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16-150

EAST VILLAGE
2437 BLACKBURN ROAD
DRAINAGE ANALYSIS

December 22, 2016
Job # 2015-121

Prepared By:
Dale K. Herrigstad P.E.

DALE HERRIGSTAD
STATE OF WASHINGTON
27807
REGISTERED
PROFESSIONAL ENGINEER

12-22-2016

Client/Owner:
Samish Bay Land Company

Mount Vernon, WA 98273

The stormwater plan will be based on the requirements of the 2005 DOE Stormwater Management Manual for Western Washington, as required by the City of Anacortes Drainage Ordinance.

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PROJECT DESCRIPTION:

The project is to develop 2.03 acres of a 13.42 acre parcel. The 2.03 acres is hydraulically isolated from the remaining 11.39 acres by being located uphill and mostly north of Maddox creek that bisects the property. The 150 foot buffer for Maddox Creek further isolates the developed portion of the parcel and becomes the dividing line between the 2.03 developed acres and the remaining property. The southern 11.39 acres has two existing dwelling units and a 2.1 acres wetland and associated 75 foot buffer in addition to Maddox Creek and its 150 foot buffer. The northern 2.03 acre developed area will be divided into 7 lots and a water quality/detention Tract. A 21 foot wide road and 4 foot sidewalk will access the site. The site is accessed through Big Fir North at the east end of Balsam Lane. The site slopes from the northeast to the southwest. The eastern offsite uphill portion of the site is a development that diverts its water away from this site. The northern property is mostly undeveloped but drainage also appears to divert around this site. This analysis will be limited to the 2.03 acres. The 2.03 acres will be mostly cleared. **See Attachment A.**

EXISTING CONDITIONS:

The existing 2.03 acre site is forested. Slopes from northeast to southwest at 3%. **See attachment B.**

DOE Stormwater Management Manual Minimum requirements:

According to the 2005 DOE manual figure 2.2, page 2-9:

Does the site have 35% or more of existing impervious coverage – No
Does the site add 5000 square feet of new impervious surfaces – Yes
Does the site ¾ acres or more of native vegetation to lawn – Yes
Does the project have 2,000 square feet of new impervious surfaces – Yes

All Minimum requirements apply to this project. This report will work through each of the 10 requirements below.

Minimum Requirement #1: Prepare a Stormwater Site Plan.

Volume 1, Chapter 3 steps (page 3-1).

Step 1. Collect and Analyze Information on Existing Conditions.
The current site is forested with little offsite properties draining onto this site.
2. Prepare a Preliminary Development Layout.
A proposed layout is attached as **attachment A**.
3. Perform an offsite analysis:
No offsite water flows onto this site.
4. Determine and Read Applicable Minimum Requirements.
The applicable minimum requirements 1 through 10 are applicable to this project.
5. Prepare a Permanent Stormwater Control Plan
Referring to Chapter 4 and determine threshold discharge areas and applicable requirements for treatment and flow control.

First, determine the amount of effective Pollution-generating impervious surfaces (PGIS) and Pollution-generating pervious surface (PGPS) to determine treatment requirements.

Threshold Discharge areas:
New PGIS road and driveway area = 0.40 acres.

PGIS = 17,578 SF > 5000 SF
PGPS = 0.40 acres < ¾ acres

From table 2.1, section 2.5.6, page 2-27; Minimum treatment #6: Runoff treatment

Treatment facilities are required and on site Stormwater BMPs are required.

Second, determine the amount of effective impervious surfaces and converted pervious surfaces.

Threshold Discharge areas table 2.2 Flow Control Requirements by Threshold Discharge Area:
Total impervious area = 34,203 sf (0.79 acres)> 10,000 SF

Storm water detention is required.

Step 6. Prepare a Construction Stormwater Pollution Prevention Plan. See minimum requirement #2 below for SWPP.

Step 7. Complete a Stormwater Site Plan: The project overview has been provided at the beginning of this report along with an existing conditions description. Maps are included in the attachments. Soil maps are provided in the attachments. Offsite analysis is provided in section step 3 above.
Step 8. Check compliance with all applicable minimum requirements: To take place during and after construction.

Minimum Requirement #2: Construction Stormwater Pollution Prevention (SWPP)
This project must meet the 12 elements of a SWPP because the site exceeds the threshold of 2,000 square feet of new impervious surfacing.

1. Mark Clearing limits: An existing fence delineates the western and eastern boundary. An orange construction fence will be installed along the northern property line and southern 150' Maddox Creek setback boundary.
2. Establish Construction Access: The construction entrance will be established at the only access point at the end of Balsam Lane.
3. Control Flow Rates: The detention pond in Tract A will be constructed to control offsite flow rates.
4. Install Sediment controls: The detention pond will be constructed as a first step in construction and act as a sediment trap during construction.
5. Stabilized Soils: Plastic covering or mulching with straw will be the most economical means to protect against erosion during construction. Exposed soils will be landscaped as final grades are accomplished. Clearing will be limited to the area for the detention pond and the road and utilities are approximately 32,000 square feet or 0.75 acres. The lots will be cleared as building permits are procured.
6. Protect Slopes: There are no steep slopes on this project. Maximum slope is 3%.
7. Protect Drain Inlets: New catch basins will equipped with filter traps until the site is paved and stabilized. Offsite catch basins filter traps will be installed along Balsam Lane.
8. Stabilize Channels and Outlets: Onsite exposed soils will be stabilized as stipulated in construction notes.
9. Control Pollutants: Applicable notes are included on construction drawing.
10. Control De-Watering: De-watering of excavation trenches will be pumped to the temporary sedimentation pond.
11. Maintain BMPs: Applicable notes are included on construction drawing.
12. Manage the Project: Applicable notes are included on construction drawing.

Minimum Requirement #3: Source Control of Pollution
The site is flat and minimal erosion will occur. The detention pond will act as the sedimentation pond and require additional excavation prior to final stabilization of the site.

Minimum Requirement #4: Preservation of Natural Drainage Systems and Outfalls
Maddox Creek naturally receives all surface flow from this site. The discharge for the pond will be to Maddox Creek to match predevelopment flow patterns.

Minimum Requirement #5: On-site Stormwater Management

The site soils for this project are poorly draining hydrologic group D. All impervious areas will be directed to the detention/wetpool pond in Tract A.

Minimum Requirement #6: Runoff Treatment

Treatment will be provided with a wetpool combined with the detention pond.

Minimum Requirement #7: Flow Control

Flow control will be provided with the use of a detention pond combined with a wetpool. See the attached WWHM report below.

Minimum Requirement #8: Wetland Protection

The drainage from this pond will discharge through a dispersion pipe upslope of Maddox Creek allowing distributed flow to Maddox Creek and to the isolated wetlands between the site and Maddox Creek.

Minimum Requirement #9: Basin/Watershed Planning

All discharge will be limited to the pre-developed flow to Maddox Creek.

Minimum Requirement #10: Operation and Maintenance

See the operation and maintenance schedules attached.

FLOW VOLUMES

Flow volume are determined using the Western Washington Hydrograph Modal WWHM3. Soils for the 2.03 acres are classified as Skipopa silt loam, hydrologic group D.

The following areas were used for the pond design.

Road area = 13,073 square feet (0.30 acres)
Driveways = 4,500 square feet (0.10 acres)
Roofs 7 x 2000 = 14,000 square feet (0.32 acres)
Sidewalks and patios/decks = 2,630 square feet (0.07 acres)

Total impervious area = 0.79 acres

Total pervious area = 1.24 acres of grass lawn

Western Washington Hydrology Model
PROJECT REPORT

Project Name: eastvillage1-3-20-2016
Site Address: Blackburn Road
City : Mount Vernon
Report Date : 3/21/2016
Gage : Burlington
Data Start : 1948/10/01
Data End : 1999/09/30
Precip Scale: 1.00
WWHM3 Version:

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	Acres
SAT, Forest, Flat	2.03

Impervious Land Use	Acres

Element Flows To:

Surface	Interflow	Groundwater

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	Acres
SAT, Lawn, Flat	1.24

Impervious Land Use	Acres
ROADS FLAT	0.3
ROOF TOPS FLAT	0.32
DRIVEWAYS FLAT	0.1
SIDEWALKS FLAT	0.07

Element Flows To:

Surface	Interflow	Groundwater
Trapezoidal Pond 1,	Trapezoidal Pond 1,	

Name : Trapezoidal Pond 1
Bottom Length: 50ft.
Bottom Width: 26.25ft.
Depth : 5ft.
Volume at riser head : 0.2269ft.
Side slope 1: 3 To 1
Side slope 2: 3 To 1
Side slope 3: 3 To 1
Side slope 4: 3 To 1
Discharge Structure
Riser Height: 4 ft.
Riser Diameter: 18 in.
NotchType : Rectangular
Notch Width : 0.062 ft.
Notch Height: 0.835 ft.
Orifice 1 Diameter: 0.753 in. **Elevation:** 0 ft.

Element Flows To:
Outlet 1 **Outlet 2**

Pond Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	0.030	0.000	0.000	0.000
0.056	0.031	0.002	0.004	0.000
0.111	0.031	0.003	0.005	0.000
0.167	0.032	0.005	0.006	0.000
0.222	0.033	0.007	0.007	0.000
0.278	0.033	0.009	0.008	0.000
0.333	0.034	0.011	0.009	0.000
0.389	0.034	0.013	0.009	0.000
0.444	0.035	0.014	0.010	0.000
0.500	0.036	0.016	0.011	0.000
0.556	0.036	0.018	0.011	0.000
0.611	0.037	0.020	0.012	0.000
0.667	0.038	0.023	0.012	0.000
0.722	0.038	0.025	0.013	0.000
0.778	0.039	0.027	0.013	0.000
0.833	0.039	0.029	0.014	0.000
0.889	0.040	0.031	0.014	0.000
0.944	0.041	0.033	0.014	0.000
1.000	0.041	0.036	0.015	0.000
1.056	0.042	0.038	0.015	0.000
1.111	0.043	0.040	0.016	0.000
1.167	0.044	0.043	0.016	0.000
1.222	0.044	0.045	0.016	0.000
1.278	0.045	0.048	0.017	0.000
1.333	0.046	0.050	0.017	0.000
1.389	0.046	0.053	0.018	0.000
1.444	0.047	0.055	0.018	0.000
1.500	0.048	0.058	0.018	0.000
1.556	0.048	0.061	0.019	0.000
1.611	0.049	0.063	0.019	0.000
1.667	0.050	0.066	0.019	0.000
1.722	0.051	0.069	0.020	0.000
1.778	0.051	0.072	0.020	0.000
1.833	0.052	0.075	0.020	0.000
1.889	0.053	0.078	0.020	0.000

1.944	0.054	0.080	0.021	0.000
2.000	0.054	0.083	0.021	0.000
2.056	0.055	0.087	0.021	0.000
2.111	0.056	0.090	0.022	0.000
2.167	0.057	0.093	0.022	0.000
2.222	0.058	0.096	0.022	0.000
2.278	0.058	0.099	0.022	0.000
2.333	0.059	0.102	0.023	0.000
2.389	0.060	0.106	0.023	0.000
2.444	0.061	0.109	0.023	0.000
2.500	0.062	0.112	0.024	0.000
2.556	0.062	0.116	0.024	0.000
2.611	0.063	0.119	0.024	0.000
2.667	0.064	0.123	0.024	0.000
2.722	0.065	0.126	0.025	0.000
2.778	0.066	0.130	0.025	0.000
2.833	0.067	0.134	0.025	0.000
2.889	0.067	0.138	0.025	0.000
2.944	0.068	0.141	0.026	0.000
3.000	0.069	0.145	0.026	0.000
3.056	0.070	0.149	0.026	0.000
3.111	0.071	0.153	0.026	0.000
3.167	0.072	0.157	0.027	0.000
3.222	0.073	0.161	0.030	0.000
3.278	0.073	0.165	0.035	0.000
3.333	0.074	0.169	0.041	0.000
3.389	0.075	0.173	0.049	0.000
3.444	0.076	0.177	0.057	0.000
3.500	0.077	0.182	0.066	0.000
3.556	0.078	0.186	0.075	0.000
3.611	0.079	0.190	0.085	0.000
3.667	0.080	0.195	0.095	0.000
3.722	0.081	0.199	0.106	0.000
3.778	0.082	0.204	0.117	0.000
3.833	0.083	0.208	0.128	0.000
3.889	0.083	0.213	0.139	0.000
3.944	0.084	0.217	0.151	0.000
4.000	0.085	0.222	0.162	0.000
4.056	0.086	0.227	0.354	0.000
4.111	0.087	0.232	0.704	0.000
4.167	0.088	0.237	1.157	0.000
4.222	0.089	0.242	1.693	0.000
4.278	0.090	0.247	2.302	0.000
4.333	0.091	0.252	2.975	0.000
4.389	0.092	0.257	3.706	0.000
4.444	0.093	0.262	4.492	0.000
4.500	0.094	0.267	5.329	0.000
4.556	0.095	0.272	6.213	0.000
4.611	0.096	0.278	7.143	0.000
4.667	0.097	0.283	8.116	0.000
4.722	0.098	0.288	9.131	0.000
4.778	0.099	0.294	10.19	0.000
4.833	0.100	0.299	11.28	0.000
4.889	0.101	0.305	12.41	0.000
4.944	0.102	0.311	13.57	0.000
5.000	0.103	0.316	14.77	0.000
5.056	0.104	0.322	16.01	0.000

MITIGATED LAND USE

ANALYSIS RESULTS

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.053317
5 year	0.14956
10 year	0.223102
25 year	0.311781
50 year	0.370117
100 year	0.420554

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.030373
5 year	0.06378
10 year	0.100306
25 year	0.171147
50 year	0.248804
100 year	0.355329

Yearly Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1950	0.178	0.220
1951	0.109	0.099
1952	0.072	0.055
1953	0.023	0.026
1954	0.001	0.022
1955	0.034	0.021
1956	0.111	0.023
1957	0.057	0.023
1958	0.124	0.026
1959	0.021	0.018
1960	0.123	0.094
1961	0.118	0.026
1962	0.040	0.022
1963	0.001	0.023
1964	0.015	0.019
1965	0.128	0.022
1966	0.160	0.103
1967	0.039	0.020
1968	0.099	0.022
1969	0.045	0.042
1970	0.053	0.019
1971	0.012	0.018
1972	0.200	0.109
1973	0.162	0.023
1974	0.065	0.023
1975	0.098	0.070
1976	0.647	0.812
1977	0.023	0.023

1978	0.020	0.019
1979	0.013	0.025
1980	0.040	0.021
1981	0.017	0.037
1982	0.061	0.020
1983	0.161	0.130
1984	0.001	0.023
1985	0.032	0.066
1986	0.021	0.019
1987	0.052	0.029
1988	0.026	0.026
1989	0.045	0.023
1990	0.014	0.022
1991	0.160	0.070
1992	0.195	0.206
1993	0.079	0.022
1994	0.073	0.022
1995	0.016	0.017
1996	0.000	0.018
1997	0.003	0.020
1998	0.443	0.053
1999	0.162	0.023
2000	0.031	0.022

Ranked Yearly Peaks for Predeveloped and Mitigated. POC #1

Rank	**Predeveloped**	**Mitigated**
1	0.6466	0.8120
2	0.4428	0.2202
3	0.1997	0.2064
4	0.1948	0.1302
5	0.1777	0.1089
6	0.1624	0.1034
7	0.1619	0.0993
8	0.1614	0.0939
9	0.1601	0.0702
10	0.1596	0.0698
11	0.1275	0.0656
12	0.1237	0.0554
13	0.1230	0.0530
14	0.1177	0.0420
15	0.1113	0.0367
16	0.1091	0.0290
17	0.0993	0.0263
18	0.0985	0.0259
19	0.0794	0.0258
20	0.0734	0.0256
21	0.0719	0.0249
22	0.0649	0.0233
23	0.0610	0.0232
24	0.0572	0.0230
25	0.0530	0.0230
26	0.0518	0.0230
27	0.0451	0.0226
28	0.0450	0.0226
29	0.0403	0.0226
30	0.0400	0.0225

31	0.0385	0.0225
32	0.0339	0.0221
33	0.0324	0.0220
34	0.0310	0.0220
35	0.0259	0.0219
36	0.0235	0.0219
37	0.0234	0.0216
38	0.0214	0.0216
39	0.0210	0.0211
40	0.0205	0.0205
41	0.0166	0.0200
42	0.0156	0.0198
43	0.0155	0.0198
44	0.0144	0.0193
45	0.0127	0.0189
46	0.0116	0.0188
47	0.0033	0.0185
48	0.0012	0.0184
49	0.0011	0.0183
50	0.0006	0.0181
51	0.0004	0.0171

POC #1
The Facility PASSED

The Facility PASSED.

Flow(CFS)	Predev	Dev	Percentage	Pass/Fail
0.0267	780	704	90	Pass
0.0301	663	451	68	Pass
0.0336	592	400	67	Pass
0.0371	526	346	65	Pass
0.0405	482	312	64	Pass
0.0440	436	270	61	Pass
0.0475	405	253	62	Pass
0.0509	377	225	59	Pass
0.0544	344	196	56	Pass
0.0579	317	178	56	Pass
0.0614	283	159	56	Pass
0.0648	263	144	54	Pass
0.0683	235	126	53	Pass
0.0718	222	118	53	Pass
0.0752	198	113	57	Pass
0.0787	187	101	54	Pass
0.0822	170	94	55	Pass
0.0856	160	86	53	Pass
0.0891	145	76	52	Pass
0.0926	132	68	51	Pass
0.0960	123	62	50	Pass
0.0995	111	55	49	Pass
0.1030	99	51	51	Pass
0.1065	84	45	53	Pass
0.1099	75	42	56	Pass
0.1134	70	37	52	Pass
0.1169	64	36	56	Pass
0.1203	53	35	66	Pass

0.1238	52	34	65	Pass
0.1273	46	32	69	Pass
0.1307	39	32	82	Pass
0.1342	36	28	77	Pass
0.1377	33	28	84	Pass
0.1411	32	27	84	Pass
0.1446	31	26	83	Pass
0.1481	29	25	86	Pass
0.1516	29	24	82	Pass
0.1550	28	24	85	Pass
0.1585	27	23	85	Pass
0.1620	24	21	87	Pass
0.1654	20	21	104	Pass
0.1689	19	20	105	Pass
0.1724	19	17	89	Pass
0.1758	18	17	94	Pass
0.1793	17	16	94	Pass
0.1828	17	16	94	Pass
0.1862	16	15	93	Pass
0.1897	16	14	87	Pass
0.1932	16	14	87	Pass
0.1967	15	14	93	Pass
0.2001	13	13	100	Pass
0.2036	13	13	100	Pass
0.2071	13	12	92	Pass
0.2105	13	11	84	Pass
0.2140	13	11	84	Pass
0.2175	13	11	84	Pass
0.2209	13	10	76	Pass
0.2244	13	9	69	Pass
0.2279	13	9	69	Pass
0.2313	12	9	75	Pass
0.2348	12	9	75	Pass
0.2383	12	9	75	Pass
0.2418	12	9	75	Pass
0.2452	12	9	75	Pass
0.2487	12	9	75	Pass
0.2522	12	8	66	Pass
0.2556	12	8	66	Pass
0.2591	12	8	66	Pass
0.2626	12	8	66	Pass
0.2660	12	8	66	Pass
0.2695	12	8	66	Pass
0.2730	12	8	66	Pass
0.2764	11	8	72	Pass
0.2799	11	8	72	Pass
0.2834	11	8	72	Pass
0.2869	11	8	72	Pass
0.2903	10	8	80	Pass
0.2938	10	8	80	Pass
0.2973	10	8	80	Pass
0.3007	10	8	80	Pass
0.3042	10	7	70	Pass
0.3077	10	7	70	Pass
0.3111	10	7	70	Pass
0.3146	10	7	70	Pass
0.3181	10	7	70	Pass

0.3215	10	7	70	Pass
0.3250	10	7	70	Pass
0.3285	10	7	70	Pass
0.3320	10	7	70	Pass
0.3354	9	7	77	Pass
0.3389	9	7	77	Pass
0.3424	9	7	77	Pass
0.3458	9	7	77	Pass
0.3493	9	7	77	Pass
0.3528	9	7	77	Pass
0.3562	8	7	87	Pass
0.3597	8	7	87	Pass
0.3632	8	7	87	Pass
0.3666	8	7	87	Pass
0.3701	8	7	87	Pass

Water Quality BMP Flow and Volume for POC 1.
On-line facility volume: 0.0414 acre-feet
On-line facility target flow: 0.01 **cfs.**
Adjusted for 15 min: 0.0238 **cfs.**
Off-line facility target flow: 0.0134 **cfs.**
Adjusted for 15 min: 0.0151 **cfs.**

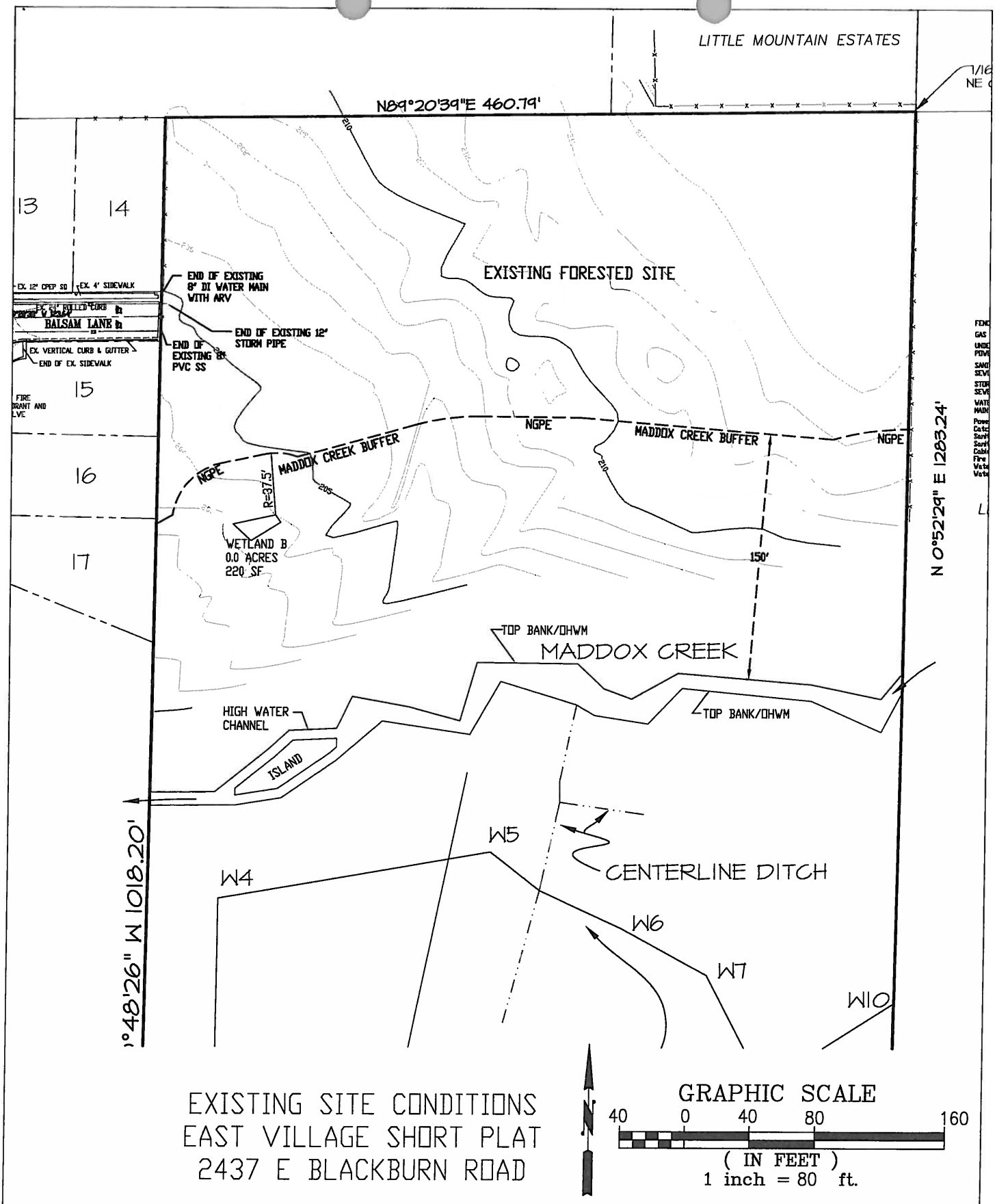
Perlnd and Implnd Changes
No changes have been made.

WATER QUALITY TREATMENT DESIGN

Water quality will be provided for with a wet pool located below the detention pond. The volume of the wet pool will be equal to the water quality storm event of 0.0414 acre-feet = 1,803 cubic feet. The bottom pond area is a minimum of 1,313 square feet so the pond depth is a minimum of 1.4' with an additional 6" for sediment storage the pond bottom will be 2 feet below the detention pond.

CONCLUSION:

The detention pond will be designed with a minimum bottom area of 1,313 square feet and 3:1 side slopes for a depth of 5 feet from the outlet. An additional 2 feet below the outlet will be used for a water quality wet pool and sediment storage.

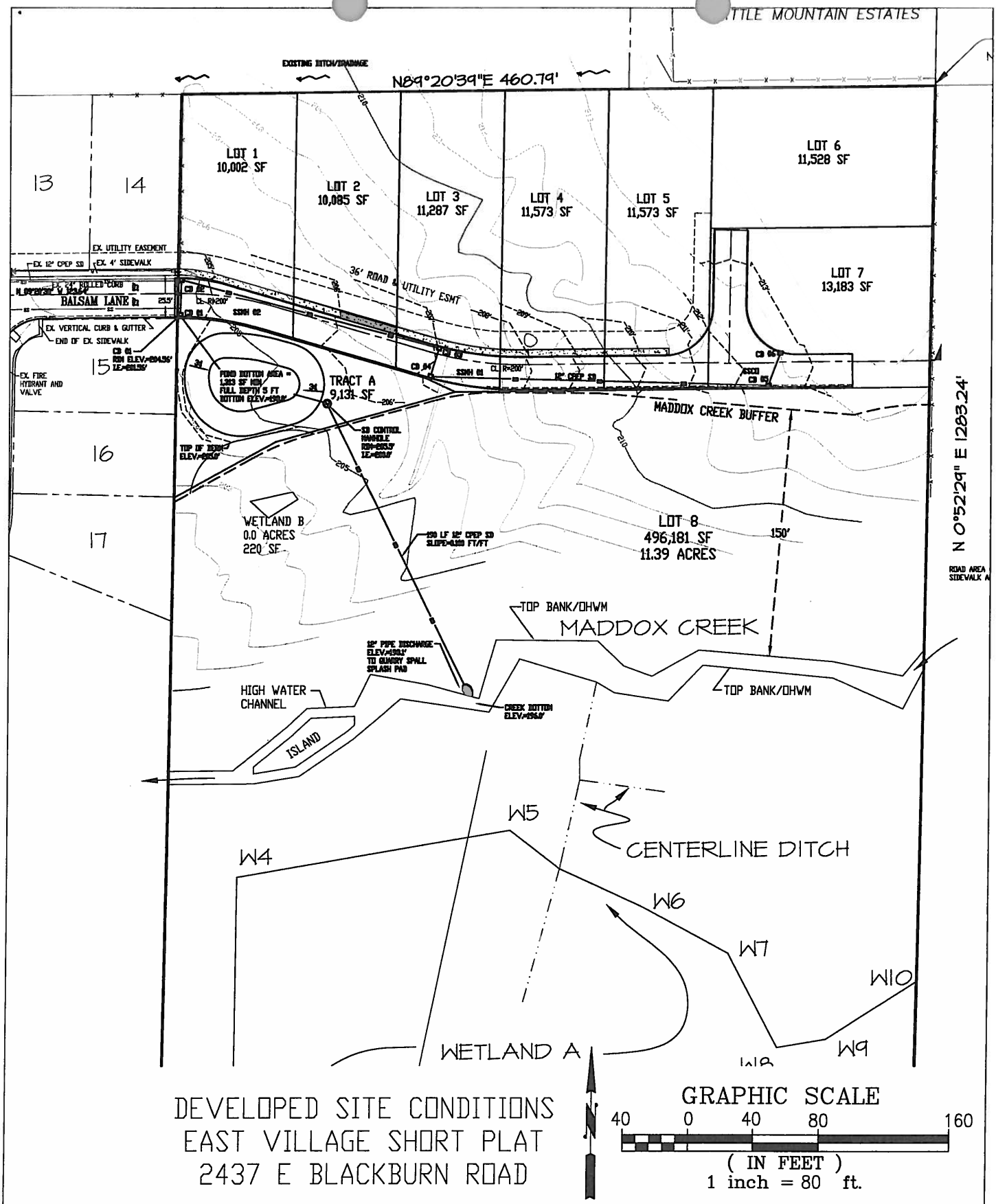


EXISTING SITE CONDITIONS
EAST VILLAGE SHORT PLAT
2437 E BLACKBURN ROAD

GRAPHIC SCALE
40 0 40 80 160
(IN FEET)
1 inch = 80 ft.

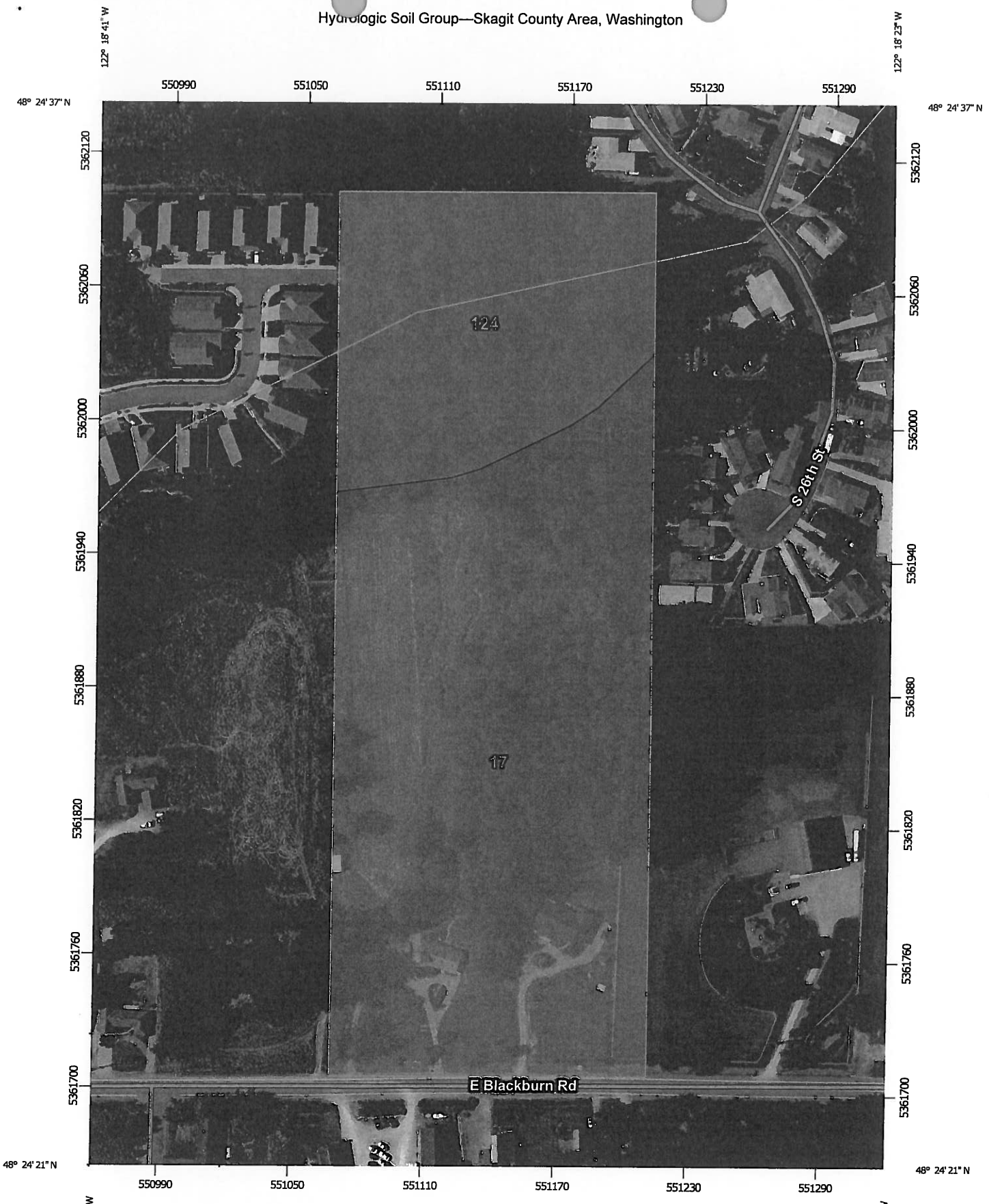
HERRIGSTAD ENGINEERING & SURVEYING
4320 WHISTLE LAKE ROAD
ANACORTES, WA 98221 299-8804

ATTACHMENT A



HERRIGSTAD ENGINEERING & SURVEYING
4320 WHISTLE LAKE ROAD
ANACORTES, WA 98221 299-8804

ATTACHMENT B



Map Scale: 1:2,330 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

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

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Skagit County Area, Washington (WA657)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
17	Bow gravelly loam, 3 to 8 percent slopes	C/D	10.1	71.0%
124	Skipopa silt loam, 0 to 3 percent slopes	D	4.1	29.0%
Totals for Area of Interest			**14.2**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition