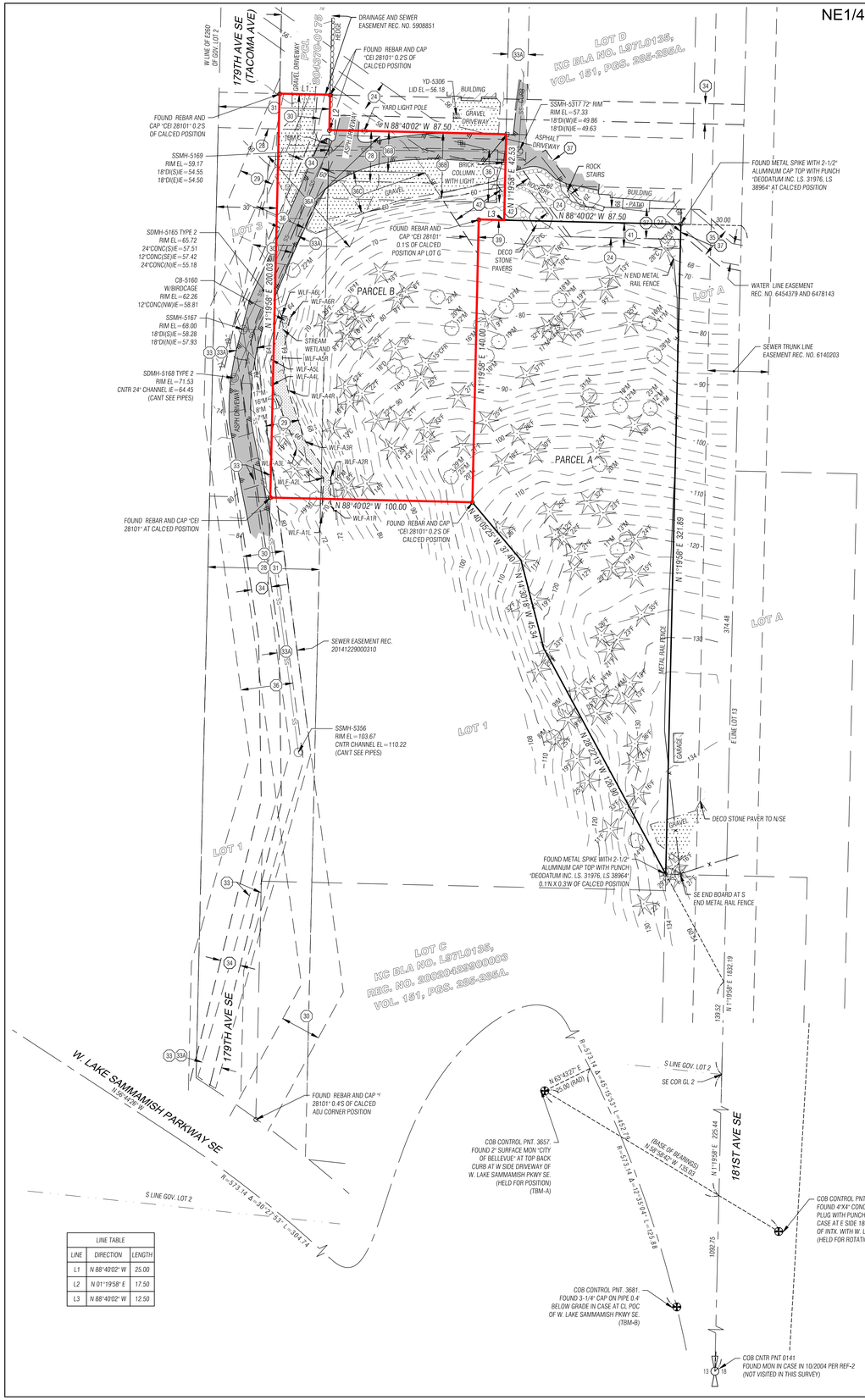
NE1/4 NE1/4 SEC. 13, TWP. 24 N., RGE. 5 E., W.M.



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N 88°40'02" W	25.00
L2	N 01°19'58" E	17.50
L3	N 88°40'02" W	12.50

LEGEND

- FOUND CORNER
- FOUND MONUMENT
- TEMPORARY BENCHMARK
- CATCH BASIN - TYPE I
- CATCH BASIN - TYPE II
- LIGHT POLE
- PARKING/YARD LIGHT
- SEWER MANHOLE
- WATER METER
- YARD DRAIN
- SHRUB
- CONIFEROUS TREE
- DECIDUOUS TREE
- ASPHALT
- FENCE LINE
- SANITARY SEWER LINE
- STORM DRAIN LINE
- ASPHALT HATCH
- CONCRETE HATCH
- DECK HATCH
- GRAVEL HATCH
- STREAM WETLAND HATCH WITHIN PROPERTY

C	CEDAR
CN	CHESTNUT
CFR	CONIFER
D	DECIDUOUS
F	FIR
H	HEMLOCK
M	MAPLE
CS	CONC SLAB
CW	CONC WALK
ST	STAIRS
WLF	OHWM STREAM WETLAND FLAG AS NOTED

EASEMENTS LEGEND

(24) WATER LINE EASEMENT REC. NO. 6451400 AMENDED REC. NO. 19990806000734.

(28) ACCESS EASEMENT REC. NO. 7305180596

(29) DRAINAGE EASEMENT REC. NO. 7412000341 (SEE EXCEPTION 29 NOTE)

(30) DRAINAGE EASEMENT REC. NOS. 7507020608 & 7507020609

(31) ACCESS EASEMENT REC. 9105241416

(33) SEWER EASEMENT REC. NO. 9309280882

(34&4) SEWER EASEMENT REC. NO. 20141229000310

(34) GAS EASEMENT PER ROS REC. NO. 9512019005

(35) UTILITY EASEMENT REC. NOS. 19990806000585 AND 19990806000586

(36) INGRESS AND EGRESS EASEMENT REC. NO. 19990806000887, MODIFIED BY REC. NO. 20130718003429

(36A) TURNAROUND EASEMENT REC. NO. 19990806000887

(36B) INGRESS AND EGRESS EASEMENT REC. NO. 20130718003429

(36C) INGRESS AND EGRESS AND PARKING EASEMENT REC. NO. 20130718003429

(37) UTILITY EASEMENT PER BLA REC. NO. 20020429900003

(39) INGRESS,EGRESS AND UTILITY EASEMENT REC. NO. 20121016001273. MODIFICATION OR AND AMENDMENT REC. NOS. 20121119001099 AND 20130718003429 (SEE PARCEL A-2)

(41) LANDSCAPE EASEMENT REC. NO. 20130718003426

(42) INGRESS, EGRESS AND UTILITY EASEMENT REC. NO. 20130718003427. (SEE LEGAL PARCEL A-3)

(43) INGRESS, EGRESS AND UTILITY EASEMENT REC. NO. 20130718003428

RESTRICTIONS OF RECORD

13. SUBJECT TO FACILITY CHARGES, IF ANY, INCLUDING BUT NOT LIMITED TO HOOK-UP, OR CONNECTION CHARGES AND LATECOMER CHARGES FOR SEWER, WATER AND PUBLIC FACILITIES OF CITY OF BELLEVUE AS RECORDED UNDER REC. NOS. 9612200938 AND 20111222000589 (SAID DOCUMENT WAS RE-RECORDED UNDER REC. NO. 20170727001075). (NOT A SURVEY MATTER).

17. SUBJECT TO RESERVATIONS AND EXCEPTIONS RESERVING AND EXCEPTING FROM SAID LANDS SO MUCH OR SUCH PORTIONS THEREOF AS ARE OR MAY BE MINERAL LANDS OR CONTAIN COAL OR IRON, AND ALSO THE USE AND THE RIGHT AND TITLE TO THE USE OF SUCH SURFACE GROUND AS MAY BE NECESSARY FOR MINING OPERATIONS AND THE RIGHT OF ACCESS TO SUCH RESERVED AND EXCEPTED MINERAL LANDS, INCLUDING LANDS CONTAINING COAL OR IRON, FOR THE PURPOSE OF EXPLORING, DEVELOPING AND WORKING THE SAME, CONTAINED IN DEED FROM NORTHERN PACIFIC RAILROAD COMPANY AS RECORDED UNDER REC. NO. 324327. (BLANKET IN NATURE - AFFECTS PARCEL B)

18. SUBJECT TO AN EASEMENT AND RIGHT OF WAY FOR LAYING AND REPAIRING OF WATER PIPE , INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN RESERVED BY STRANDVIK, A WASHINGTON CORPORATION AS RECORDED UNDER REC. NO. 2619476. (BLANKET IN NATURE-NOT PLOTTED).

19. SUBJECT TO AN EASEMENT AND RIGHT OF WAY FOR WATER PIPE TO THE OWNERS OF RECORD OF ADJACENT PROPERTY, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN AS RECORDED UNDER REC. NO. 4727576. (SAID EASEMENT DESCRIBES ONLY BLANKET INGRESS AND EGRESS EASEMENT AFFECTING SUBJECT PROPERTY IN FAVOR OF OWNERS OF PARCEL NO. 804370-0175- NOT PLOTTED). AFFECTS PARCEL B.

20. SUBJECT TO AN EASEMENT FOR LAYING WATER DRAINS OR SEWER LINES, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN AS RECORDED UNDER REC. NO. 5908851. (EASEMENT FALL UNDER ADJ. PROPERTY, PARCEL NO. 804370-0175 - PLOTTED HEREON)

21. SUBJECT TO AN EASEMENT FOR INSTALLING, CONSTRUCTING, OPERATING, MAINTAINING, REMOVING, REPAIRING, REPLACING AND USING A SEWER TRUNK LINE WITH ALL CONNECTIONS, MANHOLES AND APPURTENANCES THERETO, INCLUDING TERMS AND CONDITIONS CONTAINED THEREIN GRANTED TO THE MUNICIPALITY OF METROPOLITAN SEATTLE AS RECORDED FEBRUARY 16, 1967 UNDER REC. NO. 6140203. (PLOTTED HEREON - FALL EAST OF SUBJECT PROPERTY).

22. SUBJECT TO AN EASEMENT FOR SEWER MAINS WITH THE NECESSARY APPURTENANCES, INCLUDING TERMS AND CONDITIONS CONTAINED THEREIN GRANTED TO EASTGATE SEWER DISTRICT, A MUNICIPAL CORPORATION AS RECORDED APRIL 07, 1967 UNDER REC. NO. 6159799. (EASEMENT FALL FAR NORTH OF SUBJECT PROPERTY - NOT PLOTTED).

23. SUBJECT TO SANITARY SEWER EASEMENT (RIGHT TO ENTER SAID PREMISES TO MAKE REPAIRS, AND THE RIGHT TO CUT BRUSH AND TREES WHICH CONSTITUTE A MENACE OR DANGER TO UTILITY LINES LOCATED ON PROPERTY ADJOINING SAID PREMISES - PER TITLE REPORT), AS GRANTED BY INSTRUMENT RECORDED UNDER RECORDING NUMBER 6159800. (EASEMENT FALL FAR NORTH OF SUBJECT PROPERTY).

24. SUBJECT TO AN EASEMENT TO WATER DISTRICT NO. 97 FOR CONSTRUCTION, OPERATION, MAINTENANCE AND/OR REPAIR AND/OR REPLACEMENT OF A 6 INCH WATER LINE OR LINES AND APPURTENANCES THERETO, INCLUDING TERMS AND CONDITIONS CONTAINED THEREIN AS RECORDED DECEMBER 24, 1968 UNDER REC. NO. 6451400.. AND MODIFICATION AND/OR AMENDMENT BY INSTRUMENT REC. NO. 19990806000734. (PLOTTED HEREON)

25. SUBJECT TO AN EASEMENT FOR WATER LINE TO KING COUNTY WATER DISTRICT NUMBER 97, A MUNICIPAL CORPORATION INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN AS RECORDED UNDER REC. NO. 6454379. (PLOTTED HEREON) AFFECTS PARCEL A.

26. SUBJECT TO AN EASEMENT FOR WATER LINE TO KING COUNTY WATER DISTRICT NUMBER 97, A MUNICIPAL CORPORATION, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN AS RECORDED UNDER REC. NO. 6478143. (PLOTTED HEREON) AFFECTS PARCEL A.

27. SUBJECT TO COVENANTS, CONDITIONS AND/OR RESTRICTIONS CONTAINED IN THE DEED EXECUTED BY C. R. KELLERAN AND JEAN B. KELLERAN, HIS WIFE, DONALD E. CHANDLER, A SINGLE MAN AND ELIZABETH A. JOHNSON, INDIVIDUALLY AND AS EXECUTRIX OF THE ESTATE OF HOWARD B. JOHNSON, DECEASED AS RECORDED DECEMBER 31, 1970 UNDER REC. NO. 6728558. (NOT A SURVEY MATTER) AFFECTS PARCEL A.

28. SUBJECT TO AN EASEMENT FOR CONSTRUCTION, IMPROVEMENT, REPAIR AND MAINTENANCE A ROADWAY FOR INGRESS AND EGRESS, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN AS RECORDED UNDER REC. NO. 7305180596. (PLOTTED HEREON).

29. SUBJECT TO A RIGHT OF WAY EASEMENT FOR A DRAINAGE PIPE (42" IN DIAMETER) TO KING COUNTY, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN AS RECORDED UNDER REC. NO. 7412200341. (PLOTTED HEREON - NOTE LEGAL DESCRIPTION DID NOT FIT WITH THE MAPPED DRAINAGE LINE).

30. SUBJECT TO AN EASEMENT FOR DRAINAGE PIPE TO KING COUNTY, INCLUDING TERMS AND CONDITIONS CONTAINED THEREIN AS RECORDED UNDER REC. NOS. 7507020608 AND 7507020609. (PLOTTED HEREON).

31. SUBJECT TO INGRESS AND EGRESS EASEMENT, INCLUDING TERMS AND CONDITIONS CONTAINED THEREIN GRANTED TO RALPH H. GUDITZ, AN UNMARRIED MAN AS RECORDED MAY 24, 1991 UNDER REC. NO. 9105241416. SAID EASEMENT WAS DECREED A VALID AND PROPER CONVEYANCE OF INTEREST BY STIPULATION AND JUDGMENT UNDER KING COUNTY SUPERIOR COURT CAUSE NUMBER 01-2-27357-4 ON FEBRUARY 7, 2003, AND RECORDED UNDER RECORDING NUMBER 20030307001515. (PLOTTED HEREON).

32. SUBJECT TO AN EASEMENT FOR SANITARY SEWER PIPELINE AND ALL NECESSARY CONNECTIONS AND APPURTENANCES THERETO, GRANTED TO CITY OF BELLEVUE, A WASHINGTON MUNICIPAL CORPORATION, INCLUDING TERMS AND CONDITIONS CONTAINED THEREIN AS RECORDED UNDER REC. NO. 9207271960. A COPY OF ASSIGNMENT OF EASEMENTS RECORDED UNDER RECORDING NO. 20141229000310. (PLOTTED HEREON)

33. SUBJECT TO AN EASEMENT FOR SANITARY SEWER PIPELINE AND LINES AND ALL NECESSARY CONNECTIONS AND APPURTENANCES THERETO, GRANTED TO CITY OF BELLEVUE, A WASHINGTON MUNICIPAL CORPORATION, INCLUDING TERMS AND CONDITIONS CONTAINED THEREIN AS RECORDED UNDER REC. NO. 9309280882. NOTE A COPY OF ASSIGNMENT OF EASEMENTS RECORDED UNDER RECORDING NO. 20141229000310.

34. SUBJECT TO THE CONDITIONS, NOTES, EASEMENTS, PROVISIONS AND/OR ENCROACHMENTS CONTAINED OR DELINEATED ON THE FACE OF THE SURVEY RECORDED UNDER REC. NO. 9512019005. (GAS EASEMENT PLOTTED HEREON)

35. SUBJECT TO AN EASEMENT FOR UNDERGROUND UTILITIES AND ALL NECESSARY CONNECTIONS AND APPURTENANCES THERETO, INCLUDING TERMS AND CONDITIONS CONTAINED THEREIN GRANTED TO BRADLEY R KELLERAN AND LINDA I. KELLERAN AS RECORDED UNDER REC. NO. 19990806000885 AND 19990806000886. (PLOTTED HEREON - FALL EAST OF SUBJECT PROPERTY) AFFECTS: PARCEL B

36. SUBJECT TO INGRESS AND EGRESS EASEMENT, INCLUDING TERMS AND CONDITIONS CONTAINED THEREIN AS GRANTED TO BRUCE R KELLERAN AND REBECCA J KELLERAN, HIS WIFE AS RECORDED UNDER REC. NO. 19990806000887 . SAID INSTRUMENT CONTAINS PROVISIONS FOR BEARING THE COST OF MAINTENANCE, REPAIR OR RECONSTRUCTION OF THE RIGHT OF WAY BY THE USERS AND MODIFICATION AND/OR AMENDMENT BY REC. NO. 20130718003429. (PLOTTED HEREON).

37. SUBJECT TO THE TERMS, COVENANTS, CONDITIONS, RESTRICTIONS, EASEMENTS, BOUNDARY DISCREPANCIES AND ENCROACHMENTS AS CONTAINED IN RECORDED LOT LINE ADJUSTMENT (BOUNDARY LINE REVISIONS) AS RECORDED UNDER REC. NO. 20020429900003. (UTILITY EASEMENT PLOTTED HEREON).

38. SUBJECT TO THE CONDITIONS, NOTES, EASEMENTS, PROVISIONS AND/OR ENCROACHMENTS CONTAINED OR DELINEATED ON THE FACE OF THE SURVEY RECORDED UNDER REC. NO. 20090527900001. (NOTHING TO PLOT).

39. SUBJECT TO THE EASEMENT AGREEMENT FOR INGRESS, EGRESS AND UTILITY AND THE TERMS AND CONDITIONS THEREOF BETWEEN BRAD R. AND LINDA L. KELLERAN, HUSBAND AND WIFE AND CITY OF BELLEVUE AS RECORDED UNDER REC. NO. 20121016001273 AND MODIFICATION AND/OR AMENDMENT BY REC. NOS. 20121119001099 AND 20130718003429.

40. SUBJECT TO THE TERMS, COVENANTS, CONDITIONS, RESTRICTIONS, EASEMENTS, BOUNDARY DISCREPANCIES AND ENCROACHMENTS AS CONTAINED IN RECORDED LOT LINE ADJUSTMENT (BOUNDARY LINE REVISIONS) AS RECORDED UNDER REC. NO. 20130528900003. (NOTHING TO PLOT)

41. SUBJECT TO LANDSCAPE EASEMENT TO CHARLES CAMERON PELLY AND AMY KELLERAN PELLY, HUSBAND AND WIFE, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN AS RECORDED UNDER REC. NO. 20130718003426. (PLOTTED HEREON). AFFECTS PARCEL A.

42. SUBJECT TO AN EASEMENT AGREEMENT FOR INGRESS, EGRESS AND UTILITY AND THE TERMS AND CONDITIONS THEREOF BETWEEN BRAD R. AND LINDA L. KELLERAN, HUSBAND AND WIFE AS RECORDED UNDER REC. NO. 20130718003427. (PLOTTED HEREON).

43. SUBJECT TO AN EASEMENT FOR INGRESS, EGRESS AND UTILITY ACCESS, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN IN FAVOR OF BRAD R. AND LINDA L. KELLERAN, HUSBAND AND WIFE AS RECORDED UNDER REC. NO. 20130718003428. (PLOTTED HEREON). AFFECTS: PARCEL A

44. SUBJECT TO INGRESS, EGRESS AND UTILITIES EASEMENT, INCLUDING TERMS AND CONDITIONS CONTAINED THEREIN GRANTED TO CHARLES CAMERON PELLY AND AMY KELLERAN PELLY, HUSBAND AND WIFE AS RECORDED UNDER REC. NO. 20130718003429. (PLOTTED HEREON)

0 30 60

SCALE: 1" = 30'

MERIDIAN

WASHINGTON STATE COORDINATE SYSTEM - NORTH ZONE (NAD83/2011) PER CITY OF BELLEVUE SURVEY STATION DATA CARDS NO. 1935 AND 3657.

VERTICAL DATUM

NAVD 88
BASED ON RAPID STATIC GPS MEASUREMENTS WITH BASELINES COMPUTED FROM CORS MONUMENTS.

BENCHMARKS

TBM-A
COB CONTROL PNT. 3657.
2" SURFACE MON "CITY OF BELLEVUE" AT TOP BACK CURB AT W SIDE DRIVEWAY OF W. LAKE SAMMAMISH PKWY SE.
ELEV. = 144.77'

TBM-B
COB CONTROL PNT. 3681.
FOUND 3-1/4" CAP ON PIPE 0.4' BELOW GRADE IN CASE AT CL POC OF W. LAKE SAMMAMISH PKWY SE
ELEV. = 149.07'

TBM-C
MAG AND WASHER "HGS TRAVERSE LS #38984" 2.9' N OF SSMH-5169 2.5' S OF N EDGE ASPHALT DRIVEWAY AND 4.3' E OF INTX. WITH N EDGE GRAVEL DRIVEWAY.
ELEV. = 59.02'

NOTES

1. *A 5" ELECTRONIC TOTAL STATION WAS USED FOR THIS FIELD TRAVERSE SURVEY. ALL EQUIPMENT HAS BEEN MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES. ACCURACY MEETS OR EXCEEDS W.A.C. 332-130-090.*
2. *ALL TITLE INFORMATION SHOWN ON THIS SURVEY WAS EXTRACTED FROM FIRST AMERICAN TITLE COMPANY COMMITMENT NUMBER 4209-3327238, DATED SEPTEMBER 17, 2019. MEAD GILMAN AND ASSOCIATES HAS CONDUCTED NO INDEPENDENT TITLE RESEARCH, AND HAS RELIED WHOLLY ON THE TITLE COMPANY'S REPRESENTATIONS OF THE TITLE'S CONDITION TO PREPARE THIS SURVEY AND QUALIFIES THE MAP'S ACCURACY AND COMPLETENESS TO THAT EXTENT.*
3. *THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE ON THE DATE INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITION EXISTING AT THAT TIME. ALL CONTROL INDICATED AS "FOUND" WAS RECOVERED FOR THIS PROJECT IN OCTOBER 19, 2020, UNLESS OTHERWISE NOTED.*
4. *PROPERTY AREA*
   PARCEL A: 22,935 S.F.
   PARCEL B: 19,221 S.F.
5. *ALL DISTANCES FEET.*
6. *UNDERGROUND UTILITIES WERE LOCATED BASED ON SURFACE EVIDENCE (I.E. PAINT MARKS, SAW CUTS IN PAVEMENT, COVERS, LIDS, ETC.). THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, ELEVATION, AND SIZE OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.*
7. *TREE SIZES AND SPECIES WERE DETERMINED TO THE BEST OF OUR ABILITY. MEAD GILMAN AND ASSOCIATES DOES NOT WARRANT THE ACCURACY OF THE SIZE AND SPECIES OF ANY TREES SHOWN HEREON, ALL TREE SIZES SHOULD BE VERIFIED BY A TRAINED ARBORIST.*

LEGAL DESCRIPTION

PARCEL A:

PARCEL A-1:
LOT 2, CITY OF BELLEVUE BOUNDARY LINE ADJUSTMENT NUMBER 13-104059-LW, RECORDED UNDER RECORDING NUMBER 20130528900003, IN KING COUNTY, WASHINGTON;

PARCEL A-2:
A NON-EXCLUSIVE EASEMENT FOR INGRESS, EGRESS AND UTILITIES AS DISCLOSED BY INSTRUMENTS RECORDED UNDER RECORDING NUMBERS 19990806000887, 20121016001273, AND 20121119001099.

PARCEL A-3:
A NON-EXCLUSIVE EASEMENT FOR INGRESS, EGRESS AND UTILITIES OVER THAT PORTION OF LOT D, KING COUNTY BOUNDARY LINE ADJUSTMENT NO. L97L0135, RECORDED UNDER RECORDING NUMBER 20020429900003, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT D; THENCE SOUTH 88°40'02" EAST ALONG THE SOUTH LINE THEREOF A DISTANCE OF 18.19 FEET; THENCE NORTH 54°54'01" WEST A DISTANCE OF 21.88 FEET TO A POINT ON THE WEST LINE OF SAID LOT D THAT IS 12.16 FEET NORTHERLY OF SAID SOUTHWEST CORNER; THENCE SOUTH 01°19'58" WEST ALONG THE WEST LINE OF SAID LOT D A DISTANCE OF 12.16 FEET TO THE POINT OF BEGINNING.

PARCEL B:

NEW LOT G, KING COUNTY BOUNDARY LINE ADJUSTMENT NUMBER L97L0135, RECORDED UNDER RECORDING NUMBER 20020429900003, IN KING COUNTY, WASHINGTON.

REFERENCES

1. *KC BLA NO. L97L0135, REC. NO. 20020429900003, VOL. 151, PGS. 285-285A.*
2. *COB BLA NO. 13-104059-LW, REC. NO. 20130528900003, VOL. 298, PGS 100-103.*
3. *APPROXIMATE WETLAND FLAG LOCATION MAP "179TH LANE SE" PREPARED BY WETLAND RESOURCES, INC. DATED 10-19-2020.*

#	REVISION	DATE
1	REVISION TEXT GOES HERE	DATE
2		DATE
3		DATE
4		DATE
5		DATE
6		DATE

CHRISTOPHER SHANE HUNTER — STATE OF WASHINGTON — 35145 — REGISTERED PROFESSIONAL LAND SURVEYOR

4/6/23

MEAD GILMAN LAND SURVEYORS
P.O. BOX 289, WOODINVILLE, WA 98072 | PHONE: (425) 486-1252 | WWW.MEADGILMAN.COM

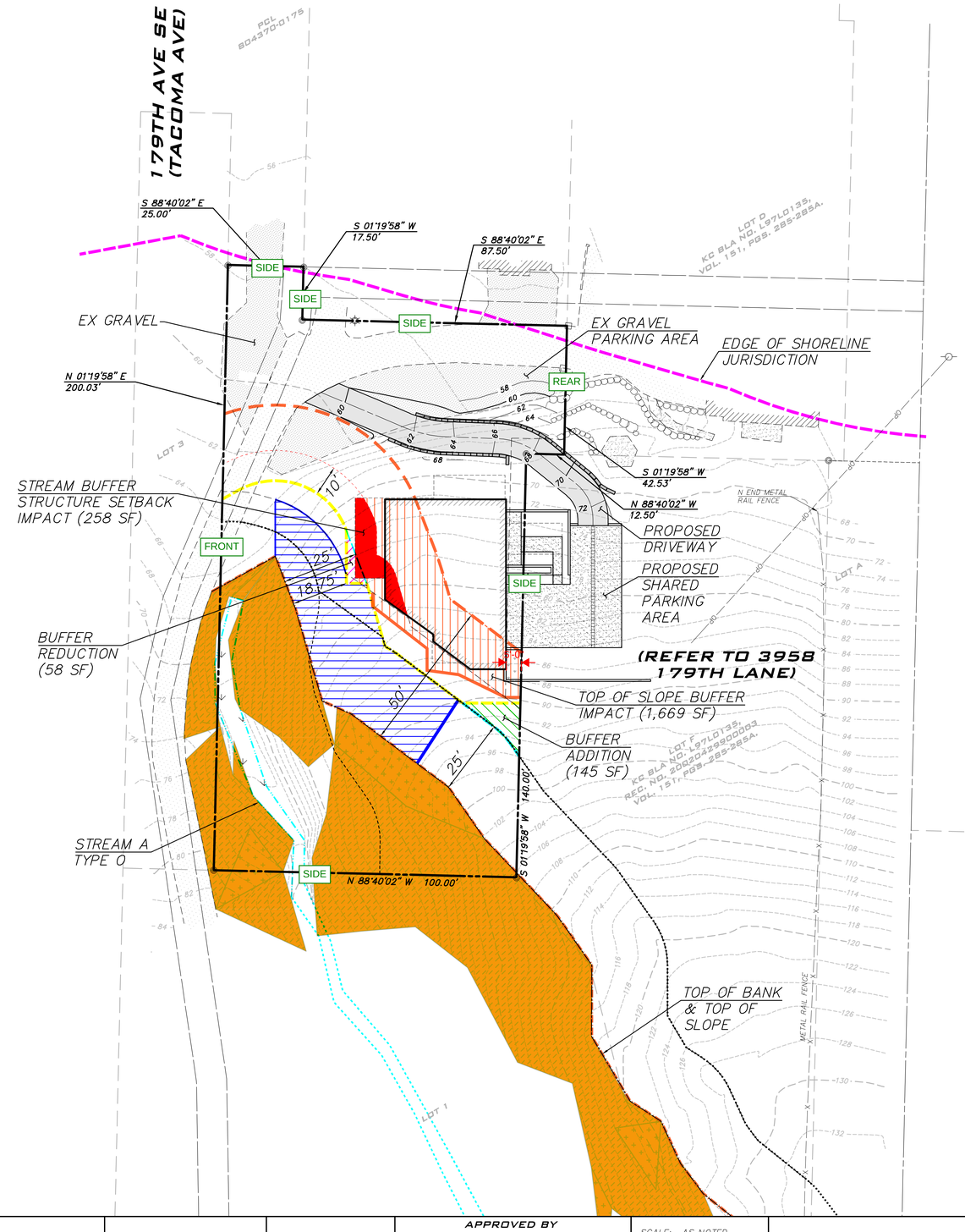
3958 179TH LANE
BOUNDARY & TOPOGRAPHIC SURVEY

SAMM VISTA, LLC
2100 124TH AVE. NE, SUITE 120
BELLEVUE, WA 98005

DRAWN BY:	LSD
REVIEWED BY:	CSB
DATE:	11-02-2020
JOB NO.	20130
SHEET	1 OF 1

3938 179TH LN SE

SCALE: 1" = 20'
0 10 20 40

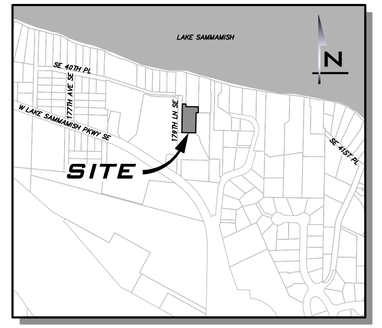


CRITICAL AREA LEGEND

- STREAM
- STREAM (ESTIMATED)
- TOP OF BANK/TOP OF SLOPE
- STANDARD STREAM BUFFER (FROM TOP OF BANK)
- 10' STREAM BUFFER STRUCTURE SETBACK
- FINAL STREAM and steep slope buffer
- TOP OF SLOPE STANDARD BUFFER
- EDGE OF SHORELINE JURISDICTION
- STEEP SLOPE AREAS
- BUFFER ENHANCEMENT
- BUFFER REDUCTION
- BUFFER ADDITION
- STREAM STRUCTURE SETBACK IMPACTS

PROPOSED FEATURES LEGEND

- BOUNDARY
- RIGHT-OF-WAY
- LOT LINE
- CURB FLOWLINE
- SIDEWALK
- CENTER LINE
- SAWCUT
- EASEMENT
- BUILDING FOOTPRINT
- BUILDING OVERHANG
- BUILDING ROOFLINE
- BUILDING SETBACK (BSBL)
- FENCE
- GUARDRAIL
- 190 10' PROPOSED CONTOURS
- 192 2' PROPOSED CONTOURS
- FILL ROCKERY
- CUT ROCKERY
- GRAVEL
- ASPHALT PAVEMENT
- CONCRETE
- RIPRAP
- PAVERS



VICINITY MAP

SCALE: 1" = 500'

PROJECT TEAM

OWNER
CAMTINEY, LLC
2100 124TH AVE NE, SUITE 120
BELLEVUE, WA 98005
(425) 289-1640
CONTACT: ELLIOTT SEVERSON

ARCHITECT
IKA/SCHELL ARCHITECTS
501 1ST STREET
LA CONNER, WA 98257
(360) 375-0551
CONTACT: JAKE SCHELL

CIVIL ENGINEER
BLUELINE
25 CENTRAL WAY, SUITE 400
KIRKLAND, WA 98033
(425) 250-7224
CONTACT: TODD A. OBERG, PE

SOILS ENGINEER
EARTH SOLUTIONS NW, LLC
1805 136TH PL NE
BELLEVUE, WA 98005
(425) 449-4704
CONTACT: RAY COGLAS

SURVEYOR
MEAD GILMAN LAND SURVEYORS
PO BOX 289
WOODINVILLE, WA 98072
(425) 486-1252
CONTACT: CHRIS BARNES

ENVIRONMENTAL
WETLAND RESOURCES, INC.
9505 19TH AVENUE SE, STE 106
EVERETT, WA 98208
(425) 337-3174
CONTACT: EAMONN COLLINS

PROJECT INFORMATION

PARCEL NUMBER:	804370-0182
SITE AREA:	19,222 SF (0.441 AC)
TOTAL NUMBER OF LOTS:	1
ZONING:	R5
PROPOSED USE:	SINGLE FAMILY RESIDENTIAL
SEWAGE DISPOSAL:	CITY OF BELLEVUE
WATER SYSTEM:	CITY OF BELLEVUE
SETBACKS:	20' FRONT, 5/10' SIDE, 20' REAR

LOT COVERAGE BY STRUCTURES	
BUILDING FOOTPRINT	1,915 SF
FRONT PORCH	88 SF
DECKS/STAIRS>30" ABOVE GRADE	0 SF
TOTAL COVERAGE	2,003 SF
GROSS LOT AREA	19,222 SF
CRITICAL AREAS W/ BUFFERS	12,740 SF
NET LOT AREA	6,482 SF
PERCENT LOT COVERAGE	30.9 %
MAXIMUM COVERAGE R-5 ZONE	40.0 %

IMPERVIOUS COVERAGE	
NET LOT AREA:	6,482 SF
55% MAX IMPERVIOUS PER ZONING:	3,565 SF
PROPOSED RESIDENCE WITH ROOF EAVES:	2,410 SF
DRIVEWAY	878 SF
WALKS/PATIO/PORCH	93 SF
TOTAL:	3,381 SF
PERCENTAGE OF LOT SF:	52.2 %

GREENSCAPE CALCULATION	
AREA IN FRONT YARD SETBACK:*	2,457 SF
LANDSCAPE AREA IN FRONT YARD:	1,758 SF
PERCENT GREENSCAPE REQUIRED:	50 %
PERCENT GREENSCAPE PROVIDED:	71.6 %

*Defined as southern edge of 179th main access easement to 20' south thereof.

NO	DATE	BY	APPR	REVISIONS

BLUELINE

25 CENTRAL WAY, SUITE 400
KIRKLAND, WA 98033
P: 425.216.4051 F: 425.216.4052
WWW.THEBLUELINEGROUP.COM

APPROVED BY

SCALE: AS NOTED
PLOT DATE: 9/27/2023
TODD A. OBERG, PE — PROJECT MANAGER
JEREMY EPLEY, PE — DESIGNED BY
LEE M. TOMKINS — DRAWN BY

3938 179TH LN SE
CITY OF BELLEVUE, WASHINGTON

UTILITY GRID # XX

SITE PLAN B

JOB NUMBER: 20-213

SEC 13 TWP 24 RGE 5E | SHT 1 OF 1

Sep 27, 2023 - 4:32pm - User: jeremy
G:\Projects\2021\Dwg\Model & Storm\Building Permit Work\Exhibits\SITE PLAN B - WEST.dwg

Earth Solutions NW LLC

Geotechnical Engineering
Construction Observation/Testing
Environmental Services

GEOTECHNICAL ENGINEERING STUDY
PROPOSED SINGLE-FAMILY RESIDENCE
3938 – 179TH LANE SOUTHEAST
BELLEVUE, WASHINGTON

ES-2861.05

15365 N.E. 90th Street, Suite 100 Redmond, WA 98052
(425) 449-4704 Fax (425) 449-4711
www.earthsolutionsnw.com

PREPARED FOR

SAMM VISTA, LLC

March 23, 2023
Updated November 6, 2023

11/06/2023

_____
Henry T. Wright, P.E.
Associate Principal Engineer

GEOTECHNICAL ENGINEERING STUDY
PROPOSED SINGLE-FAMILY RESIDENCE
3938 – 179TH LANE SOUTHEAST
BELLEVUE, WASHINGTON

ES-2861.05

Earth Solutions NW, LLC
15365 Northeast 90th Street, Suite 100
Redmond, Washington 98052
Phone: 425-449-4704 | Fax: 425-449-4711
www.earthsolutionsnw.com

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

Earth Solutions NW LLC
Geotechnical Engineering, Construction
Observation/Testing and Environmental Services

March 23, 2023
Updated November 6, 2023
ES-2861.05

Samm Vista, LLC
2100 – 124th Avenue Northeast, Suite 120
Bellevue, Washington 98005

Attention: Elliott Severson

Dear Elliott:

Earth Solutions NW, LLC (ESNW) is pleased to present this report titled "Geotechnical Engineering Study, Proposed Single-Family Residence, 3938 – 179th Lane Southeast, Bellevue, Washington".

Current plans include constructing a single-family residence within the northern portion of the subject site. We understand a minimum reduced buffer of 18.75 feet will be established from the stream bank. Based on the sloped topography at the subject site, the proposed structure and shared driveway will require excavations of up to about 10 feet on the south side of the building. Temporary shoring and permanent retaining walls will be constructed to support the proposed excavations.

Based on the results of our study, the proposed residential structure can be supported on a conventional foundation system bearing on competent native soil, recompacted native soil, or structural fill. Competent soils suitable for support of foundations should be encountered beginning at depths of between two to five feet below existing grades across the majority of the building foundation areas.

Project mitigation measures to provide minimum necessary impact to the critical areas will include Best Management Practice (BMP) measures such as silt fencing along the perimeter of development area, straw wattles, interceptor swales, stormwater collection tanks, covering soil stockpiles, and restoring and improving disturbed areas. We recommend not completing grading activities during the wet season.

This report provides geotechnical recommendations for the proposed project. The opportunity to be of service to you is appreciated. If you have any questions regarding the content of this geotechnical engineering study, please call.

Sincerely,

EARTH SOLUTIONS NW, LLC

Henry T. Wright, P.E.
Associate Principal Engineer

cc: Atwell, LLC
Attention: Jake Drake

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GEOTECHNICAL ENGINEERING STUDY
PROPOSED SINGLE-FAMILY RESIDENCE
3938 – 179TH LANE SOUTHEAST
BELLEVUE, WASHINGTON

ES-2861.05

INTRODUCTION

General

This geotechnical engineering study was prepared for the proposed single-family residence to be constructed north of West Lake Sammamish Parkway Southeast, on the east side of 179th Lane Southeast, in Bellevue, Washington. This study has been updated to reflect recent updates to the site plans and City of Bellevue comments. As part of this study, we performed the following:

- Review of geotechnical information previously prepared for the subject site.
- Engineering analyses and recommendations for the proposed development.
- Preparation of this report.

Project Description

Based on the referenced plans, the site will be developed with a single-family residential structure, a shared driveway, and associated improvements. Based on review of the referenced site plans, grading activities will include excavations of up to 10 feet and fills of up to about 5 feet. A combination of temporary shoring walls and permanent retaining walls will be necessary to support the proposed excavations. We understand soldier piles will be utilized for the temporary shoring and permanent retaining walls along the south side of the lot. Site improvements will also include underground utility installations.

We understand the proposed residential structure will consist of relatively lightly loaded wood framing supported on conventional foundations. Based on our experience with similar developments, we estimate wall loads on the order of one to two kips per linear foot and slab-on-grade loading of 150 pounds per square foot (psf).

If the above design assumptions are incorrect or change, ESNW should be contacted to review the recommendations in this report. ESNW should review the final design to verify the geotechnical recommendations provided in this report have been incorporated into the plans.

Surface

The subject site is located north of West Lake Sammamish Parkway Southeast on the east side of 179th Avenue Southeast in Bellevue, Washington, as illustrated on the Vicinity Map (Plate 1). The site consists of one residential tax parcel (King County parcel number 8043700182). The site currently consists of undeveloped wooded land through the majority of the site; a rockery and gravel driveway is located within the northwest portion of the site. Vegetation of the site consists of mature trees, saplings, and ivy ground cover. A stream is present along the western margins of the property. The subject site is bordered to the north and south by residential structures, to the east by a vacant property, and to the west by 179th Avenue Southeast.

The topography of the site consists of a moderate to steep north descending slope with an average gradient of approximately 34 percent across a vertical relief of 46 feet, as well as a steep west descending slope through the southwesterly portions of the site with an average gradient of up to 50 percent across a vertical relief of 25 feet. The western steep slope descends to the stream. The Subsurface Exploration Plan (Plate 2) illustrates the approximate limits and local topography of the property.

Slope Reconnaissance

During our fieldwork, we performed a visual slope reconnaissance across the site. The main focus of our reconnaissance was to identify signs of instability or erosion hazards along the site slopes. The typical instability indicators include such features as head scarps, tension cracks, hummocky terrain, groundwater seeps along the surface and erosion features such as gulleys and rills. During the slope reconnaissance, no signs of recent, erosion or slope instability were observed. In general, based on the slope reconnaissance, stability of the slope areas of the property can be characterized as good. The surficial stability (erosion) of the naturally vegetated steep slope areas immediately adjacent to the stream channel can be characterized as moderate. The topography of the steep slope area through the western portions of the site is associated with the stream channel along the western margins of the site, and appeared typical for this type of feature.

Slope Stability Analyses

As part of our study, we completed slope stability analyses through three representative cross-sections; cross-section locations are illustrated on the Subsurface Exploration Plan (Plate 2). The slope stability analyses were completed for static and seismic for both the existing and proposed conditions. The results of the slope stability analyses indicate adequate safety factors of greater than 1.5 and 1.15 for static and seismic, respectively, and also indicate negligible effects on the safety factors for the proposed conditions. A summary of the slope stability analyses is provided below; the results of the slope stability analyses are provided with this report.

Slope Stability Cross-Section A-A'		
	Existing Condition	Proposed Condition
Static Factor-of-Safety	2.015	2.046
Seismic Factor-of-Safety	1.177	1.227

Slope Stability Cross-Section B-B'		
	Existing Condition	Proposed Condition
Static Factor-of-Safety	2.146	1.997
Seismic Factor-of-Safety	1.283	1.187

Slope Stability Cross-Section C-C'		
	Existing Condition	Proposed Condition
Static Factor-of-Safety	2.040	2.003
Seismic Factor-of-Safety	1.195	1.185

It should be noted that the difference in factors-of-safety between the existing and proposed conditions for cross-section B-B' is due primarily to the method used for modeling reinforced concrete retaining walls in the slope stability program; the actual foundation retaining wall will be structurally designed to retain the soil and slope with adequate factors-of-safety.

Subsurface

As part of the subsurface exploration, five test pits and two borings were advanced throughout accessible portions of the site for purposes of assessing soil and groundwater conditions. Please refer to the boring and test pit logs provided in Appendix A for a more detailed description of the subsurface conditions.

Site Soil

Topsoil was observed to an average depth of 12 to 24 inches. Underlying the topsoil, medium dense to dense silty sand with gravel (Unified Soil Classification SM) was observed with increasing coarse sand and gravel content with depth extending to depths of approximately 15 to 18 feet below existing grades underlain by medium stiff to hard silt and clay with very dense silty sand observed at depths of 35 to 40 feet below existing grades. Overall soil relative density generally increased with depth.

Geologic Mapping

According to the referenced geologic map, soil across the site and surrounding areas consists of older alluvial deposits. Soil conditions observed at the test locations generally correlate with the referenced geologic map.

Groundwater

The groundwater table was observed at the boring locations at depths of approximately 35 to 40 feet below existing grades. Groundwater seepage was not observed within the test pit excavations; however, perched seepage may be encountered during the deeper site excavations. Groundwater seepage rates and elevations fluctuate depending on many factors, including precipitation duration and intensity, the time of year, and soil conditions. In general, groundwater elevations and flow rates are higher during the wetter, winter months.

CRITICAL AREAS ASSESSMENT (BCC 20.25H)

As part of this geotechnical engineering study, the referenced chapter of the Bellevue City Code was reviewed. Per the Bellevue City Code requirements, the following topics related to development plans and site conditions are addressed.

20.25H.125 Performance Standards – Landslide Hazards and Steep Slopes

ESNW has participated in site design discussions with the project team throughout the project design process. The referenced plans reflect the result of our work to comply with the City of Bellevue code requirements in a manner which minimizes potential impacts to site critical areas while maintaining the integrity of the project goals.

A. Based on the referenced plans, the structure has been designed to minimize alterations, to the extent feasible, to the natural contour of the slope by building vertically and designing the foundations to be tiered where possible to conform to the existing topography.

B. The lot and structure have been aligned in a manner to minimize impacts to the steep slope areas and to preserve the stream and stream bank.

C. Based on our understanding of the project, the proposed development will not result in greater risk or a need for increased buffers on neighboring properties. Please see attached slope stability analyses. Based on the results of our slope stability analyses, the proposed development will result in negligible changes to factors-of-safety.

D. Based on review of the referenced plans and discussions with the project team, retaining walls have been used where possible to maintain the existing natural slope area.

E. Based on review of the referenced plans and discussions with the project team, building foundation walls will be utilized as retaining walls where possible in lieu of freestanding retaining devices.

F. Based on review of the referenced plans, the proposed project will generally utilize stepped cuts to establish the level building pad and garage alignments. Piled deck support structures were considered, however, are not technically advantageous for the proposed project.

G. Based on our understanding of the proposed project, vegetation will be restored within disturbed areas of the site. Temporary disturbance will be mitigated by applying best management practices including erosion control measures such as silt fencing, straw, straw wattles, and surface water control measures such as swales and check dams, as necessary.

20.25H.140 Critical Areas Report – Additional Provisions for Landslide Hazards and Steep Slopes

A. Based on the results of our investigation, no coal mine hazard areas are present at or adjacent to the subject site.

B. This report should be considered part of the complete submittal package with regard to critical areas report requirements.

1. Current project plans and topographic survey have been reviewed by ESNW and are provided within the overall submittal package.

2. Soil conditions are described in the *Subsurface Conditions* section of this report.

3. The planned development activities will involve grading and construction of a single-family residential structure with associated improvements within a parcel containing steep slope hazard areas, a landslide hazard area, and "Type O" stream. The project has been designed to minimize impacts to the existing site topography and will not impact the stream and stream bank (steep slope and landslide hazard area). Soldier piles will be utilized to support the proposed excavations along the south side of the building. As previously described, the slopes exhibit good stability. The proposed development activity is feasible in our opinion, and, based on the results of our slope stability analyses, will not decrease stability of the site or surrounding properties. However, the geotechnical engineer should be onsite during site development activities to confirm stability and provide supplement recommendations, as necessary.

4. We understand a minimum buffer of 18.75 feet will be established from the stream bank.

20.25H.145 Critical Areas Report – Approval of Modification

ESNW completed slope stability analyses using the Slope/W 3.0 software (see attached). The slope stability analyses included an analyses of existing conditions and proposed conditions. The stability analyses for static and seismic conditions reveals acceptable factors-of-safety for the development condition of greater than 1.5 for static and 1.15 for seismic. Based on the results of our stability analysis, the proposed grading and use of foundation walls as retaining walls will improve surficial stability of the project area resulting in negligible changes to factors-of-safety for both static and seismic conditions. The results of the slope stability analysis are provided with this report.

a. Based on the results of our slope stability analysis, the proposed development will not increase the threat of the geological hazard to the adjacent properties over conditions that would exist if the provisions of the code were not modified.

b. Based on our understanding of the project, the proposed development will not adversely impact other critical areas. The proposed project will maintain a buffer from the stream and stream bank.

c. Based on the results of the slope stability analyses, the proposed development is designed so that the hazard to the project is eliminated or mitigated to a level equal to or less than would exist if the provisions of this part were not modified.

d. Based on the results of the slope stability analyses, the proposed development is safe as designed and under anticipated conditions.

C. Based on the results of the slope stability analyses, modification of the steep slope hazard critical areas and buffers will have no adverse impacts on stability of any adjacent slopes, and will not impact stability of any existing structures.

D. Based on discussions with the project team and review of the project plans, the proposed development complies with our recommendations. ESNW should observe initial site disturbance activities and site grading activities to provide supplement recommendations, as necessary.

Steep Slope Hazard Areas

With respect to steep slope hazard areas, section 20.25H.120 of the Bellevue Municipal Code defines steep slope hazards as those areas containing slopes inclined at 40 percent or more with a vertical elevation change of at least 10 feet and exceed 1,000 square feet of area. Two steep slope hazard areas have been identified within and adjacent to the subject property, a west facing slope which descends to the stream and a north facing slope at the northern edge of the property; majority of the steep slope hazard areas consist of naturally occurring slopes, however, the steep slope hazard area along the northern edge of the property has been created by past grading activities associated with the adjacent gravel parking area and driveway. Based on review of the referenced plans and topography survey, we estimate the maximum slope gradient to range up to approximately 50 percent across a vertical relief of approximately 25 feet. Based on soil conditions and slope reconnaissance, in our opinion, the steep slope areas ng slope exhibits good global stability. Surficial stability (erosion) of the naturally vegetated steep slope areas immediately adjacent to the stream channel can be characterized as moderate. The observed stream channel and related stability appeared typical for this type of feature.

Slope stability analyses have been completed within representative site cross-sections for both the existing and proposed site conditions; the cross-section locations are illustrated on the Subsurface Exploration Plan (Plate 2) and the slope stability results are provided as part of this report. Based on the results of the slope stability analyses, the site slopes exhibit adequate safety factors for both static and seismic conditions and the proposed conditions will have a negligible impact on the slope stability.

Landslide Hazards

With respect to landslide hazards, section 20.25H.120 of the Bellevue Municipal Code defines landslide hazards as "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 ground water 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."

Based on the potential for surficial instability (erosion) within the steep slope areas immediately adjacent to the stream channel, the steep slope areas adjacent to the stream classify as landslide hazards as defined by the Bellevue Municipal Code. As previously described in the *Slope Reconnaissance* section of this study, no signs of recent instability were observed and the overall global stability of the slope areas can be characterized as good. However, in our opinion, the steep slope areas immediately adjacent to the stream present a moderate susceptibility to surficial erosion.

DISCUSSION AND RECOMMENDATIONS

General

Based on the results of our study, in our opinion, construction of the proposed residential structure at the subject site is feasible from a geotechnical standpoint. The primary geotechnical considerations associated with the proposed development include temporary excavations and shoring, foundation support, retaining walls, minor grading, and temporary erosion and sediment control.

Current plans include constructing the proposed structure within the northern portion of the subject site. We understand a minimum buffer of 18.75 feet will be established from the stream bank. Based on the sloped topography at the subject site, the proposed structure and shared driveway will require excavations of up to 10 feet on the south side of the building. Temporary shoring and permanent retaining walls will be constructed to support the proposed excavations.

Based on the results of our study, the proposed residential structure can be supported on a conventional foundation system bearing on competent native soil, recompacted native soil, or structural fill. Competent soils suitable for support of foundations should be encountered beginning at depths of between two to five feet below existing grades across the majority of the building foundation areas.

Project mitigation measures to provide minimum necessary impact to the critical areas will include Best Management Practice (BMP) measures such as silt fencing along the perimeter of development area, straw wattles, interceptor swales, stormwater collection tanks, covering soil stockpiles, and restoring and improving disturbed areas. We recommend not completing grading activities during the wet season.

Site Preparation and Earthwork

Based on review of the referenced site plans, grading activities will include excavations of up to 10 feet and fills of up to 5 feet. A combination of temporary shoring walls and permanent retaining walls will be necessary to support the proposed excavations. Prior to grading operations, erosion control measures should be implemented.

Temporary Erosion Control

The following temporary erosion control measures should be considered:

- Temporary construction entrances and drive lanes, consisting of at least six inches of quarry spalls, should be considered to both minimize off-site soil tracking and provide a stable access entrance surface. Placing geotextile fabric underneath the quarry spalls will provide greater stability if needed.

- Silt fencing should be placed around appropriate portions of the site perimeter.

- When not in use, soil stockpiles should be covered or otherwise protected to reduce the potential for soil erosion, especially during periods of wet weather.

- Temporary measures for controlling surface water runoff, such as interceptor trenches, sumps, or swales, should be installed prior to beginning and concurrent with earthwork activities.

- Surface water should not be directed to or dispersed over steeply sloped areas.

- Dry soils disturbed during construction should be wetted to minimize dust and airborne soil erosion.

- When appropriate, permanent planting or hydroseeding will help to stabilize site soils.

Additional Best Management Practices, as specified by the project civil engineer and indicated on the plans, should be incorporated into construction activities. Temporary erosion control measures may be modified during construction as site conditions require, as approved by the site erosion control lead.

In-Situ Soils

Based on the conditions encountered during our fieldwork, the site soils will generally have a moderate to high sensitivity to moisture. During periods of dry weather, the on-site soils should generally be suitable for use as structural fill, provided the moisture content is at or near the optimum level at the time of placement. Successful placement and compaction of the on-site soils during periods of precipitation will be difficult. If the on-site soils cannot be successfully compacted, the use of an imported soil may be necessary. Imported soil intended for use as structural fill should consist of a well-graded granular soil with a moisture content that is at or near the optimum level. During wet weather conditions, imported soil intended for use as structural fill should consist of a well-graded granular soil with a fines content of 5 percent or less defined as the percent passing the Number 200 sieve, based on the minus three-quarter inch fraction.

Structural Fill

Structural fill is defined as compacted soil placed in foundation, slab-on-grade, and roadway areas. Fills placed to construct permanent slopes and throughout retaining wall and utility trench backfill areas are also considered structural fill. Soils placed in structural areas should be placed in loose lifts of 12 inches or less and compacted to a relative compaction of 95 percent, based on the laboratory maximum dry density as determined by the Modified Proctor Method (ASTM D-1557).

Slope Fill

Some minor fill may be placed on existing sloped topography to establish the site access along the northwestern portion of the site. Structural fill within sloping areas should be placed on a level bench as depicted on Plate 3 (Slope Fill Detail). Benches must be “keyed” into the slope and subsequently filled and compacted with suitable structural fill before continuing to the next bench. Sloping finish grades should be “overbuilt” using a bench-style fill and cut to the design gradient to ensure a compacted slope face is maintained. ESNW should observe structural fill placement to confirm subgrade conditions and provide additional drainage recommendations, as necessary.

Excavations and Slopes

We understand open cuts may be utilized for some of the proposed side excavations. Due to the sloping nature of the site, we recommend maximum open cuts of six feet. Based on the soil conditions anticipated to be exposed in the open cut excavations, we recommend sloping the excavations no steeper than 1H:1V (Horizontal:Vertical).

Permanent slopes should maintain a gradient of 2H:1V, or flatter, and should be planted with vegetation to enhance stability and to minimize erosion. A representative of ESNW should observe temporary and permanent slopes to confirm the slope inclinations are suitable for the exposed soil conditions, and to provide additional excavation and slope recommendations, as necessary.

Shoring Recommendations

Given anticipated excavation depths, temporary shoring will be required along some, if not all, excavation side walls. In our opinion, soil nails and/or soldier piles with tiebacks (if necessary) can be considered for temporary shoring; we understand soldier piles are currently being proposed where temporary shoring is necessary. The shoring wall system should be designed on the basis of applicable lateral earth soil pressures and incorporate applicable loading conditions from adjacent features. As noted previously, temporary dewatering (in some form) will likely be necessary, and will need to be studied further during the excavation phase of the project.

Cantilever and Single Tieback Soldier Piles

Temporary cantilever and single tieback shoring should be designed to resist lateral soil pressure based on an active earth pressure condition. Surcharge loading from adjacent roadways, buildings, and temporary slopes should be included in the shoring design, as necessary. For design, the following earth pressure and surcharge values should be used:

- Active earth pressure (level backfill) — 35 pcf (equivalent fluid)
- Active earth pressure (sloped backfill) — 50 pcf
- Passive earth pressure (level toe) — 350 pcf (over 2 pile diameters)
- Passive earth pressure (sloped toe) — 225 pcf (over 2 pile diameters)
- Seismic surcharge (for permanent wall) — 6H

A typical earth pressure distribution for cantilever and single tieback shoring is provided on Plate 4 of this study. Allowable soldier pile deflections for walls subjected to active earth pressures should be limited to one inch.

Soldier Piles

Soldier pile installation should be observed by the geotechnical engineer to confirm pile depths and soil conditions. If sloughing of the soldier pile excavation occurs, the contractor should be prepared to case soldier pile excavations, as necessary. Sloughing of soldier pile excavations should be expected, particularly where groundwater seepage is encountered in excavations.

Timber Lagging

Lagging should be installed in maximum four-foot lifts as the excavation is advanced. The geotechnical engineer should observe the shoring excavation to assess the cut stability. The lagging should be backfilled as the excavation is advanced to minimize voids between the lagging and cut face, and to reduce the potential for ground subsidence behind the shoring wall. Where sloughing of the excavation results in the development of a large void, injecting lean mix into the void area should be considered.

Due to anticipated soil arching between soldier piles, the timber lagging for temporary walls can be designed with a reduced pressure equal to 50 percent of the design lateral earth pressure.

Tieback Anchors

Tiebacks should be located as high on the wall as possible and should be designed based on the following parameters:

- Allowable pullout — 3.0 kips per foot
- Declination angle — 15 to 20 degrees (from horizontal)
- Soldier pile end bearing — 12,000 psf
- No load zone — See Plate 5 of this study

Tieback anchors should be verification tested and proof tested. A minimum of two verification tests should be performed to 200 percent of the design load. Verification test anchors can be used as production anchors, provided the anchor is successfully tested and is acceptable. The production anchors should be proof tested to 130 percent of the design load. The geotechnical engineer should observe the anchor testing and provide documentation of the test results. Tieback anchors should be locked-off at 90 percent to 100 percent of the design load.

Shoring Wall Drainage

Temporary shoring walls should be provided with adequate drainage to reduce the potential for excess hydrostatic pressure build-up. During construction, drainage occurring between the timber lagging is usually sufficient to prevent the development of excessive hydrostatic pressures. Where permanent building walls will be constructed along the temporary shoring walls, a sheet drain material should be installed along the face of the shoring wall. A typical detail illustrating a sheet drain and permanent wall drainage system is provided on Plate 6 of this study.

Shoring Monitoring

Due to the proximity of adjacent private properties and critical areas, an optical monitoring program should be implemented as part of the temporary shoring design. The monitoring program should consist of a photo survey prior to beginning the building excavations to document the current conditions of the surrounding features. Initial survey points should be placed at strategic locations along adjacent foundations and right-of-way alignments that will allow for periodic measurement during and after the shoring installation. This will allow for efficient monitoring of the site to identify and remediate excessive deflections or excavation related movements, if they occur. Prior to the start of construction, the geotechnical engineer, owner, and contractor should review the project and develop a monitoring program for the site.

Following installation of the soldier piles, monitoring points are typically established on the top of the piles prior to proceeding with the excavation. An initial baseline reading should be acquired prior to proceeding with the excavation. Readings should be acquired relatively frequently during the excavation phase of the construction. The geotechnical engineer should review the data as it becomes available during the course of construction. The monitoring program should be supplemented with periodic observations by the geotechnical engineer during the excavation phase of construction.

Foundations

Based on the results of our study, the proposed residential structure can be supported on conventional spread and continuous footings bearing on competent native soil, recompacted native soil, or structural fill. Based on the soil conditions encountered at the test sites, competent native soils suitable for support of foundations should be encountered at depths of between about two to five feet below existing grades. Where loose or unsuitable soil conditions are observed at foundation subgrade elevations, compaction of the soils to the specifications of structural fill, or overexcavation and replacement with granular structural fill will be necessary. Organic material exposed at foundation subgrade elevations must be removed and grades restored with structural fill.

Provided the structure will be supported as described above, the following parameters can be used for design of the new foundations:

- Allowable soil bearing capacity — 2,500 psf
- Passive earth pressure — 300 pcf (equivalent fluid)
- Coefficient of friction — 0.40

A one-third increase in the allowable soil bearing capacity can be assumed for short-term wind and seismic loading conditions.

With structural loading as expected, total settlement in the range of one inch is anticipated, with differential settlement of about one-half inch. The majority of the settlements should occur during construction, as dead loads are applied.

Seismic Design

The 2018 International Building Code (2018 IBC) recognizes the most recent edition of the Minimum Design Loads for Buildings and Other Structures manual (ASCE 7-16) for seismic design, specifically concerning earthquake loads. Based on the soil conditions encountered at the boring locations, the parameters and values provided below are recommended for seismic design per the 2018 IBC.

Parameter	**Value**
Site Class	D
Mapped short-period spectral response acceleration, S_S (*g*)	1.335
Mapped 1-second period spectral response acceleration, S_1 (*g*)	0.464
Short period site coefficient, F_a	1.0
Long-period site coefficient, F_v	1.858*
Adjusted short-period spectral response acceleration, S_{MS} (*g*)	1.335
Adjusted 1-second period spectral response acceleration, S_{M1} (*g*)	0.862
Design short-period spectral response acceleration, S_{DS} (*g*)	0.89
Design 1-second period spectral response acceleration, S_{D1} (*g*)	0.575

* *Assumes medium dense to dense soil conditions, encountered during the field exploration, remain medium dense to dense to at least 100 feet bgs.*

Liquefaction

Liquefaction is a phenomenon where saturated, loose, and cohesionless sand or silt soil suddenly loses internal strength and behaves as a fluid. This behavior is in response to increased pore water pressures resulting from an earthquake or another intense ground shaking. In our opinion, site susceptibility to liquefaction may be considered low. The composition and relatively dense characteristics of the native soil were the primary bases for this opinion.

Slab-on-Grade Floors

Slab-on-grade floors should be supported on a firm and unyielding subgrade consisting of competent native soil or at least 12 inches of structural fill. Unstable or yielding areas of the subgrade should be recompacted or overexcavated and replaced with suitable structural fill prior to construction of the slab. A capillary break consisting of a minimum of four inches of free draining crushed rock or gravel should be placed below the slab. The free draining material should have a fines content of five percent or less (percent passing the #200 sieve, based on the minus three-quarters inch fraction). In areas where slab moisture is undesirable, installation of a vapor barrier below the slab should be considered. If used, the vapor barrier should consist of a material specifically designed to function as a vapor barrier and should be installed in accordance with the manufacturer's specifications.

Retaining Walls

Retaining walls must be designed to resist earth pressures and applicable surcharge loads. The following parameters may be used for design:

- Active earth pressure (unrestrained condition) — 35 pcf (equivalent fluid)
- Active earth pressure w/ backslope — 50 pcf
- At-rest earth pressure (restrained condition) — 55 pcf
- At-rest earth pressure w/ backslope — 75 pcf
- Traffic surcharge (passenger vehicles) — 70 psf (rectangular distribution)*
- Passive earth pressure — 300 pcf
- Coefficient of friction — 0.40
- Seismic surcharge (active / at-rest) — 6H / 11H psf**

* *Where applicable.*
** *Where H equals the retained height (in feet).*

Drainage should be provided behind retaining walls such that hydrostatic pressures do not develop. If drainage is not provided, hydrostatic pressures should be included in the wall design.

Retaining walls should be backfilled with free draining material that extends along the height of the wall, and a distance of at least 18 inches behind the wall. The upper one foot of the wall backfill can consist of a less permeable soil, if desired. A perforated drain pipe should be placed along the base of the wall, and should be connected to an approved discharge location. A typical retaining wall drainage detail is provided as Plate 7.

Drainage

No shallow groundwater seepage was observed during our fieldwork; however, zones of perched groundwater seepage should be anticipated in excavations. Temporary measures to control groundwater seepage and surface water runoff during construction will involve passive elements such as interceptor trenches and sumps, as necessary. Surface water should not be allowed to runoff over sloped areas and should not be allowed to pond near the top of steep slope hazard areas or retaining structures.

Surface grades must be designed to direct water away from buildings. The grade adjacent to buildings should be sloped away from the buildings at a gradient of at least 2 percent for a horizontal distance of ten feet. In our opinion, perimeter footing drains should be installed at or below the invert of the building footings. A typical footing drain detail is provided on Plate 8 of this report.

Utility Trench Backfill

In our opinion, the soils observed at the test pit locations are generally suitable for support of utilities. In general, the soils observed at the test pit locations should be suitable for use as structural backfill in the utility trench excavations, provided the soil is at or near the optimum moisture content at the time of placement and compaction. Moisture conditioning of the soils may be necessary at some locations prior to use as structural fill. Utility trench backfill should be placed and compacted to the specifications of structural fill provided in this report, or to the applicable requirements of the city of Bellevue.

Pavement Sections

The performance of site pavements is largely related to the condition of the underlying subgrade. To ensure adequate pavement performance, the subgrade should be in a firm and unyielding condition when subjected to proofrolling with a loaded dump truck. Structural fill in pavement areas should be compacted to the specifications detailed in the *Site Preparation and Earthwork* section of this report. It is possible that soft, wet, or otherwise unsuitable subgrade areas may still exist after base grading activities. Areas of unsuitable or yielding subgrade conditions may require remedial measures such as overexcavation and replacement with structural fill or thicker crushed rock sections prior to pavement.

For relatively lightly loaded pavements subjected to automobiles and occasional truck traffic, the following sections can be considered for preliminary design:

- Two inches of hot mix asphalt (HMA) placed over four inches of crushed rock base (CRB), or;

- Two inches of HMA placed over three inches of asphalt treated base (ATB).

The HMA, CRB and ATB materials should conform to WSDOT specifications.

LIMITATIONS

This study has been prepared for the exclusive use of Samm Vista LLC, and its representatives. The recommendations and conclusions provided in this geotechnical engineering study are professional opinions consistent with the level of care and skill that is typical of other members in the profession currently practicing under similar conditions in this area. A warranty is not expressed or implied. Variations in the soil and groundwater conditions observed at the test locations may exist and may not become evident until construction. ESNW should reevaluate the conclusions in this geotechnical engineering study if variations are encountered.

Additional Services

ESNW should have an opportunity to review the final design with respect to the geotechnical recommendations provided in this report. ESNW should also be retained to provide testing and consultation services during construction.

REFERENCES

The following documents and/or resources were reviewed as part of our report preparation;

- Civil Plans, 3938 179th Ln SE, prepared by Blueline, dated September 6, 2023
- Building Plans, prepared by Delta Architects, dated October 26, 2022
- Structural Plans, Sammamish – West Lot, prepared by Plan North Engineers, dated October 25, 2022
- Geologic Map of Bellevue of the East Half of the Bellevue South 7.5’ x 15’ Quadrangle, Issaquah Area, King County, Washington, compiled by Derek B. Booth et al., 2012
- Bellevue Municipal Code, Chapter 20.25H

Reference:
King County, Washington
OpenStreetMap.org

NORTH

NOTE: This plate may contain areas of color. ESNW cannot be responsible for any subsequent misinterpretation of the information resulting from black & white reproductions of this plate.

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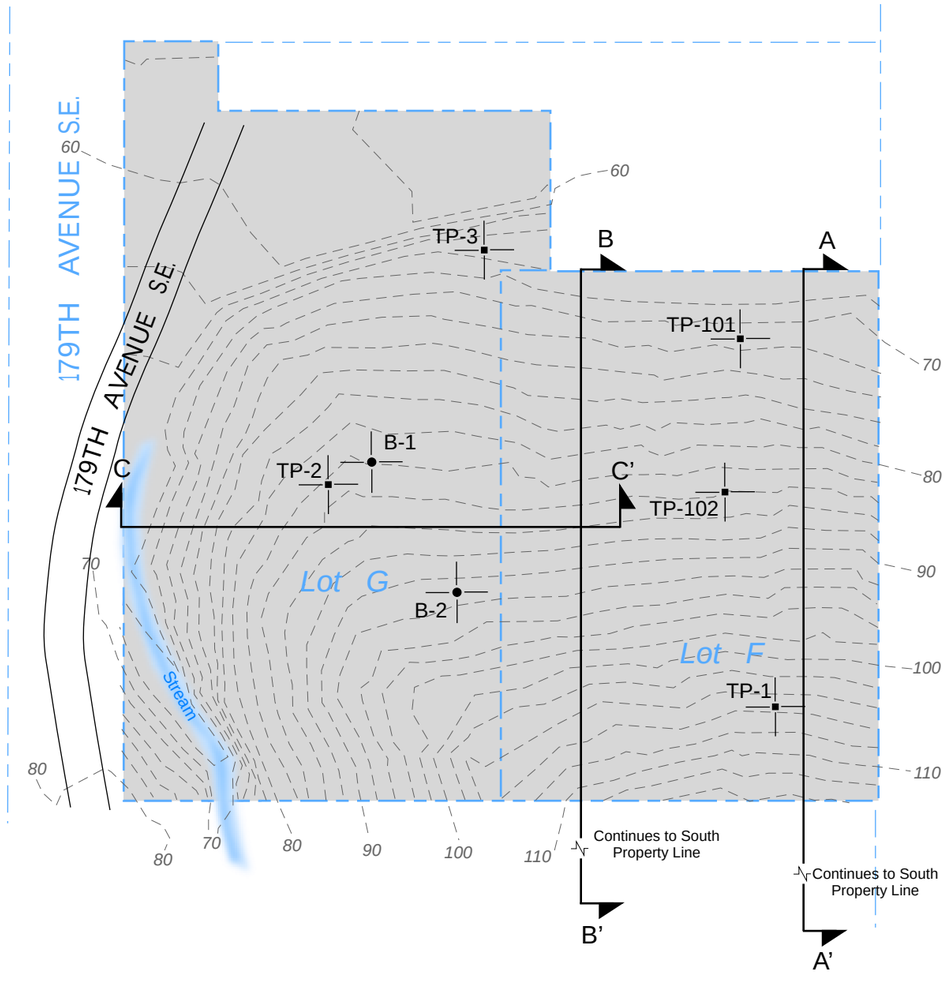
Vicinity Map
179th Short Plat
Bellevue, Washington

Drwn. CAM	Date 09/26/2022	Proj. No. 2861.05
Checked HTW	Date Sept. 2022	Plate 1



LEGEND

TP-101 — Approximate Location of ESNW Test Pit, Proj. No. ES-2861.02, Nov. 2015

B-1 — Approximate Location of ESNW Boring, Proj. No. ES-2861.03, Jan. 2015

TP-1 — Approximate Location of ESNW Test Pit, Proj. No. ES-2861.01, June 2013

Subject Site

Slope Stability Cross Section

NORTH

0 40 80 160

1"=80' Scale in Feet

NOTE: The graphics shown on this plate are not intended for design purposes or precise scale measurements, but only to illustrate the approximate test locations relative to the approximate locations of existing and / or proposed site features. The information illustrated is largely based on data provided by the client at the time of our study. ESNW cannot be responsible for subsequent design changes or interpretation of the data by others.

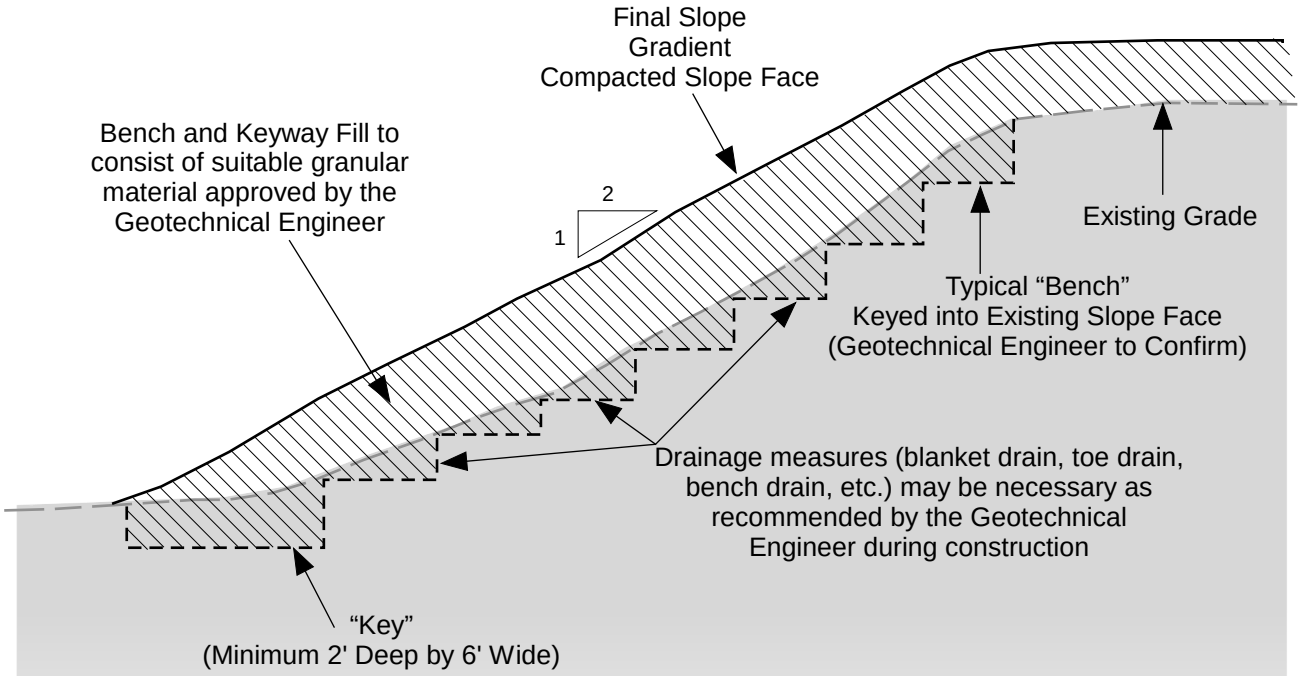
NOTE: This plate may contain areas of color. ESNW cannot be responsible for any subsequent misinterpretation of the information resulting from black & white reproductions of this plate.

Subsurface Exploration Plan
179th Short Plat
Bellevue, Washington

Earth Solutions NW LLC
Geotechnical Engineering, Construction Observation/Testing and Environmental Services

Drwn. By	MRS
Checked By	HTW
Date	09/26/2022
Proj. No.	2861.05
Plate	2

SCHEMATIC ONLY - NOT TO SCALE
NOT A CONSTRUCTION DRAWING



NOTES:

- Slope should be stripped of topsoil and unsuitable materials prior to excavating Keyway or benches.
- Benches will typically be equal to a bulldozer blade width of approximately 8 feet but shall be at least 4 feet.
- Final slope gradient should be 2H : 1V.
- Final slope face should be densified by over-building with compacted fill and trimming back to shape or by compaction with a bulldozer or vibratory drum roller.
- Planting or hydroseeding slope face with a rapid growth deep-rooted vegetative mat will reduce erosion potential of slope area.
- Use of pegged-in-place jute matting or geotechnical fabric will help maintain the seed and mulch in place until the root system has an opportunity to germinate.
- Structural fill should be placed in thin loose lifts not exceeding 12 inches in thickness. Each lift should be compacted to no less than the degree specified in the "Site Preparation and Earthwork" section of this report. No additional lift should be placed until compaction is achieved.

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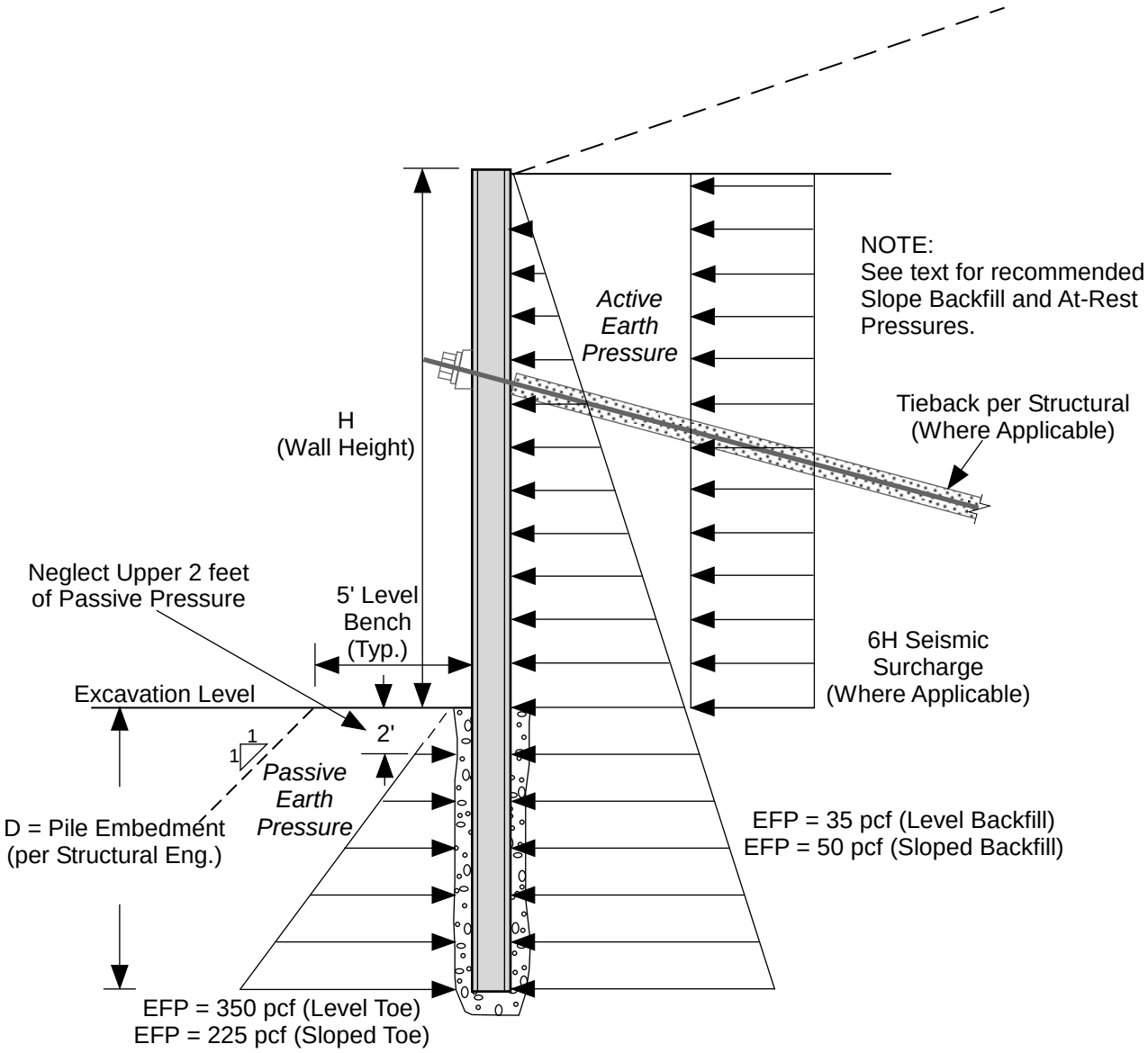
Slope Fill Detail
179th Short Plat
Bellevue, Washington

Drwn. CAM	Date 09/26/2022	Proj. No. 2861.05
Checked HTW	Date Sept. 2022	Plate 3



SCHEMATIC ONLY - NOT TO SCALE
NOT A CONSTRUCTION DRAWING

NOTES:

Diagram for pressure distribution illustration only, not a design drawing.

Passive Pressure includes a factor of safety of 1.5.

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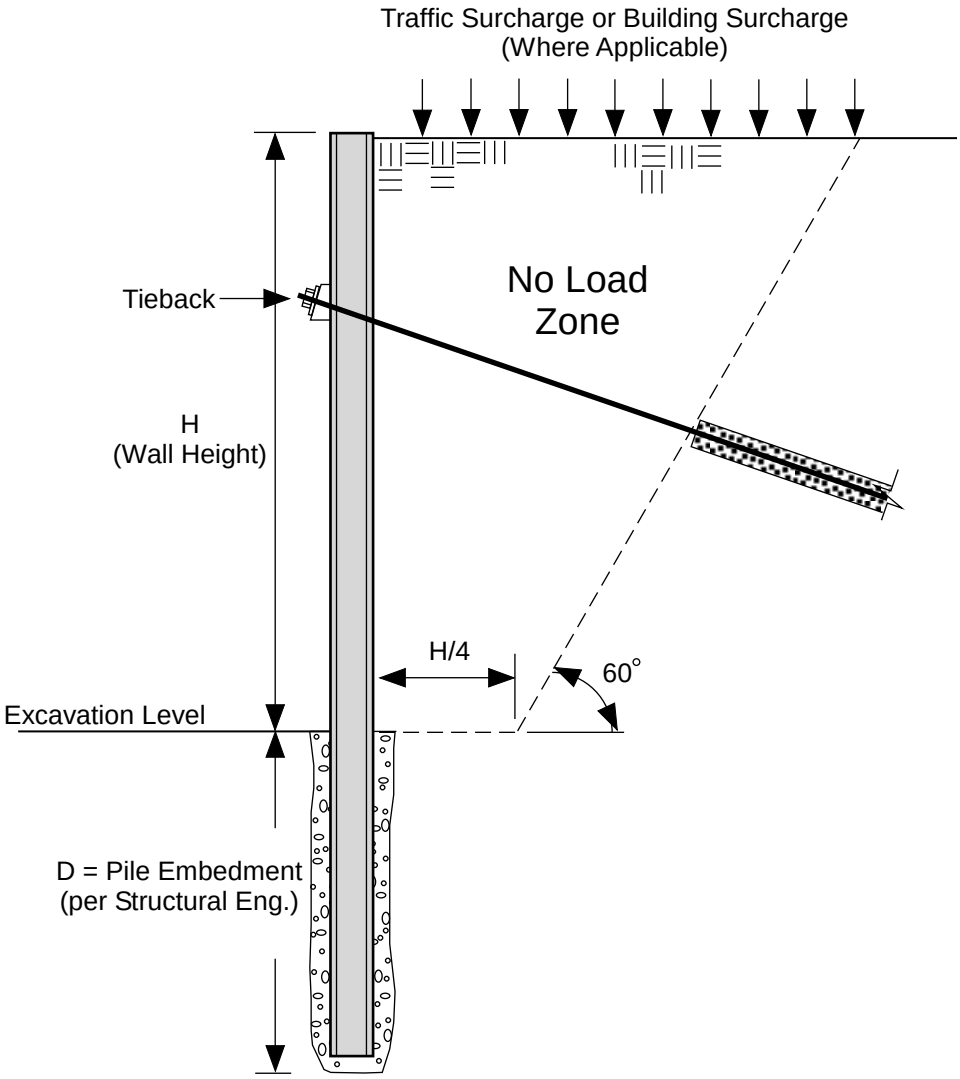
Cantilever & Single Tieback Wall
179th Short Plat
Bellevue, Washington

Drwn. CAM	Date 09/27/2022	Proj. No. 2861.05
Checked HTW	Date Sept. 2022	Plate 4



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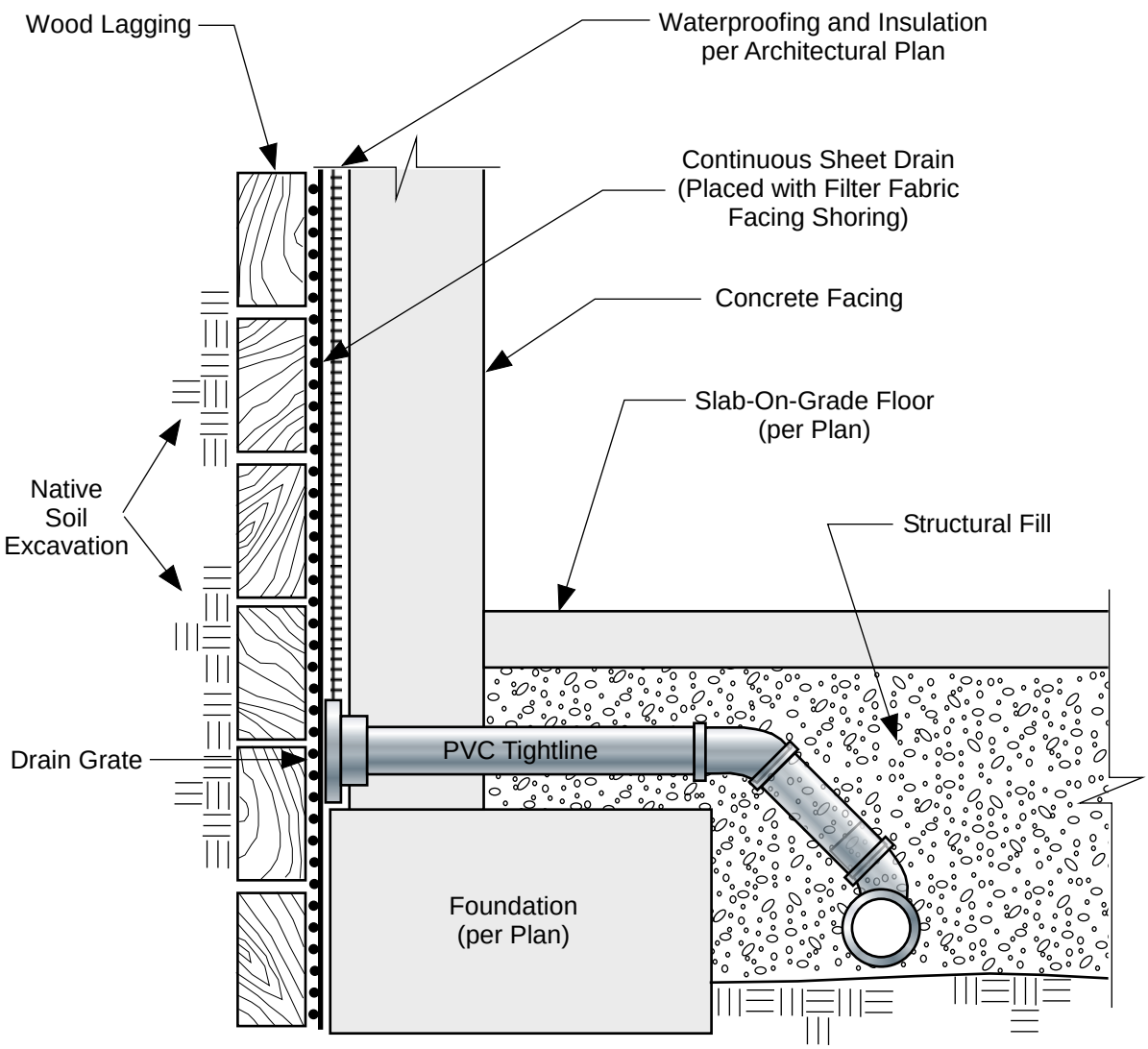
No Load Zone
179th Short Plat
Bellevue, Washington

Drwn. CAM	Date 09/26/2022	Proj. No. 2861.05
Checked HTW	Date Sept. 2022	Plate 5



NOTE: Drain through wall should be installed at middle of lagging.

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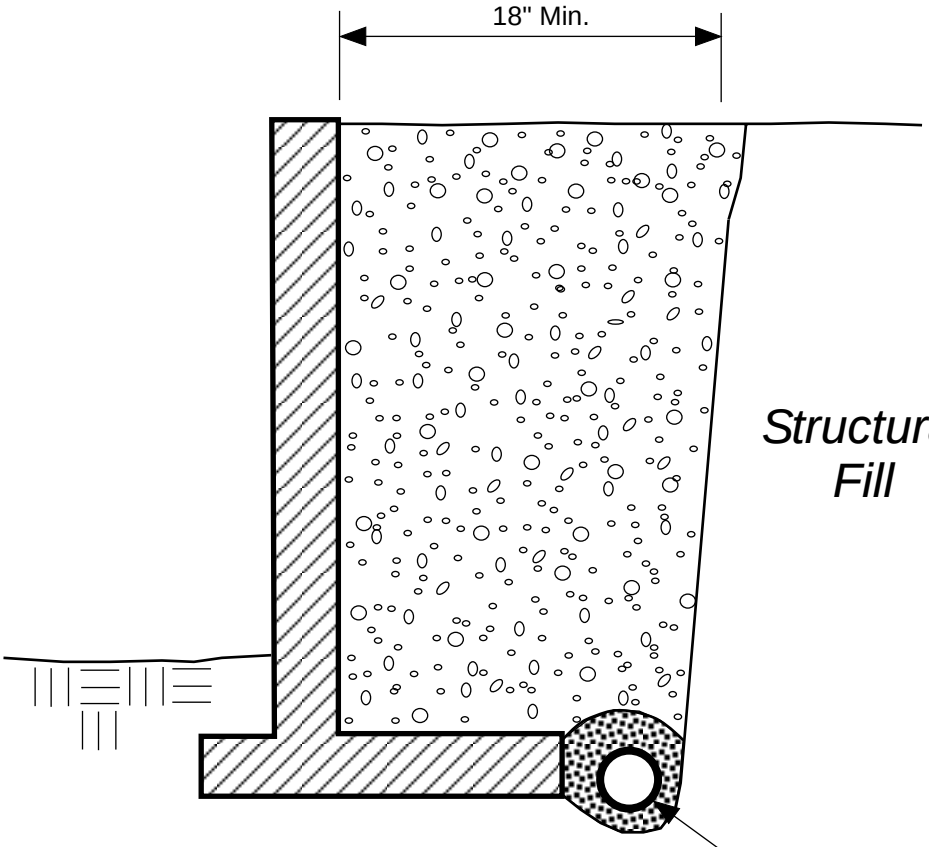
Shoring Wall Drainage Detail
179th Short Plat
Bellevue, Washington

Drwn. CAM	Date 09/26/2022	Proj. No. 2861.05
Checked HTW	Date Sept. 2022	Plate 6



NOTES:

- Free-draining Backfill should consist of soil having less than 5 percent fines. Percent passing No. 4 sieve should be 25 to 75 percent.
- Sheet Drain may be feasible in lieu of Free-draining Backfill, per ESNW recommendations.
- Drain Pipe should consist of perforated, rigid PVC Pipe surrounded with 1-inch Drain Rock.

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LEGEND:

Free-draining Structural Backfill

1-inch Drain Rock

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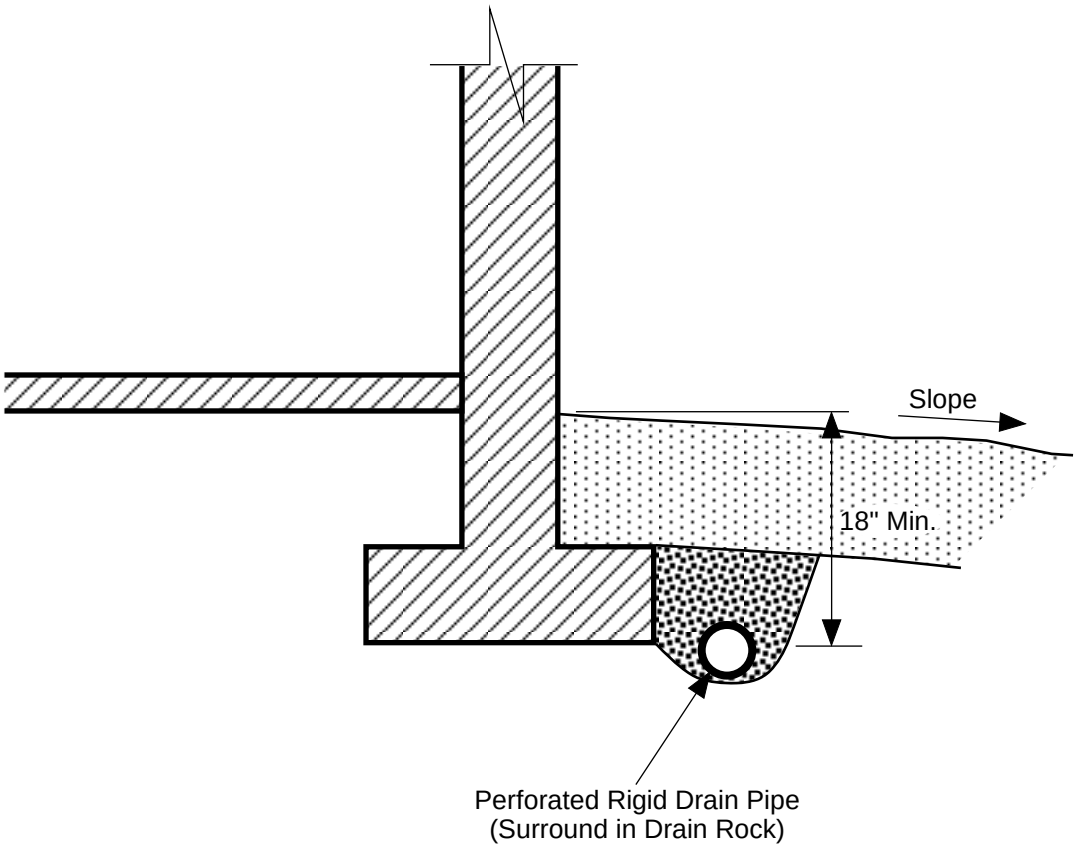
Retaining Wall Drainage Detail
179th Short Plat
Bellevue, Washington

Drwn. CAM	Date 09/26/2022	Proj. No. 2861.05
Checked HTW	Date Sept. 2022	Plate 7



NOTES:

- Do NOT tie roof downspouts to Footing Drain.
- Surface Seal to consist of 12" of less permeable, suitable soil. Slope away from building.

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LEGEND:

Surface Seal: native soil or other low-permeability material.

1-inch Drain Rock

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Footing Drain Detail
179th Short Plat
Bellevue, Washington

Drwn. CAM	Date 09/26/2022	Proj. No. 2861.05
Checked HTW	Date Sept. 2022	Plate 8

Appendix A

Subsurface Exploration Logs

ES-2861.05

The subsurface conditions at the site were explored by excavating five test pits and advancing two borings at the approximate locations illustrated on Plate 2 of this report. The test pit and boring logs are provided in this Appendix.

The final logs represent the interpretations of the field logs and the results of laboratory analyses. The stratification lines on the logs represent the approximate boundaries between soil types. In actuality, the transitions may be more gradual.

Coarse-Grained Soils - More Than 50% Retained on No. 200 Sieve	Gravels - More Than 50% of Coarse Fraction Retained on No. 4 Sieve	< 5% Fines	GW	Well-graded gravel with or without sand, little to no fines
			GP	Poorly graded gravel with or without sand, little to no fines
		> 12% Fines	GM	Silty gravel with or without sand
			GC	Clayey gravel with or without sand
	Sands - 50% or More of Coarse Fraction Passes No. 4 Sieve	< 5% Fines	SW	Well-graded sand with or without gravel, little to no fines
			SP	Poorly graded sand with or without gravel, little to no fines
		> 12% Fines	SM	Silty sand with or without gravel
			SC	Clayey sand with or without gravel
Fine-Grained Soils - 50% or More Passes No. 200 Sieve	Silts and Clays Liquid Limit Less Than 50		ML	Silt with or without sand or gravel; sandy or gravelly silt
			CL	Clay of low to medium plasticity; lean clay with or without sand or gravel; sandy or gravelly lean clay
			OL	Organic clay or silt of low plasticity
	Silts and Clays Liquid Limit 50 or More		MH	Elastic silt with or without sand or gravel; sandy or gravelly elastic silt
			CH	Clay of high plasticity; fat clay with or without sand or gravel; sandy or gravelly fat clay
			OH	Organic clay or silt of medium to high plasticity
Highly Organic Soils			PT	Peat, muck, and other highly organic soils
Fill			FILL	Made Ground

Moisture Content

Dry - Absence of moisture, dusty, dry to the touch

Damp - Perceptible moisture, likely below optimum MC

Moist - Damp but no visible water, likely at/near optimum MC

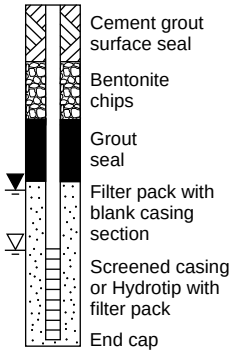
Wet - Water visible but not free draining, likely above optimum MC

Saturated/Water Bearing - Visible free water, typically below groundwater table

Symbols

ATD = At time of drilling

Static water level (date)



Terms Describing Relative Density and Consistency

Coarse-Grained Soils:

Density	SPT blows/foot
Very Loose	< 4
Loose	4 to 9
Medium Dense	10 to 29
Dense	30 to 49
Very Dense	≥ 50

Fine-Grained Soils:

Consistency	SPT blows/foot
Very Soft	< 2
Soft	2 to 3
Medium Stiff	4 to 7
Stiff	8 to 14
Very Stiff	15 to 29
Hard	≥ 30

Test Symbols & Units

Fines = Fines Content (%)

MC = Moisture Content (%)

DD = Dry Density (pcf)

Str = Shear Strength (tsf)

PID = Photoionization Detector (ppm)

OC = Organic Content (%)

CEC = Cation Exchange Capacity (meq/100 g)

LL = Liquid Limit (%)

PL = Plastic Limit (%)

PI = Plasticity Index (%)

Component Definitions

Descriptive Term	Size Range and Sieve Number
Boulders	Larger than 12"
Cobbles	3" to 12"
Gravel	3" to No. 4 (4.75 mm)
Coarse Gravel	3" to 3/4"
Fine Gravel	3/4" to No. 4 (4.75 mm)
Sand	No. 4 (4.75 mm) to No. 200 (0.075 mm)
Coarse Sand	No. 4 (4.75 mm) to No. 10 (2.00 mm)
Medium Sand	No. 10 (2.00 mm) to No. 40 (0.425 mm)
Fine Sand	No. 40 (0.425 mm) to No. 200 (0.075 mm)
Silt and Clay	Smaller than No. 200 (0.075 mm)

Modifier Definitions

Percentage by Weight (Approx.)	Modifier
< 5	Trace (sand, silt, clay, gravel)
5 to 14	Slightly (sandy, silty, clayey, gravelly)
15 to 29	Sandy, silty, clayey, gravelly
≥ 30	Very (sandy, silty, clayey, gravelly)

Classifications of soils in this geotechnical report and as shown on the exploration logs are based on visual field and/or laboratory observations, which include density/consistency, moisture condition, grain size, and plasticity estimates, and should not be construed to imply field or laboratory testing unless presented herein. Visual-manual and/or laboratory classification methods of ASTM D2487 and D2488 were used as an identification guide for the Unified Soil Classification System.

Earth Solutions NW LLC

Geotechnical Engineering, Construction Observation/Testing and Environmental Services

EXPLORATION LOG KEY

Earth Solutions NW, LLC
15365 N.E. 90th Street, Suite 100
Redmond, Washington 98052
Telephone: 425-449-4704
Fax: 425-449-4711

BORING NUMBER B-1

PROJECT NUMBER 2861.03 **PROJECT NAME** Pang Lots

DATE STARTED 1/5/15 **COMPLETED** 1/5/15 **GROUND ELEVATION** 82 ft

DRILLING CONTRACTOR Boretec **LATITUDE** _____ **LONGITUDE** _____

LOGGED BY HTW **CHECKED BY** HTW **GROUND WATER LEVEL:**

NOTES Light Ivy ▽ **AT TIME OF DRILLING** 35 ft

SURFACE CONDITIONS _____ **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					SM		Brown silty SAND, loose, moist
5	SS	100	2-3-6 (9)	MC = 26.8 Fines = 28.7			-becomes tan
10	SS	100	10-12-10 (22)	MC = 31.5			-increasing sand content -becomes medium dense
15	SS	100	15-8-11 (19)	MC = 20.2			
15.5					ML		Gray SILT with sand and gravel, medium dense, wet
20							
66.5							

GENERAL BH / TP / WELL - 2861-3.GPJ - GINT US.GDT - 9/25/23

(Continued Next Page)

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Redmond, Washington 98052
Telephone: 425-449-4704
Fax: 425-449-4711

BORING NUMBER B-1

PROJECT NUMBER 2861.03 **PROJECT NAME** Pang Lots

DATE STARTED 1/5/15 **COMPLETED** 1/5/15 **GROUND ELEVATION** 82 ft

DRILLING CONTRACTOR Boretec **LATITUDE** _____ **LONGITUDE** _____

LOGGED BY HTW **CHECKED BY** HTW **GROUND WATER LEVEL:**

NOTES Light Ivy ▽ **AT TIME OF DRILLING** 35 ft

SURFACE CONDITIONS _____ **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
20							Gray SILT with sand and gravel, medium dense, wet *(continued)*
	SS	100	18-10-10 (20)	MC = 33.2 Fines = 79.7			-increased gravel content
							-becomes moist
25					ML		
	SS	100	37-11-15 (26)	MC = 21.5			
							29.0 53.0
30							Gray lean CLAY with sand, hard, moist
	SS	100	40-50	MC = 26.6			
					CL		
35							35.0 ▽ 47.0
	SS	100	50	MC = 23.3	SM		Gray silty SAND with gravel, very dense, saturated 35.5 46.5
							Boring terminated at 35.5 feet below existing grade. Groundwater table encountered at 35.0 feet during drilling. Boring backfilled with bentonite.

Earth Solutions NW, LLC
15365 N.E. 90th Street, Suite 100
Redmond, Washington 98052
Telephone: 425-449-4704
Fax: 425-449-4711

BORING NUMBER B-2

PROJECT NUMBER 2861.03 **PROJECT NAME** Pang Lots

DATE STARTED 1/5/15 **COMPLETED** 1/5/15 **GROUND ELEVATION** 91 ft

DRILLING CONTRACTOR Boretec **LATITUDE** _____ **LONGITUDE** _____

LOGGED BY HTW **CHECKED BY** HTW **GROUND WATER LEVEL:**

NOTES Light Ivy ▽ **AT TIME OF DRILLING** 40 ft

SURFACE CONDITIONS _____ **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					SM		Brown silty SAND, loose to medium dense, moist
5	SS	100	8-10-14 (24)	MC = 32.5			-becomes tan, medium dense
10	SS	100	10-15-15 (30)	MC = 16.8 Fines = 36.0			
15	SS	100	7-10-10 (20)	MC = 33.1			-3"- 6" sand and silt interbeds
							18.0
20					ML		Gray sandy SILT, loose, wet 73.0

(Continued Next Page)

Earth Solutions NW, LLC
15365 N.E. 90th Street, Suite 100
Redmond, Washington 98052
Telephone: 425-449-4704
Fax: 425-449-4711

BORING NUMBER B-2

PROJECT NUMBER 2861.03 **PROJECT NAME** Pang Lots
DATE STARTED 1/5/15 **COMPLETED** 1/5/15 **GROUND ELEVATION** 91 ft
DRILLING CONTRACTOR Boretec **LATITUDE** _____ **LONGITUDE** _____
LOGGED BY HTW **CHECKED BY** HTW **GROUND WATER LEVEL:**
NOTES Light Ivy ▽ **AT TIME OF DRILLING** 40 ft
SURFACE CONDITIONS _____ **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
20	SS	100	3-2-2 (4)	MC = 74.6	ML		Gray sandy SILT, loose, wet *(continued)*
25	SS	100	2-3-5 (8)	MC = 34.3			29.0 62.0
30	SS	100	4-7-10 (17)	MC = 26.5	ML		Gray SILT with gravel, medium dense, moist
35	SS	100	7-11-19 (30)	MC = 19.8			
40							40.0 ▽ 51.0

(Continued Next Page)

Earth Solutions NW, LLC
15365 N.E. 90th Street, Suite 100
Redmond, Washington 98052
Telephone: 425-449-4704
Fax: 425-449-4711

BORING NUMBER B-2

PROJECT NUMBER 2861.03 **PROJECT NAME** Pang Lots

DATE STARTED 1/5/15 **COMPLETED** 1/5/15 **GROUND ELEVATION** 91 ft

DRILLING CONTRACTOR Boretec **LATITUDE** _____ **LONGITUDE** _____

LOGGED BY HTW **CHECKED BY** HTW **GROUND WATER LEVEL:**

NOTES Light Ivy ▽ **AT TIME OF DRILLING** 40 ft

SURFACE CONDITIONS _____ **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
40								
	SS	100	50/5"	MC = 16.1	SM		40.5 Gray silty SAND with gravel, very dense, saturated	50.5

Boring terminated at 40.5 feet below existing grade. Groundwater table encountered at 40.0 feet during drilling. Boring backfilled with bentonite.

Earth Solutions NW, LLC
15365 N.E. 90th Street, Suite 100
Redmond, Washington 98052
Telephone: 425-449-4704
Fax: 425-449-4711

TEST PIT NUMBER TP-101

PROJECT NUMBER 2861.02 **PROJECT NAME** Pang Lots

DATE STARTED 11/20/15 **COMPLETED** 11/20/15 **GROUND ELEVATION** 71 ft

EXCAVATION CONTRACTOR Client Provided **LATITUDE** _____ **LONGITUDE** _____

LOGGED BY HTW **CHECKED BY** HTW **GROUND WATER LEVEL:**

NOTES Depth of Topsoil & Sod 24": ivy ▽ **AT TIME OF EXCAVATION** _____

SURFACE CONDITIONS _____ **AFTER EXCAVATION** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0			TPSL		TOPSOIL and duff to 24" -roots	
					2.0	69.0
			SM		Brown silty SAND with gravel, loose to medium dense, moist -moderate cobbles	
					3.5	67.5
		MC = 15.3	SM		Tan-gray silty SAND with gravel, medium dense, moist -weakly cemented	
5						
		MC = 22.2				
					7.5	63.5
					Test pit terminated at 7.5 feet below existing grade. No groundwater encountered during excavation.	

Earth Solutions NW, LLC
15365 N.E. 90th Street, Suite 100
Redmond, Washington 98052
Telephone: 425-449-4704
Fax: 425-449-4711

TEST PIT NUMBER TP-102

PROJECT NUMBER 2861.02 **PROJECT NAME** Pang Lots

DATE STARTED 11/20/15 **COMPLETED** 11/20/15 **GROUND ELEVATION** 85 ft

EXCAVATION CONTRACTOR Client Provided **LATITUDE** _____ **LONGITUDE** _____

LOGGED BY HTW **CHECKED BY** HTW **GROUND WATER LEVEL:**

NOTES _____ ▽ **AT TIME OF EXCAVATION** _____

SURFACE CONDITIONS _____ **AFTER EXCAVATION** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0			TPSL		TOPSOIL and duff to 18"	
				1.5		83.5
			SM		Brown silty SAND with gravel, loose to medium dense, moist	
					-moderate cobbles	
					-becomes tan	
				4.5		80.5
5			SM		Tan-gray silty SAND with gravel, medium dense, moist	
					-weakly cemented	
		Fines = 46.1		8.0	[USDA Classification: slightly gravelly very fine sandy LOAM]	77.0

Test pit terminated at 8.0 feet below existing grade. No groundwater encountered during excavation.

Earth Solutions NW, LLC
15365 N.E. 90th Street, Suite 100
Redmond, Washington 98052
Telephone: 425-449-4704
Fax: 425-449-4711

TEST PIT NUMBER TP-1

PROJECT NUMBER 2861.01 **PROJECT NAME** Pang Lots

DATE STARTED 6/7/13 **COMPLETED** 6/7/13 **GROUND ELEVATION** 105 ft

EXCAVATION CONTRACTOR NW Excavating **LATITUDE** _____ **LONGITUDE** _____

LOGGED BY HTW **CHECKED BY** HTW **GROUND WATER LEVEL:**

NOTES Depth of Topsoil & Sod 16": brush ▽ **AT TIME OF EXCAVATION** _____

SURFACE CONDITIONS _____ **AFTER EXCAVATION** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			TPSL		Duff and TOPSOIL to 16"
					1.5 103.5
		MC = 13.4			Brown silty SAND with gravel, medium dense, damp to moist
5					-becomes dense
			SM		-increasing coarse sand and gravel content
		MC = 21.5			
10					
		MC = 18.3 Fines = 17.3			13.0 92.0
					Test pit terminated at 13.0 feet below existing grade. No groundwater encountered during excavation.

Earth Solutions NW, LLC
15365 N.E. 90th Street, Suite 100
Redmond, Washington 98052
Telephone: 425-449-4704
Fax: 425-449-4711

TEST PIT NUMBER TP-2

PROJECT NUMBER 2861.01 **PROJECT NAME** Pang Lots

DATE STARTED 6/7/13 **COMPLETED** 6/7/13 **GROUND ELEVATION** 82 ft

EXCAVATION CONTRACTOR NW Excavating **LATITUDE** _____ **LONGITUDE** _____

LOGGED BY HTW **CHECKED BY** HTW **GROUND WATER LEVEL:**

NOTES Depth of Topsoil & Sod 12": ivy ▽ **AT TIME OF EXCAVATION** _____

SURFACE CONDITIONS _____ **AFTER EXCAVATION** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			TPSL		Duff and TOPSOIL to 12"
1.0					81.0
					Brown silty SAND with gravel, medium dense, damp to moist
		MC = 23.5			
5					
		MC = 21.0	SM		
					-becomes dense to very dense
		MC = 20.1 Fines = 29.3			
10					
					-increasing medium to coarse sand and gravel content
		MC = 22.5			
12.0		MC = 19.8			70.0
					Test pit terminated at 12.0 feet below existing grade. No groundwater encountered during excavation.

Earth Solutions NW, LLC
15365 N.E. 90th Street, Suite 100
Redmond, Washington 98052
Telephone: 425-449-4704
Fax: 425-449-4711

TEST PIT NUMBER TP-3

PROJECT NUMBER 2861.01 **PROJECT NAME** Pang Lots

DATE STARTED 6/7/13 **COMPLETED** 6/7/13 **GROUND ELEVATION** 65 ft

EXCAVATION CONTRACTOR NW Excavating **LATITUDE** _____ **LONGITUDE** _____

LOGGED BY HTW **CHECKED BY** HTW **GROUND WATER LEVEL:**

NOTES Depth of Topsoil & Sod 12": ivy ▽ **AT TIME OF EXCAVATION** _____

SURFACE CONDITIONS _____ **AFTER EXCAVATION** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			TPSL		Duff and TOPSOIL to 12"
					1.0 64.0
					Brown silty SAND with gravel, medium dense, moist
		MC = 7.4			
			SM		
5					-increasing sand content
		MC = 38.6			
					-becomes moist to wet
		MC = 22.7			
					8.0 57.0
					Test pit terminated at 8.0 feet below existing grade. No groundwater encountered during excavation.

Appendix B

Laboratory Test Results

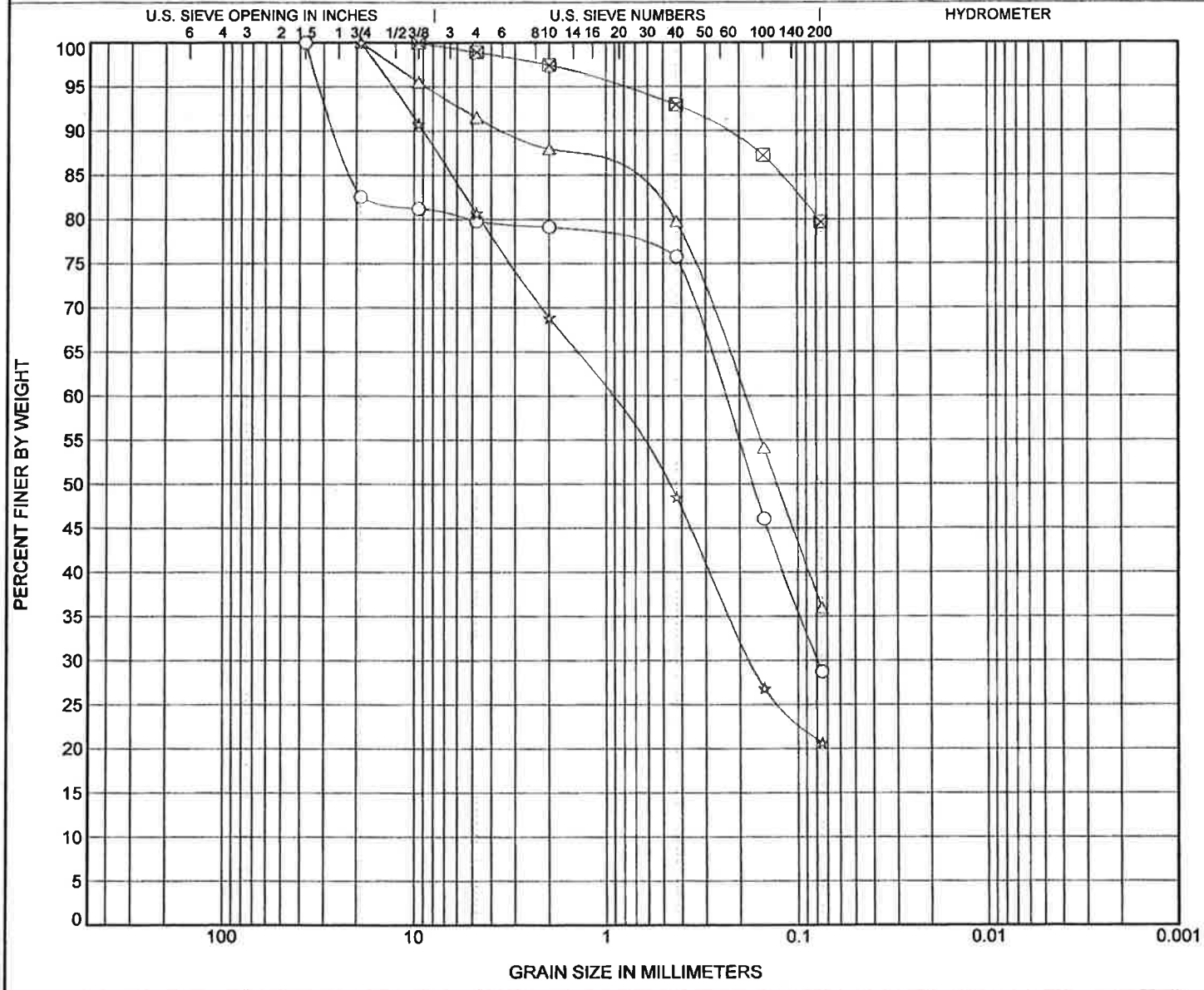
ES-2861.05

GRAIN SIZE DISTRIBUTION

Earth Solutions NW
1805 - 136th Place N.E., Suite 201
Bellevue, WA 98005
Telephone: 425-284-3300

CLIENT Jianping Pang c/o Shengtai Inc **PROJECT NAME** Pang Residence

PROJECT NUMBER ES-2861.03 **PROJECT LOCATION** Bellevue



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
○	B-1	5.0ft.	Tan Silty SAND with Gravel, SM					
☒	B-1	20.0ft.	Gray SILT with Sand, ML					
△	B-2	10.0ft.	Tan Silty SAND, SM					
☆	B-2	40.0ft.	Gray Sitly SAND with Gravel, SM					

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
○	B-1	5.0ft.	37.5	0.244	0.079		20.2	51.1	28.7	
☒	B-1	20.0ft.	9.5				1.1	19.2	79.7	
△	B-2	10.0ft.	19	0.191			8.5	55.5	36.0	
☆	B-2	40.0ft.	19	1.022	0.175		19.4	60.0	20.7	

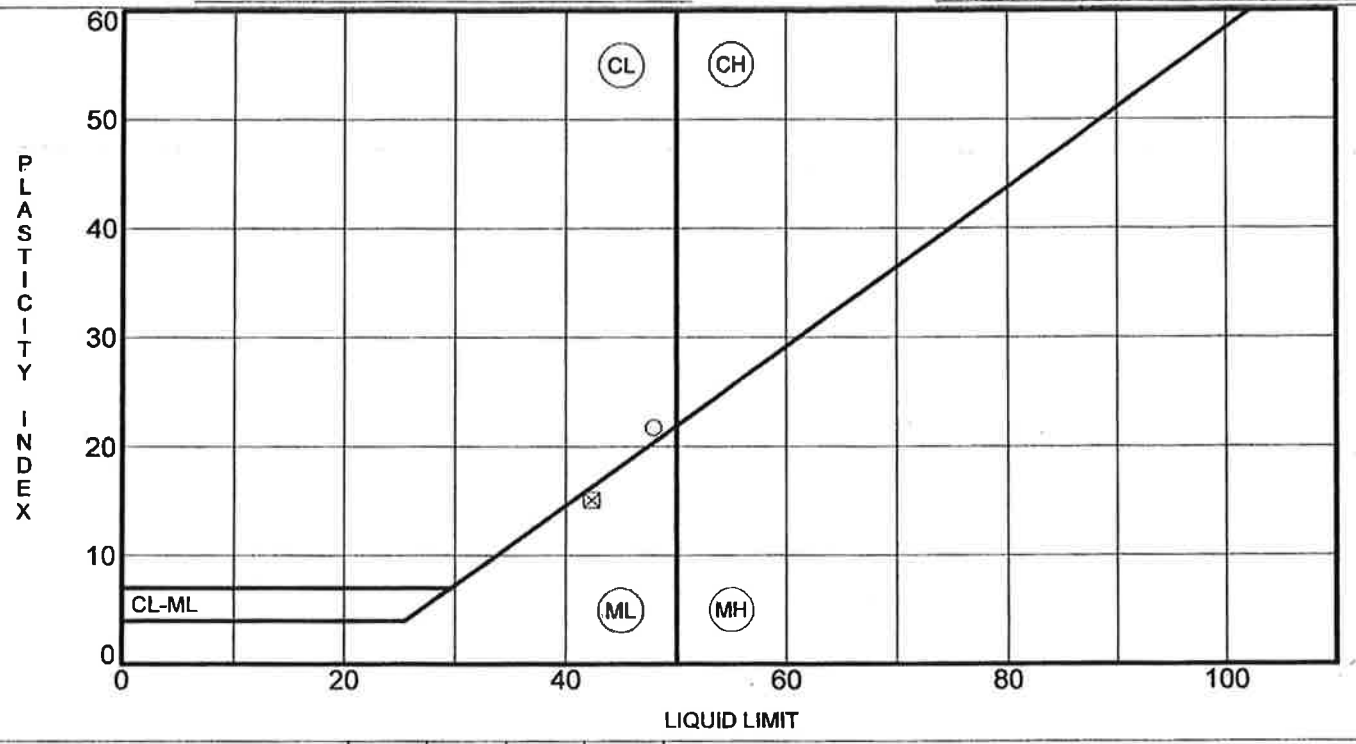
GRAIN SIZE ES-2861.03.GPJ GINT US LAB.GDT 1/7/15

Earth Solutions NW
1805 - 136th Place N.E., Suite 201
Bellevue, WA 98005
Telephone: 425-284-3300

ATTERBERG LIMITS' RESULTS

CLIENT Jianping Pang c/o Shengtai Inc **PROJECT NAME** Pang Residence

PROJECT NUMBER ES-2861.03 **PROJECT LOCATION** Bellevue



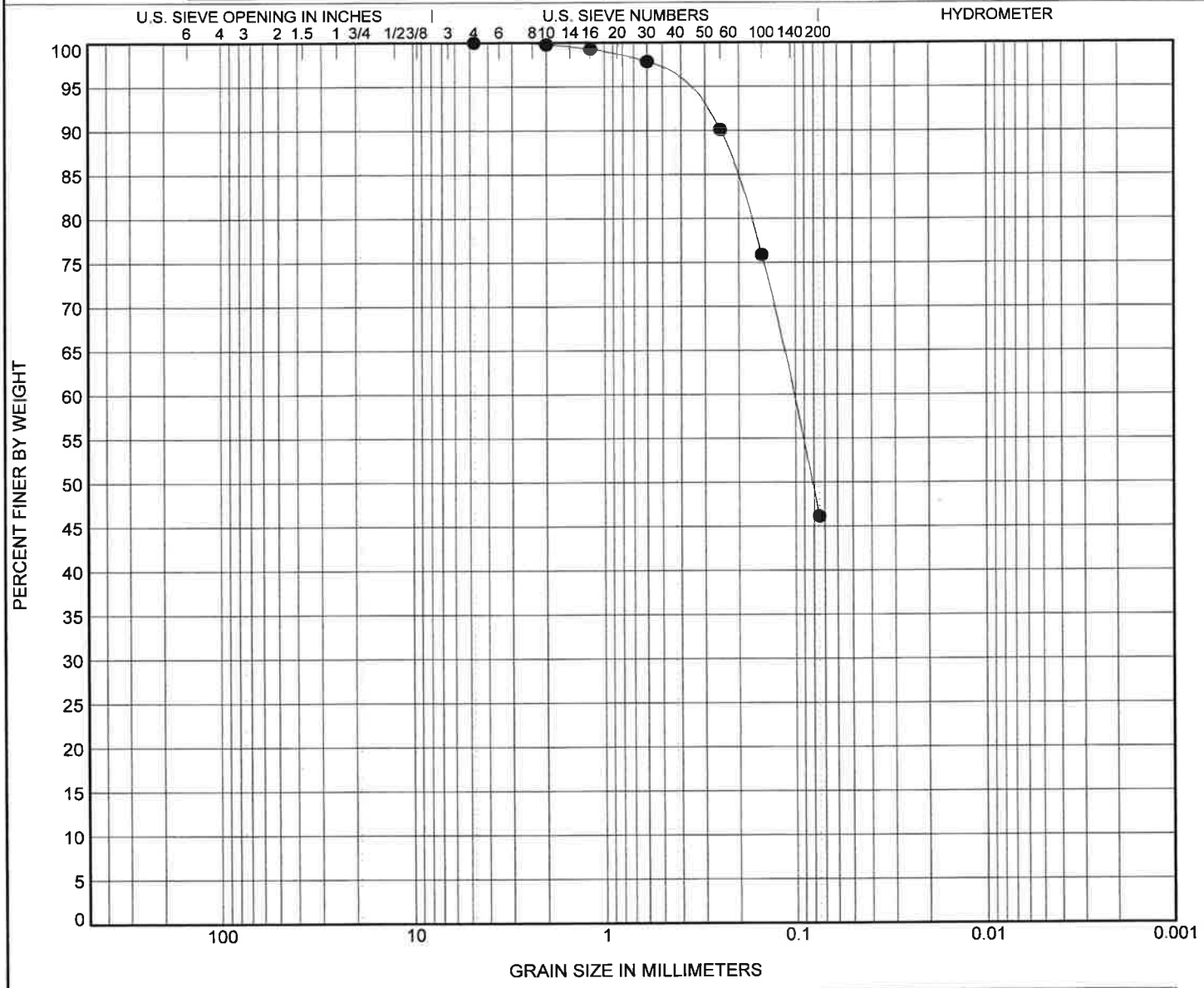
	Specimen Identification		LL	PL	PI	Fines	Classification
○	**B-1**	**30.0**	**48**	**26**	**22**	**70.1**	**Gray Lean Clay with Sand, CL**
☒	**B-2**	**25.0**	**42**	**27**	**15**	**85.4**	**Gray SILT, ML**

GRAIN SIZE DISTRIBUTION

Earth Solutions NW
1805 - 136th Place N.E., Suite 201
Bellevue, WA 98005
Telephone: 425-284-3300

CLIENT Jianping Pang c/o Shengtai Inc. **PROJECT NAME** Pang Residence

PROJECT NUMBER ES-2861.02 **PROJECT LOCATION** Bellevue



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	Cc	Cu
● TP-102	7.5ft.	**USDA: Tan-Gray Slightly Gravelly Very Fine Sandy Loam. USCS: SM.**		

Specimen Identification		D100	D60	D30	D10	LL	PL	PI	%Silt	%Clay
● TP-102	7.5ft.	**4.75**	**0.104**						**46.1**	

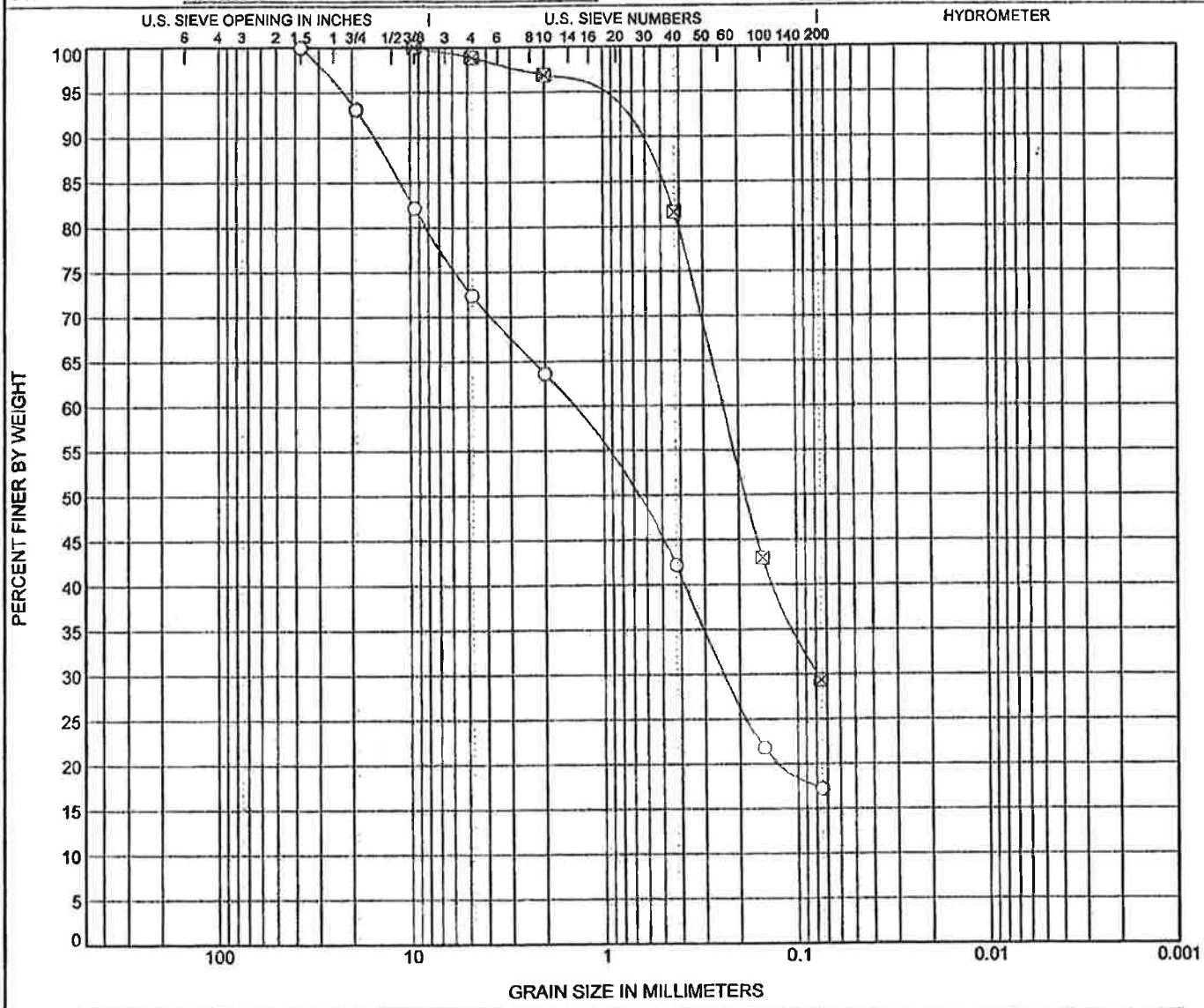
GRAIN SIZE USDA ES-2861.02.GPJ GINT US LAB.GDT 11/24/15

GRAIN SIZE DISTRIBUTION

Earth Solutions NW
1805 - 136th Place N.E., Suite 201
Bellevue, WA 98005
Telephone: 425-284-3300

CLIENT Ms. Ai Kong **PROJECT NAME** Kong Lot

PROJECT NUMBER ES-2861 **PROJECT LOCATION** Bellevue



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
○	TP-1	13.0ft.	Brown Silty SAND with Gravel, SM					
☒	TP-2	8.0ft.	Brown Silty SAND, SM					

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
○	TP-1	13.0ft.	37.5	1.538	0.229		27.6	55.1	17.3	
☒	TP-2	8.0ft.	9.5	0.237	0.078		1.2	69.5	29.3	

GRAIN SIZE ES-2861.GPJ GINT US LAB.GDT 6/11/13

CRITICAL AREAS REPORT
AND
MITIGATION PLAN

FOR

3938 179TH LANE SE - SINGLE FAMILY RESIDENCE

Wetland Resources, Inc. Project #20213

Prepared By
Wetland Resources, Inc.
9505 19th Avenue SE, Suite 106
Everett, WA 98208
(425) 337-3174

Prepared For
Arcon Tenant Improvement Contractors, LLC
Attn: Elliot Severson
2100 124th Avenue NE; #120
Bellevue, WA 98005

Revision 3: February 22, 2024
Revision 2: November 3, 2023
Revision 1: August 24, 2023
March 30, 2023

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1.0 INTRODUCTION

Wetland Resources, Inc. (WRI) performed site investigations on October 19 and December 9, 2020 to review critical areas and wildlife habitat on and in the vicinity of King County parcels 8043700182 and 8043700184. The information in this report pertains specifically to the western parcel (8043700182) which is located at 3938 179th Lane Southeast in the city of Bellevue, WA. The property is mapped by the Public Land Survey System (PLSS) as a portion of Section 13, Township 24N, Range 05E, W.M. and is located within the west Lake Sammamish sub-basin of the Cedar/Sammamish watershed, Water Resources Inventory Area (WRIA) 8. A geotechnical study was conducted by Earth Solutions Northwest (ESNW) to identify and evaluate geological hazard areas within the assemblage. The *Geotechnical Engineering Study* (ESNW, dated March 23, 2023), henceforth referred to as the geotechnical report, contains a detailed analysis of geological hazard areas, impacts, and construction recommendations as well as compliance with Bellevue Land Use Code (LUC) as it applies. The geotechnical report is included in Appendix C of this report.

The purpose of this report is to provide information on existing conditions of the site as required when a project is requesting a modification of critical areas, buffers, or setbacks. This report documents presence of critical areas on and in the vicinity of the subject site and includes discussion about modifying on-site top of slope buffers, stream buffers, and stream buffer structure setbacks.

Figure 1 - Aerial photo of the subject property (not to scale)

1.1 SITE DESCRIPTION

The subject site is located in an area of dense residential development along the east side of 179th Lane SE. The northern terminus of 179th Lane SE and the driveways for the houses located at 3921, 3923, and 3925 179th Lane SE cut through the northern portion of the parcel. The remainder of the property is undeveloped and forested with a native evergreen canopy. Topography of the site slopes to the north and west with moderate to steep slopes. A steep slope hazard area extends along the western boundary of the parcel. Per LUC 20.25H.035.A, Steep slopes require a 50-foot top of slope buffer and a 75-foot toe of slope setback in the City of Bellevue. One Type O stream (Stream A) was identified on site during the site investigation and Lake Sammamish (Type S) is located approximately 220 feet north of the site. Type O streams require 25-foot buffers measured from the top of bank and Type S waters require 100-foot buffers. The top of slope and top of bank are coincident on this parcel.

1.2 PROJECT DESCRIPTION

The applicant proposes to construct a single-family residence (SFR) on site. Access to the site will be provided via a shared driveway on the neighboring parcel to the east (8043700184). The geotechnical report provided by Earth Solutions Northwest (ESNW), which is included as Appendix C of this report, provides guidance that no buffer is necessary from the top of slope. To accommodate development of the property, the applicant is proposing to reduce the top of slope buffer, modify the buffer of Stream A through buffer width averaging, and reduce the stream buffer structure setback.

The top of slope buffer south of the proposed house will be reduced from 50 feet to 25 feet. In this area, the top of slope buffer and the buffer of Stream A will become coincident. In the area west of the house, the buffer will be reduced to a 18.75 feet.
by ESNW provides justification for the modified steep slope buffer. The modified top of slope buffer is depicted on Sheet 1 of Appendix B for this report.

The buffer of Stream A and associated structure setback will utilize different modifications to accommodate the proposed development. The applicant is proposing buffer width averaging and a stream buffer setback reduction near the northern discharge point of Stream A. The buffer of Stream A located south of the house will not be averaged or reduced and will extend 25 feet from the top of bank. West of the house, buffer averaging will reduce the buffer of Stream A to a minimum of 18.75-feet. The buffer building setback will be reduced to a minimum of 1.7 feet. A full discussion of the stream buffer and setback modifications is available in Section 4 of this report. The modifications to the stream buffer and building setbacks are depicted on Sheet 2 of Appendix B for this report.

Development of the site will impact 1,669 square feet within the standard 50-foot top of slope buffer. These impacts include 258 square feet within the standard 10-foot stream buffer structure setback following implementation of the proposed buffer averaging plan. As mitigation for these impacts, 2,070 square feet of buffer enhancement is proposed within the stream and top of slope buffer areas between Stream A, the top of slope, and the proposed SFR. The impact and enhancement areas are depicted on Sheet 3 of Appendix B for this report.

2.0 CRITICAL AREA DETERMINATION

2.1 REVIEW OF EXISTING INFORMATION

Prior to conducting an on-site investigation of the project area, public resource information was reviewed to identify the presence of wetlands, streams, and other critical areas within and near the project area. The following information was examined:

- *United States Fish and Wildlife Service National Wetlands Inventory (NWI)*: This resource depicts Lake Sammamish approximately 250 feet north of the site.
- *USDA/NRCS Web Soil Survey*: This resource identifies two soil types on site: Alderwood gravelly sandy loam (8 to 15 percent slopes) and Alderwood gravelly sandy loam (15 to 30 percent slopes).
- *WDFW SalmonScape Interactive Map*: This resource does not depict any streams on site. Lake Sammamish is mapped approximately 220 feet north of the site and is identified as a documented habitat for Sockeye salmon, Steelhead trout, Cutthroat trout, Coho salmon, Kokanee salmon, and Chinook salmon.
- *WDFW Priority Habitat and Species (PHS) Interactive Map*: Lake Sammamish is mapped approximately 220 feet north of the site. The lake is identified as documented habitat for Sockeye salmon, Steelhead trout, Cutthroat trout, Coho salmon, Kokanee salmon, and Chinook salmon.
- *King County iMap Interactive Mapping Tool*: The King County iMap does not illustrate any wetlands or streams on or near the site. Lake Sammamish is mapped approximately 220 feet to the north of parcel assemblage. Additionally, the subject property is mapped within a seismic hazard area and an erosion hazard area.
- *Washington State DNR Forest Practices Mapping Tool (FPMT)*: This resource does not identify any streams on or near the site.
- *Bellevue Map Viewer*: This resource shows steep slopes within the western portion of the site.

2.2 CRITICAL AREA DETERMINATION

One stream (Stream A) was identified within a ravine in the western portion of the subject parcel. Additionally, steep slopes are present along the eastern banks of the ravine and extend southward along the western site boundary. No other critical areas were identified on or in the immediate vicinity of the investigation area during the October and December 2020 site visits.

2.2.1 Stream Determination

The ordinary high water mark (OHWM) of streams, where present, was determined using the methodology described in the Washington State Department of Ecology document *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson et al. 2016). Stream A was classified pursuant to Bellevue LUC 20.25H.075.

Stream A
Cowardin Classification: Riverine, Lower Perennial, Unconsolidated Bottom, Cobble Gravel
City of Bellevue Classification: Type O
City of Bellevue Standard Buffer: 25 Feet

Stream A is a Type O stream located in the western portion of the site. Per the City of Bellevue drainage maps, the origin of the stream appears to be a ditch along the West Lake Sammamish Parkway SE, located south of the subject property, which discharges to a shallow ravine that runs along the western property boundary. The stream discharges to a culvert that conveys water to the north for approximately 330 feet before emptying into Lake Sammamish. Stream A does not have an above ground connection to another stream or body of water. Per Bellevue Land Use Code (LUC) 20.25H.075, Stream A is classified as a Type O water and receives a 25-foot buffer and an additional 10-foot building setback on undeveloped parcels.

2.2.2 Wetland Determination

Wetland conditions, if present, were evaluated and delineated using routine methodology described in the *Corps of Engineers Wetlands Delineation Manual* (*Final Report*; January 1987), except where superseded by the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (*Version 2.0*, referred to as 2010 Regional Supplement). Our findings are consistent with these manuals. The following criteria descriptions were used in the boundary determination of on-site wetlands:

1.) Examination of the site for hydrophytic vegetation (species present and percent cover);

2.) Examination of the site for hydric soils;

3.) Determining the presence of wetland hydrology

No wetlands were identified on site or on the parcels neighboring the assemblage. The site is forested with a canopy dominated by Douglas-fir (*Pseudotsuga menziesii*; FACU), big leaf maple (*Acer macrophyllum*; FACU) and Western hemlock (*Tsuga heterophylla*; FACU). The understory features sparse shrub vegetation including osoberry (*Oemleria cerasiformis*; FACU), salmonberry (*Rubus spectabilis*; FAC), and Oregon grape (*Mahonia nervosa*; FACU). The forest floor is almost entirely dominated by invasive English ivy (*Hedera helix*; FACU); however, sword fern (*Polystichum munitum*; FACU) and trailing blackberry (*Rubus ursinus*; FACU) are also present. Soils within the investigation area are generally a very dark grayish brown (10YR 3/2) silt loam in the top 10 to 11 inches of the soil profile. The sublayer is typically olive brown (2.5Y 4/3) silt loam and extends to a depth of at least 17 inches. Soils were generally very dry, and no primary or secondary wetland hydrology indicators were observed within the investigation area. The absence of hydrophytic vegetation, hydric soil indicators, and wetland hydrology indicators shows that wetland conditions are not present on site.

2.2.3 Steep Slopes

Steep slope areas are present in the western portion of the site. The requirements for development on or near steep slopes are outside the purview of this report and is addressed in the geotechnical report prepared by ESNW. The geotechnical report states that the on-site steep slopes do not require a buffer and instead recommend a 10-foot building setback from the top of slope. The applicant is proposing to reduce the top of slope buffer from 50 feet to 18.75 feet.

The reduced buffer will be used to accommodate development of the western parcel. The proposed house will impact 1,669 square feet of the standard steep slope buffer. Mitigation for the proposed impacts will be comprised of understory plantings within the steep slope buffer area between the proposed house and steep slopes.

2.3 HABITAT ASSESSMENT

Habitat associated with Species of Local Importance listed in LUC 20.25H.165.A is designated as critical area under LUC 20.25H.150.B. Therefore, Wetland Resources, Inc. performed an assessment of the property to determine the likelihood of use by these species.

2.3.1 Vegetation Description

The subject property is primarily undeveloped and mostly comprised of an immature native evergreen forest with sparsely distributed deciduous trees. A small, shared gravel parking area is located within the northern portion of the site. The understory is primarily comprised of native sparsely distributed shrub species with a dense ground cover layer of invasive English Ivy (*Hedera helix*). The English Ivy extends up more than halfway on most of the trees. Despite the stress caused by the invasive vine species most of the trees on site are in relatively healthy condition with limited evidence of excavation by woodpecker species. Few snags were found on site. The canopy is comprised of Douglas fir (*Pseudotsuga menziesii*), Western hemlock (*Tsuga heterophylla*), and big-leaf maple (*Acer macrophyllum*). The shrub layer is comprised of salal (*Gaultheria shallon*), beaked hazelnut (*Corylus cornuta*), red huckleberry (*Vaccinium parvifolium*), Western red cedar saplings (*Thuja plicata*), English holly (*Ilex aquifolium*), Oregon grape (*Mahonia nervosa*), snowberry (*Symphoricarpos albus*), and kinnikinic (*Arctostaphylos uva-ursi*). The ground cover is comprised mostly of English ivy (*Hedera helix*) and sword fern (*Polystichum munitum*).

2.3.2 Species of Local Importance

During our site investigation, multiple bird species were observed. These birds included: Black-capped Chickadee (*Poecile atricapillus*), American Crow (*Corvus brachyrhyncos*), American Robin (*Turdis migratorius*), Golden-crowned Kinglet (*Regulus satrapa*), Red-breasted Nuthatch (*Sitta canadensis*), Spotted Towhee (*Pipilo maculatus*), and Dark-eyed Junco (*Junco hyemalis*). Based on the available habitat, other avian species that are likely to utilize the site include Song Sparrow (*Melospiza melodia*), Stellar's Jay (*Cyanocitta stelleri)*, and Common Starling (Sturnus vulgaris). Mammalian species that may utilize this site include squirrels (*Sciurus spp.*), shrews (*Sorex* spp.), raccoons (*Procyon lotor*), skunks (*Mephitis* spp.), deer mice (*Peromyscus maniculatus*), and Virginia opossums (*Didelphis virginiana*). This list is not intended to be all-inclusive, and may omit species that currently utilize or could utilize the site.

No priority species or habitats are identified by the WDFW PHS online mapping application, or any other commonly available public resource, as being present on the subject property.

The wildlife species detected on-site, as well as those predicted to occur on-site are not on the City of Bellevue's Species of Local Importance list (LUC 20.25H.150(A)). The property lacks special habitat features such as large snags, large nesting trees, and ponds. There is a stream (Stream A) located on site; however, based of public resources, this stream is not mapped as supporting chinook, bull trout, coho, or river lamprey - Bellevue Species of Local Importance. Stream A is considered a Type O water since it does not have an above ground connection to another stream or body of water. Please see *Section 2.2.1* of this report for more information on this stream. The subject property is located within a dense suburban residential development area which limits it's use as a wildlife corridor. Additionally, the subject property's proximity to Interstate 90, West Lake Sammamish Parkway Southeast, and Lake Sammamish, further restricts it usability as a protective terrestrial wildlife corridor. These features restrict wildlife movement and increasing noise disturbance to the subject property. The property is approximately 200 feet south of Lake Sammamish, 250 feet north of West Lake Sammamish Parkway Southeast, 1,200 feet from Interstate 90, and 4.11miles from Lake Washington. Therefore, this property is no more likely to provide potential habitat to species such as Osprey and Eagle than most other residential properties within that range. The closest potential habitat corridor would be Timberland Park located approximately 1,200 feet to the east.

2.3.3 Geologic Hazard Areas

Geologic hazard areas on the site were evaluated by ESNW and are described in detail in the geotechnical report (Appendix C). The geotechnical report provides recommendations for design and implementation of the proposed development to mitigate any risks associated with the geologic hazards identified within the property. Additionally, the geotechnical report addresses criteria under the City of Bellevue Land Use Code (LUC), section 20.25H, that pertain to geologic hazard areas as they apply to this project. The applicant is proposing to reduce the on-site steep slope buffer from 50 feet to 18.75 feet. To mitigate for the proposed reduction, the applicant will provide buffer enhancement at a ratio of 1:1 for required impacts within the standard steep slope buffer.

2.3.4 Potential Habitat Impact

The applicant is proposing a combination of stream buffer averaging, stream buffer structure setback reduction, and top of slope buffer reduction. The buffer of Stream A will be reduced from 25 feet to a minimum width of 18.75 feet as part of the buffer averaging plan; however, buffer addition will be provided at a ratio of 2.5:1 for the reduction. The top of slope buffer will be reduced from 50 feet to 18.75 feet. The proposed construction requires 1,669 square feet of impacts within the standard steep slope buffer and 258 square feet of impacts within the standard stream buffer structure setback. The provided geotechnical report details how these impacts do not increase the risks of erosion along the slope; however, the impacts will still adversely affect the habitat provided by the site. The applicant is proposing 2,070 square feet of buffer enhancement between Stream A, the top of slope, and the SFR. Buffer enhancement will include removing invasive species and installing dense native understory plantings between the house and steep slope area. The buffer enhancement is designed to improve the condition of the steep slope and stream buffers while ensuring that the overall functions of the site are maintained at a minimum.

3.0 SHORELINE MASTER PROGRAM COMPLIANCE

Lake Sammamish is a Type S waterbody located approximately 200 feet north of the site. Lake Sammamish is regulated under LUC 20.25E, Shoreline Overlay District. Per LUC 20.25E.010(F), Lake Sammamish is designated as a Shoreline of Statewide Significance. The shoreline jurisdiction projected by Lake Sammamish extends 200 feet from the ordinary high water mark of the lake and extends onto the northernmost portion of the site. On-site shorelands are currently used as driveways and communal parking for the parcels immediately north of the site. No development or alterations are proposed within the shoreline overlay district.

4.0 PROPOSED MODIFICATION TO LUC

Stream A, the steep slope area, and associated buffer areas on the subject site severely limit development potential of the parcel. The applicant is proposing to reduce the steep slope buffer from 50 feet to 18.75 feet at the recommendation of ESNW. Additionally, the applicant is proposing to modify the buffer of Stream A and the structure setback projected from the Stream buffer. Buffer modification will utilize buffer averaging as allowed by LUC 20.25H.075.2 and the stream buffer structure setback modification will use LUC 20.25H.075.3.

4.1 ADDITIONAL PROVISIONS REQUIRED FOR LANDSLIDE HAZARDS AND STEEP SLOPES

4.1.1 LUC 20.25H.125 Performance Standards – Landslide Hazards and Steep Slopes

The performance standards outlined in LUC 20.25H.125 are discussed in the geotechnical report. The applicant is proposing to reduce the top-of -slope buffer from 50 feet to a minimum of 7 feet at the recommendation of ESNW. No impacts are proposed within the reduced buffer.

4.1.2 LUC 20.25H.140 Critical Areas Report Additional Provisions and LUC 20.25H.145 Approval of Modifications

An assessment of the geological characteristics, potential threats to adjacent properties, and the safety of the construction design is presented in the geotechnical report. The geotechnical engineer has reviewed the residence location, design, and construction methods.

4.1.3 LUC 20.25H.145 Approval of Modifications

The performance standards outlined in LUC 20.25H.145 are discussed in the attached geotechnical report. Regarding LUC 20.25H.145.G, the habitat assessment provided in Section 2.3 of this report determined that Species of Local Importance are unlikely to use the site. The proposed buffer enhancement plan will ensure that the habitat functions and values provided by the top of slope buffer are maintained following development of the site.

4.2 STREAM BUFFER MODIFICATION AND SETBACK MODIFICATION

The applicant is proposing a combination of buffer width averaging per LUC 20.25H.075.C.2.a and a modification to the required structure setback per LUC 20.25H.075.D.3 to accommodate construction of a single-family residence in the northern portion of the site.

4.2.1 LUC 20.25H.075.C.2.a Performance Standards – Buffer Width Averaging

Text in LUC 20.25H.075.C.2.a is below in italics, with WRI responses in standard text.

> *a. Buffer Averaging. Buffer averaging may be allowed if all the following criteria are satisfied. Proposals to average the stream critical area buffer under this subsection shall require a Critical Areas Land Use Permit; provided, that a mitigation or restoration plan is not required for buffer averaging.*
>
> *i. Buffer averaging may be approved only if the applicant demonstrates that a modification to non-critical area setbacks pursuant to LUC 20.25H.040 would not accommodate the proposed development in a manner consistent with its intended use and function.*

Site topography is the limiting factor for development of the parcel. Modification of non-critical area setbacks would not create a usable development footprint on site.

> *ii. Through buffer averaging, the ecological structure and function of the resulting buffer is equivalent to or greater than the structure and function before averaging;*

The applicant is proposing 58 square feet of buffer reduction and 145 square feet of buffer addition, a ratio of 1:2.5. Buffer addition and reduction are proposed in areas with similar plant communities and topographical character. Therefore, the applicant will be providing buffer area of similar value to Stream A as compensation for the proposed buffer reduction. By increasing the overall buffer area, the buffer averaging plan will ensure that the functions and values of on-site buffer areas are maintained.

> *iii. The total buffer area is not reduced;*

The applicant is proposing 58 square feet of buffer reduction and 145 square feet of buffer addition. This will increase the on-site buffer area by 87 square feet.

> *iv. The buffer area is contiguous;*

The buffer addition area is contiguous with the southern portion of the standard buffer.

> *v. Averaging does not result in any impact to slope stability and does not increase the likelihood of erosion or landslide hazard;*

An assessment of the geological characteristics, potential threats to adjacent properties, and the safety of the construction design is presented in the geotechnical report. The geotechnical engineer has reviewed the residence location, design, and construction methods.

> *vi. Averaging does not result in a significant adverse impact to habitat associated with species of local importance; and*

Per the habitat assessment provided in Section 2.3 of this report, there are no species of local importance on site.

vii. At no point is the critical area buffer width less than 75 percent of the required buffer dimension.

The standard buffer of Stream A is 25 feet. The minimum proposed buffer width is 18.75 feet, which is 75 percent of the standard required buffer.

4.2.2 LUC 20.25H.075.D.3.a Performance Standards – Stream Structure Setback Modification

Text in LUC 20.25H.075.D.3.a is below in italics, with WRI responses in standard text.

Structure Setback Modification – Open Streams on Undeveloped Sites. The Director may waive or modify the structure setback on an undeveloped site as part of the permit or approval for the underlying proposal if the applicant demonstrates that:

a. Water quality, or slope stability as documented in a geotechnical report, will not be adversely affected;

Proposed enhancement plantings located within the buffer of Stream A will increase slope stability and water quality functions of the buffer. Dense roots from the plants will stabilize soils and filter pollutants from the water column as it moves along the slope. An assessment of the geological characteristics, potential threats to adjacent properties, and the safety of the construction design is presented in the geotechnical report. The geotechnical engineer has reviewed the residence location, design, and construction methods.

b. Encroachment into the structure setback will not disturb habitat of a species of local importance within a critical area or critical area buffer;

Per the habitat assessment provided in Section 2.3 of this report, there are no species of local importance on site.

c. Vegetation in the critical area and critical area buffer will not be disturbed by construction, development or maintenance activities and will be maintained in a healthy condition for the anticipated life of the development; and

The proposed development will not extend into the buffer of Stream A. No future encroachment into the buffer is expected throughout the life of the project.

d. Enhancement planting on the boundary between the structure setback and the critical area buffer will reduce impacts of development within the structure setback.

The applicant is proposing enhancement plantings throughout the reduced setback and buffer areas between Stream A and the development site. Dense vegetation will help stabilize steep slopes in the west, improve water quality and hydrologic functions provided by the forested area, and increase species richness and structural diversity in the buffer.

4.3 LUC 20.25H.255 CRITICAL AREA REPORT – DECISION CRITERIA

Text in italics below is from LUC 20.25H.255.B, with WRI responses in standard text.

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;*

The understory along the steep slopes and in the steep slope and stream buffer areas is dominated by invasive English ivy. The applicant is proposing buffer enhancement at a ratio greater than 1:1 for impacts to the top of slope buffer and stream buffer structure setback. Buffer enhancement will be comprised of removing invasive species and installing dense native understory plantings with the goal of improving habitat provided by the buffer and stabilizing the area between steep slopes, Stream A, and the proposed house. Dense understory plantings will also increase the water quality and hydrologic functions provided by the buffer of Stream A. Overall, the proposed project will result in a net improvement in critical area functions on the site.

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;*

Buffer enhancement is proposed within on-site top of slope buffer and stream buffer areas. Dense understory plantings will improve water quality by reducing hydrologic flows as water approaches Stream A. Reducing flow rates allows pollutants to fall out of suspension and for plants within the buffer to absorb water as it moves through the buffer. Removing invasive English ivy and replacing it with assorted native plants will also improve the habitat provided to wildlife that utilize the site by increasing species richness and structural diversity within the buffer.

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 proposed enhancement plantings between the slope and the proposed development will allow for greater sediment/pollutant filtration and increased interception and infiltration of stormwater.

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

The applicant will provide a surety at the time of the building permit re-submittal.

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*

No other critical areas are located on or in the vicinity of the site. Only the previously mentioned stream and steep slope areas exist.

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

The subject site is in single-family residential neighborhood. The proposed development is comprised of one SFR and a shared driveway.

5.0 MITIGATION PLAN

The proposed development necessitates 1,669 square feet of impact to the standard top of slope buffer in the western portion of the site. Mitigation for the top of slope buffer impacts will be provided for via buffer enhancement at a ratio of 1:1. Additionally, stream buffer structure setback is being reduced to accommodate the proposed house. The setback modification will impact 258 square feet of area within the 10-foot stream buffer setback. An additional 401 square feet of buffer enhancement is proposed as compensation for these impacts. In total, 2,070 square feet of buffer enhancement is proposed. Buffer enhancement will be located within the top of slope buffer area between Stream A, the steep slopes, and the proposed residence.

Table 1 – Buffer and Setback Impacts and Mitigation Summary

Impact Type	Impact Area (square feet)	Mitigation Type	Mitigation Area (square feet)	Mitigation Ratio
Top of slope buffer	1,669	Enhancement	1,669	1:1
Stream buffer building setback	258	Enhancement	401	>1.5:1

5.1 MITIGATION SEQUENCING

The City of Bellevue requires that all reasonable efforts be taken to avoid and minimize impacts to critical areas and buffers. If impacts do occur, they must be compensated in the following order of preference (LUC 20.25H.215):

A) Avoiding the impact altogether by not taking a certain action or parts of an action;
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;
C) Performing the following types of mitigation (listed in order of preference):
    1) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

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

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

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

The applicant is avoiding impacts to all on-site critical areas. However, complete avoidance of the steep slope buffer and standard buffer of Stream A is not feasible due to site topography and the extent of on-site buffer areas.

Impacts to buffer areas are minimized by siting the SFR as far from Stream A and the steep slopes as possible. Buffer averaging will be used to avoid permanent impacts to stream buffer areas. Top of slope buffer impacts and modifications to stream buffer structure setbacks will be mitigated through buffer enhancement located between the proposed project and steep slope areas. The location of the mitigation area was selected to further protect the western steep slope area and stream buffer from future site usage and to improve slope stability and wildlife habitat functions adjacent to the proposed development. Overall, mitigation measures will enhance the water quality, hydrologic, and wildlife habitat buffer functions provided to the steep slope and Stream A.

All mitigation areas will be monitored for a period of five years from the time of installation per the approved mitigation and monitoring plan. Contingency plans will be followed if deemed necessary by the City or consulting biologist. The monitoring period will end when the definition of success is met. Please refer to Section 6.3 below for details of the monitoring program.

5.2 ENHANCEMENT PLAN

The proposed enhancement area is located within the top of slope and stream buffer area between the proposed house, top of slope, and Stream A. The enhancement area is currently forested with an understory dominated by invasive English ivy. The applicant proposes to remove invasive species from the enhancement area and install native plant species in their place. Enhancement measures will result in improved slope stabilization and erosion control functions, higher plant cover and diversity, and wildlife habitat functions. A net gain in steep slope and stream buffer functions will be obtained through the proposed mitigation plan.

5.2.1 Site Preparation

Prior to starting work, a silt fence (or similar erosion control device) shall be installed on the downslope edge of the mitigation area and left in place until native plant installation is complete and soils are stabilized, at which time it will be removed from the site. Before native plant installation, invasive species will be removed from the enhancement area. All invasive species shall be removed and disposed of off-site. After non-native plant removal, a topsoil or compost soil amendment may be tilled into native soils as necessary if recommended by the contracted landscaper.

5.2.2 Buffer Enhancement Planting Plan

The proposed planting plan includes plant species recommended in the Geologically Hazardous Areas section of the City of Bellevue's Critical Areas Handbook. Invasive species in the enhancement area will be replaced with a diverse palette of native shrubs and groundcover. Five shrub species and two groundcover species are proposed as shown in the table below. After planting, the entire enhancement area shall be stabilized with woodchip mulch (see *Planting Notes* for more detail). The attached *Critical Areas Report and Buffer Mitigation Plan Maps* (Appendix B) displays the proposed plant schedule and layout.

Steep Slope Buffer Enhancement Planting Area (2,070 square feet)

Common Name	*Latin Name*	*Size*	*Spacing*	*Quantity*
Red elderberry	*Sambucus racemosa*	1 gal.	4.5'	21
Beaked hazelnut	*Corylus cornuta*	1 gal.	4.5'	21
Osoberry	*Oemleria cerasiformis*	1 gal.	4.5'	20
Vine maple	*Acer circinatum*	1 gal.	4.5'	20
Western serviceberry	*Amelanchier alnifolia*	1 gal.	4.5'	20
Kinnikinnick	*Arctostaphylos uva-ursi*	1 gal	3'	64
Western sword fern	*Polystichum munitum*	1 gal.	3'	64

6.0 MITIGATION PLANTING NOTES

Plant between late fall and early spring and obtain all plants from a reputable nursery. Care and handling of all plant materials is extremely important to the overall success of the project. The origin of all plant materials specified in this plan shall be native plants, nursery grown in the Puget Sound region of Washington. Some species substitution may be allowed with agreement of the contracted ecologist.

Pre-Planting Meeting

Prior to control of invasive species or installation of mitigation plantings, a site meeting between the contracted landscaper and the consulting ecologist may occur to resolve any questions that may arise. During this meeting a discussion regarding plant spacing and proper locations of plant species will occur, as well as an inspection of the plants prior to planting. Minor adjustments to the original design may be required prior to and during construction.

Handling

Plants shall be handled so as to avoid all damage, including: breaking, bruising, root damage, sunburn, drying, freezing or other injury. Plants must be covered during transport. Plants shall not be bound with wire or rope in a manner that could damage branches. Protect plant roots with shade and wet soil in the time period between delivery and installation. Do not lift container stock by trunks, stems, or tops. Do not remove from containers until ready to plant. Water all plants as necessary to keep moisture levels appropriate to the species horticultural requirements. Plants shall not be allowed to dry out. All plants shall be watered thoroughly immediately upon installation. Soak all containerized plants thoroughly prior to installation.

Storage
Plants stored by the Permittee for longer than one month prior to planting shall be planted in nursery rows and treated in a manner suitable to those species' horticultural requirements. Plants must be re-inspected by the landscape architect prior to installation.

Damaged plants
Damaged, dried out, or otherwise mishandled plants will be rejected at installation inspection. All rejected plants shall be immediately removed from the site, and properly replaced.

Plant Names
Plant names shall comply with those generally accepted in the native plant nursery trade. Any question regarding plant species or variety shall be referred to the landscape architect or consulting ecologist. All plant materials shall be true to species and variety and legibly tagged.

Quality and condition
Plants shall be normal in pattern of growth, healthy, well-branched, vigorous, with well-developed root systems, and free of pests and diseases. Damaged, diseased, pest-infested, scraped, bruised, dried out, burned, broken, or defective plants will be rejected. Plants with pruning wounds over 1" in diameter will be rejected.

Roots
All plants shall be balled and burlapped (B&B) or containerized, unless explicitly authorized by the landscape architect and/or consulting ecologist. Rootbound plants or B&B plants with damaged, cracked, or loose rootballs (major damage) will be rejected. Immediately before installation, plants with minor root damage must be root-pruned. Matted or circling roots of containerized plantings must be pruned or straightened and the sides of the root ball must be roughened from top to bottom to a depth of at least an inch.

Sizes
Plant sizes shall be the size indicated in the plant schedule in approved plans, unless approved by the landscape architect or consulting ecologist. Larger stock may be acceptable provided that it has not been cut back to the size specified, and that the root ball is proportionate to the size of the plant. Smaller stock may be acceptable, and preferable under some circumstances, based on site-specific conditions. Measurements, caliper, branching, and balling and burlapping shall conform to the American Standard of Nursery Stock by the American Association of Nurserymen (latest edition).

Form
Evergreen trees shall have single trunks and symmetrical, well-developed form. Deciduous trees shall be single trunked unless specified as multi-stem in the plant schedule. Shrubs shall have multiple stems and be well-branched.

Timing of Planting
Unless otherwise approved by the landscape designer/consulting ecologist, all planting shall occur between October 1 and March 1. Overall, the earlier the plants go into the ground during the

dormant period, the more time they have to adapt to the site and extend their root systems before the water demands of summer.

Weeding
Non-native, invasive vegetation in the mitigation area will be hand-weeded from around all installed plants at the time of installation and on a routine basis throughout the monitoring period. No chemical control of vegetation on any portion of the site shall occur without prior approval from the City and/or consulting ecologist.

Site conditions
The landscaping contractor shall immediately notify the landscape designer and/or consulting ecologist of drainage or soil conditions likely to be detrimental to the growth or survival of plants. Planting operations shall not be conducted under the following conditions: freezing weather, when the ground is frozen, excessively wet weather, excessively windy weather, or in excessive heat.

Planting Pits
Planting pits shall be circular or square with vertical sides, and shall be at least 12" wider in diameter than the root ball of the plant. Break up the sides of the pit in compacted soils. Set plants upright in pits. All burlap shall be removed from the planting pit/rootball. Backfill of native soils shall be worked back into holes such that air pockets are removed without adversely compacting soils.

Fertilizer
Slow release fertilizer may be used if pre-approved by the consulting ecologist. Fertilizers shall be applied only at the base of plantings underneath the required covering of mulch (that does not make contact with stems of the plants). No fertilizers shall be placed within planting holes.

Support Staking
Most shrubs and many trees DO NOT require any staking. If the plant can stand alone without staking in a moderate wind, do not use a stake. If the plant needs support, then strapping or webbing should be used as low as possible on the trunk to loosely brace the tree with two stakes. Do not brace the tree tightly or too high on the trunk. If the tree is unable to sway, it will further lose the ability to support itself. Do not use wire in a rubber hose for strapping as it exerts too much pressure on the bark. As soon as supporting the plant becomes unnecessary, remove the stakes. All stakes must be removed within two (2) years of installation.

Arrangement and Spacing
The plants shall be arranged in a pattern with the appropriate numbers, sizes, species, and distribution that are required in accordance with the approved plans. The actual placement of individual plants shall mimic natural, asymmetric vegetation patterns found on similar undisturbed sites in the area. Spacing of the plantings may be adjusted to maintain existing vegetation with the agreement of the landscape designer and/or consulting ecologist.

Compost
If native soils appear unsuitable for the long term survival of installed plant material, organic compost will be added to the planting area.

Mulch
Mulch (woodchip/arborist) shall be applied to the entire enhancement area after plant installation. Mulch shall be 3-4 inches deep, and shall be kept 2 inches away from the trunks/stems of installed plants to prevent damage.

Erosion and Sediment Control Plan
A silt fence (or similar erosion control device) shall be installed at the downslope edge of the cleared area upslope of the culvert and left in place until native plant installation is complete and soils are stabilized, at which time it shall be removed from the site

6.2 MITIGATION GOALS AND OBJECTIVES

The goal of this mitigation plan is to improve the functions of the steep slope and buffer, and further protect the on-site steep slope from on-going residential uses. The specific goals of the plan are to increase vegetative species diversity and cover, increase browsing and cover opportunities for wildlife, limit erosion, improve the bio-filtration capacity of the buffer, and decrease invasive and non-native plant cover without harming steep slope areas.

To achieve the goals previously stated, non-native plants will be carefully removed from the steep slope and buffer, and diverse native vegetation will be installed. Installed vegetation will be of high value to wildlife, thicket-forming, form wide-spreading and complex root structure, and will densely cover the ground surface.

Over time, this mitigation project is expected to achieve a net-gain in functions to wildlife, water quality, hydrology, erosion capacity, and soil stability within the buffer area, and is expected to better protect the on-site steep slope.

6.3 PROJECT MONITORING PROGRAM

Monitoring shall be conducted annually for five years in accordance with the approved Buffer Mitigation Plan.

Requirements for monitoring project:

1. Initial compliance report/as-built map
2. Semi-annual site inspections (once in the spring, once in the fall) for five years
3. Annual reports including final report (one report submitted in the fall of each monitored year)

Purpose for Monitoring

The purpose for monitoring shall be to evaluate the project's success. Success will be determined if monitoring shows at the end of five years that the definitions of success stated below are being met. Access shall be granted to the planting area for inspection and maintenance to the contracted landscaper and/or ecologist and the City during the monitoring period or until the project is evaluated as successful.

Vegetation Monitoring Methodology

Due to the small size of the buffer enhancement areas, a total plant count will be conducted in lieu of transect or sampling points. Monitoring of vegetation should occur annually between May 15 and September 30 (prior to leaf drop), unless otherwise specified.

The following data will be recorded for the buffer enhancement areas:

- Species present
- Aerial cover by native and non-native species
- Quantity of dead plants
- General observations

Photo Points

Permanent photo points will be established within the mitigation area. Photographs will be taken from these points to visually record condition of the enhancement area. Photos shall be taken annually between May 15 and September 30 (prior to leaf drop), unless otherwise specified. A minimum of two photo points will be established in the mitigation area.

Monitoring Reports

Monitoring reports shall be submitted by December 31 of each year during the monitoring period. As applicable, monitoring reports must include descriptions/data for:

(1) Site plan and vicinity map;
(2) Historic description of project, including date of installation, current year of monitoring, restatement of planting/restoration goals, and performance standards;
(3) Plant survival, vigor, and areal coverage for every plant stratum (sampling point data), and explanation of monitoring methodology in the context of assessing performance standards;
(4) Slope condition and site stability;
(5) Overall buffer conditions, e.g., surrounding land use, use by humans and/or wildlife;
(6) Observed wildlife, including amphibian, avian, and others;
(7) Assessment of invasive biota and recommendations for management;
(8) Color photographs taken from permanent photo points that shall be depicted on the monitoring report map.

Project Success and Compliance

Upon installation and completion of the approved mitigation plan, an inspection by a qualified ecologist and/or the City will be made to determine plan compliance. A compliance report will be supplied to the City of Bellevue within 30 days of the completion of planting. The Applicant or consulting ecologist/landscape designer will perform condition monitoring of the plantings

between May 15 and September 30 of each year for five years. A written report describing the monitoring results will be submitted to the City after each site inspection of each monitored year. Final inspection will occur five years after completion of this project, and a report on overall project success will be prepared.

Performance Standards
Project success will be measured by native species survival and richness, and areal cover of native and invasive plants. The mitigation area must achieve the following Performance Standards to be considered successful:

	Year 1	**Years 2 & 3**	**Year 4**	**Year 5**
Installed Plant Survival	100%	90%	85%	80%
Invasive/Non-native species cover	<5%	<5%	<5%	<5%

6.4 PERFORMANCE BOND

The City of Bellevue may require a performance bond or maintenance assurance device if it is determined to be necessary. The City will determine the type and amount of assurance device required. The performance or maintenance assurance device amount is typically determined from the estimated cost of work. An estimate of the cost of project installation is provided below.

Cost of Plants and Labor 230 1-gal plants ($11.50 per plant)	$2645.00
Cost of Silt Fence ($1.60/linear foot)	$136.00
Cost of Mulch ($3.25/sq.yd.)	$250.00
TOTAL ESTIMATED COST	$3,021.00

6.5 MAINTENANCE PROGRAM

This mitigation project will require periodic maintenance to replace mortality of planted species and control invasive, non-native plant species, and other undesirable competing species. The mitigation planting areas will be maintained (at a minimum) in spring and late summer of each year for the five-year monitoring period. Maintenance may include, but will not be limited to, removal of competing species and non-native vegetation (by hand if necessary), irrigation, replacement of dead plants, and/or the replacement of mulch during each maintenance period. The Applicant is responsible for ensuring maintenance occurs in all monitoring years.

Duration and Extent
In order to achieve performance standards, the Permittee shall have the planting area maintained for the duration of the five-year monitoring period. Maintenance will include: watering, weeding around the base of installed plants, pruning, replacement, re-staking, removal of all classes of noxious weeds (see Washington State Noxious Weeds List), and any other measures needed to insure plant survival.

Survival
The Permittee shall be responsible for the health of 100 percent of all newly installed plants for *one growing season* after installation has been accepted by the City. A growing season for these purposes is defined as occurring from spring to spring (March 15 to March 15 of the following year). For fall installation (often required), the growing season will begin the following spring. The Permittee shall replace any plants that are failing, weak, defective in manner of growth, or dead during this growing season.

Installation Timing for Replacement Plants
Replacement plants shall be installed between October 1 and March 1, unless otherwise determined by the consulting ecologist and/or City staff.

Standards for Replacement Plants
Replacement plants shall meet the same standards for size and type as those specified for the original installation unless otherwise directed by the landscape designer, consulting ecologist, and/or City staff.

Mulch
All plantings will have wood chip mulch reapplied at their bases for at least the first two growing years of the monitoring period. Plants shall receive 3-4 inches of wood chips (a.k.a. arborist mulch). Mulch shall be kept well away (at least 2 inches) from the trunks and stems of woody plants.

Herbicides/Pesticides and Fertilizer
Chemical control of invasive, non-native species, if necessary, shall be applied only after approval by the City of Bellevue or consulting ecologist. Herbicide shall be applied by a licensed applicator following all label instructions. Chemical control and fertilization within the mitigation areas will only be performed if deemed necessary.

Watering/Irrigation
Water should be provided during the dry season (~July 1 through September 15 at minimum and during any other extended dry periods) to insure plant survival and establishment. Water should be applied at a rate of one inch of water twice per week for the first year after installation and one inch of water per week for the second year during the dry season. The landscaping contractor and/or property owners will determine if additional watering is necessary. Due to the steep slopes on the site, hand watering or a drip system, that waters for short periods at a time, shall be used to prevent any erosion or slope stability issues.

Pruning of Existing Trees
In the future, if it is necessary to prune the existing trees away from 179th Lane SE, individual branches will be removed, leaving the tree(s) intact. Should the need to remove a tree arise, the property owners will comply with the current City of Bellevue regulations for vegetation removal in critical areas and/or buffers at that time.

6.6 CONTINGENCY PLAN

If, during any of the annual inspections, performance standards are not being met for species survival, additional plants of the same species will be added to the mitigation area. If invasive, non-native species exceed 5 percent cover (as measured by areal cover), manual control shall occur. If any of these situations persist to the next inspection, a meeting with the landscape designer/consulting ecologist and the Permittee will be held to decide upon contingency plans. Elements of a contingency plan may include, but will not be limited to: more aggressive weed control, mulching, replanting with larger plant material, species substitution, fertilization, soil amendments, and/or irrigation.

7.0 USE OF THIS REPORT

This Critical Areas Report and Mitigation Plan is supplied to Arcon Tenant Improvement Contractors, LLC as a means of determining on-site critical area conditions, as required by the City of Bellevue during the permitting process. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions.

The laws applicable to wetlands are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report has conformed to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report, and any implied representation or warranty is disclaimed.

Wetland Resources, Inc.

Eamonn Collins
Associate Ecologist

8.0 REFERENCES

Bellevue, City of. *Bellevue Land Use Code*. Chapter 20.25H: Critical Areas Overlay Districts, Revised August 2020.

Bellevue, City of. 2023. *City of Bellevue Critical Hazards Maps. http://cobgis.maps.arcgis.com/home/item.html?id=8a2e50c0ce6d473f93054798085ff30f*

Bellevue, City of. *Critical Areas Handbook*. Prepared by City of Bellevue and The Watershed Company.

Cowardin, et al., 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Department of the Interior. FWS/OBS-79/31. December 1979.

King County. 2023. *King County iMap Interactive Mapping Tool*. http://gismaps.kingcounty.gov/iMap/.

Munsell Color. 2012. *Munsell Soil Color Book.* Munsell Color, Grand Rapids, MI.

Natural Resources Conservation Service (NRCS). 2023. *Web Soil Survey*. United States Department of Agriculture. http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

Olson, P., & Stockdale, E. (2010). *Determining the Ordinary High Water Mark on Streams in Washington State*. Second Review Draft. Washington State Department of Ecology, Shorelands & Environmental Assistance Program, Lacey, WA. *Ecology Publication*, 08-06.

U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0).* Vicksburg, MS

U.S. Army Corps of Engineers. 2018. *National Wetland Plant List (Version 3.4*), U.S. Army Corps of Engineers Engineer Research and Development Center Cold Regions Research and Engineering Laboratory, Hanover NH. http://wetlandplants.usace.army.mil/nwpl_static/v34/home/home.html

U.S. Fish & Wildlife Service (USFWS). 2023. *National Wetlands Inventory (NWI) Online Mapper*. http://www.fws.gov/wetlands/Data/Mapper.html.

WA Department of Fish & Wildlife (WDFW). 2023a. *Priority Habitat and Species (PHS) Interactive Map*. http://apps.wdfw.wa.gov/phsontheweb/

WA Department of Fish & Wildlife (WDFW). 2023b. *SalmonScape Online Mapping Application*. http://apps.wdfw.wa.gov/salmonscape/map.html

WA Department of Natural Resources (DNR). 2023. *Forest Practices Activity Mapping Tool (FPAMT)*. http://fortress.wa.gov/dnr/app1/fpars/viewer.htm.

APPENDIX A:
CORPS WETLAND DETERMINATION DATA FORMS

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

Project/Site: 20213 - 3938 & 3958 179th Lane SE - SFRs City/County: City of Bellevue Sampling Date: 10/19/20

Applicant/Owner: Arcon Tenant Improvement Conractors LLC State: WA Sampling Point: S1

Investigator(s): EC, MK Section, Township, Range: S13, T24N, R5E, W.M.

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 30

Subregion (LRR): LRR-A Lat: 47.570713 Long: -122.100735 Datum: NAD83

Soil Map Unit Name: Alderwood gravelly sandy loam, 15 to 30 percent slopes NWI classification: N/A

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

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

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

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

Remarks:

In southern portion of the site near top of the slope.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m^2)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer macrophyllum	75	Y	FACU
2. Pseudotsuga menziesii	70	Y	FACU
3.			
4.			
	145	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m^2)			
1. Symphoricarpos albus	10	Y	FACU
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 1m^2)			
1. Polystichum munitum	20	Y	FACU
2. Mahonia nervosa	10	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 3m^2)			
1. Hedera helix	90	Y	FACU
2.			
	90	= Total Cover	

% Bare Ground in Herb Stratum 70

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☑

Remarks:

SOIL

Sampling Point: S1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 3/2	100					Silt Loam	
11-16	2.5Y 4/3	100					Silt Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☑

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☐ No ☑

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

Remarks:

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

Project/Site: 20213 - 3938 & 3958 179th Lane SE - SFRs City/County: City of Bellevue Sampling Date: 10/19/20

Applicant/Owner: Arcon Tenant Improvement Conractors LLC State: WA Sampling Point: S2

Investigator(s): EC, MK Section, Township, Range: S13, T24N, R5E, W.M.

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 30

Subregion (LRR): LRR-A Lat: 47.571308 Long: -122.100807 Datum: NAD83

Soil Map Unit Name: Alderwood gravelly sandy loam, 15 to 30 percent slopes NWI classification: N/A

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

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

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

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

Remarks:

In northern portion of the site near toe of the slope.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m^2)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer macrophyllum	40	Y	FACU
2. Prunus sp.	30	Y	FAC
3. Tsuga heterophylla	25	Y	FACU
4. Pseudotsuga menziesii	25	Y	FACU
	120	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m^2)			
1. Vaccinium parvifolium	5	Y	FACU
2. Corylus cornuta	5	Y	FACU
3. Mahonia nervosa	5	Y	FACU
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 1m^2)			
1. Polystichum munitum	10	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 3m^2)			
1. Hedera helix	75	Y	FACU
2.			
	75	= Total Cover	

% Bare Ground in Herb Stratum 90

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 11 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 = 0
FACW species	x 2 = 0
FAC species	x 3 = 0
FACU species	x 4 = 0
UPL species	x 5 = 0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☑

Remarks:

SOIL

Sampling Point: S2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					Silt Loam	
10-17	2.5Y 4/3	100					Silt Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☑

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☐ No ☑

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

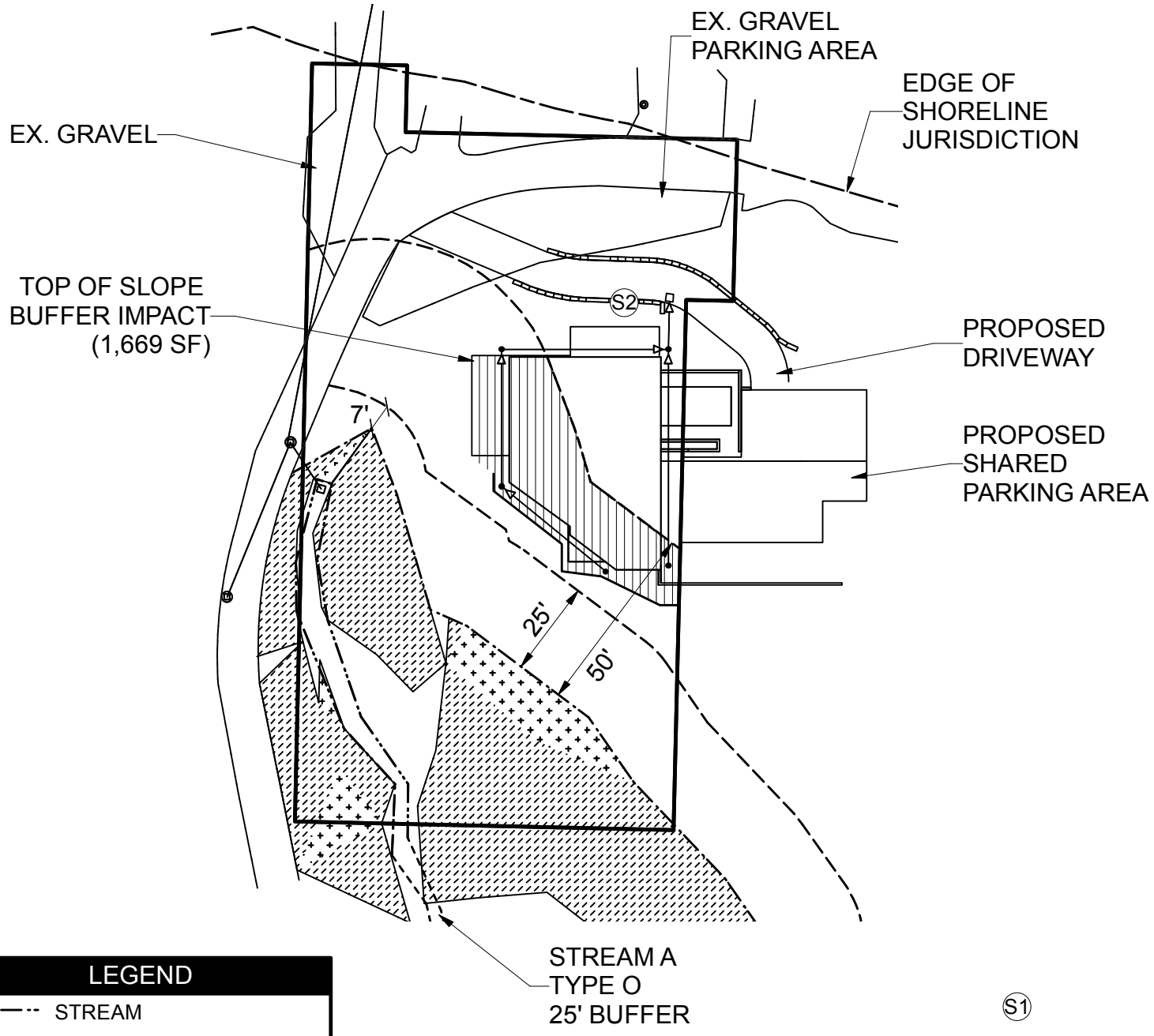
Remarks:

APPENDIX B:
CRITICAL AREAS AND MITIGATION PLAN MAPS

STEEP SLOPES BUFFER IMPACTS MAP

3938 179TH LANE SE - SINGLE FAMILY RESIDENCE

PORTION OF SECTION 13, TOWNSHIP 24N, RANGE 5E, W.M.



LEGEND	
	STREAM
	STREAM (ESTIMATED)
	TOP OF SLOPE
	STANDARD TOP OF SLOPEBUFFER
	PROPOSED TOP OF SLOPEBUFFER
	TOP OF SLOPE BUFFER IMPACTS
	STEEP SLOPE AREAS
S1	DATA SITES (S1 - S2)

Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett,Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

Critical Areas Mitigation Plan Maps
3938 179th Lane SE - SFR
Bellevue, WA

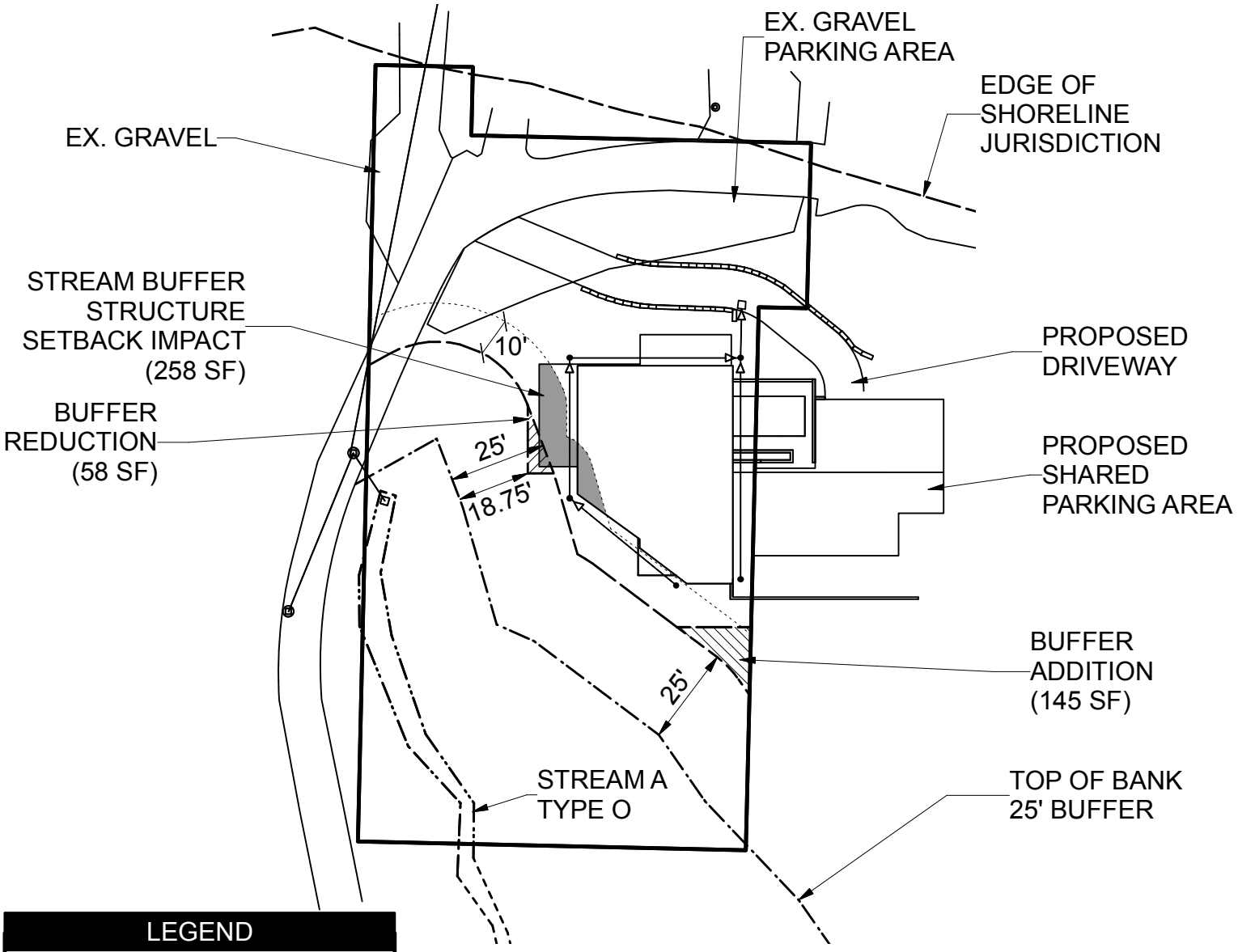
Arcon Tenant Improvement Contractors LLC
Attn: Elliot Severson
2100 124th Ave NE
Bellevue, WA 98005

Sheet 1/4
WRI #: 20213
Drawn by: EC
Rev 3. Date: 2/22/2024

STREAM BUFFER & SETBACK MITIGATION PLAN MAP

3938 179TH LANE SE - SINGLE FAMILY RESIDENCE

PORTION OF SECTION 13, TOWNSHIP 24N, RANGE 5E, W.M.



LEGEND

- STREAM
- STREAM (ESTIMATED)
- TOP OF BANK
- STANDARD STREAM BUFFER (FROM TOP OF BANK)
- FINAL STREAM BUFFER
- 10' STREAM BUFFER STRUCTURE SETBACK
- BUFFER REDUCTION
- BUFFER ADDITION
- STRUCTURE SETBACK IMPACTS

Scale 1" = 40'

0 20 40 60 80

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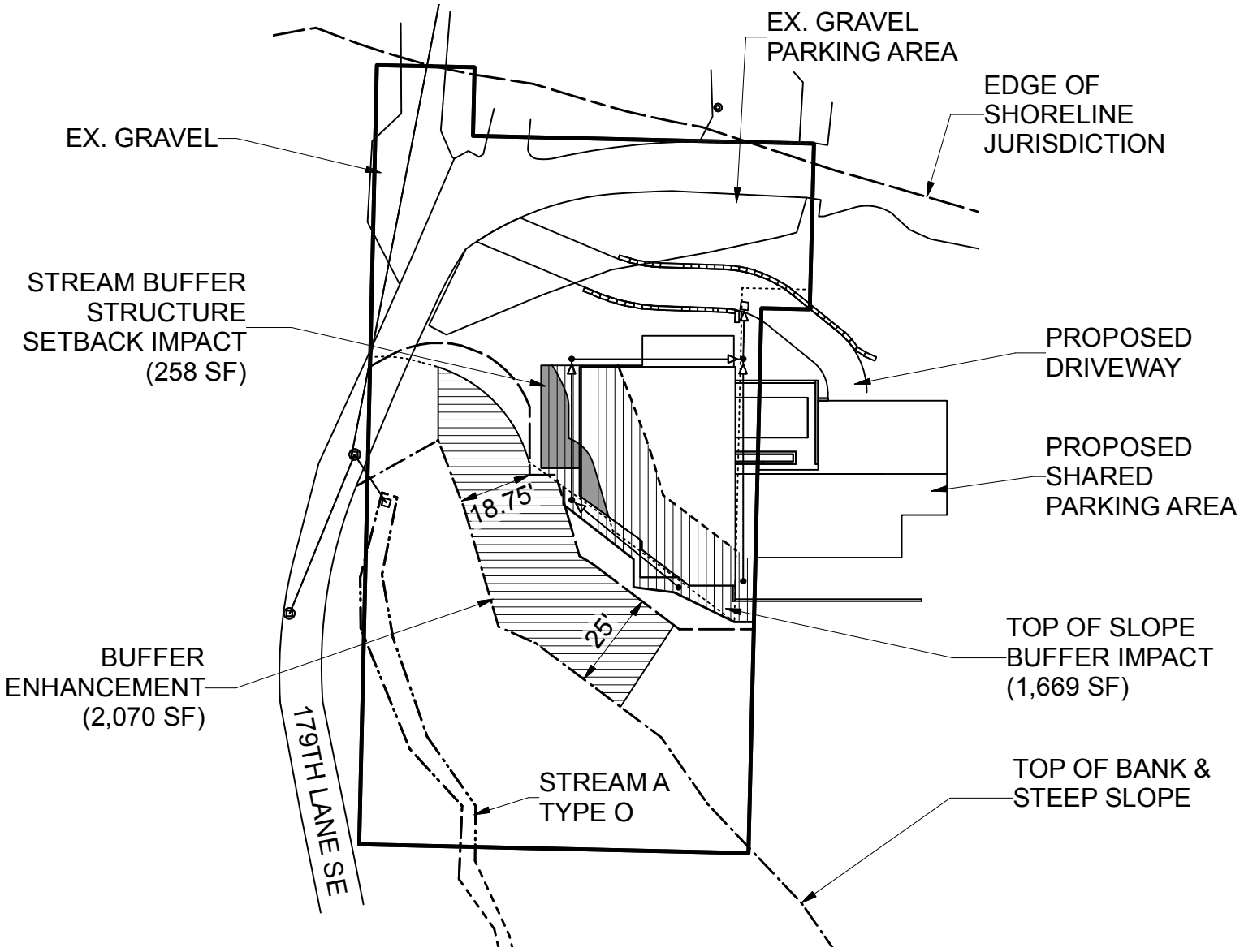
Sheet 2/4
WRI #: 20213
Drawn by: EC
Rev 3. Date: 2/22/2024

STREAM AND SLOPE BUFFER ENHANCEMENT PLAN MAP

3938 179TH LANE SE - SINGLE FAMILY RESIDENCE

PORTION OF SECTION 13, TOWNSHIP 24N, RANGE 5E, W.M.



LEGEND

- STREAM
- STREAM (ESTIMATED)
- TOP OF BANK/SLOPE
- FINAL STREAM BUFFER
- BUFFER ENHANCEMENT
- TOP OF SLOPE BUFFER IMPACTS
- STREAM BUFFER STRUCTURE SETBACK IMPACTS

Scale 1" = 40'

0 20 40 60 80

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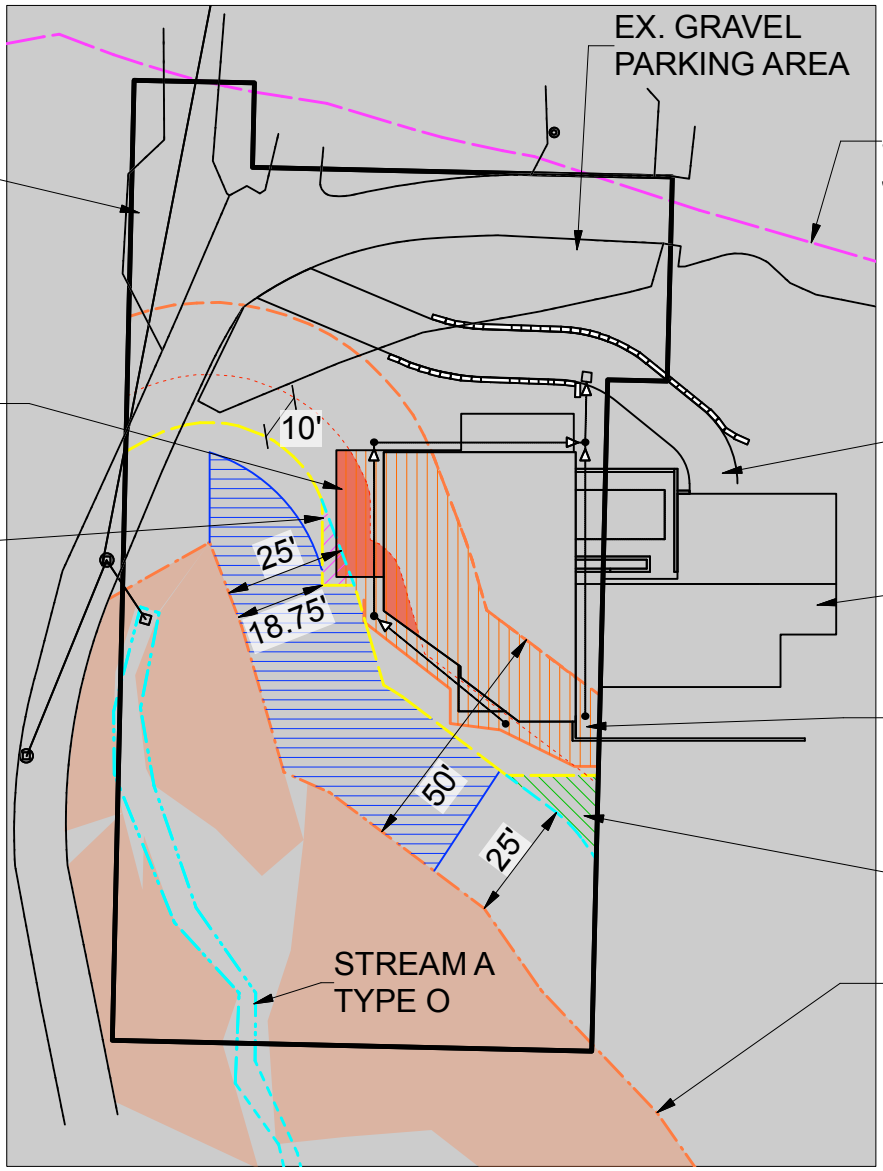
Bellevue, WA 98005

Sheet 3/4
WRI #: 20213
Drawn by: EC
Rev 3. Date: 2/22/2024

CRITICAL AREA REPORT MITIGATION PLAN MAP

3938 179TH LANE SE - SINGLE FAMILY RESIDENCE

PORTION OF SECTION 13, TOWNSHIP 24N, RANGE 5E, W.M.



LEGEND

- STREAM
- STREAM (ESTIMATED)
- TOP OF BANK / TOP OF SLOPE
- STANDARD STREAM BUFFER (FROM TOP OF BANK)
- 10' STREAM BUFFER STRUCTURE SETBACK
- FINAL STREAM BUFFER
- STEEP SLOPE AREAS
- TOP OF SLOPE STANDARD BUFFER
- SLOPE BUFFER IMPACTS
- BUFFER ENHANCEMENT
- BUFFER REDUCTION
- BUFFER ADDITION
- STREAM STRUCTURE SETBACK IMPACTS

Scale 1" = 40'

0 20 40 60 80

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Sheet 4/4
WRI #: 20213
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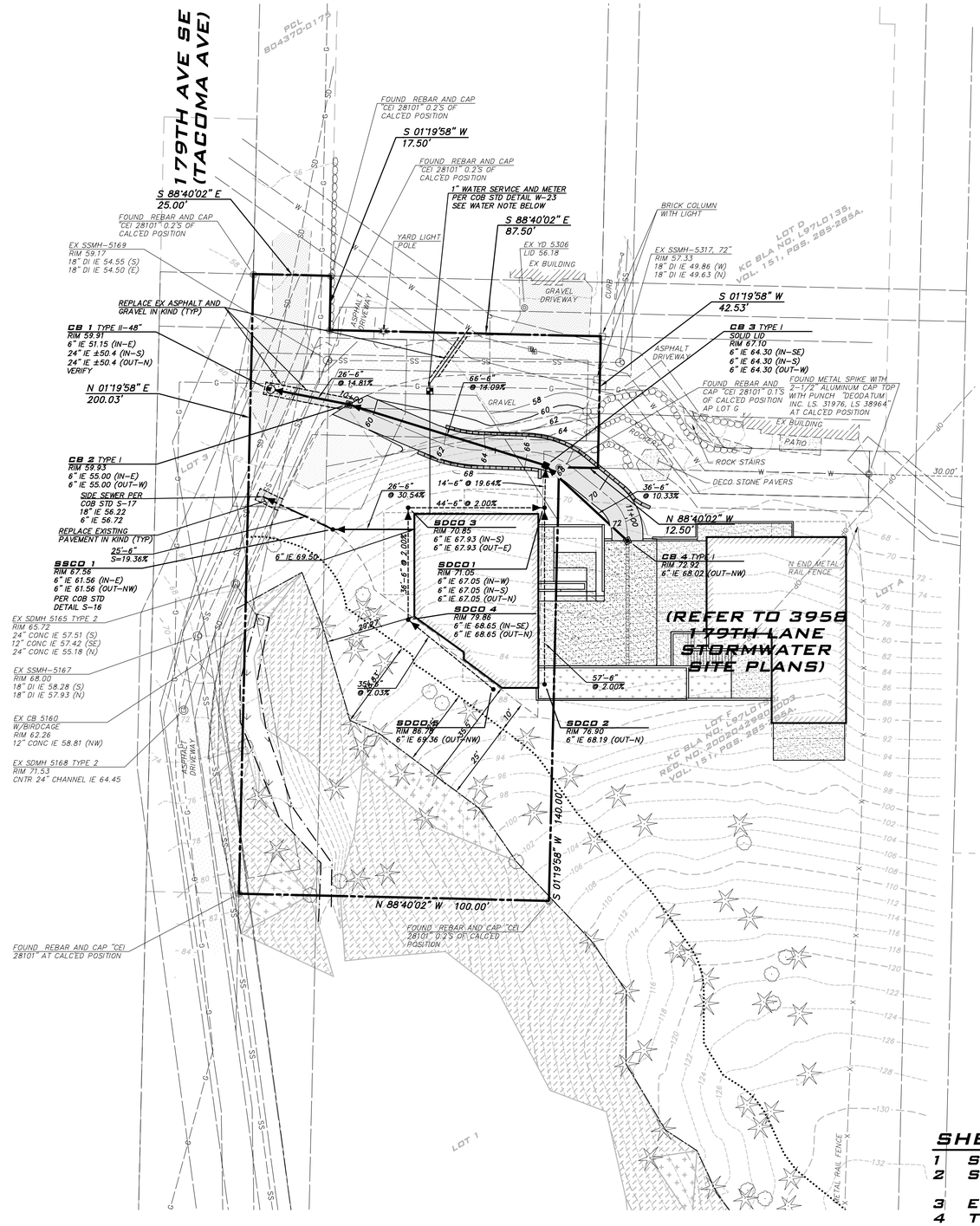
3938 179TH LN SE



LEGEND

PROPOSED FEATURES

- BOUNDARY
- RIGHT-OF-WAY
- LOT LINE
- CURB FLOWLINE
- SIDEWALK
- CENTER LINE
- SAWCUT
- EASEMENT
- BUILDING FOOTPRINT
- BUILDING OVERHANG
- BUILDING ROOFLINE
- BUILDING SETBACK (BSBL)
- FENCE
- GUARDRAIL
- 190 10' PROPOSED CONTOURS
- 192 2' PROPOSED CONTOURS
- FILL ROCKERY
- CUT ROCKERY
- GRAVEL
- ASPHALT PAVEMENT
- CONCRETE
- RIPRAP
- PAVERS

PROPOSED STORM DRAINAGE

- STORM DRAIN PIPE
- ROOF & FOOTING DRAIN
- TYPE I CB – STANDARD GRATE
- TYPE I CB – LOCKING LID
- PIPE FLOW
- STORM CLEANOUT

EXISTING FEATURES

- ADJACENT PLAT/PARCEL LINE
- ADJACENT RIGHT-OF-WAY
- CENTERLINE
- EASEMENT
- SURFACE FEATURES
- BUILDING FOOTPRINT
- TOP OF 40% SLOPE
- STEEP SLOPE BUFFER
- EDGE OF WETLAND
- WETLAND BUFFER
- 190 10' CONTOURS
- 192 2' CONTOURS
- SD STORM DRAIN PIPE
- SS SEWER MAIN
- SSS SANITARY SEWER SERVICE
- FM SEWER FORCE MAIN
- W WATER MAIN
- OHP AERIAL POWER LINE
- P BURIED POWER LINE
- G GAS MAIN
- T BURIED TELEPHONE LINE
- BOARD FENCE
- CATCH BASIN, TYPE I
- CATCH BASIN, TYPE II
- SD PIPE FLOW
- YARD DRAIN
- STORM CLEANOUT
- STORM DRAIN STUB
- SEWER MANHOLE
- SEWER CLEANOUT
- FIRE HYDRANT
- WATER METER
- GATE VALVE
- POWER POLE
- POWER METER
- JUNCTION BOX
- GAS METER
- GAS VALVE
- FIBER OPTICS MANHOLE
- TV RISER
- TELECOMM VAULT
- TELECOMM RISER
- TELECOMM JUNCTION BOX
- MAIL BOX
- SIGN
- CONIFEROUS TREE
- DECIDUOUS TREE
- ASPHALT
- CONCRETE
- GRAVEL

24-HOUR EROSION CONTROL CONTACT NAME/PHONE

CONTACT: TBD

PHONE: _____

ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE CLEARING AND GRADING INSPECTOR

EROSION CONTROL IS REQUIRED FOR ALL TRENCHES FOR UTILITIES AND DRY UTILITIES INSTALLATION

TREE PROTECTION IS REQUIRED FOR ALL TREES TO REMAIN

LID PROTECTION IS REQUIRED DURING CONSTRUCTION PER CSWPPP

SEWER NOTE

CONTRACTOR TO LOCATE EXISTING SIDE SEWER DURING CONSTRUCTION. EXISTING LINE TO BE CUT, CAPPED, AND APPROVED FOR RE-USE PER COB DISCONNECTION PROCEDURES.

WATER NOTE

1" WATER SERVICE AND 1" WATER METER ARE TYPICAL RESIDENTIAL SIZES. APPLICANT TO VERIFY SIZE IS ADEQUATE TO MEET DOMESTIC AND, IF REQUIRED, FIRE SPRINKLER FLOWS.

LEGAL DESCRIPTION

PARCEL A:

PARCEL A-1:
LOT 2, CITY OF BELLEVUE BOUNDARY LINE ADJUSTMENT NUMBER 13-104059-LW, RECORDED UNDER RECORDING NUMBER 20130528900003, IN KING COUNTY, WASHINGTON;

PARCEL A-2:
A NON-EXCLUSIVE EASEMENT FOR INGRESS, EGRESS AND UTILITIES AS DISCLOSED BY INSTRUMENTS RECORDED UNDER RECORDING NUMBERS 19990806000887, 20121016001273, AND 20121119001099;

PARCEL A-3:
A NON-EXCLUSIVE EASEMENT FOR INGRESS, EGRESS AND UTILITIES OVER THAT PORTION OF LOT D, KING COUNTY BOUNDARY LINE ADJUSTMENT NO. L97L0135, RECORDED UNDER RECORDING NUMBER 20020429900003, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT D; THENCE SOUTH 88°40'02" EAST ALONG THE SOUTH LINE THEREOF A DISTANCE OF 18.19 FEET; THENCE NORTH 54°54'01" WEST A DISTANCE OF 21.88 FEET TO A POINT ON THE WEST LINE OF SAID LOT D THAT IS 12.16 FEET NORTHERLY OF SAID SOUTHWEST CORNER; THENCE SOUTH 01°19'58" WEST ALONG THE WEST LINE OF SAID LOT D A DISTANCE OF 12.16 FEET TO THE POINT OF BEGINNING;

PARCEL B:

NEW LOT G, KING COUNTY BOUNDARY LINE ADJUSTMENT NUMBER L97L0135, RECORDED UNDER RECORDING NUMBER 20020429900003, IN KING COUNTY, WASHINGTON.

MERIDIAN

WASHINGTON STATE COORDINATE SYSTEM – NORTH ZONE (NAD83/2011) PER CITY OF BELLEVUE SURVEY STATION DATA CARDS NO. 1935 AND 3657.

VERTICAL DATUM

NAVD 88
BASED ON RAPID STATIC GPS MEASUREMENTS WITH BASELINES COMPUTED FROM CORS MONUMENTS.

BENCHMARKS

TBM-A
COB CONTROL PNT. 3657.
2" SURFACE MON "CITY OF BELLEVUE" AT TOP BACK CURB AT W SIDE DRIVEWAY OF W. LAKE SAMMAMISH PKWY SE.
ELEV. = 144.77'

TBM-B
COB CONTROL PNT. 3681.
FOUND 3-1/4" CAP ON PIPE 0.4' BELOW GRADE IN CASE AT CL POC OF W. LAKE SAMMAMISH PKWY SE.
ELEV. = 149.07'

TBM-C
MAG AND WASHER "HGG TRAVERSE LS #38984" 2.9' N OF SSMH-5169 2.5' S OF N EDGE ASPHALT DRIVEWAY AND 4.3' E OF INTX. WITH N EDGE GRAVEL DRIVEWAY.
ELEV. = 59.02'

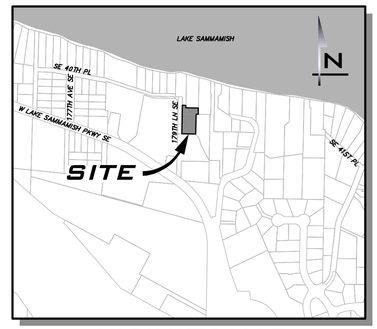
SURVEY NOTES

1. A 5" ELECTRONIC TOTAL STATION WAS USED FOR THIS FIELD TRAVERSE SURVEY. ALL EQUIPMENT HAS BEEN MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES. ACCURACY MEETS OR EXCEEDS W.A.C. 332-130-090.
2. ALL TITLE INFORMATION SHOWN ON THIS SURVEY WAS EXTRACTED FROM FIRST AMERICAN TITLE COMPANY COMMITMENT NUMBER 4209-3327238, DATED SEPTEMBER 17, 2019. MEAD GILMAN AND ASSOCIATES HAS CONDUCTED NO INDEPENDENT TITLE RESEARCH, AND HAS RELIED WHOLLY ON THE TITLE COMPANY'S REPRESENTATIONS OF THE TITLE'S CONDITION TO PREPARE THIS SURVEY AND QUALIFIES THE MAP'S ACCURACY AND COMPLETENESS TO THAT EXTENT.
3. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE ON THE DATE INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITION EXISTING AT THAT TIME. ALL CONTROL INDICATED AS "FOUND" WAS RECOVERED FOR THIS PROJECT IN OCTOBER 19, 2020, UNLESS OTHERWISE NOTED.
4. PROPERTY AREA = 42,157± SQUARE FEET.
5. ALL DISTANCES ARE IN U.S. SURVEY FEET AND REPRESENT GROUND MEASUREMENTS.
6. UNDERGROUND UTILITIES WERE LOCATED BASED ON SURFACE EVIDENCE (I.E. PAINT MARKS, SAW CUTS IN PAVEMENT, COVERS, LIDS, ETC.). THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, ELEVATION, AND SIZE OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
7. TREE SIZES AND SPECIES WERE DETERMINED TO THE BEST OF OUR ABILITY. MEAD GILMAN AND ASSOCIATES DOES NOT WARRANT THE ACCURACY OF THE SIZE AND SPECIES OF ANY TREES SHOWN HEREON, ALL TREE SIZES SHOULD BE VERIFIED BY A TRAINED ARBORIST.

REFERENCES

1. KC BLA NO. L97L0135, REC. NO. 20020429900003, VOL. 151, PGS. 285-285A.
2. COB BLA NO. 13-104059-LW, REC. NO. 20130528900003, VOL. 298, PGS 100-103.
3. APPROXIMATE WETLAND FLAG LOCATION MAP "179TH LANE SE" PREPARED BY WETLAND RESOURCES, INC. DATED 10-19-2020.

SHEET INDEX



VICINITY MAP

SCALE: 1" = 500'

PROJECT TEAM

OWNER
CAMTINEY, LLC
2100 124TH AVE NE, SUITE 120
BELLEVUE, WA 98005
(425) 289-1640
CONTACT: ELLIOTT SEVERSON

ARCHITECT
IKA/SCHELL ARCHITECTS
501 1ST STREET
LA CONNER, WA 98257
(360) 375-0551
CONTACT: JAKE SCHELL

CIVIL ENGINEER
BLUELINE
25 CENTRAL WAY, SUITE 400
KIRKLAND, WA 98033
(425) 250-7224
CONTACT: TODD A. OBERG, PE

SOILS ENGINEER
EARTH SOLUTIONS NW, LLC
1805 136TH PL NE
BELLEVUE, WA 98005
(425) 449-4704
CONTACT: RAY COGLAS

SURVEYOR
MEAD GILMAN LAND SURVEYORS
PO BOX 289
WOODINVILLE, WA 98072
(425) 486-1252
CONTACT: CHRIS BARNES

ENVIRONMENTAL
WETLAND RESOURCES, INC.
9505 19TH AVENUE SE, STE 106
EVERETT, WA 98208
(425) 337-3174
CONTACT: EAMONN COLLINS

PROJECT INFORMATION

PARCEL NUMBER:	804370-0182
SITE AREA:	19,222 SF (0.441 AC)
TOTAL NUMBER OF LOTS:	1
ZONING:	R5
PROPOSED USE:	SINGLE FAMILY RESIDENTIAL
SEWAGE DISPOSAL:	CITY OF BELLEVUE
WATER SYSTEM:	CITY OF BELLEVUE
SETBACKS:	20' FRONT, 5'/10' SIDE, 20' REAR

LOT COVERAGE BY STRUCTURES

BUILDING FOOTPRINT	1,915 SF
FRONT PORCH	88 SF
DECKS/STAIRS>30" ABOVE GRADE	0 SF
TOTAL COVERAGE	2,003 SF
GROSS LOT AREA	19,222 SF
CRITICAL AREAS W/ BUFFERS	12,740 SF
NET LOT AREA	6,482 SF
PERCENT LOT COVERAGE	30.9 %
MAXIMUM COVERAGE R-5 ZONE	40.0 %

IMPERVIOUS COVERAGE

NET LOT AREA:	6,482 SF
55% MAX IMPERVIOUS PER ZONING:	3,565 SF
PROPOSED RESIDENCE WITH ROOF EAVES:	2,410 SF
DRIVEWAY	878 SF
WALKS/PATIO/PORCH	93 SF
TOTAL:	3,381 SF
PERCENTAGE OF LOT SF:	52.2 %

GREENSCAPE CALCULATION

AREA IN FRONT YARD SETBACK:*	2,457 SF
LANDSCAPE AREA IN FRONT YARD:	1,758 SF
PERCENT GREENSCAPE REQUIRED:	50 %
PERCENT GREENSCAPE PROVIDED:	71.6 %

*Defined as southern edge of 179th main access easement to 20' south thereof.

AMENDED SOILS NOTE

AMENDED SOILS PER BMP T5.13 AND BELLEVUE STD PLAN NDP-1 ARE REQUIRED FOR LANDSCAPED AREAS.

BUILDING CALCULATIONS

SEE ARCHITECTURAL SITE PLAN FOR TREE RETENTION, BUILDING HEIGHTS AND FAR CALCULATIONS.

STORM DRAIN NOTES

1. TYPE I CATCH BASINS TO BE INSTALLED PER COB STANDARD DETAIL D-2.
2. LOCKING LIDS TO BE INSTALLED PER COB STANDARD DETAIL D-8.
3. TAPPING TEE TO BE INSTALLED PER COB STANDARD DETAIL D-33.
4. CLEANOUTS TO BE PER COB STANDARD DETAIL D-52.
5. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING STORM DRAIN FEATURES AT PROPOSED CONNECTIONS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IF CONFLICTS ARISE.
6. ROOF AND FOOTING DRAIN PIPES SHALL BE SEPARATE LINES WHICH WILL BE JOINED AT AN ELEVATION OF AT LEAST ONE FOOT BELOW THE LOWEST FOOTING DRAIN INVERT ELEVATION.

NO	DATE	BY	APPR	REVISIONS

BLUELINE
25 CENTRAL WAY, SUITE 400
KIRKLAND, WA 98033
P: 425.216.4051 F: 425.216.4052
WWW.THEBLUELINEGROUP.COM

TODD A. OBERG – STATE OF WASHINGTON – 37408 – REGISTERED PROFESSIONAL ENGINEER
10/13/22

APPROVED BY

SCALE: AS NOTED
PLOT DATE: 9/27/2023
TODD A. OBERG, PE – PROJECT MANAGER
JEREMY EPLEY, PE – DESIGNED BY
LEE M. TOMKINS – DRAWN BY

3938 179TH LN SE
CITY OF BELLEVUE, WASHINGTON

UTILITY GRID # XX

STORMWATER SITE PLAN

JOB NUMBER: 20-213

SEC 13 TWP 24 RGE 5E | SHT 1 OF 5

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N

SCALE: 1" = 20'

0 10 20 40

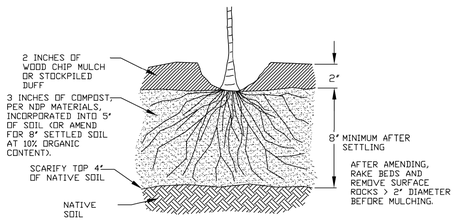
EROSION CONTROL NOTES

1. PROVIDE AND MAINTAIN TEMPORARY SEDIMENTATION COLLECTION FACILITIES TO ENSURE THAT SEDIMENT OR OTHER HAZARDOUS MATERIALS DO NOT ENTER THE STORM DRAINAGE SYSTEM IN ACCORDANCE WITH THE SITES APPROVED CSWPPP.
2. ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE CLEARING AND GRADING INSPECTOR.
3. EROSION CONTROL IS REQUIRED FOR ALL TRENCHES FOR UTILITIES AND DRY UTILITIES INSTALLATION.

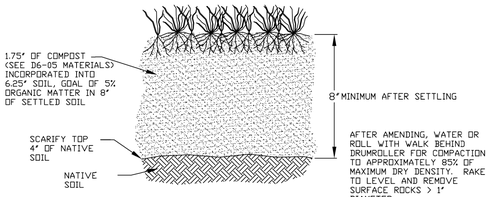
RESTORATION NOTES

1. SURFACE RESTORATION OF EXISTING ASPHALT PAVEMENT SHALL BE AS REQUIRED BY THE RIGHT-OF-WAY USE PERMIT.
2. THE CONTRACTOR SHALL RESTORE THE RIGHT-OF-WAY AND EXISTING PUBLIC STORM DRAINAGE EASEMENT(S) AFTER CONSTRUCTION TO A CONDITION EQUAL OR BETTER THAN CONDITION PRIOR TO ENTRY. THE CONTRACTOR SHALL FURNISH A SIGNED RELEASE FROM ALL AFFECTED PROPERTY OWNERS AFTER RESTORATION HAS BEEN COMPLETED.

AMENDMENT FOR LANDSCAPED AREAS



SOIL AMENDMENT FOR GRASS OR TURF AREAS



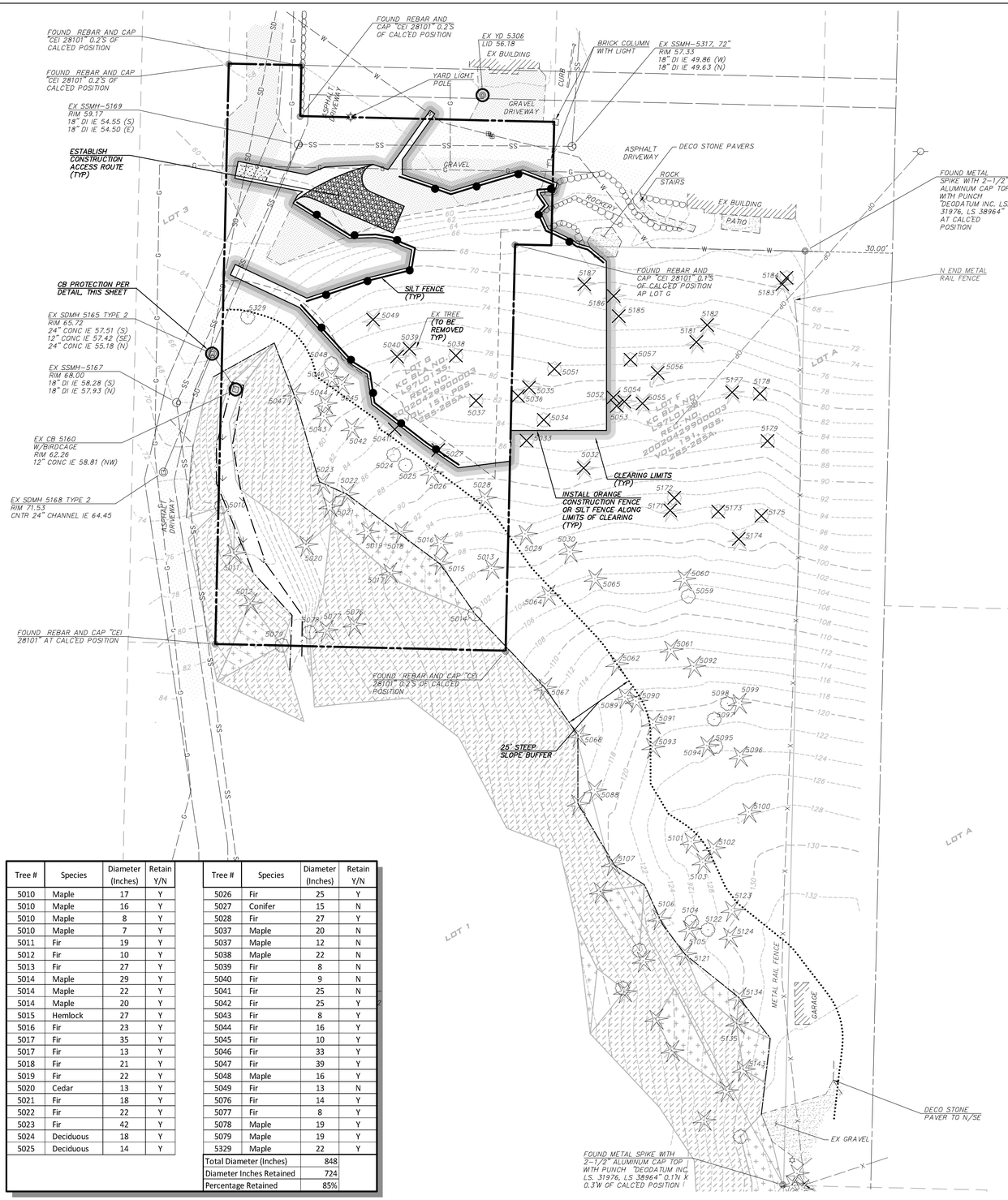
NOTES:

1. AMEND SOILS PER DOE MANUAL, VOL. V, 5.3.1, BMP T5.13, (2012 OR CURRENT) OR WWW.SOILSFORSALMON.ORG.
2. DO NOT AMEND SOILS IN AREAS WITH UNDISTURBED SOIL AND NATIVE VEGETATION.
3. OPTIONAL ALTERNATIVE: STOCKPILE NATIVE TOPSOIL ONSITE, AMEND IF NEEDED, AND REPLACE BEFORE PLANTING.
4. OPTIONAL ALTERNATIVE: IMPORT TOPSOIL MIX OF SUFFICIENT ORGANIC CONTENT AND DEPTH TO MEET REQUIREMENTS.

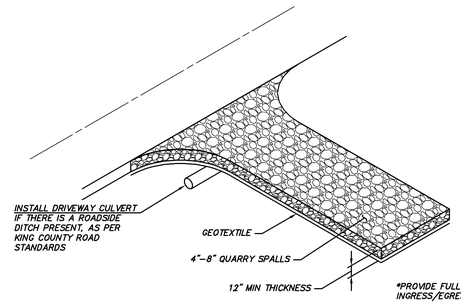
City of Bellevue — STORM AND SURFACE WATER UTILITY

TITLE: AMENDED SOILS

JANUARY 2022 — NO SCALE — NO. NDP-1

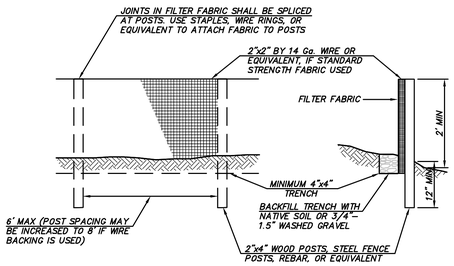


Tree #	Species	Diameter (Inches)	Retain Y/N
5010	Maple	17	Y
5010	Maple	16	Y
5010	Maple	8	Y
5010	Maple	7	Y
5011	Fir	19	Y
5012	Fir	10	Y
5013	Fir	27	Y
5014	Maple	29	Y
5014	Maple	22	Y
5014	Maple	20	Y
5015	Hemlock	27	Y
5016	Fir	23	Y
5017	Fir	35	Y
5017	Fir	13	Y
5018	Fir	21	Y
5019	Fir	22	Y
5020	Cedar	13	Y
5021	Fir	18	Y
5022	Fir	22	Y
5023	Fir	42	Y
5024	Deciduous	18	Y
5025	Deciduous	14	Y
5026	Fir	25	Y
5027	Conifer	15	N
5028	Fir	27	Y
5037	Maple	20	N
5037	Maple	12	N
5038	Maple	22	N
5039	Fir	8	N
5040	Fir	9	N
5041	Fir	25	N
5042	Fir	25	Y
5043	Fir	8	Y
5044	Fir	16	Y
5045	Fir	10	Y
5046	Fir	33	Y
5047	Fir	39	Y
5048	Maple	16	Y
5049	Fir	13	N
5076	Fir	14	Y
5077	Fir	8	Y
5078	Maple	19	Y
5079	Maple	19	Y
5329	Maple	22	Y
Total Diameter (Inches)		848	
Diameter Inches Retained		724	
Percentage Retained		85%	



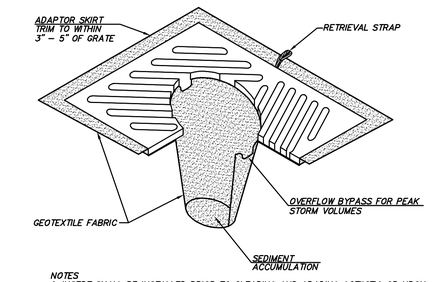
STABLIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



SILT FENCE

NOT TO SCALE



NOTES

1. INSERT SHALL BE INSTALLED PRIOR TO CLEARING AND GRADING ACTIVITY, OR UPON PLACEMENT OF A NEW CATCH BASIN.
2. SEDIMENT SHALL BE REMOVED FROM THE UNIT WHEN IT BECOMES HALF FULL.
3. SEDIMENT REMOVAL SHALL BE ACCOMPLISHED BY REMOVING THE INSERT, EMPTYING, AND RE-INSERTING IT INTO THE CATCH BASIN.

CB PROTECTION DETAIL

NOT TO SCALE

LEGEND

- FILTER FENCE
- CONSTRUCTION FENCE
- CLEARED AREA
- LIMITS OF CLEARING
- RIPRAP
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO REMAIN

NO	DATE	BY	APPR	REVISIONS

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TODD A. OBERG — STATE OF WASHINGTON — 57408 — REGISTERED PROFESSIONAL ENGINEER

10/13/22

APPROVED BY

SCALE: AS NOTED

PLOT DATE: 9/27/2023

TODD A. OBERG, PE — PROJECT MANAGER

JEREMY EPLEY, PE — DESIGNED BY

LEE M. TOMKINS — DRAWN BY

3938 179TH LN SE

CITY OF BELLEVUE, WASHINGTON

UTILITY GRID # XX

TESC AND DEMOLITION PLAN

JOB NUMBER: 20-213

SEC 13 TWP 24 RGE 5E | SHT 4 OF 5

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