DEVELOPMENT SERVICES DEPARTMENT
ENVIRONMENTAL COORDINATOR
450 110th Ave NE., P.O. BOX 90012
BELLEVUE, WA 98009-9012

## OPTIONAL DETERMINATION OF NON-SIGNIFICANCE (DNS) NOTICE MATERIALS

The attached materials are being sent to you pursuant to the requirements for the Optional DNS Process (WAC 197-11-355). A DNS on the attached proposal is likely. This may be the only opportunity to comment on environmental impacts of the proposal. Mitigation measures from standard codes will apply. Project review may require mitigation regardless of whether an EIS is prepared. A copy of the subsequent threshold determination for this proposal may be obtained upon request.

File No. 19-121109-LL

Project Name/Address: Park Pointe PUD Preliminary Plat/
7219 and 7331 Lakemont Blvd SE

Planner: Peter Rosen

Phone Number: 425-452-5210

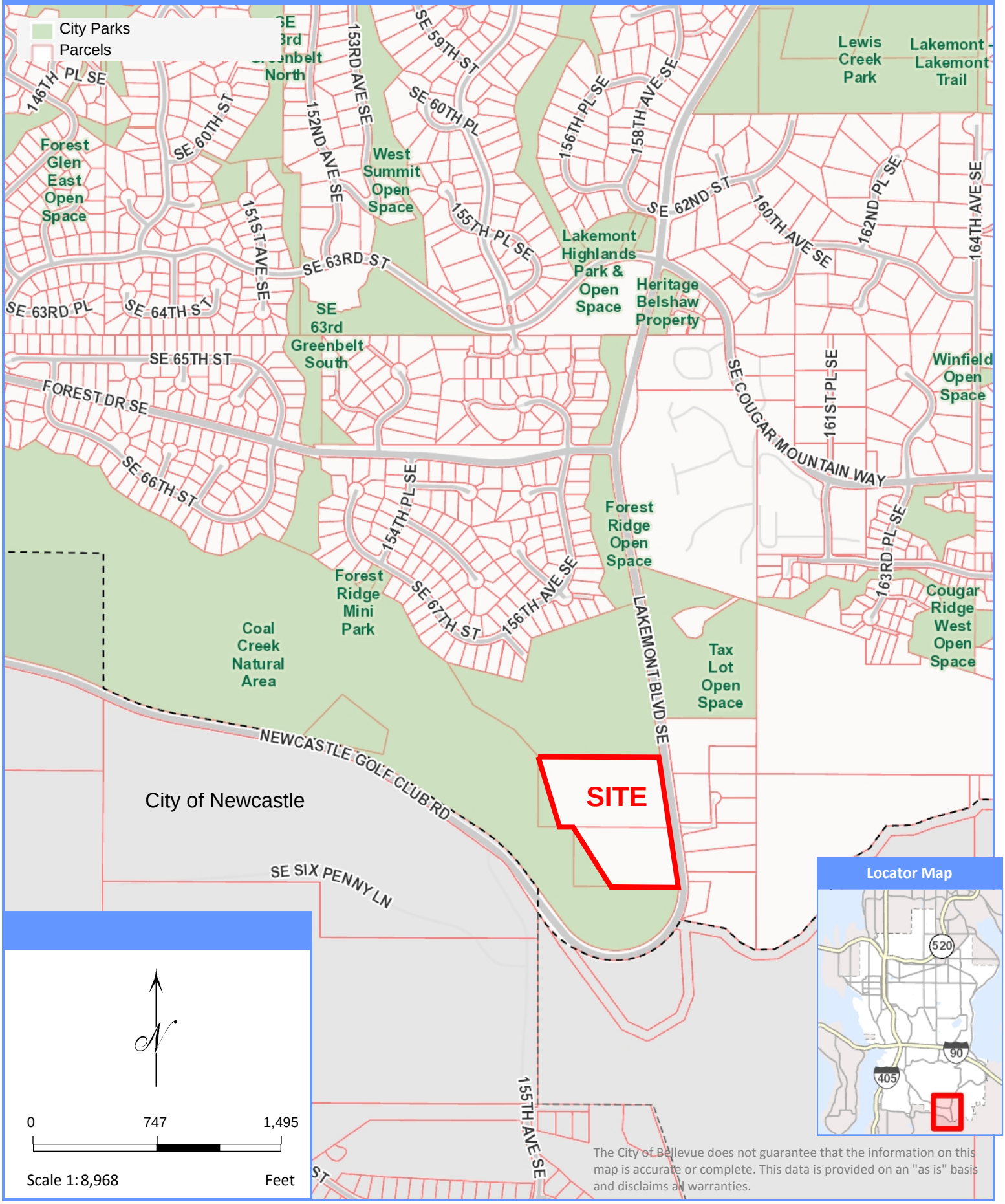
**Minimum Comment Period:** September 26, 2019

Materials included in this Notice:

☒ Blue Bulletin
☒ Checklist
☒ Vicinity Map
☒ □□□Plans
☐ □□□Other:

OTHERS TO RECEIVE THIS DOCUMENT:
☒ State Department of Fish and Wildlife / Sterwart.Reinbold@dfw.gov; Christa.Heller@dfw.wa.gov;
☒ State Department of Ecology, Shoreline Planner N.W. Region / Jobu461@ecy.wa.gov; sepaunit@ecy.wa.gov
☒ Army Corps of Engineers Susan.M.Powell@nws02.usace.army.mil
☒ Attorney General ecyolyef@atg.wa.gov
☒ Muckleshoot Indian Tribe Karen.Walter@muckleshoot.nsn.us; Fisheries.fileroom@muckleshoot.nsn.us

# VICINITY MAP




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

Map Generated on: 09/09/2019

## LEGAL DESCRIPTION

PARCEL #262405-9019
PER CHICAGO TITLE INSURANCE CO. ORDER NO. 0152217-ETU, DATED JUNE 3, 2019.

THE SOUTHERLY 356 FEET OF THE NORTHERLY 680 FEET OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 26, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M. LYING WEST OF EDWARD LEIFHELM ROAD;
EXCEPT THE WESTERLY 215 FEET THEREOF;
EXCEPT ANY PORTION THEREOF LYING WESTERLY OF THE THREAD OF AN UNNAMED CREEK, AS CONVEYED TO KING COUNTY BY INSTRUMENT RECORDED MAY 29, 1987 UNDER RECORDING NO. 8602270567.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

PARCEL #262405-9022
PER CHICAGO TITLE INSURANCE CO. ORDER NO. 0152217-ETU, DATED JUNE 3, 2019.

THAT PORTION OF SECTION 26, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

THE NORTH 324 FEET OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER LYING WEST OF THE EDWARD LEIFHELM ROAD SURVEY #1344 BEING BOUND ON THE SOUTH BY NORTH LINE OF TRACT OF LAND CONVEYED BY PACIFIC COAST COAL CO. TO ERNEST SWANSON BY DEED DATED JULY 15, 1942 AND RECORDED IN VOLUME 2066 OF DEEDS, PAGES 475 AND 476, AND THE EXTENSION OF SAID NORTH LINE OF THE ERNEST SWANSON PROPERTY EXTENDED WEST; ALSO THE SOUTH 100 FEET OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER LYING WEST OF THE EDWARD LEIFHELM CO. ROAD SURVEY #1344;

EXCEPT ANY PORTION LYING WESTERLY OF THE THREAD OF AN UNNAMED STREAM, TO-WIT

BEGINNING AT THE CENTER OF SECTION 26, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON; THENCE NORTH 01°04'35"EAST ALONG THE NORTH-SOUTH CENTERLINE OF SAID SECTION 26, A DISTANCE OF 100 FEET TO THE TRUE POINT OF BEGINNING; THENCE SOUTH 16°27'31" EAST 445.05 FEET; THENCE NORTH 88°46'03" WEST, PARALLEL TO THE EAST-WEST CENTERLINE OF SAID SECTION, 134.09 FEET TO SAID NORTH-SOUTH CENTERLINE; THENCE NORTH 01°04'35" EAST 424.00 FEET, ALONG SAID NORTH-SOUTH CENTERLINE, TO THE TRUE POINT OF BEGINNING, AS CONVEYED TO KING COUNTY BY DEED RECORDED UNDER KING COUNTY RECORDING NO. 8602270565.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

## BASIS OF BEARINGS

NAD 83(2011) WASHINGTON NORTH COORDINATE SYSTEM
PER CITY OF BELLEVUE CONTROL LINE BETWEEN POINTS #1407 AND #1405 BEARS N 07°58'42" W

## REFERENCES

1. RECORD OF SURVEY BOOK 107, PG 39, 39A, RECORDS OF KING COUNTY, WASHINGTON.
2. CITY OF BELLEVUE SURVEY CONTROL NETWORK.

## VERTICAL DATUM

NAVD 88 PER CITY OF BELLEVUE CONTROL PT V280, ELEV=732.168'

## SURVEYOR'S NOTES

1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN SEPTEMBER OF 2015, APRIL OF 2016 & MARCH OF 2017. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVENIENCE ONLY. DESIGN SHOULD RELY ON SPOT ELEVATIONS.
2. BURIED UTILITIES SHOWN BASED ON RECORDS FURNISHED BY OTHERS AND VERIFIED WHERE POSSIBLE IN THE FIELD. GEODIMENSIONS ASSUMES NO LIABILITY FOR THE ACCURACY OF THOSE RECORDS OR ACCEPT RESPONSIBILITY FOR UNDERGROUND LINES WHICH ARE NOT MADE PUBLIC RECORD. FOR THE FINAL LOCATION OF EXISTING UTILITIES IN AREAS CRITICAL TO DESIGN CONTACT THE UTILITY OWNER/AGENCY. AS ALWAYS, CALL 1-800-424-5555 BEFORE CONSTRUCTION.
3. INSTRUMENTATION FOR THIS SURVEY WAS A TRIMBLE ELECTRONIC DISTANCE MEASURING UNIT. PROCEDURES USED IN THIS SURVEY WERE DIRECT AND REVERSE ANGLES, NO CORRECTION NECESSARY. MEETS STATE STANDARDS SET BY WAC 332-130-090.
4. REFERENCE CHICAGO TITLE COMPANY GUARANTEE CERTIFICATE NO. 0152217-ETU, DATED AUGUST 5, 2019.

## VICINITY MAP

N.T.S.




## PROJECT TEAM

***OWNER/APPLICANT***
ISOLA HOMES
CONTACT: JEFF WEGENER
13555 SE 36TH ST, STE 230
BELLEVUE, WA 98006
(206) 582-7900
JEFF.WEGENER@ISOLAHOMES.COM

***CIVIL ENGINEER***
PACE ENGINEERS, INC.
CONTACT: TOBY COENEN, PE (CIVIL ENGINEER)
11255 KIRKLAND WAY, STE 300
KIRKLAND, WA 98033
(425) 827-2014
TOBYC@PACEENGRS.COM

BRIAN WAY, RLA (LANDSCAPE ARCHITECT)
BRIANW@PACEENGRS.COM

STEVE CALHOON, RLA (PROJECT PLANNER)
STEVEC@PACEENGRS.COM

***LAND SURVEYOR***
TERRANE, INC.
CONTACT: ANDY MCANDREWS
10801 MAIN ST, STE 102
BELLEVUE, WA 98004
(425) 458-4488
ANDYM@TERRANE.NET

SEAN ROULETTE-MILLER, PLS
SEANR@TERRANE.NET

***GEOTECHNICAL ENGINEER***
GEOTECH CONSULATANTS, INC.
CONTACT: JAMES H. STRANGE, PE
2401 10TH AVE EAST
SEATTLE, WA 98102
(425) 747-5618
JAMESS@GEOTECHNW.COM

***CONSULTING ARBORIST***
SHOFFNER CONSULTING
CONTACT: TONY SHOFFNER
21529 4TH AVE W #C31
BOTHELL, WA 98021
(206) 755-2871
TONY@TONYSHOFFNER.COM

***WETLAND/STREAM BIOLOGIST***
TALASAEA CONSULTANTS, INC
CONTACT: DAVID R TEESDALE, PWS
15020 BEAR CREEK ROAD NE
WOODINVILLE, WA 98007
(425) 861-7550
DTEESDALE@TALASAEA.COM

CONFLUENCE ENVIRONMENTAL COMPANY
CONTACT: CHRIS BERGER
161 N CANAL ST, STE 111
SEATTLE, WA 98103
(206) 395-7657
CHRIS.BERGER@CONFENV.COM

***MINE HAZARD ASSESSMENT***
ICICLE CREEK ENGINEERS, INC.
CONTACT: BRIAN BEAMAN, LEG
29335 NE 20TH ST
CARNATION, WA 98014
(425) 333-0093
BBEAMAN@ICICLECREEKENGINEERS.COM

***ILLUMINATION DESIGN***
INTOLIGHT
CONTACT: LARS LARSON
PO BOX 90868
BELLEVUE, WA 98009
(425) 456-2701
LARS.LARSON@PSE.COM

***CULTURAL RESOURCES***
TIERRA RIGHT OF WAY SERVICES
CONTACT: JENNIFER HUSHOUR
444 NE RAVENNA BLVD., STE 103
SEATTLE, WA 98115
(206) 363-1556
JHUSHOUR@TIERRA-ROW.COM

## PROJECT DATA

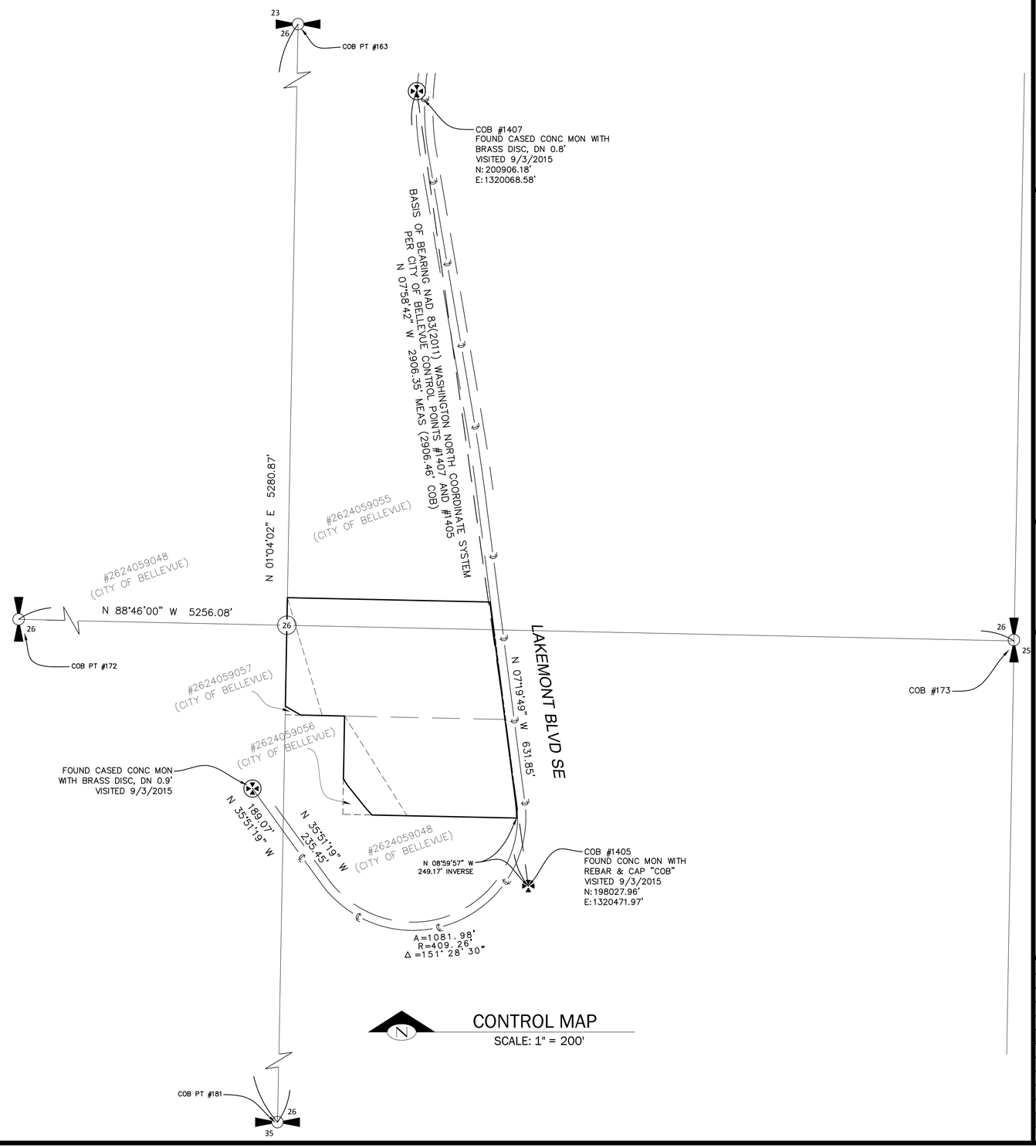
| | |
|---|---|
| GENERAL | |
| PARCEL NO.: | 2624059019, 2624059022 |
| ADDRESS: | 7219 & 7331 LAKEMONT BLVD SE |
| ZONING: | R-3.5/R-1 |
| PRESENT USE: | SINGLE-FAMILY |
| JURISDICTION: | CITY OF BELLEVUE |
| SITE DEVELOPMENT | |
| TOTAL SITE AREA: | 535,522 SF (12.29 AC) |
| PROPOSED # OF LOTS: | 35 |
| MIN. LOT SIZE: | -- |
| MAX. LOT SIZE: | -- |
| AVG. LOT SIZE: | -- |
| ACCESS/UTILITY TRACTS: | |
| (TRACTS A, F & G) | 67,096 SF (1.54 AC) |
| ROW DEDICATION: | 2,365 SF (0.05 AC) |
| CRITICAL AREA/OPEN SPACE TRACT J: | 275,672 SF (6.34 AC) |

| | |
|---|---|
| SERVICE PROVIDERS | |
| WATER & SANITARY SEWER: | CITY OF BELLEVUE |
| POWER/ELECTRIC: | PSE |
| NATURAL GAS: | PSE |
| TELEPHONE: | CENTURY LINK/FRONTIER |
| CABLE/INTERNET: | COMCAST/XFINITY |
| SCHOOL DISTRICT: | ISSAQUAH SCHOOL DISTRICT |
| GARBAGE: | REPUBLIC SERVICES |

PTN. OF SW 1/4 OF SEC. 26, TWP 24N., R5E, W.M.

# PARK POINT PUD & PRELIMINARY PLAT

CITY OF BELLEVUE KING COUNTY, WASHINGTON




CONTROL MAP
SCALE: 1" = 200'

measure success

ISOLA HOMES
SW 1/4 OF NE 1/4 & NW 1/4 OF SE 1/4, SEC 26, TWP 24N, R 5E, W.M.
*TAX PARCEL NO. 262405-9022 & 262405-9019*

PARK POINT PUD & PRELIMINARY PLAT
*7219 & 7331 LAKEMONT BLVD SE*
*BELLEVUE, WA*

SEAN A. ROULETTE-MILLER 23335 STATE OF WASHINGTON LAND SURVEYOR

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

| | |
|---|---|
| JOB NUMBER: | 151150 |
| DATE: | 8/6/19 |
| DRAFTED BY: | TLR |
| CHECKED BY: | SRM |
| SCALE: | 1"= 200' |

REVISION HISTORY

| | |
|---|---|
| | |
| | |
| | |
| | |
| | |

SHEET NUMBER
1 OF 7

PTN. OF SW 1/4 OF SEC. 26, TWP 24N., R5E, W.M.

PRELIMINARY PLAT MAP

# PARK POINT PUD & PRELIMINARY PLAT

CITY OF BELLEVUE KING COUNTY, WASHINGTON

( IN FEET )
1 inch = 40 ft.

## LEGEND

- AREA DRAIN
- CENTERLINE ROW
- CONCRETE PIPE END
- CONCRETE SURFACE
- DITCH (FLOWLINE)
- FENCE LINE (CHAIN LINK/WIRE)
- FENCE LINE (WOOD)
- FIRE HYDRANT
- GUARD RAIL
- GAS LINE
- GAS METER
- GAS VALVE
- MONUMENT IN CASE (FOUND)
- MONUMENT (SURFACE, FOUND)
- POWER METER
- POWER (OVERHEAD)
- POWER (UNDERGROUND)
- POWER POLE
- POWER POLE W/ LIGHT
- REBAR AS NOTED (FOUND)
- SIGN
- SEWER MANHOLE
- STORM LINE
- STORM CATCHBASIN
- TELEPHONE LINE (UNDERGROUND)
- TELEPHONE SENTRY
- WATER LINE
- WATER VALVE
- WETLAND AREA
- WETLAND FLAG

## EASEMENT NOTE

ADDITIONAL EASEMENT(S) MAY BE REQUIRED FOR PUBLIC SEWER AND WATER UTILITIES. EASEMENTS SHALL BE REVIEWED AND FINALIZED WITH FUTURE UTILITY EXTENSION PERMITS.

## TRACT NOTE

TRACTS A – J SHOWN HEREON ARE SHARED PRIVATE TRACTS FOR THE COMMON USE AND OWNERSHIP OF ALL LOTS WITHIN THIS SUBDIVISION AND FOR THE PURPOSE(S) SHOWN HEREON & LISTED BELOW:

TRACT A = STORMWATER & RECREATIONAL SPACE
TRACT B = OPEN SPACE & RECREATIONAL SPACE
TRACT C = OPEN SPACE & RECREATIONAL SPACE
TRACT D = OPEN SPACE & RECREATIONAL SPACE
TRACT E = OPEN SPACE & RECREATIONAL SPACE
TRACT F = PRIVATE ACCESS ROAD & UTILITIES
TRACT G = SANITARY SEWER UTILITIES
TRACT H = LANDSCAPE
TRACT I = LANDSCAPE
TRACT J = OPEN SPACE & NATIVE GROWTH PROTECTION EASEMENT (NGPE)

N 88°46'00" W 736.17'

WETLAND A (CATEGORY III)

WETLAND AA (CATEGORY IV)

REFER TO TALASAEA CONSULTANTS CRITICAL AREAS DOCUMENTATION FOR COMPLETE DEFINITION OF EXISTING CRITICAL AREAS AND BUFFERS

STREAM 2 (TYPE N)

NE 1/4 SEC 26-24-5

SE 1/4 SEC 26-24-5

100.00'

N 01°04'02" E 393' +/- TO THREAD OF STREAM

324.00'

N 16°28'04" W 445.07'

AREA RESTRICTED PER RECORDING NO 8602270568

STREAM 1 (TYPE N)

TP 262405-9022

TRACT J
PRIVATE OPEN SPACE / NGPE TRACT
275,672 S.F.
(6.34 A.C.)

PROPERTY LINE IS THREAD OF UNNAMED CREEK

134.10'

N 88°46'00" W 743' +/-

C/L CREEK

L=58.1'

356.00'

N 01°04'02" E 226' +/-

N 32°03'23" W 425.89'

EXISTING GRAVEL PATH

AREA RESTRICTED PER RECORDING NO 8602270566 8705290143

PROPERTY LINE IS THREAD OF CREEK COAL CREEK (TYPE F)

232.72'

EXISTING PUBLIC TRAIL PART OF CITY OF BELLEVUE PARKS TRAIL SYSTEM

N 88°46'00" W 526' +/-

STREAM 3 (TYPE N)

WIRE FENCE

PROPOSED STORM DRAIN EASEMENT

TP 262405-9019

TRACT A
PRIVATE STORMWATER TRACT
14,951

TRACT G
PRIVATE SEWER TRACT
5,479

TRACT D
2,438

TRACT E
2,736

TRACT C
1,946

TRACT F
46,686 SF

TRACT H
1,862
PRIVATE LANDSCAPE

TRACT I
1,453
PRIVATE LANDSCAPE

TRACT B
22,346

1 3,841
2 3,615
3 4,082
4 5,285
5 4,839
6 4,667
7 4,841
8 4,778
9 4,613
10 4,793
11 4,233
12 5,116
13 5,217
14 5,166
15 5,499
16 5,379
17 4,828
18 4,069
19 4,723
20 6,596
21 5,321
22 3,881
23 3,673
24 4,415
25 4,004
26 4,186
27 4,194
28 4,021
29 4,018
30 4,344
31 4,515
32 4,335
33 3,834
34 3,665
35 3,767

ACCESS ESM'T 103 SF
ACCESS ESM'T 413 SF
ACCESS ESM'T 1,000 SF
ACCESS ESM'T 1,066 SF
ACCESS ESM'T 1,221 SF
ACCESS ESM'T 847 SF
ACCESS ESM'T 215 SF

LAKEMONT BLVD SE

OLD R/W LINE

SIDEWALK

30' R/W

PROPOSED 3.0' R/W DEDICATION (2,365 SF)

DITCH C/L

Δ=7°41'54"
R=379.26'
L=50.96'

N 07°19'49" W 563.85'


ISOLA HOMES
SW 1/4 OF NE 1/4 & NW 1/4 OF SE 1/4, SEC 26, TWP 24N, R 5E, W.M.
TAX PARCEL NO. 262405-9022 & 262405-9019

PARK POINT PUD & PRELIMINARY PLAT
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE, WA

measure success

ROULETTE-MILLER
WASHINGTON
SEAN A.
STATE OF
REGISTERED PROFESSIONAL LAND SURVEYOR
8/6/19

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


| | |
|---|---|
| JOB NUMBER: | 151150 |
| DATE: | 8/6/19 |
| DRAFTED BY: | TLR |
| CHECKED BY: | SRM |
| SCALE: | 1"= 40' |

REVISION HISTORY

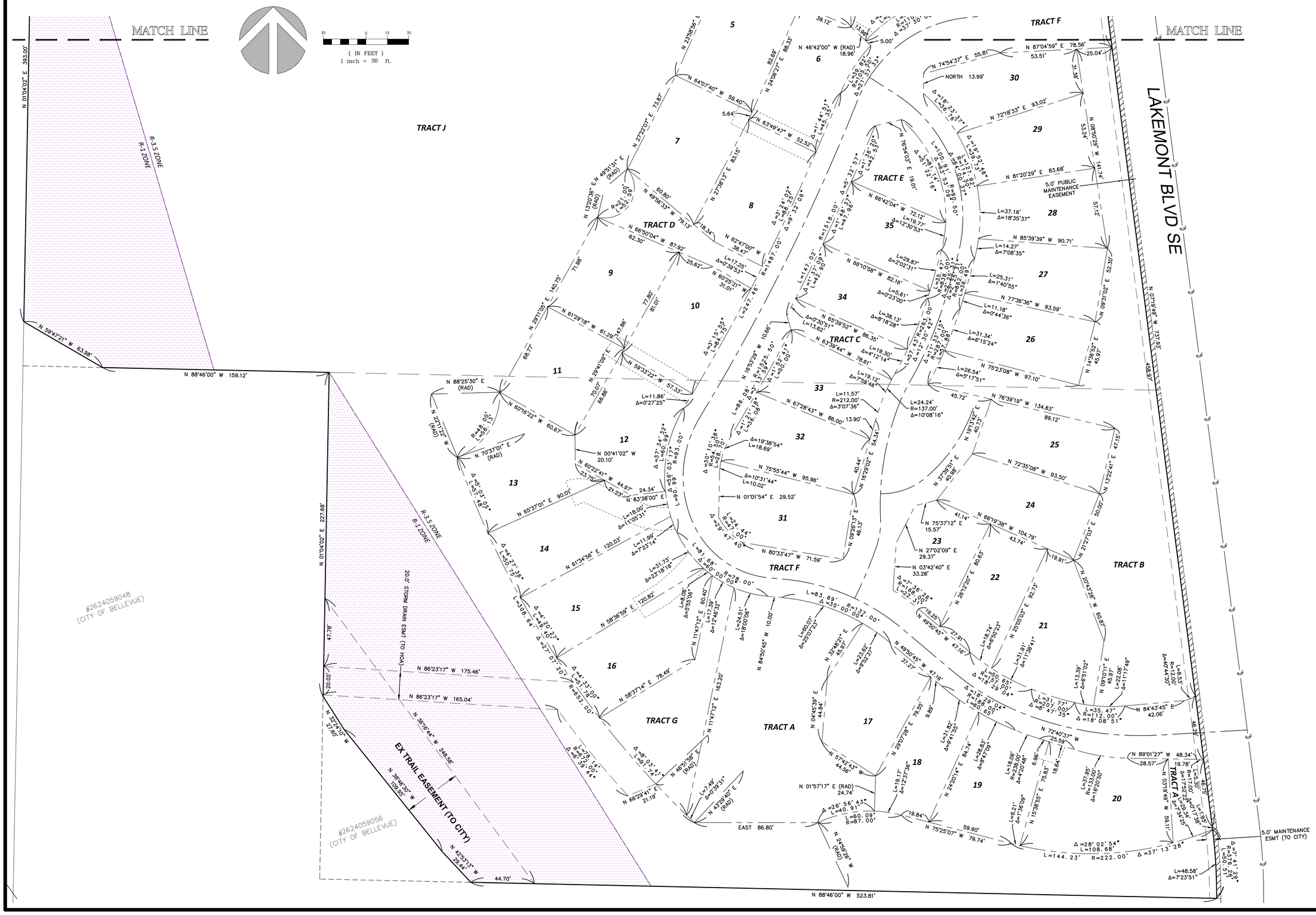
SHEET NUMBER
2 OF 7

PTN. OF SW 1/4 OF SEC. 26, TWP 24N., R5E, W.M.

PRELIMINARY PLAT MAP

# PARK POINT PUD & PRELIMINARY PLAT

CITY OF BELLEVUE KING COUNTY, WASHINGTON


MATCH LINE
MATCH LINE
( IN FEET )
1 inch = 30 ft.
30 0 15 30
LAKEMONT BLVD SE
TRACT J
TRACT D
TRACT E
TRACT F
TRACT C
TRACT G
TRACT A
TRACT B
R-3.5 ZONE
R-1 ZONE
20.0' STORM DRAIN ESMT (TO HOA)
EX TRAIL EASEMENT (TO CITY)
5.0' PUBLIC MAINTENANCE EASEMENT
5.0' MAINTENANCE ESMT (TO CITY)
#2624059048 (CITY OF BELLEVUE)
#2624059056 (CITY OF BELLEVUE)
N 01°04'02" E 393.00'
N 59°47'21" W 63.98'
N 88°46'00" W 159.12'
N 01°04'02" E 227.68'
N 32°24'10" W 27.60'
N 38°46'30" W 109.95'
N 42°53'13" W 29.44'
N 88°46'00" W 523.81'
EAST 86.80'
44.70'
47.76'
20.02'
N 88°25'30" E (RAD)
N 22°17'27" W (RAD)
N 70°37'01" E (RAD)
N 86°23'17" W 175.46'
N 86°23'17" W 165.04'
N 38°16'44" W 248.98'
N 66°29'41" E 21.19'
N 85°51'38" E (RAD)
N 43°09'45" E (RAD)
N 01°57'17" E (RAD) 24.74'
N 24°59'26" W (RAD)
N 46°42'00" W (RAD) 18.96'
N 13°20'38" E (RAD)
N 49°51'31" E (RAD)
N 66°50'04" W 62.30'
N 62°47'00" W 38.47'
N 60°25'21" W 31.01'
N 61°29'18" W 61.29'
N 59°33'22" W 57.33'
N 60°16'22" W 60.67'
N 64°07'40" W 59.40'
N 63°49'47" W 52.52'
N 27°22'07" E 73.87'
N 27°38'13" E 83.16'
N 24°08'27" E 88.33'
N 23°38'56" E 39.12'
N 29°11'05" E 140.75'
N 29°41'05" E 68.77'
N 61°34'56" E 120.03'
N 58°36'59" E 120.82'
N 58°37'14" E 78.49'
N 11°47'12" E 60.40'
N 11°47'12" E 165.20'
N 84°50'45" W 10.00'
N 32°45'21" E 45.97'
N 49°50'45" W 37.27'
N 49°50'45" W 47.16'
N 04°45'39" E 44.84'
N 57°42'43" W 44.56'
N 29°07'28" E 79.55'
N 24°20'14" E 84.74'
N 15°38'55" E 75.83'
N 75°25'07" W 79.74'
N 72°40'37" W 25.59'
N 76°39'19" W 134.83'
N 75°23'08" W 97.10'
N 77°36'36" W 93.59'
N 72°35'08" W 93.50'
N 72°18'33" E 93.02'
N 74°54'37" E 55.81'
N 87°04'59" E 78.56'
N 81°20'29" E 83.68'
N 66°42'04" W 72.12'
N 78°54'03" E 19.01'
N 85°39'39" W 90.71'
N 66°10'38" W 82.16'
N 65°39'52" W 86.35'
N 63°39'44" W 78.61'
N 67°28'43" W 86.00'
N 75°55'44" W 95.96'
N 01°01'54" E 29.52'
N 80°33'47" W 71.59'
N 83°38'00" E 24.34'
N 65°37'01" E 90.01'
N 60°22'41" W 44.97'
N 00°41'02" W 20.10'
N 16°29'02" E 54.34'
N 16°29'02" E 40.44'
N 09°38'13" E 46.13'
N 37°39'51" E 40.98'
N 19°34'24" E 40.73'
N 13°22'41" E 47.15'
N 21°27'03" E 30.00'
N 20°43'28" W 60.87'
N 09°31'02" E 52.30'
N 07°19'48" W 737.93'
N 84°43'45" E 42.06'
N 89°01'27" W 48.34'
N 03°19'49" W 59.11'
N 14°36'52" E 45.97'
N 66°19'38" W 104.79'
N 75°37'12" E 15.57'
N 27°02'09" E 29.37'
N 03°42'40" E 33.28'
N 49°30'45" W 27.91'
N 25°05'23" E 92.73'
N 26°12'20" E 80.63'
N 08°50'09" W 141.74'
N 85°39'39" W 90.71'
N 09°31'02" E 52.30'
N 09°07'17" E 45.97'
N 77°36'36" W 93.59'
N 14°36'52" E 45.97'
N 13°22'41" E 47.15'
N 21°27'03" E 30.00'
N 20°43'28" W 60.87'
N 07°19'48" W 737.93'
N 84°43'45" E 42.06'
N 89°01'27" W 48.34'
N 03°19'49" W 59.11'
N 75°25'07" W 79.74'
N 15°38'55" E 75.83'
N 24°20'14" E 84.74'
N 29°07'28" E 79.55'
N 49°50'45" W 47.16'
N 49°50'45" W 47.16'
N 25°05'23" E 92.73'
N 26°12'20" E 80.63'
N 08°50'09" W 141.74

PTN. OF SW 1/4 OF SEC. 26, TWP 24N., R5E, W.M.

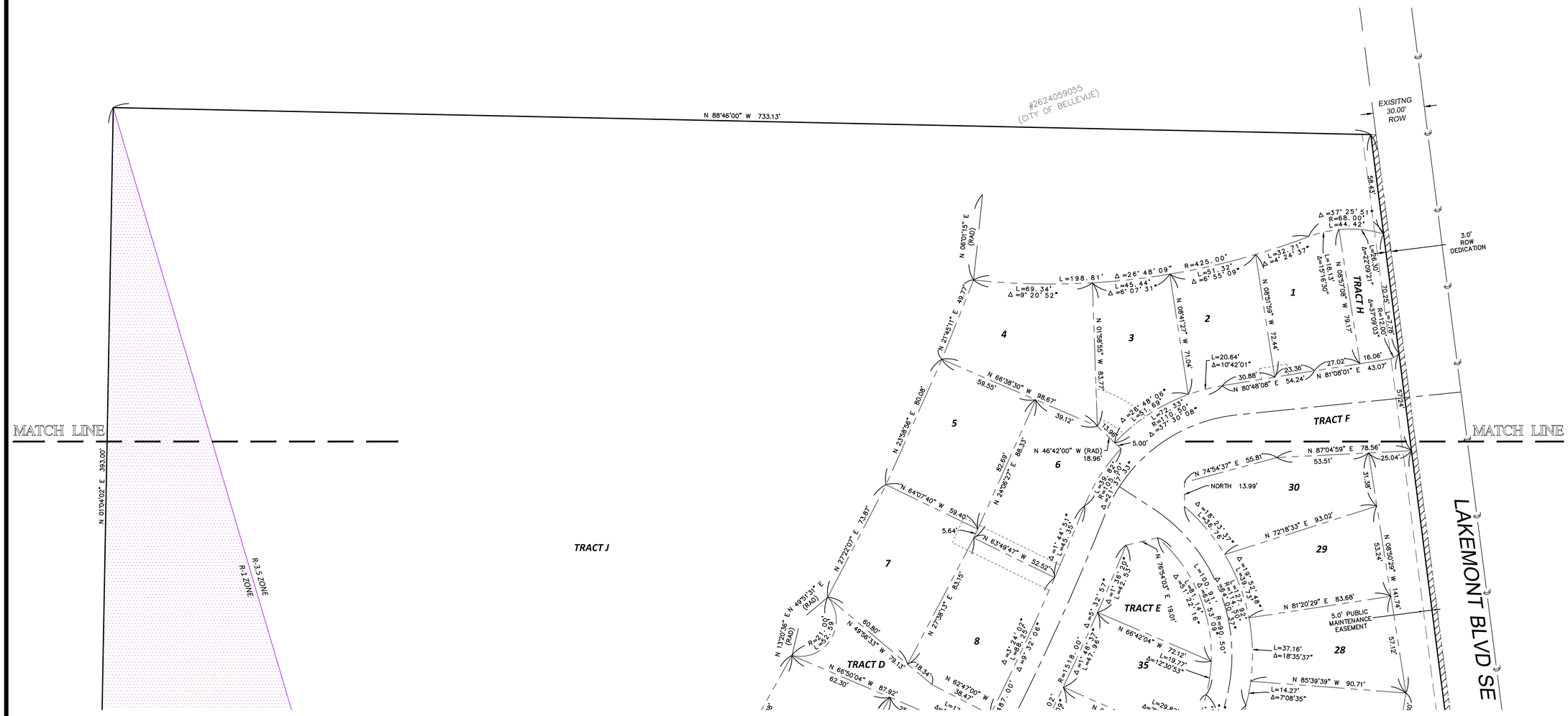
PRELIMINARY PLAT MAP

# PARK POINT PUD & PRELIMINARY PLAT

CITY OF BELLEVUE KING COUNTY, WASHINGTON

30 0 15 30

( IN FEET )
1 inch = 30 ft.




measure success

ISOLA HOMES

SW 1/4 OF NE 1/4 & NW 1/4 OF SE 1/4, SEC 26, TWP 24N, R 5E, W.M.
TAX PARCEL NO. 262405-9022 & 262405-9019

PARK POINT PUD & PRELIMINARY PLAT

*7219 & 7331 LAKEMONT BLVD SE*
*BELLEVUE, WA*


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


| | |
|---|---|
| JOB NUMBER: | 151150 |
| DATE: | 8/6/19 |
| DRAFTED BY: | TLR |
| CHECKED BY: | SRM |
| SCALE: | 1"= 30' |

REVISION HISTORY

SHEET NUMBER

4 OF 7

# TOPOGRAPHIC SURVEY

( IN FEET )
1 inch = 40 ft.

## LEGEND

- AREA DRAIN
- #XX TREE ID NUMBER (SEE ARBORIST REPORT)
- ASPHALT SURFACE
- BENCHMARK
- BUILDING
- CENTERLINE ROW
- CONCRETE PIPE END
- CONCRETE SURFACE
- DECK
- DITCH (FLOWLINE)
- FENCE LINE (CHAIN LINK/WIRE)
- FENCE LINE (WOOD)
- FIRE HYDRANT
- GUARD RAIL
- G GAS LINE
- GM GAS METER
- GV GAS VALVE
- MB MAILBOX
- MONUMENT IN CASE (FOUND)
- MONUMENT (SURFACE, FOUND)
- PM POWER METER
- P POWER (OVERHEAD)
- UP POWER (UNDERGROUND)
- PP POWER POLE
- PP POWER POLE W/ LIGHT
- REBAR AS NOTED (FOUND)
- SIGN
- SEWER MANHOLE
- SD STORM LINE
- STORM CATCHBASIN
- UT TELEPHONE LINE (UNDERGROUND)
- TEL TELEPHONE SENTRY
- SIZE TYPE TREE (AS NOTED)
- W WATER LINE
- WV WATER VALVE
- WETLAND AREA
- WETLAND FLAG
- YARD LIGHT
- CP CONCRETE PIPE
- PV POWER VAULT

FOUND REBAR & CAP "CEI 28101" 0.18' S, 0.05' E

FOUND IRON PIPE UP 2.5' 4.22' W OF LINE

N 88°46'00" W 736.17'

NE 1/4 SEC 26-24-5

SE 1/4 SEC 26-24-5

ORDINARY HIGH WATER MARK DELINEATED BY TALASAEA CONSULTANTS, INC. IN AUGUST OF 2015

WETLAND AREA "A"

N 01°04'02" E 393' +/- TO THREAD OF STREAM

N 01°04'02" E 226.36'

N 37°37'23" W 425.89'

N 07°58'34" W 445.07'

AREA RESTRICTED PER RECORDING NO 8602270568

AREA RESTRICTED PER RECORDING NO 8602270566 8705290143

PROPERTY LINE IS THREAD OF UNNAMED CREEK

N 88°46'00" W 159' +/- TO THREAD OF STREAM

N 88°46'00" W 583.79'

N 88°46'00" W 743' +/-

N 88°46'00" W 526' +/-

STREAM 3 OHWM DELINEATED BY TALASAEA CONSULTANTS IN DEC OF 2015 FLAGS LOCATED BY GEODIMENSIONS 2-4-16

WETLAND FLAGS LOCATED 4/29/16

FOUND REBAR & CAP "CEI 28101" 0.02' S, 1.20' W OF CORNER OF RESTRICTED AREA

TAX PARCEL 262405-9022 324,544 SF (7.45 AC)

TAX PARCEL 262405-9019 210,678± SF (4.84 AC)

24" CONC IE=635.24

WETLAND AREA "AA"

MATCH LINE "A"

24" CONC IE=648.72

FD REBAR & CAP "CI 28101" @ OLD R/W

FD REBAR & CAP "CI 28101"

OLD R/W LINE

LAKEMONT BLVD SE

TOP OF SLOPE

TOE OF SLOPE

WOOD STAIRS

FF=656.5

HOUSE #7219

FF=649.3

UPPER DECK

CONCRETE

FD REBAR & CAP "CI 28101" 0.02' S, 0.15' W

N 07°19'49" W 631.85'

12" CONC IE=658.17

12" CONC IE=657.74

12"CP IE=653.16

ROW OF TRANSFORMERS BETWEEN POLES

12"CP IE=651.58

12"CP IE=649.78

12"CP IE=649.09

12" CONC IE=648.22

DITCH C/L

24" CONC IE=646.52

24" CONC IE=641.89

CURB CUT

30' R/W

CROSSING AHEAD

NO PARKING ANY TIME

Δ=7°41'54" R=379.26' L=50.96'

SHED ON CONC PAD

APPROX. LOCATION PER PSE MAPPING

WIRE FENCE

GRAVEL

WD FENC ON CONC WALL

GARAGE

HOUSE #7331

FF=632.2

DECK

CONC WALK

BARN

SHED

CONC WALLS

GRAVEL PATH

WELL HOUSE IN CHAINLINK FENCE

WOOD FENCE

C/L CREEK

CL POST

232.72'

134.10'

324.00'

100.00'

356.00'

577.00'

| | |
|---|---|
| 5/12/17 | TREE TABLE |
| 3/15/17 | ADD'L TOPO |

measure success

TOPOGRAPHIC SURVEY
SW 1/4 OF NE 1/4 & NW 1/4 OF SE 1/4, SEC 26, TWP 24N, R 5E, W.M.
TAX PARCEL NO. 262405-9022 & 262405-9019

ISOLA HOMES
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE, WA

ROBERT E. MILLER 19970 STATE OF WASHINGTON REGISTERED PROFESSIONAL LAND SURVEYOR

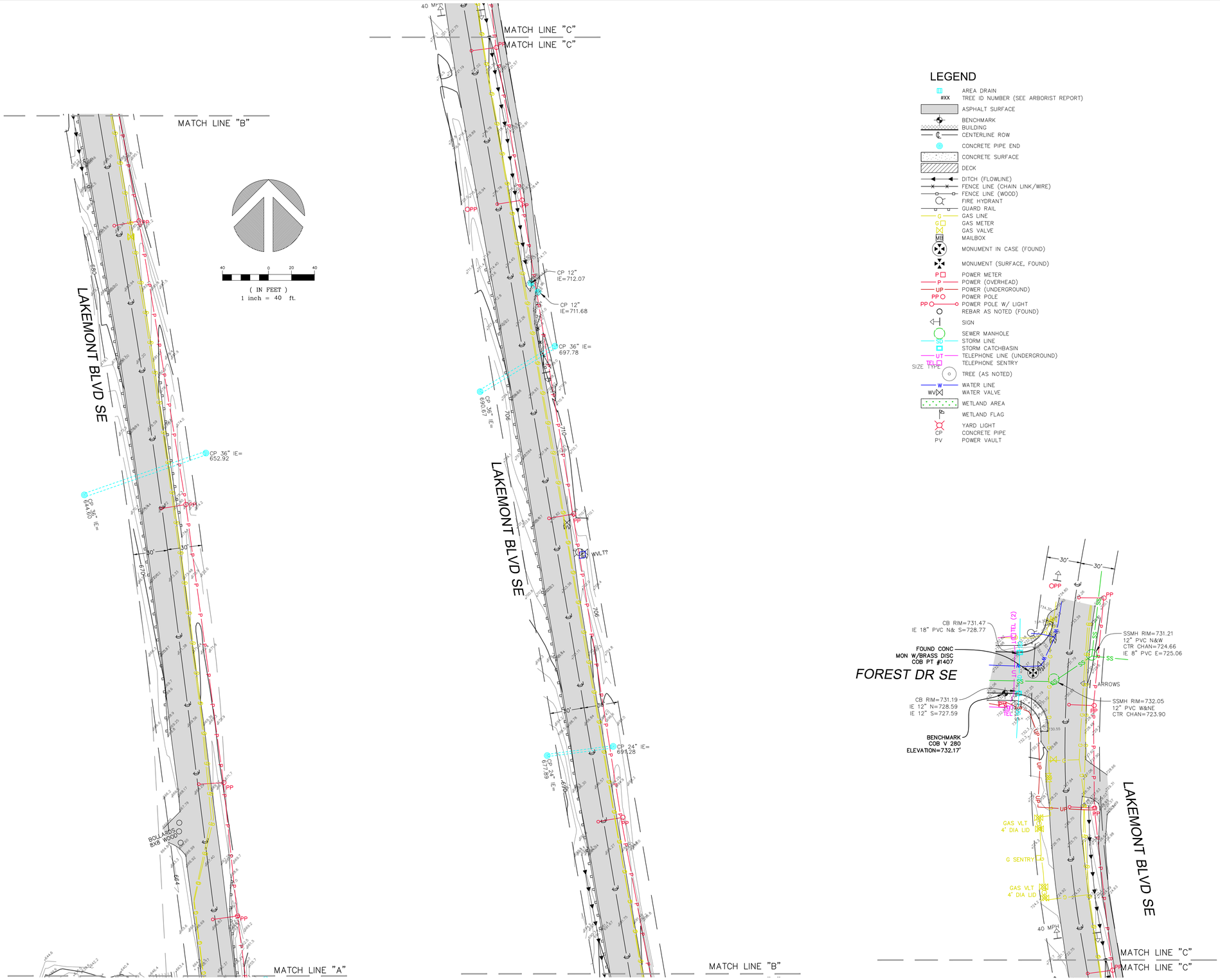

Terrane
10801 Main Street, Suite 102, Bellevue, WA 98004
phone 425.458.4488 support@terrane.net
www.terrane.net


| | |
|---|---|
| JOB NUMBER: | 151150 |
| DATE: | 9/15/15 |
| DRAFTED BY: | TLR |
| CHECKED BY: | SRM |
| SCALE: | 1"= 40' |

| REVISION HISTORY | |
|---|---|
| 9/28/15 | RESTRICTED AREAS |
| 2/9/16 | ADD STREAM 3 |
| 5/5/16 | ADD OFFSITE ROAD |
| 5/19/16 | CORRECT AREAS |
| 6/13/16 | ADDL TOPO PTS |

SHEET NUMBER
5 OF 7

# TOPOGRAPHIC SURVEY




## LEGEND

- AREA DRAIN
- #XX TREE ID NUMBER (SEE ARBORIST REPORT)
- ASPHALT SURFACE
- BENCHMARK
- BUILDING
- CENTERLINE ROW
- CONCRETE PIPE END
- CONCRETE SURFACE
- DECK
- DITCH (FLOWLINE)
- FENCE LINE (CHAIN LINK/WIRE)
- FENCE LINE (WOOD)
- FIRE HYDRANT
- GUARD RAIL
- G GAS LINE
- G GAS METER
- GAS VALVE
- MB MAILBOX
- MONUMENT IN CASE (FOUND)
- MONUMENT (SURFACE, FOUND)
- P POWER METER
- P POWER (OVERHEAD)
- UP POWER (UNDERGROUND)
- PP POWER POLE
- PP POWER POLE W/ LIGHT
- REBAR AS NOTED (FOUND)
- SIGN
- SEWER MANHOLE
- SD STORM LINE
- STORM CATCHBASIN
- UT TELEPHONE LINE (UNDERGROUND)
- TEL TELEPHONE SENTRY
- SIZE TYPE
- TREE (AS NOTED)
- W WATER LINE
- WV WATER VALVE
- WETLAND AREA
- WETLAND FLAG
- YARD LIGHT
- CP CONCRETE PIPE
- PV POWER VAULT

measure success

TOPOGRAPHIC SURVEY
SW 1/4 OF NE 1/4 & NW 1/4 OF SE 1/4, SEC 26, TWP 24N, R 5E, W.M.
*TAX PARCEL NO. 262405-9022 & 262405-9019*

ISOLA HOMES
*7219 & 7331 LAKEMONT BLVD SE*
*BELLEVUE, WA*

ROULETTE-MILLER LAND SURVEYING STATE OF WASHINGTON


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


| | |
|---|---|
| JOB NUMBER: | 151150 |
| DATE: | 9/15/15 |
| DRAFTED BY: | TLR |
| CHECKED BY: | SRM |
| SCALE: | 1"= 40' |

| REVISION HISTORY | |
|---|---|
| 9/28/15 | RESTRICTED AREAS |
| 2/9/16 | ADD STREAM 3 |
| 5/5/16 | ADD OFFSITE ROAD |
| 5/19/16 | CORRECT AREAS |
| 6/13/16 | ADDL TOPO PTS |
| 5/12/17 | TREE TABLE |
| 3/15/17 | ADD'L TOPO |

SHEET NUMBER
6 OF 7

# TOPOGRAPHIC SURVEY

ARBORIST REPORT PREPARED BY:
SHOFFNER CONSULTING
TONY SHOFFNER
ISA #PN-0909A
CTRA #1759
DATED MARCH 10, 2016

TREE EVALUTION DATA ISOLA HOMES LAKEMONT BVLD

| Tree Tag # | Species | DBH | Crown Diameter | Rating | Condition Notes | Status |
|---|---|---|---|---|---|---|
| 1 | WH/Th | 32 | 44 | 2 | Generally good condition and health, defect free | Undetermined |
| 2 | BC/Cpb | 8 | 22 | 1 | Good condition and health, young and vigorous | Undetermined |
| 3 | DF/Pm | 27 | 46 | 2 | Generally good condition and health, defect free | Undetermined |
| 4 | WH/Th | 13 | 34 | 1 | Good condition and health, young and vigorous | Undetermined |
| 5 | DF/Pm | 19 | 36 | 1 | Good condition and health, young and vigorous | Undetermined |
| 6 | PP/Pp | 23 | 36 | 2 | Generally good condition and health, defect free | Undetermined |
| 7 | DC/Cd | 34 | 46 | 2 | Generally good condition and health, defect free | Undetermined |
| 8 | EH/Ia | 16 | 28 | 1 | Good condition and health, young and vigorous | Undetermined |
| 9 | EH/Ia | 10 | 14 | 1 | Good condition and health, young and vigorous | Undetermined |
| 10 | EH/Ia | 10 | 12 | 1 | Good condition and health, young and vigorous | Undetermined |
| 11 | EH/Ia | 15 | 18 | 1 | Good condition and health, young and vigorous | Undetermined |
| 12 | WRC/Tp | 70 | 44 | 3 | Two trunks at 8', large and old, somewhat sparse cro | Undetermined |
| 13 | BLM/Am | 38 | | 4 | Dead | Undetermined |
| 14 | BLM/Am | 37 | | 4 | Dead | Undetermined |
| 15 | RA/Ar | 17 | 40 | 1 | Good condition and health, young and vigorous | Undetermined |
| 16 | RA/Ar | 23 | 28 | 2 | Generally good condition and health, defect free | Undetermined |
| 17 | RA/Ar | 25 | 52 | 2 | Generally good condition and health, defect free | Undetermined |
| 18 | RA/Ar | 15 | 34 | 1 | Good condition and health, young and vigorous | Undetermined |
| 19 | RA/Ar | 15 | 30 | 1 | Good condition and health, young and vigorous | Undetermined |
| 20 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 21 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 22 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 23 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 24 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 25 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 26 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 27 | RA/Ar | 9 | 20 | 1 | Good condition and health, young and vigorous | Undetermined |
| 28 | RA/Ar | 10 | | 4 | Dead | Undetermined |
| 29 | RA/Ar | 12 | 20 | 1 | Good condition and health, young and vigorous | Undetermined |
| 30 | RA/Ar | 12 | 20 | 1 | Good condition and health, young and vigorous | Undetermined |
| 31 | RA/Ar | 17 | 32 | 1 | Good condition and health, young and vigorous | Undetermined |
| 32 | RA/Ar | 17 | 24 | 4 | Dying | Undetermined |
| 33 | RA/Ar | 17 | 32 | 1 | Good condition and health, young and vigorous | Undetermined |
| 34 | RA/Ar | 17 | 32 | 1 | Good condition and health, young and vigorous | Undetermined |
| 35 | RA/Ar | 14 | 26 | 1 | Good condition and health, young and vigorous | Undetermined |
| 36 | RA/Ar | 14 | 26 | 1 | Good condition and health, young and vigorous | Undetermined |
| 37 | RA/Ar | 14 | 26 | 4 | Dying | Undetermined |
| 38 | RA/Ar | 14 | 26 | 1 | Good condition and health, young and vigorous | Undetermined |
| 39 | RA/Ar | 12 | 20 | 1 | Good condition and health, young and vigorous | Undetermined |
| 40 | RA/Ar | 20 | 32 | 2 | Generally good condition and health, defect free | Undetermined |
| 41 | RA/Ar | 22 | 36 | 2 | Generally good condition and health, defect free | Undetermined |
| 43 | RA/Ar | 15 | 28 | 1 | Good condition and health, young and vigorous | Undetermined |
| 44 | RA/Ar | 14 | 28 | 1 | Good condition and health, young and vigorous | Undetermined |
| 45 | RA/Ar | 14 | 20 | 1 | Good condition and health, young and vigorous | Undetermined |
| 46 | RA/Ar | 14 | 28 | 1 | Good condition and health, young and vigorous | Undetermined |
| 47 | RA/Ar | 12 | 28 | 1 | Good condition and health, young and vigorous | Undetermined |
| 48 | RA/Ar | 18 | 28 | 1 | Good condition and health, young and vigorous | Undetermined |
| 49 | RA/Ar | 15 | 34 | 1 | Good condition and health, young and vigorous | Undetermined |

1

TREE EVALUTION DATA ISOLA HOMES LAKEMONT BVLD

| Tree Tag # | Species | DBH | Crown Diameter | Rating | Condition Notes | Status |
|---|---|---|---|---|---|---|
| 50 | RA/Ar | 14 | | 4 | Dead | Undetermined |
| 51 | RA/Ar | 14 | 20 | 1 | Good condition and health, young and vigorous | Undetermined |
| 52 | BLM/Am | 12 | 32 | 1 | Good condition and health, young and vigorous | Undetermined |
| 53 | RA/Ar | 12 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 54 | RA/Ar | 18 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 55 | RA/Ar | 10 | 20 | 1 | Good condition and health, young and vigorous | Undetermined |
| 56 | RA/Ar | 14 | 20 | 1 | Good condition and health, young and vigorous | Undetermined |
| 57 | RA/Ar | 12 | 16 | 1 | Good condition and health, young and vigorous | Undetermined |
| 58 | RA/Ar | 14 | 20 | 1 | Good condition and health, young and vigorous | Undetermined |
| 59 | RA/Ar | 14 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 60 | BLM/Am | 23 | 46 | 2 | Generally good condition and health, defect free | Undetermined |
| 61 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 62 | LC/Cl | 24 | 18 | 2 | Generally good condition and health, defect free | Undetermined |
| 63 | MA/Sa | 14 | 26 | 1 | Good condition and health, young and vigorous | Undetermined |
| 64 | SS/Ps | 18 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 65 | MA/Sa | 16 | 14 | 1 | Good condition and health, young and vigorous | Undetermined |
| 66 | L/Ls | 19 | 30 | 1 | Good condition and health, young and vigorous | Undetermined |
| 67 | WRC/Tp | 55 | 44 | 2 | Generally good condition and health, defect free | Undetermined |
| 68 | Ap/Md | 23 | 38 | 2 | Generally good condition and health, defect free | Undetermined |
| 69 | SS/Ps | 22 | 28 | 2 | Generally good condition and health, defect free | Undetermined |
| 70 | PP/Pp | 20 | 30 | 2 | Generally good condition and health, defect free | Undetermined |
| 71 | PP/Pp | 12 | 20 | 1 | Good condition and health, young and vigorous | Undetermined |
| 72 | PP/Pp | 20 | 36 | 2 | Generally good condition and health, defect free | Undetermined |
| 73 | PP/Pp | 12 | 16 | 1 | Good condition and health, young and vigorous | Undetermined |
| 74 | SS/Ps | 25 | 36 | 2 | Generally good condition and health, defect free | Undetermined |
| 75 | SS/Ps | 15 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 76 | DF/Pm | 36 | 48 | 3 | Multi-trunked, fair condition | Undetermined |
| 77 | DF/Pm | 21 | 44 | 2 | Generally good condition and health, defect free | Undetermined |
| 78 | PP/Pp | 11 | 26 | 1 | Good condition and health, young and vigorous | Undetermined |
| 79 | DF/Pm | 32 | 44 | 2 | Generally good condition and health, defect free | Undetermined |
| 80 | DF/Pm | 22 | 36 | 2 | Generally good condition and health, defect free | Undetermined |
| 81 | DF/Pm | 25 | 46 | 2 | Generally good condition and health, defect free | Undetermined |
| 82 | SS/Ps | 23 | 48 | 2 | Generally good condition and health, defect free | Undetermined |
| 84 | WH/Th | 8 | 30 | 1 | Good condition and health, young and vigorous | Undetermined |
| 85 | WRC/Tp | 17 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 86 | PP/Pp | 12 | 30 | 1 | Good condition and health, young and vigorous | Undetermined |
| 87 | WRC/Tp | 22 | 32 | 2 | Generally good condition and health, defect free | Undetermined |
| 88 | WRC/Tp | 23 | 34 | 2 | Generally good condition and health, defect free | Undetermined |
| 89 | BLM/Am | 23 | 80 | 2 | Generally good condition and health, defect free | Undetermined |
| 90 | RA/Ar | 17 | 34 | 1 | Good condition and health, young and vigorous | Undetermined |
| 91 | RA/Ar | 17 | 36 | 1 | Good condition and health, young and vigorous | Undetermined |
| 92 | DF/Pm | 23 | 42 | 2 | Generally good condition and health, defect free | Undetermined |
| 93 | DF/Pm | 23 | 36 | 2 | Generally good condition and health, defect free | Undetermined |
| 94 | DF/Pm | 13 | 28 | 1 | Good condition and health, young and vigorous | Undetermined |
| 95 | WRC/Tp | 18 | 24 | 1 | Good condition and health, young and vigorous | Undetermined |
| 96 | DF/Pm | 22 | 42 | 2 | Generally good condition and health, defect free | Undetermined |

2

TREE EVALUTION DATA ISOLA HOMES LAKEMONT BVLD

Tree Tag # Number assigned to tree on survey tag
Species Species code:
Ap/Md=Apple (Malus domestica)
BC/Cpb=Boulevard cypress (Chamaecyparis pisifera 'Boulevard')
BLM/Am=Bigleaf maple (Acer macrophyllum)
DC/Cd=Deodar cedar (Cedrus deodara)
DF/Pm=Douglas fir (Pseudotsuga menziesii)
EH/Ia=English holly (Ilex aquifolium)
L/Ls=Larch (Larix species)
LC/Cl=Lawson's cypress (Chamaecyparis lawsoniana)
MA/Sa=Mountain ash (Sorbus aucuparia)
PP/Pp=Ponderosa pine (Pinus ponderosa)
RA/Ar=Red alder (Alnus rubra)
SS/Ps=Sitka spruce (Picea sitchensis)
WH/Th=Western hemlock (Tsuga heterophylla)
WRC/Tp=Western red cedar (Thuja plicata)
Dbh Diameter at 4.5' above ground surface
Crown diameter Maximum diameter of crown spread in feet
Rating Condition rating (1=Excellent condition and health; 2=Generally good condition and health; 3=fair condition and health, minor defects or stress 4=Poor condition and/or health)
Condition Notes General notes about health, condition and vigor

3

measure success

TOPOGRAPHIC SURVEY
SW 1/4 OF NE 1/4 & NW 1/4 OF SE 1/4, SEC 26, TWP 24N, R 5E, W.M.
*TAX PARCEL NO. 262405-9022 & 262405-9019*

ISOLA HOMES
*7219 & 7331 LAKEMONT BLVD SE*
*BELLEVUE, WA*




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

| | |
|---|---|
| JOB NUMBER: | 151150 |
| DATE: | 9/15/15 |
| DRAFTED BY: | TLR |
| CHECKED BY: | SRM |
| SCALE: | 1"= 40' |

| REVISION HISTORY | |
|---|---|
| 9/28/15 | RESTRICTED AREAS |
| 2/9/16 | ADD STREAM 3 |
| 5/5/16 | ADD OFFSITE ROAD |
| 5/19/16 | CORRECT AREAS |
| 6/13/16 | ADDL TOPO PTS |
| 5/12/17 | TREE TABLE |
| 3/15/17 | ADD'L TOPO |

SHEET NUMBER
7 OF 7

# PARK POINTE PUD & PRELIMINARY PLAT

## 7219 & 7331 LAKEMONT BLVD SE
## BELLEVUE, WA 98006

### AUGUST 16, 2019

## PROJECT TEAM

### OWNER/APPLICANT

**ISOLA HOMES**
CONTACT: JEFF WEGENER
ADDRESS: 13555 SE 36TH STREET, SUITE 230
BELLEVUE, WA 98006
PHONE: (206) 413-6361
EMAIL: JEFF.WEGENER@ISOLAHOMES.COM

### CONSULTANTS

**PACE ENGINEERS, INC.**
CIVIL ENGINEERING, LANDSCAPE ARCHITECTURE AND PLANNING
CONTACT: TOBY COENEN, PE (CIVIL ENGINEER)
ADDRESS: 11255 KIRKLAND WAY, STE 300
KIRKLAND, WA 98033
PHONE: (425) 827-2014
EMAIL: TOBYC@PACEENGRS.COM

CONTACT: BRIAN WAY, RLA (LANDSCAPE ARCHITECT)
EMAIL: BRIANW@PACEENGRS.COM

CONTACT: STEVE CALHOON, RLA (PROJECT PLANNER)
EMAIL: STEVEC@PACEENGRS.COM

**GEOTECH CONSULTANTS, INC.**
GEOTECHNICAL ENGINEERING
CONTACT: JAMES H. STRANGE, PE
ADDRESS: 2401 10TH AVE EAST
SEATTLE, WA 98102
PHONE: (425) 747-5618
EMAIL: JAMESS@GEOTECHNW.COM

**SHOFFNER CONSULTING**
CONSULTING ARBORIST
CONTACT: TONY SHOFFNER
ADDRESS: 21529 4TH AVE W #C31
BOTHELL, WA 98021
PHONE: (206) 755-2871
EMAIL: TONY@TONYSHOFFNER.COM

**TALASAEA CONSULTANTS, INC.**
WETLAND AND STREAM BIOLOGIST
CONTACT: ANN OLSON, PWS
ADDRESS: 15020 BEAR CREEK ROAD, NE
WOODINVILLE, WA 98007
PHONE: (425) 861-7550
EMAIL: AOLSON@TALASAEA.COM

**ICICLE CREEK ENGINEERS, INC.**
MINE HAZARD ASSESSMENT
CONTACT: BRIAN BEAMAN, LEG
ADDRESS: 29335 NE 20TH STREET
CARNATION, WA 98014
PHONE: (425) 333-0093
EMAIL: BBEAMAN@ICICLECREEKENGINEERS.COM

**TERRANE**
LAND SURVEYING
CONTACT: SEAN ROULETTE-MILLER, PLS
ADDRESS: 10801 MAIN STREET, SUITE 102
BELLEVUE, WA 98004
PHONE: (425) 458-4488
EMAIL: SEANR@TERRANE.NET

**INTOLIGHT**
STREET LIGHT DESIGN
CONTACT: LARS LARSON
ADDRESS: PO BOX 90868
BELLEVUE, WA 98009-0868
PHONE: (425) 456-2701
EMAIL: LARS.LARSON@PSE.COM

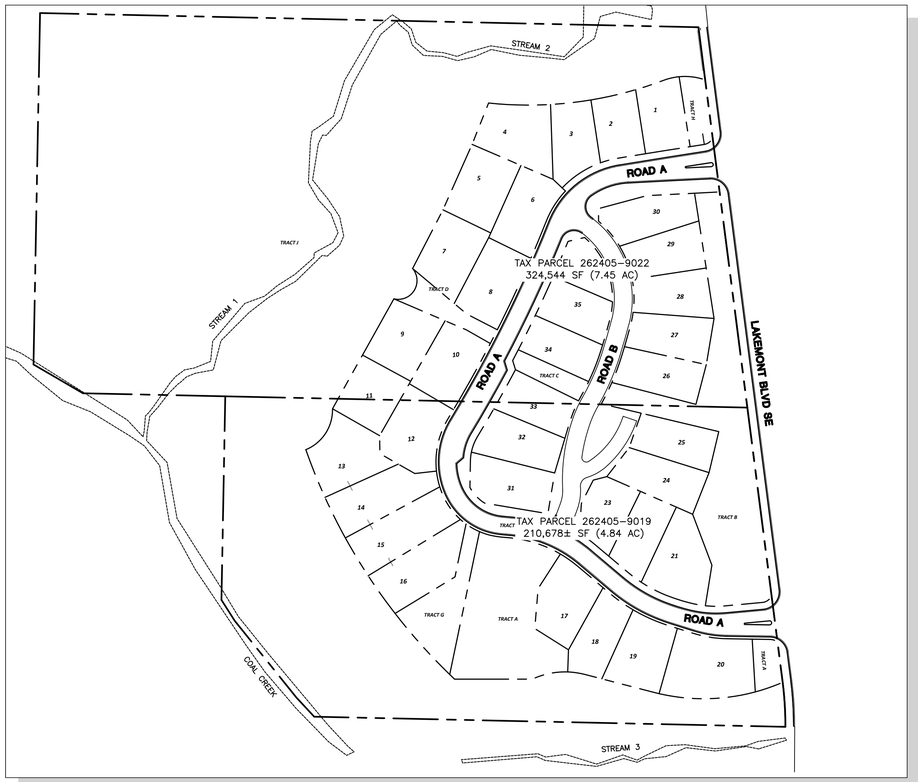
**LEMONS ARCHITECTURE PLLC**
ARCHITECT
CONTACT: JONATHAN LEMONS
ADDRESS: 98 YESLER WAY
SEATTLE, WA 98104
PHONE: (206) 306-5952
EMAIL: JON@LEMONSARCHITECTURE.COM

**CONFLUENCE ENVIRONMENTAL COMPANY**
STREAM BIOLOGIST
CONTACT: CHRIS BERGER
ADDRESS: 161 N. CANAL STREET, SUITE 111
SEATTLE, WA 98103
PHONE: (206) 395-7657
EMAIL: CHRIS.BERGER@CONFENV.COM

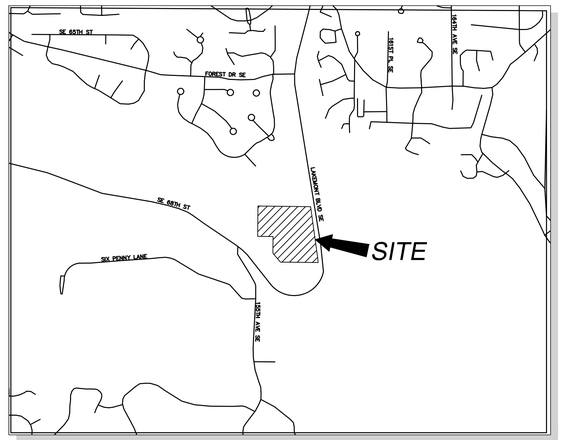
**TIERRA RIGHT OF WAY SERVICES**
CULTURAL RESOURCES
CONTACT: JENNIFER HUSHOUR
ADDRESS: 444 NE RAVENNA BLVD., SUITE 103
SEATTLE, WA 98115
PHONE: (206) 363-1556
EMAIL: JHUSHOUR@TIERRA-ROW.COM

ISOLA HOMES

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
*p.* 425.827.2014 | *f.* 425.827.5043
Civil | Structural | Planning | Survey
www. paceengrs.com




**SITE MAP**
SCALE= 1"=80'




**VICINITY MAP**
SCALE= 1"=1000'

## UTILITY PURVEYORS

### WATER & SEWER SERVICE
UTILITY: CITY OF BELLEVUE UTILITIES DEPARTMENT
ADDRESS: 450 110TH AVENUE NE
PO BOX 90012
BELLEVUE, WA 98009
PHONE: (425) 452-6932
EMAIL: UTILITIES@BELLEVUEWA.GOV

### GAS & ELECTRICAL SERVICE
UTILITY: PUGET SOUND ENERGY
ADDRESS: 10885 NE 4TH ST
BELLEVUE, WA 98004

### CABLE SERVICE
UTILITY: XFINITY/COMCAST
ADDRESS: 3630 FACTORIA BOULEVARD SE
BELLEVUE, WA 98006

### TELEPHONE SERVICE
UTILITY: FRONTIER COMMUNICATIONS
ADDRESS: (888) 982-3235

## SITE INFORMATION

### ADDRESS
7219 AND 7331 LAKEMONT BOULEVARD SE
BELLEVUE, WA 98006

### PARCEL NUMBERS
262405-9022 (324,544 SF), 262405-9019 (210,678 SF)

### BASIS OF BEARING
NAD 83 (2011) WASHINGTON NORTH COORDINATE SYSTEM PER CITY OF BELLEVUE CONTROL LINE BETWEEN POINTS #1407 AND #1405 BEARS N 07°58'42" W

### DATUM
NAVD 88 PER CITY OF BELLEVUE CONTROL PT V280, ELEV=732.168'

### BENCHMARKS
SEE DATUM

### ZONING
R1, R-3.5

## SHEET INDEX


| SHEET | TITLE |
|---|---|
| | **PUD DOCUMENTS** |
| P1 | COVER SHEET |
| P2 | BASE DENSITY CALCULATION |
| P3 | PUD CONSERVATION FEATURES |
| P4 | PUD BUILDABLE AREAS |
| P5 | SITE PLAN B |
| | **PRELIMINARY ENGINEERING DOCUMENTS** |
| E1 | ROAD PLAN & TYPICAL SECTIONS |
| E2 | ROAD PROFILES |
| E3 | ROAD PROFILES & TYPICAL SECTIONS |
| E4 | STORMWATER COMPLIANCE SUMMARY |
| E5 | STORMWATER SITE PLAN |
| E6 | STORMWATER VAULT PLAN |
| E7 | STORMWATER VAULT OUTFALL |
| E8 | PRELIMINARY UTILITY PLAN |
| E9 | OFFSITE SEWER AND WATER EXTENSIONS |
| E10 | PRELIMINARY GRADING PLAN |
| | **PRELIMINARY LANDSCAPE PLANS** |
| L1 | PRELIMINARY LANDSCAPE PLAN |
| L2 | SITE SECTIONS (PREVIOUSLY SUBMITTED) |
| L3 | TREE RETENTION PLAN |
| | **PLANS BY TERRANE** |
| 1-4 | PARK POINTE PUD & PRELIMINARY PLAT |
| 5-7 | TOPOGRAPHIC SURVEY |
| | **PLANS BY TALASAEA CONSULTANTS** |
| | UNDER SEPARATE COVER |
| | **PLANS BY INTOLIGHT** |
| 1 | INSTALL NEW AND UPGRADE EXISTING STREET LIGHTS |


16-143970-LK

| SYM | REVISION | DATE |
|---|---|---|
| | ADDITION OF PRELIMINARY PLAT | 8/16/19 |
| | RESPOND TO CITY REVIEW COMMENTS | 6/6/18 |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
*p.* 425.827.2014 | *f.* 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

CHRISTOPHER S. LEMONS
STATE OF WASHINGTON
30195
REGISTERED
PROFESSIONAL ENGINEER
8/16/19

ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.682.7900

**PARK POINTE PUD & PRELIMINARY PLAT**
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

**COVER SHEET**
35 UNIT PUD

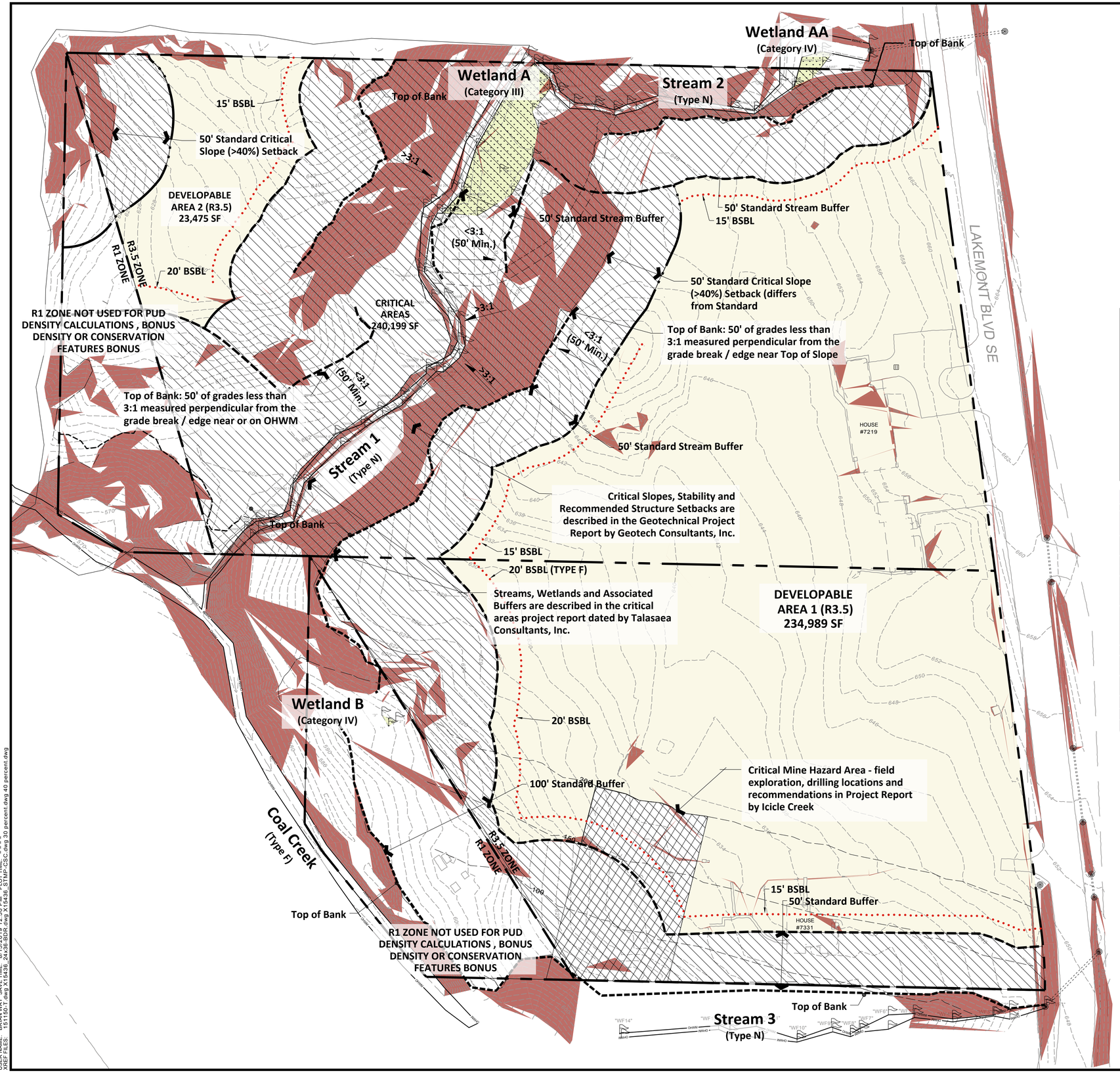
| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: | CHECKED BY: |
| TC | JA |

JOB NUMBER
15436

SHEET: P1

SHEET 1 OF 17

FILE NAME: P:\P15\15436_LAKEMONT_PROPERTY_FEASIBILITY\CAD\ENGINEERING\SHEETS\PARK POINT PUD\P15436_CVR.DWG
USER NAME: JA PLOT DATE: 8/16/2019 PLOT TIME: 8:46 AM
XREF FILES: X15436_BASE.dwg X15436_SITE.dwg X15436_24x36-BDR.dwg X15436_STMP-CSC.dwg X15436_CAO_PROPOSED.dwg




## Legend

- Ordinary High Water Mark
- Top of Bank
- Standard Buffer offset from Top of Bank
- Standard Structure Setback from Streams
- Critical Slopes (40% and greater)
- Total Existing Critical Features and their associated buffers.
- Wetlands
- Zoning Boundary

**R1 ZONE**
**PROJECT AREA (R1) = 62,547 SF**

**CRITICAL AREAS (R1) = 54,990 SF**

**DEVELOPABLE (R1) = 3,779 SF**

**R3.5 ZONE**
**PROJECT AREA (R3.5) = 472,685 SF**

**CRITICAL AREAS (R3.5) = 214,230 SF**

**DEVELOPABLE AREA (R3.5) 258,464 SF**

**Density Calculations**

**TABLE 1. Critical Areas Overlay Base Density (LUC 20.25H.045)**

(DU/Ac) X (Buildable Area) + (DU/Ac) X (Total CA & Buffer, in ac) X (Development Factor) = Maximum Dwelling Unit Potential

| Total Site Area / Gross Site Area (GA) | Du/Acre | Sq. Ft. | Acres |
|---|---|---|---|
| Parcels 262405-9022, 262405-9019 R3.5 | 3.5 | 472,685 | 10.85 |
| **Non-Buildable Areas (NBA)** | | **Sq. Ft.** | **Acres** |
| Critical Areas and Buffers | | 214,230 | 4.92 |
| Total Restricted Area | | 214,230 | 4.92 |
| **Buildable Areas (BA)** | | **Sq. Ft.** | **Acres** |
| Developable Area 1 | | 234,989 | 5.39 |
| Developable Area 2 | | 23,475 | 0.54 |
| Total Buildable Area | | 258,464 | 5.93 |
| BA + NBA | | 472,694 | 10.85 |
| **Development Factor (DF)** | | | |
| BA / Total Site Area (BA/GA) | | | 55% |
| **Calculation** | | | |
| (3.5 Du/Ac X BA) + (3.5 Du/Ac X NBA) X (DF) | | | |
| **Base Density R3.5** | | | **30.18** |
| **Base Density R1** | | | |
| **Total Base Density** | | | **30.18** |

AREAS NOTE:

THE AREAS NOTED ON THIS SHEET REPRESENT THE BUILDABLE AREAS (BA) AND NON-BUILDABLE AREAS (NBA) FOR THE R3.5 ZONE ONLY. FOR TOTAL CRITICAL AREA AND BUFFERS SEE PLANS AND CRITICAL AREAS REPORTED BY TALASEA.

N

HORIZ. 0 20 40 80
Scale In Feet

| SYM | REVISION | DATE |
|---|---|---|
| | ADDITION OF PRELIMINARY PLAT | 8/16/19 |
| | RESPOND TO CITY REVIEW COMMENTS | 6/6/18 |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

CHRISTOPHER S. NELSON
STATE OF WASHINGTON
30192
REGISTERED PROFESSIONAL ENGINEER
8/16/19

ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

**PARK POINTE PUD & PRELIMINARY PLAT**
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

**BASE DENSITY CALCULATION**
35 UNIT PUD

| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: | CHECKED BY: |
| TC | JA |
| JOB NUMBER | |
| 15436 | |
| SHEET: | |
| P2 | |
| SHEET 2 OF 17 | |

16-143970-LK

FILE NAME: P:\P15\15436 LAKEMONT PROPERTY FEASIBILITY\CAD\ENGINEERING\SHEETS\PARK POINT PUD\P15436_CAO_EXISTING.DWG
PLOTTED: 8/16/2019 @ 2:25:10 PM BY TIM CLEVELAND
XREF FILES: 151150-T..dwg X15436_24x36-BDR.dwg X15436_STMP-CSC.dwg 30 percent.dwg 40 percent.dwg




A
B
C

**TABLE 2 PUD Conservation & Rec Space Requirements (LUC 20.30D.160)**

| Conservation Design Feature | Sq. Ft. | Conservation Factor | Sq.Ft x Con Factor |
|---|---|---|---|
| Critical Areas Placed in a Tract | 188,901 | 1.0 | 188,901 |
| Forest Preservation (New Areas) | | 1.2 | 0 |
| Wildlife Corridor | 23,466 | 1.2 | 28,159 |
| Critical Area Buffer Expansion | | 1.2 | 0 |
| Soil and Tree preservation in Open Space | | 1.1 | 0 |
| Stormwater Community LID Tract | | 1.1 | 0 |
| Landscape/Grass Passive Rec Area | 40,035 | 1.0 | 40,035 |
| Pervious Paved Open Space | 0 | 1.0 | 0 |
| Paved Open Space | 0 | 1.0 | 0 |
| Total Area Provided | | | **257,095** |
| | | | |
| Percent of Gross Area (40% Min.) | | | 54% |
| (20.30D.160.A.1) | | | 40% |
| | | Min. Req. | 189,074 |
| Minimum Common Rec Space Area (20.30D.160.A.2), percentage(10%) | Critical Areas & Buffers >40%, Requesting Requirement to be waived. | | |
| Minimum Non-Rec Space Area (20.30D.160.A.2), percentage (20%) | | | |

**TABLE 3 Additional Bonus Density Options (LUC 20.30D.167.D)**

| | | | |
|---|---|---|---|
| Additional bonus densities may be granted for additional conservation design features above the minimums required in LUC | | | |
| Conservation and Rec Space Elligible for Bonus (R3.5) | | | 68,021 |
| Bonus = Area / underlying zone min lot size (R3.5) R3.5 (10,000 sq. ft) | | | 6.80 |
| **Conservation Bonus** | **Percent Possible** | **22.54%** | **6.80** |

**TABLE 4 20.30D Planned Unit Development Density Summary**

| | | | |
|---|---|---|---|
| **Base Density** | | Base Density | **30.18** |
| LUC 20.25H.045 Development Density / Intensity under Critical Areas Overlay District | | | |
| **Discretionary Bonus Density** | 10% | 30.18 | 3.02 |
| LUC 20.30D.165 Planned Unit Development Plan - Request for modification of zoning requirements No more than 10% additional units over Base Density | | | |
| **Additional Bonus Density** | 23% | 30.18 | 6.80 |
| LUC 20.30D.167 Planned Unit Development Plan - Additional Bonus Density for large-parcel projects. Up to 30% of the Base Density | | | |
| **TOTAL POTENTIAL DU YIELD** | | | **40.00** |
| **TOTAL UNITS PROVIDED** | | | **35.00** |

AREAS NOTE:

ONLY THOSE AREAS ZONED AS R3.5 WERE USED FOR PUD DENSITY, BONUS DENSITY, AND CONSERVATION FEATURES. FOR TOTAL PROPOSED CRITICAL AREAS AND MITIGATION REFER TO PLANS AND CRITICAL AREA REPORT BY TALASEA.

N

HORIZ. 0 20 40 80
Scale In Feet

16-143970-LK

| SYM | REVISION | DATE |
|---|---|---|
| | ADDITION OF PRELIMINARY PLAT | 8/16/19 |
| | RESPOND TO CITY REVIEW COMMENTS | 6/6/18 |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

CHRISTOPHER S. ANDERSEN
STATE OF WASHINGTON
30194
REGISTERED
PROFESSIONAL ENGINEER
8/16/19

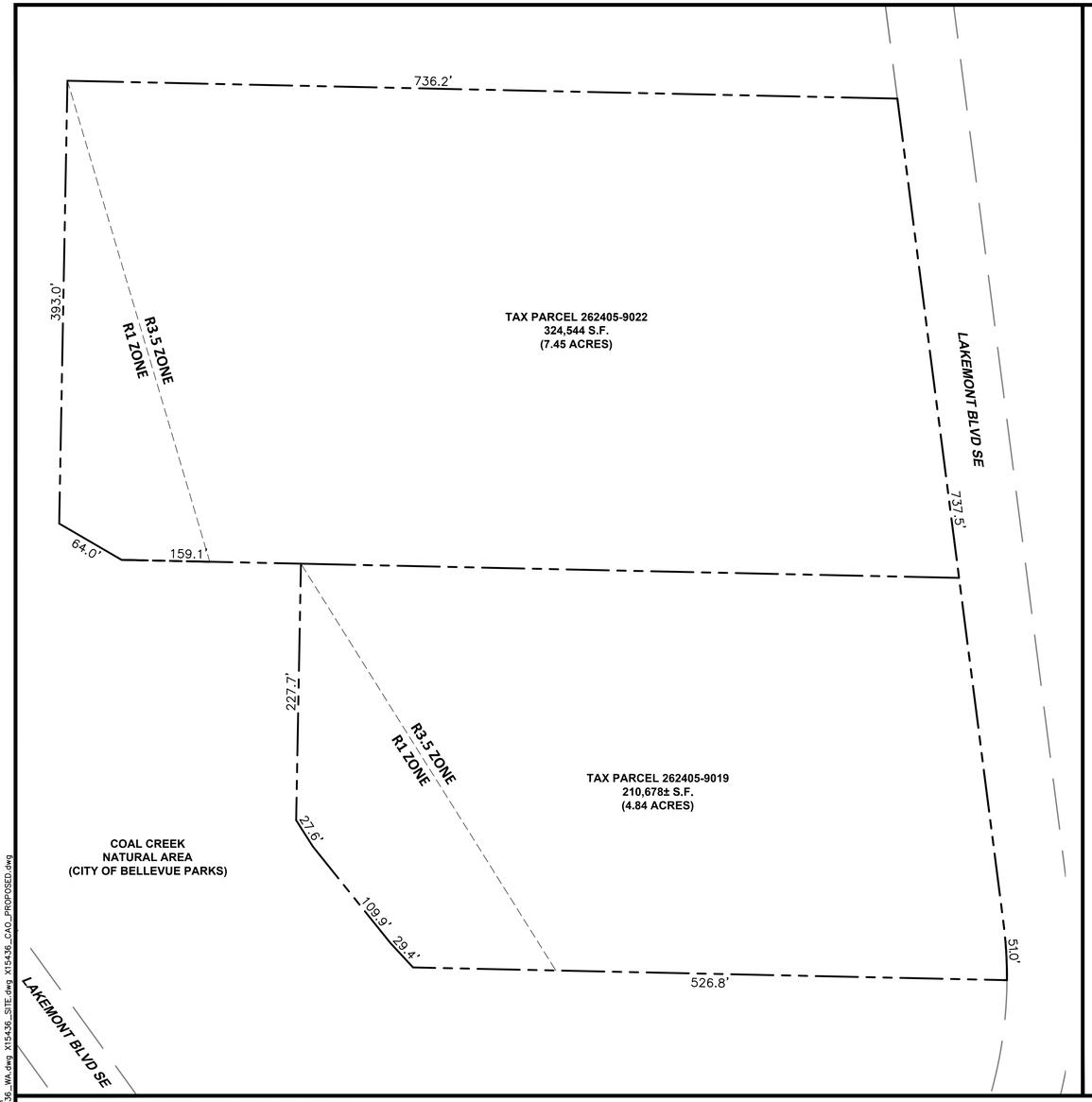
ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

# PARK POINTE PUD & PRELIMINARY PLAT
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

# PUD CONSERVATION FEATURES
35 UNIT PUD

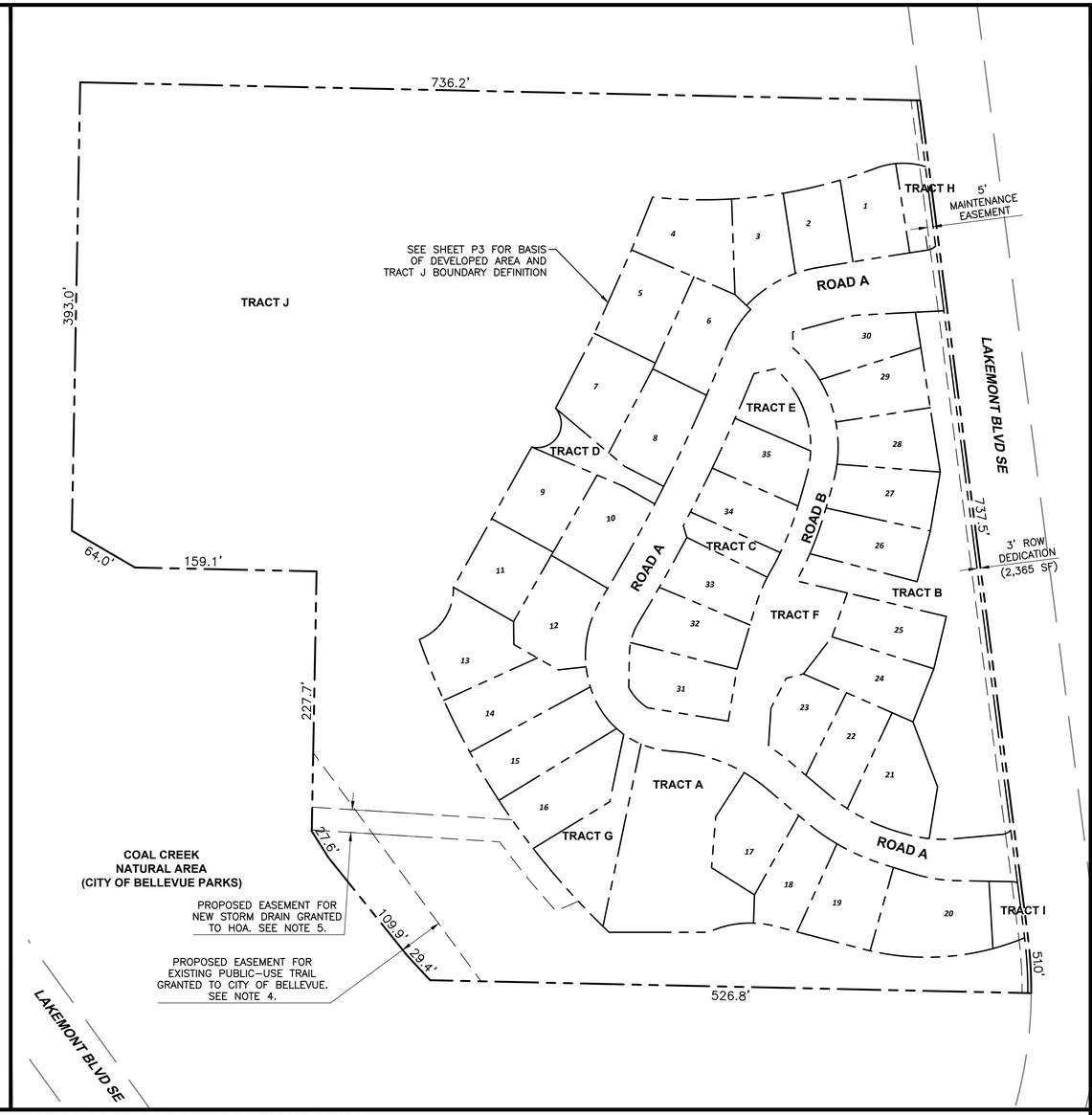
| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: TC | CHECKED BY: JA |
| JOB NUMBER 15436 | |
| SHEET: P3 | |
| SHEET 3 OF 17 | |

FILE NAME: P:\P15\15436 LAKEMONT PROPERTY FEASIBILITY\CAD\ENGINEERING\SHEETS\PARK POINT PUD\P15436_CAO_PROPOSED.DWG
PRINTED BY: JAMES ANDERSEN 8/16/2019 1:51 PM PLOTTED BY: JAMES ANDERSEN
XREF FILES: X15436_BASE.dwg X15436_24x36 BDR.dwg X15436_STMP-CSC.dwg X15436_SITE.dwg X15436_40 percent slopes.dwg X15436_HATCH.dwg




## EXISTING PARCEL CONFIGURATION

SCALE: AS SHOWN




## PROPOSED PARCEL CONFIGURATION

SCALE: AS SHOWN

## PROJECT AREA SUMMARY

| Existing Parcel Data | | | |
|---|---|---|---|
| **Description** | **R1 Zone** | **R3.5 Zone** | **Total** |
| North Parcel | 27,562 | 296,982 | 324,544 |
| South Parcel | 34,976 | 175,702 | 210,678 |
| Total | 62,538 | 472,684 | 535,222 |

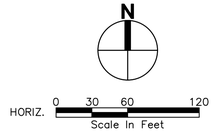
| Proposed Parcel Data | | |
|---|---|---|
| **Description** | **Tract Purpose** | **Area** |
| Tract A | Drainage and Rec Area | 14,951 |
| Tract B | Landscape and Rec Area | 22,346 |
| Tract C | Landscape and Rec Area | 1,946 |
| Tract D | Landscape and Rec Area | 2,438 |
| Tract E | Landscape and Rec Area | 2,736 |
| Tract F | Access & Utilities | 46,666 |
| Tract G | COB Wastewater Facilities | 5,479 |
| Tract H | Landscape | 1,862 |
| Tract I | Landscape | 1,453 |
| Tract J | Open Space for Critical Areas | 275,672 |
| Lot Area | -- N/A -- | 157,308 |
| R/W Dedication | -- N/A -- | 2,365 |
| TOTAL AREA | | 535,222 |

## PROPERTY SUBDIVISION NOTES

1. SEE PRELIMINARY PLAT MAP FROM TERRANE FOR DEFINITION AND ADDITIONAL INFORMATION ON PROPERTY SUBDIVISION.
2. ADDITIONAL EASEMENTS WILL BE REQUIRED ACROSS TRACT A TO ACCOMMODATE BOTH MUNICIPAL UTILITIES AND PRIVATE FRANCHISE UTILITIES.
3. TRACT J MAY BE CONVEYED TO THE CITY OF BELLEVUE PARKS DEPARTMENT OR RETAINED BY FUTURE PARK POINTE HOMEOWNERS ASSOCIATION.
4. IF TRACT J IS RETAINED BY PARK POINTE HOA, THE FINAL PLAT WILL GRANT A PROPOSED EASEMENT TO THE CITY OF BELLEVUE PARKS FOR USE AND MAINTENANCE OF THE EXISTING COAL CREEK REGIONAL TRAIL.
5. IF TRACT J IS CONVEYED TO THE CITY OF BELLEVUE PARKS, THE FINAL PLAT WILL GRANT A PROPOSED EASEMENT TO THE PARK POINTE HOA FOR A PROPOSED PRIVATELY OWNED STORM DRAIN OUTFALL PIPE.

## RIGHT OF WAY REQUIREMENTS

1. A 3–FOOT STRIP OF LAND WILL BE DEDICATED ALONG LAKEMONT BLVD SE TO ACCOMMODATE FRONTAGE IMPROVEMENTS.
2. TOTAL DEDICATION AREA = 2,365 SF




| SYM | REVISION | DATE |
|---|---|---|
| | ADDITION OF PRELIMINARY PLAT | 8/16/19 |
| | RESPOND TO CITY REVIEW COMMENTS | 6/6/18 |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
pacaengrs.com

CHRISTOPHER S. LARSEN — STATE OF WASHINGTON — 30195 — REGISTERED PROFESSIONAL ENGINEER
8/16/19

ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

# PARK POINTE PUD & PRELIMINARY PLAT

7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

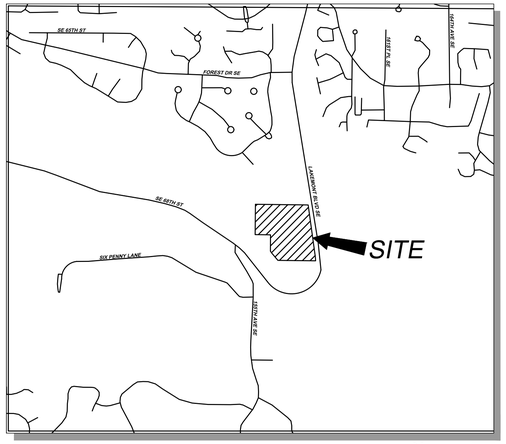
## PUD BUILDABLE AREAS

35 UNIT PUD

| | |
|---|---|
| SCALE: AS NOTED | DATE: 6/6/2018 |
| DESIGNED BY: TC | CHECKED BY: JA |
| JOB NUMBER: 15436 | |
| SHEET: P4 | |
| SHEET 4 OF 17 | |

16–143970–LK

FILE NAME: P:\P15\15436_LAKEMONT PROPERTY_FEASIBILITY\CAD\ENGINEERING\SHEETS\PARK_POINT_PUD\P15436_SITE.DWG
PLOTTED: 8/16/2019 BY: CHRISTOPHER LARSEN
XREF FILES: X15436_BASE.dwg X15436_24x36-BDR.dwg X15436_STMP-CSC.dwg X15436_SSC.dwg X15436_WA.dwg X15436_SITE.dwg X15436_CAO_PROPOSED.dwg




**VICINITY MAP**
SCALE= 1"=1000'

N

## SIGHT DISTANCE ANALYSIS

NORTH ROAD INTERSECTION:
SIGHT DISTANCE REQUIRED
TRAVELING NORTH (LOOKING SOUTH): 410 FT (40 MPH SPEED LIMIT)
TRAVELING SOUTH (LOOKING NORTH): 410 FT (40 MPH SPEED LIMIT)

SOUTH DRIVEWAY INTERSECTION:
SIGHT DISTANCE REQUIRED
TRAVELING SOUTH (LOOKING NORTH): 410 FT (40 MPH SPEED LIMIT)
TRAVELING NORTH (LOOKING SOUTH: 300 FT (30 MPH SPEED LIMIT)

SIGHT TRIANGLES PER CITY OF BELLEVUE DETAIL RL–100–1

## LEGAL DESCRIPTION

PARCEL #262405–9019
PER OLD REPUBLIC NATIONAL TITLE INSURANCE CO. ORDER NO. 5207131706, DATED AUGUST 31, 2015.

THE SOUTHERLY 356 FEET OF THE NORTHERLY 680 FEET OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 26, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M. LYING WEST OF EDWARD LEIFHELM ROAD;
EXCEPT THE WESTERLY 215 FEET THEREOF;
EXCEPT ANY PORTION THEREOF LYING WESTERLY OF THE THREAD OF AN UNNAMED CREEK, AS CONVEYED TO KING COUNTY BY INSTRUMENT RECORDED MAY 29, 1987 UNDER RECORDING NO. 8602270567.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

SPECIAL EXCEPTIONS:
RECORDING NUMBER 3254208
"NOT PLOTTED — BLANKET IN NATURE"
RECORDING NUMBER 5494713
AFFECTS : PORTION ADJOINING THE ROAD
"NOT PLOTTED — BLANKET IN NATURE"
RECORDING NUMBER 20050519001622
"NOT PLOTTED — BLANKET IN NATURE"

PARCEL #262405–9022
PER OLD REPUBLIC NATIONAL TITLE INSURANCE CO. ORDER NO. 5216013607, DATED APRIL 8, 2015.

THAT PORTION OF SECTION 26, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

THE NORTH 324 FEET OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER LYING WEST OF THE EDWARD LEIFHELM ROAD SURVEY #1344 BEING BOUND ON THE SOUTH BY NORTH LINE OF TRACT OF LAND CONVEYED BY PACIFIC COAST COAL CO. TO ERNEST SWANSON BY DEED DATED JULY 15, 1942 AND RECORDED IN VOLUME 2066 OF DEEDS, PAGES 475 AND 476, AND THE EXTENSION OF SAID NORTH LINE OF THE ERNEST SWANSON PROPERTY EXTENDED WEST; ALSO THE SOUTH 100 FEET OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER LYING WEST OF THE EDWARD LEIFHELM CO. ROAD SURVEY #1344;

EXCEPT ANY PORTION LYING WESTERLY OF THE THREAD OF AN UNNAMED STREAM, TO–WIT

BEGINNING AT THE CENTER OF SECTION 26, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON; THENCE NORTH 01°04'35"EAST ALONG THE NORTH–SOUTH CENTERLINE OF SAID SECTION 26, A DISTANCE OF 100 FEET TO THE TRUE POINT OF BEGINNING; THENCE SOUTH 16°27'31" EAST 445.05 FEET; THENCE NORTH 88°46'03" WEST, PARALLEL TO THE EAST–WEST CENTERLINE OF SAID SECTION, 134.09 FEET TO SAID NORTH–SOUTH CENTERLINE; THENCE NORTH 01°04'35" EAST 424.00 FEET, ALONG SAID NORTH–SOUTH CENTERLINE, TO THE TRUE POINT OF BEGINNING, AS CONVEYED TO KING COUNTY BY DEED RECORDED UNDER KING COUNTY RECORDING NO. 8602270565.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

SPECIAL EXCEPTIONS:
RECORDING NUMBER 3070389
"NOT PLOTTED — AS CONSTRUCTED"
RECORDING NUMBER 3913538
RECORDING NUMBER 20050419000925.
UNDER RECORDING NUMBER 20050519001620.
"NOT PLOTTED — BLANKET IN NATURE"
RECORDING NUMBER 5481732
"NOT PLOTTED — BLANKET IN NATURE"
RECORDING NUMBER 8602270568
"PLOTTED"
RECORDING NUMBER 20051212000275
"NOT SURVEY RELATED"
RECORDING NUMBER 20060831002323
"NOT SURVEY RELATED"

Development Services

## Statistical Information

Land Use Zone: R-1 and R-3.5

Site area in square feet and acres: 535,522 square feet and 12.29 Acres

### Site Data Summary

| | Required/Allowed | Proposed |
|---|---|---|
| Number of dwelling units per acre | 3.5 (per zoning) | 2.85 |
| Total number of dwelling units | 40 (PUD) | 35 |
| Area of each proposed structure: | | |
| Net | N/A | |
| Net leasable (Shopping Center) | N/A | N/A |
| Gross | N/A | N/A |
| Floor Area Ratio (F.A.R.) | N/A | N/A |
| Area of proposed building by use: | | |
| Net | 187,443 | 62,228, (from |
| Gross | N/A | ~1,775 sf / DU) |
| Percentage of lot coverage | 35% | 12% |
| Amount of impervious area (sq. ft.) | 267,761 (50%) | 133,662 (25%) |
| Cut/fill (cubic yards) | 33,154 cut | 8,283 fill |
| Building height | N/A | N/A |
| Shoreline & Transition Areas: measured from avg. existing grade | | |
| All other areas: measured from average finished grade | | |

### Parking

| | | |
|---|---|---|
| Total number of spaces for the project | 70 | 123 |
| Number of spaces by each proposed use | 2 per house | 3.5 per house |
| The percentage of compact stalls | N/A | N/A |
| The percentage of handicapped stalls | N/A | N/A |

### Area of Proposed Landscaping or Mitigation

| | | |
|---|---|---|
| Adjacent to right-of-way | 7,900 | 14,790 |
| Adjacent to interior property lines | 17,990 | 30,206 |
| Within the parking area | N/A | N/A |
| Significant Trees to be retained | N/A | N/A |

JURISDICTIONAL WETLAND AREA DELINEATED BY TALASAEA CONSULTANTS. SEE SHEET P2 FOR ADDITIONAL INFORMATION
SIGHT DISTANCE TRIANGLE PER TABLE THIS SHEET
PROPOSED SANITARY SEWER FM
ORDINARY HIGH WATER MARK DELINEATED BY TALASAEA CONSULTANTS. SEE SHEET P3 FOR ADDITIONAL INFORMATION
STREAM 2
BUFFER ENHANCEMENT PLANTING, SEE MITIGATION PLAN
RETAINING WALL
JURISDICTIONAL WETLAND AREA DELINEATED BY TALASAEA CONSULTANTS. SEE SHEET P2 FOR ADDITIONAL INFORMATION
SPLIT RAIL FENCE, SEE MITIGATION PLANS (EDGE OF NGPA)
60' R/W
29.02' EX. PAVEMENT
EXISTING TREES TO REMAIN, SEE ARBORIST REPORT FOR DESCRIPTION OF TREE RETENTION
TRACT H
PROPOSED WATER MAIN EXTENSION
TP 262405-9022
PERMANENT SUBDIVISION SIGN PER LUC 22B.10.090C(4A,B) 25 SQ FT FACE AREA
RETAINING WALL
60' R/W
29.67' EX. PAVEMENT
PROPOSED PUBLIC ACCESS
3' ROW DEDICATION
10' STRUCTURE SETBACK (TYP)
REFER TO TITLE REPORT FOR LIMITATIONS WITHIN RESTRICTED AREA (TYP).
REGULATED STEEP SLOPE (>40%). SEE SHEET P2 FOR DETAILED LOCATION
TRACT J
TRACT E
TRACT D
ROAD A
ROAD B
AREA RESTRICTED PER RECORDING NO. 8602270568
PROPOSED 5' SOFT SURFACE TRAIL
SIGHT DISTANCE TRIANGLE PER TABLE THIS SHEET
LAKEMONT BLVD SE
TRACT C
RETAINING WALL
RETAINING WALL
TRACT B
PERMANENT SUBDIVISION SIGN PER LUC 22B.10.090C(4A,B) 25 SQ FT FACE AREA
EDGE OF EXISTING ASPHALT
TP 262405-9019
Stormwater Vault
TRACT A
TRACT G
ROCKERY
SPLIT RAIL FENCE, SEE MITIGATION PLANS (EDGE OF NGPE)
29.58' EX. PAVEMENT
TREE #72
20" DBH
PONDEROSA PINE
EL. 643.39
NGPE Fence
BUFFER ENHANCEMENT PLANTING, SEE MITIGATION PLAN
RETAINING WALL
ROCK FACING
REFER TO TITLE REPORT FOR LIMITATIONS WITHIN RESTRICTED AREA (TYP).
EXISTING REGIONAL TRAIL
STREAM 3
COAL CREEK
N1° 04' 02"E 393.00'
S88° 46' 00"E 736.17'
S1° 04' 02"W 227.68'
N59° 47' 21"W 77.70'
N35° 40' 30"W 109.85'
S88° 46' 00"E 526.81'
HORIZ. 0 20 40 80 Scale In Feet
16–143970–LK

| DATE | REVISION |
|---|---|
| 6/6/18 | RESPOND TO CITY REVIEW COMMENTS |
| 8/16/19 | ADDITION OF PRELIMINARY PLAT |
| | S'YM |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
pacaengrs.com

CHRISTOPHER S. ANDERSEN STATE OF WASHINGTON 30195 REGISTERED PROFESSIONAL ENGINEER
8/16/19

ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

PARK POINTE PUD & PRELIMINARY PLAT
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

SITE PLAN B
35 UNIT PUD

| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: TC | CHECKED BY: JA |
| JOB NUMBER 15436 | |
| SHEET: P5 | |
| SHEET 5 OF 17 | |

FILE NAME: P:\P15\15436_LAKEMONT PROPERTY FEASIBILITY\CAD\ENGINEERING\SHEETS\PARK_POINT_PUD\P15436–SITEPLAN–B.DWG
PLOT DATE: 8/16/2019 10:34:20 AM BY CHRISTOPHER ANDERSEN
XREF FILES: X15436_BASE.dwg X15436_24x36–BDR.dwg X15436_STMP–CSC.dwg X15436_SHATCH.dwg X15436_SD.dwg X15436_SS.dwg X15436_WA.dwg X15436_SITE.dwg D15436_AL.dwg D15436_COR.dwg X15436_LP.dwg X15436_ARBORIST NUMBERS.dwg X15436_FG.dwg

MATCHLINE (SEE BELOW RIGHT)

MATCHLINE (SEE ABOVE LEFT)

EXISTING REGIONAL TRAIL

PEDESTRIAN CROSSING SIGN (MUTCD W11-2 & W16-7P) WITH RECTANGULAR RAPID FLASHING BEACON (RRFB)

CROSSWALK MARKINGS PER COB STD. DETAIL CW-100-1

PARKING LOT ENTRY

PEDESTRIAN CROSSING SIGN (MUTCD W11-2 & W16-7P) WITH RECTANGULAR RAPID FLASHING BEACON (RRFB)

BICYCLE LANE CHANNELIZATION PER COB STD. DETAIL CH-240-1

STREAM 2

DRIVEWAY APPROACH WITH SIDEWALK, PER COB STD. DETAIL SW-170-1, TYP

5' CONCRETE SIDEWALK PER COB STD. DETAIL SW-110-1, TYP.

DRIVEWAY APPROACH W/O SIDEWALK, PER COB STD. DETAIL SW-180-1, TYP

5' SOFT SURFACE TRAIL

TRACT J

STREAM 1

TRACT D

7.5'X22' PARALLEL PARKING, (TYP)

PERVIOUS PAVERS PARKING AREA

PROPOSED 5' SOFT SURFACE TRAIL

10' WIDE CROSSWALK STRIPING PER COB DETAIL CW-100-1

FIXED AND REMOVABLE BOLLARDS PER COB STD DETAIL DEV-14 (ACCESS TO SEWER LIFT STATION AND DETENTION VAULT)

NGPE Fence

EXISTING REGIONAL TRAIL

STA: 58+19.41 RD-A = STA: 74+20.13 RD-B

STA: 59+02.30 RD-A = STA: 59+02.30 RD-A

STA: 53+43.44 RD-A = STA: 70+14.12 RD-B

TRACT H

TRACT E

TRACT C

TRACT B

TRACT G

TRACT A

ROAD A

ROAD B

LAKEMONT BLVD SE

R20'

R15'

R25'

60+75

60+00

58+00

74+00

57+00

72+00

56+00

73+00

71+00

70+00

55+00

54+00

53+00

52+00

51+00

50+00

PROPOSED 5' SOFT SURFACE TRAIL

6' CONCRETE SIDEWALK PER COB STD. DETAIL SW-110-1, TYP.

DOUBLE CENTER LINE CHANNELIZATION PER COB STD. DETAIL CH-100-1

POTENTIAL TRANSIT STOP LOCATION

3' ROW DEDICATION

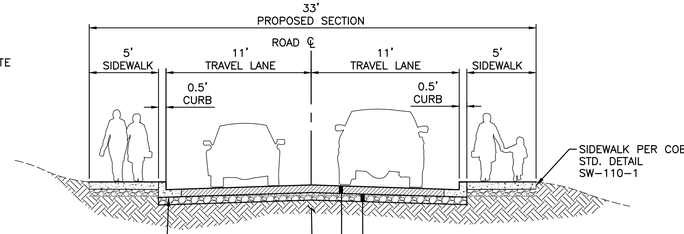
SIDEWALK OVER TREE CRZ, REFER TO COB STD. DETAIL SW-120-1, TYP.

BICYCLE LANE CHANNELIZATION PER COB STD. DETAIL CH-240-1

## KEY NOTES:

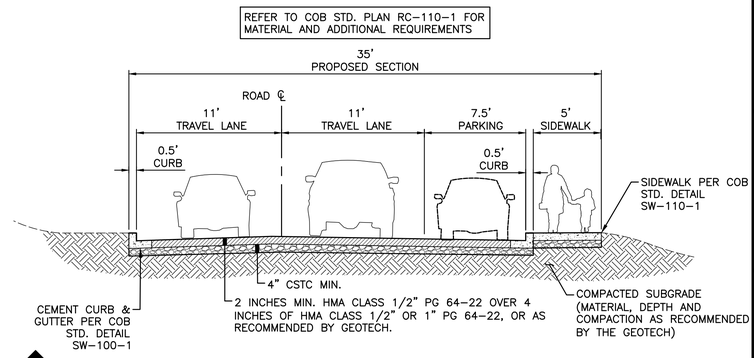
1. "NO PARKING-FIRE LANE" SIGN PER CITY OF BELLEVUE STANDARDS (R8-31).
2. TYPE 1 PERPENDICULAR CEMENT CONCRETE CURB RAMP PER CITY OF BELLEVUE STANDARD SW-230-1.
3. TYPE 3 DIRECTIONAL CEMENT CONCRETE CURB RAMP PER CITY OF BELLEVUE STANDARD SW-240-1.
4. CLUSTER MAILBOX PER CITY OF BELLEVUE STANDARD RC-280-1. 24-BOX UNITS (SOUTH) AND 16-BOX UNITS (NORTH).
5. STREET NAME SIGN PER CITY OF BELLEVUE STANDARD SG-160-1.
6. CAST IN PLACE RETAINING WALL PER WSDOT STANDARD PLAN D-10 SERIES.
7. VARY COLOR OR TEXTURE TO DIFFERENTIATE PARKING AREAS FROM DRIVEWAY.

REFER TO COB STD. PLAN RC-110-1 FOR MATERIAL AND ADDITIONAL REQUIREMENTS



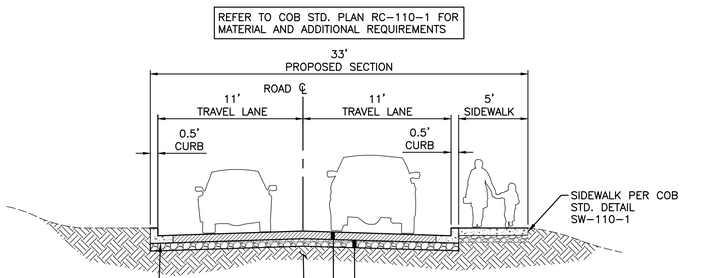

1 ROAD A SECTION - 22' PRIVATE STREET W/ 2 SIDEWALKS
SCALE: NTS

REFER TO COB STD. PLAN RC-110-1 FOR MATERIAL AND ADDITIONAL REQUIREMENTS




2 ROAD A SECTION - 22' PRIVATE STREET W/ PARKING & SIDEWALK
SCALE: NTS

REFER TO COB STD. PLAN RC-110-1 FOR MATERIAL AND ADDITIONAL REQUIREMENTS




3 ROAD A SECTION - 22' PRIVATE STREET W/ 1 SIDEWALK
SCALE: NTS

**NOTE:**
SEE SHEET E3 FOR ROAD SECTIONS 4, 5, AND 6.

N

HORIZ. 0 20 40 80
Scale In Feet

16-143970-LK

| DATE | REVISION |
|---|---|
| 6/6/18 | RESPOND TO CITY REVIEW COMMENTS |
| 8/16/19 | ADDITION OF PRELIMINARY PLAT |

SYM

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Surveying
paceengrs.com

CHRISTOPHER S. TORGERSEN
STATE OF WASHINGTON
30195
REGISTERED
PROFESSIONAL ENGINEER
8/16/19

ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

PARK POINTE PUD & PRELIMINARY PLAT
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

ROAD PLAN & TYPICAL SECTIONS
35 UNIT PUD

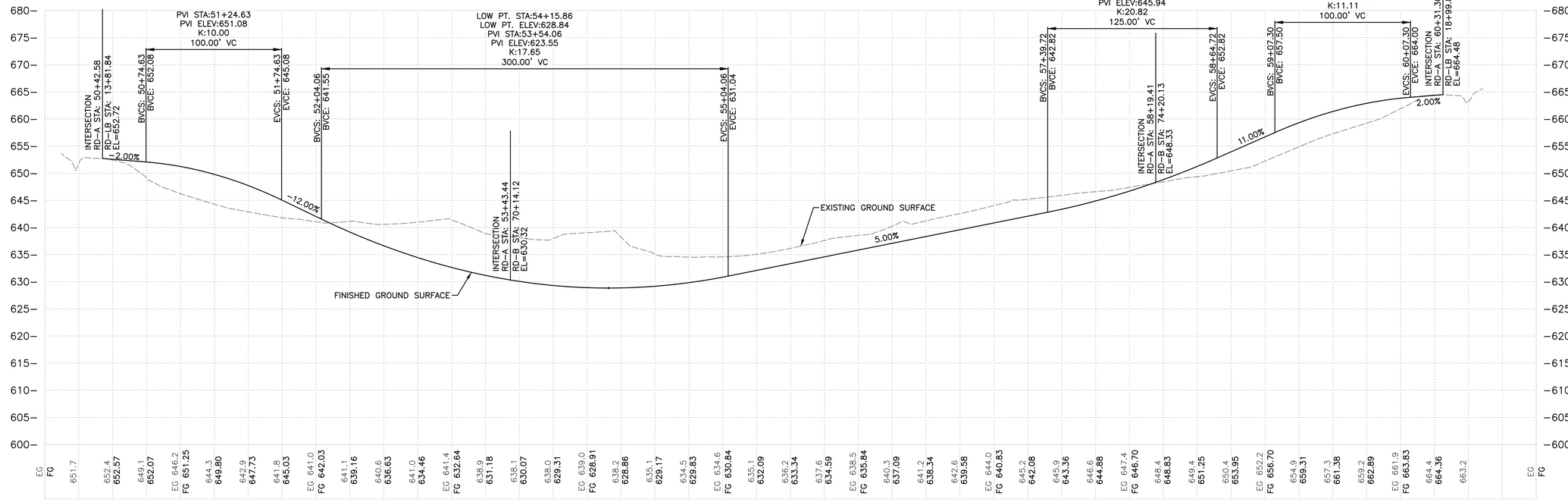
| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: | CHECKED BY: |
| TC | JA |

JOB NUMBER 15436

SHEET: E1

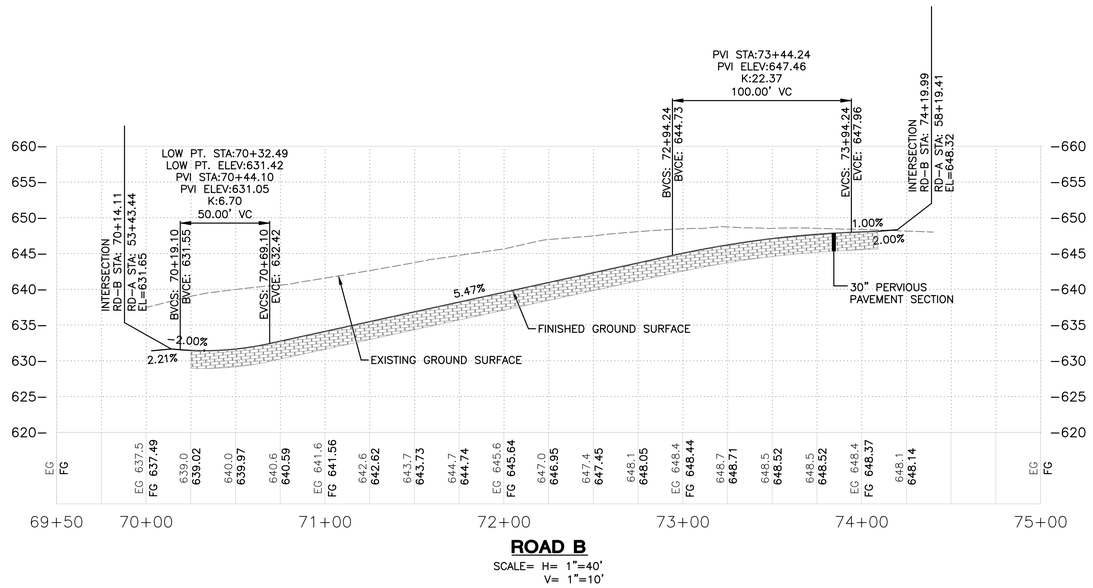
SHEET 6 OF 17

FILE NAME: P:\P15\15436 LAKEMONT PROPERTY FEASIBILITY\CAD\ENGINEERING\SHEETS\PARK POINT PUD\P15436-PP.DWG
USER NAME: CHRISTOPHER TORGERSEN PLOT DATE: 8/16/2019 8:43:56 AM PLOT SCALE: 1.000
XREF FILES: X15436_BASE.dwg X15436_24x36-BDR.dwg X15436_STMP-CSC.dwg X15436_HATCH.dwg X15436_SITE.dwg D15436_AL.dwg D15436_COR.dwg




## ROAD A

SCALE= H= 1"=40'
V= 1"=10'




## ROAD B

SCALE= H= 1"=40'
V= 1"=10'

| SYM | REVISION | DATE |
|---|---|---|
| | ADDITION OF PRELIMINARY PLAT | 8/16/19 |
| | RESPOND TO CITY REVIEW COMMENTS | 6/6/18 |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
pacaengrs.com

CHRISTOPHER S. NELSEN
STATE OF WASHINGTON
30195
REGISTERED
PROFESSIONAL ENGINEER
8/16/19

ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

# PARK POINTE PUD & PRELIMINARY PLAT

7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

# ROAD PROFILES

35 UNIT PUD

| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: | CHECKED BY: |
| TC | JA |

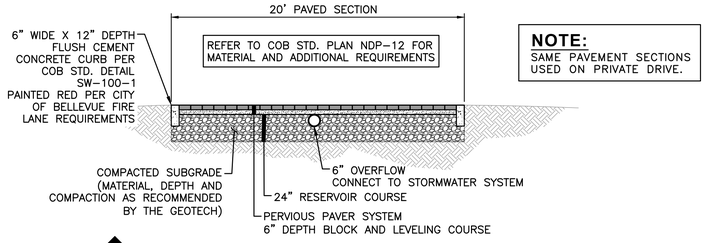
JOB NUMBER 15436

SHEET: E2

SHEET 7 OF 17

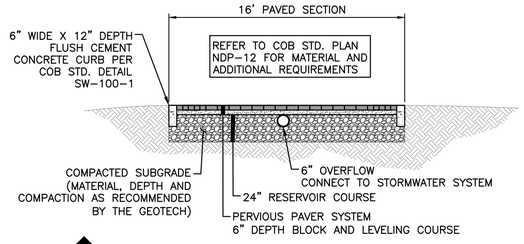
16-143970-LK

FILE NAME: P:\AP15\15436_LAKEMONT PROPERTY (EASIBU)\CAD\ENGINEERING\SHEETS\PARK POINT PUD\P15436-PP.DWG
LEICA NAME: P15436_ROADS_PLAN_PROFILE_A1.dwg P15436_ROADS_PLAN_PROFILE_B1.dwg
XREF FILES: X15436_BASE.dwg X15436_24x36-BDR.dwg X15436_STMP-CDSC.dwg X15436_HATCH.dwg X15436_SITE.dwg D15436_AL.dwg D15436_COR.dwg

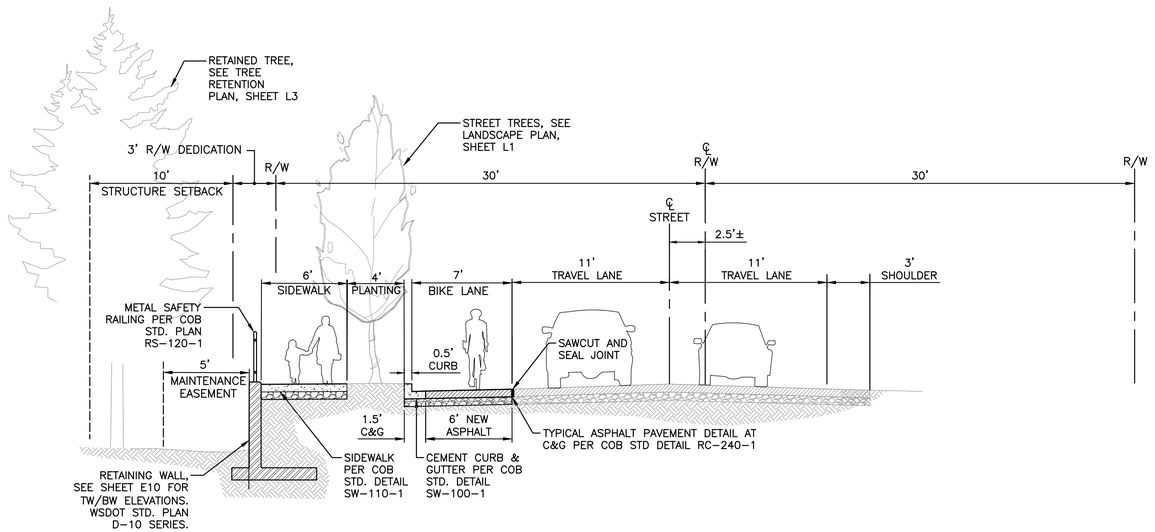



**NOTE:**
SAME PAVEMENT SECTIONS USED ON PRIVATE DRIVE.

4 **ROAD B SECTION - 20' PERVIOUS ALLEY**
SCALE: NTS




5 **ROAD C SECTION - 16' PERVIOUS ALLEY**
SCALE: NTS




6 **LAKEMONT BOULEVARD SE SECTION**
SCALE: NTS

16-143970-LK

| SYM | REVISION | DATE |
|---|---|---|
| | ADDITION OF PRELIMINARY PLAT | 8/16/19 |
| | RESPOND TO CITY REVIEW COMMENTS | 6/6/18 |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
pacaengrs.com

CHRISTOPHER S. TAYLOR — STATE OF WASHINGTON — 30195 — REGISTERED PROFESSIONAL ENGINEER
8/16/19

ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

**PARK POINTE PUD & PRELIMINARY PLAT**
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

**ROAD PROFILES & TYPICAL SECTIONS**
35 UNIT PUD

| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: | CHECKED BY: |
| TC | JA |
| JOB NUMBER | 15436 |
| SHEET: | E3 |
| SHEET 8 OF | 17 |

FILE NAME: P:\P15\15436_LAKEMONT PROPERTY_FEASIBILITY\CAD\ENGINEERING\SHEETS\PARK POINT PUD\P15436-PP.DWG
PLOTTED: 8/16/2019 BY: TAYLOR, CHRISTOPHER
XREF FILES: X15436_BASE.dwg X15436_24x36-BDR.dwg X15436_STMP-CSC.dwg X15436_HATCH.dwg X15436_SITE.dwg D15436_AL.dwg D15436_COR.dwg




## LEGEND:

- ASPHALT PAVEMENT
- CEMENT CONCRETE SIDEWALK

## STORMWATER COMPLIANCE SUMMARY:

MINIMUM REQUIREMENT 5 – ON–SITE STORM WATER MANAGEMENT
FOLLOWING SUMMARY OUTLINES APPROACHED USED TO MEET THE ON–SITE STORM WATER MANAGEMENT REQUIREMENTS DESCRIBED IN CHAPTER D6 OF THE CITY OF BELLEVUE SURFACE WATER ENGINEERING STANDARDS. REVIEW FOLLOWS MULTI–TIER APPROACH

TIER 1 BMP'S USED TO MINIMIZE RUNOFF GENERATION.

TIER 1 BMP'S:

BMP'S USED ON PROJECT

- SMART SITE DESIGN
  PRESERVE NATIVE VEGETATION
- AMENDED SOILS
  (LANDSCAPE & LAWN)

BMP'S NOT USED ON PROJECT

- FULL DISPERSION NOT FEASIBLE BECAUSE 100 FOOT NATIVE VEGETATED FLOWPATH IS NOT AVAILABLE OUTSIDE OF CRITICAL AREAS OR ASSOCIATED BUFFERS.
- FULL INFILTRATION NOT FEASIBLE BECAUSE OF THE EXTREMELY LOW INFILTRATION RATES OF THE NATIVE SOIL (~0.25 IN PER HR) AND THE SEASONALLY HIGH GROUNDWATER.

TIER 2 BMP'S USED TO RETAIN RUNOFF ON–SITE:
- PERVIOUS PAVEMENT: 0.510 ACRES
- BIORETENTION BOTTOM AREA: 0.134 ACRES

TIER 2 BMP'S:

- ROOF DOWNSPOUT DISPERSION TO STREAM/WETLAND BUFFERS
- ROOF DOWNSPOUT DISPERSION TO DEVELOPED SITE W/ SPLASHBLOCKS
- ROOF DOWNSPOUT INFILTRATION TO PERVIOUS PAVEMENT UNDERDRAIN GALLERIES
- PERVIOUS PAVEMENT
- RAINWATER CAPTURE & RECYCLING
- BIORETENTION SWALE

TIER 3 BMP'S USED TO INFILTRATE OR DISPERSE RUNOFF PRIOR TO DISCHARGE
- PERFORATED STUB OUT CONNECTIONS: 35 CONNECTIONS WHERE SPLASH BLOCKS NOT USED.

TIER 3 BMP'S:

- DISPERSION TRENCH (NO LONGER PROPOSED)

MINIMUM REQUIREMENT 6 – RUNOFF TREATMENT
FOLLOWING SUMMARY OUTLINES APPROACHED USED TO MEET THE RUNOFF TREATMENT REQUIREMENTS DESCRIBED IN CHAPTER D5 OF THE CITY OF BELLEVUE SURFACE WATER ENGINEERING STANDARDS.
- NOTE – DUE TO SHALLOW GROUNDWATER, THE BIORETENTION BMP CANNOT BE USED TO FULFILL RUNOFF TREATMENT REQUIREMENT.
- BASIC TREATMENT REQUIRED PER SURFACE WATER ENGINEERING STANDARDS 5–03.
- SELECTED BASIC TREATMENT FACILITY CONTECH STORMFILTER WITH ZPG FILTER MEDIA.

MINIMUM REQUIREMENT 7 – FLOW CONTROL
FOLLOWING SUMMARY OUTLINES APPROACHED USED TO MEET THE FLOW CONTROL REQUIREMENTS DESCRIBED IN CHAPTER 4 OF THE CITY OF BELLEVUE SURFACE WATER ENGINEERING STANDARDS D4–06. A DETENTION VAULT PROVIDES FLOW CONTROL.

N

HORIZ. 0 20 40 80
Scale In Feet

16–143970–LK

| SYM | REVISION | DATE |
|---|---|---|
| | ADDITION OF PRELIMINARY PLAT | 8/16/19 |
| | RESPOND TO CITY REVIEW COMMENTS | 6/6/18 |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

CHRISTOPHER S. TORGERSEN
STATE OF WASHINGTON
30195
REGISTERED
PROFESSIONAL ENGINEER
8/16/19

ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

PARK POINTE PUD & PRELIMINARY PLAT
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

STORMWATER COMPLIANCE SUMMARY
35 UNIT PUD

| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: | CHECKED BY: |
| TC | JA |
| JOB NUMBER | 15436 |
| SHEET: | E4 |
| SHEET 9 OF | 17 |

FILE NAME: P:\15436_LAKEMONT PROPERTY (FEASIBILITY)\CAD\ENGINEERING\SHEETS\PARK POINT PUD\P15436_LID.DWG
USER NAME: CHRISTOPHER TORGERSEN PLOT DATE: 8/16/2019 8:57 AM
XREF FILES: X15436_24x36-BDR.dwg X15436_STMP-CSC.dwg X15436_SITE.dwg X15436_CAO_PROPOSED.dwg X15436_BASE.dwg X15436_SD.dwg X15436_HATCH.dwg




## LEGEND:

- SD — STORM DRAINAGE PIPE
- RL — ROOF LEADER PIPE
- TYPE 2 48" CB
- TYPE 1 CB
- ROOF LEADER CLEANOUT
- LIFT STATION
- CONTECH STORMFILTER MANHOLE

N

HORIZ. 0 20 40 80
Scale In Feet

16-143970-LK

| SYM | REVISION | DATE |
|---|---|---|
| | ADDITION OF PRELIMINARY PLAT | 8/16/19 |
| | RESPOND TO CITY REVIEW COMMENTS | 6/6/18 |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

CHRISTOPHER S. JANSEN
STATE OF WASHINGTON
30195
REGISTERED
PROFESSIONAL ENGINEER
8/16/19

ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

# PARK POINTE PUD & PRELIMINARY PLAT
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

## STORMWATER SITE PLAN
35 UNIT PUD

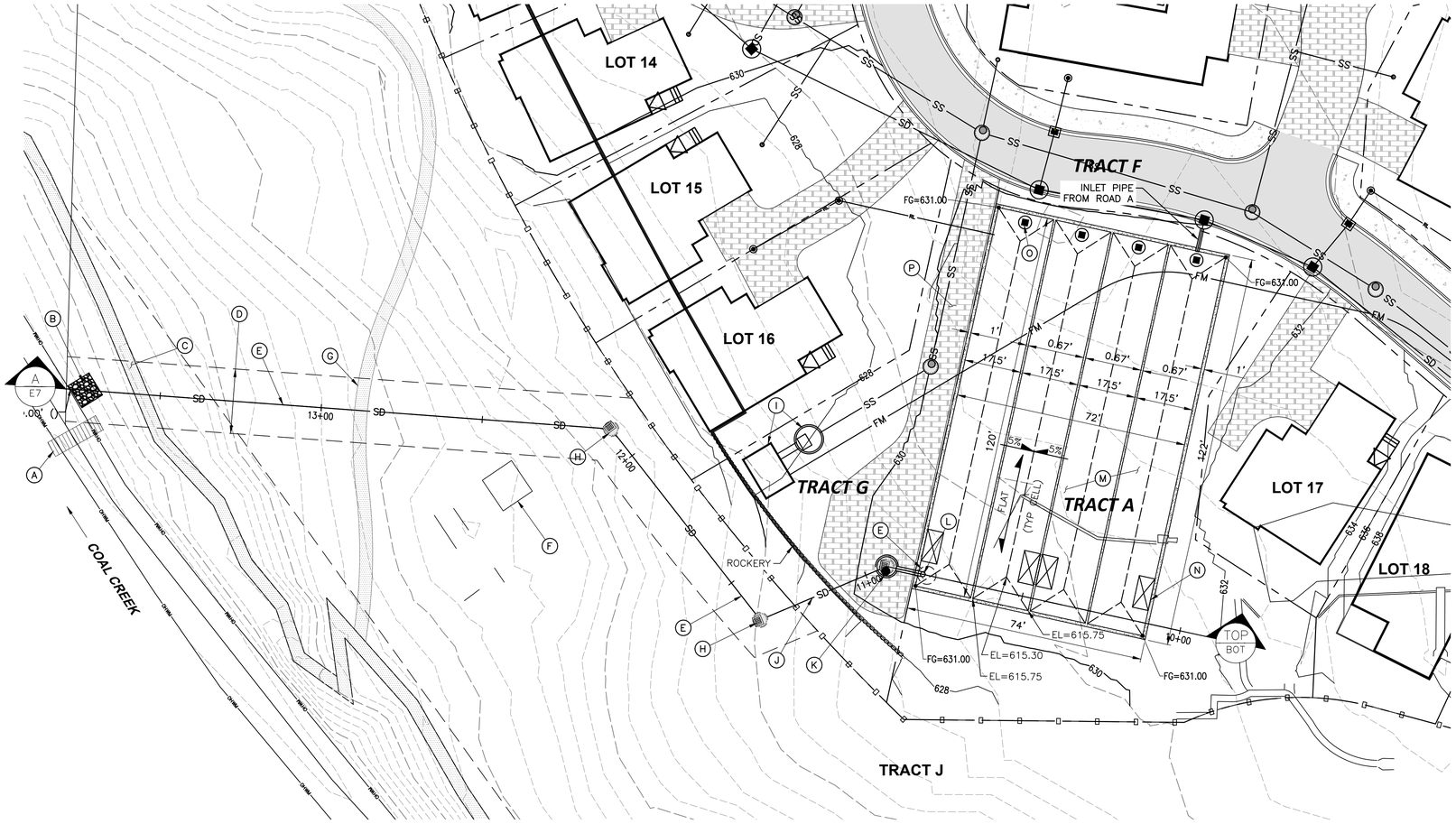
| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: | CHECKED BY: |
| TC | JA |

JOB NUMBER 15436

SHEET: E5

SHEET 10 OF 17

FILE NAME: P:\P15\15436_LAKEMONT PROPERTY (FEASIBILITY)\CAD\ENGINEERING\SHEETS\PARK POINT PUD\P15436_SD.DWG
USER NAME: CHRISTOPHER JANSEN PLOT DATE: 8/16/2019 8:27 AM
XREF FILES: X15436_BASE.dwg X15436_24x36-BDR.dwg X15436_STMP-CSC.dwg X15436_HATCH.dwg X15436_SD.dwg X15436_FG.dwg X15436_SS.dwg X15436_WA.dwg X15436_SITE.dwg X_16397_BDR.dwg




N

## 2 VAULT PLAN VIEW
SCALE: 1" = 20'

## #KEYED NOTES:

A. APPROXIMATE LOCATION OF EXISTING BRIDGE. LOCATION NOT SURVEYED!

B. OUTFALL PROTECTION. NO WORK PROPOSED WITHIN ORDINARY HIGH WATER MARK OF COAL CREEK. COE PERMIT NOT REQUIRED.

C. EXISTING REGIONAL TRAIL.

D. PROPOSED 20-FOOT WIDE STORM DRAIN EASEMENT.

E. 18" STORM DRAIN. PRIVATE STORM LINE OWNED AND MAINTAINED BY PARK POINTE HOA.

F. EXISTING STRUCTURES AND FOUNDATIONS TO REMAIN.

G. PROPOSED SOFT SURFACE TRAIL ACROSS.

H. PROPOSED TYPE 2 CATCH BASIN.

I. PROPOSED SANITARY SEWER LIFT STATION.

J. INSTALL STEEL 10' LENGTH CASING SLEEVE BENEATH ROCKERY.

K. 72" CONTECH STORMFILTER MANHOLE. SEE STORM DRAINAGE REPORT FOR RUNOFF TREATMENT DESIGN PARAMETERS.

L. 18" RISER AND OUTLET STRUCTURE LOCATED INSIDE DETENTION VAULT.

M. DETENTION VAULT. FOUR CHAMBERS AT 17'6" X 120'8" X 11'0" PROVIDES TOTAL STORAGE VOLUME IN EXCESS OF 92,400 CUBIC FEET.

N. 5' X 10' ACCESS HATCH.

O. STANDARD 24" DIAMETER BOLT-DOWN MANHOLE COVER.

P. 12' WIDE ACCESS DRIVE FOR VAULT AND SANITARY SEWER LIFT STATION.

## LEGEND

FG – FINISHED GRADE
EL – ELEVATION AT BOTTOM OF STRUCTURE
IE – INVERT ELEVATION

| SYM | REVISION | DATE |
|---|---|---|
| | ADDITION OF PRELIMINARY PLAT | 8/16/19 |
| | RESPOND TO CITY REVIEW COMMENTS | 6/6/18 |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Surveying
pacaengrs.com

CHRISTOPHER S. ANDERSEN
STATE OF WASHINGTON
30195
REGISTERED
PROFESSIONAL ENGINEER
8/16/19

ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

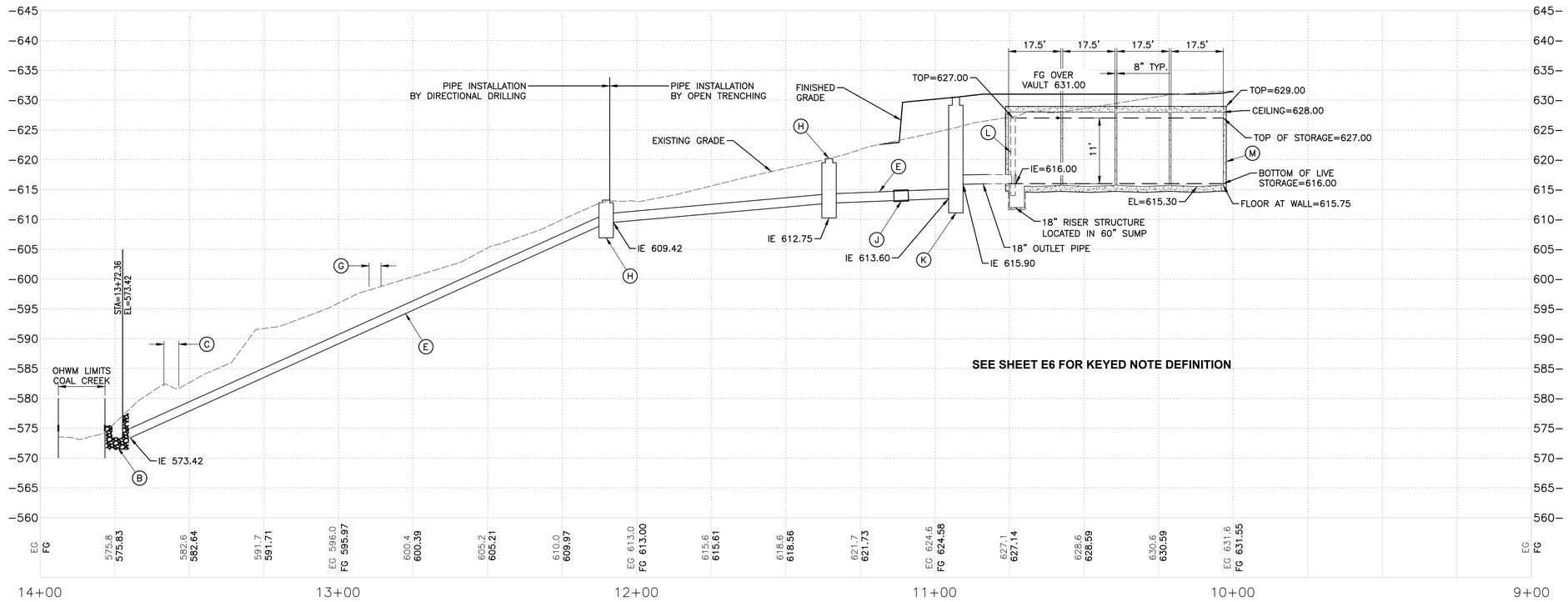
PARK POINTE PUD &
PRELIMINARY PLAT
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

STORMWATER VAULT PLAN
35 UNIT PUD

| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: | CHECKED BY: |
| TC | JA |
| JOB NUMBER | |
| 15436 | |
| SHEET: | |
| E6 | |
| SHEET 11 OF 17 | |

16-143970-LK

FILE NAME: P:\P15\15436_LAKEMONT PROPERTY (FEASIBILITY)\CAD\ENGINEERING\SHEETS\PARK POINT PUD\P15436-VAULT.DWG
PLOT NAME: CHRISTOPHER ANDERSEN, 8/15/2019 3:36 PM, PLOTTED WITH CTB FILE: PACE.CTB, PLOT SCALE: 1.000000
XREF FILES: X15436_24x36-BDR.dwg X15436_STMP-CSC.dwg X15436_3D.dwg X15436_CAD_PROPOSED.dwg X15436_SITE.dwg X15436_SS.dwg X15436_EG.dwg X15436_HATCH1.dwg 151150-Prelim Plat.dwg




**SEE SHEET E6 FOR KEYED NOTE DEFINITION**

**SD DISCHARGE**

SCALE= H= 1"=20'
V= 1"=10'

16-143970-LK

| DATE | REVISION | SYM. |
|---|---|---|
| 6/6/18 | RESPOND TO CITY REVIEW COMMENTS | |
| 8/16/19 | ADDITION OF PRELIMINARY PLAT | |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

CHRISTOPHER S. JANSEN
STATE OF WASHINGTON
30195
REGISTERED
PROFESSIONAL ENGINEER
8/16/19

ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

**PARK POINTE PUD & PRELIMINARY PLAT**
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

**STORMWATER VAULT OUTFALL**
35 UNIT PUD

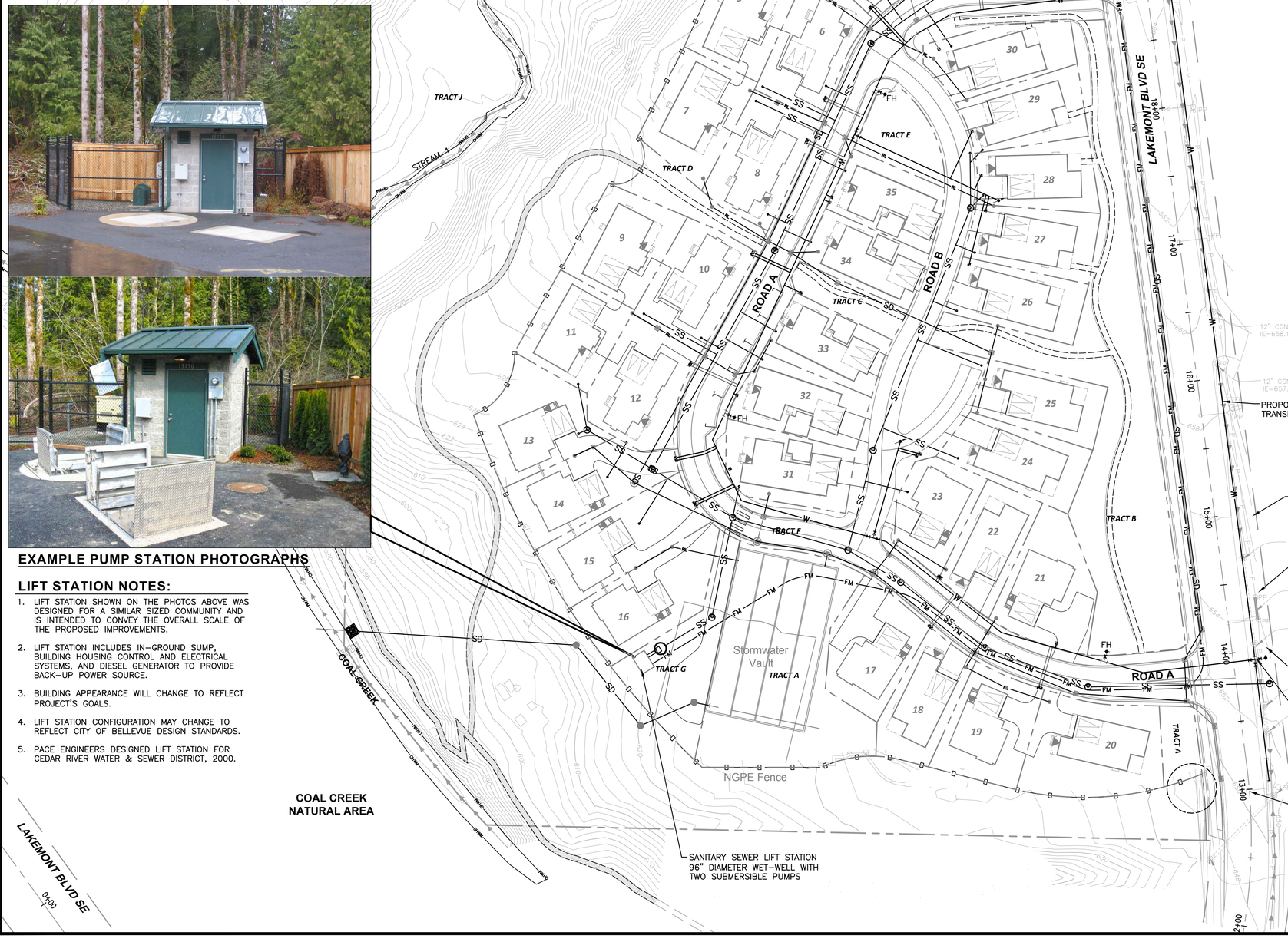
| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: TC | CHECKED BY: JA |
| JOB NUMBER 15436 | |
| SHEET: E7 | |
| SHEET 1 OF 17 | |

FILE NAME: P:\P15\15436 LAKEMONT PROPERTY (FEASIBILITY)\CAD\ENGINEERING\SHEETS\PARK POINT PUD\P15436-VAULT.DWG
PLOT NAME: CHRISTOPHER JANSEN PLOT TIME/DATE: 8/15/2019 8:58:56 AM PLOTTED BY: Chris Jansen
XREF FILES: X15436_24x36-BDR.dwg X15436_STMP-CSC.dwg X15436_SD.dwg X15436_CAD_PROPOSED.dwg X15436_SITE.dwg X15436_SS.dwg X15436_EG.dwg X15436_HATCH.dwg 151150-Prelim Plot.dwg

## EXAMPLE PUMP STATION PHOTOGRAPHS

## LIFT STATION NOTES:

1. LIFT STATION SHOWN ON THE PHOTOS ABOVE WAS DESIGNED FOR A SIMILAR SIZED COMMUNITY AND IS INTENDED TO CONVEY THE OVERALL SCALE OF THE PROPOSED IMPROVEMENTS.
2. LIFT STATION INCLUDES IN-GROUND SUMP, BUILDING HOUSING CONTROL AND ELECTRICAL SYSTEMS, AND DIESEL GENERATOR TO PROVIDE BACK-UP POWER SOURCE.
3. BUILDING APPEARANCE WILL CHANGE TO REFLECT PROJECT'S GOALS.
4. LIFT STATION CONFIGURATION MAY CHANGE TO REFLECT CITY OF BELLEVUE DESIGN STANDARDS.
5. PACE ENGINEERS DESIGNED LIFT STATION FOR CEDAR RIVER WATER & SEWER DISTRICT, 2000.




## PROPOSED UTILITY SUMMARY

1. ON SITE WATER SYSTEM IMPROVEMENTS WILL INCLUDE 8" DI WATER MAIN LOOPED THROUGH SITE.
1. WHERE ON SITE WATER MAINS DEAD-END WITHOUT FEEDING A FIRE HYDFRANT, PIPE SIZE WILL BE REDUCED TO 4" DI.
2. 1,700 FEET OF 12" DI TRANSMISSION LINE WILL EXTEND FROM SOUTH END OF CITY WATER SYSTEM ON LAKEMONT BLVD TO NEW ROADWAY.
3. PRESSURE REDUCING VALVE REQUIRED FOR NEW WATER SERVICE TO REDUCE WATER SYSTEM PRESSURE FROM 1000 ZONE TO 850 ZONE. SEE SHEET E8.
4. ONSITE GRAVITY COLLECTION SEWER SHALL BE 8" PVC.
5. LIFT STATION REQUIRED.
6. 2,976 FEET OF 4" SANITARY SEWER FORCE MAIN REQUIRED TO CONVEY WASTEWATER FROM SITE TO MANHOLE AT INTERSECTION OF LAKEMONT BLVD SE AND SE FOREST DRIVE.
7. ALL WATER AND SEWER SYSTEM IMPROVEMENTS TO BE PUBLIC FACILITIES OWNED, MAINTAINED AND OPERATED BY THE CITY OF BELLEVUE.
8. TRACT G WILL BE CONVEYED TO THE CITY OF BELLEVUE FOLLOWING RECORDING OF FINAL PLAT.

## LEGEND:

- SD — STORMWATER PIPE
- SS — SEWER PIPE
- SS — SIDE SEWER PIPE
- SEWER MANHOLE
- SEWER LIFT STATION
- BACK-UP GENERATOR
- W — WATER PIPE
- WATER METER
- FIRE HYDRANT
- GATE VALVE
- BLOW-OFF ASSEMBLY

HORIZ. 0 20 40 80
Scale In Feet

16-143970-LK

| SYM | REVISION | DATE |
|---|---|---|
| | ADDITION OF PRELIMINARY PLAT | 8/16/19 |
| | RESPOND TO CITY REVIEW COMMENTS | 6/6/18 |


PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com


CHRISTOPHER S. ANDERSEN
STATE OF WASHINGTON
30195
REGISTERED
PROFESSIONAL ENGINEER
8/16/19


ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900


**PARK POINTE PUD & PRELIMINARY PLAT**
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

**PRELIMINARY UTILITY PLAN**
35 UNIT PUD

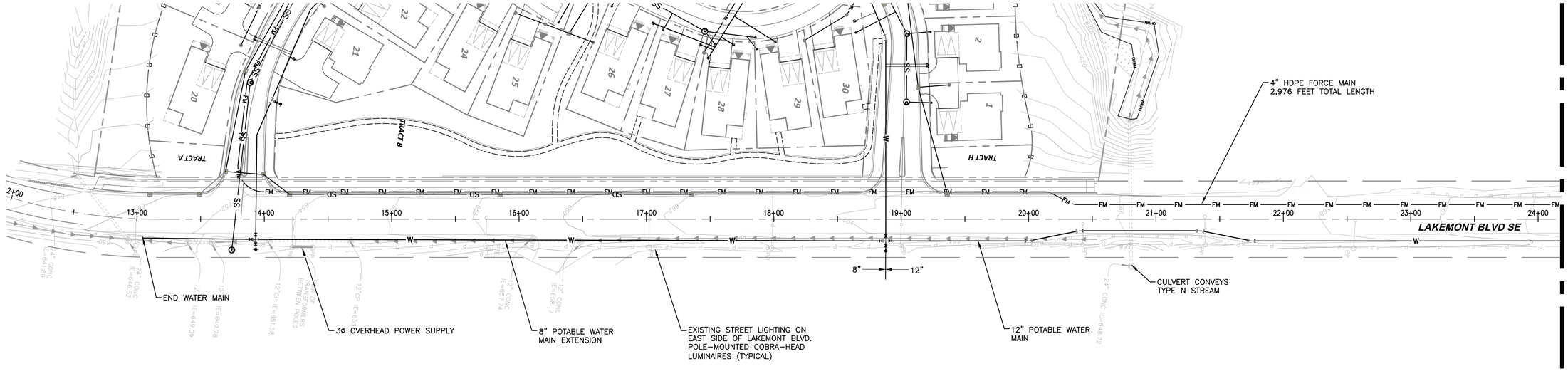
| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: | CHECKED BY: |
| TC | JA |

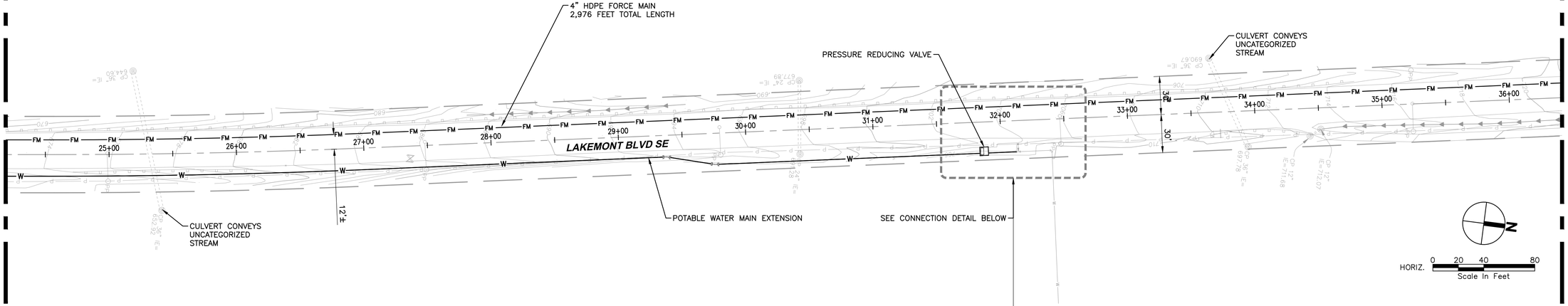
JOB NUMBER 15436

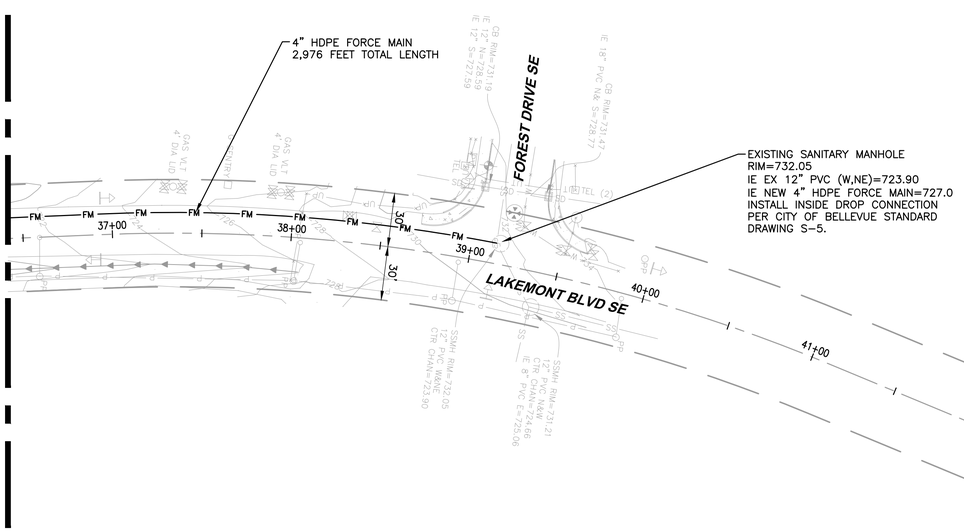
SHEET: E8

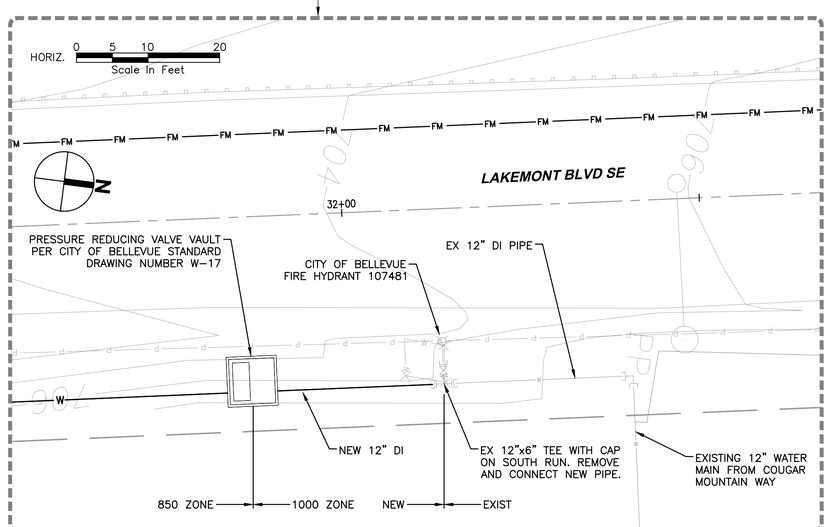
SHEET 12 OF 17


FILE NAME: P:\15436_LAKEMONT PROPERTY_FEASIBILITY\CAD\ENGINEERING\SHEETS\PARK POINT PUD\P15436_UT.DWG
USER NAME: ANDREW KING, PLA PLOT DATE: 8/16/2019 8:54 AM
XREF FILES: X15436_24x36_BDR.dwg X15436_BASE.dwg X15436_STMP-CSC.dwg X15436_HATCH.dwg X15436_SD.dwg X15436_SS.dwg X15436_WA.dwg X15436_SITE.dwg X15436_WA_COB_AB.dwg W17plt.dwg X15436_FG.dwg




16-143970-LK

| REVISION | DATE |
|---|---|
| ADDITION OF PRELIMINARY PLAT | 8/16/19 |
| RESPOND TO CITY REVIEW COMMENTS | 6/6/18 |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

CHRISTOPHER S. JANSEN — STATE OF WASHINGTON — 30195 — REGISTERED PROFESSIONAL ENGINEER

8/16/19

ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

**PARK POINTE PUD & PRELIMINARY PLAT**
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

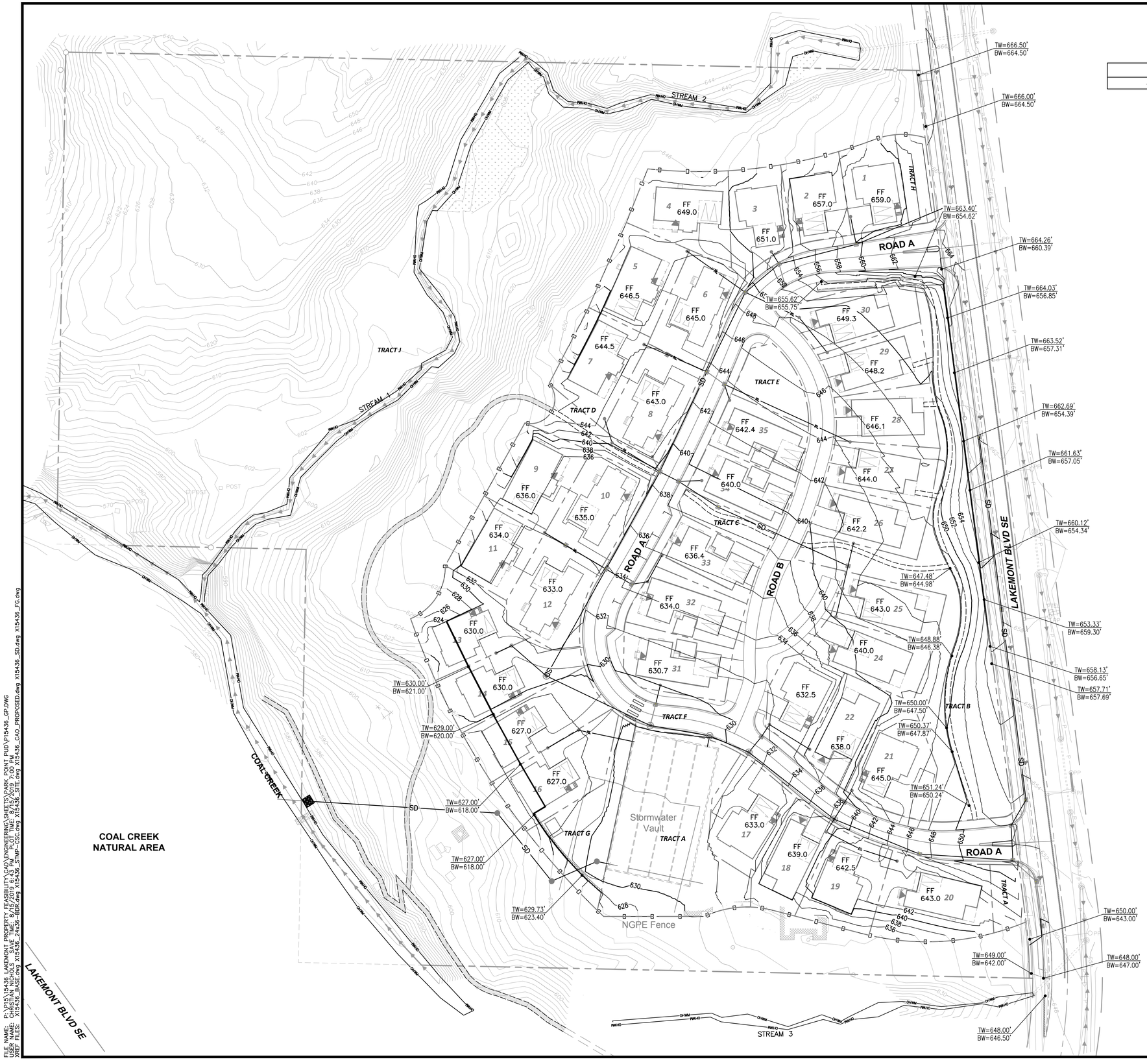
**OFFSITE SEWER AND WATER EXTENSIONS**
35 UNIT PUD

| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: TC | CHECKED BY: JA |
| JOB NUMBER 15436 | |
| SHEET: E9 | |
| SHEET 13 OF 17 | |

FILE NAME: P:\P15\15436 LAKEMONT PROPERTY (FEASIBILITY)\CAD\ENGINEERING\SHEETS\PARK POINT PUD\P15436_UT.DWG
USER NAME: CHRISTINA HOOD DESIGNED AT: 1" = 40' PLOT SCALE: 1.0000 '/ INCH PLOTTED: 8/16/2019 8:56 AM
XREF FILES: X15436_BASE.dwg X15436_24x36-BDR.dwg X15436_STMP-CSC.dwg X15436_HATCH.dwg X15436_SD.dwg X15436_SS.dwg X15436_WA.dwg X15436_SITE.dwg X15436_WA_COB_AB.dwg W17plt.dwg X15436_FG.dwg

## CUT/FILL SUMMARY

| CUT | FILL | NET |
|---|---|---|
| 33,154 CY | 8,283 CY | 24,870 CY |




N

HORIZ. 0 20 40 80
Scale In Feet

16-143970-LK

| SYM | REVISION | DATE |
|---|---|---|
| | ADDITION OF PRELIMINARY PLAT | 8/16/19 |
| | RESPOND TO CITY REVIEW COMMENTS | 6/6/18 |


PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Surveying
paceengrs.com


CHRISTOPHER S. ANDERSEN
STATE OF WASHINGTON
30195
REGISTERED
PROFESSIONAL ENGINEER
8/16/19

ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

# PARK POINTE PUD & PRELIMINARY PLAT
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

# PRELIMINARY GRADING PLAN
35 UNIT PUD

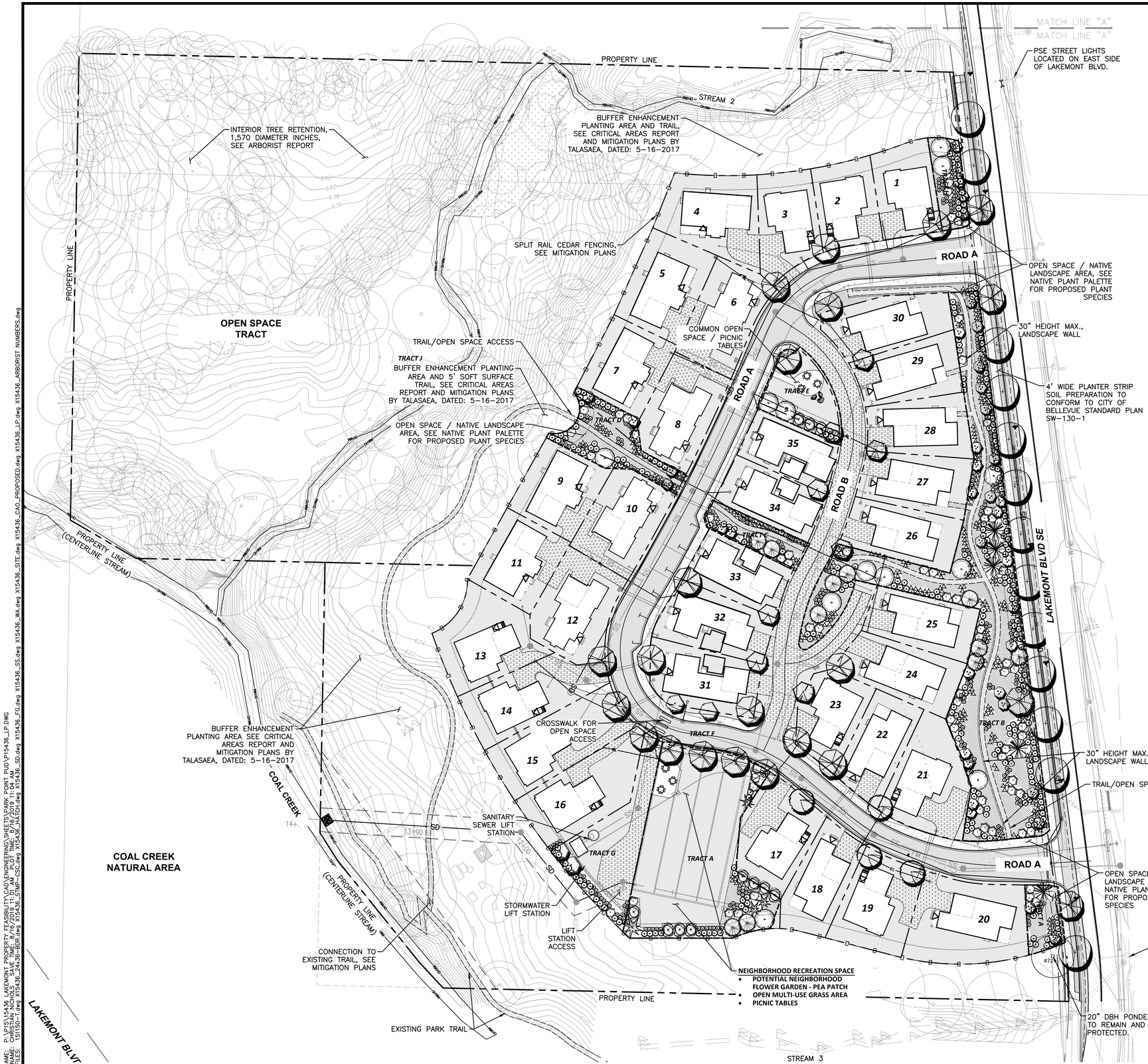
| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: | CHECKED BY: |
| TC | JA |

JOB NUMBER 15436

SHEET: E10

SHEET 14 OF 17

FILE NAME: P:\P15\15436_LAKEMONT PROPERTY FEASIBILITY\CAD\ENGINEERING\SHEETS\PARK_POINT_PUD\P15436_GP.DWG
USER NAME: CHRISTOPHER ANDERSEN PLOT DATE: 8/16/2019 PLOT TIME: 8:47:20 AM
XREF FILES: X15436_BASE.dwg X15436_24x36-BDR.dwg X15436_STMP-CSC.dwg X15436_SITE.dwg X15436_CAO_PROPOSED.dwg X15436_SD.dwg X15436_FG.dwg




# PLANT SCHEDULE

| SYMBOL | BOTANICAL NAME/COMMON NAME | SIZE/CONDITIONS |
|---|---|---|

## STREET AND PARK PLANT PALETTE

| | | |
|---|---|---|
| | ACER PLATANOIDES / NORWAY MAPLE | 1-1/2" CAL. B&B |
| | ACER X FREEMANII 'SCARCEN' / SCARLET SENTINEL MAPLE | 1-1/2" CAL. B&B |
| | CORNUS X NUTTALLII 'EDDIE'S WHITE WONDER' / HYBRID DOGWOOD | 1-1/2" CAL. B&B |
| | ACER TRUNCATUM X 'WARRENRED' / PACIFIC SUNSET MAPLE | 1-1/2" CAL. B&B |
| | AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE' / SERVICEBERRY | 1-1/2" CAL. B&B |
| | PICEA OMORIKA / SERBIAN SPRUCE | 6'-8' HT. B&B |
| | LARIX OCCIDENTALIS / WESTERN LARCH | 6'-8' HT. B&B |
| | CHAMAECYPARIS OBTUSA 'GRACILIS' DWARF HINOKI CYPRESS | 4' HT. B&B |

SHRUBS
LAVANDULA ANGUSTIFOLIA 'HIDCOTE' / LAVENDER
SENECIO GREYI 'SUNSHINE' / SENECIO
JUNIPERUS SQUAMATA 'BLUE STAR' / BLUE STAR JUNIPER
LONICERA PILEATA / BOX-LEAF HONEYSUCKLE
SPIRAEA JAPONICA 'LITTLE PRINCESS' / DWARF SPIREA
RHODODENDRON 'NOBLE MOUNTAIN' / DWARF EVERGREEN AZALEA
VIBURNUM DAVIDII / DAVID'S VIBURNUM
PINUS MUGO 'PUMILIO' / DWARF MUGO PINE
HYDRANGEA QUERCIFOLIA 'PEE WEE' / DWARF OAKLEAF HYDRANGEA
VIBURNUM x BODNANTENSE 'DAWN' / DAWN VIBURNUM
ARBUTUS UNEDO 'COMPACTA' / DWARF STRAWBERRY TREE
ABELIA 'EDWARD GOUCHER' / GLOSSY ABELIA
ILEX CRENATA 'CONVEXA' / JAPANESE HOLLY

GROUNDCOVERS
RUBUS PENTALOBUS / CREEPING BRAMBLE
ERICA CARNEA 'PORTER'S RED' / WINTER HEATH
MISC. PERENNIALS & GRASSES

TURF LAWN

## NATIVE PLANT PALETTE

| | | |
|---|---|---|
| | PSEUDOTSUGA MENZIESII / DOUGLAS FIR | 5'-6' HT. B&B |
| | THUJA PLICATA / WESTERN RED CEDAR | 5'-6' HT. B&B |
| | TSUGA HETEROPHYLLA / WESTERN HEMLOCK | 5'-6' HT. B&B |
| | ACER CIRCINATUM / VINE MAPLE | 5'-6' HT. B&B 3 TRUNKS MIN. |

SHRUBS
OEMLERIA CERASIFORMIS / INDIAN PLUM
PHYSOCARPUS CAPITATUS / PACIFIC NINEBARK
RHODODENDRON MACROPHYLLUM / PACIFIC RHODODENDRON
SAMBUCUS RACEMOSA / RED ELDERBERRY
SYMPHORICARPOS ALBUS / SNOWBERRY
MAHONIA AQUIFOLIUM / TALL OREGON GRAPE
VACINIUM OVATUM / EVERGREEN HUCKLEBERRY
CORYLUS CORNUTA / WESTERN HAZELNUT
CORNUS SERICEA / RED OSIER DOGWOOD
MYRICA CALIFORNICA / PACIFIC WAXMYRTLE
PHILADELPHUS LEWISII / MOCK ORANGE
RIBES SANGUINEUM / RED FLOWERING CURRANT

GROUNDCOVERS
MAHONIA NERVOSA / CASCADE MAHONIA
ASARUM CAUDATUM / WESTERN WILD GINGER
GAULTHERIA SHALLON / SALAL
OXALIS OREGONA / EVERGREEN REDWOOD SORREL
CORNUS CANADENSIS / BUNCHBERRY
FRAGARIA CHILOENSIS / BEACH STRAWBERRY
ARCTOSTAPHYLOS UVA-URSI / KINNIKINNICK

FERNS
POLYSTICHUM MUNITUM / SWORD FERN
ADIANTUM ALEUTICUM / MAIDENHAIR FERN
BLECHNUM SPICANT / DEER FERN
ATHYRIUM FILIX-FEMINA / LADY FERN

PERENNIALS
AQUILEGIA FORMOSA / WESTERN COLUMBINE
VANCOUVERIA HEXANDRA / INSIDE-OUT FLOWER

N

HORIZ. 0 20 40 80
Scale In Feet

16-143970-LK

| DATE | REVISION | SYM. |
|---|---|---|
| 6/6/18 | RESPOND TO CITY REVIEW COMMENTS | |
| 8/16/19 | ADDITION OF PRELIMINARY PLAT | |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

STATE OF WASHINGTON
J. BRIAN JACOBS
REGISTERED LANDSCAPE ARCHITECT
#933 EXP. 8/23/2021

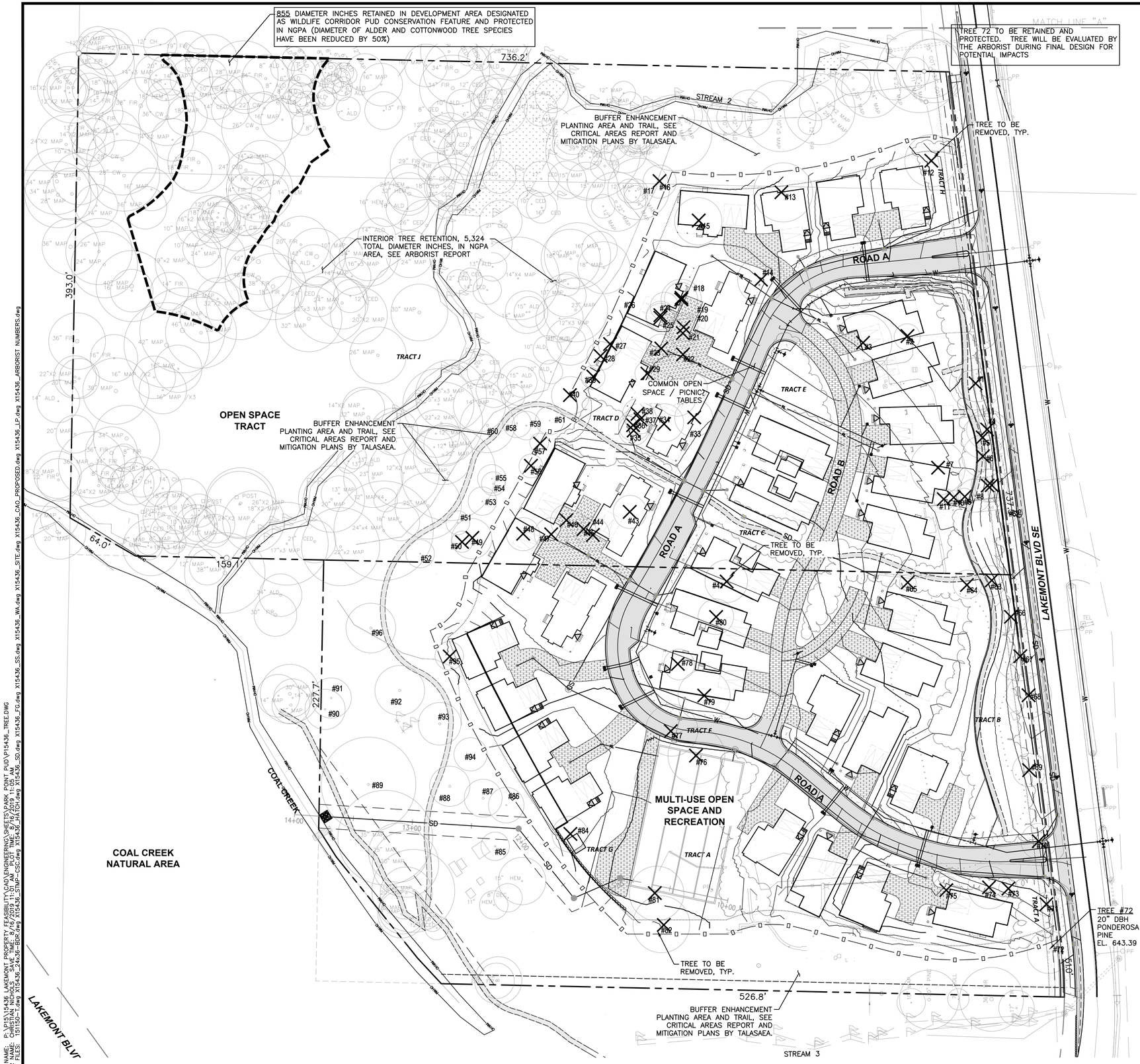
ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

**PARK POINTE PUD & PRELIMINARY PLAT**
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

**PRELIMINARY LANDSCAPE PLAN**
35 UNIT PUD

| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: TC | CHECKED BY: JA |
| JOB NUMBER 15436 | |
| SHEET: L1 | |
| SHEET L1 OF 17 | |

FILE NAME: P:\PJT\15436_LAKEMONT PROPERTY FEASIBILITY\CAD\ENGINEERING\SHEETS\PARK POINT PUD\P15436_LP.DWG
USER NAME: ROGER PENCE LAST SAVED: 8/16/2019 1:44 PM
XREF FILES: 15150-T.dwg X15436_24x36-BDR.dwg X15436_STMP-CSC.dwg X15436_HATCH.dwg X15436_SD.dwg X15436_FG.dwg X15436_SS.dwg X15436_WA.dwg X15436_SITE.dwg X15436_CAO_PROPOSED.dwg X15436_LP.dwg




| Tree Tag | Species | DBH | Crown Diameter | Rating | Condition Notes | Status |
|---|---|---|---|---|---|---|
| 1 | WH/Th | 32 | 44 | 2 | Generally good condition and health, defect free | To be Removed |
| 2 | BC/Cpb | 8 | 22 | 1 | Good condition and health, young and vigorous | To be Removed |
| 3 | DF/Pm | 27 | 46 | 2 | Generally good condition and health, defect free | To be Removed |
| 4 | WH/Th | 13 | 34 | 1 | Good condition and health, young and vigorous | To be Removed |
| 5 | DF/Pm | 19 | 36 | 1 | Good condition and health, young and vigorous | To be Removed |
| 6 | PP/Pp | 23 | 36 | 2 | Generally good condition and health, defect free | To be Removed |
| 7 | DC/Cd | 34 | 46 | 2 | Generally good condition and health, defect free | To be Removed |
| 8 | EH/la | 16 | 28 | 1 | Good condition and health, young and vigorous | To be Removed |
| 9 | EH/la | 10 | 14 | 1 | Good condition and health, young and vigorous | To be Removed |
| 10 | EH/la | 10 | 12 | 1 | Good condition and health, young and vigorous | To be Removed |
| 11 | EH/la | 15 | 18 | 1 | Good condition and health, young and vigorous | To be Removed |
| 12 | WRC/Tp | 70 | 44 | 3 | Two trunks at 8', large and old, somewhat sparse cro | To be Removed |
| 13 | BLM/Am | 38 | | 4 | Dead | To be Removed |
| 14 | BLM/Am | 37 | | 4 | Dead | To be Removed |
| 15 | RA/Ar | 17 | 40 | 1 | Good condition and health, young and vigorous | To be Removed |
| 16 | RA/Ar | 23 | 28 | 2 | Generally good condition and health, defect free | To be Removed |
| 17 | RA/Ar | 25 | 52 | 2 | Generally good condition and health, defect free | RETAINED |
| 18 | RA/Ar | 15 | 34 | 1 | Good condition and health, young and vigorous | To be Removed |
| 19 | RA/Ar | 15 | 30 | 1 | Good condition and health, young and vigorous | To be Removed |
| 20 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | To be Removed |
| 21 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | To be Removed |
| 22 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | To be Removed |
| 23 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | To be Removed |
| 24 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | To be Removed |
| 25 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | To be Removed |
| 26 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | To be Removed |
| 27 | RA/Ar | 9 | 20 | 1 | Good condition and health, young and vigorous | To be Removed |
| 28 | RA/Ar | 10 | | 4 | Dead | To be Removed |
| 29 | RA/Ar | 12 | 20 | 1 | Good condition and health, young and vigorous | To be Removed |
| 30 | RA/Ar | 12 | 20 | 1 | Good condition and health, young and vigorous | To be Removed |
| 31 | RA/Ar | 17 | 32 | 1 | Good condition and health, young and vigorous | To be Removed |
| 32 | RA/Ar | 17 | 24 | 4 | Dying | To be Removed |
| 33 | RA/Ar | 17 | 32 | 1 | Good condition and health, young and vigorous | To be Removed |
| 34 | RA/Ar | 17 | 32 | 1 | Good condition and health, young and vigorous | To be Removed |
| 35 | RA/Ar | 14 | 26 | 1 | Good condition and health, young and vigorous | To be Removed |
| 36 | RA/Ar | 14 | 26 | 1 | Good condition and health, young and vigorous | To be Removed |
| 37 | RA/Ar | 14 | 26 | 4 | Dying | To be Removed |
| 38 | RA/Ar | 14 | 26 | 1 | Good condition and health, young and vigorous | To be Removed |
| 39 | RA/Ar | 12 | 20 | 1 | Good condition and health, young and vigorous | To be Removed |
| 40 | RA/Ar | 20 | 32 | 2 | Generally good condition and health, defect free | To be Removed |
| 41 | RA/Ar | 22 | 36 | 2 | Generally good condition and health, defect free | To be Removed |
| 43 | RA/Ar | 15 | 28 | 1 | Good condition and health, young and vigorous | To be Removed |
| 44 | RA/Ar | 14 | 28 | 1 | Good condition and health, young and vigorous | To be Removed |
| 45 | RA/Ar | 14 | 20 | 1 | Good condition and health, young and vigorous | To be Removed |
| 46 | RA/Ar | 14 | 28 | 1 | Good condition and health, young and vigorous | To be Removed |
| 47 | RA/Ar | 12 | 28 | 1 | Good condition and health, young and vigorous | To be Removed |
| 48 | RA/Ar | 18 | 28 | 1 | Good condition and health, young and vigorous | To be Removed |
| 49 | RA/Ar | 15 | 34 | 1 | Good condition and health, young and vigorous | To be Removed |
| 50 | RA/Ar | 14 | | 4 | Dead | To be Removed |
| 51 | RA/Ar | 14 | 20 | 1 | Good condition and health, young and vigorous | RETAINED |
| 52 | BLM/Am | 12 | 32 | 1 | Good condition and health, young and vigorous | RETAINED |
| 53 | RA/Ar | 12 | 24 | 1 | Good condition and health, young and vigorous | RETAINED |
| 54 | RA/Ar | 18 | 24 | 1 | Good condition and health, young and vigorous | RETAINED |
| 55 | RA/Ar | 10 | 20 | 1 | Good condition and health, young and vigorous | RETAINED |
| 56 | RA/Ar | 14 | 20 | 1 | Good condition and health, young and vigorous | To be Removed |
| 57 | RA/Ar | 12 | 16 | 1 | Good condition and health, young and vigorous | To be Removed |
| 58 | RA/Ar | 14 | 20 | 1 | Good condition and health, young and vigorous | RETAINED |
| 59 | RA/Ar | 14 | 24 | 1 | Good condition and health, young and vigorous | RETAINED |
| 60 | BLM/Am | 23 | 46 | 2 | Generally good condition and health, defect free | RETAINED |
| 61 | RA/Ar | 10 | 24 | 1 | Good condition and health, young and vigorous | To be Removed |
| 62 | LC/Cl | 24 | 18 | 2 | Generally good condition and health, defect free | To be Removed |

| Tree Tag | Species | DBH | Crown Diameter | Rating | Condition Notes | Status |
|---|---|---|---|---|---|---|
| 63 | MA/Sa | 14 | 26 | 1 | Good condition and health, young and vigorous | To be Removed |
| 64 | SS/Ps | 18 | 24 | 1 | Good condition and health, young and vigorous | To be Removed |
| 65 | MA/Sa | 16 | 14 | 1 | Good condition and health, young and vigorous | To be Removed |
| 66 | L/Ls | 19 | 30 | 1 | Good condition and health, young and vigorous | To be Removed |
| 67 | WRC/Tp | 55 | 44 | 2 | Generally good condition and health, defect free | To be Removed |
| 68 | Ap/Md | 23 | 38 | 2 | Generally good condition and health, defect free | To be Removed |
| 69 | SS/Ps | 22 | 28 | 2 | Generally good condition and health, defect free | RETAINED |
| 70 | PP/Pp | 20 | 30 | 2 | Generally good condition and health, defect free | RETAINED |
| 71 | PP/Pp | 12 | 20 | 1 | Good condition and health, young and vigorous | RETAINED |
| 72 | PP/Pp | 20 | 36 | 2 | Generally good condition and health, defect free | RETAINED |
| 73 | PP/Pp | 12 | 16 | 1 | Good condition and health, young and vigorous | To be Removed |
| 74 | SS/Ps | 25 | 36 | 2 | Generally good condition and health, defect free | To be Removed |
| 75 | SS/Ps | 15 | 24 | 1 | Good condition and health, young and vigorous | To be Removed |
| 76 | DF/Pm | 36 | 48 | 3 | Multi-trunked, fair condition | To be Removed |
| 77 | DF/Pm | 21 | 44 | 2 | Generally good condition and health, defect free | To be Removed |
| 78 | PP/Pp | 11 | 26 | 1 | Good condition and health, young and vigorous | To be Removed |
| 79 | DF/Pm | 32 | 44 | 2 | Generally good condition and health, defect free | To be Removed |
| 80 | DF/Pm | 22 | 36 | 2 | Generally good condition and health, defect free | To be Removed |
| 81 | DF/Pm | 25 | 46 | 2 | Generally good condition and health, defect free | To be Removed |
| 82 | SS/Ps | 23 | 48 | 2 | Generally good condition and health, defect free | To be Removed |
| 84 | WH/Th | 8 | 30 | 1 | Good condition and health, young and vigorous | To be Removed |
| 85 | WRC/Tp | 17 | 24 | 1 | Good condition and health, young and vigorous | RETAINED |
| 86 | PP/Pp | 12 | 30 | 1 | Good condition and health, young and vigorous | RETAINED |
| 87 | WRC/Tp | 22 | 32 | 2 | Generally good condition and health, defect free | RETAINED |
| 88 | WRC/Tp | 23 | 34 | 2 | Generally good condition and health, defect free | RETAINED |
| 89 | BLM/Am | 23 | 80 | 2 | Generally good condition and health, defect free | RETAINED |
| 90 | RA/Ar | 17 | 34 | 1 | Good condition and health, young and vigorous | RETAINED |
| 91 | RA/Ar | 17 | 36 | 1 | Good condition and health, young and vigorous | RETAINED |
| 92 | DF/Pm | 23 | 42 | 2 | Generally good condition and health, defect free | RETAINED |
| 93 | DF/Pm | 23 | 36 | 2 | Generally good condition and health, defect free | RETAINED |
| 94 | DF/Pm | 13 | 28 | 1 | Good condition and health, young and vigorous | RETAINED |
| 95 | WRC/Tp | 18 | 24 | 1 | Good condition and health, young and vigorous | To be Removed |
| 96 | DF/Pm | 22 | 42 | 2 | Generally good condition and health, defect free | RETAINED |

Tree Tag # Number assigned to tree on survey tag

Species Species code:
- Ap/Md=Apple (Malus domestica)
- BC/Cpb=Boulevard cypress (Chamaecyparis pisifiera 'boulevard')
- BLM/Am=Big-leaf maple (Acer macrophyllum)
- DC/Cd=Deodar cedar (Cedrus deodars)
- DF/Pm=Douglas fir (Pseudotsuga menziesii)
- EH/la=English holly (Ilex aquifolium)
- L/Ls=Larch (Larix species)
- LC/Cl=Lawson's cypress (Chamaecyparis lawsoniana)
- MA/Sa=Mountain ash (Sorbus aucuparia)
- PP/Pp=Ponderosa pine (Pinus ponderosa)
- RA/Ar=Red alder (Alnus rubra)
- SS/Ps=Sitka spruce (Picea sitchensis)
- WH/Th=Western hemlock (Tsuga heterophylla)
- WRC/Tp=Western red cedar (Thuja plicata)

Dbh Diameter at 4.5' above ground surface

Crown diameter Maximum diameter of crown spread in feet

Rating Condition rating (1=Excellent condition and health; 2=Generally good condition and health; 3=fair condition and health, minor defects or stress 4=Pc health

Condition Notes General notes about health, condition and vigor

Status To be removed or retained

16-143970-LK

| REVISION | DATE |
|---|---|
| ADDITION OF PRELIMINARY PLAT | 8/16/19 |
| RESPOND TO CITY REVIEW COMMENTS | 6/6/18 |
| SYM | |

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
pacaengrs.com

STATE OF WASHINGTON
BRIAN JA
No. 830 EXP 8/23/2019
REGISTERED LANDSCAPE ARCHITECT

ISOLA HOMES
13555 SE 36TH ST SUITE 320
BELLEVUE, WA 98006
206.582.7900

# PARK POINTE PUD & PRELIMINARY PLAT
7219 & 7331 LAKEMONT BLVD SE
BELLEVUE WASHINGTON

## TREE RETENTION PLAN
35 UNIT PUD

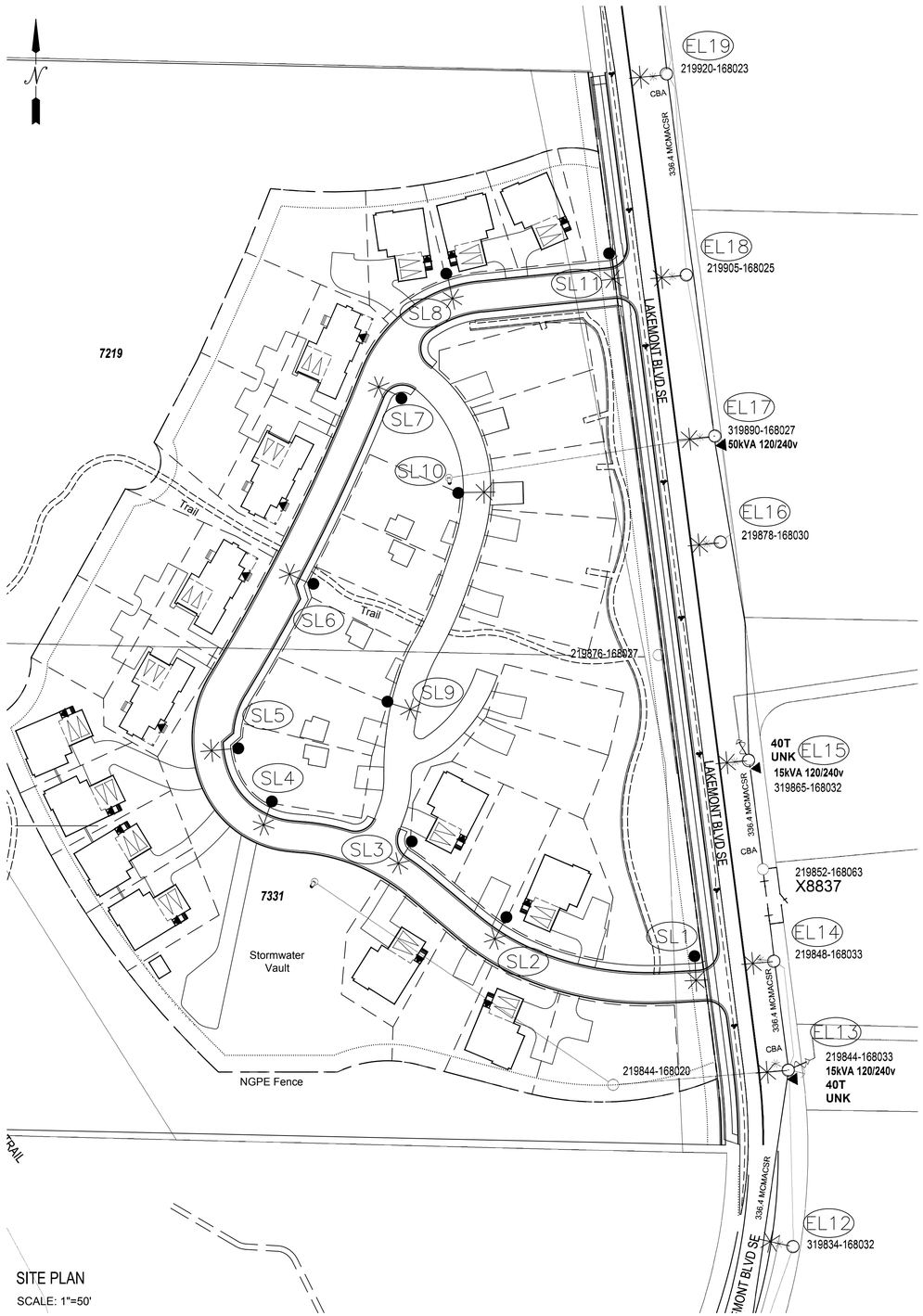
| SCALE: | DATE: |
|---|---|
| AS NOTED | 6/6/2018 |
| DESIGNED BY: | CHECKED BY: |
| TC | JA |

JOB NUMBER 15436

SHEET: L3

SHEET L3 OF 17

FILE NAME: P:\P15\15436_LAKEMONT PROPERTY FEASIBILITY\CAD\ENGINEERING\SHEETS\PARK_POINT_PUD\P15436_TREE.DWG
CONTRACT NO.: 151150-T.dwg X15436_24x36-BDR.dwg X15436_STMP-CSC.dwg X15436_SD.dwg X15436_FG.dwg X15436_SS.dwg X15436_WA.dwg X15436_SITE.dwg X15436_CAO_PROPOSED.dwg X15436_LP.dwg X15436_ARBORIST NUMBERS.dwg
XREF FILES:




SITE PLAN

SCALE: 1"=50'

SCOPE OF PROJECT:

IN PLAT SL1-SL11
INSTALL 11 - 20' RND BLK CONC POLES WITH 60W LED K729 ON BISHOP CROOK ARMS.

DEVELOPER RESPONSIBLE TO INSTALL 4'X18" BLACK CORRUGATED STREET LIGHT TUBES AT ALL STREET LIGHT LOCATIONS.

FRONTAGE EL12-EL19
REMOVE (8) EXISTING HPS CHFL LUMINAIRES AND REPLACED WITH NEW 102W LED CHFL

**STREET LIGHT TABLE - IN PLAT**

| SITE # | POLE | | | | | LUMINAIRE | | TUBE | | WO # (INTOLIGHT) | BILLING SCH. | TOTAL CONN LOAD | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GRID # | INTOLIGHT TAG # | TYPE | MTG HT. | ARM | WATTS | STYLE | TUBE LENGTH | TUBE DIAMETER | | | | |
| SL1 | XXXXXX XXXXXX | | RND BLK CONC | 20' | B.C. | 60W | LED K729 | 4' | 18" | 105082785 | 51 | 120/240 | |
| SL2 | XXXXXX XXXXXX | | RND BLK CONC | 20' | B.C. | 60W | LED K729 | 4' | 18" | 105082785 | 51 | 120/240 | |
| SL3 | XXXXXX XXXXXX | | RND BLK CONC | 20' | B.C. | 60W | LED K729 | 4' | 18" | 105082785 | 51 | 120/240 | |
| SL4 | XXXXXX XXXXXX | | RND BLK CONC | 20' | B.C. | 60W | LED K729 | 4' | 18" | 105082785 | 51 | 120/240 | |
| SL5 | XXXXXX XXXXXX | | RND BLK CONC | 20' | B.C. | 60W | LED K729 | 4' | 18" | 105082785 | 51 | 120/240 | |
| SL6 | XXXXXX XXXXXX | | RND BLK CONC | 20' | B.C. | 60W | LED K729 | 4' | 18" | 105082785 | 51 | 120/240 | |
| SL7 | XXXXXX XXXXXX | | RND BLK CONC | 20' | B.C. | 60W | LED K729 | 4' | 18" | 105082785 | 51 | 120/240 | |
| SL8 | XXXXXX XXXXXX | | RND BLK CONC | 20' | B.C. | 60W | LED K729 | 4' | 18" | 105082785 | 51 | 120/240 | |
| SL9 | XXXXXX XXXXXX | | RND BLK CONC | 20' | B.C. | 60W | LED K729 | 4' | 18" | 105082785 | 51 | 120/240 | |
| SL10 | XXXXXX XXXXXX | | RND BLK CONC | 20' | B.C. | 60W | LED K729 | 4' | 18" | 105082785 | 51 | 120/240 | |
| SL11 | XXXXXX XXXXXX | | RND BLK CONC | 20' | B.C. | 60W | LED K729 | 4' | 18" | 105082785 | 51 | 120/240 | |

**STREET LIGHT TABLE - FRONTAGE CHANGEOUTS**

| SITE # | POLE | | | LUMINAIRE | | | SCHED | W/O #'S | TOTAL CONN LOAD | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | GRID # | INTOLIGHT TAG # | TYPE | PREVIOUS LUMINAIRE | NEW LUMINAIRE | ARM LENGTH | | | | |
| EL12 | 319834 168032 | SLAS2919 | EXIST WOOD | 100W CHFL | 60W TIII LED | 8' | 53 | | 120/240 | |
| EL13 | 319844 168033 | SLAR6307 | EXIST WOOD | 150W CHFL | 60W TIII LED | 8' | 53 | | 120/240 | |
| EL14 | 219848 168033 | SLAR6306 | EXIST WOOD | 100W CHFL | 60W TIII LED | 8' | 53 | | 120/240 | |
| EL15 | 219865 168032 | SLAR6305 | EXIST WOOD | 150W CHFL | 60W TIII LED | 8' | 53 | | 120/240 | |
| EL16 | 219878 168030 | SLAR6304 | EXIST WOOD | 100W CHFL | 60W TIII LED | 8' | 53 | | 120/240 | |
| EL17 | 319890 168027 | SLAR6303 | EXIST WOOD | 150W CHFL | 60W TIII LED | 8' | 53 | | 120/240 | |
| EL18 | 219905 168025 | SLAR6302 | EXIST WOOD | 100W CHFL | 60W TIII LED | 8' | 53 | | 120/240 | |
| EL19 | 319920 168023 | SLAR6301 | EXIST WOOD | 150W CHFL | 60W TIII LED | 8' | 53 | | 120/240 | |

## EROSION & SEDIMENT CONTROL REQUIREMENTS

EROSION & SEDIMENT CONTROL SHALL BE PER PSE STANDARD PRACTICE 0150.3200 TECHNIQUES FOR TEMPORARY EROSION & SEDIMENT CONTROL & ANY ADDITIONAL LOCAL JURISDICITON REQUIREMENTS. (LOCAL JURISDICTIONS MAY HAVE ADDITIONAL REQUIREMENTS INCLUDING NOTES DETAILING WHERE EROSION OR SEDIMENT CONTROL STRUCTURES ARE TO BE INSTALLED, CROSS SECTION DETAILS OF THE TYPICAL EROSION STRUCTURES, & SPECIAL REQUIREMENTS FOR WORK IN SENSITIVE AREAS.)

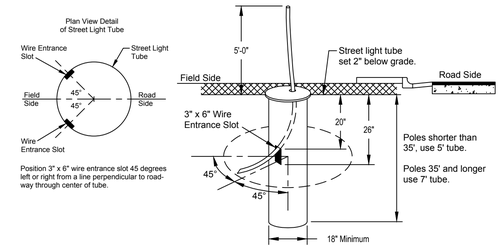
# PSE STREET LIGHT NOTES

## POTELCO:

1. ALL STREET LIGHTING POLES ARE TO BE INSTALLED PER STANDARD 6375.4800 (page #2) IN THE "LINE WORK PRACTICES MANUAL".
2. ALL POLES (WOOD, CONCRETE OR FIBERGLASS) ARE TO BE SET PLUMB AND EMBEDDED TO THE GROUND LINE MARKED ON THE POLE.
3. BACKFILL AROUND POLE WITH 5/8" MINUS GRAVEL AND COMPACT IN 6" LIFTS. (PEA GRAVEL AND NATIVE SOILS ARE NOT ACCEPTABLE.) APPROXIMATELY 1 CU. YD. OF 5/8" MINUS CRUSHED ROCK WILL BE REQUIRED.
4. IN ALL SHOEBOX AND COBRAHEAD INSTALLATIONS, THE LUMINAIRE MUST BE LEVELED.

## DEVELOPER/CUSTOMER:

1. THE DEVELOPER IS REQUIRED TO SUPPLY AND INSTALL PLASTIC (NON PAPER) STREET LIGHT TUBES (MINIMUM 18" DIAMETER) TO AID IN THE INSTALLATION OF THE STREET LIGHTING POLES.
2. DEVELOPER MUST SUPPLY DURABLE LID/COVER AT EACH STREET LIGHT TUBE.
3. DEVELOPER TO PROVIDE ALL TRENCHING AND CONDUIT WITH PULL-STRINGS FOR STREET LIGHTING CIRCUITRY.
4. CONDUIT SHALL BE SCH 40 PVC, CONDUIT CROSSING ROADWAYS OR DRIVEWAYS SHALL BE SCH 80 PVC.




## STREET LIGHT TUBE DETAIL

SCALE: NONE

FOREMAN (CHECK BOX WHEN COMPLETED)

- ☐ PSE Equipment LOCKED/SECURED & Work Area left in CLEAN/SAFE Condition.
- ☐ Grid, Cable, and Switch numbers INSTALLED & VERIFIED.
- ☐ Field Changes RED-LINED on As-built.
- ☐ Material VERIFIED and CHANGES noted on Paperwork.
- ☐ Total PRIMARY Cable noted on As-built.
- ☐ Company ID#'s RECORDED in correct location on As-built.
- ☐ Indicate correct FUSE SIZE on As-built & VERIFY proper PHASE.
- ☐ Correct QA Checklist(s) reviewed.
- ☐ Deviations noted on the As-built and their reason.

☐ I certify that the work performed meets PSE's standards and procedures and that all quality requirements are met.

Foreman's Signature _____

Print Name _____ Date _____

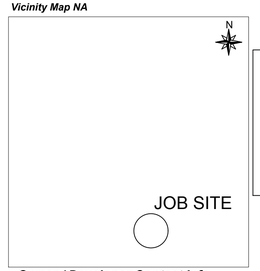
| PROJECT PHASE | | NOTIF# | ORDER# |
|---|---|---|---|
| PWR | Superior | | |
| | New Install | NA | T/E105082785 |
| | St. Light | | |
| | Removal | | |
| | Temporary | | |
| | Job Order | | |
| GAS | Distribution | | |
| | HP Main | | |
| | HP Svc/MS | | |
| CABLE TV | | | |
| PHONE | | | |

**Project Manager Contact Information:**

Lane Mahler
425-429-1356 *Cell Phone*

| | Developer | Yes | Yes | PSE |
|---|---|---|---|---|
| "Locates Required" | | (No) | (No) | |
| "Outages Required" | | Yes | (No) | |
| "Flagging Required" | | (Yes) | No | |

***Vicinity Map NA***




T/E105082785

***Owner / Developer Contact Info***

ATTN: Brian Way 425-827-2014 cell

For contacts below dial 1-888-CALL PSE (225-5773)

**CALL (800) 424-5555**
**2 BUSINESS DAYS BEFORE YOU DIG**

THIS SKETCH NOT TO BE RELIED UPON FOR EXACT LOCATION OF EXISTING FACILITIES

| X | NEW BUSINESS | | ☐ | CORRECTIVE / 10 DAY WAIVED | REAL ESTATE/EASEMENT N/A | | PERMIT N/A | |
|---|---|---|---|---|---|---|---|---|
| 3 | | | | | FUNCTION | CONTACT | PHONE NO | DATE |
| 2 | | | | | ACCOUNT MGR | Lars Larson | 425-456-2701 | |
| 1 | | | | | ENGR - POWER | Andrew Allwardt | 425-603-5904 | 05/29/18 |
| REV# | | BY | DESCRIPTION | | ENGR - GAS | | | |
| COUNTY KING | | Emer Sect | Gas Wk Ctr | POWER WK CTR 3515 | DRAWN BY | Andrew Allwardt | 425-603-5904 | 05/29/18 |
| 1/4 SEC | | OP MAP | | PLAT MAP | CHECKED BY | | | |
| | | | | | APPROVED BY | | | |
| | | | | | FOREMAN #1 | | | |
| U-MAP NO (POWER) 2405E104 | | OH CKT MAP 2405E124 | UG CKT MAP 2405E104 | CIRCUIT NO HAZ-12 | FOREMAN #2 | | | |
| | | | | | MAPPING | | | |
| JOINT FACILITIES ARRANGEMENTS | | | | | | | | |
| UTILITIES | N/A | | N/A | | N/A | | N/A | |
| CONTACT | N/A | | N/A | | N/A | | N/A | |
| PHONE# | N/A | | N/A | | N/A | | N/A | |

PUGET SOUND ENERGY

# PARK POINTE PUD

INSTALL NEW AND UPGRADE EXISTING STREET LIGHTS
7331 LAKEMONT BLVD SE, BELLEVUE, WA 98006

| INCIDENT | MAOP |
|---|---|
| Gas Order | Elect Order T/E105082785 |
| SCALE 1"=50' | PAGE 1 of 1 |

# CRITICAL AREAS REPORT, HABITAT EVALUATION, AND CONCEPTUAL MITIGATION PLAN

# PARK POINTE PUD
# PERMIT #: 15-115585-DB, 16-143970-LK AND 16-145946-LO

# BELLEVUE, WASHINGTON

*Prepared For:*
ISOLA REAL ESTATE 111, LLC
Bellevue, Washington

*Prepared By:*
TALASAEA CONSULTANTS, INC.
Woodinville, Washington

17 May 2017
(Revised 16 August 2019)

# Critical Areas Report, Habitat Evaluation, and Conceptual Mitigation Plan

# Park Pointe PUD
# Permit #: 15-115585-DB, 16-143970-LK and 16-145946-LO

# Bellevue, Washington

*Prepared For:*
Isola Real Estate 111, LLC
13555 SE 36th Street
Suite, 320
Bellevue, Washington 98006

*Prepared By:*
Talasaea Consultants, Inc.
15020 Bear Creek Road NE
Woodinville, Washington 98077
(425) 861-7550

17 May 2017
(Revised 16 August 2019)

# EXECUTIVE SUMMARY

PROJECT NAME: Park Pointe PUD

CLIENT: Isola Real Estate 111, LLC, Mr. Jeff Wegener

SITE LOCATION: The Park Pointe PUD site is an assemblage of two tax parcels located at 7219 and 7331 Lakemont Boulevard SE, Bellevue, Washington. The tax parcel numbers are 2624059022 (Parcel A) and 2624059019 (Parcel B). The Public Land Survey System (PLSS) location of the Property is E ½ Section 26, Township 24N, Range 5E, W. M.

PROJECT STAFF: Bill Shiels, Principal; Ann Olsen, RLA, Senior Project Manager; David R. Teesdale, PWS, Senior Wetland Ecologist; Jennifer Marriott, PWS, Senior Ecologist; Matt Wagner, Landscape Designer

FIELD SURVEY: Site evaluations and critical area delineations were performed on 20 May 2015, 5 and 7 August 2015, and 3 March 2017.

CRITICAL AREAS DETERMINATION: Three wetlands and four streams were identified on, or adjacent to, the property. The wetlands were named Wetland A, Wetland AA, and Wetland B. Wetland A rated as a Category III wetland with a 60-foot standard buffer. Wetlands AA and B rated as Category IV wetlands that are exempt from standard buffer requirements. The four streams are Coal Creek, Stream 1, Stream 2, and Stream 3. Coal Creek flows along the southwestern boundary of the site and is a Type F based on physical parameters rather than observed fish presence. Streams 1, 2, and 3 are classified as Type N. Stream 1 flows out of Parcel A approximately 70 feet west of the northwest corner of Parcel B and into Coal Creek approximately 60 feet to the south. Stream 2 flows adjacent to the northern boundary of Parcel A for approximately 2,850 linear feet before commingling with Stream 1. Stream 3 is adjacent offsite of the southern boundary of the project site and flows into Coal Creek. Type F waters in the City of Bellevue have a 100-foot standard buffer, while Type N waters have a 50-foot standard buffer.

VEGETATION: The eastern portion of Parcel A is maintained as mowed lawn or horse pasture. The western portion of Parcel A is undeveloped and vegetated with mixed deciduous and coniferous forest. The vegetation on Parcel B is currently maintained as pasture with some trees and blackberries along the south and west property boundaries. Vegetation within Wetland A includes salmonberry, highbush cranberry, lady fern, field horsetail, and big-leaf sedge. Vegetation in Wetland AA includes tall, American brooklime, and creeping buttercup. Vegetation within Wetland B consists predominantly of Nootka rose, equisetum, buttercup, and various pasture grasses. Typical upland vegetation includes red alder, black cottonwood, Douglas fir, western redcedar, Indian plum, Himalayan blackberry and sword fern.

SOILS: The Natural Resources Conservation Service has mapped two soil types on the subject property. These soils are Beausite gravelly sandy loam, 6-15% slopes, and Alderwood-Kitsap gravelly sandy loam. These soils are not considered to be hydric by the National Technical Committee on Hydric Soils. Slopes and geological characteristics are not included in this report. These are discussed in documents prepared by Geotech Consultants, Inc. (Geotechnical Engineering Study, January 19, 2016 and Geotechnical Supplemental Letter, March 29, 2017).

HYDROLOGY: Hydrology for Wetland A is supported primarily by shallow groundwater and seepage from a steep slope to the east of the wetland. Hydrology for Wetland AA is supported by occasional overland flow from Stream 2. Hydrology for Wetland B is supported by shallow groundwater seepage.

HABITAT ASSESSMENT: The western half of Parcel A is forested, does not contain wetlands, and is adjacent to City of Bellevue Coal Creek Natural Area. The eastern half of Parcel A is maintained as lawn or horse pasture. All of Parcel B is developed with a single-family residence and associated outbuildings and surrounded by horse pasture.

The project site (Parcels A and B) was assessed for habitat potential using the City of Bellevue's Urban Wildlife Habitat Functional Assessment Model. The site scored high for habitat value due to its forested component and adjacency to relatively intact forested natural areas.

We evaluated the habitat potential of the site against the City of Bellevue's list of species of local importance. Of the 23 species of local importance listed by City of Bellevue code, only six were determined


Copyright © 2019 Talasaea Consultants, Inc.

to have a likelihood of being present on the Site. These species are bald eagle (migration only), pileated woodpecker, red-tailed hawk, Townsend's big-eared bat, Keen's myotis, and the long-eared myotis. Townsend's big-eared bat is a Federally-listed species of concern and a State-listed candidate species. Pileated woodpecker is a State-listed Candidate species.

PROPOSED PROJECT: Isola Real Estate 111, LLC is proposing to develop the Site as a Planned Unit Development (PUD). The development will consist of 35 single-family residences with associated roads, trails, and utilities. All development will occur on the eastern portion of the property. Approximately 6 acres of the 12.29-acre Site will be developed. An on-site stormwater facility will include perforated downspout connections, flow control in a detention vault, and treatment of the runoff utilizing a proven media filtration structure. Treated stormwater will be released via a gravity outlet pipe that discharges into Coal Creek above the ordinary high-water mark. The proposed site development plan is innovative in providing the allowable development while avoiding impacts to the maximum extent practicable.

ASSESSMENT OF DEVELOPMENTAL IMPACTS: No direct impacts to the wetlands or streams are proposed with this Project. The Project is proposing reduced buffer widths for the streams and steep slopes to accommodate the development footprint, as well as minor buffer encroachments for City-required right-of-way improvements along Lakemont Blvd SE. In addition, a soft-surface trail will be constructed in the buffer to connect to an existing trail system in the Coal Creek Natural Area and construction of a gravity flow stormwater discharge pipe will result in impacts to buffers due to open trenching, manholes, & a gabion basket energy dissipator.

Structure setbacks will also be reduced slightly to a width that remains functional to preclude structures adjacent to critical areas, while still accommodating the proposed development. This structure setback reduction reduces encroachments into the stream buffers. Total buffer reductions and construction impacts are as follows:

| | |
|---|---|
| • Reduced Stream Buffer for Right-of-Way Improvements: | 114 sf |
| • Reduced Stream Buffers: | 10,256 sf |
| • Reduced Steep Slope Buffers: | 3,975 sf |
| • Combined Reduced Stream & Steep Slope Buffers: | 7,230 sf |
| **TOTAL BUFFER REDUCTION AREA** | **21,575 sf** |
| • Soft-Surface Trail: | 2,161 sf |
| • Gabion Basket Energy Dissipator & Manholes: | 117 sf |
| • Temporary Construction Impacts for Stormwater Outfall Open Trenching: | 2,706 sf |
| **TOTAL OTHER IMPACTS TO BUFFERS** | **4,984 sf** |

PROPOSED MITIGATION: The project proposes a combination of several different mitigation measures intended to compensate for buffer functions and values lost through reduced buffer widths and dedication to trails or ROW. The proposed mitigation will result in a net gain in critical area functions and values compared to existing conditions. The total mitigation proposed represents a 5:1 mitigation-to-impact ratio and consists of:

| | |
|---|---|
| • Buffer Enhancement/Restoration/Re-establishment: | 129,018sf |
| • Enhanced Buffer Addition (beyond stream and steep slope standard buffers): | 1,870 sf |
| **TOTAL BUFFER MITIGATION AREA** | **130,888 sf** |
| • Preserved Critical Areas (Coal Creek, Streams 1 & 2, & Wetlands A, AA & B): | 12,410 sf |
| • Preserved Critical Area Buffer Habitat Areas: | 104,267 sf |
| • Preserved Wildlife Corridor (Non-compensatory Habitat Conservation): | 23,675 sf |
| **ADDITIONAL HABITAT AREA:** | **140,352 sf** |

*Critical Area Protection:* All post-construction critical areas will be permanently protected with fencing and NGPA signs consistent with City Bellevue guidelines and placed in a dedicated easement.

*Performance Monitoring:* All mitigation areas will be monitored and maintained for a minimum of 5 years to ensure all goals, objectives, and performance standards are met.


Copyright © 2019 Talasaea Consultants, Inc.

# TABLE OF CONTENTS

Executive Summary ..... i
Table of Contents ..... iii
Lists of Figures, Photos, Tables, and Appendices ..... v

Chapter 1. Introduction ..... 1
1.1 Report Purpose ..... 1
1.2 Statement of Accuracy ..... 1
1.3 Qualifications ..... 1

Chapter 2. Property Overview ..... 2
2.1 Property Description and Location ..... 2
2.2 Existing Conditions ..... 2
2.2.1 Historical Land Use ..... 2
2.2.2 Topographic Discussion of Parcel A ..... 3
2.2.3 Topographic Discussion of Parcel B ..... 3

Chapter 3. Methodology ..... 3
3.1 Background Data Reviewed ..... 3
3.2 Field Investigation ..... 4

Chapter 4. Results ..... 5
4.1 Analysis of Resource Information ..... 5
4.1.1 National Wetland Inventory ..... 5
4.1.2 Natural Resources Conservation Service ..... 5
4.1.3 King County Critical Areas Map ..... 5
4.1.4 City of Bellevue Critical Areas Maps ..... 6
4.2 Analysis of Existing Site Conditions ..... 6
4.2.1 Wetlands ..... 6
4.2.2 Streams ..... 7
4.2.3 Western Upland Area ..... 13
4.2.4 Habitat Evaluation ..... 13
4.3 Existing Conditions of Upland Buffers ..... 17
4.3.1 Historical Perspective ..... 17
4.3.2 Functions and Services Provided by the Existing Stream Buffers ..... 17
4.3.3 Existing Stream Buffer Conditions – Above the Top-of-bank ..... 17
4.3.4 Existing Stream Buffer Conditions – Below the Top-of-bank ..... 18
4.3.5 Existing Patterns of Buffer Disturbance ..... 18

Chapter 5. Analysis of Critical Areas Regulations ..... 19
5.1 City of Bellevue ..... 19
5.2 State and Federal Regulations ..... 20
5.2.1 Washington State Regulations ..... 20
5.2.2 Federal Regulations ..... 20

Chapter 6. Site Development Plan ..... 20


Copyright © 2019 Talasaea Consultants, Inc.

Chapter 7. ASSESSMENT of DEVELOPMENT Impacts ..... 22
7.1 Dimensional Impacts to Stream Buffers ..... 23
7.1.1 Critical Area Buffer Impacts ..... 23
7.2 Structure Setback Reduction ..... 25
7.3 Analysis of Buffer Function ..... 25
7.3.1 Existing Habitat Functional Rating ..... 26
7.3.2 Future Condition with No Buffer Reduction ..... 26
7.3.3 Mitigation of Impacts to Buffer Reduction ..... 27
Chapter 8. Proposed Mitigation ..... 27
8.1 Agency Policies and Guidance ..... 27
8.2 Mitigation Sequencing ..... 27
8.2.1 Approach to Critical Area Buffer Mitigation ..... 28
8.2.2 Areas of Critical Area Buffer Mitigation ..... 30
8.2.3 Enhancement Planting in Critical Area Buffers and on Steep Slopes. 30
8.2.4 Functions of Significant Trees as Large Wood ..... 31
8.2.5 Water Quality and Hydrology in the Enhanced/Restored Buffers ..... 32
8.3 Additional On-site Habitat Benefits ..... 32
8.4 Mitigation Design Elements ..... 32
8.4.1 Decompaction and Topsoil ..... 32
8.4.2 Habitat Features ..... 32
8.4.3 Mulch ..... 32
8.4.4 Plantings ..... 33
8.4.5 Temporary Irrigation System ..... 33
8.4.6 2-Board Fence and Critical Area Signs ..... 33
8.5 Mitigation Goals, Objectives, and Performance Standards ..... 33
Chapter 9. Construction Sequencing ..... 34
9.1 Mitigation Construction Sequence ..... 34
9.2 Post-Construction Approval ..... 35
9.3 Post-Construction Assessment ..... 35
Chapter 10. Monitoring Plan ..... 35
10.1 Reports ..... 35
10.2 Monitoring Methods ..... 35
10.3 Photo Documentation ..... 36
10.4 Wildlife ..... 36
10.5 Water Quality and Site Stability ..... 36
Chapter 11. Maintenance and Contingency ..... 36
Chapter 12. Post-Monitoring Vegetation Management ..... 37
Chapter 13. Financial Guarantee ..... 37
Chapter 14. Summary ..... 38
Chapter 15. References ..... 0


Copyright © 2019 Talasaea Consultants, Inc.

# LIST OF FIGURES

**Figure 1:** Vicinity Map & Directions
**Figure 2:** Existing Development
**Figure 3:** NRCS Soils Map
**Figure 4:** City of Bellevue Critical Areas Map
**Figure 5:** Coal Creek Barrier Locations
**Figure 6:** Pasture Grasses in ½-Mile Vicinity

Note: All figures are located at the end of the report before the appendices.

# LIST OF PHOTOS

**Photo 1.** Rockslide Fish Passage Barrier on Coal Creek. ....8
**Photo 2.** Natural Cascade of Stream 1 at Coal Creek....10
**Photo 3.** Top of Stream 1 Cascade on its East Side. ....11
**Photo 4.** Heavy Deposits of Precipitated Iron in Stream 1. ....12

# LIST OF TABLES

**Table 1.** Species of Local Importance (LUC 20.25H.150) ....13
**Table 2.** Summary of Proposed Mitigation Performance Standards ....19
**Table 3.** Proposed Buffer Impacts....22
**Table 4.** Projected Schedule for Performance Monitoring and Maintenance Events ....35

# APPENDICES

**Appendix A1:** Geotechnical Engineering Study, Geotech Consultants, Inc., January 19, 2016
**Appendix A2:** Geotechnical Supplemental Letter, Prepared by Geotech Consultants, Inc., March 29, 2017
**Appendix B:** Geological Engineering Services, Proposed Property Development Coal Mine Hazard Assessment and Ground Proofing Program, Icicle Creek Engineers, Inc., August 2, 2016
**Appendix C:** Wetland Delineation Data Sheets, Talasaea Consultants, 2017
**Appendix D:** *Washington State Wetland Rating System for Western Washington* Publication #04-06-025
**Appendix E:** Critical Area Conceptual Mitigation Plans (large plan sheets)
**Sheet W1.0:** Existing Conditions Plan
**Sheet W1.1:** Proposed Site Plan & Impacts Assessment
**Sheet W1.2:** Proposed Mitigation Concept
**Sheet W2.0:** Proposed Buffer Mitigation Overview
**Sheet W3.0:** Preliminary Plant List, Details, and Notes
**Appendix F:** Park Pointe Coal Creek Typing Study, Confluence Environmental Company, May 11, 2017
**Appendix G:** City of Bellevue Habitat Evaluation Assessment Data Sheets
**Appendix H:** Vegetative Management Plan, May 17, 2017
**Appendix I:** Responses to Performance Standards and Decision Criteria


Copyright © 2019 Talasaea Consultants, Inc.

# Chapter 1. INTRODUCTION

## 1.1 Report Purpose

This report is the result of a critical areas study and habitat evaluation of the Park Pointe PUD property located at 7219 and 7331 Lakemont Boulevard SE (referred to as "Site" hereinafter). The Site is situated in Bellevue, Washington (**Figure 1**). The purpose of this report is to identify, describe, and categorize critical areas and wildlife habitats located on or adjacent to the Site, to assess the impacts of the proposed development by Isola Real Estate 111, LLC, and then to provide a mitigation plan that meets the requirements of the City of Bellevue.

The site contains wetlands, streams, steep slopes and their associated setbacks and buffers. The project proposes to merge a combination of critical area mitigation approaches recommended by the City, creative enhancement methods that provide the requisite benefits of critical area buffers within a modified footprint, and the flexibility inherent in Planned Unit Development (PUD) regulatory review.

The report has been prepared to comply with the reporting requirements of City of Bellevue Code §20.25H.075 and §20.25H.090. Specifically, this report provides the following information:

- Property Overview;
- Methodology for Critical Areas Investigations;
- Review and Evaluation of Existing Resource Information;
- Review and Evaluation of On-Site Critical Areas and Habitats;
- Analysis of Critical Area Regulations;
- Habitat Functional Assessment;
- Site Development Plan Description;
- Assessment of Development Impacts;
- Proposed Mitigation;
- Construction Sequencing;
- Monitoring, Maintenance and Contingency Plan;
- Post-monitoring Vegetation Management;
- Financial Guarantee; and
- Summary.

## 1.2 Statement of Accuracy

The critical area studies and regulatory reviews were conducted by trained professionals of Talasaea Consultants, Inc., in adherence to the protocols, guidelines, and generally accepted industry standards available at the time work was performed. The conclusions in this report are based on the results of analyses performed by Talasaea Consultants and represent our best professional judgment. To that extent, and within the limitations of project scope and budget, we believe the information provided herein is accurate and true to the best of our knowledge. Talasaea Consultants does not warrant any assumptions or conclusions not expressly made in this report or based on information or analyses other than what is included herein.

## 1.3 Qualifications

Field investigations and evaluations were conducted by Talasaea staff including Jennifer Marriott, PWS, Senior Ecologist and David R. Teesdale, PWS, Senior Wetland Ecologist. Jennifer Marriott has a Bachelor's Degree and a Master's Degree in Biology from University of Central Florida, and a second Master's Degree in Soil and Environmental Science from the University of Florida. She has over 14 years of experience in wetland delineations and environmental permitting. David Teesdale has a Bachelor's Degree in Biology from Grinnell College, Iowa, and a Master's Degree in Ecology from Illinois State University. He has 21 years of experience in wetland delineations and biological evaluations. Buffer mitigation design was


Copyright © 2019 Talasaea Consultants, Inc.

prepared by Ann Olsen, RLA. Ann has over 25 years of experience in designing critical area mitigation plans.

## Chapter 2. PROPERTY OVERVIEW

### 2.1 Property Description and Location

The Site is an assemblage of two tax parcels (**Figure 2**). The tax parcel numbers are 2624059022 (Parcel A, 7.45 acres) and 2624059019 (Parcel B, 4.84 acres). The total area of the Site is 12.29 acres in size. The Public Land Survey System (PLSS) location of the Site is E ½ Section 26, Township 24N, Range 5E, W. M.

### 2.2 Existing Conditions

The Site is an irregularly-shaped assemblage of two parcels located on the west side of Lakemont Boulevard SE within the City of Bellevue, Washington (**Figure 2**). The eastern ½ of Parcel A is developed with two residences and an outbuilding with mowed lawn or pasture extending from the northeast property corner to a steep-walled ravine. The western portion of Parcel A (to the west of the ravine) is in a relatively natural state and vegetated with mixed deciduous and coniferous forest. Remnant coal tailings are present within this area, though little native vegetation grows over the coal tailings. Parcel B is developed with one single-family residence and several outbuildings. The single-family residence was constructed in 1918, based on King County Parcel records. The remainder of the parcel is maintained as pasture for horses, although parts of Parcel B appear to be fallow.

The Site is bordered on the east side by Lakemont Boulevard SE and to the south, west, and north by City of Bellevue Parks Department property (Coal Creek Natural Area). Access to the Site is provided by three driveways off Lakemont Boulevard SE. Two driveways are located on Parcel A and the third is located on Parcel B.

The topography of the Site is variable based on location. The existing topographic site conditions of the two parcels will be discussed separately in **Sections 2.2.1** and **2.2.3**, below. Conditions of the geology and surface of the site are discussed in a separate study by Geotech Consultants, Inc. (Geotech 2016), provided in **Appendix A1** and a supplemental letter in 2017 (Geotech 2017), provided in **Appendix A2**. For the purposes of this report, the term “vicinity” shall mean an area within ½ mile of the Site.

#### 2.2.1 Historical Land Use

The land within the vicinity of the Site was historically part of a larger active coal mining operation from circa 1879 to circa 1930 called Red Town. Intermittent coal mining occurred up to circa 1960. In the Coal Mine Hazard Assessment and Ground Proofing Report prepared by Icicle Creek Engineers (Icicle Creek 2016) the existence and extent of three different coal mines under the Site are mapped and discussed (**Appendix B**). It should be noted that this report does not address geotechnical or mining issues and their critical areas. Interaction of any critical area boundaries was coordinated by the Pace Engineers in the site design process.

Between 1936 and 1964[1], Parcel B appears to have changed usage from primarily a single-family residence to include farming and pasture. The first residence on Parcel A was constructed in 1949. The second residence was constructed in 1964. By 1964, the eastern portion of Parcel A was cleared. Usage of the Site does not appear to have changed significantly since 1964.

[1] There appears to be a gap in available aerial photography between 1936 and 1964, based on online aerial imagery resources.


Copyright © 2019 Talasaea Consultants, Inc.

### 2.2.2 Topographic Discussion of Parcel A

Parcel A has a steep-walled ravine splitting it essentially in half. The ravine crosses the parcel from near the middle of the north property boundary in a southwesterly direction to a point approximately 220 feet east of the parcel's southwest corner. This feature effectively separates the eastern ½ from the western ½ in terms of development potential. Therefore, these two portions of Parcel A will be discussed separately.

The topography of the eastern ½ of Parcel A is relatively flat to slightly rolling. A large mound of soil is located approximately in the middle of the parcel and east of the ravine's edge. The location and shape of this mound suggest that it may be the result of fill placement in the past.

Drainage on the eastern ½ of Parcel A is generally to the south-southwest, except near the ravine, where drainage flows generally in a northwesterly direction towards the northern ravine associated with Stream 2.

The ravine is between 160 to 200 feet wide, measured at the top-of-slope. It is up to 50 feet deep in parts and bordered by slopes greater than 33%. The ravine contains a perennial stream. The bottom of the ravine near the northern boundary of Parcel A is generally flat-bottomed but narrowing to the width of the active channel near the ravine's southernmost extent.

A second, smaller ravine is located along Parcel A's northern boundary. This ravine also contains a small stream that flows in a westerly direction from a culvert under Lakemont Boulevard SE. This smaller ravine and associated stream connect to the larger ravine approximately at the midpoint of Parcel A's northern boundary.

The topography of the western ½ of Parcel A rises from Coal Creek at the southwestern corner of the parcel to near the northern property boundary. Drainage from the high ground on the western ½ of Parcel A is split with a portion flowing to the southeast towards the ravine and the remainder flowing to the southwest.

### 2.2.3 Topographic Discussion of Parcel B

The topography of Parcel B is generally rolling. Drainage on Parcel B generally flows to the southwest towards Coal Creek. A small portion flows into a deep ravine located offsite adjacent to the parcel's southern boundary.

## Chapter 3. METHODOLOGY

The critical areas analysis of the Site involved a two-part effort. The first part consisted of a preliminary assessment of the Site and immediate surrounding area using published environmental information. This information included:

1. Wetland and soils information from resource agencies;
2. Environmental critical areas information from the City of Bellevue and King County;
3. GIS analysis of orthophotography and LIDAR data; and
4. Relevant studies completed or ongoing on, or in the vicinity of, the Site as supplied by the Client.

The second part consisted of site investigations where direct observations of existing environmental conditions were made. Plant communities, soils, hydrology, stream, and wildlife habitat conditions were observed. This information was used to help characterize on-site wetlands and define the limits of the Ordinary High-Water Mark (OHWM) of streams for regulatory purposes (see **Section 3.2 – Field Investigation**, below)

### 3.1 Background Data Reviewed

Background information from the following sources was used prior to our field investigations:


Copyright © 2019 Talasaea Consultants, Inc.

- US Fish and Wildlife Service (USFWS), Wetlands Online Mapper (National Wetlands Inventory, NWI) (USFWS 2017) (www.wetlandsfws.er.usgs.gov/wtlnds/launch.html);
- Natural Resources Conservation Service (NRCS), Web Soil Survey (NRCS 2017)(www.websoilsurvey.nrcs.usda.gov/app/);
- NRCS, National Hydric Soils List by State (NRCS 2017) (www.soils.usda.gov/use/hydric/lists/state.html);
- City of Bellevue GIS databases (City of Bellevue, 2017);
- King County GIS databases (King County, 2017);
- StreamNet database, 2017 (www.streamnet.org);
- SalmonScape database, 2017 (www.wdfw.wa.gov/mapping/salmonscape/databases);
- Washington State Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) Database on the Web (WDFW 2018) (http://wdfw.wa.gov/mapping/phs/);
- Washington Department of Natural Resources (WDNR) Natural Heritage Database;
- Orthophotography from USDA's National Agricultural Imagery Program (NAIP 2017) and Google Earth; and
- LIDAR terrain data from Puget Sound LIDAR Consortium and King County.

### 3.2 Field Investigation

The Site was initially evaluated by Talasaea Consultants, Inc. on 20 May 2015. The purpose of this initial evaluation was to assess the potential extent of critical habitat on Parcel A[2]. Subsequently, we provided the Client with a letter report detailing the on-site critical areas and our understanding of the ability of Parcel A to provide habitat for wildlife.

The Site, now including Parcel A, Parcel B, and Coal Creek, was evaluated on 5 and 7 August 2015 by Talasaea Consultants. An assessment of the potential fish habitat of Coal Creek was made on 5 August 2015. The locations of natural fish passage barriers were mapped by photographing the barrier with a GPS-enabled smartphone. The limits of wetland areas and OHWM of on-site streams were delineated and flagged during the 7 August 2015 site work. Additional assessments of wildlife habitat were made during the 7 August 2015 site work. A detailed site visit of Parcel B was conducted on 3 March 2017 to identify and delineate relevant segments of Stream 3 south of the Site and Coal Creek to properly evaluate their impacts to the Site.

Wetlands were delineated using the routine methodology described in the U.S. Army Corps of Engineers *Regional Supplement to the Corps of Engineers Wetland Delineation and Identification Manual: Western Mountains, Valleys, and Coast Region, Version 2* (U.S. Army Corps of Engineers 2010). Wetlands were rated using the Washington State Wetland Rating System for Western Washington (Hruby 2006), and buffers were assigned according to City of Bellevue Municipal Code (§20.25H.095.B). The OHWM of streams were delineated using the methodology described in *Determining the Ordinary High-Water Mark on Streams in Washington State* (Olson and Stockdale, 2010)[3]. Physical barriers to fish migration and typing of on-site streams were determined using the water typing criteria provided under WAC 222-16-030.

Plant species were identified according to the taxonomy of Hitchcock and Cronquist (Hitchcock and Cronquist 1973). Taxonomic names were updated, and plant wetland status assigned according to the *North American Digital Flora: National Wetland Plant List, Version 2.4.0* (Lichvar 2012). Wetland classes were determined with the U.S. Fish and Wildlife Service's

[2] Parcel B was not yet under contract by the Client.
[3] Since the time of our initial field work, this document has been updated. The results of our OHWM delineation are consistent with the new manual.


Copyright © 2019 Talasaea Consultants, Inc.

system of wetland classification (Cowardin et al. 1979). Vegetation was considered hydrophytic if greater than 50% of the dominant plant species had a wetland indicator status of facultative or wetter (i.e., facultative, facultative wetland, or obligate wetland).

Wetland hydrology was determined based on the presence of hydrologic indicators listed in the Corps' Regional Supplement. These indicators are separated into Primary Indicators and Secondary Indicators. To confirm the presence of wetland hydrology, one Primary Indicator or two Secondary Indicators must be demonstrated. Indicators of wetland hydrology may include but are not necessarily limited to drainage patterns, drift lines, sediment deposition, watermarks, stream gauge data and flood predictions, historical records, visual observation of saturated soils, and visual observation of inundation.

Soils were considered hydric if one or more of the hydric indicators listed in the Corps' Regional Supplement are present. Indicators include the presence of organic soils, reduced, depleted, or gleyed soils, or redoximorphic features in association with reduced soils.

An evaluation of patterns of vegetation, soil, and hydrology was made along the interface of wetland and upland. Wetland boundary points were delineated and flagged for later survey. **Appendix C** contains data forms prepared by Talasaea for representative locations in both upland and wetland locations. These data forms document the vegetation, soil, and hydrology information that aided in the wetland boundary determination. **Appendix D** contains the DOE wetland rating forms.

# Chapter 4. RESULTS

## 4.1 Analysis of Resource Information

This section describes the results of our in-house research and field investigations.

### 4.1.1 National Wetland Inventory

The National Wetland Inventory map for the Mercer Island and Issaquah quadrangles does not map any wetlands on or adjacent to the Site. One wetland (a palustrine emergent, temporarily flooded wetland, PEMA) is mapped approximately 0.4 miles northeast of the Site.

### 4.1.2 Natural Resources Conservation Service

The Natural Resources Conservation Service maps two soil types on the Site (**Figure 3**). These are Beausite gravelly sandy loam 6-15% slopes and Alderwood-Kitsap soil, very steep. The Beausite gravelly sandy loam 6-15% slopes comprises approximately ¾ of the Site. The Alderwood-Kitsap map unit is located in the western third of Parcel A. Soils within the Beausite and Alderwood-Kitsap series are not considered to be hydric soils by the National Technical Committee on Hydric Soils.

### 4.1.3 King County Critical Areas Map

King County GIS maps three streams and no wetlands on the Site. One stream is mapped flowing onto the site from approximately the midpoint of the northern boundary for Parcel A. It flows in a southwesterly direction and exits the Site at the southwestern corner of Parcel A. This feature is consistent with the Project's Stream 1. One stream is mapped flowing onto the site near the northeast corner of Parcel A. It flows in a westerly direction and joins Stream 1 near where Stream 1 flows onto the Site. This feature is consistent with Stream 2. The third stream appears to flow across the southeast corner of Parcel B, then flows in a westerly direction roughly parallel with the south property boundary of Parcel B. This feature is consistent with Stream 3, though this stream was not delineated as occurring within the Site. Both Stream 1 and Stream 3 flow into Coal Creek. Coal Creek flows along portions of the western edge of the project site, partially occurring within the Site.


Copyright © 2019 Talasaea Consultants, Inc.

### 4.1.4 City of Bellevue Critical Areas Maps

The City of Bellevue GIS database maps three streams and no wetlands on the Site (**Figure 4**). The streams appear to be roughly analogous to those mapped by King County.

## 4.2 Analysis of Existing Site Conditions

Talasaea Consultants identified three wetlands and four streams on or adjacent to the Site (**Appendix E, Sheet W1.0**). The wetlands were delineated and marked in the field with surveyor tape. The OHWM of all four streams were delineated and identified with orange wire flags. The wetlands were labeled as Wetland A, Wetland AA, and Wetland B. Stream 1, Stream 2, and Coal Creek occur at least partially within the Site, while Stream 3 occurs adjacent to the southern Site boundary. Coal Creek receives water directly from Streams 1 and 3.

As discussed in **Section 2.2**, a potentially developable area of upland also exists on the Site, located to the west of Stream 1. Access to this western portion of the property would be challenging due to the ravine that contains Stream 1. Access to this portion of Parcel A from the north would require obtaining an access easement from the City of Bellevue Parks Department. The primary focus of this study is in the context of the larger developable area to the east of Stream 1 and adjoining ecological critical areas and their buffers; thus, minimal attention is given to the western portion of Parcel A, except to note that this portion provides significant value to wildlife and will be left as is.

### 4.2.1 Wetlands

***Wetland A***

Wetland A is a small (approximately 4,964 sf) depressional scrub-shrub wetland located within a terrace at the confluence of Streams 1 and 2 at the base of a deep (approximately 30 feet) steep-walled ravine. The wetland, itself, is relatively flat and level. However, there appears to be a remnant channel located against the slope that was ponded at the time of our site visit.

Wetland A is vegetated predominantly by salmonberry (*Rubus spectabilis*) and highbush cranberry (*Viburnum edule*), with lady fern (*Athyrium filix-femina*), piggyback plant (*Tolmea menziesii*), field horsetail (*Equisetum arvense*), and big-leaf sedge (*Carex amplifolia*) comprising the herbaceous stratum. Upland vegetation includes big-leaf maple (*Acer macrophyllum*), western red cedar (*Thuja plicata*), Indian plum (*Oemleria cerasiformis*), and sword fern (*Polystichum munitum*).

Soils within Wetland A are dark gray to dark grayish brown sandy loam. Redoximorphic features were present starting at six inches below the soil surface. The soil within the boundary of Wetland A satisfied the general requirements for the F3 (Depleted Matrix) hydric soil indicator.

Soils within the wetland were saturated to within one inch of the soil surface at the time of our site evaluation. The water table was observed at ten inches below the soil surface. Saturated soils during the growing season satisfies Hydrology Indicator A3 (Saturation).

It is possible that Wetland A could receive overland flooding from either of the two streams at a frequency of at least once every two years. However, the wetland also contains an area that permits ponding during parts of the growing season. Since it meets the general requirements for both a depressional and riverine wetland, it was rated as depressional, per the guidance provided on Item 8, Page 4 of the Wetland Rating Form for Western Washington (rev. 2006)[4].

Wetland A rated 16 points for Water Quality Functions, 12 points for Hydrology Functions, and 16 points for Habitat Functions. The Total Score for Functions is 44, which satisfies the

[4] As of the time of the writing of this report, Bellevue Land Use Code (20.25H.095.B) specifies that wetlands be rated using the *Washington State Wetland Rating System for Western Washington* Publication #04-06-025.


Copyright © 2019 Talasaea Consultants, Inc.

requirements for classification as a Category III wetland. Category III wetlands in the City of Bellevue with a Habitat Score of less than 20 have a 60-foot standard buffer.

***Wetland AA***

Wetland AA is a small (approximately 199 sf on-site) emergent wetland located adjacent to the OHWM of Stream 2. Approximately half of this wetland is on the Site. The wetland and stream are in a relatively deep (approximately 14 feet), steep-walled ravine. The wetland is relatively flat and level.

The wetland is sparsely vegetated with emergent plants. Plants include tall mannagrass (*Glyceria elata*), American brooklime (*Veronica americana*) and creeping buttercup (*Ranunculus repens*). However, most of the wetland lacked vegetation.

Soils within the wetland were consistent with recently deposited fine sand and silt. The soil has not had the opportunity to develop soil horizons or hydric soil characteristics due to its location within an active floodplain. Soils were saturated to the surface at the time of our site investigation.

We rated Wetland AA as a riverine wetland since it was adjacent to the OHWM of a stream and, by definition, receives hydrology by overland flooding at least once every two years. Wetland AA scored 6 points for Water Quality Functions, 2 points for Hydrology Functions, and 11 points for Habitat Functions. The Total Score for Functions is 19, which satisfies the requirements for classification as a Category IV wetland. Per §20.25H.095.B, Category IV wetlands in the City of Bellevue that are less than 2,500 sf in size do not have standard buffer requirements and are not regulated by City code.

***Wetland B***

Wetland B is a relatively small (approximately 41 sf) wetland located near the southwest boundary of Parcel B. It is an emergent slope wetland that generally drains to the southwest towards Coal Creek. Vegetation in Wetland B consists predominantly of various pasture grasses, *Equisetum* sp., creeping buttercup, and Nootka rose (*Rosa nutkana*). Hydrology for Wetland B appears to be supported, for the most part, by groundwater seepage and overland flow

Wetland B scored 12 points for Water Quality Functions, 6 points for Hydrology Functions, and 10 points for Habitat Functions. The Total Score for Functions is 28, which satisfies the requirements as a Category IV wetland. Per §20.25H.095.B, Category IV wetlands in the City of Bellevue that are less than 2,500 sf in size do not have standard buffer requirements and are not regulated by City code.

### 4.2.2 Streams

Four streams that could potentially affect site development were identified on or adjacent to the Site. Coal Creek forms a portion of the southwestern edge of the Site but is largely off-site. It will have a buffer that extends onto the southwestern portion of the Site. Stream 3 is located off property to the south of Parcel B but is sufficiently close to have a buffer extending onto the Site. Stream 1 flows within the aforementioned ravine in a southwesterly direction. Stream 2 flows in a westerly direction generally along the north property boundary of Parcel A from a culvert under Lakemont Boulevard SE. Stream 2 joins with Stream 1 where Stream 1 crosses Parcel A's northern property boundary.

Buffer widths for streams within the City of Bellevue are based on water typing. Buffers are measured landward from the top-of-bank. In some cases, the top-of-bank is synonymous with the OHWM. However, if a steep slope area (defined as greater than 33% slope) exists adjacent to a stream, then the stream buffer is measured from the point on the landscape where the slope is less than 33% for at least 50 linear feet.


Copyright © 2019 Talasaea Consultants, Inc.

***Coal Creek***

Coal Creek has its headwaters southeast of the site in the Cougar Mountain Park Natural Area and flows generally to the northeast through the Coal Creek Natural Area to Lake Washington. This stream has been affected by past mining in the area and by a realignment of the stream's mouth to a point approximately 1,200 ft. north of its historical location (based on an evaluation of legacy aerial photographs).

Coal Creek is a Type F water that supports salmonid habitat from its mouth at Lake Washington up to the location of a natural fish passage barrier approximately 760 to the northwest of the northwest corner of the Site (**Figure 5**). The natural fish passage barrier identified is a rockslide that has created a narrow channel choked with large rocks (**Photo 1**). This cascade is likely the same one identified as a fish passage barrier on the Washington State Department of Fisheries Catalog of Washington Streams and Salmon Utilization (Williams, Laramie, and Ames 1975).

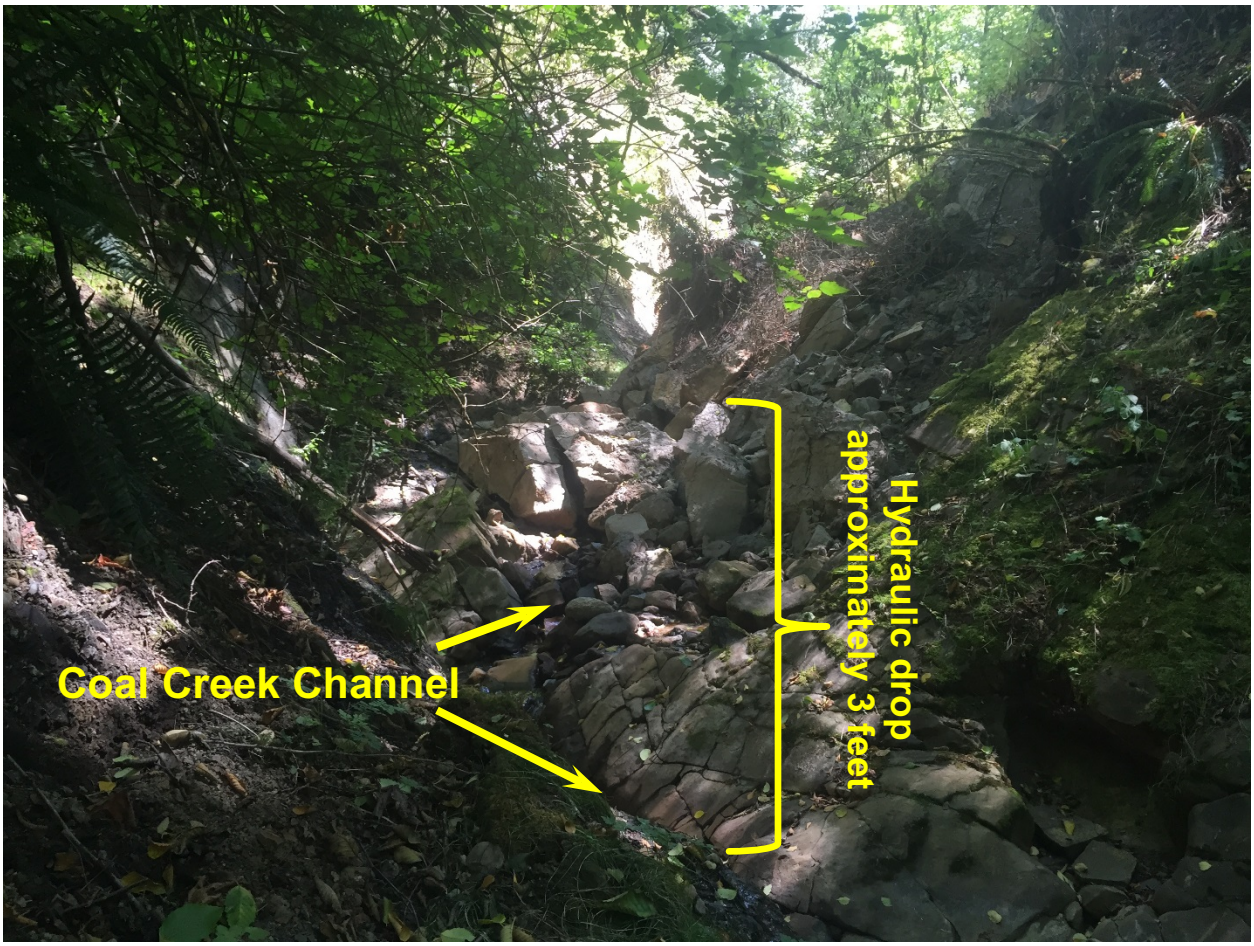



**Photo 1. Rockslide Fish Passage Barrier on Coal Creek.**
(Channel is blocked by large boulders. Water must flow through the interstitial spaces between the boulders and under the rock slab in the foreground. Little to no aboveground flow seen through the rockslide.)

The natural barrier is approximately 1,260 feet downstream of the point where the Coal Creek channel is at its closest to the Site. This point, where Coal Creek is closest to the Site, also corresponds to the location where Stream 1 flowing across the Site joins Coal Creek. We also noted during our reconnaissance of Coal Creek that its channel was dry upgradient of its confluence with Stream 1. We believe that Coal Creek upstream of the natural blockage does not contain resident fish. Coal mining in the area is thought to have extirpated any resident fish. However, no definitive studies have been conducted on fish presence upstream of the natural


Copyright © 2019 Talasaea Consultants, Inc.

blockage. Therefore, per the methodology used by the City of Bellevue under §20.25H.075.B.2, Coal Creek must be considered a Type F water based on stream habitat conditions. This is discussed in detail in the memorandum "Park Pointe Coal Creek Typing Study" (Confluence Environmental, April 19, 2017) (**Appendix F**). The physical characteristics of Coal Creek were found to have met the physical criteria for fish habitat in Western Washington per WAC 222-16-031(3). Type F waters in the City of Bellevue have a 100-foot standard buffer measured from the top-of-bank[5].

***Stream 1***

Stream 1 is a perennially flowing stream that drains a large basin (approximately 1,480 acres) located on the south side of Newport Hill and Cougar Mountain. This is the stream identified in the paragraph above as providing perennial flow to Coal Creek.

The City of Bellevue GIS database identifies this stream as 0276A and gives it a water type of PF. The City does not provide metadata with their GIS data. Therefore, we do not know exactly what this "PF" designation stands for.

The stream is fed by groundwater rich in dissolved iron. The streambed across the property was coated by a thick layer of oxidized iron deposits. These deposits are also easily seen on **Photos 2, 3**, and **4** (below). Studies have shown that high levels of oxidized iron in a stream significantly reduce the presence of aquatic macroinvertebrates and can be damaging to fish gills (Gerhardt and Westermann 1995; Johnson and Ritchie 2003; Peuranen *et al*. 1994; Vuori 1995). The heavy iron precipitates we observed in Stream 1 likely preclude the potential of resident fish populations in the stream.

The point where Stream 1 leaves the Site is a large natural waterfall over a rock formation (**Figure 5** and **Photos 2** and **3**). This waterfall is a natural feature and constitutes a natural fish passage barrier. Since Stream 1 likely has no populations of resident fish and no opportunity for resident fish populations in Coal Creek (if any) to access the stream, we have rated Stream 1 as a Type N water. Type N waters in the City of Bellevue have a 50-foot standard buffer measured from the top-of-bank.

[5] Top-of-bank is defined by the City of Bellevue as "[t]he point closest to the boundary of the active floodplain of a stream where a break in the slope of the land occurs such that the grade beyond the break is flatter than 3:1 at any point for a minimum distance of 50 feet measured perpendicularly from the edge." Alternatively, the top-of-bank is also defined "[f]or a floodplain area not contained within a ravine, the edge of the active floodplain of a stream where the slope of the land beyond the edge is flatter than 3:1 at any point for a minimum distance of 50 feet measured perpendicularly from the edge."


Copyright © 2019 Talasaea Consultants, Inc.

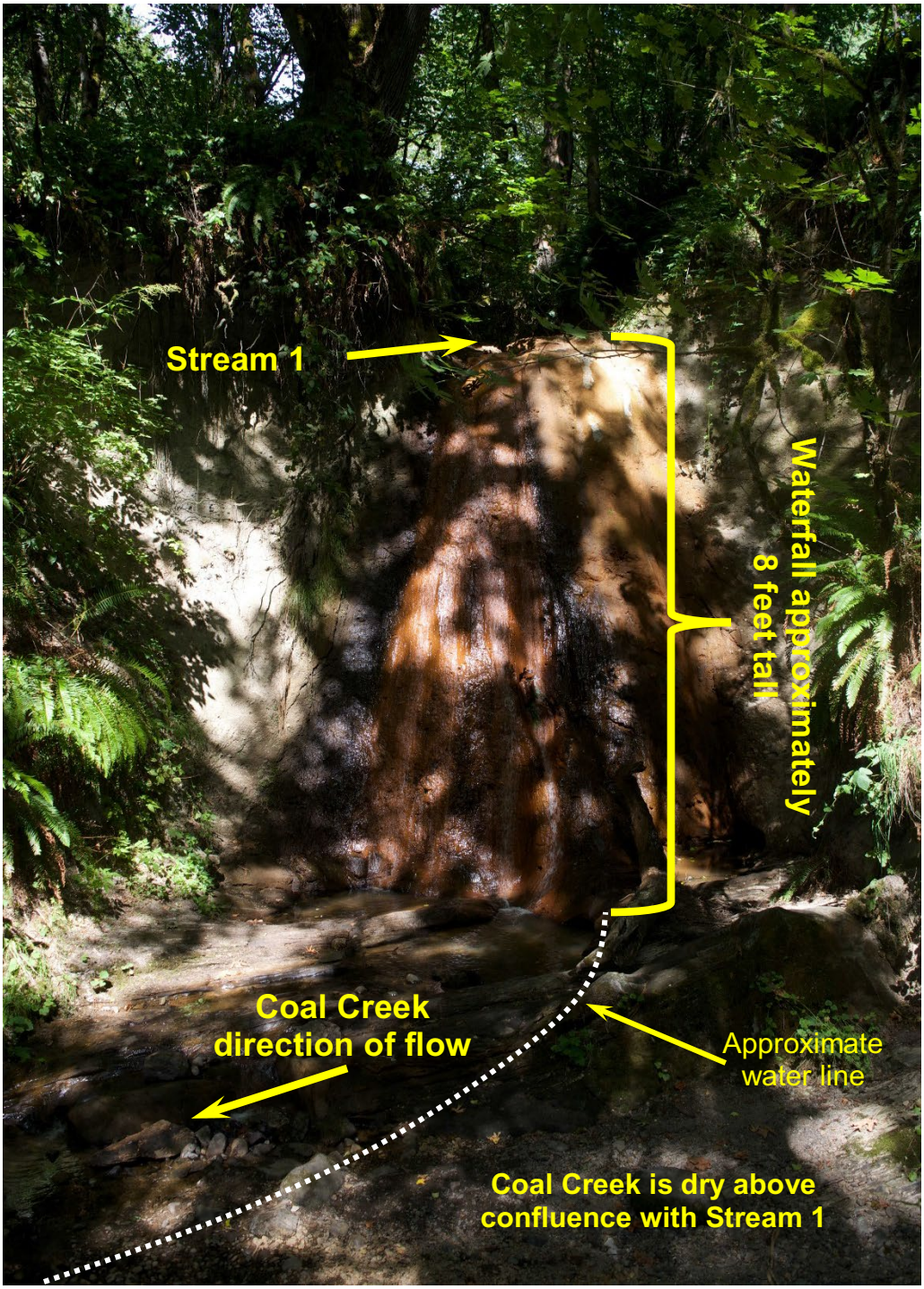



**Photo 2. Natural Cascade of Stream 1 at Coal Creek.**
(Confluence of Stream 1 with Coal Creek starts the summertime extent of aboveground flow within Coal Creek. Coal Creek channel upgradient of this confluence is well defined, but completely dry.)


Copyright © 2019 Talasaea Consultants, Inc.




**Photo 3. Top of Stream 1 Cascade on its East Side.**
(Photo taken near top of cliff face.)


Copyright © 2019 Talasaea Consultants, Inc.




**Photo 4. Heavy Deposits of Precipitated Iron in Stream 1.**

***Stream 2***

Stream 2 is a perennial tributary of Stream 1 and is identified by City of Bellevue as 0276A-5 with a water type of PF. Stream 2 drains a small basin (approximately 80 acres) on the west side of Cougar Mountain. It crosses under Lakemont Boulevard SE through a four-foot diameter round concrete culvert. The culvert is approximately ¼ full of natural streambed gravel and appears to have no obstructions within it. The culvert is located north of the northeast property corner for Parcel A. Stream 2 flows in a westerly direction to the north of the Site for approximately 70 feet before entering the Site. Stream 2 then flows in a westerly direction for approximately 235 feet to Stream 1. The confluence of Stream 2 with Stream 1 is located approximately at the midpoint along the north boundary of Parcel A.

The iron loading on streambed material observed in Stream 1 does not appear on the streambed material for Stream 2. However, Stream 2 does have a natural steep gradient (approximately 17.5% based on LIDAR data) from its confluence with Stream 1 to a point approximately 125 feet to the east. The maximum gradient measured is approximately 30% over 75 feet starting at a point 50 feet east of the confluence of Stream 2 with Stream 1. Since there is a natural stream gradient greater than 16% on Stream 2 and the demonstrated lack of fish habitat in Stream 1, we conclude that Stream 2 is also a Type N water. Type N waters in the City of Bellevue have a 50-ft standard buffer measured from the top-of-bank.

***Stream 3***

Stream 3 is a small drainage located south of Parcel B. The City of Bellevue GIS database identifies it as 0276B with a water type PF and maps it crossing Parcel B at the parcel's southeast corner. We investigated the southeast corner of Parcel B thoroughly during our 6


Copyright © 2019 Talasaea Consultants, Inc.

August 2015 site evaluation and found no signs of a stream channel or pipe in that location. We did notice a deep, well-vegetated ravine existing along the south property boundary.

Stream 3 is conveyed underneath Lakemont Blvd SE through a pipe, which is located approximately 14 feet south of the southeast corner of the Site. Stream 3 then flows within a deep ravine for approximately 430 feet before commingling with Coal Creek.

We were able to determine using analysis of LIDAR data that the average gradient of Stream 3 from its confluence with Coal Creek to a point approximately 240 feet to the east is greater than 16%. The maximum slope is approximately 22% from the confluence of Stream 3 with Coal Creek to a point approximately 79 feet east.

Since Stream 3 is likely ephemeral and upstream of a natural fish passage barrier on Coal Creek (which is also ephemeral upstream of its confluence with Stream 1), we conclude that Stream 3 is a Type N water. Type N waters in the City of Bellevue have a 50-ft standard buffer measured from the top-of-bank.

### 4.2.3 Western Upland Area

The portion of the site west of the primary development area is worthy of brief description, although no impacts are planned in this area. This area is upland and contains approximately 2.9 acres (127,942 sf) of the total site. Of that amount, 0.5 acres (23,675 sf) are potentially developable, being located outside the standard critical area buffers and a restrictive easement already imposed on the Site. This is illustrated in the Mitigation Plans in **Appendix E**, on **Sheets W1.0 and W1.1**.

The upland area occurs within the northwest corner of Parcel A and is located between the northern property boundary and the main stem of Coal Creek. This area contains the remnants of old coal tailings in a relatively small area. Typical vegetation within this area includes big leaf maple, Douglas fir, vine maple, salal, sword fern, and salmonberry. Himalayan blackberry is also present, primarily over the old coal tailings where less hardy plants have trouble establishing themselves. This upland area is contiguous with the Coal Creek Natural Area and will provide important regional habitat value as a wildlife corridor maintained in its existing state.

### 4.2.4 Habitat Evaluation

We performed an evaluation of potential habitat on the Site using the City of Bellevue's Urban Wildlife Habitat Functional Assessment Model (The Watershed Company 2010) as part of a habitat assessment of the property. The Bellevue Urban Wildlife Habitat Functional Assessment Model assesses and rates the ability of a property within the City limits to provide usable habitat for wildlife. The datasheets for the existing conditions analysis are included in **Appendix G**. The Site scored 41 points for potential habitat function, which indicates that the property has high habitat value potential for wildlife, including species of local importance.

Section VIII of the Critical Areas Overlay District (COB §LUH 20.25H) deals with habitat associated with species of local importance. This list is included in **Table 1** below along with an analysis of the likelihood of a species presence on the Site.

**Table 1. Species of Local Importance (LUC 20.25H.150)**

| Scientific Name | Common Name | Likelihood of presence | Rationale for Presence |
|---|---|---|---|
| *Haliaeetus leucocephalus* | Bald Eagle | Migration only | Tall trees on the property might provide roosting habitat. However, the property is in a relatively low spot on the landscape and does not provide suitable perching habitat or prey base. It is most likely that bald eagles might use the property during annual migrations. |


Copyright © 2019 Talasaea Consultants, Inc.

| Scientific Name | Common Name | Likelihood of presence | Rationale for Presence |
|---|---|---|---|
| *Falco peregrinus* | Peregrine falcon | No | Peregrine falcons are likely to utilize open country with suitable cliffs for roosting and nesting. Alternatively, they may utilize the downtown commercial areas of major cities. The subject property, however, does not provide suitable habitat for peregrine falcon. |
| *Gavia immer* | Common loon | No | Common loons are unable to walk on land and require open water (large rivers, lakes, and ponds) for suitable habitat. There are no such habitat types near the subject property. |
| *Drycopus pileatus* | Pileated woodpecker | Yes | Pileated woodpeckers require relatively large tracts of mature forest with a significant number of dead or dying trees. Standing snags of suitable diameter serve both as sites of nesting cavities and for insects, which comprise its diet. The subject property is connected to other large tracts of relatively mature forest. |
| *Chetura vauxi* | Vaux's swift | No | Vaux's swift require old-growth forests with hollow trees or abandoned chimneys for nesting and roosting. The forest on the subject property does not have the essential characteristics to support Vaux's swift. |
| *Falco columbarius* | Merlin | Low to very low Probability | Merlin generally prefer open country to dense forest. However, there may be enough open ground in the form of pasture on the site for them to find suitable habitat. |
| *Progne subis* | Purple martin | Low to very low Probability | Purple martins typically require open space and the presence of artificial nesting boxes (gourds, martin houses, etc.). The subject property does not have suitable nesting available. |
| *Aechmophorus occidentalis* | Western grebe | No | Like the common loon, western grebe are unable to walk on land and require open water in the form of large rivers, lakes, or ponds for suitable habitat. There are no large rivers, lakes, or ponds near the subject property. |
| *Ardea herodias* | Great blue heron | Low to very low Probability | Great blue heron require wetlands, ponds, lakes, or streams for suitable habitat. The streams on the subject property are likely too small to provide a population of prey species for great blue heron. It is possible that the forested areas in the vicinity of the subject property could be used as a heron rookery. However, there are no records of heron using the subject property or areas within the general vicinity as a rookery. |
| *Pandion haliaetus* | Osprey | Low to very low Probability | Osprey are piscivorous eagles and must be near large rivers or lakes. The subject property is not located near suitably large rivers or lakes. |


Copyright © 2019 Talasaea Consultants, Inc.

| Scientific Name | Common Name | Likelihood of presence | Rationale for Presence |
|---|---|---|---|
| *Butorides striatus* | Green heron | No | Green heron require wetlands, lakes, or other shallow water areas. No such habitat exists on or near the subject property. |
| *Buteo jamaicensis* | Red-tailed hawk | Yes | The open pasture area of the subject property likely provides a population of suitable prey species while the trees along the edges of the pasture provide suitable perches and potential nest trees. |
| *Plecotus townsendii* | Townsend's big-eared bat | Potentially present | Townsend's big-eared bat will utilize many different types of habitats, but the habitat must be near caves. Old mines suffice as caves for diurnal roosting. The Coal Creek area is known to have several old coal mines that may be used by Townsend's big-eared bat, including known mining activities in the general vicinity of the subject property. |
| *Myotis keenii* | Keen's myotis | Potentially present | Keen's myotis, like Townsend's big-eared bat, requires caves, tree cavities, or loose bark for suitable roosting habitat. Tree cavities, or trees with loose bark, are indicative of more mature forests. There is likely suitable roosting habitat in the general vicinity of the subject property |
| *Myotis volans* | Long-legged myotis | Low to very low Probability | Long-legged myotis is a more montane-adapted species and more likely present at elevations over 4,500 feet. |
| *Myotis evotis* | Long-eared myotis | Potentially present | Long-eared myotis have similar habitat requirements as Keen's myotis and may be present in the general vicinity of the subject property |
| *Rana pretiosa* | Oregon spotted frog | No | Oregon spotted frogs are seldom found away from standing water, such as wetlands, lakes, or slow-moving streams. No such habitat exists in the general vicinity of the subject property. |
| *Bufo boreas* | Western toad | Low to very low Probability | Western toads prefer grasslands or meadows that are near ponds. There are no ponds in the general vicinity of the pastures on the subject property. |
| *Clemmys marmorata* | Western pond turtle | Low to very low Probability | Western pond turtles have been mostly extirpated from King County. Their preferred habitat includes lakes, ponds, wetlands, and slow-moving streams. This type of habitat is not provided on the subject property. |
| *Oncorhynchus tshawytscha* | Chinook salmon | Low to very low Probability | Coal Creek and the stream on the subject property may provide habitat for chinook salmon, but a natural impediment to migration exists downstream. |


Copyright © 2019 Talasaea Consultants, Inc.

| Scientific Name | Common Name | Likelihood of presence | Rationale for Presence |
|---|---|---|---|
| *Salvelinus confluentus* | Bull trout | Low to very low Probability | Bull trout prefer streams with very cold water. These are typically headwater streams fed by glacial meltwater. The stream on the subject property likely does not meet bull trout preferred temperature requirements. Bull trout are known to migrate within and between WRIAs. However, the same downstream blockage that prevents chinook salmon from migrating to the subject property likely prevents bull trout migration as well. |
| *Oncorhynchus kisutch* | Coho salmon | Low to ery low Probability | The same downstream natural blockage that prevents migration of chinook salmon to the subject property will also prevent coho salmon from also migrating to the site. |
| *Entosphenus tridentatus* (formerly *Lampetra tridentatus* or *L. ayresii*) | River lamprey | Low to very low Probability | Current maps of river lamprey populations indicate that these fish are not typically found in King County. |

The relatively high score for habitat on the Site is not surprising considering the forested ravine and extensively forested areas to the north and west of the subject property. The mowed fields and disturbed areas around structures on the site, themselves, would not warrant the high rating and are areas where wildlife is less likely to utilize the spaces for their lifecycle functions, including travel from one area to another. Migration through the site would occur largely along stream corridors, in heavily forested areas, and to a lesser extent in the edge zone between the fields and forest.

Of the list of species of local importance provided on **Table 1**, only six were determined as having any likelihood of being present on the Site, and that likelihood is typically low to very low. These species are bald eagle (migration only), pileated woodpecker, red-tailed hawk, Townsend's big-eared bat, Keen's myotis, and the long-eared myotis. Townsend's big-eared bat is a Federally-listed species of concern and a State-listed candidate species. Pileated woodpecker is a State-listed Candidate species. Protecting areas with mature forests (forests with significant numbers of dead or dying conifers and soft-wood deciduous trees) provides habitat for these six species and habitat for a multitude of other species not currently included on Federal or State priority species lists.

We performed an additional assessment of the potential impact to merlin and red-tailed hawk habitat as a result of the potential loss of pasture as foraging habitat. We limited our assessment to an area approximately ½ mile around the Site ("Assessment Unit"). The Assessment Unit is approximately 503 acres in size. Of that 503-acres, approximately 34.7 acres (7 percent of the total Assessment Unit) represents potential open area that might be used by either red-tail hawks or merlins as foraging habitat. The Site contains approximately 4.8 acres of the approximately 34.7 acres of potential foraging habitat (**Figure 6**). This constitutes approximately 14 percent of the potential foraging habitat and less than one percent of the Assessment Unit. We are sensitive to the concept that, while the loss of potential foraging habitat is relatively small within the Assessment Unit, continued small losses of potential foraging habitat over a larger area could lead to significant losses of habitat for red-tailed hawk and merlin.


Copyright © 2019 Talasaea Consultants, Inc.

At this point, it is important to note that, nationwide, populations of merlin and red-tail hawks are seen as stable and increasing ("Red-Tailed Hawk" 2014; "Red-Tailed Hawk" n.d.). This is despite the burgeoning human population of the United States and the increases in urban landscape as cities expand and develop. Both red-tail hawk and merlin appear to be adapting to other artificially-maintained habitat areas, such as grassy areas along roadways (Speiser and Bosakowski 1988; Minor and Minor 1993).

## 4.3 Existing Conditions of Upland Buffers

The following paragraphs will discuss the historical uses of the subject property and the current ability of the standard buffer widths to provide protections to the streams and wetlands.

### 4.3.1 Historical Perspective

As discussed in **Section 2.2.1**, the Site had been significantly altered and impacted by coal mining. The northern portion of the ravine containing Streams 1 and 2 appears to have been logged prior to 1936, with significant areas of grading and impact along the right bank of Stream 1 and both banks of Stream 2, ostensibly from coal mining operations that were present at the time. Since then, the ravine has grown back with a relatively even-aged stand of red alder, black cottonwood, and big-leaf maple. There are very few conifers within this portion of the ravine forest, with young western redcedar being the dominant conifer present. The existing stream buffers are, therefore, mostly early successional. Big-leaf maples are a relatively long-lived species of tree. However, red alder and black cottonwood are considered early successional and short-lived, generally in the range of 80 to 120 years. Over time, these early successional trees will die, and the forest should transition from deciduous-dominated to a more conifer-dominated forest. A conifer-dominated forest consisting of Douglas fir, western hemlock, and western redcedar was likely present on the site prior to European colonization.

### 4.3.2 Functions and Services Provided by the Existing Stream Buffers

Buffers serve to provide protection to critical areas from development, as well as provide habitat for a variety of birds and other animal species. Outside of the human development context, buffers do not serve an ecological purpose. How buffers provide habitat services to critical areas has not been thoroughly researched, although much is known about the ability of a buffer to protect aquatic resources from human impacts, such as pollution, light, and noise. Buffers do provide a first line of water quality improvements, a limited amount of hydrological support, and habitat value for wildlife. The ability of a buffer to provide water quality services is relative to the average slope of the buffer, the soil composition, and the types and density of vegetation present. The ability of a buffer to provide habitat is relative to the habitat requirements of specific species. Finally, buffers serve to protect a critical area from disturbances caused by humans, such as light, noise, and intrusions that disrupt normal wildlife activities.

Habitat provided by a buffer is dependent upon the wildlife species one is considering and its dependence on the critical area being protected. Large mammal species may require larger relatively undisturbed areas adjacent to a critical area for its habitat needs. The fragmentation or shape of undisturbed habitat plays a key component on how a species perceives its value. Knowing the species that currently utilize a critical area is important in determining an appropriate buffer width.

The buffer also protects the on-site streams from impacts from human development, such as stormwater runoff, toxic runoff, noise, and light. The existing buffer does not have much opportunity to provide these water quality functions due to the current topography of the subject property.

### 4.3.3 Existing Stream Buffer Conditions – Above the Top-of-bank

The existing stream buffers measured per code from the top-of-bank, are degraded. A network of wide trails has been cut through the existing vegetation along the top-of-slope. This network of trails extends away from the top-of-slope. The trails appear to be maintained on an


Copyright © 2019 Talasaea Consultants, Inc.

infrequent basis by mowing. The vegetation within the trails is predominantly grass with non-native blackberries becoming established along the edges of the mowed areas. Trash, debris, and an old car chassis exist within these disturbed portions of the buffers. The edge of the disturbance along the top-of-slope is mostly vegetated with non-native blackberry. The remainder of the stream buffer that is not currently impacted by mowing is vegetated with invasive non-native blackberry and successional young to middle-aged red alder trees.

By contrast, the vegetation along the left bank of Stream 1 is relatively diverse and is continuous for many thousands of feet. The value of the habitat provided along the left bank of Stream 1 far exceeds that of the right bank on the subject property by any metric. There are clear differences in quality of available habitat between buffers adjacent to the developed and managed areas and those buffers that abut other native vegetation.

We believe that three functional components of the existing buffer along are important to consider with respect to the proposed development:

1. The existing patterns of disturbance within the buffer;
2. The existing environmental conditions of the steep slope area; and
3. The functions and services provided by the buffer in its existing condition

### 4.3.4 Existing Stream Buffer Conditions – Below the Top-of-bank

The steep slope area of the right bank of Stream 1 and both banks of Stream 2 (on the subject property) were cleared of vegetation by 1936 as a result of ongoing coal mining activities. It is not known how long after 1936 the steep slope areas remained unvegetated. In any case, vegetation was able to re-establish itself in the intervening years. By 1968 (the next year of available aerial imagery), the steep slope areas appear forested. Currently, the vegetation along the previously cleared stream banks consists of an even-aged stand of young big-leaf maple, young red alder, and black cottonwood, with a few scattered western redcedar trees. The understory consists of scattered salmonberry, non-native blackberry, and sword fern. There are considerable piles of large woody debris on the slopes in several areas, including some near the top-of-slope of the areas with the steepest slopes. We believe that some of these woody debris piles may have been the result of tree cutting or pruning in the past.

### 4.3.5 Existing Patterns of Buffer Disturbance

The areas of disturbance include an approximately eight- to ten-foot swath that extends outward from the top-of-slope. Vegetation within the area of disturbance consists predominantly of grasses with some annual ferns (bracken fern). Mowing likely occurs at least once a year. Himalayan blackberry is prominent along the edges of the mowed areas. Pockets of forested vegetation are interspersed around the trail network. However, the vegetation within these forested areas consists predominantly of relatively young red alder trees, some native shrubs, and non-native blackberry.

Recent disturbances within this impact area include the remains of a car. This car was not present during our 2015 site evaluation. Other signs of disturbance include trash and debris.

There are currently no restrictions (by fence or vegetation) preventing people or pets from accessing the impacted buffer area. Dr. Thomas Hruby (Washington Department of Ecology, retired) noted in his wetland rating documents (Hruby 2014) that intrusion into buffers by people or pets creates significant stress on wildlife that is present. The potential for disturbance by people, pets, and machinery significantly reduces the ability of the standard 50-foot buffer to provide habitat for many species of wildlife.


Copyright © 2019 Talasaea Consultants, Inc.

# Chapter 5. ANALYSIS OF CRITICAL AREAS REGULATIONS

## 5.1 City of Bellevue

Critical areas on the project site are subject to the regulations of Bellevue Land Use Code (BLUC) Part §20.25H. This section contains standards and requirements for the protection of designated critical areas and defines permissible uses within the Critical Areas Overlay District. BLUC §20.25H Section III establishes allowed alterations within the Critical Areas Overlay District. BLUC §20.25H Section IV establishes standards and requirements for protection of streams, Section V establishes standards and requirements for protection of wetlands, Section VI establishes standards and requirements for protection of shorelines, and Section VIII establishes standards and requirements for protection of habitat associated with species of local importance. Section XII of BLUC §20.25H provides the purpose, submittal requirements, and reporting requirements for Critical Areas Reports for projects that may alter or impact critical areas of their buffers.

Development on sites that have wetlands or wetland buffers shall also incorporate where applicable the performance standards provided in BLUC §20.25H.080, which are listed below. The following guidelines are also being applied to the on-site stream buffers for this project.

A. "Lights shall be directed away from the wetland. Lighting levels shall meet the outdoor lighting standards for spillover into critical areas, per BLUC §20.25H;
B. Activity that generates noise such as parking lots, generators, and residential uses, shall be located away from the wetland, or any noise shall be minimized through use of design and insulation techniques;
C. Toxic runoff from new impervious surface area shall be routed away from the wetlands;
D. Treated water may be allowed to enter the wetland critical area buffer;
E. The outer edge of the wetland critical area buffer shall be planted with dense vegetation to limit pet or human use;
F. Use of pesticides, insecticides, and fertilizers within 150 feet of the edge of the stream buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended."

The project will implement several of the mitigation measures listed above as follows (**Table 2**):

**Table 2. Summary of Proposed Mitigation Performance Standards**

| Examples of Disturbances | Measures to Minimize Impacts |
|---|---|
| **Lights** | Street and security lighting will be placed so that illumination is directed away from the buffer. |
| **Noise** | Planting of dense vegetation specified for mitigation of light-related impacts will also ameliorate impacts due to noise. |
| **Toxic Runoff** | Operational covenants will stipulate that no pesticides or herbicides will be used within 150 feet of the stream buffer (the use of herbicides to control non-native, invasive species in the course of routine mitigation monitoring and maintenance will be allowed as described in the Mitigation Plan). Road runoff will be collected and transferred to the project's on-site stormwater treatment and detention facilities. |
| **Stormwater runoff** | All road runoff will be detained and cleaned by the proposed stormwater system for the project. |
| **Pets and Human Disturbances** | Buffer areas will be permanently protected by fencing to help prevent human and pet intrusions into the buffer, and the buffer areas (will be placed in a separate Natural Growth Protection Area (NGPA), per City requirements. |

Stream buffers may be modified through the code provisions in §20.25H.075.C.2. This code provision describes the requirements necessary for buffer averaging. Averaging the buffers was


Copyright © 2019 Talasaea Consultants, Inc.

reviewed; however, it was discovered that buffer averaging would not be possible on-site due to the physical constraints of the property while still achieving an economically viable project design. Section §20.25H.075.C.2 notes that modifications to stream buffers that do not meet the criteria for buffer averaging may be considered through a critical areas report, as stated below:

> "Modifications to the stream critical area buffer that do not meet the criteria of this subsection may be considered through a critical areas report."

The reductions are defined further under §20.25H.090 Critical Areas Report – Additional Provisions, subsection A – Limitations on Modifications. This provision states:

> "A stream critical area buffer shall not be modified below the widths set forth in this section, measured from the top-of-bank:"

In the table that follows, it indicates that a Type F stream has a minimum allowable buffer of 25 feet, while a Type N stream has a minimum allowable buffer width of 10 feet.

As we understand these code provisions, reducing the buffer using this code provision must be supported by a mitigation plan that provides a substantial benefit to habitat and other buffer functions compared to the standard buffer width measurement.

### 5.2 State and Federal Regulations

#### 5.2.1 Washington State Regulations

Critical areas (wetlands and streams) on the Site are subject to regulation at the State level primarily by the following statutes:

- State Water Pollution Control Act (administered by DOE)
- Section 401 of the Federal Clean Water Act (administered by DOE)
- Hydraulic Code of Washington (administered by WDFW)

DOE uses Section 401 State Water Quality Certification (WQC) as the primary mechanism for implementing the provisions of the State Water Pollution Control Act. Section 401 WQC is typically issued in conjunction with Section 404 permits from the U.S. Army Corps of Engineers (Corps). Any impacts to the on-site streams would also be regulated under the Hydraulic Code of Washington as part of the Hydraulic Project Approval (HPA) permit process. It should be noted that an HPA would likely be required for an off-site impact of constructing utility crossings over or under Stream 2, to be in the Lakemont Boulevard SE ROW. This work does not affect the critical areas on the Site, and any potential impacts would be addressed by the State in its permit requirements.

#### 5.2.2 Federal Regulations

Critical areas (wetlands and streams) on the Site are also subject to Federal regulations under Section 404 of the Clean Water Act. The Corps is responsible for administering compliance with Section 404 via the issuance of Nationwide or Individual Permits for any fill or dredging activities within wetlands or streams. No direct impacts (filling or dredging) to wetlands or streams are being proposed in this project.

## Chapter 6. SITE DEVELOPMENT PLAN

Isola Real Estate 111, LLC has chosen to develop the property using the PUD code for the City of Bellevue. Developing the Site as a PUD provides more flexibility in building layout, setback requirements, and reductions in setback dimensions. This progressive PUD proposes to preserve and restore on-site habitat while supporting a low-impact designed development. The development proposal seeks to contain development on the flatter land adjacent to Lakemont Boulevard SE. The development will consist of 35 single-family residences with associated


Copyright © 2019 Talasaea Consultants, Inc.

roads, trails, and utilities (**Sheets W1.1-1.2**). About 5.98 acres (260,581 sf) of the approximately 12.29-acre Site will be developed. The remainder of the Site {approximately 6.31 acres (274,642 sf)} will remain undeveloped as permanent open space. No direct impacts to wetlands or streams are proposed. Minor modifications to standard buffers are proposed with accompanying buffer enhancement.

PUDs have long been appreciated for allowing developers and cities to deviate from standard zoning and development regulations on large properties in exchange for site-specific open space conservation, innovative site design, and other design treatments and critical area enhancements. To develop as a PUD by reducing setbacks to the minimum width practicable, it was found to be necessary to reduce the buffers for Streams 1, 2, 3, and Coal Creek. The proposed site plan is the result of several design iterations to reduce the magnitude of the buffer impacts to the greatest extent while maintaining project goals and achieving improved buffer function. Replacement buffer areas and extensive buffer enhancement will be provided for all streams to compensate for the proposed buffer reductions.

The proposed site development plan is innovative in providing the allowable development while avoiding impacts to the maximum extent practicable. The development includes embracing the natural features of the buffers as amenities to the community. A limited access pedestrian trail will interlink the community with other trails and resources in the area, such as Coal Creek Natural Area. The portion of the site proposed to be developed is not of high habitat value in its existing condition, but rather is largely disturbed by a history of mining, agriculture and other uses. The hydrology of the site will be maintained, and stormwater runoff from the future residential area will be treated prior to entering the natural environment. Native plants are to be used in the landscaping of the site to improve habitat value for the benefit of local wildlife species (birds, primarily) that may interact between the critical areas and built environment. The perimeter of the disturbed area will be enhanced to improve habitat values and buffer conditions, as described in **Chapter 8**, and illustrated in the Critical Area Conceptual Mitigation Plans in **Appendix E.**

Homes will be built using green construction technology that delivers energy conservation and long-term stewardship. Smaller lot sizes with smaller homes will allow more affordable family housing for Bellevue. In addition, the PUD will provide access to the regional trail system located along the Coal Creek Natural Area. This property of plateaus, hills, and slopes naturally creates important protective buffers to the streams; however, the buffers have been considerably degraded from decades of agricultural and residential use. The proposed mitigation will remove the invasive species common throughout the stream and wetland buffers, as well as the rusted mechanical equipment found during site evaluations. These areas of debris and invasive species removal will then be replanted with native trees and shrubs attractive for wildlife. These measures will help restore the slopes to highly desirable long-term habitat areas.

LID techniques that have become standard building practices are extensively incorporated into the PUD development. The proposed development reduces the amount of new impervious surfaces by utilizing shortened driveways and pervious pavement materials. Proposed houses will be clustered in groups of two and four units, utilizing shared driveways to reduce new impervious surfaces. The clustered home units integrate with open spaces with additional connectivity to protected habitat through the use of soft surface trails. The proposed trails will connect to existing public trails in the Coal Creek Natural Area.

PACE Engineers has designed a stormwater management system for the proposed development that will integrate both low-impact development concepts and enhanced stormwater treatment. The following are characteristics of the stormwater management plan:


Copyright © 2019 Talasaea Consultants, Inc.

- Clean rooftop runoff will be infiltrated to the extent practicable along the stream buffer boundary;
- A detention vault capable of detaining greater than 90,000 cubic feet of runoff will handle most of the wintertime stormwater runoff;
- Discharge from the stormwater vault will be treated using an advanced treatment cartridge filtration system; and
- Treated stormwater will be released via a gravity outlet pipe that discharges into Coal Creek above the ordinary high-water mark.

The development plan has been designed to avoid direct impacts to wetlands or streams on the Site. However, the location of stream buffers and building setbacks, as measured from the top-of-bank, extend well into existing degraded site conditions. Preserving these degraded buffer areas intact will likely not provide the buffer functions of a modified and enhanced reduced buffer. Reductions to buffer width, in combination with enhancing/restoring habitat, result in improved function of the remaining buffer. Buffer reductions are consistent with maintaining the site stability of the development. See the reports prepared by Geotech Consultants, Inc. (**Appendix A1** and **A2**) for more information regarding the steep slopes and other geological conditions of the site.

## Chapter 7. ASSESSMENT OF DEVELOPMENT IMPACTS

No direct impacts to the wetlands or streams are proposed with this Project. The Project is proposing reduced buffer widths for the streams and steep slopes to accommodate the development footprint, as well as minor buffer encroachments for City-required right-of-way improvements along Lakemont Blvd SE. In addition, a soft-surface trail will be constructed in the buffer to connect to an existing trail system in the Coal Creek Natural Area and construction of a gravity flow stormwater discharge pipe will result in impacts to buffers due to open trenching, manholes, & a gabion basket energy dissipator (**Table 3**). No reduction is proposed for the wetlands, or wetland buffers.

**Table 3. Proposed Buffer Impacts**

| Proposed Buffer Impacts | Area (sf) | %* |
|---|---|---|
| | | |
| Reduced Stream Buffer for Right-of-Way Dedication | 114 | 0.04% |
| Reduced Stream Buffer | 10,256 | 3.9% |
| Reduced Steep Slope Buffer | 3,975 | 1.5% |
| Combined Reduced Stream & Steep Slope Buffer | 7,230 | 2.7% |
| **Total Buffer Reduction Impacts** | **21,575** | **8.14%** |
| Soft-surface Trail | 2,161 | 0.82% |
| Gabion Basket Energy Dissipator & Manholes | 117 | 0.04% |
| Temporary Construction Impacts for Stormwater Outfall Open Trenching | 2,706 | 1.0% |
| **Total Construction Related Impacts** | **4,984** | **1.86%** |

* Total standard buffers on the site pre-development is 264,349 sf (100%).

The City of Bellevue municipal code, under §20.25H.230, allows for such reductions through a critical areas report, which provides the rationale justifying the change. The approach proposed in this report measures the proposed buffer reduction against a combination of buffer replacement and extensive buffer enhancement and re-establishment. This chapter measures


Copyright © 2019 Talasaea Consultants, Inc.

the scale of the impacts. The areas of proposed buffer impacts are illustrated in the Critical Areas Conceptual Mitigation Plans in **Appendix E**. A review of applicable codes relative to this proposal is included in **Appendix I**.

### 7.1 Dimensional Impacts to Stream Buffers

The standard buffers that apply to the site described in the existing conditions are illustrated in **Sheet W1.0** of **Appendix E**. Because of steep slopes along all four of the streams, measurement of stream buffer begins at the top-of-bank for all four streams. In §20.50.048 of the Bellevue's Land Use Code, top-of-bank is defined as:

A. "The point closest to the boundary of the active floodplain of a stream where a break in the slope of the land occurs such that the grade beyond the break is flatter than 3:1 at any point for a minimum distance of 50 feet measured perpendicularly from the break; and

B. For a floodplain area not contained within a ravine, the edge of the active floodplain of a stream where the slope of the land beyond the edge is flatter than 3:1 at any point for a minimum distance of 50 feet measured perpendicularly from the edge:

The City of Bellevue specifically recognizes that steep slopes adjacent to streams provide habitat value requiring protection. Measuring the stream buffer from the top-of-bank, according to code, provides water quality and hydrology protection to the stream[6]. The resultant protected width for a stream, therefore, often exceeds the standard stream buffer width itself. We believe that the steep-sloped areas provide buffer functions that should not be discounted, and this function may be improved with enhancements.

As stated in **Chapter 6** above, it will be necessary to reduce the standard stream buffer width in certain places for all the on-site streams (**Sheet W1.1, Appendix E**). The purpose of this buffer reduction is to allow for the development of the site in a logical manner, such that certain narrow points are widened. As shown in the mitigation plan sheet, the 50-foot wide Type N stream buffers for Streams 1, 2, and 3 are reduced in three areas. Similarly, for the Type F stream, Coal Creek, the 100-foot wide standard buffer is proposed to be reduced in two locations.

#### 7.1.1 Critical Area Buffer Impacts

The area of proposed buffer reductions is approximately 21,575 sf for all proposed critical area buffer reductions, both stream and steep slopes (**Table 3**). The total critical area buffer on the site is approximately 264,349 sf. The proposed changes to buffer affect approximately 8.14% of the available buffer area.

Additional impacts to the buffers will result from the required trail connection to the Coal Creek Natural Area trail system and construction impacts for the stormwater outfall pipe. Total construction related impacts to buffers is 4,984 sf which represents 1.86% of the available buffer areas. These areas of impact are detailed below:

##### 7.1.1.1 Site Development

Providing the improvements of the PUD development in an efficient and logical manner will necessitate reducing the stream and steep slope buffers at certain points where it extends inward to the general developable area. The modification of the critical area buffer is well within the allowable reductions and will be mitigated as with all the other buffer impacts, as described in **Chapter 8**.

##### 7.1.1.2 Right of Way Dedication

Required improvements to Lakemont Boulevard SE will necessitate dedicating a strip of land along the east side of the parcels. This strip, approximately three feet in width, will reduce

[6] City of Bellevue Land Use Code **does not** mention the ordinary high water mark as a reference point for measuring stream buffers.


Copyright © 2019 Talasaea Consultants, Inc.

stream buffers by approximately 114 sf. No other critical area buffers are affected by the dedication.

#### 7.1.1.3 Soft-surface Trail Construction

A permanent stream buffer reduction of 2,160 sf will occur as a result of City-required public limited-access trail to the Coal Creek Natural Area. The trail will be constructed from the west side of the development towards the southern Site boundary and will connect with an existing trail within the riparian corridor. This limited-access trail will be a non-ADA pedestrian trail due to grades. It will feature a soft surface constructed with natural materials such as wood fiber.

#### 7.1.1.4 Stormwater Outfall Construction

The design for the stormwater outfall has changed per the direction from the City of Bellevue Public Works. The new layout eliminates the pump station at the outlet of the detention vault, and instead provides a gravity outlet pipe that discharges to Coal Creek above the OWHM. In reviewing the preliminary engineering, City staff indicated they would not support a pumped outfall and that a redesigned system would need to comply with Section D-04.2 of Bellevue's 2016 Surface Water Engineering Standards which states that:

> *"If the 100-year peak discharge is greater than 0.5 cfs for either existing or developed conditions… then a conveyance system must be provided to convey the concentrated runoff across the downstream properties to an acceptable discharge point. Drainage easements for this conveyance system must be secured from downstream property owners and recorded prior to engineering plan approval."*

In the case of Park Pointe, both the existing and developed flow rates from the 100-year event exceed 0.5 cfs indicating runoff must be conveyed (piped) to an acceptable discharge point. The project engineer's (PACE) original proposal met the requirements of the Surface Water Engineering Standards by conveying concentrated runoff from the Site to Stream 3. However, this option was abandoned because the downstream property owner, Bellevue Parks and Community Services, would not grant an easement for the off-site storm drain.

As an alternative, the project engineer was compelled to confine the storm drain system to the Site which indicated a discharge point to Coal Creek. Talasaea and PACE collaborated to identify the preferred discharge point where the relatively flat ground minimized the amount of bank-side excavation. The alignment of the conveyance system between the discharge point and the detention vault was established to avoid impacting the existing cultural resources associated with the historic mining activity, and to minimize the impact to the existing trees and steeper slopes (**Sheet W1.1, Appendix E**). The proposed route will be constructed through already disturbed buffer areas that have been designated for re-establishment and restoration (**Sheet W2.0, Appendix E**).

The proposed installation of the 18" storm discharge pipe will utilize three methods of construction including: 1) open trenching, 2) boring, and 3) overland placement. The route will be approximately 288 linear feet long ending at a gabion basket energy dissipator located above the OHWM of Coal Creek. See engineering plans and section prepared by PACE. The first four legs of the route will be constructed with open trenches to lay the pipe and install the manholes at turning junctures. The next leg, approximately 70 linear feet, will be installed using a directional bore method. This will not disturb the early successional forests that exist, the existing trail, or the steep slopes. The pipe will daylight downslope of the existing trail and will end at the gabion basket energy dissipator. Trenching of the discharge pipe and manhole installation will require a 15-foot wide corridor for construction. This will impact 2,655 sf of previously disturbed buffer. The directional bore will be approximately 70 linear feet long and will not impact any buffer area. Construction of the gabion basket energy dissipator will require an access path to construct. The gabion basket dissipator will permanently impact approximately 60 sf of buffer. Final engineering will provide a detailed analysis of the proposed


Copyright © 2019 Talasaea Consultants, Inc.

route for both the pipe and the energy dissipator. All areas of construction disturbances for the trenching and access path to the gabion basket dissipator will be restored post-installation of the pipe. The areas will be planted with native evergreen and deciduous small trees and shrubs. No large trees can be planted over the stormwater discharge pipe.

### 7.2 Structure Setback Reduction

To allow the project to be constructed without additional buffer reductions, a structural setback reduction will be requested. The standard structure setbacks from the critical area buffers are 15 feet and 25 feet, depending on stream typing. With consideration to the needs for structure setbacks, it was determined that a reasonable width for maintenance or pedestrian access is 12 feet[7]. Within this space, all activities may occur for the buildings, including access, landscaping, passive recreation, vehicular movement, ladders, and temporary scaffolding (if needed for structural work).

This 12-foot minimum setback will apply along all the exposed stream buffers adjacent to the development. While this project proposes a reduction of the building setback dimension, this change does not reduce the critical area size, affect the critical area buffer function, or subject the critical area buffer to damage from building activities. The proposed residential units where the structure setback is reduced will not have any overhanging part extending into the buffer. The City of Bellevue allows reductions of critical area structure setbacks under BLUC §20.25H.075.D.3. The following provisions need to be ensured:

a. "Water quality, or slope stability as documented in a geotechnical report, will not be adversely affected.
b. Encroachment onto the structure setback will not disturb habitat of a species of local importance within a critical area or a critical area buffer.
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
d. Enhancement planting on the boundary between the structure setback and the critical area buffer will reduce impacts of development within the structure setback."

As established earlier, water quality will be maintained by controlling stormwater from the project site in ways that will not degrade the critical areas buffer, or the streams and wetlands themselves. The proposed site design was evaluated in the geotechnical report, and it was determined that slope stability will not be compromised by locations that included a reduced building setback. As discussed earlier, the likelihood of local species of importance present at this site is low to very low, and the retained buffers should provide needed habitat and maintain corridors for the wildlife that are present. Vegetation in the areas of the critical area buffer at the edge of the development site will not be impacted by construction, as the 12-foot wide space will be adequate for construction and other activities at the buildings. The final mitigation planting design will include extensive enhancement planting within the buffer, and in particular, adjacent to the buffer perimeter at the boundary of the structure setback where dense shrub plantings, including rose or other thicket-forming species, should help reduce unwanted intrusions into the buffer. In addition, the site landscaping plan by Pace Engineers will feature native plant species, especially in planting areas set adjacent to the critical areas buffer.

### 7.3 Analysis of Buffer Function

Buffers provide protection to critical areas only in relation to development. As presented in **Chapter 4**, the current ability of the standard buffer widths to provide protections to the streams and wetlands is compromised by the current conditions of portions of these buffers. The

[7] We had proposed an 11-foot structural setback on our previous report. The latest revision of the site plan was able to reduce the proposed reduction.


Copyright © 2019 Talasaea Consultants, Inc.

standard buffer area is largely disturbed through regular maintenance and mowing, significant amounts of non-native invasive species, and the presence of trash, old vehicles, and debris scattered throughout the buffer. The potential for disturbance by people, pets, and machinery significantly reduces the ability of the standard stream buffers to provide habitat for many species of wildlife. **Chapter 4** outlines the existing conditions of the buffer in more detail.

### 7.3.1 Existing Habitat Functional Rating

A systematic evaluation was conducted, as described in **Chapter 4,** using the City of Bellevue's Urban Wildlife Habitat Functional Assessment Model (The Watershed Company 2010). For the purposes of our analysis, we reviewed two scenarios: 1) future buffer functions with no buffer reduction proposed, and 2) future buffer functions with the proposed reductions and mitigation for impacts. We initially chose not to evaluate a third option (buffer reduction without mitigation) because the City of Bellevue BLUC requires that some form of enhancement planting be done when buffer reduction is applied (§20.25H.075.D.3.d). However, were this option (buffer reduction with no enhancement mitigation proposed), the most likely result would be a monoculture of non-native blackberries with trees present only where they are currently preserved in the buffer.

Left to itself, natural successional vegetation within the poorly-vegetated portions of the buffer would very likely result in a monoculture of Himalayan blackberry, which is already present along the periphery of the undisturbed buffer with the disturbed buffer. Himalayan blackberry, once established, effectively prevents other more desirable vegetation from becoming established. Dense thickets of Himalayan blackberry inhibit the movement of animals between habitats and provides forage and shelter for non-native animal species, such as invasive European starlings and rats (Washington State Invasive Species Council). Himalayan blackberry (and evergreen blackberry) are noxious weeds by the Washington State Invasive Species Council and King County.

Additionally, we have noted that English ivy, another species on the noxious weed list, is present within the buffer area in the northeast corner of the property. English ivy effectively smothers all groundcover vegetation and strangles trees as the vines grow up and surround tree trunks. We have observed ivy infestations within wetland and buffer areas on many other project sites that have contributed to the loss of forest canopy due to the strangulation of trees and increasing the potential of blow down resulting from a significantly increased sail area present during winter storms. Management of English ivy is a major component of one of our mitigation plans due to the deleterious effects this species has on native forest vegetation.

The datasheets for the existing conditions analysis are included in **Appendix G**. The Site scored 41 points for potential habitat function, which indicates that the property has high habitat value potential for wildlife, including species of local importance.

### 7.3.2 Future Condition with No Buffer Reduction

The potential future functional condition of onsite habitat where no buffer reduction has occurred was evaluated for comparison sake. The primary impact to the Site would be from an increase in development density within the buildable area. No other environmental factors would likely be changed as a result of a development with no buffer reduction proposed. A number of significant trees would be removed for development purposes. Mitigation for the loss of significant trees would follow the requirements of Bellevue Land Use Code §20.20.900. The degraded condition of the existing buffer would be left unchanged.

#### 7.3.2.1 Functional Rating with No Buffer Reduction

We rated the site under this scenario using the City of Bellevue Draft Assessment Tool for Upland Habitat and found the site achieved a score of 40. The overall habitat function valuation reduces slightly, from a score of 41 to a score of 40, primarily due to increased development density. Development is limited to those areas of the Site that have relatively low habitat value


Copyright © 2019 Talasaea Consultants, Inc.

due to ongoing land management and human intrusions. The Site retains enough high-quality habitat to maintain many of the higher-valued habitat areas. The reduction of score indicates that implementing the project in a manner that preserved the buffer size, but without enhancements or other mitigation, would cause a slight negative impact to buffer function, based on the Draft Functional Assessment Tool, as presented in Bellevue Urban Wildlife Habitat Functional Assessment Model (The Watershed Company 2010).

### 7.3.3 Mitigation of Impacts to Buffer Reduction

The currently proposed Site plan utilizes several approaches to increasing net buffer ecological function as mitigation for the physical reducing of the standard stream and steep slope buffers. To achieve this, Buffer Enhancement, Buffer Addition with Enhancement, and Buffer Re-establishment are proposed. **Sheets W1.2** and **2.0** of the mitigation plans shown in **Appendix E** illustrates the design.

#### 7.3.3.1 Functional Rating of Buffer with Mitigation

The functional condition of the buffers with reduction and habitat mitigation were evaluated using the same tool as the existing condition and no-buffer reduction scenario. This was completed using the City of Bellevue's Urban Wildlife Habitat Functional Assessment Model (The Watershed Company 2010). For the purposes of this analysis, we factored in the potential effect of onsite infiltration of clean rooftop runoff, green development technologies, and enhanced stormwater systems to reduce new effective impervious surfaces. The datasheets for the existing conditions analysis are included in **Appendix G**. The Site scored 46 points for potential habitat function, which indicates that the enhancement and restoration activities offset the loss due to additional urban density on the site. According to the model, there would be a 5-point gain in habitat functional rating when the site is developed given the proposed mitigation plan elements.

## Chapter 8. PROPOSED MITIGATION

### 8.1 Agency Policies and Guidance

The proposed mitigation plan was designed in accordance with the policies and guidance provided in BLUC §20.25H. Pursuant to BLUC §20.25H.245, all proposed mitigation shall be based on best available science and shall demonstrate no net loss of critical areas functions and values.

### 8.2 Mitigation Sequencing

Mitigation sequencing has been applied to the proposed project pursuant to BLUC §20.25H.215. The mitigation sequencing requirements are:

- Avoiding the adverse impact altogether by not taking a certain action or parts of an action;
- Minimizing adverse impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
- Rectify the adverse impact by repairing, rehabilitating, or restoring the affected environment;
- Reducing or eliminating the adverse impact over time by preservation and maintenance operations; or,
- Compensating for the adverse impact by replacing, enhancing, or providing substitute resources or environments.

The mitigation sequencing process was an intrinsic part of the analysis of the site development. Site development has been designed to minimize impacts to the existing critical area buffers to the maximum extent practicable while still meeting the requirements for a viable project,


Copyright © 2019 Talasaea Consultants, Inc.

including compliance with all zoning code requirements for site access, circulation, setbacks, and parking. The project will compensate for unavoidable impacts by providing adequate mitigation in the form of buffer enhancement, restoration, and re-establishment, described in the following sections.

The mitigation plan provided in **Appendix E** is described in this section which will illustrate how the net change to the site is a net increase in ecological function. With the design presented on **Sheet W2.0**, the critical area buffers would be reduced from their standard width to a variety of widths.

The sections below will illustrate how the existing critical area buffers are improved in in the mitigation associated with the proposed development:

1. The approach to critical area buffer mitigation;
2. The size and categories of buffer mitigation;
3. The wildlife usage of the restored buffer;
4. The enhancement planting that would occur in the retained buffer and steep slope areas;
5. The use of removed significant trees as large wood contributions; and
6. The water quality and hydrology functions of the project.

### 8.2.1 Approach to Critical Area Buffer Mitigation

The approach proposed for this project's mitigation is as described below:

i. **The non-critical area setbacks have been reduced to the maximum extent practicable.** The site design was prepared by Pace Engineers to provide dimensions of roadways, utility easements, and building footprints that achieve necessary functions with the minimum practical dimension. These modifications were constrained by relevant codes as well as the health, safety, and welfare of the community.

ii. **Higher habitat quality areas are being retained, while buffer reductions generally focus on areas of lower habitat value.** Most of the buffer reductions will occur within areas of lower habitat quality (i.e., pasture, mowed lawn, invasive species, human disturbance, trash, etc.). All the areas of proposed stream and steep slope buffer reduction (approx.21,575 sf) will be within this lower quality habitat. Higher quality habitat will not be reduced or otherwise impacted by the proposed development.

   The buffer for Stream 2 is essentially cleared of woody vegetation landward from the top-of-slope line. Similarly, the buffer for Stream 3 is mostly cleared of vegetation landward from the southern property boundary. The buffer reduction for Coal Creek is entirely lawn or pasture, except for two small incursions of the mixed forest described earlier.

   In summary, the existing onsite portion of the buffers for Coal Creek, Streams 2 and 3 proposed to be reduced provide little to no habitat value or protection. The buffer reduction area for Stream 1 includes a young red alder forest over a highly disturbed landscape that includes mowed lawn, pasture, and other human disturbances.

iii. **Retained buffers are enhanced through removal of invasive species.** We propose to enhance all retained on-site buffer areas by removing all non-native species and replanting with native trees and shrubs. The resulting buffers, at maturity, will provide significantly better habitat value and protections compared to


Copyright © 2019 Talasaea Consultants, Inc.

existing conditions. Any non-native bamboo creeping inward from an off-property patch will be managed regularly to prevent its spread on the site.

iv. **A favorable mitigation-to-impact ratio is utilized, in part by providing replacement buffer areas.** Additional buffer will be provided to all streams where possible. As shown on the mitigation plans in **Appendix E** (**Sheet W1.2**), the area of combined buffer replacement and buffer enhancement/restoration is 130,888 sf, compared to the area of buffer reductions, which is 21,575 sf. In addition, 4,984 sf will be impacted for trail trail and stormwater outfall. The mitigation area to compensate for these impacts is approximately 130,888 sf (3.0 acres). The net increase of buffer functionality can be measured with these values, which is equivalent to a **5 to 1** ratio of mitigation to impact (mitigation area vs. impact area).

The area proposed to be used for replacement buffer for Coal Creek is currently poorly vegetated and used as pasture. Non-native species, such as Himalayan blackberry and Scot's broom, will be removed. The replacement buffer will be replanted with a variety of native trees and shrubs. Any enhancement plan prepared for this area will likely include interpretive signage and view corridors from the proposed trail through the buffer.

The proposed areas of buffer addition for Streams 1 and 2 are currently forested, but also include significant areas of Himalayan blackberry. The blackberry will be removed, and the additional buffer area replanted with native trees and shrubs.

v. **The buffer is contiguous with itself and other critical areas.** There is a continuous band of buffer around the north, west, and south sides of the property. At no point will the continuity of this buffer be broken, except for necessary trail construction adjacent to the southern Site boundary, as required by the City of Bellevue. The area of greatest buffer addition will occur adjacent to Coal Creek. Providing an expanded buffer for Coal Creek is appropriate since the on-site drainage predominately flows to Coal Creek, based on an analysis of topography.

vi. **Native vegetation will be retained and enhanced with extensive planting in the buffer**. Native vegetation within the reduced portions of the buffer will be retained. Enhancement planting of native trees and shrubs will occur wherever native vegetation is lacking within the remaining buffer area.

The area of buffer reduction on the western side facing Stream 1 and Coal Creek does contain some existing native vegetation, however, the condition of this portion of the buffer is degraded by continued human disturbance. Native vegetation and large wood will be salvaged from this portion of the site for re-use in habitat restoration and enhancement elsewhere within the buffer. The placement of large wood will be discussed in final mitigation plan design to determine locations that would not threaten slope stability.

The area of buffer reduction for Stream 2 is currently mostly devoid of woody vegetation. This area will be enhanced through planting of native trees and shrubs. Planting the poorly vegetated area of the reduced Stream 2 buffer with native trees and shrubs will have the effect of improving slope stability through binding of the soil and removal of groundwater through evapotranspiration.

As with Stream 2, the area of proposed buffer reduction along Stream 3 is also


Copyright © 2019 Talasaea Consultants, Inc.

poorly vegetated and mostly devoid of woody species. The actual steep slope portion of Stream 3 is off property to the south and is somewhat well-vegetated (Himalayan blackberry comprises a significant portion of the shrub layer within the Stream 3 buffer offsite). Reducing the buffer along Stream 3 on-site will not lead to additional slope instability. The area of reduced buffer on the property will be enhanced with native trees and shrubs. These species will likely improve slope stability through binding of the soil and removal of groundwater through evapotranspiration.

vii. **Wildlife habitat and migratory use is retained in the mitigation design.** This report concluded in **Section 4.2.4** that the Site has a limited likelihood of the presence of the listed species of local importance. The primary areas within the Site currently used for wildlife usage are the stream corridors and adjacent uplands, which are being preserved and enhanced in the post-construction development. Reducing the critical area buffers will not significantly degrade the buffer's current ability to provide wildlife habitat. Much of the critical area buffers under existing conditions include areas of significant human disturbance. While some species of wildlife have adapted to survive within residential areas, most species of wildlife tend to avoid areas of human population. The habitat value of the area of the standard buffer being reduced is small compared to the remaining forested ravines. This forested area extends northward and westward into offsite areas currently protected from development (they are owned by the City of Bellevue). The existing ravine provides a high-quality corridor for wildlife to move through the area without being disturbed by humans or their activities. As mentioned earlier, patterns of disturbance through the buffer have reduced plant diversity and habitat value. The ability of the reduced buffer to provide wildlife habitat and movement corridor will not be diminished with the removal of the disturbances or by the conversion of the degraded spaces to a developed land use.

Intrusions of noise and light, as previously mentioned, can be ameliorated by planting the reduced buffer with native massing shrubs. Since the streams are located within ravines, light and noise from the proposed development will naturally be rapidly attenuated by the slope, the existing forest and shrub vegetation, and the proposed enhancement plantings. Therefore, we expect that the project may affect but is unlikely to adversely affect species of local importance that may utilized the developed site.

### 8.2.2 Areas of Critical Area Buffer Mitigation

Buffer enhancement and re-establishment involves the removal of non-native invasive species as well as trash and other human-related debris, and the addition of native plant species. The habitat value of the improved buffer areas will be increased by the installation of large woody debris and nesting structures, such as bat-roosting boxes and bird nesting boxes.

The proposed site development design will reduce approximately 21,575 sf of currently degraded critical area buffer and impact an additional 4,984 sf for trails and stormwater outfall. The mitigation area to compensate for these impacts is approximately 130,888 sf (3.0 acres). The net increase of buffer functionality can be measured with these values, which is equivalent to a **5 to 1** ratio of mitigation to impact.

### 8.2.3 Enhancement Planting in Critical Area Buffers and on Steep Slopes

The reduced buffer areas will be enhanced through removal of invasive non-native blackberries, trash, and other debris. The buffer will then be planted with a selection of woody trees and shrubs that will provide many functions that are currently not provided under existing conditions.


Copyright © 2019 Talasaea Consultants, Inc.

The planted trees and shrubs will provide additional sources of large and small woody debris for habitat.

While the quality of the habitat provided by the existing vegetation on the sloped areas is generally good, enhancements are very possible. Many locations within the steep slope area could be improved by selective planting of additional understory shrubs, small trees, Douglas fir, western hemlock, and western redcedar. Small trees would likely include serviceberry (*Amelanchier alnifolia*), mock orange (*Philadelphus lewisii*), red elderberry (*Sambucus racemosa*), Sitka mountain ash (*Sorbus sitchensis*), and others. Understory shrubs would likely include Nootka rose (*Rosa nutkana*), red currant (*Ribes sanguineum*), evergreen huckleberry (*Vaccinium ovatum*), and others.

The conifer tree species listed above are typically slow growing under an existing forest canopy. Eventually, the existing red alder trees, which have a lifespan of between 60 to 80 years, will die and create openings in the canopy. Black cottonwood trees, which have a lifespan of up to 120 years, will also start to die and create openings in the canopy. Additional canopy openings will likely be created by the regular loss of big-leaf maple branches. These canopy openings will be quickly exploited by the conifer trees planted, potentially speeding up the succession of the existing deciduous-dominated forest to a conifer-dominated forest, consistent with what likely existed prior to European colonization.

The additional shrubs and small trees will provide both aesthetic quality and enriched habitat for a variety of birds and native small animals. The shrub species likely to be planted within the reduced buffer area include bald hip rose (*Rosa gymnocarpa*), tall Oregongrape (*Mahonia aquifolium*), thimbleberry (*Rubus parviflorus*), salal (*Gaultheria shallon*), and others. The species selected for the reduced buffer will be of the massing variety, will provide quality habitat for a variety of birds and small mammals, and will be aesthetically pleasing to the residents throughout the year. Dense, massing shrubs will prevent people and pets from intruding within the buffer and will help reduce sound and light disturbances within the steep slope area. Fruits from the proposed plantings will provide a valuable food source for many species of mammals and birds.

### 8.2.4 Functions of Significant Trees as Large Wood

Significant trees, as defined by the City of Bellevue, will be impacted by the construction of this development. The project's landscape plans will address the appropriate mitigation for significant tree loss, as significant trees are not addressed in the Critical Areas Code for requiring mitigation. Habitat loss will be temporal so far as standing trees; however, as much large wood will be salvaged from the significant trees, as possible, for use in creating habitat features on-site. To the extent feasible, remaining native woody material will remain on-site, either as brush piles for habitat, or converted to wood chips or hog fuel for use in retaining the biomass of the significant trees within the critical area buffer. It should also be noted that many significant trees that could be subject to removal, being in a developable area, are being preserved in the Wildlife Habitat Corridor area (outlined further in **Section 8.3**, below). Given the potential for development of the site, the preservation, replacement, and re-use of significant trees within the project are above average compared to typical projects.

There are several conifers on the subject property that will likely be removed for the proposed development. These trees should be retained for use as large woody debris and cut to approximately 20-foot lengths, where possible. Downed logs and rootwads may be placed within the buffer outside of the steep slope areas to provide additional habitat value. The woody debris can be further modified using chainsaws to create pockets that can be filled with soil and duff, and then planted with western hemlock seedlings or huckleberry plants. The goal would be to simulate the habitat provided by a nurse log within the existing mature forest. Creation of


Copyright © 2019 Talasaea Consultants, Inc.

such nurse logs should be considered experimental and special monitoring and contingency standards will need to be developed for them.

### 8.2.5 Water Quality and Hydrology in the Enhanced/Restored Buffers

The water quality and hydrology functions that could be lost due to the proposed buffer reduction would be provided through innovative site development plans. Stormwater and toxic runoff are easily controlled through the site's stormwater management plan. This plan will include enhanced stormwater treatment to remove toxic metals (such as copper from brake pads and zinc from tires) from stormwater prior to discharge into natural waters. Studies have shown that these metals can be fatal to adult salmonids in concentrations often found in stormwater runoff. Preventing untreated stormwater from flowing into the stream buffers will ensure that the quality of water within the streams will remain at or above current conditions

## 8.3 Additional On-site Habitat Benefits

The riparian and upland habitat westward of Stream 1, to the west property boundary, will not be altered by development. The project is proposing to dedicate the non-utilized developable land as an expansion of the protected critical area as a "Preserved Wildlife Corridor." This area is contiguous with undeveloped City of Bellevue parklands associated with Coal Creek, creating a large, relatively unbroken greenbelt of natural forested vegetation extending from the proposed western edge of development northwest to Coal Creek Parkway; a distance of approximately two miles and an area of greater than 300 acres.

The primary function of this expanded area is to serve as an important link in providing contiguous habitat throughout the area. As the large Coal Creek Natural Area is located adjacent to the property at this end of the site, the dedication of this land for wildlife use is a significant benefit, both by its size of 23,675 sf (0.54-acre) and its proximity to adjacent habitat.

## 8.4 Mitigation Design Elements

### 8.4.1 Decompaction and Topsoil

All areas of buffer reestablishment with existing structures, impervious lawn areas, non-native vegetation and associated utilities for the residences will be removed (**Sheet W2.0**). These areas will be restored through decompaction of existing soils and the importation of high-quality topsoil and/or the addition of soil amendments. High quality topsoil will be placed a minimum of 6-inches deep across the decompacted buffer areas.

### 8.4.2 Habitat Features

Snags, down logs, rootwads, and stumps will be incorporated into the mitigation areas to provide ecologically important habitat features for wildlife (**Sheet W2.0**). All down woody material shall be coniferous species (western red cedar, Douglas fir, western hemlock, or Sitka spruce) obtained from the project site.

Snags provide perching, feeding and nesting sites for a variety of native birds. Cavity nesting bird species, such as tree swallows, violet-green swallows, chickadees, and woodpeckers, would be expected to utilize such features. A bird-nesting box will be attached to each installed snag to initially augment the natural habitat for swallow species. Down logs and stumps provide the slow release of nutrients as the wood decays, and provide cover for amphibians, small mammals, and other wildlife. Boulders recovered from site excavation (if available) will be placed in small piles throughout the mitigation area. These piles can provide habitat for reptiles and small mammals.

### 8.4.3 Mulch

The Client shall provide three (3) inches of medium bark mulch around all installed plants. Mulch shall be derived from fir, pine or hemlock species and shall not contain trash, rocks, or other debris that may be detrimental to plant growth.


Copyright © 2019 Talasaea Consultants, Inc.

### 8.4.4 Plantings

A variety of native tree and shrub will be planted in the buffer mitigation area. Plant species have been chosen for a variety of qualities, including adaptations to specific water regimes, value to wildlife, value as a physical or visual barrier, pattern of growth (structural diversity), and aesthetic values. Native species were chosen to increase both the structural and species diversity of the mitigation areas, thereby increasing the value of the area to wildlife for food and cover. Plant materials will consist of a combination of bare-root stock (if available) and containers. A proposed plant list with the proposed plant species, size, and spacing, is provided on **Sheet W3.0, Appendix E**.

### 8.4.5 Temporary Irrigation System

A temporary irrigation system is not anticipated to be needed for enhancement plantings within existing vegetated buffer areas. Plantings shall be installed in the dormant season to help reduce transplant shock and encourage successful establishment. Plants shall be watered immediately after planting and shall be provided with supplemental irrigation during the dry season if drought stress is evident during the establishment period (generally the first two growing seasons after planting).

In all other areas of buffer re-establishment that are completely cleared and grubbed, an above ground temporary irrigation system capable of full head to head coverage of all planted areas will be provided. The temporary irrigation system shall either utilize controller and point of connection (POC) from the site irrigation system or shall include a separate POC and controller with a backflow prevention device per water jurisdiction inspection and approval. The system shall be zoned to provide optimal pressure and uniformity of coverage, as well as separation for areas of full sun or shade and slopes in excess of 5%.

The system shall be operational by June 15 (or at time of planting) and winterized by October 15. Irrigation shall be provided for the first 2 years of the monitoring period. The irrigation system shall be programmed to provide 1/2" of water two times per week (one cycle with two start times per week or every three days). A chart describing the location of all installed or open zones and corresponding controller numbers shall be placed inside the controller and given to the owner's representative. In addition to the temporary irrigation system, a soil moisture retention agent will be incorporated into the backfill of planting pits to minimize the potential for plant desiccation in the mitigation areas.

### 8.4.6 2-Board Fence and Critical Area Signs

Permanent fencing and critical areas signs shall be installed at the perimeter of all critical area buffers on the site. The fencing will be a rail style fence, split or 2-board type. Sign locations are provided on **Sheet W1.2.**

## 8.5 Mitigation Goals, Objectives, and Performance Standards

The goal of the mitigation plan is to restore the functions and values of a portion of the critical area buffers on the Site. The mitigation will be evaluated through the following objectives and performance standards. Mitigation monitoring will be performed by a qualified wetland biologist or ecologist.

**Objective A:** Create habitat structure and plant species diversity in the buffer enhancement areas currently possessing an existing canopy. These areas are identified as Area A & B on **Sheet W2.0** of **Appendix E**.

> ***Performance Standard A1:*** *In those areas, at least 8 species of desirable native woody plant species will be present at the end of Year 5.*
>
> ***Performance Standard A2:*** *Plant survival must be 100% for all installed native vegetation in all enhanced buffer areas at the end of Year 1 per the contractor's plant guarantee, and at least 75% for all installed native vegetation in years 2 through 5.*


Copyright © 2019 Talasaea Consultants, Inc.

*Plants shall be replaced as needed to meet these standards in each of the monitoring years.*

**Objective B:** Create habitat structure and plant species diversity in the buffer enhancement areas currently lacking an existing canopy. These areas are identified as Areas C, D, & E on **Sheet W2.0** of **Appendix E**.

***Performance Standard B1:*** *In those areas, at least 12 species of desirable native woody plant species will be present at the end of Year 5. Woody plant coverage must be no less than 10% by the end of Year 1, no less than 60% by the end of Year 3, and no less than 80% by the end of Year 5. Woody coverage includes beneficial native woody plants that are naturally recruiting.*

***Performance Standard B2:*** *Plant survival must be 100% for all installed native vegetation in all restored buffer areas at the end of Year 1 per the contractor's plant guarantee, and at least 75% for all installed native vegetation in years 2 through 5. Plants shall be replaced as needed to meet these standards in each of the monitoring years.*

**Objective C:** Limit the amount of invasive and exotic species within the buffer enhancement areas.

***Performance Standard C****: After construction and following every monitoring event for the duration of the monitoring period, exotic and invasive plant species will be maintained at levels of 10% or less total cover throughout the mitigation areas. These species include, but are not limited to: Scot's broom, Himalayan and evergreen blackberry, Japanese knotweed, purple loosestrife, hedge bindweed, morning glory, and creeping nightshade. English ivy, where present, shall be removed where growing in the soil and stems growing up tree trunks will be cut through.*

## Chapter 9. CONSTRUCTION SEQUENCING

### 9.1 Mitigation Construction Sequence

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

1. Conduct a site meeting between the Contractor, Talasaea Consultants, and the Owner's Representative to review the project plans, work areas, staging/stockpile areas, and material disposal areas.
2. Survey clearing/grading limits.
3. Flag existing trees and other vegetation to remain.
4. Install silt fencing, tree protection fencing (if required), and any other erosion and sedimentation control BMPs necessary for work in the project areas per civil plans.
5. Complete site grading per civil site development plans.
6. Remove all trash and debris and grub out invasive species in buffer areas
7. Decompact soils and place topsoil or soil amendments as required.
8. Install habitat features (snags, down logs, and stumps).
9. Mulch all cleared/grubbed buffer areas.
10. Construct woodchip trail in the buffer.
11. Complete site cleanup and install plant material as indicated on the planting plan.
12. Install 2-board fences and critical area signs.


Copyright © 2019 Talasaea Consultants, Inc.

### 9.2 Post-Construction Approval

Following mitigation construction completion Talasaea Consultants shall notify the City in writing to request a final site inspection for final construction approval. Once the City has approved of the mitigation construction, the monitoring period shall commence.

### 9.3 Post-Construction Assessment

Once construction is approved by the City, a qualified wetland ecologist or biologist from Talasaea Consultants shall conduct a post-construction assessment. The purpose of this assessment will be to establish baseline conditions at Year 0 of the required monitoring period. A Baseline Assessment report including "as-built" drawings will be submitted to the City. The as-built plans will identify and describe any changes in planting or other features in relation to the original approved plan.

## Chapter 10. MONITORING PLAN

Performance monitoring of the mitigation areas will be conducted for a period of five years consistent with BLUC §20.25H.220(D). Monitoring events will be conducted according to the schedule presented in **Table 4** below. All monitoring will be performed by a qualified biologist or ecologist.

### 10.1 Reports

The reports will include: 1) Project Overview, 2) Mitigation Requirements, 3) Summary Data, 4) Maps and Plans, and 5) Conclusions. If the performance criteria are met, monitoring for the City will cease at the end of year five, unless objectives are met at an earlier date and the City accepts the mitigation project as successfully completed.

**Table 4. Projected Schedule for Performance Monitoring and Maintenance Events**

| Year | Date | Maintenance Review | Performance Monitoring | Report Due to Agencies |
|---|---|---|---|---|
| Year 0, As-built and Baseline Assessment | Winter 2020 | X | X | X |
| 1 | Spring 2020 | X | X | |
| | Fall 2020 | X | X | X |
| 2 | Spring 2021 | X | X | |
| | Fall 2021 | X | X | X |
| 3 | Spring 2022 | X | | |
| | Fall 2022 | X | X | X |
| 4 | Spring 2023 | X | | |
| | Fall 2023 | X | X | X |
| 5 | Spring 2024 | X | | |
| | Fall 2024 | X | X | X* |

*Obtain final approval to facilitate bond release from the City of Bellevue (presumes performance criteria are met).

### 10.2 Monitoring Methods

Vegetation monitoring methods may include counts; photo-points; random sampling; sampling plots, quadrats, or transects; stem density; visual inspection; and/or other methods deemed appropriate by the permitting agencies and the biologist/ecologist. Vegetation monitoring components shall include general appearance, health, mortality, colonization rates, percent cover, percent survival, volunteer plant species, and invasive weed cover.

Permanent vegetation sampling plots, quadrats, and/or transects will be established at selected locations to adequately sample and represent all the plant communities within the mitigation project areas. The number, exact size, and location of transects, sampling plots, and quadrats will be determined at the time of the baseline assessment.


Copyright © 2019 Talasaea Consultants, Inc.

Percent areal cover of woody vegetation (forested and/or scrub-shrub plant communities) will be evaluated using point-intercept sampling methodology. Using this methodology, a tape will be extended between two permanent markers at each end of an established transect. Trees and shrubs intercepted by the tape will be identified, and the intercept distance recorded. Percent cover by species will then be calculated by adding the intercept distances and expressing them as a total proportion of the tape length.

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

### 10.3 Photo Documentation

Locations will be established within the mitigation areas from which panoramic photographs will be taken throughout the monitoring period. These photographs will document general appearance and relative changes within the plant communities. Review of the photos over time will provide a semi-quantitative representation of the success of the planting plan. Vegetation sampling plot and photo-point locations will be shown on a map and submitted with the baseline assessment report and yearly performance monitoring reports.

### 10.4 Wildlife

Birds, mammals, reptiles, amphibians, and invertebrates observed in the mitigation areas (either by direct or indirect means) will be identified and recorded during scheduled monitoring events, and at any other times observations are made. Direct observations include actual sightings, while indirect observations include tracks, scat, nests, song, or other indicative signs. The kinds and locations of the habitat with the greatest use by each species will be noted, as will any breeding or nesting activities.

### 10.5 Water Quality and Site Stability

Water quality will be assessed qualitatively unless it is evident there is a serious problem. In such an event, water quality samples will be taken and analyzed in a laboratory for suspected parameters. Qualitative assessments of water quality include:

- oil sheen or other surface films,
- abnormal color or odor of water,
- stressed or dead vegetation or aquatic fauna,
- turbidity, and
- the absence of aquatic fauna.

Observations will be made of the general stability of slopes and soils in the mitigation areas during each monitoring event. Any erosion of soils or slumping of slopes will be recorded and corrective measures will be taken.

## Chapter 11. MAINTENANCE AND CONTINGENCY

Regular maintenance reviews will be performed according to the schedule presented in **Table 4** to address any conditions that could jeopardize the success of the mitigation project. Following maintenance reviews by the biologist or ecologist, required maintenance on the Site will be implemented within ten (10) business days of submission of a maintenance memo to the maintenance contractor and permittee.

Established performance standards for the project will be compared to the yearly monitoring results to judge the success of the mitigation. If during the monitoring period, there appears to be a significant problem with achieving the performance standards, the permittee shall work with


Copyright © 2019 Talasaea Consultants, Inc.

the permitting agencies to develop a Contingency Plan in order to get the project back into compliance with the performance standards. Contingency plans can include, but are not limited to, the following actions: additional plant installation, erosion control, modifications to hydrology, and plant substitutions of type, size, quantity, and/or location. If required, a Contingency Plan shall be submitted by December 31st of any year when deficiencies are discovered.

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

- During year one, replace all dead woody plant material (M).
- Water all plantings at a rate of 1" of water every week between June 15 – October 15 during the first two years after installation, and for the first two years after any replacement plantings (C & M).
- Replace dead plants with the same species or a substitute species that meets the goals and objectives of the mitigation plan, subject to Talasaea and agency approval (C).
- Re-plant area after the reason for failure has been identified (e.g., moisture regime, poor plant stock, disease, shade/sun conditions, wildlife damage, etc.) (C).
- After consulting with City staff, minor excavations, if deemed to be more beneficial to the existing conditions than currently exists, will be made to correct surface drainage patterns (C).
- Remove/control weedy or non-native invasive plants (e.g., Scot's broom, reed canarygrass, Himalayan blackberry, purple loosestrife, Japanese knotweed, etc.) by manual or chemical means approved by permitting agencies. Use of herbicides or pesticides within the mitigation area would only be implemented if other measures failed or were considered unlikely to be successful and would require prior agency approval. All non-native vegetation must be removed and disposed of off-site. (C & M).
- Weed all trees and shrubs to the dripline and provide 3-inch deep mulch rings 24 inches in diameter for shrubs and 36 inches in diameter for trees (M).
- Remove trash and other debris from the mitigation areas twice a year (M).
- Selectively prune woody plants at the direction of Talasaea Consultants to meet the mitigation plan's goal and objectives (e.g., thinning and removal of dead or diseased portions of trees/shrubs) (M).
- Repair or replace damaged structures including weirs, signs, fences, or bird boxes (M).

## Chapter 12. POST-MONITORING VEGETATION MANAGEMENT

A Vegetation Management Plan (VMP) has been prepared to guide general landscape maintenance practices for this project, as well as maintenance practices for the mitigation areas following the conclusion of the five-year performance monitoring period. The goal of the VMP is to ensure long-term vegetation management that is consistent with the objectives and performance standards of the mitigation plan approved by the City of Bellevue. This includes vegetation management techniques as well as restrictions on activities in critical area buffers. **Appendix H** contains the complete VMP.

## Chapter 13. FINANCIAL GUARANTEE

The applicant shall post a bond or other financial assurance device as required by the City to ensure that the mitigation plan is fully implemented, monitored, and maintained through the end of the required monitoring period. Financial guarantees shall meet the requirements of BLUC 20.40.490. As stated in this section of the code, the amount of any required assurance device will be for 150% of the cost of improvements calculated at the end of the assurance period. For


Copyright © 2019 Talasaea Consultants, Inc.

maintenance, the amount would cover at least 20% for replacement materials, as calculated on the last day of the performance period.

## Chapter 14. SUMMARY

The Park Pointe PUD property is an assemblage of two parcels totaling approximately 10 acres in size. The northern parcel (Parcel A) is approximately ½ developed on its eastern portion with a single-family residence and managed pasture. The remaining ½ of the parcel is relatively undisturbed and forested. The southern parcel (Parcel B) is developed with a single-family residence, associated outbuildings, and managed pasture.

Three wetlands and four streams were identified on, or adjacent to, the property. The wetlands were named Wetland A, Wetland AA, and Wetland B. The four streams are Coal Creek, Stream 1, Stream 2, and Stream 3.

The proposed site development design will reduce approximately 21,575 sf of currently degraded critical area buffer and impact an additional 4,984 sf for trails and stormwater outfall. The mitigation area to compensate for these impacts is approximately 130,888 sf (3.0 acres). The net increase of buffer functionality can be measured with these values, which is equivalent to a **5 to 1** ratio of mitigation to impact.

All mitigation areas will be monitored for five years post construction. All post-construction critical areas will be placed in native growth protection area easement. A split-rail or similar style fence will be installed at the outer edge of the buffer areas, adjacent to the current edge of asphalt, and critical area signs will be installed at intervals determined by the City.


Copyright © 2019 Talasaea Consultants, Inc.

## Chapter 15. REFERENCES

City of Bellevue. 2011. City of Bellevue Land Use Code Part 20.25, Special and Overlay Districts. Current through Ordinance 6016, passed August 1, 2011. Accessed [date] https://codepublishing.com/wa/bellevue/

City of Bellevue. 1997. City of Bellevue Sensitive Areas Notebook. Plate 148. April.

Confluence Environmental Company2017. Park Pointe Coal Creek Typing Study. April 19.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Department of the Interior. FWSOBS-70/31.

Geotech Consultants, Inc. 2016. Geotechnical Engineering Study. Proposed Housing Development, 7219 and 7331 Lakemont Boulevard Southeast, Bellevue, Washington. January 19.

Geotech Consultants, Inc. 2017. Supplemental Letter, Proposed Housing Development, 7219 and 7331 Lakemont Boulevard Southeast, Bellevue, Washington. March 29.

Gerhardt, A., and F. Westermann. 1995. "Effects of Precipitations of Iron Hydroxides on Leptophlebia marginata (L.)(Insecta: Ephemeroptera) in the Field." Archiv für Hydrobiologie, March: 81-93.

Hitchcock, C.L., and A. Cronquist. 1973. Flora of the Pacific Northwest. University of Washington Press. 730 pp.

Hruby, T. 2006. Washington State Wetland Rating System for Western Washington – Revised. Washington State Department of Ecology Publication #04-06-025.

Hruby, T. 2014. Washington State Wetland Rating System for Western Washington. 2014 Update. Washington State Department of Ecology Publication #14-06-029. Washington: Shorelines and Environmental Assistance Program.

Icicle Creek Engineers, Inc. 2016. Geological Engineering Services Proposed Property Development Coal Mine Hazard Assessment and Ground Proofing Program, Swanson Property, King County Parcel No. 262405-9019, 7331 Lakemont Boulevard SE, Bellevue, Washington. August 2.

Johnson, Pieter T.J., and Euan G. Ritchie. 2003. "Macroinvertebrate Fauna of an Iron-Rich Stream in the Wet Tropics of Australia: A Comparative Analysis of Communities Using a Rapid Bioassessment Protocol." Memoirs of the Queensland Museum, June 30: 331-338.

King County iMAP Property Information. Accessed May 2017. http://www5.kingcounty.gov/iMAP/viewer.htm?mapset=kcproperty.

Lichvar, R.W. 2012. The National Wetland Plant List. ERDC/CRREL TR-12-11. Hanover, NH: U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory. http://acwc.sdp.sirsi.net/client/search/asset:asset?t:ac=$N/1012381

Minor, William F., and Maureen Minor. 1993. “Nesting of Red-Tailed Hawks and Great Horned Owls in a Central New York Urban/Suburban Area.” J. Field Ornithol. 64 (4):433–39.

National Resources Conservation Service. 1973 Soil Survey for King County Area. Accessed May 2017. http://websoilsurvey.nrcs.usda.gov.


Copyright © 2019 Talasaea Consultants, Inc.

Peuranen, Seppo, Pekka Vuorinen, Marja Vourinen, and Arto Hollender. 1994. "The Effects of Iron, Humic Acids, and Low pH on the Gills and Physiology of Brown Trout (Salmo trutta)." Annales Zoologici Fennici, December 21: 389-396.

"Red-Tailed Hawk." 2014. Audubon. November 13, 2014. http://www.audubon.org/field-guide/bird/red-tailed-hawk.

———. "Red-Tailed Hawk." n.d. Accessed January 13, 2018. https://www.allaboutbirds.org/guide/Red-tailed_Hawk/lifehistory.

Salmonscape. 2017. Accessed May 2017. apps.wdfw.wa.gov/mapping/salmonscape/index.html

Speiser, Robert, and Thomas Bosakowski. 1988. "Nest Site Preferences of Red-Tailed Hawks in the Highlands of Southeastern New York and Northern New Jersey." J. Field Ornithol. 59 (4):361–68.

StreamNet. "StreamNet Mapper." StreamNet. 2017. Accessed May 2017. http://map.streamnet.org/website/bluesnetmapper/viewer.htm.

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). ed.J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Fish and Wildlife Service. National Wetlands Inventory Map. Accessed May 2017. http://www.fws.gov.nwi.

Vuori, Kari-Matti. 1995. "Direct and Indirect Effects of Iron on River Ecosystems." Annales Zoologici Fennici, July 15: 317-329.

Washington State Department of Fish and Wildlife. Priority Habitats and Species Database. July 2013. Accessed May 2017. https://www.wdfw.wa.gov/mapping/phs.

Washington State Department of Natural Resources. 2009. Natural Heritage Database. Accessed May 2017. https://www.dnr.wa.gov/researchscience/topics/naturalheritage/pages/amp_nh.aspx.

The Watershed Company. 2010. Guidance: Using the Bellevue Urban Wildlife Functional Assessment Model.

Williams, R.W., R.W. Laramie, and J.J. Ames. 1975. A Catalog of Washington Streams and Salmon Utilization – Volume 1 Puget Sound Region. Olympia, Washington: Washington State Department of Fisheries.


Copyright © 2019 Talasaea Consultants, Inc.

# FIGURES

**Figure 1:** Vicinity Map & Directions
**Figure 2:** Existing Development
**Figure 3:** NRCS Soils Map
**Figure 4:** City of Bellevue Critical Areas Map
**Figure 5:** Coal Creek Barrier Locations
**Figure 6:** Pasture Grasses in ½-Mile Vicinity


Copyright © 2019 Talasaea Consultants, Inc.

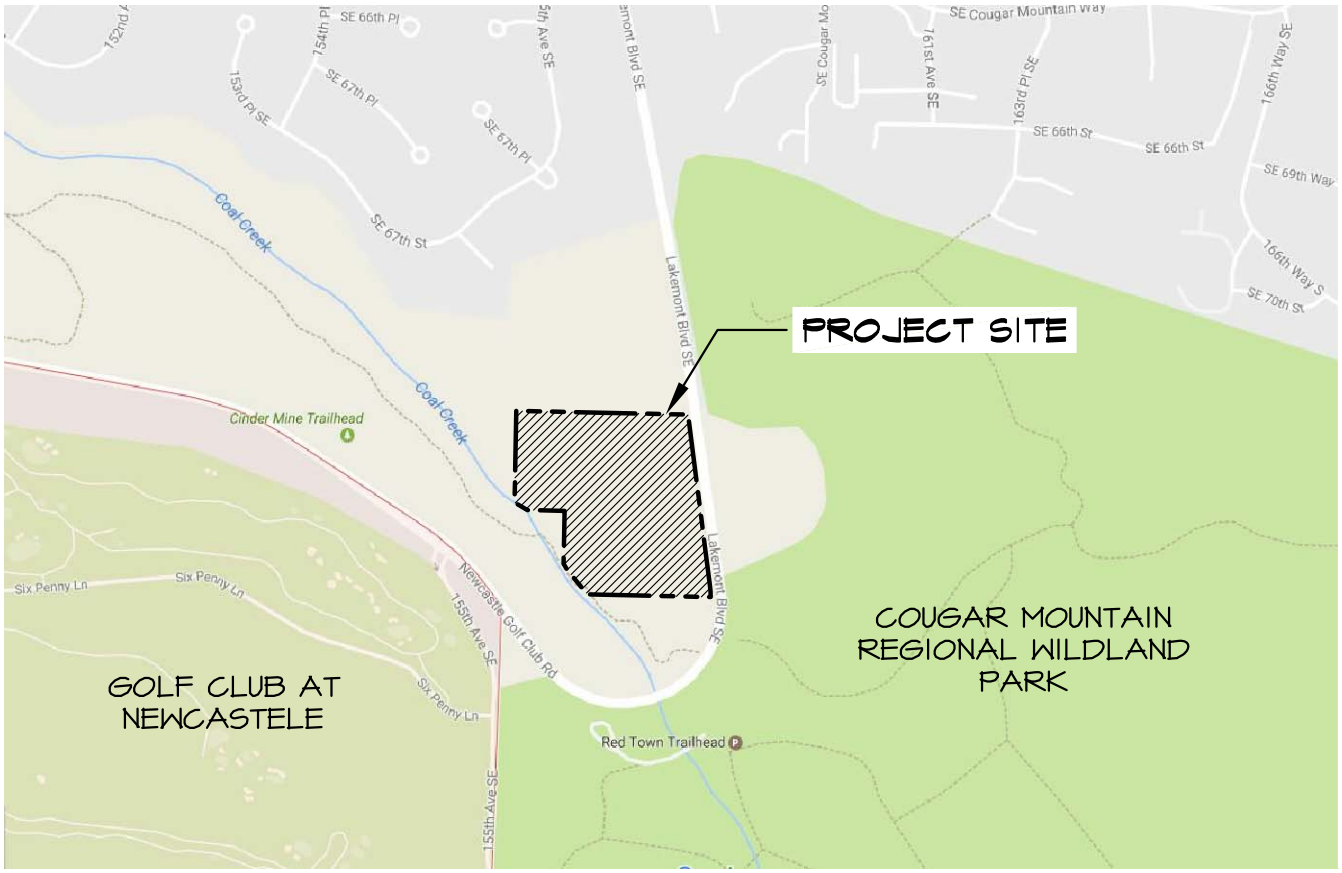



IMAGE SOURCE: GOOGLE MAPS, WWW.MAPS.GOOGLE.COM (ACCESSED 16 MAY 2017)

DRIVING DIRECTIONS:

1. FROM DOWNTOWN BELLEVUE HEAD SOUTH ON BELLEVUE WAY SE TOWARD MAIN STREET.
2. USE ANY LANE TO MERGE ONTO I-90 E VIA THE RAMP TO SPOKANE.
3. TAKE EXIT 13 TOWARD SE NEWPORT WAY.
4. UESE ANY LANE TO TURN RIGHT ONTO LAKEMONT BLVD SE.
5. IN 2.9 MILES YOU WILL ARRIVE AT YOUR DESTINATION: 7331 LAKEMONT BOULEVARD SE, BELLEVUE, WA

NORTH

TALASAEA CONSULTANTS, INC.
Resource & Environmental Planning
15020 Bear Creek Road Northeast
Woodinville, Washington 98077
Bus (425)861-7550 – Fax (425)861-7549

FIGURE #1

VICINITY MAP & DIRECTIONS

CITY OF BELLEVUE RESPONSE LETTER
PARK POINTE PUD
BELLEVUE, WA

| DESIGN | DRAWN | PROJECT |
|---|---|---|
| | KM | 1543 |

SCALE NTS

DATE 1-9-2018

REVISED 6-4-2018

1

Z:\DRAWING\1500-1599\TAL1543\Plans\TAL-FIGURE.dwg

© Copyright – Talasaea Consultants, INC.

6/4/2018 1:12 PM

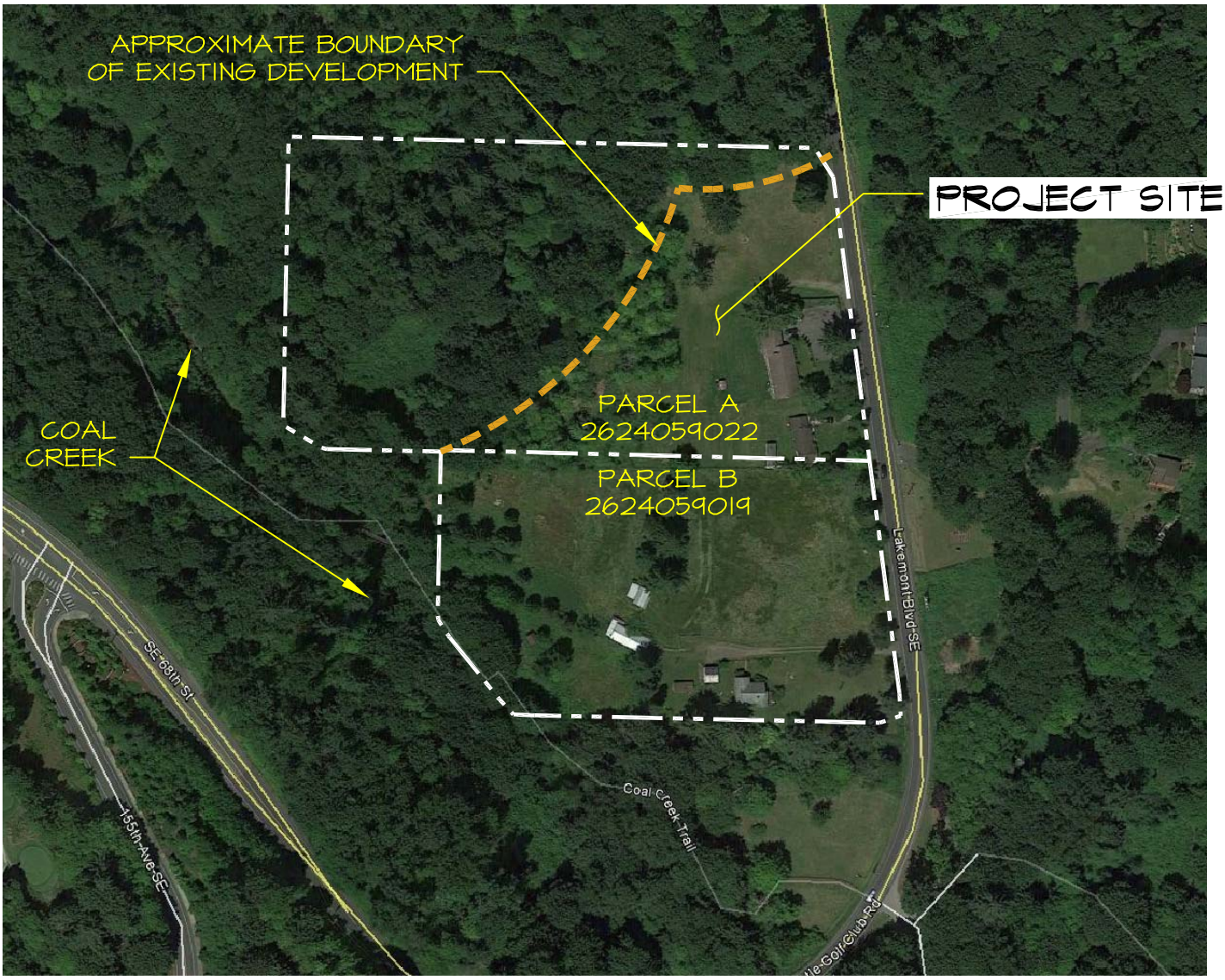



IMAGE SOURCE: GOOGLE EARTH; 2016 GOOGLE INC. (ACCESSED 16 MAY 2017)

NORTH

TALASAEA
CONSULTANTS, INC.
Resource & Environmental Planning
15020 Bear Creek Road Northeast
Woodinville, Washington 98077
Bus (425)861-7550 – Fax (425)861-7549

FIGURE #2

EXISTING DEVELOPMENT

CITY OF BELLEVUE RESPONSE LETTER
PARK POINTE PUD
BELLEVUE, WA

| DESIGN | DRAWN | PROJECT |
|---|---|---|
| | KM | 1543 |

SCALE: NTS

DATE: 1-9-2018

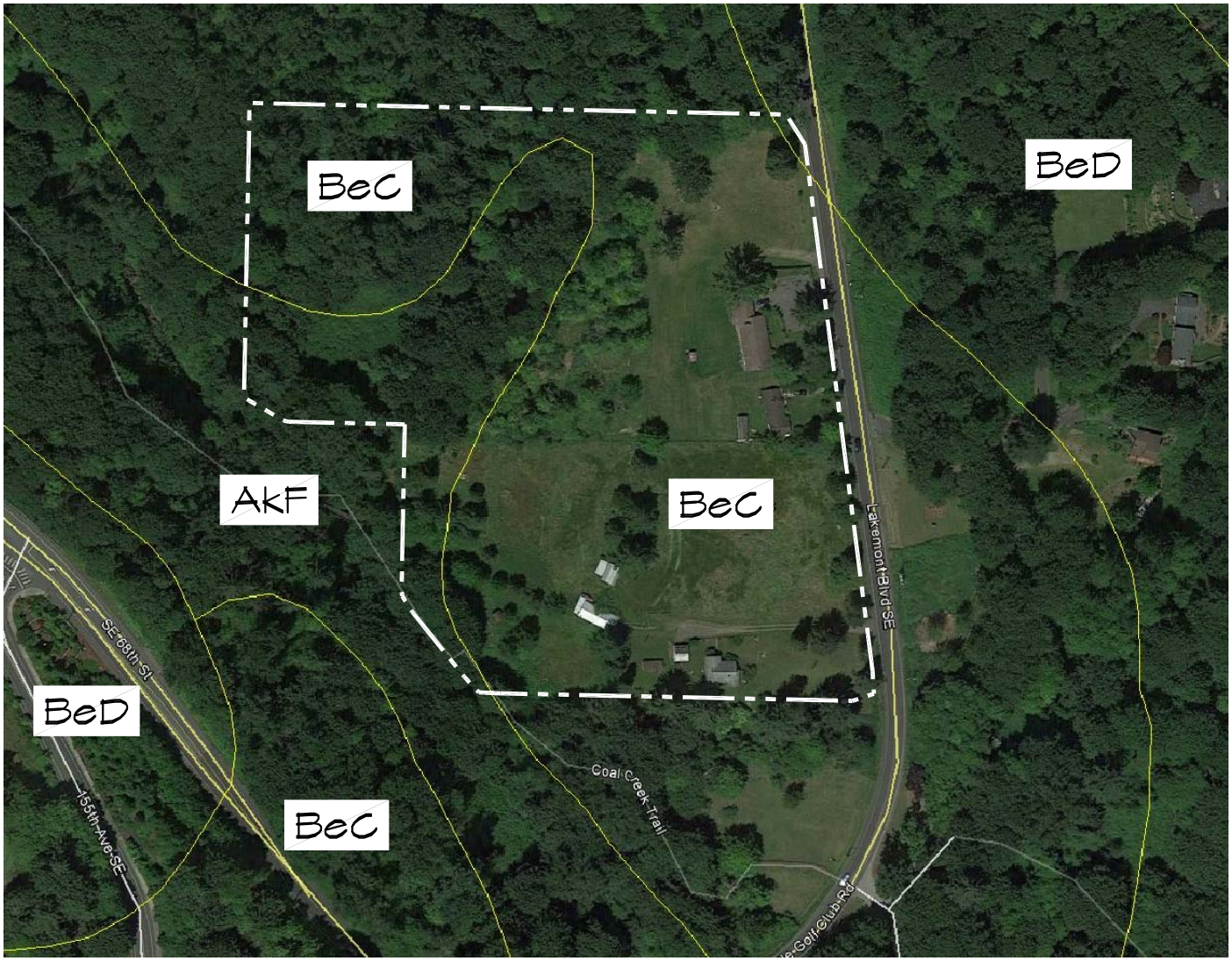
REVISED: 6-4-2018

2

Z:\DRAWING\1500-1599\TAL1543\Plans\TAL-FIGURE.dwg

© Copyright – Talasaea Consultants, INC.

6/4/2018 1:12 PM




## LEGEND

| TYPE | DESCRIPTION, SLOPES |
|---|---|
| AkF | ALDERWOOD-KITSAP SOIL, VERY STEEP |
| BeC | BEAUSITE GRAVELLY SANDY LOAM 6-15% SLOPE |
| BeD | BEAUSITE GRAVELLY SANDY LOAM 15-30% SLOPE |

SOURCE: SOIL SURVEY STAFF, NATURAL RESOURCES CONSERVATION SERVICE, UNITED STATES DEPARTMENT OF AGRICULTURE, WEB SOIL SURVEY. AVAILABLE ONLINE AT http://websoilsurvey.nrcs.usda.gov/. ACCESSED (5/16/2017).

NORTH

TALASAEA CONSULTANTS, INC.
Resource & Environmental Planning
15020 Bear Creek Road Northeast
Woodinville, Washington 98077
Bus (425)861-7550 - Fax (425)861-7549

FIGURE #3

NRCS SOILS MAP

CITY OF BELLEVUE RESPONSE LETTER
PARK POINTE PUD
BELLEVUE, WA

| DESIGN | DRAWN | PROJECT |
|---|---|---|
| | KM | 1543 |

SCALE: NTS

DATE: 1-9-2018

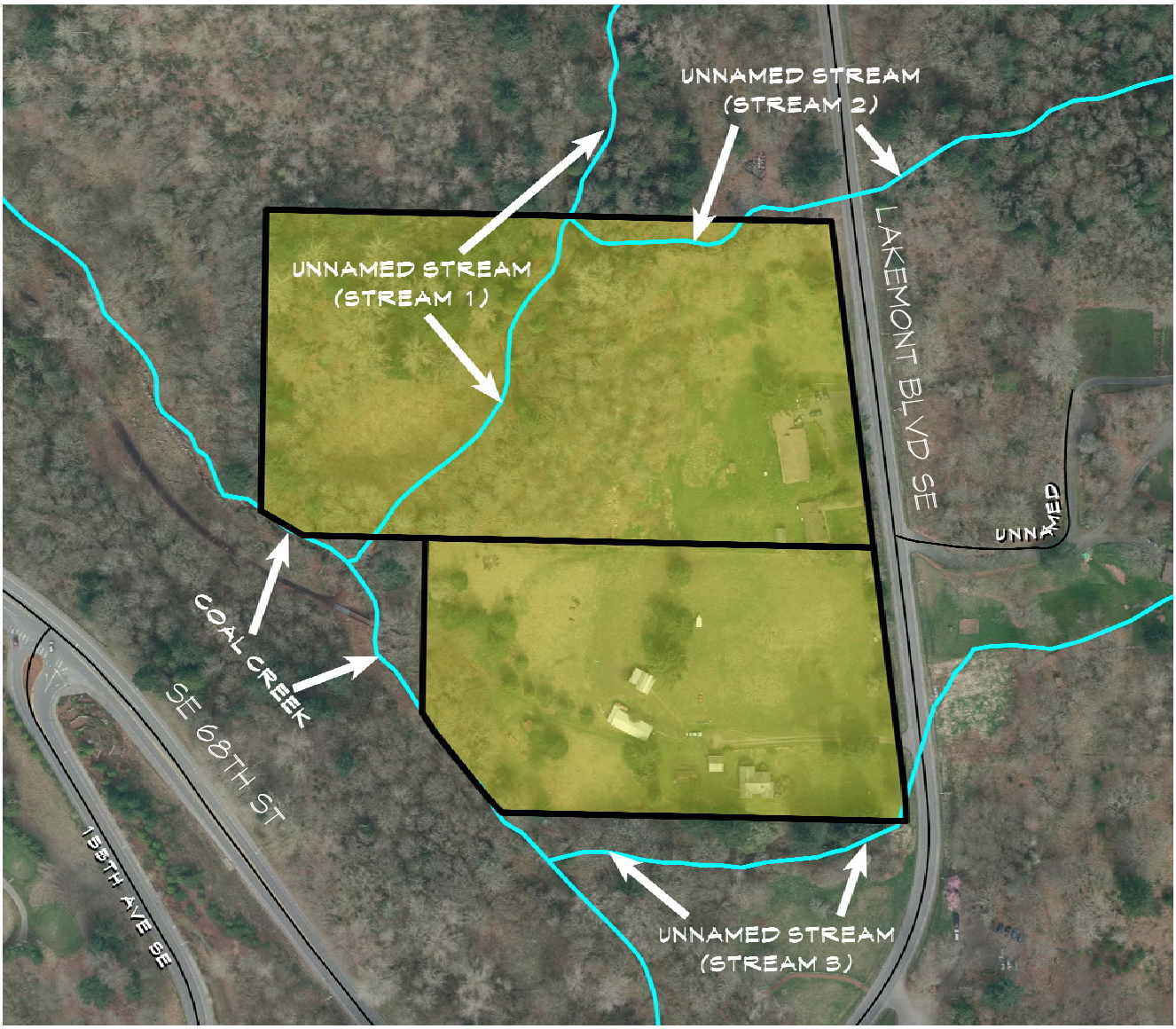
REVISED: 6-4-2018

3

Z:\DRAWING\1500-1599\TAL1543\Plans\TAL-FIGURE.dwg

© Copyright - Talasaea Consultants, INC.

6/4/2018 1:13 PM




REFERENCE: GIS ROAD, STREAM AND PARCEL DATA FROM CITY OF BELLEVUE, 2013. AERIAL IMAGE 2012 FROM EARTH EXPLORER (DOWNLOADED 2015)

NORTH

TALASAEA
CONSULTANTS, INC.
Resource & Environmental Planning
15020 Bear Creek Road Northeast
Woodinville, Washington 98077
Bus (425)861-7550 - Fax (425)861-7549

FIGURE #4

CITY OF BELLEVUE CRITICAL AREAS MAP

CITY OF BELLEVUE RESPONSE LETTER
PARK POINTE PUD
BELLEVUE, WA

| DESIGN | DRAWN | PROJECT |
|---|---|---|
| | KM | 1543 |

SCALE NTS

DATE 1-9-2018

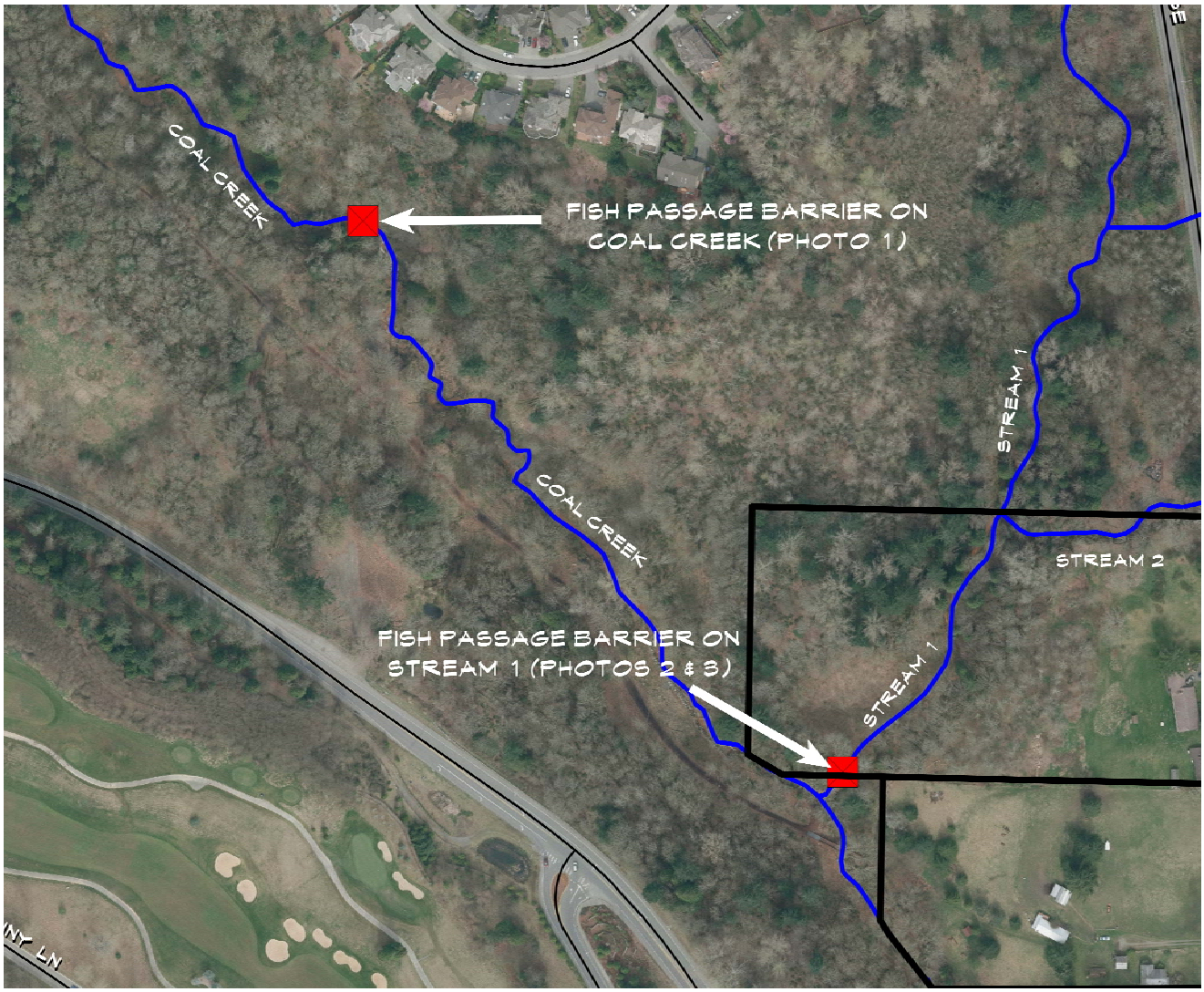
REVISED 6-4-2018

4

Z:\DRAWING\1500-1599\TAL1543\Plans\TAL-FIGURE.dwg

© Copyright - Talasaea Consultants, INC.

6/4/2018 1:13 PM




REFERENCE: GIS ROAD AND PARCEL DATA FROM CITY OF BELLEVUE, 2013. STREAM GIS DATA FROM KING COUNTY, 2010. AERIAL IMAGE 2012 FROM EARTH EXPLORER (DOWNLOADED 2015). FISH PASSAGE BARRIER LOCATIONS DETERMINED BY GPS-ENABLED CAMERA.

NORTH

TALASAEA CONSULTANTS, INC.
Resource & Environmental Planning
15020 Bear Creek Road Northeast
Woodinville, Washington 98077
Bus (425)861-7550 – Fax (425)861-7549

FIGURE #5

COAL CREEK BARRIER LOCATIONS

CITY OF BELLEVUE RESPONSE LETTER
PARK POINTE PUD
BELLEVUE, WA

| DESIGN | DRAWN | PROJECT |
|---|---|---|
| | KM | 1543 |

SCALE: NTS
DATE: 1-9-2018
REVISED: 6-4-2018

5

Z:\DRAWING\1500-1599\TAL1543\Plans\TAL-FIGURE.dwg

© Copyright – Talasaea Consultants, INC.
6/4/2018 1:14 PM




REFERENCE: KING COUNTY IMAP (HTTPS://GISMAPS.KINGCOUNTY.GOV/IMAP/)
AERIAL IMAGE DATE: 2015

## LEGEND

| | | |
|---|---|---|
| | PASTURE GRASSES WITHIN ½ MILE OF PROPERTY | 34.7 AC |
| | PASTURE GRASSES WITHIN PROPERTY BOUNDARY | 4.8 AC |

NORTH

TALASAEA CONSULTANTS, INC.
Resource & Environmental Planning
15020 Bear Creek Road Northeast
Woodinville, Washington 98077
Bus (425)861-7550 – Fax (425)861-7549

FIGURE #6

PASTURE GRASSES IN 1/2 MILE VICINITY

CITY OF BELLEVUE RESPONSE LETTER
PARK POINTE PUD
BELLEVUE, WA

| DESIGN | DRAWN | PROJECT |
|---|---|---|
| | KM | 1543 |

SCALE: NTS
DATE: 1-9-2018
REVISED: 6-4-2018

6

Z:\DRAWING\1500-1599\TAL1543\Plans\TAL-FIGURE.dwg

© Copyright – Talasaea Consultants, INC.
6/4/2018 1:15 PM

# Appendix A1:

## Geotechnical Engineering Study
## Prepared by Geotech Consultants, Inc., January 19, 2016


Copyright © 2019 Talasaea Consultants, Inc.

**GEOTECH**
**CONSULTANTS, INC.**

13256 Northeast 20th Street, Suite 16
Bellevue, Washington 98005
(425) 747-5618 FAX (425) 747-8561

January 19, 2016

JN 15349

Isola Homes
1518 – 1st Avenue South, Suite 301
Seattle, Washington 98134

Attention: Alex Mason

Subject: **Transmittal Letter – Geotechnical Engineering Study**
Proposed Housing Development
7219 and 7331 Lakemont Boulevard Southeast
Bellevue, Washington

Dear Mr.Mason:

We are pleased to present this geotechnical engineering report for the housing development to be constructed in Bellevue, Washington. The scope of our services consisted of exploring site surface and subsurface conditions, and then developing this report to provide recommendations for general earthwork and design criteria for foundations and retaining walls. This work was authorized by your acceptance of our proposal dated August 19, 2015.

The attached report contains a discussion of the study and our recommendations. Please contact us if there are any questions regarding this report, or for further assistance during the design and construction phases of this project.

Respectfully submitted,

GEOTECH CONSULTANTS, INC.

James H. Strange, P.E.
Associate

cc: **Malsam Tsang Structural Engineering** – Marc Malsam
*via email: marc@malsam-tsang.com*

TRC/JHS: at

**GEOTECHNICAL ENGINEERING STUDY**
**Proposed Housing Development**
**7219 and 7331 Lakemont Boulevard Southeast**
**Bellevue, Washington**

This report presents the findings and recommendations of our geotechnical engineering study for the site of the proposed housing development to be located in Bellevue.

We were provided with a preliminary site plan prepared by PACE dated June 3, 2015. Based on this plan, we understand that the development will consist of 45 residential lots, with associated access roads and underground utilities. A stormwater detention vault is planned at the southwest corner of the site. We have not been provided with a grading plan, but we anticipate that cuts and fills of about 5 feet are possible.

We understand that coal mine workings are located below the site and in the surrounding area. The scope of our work does not include an evaluation of potential impacts of the coal mine on the proposed development.

If the scope of the project changes from what we have described above, we should be provided with revised plans in order to determine if modifications to the recommendations and conclusions of this report are warranted.

## ***SITE CONDITIONS***

### *SURFACE*

The Vicinity Map, Plate 1, illustrates the general location of the site in Bellevue. The site is bordered to the east by Lakemont Boulevard Southeast, and to the north, west, and south by wooded, sloping land owned by City of Bellevue Parks.

The site consists of two parcels of land. Two houses and a few small outbuildings are located near the east side of the northern parcel. A house and four medium to large outbuildings are located in the south and southwestern part of the southern parcel.

Most of the eastern part of the planned development area of the site slopes gently down toward the west. There is an 8-foot-tall knob near the west side of this gently sloping area in the northern parcel. North and west of the gently sloping area in the northern parcel the terrain slopes down toward the north and west with an inclination of 1.5:1 to 2:1 (H:V). The northern slope has a height of 10 to 15 feet and the western slope has a height of 30 to 40 feet. The northern slope is steepest, likely due to past fill placement over the top of the slope. A stream is located at the base of the northern and western slopes. At the southern parcel, the area west of the gentle slope steepens to a moderate inclination and extends west of the site. Further off-site toward the west the slope becomes steep and declines to a stream. We did not observe indications of instability of the site slopes.

The gently sloping eastern portion of the site is primarily vegetated with field grass, with landscaping bushes around the houses and some scattered trees. Trees and brush grow on the steep slopes toward the north and west.

During our recent site visit we observed flowing water that emerged just south of a shed in the southwest part of the site. The water flowed westward and eventually off the site. We also observed standing water in some of the east-central part of the southern parcel and near the west side of the gently sloping area in that parcel.

## *SUBSURFACE*

The subsurface conditions were explored by excavating 24 test pits at the approximate locations shown on the Site Exploration Plan, Plate 2. Our exploration program was based on the proposed construction, anticipated subsurface conditions and those encountered during exploration, and the scope of work outlined in our proposal.

The test pits were excavated on August 21 and December 22, 2015 with a rubber-tired backhoe. A geotechnical engineer from our staff observed the excavation process, logged the test pits, and obtained representative samples of the soil encountered. "Grab" samples of selected subsurface soil were collected from the backhoe bucket. The Test Pit Logs are attached to this report as Plates 3 through 14.

### ***Soil Conditions***

Test Pits 2 through 4, 8 through 10, and 21 through 24 encountered fill and buried topsoil that generally extended to depths of 2 to 5 feet. However, in Test Pits 3, 22, and 23, located close to the tops of the slopes at the north and west sides of the development, the fill and buried topsoil had a thickness of 7.5 to more than 10 feet. Test Pit 22 terminated at a depth of 10 feet due to heavy caving; it did not advance through the fill.

Based on surface conditions and the test pit findings, it appears that fill was placed to expand the gently sloping part of the site a fairly short distance beyond the former top of the steep northern and the north part of the western slope. Fill was also placed to raise the ground surface in a low area that extended from the northwest corner of the proposed development area southward, approaching the southern edge of the northern parcel.

Below the fill and buried topsoil in the above-described explorations, and below about a foot of surficial topsoil in the other explorations, the test pits encountered up to a few feet of loose to medium-dense soil. Medium-dense native soil was encountered within 3 feet of the lowest portion of the topsoil. This native soil varied widely in composition across the site, including: silty sand with gravel, sand with gravel, silt with sand and gravel, and silt.

### ***Groundwater Conditions***

Perched groundwater seepage was observed at a depth of 6 to 10 feet in Test Pits 9, 10, and 12, which were excavated in August, and at a depth of 2 to 10 feet in Test Pits 15 through 21, 23, and 24, which were excavated in December following/during heavy rains. The test pits were left open for only a short time period. Therefore, the seepage levels on the logs represent the location of transient water seepage and may not indicate the static groundwater level. It should be noted that groundwater levels vary seasonally with rainfall and other factors, and are typically highest during the normally wet winter and spring months. We anticipate that groundwater could be found in more permeable soil layers and between the looser near-surface soil and the underlying denser soil.

The stratification lines on the logs represent the approximate boundaries between soil types at the exploration locations. The actual transition between soil types may be gradual, and subsurface conditions can vary between exploration locations. The logs provide specific subsurface information only at the locations tested. The relative densities and moisture descriptions indicated on the test pit logs are interpretive descriptions based on the conditions observed during excavation.

The compaction of test pit backfill was not in the scope of our services. Loose soil will therefore be found in the area of the test pits. If this presents a problem, the backfill will need to be removed and replaced with structural fill during construction.

## CONCLUSIONS AND RECOMMENDATIONS

### *GENERAL*

*THIS SECTION CONTAINS A SUMMARY OF OUR STUDY AND FINDINGS FOR THE PURPOSES OF A GENERAL OVERVIEW ONLY. MORE SPECIFIC RECOMMENDATIONS AND CONCLUSIONS ARE CONTAINED IN THE REMAINDER OF THIS REPORT. ANY PARTY RELYING ON THIS REPORT SHOULD READ THE ENTIRE DOCUMENT.*

The test pits conducted for this study generally encountered native, medium-dense soil within a few feet of the ground surface, and the soil became denser with depth. However, we observed up to 10 feet of loose fill in several test pits in the northern and northwestern part of the site. Other area of fill may be present at the site. Conventional footing foundations bearing on the competent native soil will provide suitable support to the proposed residences. Over-excavation of fill will be necessary where it is present at planned foundation locations.

The steep northern and western slopes are considered Steep Slope Geologic Hazard Areas by the City of Bellevue due to their height and inclination. Bellevue Code states that a buffer 50 feet wide should be established beginning at the top of Steep Slopes. However, the code includes a provision that the buffer can be reduced based on the evaluation of a geotechnical engineer. In our opinion a reduced buffer of 10 feet from the Steep Slope buffer is appropriate based on the absence of past landslides on the site slopes and the competent condition of the native soils that compose the core of the site. We recommend that the proposed residences be set back an additional 10 feet from the edge of the Steep Slope buffer and be founded on directly on competent native soils beneath the existing fill soils along the slope-edge of the residence. Specifically, all foundations within 25 feet of the steep slope shall be founded directly on the medium-dense to dense native soils underlying the fill soils. The remainders of the residences may be supported on structural fill placed above the competent native soils underlying the existing fills. In reference to the Bellevue code (20.25H.125) we believe the proposed reduction in buffer/setback conforms to Items A through C, and that the specific house/lot designs could be made to conform to Items D through J.

Like any steep slope in the Puget Sound region, the steep slopes north and west of the proposed development have a potential to experience shallow landslides, which would most likely be triggered by heavy rainfall or surface water directed onto the slope. Where the upper portion of the slopes consist of fill there is a somewhat increased potential for slope failures. However, because the fill at the top of the slopes is only on the order of about 10 feet thick, it is our opinion that increased potential will not pose a risk to the proposed residences, provided they have the recommended 10-foot-wide slope buffer and additional 10-foot-wide slope setback and are founded on the medium-dense to dense native soils at the site.

Although sand with some permeability was encountered in some test pit explorations, the sand had a thickness of just a few feet and was underlain by soils with very low permeability. We also observed numerous instances of relatively high perched groundwater at the site; based on our findings, the site soils are not suitable for concentrated stormwater infiltration.

The soils that underlie the site are generally silty and thus moisture sensitive. It would be very difficult to use the site soils as structural fill when they are wet or during wet weather.

The generally silty soils will be susceptible to softening under foot traffic during the placement of forms and rebar, particularly in wet conditions. After scraping any loosened soils from the footing excavations, the bearing surfaces could be protected with several inches of clean crushed rock.

Storm detention/retention facilities and other utilities are often installed below, or near, structures. The walls of storm vaults must be designed as either cantilever or restrained retaining walls, as appropriate. Wall pressures for the expected soil conditions are presented in the ***Permanent Foundation and Retaining Walls*** section of this report. It is important that the portion of the structure above the permanent detained water level be backfilled with free-draining soil, as recommended for retaining walls. Should drainage not be provided, the walls must be designed for hydrostatic forces acting on the outside of the structure. The backfill for all underground structures must be compacted in lifts according to the criteria of this report. Trenches for underground structures and utilities should not cross a line extending downwards from a new or existing footing at an inclination of 1:1 (Horizontal:Vertical), or a line extending downwards from a property line at an inclination of 1:1. We should be consulted if these excavation zones will be exceeded for installation of storm facilities or other utilities.

The erosion control measures needed during the site development will depend heavily on the weather conditions that are encountered. We anticipate that a silt fence will be needed around the downslope sides of any cleared areas. Existing pavements, ground cover, and landscaping should be left in place wherever possible to minimize the amount of exposed soil. Rocked staging areas and construction access roads should be provided to reduce the amount of soil or mud carried off the property by trucks and equipment. Wherever possible, the access roads should follow the alignment of planned pavements. Trucks should not be allowed to drive off of the rock-covered areas. Cut slopes and soil stockpiles should be covered with plastic during wet weather. Following clearing or rough grading, it may be necessary to mulch or hydroseed bare areas that will not be immediately covered with landscaping or an impervious surface. On most construction projects, it is necessary to periodically maintain or modify temporary erosion control measures to address specific site and weather conditions.

The drainage and/or waterproofing recommendations presented in this report are intended only to prevent active seepage from flowing through concrete walls or slabs. Even in the absence of active seepage into and beneath structures, water vapor can migrate through walls, slabs, and floors from the surrounding soil, and can even be transmitted from slabs and foundation walls due to the concrete curing process. Water vapor also results from occupant uses, such as cooking and bathing. Excessive water vapor trapped within structures can result in a variety of undesirable conditions, including, but not limited to, moisture problems with flooring systems, excessively moist air within occupied areas, and the growth of molds, fungi, and other biological organisms that may be harmful to the health of the occupants. The designer or architect must consider the potential vapor sources and likely occupant uses, and provide sufficient ventilation, either passive or mechanical, to prevent a build up of excessive water vapor within the planned structure.

Geotech Consultants, Inc. should be allowed to review the final development plans to verify that the recommendations presented in this report are adequately addressed in the design. Such a plan review would be additional work beyond the current scope of work for this study, and it may include revisions to our recommendations to accommodate site, development, and geotechnical constraints that become more evident during the review process.

We recommend including this report, in its entirety, in the project contract documents. This report should also be provided to any future property owners so they will be aware of our findings and recommendations.

## *SEISMIC CONSIDERATIONS*

In accordance with the International Building Code (IBC), the site soil profile within 100 feet of the ground surface is best represented by Site Class Type D (Stiff Site Class). As noted in the USGS website, the mapped spectral acceleration value for a 0.2 second ($S_s$) and 1.0 second period ($S_1$) equals 1.32g and 0.51g, respectively.

The IBC states that a site-specific seismic study need not be performed provided that the peak ground acceleration be equal to $S_{DS}/2.5$, where $S_{DS}$ is determined in ASCE 7. It is noted that $S_{DS}$ is equal to $2/3S_{MS}$. $S_{MS}$ equals $F_a$ times $S_S$, where $F_a$ is determined in Table 11.4-1. For our site, $F_a$ = 1.0. The calculated peak ground acceleration that we utilized for the seismic-related parameters (earth pressures, seismic surcharges, and slope stability) of this report equals 0.35g.

The site soils are not susceptible to seismic liquefaction because of their dense nature and the absence of near-surface groundwater.

## *CONVENTIONAL FOUNDATIONS*

The proposed structures can be supported on conventional continuous and spread footings bearing on undisturbed, medium-dense, native soil, or on structural fill placed above this competent native soil. As discussed in the ***General*** section, all foundations within 25 feet of the steep slope shall be founded directly on the medium-dense to dense native soils underlying the fill soils. The remainders of the residences may be supported on structural fill placed above the competent native soils underlying the existing fills. See the section entitled ***General Earthwork and Structural Fill*** for recommendations regarding the placement and compaction of structural fill beneath structures. Adequate compaction of structural fill should be verified with frequent density testing during fill placement. Prior to placing structural fill beneath foundations, the excavation should be observed by the geotechnical engineer to document that adequate bearing soils have been exposed.

We recommend that continuous and individual spread footings have minimum widths of 16 and 24 inches, respectively. Exterior footings should also be bottomed at least 18 inches below the lowest adjacent finish ground surface for protection against frost and erosion. The local building codes should be reviewed to determine if different footing widths or embedment depths are required. Footing subgrades must be cleaned of loose or disturbed soil prior to pouring concrete. Depending upon site and equipment constraints, this may require removing the disturbed soil by hand.

Depending on the final site grades, overexcavation may be required below some footings to expose competent native soil. Unless lean concrete is used to fill an overexcavated hole, the overexcavation must be at least as wide at the bottom as the sum of the depth of the overexcavation and the footing

width. For example, an overexcavation extending 2 feet below the bottom of a 2-foot-wide footing must be at least 4 feet wide at the base of the excavation. If lean concrete is used, the overexcavation need only extend 6 inches beyond the edges of the footing. A typical detail for overexcavation beneath footings is attached as Plate 16.

An allowable bearing pressure of 2,500 pounds per square foot (psf) is appropriate for footings supported on competent native soil. A one-third increase in this design bearing pressure may be used when considering short-term wind or seismic loads. For the above design criteria, it is anticipated that the total post-construction settlement of footings founded on competent native soil will be about one-inch, with differential settlements on the order of one-half-inch in a distance of 30 feet along a continuous footing with a uniform load.

Lateral loads due to wind or seismic forces may be resisted by friction between the foundation and the bearing soil, or by passive earth pressure acting on the vertical, embedded portions of the foundation. For the latter condition, the foundation must be either poured directly against relatively level, undisturbed soil or be surrounded by level, well-compacted fill. We recommend using the following ultimate values for the foundation's resistance to lateral loading:

| PARAMETER | ULTIMATE VALUE |
|---|---|
| Coefficient of Friction | 0.45 |
| Passive Earth Pressure | 300 pcf |

**Where: pcf is Pounds per Cubic Foot, and Passive Earth Pressure is computed using the equivalent fluid density.**

If the ground in front of a foundation is loose or sloping, the passive earth pressure given above will not be appropriate. We recommend maintaining a safety factor of at least 1.5 for the foundation's resistance to lateral loading, when using the above ultimate values.

## *FOUNDATION AND RETAINING WALLS*

Retaining walls backfilled on only one side should be designed to resist the lateral earth pressures imposed by the soil they retain. The following recommended parameters are for walls that restrain level backfill:

| PARAMETER | VALUE |
|---|---|
| Active Earth Pressure * | 35 pcf |
| Passive Earth Pressure | 300 pcf |
| Coefficient of Friction | 0.45 |
| Soil Unit Weight | 130 pcf |

**Where: pcf is Pounds per Cubic Foot, and Active and Passive Earth Pressures are computed using the equivalent fluid pressures.**

*** For a restrained wall that cannot deflect at least 0.002 times its height, a uniform lateral pressure equal to 10 psf times the height of the wall should be added to the above active equivalent fluid pressure.**

The design values given above do not include the effects of any hydrostatic pressures behind the walls and assume that no surcharges, such as those caused by slopes, vehicles, or adjacent foundations will be exerted on the walls. If these conditions exist, those pressures should be added to the above lateral soil pressures. Where sloping backfill is desired behind the walls, we will need to be given the wall dimensions and the slope of the backfill in order to provide the appropriate design earth pressures. The surcharge due to traffic loads behind a wall can typically be accounted for by adding a uniform pressure equal to 2 feet multiplied by the above active fluid density. Heavy construction equipment should not be operated behind retaining and foundation walls within a distance equal to the height of a wall, unless the walls are designed for the additional lateral pressures resulting from the equipment.

The values given above are to be used to design only permanent foundation and retaining walls that are to be backfilled, such as conventional walls constructed of reinforced concrete or masonry. It is not appropriate to use the above earth pressures and soil unit weight to back-calculate soil strength parameters for design of other types of retaining walls, such as soldier pile, reinforced earth, modular or soil nail walls. We can assist with design of these types of walls, if desired. The passive pressure given is appropriate only for a shear key poured directly against undisturbed native soil, or for the depth of level, well-compacted fill placed in front of a retaining or foundation wall. The values for friction and passive resistance are ultimate values and do not include a safety factor. Restrained wall soil parameters should be utilized for a distance of 1.5 times the wall height from corners or bends in the walls. This is intended to reduce the amount of cracking that can occur where a wall is restrained by a corner.

***Wall Pressures Due to Seismic Forces***

The surcharge wall loads that could be imposed by the design earthquake can be modeled by adding a uniform lateral pressure to the above-recommended active pressure. The recommended surcharge pressure is 8**H** pounds per square foot (psf), where **H** is the design retention height of the wall. Using this increased pressure, the safety factor against sliding and overturning can be reduced to 1.2 for the seismic analysis.

***Retaining Wall Backfill and Waterproofing***

Backfill placed behind retaining or foundation walls should be coarse, free-draining structural fill containing no organics. This backfill should contain no more than 5 percent silt or clay particles and have no gravel greater than 4 inches in diameter. The percentage of particles passing the No. 4 sieve should be between 25 and 70 percent. If the native sandy soil is used as backfill, a minimum 12-inch width of free-draining gravel or a drainage composite similar to Miradrain 6000 should be placed against the backfilled retaining walls. The drainage composites should be hydraulically connected to the foundation drain system.

The purpose of these backfill requirements is to ensure that the design criteria for a retaining wall are not exceeded because of a build-up of hydrostatic pressure behind the wall. Also, subsurface drainage systems are not intended to handle large volumes of water from surface runoff. The top 12 to 18 inches of the backfill should consist of a compacted, relatively impermeable soil or topsoil, or the surface should be paved. The ground surface must also slope away from backfilled walls to reduce the potential for surface water to percolate into the backfill. Water percolating through pervious surfaces (pavers, gravel, permeable pavement, etc.) must also be prevented from flowing toward walls or into the backfill zone. The compacted subgrade below pervious surfaces and any associated drainage layer should

therefore be sloped away. Alternatively, a membrane and subsurface collection system could be provided below a pervious surface.

It is critical that the wall backfill be placed in lifts and be properly compacted, in order for the above-recommended design earth pressures to be appropriate. The wall design criteria assume that the backfill will be well-compacted in lifts no thicker than 12 inches. The compaction of backfill near the walls should be accomplished with hand-operated equipment to prevent the walls from being overloaded by the higher soil forces that occur during compaction. The section entitled ***General Earthwork and Structural Fill*** contains additional recommendations regarding the placement and compaction of structural fill behind retaining and foundation walls.

The above recommendations are not intended to waterproof below-grade walls, or to prevent the formation of mold, mildew or fungi in interior spaces. Over time, the performance of subsurface drainage systems can degrade, subsurface groundwater flow patterns can change, and utilities can break or develop leaks. Therefore, waterproofing should be provided where future seepage through the walls is not acceptable. This typically includes limiting cold-joints and wall penetrations, and using bentonite panels or membranes on the outside of the walls. There are a variety of different waterproofing materials and systems, which should be installed by an experienced contractor familiar with the anticipated construction and subsurface conditions. Applying a thin coat of asphalt emulsion to the outside face of a wall is not considered waterproofing, and will only help to reduce moisture generated from water vapor or capillary action from seeping through the concrete. As with any project, adequate ventilation of basement and crawl space areas is important to prevent a build up of water vapor that is commonly transmitted through concrete walls from the surrounding soil, even when seepage is not present. This is appropriate even when waterproofing is applied to the outside of foundation and retaining walls. We recommend that you contact an experienced envelope consultant if detailed recommendations or specifications related to waterproofing design, or minimizing the potential for infestations of mold and mildew are desired.

The ***General***, ***Slabs-On-Grade***, and ***Drainage Considerations*** sections should be reviewed for additional recommendations related to the control of groundwater and excess water vapor for the anticipated construction.

## *SLABS-ON-GRADE*

The building floors can be constructed as slabs-on-grade atop competent native soil, or on structural fill. The subgrade soil must be in a firm, non-yielding condition at the time of slab construction or underslab fill placement. Any soft areas encountered should be excavated and replaced with select, imported structural fill.

Even where the exposed soils appear dry, water vapor will tend to naturally migrate upward through the soil to the new constructed space above it. This can affect moisture-sensitive flooring, cause imperfections or damage to the slab, or simply allow excessive water vapor into the space above the slab. All interior slabs-on-grade should be underlain by a capillary break drainage layer consisting of a minimum 4-inch thickness of clean gravel or crushed rock that has a fines content (percent passing the No. 200 sieve) of less than 3 percent and a sand content (percent passing the No. 4 sieve) of no more than 10 percent. Pea gravel or crushed rock are typically used for this layer.

As noted by the American Concrete Institute (ACI) in the *Guides for Concrete Floor and Slab Structures*, proper moisture protection is desirable immediately below any on-grade slab that will be covered by tile, wood, carpet, impermeable floor coverings, or any moisture-sensitive equipment or products. ACI also notes that vapor *retarders* such as 6-mil plastic sheeting have been used in the past, but are now recommending a minimum 10-mil thickness for better durability and long term performance. A vapor retarder is defined as a material with a permeance of less than 0.3 perms, as determined by ASTM E 96. It is possible that concrete admixtures may meet this specification, although the manufacturers of the admixtures should be consulted. Where vapor retarders are used under slabs, their edges should overlap by at least 6 inches and be sealed with adhesive tape. The sheeting should extend to the foundation walls for maximum vapor protection. If no potential for vapor passage through the slab is desired, a vapor *barrier* should be used. A vapor barrier, as defined by ACI, is a product with a water transmission rate of 0.01 perms when tested in accordance with ASTM E 96. Reinforced membranes having sealed overlaps can meet this requirement.

The ***General***, ***Permanent Foundation and Retaining Walls***, and ***Drainage Considerations*** sections should be reviewed for additional recommendations related to the control of groundwater and excess water vapor for the anticipated construction.

## *EXCAVATIONS AND SLOPES*

Excavation slopes should not exceed the limits specified in local, state, and national government safety regulations. Temporary cuts to a depth of about 4 feet may be attempted vertically in unsaturated soil, if there are no indications of slope instability. However, vertical cuts should not be made near property boundaries, or existing utilities and structures. Based upon Washington Administrative Code (WAC) 296, Part N, the soil at the subject site would generally be classified as Type B. Therefore, temporary cut slopes greater than 4 feet in height should not be excavated at an inclination steeper than 1:1 (Horizontal:Vertical), extending continuously between the top and the bottom of a cut.

The above-recommended temporary slope inclination is based on the conditions exposed in our explorations, and on what has been successful at other sites with similar soil conditions. It is possible that variations in soil and groundwater conditions will require modifications to the inclination at which temporary slopes can stand. Temporary cuts are those that will remain unsupported for a relatively short duration to allow for the construction of foundations, retaining walls, or utilities. Temporary cut slopes should be protected with plastic sheeting during wet weather. It is also important that surface runoff be directed away from the top of temporary slope cuts. Cut slopes should also be backfilled or retained as soon as possible to reduce the potential for instability. Please note that sand or loose soil can cave suddenly and without warning. Excavation, foundation, and utility contractors should be made especially aware of this potential danger. These recommendations may need to be modified if the area near the potential cuts has been disturbed in the past by utility installation, or if settlement-sensitive utilities are located nearby.

All permanent cuts into native soil should be inclined no steeper than 2:1 (H:V). Fill slopes should not be constructed with an inclination greater than 2:1 (H:V). To reduce the potential for shallow sloughing, fill must be compacted to the face of these slopes. This can be accomplished by overbuilding the compacted fill and then trimming it back to its final inclination. Adequate compaction of the slope face is important for long-term stability and is necessary to prevent excessive settlement of patios, slabs, foundations, or other improvements that may be placed near the edge of the slope.

Water should not be allowed to flow uncontrolled over the top of any temporary or permanent slope. All permanently exposed slopes should be seeded with an appropriate species of vegetation to reduce erosion and improve the stability of the surficial layer of soil.

Any disturbance to the existing slope outside of the building limits may reduce the stability of the slope. Damage to the existing vegetation and ground should be minimized, and any disturbed areas should be revegetated as soon as possible. Soil from the excavation should not be placed on the slope, and this may require the off-site disposal of any surplus soil.

## *DRAINAGE CONSIDERATIONS*

Footing drains should be used where: (1) crawl spaces or basements will be below a structure; (2) a slab is below the outside grade; or, (3) the outside grade does not slope downward from a building. Drains should also be placed at the base of all earth-retaining walls. These drains should be surrounded by at least 6 inches of 1-inch-minus, washed rock that is encircled with non-woven, geotextile filter fabric (Mirafi 140N, Supac 4NP, or similar material). At its highest point, a perforated pipe invert should be at least 6 inches below the bottom of a slab floor or the level of a crawl space. The discharge pipe for subsurface drains should be sloped for flow to the outlet point. Roof and surface water drains must not discharge into the foundation drain system. A typical drain detail is attached to this report as Plate 15. For the best long-term performance, perforated PVC pipe is recommended for all subsurface drains.

As a minimum, a vapor retarder, as defined in the ***Slabs-On-Grade*** section, should be provided in any crawl space area to limit the transmission of water vapor from the underlying soils. Crawl space grades are sometimes left near the elevation of the bottom of the footings. As a result, an outlet drain is recommended for all crawl spaces to prevent an accumulation of any water that may bypass the footing drains. Providing even a few inches of free draining gravel underneath the vapor retarder limits the potential for seepage to build up on top of the vapor retarder.

Groundwater was observed during our field work. If seepage is encountered in an excavation, it should be drained from the site by directing it through drainage ditches, perforated pipe, or French drains, or by pumping it from sumps interconnected by shallow connector trenches at the bottom of the excavation.

The excavation and site should be graded so that surface water is directed off the site and away from the tops of slopes. Water should not be allowed to stand in any area where foundations, slabs, or pavements are to be constructed. Final site grading in areas adjacent to buildings should slope away at least 2 percent, except where the area is paved. Surface drains should be provided where necessary to prevent ponding of water behind foundation or retaining walls. A discussion of grading and drainage related to pervious surfaces near walls and structures is contained in the ***Foundation and Retaining Walls*** section. Water from roof, storm water, and foundation drains should not be discharged onto slopes; it should be tightlined to a suitable outfall located away from any slopes.

## *GENERAL EARTHWORK AND STRUCTURAL FILL*

All building and pavement areas should be stripped of surface vegetation, topsoil, organic soil, and other deleterious material. It is important that existing foundations be removed before site development. The stripped or removed materials should not be mixed with any materials to be used as structural fill, but they could be used in non-structural areas, such as landscape beds.

Structural fill is defined as any fill, including utility backfill, placed under, or close to, a building, behind permanent retaining or foundation walls, or in other areas where the underlying soil needs to support loads. All structural fill should be placed in horizontal lifts with a moisture content at, or near, the optimum moisture content. The optimum moisture content is that moisture content that results in the greatest compacted dry density. The moisture content of fill is very important and must be closely controlled during the filling and compaction process.

Fills placed on sloping ground should be keyed into the medium-dense soils. This is typically accomplished by placing and compacting the structural fill on level benches that are cut into the competent soils. The allowable thickness of the fill lift will depend on the material type selected, the compaction equipment used, and the number of passes made to compact the lift. The loose lift thickness should not exceed 12 inches. We recommend testing the fill as it is placed. If the fill is not sufficiently compacted, it can be recompacted before another lift is placed. This eliminates the need to remove the fill to achieve the required compaction. The following table presents recommended relative compactions for structural fill:

| LOCATION OF FILL PLACEMENT | MINIMUM RELATIVE COMPACTION |
|---|---|
| Beneath footings, slabs or walkways | 95% |
| Filled slopes and behind retaining walls | 90% |
| Beneath pavements | 95% for upper 12 inches of subgrade; 90% below that level |

**Where: Minimum Relative Compaction is the ratio, expressed in percentages, of the compacted dry density to the maximum dry density, as determined in accordance with ASTM Test Designation D 1557-91 (Modified Proctor).**

***Use of On-Site Soil***

If grading activities take place during wet weather, or when the silty, on-site soil is wet, site preparation costs may be higher because of delays due to rain and the potential need to import granular fill. The on-site soil is generally silty and therefore moisture sensitive. Grading operations will be difficult during wet weather, or when the moisture content of this soil exceeds the optimum moisture content.

Moisture-sensitive soil may also be susceptible to excessive softening and "pumping" from construction equipment, or even foot traffic, when the moisture content is greater than the optimum moisture content. It may be beneficial to protect subgrades with a layer of imported sand or crushed rock to limit disturbance from traffic.

The ***General*** section should be reviewed for considerations related to the reuse of on-site soils. Structural fill that will be placed in wet weather should consist of a coarse, granular soil with a silt or clay content of no more than 5 percent. The percentage of particles passing the No. 200 sieve should be measured from that portion of soil passing the three-quarter-inch sieve.

## ***LIMITATIONS***

The conclusions and recommendations contained in this report are based on site conditions as they existed at the time of our exploration and assume that the soil and groundwater conditions encountered in the test pits are representative of subsurface conditions on the site. If the subsurface conditions encountered during construction are significantly different from those observed in our explorations, we should be advised at once so that we can review these conditions and reconsider our recommendations where necessary. Unanticipated conditions are commonly encountered on construction sites and cannot be fully anticipated by merely taking samples in test pits. Subsurface conditions can also vary between exploration locations. Such unexpected conditions frequently require making additional expenditures to attain a properly constructed project. It is recommended that the owner consider providing a contingency fund to accommodate such potential extra costs and risks. This is a standard recommendation for all projects.

The recommendations presented in this report are directed toward the protection of only the proposed residences from damage due to slope movement. Predicting the future behavior of steep slopes and the potential effects of development on their stability is an inexact and imperfect science that is currently based mostly on the past behavior of slopes with similar characteristics. Landslides and soil movement can occur on steep slopes before, during, or after the development of property. At additional cost, we can provide recommendations for reducing the risk of future movement on the steep slopes, which could involve regrading the slopes or installing subsurface drains or costly retaining structures. The owner of any property containing, or located close to steep slopes must ultimately accept the possibility that some slope movement could occur, resulting in possible loss of ground or damage to the facilities around the proposed residences.

This report has been prepared for the exclusive use of Isola Homes and its representatives for specific application to this project and site. Our conclusions and recommendations are professional opinions derived in accordance with our understanding of current local standards of practice, and within the scope of our services. No warranty is expressed or implied. The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design. Our services also do not include assessing or minimizing the potential for biological hazards, such as mold, bacteria, mildew and fungi in either the existing or proposed site development.

## ***ADDITIONAL SERVICES***

Geotech Consultants, Inc. should be retained to provide geotechnical consultation, testing, and observation services during construction. This is to confirm that subsurface conditions are consistent with those indicated by our exploration, to evaluate whether earthwork and foundation construction activities comply with the general intent of the recommendations presented in this report, and to provide suggestions for design changes in the event subsurface conditions differ from those anticipated prior to the start of construction. However, our work would not include the supervision or direction of the actual work of the contractor and its employees or agents. Also, job and site safety, and dimensional measurements, will be the responsibility of the contractor.

During the construction phase, we will provide geotechnical observation and testing services when requested by you or your representatives. Please be aware that we can only document site work we actually observe. It is still the responsibility of your contractor or on-site construction team to verify that our recommendations are being followed, whether we are present at the site or not.

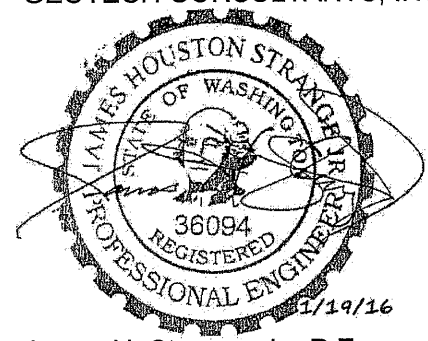
The following plates are attached to complete this report:

| | |
|---|---|
| Plate 1 | Vicinity Map |
| Plate 2 | Site Exploration Plan |
| Plates 3 - 14 | Test Pit Logs |
| Plate 15 | Typical Footing Drain Detail |
| Plate 16 | Typical Footing Overexcavation |

We appreciate the opportunity to be of service on this project. Please contact us if you have any questions, or if we can be of further assistance.

Respectfully submitted,

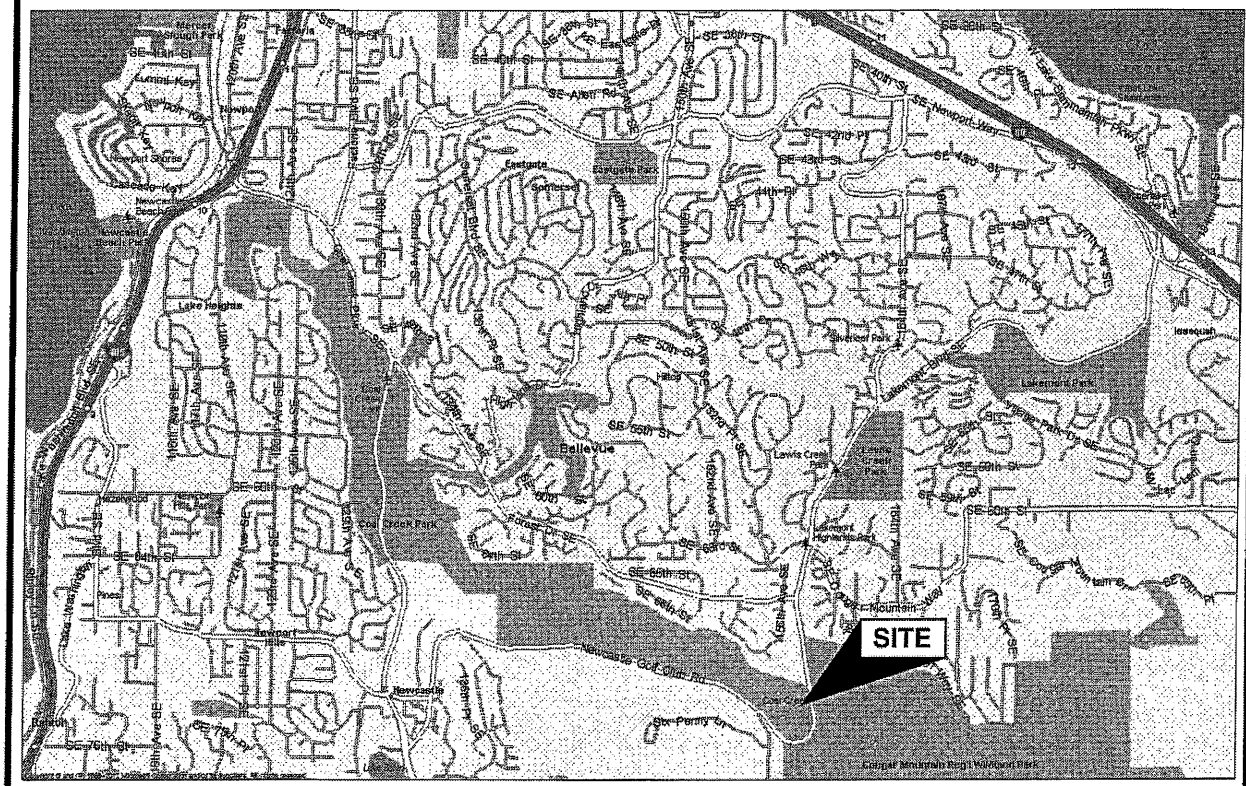
GEOTECH CONSULTANTS, INC.




James H. Strange, Jr., P.E.
Associate

TRC/JHS:at

NORTH



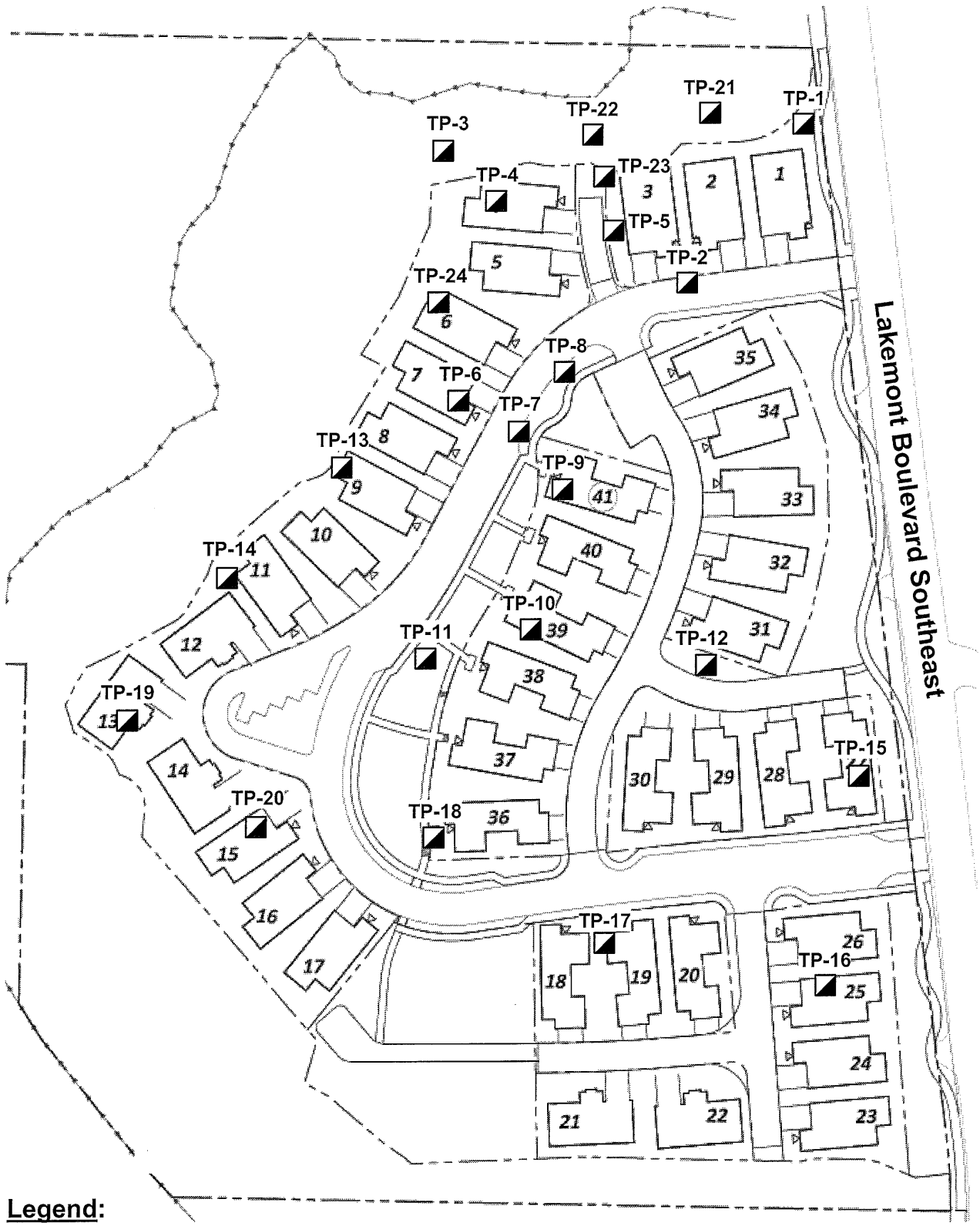

*(Source: Microsoft MapPoint, 2013)*

**GEOTECH**
**CONSULTANTS, INC.**

## VICINITY MAP

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

| Job No: | Date: | | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | | 1 |




**Legend:**

Test Pit Location

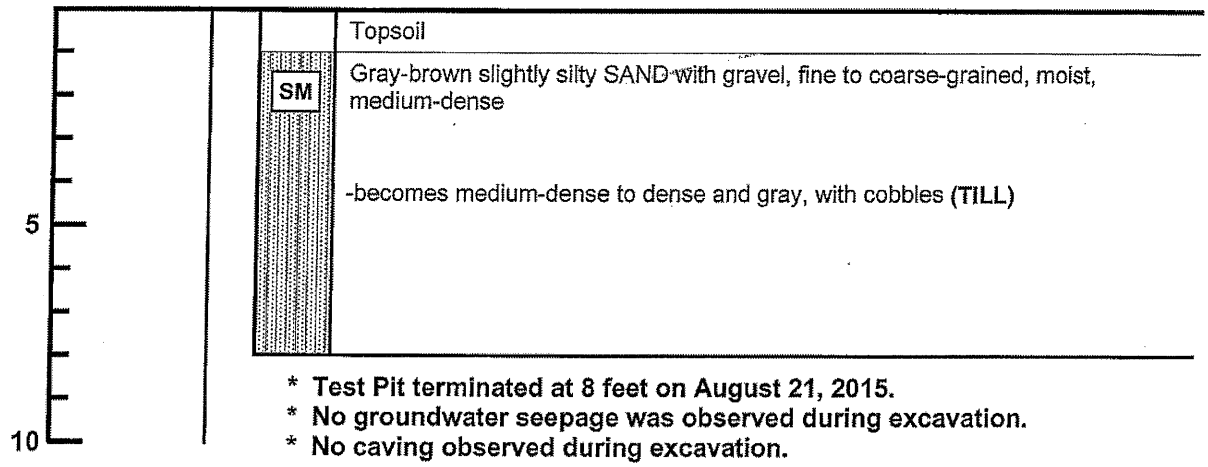
GEOTECH CONSULTANTS, INC.

# SITE EXPLORATION PLAN

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

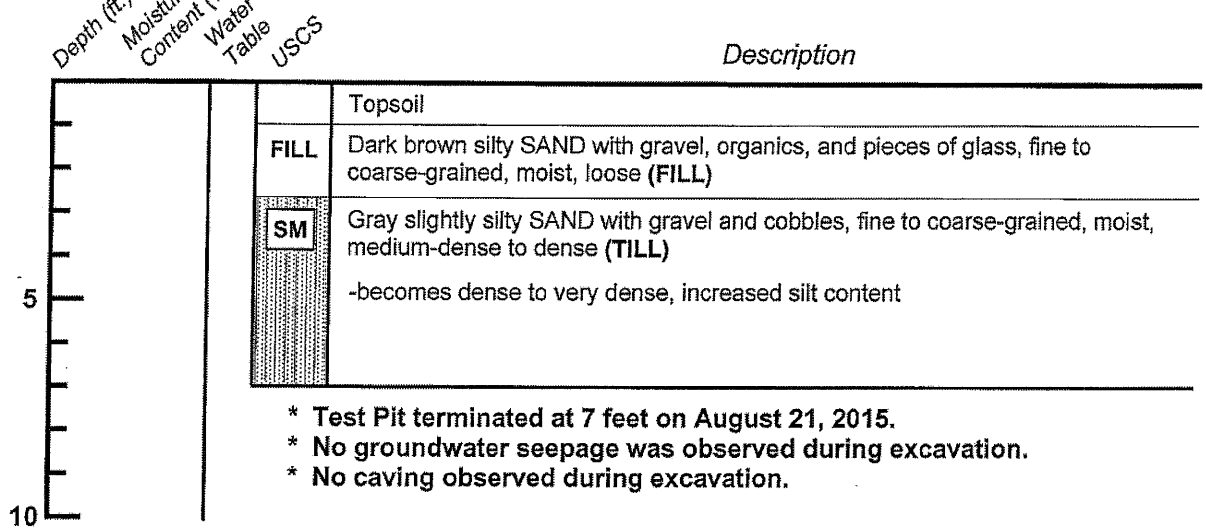
| Job No: | Date: | | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | No Scale | 2 |

## TEST PIT 1




* **Test Pit terminated at 8 feet on August 21, 2015.**
* **No groundwater seepage was observed during excavation.**
* **No caving observed during excavation.**

## TEST PIT 2




* **Test Pit terminated at 7 feet on August 21, 2015.**
* **No groundwater seepage was observed during excavation.**
* **No caving observed during excavation.**

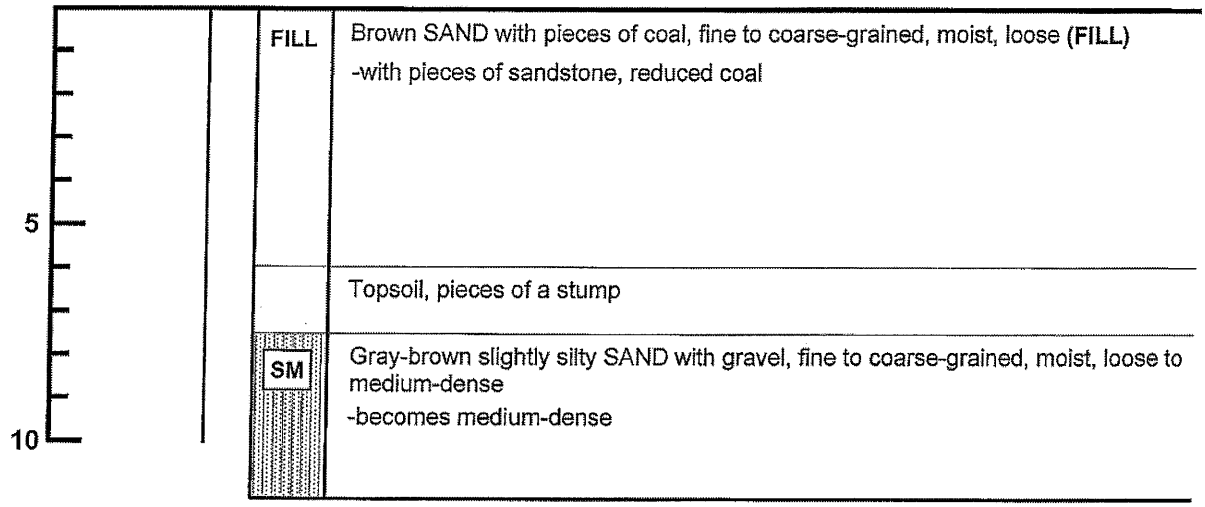
GEOTECH CONSULTANTS, INC.

**TEST PIT LOG**

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

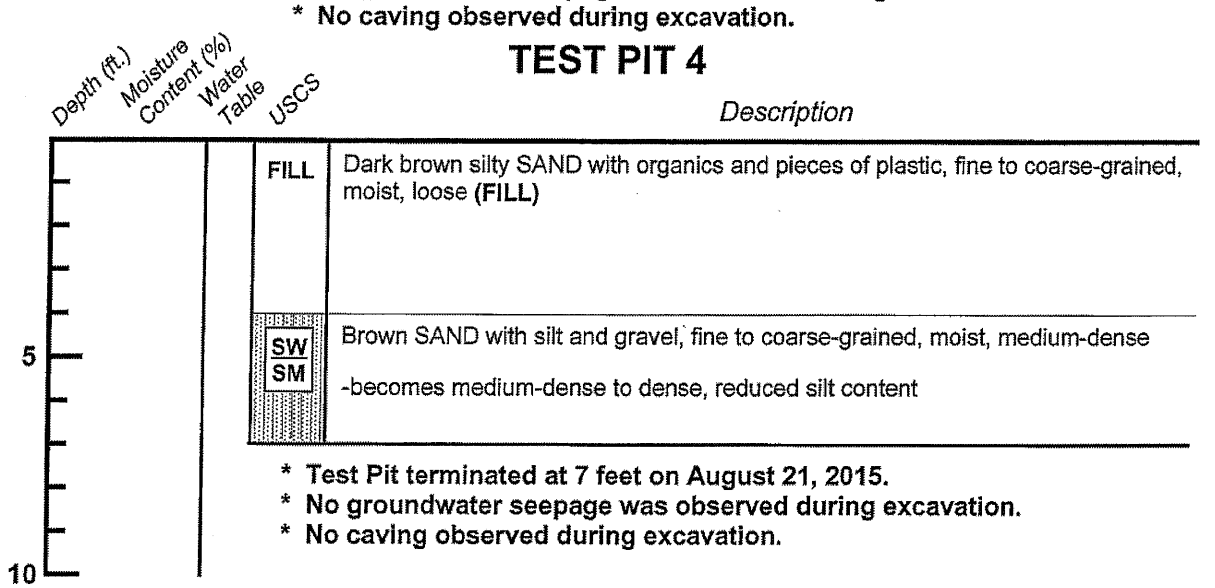
| Job | Date: | Logged by: | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | TRC | 3 |

## TEST PIT 3




* **Test Pit terminated at 12.5 feet on August 21, 2015.**
* **No groundwater seepage was observed during excavation.**
* **No caving observed during excavation.**

## TEST PIT 4




* **Test Pit terminated at 7 feet on August 21, 2015.**
* **No groundwater seepage was observed during excavation.**
* **No caving observed during excavation.**

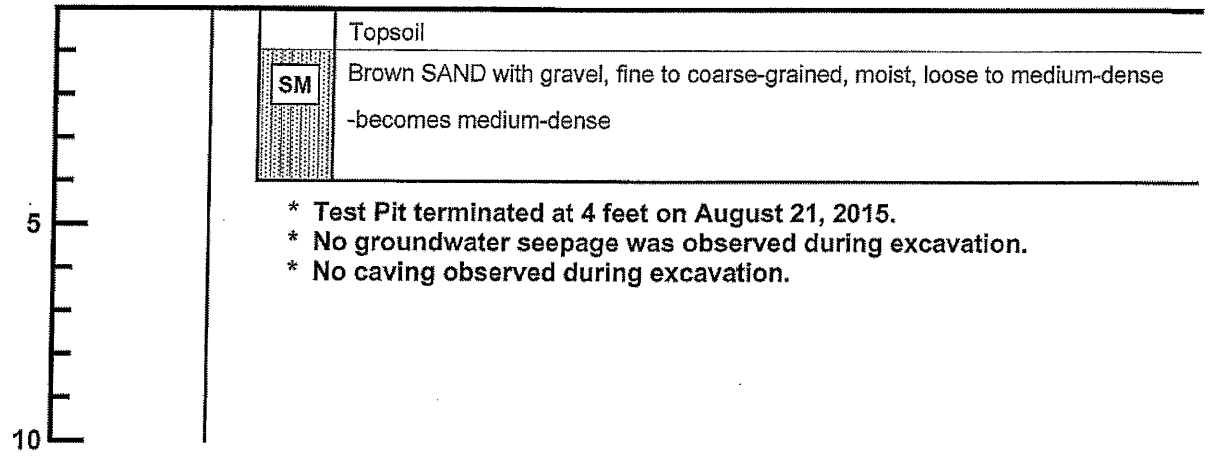
GEOTECH CONSULTANTS, INC.

**TEST PIT LOG**

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

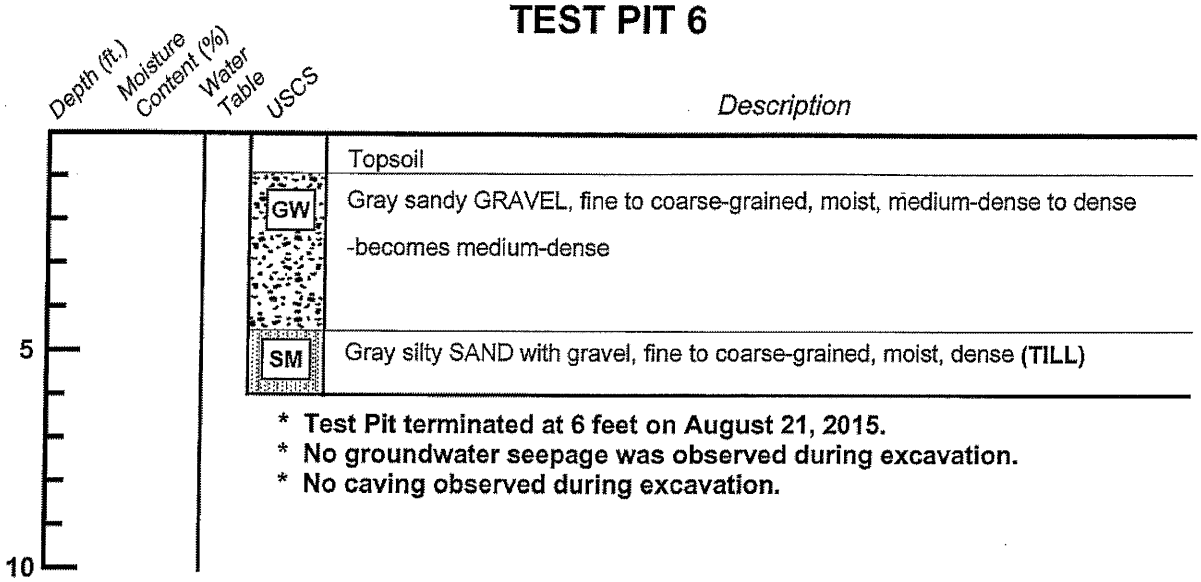
| Job | Date: | Logged by: | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | TRC | 4 |

## TEST PIT 5




* **Test Pit terminated at 4 feet on August 21, 2015.**
* **No groundwater seepage was observed during excavation.**
* **No caving observed during excavation.**

## TEST PIT 6




* **Test Pit terminated at 6 feet on August 21, 2015.**
* **No groundwater seepage was observed during excavation.**
* **No caving observed during excavation.**

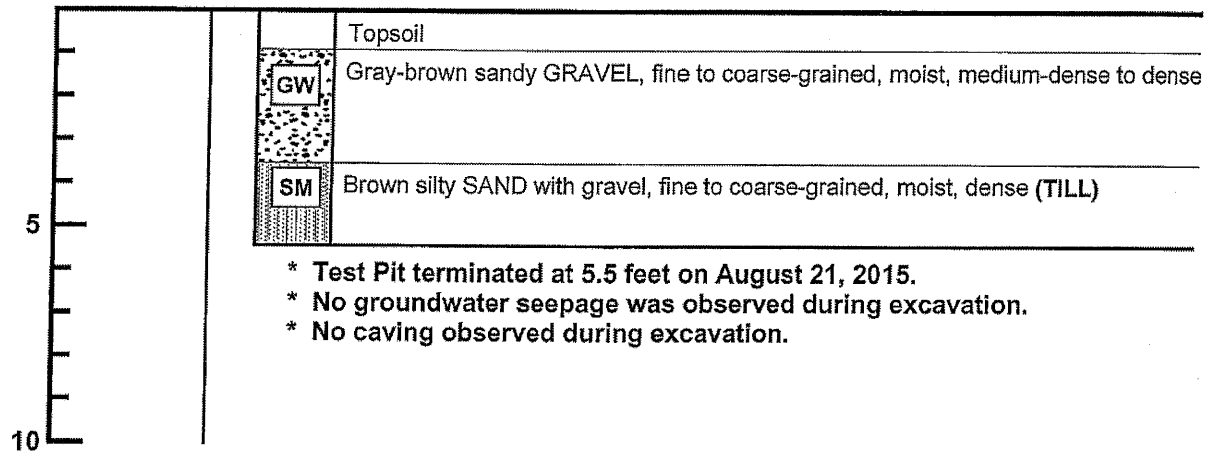
**GEOTECH CONSULTANTS, INC.**

**TEST PIT LOG**

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

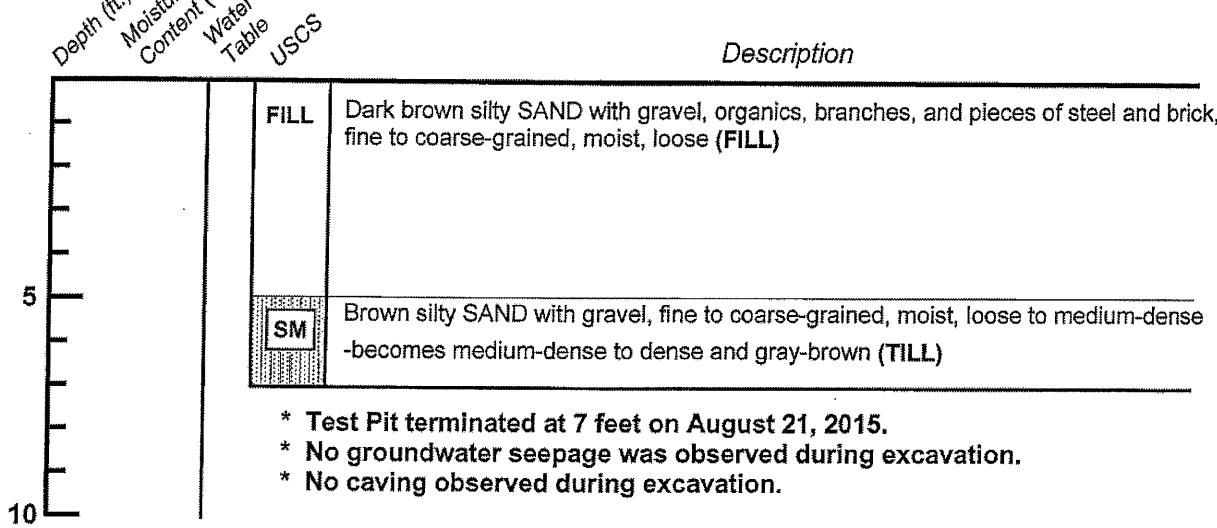
| Job | Date: | Logged by: | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | TRC | 5 |

## TEST PIT 7




* **Test Pit terminated at 5.5 feet on August 21, 2015.**
* **No groundwater seepage was observed during excavation.**
* **No caving observed during excavation.**

## TEST PIT 8




* **Test Pit terminated at 7 feet on August 21, 2015.**
* **No groundwater seepage was observed during excavation.**
* **No caving observed during excavation.**

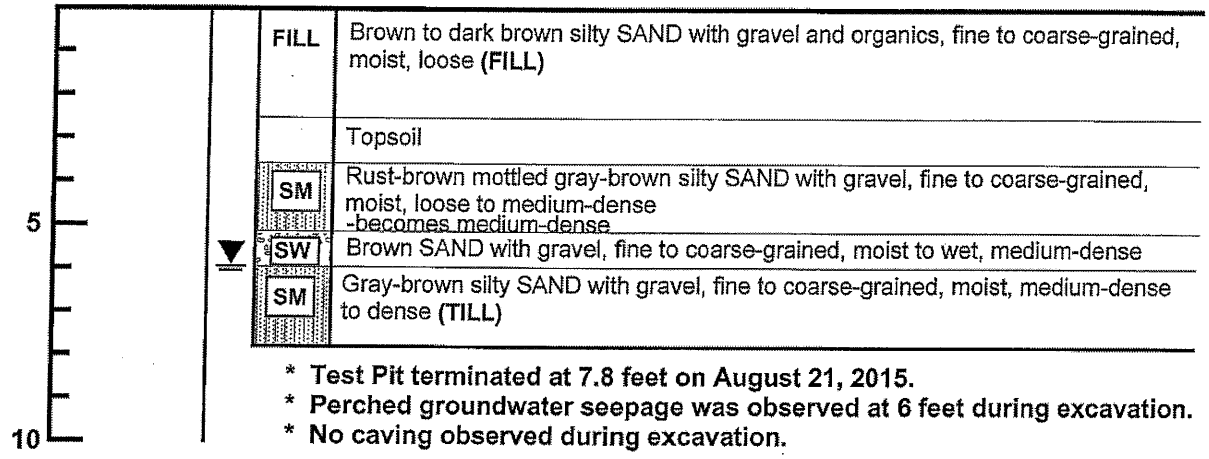
GEOTECH CONSULTANTS, INC.

**TEST PIT LOG**

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

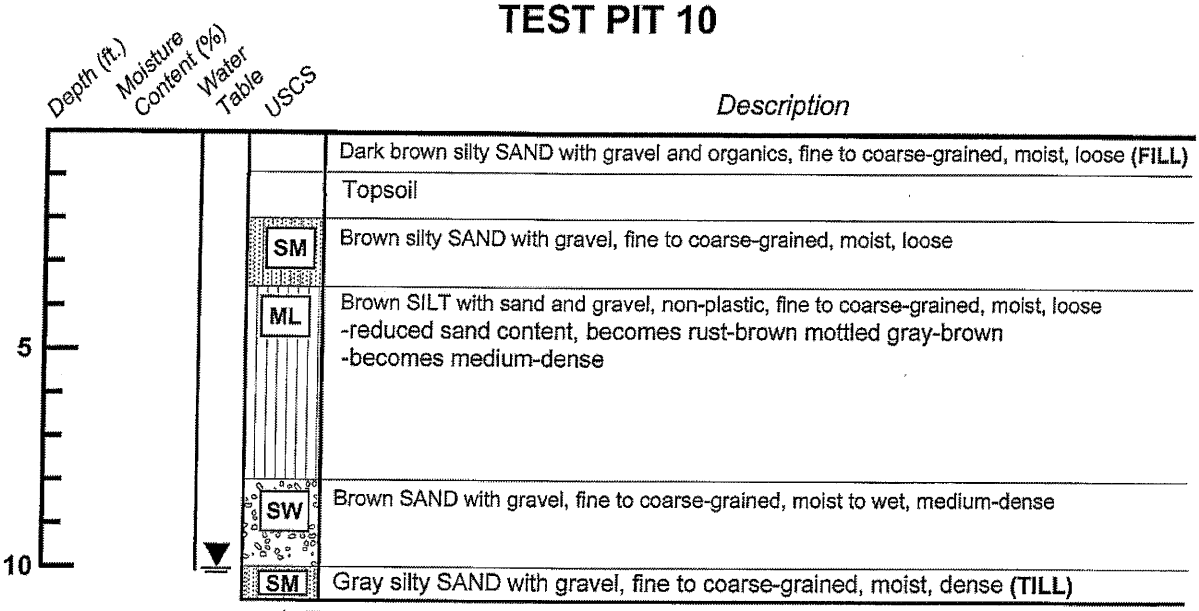
| Job | Date: | Logged by: | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | TRC | 6 |

## TEST PIT 9




* **Test Pit terminated at 7.8 feet on August 21, 2015.**
* **Perched groundwater seepage was observed at 6 feet during excavation.**
* **No caving observed during excavation.**

## TEST PIT 10




* **Test Pit terminated at 11.5 feet on August 21, 2015.**
* **Perched groundwater seepage was observed at 10 feet during excavation.**
* **No caving observed during excavation.**

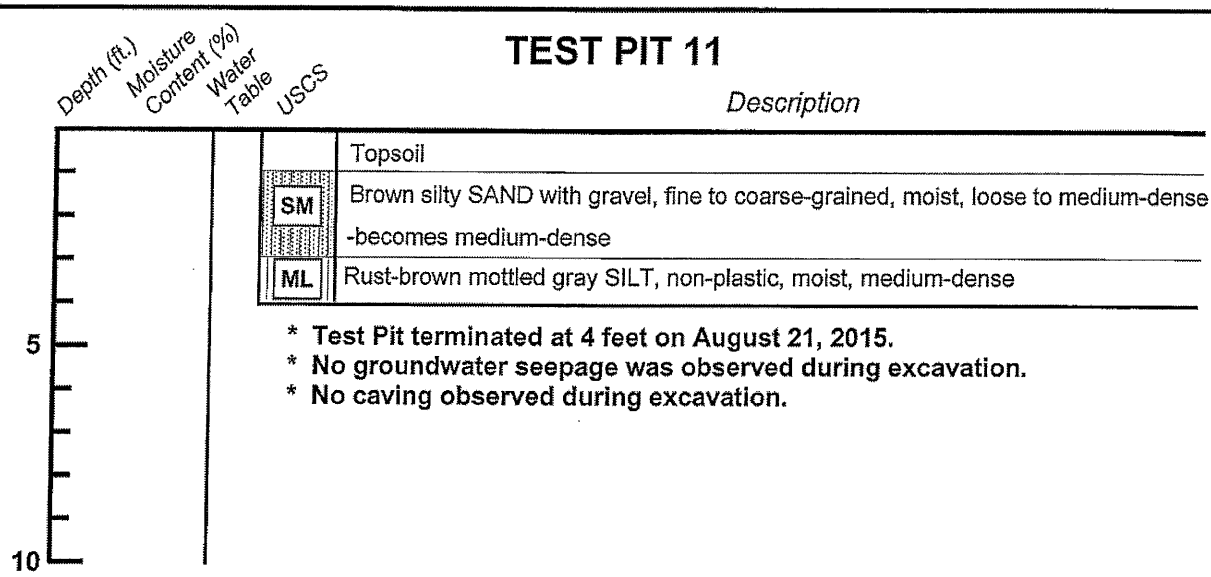
**GEOTECH CONSULTANTS, INC.**

## TEST PIT LOG

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

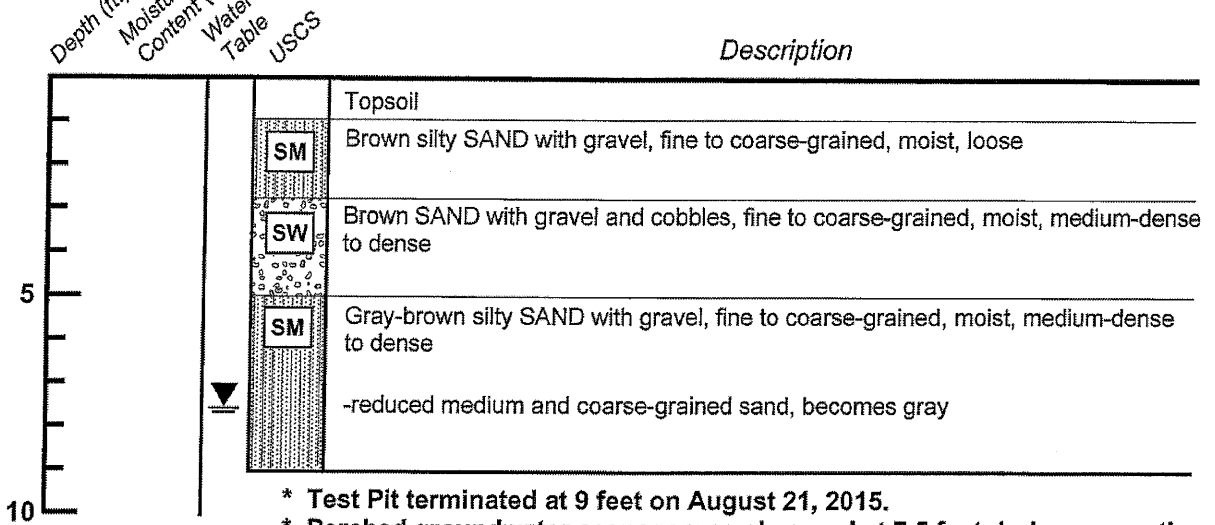
| Job | Date: | Logged by: | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | TRC | 7 |

## TEST PIT 11




* **Test Pit terminated at 4 feet on August 21, 2015.**
* **No groundwater seepage was observed during excavation.**
* **No caving observed during excavation.**

## TEST PIT 12




* **Test Pit terminated at 9 feet on August 21, 2015.**
* **Perched groundwater seepage was observed at 7.5 feet during excavation.**
* **No caving observed during excavation.**

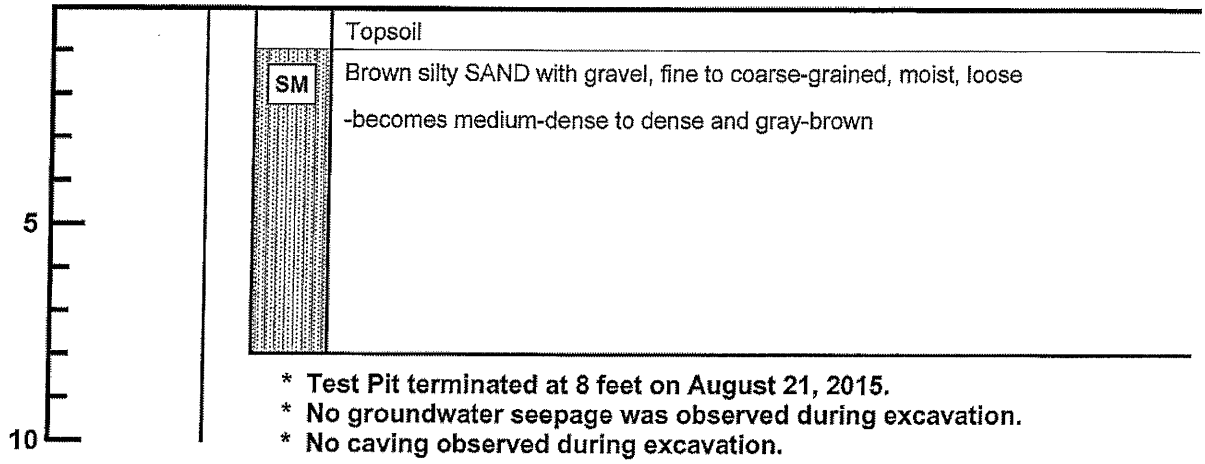
GEOTECH CONSULTANTS, INC.

**TEST PIT LOG**

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

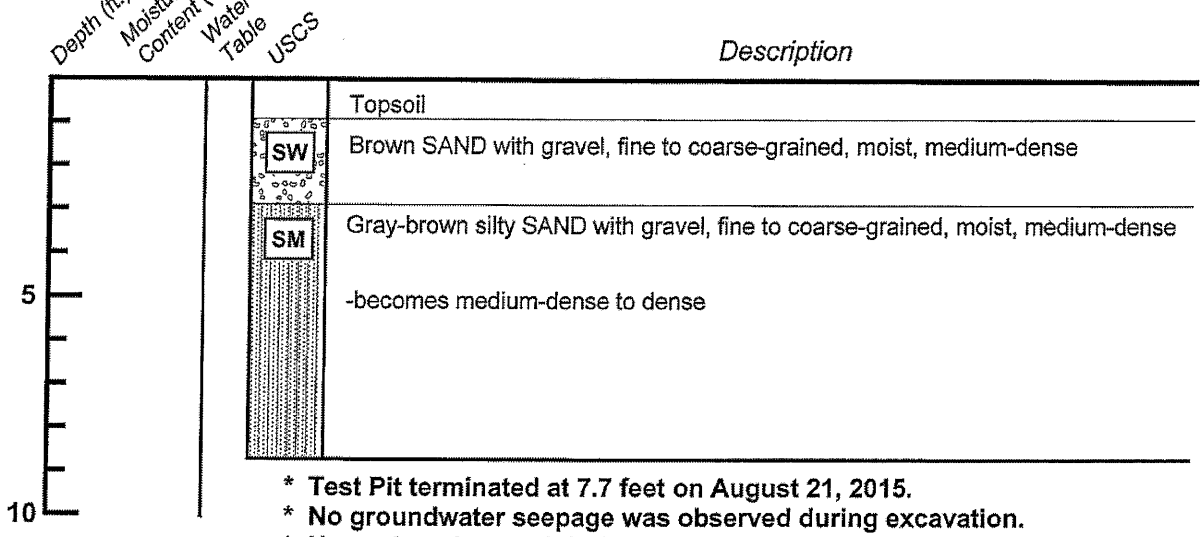
| Job | Date: | Logged by: | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | TRC | 8 |

## TEST PIT 13




* **Test Pit terminated at 8 feet on August 21, 2015.**
* **No groundwater seepage was observed during excavation.**
* **No caving observed during excavation.**

## TEST PIT 14




* **Test Pit terminated at 7.7 feet on August 21, 2015.**
* **No groundwater seepage was observed during excavation.**
* **No caving observed during excavation.**

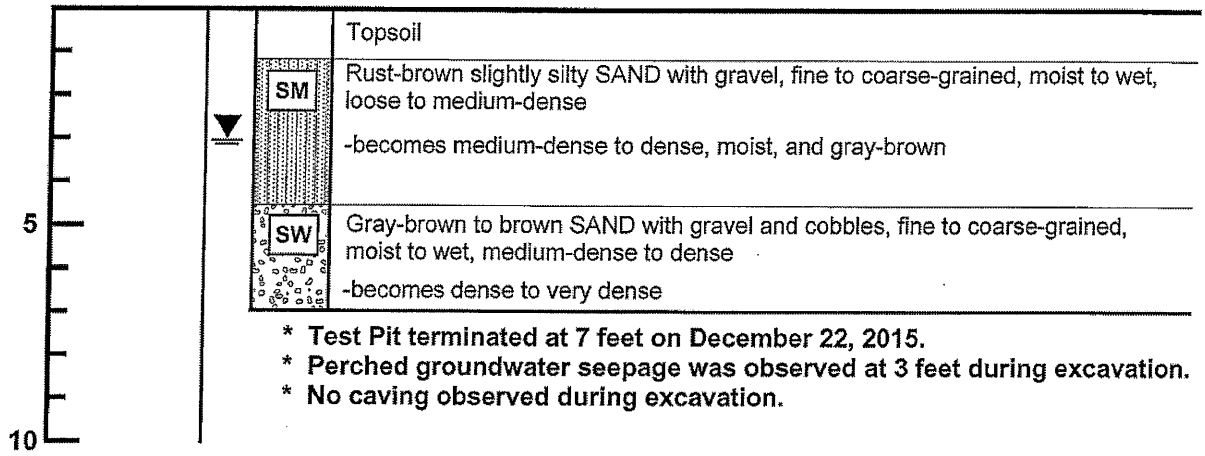
GEOTECH CONSULTANTS, INC.

**TEST PIT LOG**

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

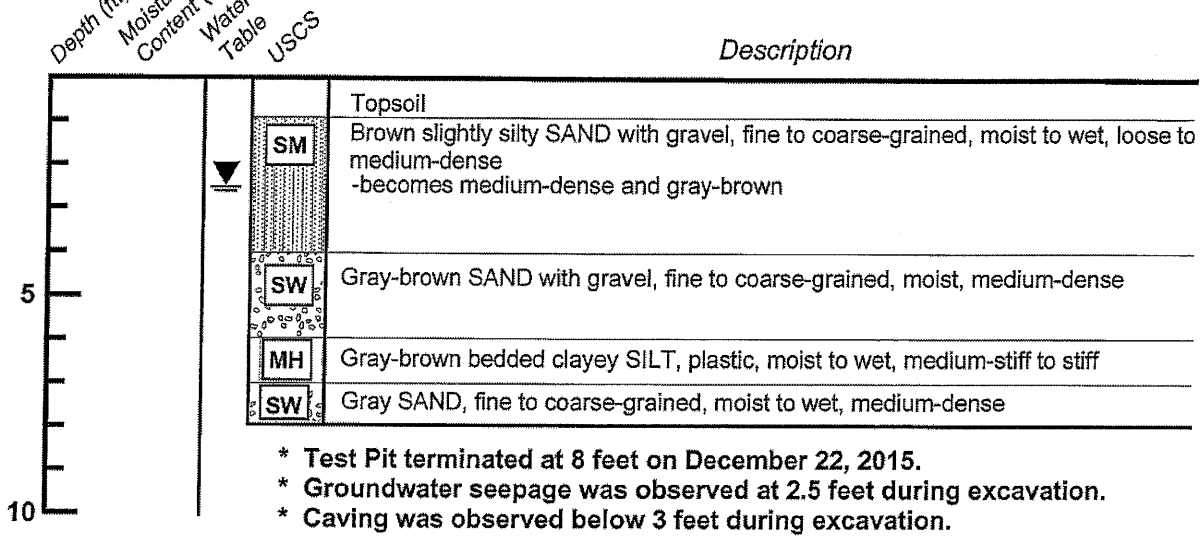
| Job | Date: | Logged by: | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | TRC | 9 |

## TEST PIT 15




* **Test Pit terminated at 7 feet on December 22, 2015.**
* **Perched groundwater seepage was observed at 3 feet during excavation.**
* **No caving observed during excavation.**

## TEST PIT 16




* **Test Pit terminated at 8 feet on December 22, 2015.**
* **Groundwater seepage was observed at 2.5 feet during excavation.**
* **Caving was observed below 3 feet during excavation.**

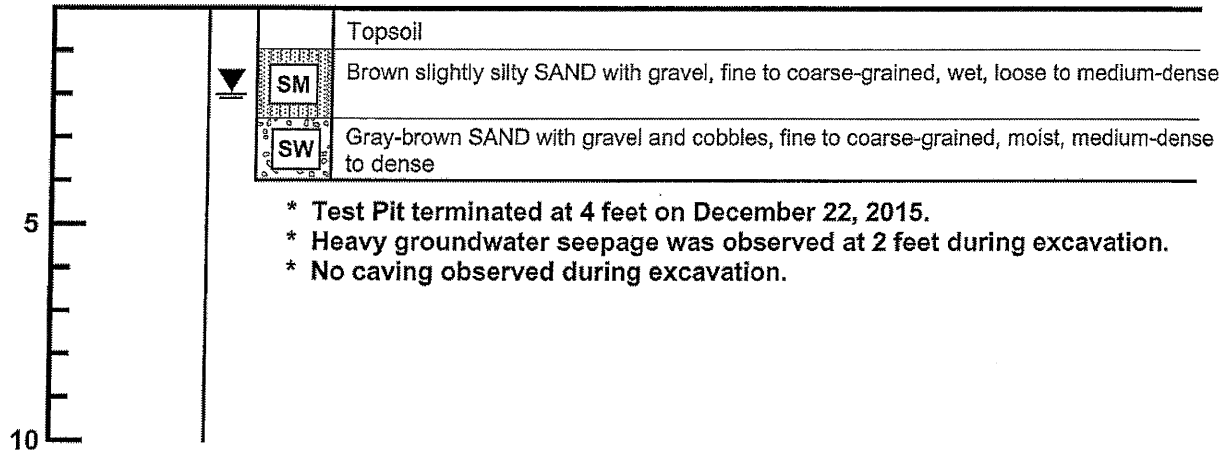
GEOTECH CONSULTANTS, INC.

**TEST PIT LOG**

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

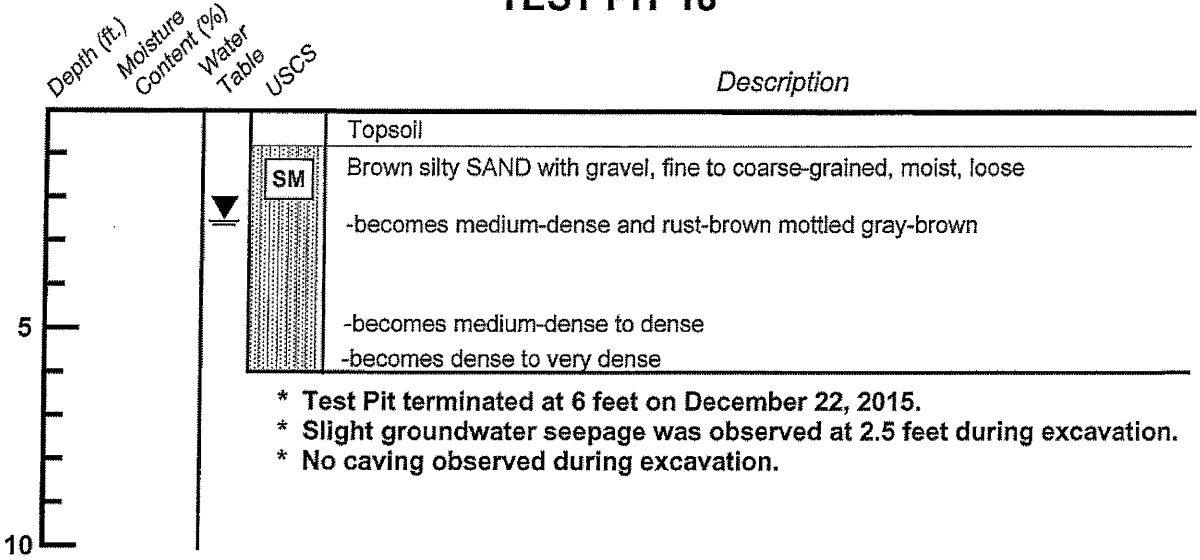
| Job | Date: | Logged by: | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | TRC | 10 |

## TEST PIT 17




* **Test Pit terminated at 4 feet on December 22, 2015.**
* **Heavy groundwater seepage was observed at 2 feet during excavation.**
* **No caving observed during excavation.**

## TEST PIT 18




* **Test Pit terminated at 6 feet on December 22, 2015.**
* **Slight groundwater seepage was observed at 2.5 feet during excavation.**
* **No caving observed during excavation.**

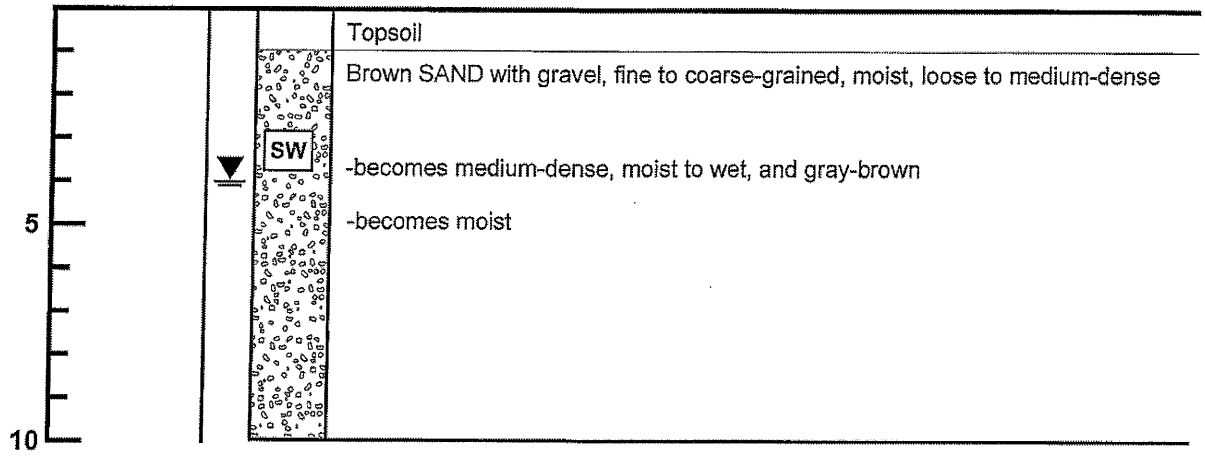
GEOTECH CONSULTANTS, INC.

# TEST PIT LOG

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

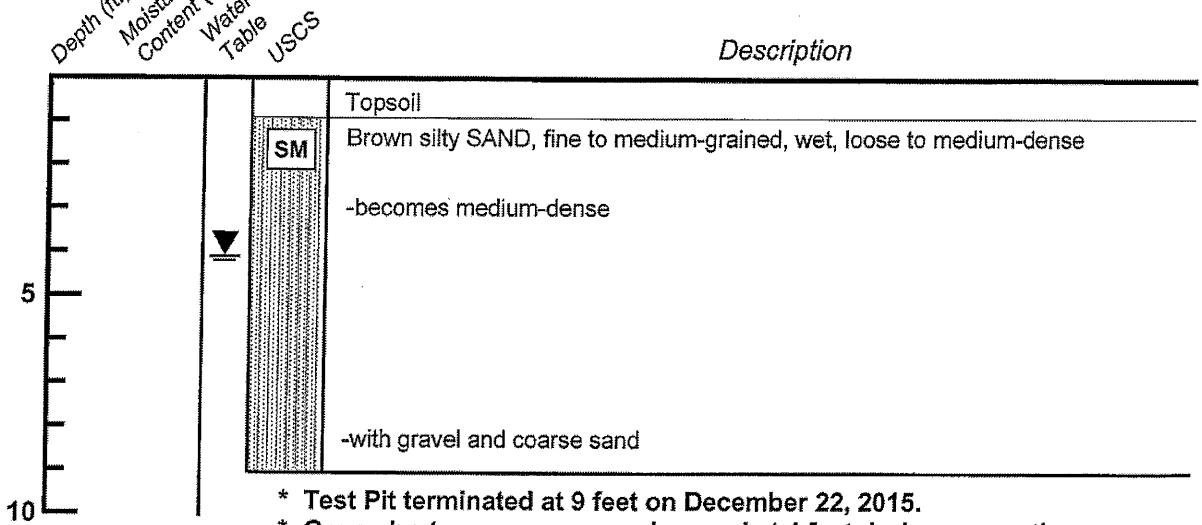
| Job | Date: | Logged by: | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | TRC | 11 |

## TEST PIT 19




* **Test Pit terminated at 10 feet on December 22, 2015.**
* **Groundwater seepage was observed at 4 feet during excavation.**
* **Caving was observed above 5 feet during excavation.**

## TEST PIT 20




* **Test Pit terminated at 9 feet on December 22, 2015.**
* **Groundwater seepage was observed at 4 feet during excavation.**
* **Caving was observed below 0 feet during excavation.**

GEOTECH CONSULTANTS, INC.

**TEST PIT LOG**

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

| Job | Date: | Logged by: | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | TRC | 12 |

## TEST PIT 21

| Depth (ft.) | Moisture Content (%) | Water Table | USCS | Description |
|---|---|---|---|---|
| | | | FILL | Dark brown silty SAND with organics, fine to coarse-grained, moist, loose **(FILL)** |
| | | | | Topsoil |
| 5 | | | SM | Rust-brown mottled gray-brown silty SAND with gravel, fine to coarse-grained, moist, medium-dense<br>-becomes medium-dense to dense **(TILL)**<br>-becomes dense and gray-brown |
| 10 | | | | |

* **Test Pit terminated at 5 feet on December 22, 2015.**
* **No groundwater seepage was observed during excavation.**
* **No caving observed during excavation.**

## TEST PIT 22

| Depth (ft.) | Moisture Content (%) | Water Table | USCS | Description |
|---|---|---|---|---|
| | | | FILL | Dark brown to gray silty SAND with gravel and organics, fine to coarse-grained, moist, loose **(FILL)**<br>-with a piece of steel pipe |
| 5 | | | | |
| 10 | | ▼ | | -stump or log |

* **Test Pit terminated at 10.5 feet on December 22, 2015.**
* **Groundwater seepage was observed at 10 feet during excavation.**
* **Caving observed below 0 feet during excavation.**



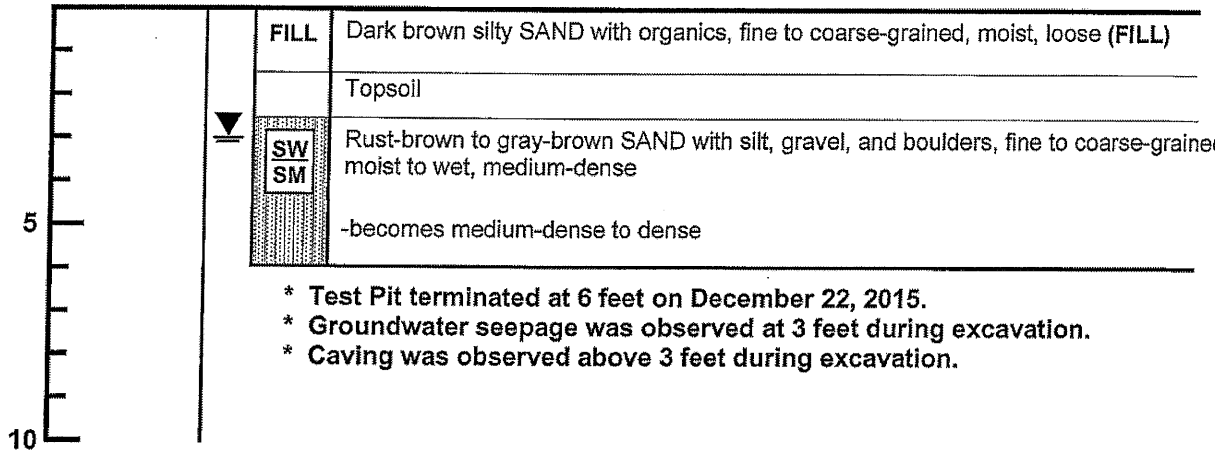
**GEOTECH**
**CONSULTANTS, INC.**

**TEST PIT LOG**

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

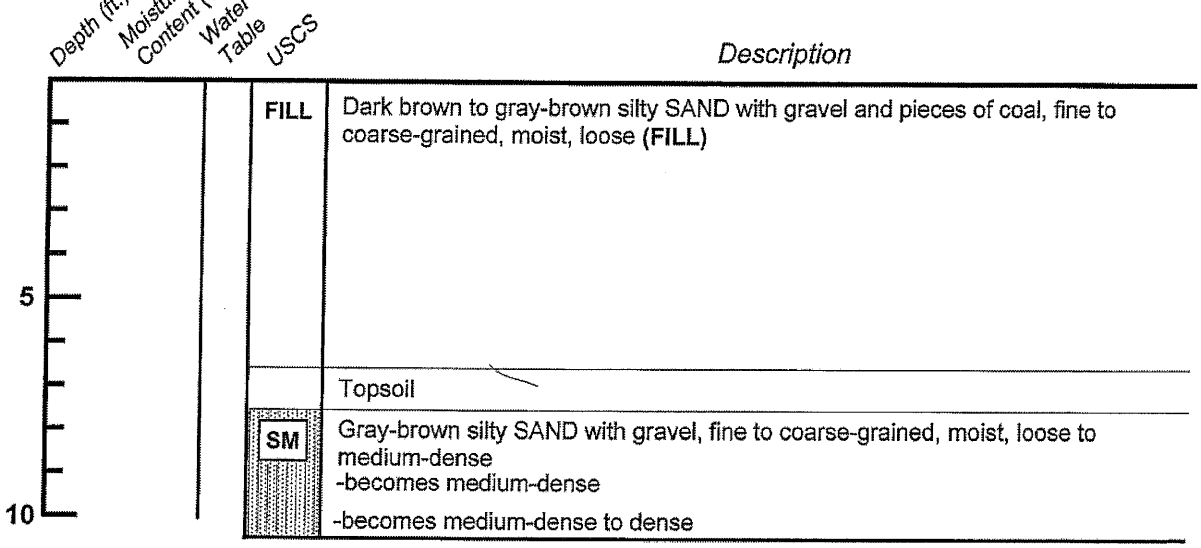
| Job | Date: | Logged by: | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | TRC | 13 |

## TEST PIT 23




* **Test Pit terminated at 6 feet on December 22, 2015.**
* **Groundwater seepage was observed at 3 feet during excavation.**
* **Caving was observed above 3 feet during excavation.**

## TEST PIT 24



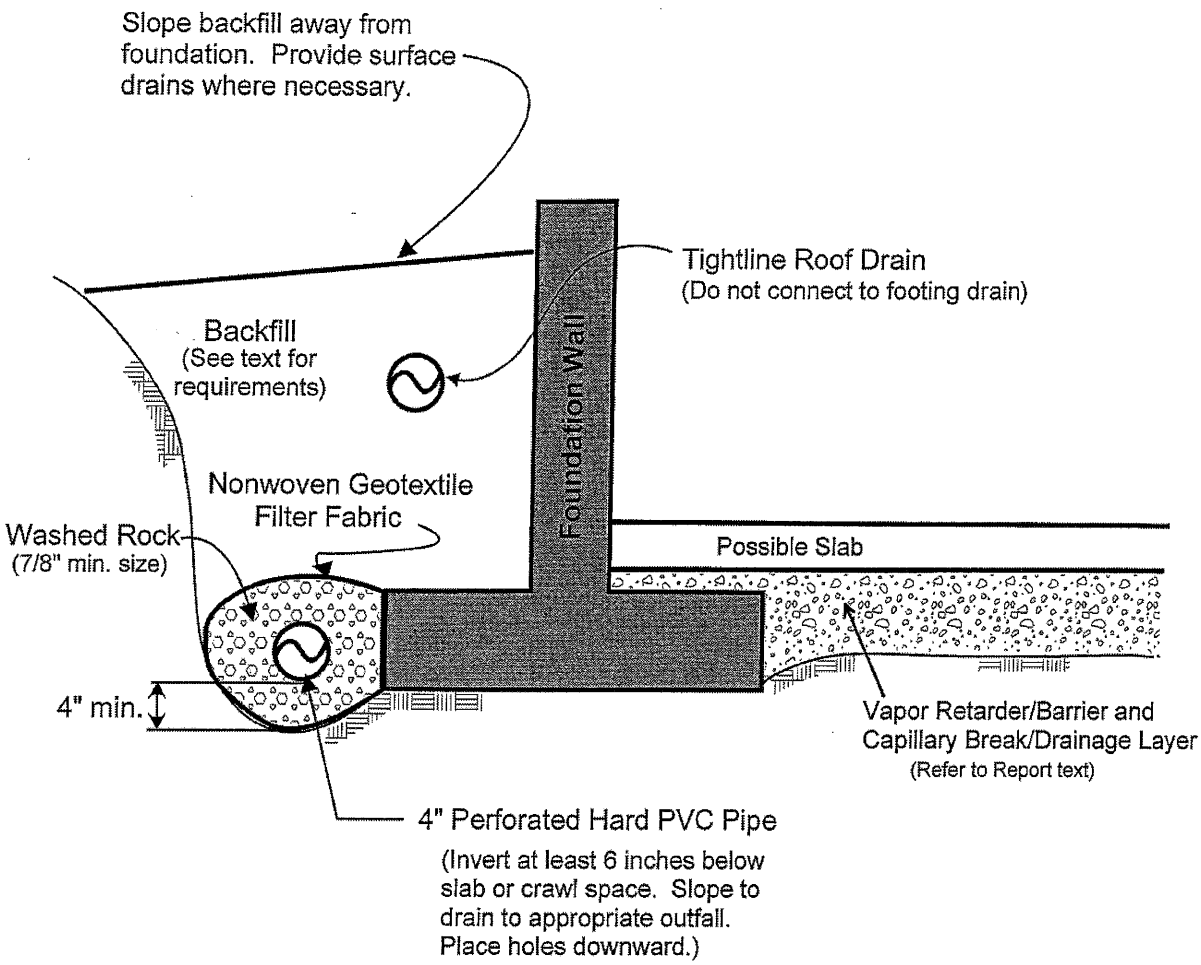

* **Test Pit terminated at 10.5 feet on December 22, 2015.**
* **No groundwater seepage was observed during excavation.**
* **No caving observed during excavation.**

GEOTECH CONSULTANTS, INC.

**TEST PIT LOG**

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

| Job | Date: | Logged by: | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | TRC | 14 |




**NOTES:**

(1) In crawl spaces, provide an outlet drain to prevent buildup of water that bypasses the perimeter footing drains.

(2) Refer to report text for additional drainage, waterproofing, and slab considerations.

GEOTECH
CONSULTANTS, INC.

**FOOTING DRAIN DETAIL**

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

| Job No: | Date: | | Plate: |
|---|---|---|---|
| 15349 | Jan. 2016 | | 15 |

| | |
|---|---|
| **From:** | James Strange |
| **To:** | alex.mason@isolacm.com; peter.locke@isolacm.com; Michael Pollard |
| **Cc:** | Ann Tagland; Thor Christensen |
| **Subject:** | 15349 GES Isola Homes 7219 and 7331 Lakemont Boulevard Southeast |
| **Date:** | Tuesday, January 19, 2016 3:58:32 PM |
| **Attachments:** | 15349 GES Isola Homes 7219 and 7331 Lakemont Boulevard Southeast.pdf |

Hi Guys-
Attached is the soil report for Lakemont. Let me know if you have any questions.
Cheers, James

James H. Strange, Jr. P.E.
Associate
**Geotech Consultants, Inc.**
13256 NE 20th St, Ste 16
Bellevue, WA 98005
P(425) 747-5618 / F(425) 747-8561/ Cell(206)250-3849

DISCLAIMER: Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by Geotech Consultants, Inc. and will serve as the official document of record.
Copyright © 2016 by Geotech Consultants, Inc. All rights reserved.

# Appendix A2:

## Geotechnical Supplemental Letter
## Prepared by Geotech Consultants, Inc., March 29, 2017


Copyright © 2019 Talasaea Consultants, Inc.

**GEOTECH**
**CONSULTANTS, INC.**

2401 10th Ave E
Seattle, Washington 98102
(425) 747-5618 FAX (425) 747-8561

March 29, 2017

JN 15349

Isola Homes
1518 – 1st Avenue South, Suite 301
Seattle, Washington 98134

Attention: Alex Mason *via email: alex.mason@isolacm.com*

Subject: **Supplemental Letter**
Proposed Housing Development
7219 and 7331 Lakemont Boulevard Southeast
Bellevue, Washington

Dear Mr. Mason:

We have prepared this letter to address geotechnical portions of City of Bellevue Review Comments dated February 3, 2017. We previously prepared a geotechnical engineering study for the site dated January 5, 2016. This letter should be considered a supplement to that study.

The steep northern and eastern slopes are considered Steep Slope Geologic Hazard Areas by the City of Bellevue due to their height and inclination. We understand that the City of Bellevue has requested a numerical analysis of the stability of the steep slopes following construction at the site. The City has also requested that we show locations of seepage on a site plan.

We have observed groundwater seepage at a few locations within the property. Those locations are shown on the Site Exploration Plan, Plate 1. The seepage areas are primarily located in areas that have been designated critical slope that are outside the proposed development area. In our opinion the seepage will not impact the proposed development. One area of seepage has been observed near the south edge of the site, in a proposed roadway. This area is only gently sloping, and the seepage will not affect slope stability at that location or in the surrounding area. We believe that seepage will be intercepted by the proposed pavements and underground utility trenches, and that it will not be present after the site has been developed.

We completed a slope stability analysis of three cross sections across the northern and western slopes using the computer program SLOPE/W. The cross section locations are shown on the Site Exploration Plan, Plate 1. The cross sections were developed using the topographic information provided to us.

Soil parameters were needed for the analysis, with the most significant being the defining strength parameters of the site soils, including angles of internal friction. The soils near the tops of the northern and western slopes have been generalized as up to about 10 feet of fill and loose native soil on the surface of the slope, underlain by medium-dense to dense silty sand to sand. The soil at Lot 13 consisted of medium-dense sand with gravel. Some rock spall fill will be needed in footing locations where fill is present. Based on our experience with similar soils, we used the following parameters in our slope stability analyses:

| | *Loose Fill And Near Surface Soil* | *Medium-Dense Silty Sand Soil* | *Medium-Dense Sand Soil* | *Rock Spall Fill* |
|---|---|---|---|---|
| **Angle of Internal Friction** | 28 degrees | 32 degrees | 36 degrees | 45 degrees |
| **Cohesion** | 0 psf | 50 psf | 0 psf | 0 psf |
| **Soil Density** | 115 pcf | 125 pcf | 125 pcf | 120 pcf |

The slopes were analyzed in static and dynamic (seismic) conditions. For the dynamic analysis, a seismic coefficient of 0.18 (equal to half of the potential peak horizontal ground acceleration of 0.36g) was included to represent a 475-year return period seismic event.

Based on the analyses, potential deep-seated slope failure surfaces for both the existing and post-development conditions have factors of safety greater than 1.5 under static conditions and 1.15 under seismic conditions. We believe these safety factors are very appropriate for the proposed development. The output sections of the stability analyses are included with this letter. Based on our analysis, the post-construction stability of the steep slopes satisfies the City of Bellevue standards.

Provided that the foundation, grading, and retaining recommended in our previous report are observed in the proposed development of the property, it is our opinion that modification of the critical area or critical area buffer will have no adverse impacts on stability of any adjacent slopes, and will not impact stability of any existing structures.

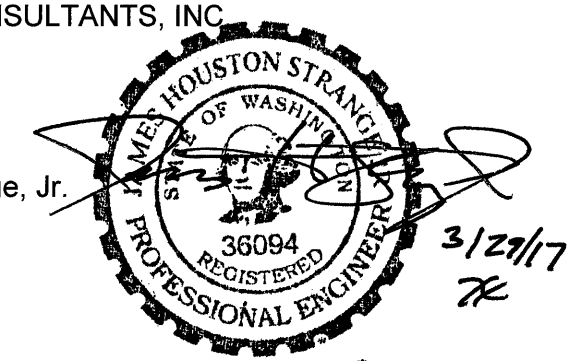
The following plates are attached to complete this report:

| | |
|---|---|
| Plate 1 | Site Exploration Plan |
| Plates 2 - 7 | Slope Stability Analyses |

We appreciate the opportunity to be of service on this project. Please contact us if you have any questions, or if we can be of further assistance.

Respectfully submitted,

GEOTECH CONSULTANTS, INC.

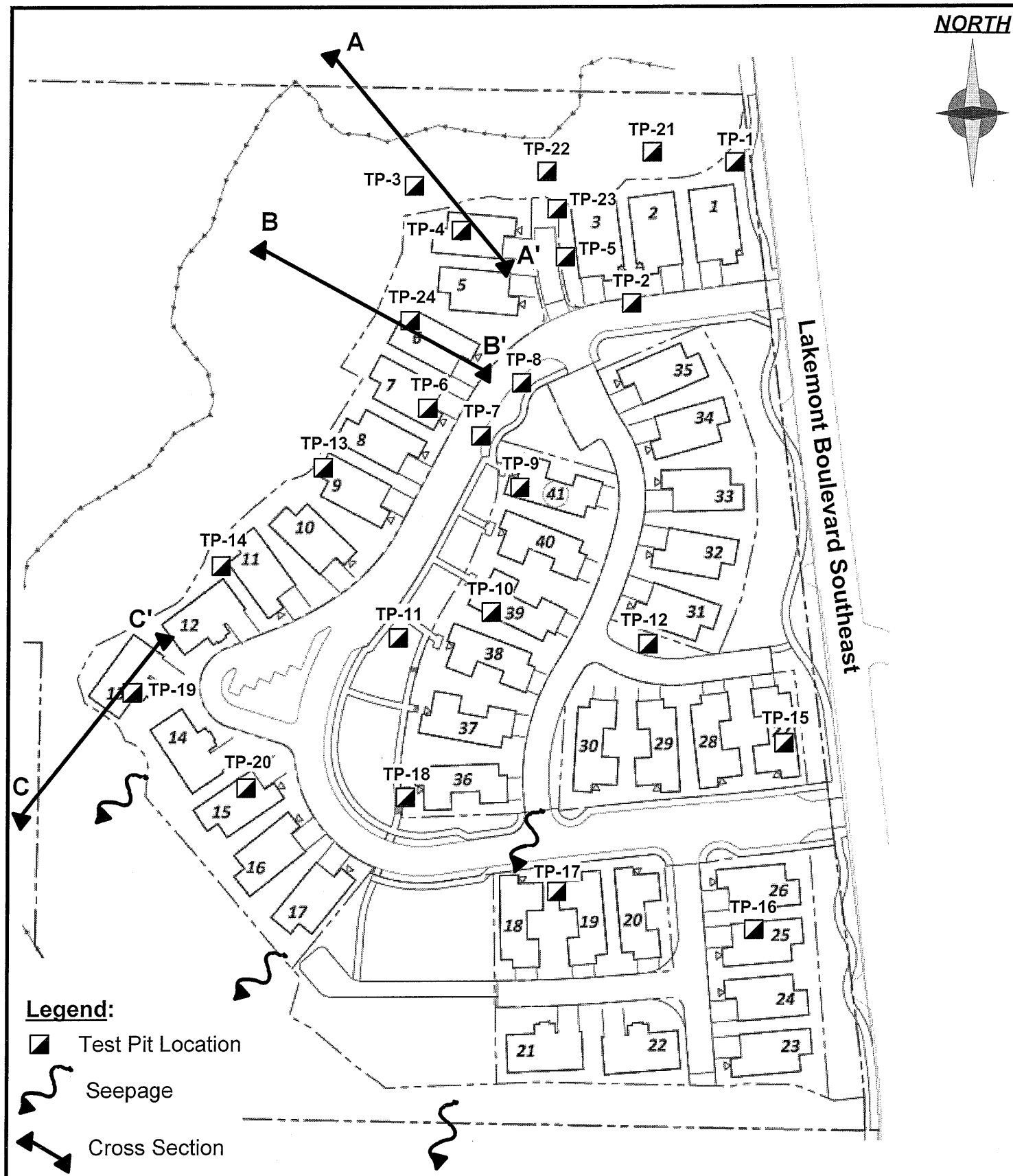



3/29/17

James H. Strange, Jr.
Associate

cc: **PACE Engineers** – Steve Calhoon
*via email: stevec@paceengrs.com*

TRC/JHS:mw



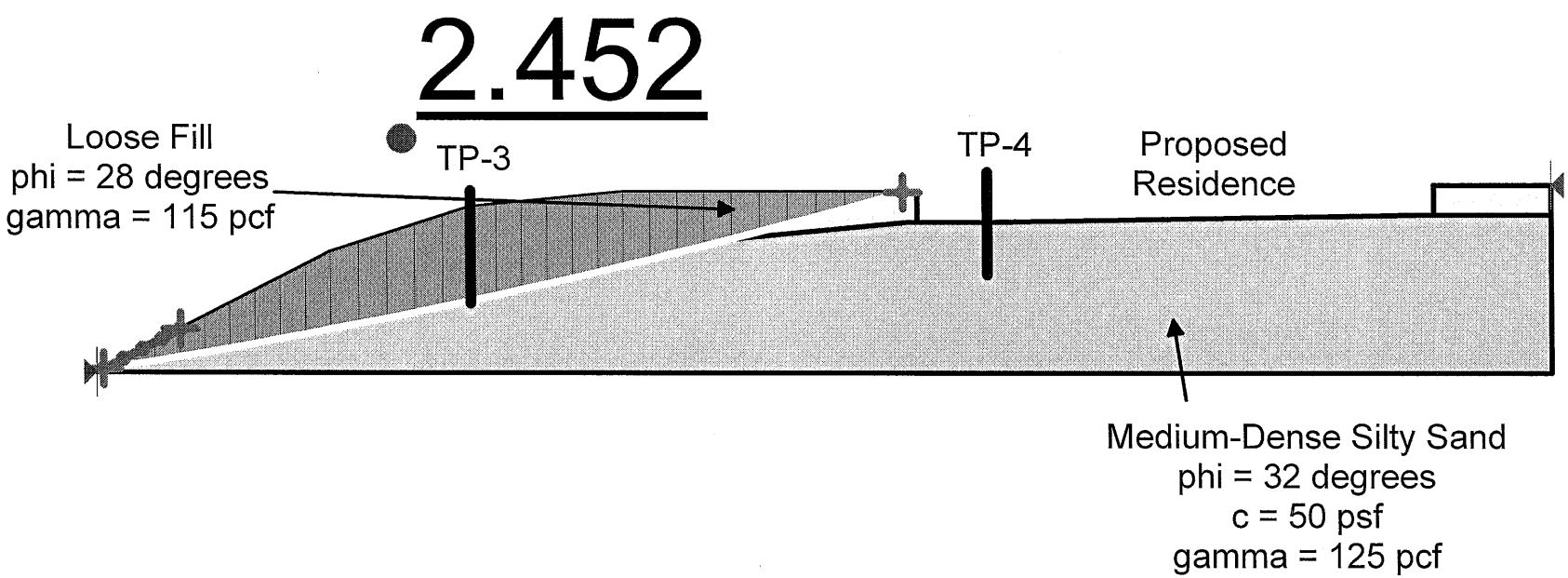

**GEOTECH CONSULTANTS, INC.**

# SITE EXPLORATION PLAN

7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

| Job No: | Date: | | Plate: |
|---|---|---|---|
| 15349 | Mar. 2017 | No Scale | 1 |

**Section A - A'**

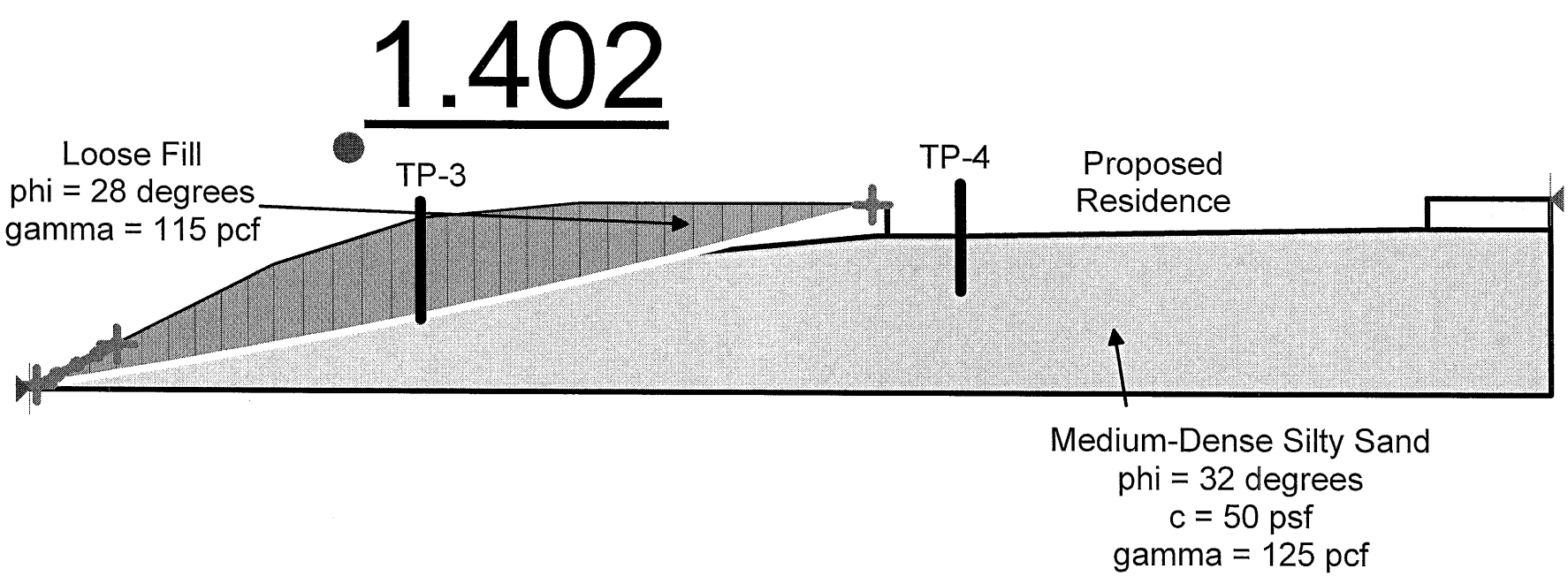



GEOTECH
CONSULTANTS, INC.

Static Slope Stability - Lot 4
7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

| Job No: | Date: | | Plate: |
|---|---|---|---|
| 15349 | Mar. 2017 | | 2 |

**Section A - A'**

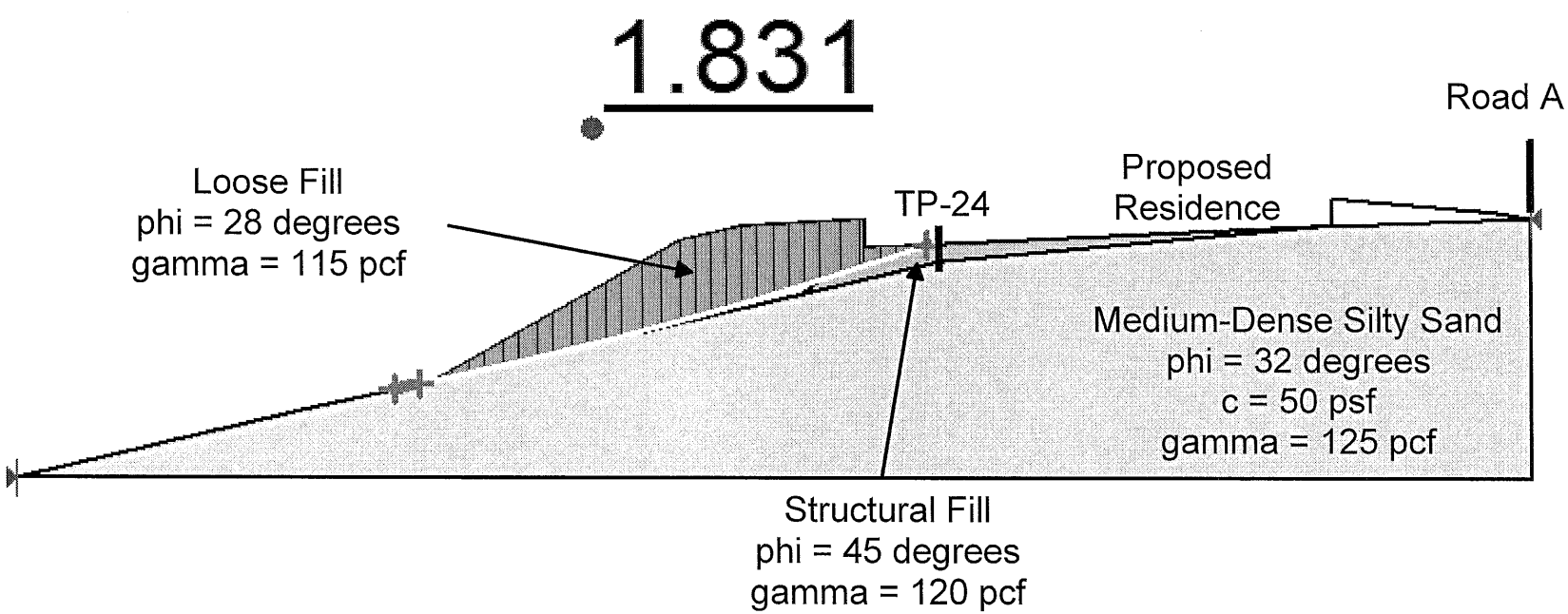



GEOTECH
CONSULTANTS, INC.

Seismic Slope Stability - Lot 4
7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

| Job No: | Date: | | Plate: |
|---|---|---|---|
| 15349 | Mar. 2017 | | 3 |

**Section B - B'**

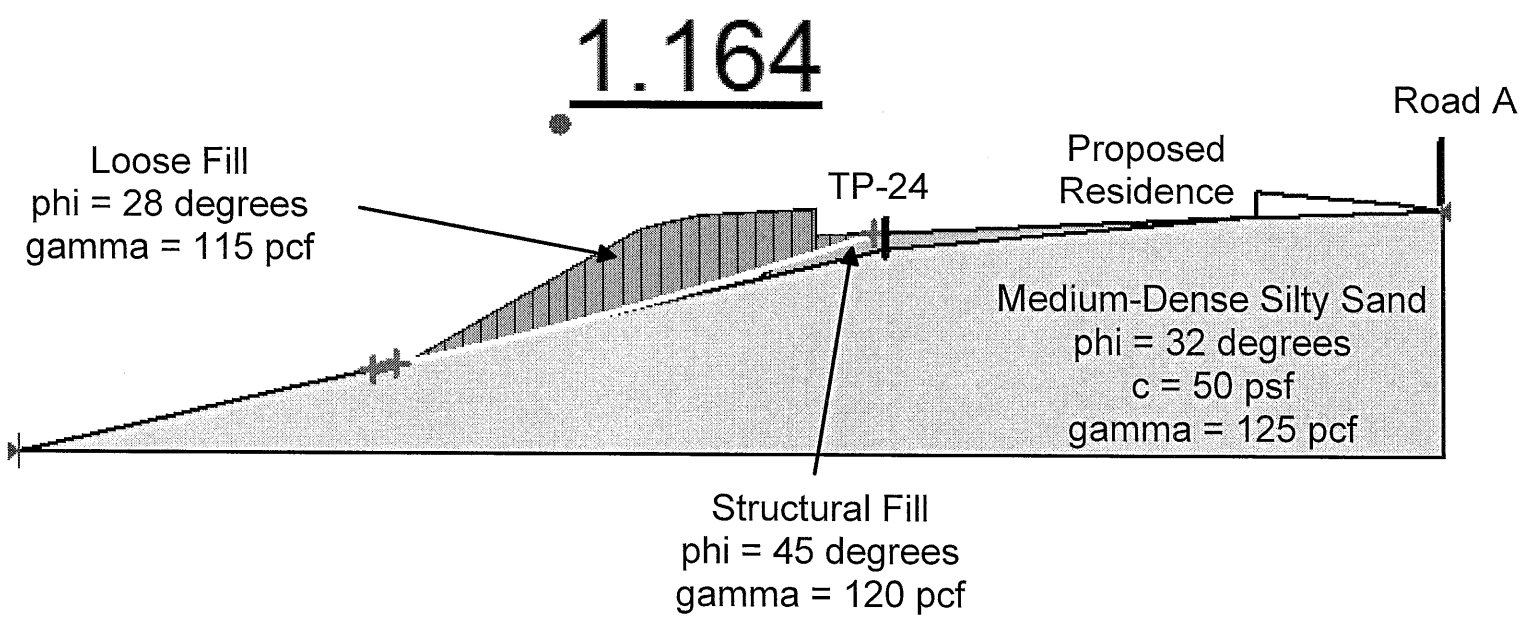



GEOTECH
CONSULTANTS, INC.

Static Slope Stability - Lot 6
7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

| Job No: | Date: | | Plate: |
|---|---|---|---|
| 15349 | Mar. 2017 | | 4 |

**Section B - B'**

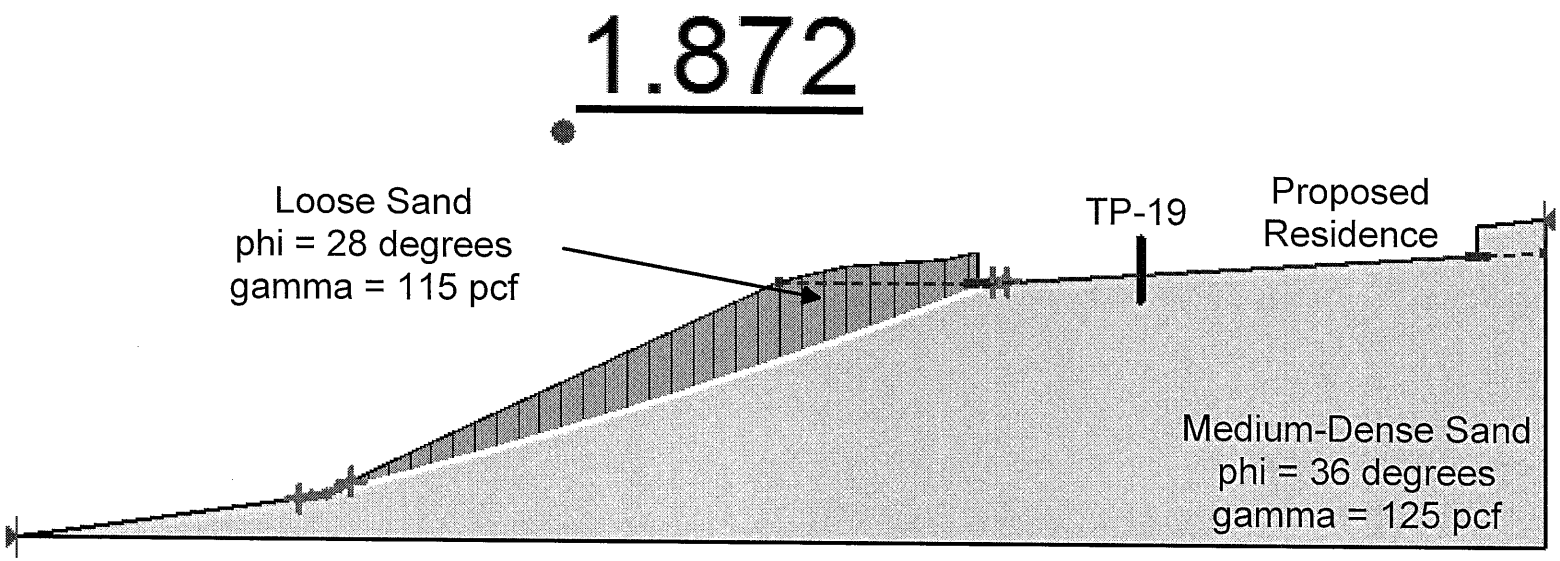



GEOTECH
CONSULTANTS, INC.

Seismic Slope Stability - Lot 6
7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

| Job No: | Date: | | Plate: |
|---|---|---|---|
| 15349 | Mar. 2017 | | 5 |

**Section C - C'**

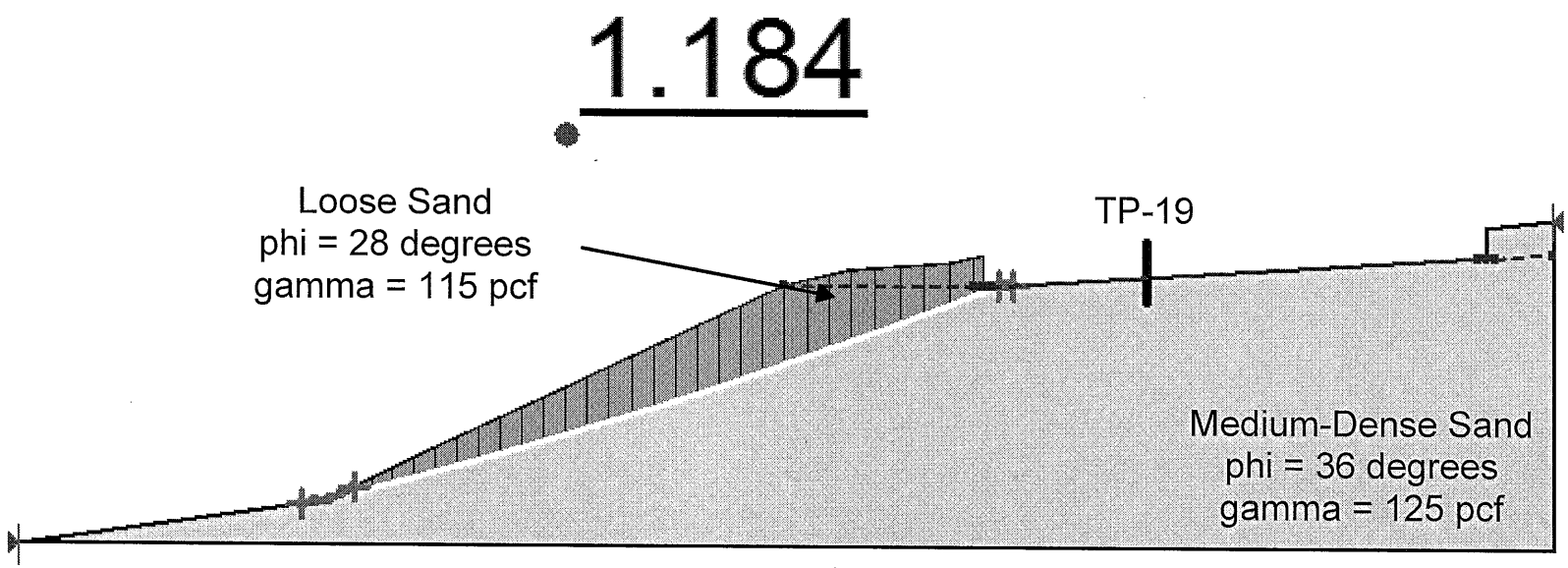



GEOTECH
CONSULTANTS, INC.

Static Slope Stability - Lot 13
7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

| Job No: | Date: | | Plate: |
|---|---|---|---|
| 15349 | Mar. 2017 | | 6 |

**Section C - C'**




GEOTECH
CONSULTANTS, INC.

Seismic Slope Stability - Lot 13
7219 and 7331 Lakemont Boulevard SE
Bellevue, Washington

| Job No: | Date: | | Plate: |
|---|---|---|---|
| 15349 | Mar. 2017 | | 7 |

# Appendix B:

## Geological Engineering Services
## Proposed Property Development Coal Mine Hazard Assessment and Ground Proofing Program.
## Icicle Creek Engineers, Inc., August 2, 2016


Copyright © 2019 Talasaea Consultants, Inc.

**Report**
**Geological Engineering Services**
**Proposed Property Development**
**Coal Mine Hazard Assessment and**
**Ground Proofing Program**
**Swanson Property**
**King County Parcel No. 262405-9019**
**7331 Lakemont Boulevard SE**
**Bellevue, Washington**

**August 2, 2016**
**ICE File No. 1180-001**

**Prepared For:**
**Isola Homes**

**Prepared By:**
**Icicle Creek Engineers, Inc.**

ICICLECREEK ENGINEERS

August 2, 2016

Alex Mason, Vice President of Entitlement
Isola Homes
1518 1st Avenue South, Suite 301
Seattle, Washington 98134

Report
Geological Engineering Services
Proposed Property Development
Coal Mine Hazard Assessment and Ground Proofing Program
Swanson Property
King County Parcel No. 262405-9019
7331 Lakemont Boulevard SE
Bellevue, Washington
ICE File No. 1180-001

## 1.0 INTRODUCTION

At the request of Alex Mason of Isola Homes, Icicle Creek Engineers (ICE) has prepared this report of our geological engineering services for a coal mine hazard assessment and ground proofing program of the Swanson Property located at 7331 Lakemont Boulevard SE (King County Parcel No. 262405-9019) in Bellevue, Washington. The Swanson Property is shown relative to nearby physical features on the Vicinity Map, Figure 1. The general layout of the Swanson Property is shown on the Site Plan, Figure 2.

Our services were completed in general accordance with our Scope of Services and Fee Estimate dated January 13, 2016 and were authorized in writing by Ron Froton of Isola Homes on January 26, 2016.

## 2.0 BACKGROUND INFORMATION

ICE previously completed a preliminary coal mine hazard evaluation of the Swanson Property and the adjoining property to the north (referred to as the "Jentry Property" as shown on Figure 2); the results are presented in ICE's report dated December 1, 2014 that was prepared for David Jentry, owner of the Jentry Property. We understand that Isola Homes may develop the Swanson and Jentry properties for residential use including paved access, building lots and stormwater detention.

The City of Bellevue has regionally mapped "Coal Mine Hazard Areas" across most of the Swanson Property (City of Bellevue, Critical Areas Maps, Human Created Hazards). The regulatory aspects of Coal Mine Hazard Areas are described in detail in Section 4.0 of this report. ICE concluded in our December 2014 report that the south portion of the Swanson Property is within a Coal Mine Subsidence (CMS) Zone 2 area and recommended subsurface exploration to better evaluate the hazards related to abandoned underground coal mines (subject to this report).

## 3.0 SCOPE OF SERVICES

The purpose of our services was to complete a coal mine hazard assessment and ground proofing program targeting the potentially developable (some area is in wetland and is excluded) area at the Swanson Property. Specifically, our services included the following:

- Review ICE's 2014 report and readily available historic coal mine records from the Washington State Department of Natural Resources.
- Complete a site visit to perform site reconnaissance and to stake test borings for the purpose of the utility locate.
- Drill 12 test borings in the south part of the Swanson Property where the abandoned underground coal mine/seam is less than 100-feet deep using track-mounted drilling equipment (referred to as "air-track") owned and operated by McCallum Rock Drilling.
- Drill four test borings in the south part of the Swanson Property where the abandoned underground coal mine/seam are more than 100-feet deep using track-mounted drilling equipment (referred to as "mud-rotary") owned and operated by Gregory Drilling.
- Reclassify all or part of CMS Zone 2, if appropriate, consistent the City of Bellevue LUC Part 20.25H.130 C.4.
- Develop mitigation related to coal mine hazards for site use including road access, stormwater detention and/or building design and construction, if appropriate.

## 4.0 REGULATORY CONSIDERATIONS

ICE's analysis of coal mine hazards at the Swanson Property was completed in general accordance with the City of Bellevue Land Use Code (LUC) Part 20.25H.130 (Coal Mine Hazard Area). Specific mine hazard categories are summarized below.

CMS Zone 1 is described by the City of Bellevue LUC as areas that are affected by Potential Trough Subsidence where ground strain could exceed 0.003 inches per inch, and/or where ground tilt may exceed 1V:350H (vertical to horizontal) (Bellevue LUC Part 20.25H.130.C.1).

In our December 2014 report, we concluded that no CMS Zone 1 occurs within the Swanson Property area based on our analysis of ground tilt and ground strain for which the magnitudes are less than the defined thresholds for property damage.

Based on the City of Bellevue LUC Part 20.25H.130 and available information at the time of our 2014 study (primarily a historic mine map review), the south part of the Swanson Property is within a CMS Zone 2. This part of the Swanson Property is referred to as the "Primary Area of Interest" (PAOI) and the "Secondary Area of Interest" (SAOI) in this report. The PAOI is where residential development is proposed; the SAOI is where a stormwater pond or underground vault is proposed.

The PAOI and SAOI were classified as a CMS Zone 2 because the area is underlain by the access tunnel (Main Slope) and mine workings of the No. 4 Mine at a depth less than 200 feet as shown on Figure 5 of ICE's December 2014 report. These areas are shown on Figure 2 and on the Abandoned Underground Coal Mine Map (No. 4 Mine/Coal Seam), Figure 3. An updated mine location based on the current ground proofing study is also shown on Figure 3.

According to City of Bellevue LUC Part 20.25H.130 C.2, development can occur in CMS Zone 2 *only after potential public safety mine hazards are investigated and eliminated. A direct subsurface investigation program is required to investigate potential sinkhole development*. This report refers to the "direct subsurface investigation program" as "ground proofing."

The PAOI is divided by a 100-foot-wide corridor where a known inclined mine shaft for the No. 4 Mine exists as shown on Figure 3; this corridor is the SAOI.

## 5.0 NO. 4 MINE BACKGROUND INFORMATION

ICE's December 2014 report adequately summarizes the history of mining in the Swanson Property area. Additional information related to the No. 4 Mine and reviewed for the current study include the following documents:

- King County iMAP, aerial photograph dated 1936.
- McDonald, R.K. and McDonald, Lucille, 1987, The Coals of Newcastle, A Hundred Years of History, by the Issaquah Alps Trails Club in cooperation with the Newcastle Historical Society.
- Pacific Coast Coal Company (PCCC), 1928a, "Map of Newcastle Mine, No. 4 Seam," 1 Plate, Scale 1 inch = 100 feet. The original of this map was in the possession of Mr. Milt Swanson (deceased, formerly of Bellevue, Washington). A copy of this map is also on file in the mine map collection with the State of Washington Department of Natural Resources (DNR).
- PCCC, 1928b, "Map of Newcastle Mine, Composite," 1 Plate, Scale 1 inch = 100 feet. The original of this map was in the possession of Mr. Swanson. A copy of this map is also on file in the WDNR mine map collection.
- Skelly and Loy, 1985, "Abandoned Coal Mine Survey, Coal Creek, King County, Washington," prepared for U.S. Department of Interior, Office of Surface Mining (OSM), Denver, Colorado, 66 pages. A copy of this document is in the DNR library.
- USGS, Dunrud, C. Richard, 1990, unpublished compiled abandoned underground mine map of the Newcastle area showing the extent of mined out areas and location of surface openings. A copy of this map is in the ICE library.
- Washington State Department of Natural Resources (DNR), copies of the "Annual Reports of the Inspectors of Coal Mines," dated 1887, 1889, 1891, 1892, 1893 and 1894. Copies of these reports were provided to ICE by Mr. Swanson in 1990.

ICE previously completed several interviews with individuals familiar with the coal mining history in the Swanson Property area. We personally interviewed Mr. Swanson and Mr. Timothy Walsh of the DNR in 1990. At the time of our 1990 interviews, we were not able to meet with Mr. Fred Rounds, due to his poor health. However, we do have interview notes that are pertinent to the Swanson Property from our discussions with Mr. Rounds during a meeting with him in 1987. Mr. Swanson was a long-time resident of this area (the owner of the property subject to this report) and a mine historian. Mr. Walsh is a geologist, recently retired from the DNR, whose past responsibilities included the organization of the historical coal mine map collection for Washington State. Mr. Rounds (deceased) was a miner that worked in the Primrose Seam (a nearby coal mine) during its development in the 1930s.

The detailed history of coal mining in the Bellevue area is well documented in the publication by McDonald and McDonald (1987). This publication also provides useful descriptions of general mining terminology.

This report describes mining activities and explains certain mining terms that the readers of this report may not be familiar with.

A general summary of historic mining activities in the Swanson Property area is presented in the following paragraphs.

**1879 to December 1894 - Active mining in the "Newcastle Mine"**
The No. 3 Mine and the No. 4 Mine are referred to collectively in the historical documents as the "Newcastle Mine."

The main entry tunnel or "slope" for the Newcastle Mine accessed the No. 3 seam to five levels extending to a depth of over 1,300 feet below the ground surface. Mines were typically worked in levels extending out along the strike of the coal seam from a main slope. Each level was then worked "up-dip" in order to maximize the use of gravity to move loosened coal to the coal cars.

Tunnels were driven in non-coal bearing rock formations from the No. 3 seam (No. 3 Mine) to access the No. 4 seam (No. 4 Mine) at the 1st, 2nd and 5th levels. Rock material separating the No. 3, No. 4 and other coal bearing seams consists of sandstone and shale. The thickness of the No. 3 and No. 4 seams is about 10 feet and 5 feet, respectively (McDonald R.K and McDonald, Lucille, 1987, page 4). The entrance to the No. 3 Mine has been crudely backfilled and is located under the pavement of Lakemont Boulevard (Swanson, 1990) and was exposed during the gas main installation in Lakemont Boulevard SE in 1990 (personal observation). This location corresponds well with the location shown on the historic mine maps (Pacific Coast Coal Company, 1928a and 1928b).

In 1887, the Mine Inspector reported (DNR, 1887, page 7) that the No. 4 seam had been abandoned. There was no explanation as to why the No. 4 workings had been abandoned. It is suspected that the coal was of low quality (Swanson, 1990).

In 1891, the Newcastle mine was being worked on a slope angle of 40 to 41 degrees, and to a depth of 1,350 feet (DNR, 1891, page 15). The Mine Inspector also reports that the mine has been extensively worked and many of the roof support pillars are being crushed by the weight of the overburden. On page 16 of DNR (1891), the Mine Inspector indicates that the 1st, 2nd and 3rd levels of the No. 3 seam had not been completely worked out due to spontaneous combustion fires.

In 1893 (DNR, 1893, pages 31 and 32) the Mine Inspector reported that there were considerable problems with pillar crushing in the Newcastle Mine which required the construction of cribs and sand-filled compartments parallel to the pillars. The Mine Inspection report indicates that the cribbing and other shoring had improved the caving problems.

In December 1894, the Newcastle Mine was permanently closed due to a mine fire (DNR, 1894, page 51, and McDonald, R.K and McDonald, Lucille, page 47). PCCC (1928 a and b) does not show detail of the workings in the Nos. 3 and 4 seams of the Newcastle Mine. The 1985 Skelly and Loy report also does not show detail of the Newcastle Mine workings.

Based on our discussions with Mr. Rounds and Mr. Swanson and our review of the Mine Inspector's reports, it is our opinion that the 1st, 2nd, 3rd, 4th and 5th levels of the No. 3 Mine and the 1st, 2nd and 5th levels of the No. 4 Mine were partially to completely worked out using room-and-pillar mining methods.

## 6.0 GROUND PROOFING PROGRAM

The Swanson Property is underlain by abandoned underground coal mines summarized as follows:

| Mine | Swanson Property Depth to Mine Workings (feet) |
|---|---|
| No. 4 Mine | <20 to 350 |
| No. 3 Mine | 300 to 630 |
| Ford Slope (Muldoon Coal Seam) | >930 |

Only the No. 4 Mine is of concern at the Swanson Property for the purpose of this ground proofing program because the mine workings are less than 200 feet below the ground surface within the PAOI and SAOI. The other abandoned underground mines and the No. 4 Mine workings that are more than 200 feet below the ground surface were previously evaluated for CMS Zone 1 concerns as described in ICE's December 2014 report; these areas were determined to be less than the designated thresholds for ground tilt and strain that could cause damage to structures. As stated in our 2014 report, we recommended that the CMS Zone 1 classification was not appropriate for the Swanson Property.

For the current study, subsurface conditions within the PAOI were explored by drilling 16 test borings (Borings B-1 through B-16) using air-track drill equipment owned and operated by McCallum Rock Drilling for mine targets of less than 100-feet deep (referred to as "shallow test borings" on Figures 2 and 3), and mud-rotary drill equipment owned and operated by Gregory Drilling for mine targets of more than 100-feet deep (referred to as "deep" and "deeper test borings" on Figures 2 and 3). The mine target depth for the deeper test borings was approximately 170 feet. The borings were drilled between February 8 and 22, 2016. The boring locations are shown on Figures 2 and 3. Exploration locations were established by measuring from physical features at the site. The results of our ground proofing are presented in the Coal Mine Hazards Map (No. 4 Mine/Coal Seam), Figure 4.

Soil and bedrock samples (drill cuttings) were observed continuously as the borings were advanced. The subsurface explorations were continuously logged by Jeff Schwartz, a licensed engineering geologist from our firm. Soils were classified in general accordance with ASTM Test Method D 2488 as shown on the Explanation for Boring Logs, Figure 5. Bedrock was classified in general accordance with Chapter 4 of the May 2015 WSDOT Geotechnical Design Manual. The boring logs are presented in Figures 6 through 21.

A summary of the subsurface conditions observed in the test borings is presented below.

| Test Boring Number | Total Depth (feet) | Depth to Bedrock (feet)[1] | Depth to Coal Seam/Mine (feet) | Void Thickness (feet) | Unmined - Intact Coal | Thickness of Intact Coal (feet) |
|---|---|---|---|---|---|---|
| B-1 | 90 | 40 | Not Encountered[2] | - | - | - |
| B-2[3] | 90 | 63 | 85 | No voids | Yes | 5 |
| B-3 | 96 | 30 | 86 | No voids | Yes | 7 |
| B-4 | 105 | 30 | 103 | No voids | Yes | 2+[4] |
| B-5 | 145 | 45 | 132 | No voids | Yes | 8 |
| B-6 | 125 | 34 | 117 | No voids | Yes | 8 |
| B-7 | 190 | 35 | 178 | No voids | Yes | 7 |
| B-8 | 155 | 14 | 144 | No voids | Yes | 7 |
| B-9 | 91 | 46 | 88 | No voids | Yes | 3+[4] |
| B-10 | 90 | 36 | 76 | No voids | Yes | 10 |
| B-11 | 86 | 45 | 85 | No voids | Yes | 1+[4] |
| B-12 | 60 | 24 | 40 | No voids | Yes | 9 |
| B-13 | 85 | 45 | 67 | No voids | Yes | 7 |
| B-14 | 118 | 29 | 116 | 1.3[5] | -[6] | -[6] |
| B-15 | 70 | 60 | Not encountered[2] | - | - | - |
| B-16 | 190 | 56 | 178 | No voids | Yes | 5 |

(1) The overburden generally consisted of Glacial Till (dense to very dense silty sand with gravel and cobbles).
(2) Borings B-1 and B-15 encountered drill bit plugging or hole deflection and could not be advanced below the total depth indicated.
(3) Boring B-2 was drilled on an incline (not vertical) at 55 degrees below horizontal.
(4) The coal seam was not fully penetrated in Borings B-4, B-9 and B-11 because of bit plugging.
(5) Boring B-14 encountered a 2-foot void which, based on the coal seam inclination of about 40 degrees, is equivalent to a 1.3-foot true thickness void.
(6) Lost drill circulation at the void; drilling terminated.

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

In our opinion, sufficient subsurface exploration (ground proofing) has been completed within the PAOI at the Swanson Property to evaluate the potential for sinkholes within the CMS Zone 2 area. The results of the ground proofing also reinforce our previous conclusions that CMS Zone 1 was not applicable within the Swanson Property as described in ICE's December 2014 report.

It is important to note that the entire CMS Zone 2 area, where test borings were completed for the current study, is mantled with 14 to 63 feet of Glacial Till (average thickness of 36 feet) which has the strength of reinforced concrete.

Based on our experience in researching sinkhole potential (database of over 1,000 sinkholes in Washington State), only three sinkholes have occurred where the mine depth is over 100-feet deep. In these three sinkhole occurrences, the geologic conditions were unique with over 100 feet of clean sand and gravel overlying the bedrock. The mine breached into the sand and gravel overburden resulting in an "hour glass effect" of the sand and gravel flowing into the mine. These conditions do not exist at the Swanson Property. Based on our research and experience, most sinkholes form over the "mine subcrop" or where the overburden is less than 50-feet thick. At the Swanson Property within the PAOI, it appears

that the coal is intact (not mined) at a depth up 120 feet, and probably closer to 150 feet, based on our ground proofing.

In all borings except one (Boring B-14) intact coal or a completely collapsed mine zone was encountered. Boring B-14 encountered a 1.3 foot void at a depth about 118 feet. In our opinion, this amount of void at this depth should be considered substantially collapsed (no risk of sinkhole development).

In our opinion, development should be unrestricted with regard to coal mine hazards within the PAOI as shown on Figure 2; we recommend that the PAOI be reclassified as a Declassified Coal Mine Area as shown on Figure 4.

Based on the results of our ground proofing study, we recommend that the 100-foot wide "corridor" referred to as the SAOI (where an inclined mine shaft is located) be classified as a CMS Zone 2, with further classifications as Lower Risk CMS Zone 2 and Higher Risk CMS Zone 2 as shown on Figure 4. The Lower Risk CMS Zone 2 could be used for a stormwater detention pond or underground vault provided that the pond/vault site is maintained within the area where the mine shaft is more than 100 feet below the ground surface as shown on Figure 4. No development should occur within remainder of the SAOI where the mine shaft is less than 100 feet below the ground surface; this area is shown as the Higher Risk CMS Zone 2 on Figure 4.

The SAOI could be utilized for other uses (residential) or the stormwater detention pond or vault shifted to areas where the mine shaft is less than 100 feet below the ground surface if additional ground proofing is completed within this corridor to evaluate the status of collapse of the mine shaft and the character of the overburden soils and bedrock.

At this time, a specific plan for the location of the stormwater detention pond or vault, along with the method of discharge to Coal Creek are not known. **ICE should be retained to review and comment for the stormwater plan concepts for use of the SAOI area.**

## 8.0 USE OF THIS REPORT

We have prepared this report for use by Isola Homes in the design of a portion of the project. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions. This report should not be considered a final report; a detailed report will be provided at a later date.

There are always risks to public health and safety and property damage related to development in areas of Coal Mine Hazards. However, this risk can be reduced to an acceptable level by ground proofing of the coal seam/mine, as was completed for this evaluation. This risk cannot be eliminated, just as the risk of seismic hazards cannot be eliminated in this area. Potential owner(s) of this property should be informed of the hazards that do exist and be provided a copy of this report for their own evaluation of risk acceptance.

Variations in subsurface conditions are possible between the locations of the explorations; variations may also occur with time. Some contingency for unanticipated conditions should be included in the project budget and schedule.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in this area at the time the report was prepared. No warranty or other conditions, express or implied, should be understood.

**********

We trust this report meets your present needs. Please call if you have any questions concerning this report.

Yours very truly,
Icicle Creek Engineers, Inc.

Kathy S. Killman, LEG
Principal Engineering Geologist

Brian R. Beaman, PE, LEG, LHG
Principal Engineer/Geologist/Hydrogeologist

Document ID: 1180001.REP

Submitted via email (PDF) and surface mail (two original copies)

Attachments: Vicinity Map – Figure 1
Site Plan – Figure 2
Abandoned Underground Coal Mine Map – Figure 3
Coal Mine Hazard Map – Figure 4
Explanation for Boring Logs – Figure 5
Borings Logs – Figures 6 through 21

**FIGURES**




# VICINITY MAP

SWANSON PROPERTY - 7331 LAKEMONT BOULEVARD SE, BELLEVUE, WASHINGTON

ICICLE CREEK ENGINEERS
29335 NE 20th Street
Carnation, Washington 98014
(425) 333-0093

| | |
|---|---|
| SCALE: As Shown | ICE FILE NO. |
| DESIGNED: --- | 1180-001 |
| DRAWN: BRB | Figure |
| CHECKED: KSK | 1 |
| DATE: 08/02/16 | |




Base aerial photograph source: Google Maps, 2013

0 150 300
Approximate Scale in Feet

EXPLANATION

- B-3 Shallow Test Boring (less than 100-feet deep)
- B-5 Deep Test Boring (target depth greater than 100-feet deep)
- B-7 Deeper Test Boring (target depth ~170-feet deep)
- Primary Area of Interest (PAOI - proposed development area)
- Secondary Area of Interest (SAOI - proposed stormwater pond area)

# SITE PLAN

SWANSON PROPERTY - 7331 LAKEMONT BOULEVARD SE, BELLEVUE, WASHINGTON

ICICLECREEK ENGINEERS
29335 NE 20th Street
Carnation, Washington 98014
(425) 333-0093

SCALE: As Shown
DESIGNED: ---
DRAWN: JMS
CHECKED: BRB
DATE: 08/02/16

ICE FILE NO.
1180-001
Figure
2




Base aerial photograph source: Google Maps, 2013

0 150 300

Approximate Scale in Feet

EXPLANATION

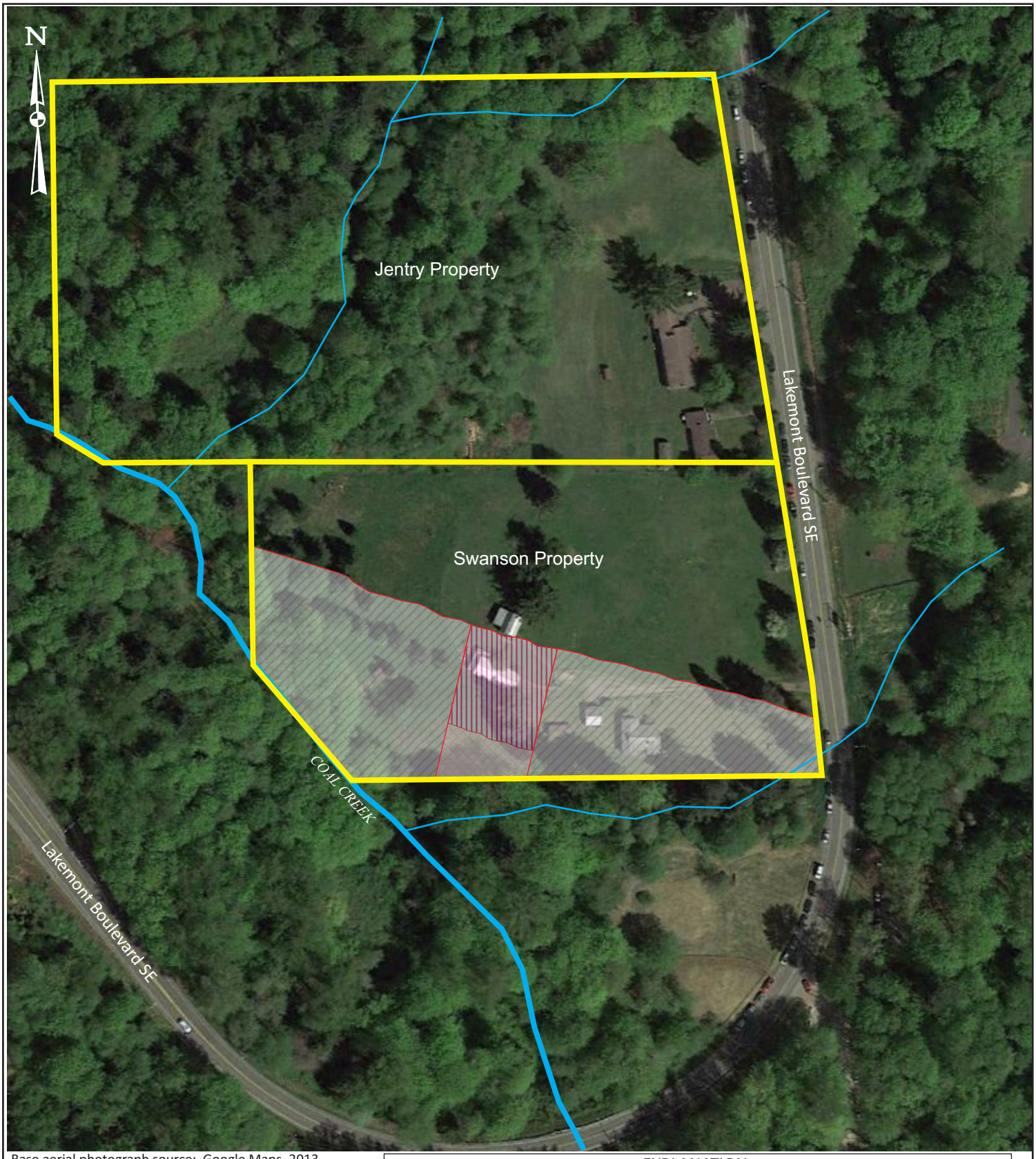
- B-3 Shallow Test Boring (target depth less than 100-feet deep)
- B-5 Deep Test Boring (target depth greater than 100-feet deep)
- B-7 Deeper Test Boring (target depth ~170-feet deep)
- Primary Area of Interest (PAOI - proposed development area)
- Secondary Area of Interest (SAOI - proposed stormwater pond area)
- Outline of the Abandoned No. 4 Mine
- 100′ Estimated Depth (feet) of Abandoned No. 4 Mine/Coal Seam

# ABANDONED UNDERGROUND COAL MINE MAP (NO. 4 MINE/COAL SEAM)

SWANSON PROPERTY - 7331 LAKEMONT BOULEVARD SE, BELLEVUE, WASHINGTON

ICICLECREEK ENGINEERS
29335 NE 20th Street
Carnation, Washington 98014
(425) 333-0093

| | |
|---|---|
| SCALE: As Shown | ICE FILE NO. |
| DESIGNED: --- | 1180-001 |
| DRAWN: JMS | Figure |
| CHECKED: BRB | 3 |
| DATE: 08/02/16 | |




Base aerial photograph source: Google Maps, 2013

0 150 300
Approximate Scale in Feet

EXPLANATION

- Declassified Coal Mine Area (includes the PAOI - no subsidence affects expected; see report text for details)
- Higher Risk CMS Zone 2 (within the SAOI - abandoned mine tunnel less than 100 feet below the ground surface; recommend passive use only)
- Lower Risk CMS Zone 2 (within the SAOI - abandoned mine tunnel more than 100 feet below the ground surface; recommend use for stormwater pond)

PAOI = Primary Area of Interest; SAOI = Secondary Area of Interest

# COAL MINE HAZARDS MAP (NO. 4 MINE/COAL SEAM)

SWANSON PROPERTY - 7331 LAKEMONT BOULEVARD SE, BELLEVUE, WASHINGTON

ICICLECREEK ENGINEERS
29335 NE 20th Street
Carnation, Washington 98014
(425) 333-0093

| | |
|---|---|
| SCALE: As Shown | ICE FILE NO. |
| DESIGNED: --- | 1180-001 |
| DRAWN: JMS | Figure |
| CHECKED: BRB | 4 |
| DATE: 08/02/16 | |

## Unified Soil Classification System

| MAJOR DIVISIONS | | | Soil Classification and Generalized Group Description | |
|---|---|---|---|---|
| Coarse-Grained Soils | GRAVEL More than 50% of coarse fraction retained on the No. 4 sieve | CLEAN GRAVEL | GW | Well-graded gravels |
| | | | GP | Poorly-graded gravels |
| | | GRAVEL WITH FINES | GM | Gravel and silt mixtures |
| | | | GC | Gravel and clay mixtures |
| | SAND More than 50% of coarse fraction passes the No. 4 sieve | CLEAN SAND | SW | Well-graded sand |
| | | | SP | Poorly-graded sand |
| More than 50% retained on the No. 200 sieve | | SAND WITH FINES | SM | Sand and silt mixtures |
| | | | SC | Sand and clay mixtures |
| Fine-Grained Soils | SILT AND CLAY Liquid Limit less than 50 | INORGANIC | ML | Low-plasticity silts |
| | | | CL | Low-plasticity clays |
| | | ORGANIC | OL | Low plasicity organic silts and organic clays |
| | SILT AND CLAY Liquid Limit greater than 50 | INORGANIC | MH | High-plasticity silts |
| | | | CH | High-plasticity clays |
| More than 50% passing the No. 200 sieve | | ORGANIC | OH | High-plasticity organic silts and organic clays |
| Highly Organic Soils | Primarily organic matter with organic odor | | PT | Peat |

Notes: 1) Soil classification based on visual classification of soil is based on ASTM D 2488.
2) Soil classification using laboratory tests is based on ASTM D 2487.
3) Description of soil density or consistency is based on interpretation of blow count data and/or test data.

## Soil Particle Size Definitions

| Component | Size Range |
|---|---|
| Boulders | Coarser than 12 inch |
| Cobbles | 3 inch to 12 inch |
| Gravel | 3 inch to No. 4 (4.78 mm) |
| Coarse | 3 inch to 3/4 inch |
| Fine | 3/4 inch to No. 4 (4.78 mm) |
| Sand | No. 4 (4.78 mm) to No. 200 (0.074mm) |
| Coarse | No. 4 (4.78 mm) to No. 10 (2.0 mm) |
| Medium | No. 10 (2.0 mm) to No. 40 (0.42 mm) |
| Fine | No. 40 (0.42 mm) to No. 200 (0.074 mm) |
| Silt and Clay | Finer than No. 200 (0.074 mm) |

## Soil Moisture Modifiers

| Soil Moisture | Description |
|---|---|
| Dry | Absence of moisture |
| Moist | Damp, but no visible water |
| Wet | Visible water |

## Key to Boring Log Symbols

| Sampling Method | Boring Log Symbol | Description |
|---|---|---|
| Blows required to drive a 2.4 inch I.D. split-barrel sampler 12-inches or other indicated distance using a 300-pound hammer falling 30 inches. | 34 | Location of relatively undisturbed sample |
| | 12 | Location of disturbed sample |
| | 21 | Location of sample attempt with no recovery |
| Blows required to drive a 1.5-inch I.D. split barrel sampler (SPT - Standard Penetration Test) 12-inches or other indicated distance using a 140-pound hammer falling 30 inches. | 14 | Location of sample obtained in general accordance with Standard Penetration Test (ASTM D-1586) test procedures. |
| | 30 | Location of SPT sampling attempt with no recovery. |
| Pushed Sampler | P | Sampler pushed with the weight of the hammer or against weight of the drilling rig. |
| Grab Sample | G | Sample obtained from drill cuttings. |

Note: The lines separating soil types on the logs represents approximate boundaries only. The actual boundaries may vary or be gradual.

## Laboratory Tests

| Test | Symbol |
|---|---|
| Moisture Content | MC |
| Density | DN |
| Grain Size | GS |
| Percent Fines | PF |
| Atterberg Limits | AL |
| Hydrometer Analysis | HA |
| Consolidation | CN |
| Compaction | CP |
| Permeability | PM |
| Unconfined Compression | UC |
| Unconsolidated Undrained TX | UU |
| Consolidated Undrained TX | CU |
| Consolidated Drained TX | CD |
| Chemical Analysis | CA |

SAB: 03/07/16

# Boring B-1

47.5362530°, -122.1300539°

Approximate Ground Surface Elevation: 629 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown to reddish-yellow silty fine to medium SAND with gravel (Weathered Soil) | | SM | | | | 0 |
| 5 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | Groundwater encountered at about 12 feet at the time of drilling | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | | | SM | ☒ | | | 25 |
| 30 | | | SM | ☒ | | | 30 |
| 35 | | | SM | ☒ | | | 35 |
| 40 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | Top of bedrock encountered at about 40 feet | | 40 |
| 45 | | | Rock | ☒ | | | 45 |
| 50 | | | | | | | 50 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 6

SAB: 03/07/16

# Boring B-1



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1080-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 50 |
| 55 | | | Rock | ☒ | | | 55 |
| 60 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 60 |
| 65 | | | Rock | ☒ | | | 65 |
| 70 | | | Rock | ☒ | | | 70 |
| 75 | | | Rock | ☒ | | | 75 |
| 80 | | | Rock | ☒ | | | 80 |
| 85 | | | Rock | ☒ | | | 85 |
| 90 | Boring completed at 90.0 feet due to plugged drill bit on 02/08/16 | | | | | | 90 |
| 95 | | | | | | | 95 |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 6

SAB: 03/07/16

# Boring B-2

47.5362738°, -122.1300888°

Approximate Ground Surface Elevation: 629 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown to reddish-yellow silty fine to medium SAND with gravel (Weathered Soil) | | SM | | | No groundwater encountered at the time of drilling | 0 |
| 5 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | | | SM | ☒ | | | 25 |
| 30 | | | SM | ☒ | | | 30 |
| 35 | | | SM | ☒ | | | 35 |
| 40 | | | SM | ☒ | | | 40 |
| 45 | | | SM | ☒ | | | 45 |
| 50 | | | | | | | 50 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 7

SAB: 03/07/16

# Boring B-2



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1080-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 50 |
| 55 | | | SM | ☒ | | | 55 |
| 60 | | | SM | ☒ | | | 60 |
| | Light gray SILTSTONE (Renton Formation bedrock) | | | | Top of bedrock encountered at about 63 feet | | |
| 65 | | | Rock | ☒ | | | 65 |
| 70 | | | Rock | ☒ | | | 70 |
| 75 | | | Rock | ☒ | | | 75 |
| | Brown carbonaceous SHALE (Renton Formation bedrock) | | | | | | |
| 80 | | | Rock | ☒ | | | 80 |
| 85 | Black COAL (Renton Formation bedrock) | | Rock | ☒ | No. 4 Coal Seam - intact/not mined | | 85 |
| 90 | Boring completed at 90.0 feet on 02/08/16 | | | | | | 90 |
| 95 | | | | | | | 95 |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 7

SAB: 03/07/16

# Boring B-3

47.5361733°, -122.1298246°

Approximate Ground Surface Elevation: 628 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1080-001

| Depth in Feet | Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown silty fine to coarse GRAVEL with sand (Weathered Soil) | | GM | | | No groundwater encountered at the time of drilling | 0 |
| 5 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | | | SM | ☒ | | | 25 |
| 30 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | Top of bedrock encountered at about 30 feet | | 30 |
| 35 | | | Rock | ☒ | | | 35 |
| 40 | | | Rock | ☒ | | | 40 |
| 45 | | | Rock | ☒ | | | 45 |
| 50 | | | | | | | 50 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 8

SAB: 03/07/16

# Boring B-3



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 50 |
| | Light gray SILTSTONE (Renton Formation bedrock) | | | | | | |
| 55 | | | Rock | ☒ | | | 55 |
| 60 | | | Rock | ☒ | | | 60 |
| 65 | | | Rock | ☒ | | | 65 |
| 70 | | | Rock | ☒ | | | 70 |
| 75 | | | Rock | ☒ | | | 75 |
| 80 | | | Rock | ☒ | | | 80 |
| | Brown carbonaceous SHALE (Renton Formation bedrock) | | | | | | |
| 85 | | | Rock | ☒ | | | 85 |
| | Black COAL (Renton Formation bedrock) | | | | No. 4 Coal Seam - intact/not mined | | |
| 90 | | | Rock | ☒ | | | 90 |
| | Light brown fine-grained SANDSTONE (Renton Formation bedrock) | | | | | | |
| 95 | | | Rock | ☒ | | | 95 |
| | Boring completed at 96.0 feet on 02/09/16 | | | | | | |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 8

SAB: 03/07/16

# Boring B-4

47.5361715°, -122.1294357°

Approximate Ground Surface Elevation: 631 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown silty fine to coarse GRAVEL with sand (Weathered Soil) | | GM | | | No groundwater encountered at the time of drilling | 0 |
| 5 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | | | SM | ☒ | | | 25 |
| 30 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | Top of bedrock encountered at about 30 feet | | 30 |
| 35 | | | Rock | ☒ | | | 35 |
| 40 | | | Rock | ☒ | | | 40 |
| 45 | | | Rock | ☒ | | | 45 |
| 50 | | | | | | | 50 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 9

SAB: 03/07/16

# Boring B-4



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 50 |
| 55 | | | Rock | ☒ | | | 55 |
| 60 | | | Rock | ☒ | | | 60 |
| 65 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 65 |
| 70 | | | Rock | ☒ | | | 70 |
| 75 | | | Rock | ☒ | | | 75 |
| 80 | | | Rock | ☒ | | | 80 |
| 85 | | | Rock | ☒ | | | 85 |
| 90 | | | Rock | ☒ | | | 90 |
| 95 | | | Rock | ☒ | | | 95 |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

SAB: 03/07/16

# Boring B-4



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 100 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 100 |
| | Black COAL (Renton Formation bedrock) | | | | No. 4 Coal Seam - intact/not mined | | |
| 105 | Boring completed at 105.0 feet on 02/09/16 | | | | | | 105 |
| 110 | | | | | | | 110 |
| 115 | | | | | | | 115 |
| 120 | | | | | | | 120 |
| 125 | | | | | | | 125 |
| 130 | | | | | | | 130 |
| 135 | | | | | | | 135 |
| 140 | | | | | | | 140 |
| 145 | | | | | | | 145 |
| 150 | | | | | | | 150 |

See Figure 5 for explanation of symbols

SAB: 03/07/16

# Boring B-5

47.5363209°, -122.1297696°

Approximate Ground Surface Elevation: 633 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown silty fine to medium SAND with gravel (Glacial Till) | | SM | | | No groundwater encountered at the time of drilling | 0 |
| 5 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | | | SM | ☒ | | | 25 |
| 30 | | | SM | ☒ | | | 30 |
| 35 | | | SM | ☒ | | | 35 |
| 40 | | | SM | ☒ | | | 40 |
| 45 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | Top of bedrock encountered at about 45 feet | | 45 |
| 50 | | | | | | | 50 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 10

SAB: 03/07/16

# Boring B-5



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 50 |
| 55 | | | Rock | ☒ | | | 55 |
| | Dark brown carbonaceous SHALE and black COAL (Renton Formation bedrock) | | | | | | |
| 60 | | | Rock | ☒ | | | 60 |
| 65 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 65 |
| 70 | | | Rock | ☒ | | | 70 |
| 75 | | | Rock | ☒ | | | 75 |
| 80 | | | Rock | ☒ | | | 80 |
| 85 | | | Rock | ☒ | | | 85 |
| 90 | | | Rock | ☒ | | | 90 |
| 95 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 95 |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

SAB: 03/07/16

# Boring B-5



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 100 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 100 |
| 105 | | | Rock | ☒ | | | 105 |
| 110 | | | Rock | ☒ | | | 110 |
| 115 | | | Rock | ☒ | | | 115 |
| 120 | | | Rock | ☒ | | | 120 |
| 125 | | | Rock | ☒ | | | 125 |
| 130 | | | Rock | ☒ | | | 130 |
| 135 | Black COAL (Renton Formation bedrock) | | Rock | ☒ | No. 4 Coal Seam - intact/not mined | | 135 |
| 140 | Light brown fine-grained SANDSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 140 |
| 145 | Boring completed at 145.0 feet on 02/15/16 | | | | | | 145 |
| 150 | | | | | | | 150 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 10

SAB: 03/07/16

# Boring B-6

47.5362249°, -122.1294611°

Approximate Ground Surface Elevation: 633 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown silty fine to medium SAND with gravel (Weathered Soil) | | SM | | | No groundwater encountered at the time of drilling | 0 |
| 5 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | | | SM | ☒ | | | 25 |
| 30 | | | SM | ☒ | | | 30 |
| 35 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | Top of bedrock encountered at about 34 feet | | 35 |
| 40 | Dark brown carbonaceous SHALE and black COAL (Renton Formation bedrock) | | Rock | ☒ | | | 40 |
| 45 | | | Rock | ☒ | | | 45 |
| 50 | Gray SILTSTONE (Renton Formation bedrock) | | | | | | 50 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 11

SAB: 03/07/16

# Boring B-6



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 50 |
| 55 | | | Rock | ☒ | | | 55 |
| 60 | | | Rock | ☒ | | | 60 |
| 65 | | | Rock | ☒ | | | 65 |
| 70 | | | Rock | ☒ | | | 70 |
| 75 | | | Rock | ☒ | | | 75 |
| 80 | | | Rock | ☒ | | | 80 |
| 85 | | | Rock | ☒ | | | 85 |
| 90 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 90 |
| 95 | | | Rock | ☒ | | | 95 |
| 100 | | | | | | | 100 |

Soil/Rock Profile

See Figure 5 for explanation of symbols

SAB: 03/07/16

# Boring B-6



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 100 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 100 |
| 105 | | | Rock | ☒ | | | 105 |
| 110 | | | Rock | ☒ | | | 110 |
| 115 | | | Rock | ☒ | | | 115 |
| 120 | Black COAL (Renton Formation bedrock) | | Rock | ☒ | No. 4 Coal Seam - intact/not mined | | 120 |
| 125 | Boring completed at 125.0 feet on 02/16/16 and 02/17/16 | | | | | | 125 |
| 130 | | | | | | | 130 |
| 135 | | | | | | | 135 |
| 140 | | | | | | | 140 |
| 145 | | | | | | | 145 |
| 150 | | | | | | | 150 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 11

SAB: 03/07/16

# Boring B-7

47.5363870°, -122.1294048°

Approximate Ground Surface Elevation: 638 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown silty fine to medium SAND with gravel (Weathered Soil) | | SM | | | No groundwater encountered at the time of drilling | 0 |
| 5 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | | | SM | ☒ | | | 25 |
| 30 | | | SM | ☒ | | | 30 |
| 35 | Light brown SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | Top of bedrock encountered at about 35 feet | | 35 |
| 40 | | | Rock | ☒ | | | 40 |
| 45 | | | Rock | ☒ | | | 45 |
| 50 | | | | | | | 50 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 12

SAB: 03/07/16

# Boring B-7



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Light brown SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 50 |
| 55 | | | Rock | ☒ | | | 55 |
| | Gray SILTSTONE (Renton Formation bedrock) | | | | | | |
| 60 | | | Rock | ☒ | | | 60 |
| 65 | | | Rock | ☒ | | | 65 |
| 70 | | | Rock | ☒ | | | 70 |
| 75 | | | Rock | ☒ | | | 75 |
| 80 | | | Rock | ☒ | | | 80 |
| 85 | | | Rock | ☒ | | | 85 |
| 90 | | | Rock | ☒ | | | 90 |
| 95 | | | Rock | ☒ | | | 95 |
| | Dark brown carbonaceous SHALE and black COAL (Renton Formation bedrock) | | | | | | |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 12

SAB: 03/07/16

# Boring B-7



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 100 | Dark brown carbonaceous SHALE and black COAL (Renton Formation bedrock) | | Rock | ☒ | | | 100 |
| | Gray SILTSTONE (Renton Formation bedrock) | | | | | | |
| 105 | | | Rock | ☒ | | | 105 |
| 110 | | | Rock | ☒ | | | 110 |
| 115 | | | Rock | ☒ | | | 115 |
| 120 | | | Rock | ☒ | | | 120 |
| 125 | | | Rock | ☒ | | | 125 |
| 130 | | | Rock | ☒ | | | 130 |
| 135 | | | Rock | ☒ | | | 135 |
| 140 | | | Rock | ☒ | | | 140 |
| 145 | | | Rock | ☒ | | | 145 |
| 150 | | | | | | | 150 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 12

SAB: 03/07/16

# Boring B-7



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 150 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 150 |
| 155 | | | Rock | ☒ | | | 155 |
| 160 | | | Rock | ☒ | | | 160 |
| 165 | | | Rock | ☒ | | | 165 |
| 170 | | | Rock | ☒ | | | 170 |
| 175 | Dark brown carbonaceous SHALE and black COAL (Renton Formation bedrock) | | Rock | ☒ | | | 175 |
| 180 | Black COAL (Renton Formation bedrock) | | Rock | ☒ | No. 4 Coal Seam - intact/not mined | | 180 |
| 185 | Light brown fine-grained SANDSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 185 |
| 190 | Boring completed at 190.0 feet on 02/19/16 and 02/22/16 | | | | | | 190 |
| 195 | | | | | | | 195 |
| 200 | | | | | | | 200 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 12

SAB: 03/07/16

# Boring B-8

47.5362286°, -122.1291634°

Approximate Ground Surface Elevation: 636 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown silty fine to medium SAND with gravel (Weathered Soil) | | SM | | | No groundwater encountered at the time of drilling | 0 |
| 5 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | | 10 |
| 15 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | Top of bedrock encountered at about 14 feet | | 15 |
| 20 | | | Rock | ☒ | | | 20 |
| 25 | | | Rock | ☒ | | | 25 |
| 30 | | | Rock | ☒ | | | 30 |
| 35 | | | Rock | ☒ | | | 35 |
| 40 | | | Rock | ☒ | | | 40 |
| 45 | | | Rock | ☒ | | | 45 |
| 50 | | | | | | | 50 |

Soil/Rock Profile

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 13

SAB: 03/07/16

# Boring B-8



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 50 |
| 55 | | | Rock | ☒ | | | 55 |
| | Dark brown carbonaceous SHALE and black COAL (Renton Formation bedrock) | | | | | | |
| 60 | | | Rock | ☒ | | | 60 |
| | Gray SILTSTONE (Renton Formation bedrock) | | | | | | |
| 65 | | | Rock | ☒ | | | 65 |
| 70 | | | Rock | ☒ | | | 70 |
| 75 | | | Rock | ☒ | | | 75 |
| 80 | | | Rock | ☒ | | | 80 |
| 85 | | | Rock | ☒ | | | 85 |
| 90 | | | Rock | ☒ | | | 90 |
| 95 | | | Rock | ☒ | | | 95 |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 13

SAB: 03/07/16

# Boring B-8



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 100 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 100 |
| 105 | | | Rock | ☒ | | | 105 |
| 110 | | | Rock | ☒ | | | 110 |
| 115 | | | Rock | ☒ | | | 115 |
| 120 | | | Rock | ☒ | | | 120 |
| 125 | | | Rock | ☒ | | | 125 |
| 130 | | | Rock | ☒ | | | 130 |
| 135 | | | Rock | ☒ | | | 135 |
| 140 | | | Rock | ☒ | | | 140 |
| | Dark brown carbonaceous SHALE and black COAL (Renton Formation bedrock) | | | | | | |
| 145 | Black COAL (Renton Formation bedrock) | | Rock | ☒ | No. 4 Coal Seam - intact/not mined | | 145 |
| 150 | | | | | | | 150 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 13

SAB: 03/07/16

# Boring B-8



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 150 | Black COAL (Renton Formation bedrock) | | Rock | ☒ | No. 4 Coal Seam - intact/not mined | | 150 |
| | Light brown/light gray fine-grained SANDSTONE (Renton Formation bedrock) | | | | | | |
| 155 | Boring completed at 155.0 feet on 02/15/16 and 02/16/16 | | | | | | 155 |
| 160 | | | | | | | 160 |
| 165 | | | | | | | 165 |
| 170 | | | | | | | 170 |
| 175 | | | | | | | 175 |
| 180 | | | | | | | 180 |
| 185 | | | | | | | 185 |
| 190 | | | | | | | 190 |
| 195 | | | | | | | 195 |
| 200 | | | | | | | 200 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 13

SAB: 03/07/16

# Boring B-9

47.5364241°, -122.1308277°

Approximate Ground Surface Elevation: 603 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown silty fine to medium SAND with gravel (Weathered Soil) | | SM | | | No groundwater encountered at the time of drilling | 0 |
| 5 | Gray silty fine to medium SAND with gravel, occasional cobbles and boulders (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | | | SM | ☒ | | | 25 |
| 30 | | | SM | ☒ | | | 30 |
| 35 | | | SM | ☒ | | | 35 |
| 40 | | | SM | ☒ | | | 40 |
| 45 | | | SM | ☒ | | | 45 |
| | Light gray SILTSTONE (Renton Formation bedrock) | | | | Top of bedrock encountered at about 46 feet | | |
| 50 | | | | | | | 50 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 14

SAB: 03/07/16

# Boring B-9



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 50 |
| 55 | | | Rock | ☒ | | | 55 |
| 60 | | | Rock | ☒ | | | 60 |
| 65 | | | Rock | ☒ | | | 65 |
| 70 | | | Rock | ☒ | | | 70 |
| 75 | | | Rock | ☒ | | | 75 |
| 80 | | | Rock | ☒ | | | 80 |
| 85 | | | Rock | ☒ | | | 85 |
| 90 | Dark brown calcareous SHALE and black COAL (Renton Formation bedrock) | | Rock | ☒ | No. 4 Coal Seam - intact/not mined | | 90 |
| 95 | Boring completed at 91.0 feet on 02/09/16 | | | | | | 95 |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 14

SAB: 03/07/16

# Boring B-10

47.5363454°, -122.1307084°

Approximate Ground Surface Elevation: 608 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown silty fine to coarse GRAVEL with sand (Weathered Soil) | | GM | | | | 0 |
| 5 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | Groundwater encountered at about 10 feet at the time of drilling | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | | | SM | ☒ | | | 25 |
| 30 | | | SM | ☒ | | | 30 |
| 35 | | | SM | ☒ | | | 35 |
| 36 | Light gray SILTSTONE (Renton Formation bedrock) | | | | Top of bedrock encountered at about 36 feet | | |
| 40 | | | Rock | ☒ | | | 40 |
| 45 | | | Rock | ☒ | | | 45 |
| 50 | | | | | | | 50 |

See Figure 5 for explanation of symbols

SAB: 03/07/16

# Boring B-10



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Gray silty fine to medium SAND with gravel and occasional cobbles (Renton Formation bedrock) | | Rock | ☒ | | | 50 |
| 55 | | | Rock | ☒ | | | 55 |
| 60 | | | Rock | ☒ | | | 60 |
| 65 | | | Rock | ☒ | | | 65 |
| 70 | | | Rock | ☒ | | | 70 |
| 75 | | | Rock | ☒ | | | 75 |
| | Black COAL (Renton Formation bedrock) | | | | | | |
| 80 | | | Rock | ☒ | No. 4 Coal Seam - intact/not mined | | 80 |
| 85 | | | Rock | ☒ | | | 85 |
| | Light gray to white fine-grained SANDSTONE (Renton Formation bedrock) | | | | | Groundwater encountered at about 86.0 feet at the time of drilling | |
| 90 | Boring completed at 90.0 feet on 02/08/16 | | | | | | 90 |
| 95 | | | | | | | 95 |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 15

SAB: 03/07/16

# Boring B-11

47.5363490°, -122.1306266°

Approximate Ground Surface Elevation: 613 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown fine to medium SAND with silt and occasional gravel (Weathered Soil) | | SM | | | | 0 |
| 5 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | Groundwater encountered at about 10 feet at the time of drilling | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | | | SM | ☒ | | | 25 |
| 30 | | | SM | ☒ | | | 30 |
| 35 | | | SM | ☒ | | | 35 |
| 40 | | | SM | ☒ | | | 40 |
| 45 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | Top of bedrock encountered at about 45 feet | | 45 |
| 50 | | | | | | | 50 |

See Figure 5 for explanation of symbols

SAB: 03/07/16

# Boring B-11



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 50 |
| 55 | | | Rock | ☒ | | | 55 |
| 60 | | | Rock | ☒ | | | 60 |
| 65 | | | Rock | ☒ | | | 65 |
| 70 | | | Rock | ☒ | | | 70 |
| 75 | | | Rock | ☒ | | | 75 |
| 80 | | | Rock | ☒ | | | 80 |
| 85 | Dark brown carbonaceous SHALE and black COAL (Renton Formation bedrock) | | Rock | ☒ | No. 4 Coal Seam - drill action suggests intact coal seam (no fluid loss) | | 85 |
| | Boring completed at 86.0 feet because of drill bit plugging on 02/09/16 | | | | | | |
| 90 | | | | | | | 90 |
| 95 | | | | | | | 95 |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 16

SAB: 03/07/16

# Boring B-12

47.5361987°, -122.1305957°

Approximate Ground Surface Elevation: 609 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown silty fine to coarse GRAVEL with sand (Weathered Soil) | | GM | | | No groundwater encountered at the time of drilling | 0 |
| 5 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | Top of bedrock encountered at about 24 feet | | 25 |
| 30 | | | Rock | ☒ | | | 30 |
| 35 | | | Rock | ☒ | | | 35 |
| 40 | Dark brown carbonaceous SHALE (Renton Formation bedrock) | | | | | | 40 |
| | Black COAL (Renton Formation bedrock) | | Rock | ☒ | | | |
| 45 | | | Rock | ☒ | No. 4 Coal Seam - intact/not mined | | 45 |
| 50 | White SANDSTONE (Renton Formation bedrock) | | | | | | 50 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 17

SAB: 03/07/16

# Boring B-12



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | White SANDSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 50 |
| 55 | | | Rock | ☒ | | | 55 |
| 60 | Boring completed at 60.0 feet on 02/08/16 | | | | | | 60 |
| 65 | | | | | | | 65 |
| 70 | | | | | | | 70 |
| 75 | | | | | | | 75 |
| 80 | | | | | | | 80 |
| 85 | | | | | | | 85 |
| 90 | | | | | | | 90 |
| 95 | | | | | | | 95 |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 17

SAB: 03/07/16

# Boring B-13

47.5362702°, -122.1305421°

Approximate Ground Surface Elevation: 616 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown fine to medium SAND with silt and occasional gravel (Weathered Soil) | | SM | | | | 0 |
| 5 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | Groundwater encountered at about 10 feet at the time of drilling | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | | | SM | ☒ | | | 25 |
| 30 | | | SM | ☒ | | | 30 |
| 35 | | | SM | ☒ | | | 35 |
| 40 | | | SM | ☒ | | | 40 |
| 45 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | Top of bedrock encountered at about 45 feet | | 45 |
| 50 | | | | | | | 50 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 18

SAB: 03/07/16

# Boring B-13



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 50 |
| 55 | | | Rock | ☒ | | | 55 |
| 60 | | | Rock | ☒ | | | 60 |
| 65 | | | Rock | ☒ | | | 65 |
| | Dark brown carbonaceous SHALE and black COAL (Renton Formation bedrock) | | | | | | |
| 70 | Black COAL (Renton Formation bedrock) | | Rock | ☒ | No. 4 Coal Seam - intact/not mined | | 70 |
| 75 | | | Rock | ☒ | | | 75 |
| | White SANDSTONE (Renton Formation bedrock) | | | | | | |
| 80 | | | Rock | ☒ | | | 80 |
| 85 | Boring completed at 85.0 feet on 02/09/16 | | | | | | 85 |
| 90 | | | | | | | 90 |
| 95 | | | | | | | 95 |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 18

SAB: 03/07/16

# Boring B-14

47.5365518°, -122.1308613°

Approximate Ground Surface Elevation: 604 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown to reddish-yellow silty fine to medium SAND with gravel (Glacial Till) | | SM | | | No groundwater encountered at the time of drilling | 0 |
| 5 | Gray silty fine to medium SAND with gravel, occasional cobbles and boulders (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | | | SM | ☒ | | | 25 |
| 30 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | Top of bedrock encountered at about 29 feet | | 30 |
| 35 | | | Rock | ☒ | | | 35 |
| 40 | | | Rock | ☒ | | | 40 |
| | Dark brown carbonaceous SHALE and black COAL (Renton Formation bedrock) | | | | | | |
| 45 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 45 |
| 50 | | | | | | | 50 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 19

SAB: 03/07/16

# Boring B-14



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 50 |
| 55 | | | Rock | ☒ | | | 55 |
| 60 | | | Rock | ☒ | | | 60 |
| 65 | | | Rock | ☒ | | | 65 |
| 70 | | | Rock | ☒ | | | 70 |
| 75 | | | Rock | ☒ | | | 75 |
| 80 | | | Rock | ☒ | | | 80 |
| 85 | | | Rock | ☒ | | | 85 |
| 90 | | | Rock | ☒ | | | 90 |
| 95 | | | Rock | ☒ | | | 95 |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

SAB: 03/07/16

# Boring B-14



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 100 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 100 |
| 105 | | | Rock | ☒ | | | 105 |
| 110 | | | Rock | ☒ | | | 110 |
| 115 | | | Rock | ☒ | | | 115 |
| | Void | ☒ | | | No. 4 Mine is substantially collapsed | | |
| | Boring completed at 118.0 feet because of drill fluid circulation loss on 02/17/16 | | | | | | |
| 120 | | | | | | | 120 |
| 125 | | | | | | | 125 |
| 130 | | | | | | | 130 |
| 135 | | | | | | | 135 |
| 140 | | | | | | | 140 |
| 145 | | | | | | | 145 |
| 150 | | | | | | | 150 |

Soil/Rock Profile

See Figure 5 for explanation of symbols

SAB: 03/07/16

# Boring B-15

47.5365762°, -122.1304455°

Approximate Ground Surface Elevation: 626 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown to reddish-yellow silty fine to medium SAND with gravel (Weathered Soil) | | SM | | | No groundwater encountered at the time of drilling | 0 |
| 5 | Gray silty fine to medium SAND with gravel, occasional cobbles and boulders (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | | | SM | ☒ | | | 25 |
| 30 | | | SM | ☒ | | | 30 |
| 35 | | | SM | ☒ | | | 35 |
| 40 | | | SM | ☒ | | | 40 |
| 45 | | | SM | ☒ | | | 45 |
| 50 | | | | | | | 50 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 20

SAB: 03/07/16

# Boring B-15



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Gray silty fine to medium SAND with gravel, occasional cobbles and boulders (Glacial Till) | | SM | ☒ | | | 50 |
| 55 | | | SM | ☒ | | | 55 |
| 60 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | Top of bedrock encountered at about 60 feet | | 60 |
| 65 | | | Rock | ☒ | | | 65 |
| 70 | Boring completed at 70.0 feet because the drilling fluid surface seal was leaking on 02/18/16 | | | | | | 70 |
| 75 | | | | | | | 75 |
| 80 | | | | | | | 80 |
| 85 | | | | | | | 85 |
| 90 | | | | | | | 90 |
| 95 | | | | | | | 95 |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 20

SAB: 03/07/16

# Boring B-16

47.5366016°, -122.1305206°

Approximate Ground Surface Elevation: 624 feet



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 0 | Brown silty fine to medium SAND with gravel (Weathered Soil) | | SM | | | No groundwater encountered at the time of drilling | 0 |
| 5 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 5 |
| 10 | | | SM | ☒ | | | 10 |
| 15 | | | SM | ☒ | | | 15 |
| 20 | | | SM | ☒ | | | 20 |
| 25 | | | SM | ☒ | | | 25 |
| 30 | | | SM | ☒ | | | 30 |
| 35 | | | SM | ☒ | | | 35 |
| 40 | | | SM | ☒ | | | 40 |
| 45 | | | SM | ☒ | | | 45 |
| 50 | | | | | | | 50 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 21

SAB: 03/07/16

# Boring B-16



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 50 | Gray silty fine to medium SAND with gravel and occasional cobbles (Glacial Till) | | SM | ☒ | | | 50 |
| 55 | | | SM | ☒ | | | 55 |
| | Gray SILTSTONE (Renton Formation bedrock) | | | | Top of bedrock encountered at about 56 feet | | |
| 60 | | | Rock | ☒ | | | 60 |
| 65 | | | Rock | ☒ | | | 65 |
| 70 | | | Rock | ☒ | | | 70 |
| 75 | | | Rock | ☒ | | | 75 |
| 80 | | | Rock | ☒ | | | 80 |
| 85 | | | Rock | ☒ | | | 85 |
| 90 | | | Rock | ☒ | | | 90 |
| | Dark brown carbonaceous SHALE and black COAL (Renton Formation bedrock) | | | | | | |
| 95 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 95 |
| 100 | | | | | | | 100 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 21

SAB: 03/07/16

# Boring B-16



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 100 | Gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 100 |
| 105 | | | Rock | ☒ | | | 105 |
| 110 | | | Rock | ☒ | | | 110 |
| 115 | | | Rock | ☒ | | | 115 |
| 120 | | | Rock | ☒ | | | 120 |
| 125 | | | Rock | ☒ | | | 125 |
| 130 | | | Rock | ☒ | | | 130 |
| 135 | | | Rock | ☒ | | | 135 |
| 140 | | | Rock | ☒ | | | 140 |
| 145 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 145 |
| 150 | | | | | | | 150 |

See Figure 5 for explanation of symbols

SAB: 03/07/16

# Boring B-16



Logged by: JMS

Project Name: Swanson Property

ICE Project No. 1180-001

| Depth in Feet | Soil/Rock Profile: Description | Graphic Log | Soil Classification Symbol | Sample Location | Comments | Groundwater Observations | Depth in Feet |
|---|---|---|---|---|---|---|---|
| 150 | Light gray SILTSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 150 |
| 155 | | | Rock | ☒ | | | 155 |
| 160 | | | Rock | ☒ | | | 160 |
| 165 | | | Rock | ☒ | | | 165 |
| | Gray SILTSTONE and dark brown carbonaceous SHALE (Renton Formation bedrock) | | | | | | |
| 170 | | | Rock | ☒ | | | 170 |
| 175 | | | Rock | ☒ | | | 175 |
| | Black COAL (Renton Formation bedrock) | | | | No. 4 Mine fully collapsed | | |
| 180 | | | Rock | ☒ | | | 180 |
| 185 | Light gray fine-grained SANDSTONE (Renton Formation bedrock) | | Rock | ☒ | | | 185 |
| 190 | Boring completed at 190.0 feet on 02/18/16 and 02/19/16 | | | | | | 190 |
| 195 | | | | | | | 195 |
| 200 | | | | | | | 200 |

See Figure 5 for explanation of symbols

**Icicle Creek Engineers**

Boring Log - Figure 21

# Appendix C:

## Wetland Delineation Data Sheets, Talasaea Consultants, 2017


Copyright © 2019 Talasaea Consultants, Inc.

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

Project/Site: TAL-1543 Coal Creek City/County: Bellevue Sampling Date: 12/11/2017

Applicant/Owner: Isola Homes State: WA Sampling Point: WL-A-UPL

Investigator(s): KM Section, Township, Range: SE 1/4 S26, T24N, R05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 20%

Subregion (LRR): A Lat: 47.536660 Long: -122.129723 Datum: NAD83

Soil Map Unit Name: BeC, AkF NWI classification: None Mapped

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 ☒<br>Hydric Soil Present? Yes ☐ No ☒<br>Wetland Hydrology Present? Yes ☐ No ☒ | **Is the Sampled Area within a Wetland?** Yes ☐ No ☒ |

Remarks: Pit located southeast of WL-A-WET testpit.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 5m) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Acer macrophyllum* | 70 | Yes | FACU |
| 2. *Thuja plicata* | 15 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| | 85 = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 3m) | | | |
| 1. *Oemleria cerasiformis* | 35 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 35 = Total Cover | | |
| **Herb Stratum** (Plot size: 1m) | | | |
| 1. *Polystichum munitum* | 25 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 25 = Total Cover | | |
| **Woody Vine Stratum** (Plot size: 3m) | | | |
| 1. *None* | | | |
| 2. | | | |
| | 0 = Total Cover | | |

% Bare Ground in Herb Stratum 75 % Cover of Biotic Crust 0

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

**Prevalence Index worksheet:**

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

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 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: No hydrophytic vegetation present.

## SOIL

Sampling Point: WL-A-UPL

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 10YR 3/4 | 100 | - | - | - | - | Loam | |
| 5-16 | 10YR 5/3 | 100 | - | - | - | - | Sand/Rck | Sandstone-Coal Mix |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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: Sandstone and coal mixture below 5 inches

## 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: No wetland hydrology present.

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

Project/Site: TAL-1543 Coal Creek City/County: Bellevue Sampling Date: 12/11/2017

Applicant/Owner: Isola Homes State: WA Sampling Point: WL-A-WET

Investigator(s): KM Section, Township, Range: SE 1/4 S26, T24N, R05E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2%

Subregion (LRR): A Lat: 47.536660 Long: -122.129723 Datum: NAD83

Soil Map Unit Name: BeC, AkF NWI classification: None Mapped

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 ☐<br>Hydric Soil Present? Yes ☒ No ☐<br>Wetland Hydrology Present? Yes ☒ No ☐ | **Is the Sampled Area within a Wetland?** Yes ☒ No ☐ |

Remarks: Test pit located southeast of Stream 1

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 5m) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *None.* | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 0 = Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 3m)** | | | |
| 1. *Rubus spectabilis* | 40 | Yes | FAC |
| 2. *Viburnum edule* | 30 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 70 = Total Cover | | |
| **Herb Stratum (Plot size: 1m)** | | | |
| 1. *Athyrium filix-femina* | 30 | Yes | FAC |
| 2. *Tolmiea menziesii* | 20 | Yes | FAC |
| 3. *Equisetum arvense* | 15 | Yes | FAC |
| 4. *Carex amplifolia* | 10 | No | OBL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 75 = Total Cover | | |
| **Woody Vine Stratum (Plot size: 3m)** | | | |
| 1. *None.* | | | |
| 2. | | | |
| | 0 = Total Cover | | |

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

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

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

☒ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

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

☐ 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: Wetland dominated by hydrophytic vegetation.

## SOIL

Sampling Point: WL-A-UPL

**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 |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 3/2 | 100 | - | - | - | - | Clay Loam | A little greasy |
| 8-16 | 10YR 3/1 | 60 | 10YR 4/4 | 30 | C | M | ClL/O | Greasy |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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: ClL = Clay loam, O = organic. Abundance of ferrous iron present at surface and throughout the 8-16" layer. Saturation at 10 inches.

## 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): N/A.

Water Table Present? Yes ☒ No ☐ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 10

**Wetland Hydrology Present? Yes ☒ No ☐**

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

Remarks: Saturation and water table present at 10" depth from the soil surface.

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

Project/Site: TAL-1543 Coal Creek City/County: Bellevue Sampling Date: 12/11/2017

Applicant/Owner: Isola Homes State: WA Sampling Point: WL-B-UPL

Investigator(s): KM Section, Township, Range: SE 1/4 S26, T24N, R05E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 20%

Subregion (LRR): A Lat: 47.536660 Long: -122.129723 Datum: NAD83

Soil Map Unit Name: Alderwood Kitsap Soil, very steep NWI classification: None Mapped

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 ☒<br>Hydric Soil Present? Yes ☐ No ☒<br>Wetland Hydrology Present? Yes ☐ No ☒ | **Is the Sampled Area within a Wetland?** Yes ☐ No ☒ |

Remarks: Plot located North (uphill) of Wetland B.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 5m) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Psuedotsuga menziesii* | 30 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 30 = Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 3m)** | | | |
| 1. *None.* | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| **Herb Stratum (Plot size: 1m)** | | | |
| 1. *Polystichum munitum* | 25 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 25 = Total Cover | | |
| **Woody Vine Stratum (Plot size: 3m)** | | | |
| 1. *None* | | | |
| 2. | | | |
| | 0 = Total Cover | | |

% Bare Ground in Herb Stratum 75 % Cover of Biotic Crust 0

**Dominance Test worksheet:**

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

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

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

**Prevalence Index worksheet:**

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

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 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: Plot dominated by upland species

## SOIL

Sampling Point: WL-B-UPL

**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 |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 2/2 | 100 | - | - | - | - | Sandy Loam | |
| 8-12 | 10YR 3/3 | 100 | - | - | - | - | Sandy 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: No hydric soils indicators met.

## 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: No wetland hydrology present.

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

Project/Site: TAL-1543 Coal Creek City/County: Bellevue Sampling Date: 12/11/2017

Applicant/Owner: Isola Homes State: WA Sampling Point: WL-B-WET

Investigator(s): KM Section, Township, Range: SE 1/4 S26, T24N, R05E

Landform (hillslope, terrace, etc.): Hill slope/seep Local relief (concave, convex, none): None Slope (%): 20%

Subregion (LRR): A Lat: 47.536660 Long: -122.129723 Datum: NAD83

Soil Map Unit Name: BeC, AkF NWI classification: None Mapped

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 ☐<br>Hydric Soil Present? Yes ☒ No ☐<br>Wetland Hydrology Present? Yes ☒ No ☐ | **Is the Sampled Area within a Wetland?** Yes ☒ No ☐ |

Remarks: Plot located in center of wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 5m) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *None.* | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 0 = Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 3m)** | | | |
| 1. *Rosa nutkana* | 10 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 10 = Total Cover | | |
| **Herb Stratum (Plot size: 1m)** | | | |
| 1. *Equisetum telmateia* | 30 | Yes | FACW |
| 2. *Ranunculus repens* | 25 | Yes | FAC |
| 3. *Agrostis stolonifera* | 5 | No | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 60 = Total Cover | | |
| **Woody Vine Stratum (Plot size: 3m)** | | | |
| 1. *None* | | | |
| 2. | | | |
| | 0 = Total Cover | | |

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

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

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

☒ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

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

☐ 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: Hydrophytic vegetation present.

## SOIL

Sampling Point: WL-B-WET

**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 |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 2/1 | 100 | - | - | - | - | SCL | Undecomposed wood found |
| 8-16 | 10YR 3/2 | 90 | 10YR 4/4 | 10 | C | M | SCL | More wood found |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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: SCL=Sandy Clayey Loam

## 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): 0.5

Water Table Present? Yes ☒ No ☐ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0

**Wetland Hydrology Present? Yes ☒ No ☐**

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

Remarks: Saturation/Surface water visible seeping at surface.

# Appendix D:

## Washington State Wetland Rating System for Western Washington Publication #04-06-025


Copyright © 2019 Talasaea Consultants, Inc.

Wetland name or number **TAL-1543 Wetland A**

**WETLAND RATING FORM – WESTERN WASHINGTON**
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): TAL- 1543 Wetland A Date of site visit: 08-06-15

Rated by DRT Trained by Ecology? Yes ✓ No___ Date of training 10-05

SEC: ___ TWNSHP: ____ RNGE: ____ Is S/T/R in Appendix D? Yes___ No___

**Map of wetland unit: Figure ____ Estimated size _____**

# SUMMARY OF RATING

## Category based on FUNCTIONS provided by wetland

**I___ II___ III ✓ IV___**

| |
|---|
| Category I = Score >=70 |
| Category II = Score 51-69 |
| Category III = Score 30-50 |
| Category IV = Score < 30 |

| | |
|---|---|
| Score for Water Quality Functions | 16 |
| Score for Hydrologic Functions | 6 |
| Score for Habitat Functions | 15 |
| **TOTAL score for Functions** | **37** |

## Category based on SPECIAL CHARACTERISTICS of wetland

**I___ II___ Does not Apply ✓**

**Final Category (choose the "highest" category from above)** **Cat. III**

**Summary of basic information about the wetland unit**

| Wetland Unit has Special Characteristics | | Wetland HGM Class used for Rating | |
|---|---|---|---|
| **Estuarine** | | **Depressional** | ✓ |
| **Natural Heritage Wetland** | | **Riverine** | |
| **Bog** | | **Lake-fringe** | |
| **Mature Forest** | | **Slope** | |
| **Old Growth Forest** | | **Flats** | |
| **Coastal Lagoon** | | **Freshwater Tidal** | |
| **Interdunal** | | | |
| None of the above | ✓ | Check if unit has multiple HGM classes present | |

## Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

| Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category) | YES | NO |
|---|---|---|
| SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?*<br>For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database. | | ✓ |
| SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?*<br>For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form). | | ✓ |
| SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?* | | ✓ |
| SP4. *Does the wetland unit have a local significance in addition to its functions*?<br>For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance. | | ✓ |

*To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.*

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

# Classification of Wetland Units in Western Washington

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

**1.** Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?

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

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. ).

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

✓ NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a "Flats" wetland, use the form for **Depressional** wetlands.

**3.** Does the entire wetland unit **meet both** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

___At least 30% of the open water area is deeper than 6.6 ft (2 m)?

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

**4.** Does the entire wetland unit **meet all** of the following criteria?

____The wetland is on a slope (*slope can be very gradual*),

____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

____The water leaves the wetland **without being impounded**?

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

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

**5.** Does the entire wetland unit **meet all** of the following criteria?

____ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river

____ The overbank flooding occurs at least once every two years.

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

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

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

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

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

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

**8**. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

| *HGM Classes within the wetland unit being rated* | *HGM Class to Use in Rating* |
|---|---|
| Slope + Riverine | Riverine |
| Slope + Depressional | Depressional |
| Slope + Lake-fringe | Lake-fringe |
| Depressional + Riverine along stream within boundary | Depressional |
| Depressional + Lake-fringe | Depressional |
| Salt Water Tidal Fringe and any other class of freshwater wetland | Treat as ESTUARINE under wetlands with special characteristics |

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

Wetland name or number TAL-1543 Wetland A

| D | **Depressional and Flats Wetlands**<br>**WATER QUALITY FUNCTIONS** - Indicators that the wetland unit functions to improve water quality | **Points** (only 1 score per box) |
|---|---|---|
| D | **D 1. Does the wetland unit have the potential to improve water quality?** | *(see p.38)* |
| D | D 1.1 Characteristics of surface water flows out of the wetland:<br>Unit is a depression with no surface water leaving it (no outlet) points = 3<br>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2<br>Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) points = 1<br>Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1<br>(*If ditch is not permanently flowing treat unit as "intermittently flowing"*)<br>Provide photo or drawing | **Figure ___**<br>1 |
| D | S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)*<br>YES points = 4<br>NO points = 0 | 0 |
| D | D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class)<br>Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5<br>Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3<br>Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1<br>Wetland has persistent, ungrazed vegetation <1/10 of area points = 0<br>Map of Cowardin vegetation classes | **Figure ___**<br>5 |
| D | D1.4 Characteristics of seasonal ponding or inundation.<br>*This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.*<br>Area seasonally ponded is > ½ total area of wetland points = 4<br>Area seasonally ponded is > ¼ total area of wetland points = 2<br>Area seasonally ponded is < ¼ total area of wetland points = 0<br>Map of Hydroperiods | **Figure ___**<br>2 |
| D | **Total for D 1** *Add the points in the boxes above* | 8 |
| D | **D 2. Does the wetland unit have the opportunity to improve water quality?**<br>Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.*<br>— Grazing in the wetland or within 150 ft<br>— Untreated stormwater discharges to wetland<br>— Tilled fields or orchards within 150 ft of wetland<br>— A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging<br>✓ — Residential, urban areas, golf courses are within 150 ft of wetland<br>— Wetland is fed by groundwater high in phosphorus or nitrogen<br>— Other_____<br>**YES** multiplier is **2** **NO** multiplier is **1** | *(see p. 44)*<br>multiplier<br>2 |
| D | **TOTAL - Water Quality Functions** Multiply the score from D1 by D2<br>***Add score to table on p. 1*** | 16 |

Comments:

Wetland name or number TAL-1543 Wetland A

| D | **Depressional and Flats Wetlands**<br>HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation | **Points** (only 1 score per box) |
|---|---|---|
| | **D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?** | ***(see p.46)*** |
| D | D 3.1 Characteristics of surface water flows out of the wetland unit<br>Unit is a depression with no surface water leaving it (no outlet) points = 4<br>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2<br>Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1<br>(*If ditch is not permanently flowing treat unit as "intermittently flowing"*)<br>Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) points = 0 | 0 |
| D | D 3.2 Depth of storage during wet periods<br>*Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).*<br>Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7<br>The wetland is a "headwater" wetland" points = 5<br>Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5<br>Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3<br>Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap water points = 1<br>Marks of ponding less than 0.5 ft points = 0 | 3 |
| D | D 3.3 Contribution of wetland unit to storage in the watershed<br>*Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*<br>The area of the basin is less than 10 times the area of unit points = 5<br>The area of the basin is 10 to 100 times the area of the unit points = 3<br>The area of the basin is more than 100 times the area of the unit points = 0<br>Entire unit is in the FLATS class points = 5 | 3 |
| D | **Total for D 3** *Add the points in the boxes above* | 6 |
| D | **D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** ***(see p. 49)***<br>Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur.<br>*Note which of the following indicators of opportunity apply.*<br>— Wetland is in a headwater of a river or stream that has flooding problems<br>— Wetland drains to a river or stream that has flooding problems<br>— Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems<br>— Other_____<br>**YES** multiplier is **2** **NO** multiplier is **1** | multiplier<br>1 |
| D | **TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4<br>***Add score to table on p. 1*** | **6** |

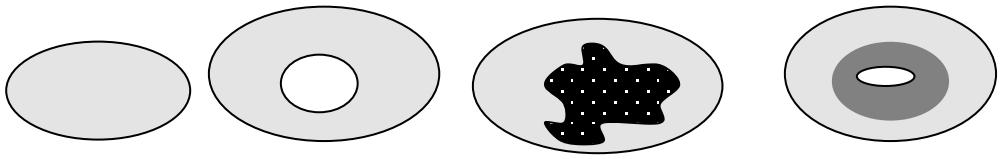
Comments: The stream that this wetland drains to is contained within a ravine and does not appear to have an erosion problem based on the composition of the streambed material.

| ***These questions apply to wetlands of all HGM classes.*** HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat | **Points** (only 1 score per box) |
|---|---|
| **H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?** | |
| H 1.1 <u>Vegetation structure</u> ***(see p. 72)*** | **Figure ___** |
| *Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.*<br>____Aquatic bed<br>____Emergent plants<br>__✓__Scrub/shrub (areas where shrubs have >30% cover)<br>____Forested (areas where trees have >30% cover)<br>*If the unit has a forested class check if:*<br>____The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon<br>*Add the number of vegetation structures that qualify. If you have:*<br>4 structures or more points = 4<br>3 structures points = 2<br>2 structures points = 1<br>1 structure points = 0<br>Map of Cowardin vegetation classes | 0 |
| H 1.2. <u>Hydroperiods</u> ***(see p. 73)*** | **Figure ___** |
| *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)*<br>____Permanently flooded or inundated<br>__✓__Seasonally flooded or inundated<br>____Occasionally flooded or inundated<br>__✓__Saturated only<br>4 or more types present points = 3<br>3 types present points = 2<br>2 types present point = 1<br>1 type present points = 0<br>__✓__ Permanently flowing stream or river in, or adjacent to, the wetland<br>____ Seasonally flowing stream in, or adjacent to, the wetland<br>____ ***Lake-fringe wetland* = 2 points**<br>____***Freshwater tidal wetland* = 2 points**<br>Map of hydroperiods | 2 |
| H 1.3. <u>Richness of Plant Species</u> ***(see p. 75)***<br>Count the number of plant species in the wetland that cover at least 10 $ft^2$. (*different patches of the same species can be combined to meet the size threshold)*<br>*You do not have to name the species.*<br>*Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle*<br>If you counted: > 19 species points = 2<br>*List species below if you want to:* 5 - 19 species points = 1<br>*Rusp, Madi, Atfi* < 5 species points = 0 | 1 |

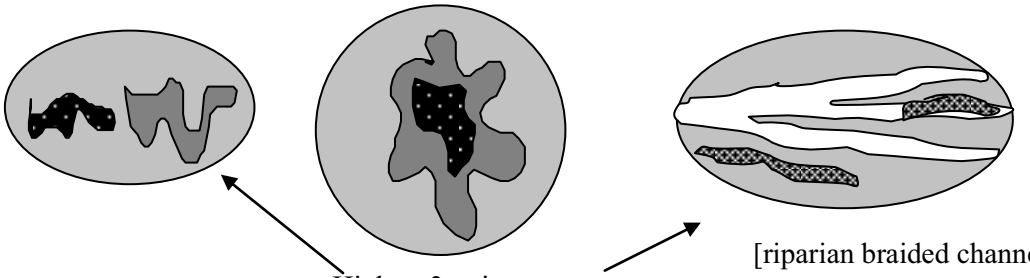
Total for page 3

H 1.4. Interspersion of habitats ***(see p. 76)*** **Figure ___**

Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



None = 0 points ✓ Low = 1 point Moderate = 2 points



High = 3 points [riparian braided channels]

NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes

1

H 1.5. Special Habitat Features: ***(see p. 77)***

*Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.*

____Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).

____Standing snags (diameter at the bottom > 4 inches) in the wetland

✓ Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)*

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated.*(structures for egg-laying by amphibians)*

✓ Invasive plants cover less than 25% of the wetland area in each stratum of plants

*NOTE: The* 20% *stated in early printings of the manual on page 78 is an error.*

3

**H 1. TOTAL** Score - potential for providing habitat
*Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5*

7

**Comments**

| **H 2. Does the wetland unit have the opportunity to provide habitat for many species?** | |
|---|---|
| H 2.1 Buffers ***(see p. 80)***<br>*Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."*<br>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer**.** (relatively undisturbed also means no-grazing, no landscaping, no daily human use) **Points = 5**<br>— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4**<br>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4**<br>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3**<br>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3**<br>**If buffer does not meet any of the criteria above**<br>✓ — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**<br>— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**<br>— Heavy grazing in buffer. **Points = 1**<br>— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0**.<br>— Buffer does not meet any of the criteria above. **Points = 1**<br>Aerial photo showing buffers | **Figure ___**<br>2 |
| H 2.2 Corridors and Connections ***(see p. 81)***<br>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (*dams in riparian corridors*, *heavily used gravel roads*, *paved roads, are considered breaks in the corridor*).<br>YES = **4 points** (*go to H 2.3*) NO = go to H 2.2.2<br>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR** a **Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above?<br>YES = **2 points** (*go to H 2.3*) NO = H 2.2.3<br>H 2.2.3 Is the wetland:<br>within 5 mi (8km) of a brackish or salt water estuary OR<br>within 3 mi of a large field or pasture (>40 acres) OR<br>within 1 mi of a lake greater than 20 acres?<br>YES = **1 point** NO = **0 points** | 0 |

Total for page 2

| | |
|---|---|
| H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm )***<br>Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.*<br>____**Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).<br>__✓__**Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report p. 152*).<br>____**Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.<br>____**Old-growth/Mature forests:** (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. **(**Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.<br>____**Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158*).<br>____**Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.<br>____**Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161*).<br>____**Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.<br>____ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).*<br>____**Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.<br>____**Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.<br>____**Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.<br>__✓__**Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.<br>If wetland has **3 or more** priority habitats **= 4 points**<br>If wetland has **2** priority habitats = **3 points**<br>If wetland has **1** priority habitat **= 1 point** No habitats = 0 points<br>*Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)* | 3 |

| | |
|---|---|
| H 2.4 Wetland Landscape *(choose the **one** description of the landscape around the wetland that best fits*) ***(see p. 84)***<br>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5<br>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5<br>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3<br>The wetland is Lake-fringe on a lake **with** disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3<br>There is at least 1 wetland within ½ mile. points = 2<br>There are no wetlands within ½ mile. points = 0 | 3 |
| **H 2**. TOTAL Score - opportunity for providing habitat<br>*Add the scores from H2.1,H2.2, H2.3, H2.4* | 8 |
| TOTAL for H 1 from page 14 | 7 |
| **Total Score for Habitat Functions –** add the points for H 1, H 2 and record the result on p. 1 | **15** |

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

***Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.***

| **Wetland Type**<br>*Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.* | **Category** |
|---|---|
| **SC 1.0 Estuarine wetlands** ***(see p. 86)***<br>Does the wetland unit meet the following criteria for Estuarine wetlands?<br>— The dominant water regime is tidal,<br>— Vegetated, and<br>— With a salinity greater than 0.5 ppt.<br>YES = Go to SC 1.1 NO ✓ | |
| SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?<br>YES = Category I NO go to SC 1.2 | |
| SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II<br>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.<br>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.<br>— The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. | No |

| | |
|---|---|
| **SC 2.0 Natural Heritage Wetlands** ***(see p. 87)***<br>Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.<br>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? *(this question is used to screen out most sites before you need to contact WNHP/DNR)*<br>S/T/R information from Appendix D ___ or accessed from WNHP/DNR web site ___<br><br>YES____ – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO ___<br><br>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species?<br>YES = Category I NO __✓__not a Heritage Wetland | No |
| **SC 3.0 Bogs** ***(see p. 87)***<br>Does the wetland unit (**or any part of the unit**) meet both the criteria for soils and vegetation in bogs? *Use the key below to identify if the wetland is a bog.* ***If you answer yes you will still need to rate the wetland based on its functions.***<br>1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 No - go to Q. 2<br>2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?<br>Yes - go to Q. 3 ✓ No - Is not a bog for purpose of rating<br>3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?<br>Yes – Is a bog for purpose of rating No - go to Q. 4<br>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.<br>*1.* Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)?*<br>2. YES = Category I No__✓__ Is not a bog for purpose of rating | No |

| | |
|---|---|
| **SC 4.0 Forested Wetlands** ***(see p. 90)***<br>Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its functions.*<br>— **Old-growth forests**: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.<br>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.<br>— **Mature forests**: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.<br>YES = Category I NO ✓ not a forested wetland with special characteristics | No |
| **SC 5.0 Wetlands in Coastal Lagoons** ***(see p. 91)***<br>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?<br>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks<br>— The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*<br>YES = Go to SC 5.1 NO ✓ not a wetland in a coastal lagoon<br><br>SC 5.1 Does the wetland meets all of the following three conditions?<br>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).<br>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.<br>— The wetland is larger than 1/10 acre (4350 square feet)<br>YES = Category I NO = Category II | No |

| | |
|---|---|
| **SC 6.0 Interdunal Wetlands** ***(see p. 93)***<br>Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?<br>YES - go to SC 6.1 NO ✓ not an interdunal wetland for rating<br>***If you answer yes you will still need to rate the wetland based on its functions.***<br>In practical terms that means the following geographic areas:<br>• Long Beach Peninsula- lands west of SR 103<br>• Grayland-Westport- lands west of SR 105<br>• Ocean Shores-Copalis- lands west of SR 115 and SR 109<br>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?<br>YES = Category II NO – go to SC 6.2<br>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?<br>YES = Category III | No |
| **Category of wetland based on Special Characteristics**<br>*Choose the "highest" rating if wetland falls into several categories, and record on p. 1.*<br>If you answered NO for all types enter "Not Applicable" on p.1 | **NA** |

Wetland name or number **TAL-1543 Wetland AA**

**WETLAND RATING FORM – WESTERN WASHINGTON**
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): TAL- 1543 Wetland AA Date of site visit: 08-06-15

Rated by DRT Trained by Ecology? Yes ✓ No ___ Date of training 10-05

SEC: 26 TWNSHP: 24N RNGE: 5E Is S/T/R in Appendix D? Yes ___ No ___

**Map of wetland unit: Figure ____ Estimated size _____**

# SUMMARY OF RATING

## Category based on FUNCTIONS provided by wetland

**I___ II___ III___ IV ✓**

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

| | |
|---|---|
| Score for Water Quality Functions | 6 |
| Score for Hydrologic Functions | 2 |
| Score for Habitat Functions | 11 |
| **TOTAL score for Functions** | **19** |

## Category based on SPECIAL CHARACTERISTICS of wetland

**I___ II___ Does not Apply ✓**

## Final Category (choose the "highest" category from above)

**Cat. IV**

**Summary of basic information about the wetland unit**

| Wetland Unit has Special Characteristics | | Wetland HGM Class used for Rating | |
|---|---|---|---|
| **Estuarine** | | **Depressional** | |
| **Natural Heritage Wetland** | | **Riverine** | ✓ |
| **Bog** | | **Lake-fringe** | |
| **Mature Forest** | | **Slope** | |
| **Old Growth Forest** | | **Flats** | |
| **Coastal Lagoon** | | **Freshwater Tidal** | |
| **Interdunal** | | | |
| None of the above | ✓ | Check if unit has multiple HGM classes present | |

## Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

| Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category) | YES | NO |
|---|---|---|
| SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?*<br>For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database. | | ✓ |
| SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?*<br>For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form). | | ✓ |
| SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?* | | ✓ |
| SP4. *Does the wetland unit have a local significance in addition to its functions*?<br>For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance. | | ✓ |

*To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.*

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

# Classification of Wetland Units in Western Washington

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

**1.** Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?

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

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. ).

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

✓ NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a "Flats" wetland, use the form for **Depressional** wetlands.

**3.** Does the entire wetland unit **meet both** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

___At least 30% of the open water area is deeper than 6.6 ft (2 m)?

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

**4.** Does the entire wetland unit **meet all** of the following criteria?

____The wetland is on a slope (*slope can be very gradual*),

____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

____The water leaves the wetland **without being impounded**?

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

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

**5.** Does the entire wetland unit **meet all** of the following criteria?

✓ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river

✓ The overbank flooding occurs at least once every two years.

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

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

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

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

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

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

**8**. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

| *HGM Classes within the wetland unit being rated* | *HGM Class to Use in Rating* |
|---|---|
| Slope + Riverine | Riverine |
| Slope + Depressional | Depressional |
| Slope + Lake-fringe | Lake-fringe |
| Depressional + Riverine along stream within boundary | Depressional |
| Depressional + Lake-fringe | Depressional |
| Salt Water Tidal Fringe and any other class of freshwater wetland | Treat as ESTUARINE under wetlands with special characteristics |

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

| R | **Riverine and Freshwater Tidal Fringe Wetlands**<br>WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality | **Points** (only 1 score per box) |
|---|---|---|
| R | **R 1. Does the wetland unit have the <u>potential</u> to improve water quality?** | ***(see p.52)*** |
| R | R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event:<br>Depressions cover >3/4 area of wetland points = 8<br>Depressions cover > 1/2 area of wetland points = 4<br>If depressions > ½ of area of unit draw polygons on aerial photo or map<br>Depressions present but cover < 1/2 area of wetland points = 2<br>No depressions present points = 0 | **Figure ___**<br>0 |
| R | R 1.2 Characteristics of the vegetation in the unit (areas with >90% cover at person height):<br>Trees or shrubs > 2/3 the area of the unit points = 8<br>Trees or shrubs > 1/3 area of the unit points = 6<br>Ungrazed, herbaceous plants > 2/3 area of unit points = 6<br>Ungrazed herbaceous plants > 1/3 area of unit points = 3<br>Trees, shrubs, and ungrazed herbaceous < 1/3 area of unit points = 0<br>Aerial photo or map showing polygons of different vegetation types | **Figure ___**<br>3 |
| R | *Add the points in the boxes above* | 3 |
| R | **R 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?**<br>Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity*.<br>— Grazing in the wetland or within 150ft<br>— Untreated stormwater discharges to wetland<br>— Tilled fields or orchards within 150 feet of wetland<br>— A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging<br>✓ Residential, urban areas, golf courses are within 150 ft of wetland<br>— The river or stream linked to the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above standards for water quality<br>— Other_____<br>**YES** multiplier is **2** **NO** multiplier is **1** | ***(see p.53)***<br>multiplier<br>2<br>_____ |
| R | **<u>TOTAL</u> - Water Quality Functions** Multiply the score from R 1 by R 2<br>***Add score to table on p. 1*** | **6** |

**Comments** Wetland is on a sandbar within the larger stream channel.

| R | **Riverine and Freshwater Tidal Fringe Wetlands**<br>HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion | **Points**<br>(only 1 score per box) |
|---|---|---|
| | **R 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?** | ***(see p.54)*** |
| **R** | R 3.1 Characteristics of the overbank storage the unit provides:<br>*Estimate the average width of the wetland unit perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: ( average width of unit)/( average width of stream between banks).*<br>If the ratio is more than 20 points = 9<br>If the ratio is between 10 – 20 points = 6<br>If the ratio is 5 - <10 points = 4<br>If the ratio is 1 - <5 points = 2<br>If the ratio is < 1 points = 1<br>Aerial photo or map showing average widths | **Figure ___**<br>2 |
| **R** | R 3.2 Characteristics of vegetation that slow down water velocities during floods: *Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description.* (polygons need to have >90% cover at person height NOT Cowardin classes):<br>Forest or shrub for >1/3 area OR herbaceous plants > 2/3 area points = 7<br>Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area points = 4<br>Vegetation does not meet above criteria points = 0<br>Aerial photo or map showing polygons of different vegetation types | **Figure ___**<br>0 |
| **R** | *Add the points in the boxes above* | 2 |
| **R** | **R 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?**<br>Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.*<br>— There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding.<br>— There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding<br>— Other_____<br>*(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)*<br>**YES** multiplier is **2** **NO** multiplier is **1** | ***(see p.57)***<br>multiplier<br>1 |
| **R** | **TOTAL - Hydrologic Functions** Multiply the score from R 3 by R 4<br>***Add score to table on p. 1*** | **2** |

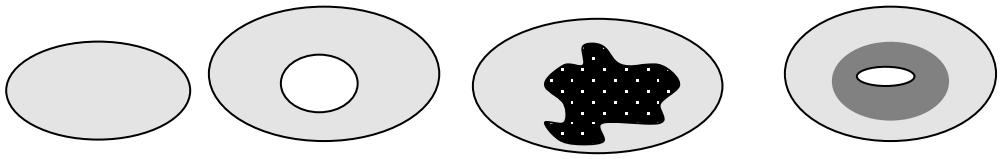
**Comments**

| ***These questions apply to wetlands of all HGM classes.*** HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat | **Points** (only 1 score per box) |
|---|---|
| **H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?** | |
| H 1.1 <u>Vegetation structure</u> ***(see p. 72)*** | **Figure ___** |
| *Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.*<br>____Aquatic bed<br>__✓__Emergent plants<br>____Scrub/shrub (areas where shrubs have >30% cover)<br>____Forested (areas where trees have >30% cover)<br>*If the unit has a forested class check if:*<br>____The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon<br>*Add the number of vegetation structures that qualify. If you have:*<br>4 structures or more points = 4<br>3 structures points = 2<br>2 structures points = 1<br>1 structure points = 0<br>Map of Cowardin vegetation classes | 0 |
| H 1.2. <u>Hydroperiods</u> ***(see p. 73)*** | **Figure ___** |
| *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)*<br>____Permanently flooded or inundated — 4 or more types present points = 3<br>__✓__Seasonally flooded or inundated — 3 types present points = 2<br>____Occasionally flooded or inundated — 2 types present point = 1<br>____Saturated only — 1 type present points = 0<br>__✓__ Permanently flowing stream or river in, or adjacent to, the wetland<br>____ Seasonally flowing stream in, or adjacent to, the wetland<br>____ ***Lake-fringe wetland* = 2 points**<br>____***Freshwater tidal wetland* = 2 points**<br>Map of hydroperiods | 1 |
| H 1.3. <u>Richness of Plant Species</u> ***(see p. 75)***<br>Count the number of plant species in the wetland that cover at least 10 $ft^2$. (*different patches of the same species can be combined to meet the size threshold)*<br>*You do not have to name the species.*<br>*Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle*<br>If you counted: > 19 species points = 2<br>*List species below if you want to:* 5 - 19 species points = 1<br>< 5 species points = 0 | 0 |

Total for page 1

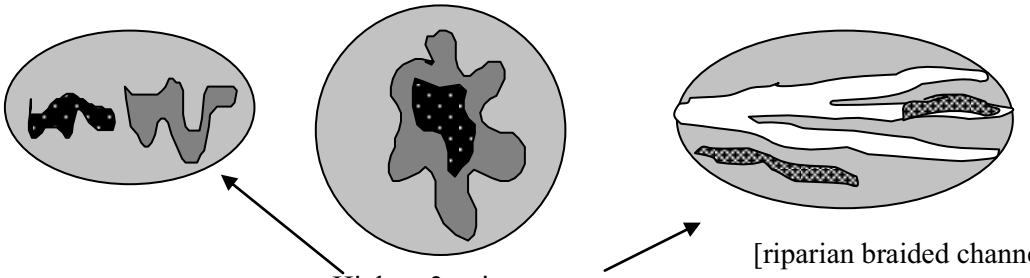
H 1.4. Interspersion of habitats ***(see p. 76)*** — **Figure ___**

Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



✓ None = 0 points  Low = 1 point  Moderate = 2 points

0



High = 3 points  [riparian braided channels]

NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes

H 1.5. Special Habitat Features: ***(see p. 77)***

*Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.*

____Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).

____Standing snags (diameter at the bottom > 4 inches) in the wetland

____Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)

2

✓ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)*

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated.*(structures for egg-laying by amphibians)*

✓ Invasive plants cover less than 25% of the wetland area in each stratum of plants

*NOTE: The* 20% *stated in early printings of the manual on page 78 is an error.*

**H 1. TOTAL** Score - potential for providing habitat
*Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5*

3

**Comments**

| **H 2. Does the wetland unit have the opportunity to provide habitat for many species?** | |
|---|---|
| H 2.1 Buffers ***(see p. 80)***<br>*Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."*<br>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer**.** (relatively undisturbed also means no-grazing, no landscaping, no daily human use) **Points = 5**<br>— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4**<br>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4**<br>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3**<br>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3**<br>**If buffer does not meet any of the criteria above**<br>— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**<br>✓ — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**<br>— Heavy grazing in buffer. **Points = 1**<br>— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0**.<br>— Buffer does not meet any of the criteria above. **Points = 1**<br>Aerial photo showing buffers | **Figure ___**<br>2 |
| H 2.2 Corridors and Connections ***(see p. 81)***<br>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (*dams in riparian corridors*, *heavily used gravel roads*, *paved roads, are considered breaks in the corridor*).<br>YES = **4 points** (*go to H 2.3*) NO = go to H 2.2.2<br>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR** a **Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above?<br>YES = **2 points** (*go to H 2.3*) NO = H 2.2.3<br>H 2.2.3 Is the wetland:<br>within 5 mi (8km) of a brackish or salt water estuary OR<br>within 3 mi of a large field or pasture (>40 acres) OR<br>within 1 mi of a lake greater than 20 acres?<br>YES = **1 point** ✓ NO = **0 points** | 0 |

Total for page 2

| | |
|---|---|
| H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm )***<br>Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.*<br>____**Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).<br>__✓__**Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report p. 152*).<br>____**Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.<br>____**Old-growth/Mature forests:** (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. **(**Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.<br>____**Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158*).<br>____**Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.<br>____**Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161*).<br>____**Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.<br>____ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).*<br>____**Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.<br>____**Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.<br>____**Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.<br>__✓__**Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.<br>If wetland has **3 or more** priority habitats **= 4 points**<br>If wetland has **2** priority habitats = **3 points**<br>If wetland has **1** priority habitat **= 1 point** No habitats = 0 points<br>*Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)* | 3 |

| | |
|---|---|
| H 2.4 Wetland Landscape *(choose the **one** description of the landscape around the wetland that best fits*) ***(see p. 84)***<br>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5<br>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5<br>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3<br>The wetland is Lake-fringe on a lake **with** disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3<br>There is at least 1 wetland within ½ mile. points = 2<br>There are no wetlands within ½ mile. points = 0 | 3 |
| **H 2**. TOTAL Score - opportunity for providing habitat<br>*Add the scores from H2.1,H2.2, H2.3, H2.4* | 8 |
| TOTAL for H 1 from page 14 | 3 |
| **Total Score for Habitat Functions –** add the points for H 1, H 2 and record the result on p. 1 | **11** |

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

***Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.***

| **Wetland Type**<br>*Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.* | **Category** |
|---|---|
| **SC 1.0 Estuarine wetlands** ***(see p. 86)***<br>Does the wetland unit meet the following criteria for Estuarine wetlands?<br>— The dominant water regime is tidal,<br>— Vegetated, and<br>— With a salinity greater than 0.5 ppt.<br>YES = Go to SC 1.1 NO ✓ | |
| SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?<br>YES = Category I NO go to SC 1.2 | |
| SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II<br>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.<br>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.<br>— The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. | No |

| | |
|---|---|
| **SC 2.0 Natural Heritage Wetlands** ***(see p. 87)***<br>Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.<br>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? *(this question is used to screen out most sites before you need to contact WNHP/DNR)*<br>S/T/R information from Appendix D ___ or accessed from WNHP/DNR web site ___<br><br>YES____ – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO ___<br><br>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species?<br>YES = Category I NO ✓ not a Heritage Wetland | No |
| **SC 3.0 Bogs** ***(see p. 87)***<br>Does the wetland unit (**or any part of the unit**) meet both the criteria for soils and vegetation in bogs? *Use the key below to identify if the wetland is a bog.* ***If you answer yes you will still need to rate the wetland based on its functions.***<br>1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 No - go to Q. 2<br>2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?<br>Yes - go to Q. 3 ✓ No - Is not a bog for purpose of rating<br>3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?<br>Yes – Is a bog for purpose of rating No - go to Q. 4<br>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.<br>*1.* Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)?*<br>2. YES = Category I No ✓ Is not a bog for purpose of rating | No |

| | |
|---|---|
| **SC 4.0 Forested Wetlands** ***(see p. 90)***<br>Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its functions.*<br>— **Old-growth forests**: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.<br>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.<br>— **Mature forests**: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.<br>YES = Category I NO ✓ not a forested wetland with special characteristics | No |
| **SC 5.0 Wetlands in Coastal Lagoons** ***(see p. 91)***<br>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?<br>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks<br>— The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*<br>YES = Go to SC 5.1 NO ✓ not a wetland in a coastal lagoon<br><br>SC 5.1 Does the wetland meets all of the following three conditions?<br>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).<br>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.<br>— The wetland is larger than 1/10 acre (4350 square feet)<br>YES = Category I NO = Category II | No |

| | |
|---|---|
| **SC 6.0 Interdunal Wetlands** ***(see p. 93)***<br>Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?<br>YES - go to SC 6.1 NO ✓ not an interdunal wetland for rating<br>***If you answer yes you will still need to rate the wetland based on its functions.***<br>In practical terms that means the following geographic areas:<br>• Long Beach Peninsula- lands west of SR 103<br>• Grayland-Westport- lands west of SR 105<br>• Ocean Shores-Copalis- lands west of SR 115 and SR 109<br>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?<br>YES = Category II NO – go to SC 6.2<br>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?<br>YES = Category III | No |
| **Category of wetland based on Special Characteristics**<br>*Choose the "highest" rating if wetland falls into several categories, and record on p. 1.*<br>If you answered NO for all types enter "Not Applicable" on p.1 | **NA** |

Wetland name or number **TAL-1543 Wetland B**

**WETLAND RATING FORM – WESTERN WASHINGTON**
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): TAL- 1543 Wetland B Date of site visit: 08-06-15

Rated by DRT Trained by Ecology? Yes ✓ No ___ Date of training 10-058

SEC: 26 TWNSHP: 24N RNGE: 5E Is S/T/R in Appendix D? Yes ___ No ✓

**Map of wetland unit: Figure ____ Estimated size _____**

# SUMMARY OF RATING

## Category based on FUNCTIONS provided by wetland

**I___ II___ III___ IV ✓**

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

| | |
|---|---|
| Score for Water Quality Functions | 12 |
| Score for Hydrologic Functions | 6 |
| Score for Habitat Functions | 11 |
| **TOTAL score for Functions** | **29** |

## Category based on SPECIAL CHARACTERISTICS of wetland

**I___ II___ Does not Apply ✓**

## Final Category (choose the "highest" category from above)

**Cat. IV**

**Summary of basic information about the wetland unit**

| Wetland Unit has Special Characteristics | | Wetland HGM Class used for Rating | |
|---|---|---|---|
| **Estuarine** | | **Depressional** | |
| **Natural Heritage Wetland** | | **Riverine** | |
| **Bog** | | **Lake-fringe** | |
| **Mature Forest** | | **Slope** | ✓ |
| **Old Growth Forest** | | **Flats** | |
| **Coastal Lagoon** | | **Freshwater Tidal** | |
| **Interdunal** | | | |
| None of the above | ✓ | Check if unit has multiple HGM classes present | |

## Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

| Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category) | YES | NO |
|---|---|---|
| SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?*<br>For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database. | | ✓ |
| SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?*<br>For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form). | | ✓ |
| SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?* | | ✓ |
| SP4. *Does the wetland unit have a local significance in addition to its functions*?<br>For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance. | | ✓ |

*To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.*

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

# Classification of Wetland Units in Western Washington

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

**1.** Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?

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

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. ).

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

✓ NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a "Flats" wetland, use the form for **Depressional** wetlands.

**3.** Does the entire wetland unit **meet both** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

___At least 30% of the open water area is deeper than 6.6 ft (2 m)?

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

**4.** Does the entire wetland unit **meet all** of the following criteria?

✓ The wetland is on a slope (*slope can be very gradual*),

✓ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

✓ The water leaves the wetland **without being impounded**?

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

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

**5.** Does the entire wetland unit **meet all** of the following criteria?

____ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river

____ The overbank flooding occurs at least once every two years.

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

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

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

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

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

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

**8**. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

| *HGM Classes within the wetland unit being rated* | *HGM Class to Use in Rating* |
|---|---|
| Slope + Riverine | Riverine |
| Slope + Depressional | Depressional |
| Slope + Lake-fringe | Lake-fringe |
| Depressional + Riverine along stream within boundary | Depressional |
| Depressional + Lake-fringe | Depressional |
| Salt Water Tidal Fringe and any other class of freshwater wetland | Treat as ESTUARINE under wetlands with special characteristics |

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

| S | **Slope Wetlands**<br>HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion | **Points**<br>(only 1 score per box) |
|---|---|---|
| | **S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?** | ***(see p.68)*** |
| S | S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms.<br>*Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows)*<br>Dense, uncut, **rigid** vegetation covers > 90% of the area of the wetland. points = 6<br>Dense, uncut, **rigid** vegetation > 1/2 area of wetland points = 3<br>Dense, uncut, **rigid** vegetation > 1/4 area points = 1<br>More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0 | 6 |
| S | S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows:<br>The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2<br>NO points = 0 | 0 |
| S | *Add the points in the boxes above* | 6 |
| S | **S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?**<br>Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? *Note which of the following conditions apply.*<br>— Wetland has surface runoff that drains to a river or stream that has flooding problems<br>— Other_____<br>*(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam)*<br>**YES** multiplier is **2** **NO** multiplier is **1** | ***(see p. 70)***<br>multiplier<br>1 |
| S | **TOTAL - Hydrologic Functions** Multiply the score from S 3 by S 4<br>***Add score to table on p. 1*** | 6 |

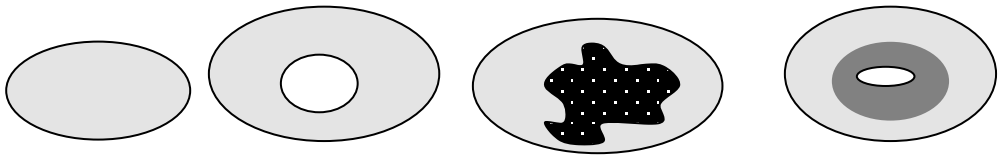
**Comments** A rockslide on Coal Creek downstream from Wetland B attenuates flows. This feature is more likely to provide protection from erosion below the rockslide.

| ***These questions apply to wetlands of all HGM classes.*** HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat | **Points** (only 1 score per box) |
|---|---|
| **H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?** | |
| H 1.1 <u>Vegetation structure</u> ***(see p. 72)*** | **Figure ___** |
| *Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.*<br>____Aquatic bed<br>__✓__Emergent plants<br>__✓__Scrub/shrub (areas where shrubs have >30% cover)<br>____Forested (areas where trees have >30% cover)<br>*If the unit has a forested class check if:*<br>____The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon<br>*Add the number of vegetation structures that qualify. If you have:*<br>4 structures or more points = 4<br>3 structures points = 2<br>2 structures points = 1<br>1 structure points = 0<br>Map of Cowardin vegetation classes | 1 |
| H 1.2. <u>Hydroperiods</u> ***(see p. 73)*** | **Figure ___** |
| *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)*<br>____Permanently flooded or inundated — 4 or more types present points = 3<br>____Seasonally flooded or inundated — 3 types present points = 2<br>____Occasionally flooded or inundated — 2 types present point = 1<br>__✓__Saturated only — 1 type present points = 0<br>____ Permanently flowing stream or river in, or adjacent to, the wetland<br>____ Seasonally flowing stream in, or adjacent to, the wetland<br>____ ***Lake-fringe wetland* = 2 points**<br>____***Freshwater tidal wetland* = 2 points**<br>Map of hydroperiods | 0 |
| H 1.3. <u>Richness of Plant Species</u> ***(see p. 75)***<br>Count the number of plant species in the wetland that cover at least 10 $ft^2$. (*different patches of the same species can be combined to meet the size threshold)*<br>*You do not have to name the species.*<br>*Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle*<br>If you counted: > 19 species points = 2<br>*List species below if you want to:* 5 - 19 species points = 1<br>< 5 species points = 0 | 0 |

Total for page 1

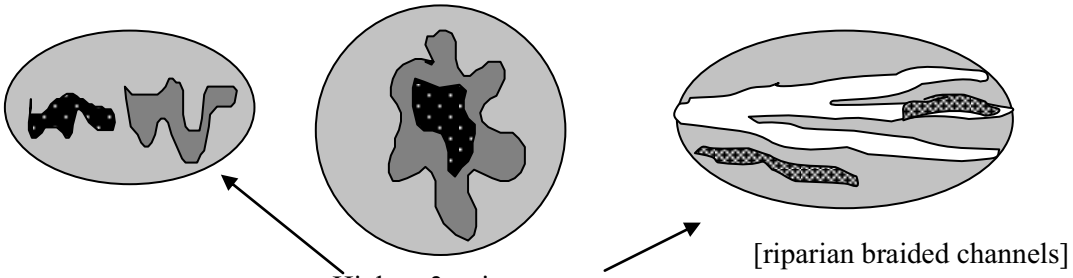
H 1.4. Interspersion of habitats ***(see p. 76)*** **Figure ___**

Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



None = 0 points ✓ Low = 1 point Moderate = 2 points

1



High = 3 points [riparian braided channels]

NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes

H 1.5. Special Habitat Features: ***(see p. 77)***

*Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.*

____Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).

____Standing snags (diameter at the bottom > 4 inches) in the wetland

____Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)

0

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)*

____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated.*(structures for egg-laying by amphibians)*

____ Invasive plants cover less than 25% of the wetland area in each stratum of plants

*NOTE: The* 20% *stated in early printings of the manual on page 78 is an error.*

**H 1. TOTAL** Score - potential for providing habitat
*Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5*

2

**Comments**

| **H 2. Does the wetland unit have the opportunity to provide habitat for many species?** | |
|---|---|
| H 2.1 Buffers ***(see p. 80)***<br>*Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."*<br>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer**.** (relatively undisturbed also means no-grazing, no landscaping, no daily human use) **Points = 5**<br>— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4**<br>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4**<br>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3**<br>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3**<br>**If buffer does not meet any of the criteria above**<br>— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**<br>✓ — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2**<br>— Heavy grazing in buffer. **Points = 1**<br>— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0**.<br>— Buffer does not meet any of the criteria above. **Points = 1**<br>Aerial photo showing buffers | **Figure ___**<br>2 |
| H 2.2 Corridors and Connections ***(see p. 81)***<br>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (*dams in riparian corridors*, *heavily used gravel roads*, *paved roads, are considered breaks in the corridor*).<br>YES = **4 points** (*go to H 2.3*) NO = go to H 2.2.2<br>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR** a **Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above?<br>YES = **2 points** (*go to H 2.3*) NO = H 2.2.3<br>H 2.2.3 Is the wetland:<br>within 5 mi (8km) of a brackish or salt water estuary OR<br>within 3 mi of a large field or pasture (>40 acres) OR<br>within 1 mi of a lake greater than 20 acres?<br>YES = **1 point** NO = **0 points** | 0 |

Total for page 2

| | |
|---|---|
| H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm )***<br>Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.*<br>____**Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).<br>__✓__**Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report p. 152*).<br>____**Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.<br>____**Old-growth/Mature forests:** (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. **(**Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.<br>____**Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158*).<br>__✓__**Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.<br>____**Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161*).<br>__✓__**Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.<br>____ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).*<br>____**Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.<br>____**Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.<br>____**Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.<br>__✓__**Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.<br>If wetland has **3 or more** priority habitats **= 4 points**<br>If wetland has **2** priority habitats = **3 points**<br>If wetland has **1** priority habitat **= 1 point** No habitats = 0 points<br>*Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)* | 4 |

| | |
|---|---|
| H 2.4 Wetland Landscape *(choose the **one** description of the landscape around the wetland that best fits*) ***(see p. 84)***<br>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5<br>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5<br>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3<br>The wetland is Lake-fringe on a lake **with** disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3<br>There is at least 1 wetland within ½ mile. points = 2<br>There are no wetlands within ½ mile. points = 0 | 3 |
| **H 2**. TOTAL Score - opportunity for providing habitat<br>*Add the scores from H2.1,H2.2, H2.3, H2.4* | 9 |
| TOTAL for H 1 from page 14 | 2 |
| **Total Score for Habitat Functions –** add the points for H 1, H 2 and record the result on p. 1 | **11** |

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

***Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.***

| **Wetland Type**<br>*Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.* | **Category** |
|---|---|
| **SC 1.0 Estuarine wetlands** ***(see p. 86)***<br>Does the wetland unit meet the following criteria for Estuarine wetlands?<br>— The dominant water regime is tidal,<br>— Vegetated, and<br>— With a salinity greater than 0.5 ppt.<br>YES = Go to SC 1.1 NO ✓ | |
| SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?<br>YES = Category I NO go to SC 1.2 | |
| SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II<br>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.<br>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.<br>— The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. | No |

| | |
|---|---|
| **SC 2.0 Natural Heritage Wetlands** ***(see p. 87)***<br>Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.<br>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? *(this question is used to screen out most sites before you need to contact WNHP/DNR)*<br>S/T/R information from Appendix D ___ or accessed from WNHP/DNR web site ___<br><br>YES____ – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO ___<br><br>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species?<br>YES = Category I NO ✓ not a Heritage Wetland | No |
| **SC 3.0 Bogs** ***(see p. 87)***<br>Does the wetland unit (**or any part of the unit**) meet both the criteria for soils and vegetation in bogs? *Use the key below to identify if the wetland is a bog.* ***If you answer yes you will still need to rate the wetland based on its functions.***<br>1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 No - go to Q. 2<br>2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?<br>Yes - go to Q. 3 ✓ No - Is not a bog for purpose of rating<br>3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?<br>Yes – Is a bog for purpose of rating No - go to Q. 4<br>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.<br>*1.* Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)?*<br>2. YES = Category I No ✓ Is not a bog for purpose of rating | No |

| | |
|---|---|
| **SC 4.0 Forested Wetlands** ***(see p. 90)***<br>Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its functions.*<br>— **Old-growth forests**: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.<br>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.<br>— **Mature forests**: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.<br>YES = Category I NO ✓ not a forested wetland with special characteristics | No |
| **SC 5.0 Wetlands in Coastal Lagoons** ***(see p. 91)***<br>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?<br>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks<br>— The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*<br>YES = Go to SC 5.1 NO ✓ not a wetland in a coastal lagoon<br><br>SC 5.1 Does the wetland meets all of the following three conditions?<br>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).<br>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.<br>— The wetland is larger than 1/10 acre (4350 square feet)<br>YES = Category I NO = Category II | No |

| | |
|---|---|
| **SC 6.0 Interdunal Wetlands** ***(see p. 93)***<br>Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?<br>YES - go to SC 6.1 NO ✓ not an interdunal wetland for rating<br>***If you answer yes you will still need to rate the wetland based on its functions.***<br>In practical terms that means the following geographic areas:<br>• Long Beach Peninsula- lands west of SR 103<br>• Grayland-Westport- lands west of SR 105<br>• Ocean Shores-Copalis- lands west of SR 115 and SR 109<br>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?<br>YES = Category II NO – go to SC 6.2<br>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?<br>YES = Category III | No |
| **Category of wetland based on Special Characteristics**<br>*Choose the "highest" rating if wetland falls into several categories, and record on p. 1.*<br>If you answered NO for all types enter "Not Applicable" on p.1 | **NA** |

# Appendix E:

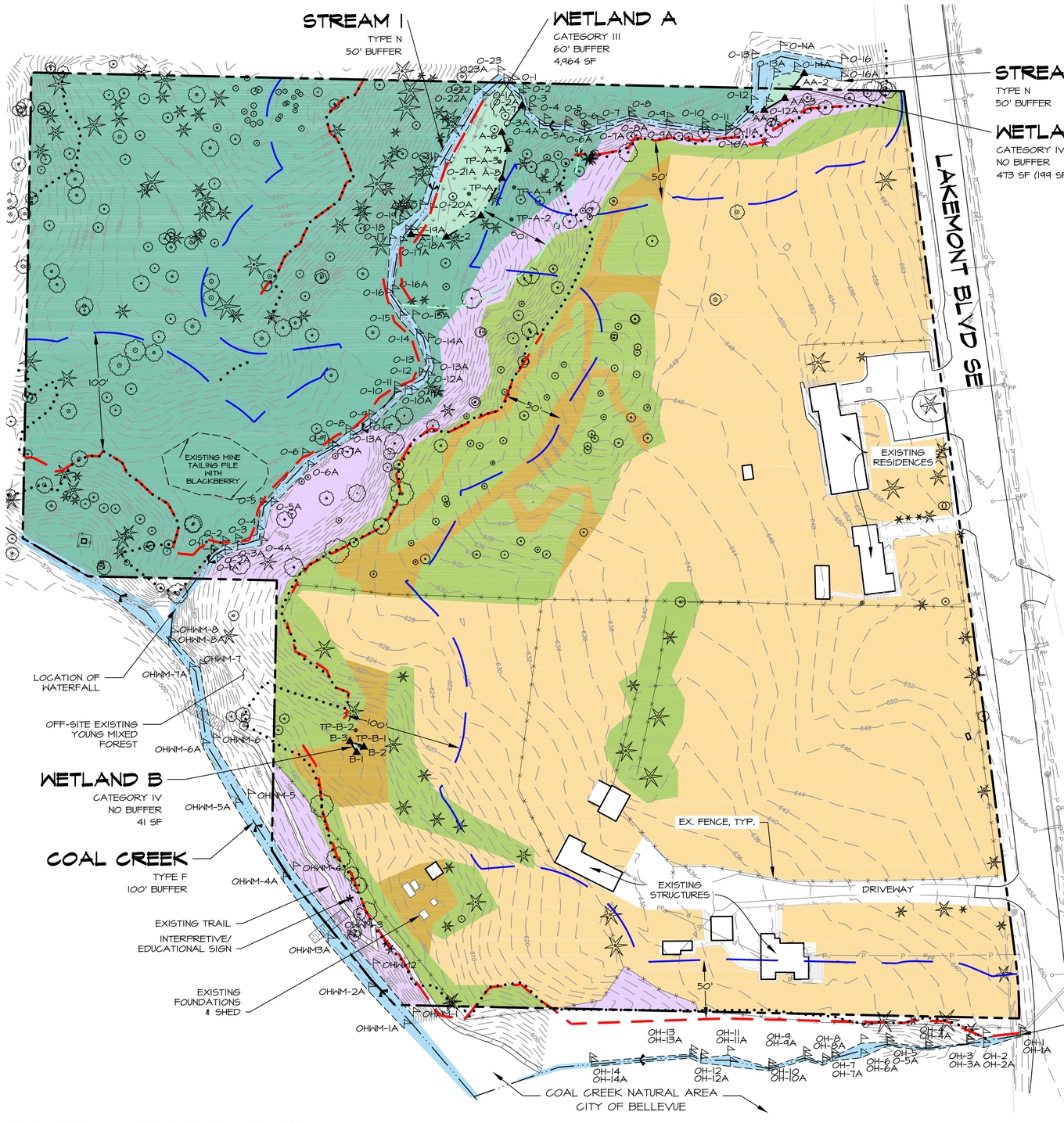
## Critical Areas Conceptual Mitigation Plans

**(large plan sheets)**

**Sheet W1.0:** Existing Conditions Plan
**Sheet W1.1:** Proposed Site Plan & Impacts Assessment
**Sheet W1.2**: Proposed Mitigation Concept
**Sheet W2.0**: Proposed Buffer Mitigation Overview
**Sheet W3.0:** Preliminary Plant List, Details, and Notes


Copyright © 2019 Talasaea Consultants, Inc.

E ½ SECTION 26, TOWNSHIP 24N, RANGE 5E, W.M.




## EXISTING CONDITIONS PLAN

GRAPHIC SCALE ( IN FEET )
0 25 50 100
SCALE: 1"=50'
NORTH

## EXISTING SITE CONDITIONS LEGEND

- MATURING FOREST WITH CLOSED CANOPY AND MIXED NATIVE SHRUBS
- EARLY SUCCESSIONAL FOREST WITH UNDERSTORY OF NATIVE SHRUBS
- DISTURBED EARLY SUCCESSIONAL FOREST WITH NON-NATIVE OR INVASIVE UNDERSTORY
- OPENINGS WITHIN EARLY SUCCESSIONAL FOREST DEGRADED BY FREQUENT HUMAN DISTURBANCE
- FREQUENTLY MAINTAINED NON-NATIVE LAWN OR PASTURE GRASSES

## PLAN LEGEND

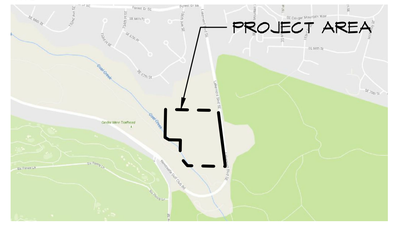
- PROPERTY LINE
- EXISTING WETLAND
- WETLAND BUFFER (STANDARD)
- STREAM CENTERLINE
- STREAM ORDINARY HIGH WATER MARK (OHWM)
- TOP OF BANK (3:1 SLOPE PER LUC 20.50.048.T
- STREAM BUFFER (STANDARD)
- STEEP SLOPE (SEE CIVIL PLANS)
- 100 — EXISTING CONTOUR
- ▲A-# WETLAND DELINEATION FLAG
- OHWM-# ORDINARY HIGH WATER FLAG - COAL CREEK
- OH-# ORDINARY HIGH WATER FLAG - STREAM 3
- O-# ORDINARY HIGH WATER FLAG - STREAM 1 & 2
- TP-# TEST PIT
- EXISTING TREES

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

**FILE #: 15-115585-DB, 16-143970-LK, 16-145946-LO**

## VICINITY MAP

NTS




SOURCE: GOOGLE MAPS; WWW.MAPS.GOOGLE.COM (ACCESSED 8/22/2016)

NORTH

## CONTACTS


APPLICANT
NAME: ISOLA HOMES
ADDRESS: 1518 1ST AVE S, SUITE 301 SEATTLE, WA 98134
PHONE: (206) 582-7900
CONTACT: JOHN JACKELS

SURVEYOR
NAME: TERRANE
ADDRESS: 10801 MAIN STREET, SUITE 102 BELLEVUE, WA 98004
PHONE: 425-458-4488

ENGINEER
NAME: PACE ENGINEERS
ADDRESS: 11255 KIRKLAND WAY SUITE 300 KIRKLAND, WA 98033
PHONE: (425) 827-2014
CONTACT: TOBY COENEN, PE

ENVIRONMENTAL CONSULTANT
NAME: TALASAEA CONSULTANTS, INC.
ADDRESS: 15020 BEAR CREEK RD. NE WOODINVILLE, WA 98077
PHONE: (425) 861-7550
CONTACT: ANN OLSEN, RLA SENIOR PROJECT PLANNER
DAVID TEESDALE, PWS, SENIOR WETLAND ECOLOGIST
JENNIFER MARRIOTT, PWS, SENIOR WETLAND ECOLOGIST


## SHEET INDEX


| SHEET NUMBER | SHEET TITLE |
|---|---|
| W1.0 | EXISTING CONDITIONS PLAN |
| W1.1 | PROPOSED SITE PLAN & IMPACTS ASSESSMENT |
| W1.2 | PROPOSED MITIGATION PLAN |
| W2.0 | PROPOSED BUFFER MITIGATION OVERVIEW |
| W3.0 | PRELIMINARY PLANT LIST, DETAILS AND NOTES |


## NOTES

1. SITE PLAN PROVIDED BY PACE ENGINEERS, 11255 KIRKLAND WAY SUITE 300 KIRKLAND, WA 98033, (425) 827-2014.
2. SOURCE DRAWING WAS MODIFIED BY TALASAEA CONSULTANTS FOR VISUAL ENHANCEMENT.
3. THIS PLAN IS AN ATTACHMENT TO THE CRITICAL AREAS REPORT PREPARED BY TALASAEA CONSULTANTS IN DATED MARCH 2014.

APPROVED FOR CONSTRUCTION

BY:
CITY OF BELLEVUE
DEPARTMENT OF PLANNING

DATE:


TALASAEA CONSULTANTS, INC.
Resource & Environmental Planning
15020 Bear Creek Road Northeast - Woodinville, Washington 98077
Fax (425) 861-7549 Phone (425) 861-7550


# CRITICAL AREA CONCEPTUAL MITIGATION PLANS
## EXISTING CONDITIONS PLAN
## PARK POINTE PUD
## BELLEVUE, WASHINGTON

| Revisions | Date | By |
|---|---|---|
| CITY COMMENTS | 5-17-2017 | MW |
| CITY COMMENTS | 1-19-2016 | OA |
| CITY COMMENTS | 6-6-2016 | ABS |
| CITY COMMENTS | 10-25-2016 | ABS |
| STORM OUTFALL | 3-13-2019 | MW |

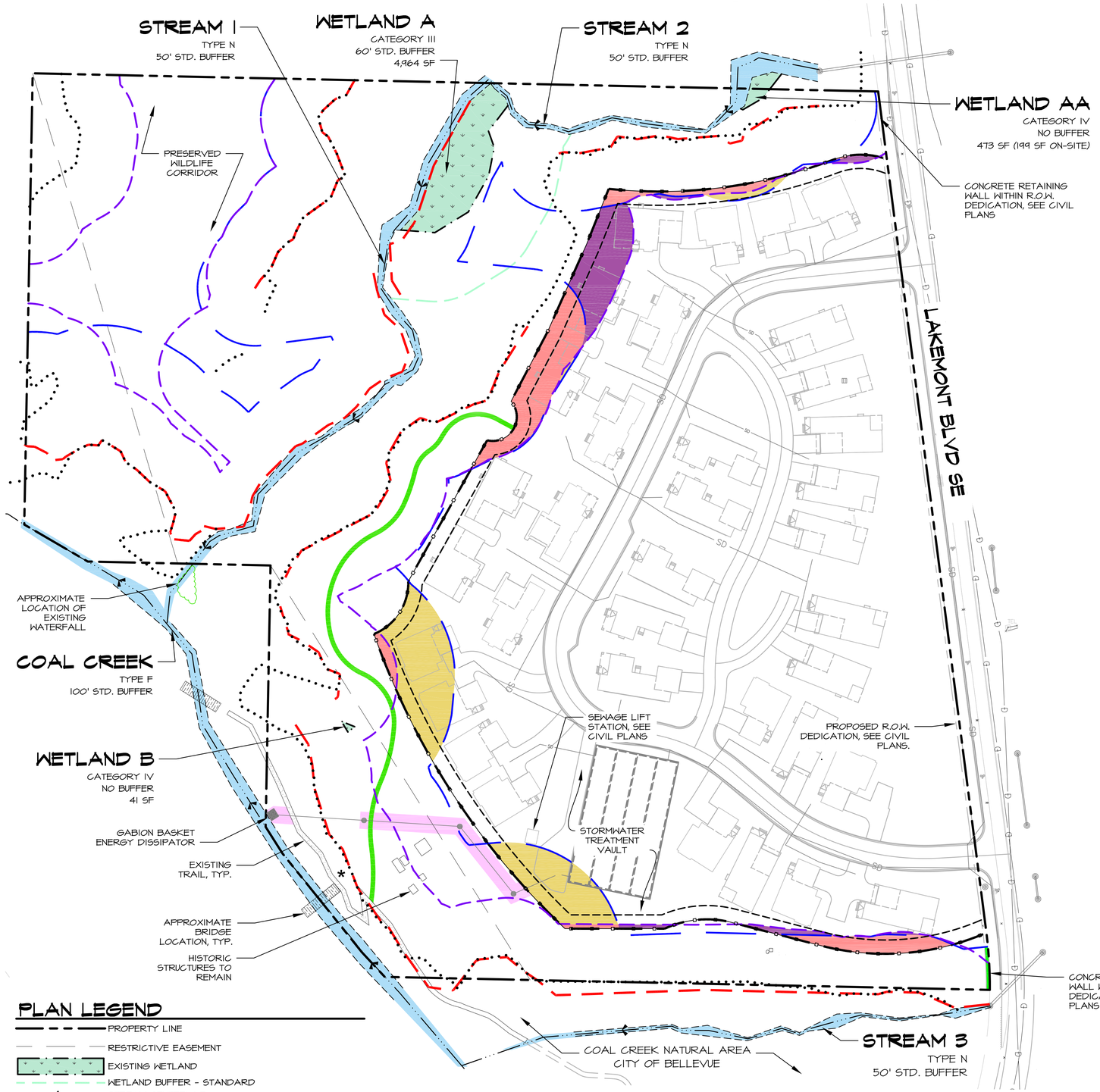
| | |
|---|---|
| Date | 10-7-2016 |
| Scale | AS SHOWN |
| Designed | AO |
| Drawn | ABS |
| Checked | AO |
| Approved | BS |

Project #1543

Sheet # W1.0


© Copyright 2014 - Talasaea Consultants, Inc. All Rights Reserved.
Z:\DRAWINGS\1500-1599\TAL1543\PLANS\TAL-1543 WP 2019-03.DWG
3/13/2019 1:19 AM

E ½ SECTION 26, TOWNSHIP 24N, RANGE 5E, W.M.




## PLAN LEGEND

- PROPERTY LINE
- RESTRICTIVE EASEMENT
- EXISTING WETLAND
- WETLAND BUFFER - STANDARD
- STREAM CENTERLINE
- STREAM ORDINARY HIGH WATER MARK (OHWM)
- TOP OF BANK FOR STREAMS
- STREAM BUFFER - STANDARD
- TOP OF STEEP SLOPE (PER CIVIL)
- STEEP SLOPE BUFFER - STANDARD

## PROPOSED SITE PLAN AND IMPACTS ASSESSMENT

GRAPHIC SCALE ( IN FEET )
0 25 50 100
SCALE: 1"=50'
NORTH

## BUFFER REDUCTION LEGEND

| | |
|---|---|
| REDUCED STREAM BUFFER FOR RIGHT-OF-WAY IMPROVEMENTS | 114 SF |
| REDUCED STREAM BUFFERS | 10,256 SF |
| REDUCED STEEP SLOPE BUFFER | 3,975 SF |
| COMBINED REDUCED STREAM & STEEP SLOPE BUFFER | 7,230 SF |
| TOTAL BUFFER REDUCTION IMPACTS: | 21,575 SF |

## CONSTRUCTION IMPACTS LEGEND

| | |
|---|---|
| SOFT SURFACE TRAIL | 2,161 SF |
| GABION BASKET ENERGY DISSIPATOR & MANHOLES | 117 SF |
| TEMPORARY CONSTRUCTION IMPACTS FOR STORMWATER OUTFALL OPEN TRENCHING | 2,706 SF |
| TOTAL CONSTRUCTION RELATED IMPACTS: | 4,984 SF |

## MITIGATION LEGEND

- POST CONSTRUCTION BUFFER
  SEE SHEET WI.2 FOR PROPOSED MITIGATION
- PROPOSED STRUCTURE SETBACK (FOR WETLANDS AND STREAMS)

## PRE-DEVELOPMENT SITE CALCULATIONS TABLE

(SEE SHEET WI.2 FOR POST-DEVELOPMENT SITE CALCULATIONS TABLE)

| CRITICAL AREAS (ON-SITE) | |
|---|---|
| WETLAND AA: | 4964 SF |
| WETLAND A: | 199 SF |
| WETLAND B: | 41 SF |
| STREAM 1: | 4,408 SF |
| STREAM 2: | 1,432 SF |
| COAL CREEK: | 1,366 SF |
| TOTAL: | 12,410 SF |
| CRITICAL AREA BUFFERS | 264,349 SF |
| DEVELOPABLE AREAS | 258,464 SF |
| TOTAL SITE AREA: | 535,223 SF |

## NOTES

1. SITE PLAN PROVIDED BY PACE ENGINEERS, 11255 KIRKLAND WAY SUITE 300 KIRKLAND, WA 98033, (425) 827-2014.
2. SOURCE DRAWING WAS MODIFIED BY TALASAEA CONSULTANTS FOR VISUAL ENHANCEMENT.
3. THIS PLAN IS AN ATTACHMENT TO THE CRITICAL AREAS REPORT PREPARED BY TALASAEA CONSULTANTS IN DATED MARCH 2019.

APPROVED FOR CONSTRUCTION

BY:
CITY OF BELLEVUE
DEPARTMENT OF PLANNING

DATE:

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

**FILE #: 15-115585-DB, 16-143970-LK, 16-145946-LO**

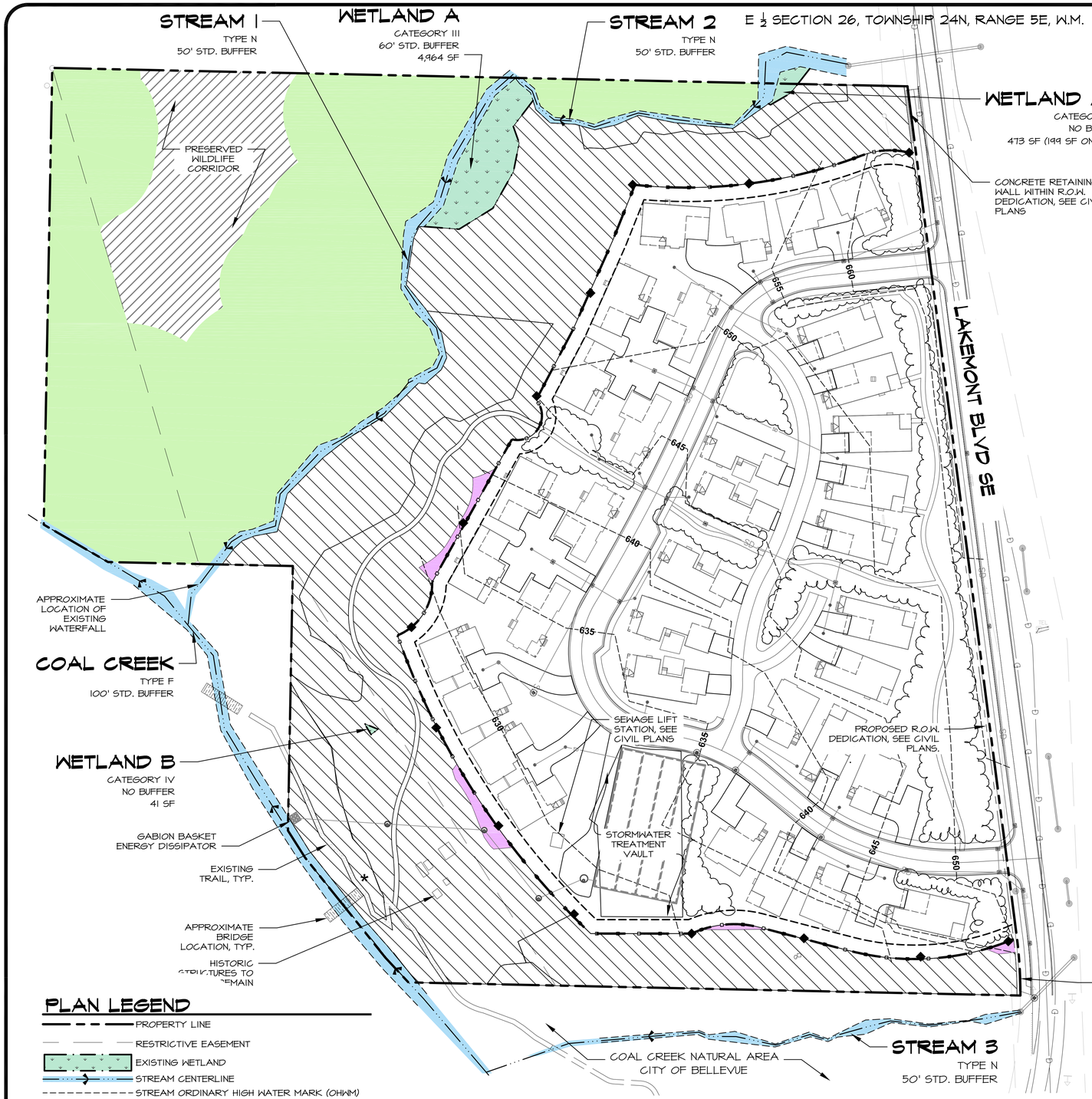

TALASAEA CONSULTANTS, INC.
Resource & Environmental Planning
15020 Bear Creek Road Northeast - Woodinville, Washington 98077
Bus (425) 861-7550 - Fax (425) 861-7549


# CRITICAL AREA CONCEPTUAL MITIGATION PLANS
## PROPOSED SITE PLAN & IMPACTS ASSESSMENT
## PARK POINTE PUD
## BELLEVUE, WASHINGTON

| Revisions | Date | By |
|---|---|---|
| CITY COMMENTS | 5-17-2017 | MW |
| CITY COMMENTS | 1-14-2018 | OA |
| CITY COMMENTS | 6-6-2018 | ABS |
| CITY COMMENTS | 10-25-2018 | ABS |
| STORM OUTFALL | 3-13-2019 | MW |

| | |
|---|---|
| Date | 10-7-2016 |
| Scale | AS SHOWN |
| Designed | AO |
| Drawn | ABS |
| Checked | AO |
| Approved | BS |
| Project # | 1543 |
| Sheet # | WI.1 |


© Copyright 2014 - Talasaea Consultants, Inc. All Rights Reserved.
Z:\DRAWING\1600-1699\TAL1543\PLANS\TAL-1543 WP 2019-03.DWG
3/13/2019 11:20 AM




## PLAN LEGEND

- PROPERTY LINE
- RESTRICTIVE EASEMENT
- EXISTING WETLAND
- STREAM CENTERLINE
- STREAM ORDINARY HIGH WATER MARK (OHWM)

## PROPOSED MITIGATION PLAN

GRAPHIC SCALE ( IN FEET )
0 25 50 100
SCALE: 1"=50'
NORTH

## CRITICAL AREA MITIGATION LEGEND

### MITIGATION FOR BUFFER REDUCTIONS/IMPACTS

| | |
|---|---|
| BUFFER ENHANCEMENT, RESTORATION, & RE-ESTABLISHMENT | 129,018 SF |
| ENHANCED BUFFER ADDITION (BEYOND STREAM AND STEEP SLOPE STANDARD BUFFERS) | 1,870 SF |
| TOTAL MITIGATION AREA: | 130,888 SF |

MITIGATION TO IMPACT RATIO 5:1

## MITIGATION LEGEND

- POST CONSTRUCTION BUFFER
- PROPOSED STRUCTURE SETBACK (FOR WETLANDS AND STREAMS)
- CRITICAL AREA SIGNS (SEE DETAIL ON W2.0)

### ADDITIONAL ON-SITE HABITAT AREAS

| | |
|---|---|
| CRITICAL AREAS (COAL CREEK, STREAM 1 &2, WETLANDS A, AA, & B) | 12,410 SF |
| PRESERVED CRITICAL AREA BUFFER HABITAT AREAS | 104,267 SF |
| PRESERVED WILDLIFE CORRIDOR (NON-COMPENSATORY HABITAT CONSERVATION) | 23,675 SF |
| ADDITIONAL HABITAT AREA: | 140,352 SF |

## POST-DEVELOPMENT SITE CALCULATIONS TABLE

| | | |
|---|---|---|
| SITE DEVELOPMENT PLAN AREA | | 260,581 SF |
| CRITICAL AREAS (ON-SITE) | | |
| WETLAND AA: | 199 SF | |
| WETLAND A: | 4964 SF | |
| WETLAND B: | 41 SF | |
| STREAM 1: | 4,408 SF | |
| STREAM 2: | 1,432 SF | |
| COAL CREEK: | 1,366 SF | |
| TOTAL: | | 12,410 SF |
| BUFFER ENHANCEMENT AREAS | | 130,888 SF |
| OTHER | | |
| EXISTING TRAIL (ON-SITE): | 1,124 SF | |
| PROPOSED TRAIL: | 2,161 SF | |
| GABION BASKET ENERGY DISSIPATOR & MANHOLDES | 117 SF | |
| TOTAL: | | 3,402 SF |
| PRESERVED CRITICAL AREA BUFFER (WEST OF STREAM 1 AND NORTH OF STREAM 2) | | 104,267 SF |
| PRESERVED WILDLIFE CORRIDOR | | 23,675 SF |
| TOTAL SITE AREA: | | 535,223 SF |

## NOTES

1. SITE PLAN PROVIDED BY PACE ENGINEERS, 11255 KIRKLAND WAY SUITE 300 KIRKLAND, WA 98033, (425) 827-2014.
2. SOURCE DRAWING WAS MODIFIED BY TALASAEA CONSULTANTS FOR VISUAL ENHANCEMENT.
3. THIS PLAN IS AN ATTACHMENT TO THE CRITICAL AREAS REPORT PREPARED BY TALASAEA CONSULTANTS IN DATED MARCH 2019.

Know what's below. Call before you dig.

APPROVED FOR CONSTRUCTION

BY:
CITY OF BELLEVUE
DEPARTMENT OF PLANNING

DATE:

**FILE #: 15-115585-DB, 16-143970-LK, 16-145946-LO**

TALASAEA CONSULTANTS, INC.
Resource & Environmental Planning
15020 Bear Creek Road Northeast - Woodinville, Washington 98077
Bus (425) 861-7500 - Fax (425) 861-7549

# CRITICAL AREA CONCEPTUAL MITIGATION PLANS
## PROPOSED MITIGATION CONCEPT
## PARK POINTE PUD
## BELLEVUE, WASHINGTON

| Revisions | Date | By |
|---|---|---|
| CITY COMMENTS | 5-17-2017 | MW |
| CITY COMMENTS | 1-14-2018 | OA |
| CITY COMMENTS | 6-6-2018 | ABS |
| CITY COMMENTS | 10-25-2018 | ABS |
| STORM OUTFALL | 3-13-2019 | MW |

| | |
|---|---|
| Date | 10-7-2016 |
| Scale | AS SHOWN |
| Designed | AO |
| Drawn | ABS |
| Checked | AO |
| Approved | BS |
| Project # | 1543 |
| Sheet # | W1.2 |

© Copyright 2014 - Talasaea Consultants, Inc. All Rights Reserved.
Z:\DRAWING\1500-1599\TAL1543\PLANS\TAL-1543 WP 2019-03.DWG
3/13/2019 12:04 PM

E ½ SECTION 26, TOWNSHIP 24N, RANGE 5E, W.M.




## BUFFER MITIGATION LEGEND

**AREA A - FORESTED SUB-CANOPY ENHANCEMENT** — 12,369 SF

- GRUB OUT INVASIVE SPECIES, IF ANY, BY HAND
- ENHANCE ENTIRE AREA PRIMARILY WITH A MIX OF NATIVE MID-STORY SHRUBS
- ESTIMATED NUMBER OF TREES: 37
- ESTIMATED NUMBER OF SHRUBS: 87

**AREA B - UNDISTURBED FORESTED BUFFER ENHANCEMENT** — 30,128 SF

- GRUB OUT ALL INVASIVE SPECIES BY HAND
- STABILIZE ANY DISTURBED SOILS WITH A 3-INCH DEPTH OF BARK MULCH
- ENHANCE ENTIRE AREA, WHERE PLANTING OPPORTUNITIES EXIST, WITH AN APPROPRIATE MIX OF NATIVE EVERGREEN TREES AND MID-STORY SHRUBS THAT ARE LARGELY NOT PRESENT IN EXISTING CONDITION
- ESTIMATED NUMBER OF TREES: 90
- ESTIMATED NUMBER OF SHRUBS: 211

**AREA C - DISTURBED FORESTED BUFFER ENHANCEMENT** — 41,531 SF

- SELECTIVELY GRUB OUT ALL NON-NATIVE INVASIVE SPECIES BY HAND
- INSTALL HABITAT FEATURES SUCH AS DOWN LOGS, STUMPS, AND SNAGS WITH SNALLOW NEST BOXES IN SELECT LOCATIONS WHERE EXISTING NATIVE VEGETATION WILL NOT BE DISTURBED
- STABILIZE ANY DISTURBED SOILS WITH 3-INCH DEPTH OF BARK MULCH
- REVEGETATE ALL GRUBBED AND SELECTED OTHER AREAS WITH A MIX OF NATIVE EVERGREEN AND DECIDUOUS TREES, AS WELL AS MID- AND LOW-STORY SHRUBS.
- ESTIMATED NUMBER OF TREES: 125
- ESTIMATED NUMBER OF SHRUBS: 291

**AREA D - RE-ESTABLISHMENT OF FORESTED BUFFER** — 44,154 SF

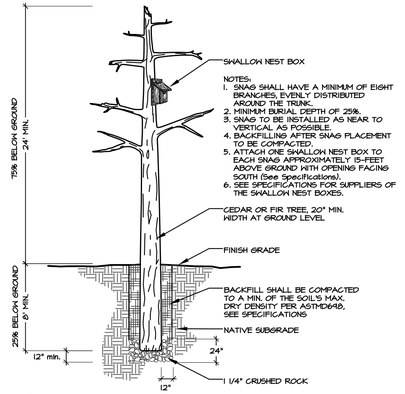
- REMOVE AND DISPOSE OF ANY TRASH, DEBRIS, OR NON-SIGNIFICANT STRUCTURES
- GRUB ENTIRE AREA BY MACHINE TO REMOVE ALL NON-NATIVE/INVASIVE SPECIES
- PRESERVE EXISTING NATIVE VEGETATION (WHERE APPLICABLE)
- DECOMPACT AND RESTORE DISTURBED SOILS WITH COMPOST OR IMPORTED TOPSOIL IF NECESSARY
- STABILIZE DISTURBED SOILS WITH 3-INCH DEPTH OF BARK MULCH
- REVEGETATE ENTIRE AREA WITH A MIX OF NATIVE EVERGREEN AND DECIDUOUS TREES, AS WELL AS MID- AND LOW-STORY SHRUBS.
- ESTIMATED NUMBER OF TREES: 530
- ESTIMATED NUMBER OF SHRUBS: 1,236

**AREA E - RESTORATION OF CONSTRUCTION IMPACTS** — 2,706 SF

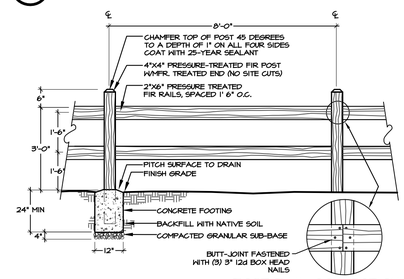
- INSTALL 9-INCH MINIMUM DEPTH OF NEW TOPSOIL IN ALL DISTURBED AREAS
- STABILIZE DISTURBED SOILS WITH 3-INCH DEPTH OF BARK MULCH
- REVEGETATE ENTIRE AREA WITH A MIX OF NATIVE EVERGREEN AND DECIDUOUS SHRUBS
- ESTIMATED NUMBER OF SHRUBS: 1,750

| | |
|---|---|
| TOTAL AREA: | 130,888 |
| ESTIMATED TOTAL NUMBER OF TREES: | 782 |
| ESTIMATED TOTAL NUMBER OF SHRUBS: | 3,575 |

NOTES:
1. FULL KING COUNTY PLANTING DENSITIES WERE USED FOR AREAS D & E WHERE RE-ESTABLISHMENT OR FULL RESTORATION OF FORESTED BUFFERS IS REQUIRED.
2. IN AREAS OF EXISTING NATIVE FOREST KING COUNTY PLANTING DENSITIES WERE USED AT A RATE OF 25%.



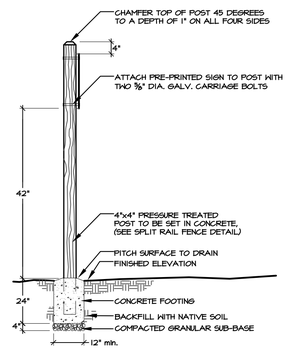

## 1 SNAG WITH NEST BOX DETAIL
N.T.S.




POST/RAIL CONNECTION

NOTES:
1. RAIL FENCE TO ALIGN WITH LAND GRADIENT.
2. TREAT WITH CLEAR PRESERVATIVE UPON COMPLETION OF INSTALLATION.
3. ALL FASTENERS TO BE GALVANIZED STEEL.

## 2 OPEN 2-BOARD FENCE DETAIL
N.T.S.




## 3 CRITICAL AREA SIGN DETAIL
N.T.S.

## NOTES

1. SITE PLAN PROVIDED BY PACE ENGINEERS, 11255 KIRKLAND WAY SUITE 300 KIRKLAND, WA 98033, (425) 827-2014.
2. SOURCE DRAWING WAS MODIFIED BY TALASAEA CONSULTANTS FOR VISUAL ENHANCEMENT.
3. THIS PLAN IS AN ATTACHMENT TO THE CRITICAL AREAS REPORT PREPARED BY TALASAEA CONSULTANTS IN DATED MARCH 2019.

APPROVED FOR CONSTRUCTION

BY:
CITY OF BELLEVUE
DEPARTMENT OF PLANNING

DATE:

## PROPOSED BUFFER MITIGATION OVERVIEW

GRAPHIC SCALE ( IN FEET )
0 25 50 100
SCALE: 1"=50'
NORTH

## PLAN LEGEND

- PROPERTY LINE
- EXISTING WETLAND
- STREAM WITH DIRECTION OF FLOW
- STREAM ORDINARY HIGH WATER MARK (OHWM)
- 2-BOARD FENCE - SEE DETAIL 2/P2.0
- CRITICAL AREA SIGN - SEE DETAIL 3/P2.0

## HABITAT FEATURE LEGEND

- SNAG W/ SWALLOW NEST BOX - SEE DETAIL 1/P2.0
- DOWN LOG
- STUMP 3/P2.0

Know what's below. Call before you dig.

**FILE #: 15-115585-DB, 16-143970-LK, 16-145946-LO**


TALASAEA CONSULTANTS, INC.
Resource & Environmental Planning
10020 Bear Creek Road Northeast - Woodinville, Washington 98077
Bus (425) 861-7500 - Fax (425) 861-7549


# CRITICAL AREA CONCEPTUAL MITIGATION PLANS
## PROPOSED BUFFER MITIGATION OVERVIEW
## PARK POINTE PUD
## BELLEVUE, WASHINGTON

| Revisions | Date | By |
|---|---|---|
| CITY COMMENTS | 5-17-2017 | MA |
| CITY COMMENTS | 1-19-2018 | OA |
| CITY COMMENTS | 6-6-2018 | ABS |
| CITY COMMENTS | 10-25-2018 | ABS |
| STORM OUTFALL | 3-13-2019 | MK |

| | |
|---|---|
| Date | 10-7-2016 |
| Scale | AS SHOWN |
| Designed | AO |
| Drawn | ABS |
| Checked | AO |
| Approved | BS |
| Project # | 1543 |
| Sheet # | W2.0 |


© Copyright 2014 - Talasaea Consultants, Inc. All Rights Reserved.
Z:\DRAWINGS\1500-1599\TAL1543\PLANS\TAL-1543 MP 2019-03.DWG
3/13/2019 12:17 PM

# PRELIMINARY PLANT LIST

## LARGE TREES

| SYMBOL | SCIENTIFIC NAME | COMMON NAME | WL STATUS | QTY. | SPACING | SIZE (MIN.) | NOTES |
|---|---|---|---|---|---|---|---|
| | ACER MACROPHYLLUM | BIG LEAF MAPLE | FACU | TBD | AS SHOWN | 4-5' HT. | SINGLE TRUNK, WELL BRANCHED |
| | BETULA PAPYRIFERA | PAPER BIRCH | FAC | TBD | AS SHOWN | 5-6' HT. | SINGLE TRUNK, WELL BRANCHED |
| | CORNUS NUTTALLII | PACIFIC DOGWOOD | FACU | TBD | AS SHOWN | 3'-4' HT. | SINGLE TRUNK, WELL BRANCHED |
| | FRANGULA (RHAMNUS) PURSHIANA | CASCARA | FAC | TBD | AS SHOWN | 4-5' HT. | SINGLE TRUNK, WELL BRANCHED |
| | FRAXINUS LATIFOLIA | OREGON ASH | FACW | TBD | AS SHOWN | 4-5' HT. | SINGLE TRUNK, WELL BRANCHED |
| | PICEA SITCHENSIS | SITKA SPRUCE | FAC | TBD | AS SHOWN | 4-5' HT. | B&B, FULL & BUSHY |
| | PINUS CONTORTA | SHORE PINE | FAC | TBD | AS SHOWN | 4-5' HT. | B&B, FULL & BUSHY |
| | PRUNUS EMARGINATA | BITTERCHERRY | FACU | TBD | AS SHOWN | 4-5' HT. | SINGLE TRUNK, WELL BRANCHED |
| | PSEUDOTSUGA MENZIESII | DOUGLAS FIR | FACU | TBD | AS SHOWN | 4-5' HT. | B&B, FULL & BUSHY |
| | SALIX LASIANDRA | PACIFIC WILLOW | FACW | TBD | AS SHOWN | 4-5' HT. | SINGLE TRUNK, WELL BRANCHED |
| | THUJA PLICATA | WESTERN RED CEDAR | FAC | TBD | AS SHOWN | 4-5' HT. | B&B, FULL & BUSHY |
| | TSUGA HETEROPHYLLA | WESTERN HEMLOCK | FACU | TBD | AS SHOWN | 4-5' HT. | B&B, FULL & BUSHY |

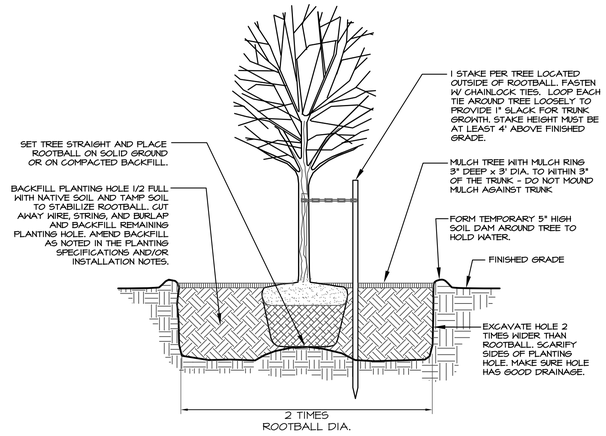
## SMALL TREES/LARGE SHRUBS

| SYMBOL | SCIENTIFIC NAME | COMMON NAME | WL STATUS | QTY. | SPACING | SIZE (MIN.) | NOTES |
|---|---|---|---|---|---|---|---|
| | ACER CIRCINATUM | VINE MAPLE | FAC | TBD | TBD | 4' HT. | SINGLE TRUNK, WELL BRANCHED |
| | AMELANCHIER ALNIFOLIA | SERVICEBERRY | FACU | TBD | TBD | 24" HT. | MULTI-CANE (3 MIN.) |
| | CORYLUS CORNUTA | WESTERN HAZELNUT | FACU | TBD | TBD | 4' HT. | SINGLE TRUNK, WELL BRANCHED |
| | CRATAEGUS DOUGLASII | BLACK HAWTHORN | FAC | TBD | TBD | 24" HT. | MULTI-CANE (3 MIN.) |
| | HOLODISCUS DISCOLOR | OCEAN SPRAY | FACU | TBD | TBD | 24" HT. | MULTI-CANE (3 MIN.) |
| | OEMLERIA CERASIFORMIS | INDIAN PLUM | FACU | TBD | TBD | 24" HT. | MULTI-CANE (3 MIN.) |
| | PHILADELPHUS LEWISII | MOCK ORANGE | UPL | TBD | TBD | 24" HT. | MULTI-CANE (3 MIN.) |
| | PHYSOCARPUS CAPITATUS | PACIFIC NINEBARK | FACW | TBD | TBD | 24" HT. | MULTI-CANE (3 MIN.) |
| | PYRUS (MALUS) FUSCA | WESTERN CRABAPPLE | FACW | TBD | TBD | 4' HT. | SINGLE TRUNK, WELL BRANCHED |
| | RIBES BRACTEOSUM | STINK CURRANT | FAC | TBD | TBD | 24" HT. | MULTI-CANE (3 MIN.) |
| | RIBES SANGUINEUM | RED CURRANT | NL | TBD | TBD | 24" HT. | MULTI-CANE (3 MIN.) |
| | SAMBUCUS RACEMOSA | RED ELDERBERRY | FACU | TBD | TBD | 24" HT. | MULTI-CANE (3 MIN.) |
| | SORBUS SITCHENSIS | SITKA MOUNTAIN ASH | FAC | TBD | TBD | 4' HT. | SINGLE TRUNK, WELL BRANCHED |
| | VIBURNUM EDULE | HIGH-BUSH CRANBERRY | FACW | TBD | TBD | 24" HT. | MULTI-CANE (3 MIN.) |

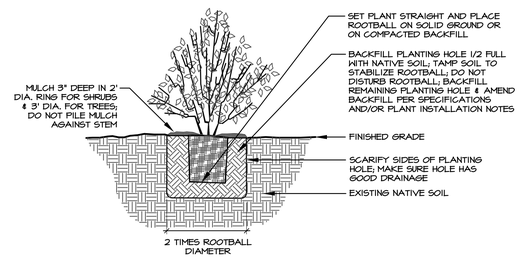
## MASSING SHRUBS

| SYMBOL | SCIENTIFIC NAME | COMMON NAME | WL STATUS | QTY. | SPACING | SIZE (MIN.) | NOTES |
|---|---|---|---|---|---|---|---|
| | CORNUS ALBA (SERICEA) | RED-OSIER DOGWOOD | FACW | TBD | TBD | 18" HT. | MULTI-CANE (3 MIN.) |
| NO SYMBOL | GAULTHERIA SHALLON | SALAL | FACU | TBD | TBD | 1 GAL. | FULL & BUSHY |
| | LONICERA INVOLUCRATA | BLACK TWIN-BERRY | FAC | TBD | TBD | 18" HT. | MULTI-CANE (3 MIN.) |
| | MAHONIA AQUIFOLIUM | TALL OREGON GRAPE | FACU | TBD | TBD | 18" HT. | FULL & BUSHY |
| NO SYMBOL | POLYSTICHUM MUNITUM | WESTERN SWORD FERN | FACU | TBD | TBD | 1 GAL. | FULL & BUSHY |
| | ROSA GYMNOCARPA | BALDHIP ROSE | FACU | TBD | TBD | 18" HT. | MULTI-CANE (3 MIN.) |
| | ROSA NUTKANA | NOOTKA ROSE | FAC | TBD | TBD | 18" HT. | MULTI-CANE (3 MIN.) |
| | RUBUS PARVIFLORUS | THIMBLEBERRY | FACU | TBD | TBD | 18" HT. | MULTI-CANE (3 MIN.) |
| | SYMPHORICARPOS ALBUS | COMMON SNOWBERRY | FACU | TBD | TBD | 18" HT. | MULTI-CANE (3 MIN.) |
| | VACCINIUM OVATUM | EVERGREEN HUCKLEBERRY | FACU | TBD | TBD | 1 GAL. | FULL & BUSHY |

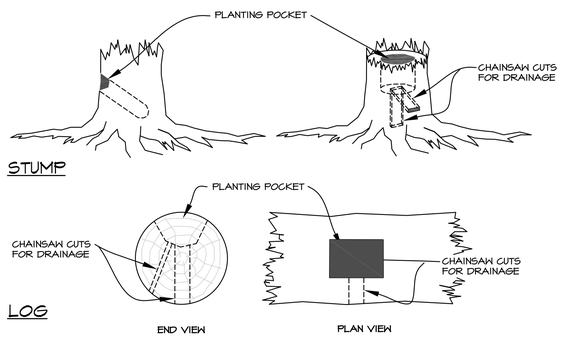
NOTE: QUANTITIES AND LAYOUT SHALL BE DETERMINED ON FINAL MITIGATION PLANS.



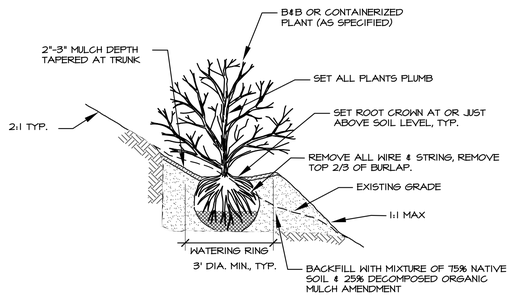

1 B&B TREE PLANTING DETAIL.
NTS




2 CONTAINER STOCK PLANTING DETAIL
N.T.S.




3 PLANTING POCKET DETAIL
1"=1'




4 SLOPE PLANTING DETAIL
1"=1'

# GENERAL PLANT INSTALLATION NOTES

1. PLANT TREES AND/OR SHRUBS 1" HIGHER THAN DEPTH GROWN AT NURSERY.
2. FOR CONTAINER TREES AND/OR SHRUBS, SCORE FOUR SIDES OF ROOTBALL PRIOR TO PLANTING. BUTTERFLY ROOTBALL IF ROOT CIRCLING IS EVIDENT.
3. STAKE DECIDUOUS AND EVERGREEN TREES 4 FEET AND OVER IN HEIGHT WITH ONE (1) STAKE PER TREE. STAKE TREES IMMEDIATELY AFTER PLANTING. PLACE STAKE AT THE OUTER EDGE OF THE ROOTS OR ROOTBALL, IN LINE WITH THE PREVAILING WIND. STAKES SHALL BE LOOSELY ATTACHED USING CHAIN-LOCK TREE TIES TO ALLOW FOR SOME TRUNK MOVEMENT.
4. TREE STAKES TO BE VERTICAL, PARALLEL, EVEN-TOPPED, UNSCARRED AND DRIVEN INTO UNDISTURBED SUBGRADE. REMOVE AFTER ONE YEAR.
5. WATER PLANTS IMMEDIATELY UPON PLANTING, THEN PROVIDE MANUAL WATERING OR A TEMPORARY IRRIGATION SYSTEM (IF SPECIFIED IN THE PLANTING SPECIFICATIONS) TO PREVENT PLANT MORTALITY AND ENSURE PROPER PLANT ESTABLISHMENT. PLANTS SHALL RECEIVE A MINIMUM OF APPROXIMATELY ONE INCH OF WATER EVERY WEEK DURING THE DRY SEASON (GENERALLY JUNE 15TH - OCTOBER 15TH, OR EARLIER OR LATER IF CONDITIONS WARRANT) FOR THE FIRST SEASON AFTER PLANTING. IRRIGATION AMOUNTS MAY NEED TO BE INCREASED DURING PROLONGED PERIODS OF HOT, DRY WEATHER.
6. FERTILIZE ALL TREES AND SHRUBS WITH A SLOW-RELEASE GENERAL PURPOSE GRANULAR FERTILIZER OR SLOW-RELEASE TABLETS AT MANUFACTURER'S SPECIFIED RATE.

# NOTES

1. SITE PLAN PROVIDED BY PACE ENGINEERS, 11255 KIRKLAND WAY SUITE 300 KIRKLAND, WA 98033, (425) 827-2014.
2. SOURCE DRAWING WAS MODIFIED BY TALASAEA CONSULTANTS FOR VISUAL ENHANCEMENT.
3. THIS PLAN IS AN ATTACHMENT TO THE CRITICAL AREAS REPORT PREPARED BY TALASAEA CONSULTANTS IN DATED MARCH 2014.

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

APPROVED FOR CONSTRUCTION

BY:
CITY OF BELLEVUE
DEPARTMENT OF PLANNING

DATE:

**FILE #: 15-115585-DB, 16-143970-LK, 16-145946-LO**

TALASAEA CONSULTANTS, INC.
Resource & Environmental Planning
13020 Bear Creek Road Northeast - Woodinville, Washington 98077
Fax (425) 861-7549

CRITICAL AREA CONCEPTUAL MITIGATION PLANS
PRELIMINARY PLANT LIST, DETAILS, AND NOTES
PARK POINTE PUD
BELLEVUE, WASHINGTON

| Revisions | Date | By |
|---|---|---|
| CITY COMMENTS | 5-17-2017 | MW |
| CITY COMMENTS | 1-19-2018 | OA |
| CITY COMMENTS | 6-6-2018 | ABS |
| CITY COMMENTS | 10-25-2018 | ABS |
| STORM OUTFALL | 3-13-2019 | MW |

Date 10-7-2016
Scale AS SHOWN
Designed AO
Drawn ABS
Checked AO
Approved BS

Project #1543

Sheet # W3.0

© Copyright 2014 - Talasaea Consultants, Inc. All Rights Reserved.
Z:\DRAWINGS\1600-1599\TAL1543\PLANS\TAL-1543 WP 2019-03.DWG
3/13/2019 12:01 PM

# Appendix F:

## Park Pointe Coal Creek Typing Study. Confluence Environmental Company


Copyright © 2019 Talasaea Consultants, Inc.

CONFLUENCE
ENVIRONMENTAL COMPANY

May 11, 2017

Mr. Alex Mason
VP of Entitlement
ISOLA Homes
1518 First Avenue S, Suite 301
Seattle, WA 98134

**Re: Park Pointe Coal Creek Typing Study**

Dear Mr. Mason:

The purpose of this letter is to address the City of Bellevue's (Bellevue) preliminary review comments on the Park Pointe PUD, and to address the stream typing for Coal Creek pursuant to the Bellevue Municipal Code (BMC). A February 3, 2017 Bellevue revision letter provided several requests related to land use and critical areas review. As it relates to stream typing, the Bellevue revision letter provided the following:

> ***Streams****: The City of Bellevue has mapped Coal Creek as a fish bearing stream. It is noted that the area downstream from the subject site does have a natural barrier for fish however Bellevue city code does recognize resident fish populations that may be present in stream reaches which are not accessible from downstream fish populations and the potential for fish habitat. Information regarding this stream reach is necessary to determine the stream typing. Note WAC 222-16-030:*
>
> > *(B) Stream segments having a defined channel of 2 feet or greater within the bankfull width in Western Washington; or 3 feet or greater within the bankfull width in Eastern Washington, and having a gradient greater than 16 percent and less than or equal to 20 percent, and having greater than 50 acres in contributing basin size in Western Washington or greater than 175 acres contributing basin size in Eastern Washington, based on hydrographic boundaries;*
>
> *Additional information regarding the stream channel and gradient is necessary to determine typing and applicable buffers. A formal stream typing should be conducted and included as part of the critical areas report.*

This letter documents the activities and findings associated with the Park Pointe Coal Creek Typing Study.

## SITE DESCRIPTION

The Park Pointe PUD site consists of two tax parcels (2624059022 and 2624059019) located at 7219 and 7331 Lakemont Boulevard SE, Bellevue, Washington. The Public Land Survey System (PLSS) location of the Property is E ½ Section 26, Township 24N, Range 5E, W. M. The Property is bordered on the east side by Lakemont Boulevard SE and to the south, west, and north by City of Bellevue Parks Department property (Coal Creek Natural Area).

The site is currently developed as rural residences, and contains residential structures, lawn, pasture landscaping, and forested areas. Coal Creek flows in a generally northwesterly direction just outside of the south and west site boundaries. Tributaries to Coal Creek (identified as Streams 1-3 in Talasaea 2016), flow in a generally southwesterly direction across northwestern (Streams 1-2) and southeastern (Stream 3) portions of the site.

## METHODS

Prior to, and following, a field investigation, agency sources and databases regarding fish habitat in and near the project area were researched. These sources included:

- City of Bellevue Stream Maps (Bellevue 2017)
- City of Bellevue Utilities (K. Paulsen, personal communication, email March 2, 2017)
- Seattle Public Utilities (K. Lynch, personal communication, email March 14, 2017)
- King County Water Resources Inventory Area Maps (King County 2017)
- Washington Department of Natural Resources (DNR) Forest Practices Application Review System (FPARS) Water Type Maps (DNR 2017)
- WDFW (Williams et al. 1975)
- Washington Department of Fish and Wildlife (WDFW) Salmonscape (WDFW 2017a)
- WDFW Priority Habitats and Species Maps (WDFW 2017b)
- WDFW Habitat Program (Fischer, Reinbold, personal communication, email March 10, 2017)
- WDFW Stock Assessment Program (Bosworth, Thompson, personal communication, phone interview March 6, 2017)
- StreamNet Mapper (StreamNet 2017)
- Muckleshoot Indian Tribe Fisheries Division (K. Walter, personal communication, email March 2, 2017)
- US Fish and Wildlife Service (Tabor, R., personal communication, email March 14, 2017)

On March 9, 2017 biologists from Confluence Environmental Company (Confluence) conducted a field investigation at the site to support the stream type assessment. Approximately 800 feet Coal Creek, from the confluence with Stream 1 to the Lakemont Blvd SE crossing adjacent to the site (project reach), was evaluated for fish presence and physical fish habitat characteristics (see Salmonscape figure in Appendix A). Fish presence was evaluated by both visual observation and conducting sweeps of the channel using nets. Two channel segments of approximately 150 feet in length were selected for sweeping based on the presence of pool habitat within the segment. Block nets were set across the

stream channel at the downstream end of the sweep segment and biologists walked the channel in a downstream direction methodically sweeping the channel and herding any fish present toward the block net. The block net was then removed from the channel and observed for any fish captured.

Physical habitat characteristics were evaluated based on the criteria for fish habitat in Western Washington per WAC 222-16-031(3), below:

> Waters having any of the following characteristics are presumed to have fish use:
>
> (A) Stream segments having a defined channel of 2 feet or greater within the bankfull width in Western Washington; or 3 feet or greater in width in Eastern Washington; and having a gradient of 16 percent or less;
>
> (B) Stream segments having a defined channel of 2 feet or greater within the bankfull width in Western Washington; or 3 feet or greater within the bankfull width in Eastern Washington, and having a gradient greater than 16 percent and less than or equal to 20 percent, and having greater than 50 acres in contributing basin size in Western Washington or greater than 175 acres contributing basin size in Eastern Washington, based on hydrographic boundaries.

Channel slope was evaluated using a hip chain to measure channel lengths and a clinometer and stadia rod to determine slope percentage, on an optimal line of sight basis. Measurements of bankfull width were taken at the point of each slope measurement using a stadia rod or measuring tape.

## RESULTS

This section describes the results of the stream typing study.

The agency sources and online databases have general consensus that Coal Creek is fish bearing to a point where a partial passage barrier is identified at approximately river mile 4.2, which is just downstream of where Stream 1 joins Coal Creek. The fish passage barrier is shown in Salmonscape (Appendix A) and is described in Williams 1975, though Williams shows the location as river mile 3.7. The city of Bellevue stream maps and the DNR (FPARS) water type maps identify Coal Creek as a Type F stream throughout the project reach and upstream of Lakemont Blvd SE. A summary of the agency and online data is presented below in Table 1.

**Table 1. Stream 1 Survey**

| Source | Fish Distribution Results |
|---|---|
| Bellevue 2017 | Mapped as Type F in lower reaches. Un-known through project reach. |
| Paulsen 2017 | No data for project reach. |
| Lynch 2017 | No data for project reach. |
| King County 2017 | Cutthroat distribution shown to passage barrier at RM 4.2. |
| DNR 2017 | Type F through project reach. |
| Williams et al. 1975 | No data for project reach. |
| WDFW 2017a | No Salmonscape species shown through project reach. |
| WDFW 2017b | Cutthroat distribution shown to passage barrier at RM 4.2. |
| Fischer, Reinbold 2017 | No data for project reach. |
| Bosworth, Thompson 2017 | No data for project reach. |
| StreamNet 2017 | No data for project reach. |
| Walter 2017 | No data for project reach. Concurred with original Type N designation[1]. |
| Tabor 2017 | No data for project reach. |

[1] Talasaea 2016

The field investigation yielded no visual observations or capture of fish during sweeping efforts.

For the project reach evaluated for physical characteristics, the habitat observed in Coal Creek qualitatively appears to provide suitable habitat for fish. The stream has a gravel bed, and is composed of predominantly riffle and pool habitat units. Qualitative observations of pool frequency was relatively low, and no large woody debris was observed in the project reach.

The channel consistently exhibited a bankfull width between 10 to 15 feet, and a slope of less than 5%. These physical characteristics meet the physical criteria for fish habitat in Western Washington per WAC 222-16-031(3).

## DISCUSSION

BMC 20.25H.075 designates streams and their regulatory buffers. A Type F water per BMC 20.25H.075(B)(2) means:

> All segments of waters that are not type S waters, and that contain fish or *fish habitat*, including waters diverted for use by a federal, state, or tribal fish hatchery from the point of diversion for

> 1,500 feet or the entire tributary if the tributary is highly significant for protection of downstream water quality.

BMC 20.50.020 F defines fish habitat as:

> Any habitat which is used by any fish at any life stage at any time of the year, including potential habitat likely to be used by fish which could be recovered by restoration or management. "Fish Habitat" includes off-channel habitat.

Though fish habitat is defined under the BMC, the definition is broad and general in scope. As a general practice, the physical criteria for fish habitat from WAC 222-16-031(3) is used as the best available science to more specifically define fish habitat by Bellevue (Bedwell 2017).

Though no documentation of fish use in the project reach of Coal Creek could be found in available data sources, nor were any fish observed or captured during the field investigation, Coal Creek does meet the definitions of fish habitat provided by BMC 20.50.020 F and WAC 222-16-031(3). In the absence of verifiable documentation, Bellevue relies on the physical criteria of fish habitat in WAC 222-16-031(3) (Bedwell 2017) to determine the appropriate stream type designation. Given the results of the physical habitat evaluation, Coal Creek warrants a Type 3 designation under WAC 222-16-031(3) and a Type F designation under BMC 20.25H.075. Type F streams require a prescriptive buffer of 100 feet for undeveloped sites per BMC 20.25H.075(C)(1)(a)(i).

If you have any comments or questions, please feel free to contact me. My contact information is below.

Respectfully yours,



CHRIS BERGER, PWS
Senior Ecologist
206.604.9059 | chris.berger@confenv.com

Cc: Steve Calhoon, Pace Engineering

Appendix A: Online Data Maps

**REFERENCES**

City of Bellevue. 2015. Drainage Basin Maps. Bellevue, WA. URL: < http://www.ci.bellevue.wa.us/drainage-basins.htm > (accessed on March 7, 2017).

DNR (Washington Department of Natural Resources). 2017. Forest Practices Application Review System ArcIMS Mapping Application. Washington State Department of Natural Resources, Olympia. URL: < http://fortress.wa.gov/dnr/app1/fpars/viewer.htm> (accessed on March 7, 2017) .

King County. 2017. Water Resource Inventory Area 8 Cutthroat Distribution Map. Lake Washington/Cedar/Sammamish Watershed. URL: < http://govlink.org/watersheds/8/reports/fish-maps/cutthroat/default.aspx > (accessed on March 7, 2017).

StreamNet. 2017. StreamNet Mapper. MAPS and GIS Data. URL< http://psmfc.maps.arcgis.com/apps/webappviewer/index.html?id=3be91b0a32a9488a901c3885bbfc2bob > (accessed on March 7, 2017).

Talasaea. 2016. Critical Areas Report, Habitat Evaluation, and Conceptual Mitigation Plan; Park Pointe PUD, Bellevue, Washington. Prepared for ISOLA Homes. Prepared by Talasaea Consultants, Inc., Woodinville, WA.

WDFW. 2014b. Salmonscape interactive mapping system. Washington Department of Fish and Wildlife, Olympia. URL: <http://apps.wdfw.wa.gov/salmonscape/> (accessed on March 7, 2017).

WDFW (Washington Department of Fish and Wildlife). 2014a. Priority habitats and species on the web. Washington Department of Fish and Wildlife, Olympia. URL: < http://wdfw.wa.gov/mapping/phs/> (accessed on March 7, 2017).

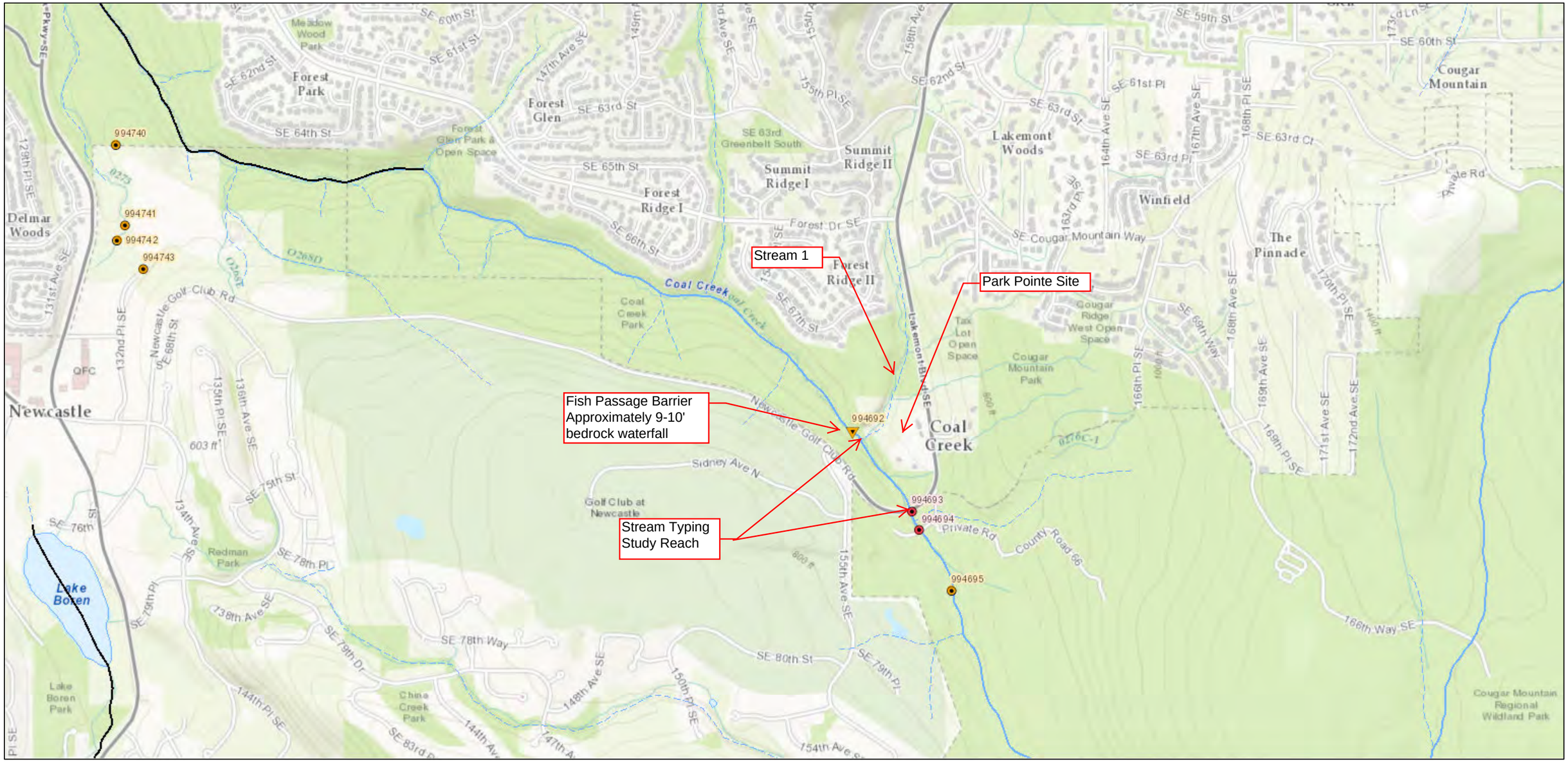
Williams, R.W., R.M. Laramie, and J.J. Ames. 1975. A catalog of Washington streams and salmon utilization, Volume 1, Puget Sound Region. Washington Department of Fisheries. Olympia, WA.

# Appendix A

## Maps

This Page Intentionally Left Blank

# Park Pointe




April 14, 2017

1:18,056

0 0.2 0.4 0.8 mi

0 0.35 0.7 1.4 km

**Culverts**

- Total Blockage
- Total Blockage, Fishway Present
- Partial Blockage
- Partial Blockage, Fishway Present
- Unknown Blockage
- Unknown Blockage, Fishway Present

**Dams**

- Total Blockage
- Total Blockage, Fishway Present
- Partial Blockage
- Partial Blockage, Fishway Present

**Other Barriers**

- Total Blockage
- Total Blockage, Fishway Present
- Partial Blockage
- Unknown Blockage
- Unknown Blockage, Fishway Present
- Partial Blockage, Fishway Present
- Unknown Blockage
- All SalmonScape Species

Salmonscape

USGS/NHD
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the

Forest Practices Application Mapping Tool

DNR Home | FPARS Home | Forest Practices | FP Rules | FP Manual

Data | Active (17) | Legend

**City and Urban Growth Area Boundaries**
City and Urban Growth Area Boundaries
- Incorporated
- Unincorporated

**County Boundary**
County Boundary

**Tribal Cultural Resources Contacts**
Tribal Cultural Resources Contacts

**Contours - 40ft. Interval**
Contours - 40ft. Interval

**Fire Shutdown Zones**
Fire Shutdown Zones

**Water Bodies**
Water Bodies
- Flats/Gravel Bars
- Ice
- Man Made Features
- Open Water
- Wet Area

**Streams**
Streams
- Type S
- Type F
- Type N, Np, Ns
- U, unknown
- X, non-typed per WAC 222-16

**WRIA**
WRIA

Map Themes

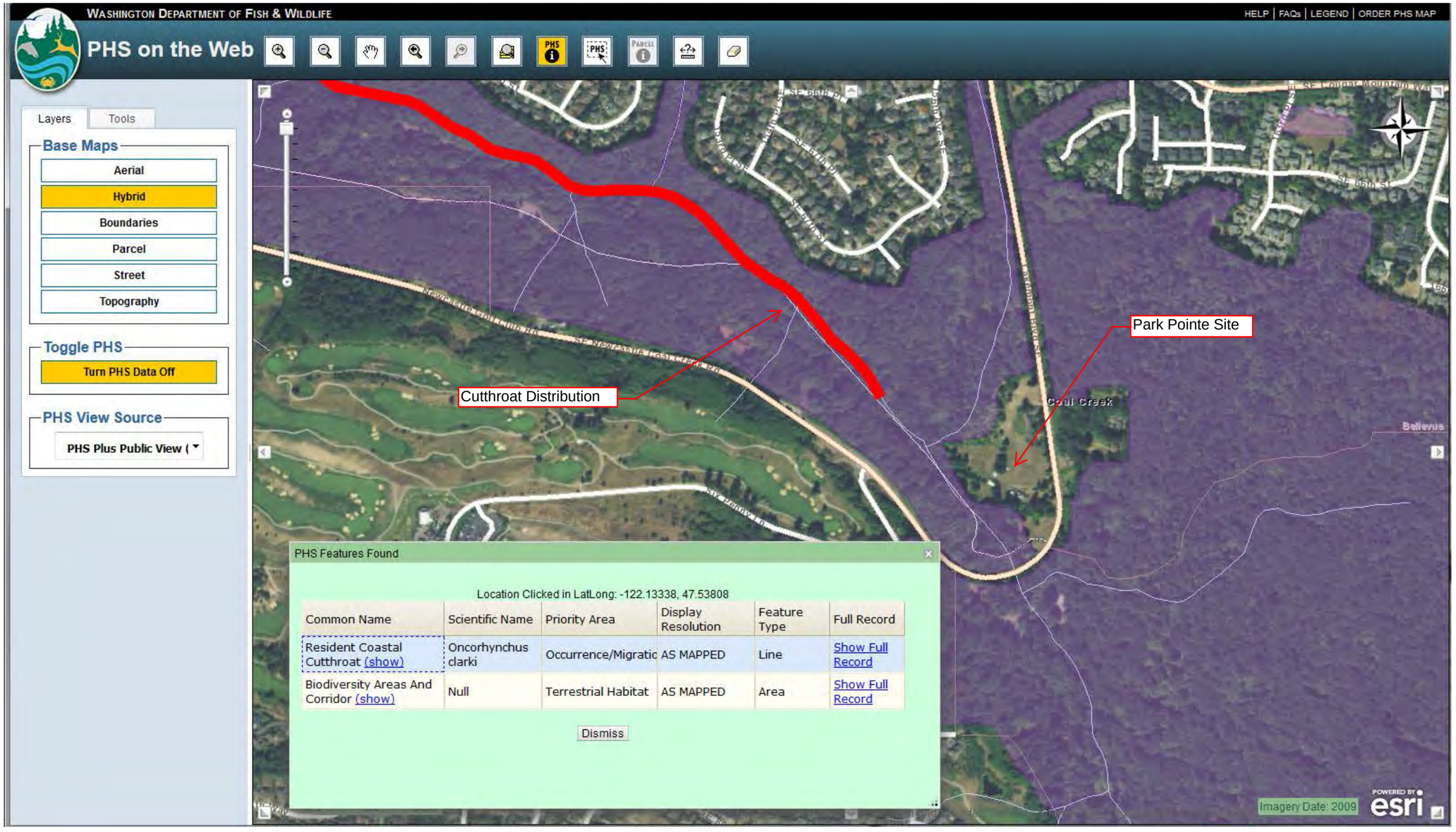
Township | Range | Section

Park Pointe Site

Coal Creek

0 0.1 0.2mi
1:18,056

Esri, HERE, Garmin, NGA, USGS, NPS


WASHINGTON DEPARTMENT OF FISH & WILDLIFE
HELP | FAQs | LEGEND | ORDER PHS MAP
PHS on the Web
Layers
Tools
Base Maps
Aerial
Hybrid
Boundaries
Parcel
Street
Topography
Toggle PHS
Turn PHS Data Off
PHS View Source
PHS Plus Public View (
Cutthroat Distribution
Park Pointe Site
Coal Creek
Bellevue
PHS Features Found
Location Clicked in LatLong: -122.13338, 47.53808
Common Name | Scientific Name | Priority Area | Display Resolution | Feature Type | Full Record
Resident Coastal Cutthroat (show) | Oncorhynchus clarki | Occurrence/Migratic | AS MAPPED | Line | Show Full Record
Biodiversity Areas And Corridor (show) | Null | Terrestrial Habitat | AS MAPPED | Area | Show Full Record
Dismiss
Imagery Date: 2009
POWERED BY esri

This map depicts the known freshwater distribution of cutthroat trout (*Oncorhynchus clarki*) for Water Resource Inventory Area (WRIA) 8. The depicted limits of known freshwater distribution of cutthroat trout are based upon the collective personal knowledge of participants in the WRIA 8 mapping project and data they gathered from published and unpublished databases.

This map may underestimate or overestimate the actual distribution of cutthroat trout. Also, this map may inaccurately depict the location of water bodies. For example, some water bodies may be incorrectly located on this map, or may not be depicted on this map at all. *All users of this map should seek the assistance of qualified professionals such as surveyors, hydrologists, or fishery biologists as needed to ensure that such users possess complete, precise, and up to date information on freshwater cutthroat trout distribution and water body location.*

The information depicted on this map is current as of May 2001. This map may be revised at any time. Although the WRIA 8 Technical Committee intends to revise this map on an annual basis, the WRIA 8 Technical Committee cannot and does not guarantee that this map will be revised on an annual basis or at any other interval.

NO EXPRESS OR IMPLIED WARRANTIES; NO WARRANTY OF MERCHANTABILITY; NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

There are not express or implied warranties for this map, the information it depicts, the data on which it is based, or any service furnished herein. There is no warranty of merchantability for this map's accuracy or its depiction of cutthroat trout distribution or water body location. This map is not warranted as fit for a particular purpose.

**NOTES:**
**The upper reach of the Cedar River Watershed is not shown on this map in order to make the map more readable. No cutthroat trout are currently present above Cedar Falls.**

Park Pointe Site

# Known Freshwater Distribution of Cutthroat Trout for Water Resource Inventory Area (WRIA) 8

**Cutthroat Trout Distribution - Streams**
- Present - First Hand Information
- Present - Second Hand Information

**Cutthroat Trout Distribution - Lakes**
- Present

- Data Point and Number (CLICK HERE to see data table for a description of each point.)
- WRIA 8 Boundary
- River
- Stream
- Major Road

N

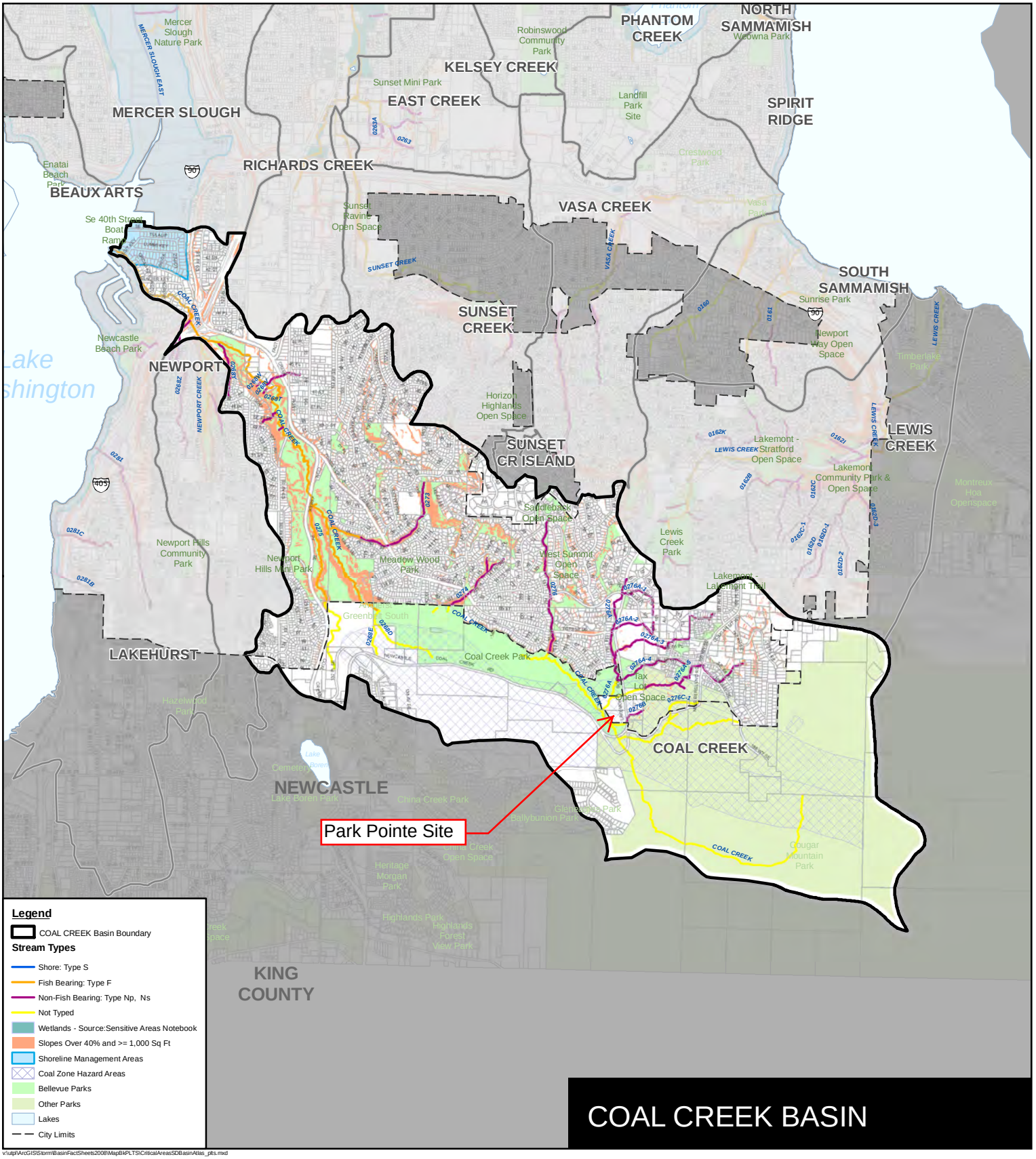
0 2 4 6 Miles

Revised May 2001

KING COUNTY

**Map Produced by:**
GIS & Visual Communications Unit, WLR

**File Name:** 0105CutthroatDistMap.eps md,lp,sk




= 3,800 feet

NORTH

City of Bellevue
IT Department
GIS Services
Plot Date: 7/28/2009

# Critical Areas

## by Storm Drainage Basin

City of Bellevue

This data is a geographic representation derived from the City of Bellevue Geographic Information System. The City of Bellevue does not guarantee that the information provided herein is accurate or complete. This information is provided on an "as is" basis and disclaims all warranties, express or implied, including but not limited to warranties of merchantability, fitness for a particular purpose and non-infringement. Any commercial use or sale of the information and data provided herein, or portions thereof, is prohibited without express written authorization by the City of Bellevue. The City of Bellevue is not responsible for any damages arising from the use of this data. Users should verify the information before making project

# Coal Creek Basin

Lake Washington Watershed (WRIA 8)
State Stream #08-0268

## LAND CHARACTERISTICS

Basin Area: 3,990 Total Acres ( 11% of the City)
Drainage Jurisdiction(s):
2,181.7 Acres - in Bellevue
1,275.7 Acres - in King County
532.1 Acres - in Newcastle

Highest Elevation: 1,561 Ft
Lowest Elevation: 18 Ft

Total Length of Open Channel: 85,838 Ft
Total Length of Storm Drainage Pipes: 266,341 Ft
Built Rain Storage Volume per Acre of Impervious Surface:
Less than 0.5 Inches

## SALMON PRESENT in BASIN

Chinook*+
Rainbow & cutthroat trout
Coho+
Sockeye
Steelhead

* Listed Federal Endangered Species
\+ City Species of Local Importance (Bellevue Land Use Code 20.25H.150A)

## POPULATION

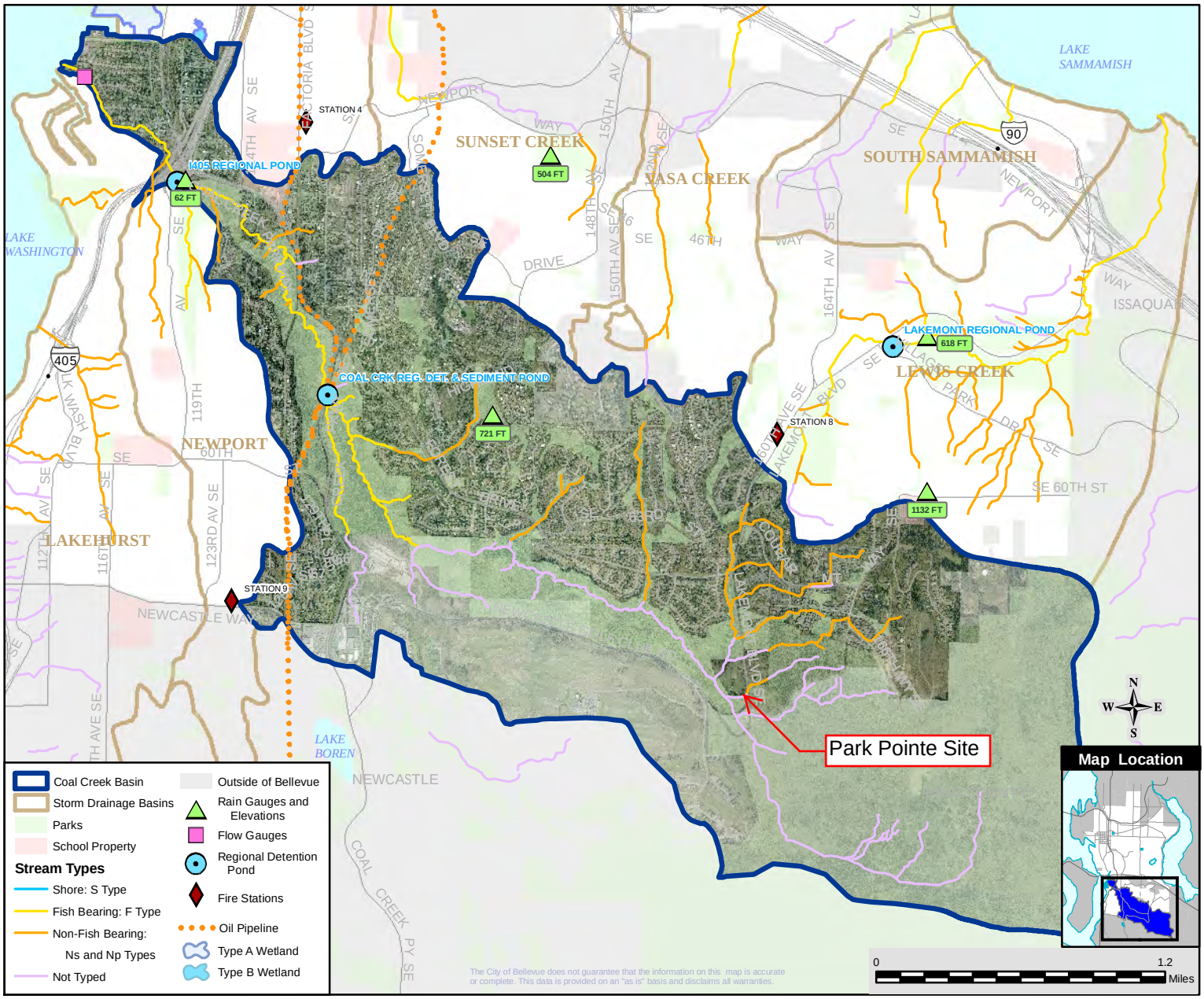
City Basin Population (2000): 10,144 ( 9.1% of the City)
Basin Population Density: 1,852 People/Square Mile
Number 3 of 26 Basins (One is the lowest density)

## LAND USE (within Bellevue city limits)

| | | |
|---|---|---|
| Public Right of Way: | 9.16% | 365.38 Acres |
| Commercial/Office: | 0.03% | 0.6 Acres |
| Industrial: | 0.01% | 0.3 Acres |
| Institutional/Government: | 3.06% | 66.8 Acres |
| Mixed Use/Misc: | 3.77% | 82.2 Acres |
| Multi-Family Residential: | 1.44% | 31.4 Acres |
| Open Space/Park: | 10.89% | 237.7 Acres |
| Single Family Residential: | 50.14% | 1,093.9 Acres |

## LAND COVER

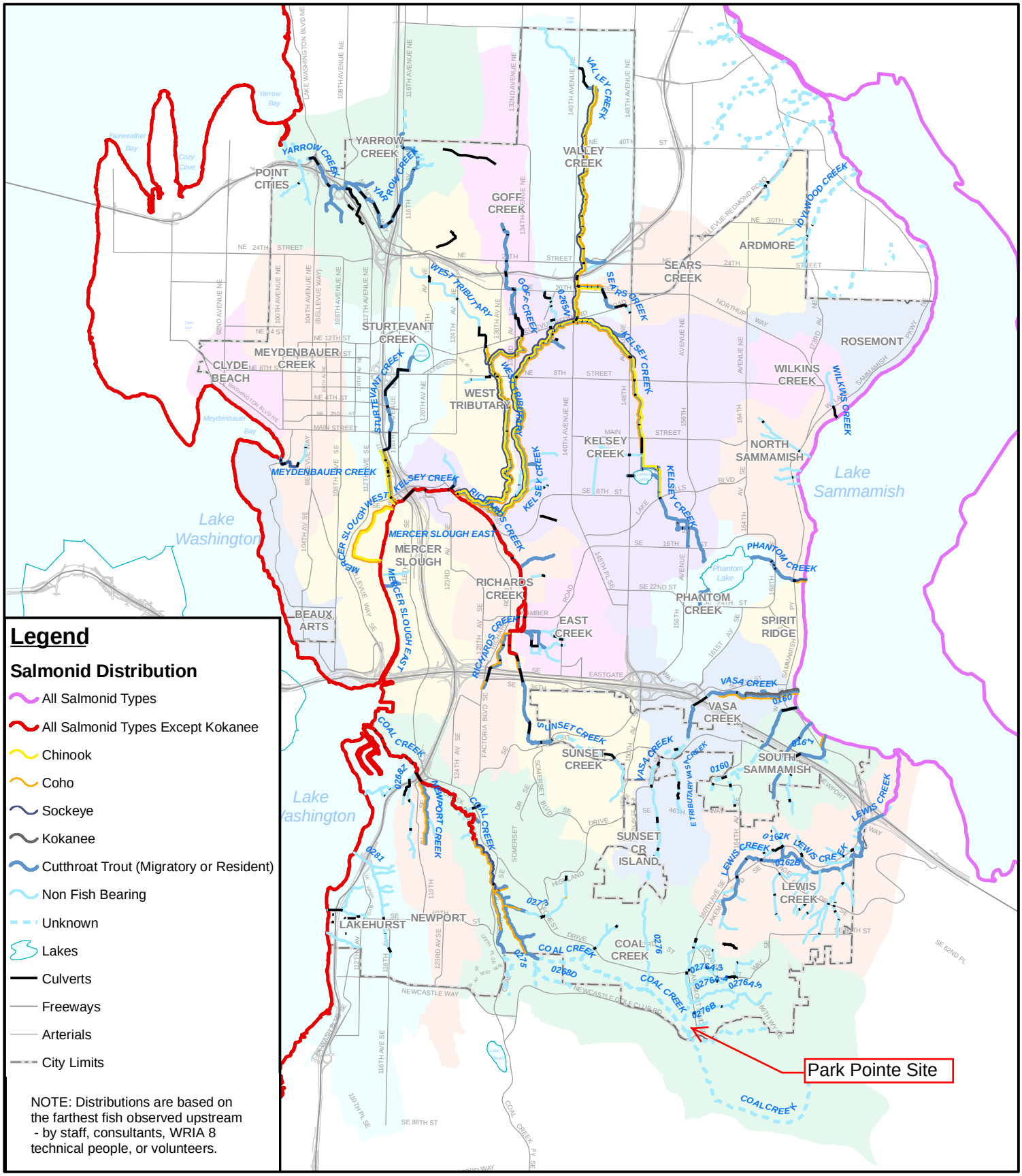
| | |
|---|---|
| Impervious: | 20% |
| Tree Canopy: | 58% |
| Impervious in 100 Ft Stream Buffer: | 8% |
| Tree Canopy in 100 Ft Stream Buffer: | 85% |




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

V:\utpl\ArcGIS\Storm\BasinFactSheets2010\MapBkPLTS\StormBasinFactSht21Jul2010_LegSW.mxd

Plot Date: 7/28/2010




NORTH

= 5,940 feet

City of Bellevue
IT Department
GIS Services

Plot Date: 4/12/2010

City of Bellevue

# Fish Distribution and Storm Drainage Basins

The information on this map is a geographic representation derived from the City of Bellevue Geographic Information System. The City of Bellevue does not guarantee that the information on this map is accurate or complete. This map is provided on an "as is" basis and disclaims all warranties, express or implied, including but not limited to warranties of merchantability, fitness for a particular purpose and non-infringement. Any commercial use or sale of this map or portions thereof, is prohibited without express written authorization by the City of Bellevue. The City of Bellevue is not responsible for any damages arising from the use of information on this map. Use of this map is at user's risk. Users should verify the information before making project commitments.

# SOUTH LAKE WASHINGTON DRAINAGES

Along the east shore of Lake Washington, between the East Channel Bridge and Renton, are Mercer Slough, Coal Creek, May Creek, and one small unnamed stream. These drain the hills and low mountain range lying between the south end of Lake Sammamish and Lake Washington, and total approximately 50 stream miles.

## Stream Description

Mercer Slough enters Lake Washington near Newport under the I-90 highway. Its headwaters are formed by Kelsey and Sturtevant creeks. Kelsey Creek originates from the outlet of Larsen Lake in Lake Hills and flows 4.6 miles to Sturtevant Creek, then continues as Mercer Slough for 1.7 miles to Lake Washington. Sturtevant Creek originates from the outlet of Sturtevant Lake near Midlakes in Bellevue, and flows south 1.3 miles to Mercer Slough.

The heavy peat bog valley containing Mercer Slough is rapidly being converted to commercial-industrial use. Sturtevant and Kelsey drainages also lie in the heart of industrial, business, and concentrated residential developments. The entire stream is confined within well defined cut banks with a gentle gradient. Fine gravel materials are predominant within long riffle-glide sections. The stream banks have been cleared in much of the area where residential property abuts the stream.

Coal Creek also enters the east channel of Lake Washington at Newport, flowing northwest 7.0 miles from the Newport Hill-Newcastle area. Many old coal mines are evident above Newcastle. Coal Creek drops through a very deep ravine of steep gradient between R.M. 2.7 and 4.0. An impassable cascade and log jam occurs at R.M. 2.7 and a 10-foot impassable falls at R.M. 3.7. Although Newport Hills is a highly developed residential area, Coal Creek has remained in its natural state due mainly to steepness of the ravines. The entire watershed is in a densely wooded valley below R.M. 2.7. Highway 405 crosses Coal Creek at R.M. 0.7 where the stream passes through a 457-foot culvert. Stream widths below the canyon vary from 2 to 4 yards with flows from 7 to 15 cfs in the fall-winter spawning period. The stream is confined within well defined cut banks overgrown with grass, brush and deciduous growth to its confluence with Lake Washington. The bottom composition is comprised of good quality gravel for spawning.

May Creek originates from the outlet of Lake Kathleen and flows westerly 8.6 miles to Lake Washington near Kennydale. Twelve small tributaries provide flow to May Creek. The lower three miles is heavy residential while the upper watershed is largely urban and small farms. The valley floor above R.M. 3.0 averages less than 0.25 mile wide with steep hills to the north, and gentle foothills to the south. From R.M. 1.0 to 3.0 the stream lies in a broad ravine with a gradient approaching 150 feet per mile. Heavy deciduous growth occurs along the lower four miles of stream with the upper stream only sparsely shaded with scattered deciduous vegetation through the farmlands. Conifers and heavy underbrush cover the upper hillsides. The stream bottom is composed mainly of gravel and rubble throughout much of its length, with numerous good quality spawning riffles, many glides, and few pools. The stream ranges from 2 to 4 yards in width.

## Salmon Utilization

Salmon utilization extends to all accessible stretches of Kelsey Creek, Sturtevant Creek, and May Creek. It is restricted to the lower 2.7 miles of Coal Creek. Mercer Slough serves only as transportation and rearing area. Coho are the dominant species with chinook and sockeye occurring only rarely. A select race of sockeye utilizes shallow gravelly beach zones along the lake's east shore for spawning.

## Limiting Factors

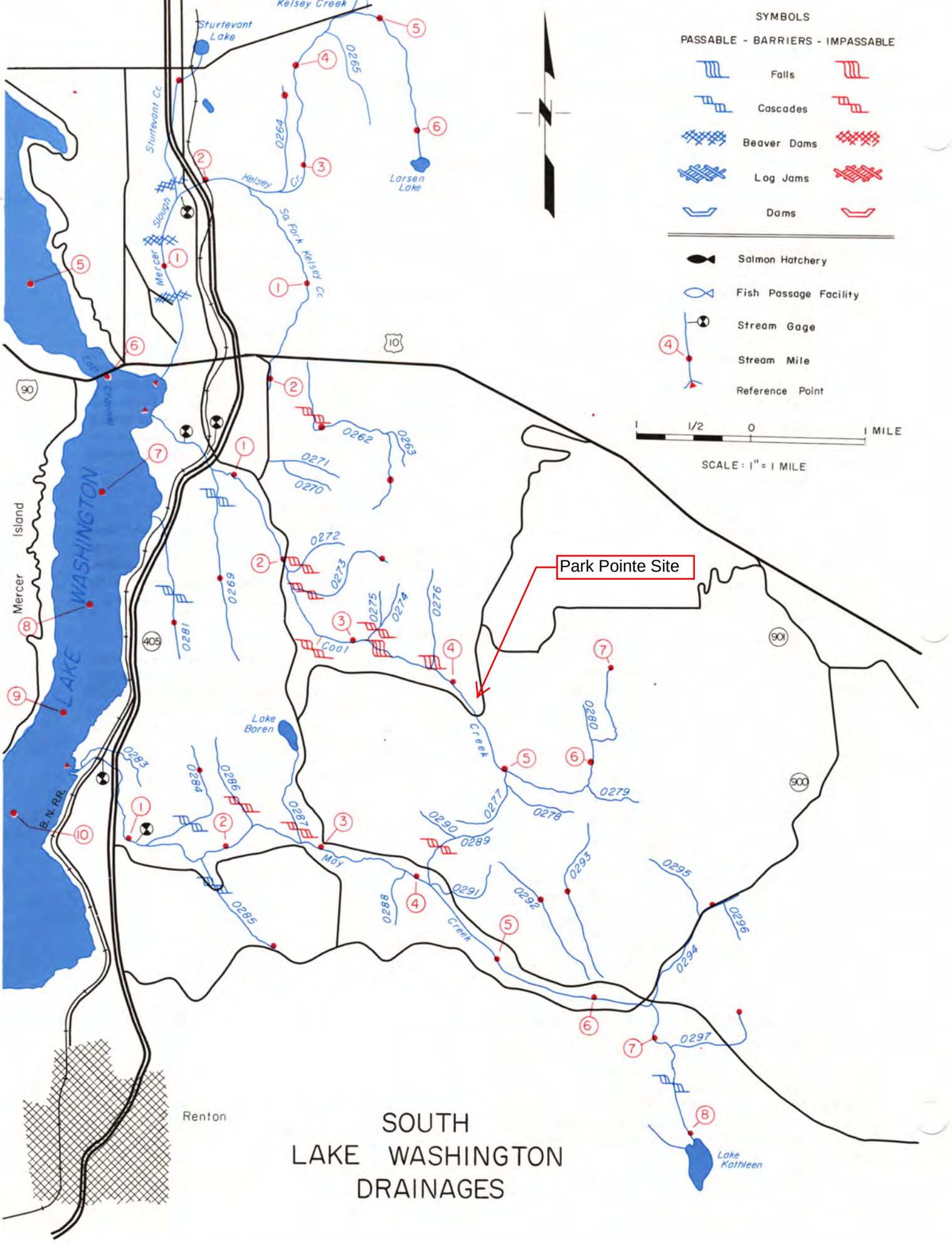
The principal factors limiting salmon production in this drainage section are water quality, water supply, and general habitat deterioration. Water quality problems on Kelsey Creek have curtailed much of its salmon production. Low summer flows with associated high temperatures are particularly crctical to rearing juveniles in all systems. Large scale residential developments on May Creek create water quality problems from storm drains, siltation, road construction and culverts. Elimination of natural cover, along with increasing storm runoff further limits production.

## Beneficial Developments

City of Bellevue has developed and implemented plans to rehabilitate and preserve streams within its boundaries. No other specific projects or programs have been undertaken to benefit fish production. Stream maintenance, mainly removal of debris or small barriers, is conducted as needed.

## Habitat Needs

The major requirement to maintain salmon production potential in this section will be to preserve water quality and quantity at levels no less than presently existing. Planning and coordination of water-associated project activities must consider fish and habitat requirements. Strict controls should be implemented regarding removal of stream water, introduction of storm drainage, placement of sanitary landfills and placement of culverts or bank protection devices.


SYMBOLS
PASSABLE - BARRIERS - IMPASSABLE
Falls
Cascades
Beaver Dams
Log Jams
Dams
Salmon Hatchery
Fish Passage Facility
Stream Gage
Stream Mile
Reference Point
1/2
0
1 MILE
SCALE: 1" = 1 MILE
Park Pointe Site
Kelsey Creek
Sturtevant Lake
Sturtevant Cr.
Kelsey Cr.
Larsen Lake
Mercer Slough
So. Fork Kelsey Cr.
LAKE WASHINGTON
Mercer Island
Lake Boren
Moy Creek
B. N. RR.
Renton
Lake Kathleen
0262
0263
0264
0265
0269
0270
0271
0272
0273
0274
0275
0276
0277
0278
0279
0280
0281
0283
0284
0285
0286
0287
0288
0289
0290
0291
0292
0293
0294
0295
0296
0297
Cool
90
405
900
901
10
SOUTH
LAKE WASHINGTON
DRAINAGES

This Page Intentionally Left Blank

# Appendix G:

## City of Bellevue Habitat Evaluation Assessment Data Sheets


Copyright © 2019 Talasaea Consultants, Inc.

# City of Bellevue
# DRAFT FUNCTIONAL ASSESSMENT TOOL for Upland Habitat

## Existing Condition

City of Bellevue

# DRAFT FUNCTIONAL ASSESSMENT TOOL

## for Upland Habitat

Property address 7219 Lakemont Boulevard SE

Location ____ Range ____ Township ____ Section ____

Parcel number ____

Property owner ____

Telephone number (____) - ____ - ____

Project name TAL-1543 Lakemont Boulevard Property

Project contact Michael Pollard

Telephone number (____) - ____ - ____

Address ____

Staff DRT

Date(s) of site visit(s) 05-20-15

Washington Department of Fish and Wildlife Priority Habitat and Species (PHS) data obtained? Y/N Y

| 1.0 | PROPERTY DESIGNATION | Zone A | Zone B | Zone C | Zone D | | Zone |
|---|---|---|---|---|---|---|---|
| 1.1 | Existing impervious surface | >90% | 50-90% | 20-50% | 0-20% | | 0 |
| **2.0** | **LANDSCAPE PARAMETERS** | **No points** | **1 point** | **2 points** | **3 points** | **Additional points** | **Total** |
| 2.1 | Land use/development density | Zone A | Zone B | Zone C | Zone D | | 3 |
| 2.2 | *Occurrence (number) of habitat types | 0 | 1 | 2 | 3+ | | 3 |
| 2.3 | **Proximity of known critical areas (distance to edge) | >2,500 ft | <2,500 ft | <1,200 ft | <100 ft | +1 point if contiguous with critical area | 3 |
| 2.4 | Habitat connectivity and corridors | No connection to other habitat areas | ≥50-foot-wide connection to vegetated areas of at least 1 acre | ≥50-foot-wide connection to vegetated areas of at least 50 acres but not listed parks*** | ≥50-foot-wide connection King County wildlife network or listed parks*** | +1 point for ≥150-foot-wide connection King County wildlife network or listed parks*** | 4 |
| 2.5 | Patch size | <0.-1.0 ac | 1.0-5.0 ac | >5-10 ac | 10-42 acres | >42 acres = 4 points | 4 |

17

City of Bellevue

# DRAFT FUNCTIONAL ASSESSMENT TOOL

## for upland habitat

| 2.0 | LANDSCAPE PARAMETERS | No points | 1 point | 2 points | 3 points | Additional points | Total |
|---|---|---|---|---|---|---|---|
| 2.6 | ***Interspersion of habitat patches (excluding patches <1 ac in area)** | No or isolated patch (no others within 0.5-ac circle) | Low | Moderate | High | +1 point if wildlife network or listed park is included | 2 |
| **3.0** | **LOCAL PARAMETERS** | **No points** | **1 point** | **2 points** | **3 points** | **Additional points** | **Total** |
| 3.1 | **Size of native trees on site** | No significant trees on site | 6-12" dbh tree(s) present | 12-20" dbh tree(s) present | >20" dbh tree(s) present | +1 point if tree(s) >30" dbh are present | 3 |
| 3.2 | **Coniferous component** | No conifers on site | Conifers very sparse or present in understory only | Conifers co- or sub-dominant in overstory | Conifers dominant | +1 point if conifers >30" dbh are present | 1 |
| 3.3 | **Percent cover (sample vegetated areas only)** | | | | | | |
| | Ground layer (0-2.3 ft) (5-ft radius) | 0% | 0-25% | 25-50% | 50%+ | +1 point for cover >75%; -1 point if mowed grass is >50% | 3 2 |
| | Shrub layer (2.3-25 ft) (10-ft radius) | 0% | 0-25% | 25-50% | 50%+ | +1 point for cover >75% | 2 |
| | Canopy (>25 ft) (30-ft radius) | 0% | 0-25% | 25-50% | 50%+ | +1 point for cover >75% | 2 |
| 3.4 | **Vegetative vertical structural diversity (foliage height diversity)** | FHD = 0 | FHD < 0.70 | FHD = 0.70-0.90 | FHD > 0.90 | | 2 |
| 3.5 | **Vegetative species richness** | 0-1 species | 2-5 species | 6-19 species | 20+ species | | 2 |
| 3.6 | **Invasive species component** | >75% cover | 25-75% cover | 10-25%cover | <10% cover | | 1 |

City of Bellevue

# DRAFT FUNCTIONAL ASSESSMENT TOOL

## for Upland Habitat

| 3.0 | LOCAL PARAMETERS | No points | 1 point | 2 points | 3 points | Additional points | Total |
|---|---|---|---|---|---|---|---|
| 3.7 | **Proximity to year-round water** | >1.0 mi or artificial feature with maintained /invasive buffer present within 0.3-1 mi | 0.3-1.0 mi or artificial feature with maintained/ invasive buffer present within <0.3 mi | <0.3 mi or artificial feature with maintained/ invasive buffer present within patch | Natural water feature present within patch with native buffer | | 3 |
| 3.8 | **Snags (≥4 in dbh)** | No snags on site | 1/ac or fewer | 2-6/ac | >7/ac | Add 0.5 point for each >20 in dbh and 1 point for each >30 in dbh | 2 |
| 3.9 | **Other habitat features** | None | 1 | 2-4 | 5 or more | | 2 |
| **Landscape parameters points** | | | | | | | 19 |
| **Local parameters points** | | | | | | | 22 |
| **TOTAL POINTS** | | | | | | | 41 |

* Use circle of the appropriate size for the property's zone:

Zone A – 0.5 ac
Zone B – 5.0 ac
Zone C – 100 ac
Zone D – 250 ac

** PHS data required for sites in Zone D

***Parks: Mercer Slough, Phantom Lake wetland complex, Larson Lake wetland complex, Cougar Mountain Regional Wildland Park, Weowna Park; King County wildlife network

# City of Bellevue
# DRAFT FUNCTIONAL ASSESSMENT TOOL
# for Upland Habitat

## Post-Construction: No Buffer Enhancement; Reduced Development Footprint

**City of Bellevue**

# DRAFT FUNCTIONAL ASSESSMENT TOOL

**for Upland Habitat**

Property address 7219 LAKEMONT BLVD SE

Location ___ Range ___ Township ___ Section ___

Parcel number ___

Property owner ___

Telephone number ( ) - -

Project name TAL-1543 LAKEMONT/PARK POINTE

Project contact ALEX MASON/ISOLA HOMES

Telephone number ( ) - -

Address ___

(PREPARED 4/17/17)
THIS EVALUATION IS AN IMPACT ASSESSMENT, WITH NO MITIGATION EVALUATED

Staff OA - TALASAEA

Date(s) of site visit(s) ___

Washington Department of Fish and Wildlife Priority Habitat and Species (PHS) data obtained? Y/N Y

| 1.0 | PROPERTY DESIGNATION | Zone A | Zone B | Zone C | Zone D | | Zone |
|---|---|---|---|---|---|---|---|
| 1.1 | Existing impervious surface | >90% | 50-90% | 20-50% | 0-20% | | C |
| **2.0** | **LANDSCAPE PARAMETERS** | **No points** | **1 point** | **2 points** | **3 points** | **Additional points** | **Total** |
| 2.1 | **Land use/development density** | Zone A | Zone B | Zone C | Zone D | | 2 |
| 2.2 | ***Occurrence (number) of habitat types** | 0 | 1 | 2 | 3+ | | 3 |
| 2.3 | ****Proximity of known critical areas (distance to edge)** | >2,500 ft | <2,500 ft | <1,200 ft | <100 ft | +1 point if contiguous with critical area | 3 |
| 2.4 | **Habitat connectivity and corridors** | No connection to other habitat areas | ≥50-foot-wide connection to vegetated areas of at least 1 acre | ≥50-foot-wide connection to vegetated areas of at least 50 acres but not listed parks*** | ≥50-foot-wide connection King County wildlife network or listed parks*** | +1 point for ≥150-foot-wide connection King County wildlife network or listed parks*** | 4 |
| 2.5 | **Patch size** | <0.-1.0 ac | 1.0-5.0 ac | >5-10 ac | 10-42 acres | >42 acres = 4 points | 4 |

City of Bellevue

# DRAFT FUNCTIONAL ASSESSMENT TOOL

for upland habitat

| 2.0 | LANDSCAPE PARAMETERS | No points | 1 point | 2 points | 3 points | Additional points | Total |
|---|---|---|---|---|---|---|---|
| 2.6 | *Interspersion of habitat patches (excluding patches <1 ac in area) | No or isolated patch (no others within 0.5-ac circle) | Low | Moderate | High | +1 point if wildlife network or listed park is included | 2 |
| **3.0** | **LOCAL PARAMETERS** | **No points** | **1 point** | **2 points** | **3 points** | **Additional points** | **Total** |
| 3.1 | Size of native trees on site | No significant trees on site | 6-12" dbh tree(s) present | 12-20" dbh tree(s) present | >20" dbh tree(s) present | +1 point if tree(s) >30" dbh are present | 3 |
| 3.2 | Coniferous component | No conifers on site | Conifers very sparse or present in understory only | Conifers co- or sub-dominant in overstory | Conifers dominant | +1 point if conifers >30" dbh are present | 1 |
| 3.3 | Percent cover (sample vegetated areas only) | | | | | | |
| | Ground layer (0-2.3 ft) (5-ft radius) | 0% | 0-25% | 25-50% | 50%+ | +1 point for cover >75%; -1 point if mowed grass is >50% | 2 |
| | Shrub layer (2.3-25 ft) (10-ft radius) | 0% | 0-25% | 25-50% | 50%+ | +1 point for cover >75% | 2 |
| | Canopy (>25 ft) (30-ft radius) | 0% | 0-25% | 25-50% | 50%+ | +1 point for cover >75% | 2 |
| 3.4 | Vegetative vertical structural diversity (foliage height diversity) | FHD = 0 | FHD < 0.70 | FHD = 0.70-0.90 | FHD > 0.90 | | 2 |
| 3.5 | Vegetative species richness | 0-1 species | 2-5 species | 6-19 species | 20+ species | | 2 |
| 3.6 | Invasive species component | >75% cover | 25-75% cover | 10-25%cover | <10% cover | | 1 |

**City of Bellevue**

# DRAFT FUNCTIONAL ASSESSMENT TOOL

**for Upland Habitat**

| 3.0 | LOCAL PARAMETERS | No points | 1 point | 2 points | 3 points | Additional points | Total |
|---|---|---|---|---|---|---|---|
| 3.7 | **Proximity to year-round water** | >1.0 mi or artificial feature with maintained /invasive buffer present within 0.3-1 mi | 0.3-1.0 mi or artificial feature with maintained/ invasive buffer present within <0.3 mi | <0.3 mi or artificial feature with maintained/ invasive buffer present within patch | Natural water feature present within patch with native buffer | | 3 |
| 3.8 | **Snags (≥4 in dbh)** | No snags on site | 1/ac or fewer | 2-6/ac | >7/ac | Add 0.5 point for each >20 in dbh and 1 point for each >30 in dbh | 2 |
| 3.9 | **Other habitat features** | None | 1 | 2-4 | 5 or more | | 2 |
| **Landscape parameters points** | | | | | | | 18 |
| **Local parameters points** | | | | | | | 22 |
| **TOTAL POINTS** | | | | | | | 40 |

* Use circle of the appropriate size for the property's zone:

Zone A – 0.5 ac
Zone B – 5.0 ac
Zone C – 100 ac
Zone D – 250 ac

** PHS data required for sites in Zone D

***Parks: Mercer Slough, Phantom Lake wetland complex, Larson Lake wetland complex, Cougar Mountain Regional Wildland Park, Weowna Park; King County wildlife network

# City of Bellevue
# DRAFT FUNCTIONAL ASSESSMENT TOOL for Upland Habitat

## Post-Construction: With Proposed Development and Buffer Enhancement

**City of Bellevue**

# DRAFT FUNCTIONAL ASSESSMENT TOOL

**for Upland Habitat**

Property address 7219 LAKEMONT BLVD SE

Location Range Township Section

Parcel number

Property owner

Telephone number ( ) - -

Project name TAL-1543 LAKEMONT/PARK POINTE

Project contact ALEX MASON, ISOLA HOMES

Telephone number ( ) - -

Address

(PREPARED 3/24/2017) THIS EVALUATION IS A PREDICTIVE ASSESSMENT OF THE POST-5 YEAR HABITAT RESTORATION.

Staff OA - TALASAEA CONSULTANTS

Date(s) of site visit(s)

Washington Department of Fish and Wildlife Priority Habitat and Species (PHS) data obtained? Y/N Y

| 1.0 | PROPERTY DESIGNATION | Zone A | Zone B | Zone C | Zone D | | Zone |
|---|---|---|---|---|---|---|---|
| 1.1 | Existing impervious surface | >90% | 50-90% | 20-50% | 0-20% | | C |
| **2.0** | **LANDSCAPE PARAMETERS** | **No points** | **1 point** | **2 points** | **3 points** | **Additional points** | **Total** |
| 2.1 | **Land use/development density** | Zone A | Zone B | Zone C | Zone D | | 2 |
| 2.2 | ***Occurrence (number) of habitat types** | 0 | 1 | 2 | 3+ | | 3 |
| 2.3 | ****Proximity of known critical areas (distance to edge)** | >2,500 ft | <2,500 ft | <1,200 ft | <100 ft | +1 point if contiguous with critical area | 3 |
| 2.4 | **Habitat connectivity and corridors** | No connection to other habitat areas | ≥50-foot-wide connection to vegetated areas of at least 1 acre | ≥50-foot-wide connection to vegetated areas of at least 50 acres but not listed parks*** | ≥50-foot-wide connection King County wildlife network or listed parks*** | +1 point for ≥150-foot-wide connection King County wildlife network or listed parks*** | 4 |
| 2.5 | **Patch size** | <0.-1.0 ac | 1.0-5.0 ac | >5-10 ac | 10-42 acres | >42 acres = 4 points | 4 |

City of Bellevue

# DRAFT FUNCTIONAL ASSESSMENT TOOL

## for upland habitat

| 2.0 | LANDSCAPE PARAMETERS | No points | 1 point | 2 points | 3 points | Additional points | Total |
|---|---|---|---|---|---|---|---|
| 2.6 | ***Interspersion of habitat patches (excluding patches <1 ac in area)** | No or isolated patch (no others within 0.5-ac circle) | Low | Moderate | High | +1 point if wildlife network or listed park is included | 2 |
| **3.0** | **LOCAL PARAMETERS** | **No points** | **1 point** | **2 points** | **3 points** | **Additional points** | **Total** |
| 3.1 | **Size of native trees on site** | No significant trees on site | 6-12" dbh tree(s) present | 12-20" dbh tree(s) present | >20" dbh tree(s) present | +1 point if tree(s) >30" dbh are present | 3 |
| 3.2 | **Coniferous component** | No conifers on site | Conifers very sparse or present in understory only | Conifers co- or sub-dominant in overstory | Conifers dominant | +1 point if conifers >30" dbh are present | 1 |
| 3.3 | **Percent cover (sample vegetated areas only)** | | | | | | |
| | Ground layer (0-2.3 ft) (5-ft radius) | 0% | 0-25% | 25-50% | 50%+ | +1 point for cover >75%; -1 point if mowed grass is >50% | 3 |
| | Shrub layer (2.3-25 ft) (10-ft radius) | 0% | 0-25% | 25-50% | 50%+ | +1 point for cover >75% | 3 |
| | Canopy (>25 ft) (30-ft radius) | 0% | 0-25% | 25-50% | 50%+ | +1 point for cover >75% | 2 |
| 3.4 | **Vegetative vertical structural diversity (foliage height diversity)** | FHD = 0 | FHD < 0.70 | FHD = 0.70-0.90 | FHD > 0.90 | | 2 |
| 3.5 | **Vegetative species richness** | 0-1 species | 2-5 species | 6-19 species | 20+ species | | 3 |
| 3.6 | **Invasive species component** | >75% cover | 25-75% cover | 10-25%cover | <10% cover | | 3 |

**City of Bellevue**

# DRAFT FUNCTIONAL ASSESSMENT TOOL

**for Upland Habitat**

| 3.0 | LOCAL PARAMETERS | No points | 1 point | 2 points | 3 points | Additional points | Total |
|---|---|---|---|---|---|---|---|
| 3.7 | **Proximity to year-round water** | >1.0 mi or artificial feature with maintained /invasive buffer present within 0.3-1 mi | 0.3-1.0 mi or artificial feature with maintained/ invasive buffer present within <0.3 mi | <0.3 mi or artificial feature with maintained/ invasive buffer present within patch | Natural water feature present within patch with native buffer | | 3 |
| 3.8 | **Snags (≥4 in dbh)** | No snags on site | 1/ac or fewer | 2-6/ac | >7/ac | Add 0.5 point for each >20 in dbh and 1 point for each >30 in dbh | 2 |
| 3.9 | **Other habitat features** | None | 1 | 2-4 | 5 or more | | 3 |
| **Landscape parameters points** | | | | | | | 18 |
| **Local parameters points** | | | | | | | 28 |
| **TOTAL POINTS** | | | | | | | 46 |

* Use circle of the appropriate size for the property's zone:

Zone A – 0.5 ac
Zone B – 5.0 ac
Zone C – 100 ac
Zone D – 250 ac

** PHS data required for sites in Zone D

***Parks: Mercer Slough, Phantom Lake wetland complex, Larson Lake wetland complex, Cougar Mountain Regional Wildland Park, Weowna Park; King County wildlife network

# Appendix H:

## Vegetative Management Plan


Copyright © 2019 Talasaea Consultants, Inc.

**VEGETATION MANAGEMENT PLAN**

**Park Pointe PUD**

**Bellevue, Washington**

May 17, 2017

This Vegetation Management Plan (VMP) is intended to guide general landscape maintenance practices for the Park Pointe PUD, as well as maintenance practices for the mitigation area. The goal of the VMP is to ensure long-term vegetation management that is consistent with the objectives and performance standards of the mitigation plan approved by the City of Bellevue in conjunction with the approval of the Critical Areas Report. This includes vegetation management techniques as well as restrictions on activities in buffers.

The VMP is intended for general application. Enforcement of the VMP shall be the responsibility of Park Pointe PUD, or their representative, hereinafter referred to as "Park Pointe". This VMP is adopted for the following purposes, which shall be considered in the administration of this plan. They are as follows:

- To preserve and enhance the physical and aesthetic character and ecological functions of the critical areas and buffers on the site;
- To promote landscape maintenance practices that result in a minimal disturbance to the natural environment;
- To promote the existence of wildlife through the establishment of native plantings;
- To allow future replanting and augmentation of native vegetation;
- To ensure prompt restoration, replanting, and effective erosion control of soil disturbances;
- To prevent and/or control erosion, and prevent stray sediment and polluted water from entering the adjacent natural systems;
- To promote maintenance practices that are consistent with the approved Mitigation Plan prepared by Talasaea Consultants;
- To support the goals and policies of the State of Washington Environmental Policy Act, the Federal Endangered Species Act, and the Clean Water Act; and
- To maintain the Site in accordance with City of Bellevue Code.

## 1.0 GENERAL SITE LANDSCAPE MAINTENANCE & MANAGEMENT

### 1.1 Fertilizer

Any fertilizer shall be carefully applied to avoid direct and indirect entry of fertilizer into streams or water bodies. In order to accurately determine fertilizer inputs, it is recommended that a soil sample be collected by Park Pointe for sampling of the major nutrients Nitrogen, Phosphorous, and Potassium (NPK), micronutrients, pH, and organic matter. The King Conservation District has a soil testing laboratory that will send back recommendations specific to the site and plant material so that the appropriate type and amount of fertilizer can be applied and potential contamination of surface and groundwater resulting from excess fertilizer can be avoided.


Copyright © 2017 Talasaea Consultants, Inc

### 1.2 Control of Invasive/Noxious Species

Non-native and noxious species include Scot's broom, Himalayan and evergreen blackberry, reed canarygrass, purple loosestrife, field bindweed, knotweed sp., English ivy, Canada thistle, and bittersweet nightshade. Herbicides shall be utilized only if manual control methods are not effective. Rodeo, or an equivalent approved by the City of Bellevue (such as Aquamaster), shall be the only herbicide allowed in the protected critical areas. Recommendations for manual and chemical removal of invasive/ noxious weed species shall be in compliance with the Best Management Practices established by the King County Noxious Weed Control Board. All invasive/noxious weeds or other non-native species shall be systematically and periodically removed on a specimen-by-specimen basis and disposed of off-site at an approved dump location.

## 2.0 CRITICAL AREAS MAINTENANCE & MANAGEMENT

After the conclusion of the 5-year performance monitoring period, maintenance of the mitigation areas and protection of on-site critical areas shall be the responsibility of Park Pointe, who shall:

- Ensure the ongoing protection of the critical area buffer by encouraging people and pets to stay within designated areas.
- Ensure removal of all trash and debris on a routine basis.
- Coordinate the immediate control and/or removal of any erosion, stray sediment, and polluted water.
- Coordinate the protection of the installed native plant material.
- Provide routine maintenance of all newly planted (or replanted) vegetation.
- Ensure the removal of invasive/noxious species as listed on the King County Noxious Species List.
- Coordinate cleaning and maintenance of signage to maintain visibility and repair damage.
- Provide maintenance for all structures (e.g., culverts, etc.) that are required to be cleaned and repaired as needed to maintain proper function.

### 2.1 Maintenance Schedule Guidelines

Park Pointe shall inspect the restored critical areas and shall take action to adequately address intrusion of invasive/noxious species; trash and debris, erosion, stray sediment, and/or polluted water; and plant mortality on a routine basis. It is recommended that these inspections be performed on a quarterly basis each year.

### 2.2 Contingency Items

Contingency items include, but are not limited to: additional plant installation, irrigation, erosion control, and invasive/noxious species control (Section 2.3 below). Contingency items include many of the items listed below, and shall be implemented if the purposes for adopting the VMP, as defined on page one, are not met.

Replanting – Park Pointe will replant areas that may experience plant mortality as necessary to maintain plant survival. Areas will be replanted with the same species or a substitute species approved by the City of Bellevue.


Copyright © 2017 Talasaea Consultants, Inc

Irrigation -- Park Pointe shall coordinate the watering of any newly installed plants from June 15th through October 15th. Watering shall be by manual means or through provision of a temporary irrigation system. During the first year after re-planting, irrigation shall be at the rate of 1/2" of water twice per week. During the second year, irrigation shall be at the rate of 1/2" of water once per week.

Erosion Control – Park Pointe shall promptly coordinate the correction of any erosion and shall prevent any stray sediment or polluted water from entering adjacent water bodies.

### 2.3 Control of Invasive/Noxious Species

Park Pointe shall coordinate the routine removal and control of invasive/noxious weeds or other non-native species with the goal of maintaining them below 10% of the total areal cover in the protected natural areas. These non-native and noxious species include Scot's broom, Himalayan and evergreen blackberry, reed canarygrass, purple loosestrife, field bindweed, Japanese knotweed, English ivy, Canada thistle, and bittersweet nightshade. Complete or near-complete removal of these species shall be performed by manual means whenever reasonably possible. Herbicides shall be utilized in the protected critical areas only if manual control methods are not effective. Rodeo, or an equivalent approved by King County (such as Aquamaster), will be the only herbicide allowed in the protected critical areas.

Recommendations for manual and chemical removal of invasive/ noxious weed species shall be in compliance with the Best Management Practices established by the King County Noxious Weed Control Board. All invasive/noxious weeds or other non-native species shall be systematically and periodically removed on a specimen-by-specimen basis and disposed of off-site at an approved dump location.

### 2.4 General Maintenance Items

1. Park Pointe shall coordinate the ongoing protection of the critical area by encouraging the public to stay within designated areas.
2. Park Pointe shall coordinate the removal of all trash and other debris on a routine basis. Large and/or hazardous items or large accumulations shall be removed promptly upon their discovery.
3. Park Pointe shall coordinate the routine maintenance of all newly planted trees and shrubs. These measures include maintaining and weeding mulch rings, including removal of all herbaceous plants within the mulch ring or dripline of all woody shrubs and trees. Invasive/noxious non-native plants shall be removed and/or controlled in all critical area.
4. Park Pointe shall coordinate the pruning of trees and large woody plants (e.g., thinning and removal of dead or diseased portions of trees/shrubs) within the critical area at the direction of a qualified arborist.
5. Park Pointe shall coordinate cleaning and maintenance of critical areas signage and check signage for visibility and damage. These efforts shall occur at least twice yearly.
6. Park Pointe shall coordinate cleaning and maintenance of all structures (e.g., culverts, etc.) to be cleaned and repaired as needed to maintain proper function.
7. Park Pointe acknowledges that the critical area is not to be maintained like traditional ornamental landscaping. Grasses and other herbaceous vegetation (other than reed canarygrass and other invasive/noxious species) shall be left alone.


Copyright © 2017 Talasaea Consultants, Inc

## 2.5 Tree Protection and Maintenance

All retained trees shall be maintained in healthy condition by Park Pointe in perpetuity, unless otherwise approved by the City of Bellevue.

Pruning and maintenance of trees shall be consistent with best management practices in the field of arboriculture and shall further the long-term health of the tree. Excessive pruning shall not be allowed unless necessary to protect life and property.

Hazardous trees may be removed if the hazardous tree exhibits threat of injury to people or damage to property and if the City of Bellevue approves removal. The following conditions are some indications of a potentially hazardous tree:

- large dead or detached branches;
- significant cavities or rotten wood along the trunk or in major branches;
- fungal infection;
- significant cracks or splits in the bark;
- strong lean of the trunk;
- poor branching structure;
- a damaged root system;
- previously topped or heavily pruned.

The City requires that the hazardous condition of a tree be confirmed by a Certified Arborist and that all proper permits be obtained (per applicable City code) prior to tree removal, except in the event of an emergency that poses an imminent threat to human health and/or property.


Copyright © 2017 Talasaea Consultants, Inc

# Appendix I:

## Responses to Performance Standards and Decision Criteria


Copyright © 2019 Talasaea Consultants, Inc.

| **Standard** |
|---|
| **20.25H.100 Performance standards.** Development on sites with a wetland or wetland critical area buffer shall incorporate the following performance standards in design of the development, as applicable: |
| A. Lights shall be directed away from the wetland. |
| ***Site lighting shall be sensitive to the needs of wildlife. Direct illumination of the critical areas will be avoided.*** |
| B. Activity that generates noise such as parking lots, generators, and residential uses, shall be located away from the wetland, or any noise shall be minimized through use of design and insulation techniques. |
| ***Site roadways and activity areas are directed towards the center of the site. Where any activity approaches the perimeter of the development, extensive planting with coniferous trees shall help diffuse noise. Homes will be built with a high R-value insulation within the structure.*** |
| C. Toxic runoff from new impervious area shall be routed away from the wetlands. |
| ***All street run-off will be directed towards the advanced treatment system before discharge to streams. No wetlands will receive stormwater. Paved areas at the perimeter of the site will feature pervious pavement, and rooftop rainwater will be routed to the buffer.*** |
| D. Treated water may be allowed to enter the wetland critical area buffer. |
| ***Site stormwater from streets and paved areas will be directed to the advanced filtration system, before discharge to the critical areas buffer.*** |
| E. The outer edge of the wetland critical area buffer shall be planted with dense vegetation to limit pet or human use. |
| **Dense plantings of rose, Oregon grape, or similar native species will be incorporated at the outer edge of the critical areas buffer in the final mitigation plans.** |
| F. F. Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the stream buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended. (Ord. 5680, 6-26-06, § 3) |
| ***For the site landscaping, 100% of the developed space will be managed and guided by a Best Management Plan for Landscape Maintenance incorporating the City's current Environmental Best Practices and Design Standards manual.*** |

| Criteria |
|---|
| **20.25H.145 Critical areas report – Approval of modification.**<br>Modifications to geologic hazard critical areas and critical area buffers shall only be approved if the Director determines that the modification: |
| G. The proposed modification to the critical area or critical area buffer with any associated mitigation does not significantly impact habitat associated with species of local importance, or such habitat that could reasonably be expected to exist during the anticipated life of the development proposal if the area were regulated under this part. |
| ***The proposed modification of critical area buffers has been demonstrated in Chapter 4 of the project critical areas report that two species of local importance are associated with the site. In the long term improvement of the site, the habitat should continue to be available for both species, thus no loss is expected. In Chapter 9, the site ranked highly in habitat function under existing conditions, and after the mitigation, it is expected to have an increased habitat functional value.*** |

| Criteria |
|---|
| **20.25H.250 Critical areas report – Submittal requirements.**<br>**A. Specific Proposal Required**. A critical areas report must be submitted as part of an application for a specific development proposal. In addition to the requirements of this section, additional information may be required for the permit applicable to the development proposal. |
| ***The project critical areas report is submitted with the applications, with intent to fully have requirements met and necessary information provided.*** |
| **B. Minimum Report Requirements.** The critical areas report shall be prepared by a qualified professional and shall at minimum include the content identified in this section. The Director may waive any of the report requirements where, in the Director's discretion, the information is not necessary to assess the impacts of the proposal and the level of protection of critical area function and value accomplished. At a minimum, the report shall contain the following: |
| 1. Identification and classification of all critical areas and critical area buffers on the site; |
| ***The project critical areas report identifies and classifies three wetlands and three streams on the site.*** |
| 2. Identification and characterization of all critical areas and critical area buffers on those properties immediately adjacent to the site; |
| ***A fourth stream was identified off site, and wetlands and streams that extended off site were characterized.*** |
| 3. Identification of each regulation or standard of this code proposed to be modified; |
| ***The critical areas report identifies modification of the code to reduce buffers for streams under LUC 20.25H.075.C.2 and 20.25H.090, and to reduce the critical area building setback associated with stream buffers under section LUC 20.25H.075.D.3.*** |
| 3. A habitat assessment consistent with the requirements of LUC 20.25H.165; |
| ***A thorough habitat assessment consistent with the requirements above were included in the critical areas report in Chapter 4.*** |
| 4. An assessment of the probable cumulative impacts to critical areas resulting from development of the site and the proposed development; |
| ***An assessment of the impacts associated with the development, consistent with the requirements above were included in the critical areas report in Chapter 7.*** |

| |
|---|
| 5. An analysis of the level of protection of critical area functions and values provided by the regulations or standards of this code, compared with the level of protection provided by the proposal. The analysis shall include:<br>a. A discussion of the functions and values currently provided by the critical area and critical area buffer on the site and their relative importance to the ecosystem in which they exist;<br>b. A discussion of the functions and values likely to be provided by the critical area and critical area buffer on the site through application of the regulations and standards of this Code over the anticipated life of the proposed development; and<br>c. A discussion of the functions and values likely to be provided by the critical area and critical area buffer on the site through the modifications and performance standards included in the proposal over the anticipated life of the proposed development; |
| ***A thorough analysis of critical area functions and values consistent with the requirements above were included in the critical areas report in Chapter 7. In the existing conditions, the site scored 41, in a scenario with an application of the standards set forth in the code scored a 40, and with the proposed mitigation the site scored 46, using a City of Bellevue habitat assessment model.*** |
| 6. A discussion of the performance standards applicable to the critical area and proposed activity pursuant to LUC 20.25H.160, and recommendation for additional or modified performance standards, if any; |
| ***Performance standards are included in the monitoring section of Chapter 8 are considered consistent with the requirements of the proposed mitigation.*** |
| 7. A discussion of the mitigation requirements applicable to the proposal pursuant to LUC 20.25H.210, and a recommendation for additional or modified mitigation, if any; and |
| ***A discussion of possible mitigation requirements and modified mitigation approach is presented consistent with the requirements above were included in Chapters 5, 7, and 8 of the project critical areas report.*** |
| 8. Any additional information required for the specific critical area as specified in the sections of this part addressing that critical area. |
| ***Data forms associated with the critical area ratings are provided in Appendices C, D, and G of the project critical areas report. A Vegetation Monitoring Plan has been prepared and is presented in Appendix H.*** |
| **C. Additional Report Submittal Requirements.** |
| 1. Unless otherwise provided, a critical areas report may be supplemented by or composed, in whole or in part, of any reports or studies required by other laws and regulations or previously prepared for and applicable to the development proposal site, as approved by the Director. |
| ***Included as supplemental information to the project critical areas report are a geotechnical study in Appendix A and a mine hazard study in Appendix B.*** |
| 2. Where a project requires a critical areas report and a mitigation or restoration plan, the mitigation or restoration plan may be included with the critical areas report, and may be considered in determining compliance with the applicable decision criteria, except as set forth in subsection C.4 of this section. |
| ***Included with the project critical areas report is a Detailed Conceptual Mitigation Plan in Appendix E, designed to establish the direction and scope of a future detailed mitigation plan.*** |
| 3. The applicant may consult with the Director prior to or during preparation of the critical areas report to obtain approval of modifications to the required contents of the report where, in the judgment of a qualified professional, more or less information is required to adequately address the potential critical area impacts and required mitigation. |
| ***In consideration of a revised ranking, a third party fisheries professional firm was engaged to review the stream classification of Coal Creek, and this report was included as Appendix F within the project critical areas report.*** |

4. Proposals to obtain reductions in regulated critical area buffers below the buffers required by this part shall include the following information in addition to the minimum critical areas report contents described in subsection B of this section. The restoration proposed to improve existing function included in the proposal must be separate from any impact mitigation proposal:

a. The specific restoration actions proposed and the specific regulated buffer dimensions proposed.

b. The functions that will be enhanced by the restoration actions, addressing at minimum habitat, hydrology, water quality and (where applicable) stream process functions.

c. Functions that will be provided outside of the reduced regulated buffer dimension proposed by the project, if any (for example, stormwater quality and quantity controls or low impact development features).

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

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

**a. The restoration actions to improve existing buffer function are extensive buffer enhancement, and these are provided to mitigate buffer reductions as described in Chapter 8 and on Sheet W1.1.**

**b. Functions that are discussed in Chapters 7 and 8 of the project critical areas report include habitat, hydrology, and water quality.**

**c. Functions that are provided outside of the mitigation action are in the project description of Chapter 7 of the Critical Areas Report.**

**d. The relative importance of enhanced functions are discussed in the mitigation section, Chapter 8.**

e. **A description of the net gain in buffer functions is provided in the functional analysis section, Chapters 7 and 8.**

## Criteria

**20.25H.255 Critical areas report – Decision criteria.**

A. General.

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

***NOTE: Part A is not applicable because the approval process would use Part B.***

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

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

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

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

**A. 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 net gain in critical area buffer function is illustrated in Appendix E and Chapter 8 of the project critical areas report.***

| |
|---|
| 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; |
| ***Enhancement of the degraded critical area buffer is a key element of the mitigation plan outlined in Chapter 8 and in Appendix E.*** |
| 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; |
| ***A combination of improvements to the buffer, low impact development design that captures run-off, and an advanced filtration and detention system will improve stormwater quality, as described by Chapters 6 and 8.*** |
| 4. Adequate resources to ensure completion of any required restoration, mitigation and monitoring efforts; |
| ***A chapter describing provisions of required bonding is included at the end of the project critical areas report. The City will need to inform the applicant of required bonding.*** |
| 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 |
| ***Based on the content of several chapters of the project critical areas report, especially the conclusions in Chapter 8, the proposed mitigation would achieve a net increase of critical area function and values.*** |
| 6. The resulting development is compatible with other uses and development in the same land use district. |
| ***The land use district which contains this parcel also features single family subdivisions similar to this proposal. The innovation of this PUD should be inspirational to others wishing to develop in the City of Bellevue, in order that their emulations and achieve innovative site design and critical area function in future projects.*** |

DEVELOPMENT SERVICES DEPARTMENT
450 110TH AVENUE NE
BELLEVUE, WA 98009-9012

Existing PUD Application: 16-143970-LK
Existing Critical Areas Land Use: 16-145946-LO
Application for Preliminary Plat Dated: 8/16/2019

# SEPA Environmental Checklist

If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit the Land Use Desk in the Permit Center between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4) or call or email the Land Use Division at 425-452-4188 or landusereview@bellevuewa.gov. Assistance for the hearing impaired: Dial 711 (Telecommunications Relay Service).

***Purpose of checklist:***
The City of Bellevue uses this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

***Instructions for applicants:***
This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies and reports. Please make complete and accurate answers to these questions to the best of your ability in order to avoid delays.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The City may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

**PLEASE REMEMBER TO SIGN THE CHECKLIST**. Electronic signatures are also acceptable.

Environmental Checklist reviewed by Peter Rosen (PR) 9/9/2019

## A. Background [help]

1. Name of proposed project, if applicable: [help]
   *Park Pointe PUD & Preliminary Plat*
   *City of Bellevue Numbers:*
   *16-145946-LO* Critical Areas Land Use Permit
   *16-143970-LK* Planned Unit Development (PUD)
   19-121109-LL Preliminary Plat

2. Name of applicant: [help]
   *Mr. Jeff Wegener / ISOLA Homes*

3. Address and phone number of applicant and contact person: [help]
   *Owner/Applicant:*
   *Mr. Jeff Wegener*
   *Isola Homes*
   *13555 SE 36th Street, Suite 320*
   *Bellevue, WA 98006*
   *(206) 737-9700*

   *Consultant Team:*
   *Mr. Toby Coenen*
   *PACE Engineers*
   *11255 Kirkland Way, Suite 300*
   *Kirkland, WA 98033-3417*
   *(425) 827-2014*

4. Date checklist prepared: [help]
   *August 16, 2019*

5. Agency requesting checklist: [help]
   *City of Bellevue*

6. Proposed timing or schedule (including phasing, if applicable): [help]
   *Phase I site improvements are expected to begin in 2020; homes will be sold in 2020-2022.*

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain. [help]
   *None identified at this time.*

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal. [help]
   *Critical Areas Report, Geotechnical Assessment Report, Arborist Report, Coal Mine Hazard Report, Supplemental Geotechnical Letter, Coal Creek Stream Typing Study, Cultural Resources Assessment for Park Pointe and Cultural Resources Assessment Addendum, Trip Generation Memorandum, Storm Drainage Report*



PR 9/9/2019

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. [help]
*No*

10. List any government approvals or permits that will be needed for your proposal, if known. [help]
*City Land Use Approvals, City Site Development (grading) Permit, City Utility Extension Permits, NPDES Constuction Stormwater General Permit, and State Dept. of Archology and Historic Preservation review related to potential archologocial resource discovery.*

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.) [help]
*Residential development of 35 single-family homes on 12.29-acre site. Development will occupy the easterly 5.96 acres of the property, with the remaining 6.33 acres of the site being retained as open space.*

*Consistent with Bellevue Municipal Code 20.30D.195, this proposal seeks approval of a preliminary plat in conjunction with the previously proposed Planned Unit Development (PUD).*

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. [help]
*The project site includes two existing parcels of land:*
- *King County Parcel 262405-9022 at 7219 Lakemont Boulevard SE (324,544 square feet), and*
- *King County Parcel 262405-9019 at 7231 Lakemont Boulevard SE (210,678 square feet)*

*Property I located within the SW ¼ OF THE NE ¼ and the NW ¼ OF SE ¼, SEC 26, TWP 24N, R5E, WM*

## B. Environmental Elements [help]

### 1. Earth [help]

a. General description of the site: [help] (select one): ☐Flat, ☒rolling, ☐hilly, ☒steep slopes, ☐mountainous, other: *Click here to enter text.*

b. What is the steepest slope on the site (approximate percent slope)? [help]
*45% (2:1)*



PR 9/9/2019

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils. [help]

*This native soil varied widely in composition across the site, including: silty sand with gravel, sand with gravel, silt with sand and gravel, and silt. Please refer to the Geotech Consultants, Inc. report and amendments.*

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. [help]

*The steep slopes north and west of the proposed development have a potential to experience shallow landslides, which would most likely be triggered by heavy rainfall or surface water directed onto the slope. Please refer to the Geo-tech Consultants, Inc. report.*

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill. [help]

*Grading will occur to 'manufacture' the site to provide home building sites within the 5.9-acre development area. Depending on the quality of the site material, the import of fill may be required. Clean structural material will be obtained from local sources.*

*A comparison of the existing and proposed ground surface levels estimates the total earthwork volumes at approximately 33,000 cubic yards of excavation and 8,300 cubic yards of fill. Balance is 24,700 cubic yards of exported material.*

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. [help]

*Erosion is possible whenever construction activity disturbs ground surface and exposes soils. However, 'Best Management Practices' will be implemented consistent with Washington State and City of Bellevue requirements.*

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? [help]

*The project will create 3.05 acres of impervious surface. This represents 25% of the 12.29-acre project site, and 51% of the 5.96-acre development area.*

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: [help]

*Construction site erosion control measures will be implemented under the Department of Ecology's Construction Stormwater General Permit. The permit mandates specific eorision control measures (Best Management Practices), water quality testing, monitoring of effectiveness, inspection and agency reporting.*

Erosion control regulated by BCC 23.76



PR 9/9/2019

**2. Air** [help]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known. [help]
*Emissions typical of construction activity will result from equipment during construction. Following construction of the homes, vehicles associated with residential development will be present.*

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. [help]
*None known.*

c. Proposed measures to reduce or control emissions or other impacts to air, if any: [help]
*Sound attenuating equipment will be utilized. Work hours will be limited by city code to reduce impacts.*

**3. Water** [help]

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. [help]
Three distinct Type N streams bound the north, west and south edge of the developed area. Coal Creek is a Type F stream forming part of the property's south boundary. Refer to Talasaea Consultant's and Confluence Environmental's reports for additional information.

Additionally, the off-site sewer and water extensions running north in Lakemont Boulevard cross two unnamed streams. Bellevue's stream inventory included in Chapter 11 of the comprehensive plan indicates both are potentially fish bearing (PF). Both streams cross beneath Lakemont Boulevard through 36-inch concrete culverts and are between 15 and 25 feet below the road surface.

The proposed sewer and water mains will have no impact on the culverts or the adjacent type PF streams.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans. [help]
*Yes, significant work will occur within 200 feet of the above described waters. Adjacent to the four onsite streams, buffer areas will be enhanced in accordance with*



PR 9/9/2019

*Talasaea's mitigation plans. Beyond the established buffers, the improvements are described in PACE's preliminary engineering plans.*

*The proposed sewer and water extensions cross the two Lakemont Boulevard type PF streams. These crossings are confined to the road prism where the streams run through culverts and possess no natural stream charachteristics. However, the stream classification may prompt State Department of Fish & Wildlife to require Hydraulic Project Approval for the utility crossings.*

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. [help]
*None proposed or expected.*

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. [help]
*No*

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan. [help]
*No. FEMA's Flood Insurance Rate Map of King County (panel 667 of 1725) indicates the Site and adjacent portions of Coal Creek are "determined to be outside 500-year floodplain."*

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge. [help]
*No*

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known. [help]
*No*

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals…; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve. [help]
*Not applicable.*

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection



PR 9/9/2019

and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe. [help]
*The Storm Drainage Report (SDR) describes in full detail the collection, conveyance, detention, treatment and discharge of storm water.*

2) Could waste materials enter ground or surface waters? If so, generally describe. [help]
*No waste materials are expected, however should they be found, BMP measures will be utilized to provide protection.*

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe. [help]
*Refer to Storm Drainage Report*

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any: [help]
*Refer to Storm Drainage Report*

Project will comply with erosion and sediment controls per BCC 23.76

**4. Plants** [help]

a. Check the types of vegetation found on the site: [help]
☒deciduous tree: alder, maple, aspen, other: *Click here to enter text.*
☒evergreen tree: fir, cedar, pine, other: *Click here to enter text.*
☒shrubs
☒grass
☒pasture
☐crop or grain
☐Orchards, vineyards or other permanent crops.
☒wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other: *Click here to enter text.*
☐water plants: water lily, eelgrass, milfoil, other: *Click here to enter text.*
☐other types of vegetation: *Click here to enter text.*

b. What kind and amount of vegetation will be removed or altered? [help]
*Vegetation scheduled for removal includes: lawn, pasture, second growth trees, invasive plants such as blackberries, and assorted shrubs.*

c. List threatened and endangered species known to be on or near the site. [help]
*None identified.*

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: [help]
*Native plant materials have been included in the Preliminary Landscape design plans and buffer enhancement plans.*

e. List all noxious weeds and invasive species known to be on or near the site. [help]
*Noxious weed and invasive plant species are described in the critical areas report.*



PR 9/9/2019

## 5. Animals [help]

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. [help]

Examples include:

birds: ☒hawk, ☐heron, ☐eagle, ☒songbirds, other: *Cl…ter text.*
mammals: ☒deer, ☒bear, ☐elk, ☐beaver, other: *Cli…r text.*
fish: ☐bass, ☐salmon, ☐trout, ☐herring, ☐shellfish, other: *Click here to enter text.*

raccoon, coyote, potential cougar

b. List any threatened and endangered species known to be on or near the site. [help]
*None identified.*

c. Is the site part of a migration route? If so, explain. [help]
*Not to our knowledge.*

Western Washington is part of Pacific Flyway

d. Proposed measures to preserve or enhance wildlife, if any: [help]
*Landscape planting, buffer enhancement. See report by Talasaea Consultants for additional discussion.*

e. List any invasive animal species known to be on or near the site. [help]
*None known.*

## 6. Energy and Natural Resources [help]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc. [help]
*Electricity and natural gas. Homeowners may elect to use wood burning stoves.*

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. [help]
*No*

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any: [help]
*The builder may elect to use low-flow water fixtures and other "Built-Green" items.*

## 7. Environmental Health [help]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe. [help]
*No*



PR 9/9/2019

1) Describe any known or possible contamination at the site from present or past uses. [help]
*None*

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity. [help]
*None known.*

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project. [help]
*None*

4) Describe special emergency services that might be required. [help]
*None*

5) Proposed measures to reduce or control environmental health hazards, if any: [help]
*Environmental health is a priority. Standard construction methods and activities will employ Best Management Practices.*

b. Noise [help]

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? [help]
*Existing noise is typical of existing urban areas.*

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indi-cate what hours noise would come from the site. [help]
*Short-term: Construction equipment during permitted daylight hours. Long-term: Noise typical of residential neighborhoods.*

3) Proposed measures to reduce or control noise impacts, if any: [help]
*Typical sound mitigation equipment.*

Noise from construction activity is limited to the hours between 7 a.m. to 6 p.m. on weekdays and 9 a.m. to 6 p.m. on Saturdays and prohibited on Sundays and other legal holidays (BCC 9.18)

**8. Land and Shoreline Use** [help]

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe. [help]
*The site and adjacent properties are low-density residential*

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use? [help]
*The site has been used for low-intensity grazing. No current farming activity.*



PR 9/9/2019

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how: [help]
*No.*

c. Describe any structures on the site. [help]
*Existing structures include two aging residential structures and associated sheds.*

d. Will any structures be demolished? If so, what? [help]
*All buildings within the development area will be removed.*

e. What is the current zoning classification of the site? [help]
*Residential R-1 and R-3.5*

f. What is the current comprehensive plan designation of the site? [help]
*Residential single-family medium.*

g. If applicable, what is the current shoreline master program designation of the site? [help]
*Not applicable.*

h. Has any part of the site been classified as a critical area by the city or county? If so, specify. [help]
*Yes. Regulated critical areas include streams, wetlands, steep slopes and coal mine hazards.*

i. Approximately how many people would reside or work in the completed project? [help]
*35 homes x 2.5/home = 88+*

j. Approximately how many people would the completed project displace? [help]
*1-4 people*

k. Proposed measures to avoid or reduce displacement impacts, if any: [help]
*None*

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: [help]
*Homes will be designed to be architecturally pleasing and consistent with the surrounding residential neighborhoods. Refer to preliminary architectural plans for additional information.*

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any: [help]
*Native planting has been incorporated into the perimeter design to be compatible with surrounding natural park land.*



PR 9/9/2019

**9. Housing** [help]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing. [help]
*35 homes will be built, priced in the middle income range for Bellevue.*

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. [help]
*Two middle income.*

c. Proposed measures to reduce or control housing impacts, if any: [help]
*None*

**10. Aesthetics** [help]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? [help]
*35 feet to ridgeline. The exteriors are likely to be cedar or visually equal.*

b. What views in the immediate vicinity would be altered or obstructed? [help]
*None.*

c. Proposed measures to reduce or control aesthetic impacts, if any: [help]
*Aesthetics are a high priority to the builder, therefore, great attention is given to the architectural design and site landscape treatment. Please refer to the previously submitted conceptual plans.*

**11. Light and Glare** [help]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur? [help]
*No unusual light or glare is anticipated.*

b. Could light or glare from the finished project be a safety hazard or interfere with views? [help]
*No*

c. What existing off-site sources of light or glare may affect your proposal? [help]
*None known.*

d. Proposed measures to reduce or control light and glare impacts, if any: [help]
*Street lights are required. Lighting will have directive shields to limit and control glare.*



PR 9/9/2019

**12. Recreation** [help]

a. What designated and informal recreational opportunities are in the immediate vicinity? [help]
*Cougar Mountain Regional Park, Newcastle Golf Club, Lakemont Highlands Neighborhood Park and Lewis Creek Park as well as generous hiking trails.*

b. Would the proposed project displace any existing recreational uses? If so, describe. [help]
*No*

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: [help]
*The proposal will provide on-site recreation areas and trails that will provide a walking connection to Coal Creek Regional Park corridor and the Cougar Mountain Park.*

**13. Historic and cultural preservation** [help]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe. [help]
*Yes. Refer to the Cultural Resources Assessment and Addendum prepared by Tierra Right-of-Way*

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources. [help]
*The historic coal mine activity may represent local cultural value. Refer to reporting prepared by Tierra Right-of-Way.*

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc. [help]
*A Cultural Resources Assessment and Addendum was prepared by Tierra Right-of-Way*

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required. [help]
*The historic coal mine remnants will not be disturbed. They are located deeply below and out of the development area. Project construction will only impart areas that have undergone significant disruption through farming and clearing.*

**14. Transportation** [help]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any. [help]



PR 9/9/2019

*Lakemont Boulevard provided public R.O.W. to the site.*

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop? [help]
*King County Metro Bus Route 824 passes the property but does not presently stop near the project site.*

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate? [help]
*Approximately 123 parking spaces, including 70 garage stalls, 6 on-street spaces, and 53 driveway spaces.*

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private). [help]
*Yes, new private roadways within the PUD will be constructed, and Lakemont Blvd will be widened.*

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. [help]
*No*

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates? [help]
*Gibson Traffic Consultants Inc. determined the project will produce 304 trips per day, and 32 PM peak hour trips.*

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe. [help]
*No.*

h. Proposed measures to reduce or control transportation impacts, if any: [help]
*The builder will encourage carpool, use of park and ride facilities, as well as public transit.*

**15. Public Services** [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe. [help]
*Yes, typical of residential.*

b. Proposed measures to reduce or control direct impacts on public services, if any. [help]
*Homeowners will pay King County property taxes, and project developer will be assessed impact fees.*

**16. Utilities** [help]

a. Circle utilities currently available at the site: [help]



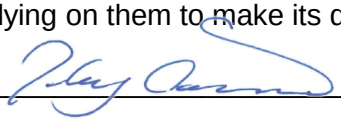
PR 9/9/2019

electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other

c. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed. [help]
*The development will construct extensions of water and sanitary sewer from about 1,400 LF north of the property.*

## C. Signature [help]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: 

Name of signee: *Toby Coenen, PE*
Position and Agency/Organization: *Project Manager, PACE Engineers, Inc.*
Date Submitted: *August 16, 2019*



PR 9/9/2019