TECHNICAL INFORMATION REPORT
CITY OF MERCER ISLAND

For

93rd Ave SE Short Plat
7216 93rd Avenue SE
Mercer Island, WA 98040

May 4, 2022

Prepared By:
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Prepared For:

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TABLE OF CONTENTS

List of Figures

Appendix A

Appendix B

Appendix C

I. PROJECT OVERVIEW

Project Name:	93rd Ave SE Short Plat
Site Address:	7216 93rd Avenue SE
King County Tax Parcel:	258190-0210
Zoning:	R-8.4
Site Area:	39,144 SF (0.90 AC)
Site Location:	The site is located in the City of Mercer Island at 7216 93rd Avenue SE within the SE ¼ of Section 30, Township 24 North, Range 5 East, W.M.
Ex. Adjacent Development:	North – Single-Family Residence East – Single-Family Residence South – Single-Family Residence West – 93rd Avenue SE

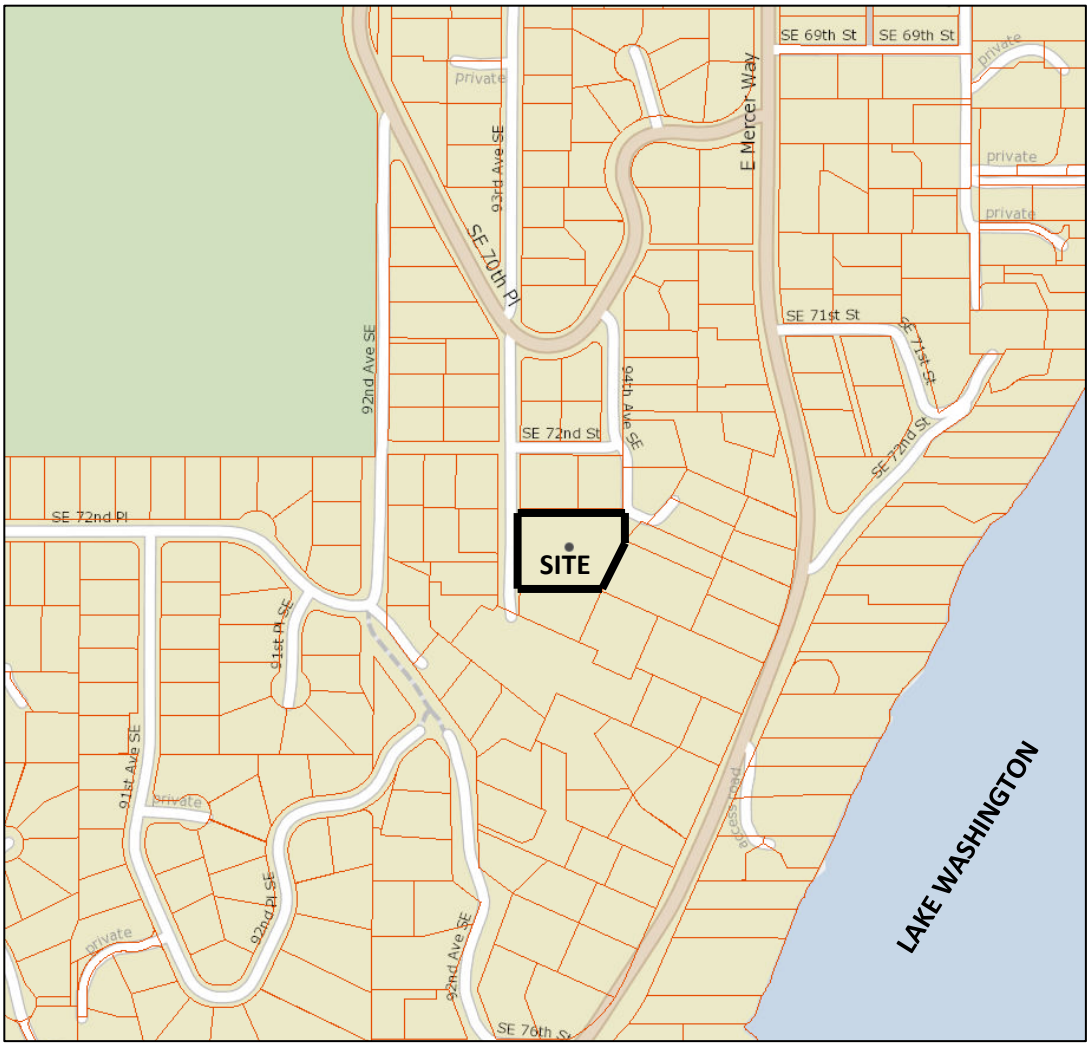


Figure 1: Vicinity Map

Pre-developed Site Conditions:

The property is presently developed with a single-family residence with detached garage and a paved driveway that provides access to 93rd Avenue SE. Except for the structures and driveway, the site is vegetated with shrubs and trees. The site generally slopes down from the west to the east at an average grade of approximately 16%. There are steep slopes (>40%) located in the eastern portion of the site.

Critical Areas:

Per the City of Mercer Island GIS Mapping, the eastern portion of the site is within a landslide hazard, erosion hazard, seismic hazard, and protected steep slope area. Per FEMA Flood Map Number 53033C0675G the site is located outside of the floodplains. The property is not located within and does not contain any other known critical areas.

Soils:

The onsite soils are mapped as Everett-Alderwood gravelly sandy loam (EwC) and Kitsap silt Loam (KpD) by the US Department of Agriculture (USDA), Natural Resources Conservation Service (NCRS) Web Soil Survey information. The soils onsite were further analysed by Robert M. Price, P.E. The analysis conducted by Mr. Pride, concluded that the site is underlain by medium dense to dense silty sands classified as weather glacial till soils. The geotechnical report is included in Appendix C.

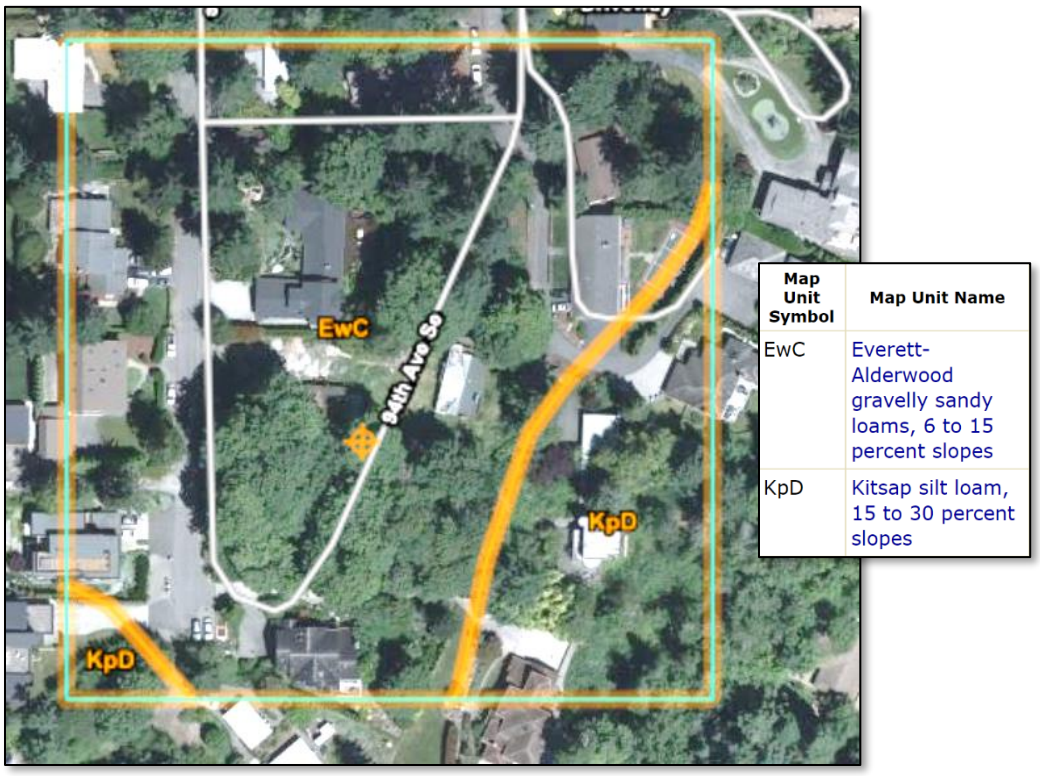


Figure 2: Soils Map and Legend

Post-developed Site Conditions:

The development proposal incorporates the construction of on-site and off-site infrastructure to support the future construction of three new single-family residences. The existing structures will be demolished. The lots will be accessed via new driveways extending from 93rd Avenue SE. The project site is located within the Mercer Island Drainage Basin. The site is defined by a single drainage basin that discharges to the west. Developed runoff will be collected, detained, and conveyed to the existing conveyance system within 93rd Avenue SE. The discharge from the proposed detention tank will be pumped to an onsite catch basin. In order to get gravity flow from the site to the public conveyance system with 93rd Avenue SE, approximately 314 feet of the existing conveyance system will need to be replaced. Water quality is not required since the new pollution generating impervious surface is less than 5,000 SF. The pervious landscape areas will be allowed to infiltrate naturally into the native soil.

II. CONDITIONS AND REQUIREMENTS SUMMARY

Flow Chart #1: Flow Chart for Determining Requirements for New Development was utilized to determine which requirements apply to the project. Per Flow Chart #1 all Minimum Requirements apply to the new and replaced hard surfaces and converted vegetation areas. Please refer to page 6 for Flow Chart #1.

Minimum Requirements #1-9:

Minimum Requirement No. 1 – Preparation of Stormwater Site Plans

A Stormwater Site Plan has been prepared for review by the City.

Minimum Requirement No. 2 – Construction Stormwater Pollution Prevention (SWPP)

A SWPP (i.e. TESC) plan is included in the project submittal.

Minimum Requirement No. 3 – Source Control of Pollution

Proposed construction source control measures include silt fence and temporary and permanent seeding. Operational and structural BMPs are not proposed. Please refer to Section 3: Construction Stormwater Pollution Prevention Plan for additional BMPs.

Minimum Requirement No. 4 – Preservation of Natural Drainage Systems and Outfalls

The natural drainage pattern and discharges from the site will be maintained to the maximum extent practicable. No significant adverse impacts to the downstream system are expected or anticipated.

Minimum Requirement No. 5 – On-site Stormwater Management

Flow Chart #2 Flow Chart for Determining LID MR #5 Requirements was utilized to determine the requirements to meet On-site Stormwater Management. Per Flow Chart #2, List #2 was used to determine the On-site Stormwater Management BMPs feasible for the project. Please refer to Flow Chart #2 on page 7.

List #2 Analysis:

Per Section 2.5.5 of the Stormwater Management Manual for Western Washington, the BMPs must be considered in the order listed in List #2 for each surface. The first BMP considered feasible must be implemented to the maximum extent feasible. Below is the feasibility evaluation of the BMPs in the order listed.

Lawn and Landscaped areas:

1. **Post Construction Soil Quality and Depth** – This BMP is feasible and will be implemented per BMP T5.13 for all disturbed and converted vegetated areas that are sloped at less than 33%.

Roofs:

1. Full Dispersion – Infeasible due to steep slopes and lack of vegetated flow paths.
2. Rain Gardens or Bioretention – Infeasible; per city mapping the site is labeled as “non-infiltrating”.
3. Downspout Dispersion Systems – Infeasible due to steep slopes and lack of vegetated flow paths.
4. Perforated Stub-out Connection – Infeasible; per city mapping the site is labeled as “non-infiltrating”.

Other Hard Surfaces:

1. Full Dispersion – Infeasible due to steep slopes and lack of vegetated flow paths.
2. Permeable Pavement – Infeasible; per city mapping the site is labeled as “non-infiltrating”.

Per City of Mercer Island City Code 15.09.050, if all on-site stormwater management BMPs included on List #1 & #2 are determined to be infeasible for roofs and/or other hard surfaces, on-site detention shall be required when applicable.

Minimum Requirement No. 6 – Runoff Treatment

The pollution-generating impervious surfaces (3,648 SF) are less than 5,000 SF therefore water quality treatment is not required.

Minimum Requirement No. 7 – Flow Control

Per Section 2.5.7 of the SWMMWW a formal flow control facility is required if the following thresholds are exceeded;

- the total effective impervious surface is 10,000 square feet or more
- ¾ acres or more of native vegetation converted to lawn or landscape, or 2.5 acres or more of native vegetation converted to pasture

- A 0.15 cubic feet per second increase in the 100-year flow frequency

Since the project is proposing greater than 10,000 square feet of effective impervious surface a formal flow control facility is required. The site was analyzed using the Western Washington Hydrology Model (WWHM) provided by the Department of Ecology (DOE). The project site is located in a Level 2 Flow Control Area, therefore forested conditions have been used for the pre-developed modeling analysis. The hydrologic analysis of the site was completed in order to determine the on-site detention necessary to account for the increase in the peak storm release rate for the developed site. Please note for the purpose of this analysis only the developable area of the site was used, as the steep slope areas and associated buffers will not be disturbed. As discussed, given the topography of the existing project site, a single drainage basin was analyzed for the project. Per Appendix III – C: Washington State Department of Ecology Low Impact Development Flow Modeling Guidance, C-9 Soil Quality and Depth, pervious areas that meet the requirements for BMP T5.13 may be modeled as pasture. Therefore, the pervious areas to be amended per BMP T5.13 have been modeled as pasture. The site basin criterion is summarized below. Refer to Appendix A for a detailed depiction of the project's WWHM modeling areas.

WWHM Area Summary:

Existing Conditions:

Area Forest	=	0.64 acre
Total Site	=	0.64 acre

Developed Conditions:

Impervious	=	0.33 acre
Pervious (Lawn/Pasture)	=	0.31 acre
Total Site	=	0.64 acre

The detention tank system was designed for the drainage basin using WWHM. The proposed detention tank is 64 LF and 10' diameter. Please see Appendix A for the complete WWHM tank analysis. The discharge from the proposed detention tank will be pumped to an onsite catch basin located in the northwest corner of the site. The catch basin will convey runoff via gravity to the existing public conveyance system within 93rd Ave SE. In order to provide gravity flow, approximately 314 feet of the existing conveyance system will need to be replaced.

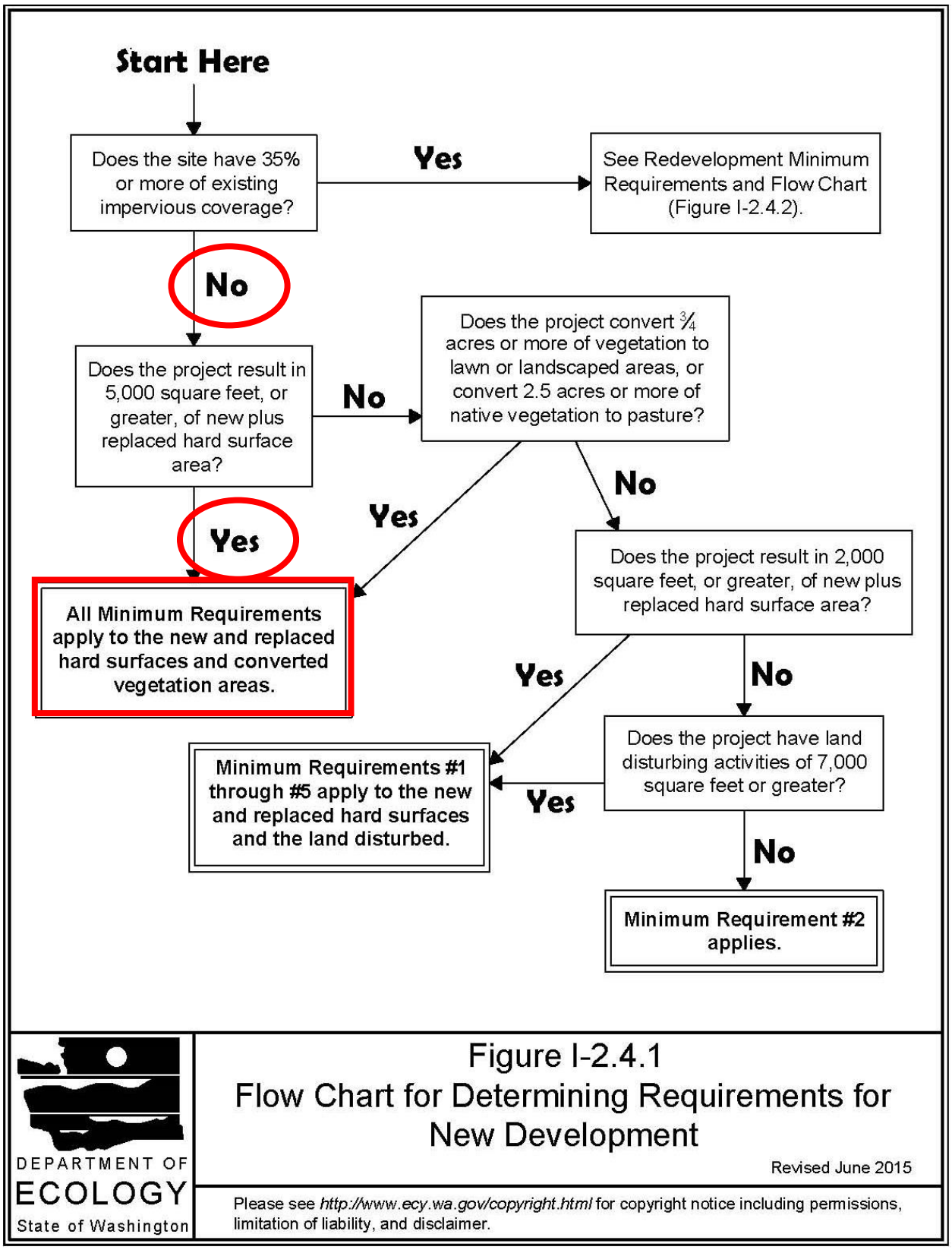
Minimum Requirement No. 8 – Wetlands Protection

N/A – The project does not discharge to a wetland.

Minimum Requirement No. 9 – Operations and Maintenance

A draft Operations and Maintenance Manual is included in Appendix B.

Flow Chart #1:


Start Here
Does the site have 35% or more of existing impervious coverage?
Yes
See Redevelopment Minimum Requirements and Flow Chart (Figure I-2.4.2).
No
Does the project result in 5,000 square feet, or greater, of new plus replaced hard surface area?
No
Does the project convert ¾ acres or more of vegetation to lawn or landscaped areas, or convert 2.5 acres or more of native vegetation to pasture?
Yes
Yes
No
All Minimum Requirements apply to the new and replaced hard surfaces and converted vegetation areas.
Does the project result in 2,000 square feet, or greater, of new plus replaced hard surface area?
Yes
No
Minimum Requirements #1 through #5 apply to the new and replaced hard surfaces and the land disturbed.
Does the project have land disturbing activities of 7,000 square feet or greater?
Yes
No
Minimum Requirement #2 applies.
DEPARTMENT OF ECOLOGY
State of Washington
Figure I-2.4.1
Flow Chart for Determining Requirements for New Development
Revised June 2015
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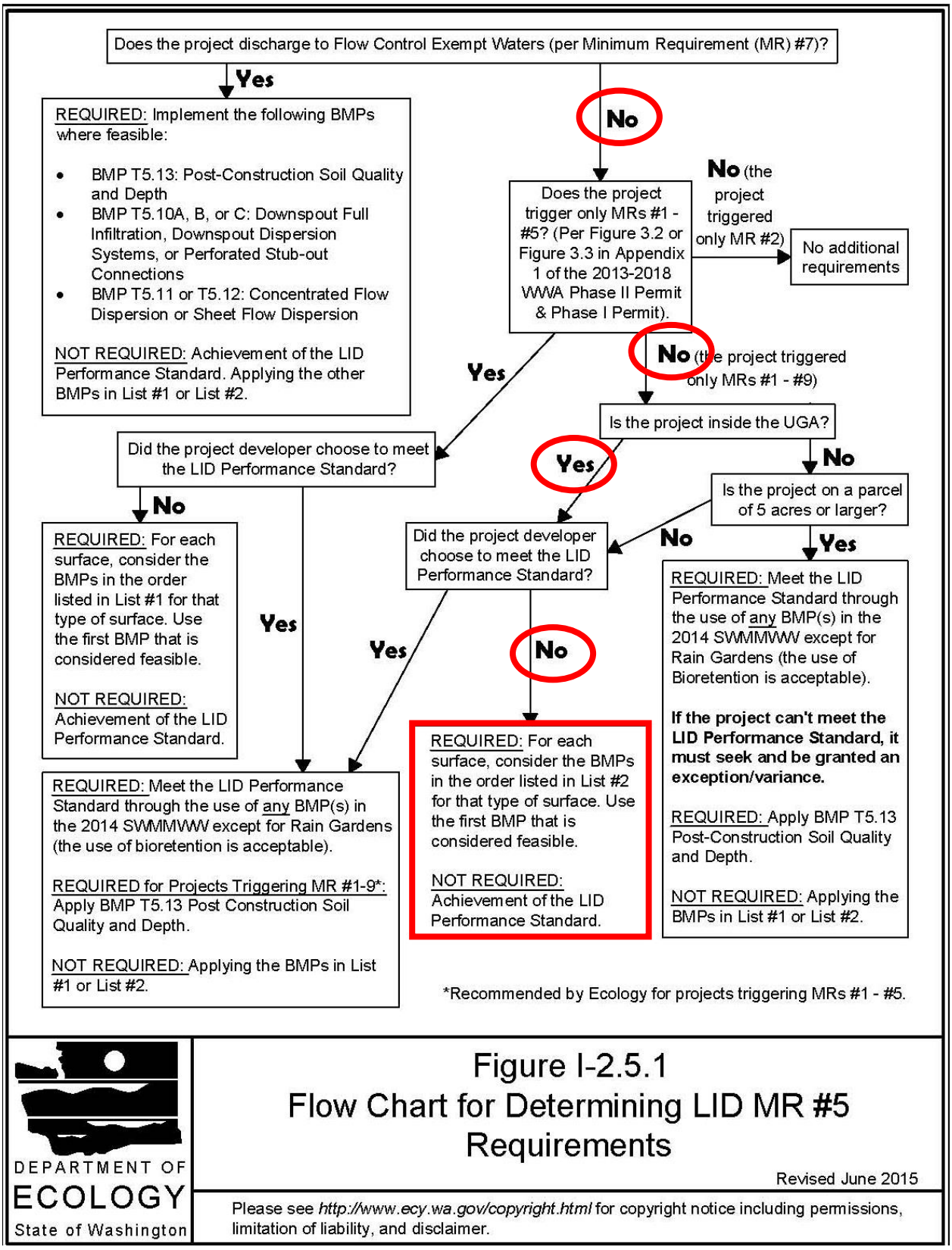
Flow Chart #2:


Does the project discharge to Flow Control Exempt Waters (per Minimum Requirement (MR) #7)?
Yes
REQUIRED: Implement the following BMPs where feasible:
• BMP T5.13: Post-Construction Soil Quality and Depth
• BMP T5.10A, B, or C: Downspout Full Infiltration, Downspout Dispersion Systems, or Perforated Stub-out Connections
• BMP T5.11 or T5.12: Concentrated Flow Dispersion or Sheet Flow Dispersion
NOT REQUIRED: Achievement of the LID Performance Standard. Applying the other BMPs in List #1 or List #2.
No
Does the project trigger only MRs #1 - #5? (Per Figure 3.2 or Figure 3.3 in Appendix 1 of the 2013-2018 WWA Phase II Permit & Phase I Permit).
No (the project triggered only MR #2)
No additional requirements
Yes
No (the project triggered only MRs #1 - #9)
Is the project inside the UGA?
Yes
No
Did the project developer choose to meet the LID Performance Standard?
Yes
No
Is the project on a parcel of 5 acres or larger?
No
Yes
Did the project developer choose to meet the LID Performance Standard?
REQUIRED: For each surface, consider the BMPs in the order listed in List #1 for that type of surface. Use the first BMP that is considered feasible.
NOT REQUIRED: Achievement of the LID Performance Standard.
Yes
Yes
No
REQUIRED: Meet the LID Performance Standard through the use of any BMP(s) in the 2014 SWMMWW except for Rain Gardens (the use of Bioretention is acceptable).
If the project can't meet the LID Performance Standard, it must seek and be granted an exception/variance.
REQUIRED: Apply BMP T5.13 Post-Construction Soil Quality and Depth.
NOT REQUIRED: Applying the BMPs in List #1 or List #2.
REQUIRED: Meet the LID Performance Standard through the use of any BMP(s) in the 2014 SWMMWW except for Rain Gardens (the use of bioretention is acceptable).
REQUIRED for Projects Triggering MR #1-9*: Apply BMP T5.13 Post Construction Soil Quality and Depth.
NOT REQUIRED: Applying the BMPs in List #1 or List #2.
REQUIRED: For each surface, consider the BMPs in the order listed in List #2 for that type of surface. Use the first BMP that is considered feasible.
NOT REQUIRED: Achievement of the LID Performance Standard.
*Recommended by Ecology for projects triggering MRs #1 - #5.
DEPARTMENT OF ECOLOGY
State of Washington
Figure I-2.5.1
Flow Chart for Determining LID MR #5 Requirements
Revised June 2015
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III. CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN

The project SWPPP addresses the thirteen required elements as follows:

Element 1 – Preserve Vegetation/Mark Clearing Limits – Clearing limits will be delineated with silt fence and orange construction fencing.

Element 2 – Establish Construction Access - A quarry spall construction entrance and a wheel wash will be provided if warranted.

Element 3 – Control Flow Rates – The proposed detention tank will be used during construction as a sediment and flow control device. Upon competition of the project, the tank and associated catch basins to be flushed and cleaned of debris.

Element 4 – Install Sediment Controls – Silt fencing will be constructed and is expected to provide construction stormwater sediment control during construction.

Element 5 – Stabilize Soils – Stockpiled or unworked soils will be protected during construction by covering with plastic or temporary or permanent seeding. All exposed soils will be landscaped or seeded and BMP T5.13- Post Construction Soil Amendment will be implemented at the conclusion of the project.

Element 6 – Protect Slopes – Areas of cut slopes to be covered with plastic per BMP C123 until permanently stabilized.

Element 7 – Protect Drain Inlets – The existing and newly constructed conveyance system inlets in the vicinity of the project site will be protected with catch basin filters during construction.

Element 8 – Stabilize Channels and Outlets – There are no existing or proposed surface channels or outfalls. Therefore the use of typical energy dissipation devices and channel lining such as riprap are not anticipated.

Element 9 – Control Pollutants – The small size of this project will limit the opportunity for discharge of pollutants. Waste/demolition debris will not be stockpiled, fueling will be done off-site and concrete trucks will be washed out off-site.

Element 10 – Control De-watering – De-watering is not anticipated.

Element 11 – Maintain BMPs – BMPs will be maintained as necessary to assure continued functioning.

Element 12 – Manage the Project – An inspector (sites less than 1 acre) will be present or on call to ensure BMPs are maintained and assess effectiveness of ESC measures. Rainy season requirements will be implemented if necessary.

Element 13 – Protect LID BMPs – N/A. No LID BMPs are proposed.

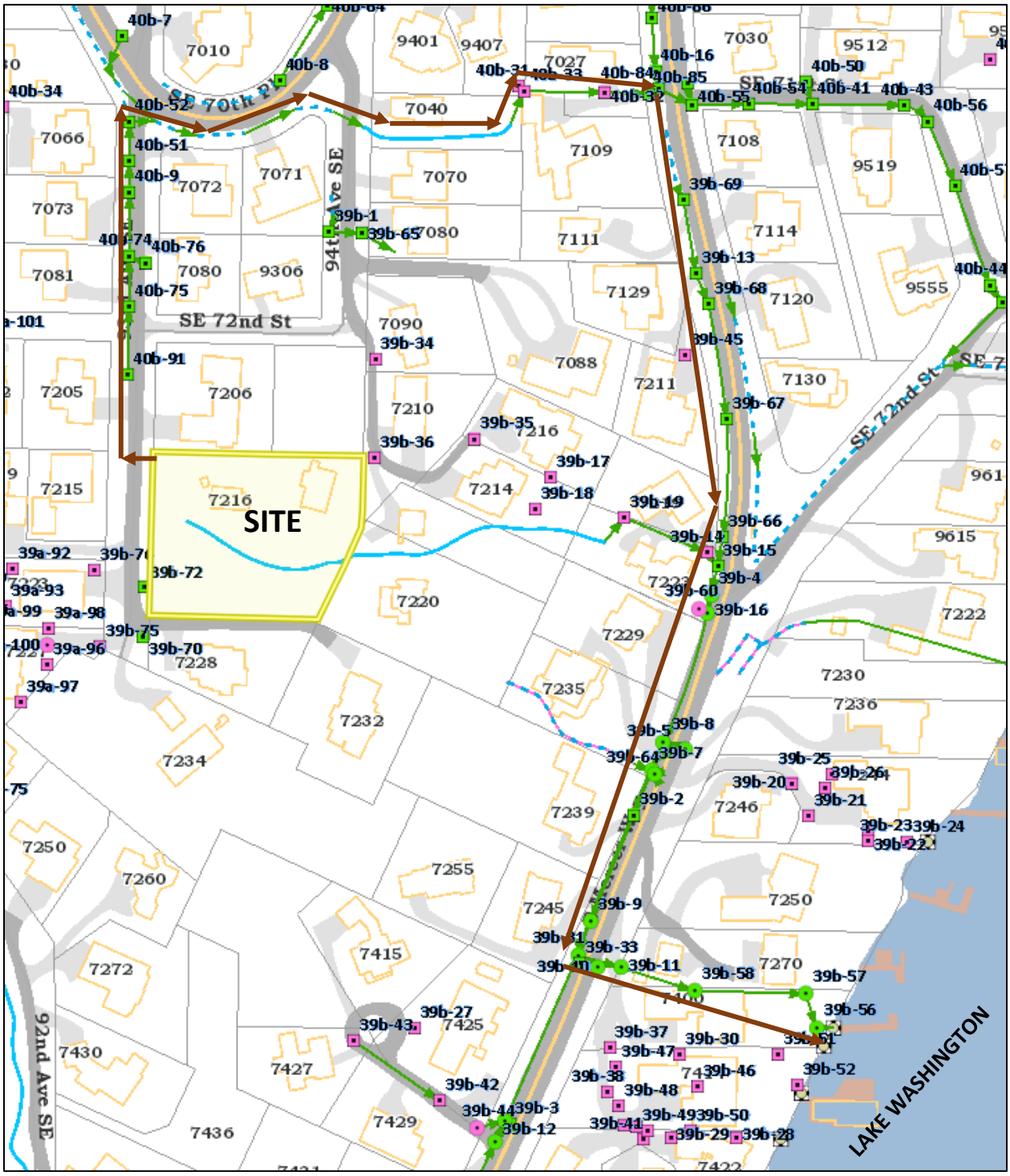


Figure 3: Downstream Map

Appendix A
WWHM OUTPUT

WWHM2012

PROJECT REPORT

General Model Information

Project Name:	BCH 93rd Tank 2-3-22
Site Name:	BCH 93rd Short Plat
Site Address:	7216 93rd Ave SE
City:	Mercer Island
Report Date:	2/3/2022
Gage:	Seatac
Data Start:	1948/10/01
Data End:	2009/09/30
Timestep:	15 Minute
Precip Scale:	1.000
Version Date:	2021/08/18
Version:	4.2.18

POC Thresholds

Low Flow Threshold for POC1:	50 Percent of the 2 Year
High Flow Threshold for POC1:	50 Year

Landuse Basin Data

Predeveloped Land Use

Basin 1

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C, Forest, Steep	0.64
Pervious Total	0.64
Impervious Land Use	acre
Impervious Total	0
Basin Total	0.64

Element Flows To:

Surface	Interflow	Groundwater

Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
C, Lawn, Steep	0.02
C, Pasture, Flat	0.05
C, Pasture, Mod	0.07
C, Pasture, Steep	0.17
Pervious Total	0.31

Impervious Land Use	acre
ROADS FLAT	0.27
ROADS MOD	0.06
Impervious Total	0.33
Basin Total	0.64

Element Flows To:

Surface	Interflow	Groundwater
Tank 1	Tank 1	

Routing Elements
Predeveloped Routing

Mitigated Routing

Tank 1

Dimensions

Depth:	10 ft.	
Tank Type:	Circular	
Diameter:	10 ft.	
Length:	64 ft.	
Discharge Structure		
Riser Height:	9.5 ft.	
Riser Diameter:	12 in.	
Orifice 1 Diameter:	0.5 in.	Elevation:0 ft.
Orifice 2 Diameter:	0.73438 in	Elevation:5.75 ft.
Orifice 3 Diameter:	0.4375 in	Elevation:6 ft.

Element Flows To:

Outlet 1 Outlet 2

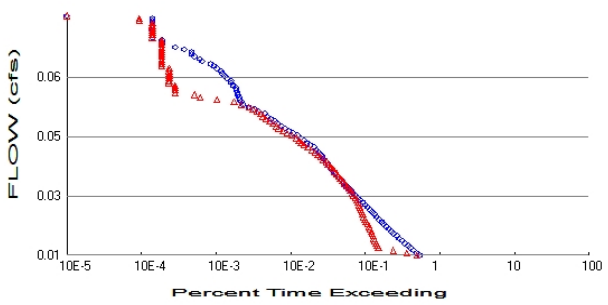
Tank Hydraulic Table

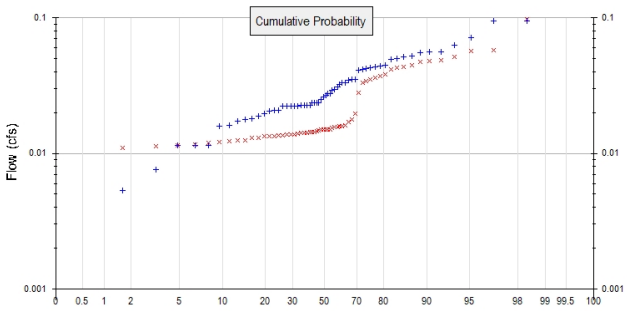
Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.000000	0.000000	0.000	0.000
0.1111	0.003080	0.000229	0.002	0.000
0.2222	0.004331	0.000645	0.003	0.000
0.3333	0.005275	0.001180	0.003	0.000
0.4444	0.006056	0.001811	0.004	0.000
0.5556	0.006731	0.002522	0.005	0.000
0.6667	0.007330	0.003304	0.005	0.000
0.7778	0.007870	0.004149	0.006	0.000
0.8889	0.008362	0.005051	0.006	0.000
1.0000	0.008815	0.006006	0.006	0.000
1.1111	0.009235	0.007009	0.007	0.000
1.2222	0.009625	0.008057	0.007	0.000
1.3333	0.009989	0.009147	0.007	0.000
1.4444	0.010330	0.010276	0.008	0.000
1.5556	0.010650	0.011441	0.008	0.000
1.6667	0.010951	0.012641	0.008	0.000
1.7778	0.011235	0.013874	0.009	0.000
1.8889	0.011502	0.015137	0.009	0.000
2.0000	0.011754	0.016430	0.009	0.000
2.1111	0.011992	0.017749	0.009	0.000
2.2222	0.012216	0.019094	0.010	0.000
2.3333	0.012428	0.020463	0.010	0.000
2.4444	0.012628	0.021855	0.010	0.000
2.5556	0.012817	0.023269	0.010	0.000
2.6667	0.012994	0.024703	0.011	0.000
2.7778	0.013162	0.026156	0.011	0.000
2.8889	0.013319	0.027628	0.011	0.000
3.0000	0.013466	0.029116	0.011	0.000
3.1111	0.013604	0.030620	0.012	0.000
3.2222	0.013732	0.032138	0.012	0.000
3.3333	0.013852	0.033671	0.012	0.000
3.4444	0.013963	0.035216	0.012	0.000
3.5556	0.014066	0.036774	0.012	0.000
3.6667	0.014160	0.038342	0.013	0.000
3.7778	0.014247	0.039920	0.013	0.000
3.8889	0.014325	0.041507	0.013	0.000

4.0000	0.014396	0.043103	0.013	0.000
4.1111	0.014458	0.044706	0.013	0.000
4.2222	0.014514	0.046316	0.013	0.000
4.3333	0.014561	0.047931	0.014	0.000
4.4444	0.014601	0.049551	0.014	0.000
4.5556	0.014634	0.051175	0.014	0.000
4.6667	0.014660	0.052803	0.014	0.000
4.7778	0.014678	0.054433	0.014	0.000
4.8889	0.014689	0.056064	0.015	0.000
5.0000	0.014692	0.057697	0.015	0.000
5.1111	0.014689	0.059329	0.015	0.000
5.2222	0.014678	0.060961	0.015	0.000
5.3333	0.014660	0.062591	0.015	0.000
5.4444	0.014634	0.064218	0.015	0.000
5.5556	0.014601	0.065842	0.016	0.000
5.6667	0.014561	0.067463	0.016	0.000
5.7778	0.014514	0.069078	0.018	0.000
5.8889	0.014458	0.070688	0.021	0.000
6.0000	0.014396	0.072291	0.023	0.000
6.1111	0.014325	0.073886	0.027	0.000
6.2222	0.014247	0.075474	0.029	0.000
6.3333	0.014160	0.077052	0.031	0.000
6.4444	0.014066	0.078620	0.032	0.000
6.5556	0.013963	0.080177	0.034	0.000
6.6667	0.013852	0.081723	0.035	0.000
6.7778	0.013732	0.083255	0.037	0.000
6.8889	0.013604	0.084774	0.038	0.000
7.0000	0.013466	0.086278	0.039	0.000
7.1111	0.013319	0.087766	0.040	0.000
7.2222	0.013162	0.089237	0.041	0.000
7.3333	0.012994	0.090691	0.042	0.000
7.4444	0.012817	0.092125	0.043	0.000
7.5556	0.012628	0.093538	0.044	0.000
7.6667	0.012428	0.094930	0.045	0.000
7.7778	0.012216	0.096300	0.046	0.000
7.8889	0.011992	0.097645	0.047	0.000
8.0000	0.011754	0.098964	0.048	0.000
8.1111	0.011502	0.100256	0.049	0.000
8.2222	0.011235	0.101519	0.050	0.000
8.3333	0.010951	0.102752	0.051	0.000
8.4444	0.010650	0.103952	0.051	0.000
8.5556	0.010330	0.105118	0.052	0.000
8.6667	0.009989	0.106247	0.053	0.000
8.7778	0.009625	0.107337	0.054	0.000
8.8889	0.009235	0.108385	0.055	0.000
9.0000	0.008815	0.109388	0.055	0.000
9.1111	0.008362	0.110343	0.056	0.000
9.2222	0.007870	0.111245	0.057	0.000
9.3333	0.007330	0.112090	0.057	0.000
9.4444	0.006731	0.112872	0.058	0.000
9.5556	0.006056	0.113583	0.198	0.000
9.6667	0.005275	0.114213	0.763	0.000
9.7778	0.004331	0.114749	1.444	0.000
9.8889	0.003080	0.115165	1.982	0.000
10.000	0.000000	0.115394	2.265	0.000
10.111	0.000000	0.000000	2.524	0.000

Analysis Results

POC 1





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1
Total Pervious Area: 0.64
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 0.31
Total Impervious Area: 0.33

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	0.028639
5 year	0.045619
10 year	0.056644
25 year	0.069977
50 year	0.079394
100 year	0.088348

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	0.018327
5 year	0.030381
10 year	0.041132
25 year	0.058579
50 year	0.074886
100 year	0.0945

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	**Predeveloped**	**Mitigated**
1949	0.032	0.014
1950	0.035	0.020
1951	0.056	0.051
1952	0.021	0.012
1953	0.016	0.012
1954	0.022	0.015
1955	0.041	0.018
1956	0.031	0.028
1957	0.029	0.015
1958	0.028	0.015

1959	0.023	0.014
1960	0.041	0.044
1961	0.022	0.014
1962	0.016	0.012
1963	0.021	0.015
1964	0.026	0.014
1965	0.020	0.015
1966	0.018	0.013
1967	0.042	0.016
1968	0.024	0.014
1969	0.025	0.014
1970	0.022	0.014
1971	0.023	0.016
1972	0.045	0.038
1973	0.022	0.014
1974	0.022	0.015
1975	0.035	0.016
1976	0.024	0.015
1977	0.004	0.011
1978	0.023	0.014
1979	0.011	0.012
1980	0.053	0.035
1981	0.017	0.013
1982	0.043	0.043
1983	0.030	0.016
1984	0.021	0.012
1985	0.011	0.013
1986	0.050	0.037
1987	0.044	0.042
1988	0.019	0.013
1989	0.011	0.011
1990	0.094	0.045
1991	0.055	0.047
1992	0.024	0.014
1993	0.022	0.014
1994	0.008	0.010
1995	0.028	0.017
1996	0.063	0.049
1997	0.056	0.048
1998	0.018	0.013
1999	0.050	0.033
2000	0.024	0.014
2001	0.005	0.012
2002	0.027	0.036
2003	0.035	0.012
2004	0.052	0.057
2005	0.033	0.016
2006	0.033	0.015
2007	0.072	0.058
2008	0.095	0.097
2009	0.044	0.034

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	0.0947	0.0971
2	0.0945	0.0576
3	0.0715	0.0568

4	0.0629	0.0512
5	0.0560	0.0488
6	0.0559	0.0481
7	0.0549	0.0473
8	0.0526	0.0447
9	0.0517	0.0437
10	0.0503	0.0431
11	0.0495	0.0419
12	0.0448	0.0381
13	0.0441	0.0371
14	0.0436	0.0361
15	0.0429	0.0349
16	0.0422	0.0341
17	0.0413	0.0330
18	0.0410	0.0279
19	0.0353	0.0197
20	0.0352	0.0179
21	0.0346	0.0171
22	0.0332	0.0161
23	0.0331	0.0158
24	0.0321	0.0158
25	0.0311	0.0157
26	0.0296	0.0157
27	0.0293	0.0155
28	0.0277	0.0151
29	0.0275	0.0150
30	0.0270	0.0150
31	0.0260	0.0149
32	0.0250	0.0149
33	0.0237	0.0148
34	0.0237	0.0145
35	0.0237	0.0144
36	0.0236	0.0144
37	0.0228	0.0143
38	0.0227	0.0142
39	0.0226	0.0142
40	0.0225	0.0142
41	0.0223	0.0139
42	0.0223	0.0138
43	0.0222	0.0138
44	0.0222	0.0137
45	0.0222	0.0136
46	0.0209	0.0136
47	0.0208	0.0135
48	0.0205	0.0134
49	0.0197	0.0134
50	0.0189	0.0131
51	0.0180	0.0130
52	0.0178	0.0125
53	0.0172	0.0124
54	0.0162	0.0122
55	0.0158	0.0122
56	0.0115	0.0119
57	0.0115	0.0116
58	0.0114	0.0115
59	0.0076	0.0113
60	0.0053	0.0110
61	0.0041	0.0101

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0143	11424	10468	91	Pass
0.0150	10371	7668	73	Pass
0.0156	9441	5063	53	Pass
0.0163	8630	3217	37	Pass
0.0169	7948	3093	38	Pass
0.0176	7279	2973	40	Pass
0.0183	6671	2873	43	Pass
0.0189	6098	2787	45	Pass
0.0196	5612	2710	48	Pass
0.0202	5153	2631	51	Pass
0.0209	4770	2565	53	Pass
0.0216	4408	2494	56	Pass
0.0222	4072	2404	59	Pass
0.0229	3767	2291	60	Pass
0.0235	3542	2190	61	Pass
0.0242	3292	2085	63	Pass
0.0248	3071	2016	65	Pass
0.0255	2862	1971	68	Pass
0.0262	2667	1919	71	Pass
0.0268	2479	1871	75	Pass
0.0275	2306	1816	78	Pass
0.0281	2158	1753	81	Pass
0.0288	1970	1694	85	Pass
0.0294	1828	1633	89	Pass
0.0301	1684	1572	93	Pass
0.0308	1572	1502	95	Pass
0.0314	1461	1425	97	Pass
0.0321	1362	1353	99	Pass
0.0327	1268	1275	100	Pass
0.0334	1173	1198	102	Pass
0.0340	1102	1129	102	Pass
0.0347	1030	1052	102	Pass
0.0354	962	993	103	Pass
0.0360	905	929	102	Pass
0.0367	849	882	103	Pass
0.0373	802	832	103	Pass
0.0380	750	782	104	Pass
0.0386	715	730	102	Pass
0.0393	679	680	100	Pass
0.0400	638	645	101	Pass
0.0406	605	586	96	Pass
0.0413	572	537	93	Pass
0.0419	542	488	90	Pass
0.0426	503	452	89	Pass
0.0432	469	408	86	Pass
0.0439	435	364	83	Pass
0.0446	391	321	82	Pass
0.0452	351	296	84	Pass
0.0459	321	277	86	Pass
0.0465	293	254	86	Pass
0.0472	264	221	83	Pass
0.0478	230	190	82	Pass
0.0485	203	168	82	Pass

0.0492	177	148	83	Pass
0.0498	160	136	85	Pass
0.0505	141	124	87	Pass
0.0511	130	112	86	Pass
0.0518	116	99	85	Pass
0.0524	103	90	87	Pass
0.0531	95	85	89	Pass
0.0538	79	75	94	Pass
0.0544	71	67	94	Pass
0.0551	58	59	101	Pass
0.0557	49	46	93	Pass
0.0564	46	37	80	Pass
0.0570	44	22	50	Pass
0.0577	43	13	30	Pass
0.0584	42	11	26	Pass
0.0590	41	6	14	Pass
0.0597	40	6	15	Pass
0.0603	39	6	15	Pass
0.0610	36	6	16	Pass
0.0616	34	5	14	Pass
0.0623	34	5	14	Pass
0.0630	30	5	16	Pass
0.0636	28	5	17	Pass
0.0643	26	5	19	Pass
0.0649	25	5	20	Pass
0.0656	22	5	22	Pass
0.0662	20	4	20	Pass
0.0669	18	4	22	Pass
0.0676	14	4	28	Pass
0.0682	13	4	30	Pass
0.0689	11	4	36	Pass
0.0695	10	4	40	Pass
0.0702	10	4	40	Pass
0.0708	8	4	50	Pass
0.0715	6	4	66	Pass
0.0722	4	4	100	Pass
0.0728	4	4	100	Pass
0.0735	4	4	100	Pass
0.0741	3	3	100	Pass
0.0748	3	3	100	Pass
0.0755	3	3	100	Pass
0.0761	3	3	100	Pass
0.0768	3	3	100	Pass
0.0774	3	3	100	Pass
0.0781	3	3	100	Pass
0.0787	3	2	66	Pass
0.0794	3	2	66	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #1

On-line facility volume:	0 acre-feet
On-line facility target flow:	0 cfs.
Adjusted for 15 min:	0 cfs.
Off-line facility target flow:	0 cfs.
Adjusted for 15 min:	0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Tank 1 POC	☐	63.14			☐	0.00			
Total Volume Infiltrated		63.14	0.00	0.00		0.00	0.00	0%	No Treat. Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Passed

Model Default Modifications

Total of 0 changes have been made.

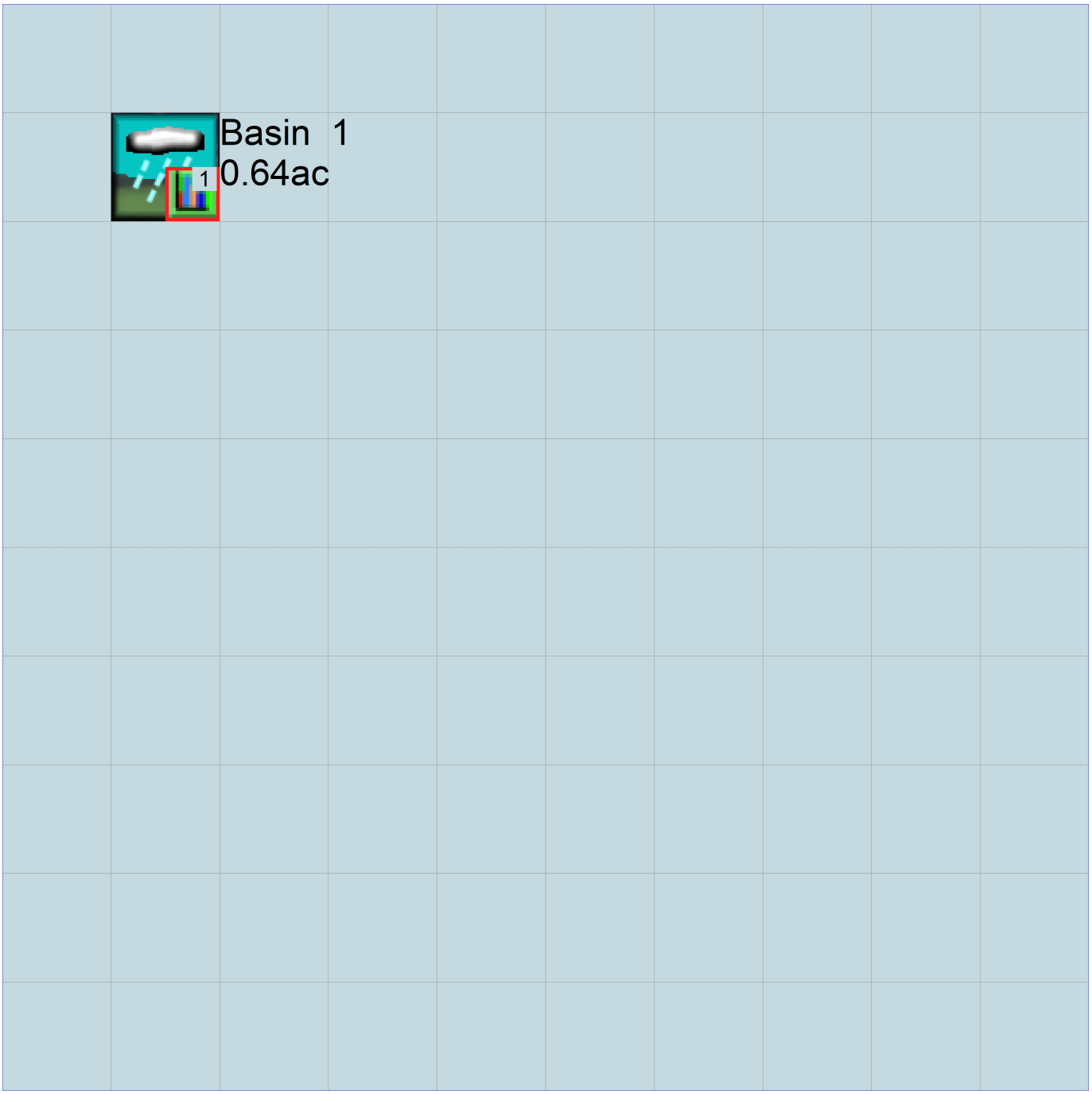
PERLND Changes

No PERLND changes have been made.

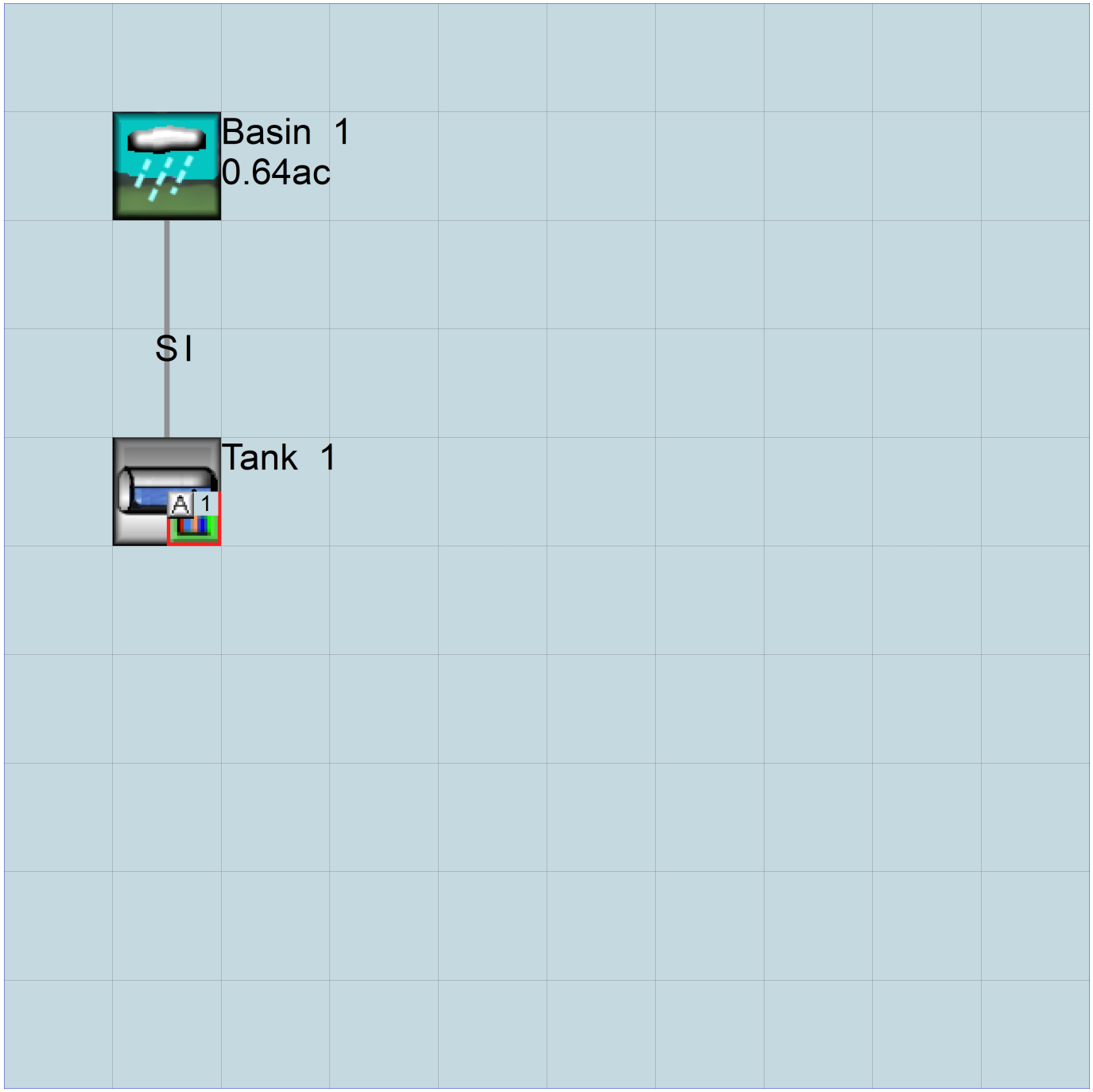
IMPLND Changes

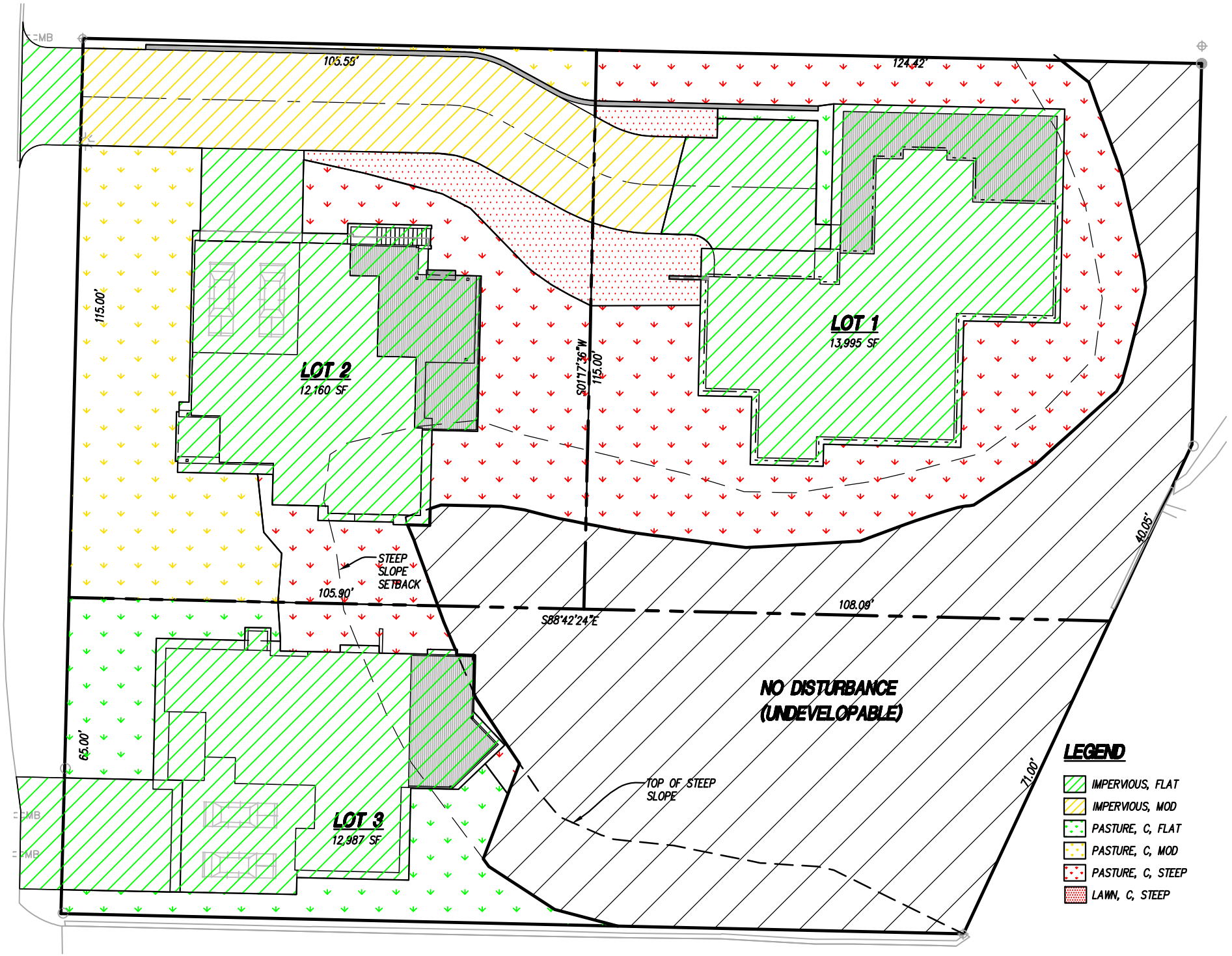
No IMPLND changes have been made.

Appendix
Predeveloped Schematic



Mitigated Schematic




105.53'
124.42'
115.00'
LOT 2
12,160 SF
LOT 1
13,995 SF
S01°17'36"W
115.00'
STEEP
SLOPE
SETBACK
105.90'
108.09'
S88°42'24"E
40.05'
NO DISTURBANCE
(UNDEVELOPABLE)
65.00'
LOT 3
12,987 SF
TOP OF STEEP
SLOPE
71.00'
LEGEND
IMPERVIOUS, FLAT
IMPERVIOUS, MOD
PASTURE, C, FLAT
PASTURE, C, MOD
PASTURE, C, STEEP
LAWN, C, STEEP

Appendix B
MAINTENANCE & OPERATIONS MANUAL

Table V-4.5.2(3) Maintenance Standards - Closed Detention Systems (Tanks/Vaults)

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
Storage Area	Plugged Air Vents	One-half of the cross section of a vent is blocked at any point or the vent is damaged.	Vents open and functioning.
	Debris and Sediment	Accumulated sediment depth exceeds 10% of the diameter of the storage area for 1/2 length of storage vault or any point depth exceeds 15% of diameter. (Example: 72-inch storage tank would require cleaning when sediment reaches depth of 7 inches for more than 1/2 length of tank.)	All sediment and debris removed from storage area.
	Joints Between Tank/Pipe Section	Any openings or voids allowing material to be transported into facility. (Will require engineering analysis to determine structural stability).	All joint between tank/pipe sections are sealed.
	Tank Pipe Bent Out of Shape	Any part of tank/pipe is bent out of shape more than 10% of its design shape. (Review required by engineer to determine structural stability).	Tank/pipe repaired or replaced to design.
	Vault Structure Includes Cracks in Wall, Bottom, Damage to Frame and/or Top Slab	Cracks wider than 1/2-inch and any evidence of soil particles entering the structure through the cracks, or maintenance/inspection personnel determines that the vault is not structurally sound. Cracks wider than 1/2-inch at the joint of any inlet/outlet pipe or any evidence of soil particles entering the vault through the walls.	Vault replaced or repaired to design specifications and is structurally sound. No cracks more than 1/4-inch wide at the joint of the inlet/outlet pipe.

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
Manhole	Cover Not in Place	Cover is missing or only partially in place. Any open manhole requires maintenance.	Manhole is closed.
	Locking Mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread (may not apply to self-locking lids).	Mechanism opens with proper tools.
	Cover Difficult to Remove	One maintenance person cannot remove lid after applying normal lifting pressure. Intent is to keep cover from sealing off access to maintenance.	Cover can be removed and reinstalled by one maintenance person.
	Ladder Rungs Unsafe	Ladder is unsafe due to missing rungs, misalignment, not securely attached to structure wall, rust, or cracks.	Ladder meets design standards. Allows maintenance person safe access.
Catch Basins	See "Catch Basins" (No. 5)	See "Catch Basins" (No. 5).	See "Catch Basins" (No. 5).

Table V-4.5.2(4) Maintenance Standards - Control Structure/Flow Restrictor

Maintenance Component	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Trash and Debris (Includes Sediment)	Material exceeds 25% of sump depth or 1 foot below orifice plate.	Control structure orifice is not blocked. All trash and debris removed.
	Structural Damage	Structure is not securely attached to manhole wall. Structure is not in upright position (allow up to 10% from plumb). Connections to outlet pipe are not watertight and show signs of rust. Any holes - other than designed holes - in the structure.	Structure securely attached to wall and outlet pipe. Structure in correct position. Connections to outlet pipe are water tight; structure repaired or replaced and works as designed. Structure has no holes other than designed holes.
Cleanout Gate	Damaged or Missing	Cleanout gate is not watertight or is missing. Gate cannot be moved up and down by one maintenance person. Chain/rod leading to gate is missing or damaged. Gate is rusted over 50% of its surface area.	Gate is watertight and works as designed. Gate moves up and down easily and is watertight. Chain is in place and works as designed. Gate is repaired or replaced to meet design standards.
Orifice Plate	Damaged or Missing	Control device is not working properly due to missing, out of place, or bent orifice plate.	Plate is in place and works as designed.

Maintenance Component	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
	Obstructions	Any trash, debris, sediment, or vegetation blocking the plate.	Plate is free of all obstructions and works as designed.
Overflow Pipe	Obstructions	Any trash or debris blocking (or having the potential of blocking) the overflow pipe.	Pipe is free of all obstructions and works as designed.
Manhole	See "Closed Detention Systems" (No. 3).	See "Closed Detention Systems" (No. 3).	See "Closed Detention Systems" (No. 3).
Catch Basin	See "Catch Basins" (No. 5).	See "Catch Basins" (No. 5).	See "Catch Basins" (No. 5).

Table V-4.5.2(5) Maintenance Standards - Catch Basins

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is performed
General	Trash & Debris	Trash or debris which is located immediately in front of the catch basin opening or is blocking inletting capacity of the basin by more than 10%. Trash or debris (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of six inches clearance from the debris surface to the invert of the lowest pipe. Trash or debris in any inlet or outlet pipe blocking more than 1/3 of its height. Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane).	No Trash or debris located immediately in front of catch basin or on grate opening. No trash or debris in the catch basin. Inlet and outlet pipes free of trash or debris. No dead animals or vegetation present within the catch basin.
	Sediment	Sediment (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of 6 inches clearance from the sediment surface to the invert of the lowest pipe.	No sediment in the catch basin
	Structure Damage to Frame and/or Top Slab	Top slab has holes larger than 2 square inches or cracks wider than 1/4 inch. (Intent is to make sure no material is running into basin). Frame not sitting flush on top slab, i.e., separation of more than 3/4 inch of the frame from the top slab. Frame not securely attached	Top slab is free of holes and cracks. Frame is sitting flush on the riser rings or top slab and firmly attached.

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is performed
	Fractures or Cracks in Basin Walls/ Bottom	Maintenance person judges that structure is unsound. Grout fillet has separated or cracked wider than 1/2 inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering catch basin through cracks.	Basin replaced or repaired to design standards. Pipe is regrouted and secure at basin wall.
	Settlement/ Misalignment	If failure of basin has created a safety, function, or design problem.	Basin replaced or repaired to design standards.
	Vegetation	Vegetation growing across and blocking more than 10% of the basin opening. Vegetation growing in inlet/outlet pipe joints that is more than six inches tall and less than six inches apart.	No vegetation blocking opening to basin. No vegetation or root growth present.
	Contamination and Pollution	See "Detention Ponds" (No. 1).	No pollution present.
Catch Basin Cover	Cover Not in Place	Cover is missing or only partially in place. Any open catch basin requires maintenance.	Catch basin cover is closed
	Locking Mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.	Mechanism opens with proper tools.
	Cover Difficult to Remove	One maintenance person cannot remove lid after applying normal lifting pressure. (Intent is keep cover from sealing off access to maintenance.)	Cover can be removed by one maintenance person.
Ladder	Ladder Rungs Unsafe	Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges.	Ladder meets design standards and allows maintenance person safe access.
Metal Grates (If Applicable)	Grate opening Unsafe	Grate with opening wider than 7/8 inch.	Grate opening meets design standards.
	Trash and Debris	Trash and debris that is blocking more than 20% of grate surface inletting capacity.	Grate free of trash and debris.
	Damaged or Missing.	Grate missing or broken member(s) of the grate.	Grate is in place and meets design standards.

Appendix C
GEOTECHNICAL REPORTS

February 27, 2020

Mr. Bogdan Maksimchuk
Barcelo Homes
P. O. Box 1639
Mercer Island, WA 98040

Re: **Geotechnical Recommendations**
Proposed Residence
3220 74th Avenue South
Mercer Island, Washington

Dear Mr. Maksimchuk,

This report summarizes the results of our site investigation and geologic research for the residential property located on the south side of 93rd Avenue SE in Mercer Island. It is understood that three new residential structures will be built on this property after removal of an existing residence and garage.

The purpose of this report is to describe existing site and subsoil conditions, and to provide recommendations for foundation design. Geologic mapping along with recent subsurface explorations were used as references for project design.

Site Conditions

The property is relatively flat on the upper west side adjacent to 93rd Avenue, but there is a drop in elevation on the east side where an existing creek channel extends down to the east property line. Geologic mapping by Troost in 2006 shows this area is underlain by glacial deposits (Qvt) consisting of very dense silty sands. The existing steep slope area adjacent to the creek shows no evidence of previous landslide activity on this property that has an overall elevation drop of about 30 to 35 feet from the west to east sides of this site.

This property does not classify as a geologic hazard area based on our site investigation and confirmation of the dense underlying glacial soils. This slope is not susceptible to erosion, sliding, earthquake seismic response or other geological events based on slope gradient, dense glacial soils, hydrology, and heavy tree and vegetation covering this slope area.

Subsurface exploration was performed by excavating four test pits to document the existing soil and groundwater conditions. All test pits encountered an upper thin layer of topsoil that was underlain by medium dense to dense silty sands classified as weathered glacial till soils. No groundwater was encountered to depths ranging from 6 to 9 feet below existing grades. Our test pit excavations are described below and their locations are shown on Drawing No. 1.

TP -1 Located on the lower east side of the property - Elev 212 feet
0.0 to 0.8ft Topsoil – Silty Sand with grass and sod; brown, moist, loose;
0.8 to 6.0ft f/m Silty Sand; light brown, moist, medium dense to dense;
6.0 to 7.5ft Sand and Silty Sand; light brown, moist, dense; no groundwater encountered

TP-2 Located on the north side of the property – Elev 221 feet
0.0 to 0.4ft Topsoil– Silty Sand; brown, loose and moist;
0.4 to 2.2ft f/m Silty Sand; light brown, moist, medium dense;
2.2 to 6.5ft Silty Sand; light brown, moist, dense; no groundwater encountered;

TP-3 Located near the northwest corner of the property– Elev 229 feet
0.0 to 0.5ft Sandy Gravel Fill; grey, slightly moist, dense;
0.5 to 2.5ft Silty Sand; light brown, moist, medium dense;
2.5 to 5.5ft Silty Sand; light brown, moist, dense; no groundwater encountered;

TP-4 Located near the southwest corner of the property – Elev 226 feet
0.0 to 0.3ft Topsoil – Silty Sand; brown, moist, loose;
0.3 to 3.0ft Silty Sand; light brown, moist, medium dense;
3.0 to 6.0ft Silty Sand; light brown, moist, dense; no groundwater encountered;

On the basis of our field exploration the subsurface soil and geologic conditions consisting of dense silty sands are competent for foundation support. The underlying very dense glacial deposits are stable and will not be subject to lateral or vertical slope movement or instability due to future seismic activity.

Geotechnical Recommendations

Based on the results of our site investigation the following recommendations have been prepared for site development and foundation design. It is understood that one new residence to be located on the lower portion of Lot 20 at the northeast corner of this property. The remaining two residences on Lots 21 and 22 will be located on the upper portion of this property adjacent to 93rd Avenue.

Foundations extending down to the dense soils may be designed for an allowable bearing value of 2000 psf and a passive value of 250 pcf. Depths of these footings will vary depending on final building pad grades, but they must be a minimum depth of 24 inches below the existing topsoil layer. An active pressure of 30 pcf and a seismic pressure of 8H should be used in the design of retaining walls. Concrete floor slabs may be poured on the final subgrade soils as long as they are proof rolled prior to pouring the concrete.

Perforated subdrain piping should be installed around the perimeter of the residence foundations, and should discharge to a catch basin before connecting to the city storm drain system. Storm water runoff from the impervious surface areas along with subdrain groundwater should be directed into a catch basin onsite before discharge to the City storm drain system or into the existing creek channel that leads toward the southeast corner of this property.

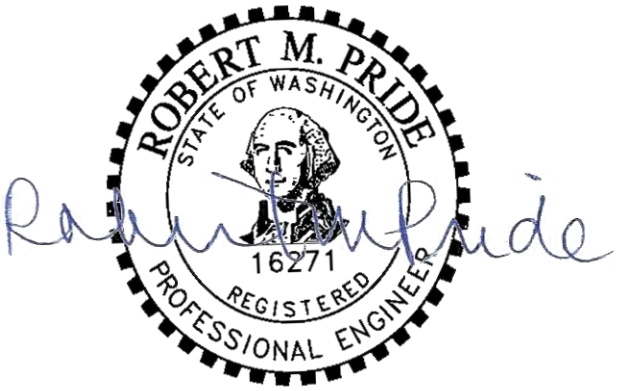
It is recommended that field inspections be performed during site excavation for the proposed building pads and the structure foundations. Field memos will be prepared for submittal to Mercer Island.

Summary

A final plan review will be performed for each of the proposed residential projects to confirm that our geotechnical recommendations have been included on the design drawings. Our findings and recommendations provided in this report were prepared in accordance with generally accepted principles of engineering geology and geotechnical engineering as practiced in the Puget Sound area at the time this report was submitted. We make no other warranty, either express or implied.

Please call me if there are any questions.

Respectfully,

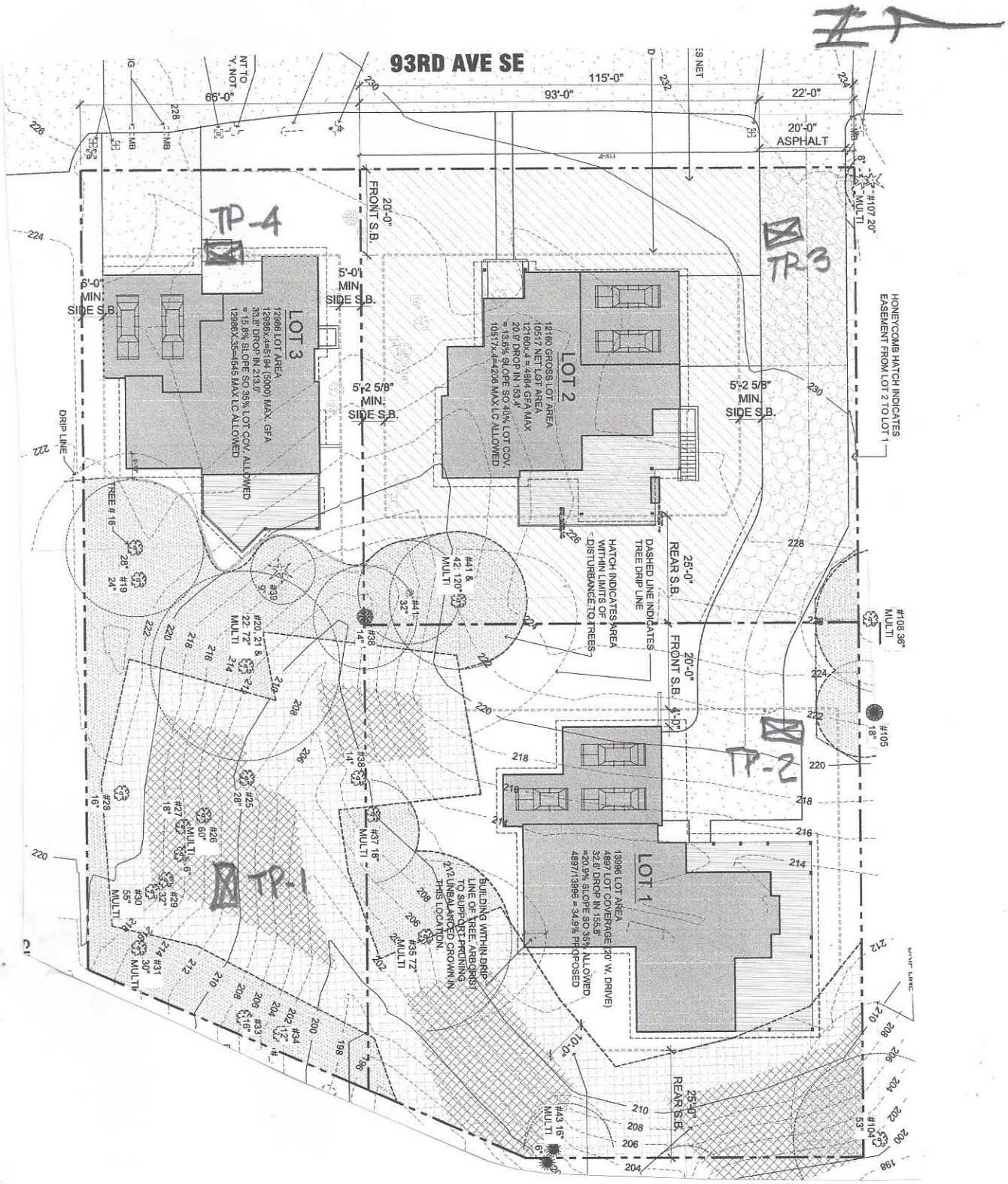


Robert M. Pride, P. E.
Principal Geotechnical Engineer

dist: (1) Addressee

encl: Drawing No. 1

rmp: Barcelo93rdRes1



SITE PLAN

Proposed Residences
9216 93rd Avenue NE
Mercer Island, Washington

Project No.

Drawing No. **1**

Robert M. Pride, LLC

Consulting Engineer

November 5, 2020

Mr. Bogdan Maksimchuk
Barcelo Homes
P. O. Box 1639
Mercer Island, WA 98040

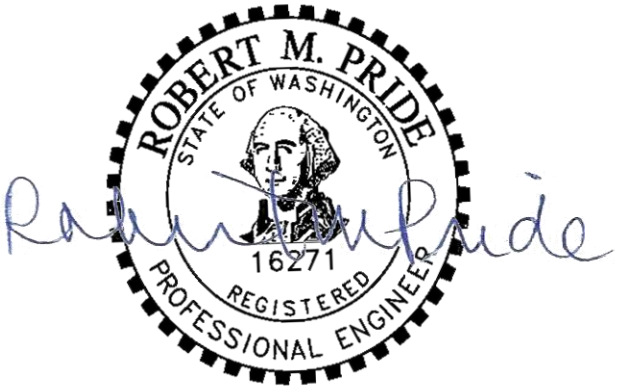
Re: **Geotechnical Recommendations**
Proposed Residences
7216 93rd Avenue SE
Mercer Island, Washington

Dear Mr. Maksimchuk,

This report summarizes the results of our site investigation and geologic research for the residential property located on the south side of 93rd Avenue SE in Mercer Island. It is understood that three new residential structures will be built on this property after removal of an existing residence and garage.

This property does not classify as a geologic hazard area based on our site investigation and confirmation of the dense underlying glacial soils. The existing slopes extending down below the proposed residence building pad areas are not susceptible to erosion or landslide failures based on slope gradient, dense glacial soils, hydrology, and heavy tree and vegetation covering this slope area. Based on site exploration and evaluation of existing steep slope conditions, it has been recommended that a ten foot buffer zone be established from the top of the steep slopes for permanent protection of the proposed residences. All previous recommendations for foundation installations are appropriate.

Respectfully,



Robert M. Pride, P. E.
Principal Geotechnical Engineer

dist: (1) Addressee

rmp: Barcelo93rdRes3

November 14, 2020

Mr. Bogdan Maksimchuk
Barcelo Homes
P. O. Box 1639
Mercer Island, WA 98040

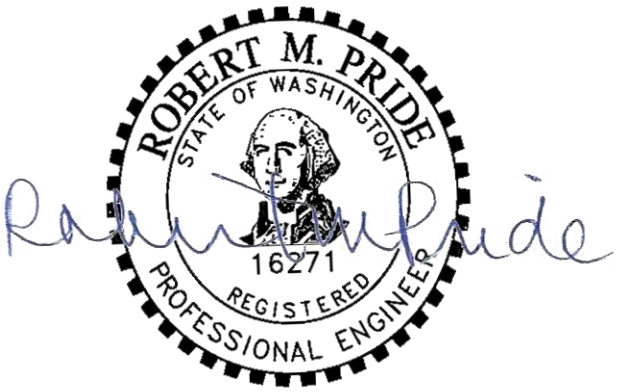
Re: **Geotechnical Recommendations**
Proposed Residences
7216 93rd Avenue SE
Mercer Island, Washington

Dear Mr. Maksimchuk,

This report provides supplemental information for this property as requested by Mercer Island. The entire property including the existing steep slope adjacent to the creek channel is underlain by dense glacial deposits that are not subject landslide movement or is considered a seismic hazard area. Very shallow surficial erosion may occur if heavy storm water is allowed to flow down the steep slope areas, but existing observations showed no significant erosion conditions have occurred.

The proposed deck extension on the north side of the new residence on Lot 1 has the NE corner extending about five feet into the ten foot buffer zone. It has been recommended that the deck footing extend down to 3 feet at the corner to maintain a ten foot horizontal setback from the face of this steep slope. All footings will bear on the dense glacial soils as previously recommended, and the entire residence building pad will remain outside of the this ten foot buffer..

Respectfully,



Robert M. Pride, P. E.
Principal Geotechnical Engineer

dist: (1) Addressee

rmp: Barcelo93rdRes4

December 17, 2021

Mr. Bogdan Maksimchuk
Barcelo Homes
P.O. Box 1639
Mercer Island, Washington

Re: Geotechnical Report Addendum
Proposed New Residence (Lot 1)
7216 93rd Avenue SE
Mercer Island, Washington

Dear Mr. Maksimchuk,

This geotechnical report addendum has been prepared in response to comments received from the City of Mercer Island. This addendum should be used in conjunction with previous reports prepared for the site and project as listed below:

1. Geotechnical Recommendations, Proposed Residence, 7215 93rd Avenue SE, Mercer Island, Washington dated February 27, 2020 prepared by Robert M. Pride, P.E.
2. Infiltration Testing, Proposed Residence, 7215 93rd Avenue SE, Mercer Island, Washington dated June 26, 2020 prepared by Robert M. Pride, P.E.
3. Geotechnical Recommendations, Proposed Residence, 7216 93rd Avenue SE, Mercer Island, Washington dated November 5, 2020 prepared by Robert M. Pride, P.E.
4. Geotechnical Recommendations, Proposed Residence, 7216 93rd Avenue SE, Mercer Island, Washington dated November 14, 2020 prepared by Robert M. Pride, P.E.

Slope Reconnaissance

The slope conditions described in the various reports listed above was based upon soil conditions observed in subsurface explorations completed in February and June 2020 and November 2021 and as described in the above referenced reports. Additional details on subject slopes at the site can be found in the Critical Area Report for the site prepared by Sondergaard Geoscience, PLLC dated May 5, 2021.

Groundwater Conditions/Site Excavations

Subsurface explorations completed at the site in February and June 2020 indicate that ground water was not observed in the test excavations to the maximum depths explored of 7.5 to 8 feet below the existing site grades. In addition, exploration boring EB-1(see attached boring log) completed in November 2021 to a depth of 26 feet in the area of the proposed stormwater detention facility (Figure 1) did not encounter groundwater.

Based on the completed subsurface explorations at the site, it is not anticipated that groundwater will be encountered in the excavations at the site.

Impact of Demolition on New Construction

The existing residence located at the northeast corner of the subject property on Lot 20 of the proposed new construction. The existing house has a basement and the new house on Lot 20 will be constructed over the foot print of the old house. Demolition of the old house should remove all of the old foundations and slabs. All old fill location beneath new foundations and slabs should also be removed down to bearing soil. Depressions remaining after demolition that are below new foundation elements or slabs should be backfilled with structural fill.

After stripping, planned excavation, and any required over-excavation have been performed to the satisfaction of the geotechnical engineer/engineering geologist, the upper 12 inches of exposed ground should be recompacted to a firm and unyielding condition. If the subgrade contains too much moisture, adequate recompaction may be difficult or impossible to obtain and should probably not be attempted. In lieu of recompaction, the area to receive fill should be blanketed with washed rock or quarry spalls to act as a capillary break between the new fill and the wet subgrade. Where the exposed ground remains soft and further over-excavation is impractical, placement of an engineering stabilization fabric may be necessary to prevent contamination of the free-draining layer by silt migration from below.

After recompaction of the exposed ground is approved, or a free-draining rock course is laid, structural fill may be placed to attain desired grades. Structural fill is defined as non-organic soil, acceptable to the geotechnical engineer/engineering geologist, placed in maximum 8-inch loose lifts with each lift being compacted to 95 percent of ASTM:D-1557. In the case of roadway and utility trench filling, the backfill should be placed and compacted in accordance with local codes and standards. The top of the compacted fill should extend horizontally outward a minimum distance of 3 feet beyond the location of the perimeter footings or roadway edges before sloping down at a maximum angle of 2H:1V.

The other structure on the property is a garage that is located on the southeast corner of Lot 2. The structure is founded upon shallow foundations and demolition of this structure should not result in extensive excavation. Areas under new structural elements that require fill to establish the desired finished grades should be prepared and completed as described above.

Temporary Cut Slopes

In our opinion, stable construction slopes should be the responsibility of the contractor and should be determined during construction. For estimating purposes, however, we anticipate that temporary, unsupported cut slopes in the medium dense to very dense native soil may be made at a maximum slope of 1H:1V (Horizontal:Vertical). As is typical with earthwork operations, some sloughing and raveling may occur, and cut

slopes may have to be adjusted in the field. In addition, WISHA/OSHA regulations should be followed at all times.

Permanent cut slopes in fill and native soils or structural fill must not exceed a 2H:1V inclination. Fill slopes should either be overbuilt and trimmed back to final grade or surface compacted to a specified density.

Temporary Cuts or Shoring for Basement Construction

Construction of the proposed new house on Lot 20 will involve cuts ranging in depth from about 10 to 12 feet below the existing site grade. Based upon the plans reviewed, it appears there is sufficient space to construct safe slopes for these cuts in accordance with the recommendations for temporary cut slopes presented above. Should temporary shoring be required, recommendations for shoring can be provided based upon the specific condition identified.

Temporary Cuts for Stormwater Detention Pipe

The proposed stormwater detention system will consist of a 10 feet diameter CMP installed beneath the access drive into the property at the northwest corner of the site. Cuts on the order of 21 feet deep will be required. Due to the proximity of the property line on the north and west, cuts on the north and west sides of the CMP excavation will required temporary shoring consisting of soldier pile walls. Along the south and east sidewalls of the excavation sufficient room exists to safely cut these areas at an inclination of 1H:1V (Horizontal:Vertical) per the recommendations provided above for temporary cut slopes. To avoid having to use tie back anchors that would impinge upon the neighboring property to the north and right-of-way to the west, the retained cut height will be a maximum of 15 feet with a slope no steeper than 1H:1V and higher than 6.5 feet above the top of the shoring wall.

Soldier pile shoring walls involve wide flange piles that are installed into borings drilled to the desired depths. Design of the shoring wall should be based upon a temporary active earth pressure of 55 pcf where the cut above the shoring wall is sloped and a passive value of 350 pcf over 2 pile diameters (Figure 2). If there is no slope behind the shoring wall then an active earth pressure of 35 pcf may be used. Wood lagging may be designed for ½ of the active pressure.

Excavation for the shoring wall construction should not exceed a depth of 5 feet without lagging the native advance outwash soils. All voids behind the lagging must be backfilled with a sand slurry, pea gravel, clean crushed rock or drain rock. Care must be taken to assure that the backfill materials do not bridge so that all voids behind the lagging are filled and the lagging is in direct contact with native soil or backfill at all times.

Retaining Wall on the North Side of the Driveway

Lateral loads can be resisted by friction between the foundation and the natural glacial soils or supporting structural fill soils, and by passive earth pressure acting on the buried portions of the foundations. The foundations must be backfilled with structural

fill and compacted to at least 95 percent of the maximum dry density to achieve the passive resistance provided below. We recommend the following allowable design parameters:

- Passive equivalent fluid = 300 pcf
- Coefficient of friction = 0.32

All perimeter footing walls should be provided with a drain at the base of the footing elevation. Drains should consist of rigid, perforated, polyvinyl chloride (PVC) pipe surrounded by washed pea gravel. The level of the perforations in the pipe should be set at or slightly below the bottom of the footing and the drains should be constructed with sufficient gradient to allow gravity discharge away from the buildings. Roof and surface runoff should not discharge into the footing drain system but should be handled by a separate, rigid, tightline drain. In planning, exterior grades adjacent to foundations should be sloped downward away from the structures to achieve surface drainage.

Foundation Surcharge Loading

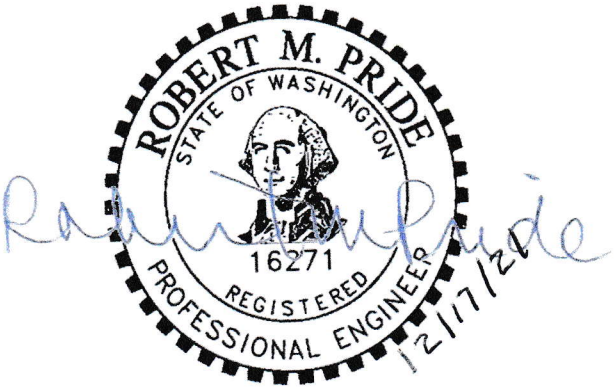
Along the west side of the proposed new house, there are areas where the shallower foundations for the garage are close enough to the basement walls to apply a surcharge load to the basement walls. We recommend that a surcharge equal to 45 pcf be applied to design of the basement walls to account for the surcharge provided by the garage footings.

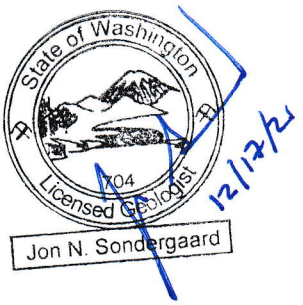
Top of Steep Slope Set Back

The current footprint for the house on Lot 1 meets the setback requirements of the Mercer Island Municipal Code (MIMC) Title 19 Chapter 19.07 Section 19.07.1160(C)(2)(a) in that the set back is equal to the height of the slope in this area (see Figure 3).

Should you have any questions regarding this letter or other geotechnical aspects of the project, please call at your earliest convenience.

Respectfully,



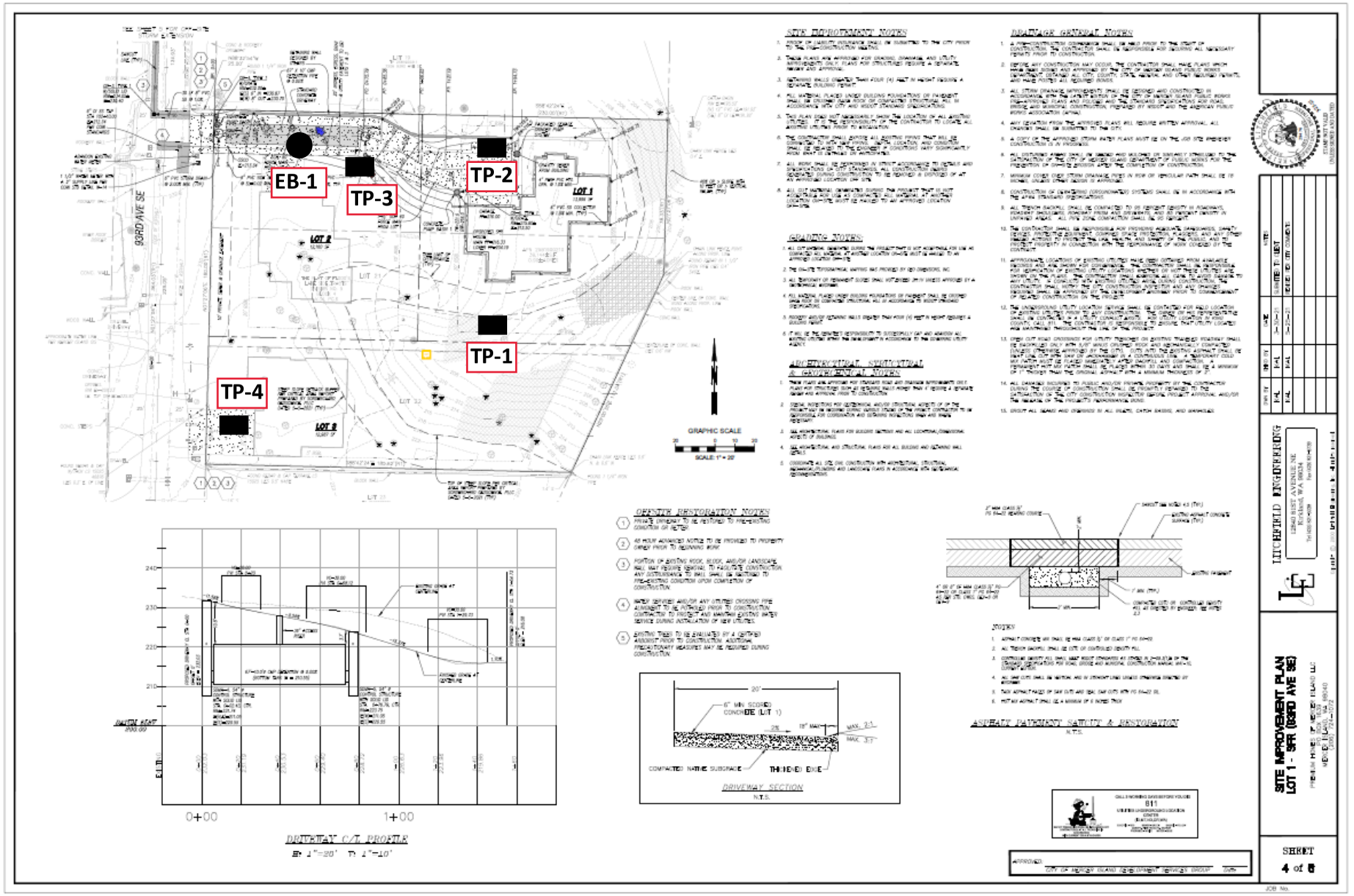


Robert M. Pride, P. E.
Principal Geotechnical Engineer

Jon N. Sondergaard, L.E.G.
Engineering Geologist

dist: (1) Addressee
(2) McCullough Architects

Attachments: Figure 1 Site and Exploration Plan
Figure 2 Shoring Earth Pressure Diagram
Figure 3 Top of Steep Slope Set Back
Exploration Boring Log
Bob Pride, P.E. Registration



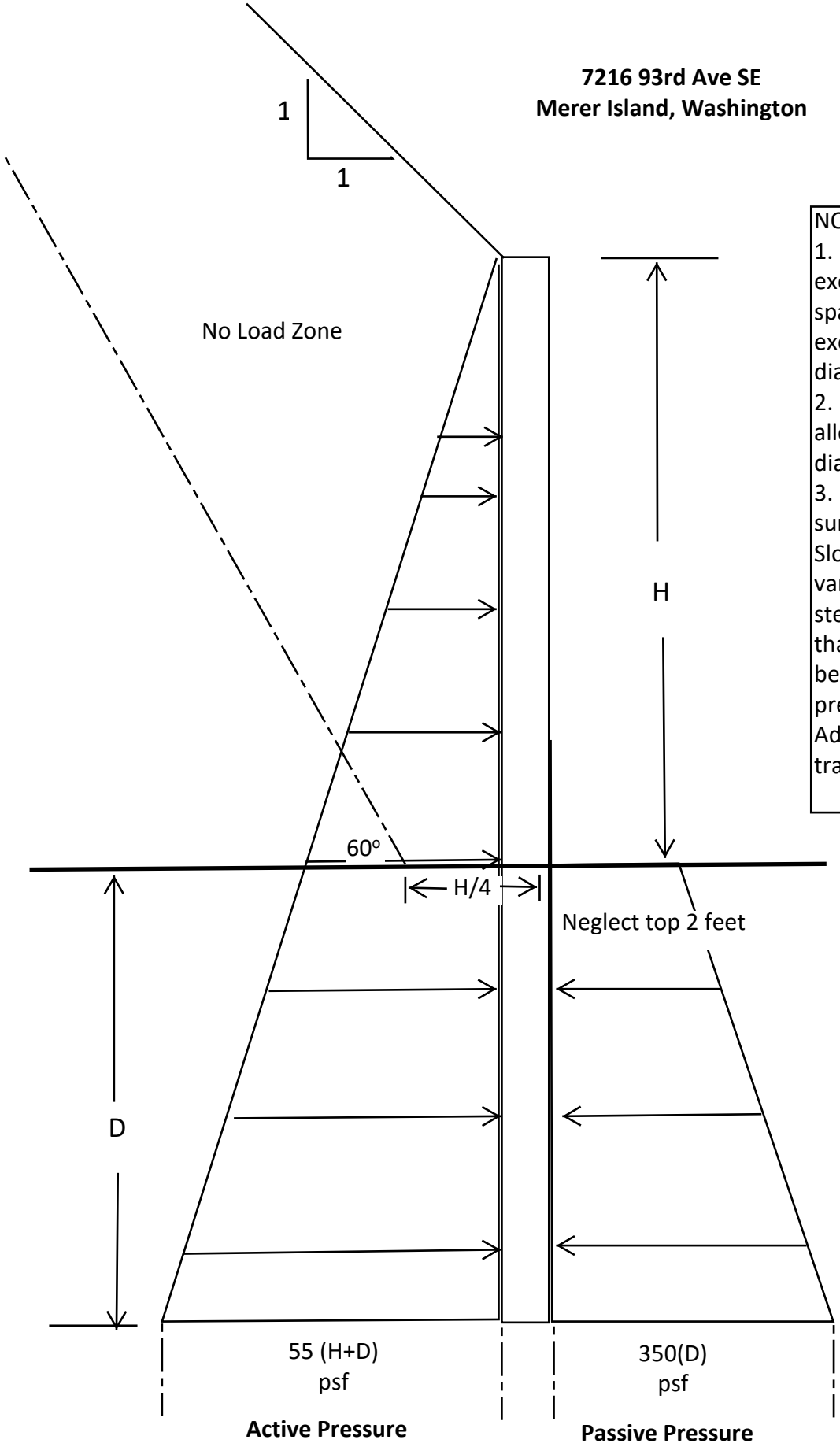
● EB-1 Boring Number and Approximate Location SGP November 2021

■ TP-1 Test Pit Number and Approximate Location Pride April 2020

SITE AND EXPLORATIO NPLAN
7216 93RD AVENUE SE
MERCER ISLAND, WASHINGTON

FIGURE 1

7216 93rd Ave SE
Merer Island, Washington



NOTES:
1. Active pressure above excavation acts over one pile spacing. Active pressure below excavation acts over one pile diameter.
2. Passive pressures are allowable acting over 2 pile diameters.
3. Active pressure includes surcharge for slope behind wall. Slope inclination and height will vary with topography but no steeper than 1H:1V and no taller than 6.5 feet. Where slope behind wall is flat then active pressure of 35 psf may be used. Add appropriate surcharges for traffic or parking.

TEMPORARY SHORING
DRILLED WIDE FLANGE PILES
EARTH PRESSURE DIAGRAM

J-0165

93RD AVE SE

115'-0"

93'-0"

22'-0"

20'-0" ASPHALT

65'-0"

WATER METERS

MAILBOXES, EXISTING LOCATION

CATCH BASIN

FIRE HYDRANT (ADDITIONAL HYDRANT TO NORTH OF PROPERTY, NOT SHOWN)

GUY WIRE

UTILITY POLE

THICK DASHED LINE INDICATES PROPOSED BUILDING PAD, TYP.

LINE HATCH INDICATES NET LOT 2 AREA

WATER METER

MAILBOX

UTILITY POLE

RECOMMENDED TOPO OF STEEP SLOPE SET BACK BUFFER

HONEYCOMB HATCH INDICATES EASEMENT FROM LOT 2 TO LOT 1

LOT 3

12986 LOT AREA
12986x.4=5194 (5000) MAX. GFA
33.8' DROP IN 213.9'
= 15.8% SLOPE SO 35% LOT COV. ALLOWED
12986X.35=4545 MAX LC ALLOWED

LOT 2

12160 GROSS LOT AREA
10517 NET LOT AREA
12160x.4 = 4864 GFA MAX
20.9' DROP IN 153.4'
= 13.6% SLOPE SO 40% LOT COV.
10517x.4=4206 MAX LC ALLOWED

LOT 1

13996 LOT AREA
4897 LOT COVERAGE (20' W. DRIVE)
32.6' DROP IN 155.8'
=20.9% SLOPE SO 35% ALLOWED
4897/13996 = 34.9% PROPOSED

5'-0" MIN SIDE S.B.

5'-2 5/8" MIN. SIDE S.B.

25'-0" REAR S.B.

20'-0" FRONT S.B.

4'-0"

DRIP LINE

DASHED LINE INDICATES TREE DRIP LINE

HATCH INDICATES AREA WITHIN LIMITS OF DISTURBANCE TO TREES

BUILDING WITHIN DRIP LINE OF TREE. ARBORIST TO SUPPORT PRUNING UNBALANCED CROWN IN THIS LOCATION.

TREE LIMIT OF DISTURBANCE LINE, TYP.

TOP OF STEEP SLOPE

REFERENCE LINE FROM TOP OF SLOPE

DARK HATCH INDICATES MAPPED STEEP SLOPE AREAS PER SURVEY, TYP.

TREE # 18 #18 28" #19 24"

#39 9"

#42: 120" MULTI

#41 32"

#38 14"

#20, 21 & 22: 72" MULTI

#36 14"

#37 18" MULTI

#35 72" MULTI

#25 28"

#26 60"

#27 18"

#28 16"

MULTI 6"

#29 32"

#30 55" MULTI

#31 30" MULTI

#33 16"

#34 12"

24" SNAG

#43 16" MULTI 6"

#101 20"

#102 32"

#103 70" MULTI

#104 53"

#105 18"

#106 36" MULTI

#107 20" MULTI

PROPOSED PROPERTY LINE

SITE PLAN

SCALE: 10 0 20

KEY:

- TREE LIMITS OF DISTURBANCE
- MAPPED STEEP SLOPE PER SURVEY
- 10' BUFFER FROM TOP OF SLOPE
- BUILDING
- WOOD DECK
- IMPERVIOUS SURFACE
- EASEMENT FROM LOT 2 TO LOT 1
- LOT 2 NET AREA
- EXTENT OF BUILDING PAD
- PROPERTY LINE

RECOMMENDED TOP OF STEEP SLOPE SETBACK BUFFER
7216 93RD AVENUE SE
MERCER ISLAND, WASHINGTON

J-0165 FIGURE 3

Short Plat Application Set

A1 Site Plan

PRELIMINARY SHORT PLAT APPLICATION

7216 93rd AVE. SE
MERCER ISLAND, WA 98040

7806 REGISTERED ARCHITECT A. PHILIP MCCULLOUGH STATE OF WASHINGTON

Date: 2021.04.12
Job No: 19-034
Project No: 00000
Drawn: MCG
Approved: APM

Owner

Barcelo homes

Revisions	Comment
.	.

MCCULLOUGH ARCHITECTS
2910 First Ave South, Suite 201
Seattle. WA. 98134
206.443.1181
mccullougharchitects.com

7216 93rd AVENUE SE
EXPLORATION LOGS

EB-1

Sample Depth (ft)	SPT	Sample No.	Soil Description
			FILL
2.5 – 4.0	6/5/4	S-1	Medium dense, moist, mottled, slightly oxidized brown to gray, sandy SILT with scattered gravel (2.5 – 3.5
			Vashon Advance Outwash
			Medium dense, moist, gray, fine to medium SAND (3.5 – 4.0)
5.0 – 6.5	3/16/11	S-2	Medium dense, moist to wet, brown to gray, slightly silty, SAND with scattered gravel.
10.0 – 11.5	10/11/11	S-3	Medium dense, moist, gray, slightly silty to silty SAND
15.0 – 16.5	14/16/18	S-4	Dense, moist, gray, slightly silty fine SAND
20.0 – 21.5	14/18/15	S-5	Dense, moist, gray, slightly silty fine SAND with scattered silt lenses. Gravelly drilling at 23 feet
			Pre-Olympia Non-glacial Deposits
25.0 – 25.3	50 – 4 inches	S-6	Very dense, moist, oxidized brown, silty, sandy GRAVEL. Hard drilling
26.0 – 26.1	50 – 1 inch	S-7	Very dense, moist, oxidized brown, silty, sandy GRAVEL. Hard drilling

Refusal to auger drilling at 26.0 feet on 11/10/21.

Ground water seepage not encountered at time of drilling.

WASHINGTON STATE DEPARTMENT OF LICENSING

WASHINGTON STATE DEPARTMENT OF LICENSING

License lookup

Professional License Details

Information as of December 09, 2021, 11:51:13 AM

License Number: 16271
License Type: Professional Engineer
Status: Active

Name: ROBERT M PRIDE
Sub-status: None
Disciplinary Action: No
Program: Engineers

Prior Name: None
City: Kirkland
State: WA
Country: United States

First Issue Date: November 05, 1976
Current Issue Date: September 28, 2021
Expiration Date: July 20, 2022

Endorsements

Civil

SONDERGAARD GEOSCIENCE, PLLC
13012 65TH Avenue SE
Snohomish, Washington 98296

April 30, 2021

Revised May 5, 2021

J-0165

Premium Homes

P.O. Box 1639

Mercer Island, Washington 98040

Attention: Bogdan Maksimchuk

Subject: Critical Area Report

7216 93rd Avenue SE

Mercer Island, Washington

Mr. Maksimchuk:

Sondergaard Geoscience, PLLC (SGP) is pleased to provide this critical area report as requested by you. This report is intended to meet the requirements of the Mercer Island Municipal Code (MIMC) Title 19 Section 19.07.110 for a critical area study. This report is based upon review of the best available science consistent with the standards set forth in Chapter 365-195 of the Washington Administrative Code (WAC) and has been prepared by Jon N. Sondergaard, L.E.G. in the State of Washington who meets the qualifications of a qualified professional as defined in MIMC 19.16.010(2).

The methods used to complete this critical area study included reviewing of available, pertinent documents as listed in the attached references, review of previously completed geotechnical studies at the property, review of the proposed development plan and a visit to the subject property to observe the current, existing conditions. The accuracy of the report is as good as the quality of the documents reviewed and the experience of the preparer to the degree implied by the methods used. In our opinion, the accuracy of the report meets the criteria of competent scientific inquiry using the best available science for the subject property.

PROPERTY AND PROJECT DESCRIPTION

The subject property consists of a roughly rectangular-shaped parcel covering approximately 39,145 square feet located on the south end of Mercer Island at the above referenced address (Figure 1). The property is currently occupied by 1,340 square feet house built in 1946 and a

detached garage. Both structures are currently abandoned. The topography of the lot slopes gently to moderately down to the east with a small, 1 to 14 feet deep gulley running roughly west to east along the southeast portion of the parcel. Vegetation on the parcel consists of scattered, large maple and evergreen trees with a sparse to moderate understory of small trees, brush and shrubs. It appears that the area around the garage has been graded with placement of 1 to 2 feet of imported fill. Photographs of the property are presented in Photos 1 through 8 attached to this report.

The proposed project consists of demolishing the existing structures and subdividing the parcel into 3 single-family, residential building lots as shown on Figure 2. The lots would be accessed via a concrete driveway entering off of 93rd Avenue SE and running along the north property line. Two of the lots are located on the west side of the parcel and one lot is located at the northeast corner of the parcel. The southeast portion of the parcel and an area along the east property line are set aside for geologic hazard mitigation.

GEOLOGY AND HYDROGEOLOGY

The identification of the geologic units underlying the parcel was determined by review of the published geologic map of the area (K.G. Troost and A.P. Wisher, 2006) and of site-specific geotechnical reports prepared for the proposed project (R.M. Pride, 2020a and 202b). The geologic map of the area (Figure 3) indicates that the west portion of the site is underlain by Vashon glacial till and the east half of the site is underlain by Vashon advance outwash. Vashon glacial till typically consists of dense to very dense, gray, silty, gravelly sand that exhibits high strength and low permeability. Vashon advance outwash typically consists of medium dense to very dense, brown to gray, sand, gravelly sand and silty sand that exhibits a moderate to high phi angle and low to high permeability. The findings on the geologic map were confirmed by subsurface explorations completed at the site and that encountered soils generally consisting of medium dense to dense, brown, silty sand underlying surficial topsoil and fill interpreted to be weather glacial till. Testing completed at the site (R.M. Pride, 2020b) determined infiltration rates ranging from 3.75 to 30 inches per hour for soils at depths ranging from 4 to 8 feet below the existing site grade. Groundwater was not detected to depths of 9 feet in soil explorations completed in February 2020.

GEOLOGIC HAZARDS

The identification of geologic hazard areas is based upon review of the existing geology, hydrogeology, topography and the MIMC Title 19, Chapter 19.07, Section 19.07.160. The geologic hazard areas identified are landslide hazard areas, seismic hazard areas and erosion hazard areas.

Landslide Hazard Areas

The site is characterized by a slight slope down to the east on the west half of the property and on most of the northeast portion of the property. A gulley runs along the southeast portion of the lot and along the east property line (Figure 4). Review of the Mercer Island Landslide Hazard map (K.G. Troost and A.P. Wisher (2009), Mercer Island Landslide Hazard Assessment prepared for Geomap Northwest and the City of Mercer Island indicates the east portion of the property contains slopes greater that 15 percent inclination (Figure 5). The topographic survey of the property shows that the slopes along the gulley range height from about 8 to 20 feet with slope inclinations ranging from approximately 38 to 53 percent. According to MIMC Title 19, Chapter 19.16, Section 19.16.010(L) the gulley slopes meet the definition of a landslide hazard area by having slope inclinations greater than 40 percent over a horizontal distance of 30 feet or greater (Figure 6). Based upon observation of the existing site conditions, including the large trees that remain on the site, in our opinion, there is no obvious evidence of past or present shallow or deep landslide movement at the site.

Seismic Hazards and Mitigations

The subsurface soils at the site consist of medium dense to dense glacial till and advance outwash. Subsurface exploration at the site indicates shallow ground water was not present to depths of at least 7 feet and review of near by well logs indicates no groundwater within the upper 30 feet at the site (Washington State Well Report Viewer (2009). Based upon review of the Mercer Island Seismic Hazard map ((K.G. Troost and A.P. Wisher (2009b) and Chapter 19.16, Section 19.16.010(S) the subject property is not located in a Seismic Hazard Area (Figure 7).

Erosion Hazards and Mitigations

Review of the Mercer Island Erosion Hazard map (K.G. Troost and A.P. Wisher (2009c) indicates that east portion of the subject property is located within an Erosion Hazard Area (Figure 8). MIMC Title 19, Chapter 19.16, Section 19.16.010(E) defines erosion hazard areas as those areas with slopes having inclinations greater than 15 percent including those areas underlain by soils with a severe or very severe rill and inter-rill erosion hazard. Review of the USDA Soil Survey (Web Soil Survey, 2021) of the site indicates the site is underlain by Everett-Alderwood gravelly, sandy loams on 6 to 15 percent slopes (Figure 9). According to the USDA, these soils exhibit a moderate erosion hazard. The steep slope area of the site exceeds inclination of 15 percent and are classified as an erosion hazard area (Figure 10).

GEOLOGIC HAZARD MITIGATIONS

As described above, the south and east portions of the site contain Landslide and Erosion Hazard Areas primarily due to the height and inclination of the slopes along the gulley that cuts across that portion of the site. The recommended mitigations for these hazards are as follows:

Landslide Hazard

1. Restrict development of the site within the designated landslide hazard area except those portions that meet the requirements of MIMC Title 19, Chapter 19.07, Section 19.07.160(B)(2). The current plan for Lots 2 and 3 shows that the southeast corner of the new home for Lot 2 extends into the buffer approximately 20 feet and the northeast corner of the new home for Lot 3 extends into the buffer about 10 feet. The proposed new home for Lot 1 does not intrude into the buffer. As per the geotechnical recommendations provided by Pride (RM Pride, 2020), foundations that protrude into the buffer should be extended to a minimum depth of 3 feet to reduce potential loads on the slope. An analysis of site specific geologic and topographic conditions indicate that the subject property has not experienced landsliding in the past and the development has been designed so that the risk to the site and adjacent property is mitigated such that the site is determined to be safe.

2. Provide a top of steep slope set back consistent with MIMC Title 19, Chapter 19.07, Section 19.07.160(C)(2)(a) that is equal to the height of the slope (Figure 11). In this case the set- backs would range from approximately 8 to 20 feet as the slope height changes across the site.

Erosion Hazard

1) The winter performance of a site is dependent on a well-conceived plan for control of site erosion and storm water runoff. It is easier to keep the soil on the ground than to remove it from storm water. The owner and the design team should include adequate ground-cover measures, access roads, and staging areas in the project bid to give the selected contractor a workable site. The selected contractor needs to be prepared to implement and maintain the required measures to reduce the amount of exposed ground. A site maintenance plan should be in place in the event storm water turbidity measurements are greater than the City of Mercer Island standards.

2) All TESC measures for a given area to be graded or otherwise worked should be installed prior to any activity within that area. The recommended sequence of construction within a given area would be to install sediment traps and/or ponds and establish perimeter flow control prior to starting mass grading.

3) During the wetter months of the year, or when large storm events are predicted during the summer months, each work area should be stabilized so that if showers occur, the work area can receive the rainfall without excessive erosion or sediment transport. The required measures for an area to be "buttoned-up" will depend on the time of year and the duration the area will be left un-worked. During the winter months, areas that are to be left un-worked for more than 2 days should be mulched or covered with plastic. During the summer months, stabilization will usually consist of seal-rolling the subgrade. Such measures will aid in the contractor's ability to get back into a work area after a storm event. The stabilization process also includes establishing temporary storm water conveyance channels through work areas to route runoff to the approved treatment facilities.

4) All disturbed areas should be revegetated as soon as possible. If it is outside of the growing season, the disturbed areas should be covered with mulch, as recommended in the erosion control plan. Straw mulch provides the most cost-effective cover measure and can be made wind-resistant with the application of a tackifier after it is placed.

5) Surface runoff and discharge should be controlled during and following development. Uncontrolled discharge may promote erosion and sediment transport. Under no circumstances should concentrated discharges be allowed to flow over significant slopes.

6) Soils that are to be reused around the site should be stored in such a manner as to reduce erosion from the stockpile. Protective measures may include, but are not limited to, covering with plastic sheeting, the use of low stockpiles in flat areas, or the use of straw bales/silt fences around pile perimeters. During the period between October 1 and March 31, these measures are required.

7) On-site erosion control inspections and turbidity monitoring should be performed in accordance with City of Mercer Island requirements. TESC monitoring should be part of the weekly construction team meetings. Temporary and permanent erosion control and drainage measures should be adjusted and maintained, as necessary, at the time of construction.

The recommended geologic hazard mitigations should be sequenced as follows:

1. Survey and stake the top of the steep slope and the steep slope buffer prior to clearing and grading.

2. Clear and grade the developable portion of the site. Limit buffer disturbance to those areas on Lots 2 and 3 where proposed building extends into the buffer.

3. Establish temporary erosion control measures per the approved plan across the site as areas of soil are exposed. Temporary erosion control measures should be maintained and modified as necessary to remain effective.

4. Perform foundations excavations within the affected buffer areas only after temporary erosion control measures have been established.

It is our opinion that with the proper implementation of the TESC plans and by field-adjusting appropriate mitigation elements (best management practices) during construction, as recommended by the erosion control inspector, the potential adverse impacts from erosion hazards on the project can be mitigated.

CONCLUSIONS

The subject property is proposed for development with three, single-family residential building lots. The site contains Geologic Hazards consisting of Landslide and Erosion Hazard Areas associated with the topographic gulley that runs along the southeast corner of the lot and along the east property boundary. The Landslide and Erosion Hazard Areas classifications are the result of the inclinations of the slopes associated with the gulley and not due to historic landsliding or soil and ground water conditions on the property. In our opinion, provided the mitigation recommendations provided in this report are implemented and good construction practices are utilized, the risk to the property and adjacent properties from the development is minimal.

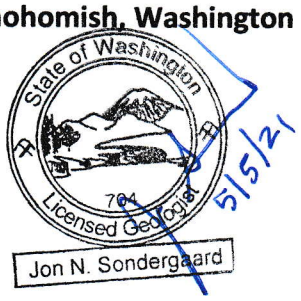
CLOSURE

We appreciate the opportunity to work with you on this project. Should you have any questions regarding this report or other geotechnical aspects of the site, please call us at your earliest convenience.

Sincerely,

SONDERGAARD GEOSCIENCE, PLLC.

Snohomish, Washington



Jon N. Sondergaard, L.E.G.

Principal

Attachments:

Figure 1: Vicinity Map

Figure 2: Proposed Development Plan

Figure 3: Site Geology

Figure 4: USGS Topographic Map

Figure 5: Mercer Island Landslide Hazard Map

Figure 6: Site Topographic Survey with Landslide Hazard Area

Figure 7: Mercer Island Seismic Hazard Map

Figure 8: Mercer Island Erosion Hazard Map

Figure 9: USDA Soil Survey Map

Figure 10: Site Topographic Survey with Erosion Hazard Area

Figure 11: Recommended Top of Steep Slope Setback

Site Photographs

REFERNCES

K.G. Troost and A.P. Wisher (2006), Geologic Map of Mercer Island prepared for Geomap Northwest and the City of Mercer Island.

K.G. Troost and A.P. Wisher (2009a), Mercer Island Landslide Hazard Assessment prepared for Geomap Northwest and the City of Mercer Island.

K.G. Troost and A.P. Wisher (2009b), Mercer Island Seismic Hazard Assessment prepared for Geomap Northwest and the City of Mercer Island.

K.G. Troost and A.P. Wisher (2009c), Mercer Island Erosion Hazard Assessment prepared for Geomap Northwest and the City of Mercer Island.

R.M. Pride, (2020a), Geotechnical Recommendations, Proposed Residence, 7216 93rd Avenue SE, Mercer Island, Washington prepared for Barcelo Homes.

R.M. Pride (2020b), Infiltration Testing, Proposed Residence, 7216 93rd Avenue SE, Mercer Island, Washington prepared for Barcelo Homes.

R.M. Pride (2020b), Geotechnical Recommendations, Proposed Residences, 7216 93rd Avenue SE, Mercer Island, Washington prepared for Barcelo Homes.

Washington State Well Report Viewer (2021), Washington State Department of Ecology.

Web Soil Survey (2021), United States Department of Agriculture, Natural Resources and Conservation Service.

King County iMap

The information included on this map has been compiled by King County staff from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a survey product. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, lost revenues or lost profits resulting from the use or misuse of the information contained on this map. Any sale of this map or information on this map is prohibited except by written permission of King County.

VICINITY MAP
7216 93RD AVENUE SE
MERCER ISLAND, WASHINGTON

N

J-0165 FIGURE 1

King County

J-0165 FIGURE 2

UTILITY POLE
MAILBOX
WATER METER
LINE HATCH INDICATES NET LOT 2 AREA
THICK DASHED LINE INDICATES PROPOSED BUILDING PAD, TYP.
HONEYCOMB HATCH INDICATES EASEMENT FROM LOT 2 TO LOT 1
TREE LIMIT OF DISTURBANCE LINE, TYP.
DRIP LINE
DASHED LINE INDICATES TREE DRIP LINE
HATCH INDICATES AREA WITHIN LIMITS OF DISTURBANCE TO TREES
DARK HATCH INDICATES MAPPED STEEP SLOPE AREAS PER SURVEY, TYP.
REFERENCE LINE FROM TOP OF SLOPE
BUILDING WITHIN DRIP LINE OF TREE. ARBORIST TO SUPPORT PRUNING UNBALANCED CROWN IN THIS LOCATION.
PROPOSED PROPERTY
UTILITY POLE
GUY WIRE
FIRE HYDRANT (ADDITIONAL HYDRANT TO NORTH OF PROPERTY, NOT SHOWN)
CATCH BASIN
MAILBOXES, EXISTING LOCATION
WATER METERS
DRIP LINE

93RD AVE SE

22'-0"
20'-0" ASPHALT
115'-0"
93'-0"
65'-0"

5'-2 5/8" MIN. SIDE S.B.
5'-0" MIN SIDE S.B.
25'-0" REAR S.B.
20'-0" FRONT S.B.
4'-0"
10'-0"

LOT 1
13996 LOT AREA
4897 LOT COVERAGE (20' W. DRIVE)
32.6' DROP IN 155.8'
=20.9% SLOPE SO 35% ALLOWED
4897/13996 = 34.9% PROPOSED

LOT 2
12160 GROSS LOT AREA
10517 NET LOT AREA
12160x.4 = 4864 GFA MAX
20.9' DROP IN 153.4'
= 13.6% SLOPE SO 40% LOT COV.
10517x.4=4206 MAX LC ALLOWED

LOT 3
12986 LOT AREA
12986x.4=5194 (5000) MAX. GFA
33.8' DROP IN 213.9'
= 15.8% SLOPE SO 35% LOT COV. ALLOWED
12986X.35=4545 MAX LC ALLOWED

#107 20" MULTI
#106 36" MULTI
#105 18"
#104 53"
#103 70" MULTI
#102 32"
#101 20"
#43 16" MULTI
#42: 120" MULTI
#41 32"
#38 14"
#37 18" MULTI
#36 14"
#35 72" MULTI
#34 12"
#33 16"
#31 30" MULTI
#30 55" MULTI
#29 32"
#28 16"
#27 18"
#26 60" MULTI
#25 28"
#20, 21 & 22: 72" MULTI
#18 28"
#19 24"
TREE # 18
#39 9"
24" SNAG
6" SNAG

KEY:
- TREE LIMITS OF DISTURBANCE
- MAPPED STEEP SLOPE PER SURVEY
- 10' BUFFER FROM TOP OF SLOPE
- BUILDING
- WOOD DECK
- IMPERVIOUS SURFACE
- EASEMENT FROM LOT 2 TO LOT 1
- LOT 2 NET AREA
- EXTENT OF BUILDING PAD
- PROPERTY LINE

SCALE: 10 0 20

SITE PLAN

PROPOSED DEVELOPMENT PLAN
7216 93RD AVENUE SE
MERCER ISLAND, WASHINGTON

MCCULLOUGH ARCHITECTS
2910 First Ave South, Suite 201
Seattle. WA. 98134
206.443.1181
mccullougharchitects.com

Revisions Comment
. .

Date: 2021.04.12
Job No: 19-034
Project No: 00000
Drawn: MCG
Approved: APM
Owner

Barcelo homes

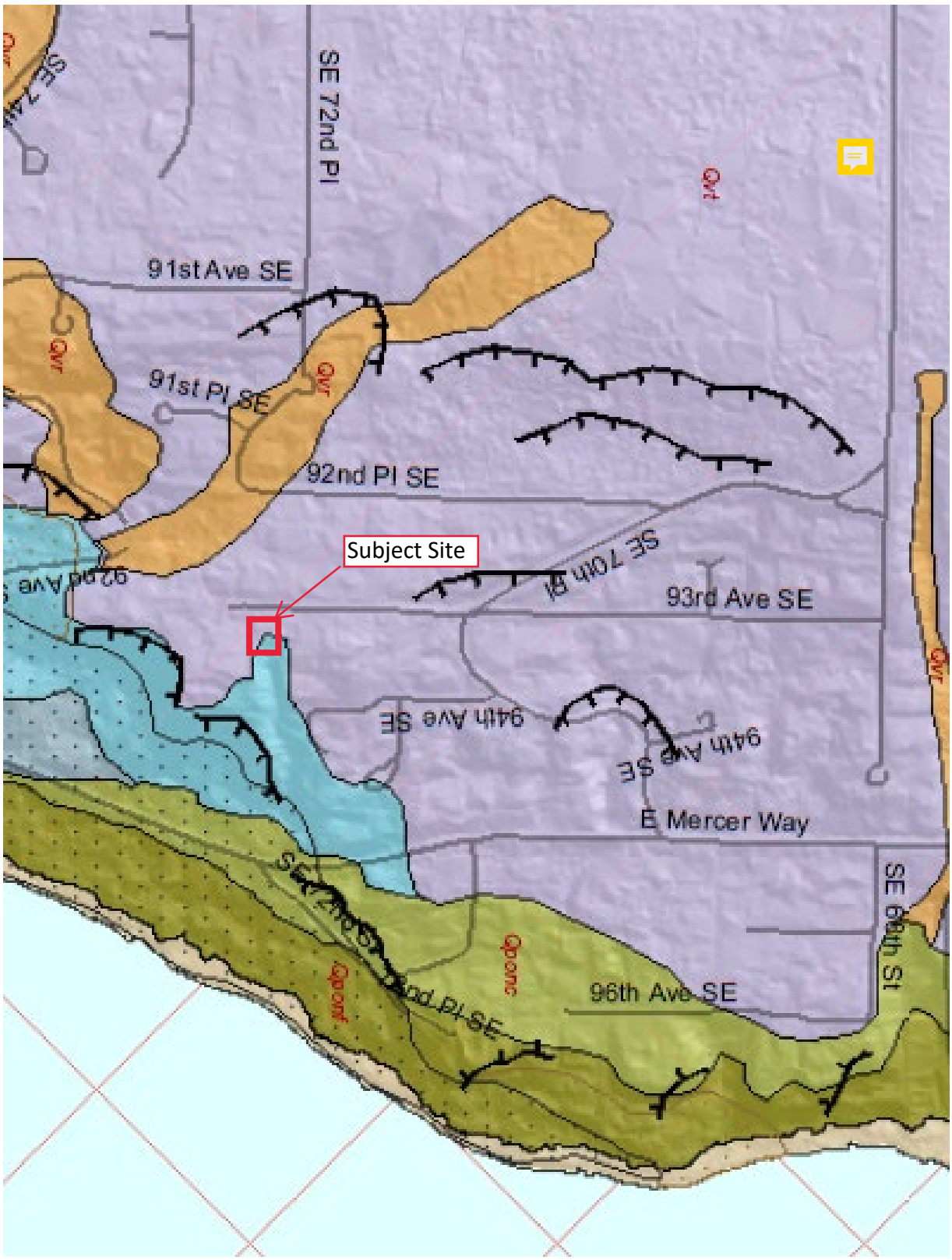
REGISTERED ARCHITECT 7806 STATE OF WASHINGTON

PRELIMINARY SHORT PLAT APPLICATION
7216 93rd AVE. SE
MERCER ISLAND, WA 98040

Short Plat Application Set

Site Plan

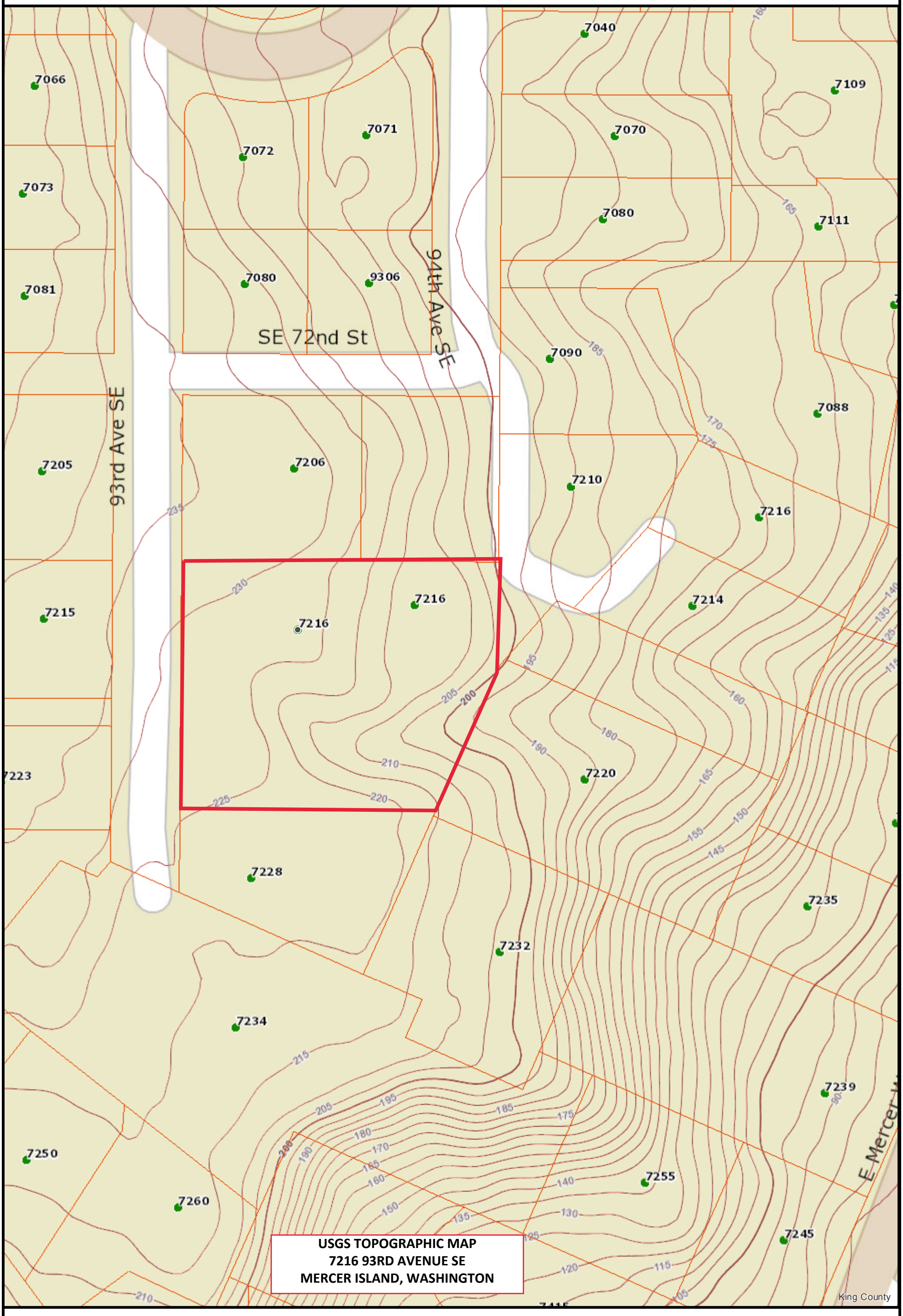
A1



SITE GEOLOGY
7216 93RD AVENUE SE
MERCER ISLAND, WASHINGTON

J-0165 FIGURE 3

King County iMap

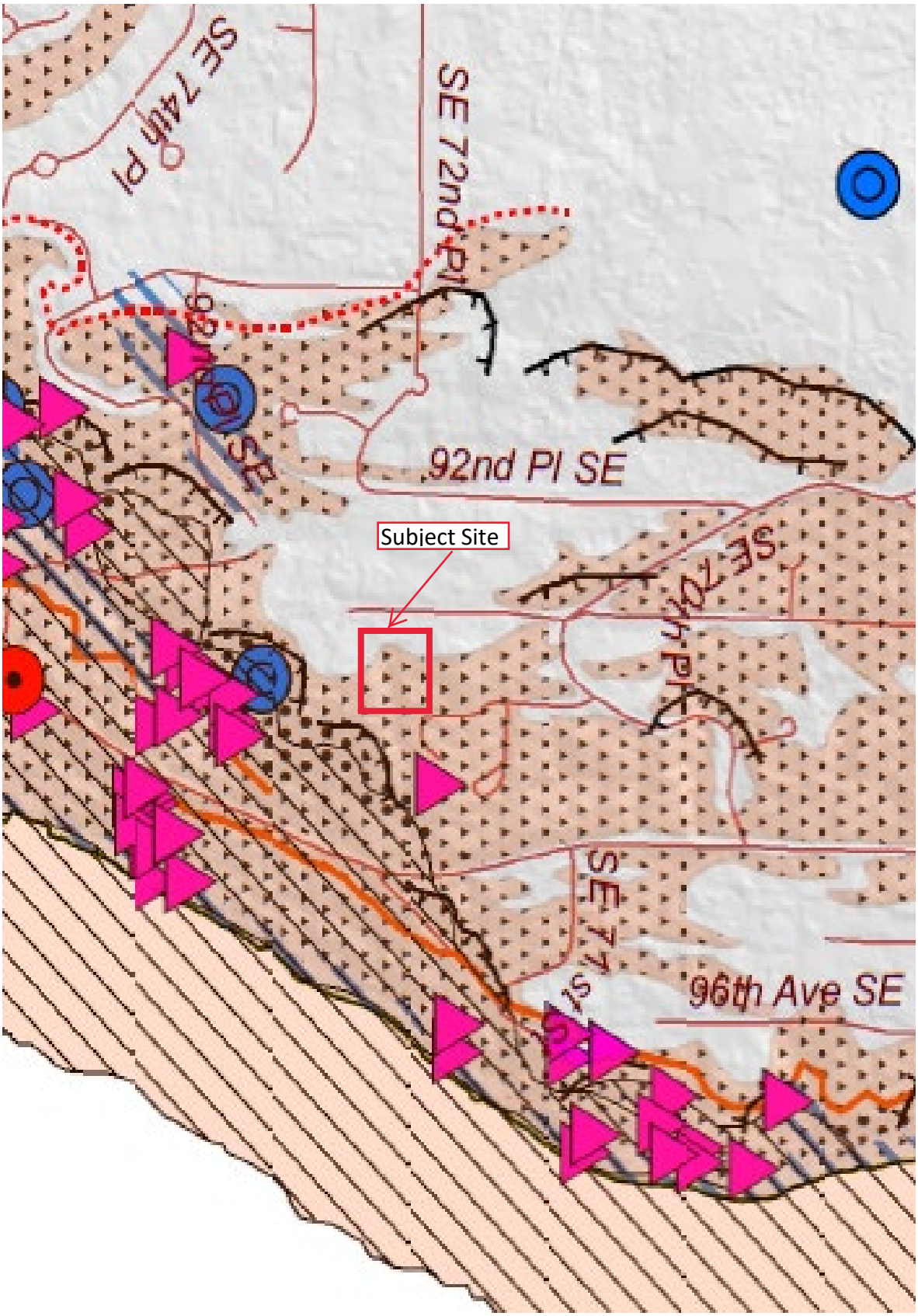


Date: 5/4/2021

Notes: J-0165 FIGURE 4

N

King County



MERCER ISLAND LANDSLIDE HAZARD MAP
7216 93RD AVENUE SE
MERCER ISLAND, WASHINGTON

J-0165 FIGURE 5

TOPOGRAPHIC SURVEY

SEWER STRUCTURE TABLE

1. SEWER MANHOLE
RIM EL=225.11'
(N) 8" IRON I.E.=212.81'
(S,W) I.E.=212.91'

2. SEWER MANHOLE
RIM EL=236.50'
(E) 8" IRON I.E.=211.60'
(S) 8" IRON I.E.=211.70'
(NW) 8" IRON I.E.=211.70'

STORM STRUCTURE TABLE

1. CATCH BASIN
39B-36
RIM EL=195.52'
(N) 12" PVC I.E.=191.92'
(SE) 8" DI I.E.=191.92'

2. DRYWELL
39B-70
RIM EL=225.14'
I.E. TOP GRAVEL=222.84'

3. DRYWELL
39B-72
RIM EL=228.23'
I.E. TOP GRAVEL=225.93'

4. CATCH BASIN
40B-91
RIM EL=236.27'
(N) 8" PVC I.E.=234.97'

5. CATCH BASIN
40B-75
RIM EL=235.90'
(S) 8" PVC I.E.=234.05'
(N) 8" PVC I.E.=233.98'

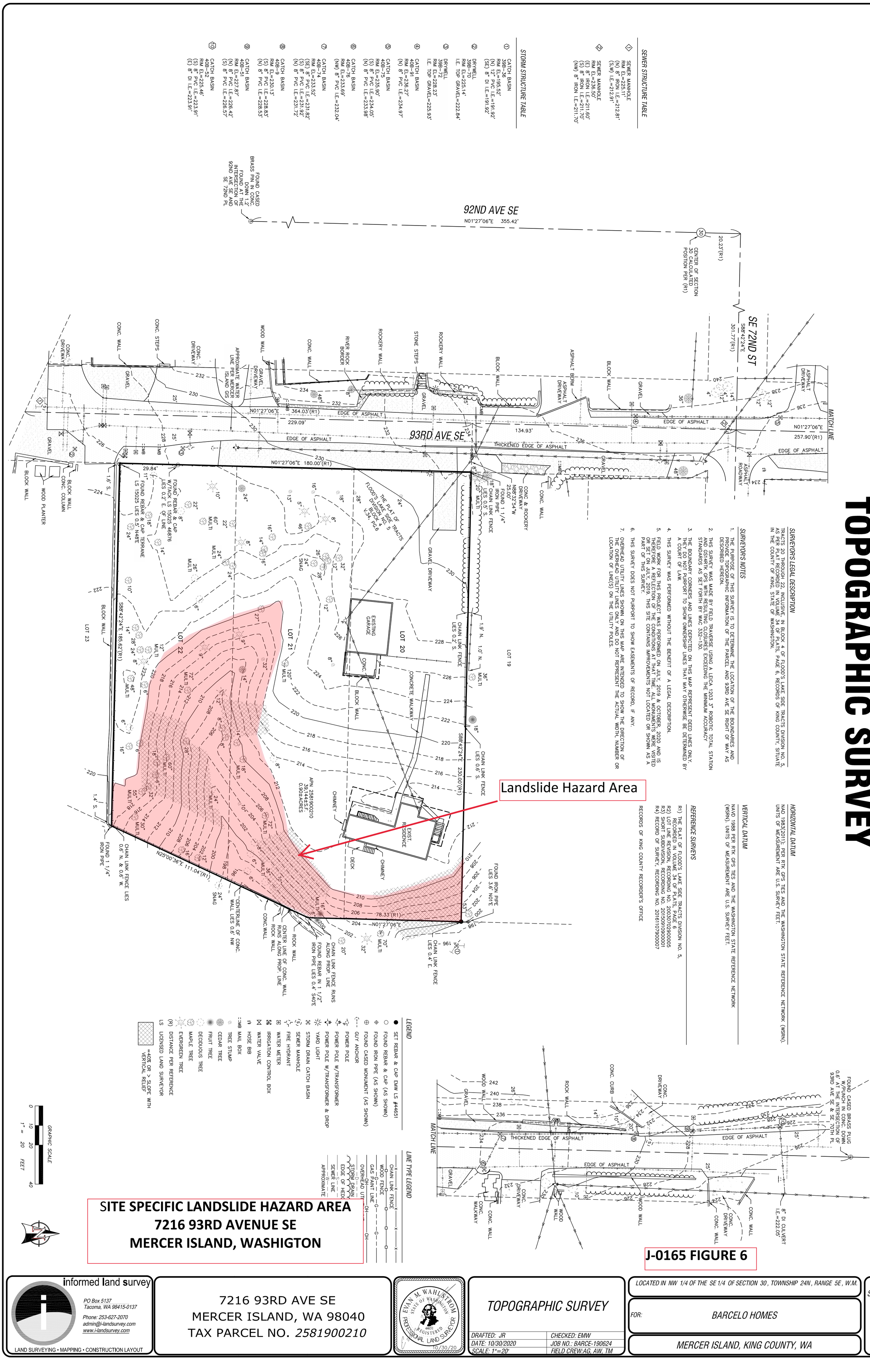
6. CATCH BASIN
40B-76
RIM EL=233.69'
(NW) 8" PVC I.E.=232.04'

7. CATCH BASIN
40B-74
RIM EL=233.52'
(SE) 8" PVC I.E.=231.82'
(S) 8" PVC I.E.=231.92'
(N) 8" PVC I.E.=231.72'

8. CATCH BASIN
40B-9
RIM EL=230.13'
(S) 8" PVC I.E.=228.83'
(N) 8" PVC I.E.=228.53'

9. CATCH BASIN
40B-51
RIM EL=227.87'
(N) 8" PVC I.E.=226.42'
(S) 8" PVC I.E.=226.57'

10. CATCH BASIN
40B-52
RIM EL=225.46'
(S) 8" PVC I.E.=223.91'
(E) 8" DI I.E.=223.91'



SURVEYOR'S LEGAL DESCRIPTION

TRACTS 20 THROUGH 22, INCLUSIVE, IN BLOCK 4 OF FLOOD'S LAKE SIDE TRACTS DIVISION NO. 5, AS PER PLAT RECORDED IN VOLUME 34 OF PLATS, PAGE 6, RECORDS OF KING COUNTY, SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

SURVEYOR'S NOTES

1. THE PURPOSE OF THIS SURVEY IS TO DETERMINE THE LOCATION OF THE PARCEL AND 93RD AVE SE RIGHT OF WAY AS PROVIDE TOPOGRAPHIC INFORMATION OF THE PARCEL AND 93RD AVE SE RIGHT OF WAY AS DESCRIBED HEREON.
2. THIS SURVEY WAS MADE BY FIELD TRAVERSE USING A LEICA 1203 3" ROBOTIC TOTAL STATION AND GS14RTK GPS WITH RESULTING CLOSURES EXCEEDING THE MINIMUM ACCURACY STANDARDS AS SET FORTH BY WAC 332-130.
3. THE BOUNDARY CORNERS AND LINES DEPICTED ON THIS MAP REPRESENT DEED LINES ONLY. THEY DO NOT PURPORT TO SHOW OWNERSHIP LINES THAT MAY OTHERWISE BE DETERMINED BY A COURT OF LAW.
4. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A LEGAL DESCRIPTION.
5. FIELD WORK FOR THIS PROJECT WAS PERFORMED ON JULY, 2019 & OCTOBER, 2020 AND IS THEREFORE A REFLECTION OF THE CONDITIONS AT THAT TIME. ALL MONUMENTS WERE VISITED OR SET ON JULY, 2019. THIS SITE CONTAINS IMPROVEMENTS NOT LOCATED OR SHOWN AS A PART OF THIS SURVEY.
6. THIS SURVEY DOES NOT PURPORT TO SHOW EASEMENTS OF RECORD, IF ANY.
7. OVERHEAD UTILITY LINES SHOWN ON THIS MAP ARE INTENDED TO SHOW THE DIRECTION OF THE OVERHEAD UTILITY LINES ONLY AND DO NOT REPRESENT THE ACTUAL WIDTH, NUMBER OR LOCATION OF LINE(S) ON THE UTILITY POLES.

HORIZONTAL DATUM

NAD 1983(2011): PER RTK GPS TIES AND THE WASHINGTON STATE REFERENCE NETWORK (WSRN). UNITS OF MEASUREMENT ARE U.S. SURVEY FEET.

VERTICAL DATUM

NAVD 1988 PER RTK GPS TIES AND THE WASHINGTON STATE REFERENCE NETWORK (WSRN). UNITS OF MEASUREMENT ARE U.S. SURVEY FEET.

REFERENCE SURVEYS

R1) THE PLAT OF FLOOD'S LAKE SIDE TRACTS DIVISION NO. 5, RECORDED IN VOLUME 34 OF PLATS, PAGE 6
R2) LOT LINE REVISION, RECORDING NO. 20030702900005
R3) SHORT SUBDIVISION, RECORDING NO. 201509109000001
R4) RECORD OF SURVEY, RECORDING NO. 201611079000007

RECORDS OF KING COUNTY RECORDER'S OFFICE

LEGEND

- SET REBAR & CAP EMW LS #44651
- FOUND REBAR & CAP (AS SHOWN)
- FOUND IRON PIPE (AS SHOWN)
- FOUND CASED MONUMENT (AS SHOWN)
- GUY ANCHOR
- POWER POLE
- POWER POLE W/TRANSFORMER
- POWER POLE W/TRANSFORMER & DROP
- YARD LIGHT
- STORM DRAIN CATCH BASIN
- (S) SEWER MANHOLE
- FIRE HYDRANT
- WATER METER
- IRRIGATION CONTROL BOX
- WATER VALVE
- HOSE BIB
- MB MAIL BOX
- TREE STUMP
- CEDAR TREE
- FRUIT TREE
- DECIDUOUS TREE
- MAPLE TREE
- EVERGREEN TREE
- (R) DISTANCE PER REFERENCE
- LS LICENSED LAND SURVEYOR
- =40% OR > SLOPE WITH VERTICAL RELIEF

LINE TYPE LEGEND

- CHAIN LINK FENCE
- WOOD FENCE
- GAS PAINT LINE
- OVERHEAD UTILITY LINES
- STORM DRAIN
- EDGE OF HEDGE
- SEWER LINE
- APPROXIMATE

GRAPHIC SCALE
0 10 20 40
1" = 20 FEET

SITE SPECIFIC LANDSLIDE HAZARD AREA
7216 93RD AVENUE SE
MERCER ISLAND, WASHIGTON

J-0165 FIGURE 6

informed land survey
PO Box 5137
Tacoma, WA 98415-0137
Phone: 253-627-2070
admin@i-landsurvey.com
www.i-landsurvey.com
LAND SURVEYING • MAPPING • CONSTRUCTION LAYOUT

7216 93RD AVE SE
MERCER ISLAND, WA 98040
TAX PARCEL NO. *2581900210*

EVAN M. WAHLSTROM
STATE OF WASHINGTON
44651
REGISTERED
PROFESSIONAL LAND SURVEYOR
10/30/20

DRAFTED: JR	CHECKED: EMW
DATE: 10/30/2020	JOB NO.: BARCE-190624
SCALE: 1"=20'	FIELD CREW:AG, AW, TM

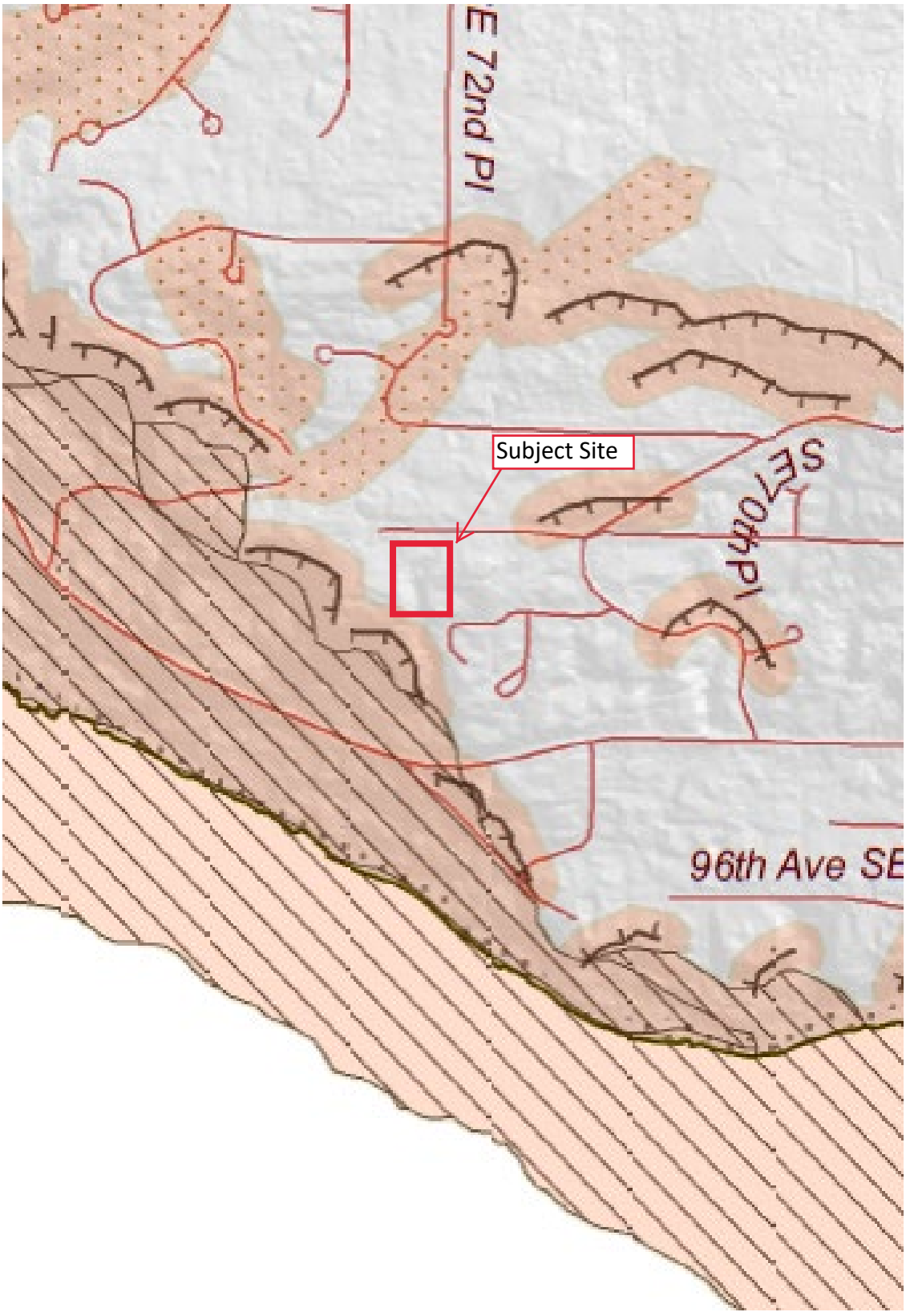
TOPOGRAPHIC SURVEY

LOCATED IN NW 1/4 OF THE SE 1/4 OF SECTION 30, TOWNSHIP 24N, RANGE 5E, W.M.

FOR: *BARCELO HOMES*

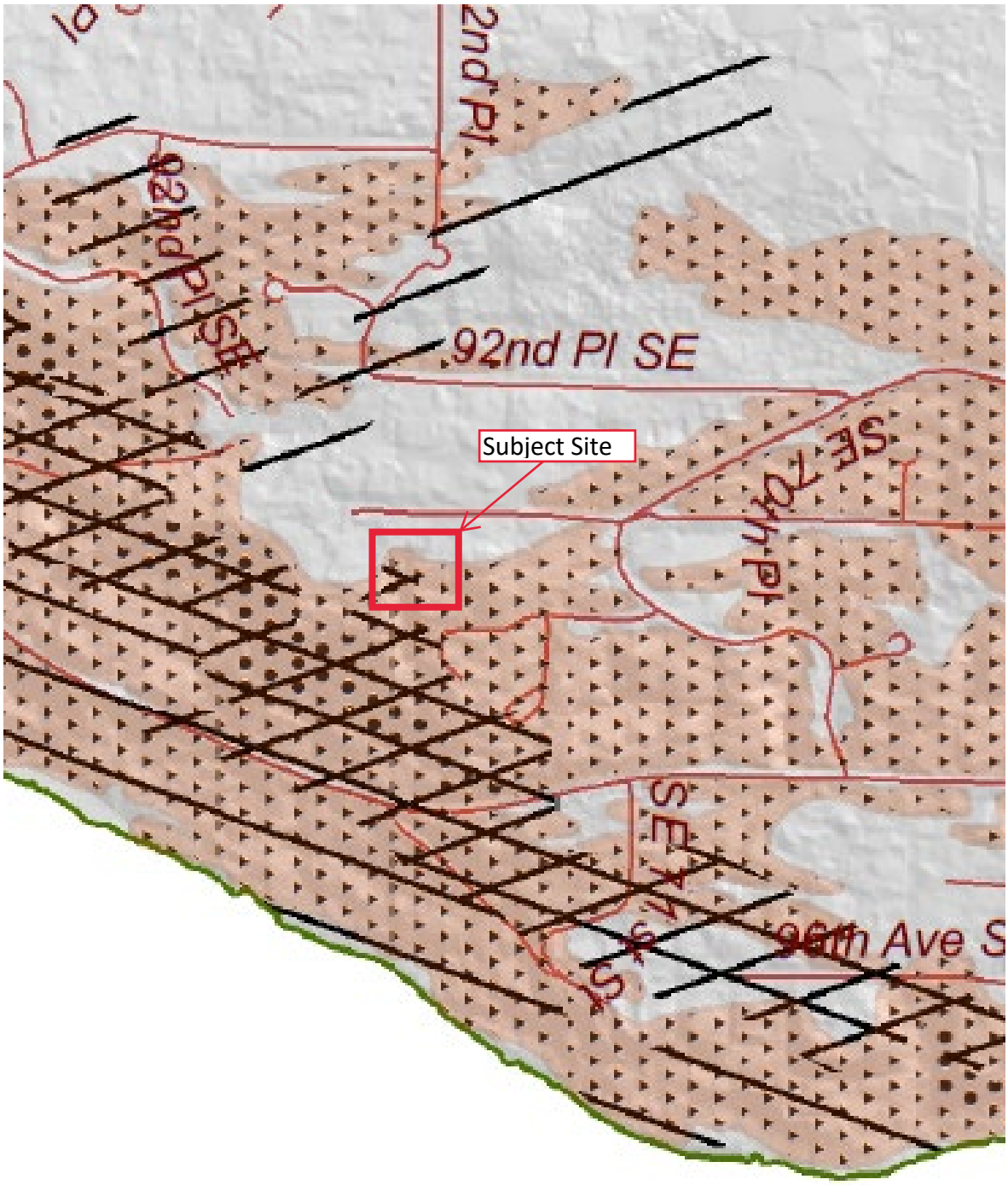
MERCER ISLAND, KING COUNTY, WA

SHT. 1 OF 1



MERCER ISLAND SEISMIC HAZARD AREA MAP
7216 93RD AVENUE SE
MERCER ISLAND, WASHINGTON

J-0165 FIGURE 7



MERCER ISLAND EROSION HAZARD AREA MAP
7216 93RD AVENUE SE
MERCER ISLAND, WASHINGTON

J-0165 FIGURE 8

SOIL SURVEY MAP
7216 93RD AVENUE SE
MERCER ISLAND, WASHINGTON

J-0165 FIGURE 9

Map Scale: 1:3,360 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

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

TOPOGRAPHIC SURVEY

SEWER STRUCTURE TABLE

①	SEWER MANHOLE RIM EL=225.11' (N) 8" IRON I.E.=212.81' (S,W) I.E.=212.91'
②	SEWER MANHOLE RIM EL=236.50' (E) 8" IRON I.E.=211.60' (S) 8" IRON I.E.=211.70' (NW) 8" IRON I.E.=211.70'

STORM STRUCTURE TABLE

①	CATCH BASIN 39B-36 RIM EL=195.52' (N) 12" PVC I.E.=191.92' (SE) 8" DI I.E.=191.92'
②	DRYWELL 39B-70 RIM EL=225.14' I.E. TOP GRAVEL=222.84'
③	DRYWELL 39B-72 RIM EL=228.23' I.E. TOP GRAVEL=225.93'
④	CATCH BASIN 40B-91 RIM EL=236.27' (N) 8" PVC I.E.=234.97'
⑤	CATCH BASIN 40B-75 RIM EL=235.90' (S) 8" PVC I.E.=234.05' (N) 8" PVC I.E.=233.98'
⑥	CATCH BASIN 40B-76 RIM EL=233.69' (NW) 8" PVC I.E.=232.04'
⑦	CATCH BASIN 40B-74 RIM EL=233.52' (SE) 8" PVC I.E.=231.82' (S) 8" PVC I.E.=231.92' (N) 8" PVC I.E.=231.72'
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⑩	CATCH BASIN 40B-52 RIM EL=225.46' (S) 8" PVC I.E.=223.91' (E) 8" DI I.E.=223.91'

92ND AVE SE
N01°27'06"E 355.42'

FOUND CASED BRASS PIN IN CONC. DOWN 1.2' FOUND AT THE INTERSECTION OF 92ND AVE SE AND SE 72ND PL

20.23'(R1)

30 CENTER OF SECTION 30 CALCULATED POSITION PER (R1)

SE 72ND ST
S88°42'24"E
301.77'(R1)

MATCH LINE

93RD AVE SE
N01°27'06"E 364.03'(R1)
229.09'
134.93'
N01°27'06"E 257.90'(R1)
N01°27'06"E 180.00'(R1)
S88°42'24"E 230.00'(R1)
N25°00'36"E 111.04'(R1)
N01°27'06"E 78.33'(R1)
S88°42'24"E 185.62'(R1)

EDGE OF ASPHALT
THICKENED EDGE OF ASPHALT
ASPHALT DRIVEWAY
ASPHALT BERM
ASPHALT ROADWAY
GRAVEL DRIVEWAY
CONC. DRIVEWAY
CONC. & ROCKERY DRIVEWAY
GRAVEL
CONC. WALL
WOOD WALL
ROCKERY WALL
RIVER ROCK BORDER
STONE STEPS
CONC. STEPS
BLOCK WALL
CONC. COLUMN
WOOD PLANTER
APPROXIMATE WATER LINE PER MERCER ISLAND GIS
CONC. CURB
CONC. WALKWAY

FOUND REBAR & CAP W/TACK LS 15025 46876 LIES 0.2' E. OF LINE
FOUND REBAR & CAP TERRANE LS 15025 LIES 0.5' N48°E
FOUND 1 1/4" IRON PIPE LIES 0.5' S
FOUND 1 1/4" IRON PIPE N88°32'54"W 25.00'
FOUND IRON PIPE LIES 3.6' N01°E
FOUND CASED BRASS PLUG W/PUNCH IN CONC. DOWN 0.6' AT THE INTERSECTION OF 93RD AVE SE & SE 70TH PL
8" DI CULVERT I.E.=222.05'
CHAIN LINK FENCE LIES 0.6' S.
CHAIN LINK FENCE LIES 0.2' S.
CHAIN LINK FENCE LIES 0.4' E.
CHAIN LINK FENCE LIES 0.6' N. & 0.6' W.
CHAIN LINK FENCE RUNS ALONG PROP. LINE
FOUND REBAR IN 1 1/2" IRON PIPE LIES 0.4' S40°E
CENTER LINE OF CONC. WALL RUNS ALONG PROP. LINE
CENTERLINE OF CONC. WALL LIES 0.6' NW
ROCK WALL
CONC.WALL
1.9' N.
1.0' N.
1.6' S.
1.4' S.

THE PLAT OF FLOOD'S LAKE SIDE TRACTS DIVISION NO. 5 V.34, PG6

APN 2581900210
39,144±S.F.
0.90±ACRES

EXISTING GARAGE
EXIST. RESIDENCE
CHIMNEY
DECK
CONCRETE WALKWAY

LOT 19
LOT 20
LOT 21
LOT 22
LOT 23

Erosion Hazard Area

SURVEYOR'S LEGAL DESCRIPTION

TRACTS 20 THROUGH 22, INCLUSIVE, IN BLOCK 4 OF FLOOD'S LAKE SIDE TRACTS DIVISION NO. 5, AS PER PLAT RECORDED IN VOLUME 34 OF PLATS, PAGE 6, RECORDS OF KING COUNTY, SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

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3. THE BOUNDARY CORNERS AND LINES DEPICTED ON THIS MAP REPRESENT DEED LINES ONLY. THEY DO NOT PURPORT TO SHOW OWNERSHIP LINES THAT MAY OTHERWISE BE DETERMINED BY A COURT OF LAW.
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R3) SHORT SUBDIVISION, RECORDING NO. 20150910900001
R4) RECORD OF SURVEY, RECORDING NO. 20161107900007

RECORDS OF KING COUNTY RECORDER'S OFFICE

LEGEND

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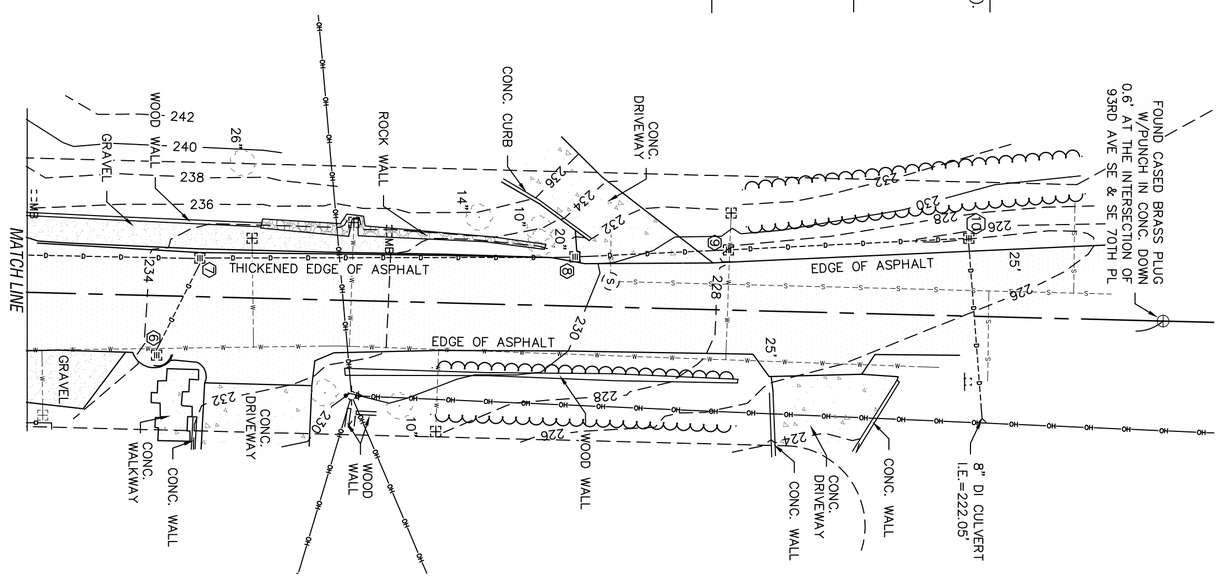
- FOUND REBAR & CAP (AS SHOWN)
- FOUND IRON PIPE (AS SHOWN)
- FOUND CASED MONUMENT (AS SHOWN)
- GUY ANCHOR
- POWER POLE
- POWER POLE W/TRANSFORMER
- POWER POLE W/TRANSFORMER & DROP
- YARD LIGHT
- STORM DRAIN CATCH BASIN
- (S) SEWER MANHOLE
- FIRE HYDRANT
- WATER METER
- IRRIGATION CONTROL BOX
- WATER VALVE
- HOSE BIB
- MB MAIL BOX
- TREE STUMP
- CEDAR TREE
- FRUIT TREE
- DECIDUOUS TREE
- MAPLE TREE
- EVERGREEN TREE
- (R) DISTANCE PER REFERENCE
- LS LICENSED LAND SURVEYOR
- =40% OR > SLOPE WITH VERTICAL RELIEF

LINE TYPE LEGEND

- CHAIN LINK FENCE
- WOOD FENCE
- GAS PAINT LINE
- OVERHEAD UTILITY
- STORM DRAIN LINE
- EDGE OF HEDGES
- SEWER LINE
- APPROXIMATE WATER

GRAPHIC SCALE
0 10 20 40
1" = 20 FEET



SITE SPECIFIC EROSION HAZARD AREA MAP
7216 93RD AVENUE SE
MNERCER ISLAND, WASHINGTON

J-0165 FIGURE 10

informed land survey
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LAND SURVEYING • MAPPING • CONSTRUCTION LAYOUT

7216 93RD AVE SE
MERCER ISLAND, WA 98040
TAX PARCEL NO. *2581900210*

EVAN M. WAHLSTROM
STATE OF WASHINGTON
44651
REGISTERED
PROFESSIONAL LAND SURVEYOR
10/30/20

TOPOGRAPHIC SURVEY	
DRAFTED: JR	CHECKED: EMW
DATE: 10/30/2020	JOB NO.: BARCE-190624
SCALE: 1"=20'	FIELD CREW:AG, AW, TM

LOCATED IN NW 1/4 OF THE SE 1/4 OF SECTION 30, TOWNSHIP 24N, RANGE 5E, W.M.

FOR: BARCELO HOMES

MERCER ISLAND, KING COUNTY, WA

SHT. 1 OF 1

SITE PLAN

93RD AVE SE

RECOMMENDED TOPO OF STEEP SLOPE SET BACK BUFFER

TOP OF STEEP SLOPE

LOT 1
13996 LOT AREA
4897 LOT COVERAGE (20' W. DRIVE)
32.6' DROP IN 155.8'
=20.9% SLOPE SO 35% ALLOWED
4897/13996 = 34.9% PROPOSED

LOT 2
12160 GROSS LOT AREA
10517 NET LOT AREA
12160x.4 = 4864 GFA MAX
20.9' DROP IN 153.4'
= 13.6% SLOPE SO 40% LOT COV.
10517x.4=4206 MAX LC ALLOWED

LOT 3
12986 LOT AREA
12986x.4=5194 (5000) MAX. GFA
33.8' DROP IN 213.9'
= 15.8% SLOPE SO 35% LOT COV. ALLOWED
12986X.35=4545 MAX LC ALLOWED

115'-0"
93'-0"
22'-0"
20'-0" ASPHALT
65'-0"
5'-0" MIN SIDE S.B.
5'-2 5/8" MIN. SIDE S.B.
25'-0" REAR S.B.
20'-0" FRONT S.B.
4'-0"

WATER METERS
MAILBOXES, EXISTING LOCATION
FIRE HYDRANT (ADDITIONAL HYDRANT TO NORTH OF PROPERTY, NOT SHOWN)
CATCH BASIN
GUY WIRE
UTILITY POLE
THICK DASHED LINE INDICATES PROPOSED BUILDING PAD, TYP.
LINE HATCH INDICATES NET LOT 2 AREA
WATER METER
MAILBOX
UTILITY POLE

HONEYCOMB HATCH INDICATES EASEMENT FROM LOT 2 TO LOT 1

DASHED LINE INDICATES TREE DRIP LINE

HATCH INDICATES AREA WITHIN LIMITS OF DISTURBANCE TO TREES

DRIP LINE

TREE LIMIT OF DISTURBANCE LINE, TYP.

BUILDING WITHIN DRIP LINE OF TREE. ARBORIST TO SUPPORT PRUNING UNBALANCED CROWN IN THIS LOCATION.

DARK HATCH INDICATES MAPPED STEEP SLOPE AREAS PER SURVEY, TYP.

REFERENCE LINE FROM TOP OF SLOPE

PROPOSED PROPERTY LINE

24" SNAG

#101 20"
#102 32"
#103 70" MULTI
#104 53"
#105 18"
#106 36" MULTI
#107 20" MULTI
#25 28"
#26 60"
#27 18"
#28 16"
#29 32"
#30 55" MULTI
#31 30" MULTI
#33 16"
#34 12"
#35 72" MULTI
#36 14"
#37 18" MULTI
#38 14"
#39 9"
#41 32"
#42: 120" MULTI
#43 16" MULTI 6"
#20, 21 & 22: 72" MULTI
TREE # 18 #18 28" #19 24"

KEY:
- TREE LIMITS OF DISTURBANCE
- MAPPED STEEP SLOPE PER
- 10' BUFFER FROM TOP OF SL
- BUILDING
- WOOD DECK
- IMPERVIOUS SURFACE
- EASEMENT FROM LOT 2 TO LOT 1
- LOT 2 NET AREA
- EXTENT OF BUILDING PAD
- PROPERTY LINE

SCALE: 10 0 20

RECOMMENDED TOP OF STEEP SLOPE SETBACK BUFFER
7216 93RD AVENUE SE
MERCER ISLAND, WASHINGTON

J-0165 FIGURE 11

Short Plat Application Set

A1 Site Plan

PRELIMINARY SHORT PLAT APPLICATION

7216 93rd AVE. SE
MERCER ISLAND, WA 98040

7806 REGISTERED ARCHITECT
A. PHILIP MCCULLOUGH
STATE OF WASHINGTON

Date: 2021.04.12
Job No: 19-034
Project No: 00000
Drawn: MCG
Approved: APM

Owner
Barcelo homes

Revisions	Comment
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MCCULLOUGH ARCHITECTS
2910 First Ave South, Suite 201
Seattle. WA. 98134
206.443.1181
mccullougharchitects.com

Photo 1: Site looking east from 93rd Avenue SE with the garage in the foreground and the residence to the east.

Photo 2: Looing east toward the southeast at the head of small gulley that runs along the south side of the property.

Photo 3: Looking south down slope of small gulley on the south side of the property.

Photo 4: Looking northeast at abandoned residence located on the east side of the property.

Photo 5: Looking east along the north side of the abandoned residence.

Photo 6: Looing east at the northeast corner of the property down road cut for 94th Avenue SE.

Photo 7: Looking south along west property line toward southwest corner of the lot.

Photo 8: Looking northeast along north property line toward adjacent property to the north.