NARRATIVE DESCRIPTION

1811 Richards Road – 12-127201-DC

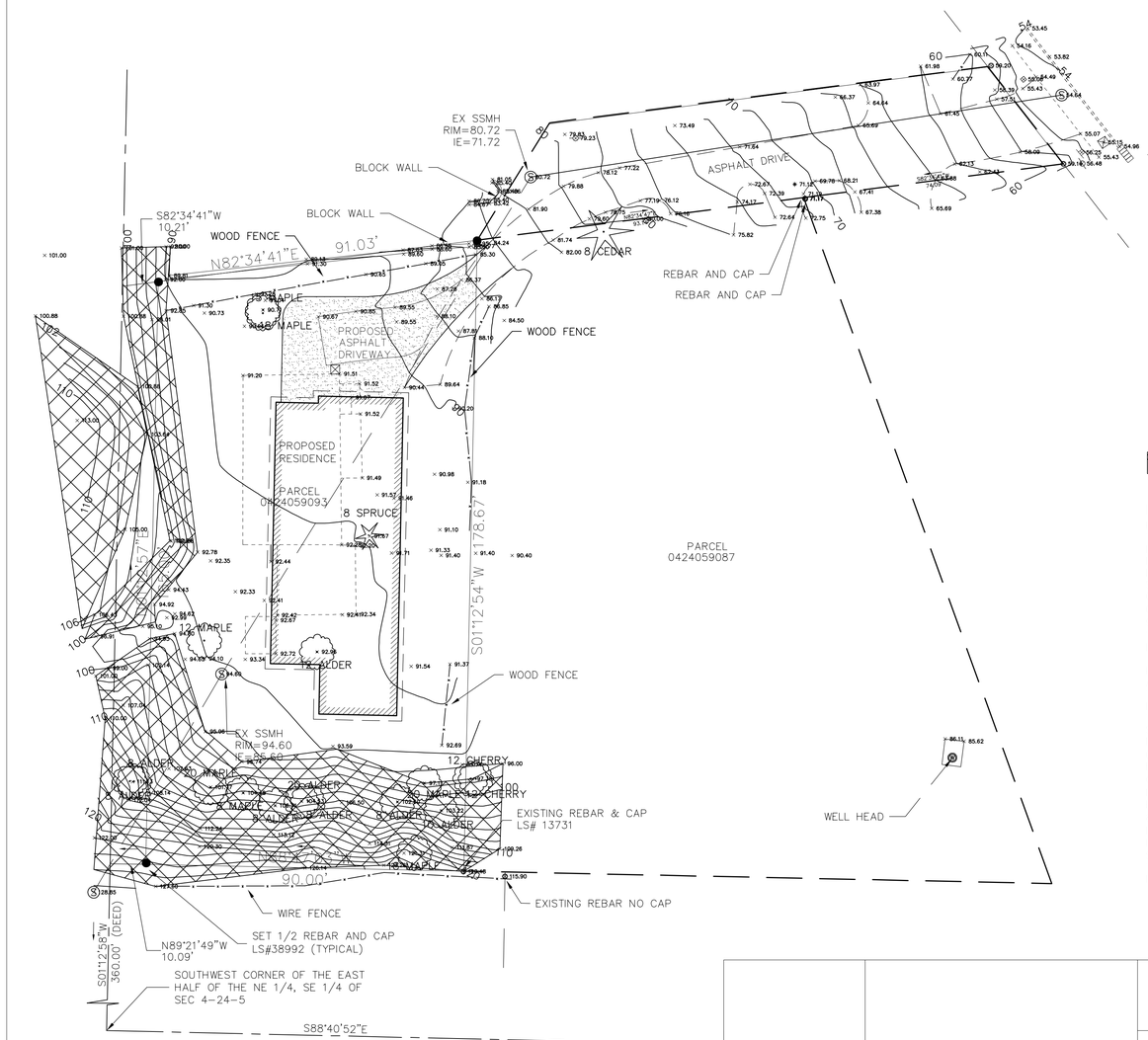
To comply with City of Bellevue Land Use Code Section (LUC) 20.25H.025, the proponent has submitted a Steep Slope Mitigation Plan. The proponent hired *J. S. Jones and Associates, Inc.*, an environmental consulting firm, and Earth Solutions, a geotechnical engineering firm, to prepare the steep slope mitigation plan and geotechnical study. The results of these studies were used in the development of plans (clearing and grading, temporary erosion control plan, building plan, mitigation plan) and to comply with all applicable land use requirements for development for the City of Bellevue.

The proponent plans to replace an existing single-family residence with a new single-family residence. The existing and proposed structures are located within the steep slope buffer. The steep slope structure setback requirement is 50 feet from the top-of-slope and 75 feet from the toe-of-slope. Expansion of the existing footprint in the buffer may only be allowed pursuant to the provisions of LUC 20.25H.230 which require a Critical Areas Land Use Permit.

The lot area is 15,467 sf. The proposed building footprint is 3,407 sf. The proposed building envelope and use area is 9,505 sf. The proposed driveway will be 1,416 sf of pervious asphalt. Existing asphalt will be removed. The front setback is 20 feet on the side of the driveway. The side setback is 15 feet on the lower side of the structure, which will move the proposed residence farther from the toe of slope than the existing structure. The rear setback is 25 feet. The proposed mitigation is vegetative enhancement of 5,962 sf, including the steep slope and areas adjacent to the toe of the steep slope. The proposed mitigation is 1.236:1= building footprint + driveway/mitigation area= 5,962 sf /4,823 sf.

The impacted wetland and stream buffers will be mitigated with on-site vegetative enhancement (see Steep Slope Mitigation Plan). Mitigation will include removal of invasive plant species, i.e. English ivy and Himalayan blackberry, and establishment of native plant species. Existing native plants in the mitigation area will retained as much as possible. All the necessary requisites for protecting various impacts to the environmental elements will be implemented before, during and after construction (see environmental checklist).

NE 1/4, SE 1/4, SEC. 4, T. 24N, R. 5E, W.M.



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

SURVEY NOTES

INSTRUMENT: TOPCON GPT 3000W TOTAL STATION
METHOD USED: FIELD TRAVERSE WITH ACTUAL FIELD MEASUREMENTS AND ANGLES WAC 332-130-090
DATE OF SURVEY: OCTOBER 2012
BASIS OF BEARING: E LINE OF THE SE 1/4 OF SECTION 4-25-5 (N1°38'10"E)
BENCHMARK: CITY OF BELLEVUE BENCHMARK #133 60'E OF CENTERLINE OF RICHARDS RD & 80'N OF CENTERLINE OF DRIVEWAY TOP NW CORNER WEST END 3' CONC RETAINING WALL ELE=90.80
REFERENCE SURVEYS: 20050328900001 9909179001

LEGEND

- SANITARY SEWER MH
- UTILITY POLE
- POWER JUNCTION BOX
- POWER PEDESTAL
- TELEPHONE VAULT
- TELEPHONE CABINET
- SET 1/2 REBAR AND CAP LS# 38992
- 40% SLOPE +
- SIGN
- CONIFER TREE
- DECIDUOUS TREE
- MAIL BOX
- PK NAIL
- MON IN CASE/
- EX REBAR / PIPE AS NOTED
- WATER WELL

LEGAL DESCRIPTION

PARCEL A:
THAT PORTION OF SECTION 4, TOWNSHIP 24 NORTH, RANGE 5 EAST, WILLAMETTE MERIDIAN, IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:
BEGINNING 360 FEET NORTH AND 10 FEET EAST OF THE SOUTHWEST CORNER OF THE EAST HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER; THENCE NORTHERLY 01°19'10" EAST 165 FEET; THENCE NORTHERLY 82°40'54" EAST 91.03 FEET; THENCE SOUTHERLY 01°19'10" WEST 178.67 FEET; THENCE NORTHERLY 88°40'50" WEST 90 FEET TO THE POINT OF BEGINNING.

PARCEL B:
A NON-EXCLUSIVE EASEMENT FOR INGRESS AND EGRESS OVER THE FOLLOWING DESCRIBED PROPERTY:
BEGINNING AT THE SOUTHWEST CORNER OF THE EAST HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 24 NORTH, RANGE 5 EAST, WILLAMETTE MERIDIAN, IN KING COUNTY, WASHINGTON; THENCE NORTH 01°08'26" EAST 525 FEET ALONG THE WESTERLY LINE OF SAID EAST HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER; THENCE SOUTH 88°40'50" EAST 10 FEET; THENCE NORTH 82°40'34" EAST 91.03 FEET TO THE TRUE POINT OF BEGINNING OF EASEMENT HEREIN DESCRIBED; THENCE NORTH 82°40'54" EAST 167.23 FEET, MORE OR LESS, TO THE WESTRLY MARGIN OF COUNTY ROAD; THENCE NORTH 37°50'42" WEST 34.88 FEET ALONG SAID WESTERLY LINE OF COUNTY ROAD; THENCE SOUTH 82°40'54" WEST 125 FEET; THENCE SOUTHWESTERLY TO THE TRUE POINT OF BEGINNING AS SET OUT IN RECORDING NUMBER 4940510.

SITE PLAN
1811 132ND PLACE SOUTHEAST
BELLEVUE, WA 98005

		DATE 09/14/15
	SCALE NOTED	SHEET 1 OF 1

November 6, 2015
ES-4045

Earth Solutions NW LLC

- Geotechnical Engineering
- Construction Monitoring
- Environmental Sciences

Than Associated, LLC
13400 Northup Way #31
Bellevue, Washington 98005

Attention: Mr. Charles Jackson

Subject: Geotechnical Consultation
1811 Richards Road
Bellevue, Washington

Dear Mr. Jackson:

In accordance with your request, Earth Solutions NW, LLC (ESNW) has prepared this letter providing recommendations regarding the stability of the slopes on the subject site to satisfy the City of Bellevue critical areas report format as described in LUC 20.25H.125, LUC 20.25H.145, and LUC 20.25H.140.

We understand construction of a new residence is planned for the site following the demolition of the existing single-family residence. Infiltration of stormwater runoff from impervious surfaces is being examined as a part of the redevelopment plan for the subject site, as required by the City of Bellevue. We have provided preliminary recommendations for stormwater infiltration based on subsurface exploration and textural analysis in accordance with the 2009 King County Surface Water Design Manual as adopted by the City of Bellevue. We have also provided a slope stability assessment as part of our scope of services for this project.

The property is located on the west side of Richards Road, at the terminus of 132nd Place Southeast in Bellevue, Washington. The site consists of a residential property which is currently developed with a single-family residence. Slopes meeting the criteria for critical areas are present on the west and south sides of the site. The slopes ascend approximately 25 feet from the site towards the south neighboring property, and approximately 20 feet on the west side of the site. Reduction of the critical areas buffers is being considered.

LUC 20.25H.125 Performance standards - Landslide hazards and steep slopes

Sections A and B

The proposed re-development does not include modifications to the steep slope areas. The proposed structure will be located to preserve the most critical portion of the site (steep slope) and the vegetation present on the slope.

Section C

In our opinion, through site reconnaissance, subsurface exploration, and analysis described later in this report, the proposed re-development will not result in a greater risk or a need for increased buffers on neighboring properties. The proposed re-development does not include modifications to the critical area. Therefore, no increase in instability to the critical slopes on and around the subject site will result.

Sections D through J

No disturbance or construction is planned for the steep slope present on the south, and west sides of the subject site. Therefore, the discussion of retaining walls, grade changes outside of the building footprint, foundation design, pole-type construction, pile deck support, and impervious surfaces in the critical area is not applicable.

The proposed residential structure to be sited within the normal buffer required by the City of Bellevue, will utilize gutters and downspouts to direct stormwater runoff to an approved discharge point so as to not increase instability in the area surrounding the steep slope.

LUC 20.25H.140 A. Limitation on Modification

Based on our review of the project plans and available resources, the subject site is not located in a coal mine hazard area.

LUC 20.25H.140 B. Area Addressed in Critical Area Report

1. Site and Construction Plans

The site plan/topographic survey are attached. The locations of the exploratory borings and test pit are shown on the attached site plan..

2. Assessment of Geological Characteristics

The referenced geologic map resource identifies glacial outwash (Qgo) deposits across the site and surrounding areas. The referenced SCS soil survey identifies Everett-Alderwood gravelly sandy loam (EwC) series soils across the entirety of the site. Everett-Alderwood soils are typified by glacial outwash deposits.

The soil conditions observed at the boring and test pit locations are generally consistent with glacial outwash deposits.

A representative of ESNW observed, logged and sampled three borings drilled with a mini-tracked drill rig, and one test pit excavated with hand tools on the site. One boring was located on the south side of the existing single-family residential structure, one on the west side of the existing structure, and the third boring was located on the north side of the project area. The test pit location was on the slope to the south of the existing residence. The borings were drilled for the purposes of characterizing the subsurface soil and groundwater conditions.

Topsoil

Topsoil was encountered at the boring and test pit locations. The topsoil was observed in a four to six inch thicknesses, and was in a loose condition.

Fill

Fill was not encountered at the boring locations, nor the test pit location. Fill soil may be encountered surrounding the existing residence and utility alignments, and more than likely would be in a medium dense condition.

Native Soil

Underlying the topsoil at the borings located surrounding the residential structure, native soil consisting primarily of medium dense material transitioning to dense glacial outwash was encountered extending to the maximum exploration depth of 21.5 feet below existing grades. The native soil consisted of poorly graded sand (Unified Soil Classification, SP-SM) and silt (ML). The native soil transitioned from a loose to medium dense condition, to dense at approximately 15 feet in depth at the boring locations.

The subsurface conditions observed at the boring location on the west side of the site, consisted of poorly graded sand with silt (Unified Soil Classification, SP-SM) in a medium dense to dense condition. The poorly graded sand with silt transitioned to a silt (ML) at a depth of 12 below existing surface elevation. The silt was observed in a stiff condition to a depth of 15 feet, where this material transitioned into a dense poorly graded sand which extended to the limits of exploration (21.5 feet).

A representative of ESNW performed a visual slope reconnaissance (October 2015) to observe the current condition of the slopes on the west and south sides of the proposed building envelope.

The visual slope reconnaissance was performed in order to identify any visual signs of instability on the steep slopes. Signs of instability are surface seeps, slumps or scarps, evidence of historic landslides, excessively pistol butted tree trunks, and/or hummocky terrain. No signs of instability on the surface were observed at that time (October 2015) on the subject property.

3. Analysis of Proposal

Steep slopes meeting the criteria for a critical area pursuant with the City of Bellevue LUC 20.25 are present within the western and southern portions of the subject site. The slopes ascend from the existing building pad elevation towards the neighboring properties.

The proposed new building envelope will roughly mimic the current footprint for the existing single-family residence.

No modifications to the steep slopes on the west and south sides of the site are a part of the proposed site re-development, as the development envelope is sited below the steep slope area. Therefore, stormwater runoff volumes on the slope will not be increased; nor will structural loading on the slopes be increased.

The proposed building footprint will encroach within the 75 foot steep slope buffer from the toe-of-slope. The proposed shortest distance between the proposed new residential development and toe-of-slope will be 10 feet at the southeast corner of the structure, and 30 feet on the west side of the proposed building.

We have evaluated the design and inherent engineering involved in construction of the proposed single-family residential structure with respect to slope stability for the site. This entailed a site visit to perform a slope reconnaissance, in search of evidence of instability in the form of surface seeps, hummocky terrain, excessively pistol-butted tree trunks, or scarps which may be indicative of instability past or present.

No signs of a past landslide, atypical soil movement indicating instability, or active landslides were observed during our site visit (October 2015). Mature native trees and forest undergrowth were observed on the steep slope.

ESNW performed slope stability analyses of the site, including the slope located on the west side of the site using the data obtained through our subsurface exploration. The data gathered from our fieldwork was utilized in our analysis employing GeoStudio Slope/W software. The stability analysis indicated factors of safety of 0.460 and 0.748 for seismic and static conditions, respectively when modeling a slope failure on-site. The soil parameters utilized in our stability modeling are as follows:

Soil Type	Unit Weight	Cohesion	Phi Angle
Medium Dense SP-SM	125 pcf	0 psf	35 degrees
Medium Stiff ML	125 pcf	300 psf	28 degrees

Given the lack of planned modifications to the steep slope, the risk of instability on the steep slope will not be increased.

4. Minimum Critical Area Buffer and Building Setback

In our opinion, the buffer and setback from the toe-of-slope can be reduced as proposed without increasing the risk to property from the current site configuration. No indication of past or current instability was observed on the slope during our reconnaissance. However, the potential for landslides, particularly surficial debris flow type failures, exists on the slope. Given the fact that no modifications are planned to the steep slope, the risk of landslide activity will not be increased by the planned development.

LUC 20.25H.145 Critical Areas Report - Approval of modification

A. Will not increase the threat of the geological hazard to adjacent properties over conditions that would exist if the provisions of this part were not modified

It is our opinion that due to the project plans not including a modification to the slope to the west and south of the proposed residence, the risk of damage to adjacent properties will not be increased by the proposed re-development on the subject site.

B. Will not adversely impact other critical areas

The proposed re-development will not entail any modifications to the steep slope on the subject site, therefore it is our opinion that there will be no adverse impact to other critical areas on or around the subject site given best management practices for controlling surface water both during and after construction are employed.

C. Is designed so that the hazard to the project is eliminated or mitigated to a level equal to or less than would exist if the provisions of this part were not modified

No planned modification to the steep slope area is proposed. Therefore, the hazard to the project will be no more than would be given the current configuration of the development.

D. Is certified as safe as designed and under anticipated conditions by a qualified engineer or geologist, licensed in the state of Washington

Due to the lack of proposed modifications to the steep slope on the subject site, there is no decrease in the level of safety in regards to the slope.

E. The applicant provides a geotechnical report prepared by a qualified professional demonstrating that modification of the critical area buffer will have no adverse impacts on the stability of any adjacent slopes, and will not impact stability of any existing structures

Through our review of the proposed re-development, we have determined that there will be no increased risk or adverse impacts on the stability of any adjacent slopes or structures. We base this opinion on the fact that there are no planned modifications to the steep slope, and best management practices will be utilized during and after construction of the proposed single-family residence.

F. Any modification complies with recommendations of the geotechnical support with respect to best management practices, construction techniques or other recommendations

There is no proposed modification to the steep slope on the subject site, but the reduction of the steep slope buffer and setback to 10 for a new residence is being proposed. In our opinion, given that industry-wide best management practices are utilized for stormwater management, construction of the proposed single-family residence will not increase global instability on, and around the subject site.

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

There are no proposed changes, or modification to the steep slope, or vegetation on and around the slope on the subject site. Any species present at the time of proposal on the site will not be adversely affected given the project plans for re-development, and the proposed site layout will not vary from the current site configuration. It is our opinion given the lack of modification to the area to the west and south of the residence, the risk to any habitat or species of local importance will not be adversely impacted by the proposed re-development.

PRELIMINARY INFILTRATION EVALUATION

Our infiltration evaluation consisted of textural analyses of representative soils to assist in characterizing the soils to provide preliminary design infiltration rates conducted in accordance with the 2005 DOE Stormwater Management Manual. Our test sites were located surrounding the existing residential structure.

Textural Analyses

Textural analyses were performed on representative soil samples collected from the test sites at variable depths. The textural classifications were performed in accordance with the USDA sieve method. This classification differs from the USCS classification method in that the sand fraction of the sample is based on the minus #10 sieve fraction as opposed to the minus #4 sieve fraction used for USCS classification.

The native soils encountered in the borings consisted of fine gray sand at boring location B-1 at a depth of five feet, slightly gravelly sand at boring location B-2 at a depth of five feet, and slightly gravelly sand at boring location B-3 at a depth of 15 feet, based on the USDA textural classification.

Preliminary Infiltration Recommendations

In our opinion, based on textural analysis an infiltration rate of 2.0 inches per hour can be used for preliminary design in the fine sand soils, and a rate of 10 inches per hour can be used for the gravelly sand soils.

No groundwater was observed at the time of our fieldwork (October 2015). However, designs should provide a minimum of three feet of separation between the bottom of infiltration facilities and the seasonal high water table, or the silt layer observed at boring location B-1 at a depth of 11.5 feet below the existing ground surface.

Further in-situ testing may be required for confirmation of these preliminary infiltration rates, which ESNW can provide upon request. In our opinion infiltration of stormwater runoff from impervious surfaces is feasible from a geotechnical standpoint.

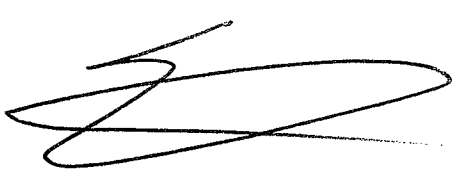
Limitations

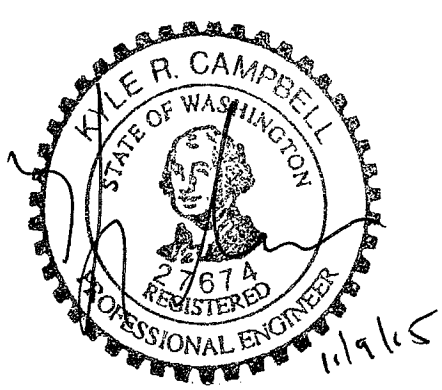
The recommendations and conclusions provided in this letter are professional opinions consistent with the level of care and skill that is typical of other members in the profession currently practicing under similar conditions in this area. Our recommendations are based on the information available at the time of this letter preparation. A warranty is not expressed or implied.

We trust this letter meets your current needs. If you have any questions, or if additional information is required, please call.

Sincerely,

EARTH SOLUTIONS NW, LLC



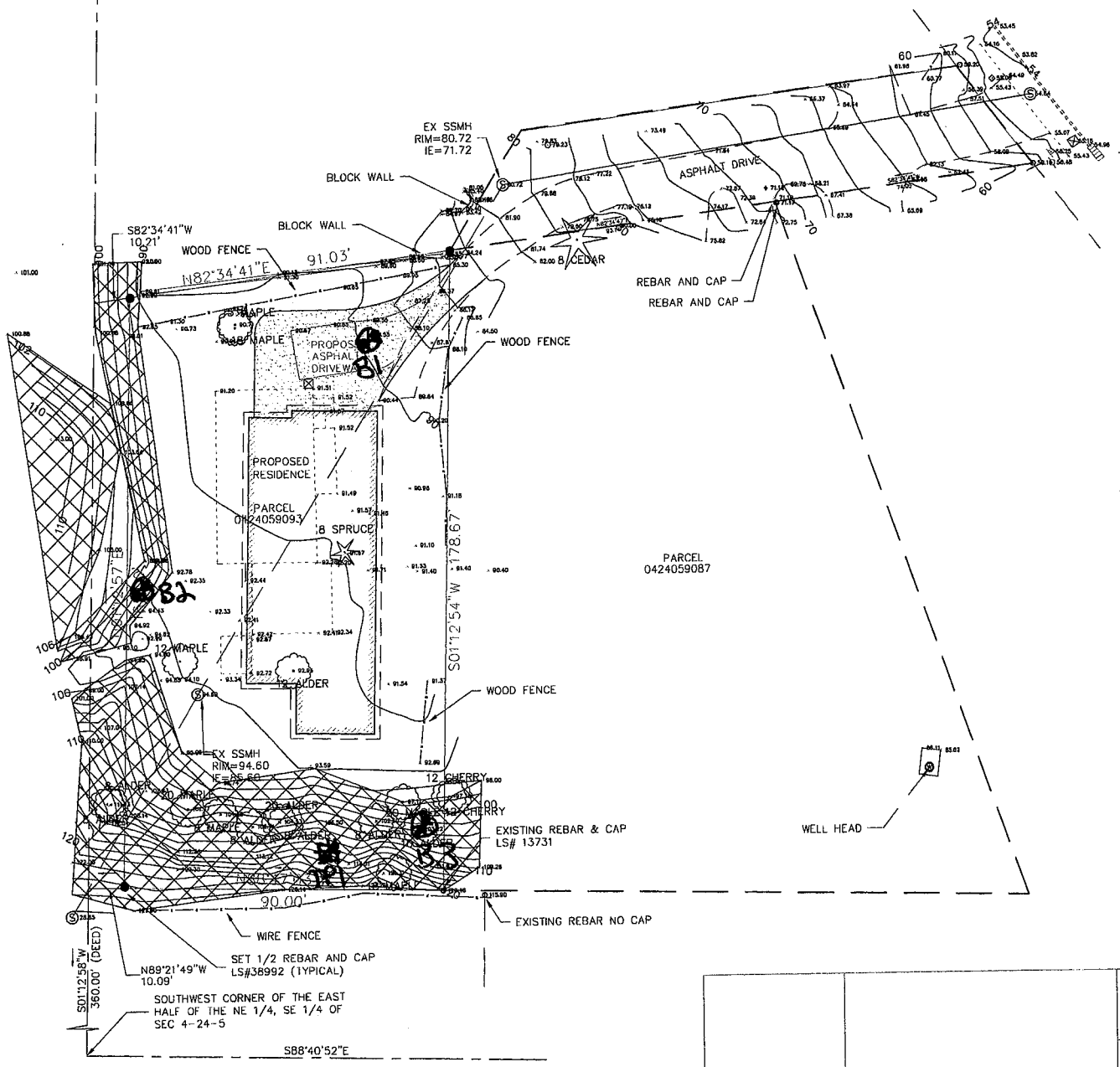


Stephen H. Avril
Project Geologist

Kyle R. Campbell, P.E.
Principal

Attachments: Boring Location Plan with Topographic Survey
Slope W Output, and Subsurface Logs

NE 1/4, SE 1/4, SEC. 4, T. 24N, R. 5E, W.M.



GRAPHIC SCALE

20 0 10 20 40 60

(IN FEET)
1 inch = 20 ft.

SURVEY NOTES

INSTRUMENT: TOPCON GPT 3000W TOTAL STATION
METHOD USED: FIELD TRAVERSE WITH ACTUAL FIELD MEASUREMENTS AND ANGLES WAC 332-130-090
DATE OF SURVEY: OCTOBER 2012
BASIS OF BEARING: E LINE OF THE SE 1/4 OF SECTION 4-25-5 (N1°38'10"E)
BENCHMARK: CITY OF BELLEVUE BENCHMARK #133
60'E OF CENTERLINE OF RICHARDS RD & 80'N OF CENTERLINE OF DRIVEWAY
TOP NW CORNER WEST END 3' CONC RETAINING WALL ELE=90.80
REFERENCE SURVEYS: 20050328900001
9909179001

LEGEND

- SANITARY SEWER MH
- UTILITY POLE
- POWER JUNCTION BOX
- POWER PEDESTAL
- TELEPHONE VAULT
- TELEPHONE CABINET
- SET 1/2 REBAR AND CAP LS# 38992
- SIGN
- CONIFER TREE
- DECIDUOUS TREE
- MAIL BOX
- PK NAIL
- MON IN CASE/
- EX REBAR / PIPE AS NOTED
- WATER WELL
- 40% SLOPE +

LEGAL DESCRIPTION

PARCEL A:
THAT PORTION OF SECTION 4, TOWNSHIP 24 NORTH, RANGE 5 EAST, WILLAMETTE MERIDIAN, IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:
BEGINNING 360 FEET NORTH AND 10 FEET EAST OF THE SOUTHWEST CORNER OF THE EAST HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER; THENCE NORTHERLY 01°19'10" EAST 165 FEET; THENCE NORTHERLY 82°40'54" EAST 91.03 FEET; THENCE SOUTHERLY 01°19'10" WEST 178.67 FEET; THENCE NORTHERLY 88°40'50" WEST 90 FEET TO THE POINT OF BEGINNING.

PARCEL B:
A NON-EXCLUSIVE EASEMENT FOR INGRESS AND EGRESS OVER THE FOLLOWING DESCRIBED PROPERTY:
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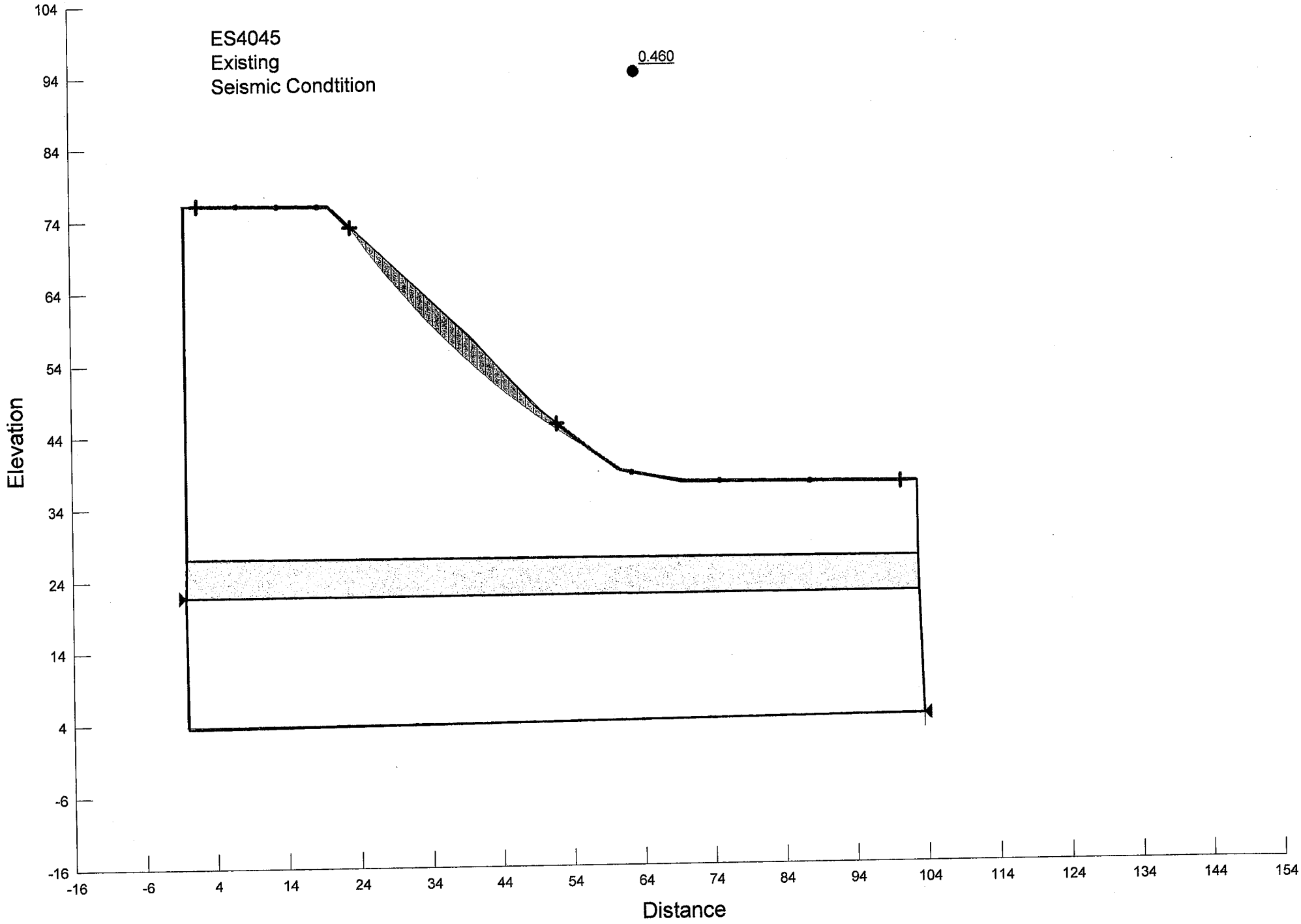
BOUNDARY & TOPO
1811 132ND PLACE SOUTHEAST
BELLEVUE, WA 98005

	DATE	JOB NO.
	09/14/15	15080
	SCALE	SHEET
	NOTED	1 OF 1


ES4045
Existing
Seismic Condtition
0.460
Elevation
104
94
84
74
64
54
44
34
24
14
4
-6
-16
-16
-6
4
14
24
34
44
54
64
74
84
94
104
114
124
134
144
154
Distance

Richards Road

File Information

Created By: Steve Avril
Revision Number: 21
Last Edited By: Steve Avril
Date: 11/6/2015
Time: 2:23:18 PM
File Name: ES4045 A-A' existing seismic.gsz
Directory: C:\Users\steve.avril\Documents\
Last Solved Date: 11/6/2015
Last Solved Time: 2:24:31 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

Richards Road

Description: Slope Stability for Richards Road
Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Left to Right
    Allow Passive Mode: No
    Slip Surface Option: Entry and Exit
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: No
    Tension Crack
        Tension Crack Option: (none)
FOS Distribution

FOS Calculation Option: Constant

Advanced

Number of Slices: 30
Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 0.1 ft
Optimization Maximum Iterations: 2000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1

Materials

Medium Dense SP-SM

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 0 psf
Phi: 35 °
Phi-B: 0 °

Medium Stiff ML

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 300 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Entry and Exit

Left Projection: Range
Left-Zone Left Coordinate: (1.86802, 76.06998) ft
Left-Zone Right Coordinate: (23.265583, 72.935583) ft
Left-Zone Increment: 4
Right Projection: Range
Right-Zone Left Coordinate: (52.062769, 45.246488) ft
Right-Zone Right Coordinate: (100.43305, 36.575647) ft
Right-Zone Increment: 4
Radius Increments: 4

Slip Surface Limits

Left Coordinate: (-0.1820694, 21.735764) ft
Right Coordinate: (103.48336, 4.3746527) ft

Seismic Loads

Horz Seismic Load: 0.25
Ignore seismic load in strength: No

Regions

	Material	Points	Area (ft^2)
Region 1	Medium Dense SP-SM	1,2,3,4,5,6,7,8,9,10,11,12	2634.3466
Region 2	Medium Stiff ML	11,13,14,12	523.4564
Region 3	Medium Dense SP-SM	13,15,16,14	1835.1408

Points

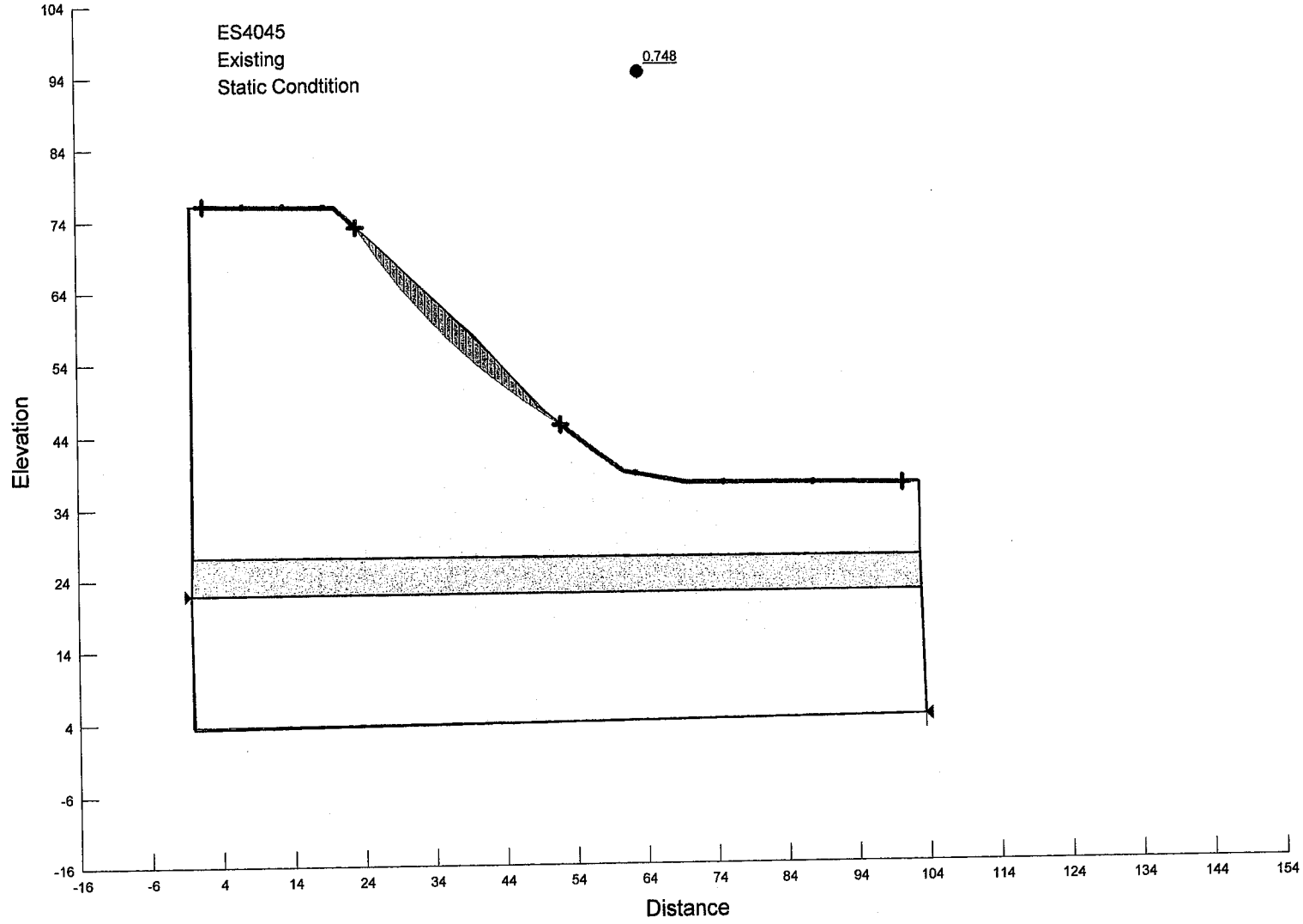
	X (ft)	Y (ft)
Point 1	0.1369011	76.097458
Point 2	20.232046	75.778488
Point 3	36.909648	60.148931
Point 4	39.82595	57.597167
Point 5	48.802693	47.800214
Point 6	57.004793	41.375236
Point 7	60.878006	38.641203
Point 8	69.581346	37.000783
Point 9	92.045985	36.681812
Point 10	102.84542	36.545111
Point 11	102.84542	26.429188
Point 12	-0.0453677	27.067129
Point 13	102.98212	21.599062
Point 14	-0.1820694	21.735764
Point 15	103.48336	4.3746527
Point 16	0.1369011	3.417741

Critical Slip Surfaces

	Number	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	107	0.460	(111.486, 133.439)	106.975	(23.2656, 72.9356)	(56.9923, 41.385)

Slices of Slip Surface: 107

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	107	23.834085	72.122905	0	10.846084	7.59451	0
2	107	24.97109	70.528425	0	31.569789	22.105404	0
3	107	26.108095	68.993465	0	50.233142	35.173625	0
4	107	27.2451	67.51386	0	67.09827	46.982714	0
5	107	28.382105	66.085965	0	82.401289	57.698004	0
6	107	29.519115	64.70655	0	96.385651	67.489959	0
7	107	30.65612	63.372745	0	109.23598	76.487854	0
8	107	31.793125	62.081995	0	121.12806	84.814784	0
9	107	32.93013	60.832	0	132.19233	92.562066	0
10	107	34.067135	59.62069	0	142.50608	99.783831	0
11	107	35.20414	58.446185	0	152.10445	106.50469	0
12	107	36.341145	57.30678	0	160.93767	112.68977	0
13	107	37.3957	56.27894	0	169.92063	118.97971	0
14	107	38.3678	55.35708	0	179.12909	125.42754	0
15	107	39.3399	54.45794	0	187.59442	131.35503	0
16	107	40.386995	53.514855	0	189.03667	132.3649	0
17	107	41.50909	52.530515	0	182.46711	127.76485	0
18	107	42.631185	51.57339	0	173.33112	121.36776	0
19	107	43.753275	50.64254	0	161.38211	113.00097	0
20	107	44.875365	49.737085	0	146.46671	102.55709	0
21	107	45.99746	48.85621	0	128.52403	89.993498	0
22	107	47.119555	47.999155	0	107.6322	75.364877	0
23	107	48.241645	47.165205	0	83.957571	58.787724	0
24	107	49.387665	46.33687	0	68.83861	48.201314	0
25	107	50.557615	45.514455	0	62.716032	43.914238	0
26	107	51.727565	44.71509	0	54.656396	38.27082	0
27	107	52.897515	43.938155	0	44.852725	31.406216	0
28	107	54.067465	43.183075	0	33.52002	23.470971	0
29	107	55.237415	42.44931	0	20.87532	14.617056	0
30	107	56.407365	41.73634	0	7.1156153	4.9824075	0


ES4045
Existing
Static Condtition
0.748
Elevation
104
94
84
74
64
54
44
34
24
14
4
-6
-16
-16
-6
4
14
24
34
44
54
64
74
84
94
104
114
124
134
144
154
Distance

Richards Road

File Information

Created By: Steve Avril
Revision Number: 20
Last Edited By: Steve Avril
Date: 11/6/2015
Time: 2:22:00 PM
File Name: ES4045 A-A' existing static.gsz
Directory: C:\Users\steve.avril\Documents\

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

Richards Road

Description: Slope Stability for Richards Road
Kind: SLOPE/W
Method: Morgenstern-Price
Settings
Side Function
Interslice force function option: Half-Sine
PWP Conditions Source: (none)
SlipSurface
Direction of movement: Left to Right
Allow Passive Mode: No
Slip Surface Option: Entry and Exit
Critical slip surfaces saved: 1
Optimize Critical Slip Surface Location: No
Tension Crack
Tension Crack Option: (none)
FOS Distribution
FOS Calculation Option: Constant
Advanced

Number of Slices: 30
Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 0.1 ft
Optimization Maximum Iterations: 2000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1

Materials

Medium Dense SP-SM

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 0 psf
Phi: 35 °
Phi-B: 0 °

Medium Stiff ML

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 300 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Entry and Exit

Left Projection: Range
Left-Zone Left Coordinate: (1.86802, 76.06998) ft
Left-Zone Right Coordinate: (23.265583, 72.935583) ft
Left-Zone Increment: 4
Right Projection: Range
Right-Zone Left Coordinate: (52.062769, 45.246488) ft
Right-Zone Right Coordinate: (100.43305, 36.575647) ft
Right-Zone Increment: 4
Radius Increments: 4

Slip Surface Limits

Left Coordinate: (-0.1820694, 21.735764) ft
Right Coordinate: (103.48336, 4.3746527) ft

Regions

	Material	Points	Area (ft^2)

Region 1	Medium Dense SP-SM	1,2,3,4,5,6,7,8,9,10,11,12	2634.3466
Region 2	Medium Stiff ML	11,13,14,12	523.4564
Region 3	Medium Dense SP-SM	13,15,16,14	1835.1408

Points

	X (ft)	Y (ft)
Point 1	0.1369011	76.097458
Point 2	20.232046	75.778488
Point 3	36.909648	60.148931
Point 4	39.82595	57.597167
Point 5	48.802693	47.800214
Point 6	57.004793	41.375236
Point 7	60.878006	38.641203
Point 8	69.581346	37.000783
Point 9	92.045985	36.681812
Point 10	102.84542	36.545111
Point 11	102.84542	26.429188
Point 12	-0.0453677	27.067129
Point 13	102.98212	21.599062
Point 14	-0.1820694	21.735764
Point 15	103.48336	4.3746527
Point 16	0.1369011	3.417741

Subsurface Logs

ES-4045

Boring Location B-1

Depth	Soil Description	
0'-11.5'	SP-SM	Brown Poorly Graded Sand with Silt, Medium Dense, Moist
11.5'-15.5'	ML	Brown Silt with Sand, Stiff, Moist
15.5'-21.5'	SP-SM	Brown Poorly Graded Sand with Silt, Dense, Moist

Boring Location B-2

Depth	Soil Description	
0'-5'	SP-SM	Brown Poorly Graded Sand with Silt, Medium Dense, Moist
5'-11'	SM	Brown Silty Sand with Gravel, Loose, Moist
11'-16.5'	SP-SM	Brown Poorly Graded Sand with Silt, Medium Dense, Moist

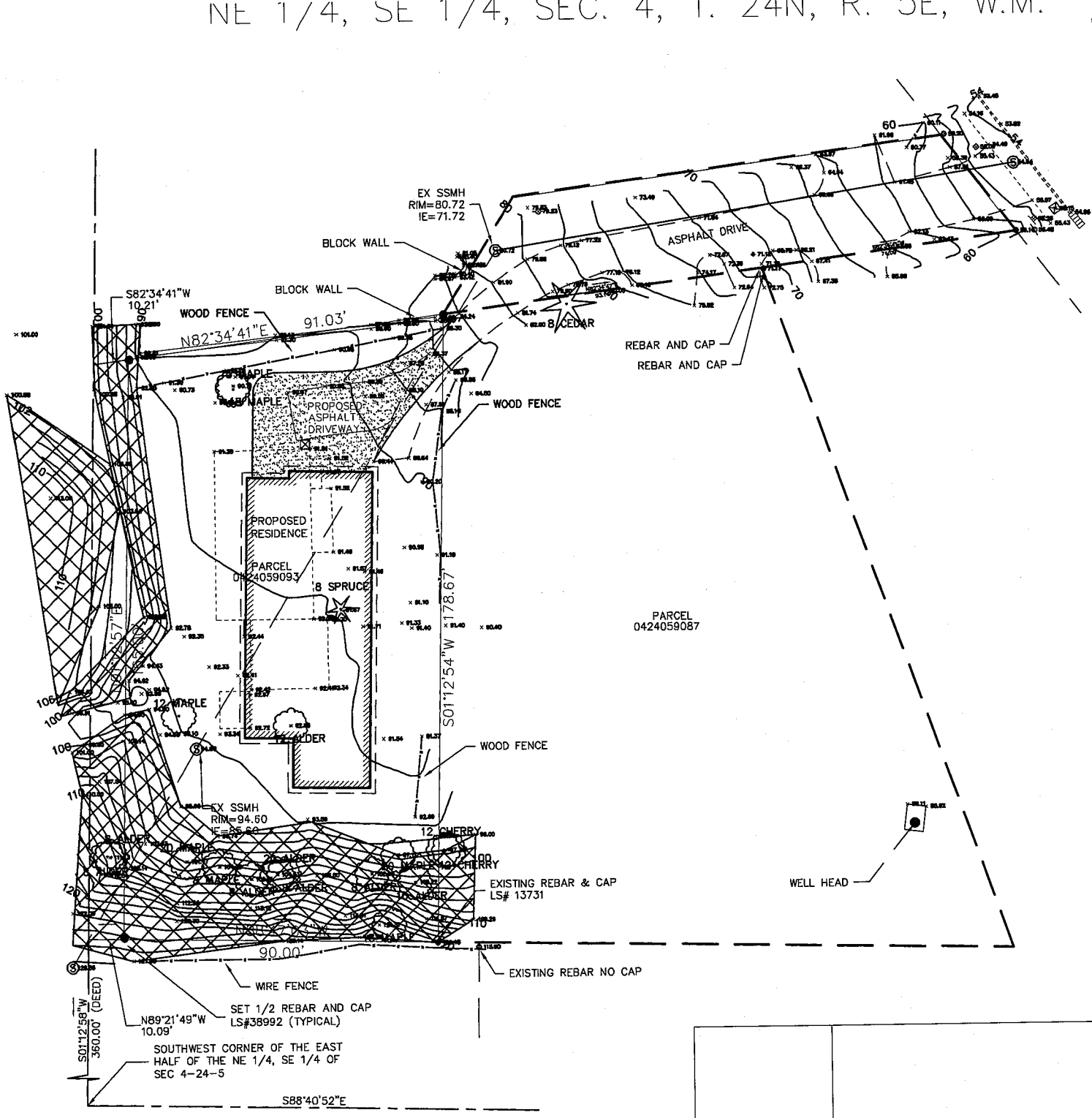
Boring Location B-3

Depth	Soil Description	
0'-7.5'	SP-SM	Brown Poorly Graded Sand with Silt, Medium Dense, Moist
7.5'-16.5'	SP-SM	Brown Poorly Graded Sand with Silt, Dense, Moist

Test Pit Location TP-1

Depth	Soil Description	
0'-5'	SP-SM	Brown Poorly Graded Sand with Silt, Medium Dense, Moist

NE 1/4, SE 1/4, SEC. 4, T. 24N, R. 5E, W.M.



(IN FEET)
1 inch = 50 ft.

SURVEY NOTES

INSTRUMENT: TOPCON GPT 3000W TOTAL STATION
METHOD USED: FIELD TRAVERSE WITH ACTUAL FIELD MEASUREMENTS AND ANGLES WAC 332-130-090
DATE OF SURVEY: OCTOBER 2012
BASIS OF BEARING: E LINE OF THE SE 1/4 OF SECTION 4-25-5 (N1°38'10"E)
BENCHMARK: CITY OF BELLEVUE BENCHMARK #133 60'E OF CENTERLINE OF RICHARDS RD & 80'N OF CENTERLINE OF DRIVEWAY TOP NW CORNER WEST END 3' CONC RETAINING WALL ELE=90.80
REFERENCE SURVEYS: 20050328900001 9909179001

LEGEND

- SANITARY SEWER MH
- UTILITY POLE
- POWER JUNCTION BOX
- POWER PEDESTAL
- TELEPHONE VAULT
- TELEPHONE CABINET
- SET 1/2 REBAR AND CAP LS# 38992
- SIGN
- CONIFER TREE
- DECIDUOUS TREE
- MAIL BOX
- PK NAIL
- MON IN CASE/
- EX REBAR / PIPE AS NOTED
- WATER WELL
- 40% SLOPE +

LEGAL DESCRIPTION

PARCEL A:
THAT PORTION OF SECTION 4, TOWNSHIP 24 NORTH, RANGE 5 EAST, WILLAMETTE MERIDIAN, IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:
BEGINNING 360 FEET NORTH AND 10 FEET EAST OF THE SOUTHWEST CORNER OF THE EAST HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER; THENCE NORTHERLY 01°19'10" EAST 165 FEET; THENCE NORTHERLY 82°40'54" EAST 91.03 FEET; THENCE SOUTHERLY 01°19'10" WEST 178.67 FEET; THENCE NORTHERLY 88°40'50" WEST 90 FEET TO THE POINT OF BEGINNING.

PARCEL B:
A NON-EXCLUSIVE EASEMENT FOR INGRESS AND EGRESS OVER THE FOLLOWING DESCRIBED PROPERTY:
BEGINNING AT THE SOUTHWEST CORNER OF THE EAST HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 24 NORTH, RANGE 5 EAST, WILLAMETTE MERIDIAN, IN KING COUNTY, WASHINGTON; THENCE NORTH 01°08'26" EAST 525 FEET ALONG THE WESTERLY LINE OF SAID EAST HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER; THENCE SOUTH 88°40'50" EAST 10 FEET; THENCE NORTH 82°40'34" EAST 91.03 FEET TO THE TRUE POINT OF BEGINNING OF EASEMENT HEREIN DESCRIBED; THENCE NORTH 82°40'54" EAST 167.23 FEET, MORE OR LESS, TO THE WESTRLY MARGIN OF COUNTY ROAD; THENCE NORTH 37°50'42" WEST 34.88 FEET ALONG SAID WESTERLY LINE OF COUNTY ROAD; THENCE SOUTH 82°40'54" WEST 125 FEET; THENCE SOUTHWESTERLY TO THE TRUE POINT OF BEGINNING AS SET OUT IN RECORDING NUMBER 4940510.

SITE PLAN
1811 132ND PLACE SOUTHEAST
BELLEVUE, WA 98005

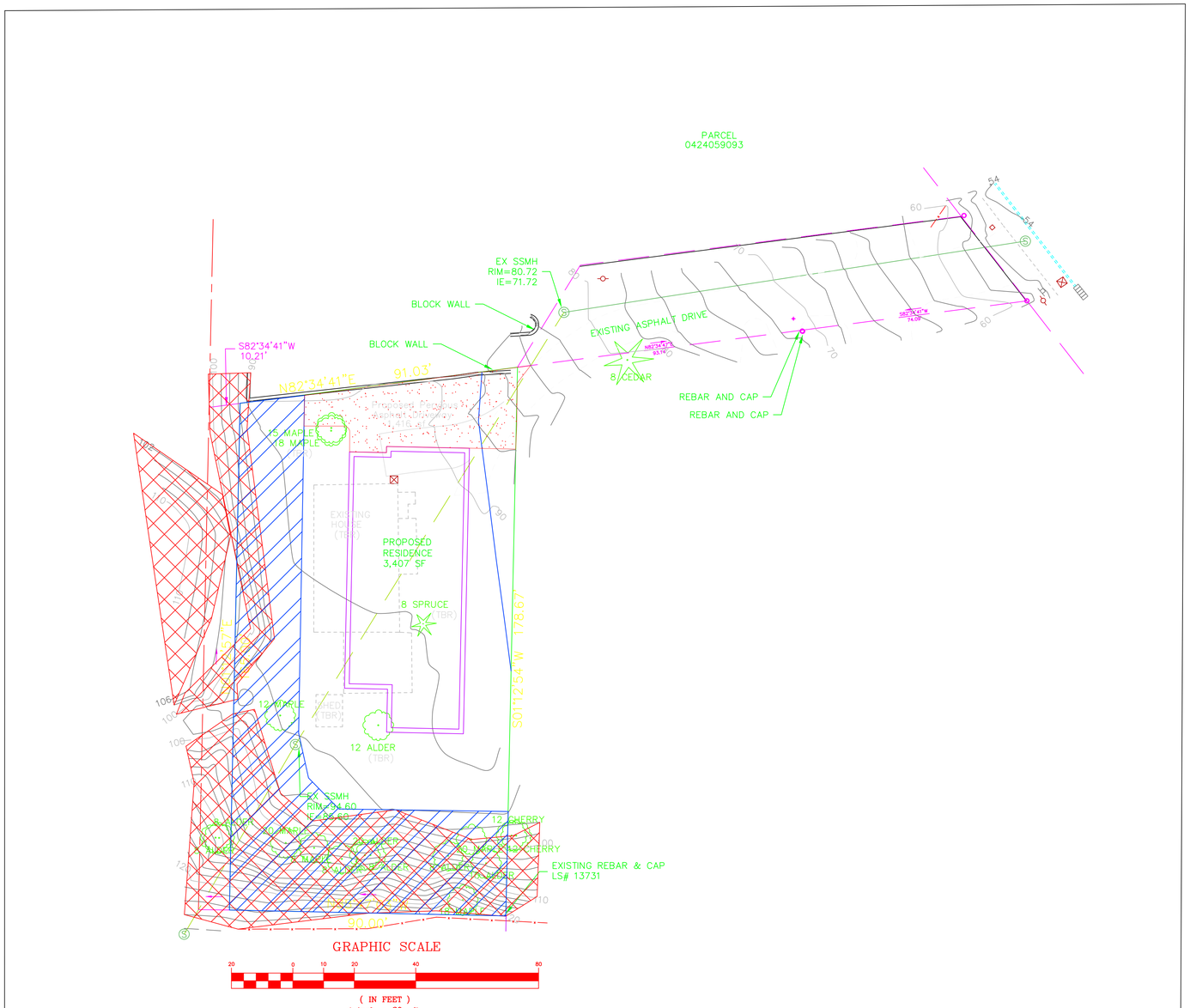
		DATE 09/14/15
	SCALE	SHEET

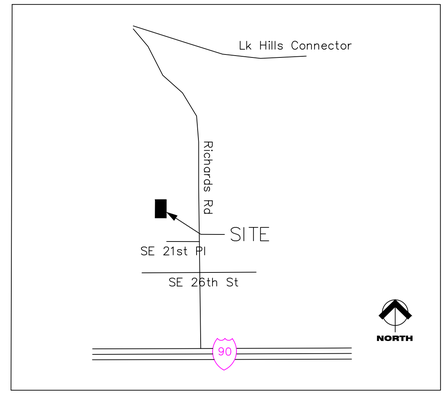
Tahn Associates, L.L.C.
Steep Slope Mitigation Plan

NE 1/4, SE 1/4, SEC. 4, T. 24N, R. 5E, W.M.
1811 132ND PLACE SOUTHEAST
BELLEVUE, WA 98005

NORTH

SCALE: 1" = 20'





VICINITY MAP
NOT TO SCALE

CONTACT INFORMATION

APPLICANT:
Tahn Associates, L.L.C.
13400 Northup Way #31
Bellevue, WA 98004
425-891-8383
don@prolinkre.com
c/o charles@vista-dc.com

ENVIRONMENTAL CONSULTANT:
J. S. Jones and Associates, Inc.
Environmental Consulting
PO Box 1908
Issaquah, Washington 98027
253-905-5736
jeff.jsjones@comcast.net

IMPACT AND MITIGATION AREAS

Lot Area	15,467 sf
Proposed Building Footprint	3,407 sf
Proposed Impervious Driveway	1,416 sf
Front Setback	20 Feet
Side Setback	15 Feet
Rear Setback	25 Feet
Steep Slope Setback from Toe of Slope	75 feet
Steep Slope Area	3,783 sf
Steep Slope Mitigation Area	5,962 sf
Required Mitigation Area Ratio	1 : 1
Building Envelope and Usable Area	9,505 sf
Lot Coverage (Building Footprint+Driveway–Steep Slope)	
3,407sf+1,272sf/15,467sf–3,783sf =	40%
Percentage of Impervious Surface	
3,407sf/15,467sf =	22%

LEGEND

- SANITARY SEWER MH
- UTILITY POLE
- POWER JUNCTION BOX
- POWER PEDESTAL
- TELEPHONE VAULT
- TELEPHONE CABINET
- SET 1/2 REBAR AND CAP LS# 38992
- 40% SLOPE +
- RESTORATION AREA
- TBR – To Be Removed
- SIGN
- CONIFER TREE
- DECIDUOUS TREE
- MAIL BOX
- PK NAIL
- MON IN CASE/
- EX REBAR / PIPE AS NOTED
- WATER WELL

NO.	DATE	BY	REVISION

CONSULTANT:
J. S. Jones and Associates, Inc.
Environmental Consultants
Wetlands, Streams, and Wildlife
P.O. BOX 1908 ISSAQUAH, WASHINGTON 98027

CLIENT:
Tahn Associates, L.L.C.
13400 Northup Way #31, Bellevue, WA 98004
425-891-8383 don@prolinkre.com c/o charles@vista-dc.com

PROJECT:
Steep Slope Mitigation Plan
1811 132ND PLACE SOUTHEAST
BELLEVUE, WA 98005

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
J. Jones	J. Jones	J. Jones	J. Jones	12/12/2015

SCALE 1"=20'

SHEET 1 of 4

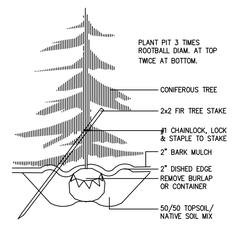
Tahn Associates, L.L.C.
Steep Slope Mitigation Plan

NE 1/4, SE 1/4, SEC. 4, T. 24N, R. 5E, W.M.
1811 132ND PLACE SOUTHEAST
BELLEVUE, WA 98005

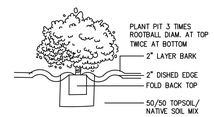
NORTH
SCALE: 1" = 10'

PLANT SCHEDULE

SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	QTY.
	DOUGLAS FIR	PSEUDOTSUGA MENZIESII	2 gal	5
Vm	VINE MAPLE	ACER CIRCINATUM	2 gal	24
Pn	PACIFIC NINEBARK	PHYSOCARPUS CAPITATUS	2 gal	24
SL	SALAL	GAULTHERIA SHALLON	1 gal	225
SF	SWORD FERN	POLYSTICHUM MUNITUM	1 gal	90



CONIFEROUS TREE STAKING
N.T.S.



SHRUB PLANTING DETAIL
N.T.S.

PLANTING DETAILS

NOTES

REMOVE ALL INVASIVE PLANT SPECIES FROM ENHANCEMENT AREA
INSTALL PLANT MATERIALS
INSTALL MIN 2" MULCH RINGS AROUND NEW PLANTS
PROVIDE ONE YEAR WRITTEN WARRANTY FOR ALL MATERIALS AND LABOR
NO SUBSTITUTIONS WITHOUT WRITTEN CONSENT OF CITY
LOCATE AND PROTECT ALL UNDERGROUND UTILITIES

NO.	DATE	BY	REVISION

CONSULTANT:
J. S. Jones and Associates, Inc.
Environmental Consultants
Wetlands, Streams, and Wildlife
P.O. BOX 1908 ISSAQUAH, WASHINGTON 98027

CLIENT:
Tahn Associates, L.L.C.
13400 Northup Way #31, Bellevue, WA 98004
425-891-8383 donaprolinkre.com c/o charles@vista-dc.com

PROJECT:
Steep Slope Mitigation Plan
1811 132ND PLACE SOUTHEAST
BELLEVUE, WA 98005

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
J. Jones	J. Jones	J. Jones		12/12/2015

SCALE 1"=10'

SHEET 2 of 4

Tahn Associates, L.L.C.
Steep Slope Mitigation Plan

NE 1/4, SE 1/4, SEC. 4, T. 24N, R. 5E, W.M.
1811 132ND PLACE SOUTHEAST
BELLEVUE, WA 98005

1.0 Executive Summary
The applicant proposes to replace the existing single-family residence. The City of Bellevue requires a 75-foot steep slope buffer from the toe of the slope. The applicant proposes a reduced buffer, with the new single-family residence located the minimum front and side setbacks from the toe of the steep slope.

1.1 Goals and Objectives
The goal of mitigation is to increase the wildlife functions and values of the slope by removing all invasive plants and restoring the slope to a native plant community. The objectives necessary to meet the above stated goal area as follows:

- Remove all existing non-vegetation from the buffer by hand
- Install native plants
- Maintain and monitor the enhancement area for a period of five years or until the site meets the specified performance standards
- Record the sensitive area in a "Notice on Title"
- If the enhancement area fails to meet performance standards provide a contingency plan to rectify the situation.

2.0 Project Location
The property is located at 15219 SE 280th, Bellevue, Washington 98042.

3.0 Responsible Parties
Property Owners
Than Associates, L.L.C.
13400 Northrup Way, #31
Bellevue, WA 98004
425-891-8383
don@prolinkre.com
c/o charles@vista-dc.com

Environmental Consultant
J. S. Jones and Associates, Inc.
Attn: Jeffery S. Jones, PWS
P.O. Box 1908
Issaquah, Washington 98027
253-905-5736

4.0 Standards
All work and materials shall conform to City of Bellevue standards and specifications, and to the specifications and details shown on these plans.

5.0 City of Bellevue Contact
Certain actions within this mitigation/restoration plan require inspection or approval by City of Bellevue staff. Requests for inspection/approval shall be coordinated through the City of Bellevue staff.

6.0 Contractor Information
When it is available, contact information shall be provided to City of Bellevue that includes names, addresses and phone numbers of persons/firms that will be responsible for grading the mitigation/restoration area, installing required plants, and performing required maintenance and monitoring.

7.0 Contractor's Qualifications
Contractor/Landscape Installer must be experienced in mitigation and native plane restoration. The Permittee shall provide that there is one person on the site at all times during work and installation who is thoroughly familiar with the type of materials being installed and the best methods for their installation, and who shall direct all work being performed under these specifications. This person shall be experienced in installing native plant materials for wetland mitigation or restoration projects, unless otherwise allowed by the Environmental Consultant and/or City of Bellevue staff .

8.0 Site Conditions
The Permittee and/or Environmental Consultant shall immediately notify City of Bellevue staff of any discrepancies between these plans and the site conditions. The locations of plants shown may be modified in the field by the Environmental Consultant and/or City of Bellevue staff based on field conditions at the time of planting. Changes should be documented and as-built drawings submitted to City of Bellevue upon request for formal construction approval.

9.0 Plants
9.1 Origin: Plant materials shall be Northwest native plants, nursery grown in the Puget Sound region of Washington. Dug plants may only be used upon approval of City of Bellevue staff.
9.2 Handling: Plants shall be handled so as to avoid all damage, including breaking, bruising, root damage, sunburn, drying, freezing or other injury. Plants must be covered during transport. Plants shall not be bound with wire or rope in a manner that could damage branches. Protect plant roots with shade and wet soil in the time period between delivery and installation. Do not lift container stock by trunks, stems, or tops. Do not remove from containers until ready to plant. Water all plants as necessary to keep moisture levels appropriate to the species horticultural requirements. Plants shall not be allowed to dry out. All plants shall be watered thoroughly immediately upon installation. Soak all containerized plants thoroughly prior to installation. Bare root plants are subject to the following special requirements, and shall not be used unless planted between November 1 and March 1, and only with the permission of the Landscape Designer and City of Bellevue staff. Bare root plants must have enough fibrous root to insure plant survival. Roots must be covered at all times with mud and/or wet straw, moss, or other suitable packing material until time of installation. Plants whose roots have dried out from exposure will not be accepted at installation inspection.
9.3 Storage: Plants stored by the Permittee for longer than one month prior to planting shall be planted in nursery rows, and treated in a manner suitable to that species horticultural requirements. Plants must be reinspected by the Environmental Consultant prior to installation.
9.4 Damaged Plants: Damaged, dried out, or otherwise mishandled plants will be rejected at installation inspection. All rejected plants shall be immediately removed from the site.
9.5 Plant Names: Plant names shall comply with those generally accepted in the native plant nursery trade. Any questions regarding plant species or variety shall be referred to the Environmental Consultant or City of Bellevue staff. All plant materials shall be true to species and variety.
9.6 Plant Substitutions: Plant substitutions are not permitted without the written permission of the City of Bellevue staff. Same species substitutions of larger size do not require special permission.
9.7 Quality and Condition: Plants shall be normal in pattern of growth, healthy, well-branched, vigorous, with well-developed root systems, and free of pests and diseases. Damaged, diseased, pest-infested, scraped, bruised, dried-out, burned, broken, or defective plants will be rejected. Plants with bark wounds will be rejected.
9.8 Roots: All plants shall be containerized, unless explicity authorized by the Environmental Consultant. Rootbound plants plants with damaged, cracked or loose rootballs (major damage) will be rejected. Immediately before installation, plants with minor root damage (some broken and/or twisted) must be root-pruned. Matted or circling roots of containerized plantings must be pruned or straightened and the sides of the root ball must be roughened from top to bottom to a depth of approximately half and inch in two to four places.
9.9 Sizes: Plant sizes shall be the size indicated in the plant schedule. Larger stock may be acceptable provided that it has not been cut back to size specified, and that the root ball is proportionate to the size of the plant. Measurements, caliper, branching and balling and burlapping shall conform to the American Standard of Nursery Stock by the American Association of Nurserymen (latest edition).
9.10 Form: Trees shall have single trunks and symmetrical, well-developed form. Shrubs shall have multiple stems, and be well-branched.
9.11 Planting: Planting shall be done in accordance with illustrated details in the mitigation/restoration plan set and accepted industry standards.
9.12 Timing of Planting: Unless otherwise approved by City of Bellevue staff, all planting shall occur between September 1 and March 31.
9.13 Weeding: Existing and exotic vegetation in the mitigation and buffer areas will be hand weeded at the time of installation and on routine basis through monitoring period. Chemical control of vegetation on any portion of the site is allowed with the written permission of City of Bellevue staff.
9.14 Soil Amendments: Unless otherwise specified and approved by City of Bellevue, native soil will be incorporated into the planting pits.
9.15 Mulch: The soil surface surrounding all planting pit areas shall receive no less than 2" depth of bark mulch to the drip line. Mulch shall be kept well away (at least 2") from the trunks and stems of woody plants.
9.16 Site Conditions: Contractor shall immediately notify the Environmental Consultant of drainage or soil conditions likely to be detrimental to the growth or survival of plants. Planting operations shall not be conducted under the following conditions: freezing weather, when the ground is frozen, excessively wet weather, excessively windy weather, or in excessive heat.
9.17 Plant Locations: The Environmental Consultant may adjust the locations of plantings based on field conditions.
9.18 Planting in Pits: Planting pits shall be circular or square with vertical sides, and shall be 3" deeper and 6" larger in diameter than the root ball of the plant. Break up the sides of the pit in compacted soils. Set plants upright in pits, as illustrated in planting detail. Backfill shall be worked back into holes such that air pockets are removed without adversely compacting soils.
9.19 Fertilizer: Slow release fertilizer may be used if pre-approved by City of Bellevue staff. Fertilizers shall be applied only at the base of plantings underneath the required covering of mulch (that does not make contact with stems of the plants). No fertilizers will be placed in planting holes.
9.20 Water: Plants shall be watered upon completion of backfilling. For spring plantings (if approved), a rim of earth shall be mounded around the base of the tree or shrub no closer than the drip line, or no less than 30" in diameter, except on steep slopes or in hollows. Plants shall be watered a second time within 24-48 hours after installation. The earthen rim/dam should be leveled prior to the second growing season.

10.0 Maintenance
Maintenance shall be required in accordance with City of Bellevue guidelines and approved plans.
10.1 Survival: The Permittee shall be responsible for the health of 100% of all newly installed plants for one *growing season* after installation has been accepted by City of Bellevue staff (see Performance Standards). A growing season for these purposes is defined as occurring from spring to spring (March 15 to March 15, following year). For fall installation (often required), the growing season will begin the following spring. The Permittee shall replace any plants that are failing, weak, defective in a manner of growth, or dead during this growing season, as directed by the Environmental Consultant and/or City of Bellevue staff.
10.2 Installation Timing for Replacement Plants: Replacement plants shall be installed between September 1 and March 31, unless otherwise determined by the City of Bellevue staff.
10.3 Duration and Extent: In order to achieve performance standards, the Permittee shall have the mitigation/restoration area maintained for the duration of the monitoring period, **5** years. Maintenance will include watering, weeding around base of installed plants, pruning, replacement, restaking, removal of all classes of noxious weeds (see Washington State Noxious Weeds List, WAC 16-750-005) as well as Himalayan blackberry, and any other measures needed to insure plant survival. All maintenance shall be directed by the Environmental Consultant.
10.4 Standards for Replacement Plants: Replacement plants shall meet the same standards for size and type as those specified for original installation unless otherwise directed by the City of Bellevue staff. Replacement plants shall be inspected as described above for the original installation.
10.5 Replanting: Plants that have settled in their planting pits too deep, too shallow, loose, or crooked shall be replanted.
10.6 Herbicides/Pesticides: Use of herbicides may used depending on site specific conditions, if approved by City of Bellevue staff.
10.7 Irrigation/Watering: Water shall be provided during the dry season (July 1-October 15) for the first two years after installation to ensure plant survival and establishment. Water should be provided by a temporary above ground irrigation system and/or water truck. Water should be applied at a rate of 1" of water two times a week for year 1 and 1" of water one time a week during year 2.
10.8 General: The Permittee shall include in general maintenance activities the replacement of any vandalized or damaged signs, habitat features, fences or other structural component of the mitigation site.
11.0 Performance Standards - Plant Cover and Survival
Plant survival and cover standards are established to measure mitigation success as follows:
Performance Standards

- 80% survival of all planted shrubs and trees in the buffer following completion of the five year after planting. Plantings will be replaced, as necessary, with the same or similar species and specification in order to meet the 80% survival standard. Upon installation of replacement plantings at the conclusion of year five, the 80% survival performance standard will be considered to be met;
- Coverage by tree and shrub species (volunteer and planted individuals) within the enhancement area will be the following:
  - at least 5% after one year
  - at least 10% after two years
  - at least 20% after three years
  - at least 30% after four years
  - at least 50% after five years

12.0 Monitoring
Monitoring shall be conducted annually for **5** years in accordance with the approved mitigation/restoration monitoring plan.
12.1 Vegetation Monitoring: Sample plots will be established for vegetation monitoring, and photo-points established from which photos will be taken throughout the monitoring period. Sample plots are the preferred method for vegetation monitoring for this site. No less than four (2) plot will be established the enhancement area. Permanent plot location(s) must be identified on mitigation/restoration site plans in the first monitoring report (they may be drawn on approved mitigation/restoration plans by hand). Monitoring of vegetation plots shall occur annually between August 1 and October 15 (prior to leaf drop), unless otherwise specified.
12.2 Photopoints: No less than two (2) permanent photo point per plot will be established within the mitigation/restoration area. Photographs will be taken from these points to visually record the condition of the mitigation/restoration area.
12.3 Reports: Monitoring reports shall be submitted by December 31 of each year during the monitoring period. As applicable, monitoring reports must include description/data for:
i. Site plan and location map
ii. Historic description of project, including date of installation, current year of monitoring, restatement of mitigation/restoration goals, and performance standards
iii. Plant survival, vigor, and aerial coverage from every plant community (transect data), and explanation of monitoring methodology in the context of assessing performance standards
iv. Slope condition, site stability, any structures or special features
v. Buffer conditions, e.g. surrounding land use, use by humans, wild and domestic creatures
vi. Observed wildlife, including amphibians, avians and others
vii. Assessment of nuisance/exotic biota and recommendations for management
viii. 4"x5" color photograph taken from permanent photo-points
ix. Summary of maintenance and contingency measures proposed for next season and completed for past season
12.4 Deficiences: Any deficiency discovered during any monitoring or inspection visit must be corrected within 60 days of approval by City of Bellevue.
12.5 Contingency Plan: Should any monitoring report reveal the mitigation has failed in whole or in part, and should that failure be beyond the scope of routine maintenance, a Contingency Plan will be submitted. The Contingency Plan may range in complexity from a list of plants substituted, to cross-sections of proposed engineered structures. Once approved, it may be installed, and will replace the approved mitigation/restoration plan. If the failure is substantial, the City of Bellevue may extend the monitoring period for that mitigation.

13.0 Bond
Prior to beginning any work, the Permittee must provide a mitigation/restoration bond or assignment of funds per City of Bellevue procedures. Upon approval of the mitigation plan, a bond quantity worksheet will completed based on all elements of the mitigation/restoration plan.

NO.	DATE	BY	REVISION

CONSULTANT:
J. S. Jones and Associates, Inc.
Environmental Consultants
Wetlands, Streams, and Wildlife
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PROJECT:
Steep Slope Mitigation Plan
1811 132ND PLACE SOUTHEAST
BELLEVUE, WA 98005

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
J. Jones	J. Jones	J. Jones	J. Jones	12/12/2015

SCALE

SHEET 3 of 3