dark brown (10YR 2/2) sandy loam and met hydric soil indicator A1 Histosol. Two sample plots (SP-5 and SP-9) also met hydric soil indicator A4 Hydrogen Sulfide. At SP-4, soils are characterized as black (10YR 2/1) loam in the upper 8 inches, underlain by grayish brown (10YR 3/2) silty loam with yellowish brown (10YR 5/8) and dark yellowish brown (10YR 3/6) redoximorphic features from 8 inches to 16 inches below ground surface (SP-4) and met hydric soil indicator F3 Depleted Matrix. From 16 inches, soils at SP-4 are characterized by black (10YR 2/1) organic soils.

Several test plots were excavated in upland areas adjacent to Wetland 1, to determine its boundaries near the project. Vegetation in the upland sample plots adjacent to Wetland 1 was dominated by Douglas fir (*Pseudotsuga menziesii*, FACU), Sitka willow (*Salix sitchensis*, FACW) red alder (*Alnus rubra*, FAC), Himalayan blackberry (*Rubus armeniacus*, FAC) (**Photograph 5**).

The Natural Resources Conservation Service (NRCS) maps soils in the uplands as Arents, Alderwood material, 6 – 15% slope which is not classified as hydric soil. Soils at SP-6 and SP-8 were characterized by very dark brown (10YR 2/2) loam with no hydric soil indicators observed. Soils at SP-2 were characterized by very dark brown (7.5YR 2.5/2) sandy loam in the upper 4 inches, underlain by dark brown (7.5 YR 3/2) sandy loam to a depth of 6 inches. From 6 to 12 inches, the soils are characterized by black (5YR 3/1) sandy loam with pebbles, underlain by

black (10YR 2/1) organic soil. No hydric soil indicators were observed. No wetland hydrology indicators were present in these test pits.

Wetland 1 boundaries were delineated in the field based on the presence of groundwater below the surface, along clear topographic breaks where those were present, and the sharp contrast of spirea and willow growth versus densely rooted Himalayan blackberry which was present where groundwater shifted from greater than 12 inches deep to less than 12 inches deep on the days of survey.

Wetland 2

Wetland 2 is a small (350-square-foot) depressional Category III wetland that is located at the northern end of the study area, west of the project area. It is directly adjacent to a fenceline. Using the 2014 Wetland Rating System (Hruby 2014), Wetland 2 scored 7 points for improving water quality, 6 points for hydrologic function, and 3 points for habitat function for a total of 16 points.

The only Cowardin class observed in Wetland 2 was scrub-shrub (PSS). The hydrogeomorphic class is depressional. Hydrologic sources to Wetland 2 include stormwater runoff and groundwater. No outlet was observed.

Wetland 2 vegetation is dominated by Himalayan blackberry and reed canary grass (**Photograph 6**). Soils at SP-1B were characterized as very dark brown (10YR 2/2) silt loam, underlain by yellowish brown (10YR 5/4) from 8 to 10 inches. From 10 to 18 inches, the soil was black (10YR 2/1)). SP-1B met hydric soil indicator A1 Histosol.

A soil test pit was excavated in upland areas adjacent to the wetland. Uplands were dominated by Himalayan blackberry (**Photograph 8, 9 and 10**). Soils at SP-2B were very dark brown (10YR 2/2) silt loam in the upper 9 inches, underlain by dark yellowish brown (10YR 4/4) silt loam to a depth of 12 inches. From 12 to 18 inches, the soils are characterized by a very dark brown (10YR 2/2) silt loam to a depth of 18 inches (Photograph 7). SP-2B met hydric soil indicator A1 Histosol but no wetland hydrology indicators were present.

Streams

There were no streams adjacent to the project. The nearest stream is the tributary to Kelsey Creek, flowing through Wetland 1 over 250 feet from the project (**Photograph 1**). Kelsey Creek flows through Larsen Lake, to Mercer Slough and ultimately drains into Lake Washington. City of Bellevue categorizes Kelsey Creek as a Type F (fish-bearing) stream.

REGULATIONS

The City of Bellevue regulates wetlands under its Land Use Code (LUC) 20.25H.095. Buffer widths are determined by wetland category and habitat score. Wetland 1 is a Category II wetland with a habitat score of 6 which requires a 110-foot buffer width (LUC 20.25H.095).

The stream within Wetland 1 is a Type F (fish-bearing stream), and would thus have 100-foot regulated buffers (LUC 20.25H.095).

Wetland 2 is a Category III wetland with a habitat score of 3 which requires a 60 foot buffer width (LUC 20.25H.095). Uplands isolate Wetland 2 from Wetland 1 and Kelsey Creek.

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U.S. Army Corps of Engineers (USACE). 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*. ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-3. Vicksburg, MS. U.S. Army Engineer Research and Development Center.

_____. 2020. National Wetland Plant List, version 3.5. Available http://wetland-plants.usace.army.mil/. U.S. Army Corps of Engineers Engineer Research and Development Center Cold Regions Research and Engineering Laboratory. Hanover, NH.

U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS). 2017. *Field Indicators of Hydric Soils in the United States*, Version 8.1. L.M. Vasilas and G.W. Hurt (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

———. n.d.-a. Web Soil Survey. Available https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx . Accessed 12/21/2021

———. n.d.-b Agricultural Applied Climate Information System Precipitation Data Wetlands Table for King County, Seattle Boeing Field. https://agacis.rcc-acis.org/?fips=53033 . Accessed March 22, 2022

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ATTACHMENT 1
WETLAND DETERMINATION DATA FORMS

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ATTACHMENT 2
WETLAND RATING FORMS

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Wetland name or number Wetland 1 Bogline

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 1 Bogline Date of site visit: 11/23 + 11/24/21

Rated by M. Brownell + E. Drew Trained by Ecology? X Yes ___ No Date of training 10/2020

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___ Y ✓ N

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map _____

OVERALL WETLAND CATEGORY II (based on functions___ or special characteristics___)

1. Category of wetland based on FUNCTIONS

___**Category I** – Total score = 23 - 27

✓ **Category II** – Total score = 20 - 22

___**Category III** – Total score = 16 - 19

___**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H (M) L	H (M) L	H (M) L	
Landscape Potential	(H) M L	(H) M L	H M (L)	
Value	H M (L)	(H) M L	(H) M L	TOTAL
Score Based on Ratings	6	8	6	20

(possibly H) 22

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	✓

Wetland name or number Bogline 1

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	2
Map of the contributing basin	D 4.3, D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants *(can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number Wetland 1 Bogline

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

   1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   *If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

   NO – go to 3 **YES** – The wetland class is **Flats**
   *If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
   ___At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES** – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   ___The wetland is on a slope (*slope can be very gradual*),
   ___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
   ___The water leaves the wetland **without being impounded**.

   NO – go to 5 **YES** – The wetland class is **Slope**

   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
   ___The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ___The overbank flooding occurs at least once every 2 years.

Wetland name or number Bogline 1

NO – go to 6 **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number Wetland 1 Bog line

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	2
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*. Yes = 4 No = 0	4
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	0
Total for D 1 Add the points in the boxes above	11

Rating of Site Potential If score is: ___ **12-16 = H** ✓ **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source Leaking sewer Yes = 1 No = 0	1
Total for D 2 Add the points in the boxes above	3

Rating of Landscape Potential If score is: ✓ **3 or 4 = H** ___ **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** ✓ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number Wetland 1 Bigline

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	2
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	1
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	5
Total for D 4 — Add the points in the boxes above	7

Rating of Site Potential If score is: ___ **12-16 = H** ✓ **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 — Add the points in the boxes above	3

Rating of Landscape Potential If score is: ✓ **3 = H** ___ **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin. points = 1 The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 There are no problems with flooding downstream of the wetland. points = 0	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for D 6 — Add the points in the boxes above	2

Rating of Value If score is: ✓ **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number Wetland 1 Bogline

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- ___ Aquatic bed
- X Emergent
- X Scrub-shrub (areas where shrubs have > 30% cover)
- X Forested (areas where trees have > 30% cover)

If the unit has a Forested class, check if:

- X The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

4 structures or more: points = 4
3 structures: points = 2
2 structures: points = 1
1 structure: points = 0

4

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- ___ Permanently flooded or inundated
- X Seasonally flooded or inundated
- ___ Occasionally flooded or inundated
- X Saturated only
- ___ Permanently flowing stream or river in, or adjacent to, the wetland
- X Seasonally flowing stream in, or adjacent to, the wetland
- ___ **Lake Fringe wetland** **2 points**
- ___ **Freshwater tidal wetland** **2 points**

4 or more types present: points = 3
3 types present: points = 2
2 types present: points = 1
1 type present: points = 0

2

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

If you counted: > 19 species points = 2
5 - 19 species points = 1
< 5 species points = 0

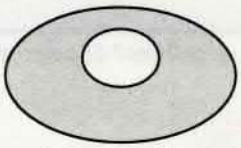
2

H 1.4. Interspersion of habitats

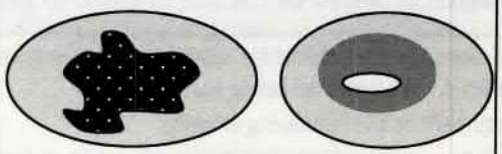
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



None = 0 points

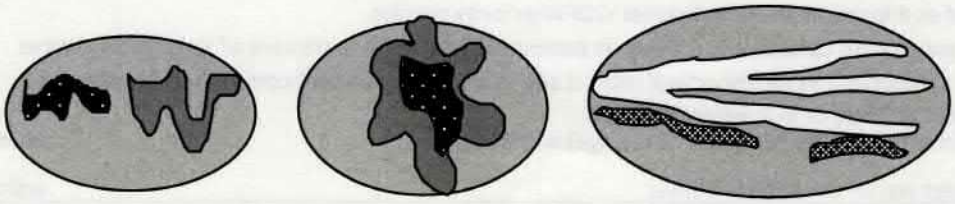


Low = 1 point



Moderate = 2 points

All three diagrams in this row are **HIGH** = 3points



3

Wetland name or number Wetland 1 Bogline

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* X Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). X Standing snags (dbh > 4 in) within the wetland – check w/Parks ___ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* – check w/ Parks X At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ___ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*) – No, Rubus + PHAR	3
Total for H 1 — Add the points in the boxes above	14

Rating of Site Potential If score is: ___ **15-18 = H** X **7-14 = M** ___ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 5 % undisturbed habitat 5 + [(% moderate and low intensity land uses)/2] 8 = 13 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon — points = 3 20-33% of 1 km Polygon — points = 2 10-19% of 1 km Polygon — points = 1 < 10% of 1 km Polygon — points = 0	1
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat 8 + [(% moderate and low intensity land uses)/2] 8 = 16 % Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10-50% and in 1-3 patches — points = 2 Undisturbed habitat 10-50% and > 3 patches — points = 1 Undisturbed habitat < 10% of 1 km Polygon — points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use — points = (- 2) ≤ 50% of 1 km Polygon is high intensity — points = 0	-2
Total for H 2 — Add the points in the boxes above	0

Rating of Landscape Potential If score is: ___ **4-6 = H** ___ **1-3 = M** ✓ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: — points = 2 ✓ It has 3 or more priority habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW priority species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m — points = 1 Site does not meet any of the criteria above — points = 0	2

Rating of Value If score is: ✓ **2 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number Bogline 1

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

✓ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

✗ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

✓ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

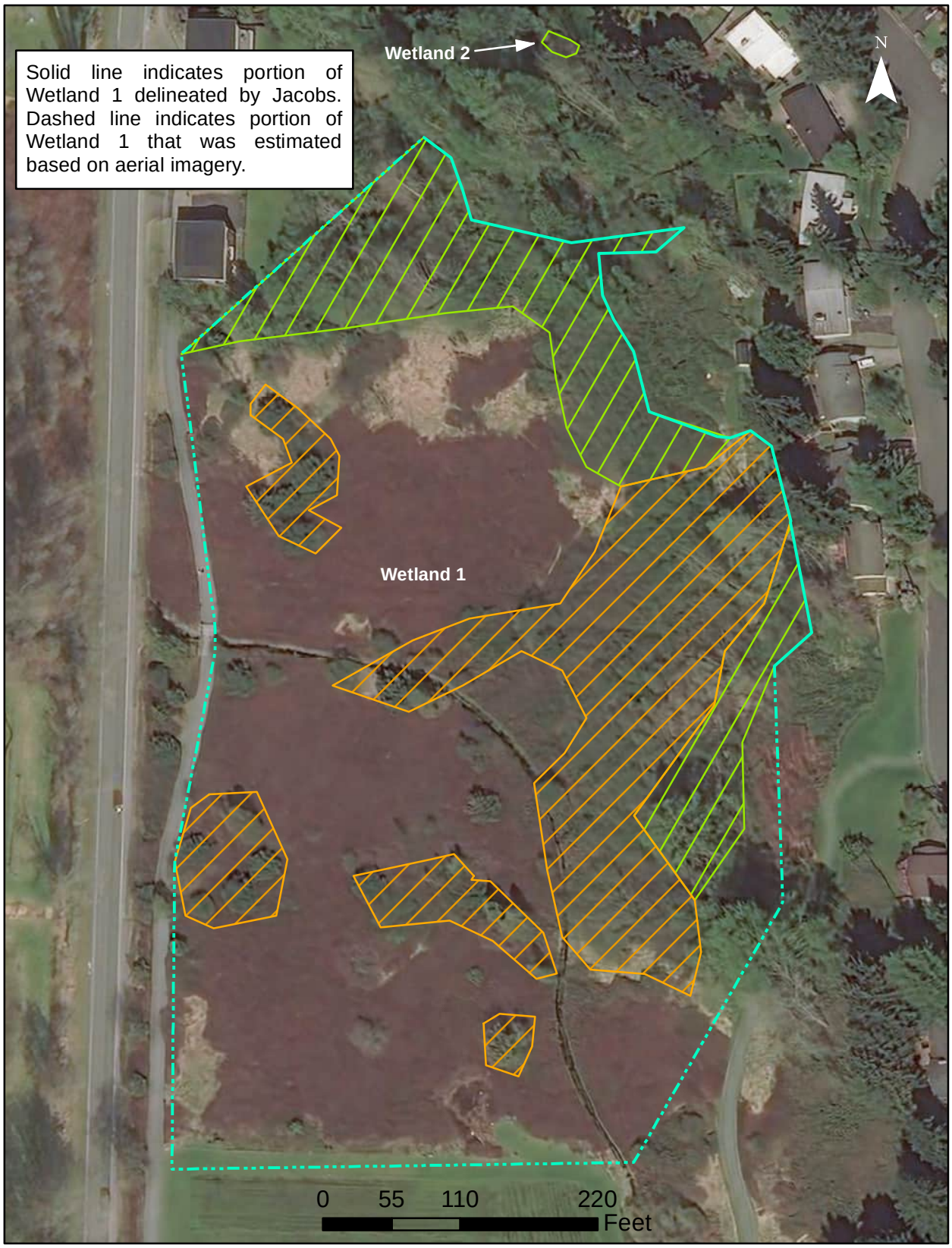
Wetland name or number Bog line 1

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes –Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No - Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to **SC 2.2** No – Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = **Category I** No = **Not a WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes – **Contact WNHP/WDNR and go to SC 2.4** No = **Not a WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? (Yes) – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** (No) = **Is not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Is a Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Is a Category I bog** No = **Is not a bog**	**Cat. I**

Wetland name or number Bog line 1

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). Yes = **Category I** (No) = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon**	**Cat. I**
SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** (No) = **Category II**	**Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to **SC 6.1** (No) = **not an interdunal wetland for rating**	**Cat I**
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**	**Cat. II**
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3**	**Cat. III**
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	N/A



Palustrine Forested

Palustrine Scrub-Shrub

Remaining portion of Wetland 1 contains Palustrine Emergent vegetation

Figure 1. Cowardin

Jacobs

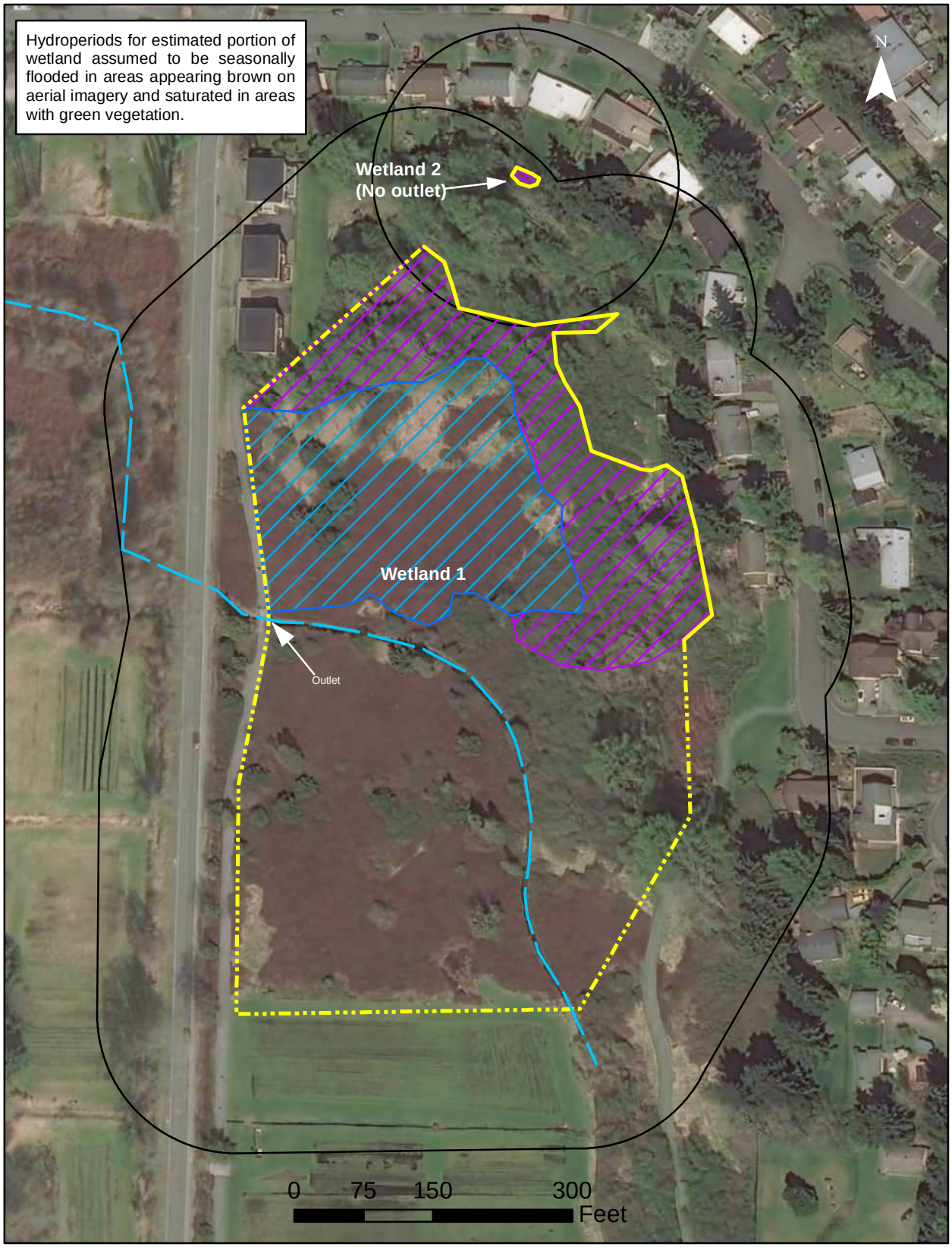


Figure 2. Hydroperiods

Jacobs

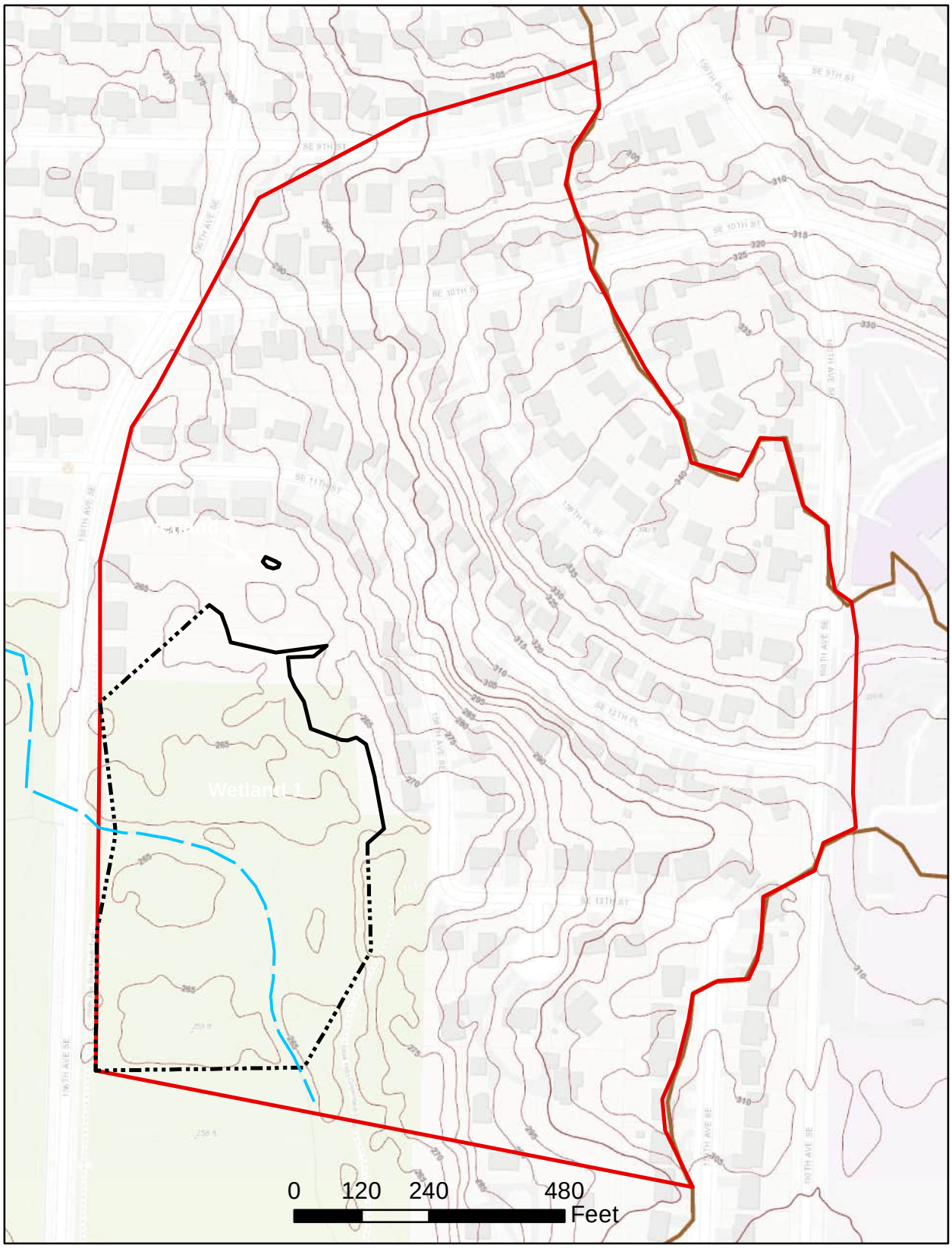


Figure 3. Contributing Basin

Jacobs

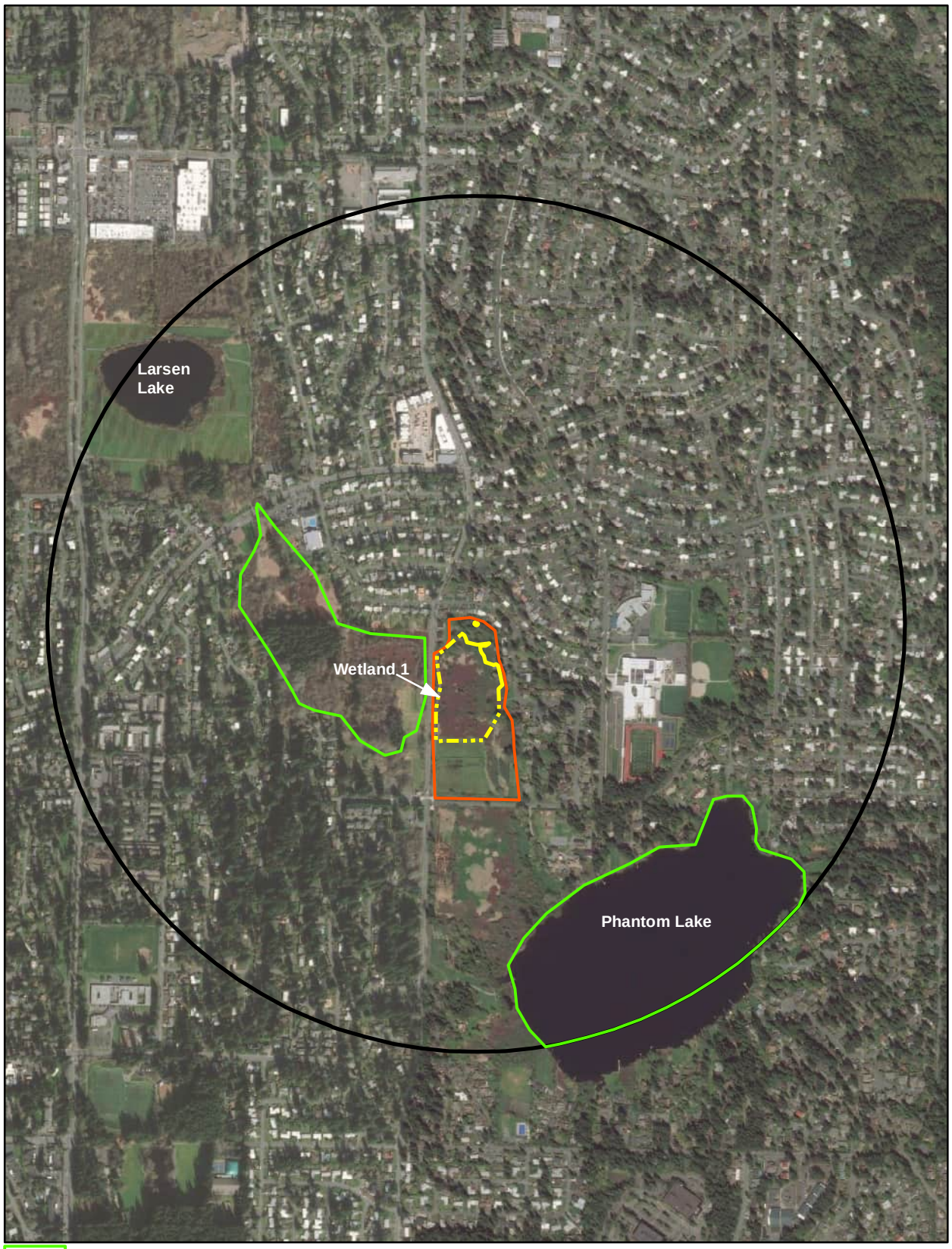
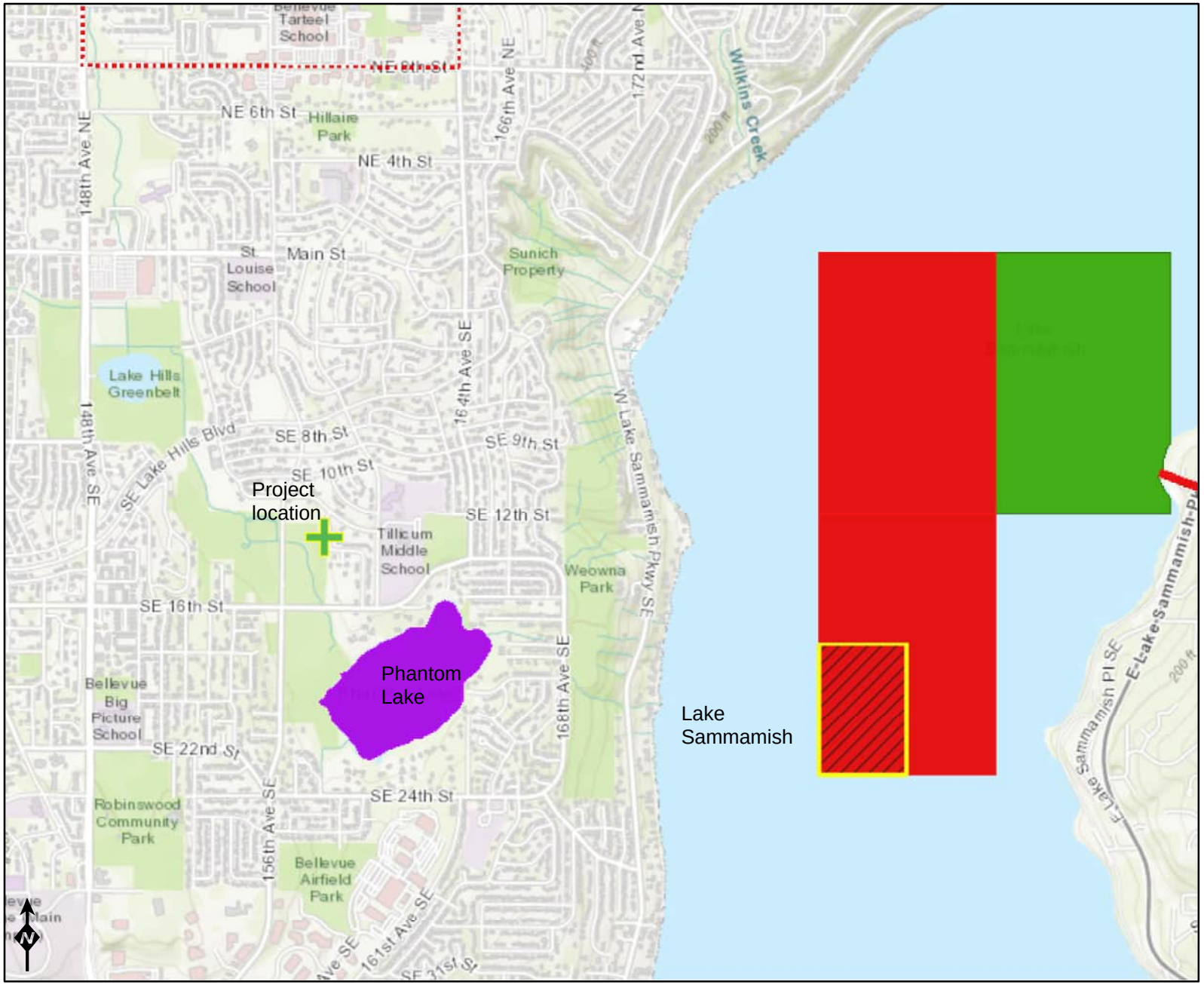


Figure 4. Land Use

Jacobs

April 14, 2022

303(d) Listed Waters



Assessed Water/Sediment

Water

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

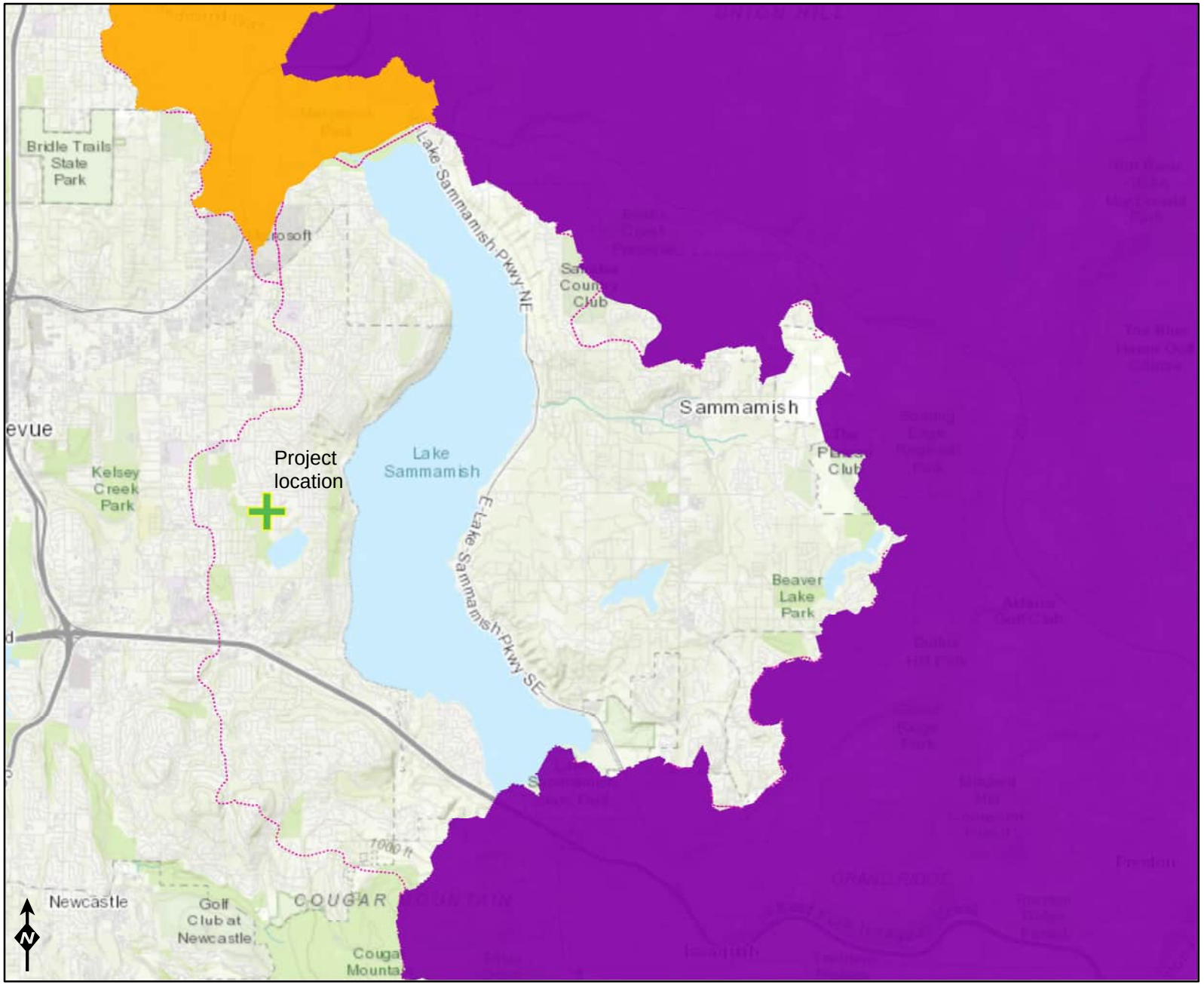
Miles
0 0.25 0.5 1

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and

DEPARTMENT OF ECOLOGY
State of Washington

December 15, 2021

TMDLs



WQ Improvement Projects

- Approved
- In Development

Subbasins (12 digit HUCs)

- HUC boundary

Miles
0 1 2 4

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and

DEPARTMENT OF ECOLOGY
State of Washington

Wetland name or number _____

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Bogline Wetland B Date of site visit: March 4 2022

Rated by Emily Drew Trained by Ecology?__ Yes ___No Date of training_____

HGM Class used for rating Depressional Wetland has multiple HGM classes?___Y __N N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map _____

OVERALL WETLAND CATEGORY III (based on functions X___ or special characteristics___)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

X_____**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H [M] L	H [M] L	H M [L]	
Landscape Potential	H [M] L	H [M] L	H M [L]	
Value	H [M] L	H [M] L	H M [L]	**TOTAL**
Score Based on Ratings	7	6	3	16

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	NA

Wetland name or number Bogline Wetland B

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	na
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	2
Map of the contributing basin	D 4.3, D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number Bogline Wetland B

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

   1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   *If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

   NO – go to 3 **YES** – The wetland class is **Flats**
   *If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
   ___At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   ___The wetland is on a slope (*slope can be very gradual*),
   ___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
   ___The water leaves the wetland **without being impounded**.

   NO – go to 5 **YES –** The wetland class is **Slope**

   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
   ___The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ___The overbank flooding occurs at least once every 2 years.

Wetland name or number Bogline Wetland B

NO – go to 6 **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number Bogline Wetland B

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	3
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0	4
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	4
Total for D 1 Add the points in the boxes above	14

Rating of Site Potential If score is: X **12-16 = H** ___ **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 or 4 = H** X **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number Bogline Wetland B

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	4
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	3
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	0
Total for D 4 Add the points in the boxes above	7

Rating of Site Potential If score is: ___ **12-16 = H** _X_ **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	2

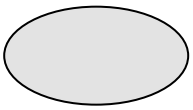
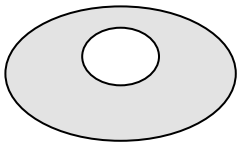
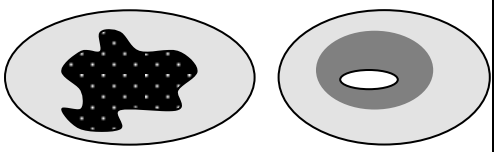
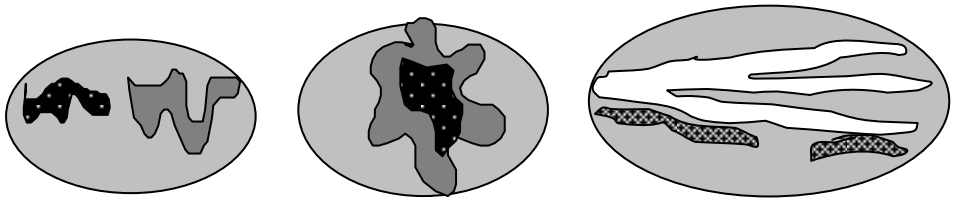
Rating of Landscape Potential If score is: ___ **3 = H** _X_ **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin. points = 1 The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 There are no problems with flooding downstream of the wetland. points = 0	1
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for D 6 Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** _X_ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number Bogline Wetland B

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 ____Emergent — 3 structures: points = 2 __X__Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 __X__Seasonally flooded or inundated — 3 types present: points = 2 ____Occasionally flooded or inundated — 2 types present: points = 1 X___Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	0
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number Bogline Wetland B

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* _X_ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ____ Standing snags (dbh > 4 in) within the wetland ____ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ____ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ____ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ____ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	1
Total for H 1 Add the points in the boxes above	2

Rating of Site Potential If score is:___**15-18 = H** ___**7-14 = M** _X_**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat 5 **+** [(% moderate and low intensity land uses)/2] 8 = 13 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	1
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat 8 **+** [(% moderate and low intensity land uses)/2] 8 = 16 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is:___**4-6 = H** ___**1-3 = M** _X_**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 — It has 3 or more priority habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW priority species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	0

Rating of Value If score is:___**2 = H** ___**1 = M** _X_**0 = L** *Record the rating on the first page*

Wetland name or number Bogline Wetland B

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

X — **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

X — **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number Bogline Wetland B

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes –Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No - Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes **–** Go to **SC 2.2** No **–** Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes **= Category I** No **= Not a WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 2.4** No **= Not a WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes **= Category I** No **= Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either ~~peats or mucks,~~ that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either ~~peats or mucks, that~~ are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Is not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Is a Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Is a Category I bog** No **= Is not a bog**	**Cat. I**

Wetland name or number Bogline Wetland B

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to **SC 6.1** No = **not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	NA

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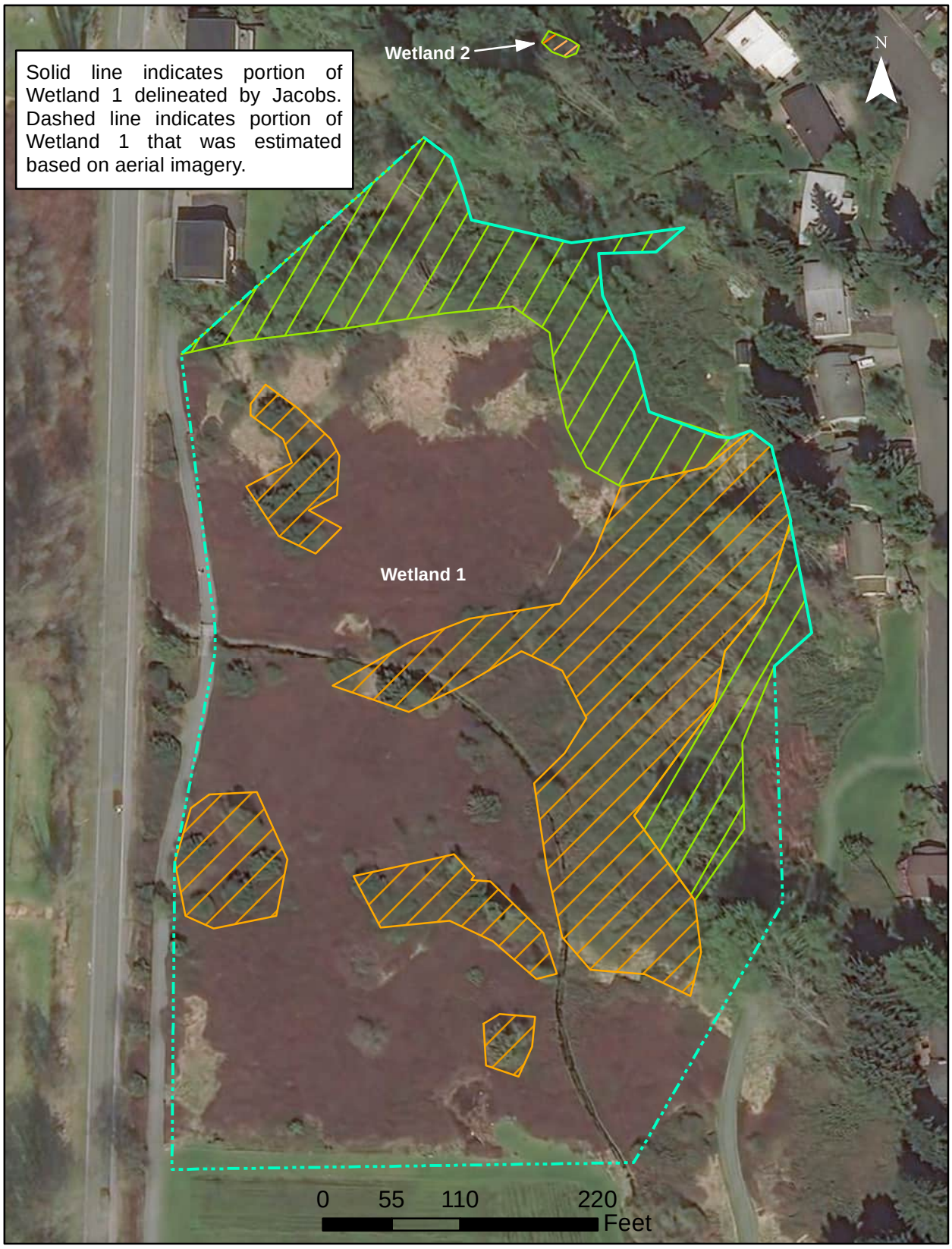


Palustrine Forested

Palustrine Scrub-Shrub

Remaining portion of Wetland 1 contains Palustrine Emergent vegetation

Figure 1. Cowardin

Jacobs

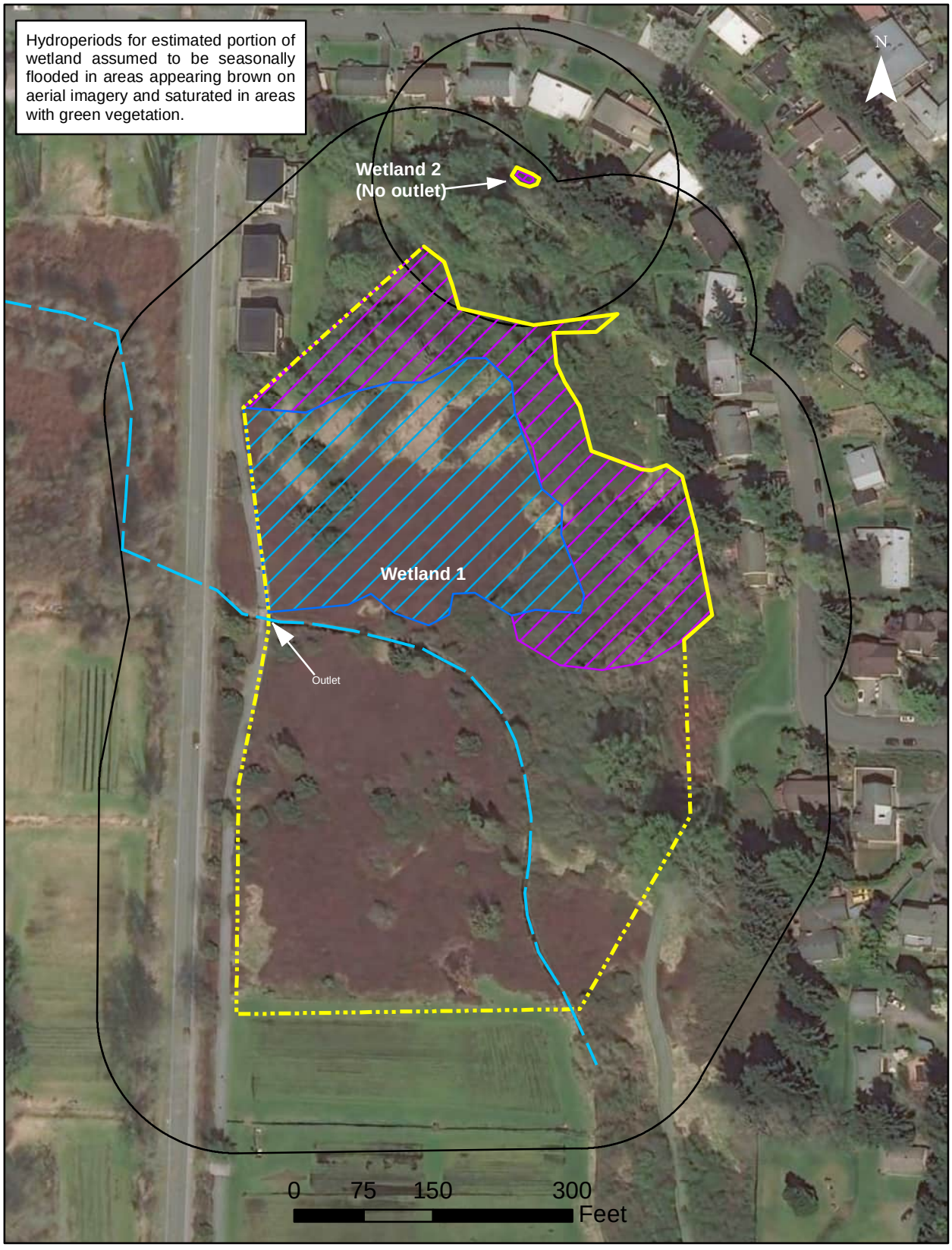


Figure 2. Hydroperiods

Jacobs



Contributing Basin

Drainage basin (Source: King County iMap)

Permanently flowing stream (approximated)

Figure 3. Contributing Basin

Jacobs

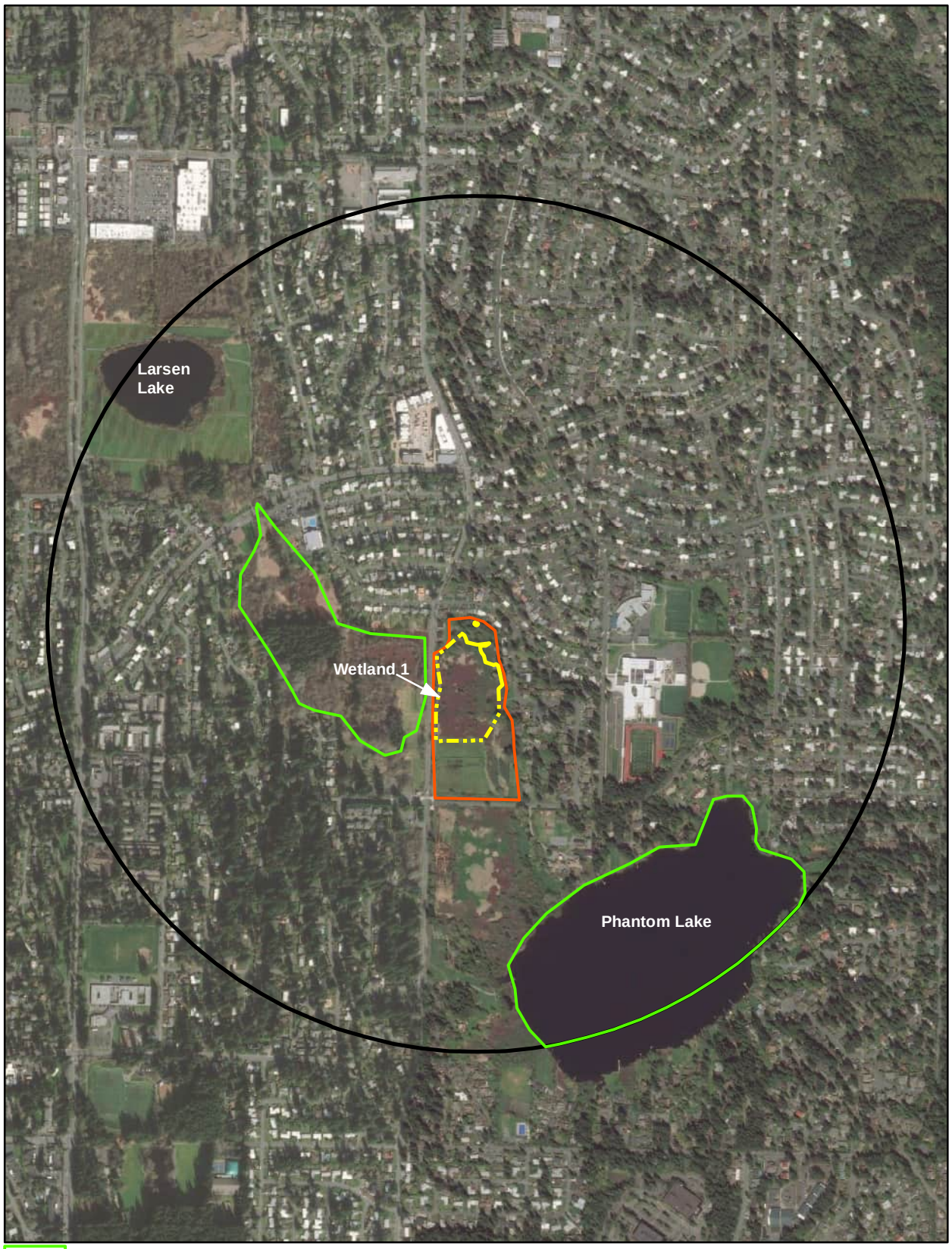
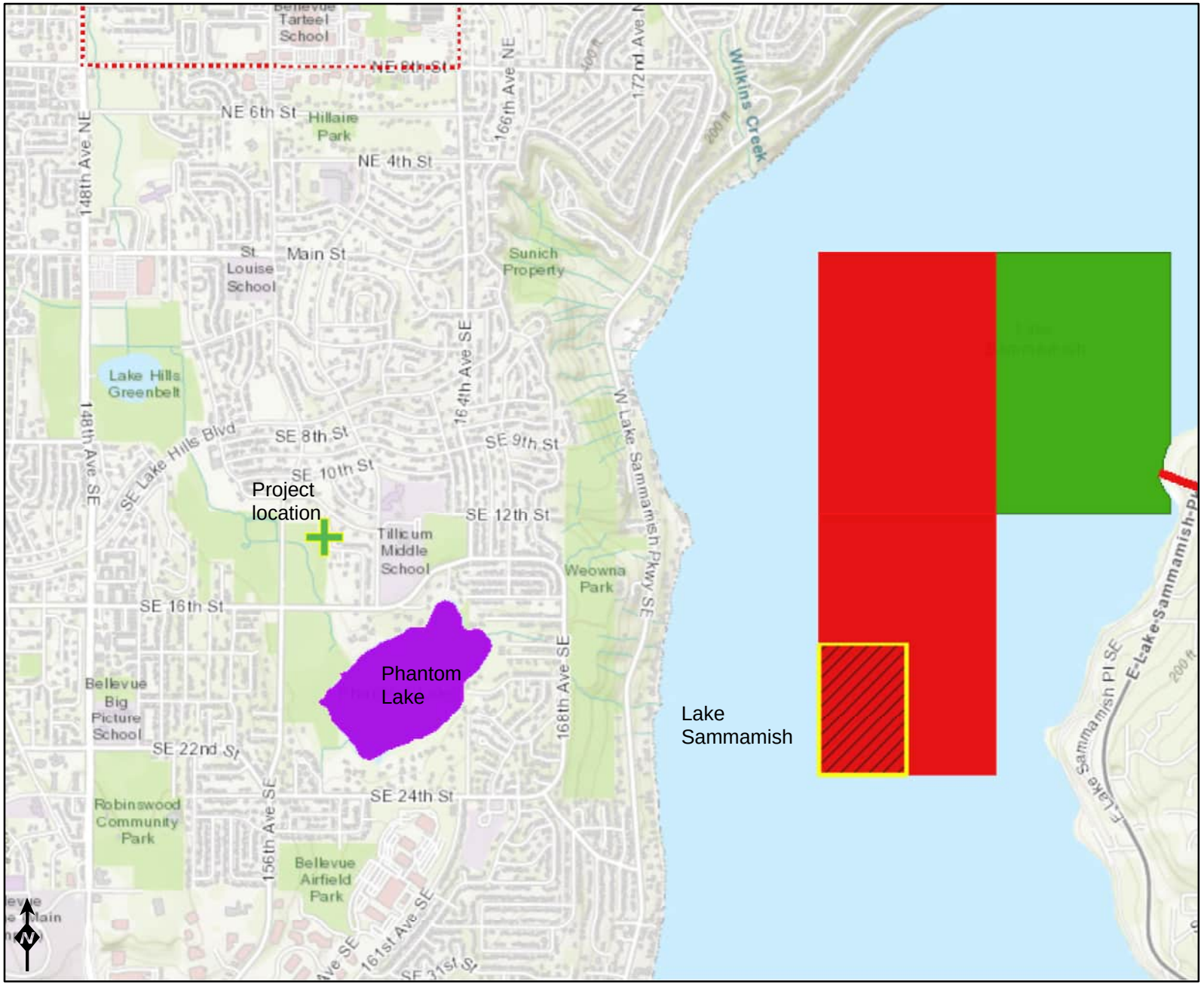


Figure 4. Land Use

Jacobs

April 14, 2022

303(d) Listed Waters



Assessed Water/Sediment

Water

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

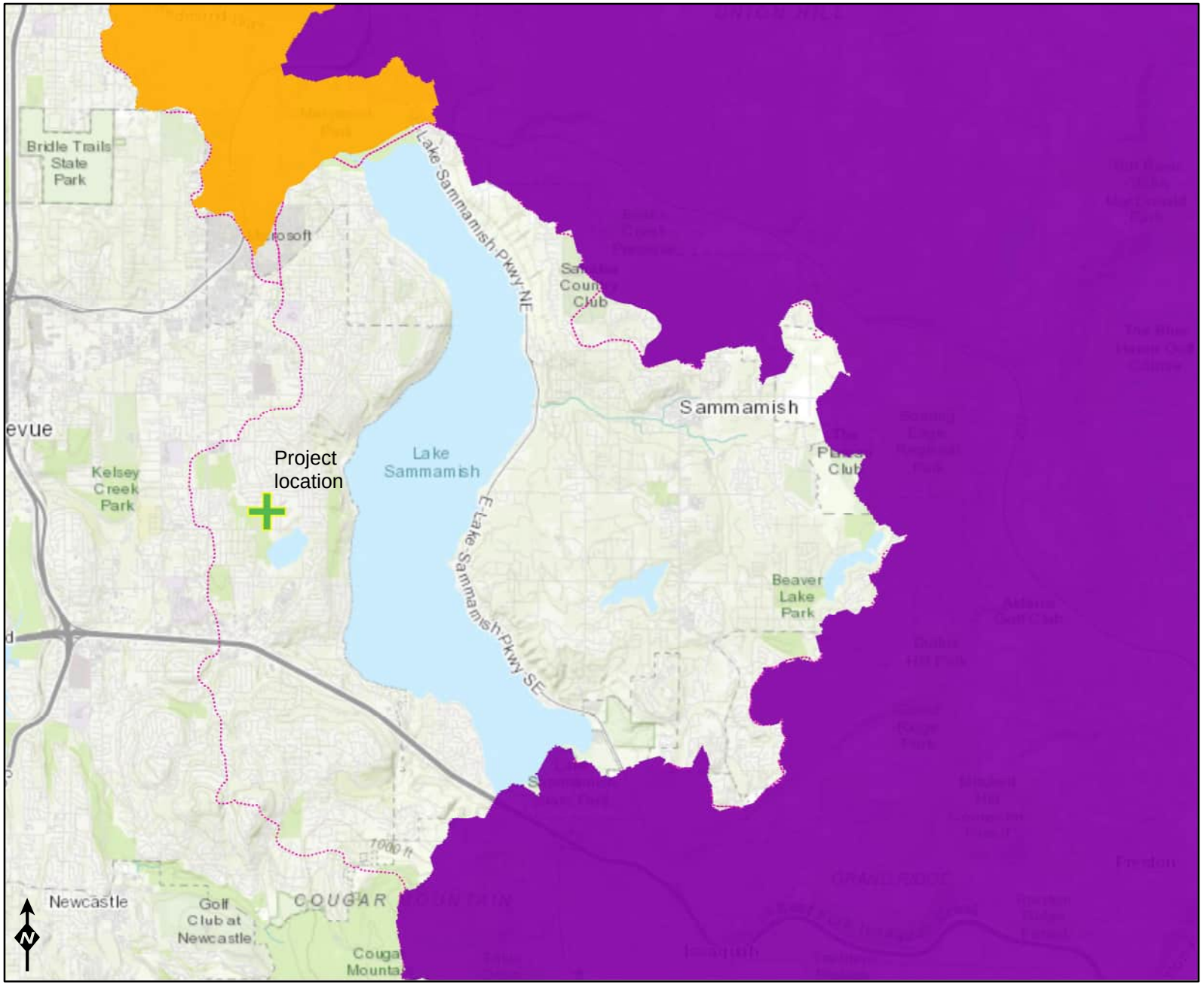
Miles
0 0.25 0.5 1

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and

DEPARTMENT OF ECOLOGY
State of Washington

December 15, 2021

TMDLs



WQ Improvement Projects

- Approved
- In Development

Subbasins (12 digit HUCs)

- HUC boundary

Miles
0 1 2 4

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and

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ATTACHMENT 3
SITE PHOTOGRAPHS

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Photograph 1: A tributary to Kelsey Creek within Wetland 1, southwest of the Project Area



Photograph 2: Wetland 1 vegetation including Himalayan blackberry, reed canarygrass, and red alder.



Photograph 3: Wetland 1 in backyard of 1223 158th Avenue SE looking northwest. Wetland edge is at the corner of the fences.



Photograph 4: Wetland 1 soils within backyards of 1229 158th Avenue SE and 1223 Avenue SE.



Photograph 5: Upland vegetation, adjacent to northern boundary of Wetland 1 (facing west). All area in photo is wetland buffer.



Photograph 6: Wetland 2 vegetation, dominated by Himalayan blackverry and reed canarygrass.



Photograph 7: Organic soils in upland adjacent to wetland 2. Wetland hydrology was lacking.



Photograph 8. Fenceline looking east from Wetland 2. Construction limits include fencline and areas 10-20 feet east and west of fence. All area in photo is wetland buffer.



Photograph 9. Upland vegetation immediately south of Wetland 2 and construction limits. All area in photo is wetland buffer.



Photograph 10. Upland vegetation south of construction limits, looking south towards Wetland 1 beyond trees in background. All area in photo is wetland buffer.



Photograph 11. Backyard of 1229 158th Avenue SE, looking north towards 1223 158th Avenue property. Constuction limits include grass and shrubs in the center and right side of photo.Wetland 1 boundary follows shrubs on right side.



Photograph 12. Backyard of 1223 158th Avenue property, looking N towards 1215 158th Avenue. Constuction limits include trampoline area, shed, tree next to shed, and lowest part of slope on right. Wetland 1 boundary angles from trampoline area to fence corner to left of the shed.

	
Photograph 13. Backyard of 1215 158th Avenue SE, looking west towards Wetland 1. Wetland touches fence on left. Construction limits include foreground lawn, tree on left, and shed on right. All foreground is wetland buffer.	Photograph 14. Backyard of 1215 158th Avenue SE, looking north to 1213 158th Avenue. Construction limits include lawn on left, garden area, shed, and fence and Himalayn blackberries in background. All area shown in photo is wetland buffer.

1100 112th Avenue NE, Suite 500
Bellevue, Washington 98004
425.453.5000
www.jacobs.com

April 4, 2023

Leticia Wallgren
Associate Planner, Land Use Division
Development Services Department
City of Bellevue, WA

SUBJECT: Critical Areas Report Addendum, Bogline Sanitary Sewer Rehabilitation Project

To Whom it May Concern:

This addendum provides an update to the Critical Areas Report (CAR; Jacobs 2022[1]) submitted to the City of Bellevue (City) for the Bogline Sanitary Sewer Rehabilitation Project (the project). The details in this addendum were requested by Leticia Wallgren, Associate Planner, during the City's review of the land use permit package for the project.

This addendum provides further details on work in the shoreline jurisdiction and the regulated floodplain, and provides updates on the restoration plan.

1. PROJECT OVERVIEW

A full description of the project is provided in Section 1 of the CAR. A summary is presented here.

The Bogline Sanitary Sewer Rehabilitation Project will replace the City's existing sanitary sewer pipeline and manholes in a section of pipeline located in public easements in private properties in the vicinity of 158th Avenue SE and SE 11th Street within the City Limits. The portion of the existing sewer conveyance system west of 158th Avenue SE has reversely settled pipes due to poor soils; this section requires frequent (monthly) maintenance.

The project will entail excavating pipe sections and replacing them with new pipe; a small section will be rerouted with the old pipe being decommissioned in place. To access the pipe, some landscaping vegetation, non-native vegetation (Himalayan blackberry and reed canarygrass) and trees will need to be removed within wetland buffer. Pile supports or imported fill will be placed where needed to better support the new pipe. Disturbed areas will be replanted to meet City restoration requirements.

[1] Jacobs. 2022. Bogline Sanitary Sewer Rehabilitation Project – Critical Areas Report. May 25, 2022.

2. FREQUENTLY FLOODED AREAS

CAR Overview

Section 2.8 of the CAR describes and maps the 100-year floodplain within the project area. The boundaries of the floodplain are based on Federal Emergency Management Agency (FEMA) mapping[2] and City of Bellevue[3] and King County[4] mapping. The section describes that there will be no rise in elevation within this floodplain; therefore, no mitigation is required.

Addendum Updates

Leticia Wallgren requested that the project floodplain impact area be expanded to include all areas below the base flood elevation of 264 feet. This line has now been highlighted in the 90% project design plans (see Attachment A). This designation slightly increases the square footage of disturbance within floodplain, from up to 4,300 square feet in FEMA-mapped floodplain shown in the CAR, to about 4,400 square feet in area below 264 feet in elevation, and includes up to 50 cubic yards of temporary excavation to access the sewer line.

The project will not result in a rise within the 100-year floodplain and/or below the base flood elevation; therefore, no mitigation is required.

3. SHORELINES

CAR Overview

Section 2.4.1 of the CAR describes where the work limits overlap with the City's regulated shoreline area. The City's Shoreline Master Program (SMP) states that jurisdictional shoreline includes floodplains and wetlands associated with Lower Kelsey Creek. Therefore, the project's overlap with Kelsey Creek's100-year floodplain is within shoreline jurisdiction, and is regulated as Urban Conservancy – Open Space.

Shoreline impacts will entail temporary soil disturbance, shrub clearing, and tree removal within the shoreline area overlapping the construction limits. All temporarily disturbed areas will be restored and will meet City restoration requirements. About 10 square feet within currently landscaped yards will contain permanent manhole covers after construction, to allow access the sewer system for future maintenance; this will be mitigated through enhancement of existing undeveloped area with native plantings.

Addendum Updates

[2] Federal Emergency Management Agency (FEMA). 2022. Flood Map Service Center: Available at: <https://msc.fema.gov/portal/>. Accessed April 4, 2022.
[3] City of Bellevue. n.d. City of Bellevue Map Viewer. Accessed at: < https://bellevuewa.gov/city-government/departments/ITD/services/maps>. Accessed April 4, 2022.
[4] King County. n.d. King County iMap Interactive Mapping Tool. Available at https://gismaps.kingcounty.gov/iMap/. Accessed April 4, 2022.

A shoreline exemption has been requested for work in this jurisdiction. Up to 4 trees will be removed (including 2 significant trees) from this shoreline area during construction. These will be replaced with eight trees in the shoreline area during restoration.

This addendum presents an analysis of why the project must be built within shoreline, and an explanation of how the project meets SMP performance standards.

Technical Feasibility Analysis:

For work in jurisdictional shoreline, Bellevue Municipal Code (BMC) 20.25E.060C1 requires a technical feasibility analysis, to determine if there are other feasible alternatives to the proposal that would avoid shoreline. The following are the BMC items the feasibility analysis must address, followed by an analysis of each item.

a. Existing site conditions, including, but not limited to, topography and the proposed location of the facility, system, technique, or measure in relation to the ordinary high water mark and any critical areas on the site;

Existing site conditions within the shoreline are described and mapped in the CAR (see in particular sections 2.3.3 and 2.6.3 for description and photos of the project area near Wetland 1, which is within the shoreline jurisdiction).

b. The location of existing infrastructure necessary to support the proposed facility, system, technique, or measure;

See the 90% Project Plans for mapping of existing sewer infrastructure at and near the site.

The work is restricted to the existing easement; the alignment of the easement and the buildings to the east of the easement prevent the sewer line from being moved farther east from the shoreline/floodplain area.

c. The function or objective of the proposed facility, system, technique, or measure;

The system is a sanitary sewer system serving the residences along 158th Avenue SE. The purpose of the proposed repair is to restore the full function of the sewer system which has settled due to poor soils.

d. The level of risk to a primary structure, public facility, or public use structure or area presented by shoreline erosion, and the ability of the proposed facility, system, technique, or measure to mitigate that risk;

This project has no risk to existing houses or structures. This project is intended to reduce risk of sewer system failure by restoring the full function of the system.

e. Whether the cost of avoiding the disturbance of the shoreline area is disproportionate as compared to the environmental impact of proposed disturbance, including any continued impacts on functions and values over time; and

The only way to avoid disturbing the shoreline is to leave the sewer line in its current position within the shoreline. However, if this portion of sewer line isn't accessed for

repair, the sewer system failures would not be solved. The City would need to continue costly monthly maintenance of a system that if fully functioning would only require such maintenance every 10 years.

The project will have no negative impacts to shoreline in the long-term. All temporary impacts will be restored, and the only permanent impacts are 10 square feet of manholes in currently landscaped private back yards, which will be mitigated by adding native trees and shrubs to up to 4,000 square feet of currently degraded, undeveloped shoreline.

f. The ability of both permanent and temporary construction disturbance to be mitigated.

The site's impacts to shoreline will be fully mitigated for **no net loss of ecological function**, as described in the CAR. This project provides a good opportunity to remove extensive non-native weeds (Himalayan blackberry and reed canarygrass) that are encroaching on wetland and wetland buffer, and replace it with a multilayer, native plant community that will increase the area's value to wildlife.

Performance Standards:

Per BMC 20.25E.060C2, if no technically feasible alternative exists, then the applicant shall comply with the following design criteria (except if specific standards in 20.25E.070 [Specific Use Regulations] or 20.25E.080 [Shoreline Modifications] apply).

BMC 20.25E.060C2a. Design shall result in the least impacts to shoreline functions and values;

There will be no negative change to the shoreline functions and values from the project. All temporarily disturbed areas will be fully restored or restored and enhanced. About 10 square feet within the shoreline jurisdiction will be changed from lawn to manhole covers so that these sections of pipe can be easily accessed in the future without soil disturbance; this will be mitigated with up to 4,000 square feet of habitat enhancement.

The project has been designed to prevent future failure of the system. Leak-proof joints will be used on the pipes. Compacted pipe bedding will be placed under the pipe to prevent floatation or settling; the sewer line closest to the floodplain boundary at the southwest corner will be pile footed for further support.

b. Disturbance, including the disturbance of vegetation and soils, shall be minimized;

Disturbance of vegetation and soils will be minimized. The project will use only a small excavator to access the pipe.

c. Disturbance shall not occur in habitat used for salmonids rearing or spawning or by any species of local importance unless no other technically feasible location exists;

No work will occur in habitat for salmonids – the nearest stream is 250 feet west of the work limits (see CAR Section 2.2.1).

As described in the CAR Section 2.6.4, a few removed trees could provide habitat for birds of local importance, and some temporarily disturbed area could provide western

toad habitat. However, the work area is small and mostly limited to currently developed backyards; there are hundreds of similar trees and many acres of habitat available for these species. Also, as noted in the feasibility analysis above, no feasible alternative exists for repairing the pipe.

d. All work shall be consistent with the SMP and with applicable City of Bellevue codes and standards; and

This project will meet all applicable City of Bellevue codes and standards. The project will also meet the purpose and management policies of Urban Conservancy – Open Space portions of shoreline, as described in Section 2.4.4 of the CAR.

The project will meet all general requirements of the SMP listed in BMC 20.25E.060. This includes the following:

- No net loss of ecological function (20.25E.060B) as described in the CAR.
- Technical feasibility analysis (20.25E.060C), covered in this addendum.
- Mitigation requirements (20.25E.060D), as described in the CAR.
- Archeological resources (20.25E.060F), as covered in the cultural resource analysis prepared for the project (see Attachment B).
- Critical areas (20.25E.060G), as described in the CAR.
- Vegetation conservation and landscape standards (20.25E.060K). This includes removal of noxious species (covered in the CAR) and tree protection plans/tree retention and replanting standards (covered in the 90% design plans and arborist report for the project).
- Water quality and stormwater requirements (20.25E.060L). This project's purpose addresses potential risks to water quality from the sewer system. The construction plans include specifications including storm drain inlet protections, straw bale barriers, to meet stormwater requirements.

SMP general requirements for development (20.25E.060E), parking (20.25E.06H), public access (20.25E.060I), and signage (20.25E.060I) do not apply as the project is not a development and is on private property and on undeveloped City park land.

e. Areas of new permanent disturbance and all areas of temporary construction disturbance shall be mitigated or restored pursuant to a mitigation restoration plan meeting the requirements of subsection D of this section and evaluated consistent with the no net loss standard in subsection B of this section.

According to the Shoreline Master Program (City of Bellevue 2018), critical areas within shoreline jurisdiction are to be regulated in accordance to the provisions of the Bellevue Critical Areas Regulations. Therefore, the restoration provided for wetlands and wetland buffers (Section 2.3 of the CAR) and wildlife habitat (Section 2.6 of the CAR), and the monitoring plan (Section 4 of the CAR), which meet the Bellevue Critical Areas Regulations, have adequately addressed shoreline requirements in kind.

BMC 20.25E.070E: Specific Use Regulations – Utilities

These specific use regulations apply to utility systems, such as sewer lines. BMC20.25E.070.E2a allows routine maintenance and repair of such systems to prevent decline, lapse, or cessation of the utility. The new manhole covers would be allowable under BMC20.25E.070.E2b as a minor expansion (which includes enlargement of the permanent disturbance associated with the utility system by up to 20 percent when necessary to comply with ….changes in technology or design or changes in maintenance practice. BMC20.25E.070.E2d and E2e allow vegetation clearing if it's kept to a minimum, and requires temporary disturbance and permanent disturbance to be minimized and mitigated per City requirements (this will be done as described in the CAR).

BMC 20.25E.080: Shoreline Modifications

No modification is being proposed in the shoreline area.

4. RESTORATION/MITIGATION PLAN

CAR Overview

Section 2.3.6 of the CAR summarizes impacts to wetland and wetland buffer (see especially Table 3), and proposed mitigation and restoration. Landscaped areas will be returned to their original condition (lawn and landscaping trees/plants). Non-landscaped and wetland areas will be improved after construction by replacing non-native vegetation (Himalayan blackberry and reed canarygrass) with native trees and shrubs.

Section 3 of the CAR describes monitoring and maintenance standards that will be followed for 5 years after construction.

Addendum Updates

The restoration plan and planting list has been refined since the CAR was submitted to the City. See Attachment C for an updated drawing of the restoration plan. This plan includes a plant schedule that supersedes the plant list presented in Table 4 of the CAR.

The 90% design expands the number of planting areas from 3 to 5. The previous "Area A" (currently landscaped areas) has been split into two categories: Sod Lawn (where lawn will be placed) and Mulched Area (where mulch and tree plantings will be placed). The previous "Area B" (currently non-landscaped areas) has been split into two categories: Planting Mix A (where native trees and shrubs will be planted), and Planting Mix C (where only native shrub placement is practical). "Area C" (the small isolated Wetland 2) has been renamed Planting Mix B.

See Table A for a crosswalk of these name changes.

Table A. Comparison of Planting Areas in Critical Area Report versus 90% Design

Label in CAR (Jacobs 2022)	Label in 90% Design Drawings
Area A (Landscaped Areas)	SOD Lawn
	Wood Mulch (+ tree plantings)
Area B (Non-Landscaped Areas)	Planting Mix A (native trees and shrubs)
	Planting Mix C (native shrubs)
Area C (Wetland 2)	Planting Mix B (native trees/shrubs)

5. CLOSING

Should any questions related to this critical areas memo addendum arise, please do not hesitate to contact me by phone or email.

Sincerely,

Emily Drew

Senior Biologist

Attachments:

- Attachment A: Project Plan showing Base Flood Elevation 264 feet
- Attachment B: Cultural Resources Analysis
- Attachment C: Restoration/Mitigation Plan Drawings, 90% Design