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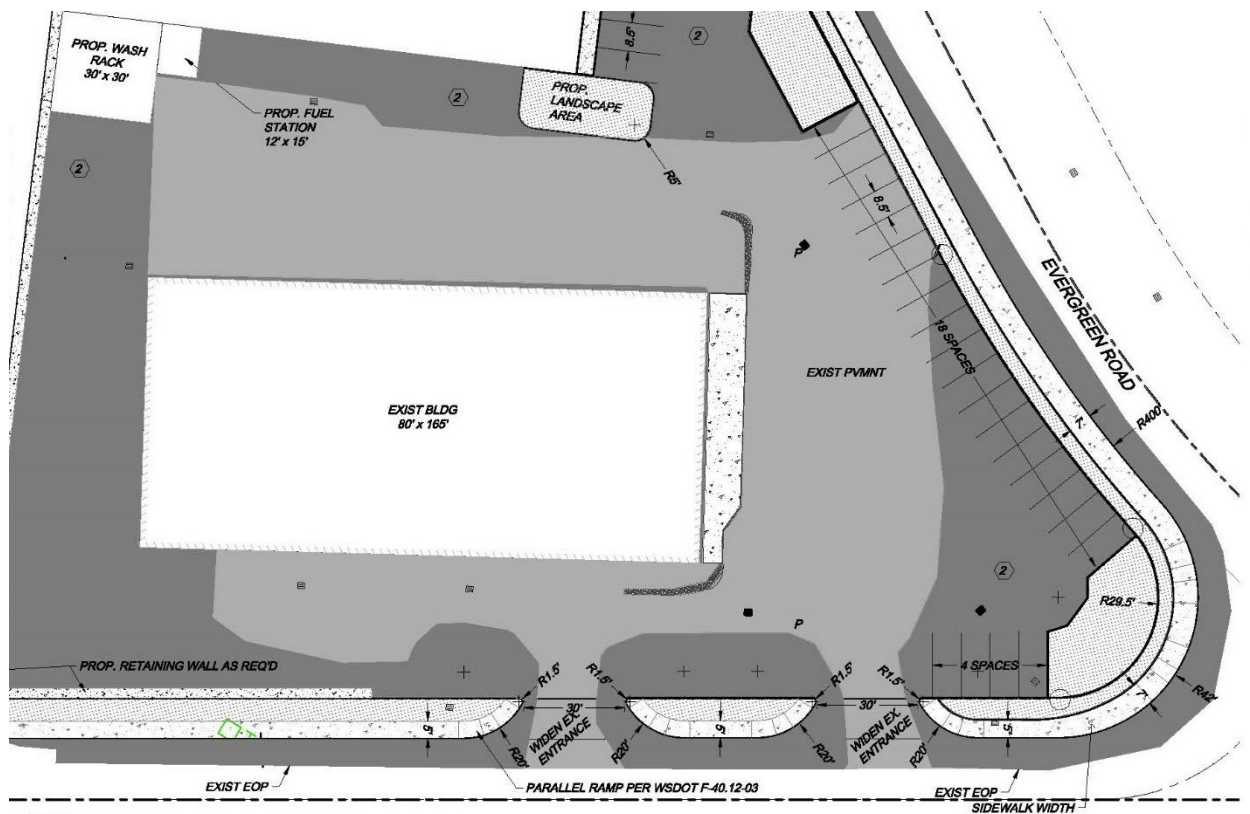


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06-24-2021

Construction Stormwater Pollution Prevention Plan Combined Construction Re-Development

3701 South Road
Mukilteo, WA 98275
Parcel #00441300002500



Applicant

AJ Smith
Combined Construction
3701 South Road
Mukilteo, WA 98275
425-610-4334

Owner

Smith & Sons Real Estate
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Engineer/Contact

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C-SWPPP Narrative For

Combined Construction Site Redevelopment Mukilteo, WA

Section 1

Site Location:

3701 South Road
Mukilteo, WA 98275

Project Description:

This project is the re-development of a 1.71 acre parcel zoned Light Industrial. This project takes place in the Picnic Point Ravine watershed and the stormwater will subsequently discharge to the Picnic Point Stream. An undeveloped site would naturally drain overland to the Picnic Point stream to the southwest. The currently developed site utilizes on-site stormwater collection facilities from its impervious surfaces, and then discharges to the public conveyance system. After re-development of the site and an increase in the impervious surface coverage, this is also the proposed method. The proposed system will utilize existing and new catch basins that will collect at a properly sized Contech storm filter to meet code requirements for runoff treatment. This includes the runoff for all rooftops and impervious surfaces. The runoff will then be collected into underground chambers. These chambers are designed assuming zero infiltration, although they will be constructed so that infiltration may occur when site conditions allow. The remaining stormwater will be introduced into the public system for further conveyance in the same location as it currently does, at CB106 per the attached drainage plan. Flow control will be provided after the chambers, prior to entry into the public system via an approved WSDOT structure (similar to Standard Plan B-10.40-01).

Existing Site Conditions

The site is currently developed with a large warehouse style structure, loading dock, and paved surfacing surrounding the building. Existing stormwater catch basins are in place and transfer water to the East to an on-site stormwater pond, near the intersection of South Road and Evergreen Road. Overflow conveyance is provided to the public system via an existing catch basin near the edge of paving of South Road.

Existing Site	Proposed Site
Buildings 13,348 SF (0.31 Ac)	Buildings: 26,748 SF (.61 Ac)
Impervious Surface: 21,197 SF (0.49 Ac)	Impervious Surface: 40,785 SF (.94 Ac)
Other Impervious: 1,082 SF (0.02 Ac)	Other Impervious: 3,572 SF (0.08 Ac)
Pervious/undeveloped: SF (0.89 Ac)	Lawn/Tree tract: 3,383 SF (0.08 Ac)



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Adjacent Areas:

To the northwest and southwest of the site are existing developed commercial areas. To the northeast is Evergreen Road, and to the southeast is South Road. All of the stormwater that is created by the impervious surfaces, including rooftops, will be treated and routed through the treatment system prior to entering the public system in the location that it currently does.

Critical Areas:

There are no critical areas that are found to be present within the area of the project.

Soil:

The soil on site is classified as Alderwood-Urban land complex, and Everett very gravelly sandy loam. The Alderwood-Urban is a hydrologic soil group B class soil. See **Appendix B** for more information regarding the existing soil on site.

Potential Erosion Problem Areas:

The site is largely flat, with very few locations for channeled flow with proper BMP control.

Section 2

Thirteen Elements:

The Elements are as follows, and shown on sheet C03 where appropriate:

Element #1 – Mark Clearing Limits – This project clearing limits is the wetland/property boundary lines. BMP C103.

Element #2 – Establish Construction Access – We recommend a stabilized construction entrance per BMP C105 (C111). This will be installed if needed during building construction but access to the site will utilize a paved entrance as it is already in place and/or the asphalt base course will remain when the site is stripped and preparing for the new paving surface.

Element #3 – Control Flow Rates – We anticipate work taking place during dry weather months and construction flows will be minimal as the site is flat. Straw lining and wattles in ditches will be utilized. Temporary ditches will overflow via flow spreaders.

Element #4 – Install Sediment Controls – There will be minimal flow from the flat site, but inlet protection will be provided for all existing catch basins possibly affected and wattles in any swales or ditches affected.



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Element #5 - Stabilize Soils – Stockpile soils will be covered during wet seasons (BMP C123) loose soils in production will be mulched in place (BMP C121).

Element #6 –Protect Slopes – Due to the nature of the site terrain minimal slopes will be temporarily mulched (C121) and permanent slopes mulched, topsoiled and planted (C121, C125 and C120).

Element #7 Protect Drain Inlets – We recommend inlet protection per BMP C220 shown in the plans at the affected Catch Basins.

Element #8 Stabilize Channels and Outlets – There are no channels or conveyances anticipated other than what is shown on the plans. Outlets will be at permanent locations.

Element #9 Control Pollutants – Anticipated pollutants that could be from concrete washout, we are recommending that washout occur off-site as that is the current arrangement for existing Lakeview Meadows.

Element #10 Control Dewatering - There is no expectation for dewatering at the depths being excavated. No plan items shown.

Element #11 Maintain BMPs – We have placed any applicable notes on the TESC sheets regarding maintenance of BMPs.

Element #12 Manage the Project – A Certified Erosion and Sediment Control Lead (CESCL) shall perform site inspections, review the SWPPP for compliance, and make determinations regarding the in-place BMPs.

Element #13 Protect Low Impact Development BMPs – The following BMPs are proposed for this project include, but are not limited to:

- BMP C103* – High Visibility Fence
- BMP C105* – Stabilized Construction Entrance
- BMP C120* – Temporary and Permanent Seeding
- BMP C121* – Mulching
- BMP C123* – Plastic Covering
- BMP C125* – Topsoiling / Composting
- BMP C220* – Storm Drain Inlet Protection
- BMP C233* - Silt Fence

Construction Scheduling:

Construction is proposed to begin during the fall of 2020. Wet season construction activities shall be in accordance with the Manual, and shall be monitored as such by the CESCL responsible for the project.



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Financial / Ownership Responsibilities:

Construction is proposed to be completed by the landowner, Combined Construction (License No. COMBIC1893NT). Bond and Insurance information

Engineering Calculations:

None required for proposed construction stormwater activity.

CESCL:

To be determined prior to permit issuance.

Certification:

"I hereby state that this Construction SWPPP for Combined Construction Site Redevelopment has been prepared by me, or under my supervision, and meets the standard of care and expertise which is usual and customary in this community for professional engineers. I understand that the City of Mukilteo does not and will not assume liability for the sufficiency, suitability, or performance of Construction SWPPP BMPs prepared by me."

A handwritten signature in blue ink, appearing to read "Collin McMaster", written over a horizontal line.

Signature

7/1/2020

Date

Collin McMaster, P.E.
Vector Engineering, Inc.
2724 Black Lake Blvd, Ste 202
Tumwater, WA 98512
(360) 352-2477

Seal:

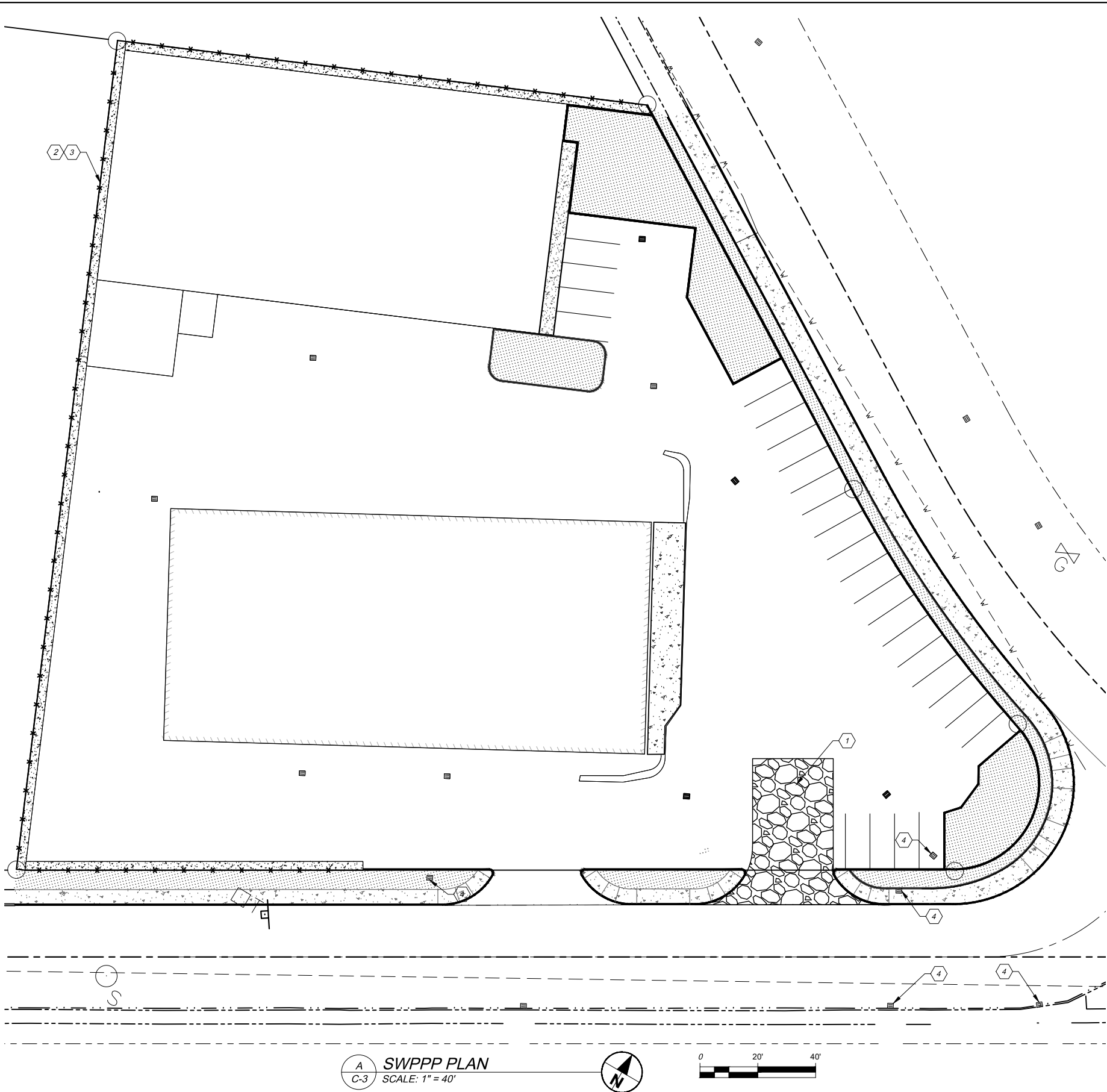


7/1/2020

Appendix A

Erosion Control Plans

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A
C-3
SWPPP PLAN
SCALE: 1" = 40'



APPROVED FOR CONSTRUCTION

BY: _____ DATE: _____

CITY OF MUKILTEO
DIRECTOR OF PUBLIC WORKS

APPROVAL EXPIRES: _____

STANDARD EROSION CONTROL NOTES

1. PRIOR TO ANY SITE WORK, INCLUDING CLEARING, LOGGING OR GRADING, THE SITE CLEARING LIMITS SHALL BE LOCATED AND FIELD IDENTIFIED BY THE PROJECT SURVEYOR (OR PROJECT ENGINEER) AS REQUIRED BY THESE THE PROJECT SURVEYOR'S NAME AND PHONE NUMBER IS _____.
2. SOILS IN MUKILTEO OFTEN CONTAIN FINER PARTICLES WHICH WILL PASS THROUGH SEDIMENT TRAPS UNTREATED AND HAVE EXTREMELY LONG SETTLING TIMES. THEREFORE, THE NEED TO CONTROL EROSION FROM THE SITE IS THE FIRST PRIORITY AND SHOULD BE EMPHASIZED.
3. THE CONSTRUCTION STORMWATER POLLUTION PREVENTION FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPROVED SWPPP PRIOR TO ANY GRADING OR EXTENSIVE LAND CLEARING. AN INSPECTION BY THE CITY OF THESE FACILITIES SHALL BE ARRANGED FOR BY THE CONTRACTOR PRIOR TO ANY GRADING. THESE FACILITIES MUST BE SATISFACTORILY MAINTAINED UNTIL CONSTRUCTION AND LANDSCAPING IS COMPLETED AND THE POTENTIAL FOR ON-SITE EROSION HAS PASSED.
4. STOCKPILES ARE TO BE LOCATED IN SAFE AREAS AND ADEQUATELY PROTECTED BY TEMPORARY SEEDING AND MULCHING. HYDROSEEDING IS PREFERRED.
5. THE DEVELOPER (OR PROJECT ENGINEER) IS RESPONSIBLE FOR WATER QUALITY AS DETERMINED BY THE MONITORING PROGRAM ESTABLISHED BY THE PROJECT ENGINEER. THE PROJECT ENGINEER'S NAME AND PHONE NUMBER IS _____.
6. IF THE PROJECT WILL DISTURB MORE THAN ONE (1) ACRE OF LAND, THEN A CONSTRUCTION NPDES PERMIT IS REQUIRED AND A CERTIFIED EROSION AND SEDIMENT CONTROL LEAD (CESCL) SHALL BE ASSIGNED TO THE SITE.
CESCL'S NAME: _____
PHONE NUMBER: _____
CESCL CERTIFICATE NUMBER IS: _____
7. ALL SITE WORK MUST BE PERFORMED IN ACCORDANCE WITH THE CURRENT CITY ADOPTED INTERNATIONAL BUILDING CODE.
8. ALL EARTH WORK SHALL BE PERFORMED IN ACCORDANCE WITH CITY STANDARDS. A PRECONSTRUCTION SOILS INVESTIGATION MAY BE REQUIRED TO EVALUATE SOILS STABILITY.
9. IF CUT AND FILL SLOPES EXCEED A MAXIMUM OF TWO FEET HORIZONTAL TO ONE FOOT VERTICAL, A ROCK OR CONCRETE RETAINING WALL MAY BE REQUIRED. ALL ROCK RETAINING WALLS GREATER THAN FOUR (4) FEET IN HEIGHT ARE TO BE DESIGNED AND CERTIFIED BY A PROFESSIONAL ENGINEER EXPERIENCED IN SOIL MECHANICS.
10. THE SURFACE OF ALL SLOPES SHALL BE COMPACTED. THIS MAY BE ACCOMPLISHED BY OVER-BUILDING THE SLOPES, THEN CUTTING BACK TO FINAL GRADES; OR BY COMPACTING EACH LIFT AS THE SLOPE IS BEING CONSTRUCTED. ALL SLOPES SHALL BE COMPACTED BY THE END OF EACH WORKING DAY.
11. ALL STRUCTURAL FILLS SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DENSITY IN THE UPPER 4 FEET & 90% MAXIMUM DENSITY BELOW 4 FEET AS DETERMINED BY MODIFIED PROCTOR.
12. NONCOMPLIANCE WITH THE EROSION CONTROL REQUIREMENTS, WATER QUALITY REQUIREMENTS AND CLEARING LIMITS VIOLATIONS MAY RESULT IN REVOCATION OF PROJECT PERMITS AND PLAN APPROVAL AND BOND FORECLOSURES.
13. UPON COMPLETION OF WORK, FINAL REPORTS MUST BE SUBMITTED TO THE CITY IN CONFORMANCE WITH THE CURRENT CITY ADOPTED INTERNATIONAL BUILDING CODE.
14. A WET WEATHER EROSION CONTROL PLAN MUST BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL ON OR BEFORE SEPTEMBER 1, IF THE PROJECT IS PROPOSING TO ACTIVELY CLEAR, GRADE, OR OTHERWISE DISTURB 1,000 SQUARE FEET OR MORE OF SOIL DURING THE PERIOD BETWEEN OCTOBER 1 AND APRIL 30. OTHER THRESHOLDS FOR A WET WEATHER EROSION CONTROL PLAN INCLUDE PROJECTS THAT:
 - 14.1. HAVE AREA(S) THAT DRAIN, BY PIPE, OPEN DITCH, SHEET FLOW, OR A COMBINATION OF THESE TO A TRIBUTARY WATER, AND THE TRIBUTARY WATER IS ONE-QUARTER MILE OR LESS DOWNSTREAM; OR
 - 14.2. HAVE SLOPES STEEPER THAN 15 PERCENT ADJACENT OR ON-SITE; OR
 - 14.3. HAVE HIGH POTENTIAL FOR SEDIMENT TRANSPORT, AS DETERMINED BY THE CONSTRUCTION SITE SEDIMENT TRANSPORT POTENTIAL WORKSHEET; OR
 - 14.4. HAVE A CRITICAL AREA OR CRITICAL AREA BUFFER ON-SITE, OR WITHIN 50 FEET OF THE SITE; OR
 - 14.5. HAVE HIGH GROUNDWATER TABLE OR SPRINGS.

TEMPORARY SEEDING GENERAL NOTES

1. USE SEEDING THROUGHOUT THE PROJECT ON DISTURBED AREAS THAT HAVE REACHED FINAL GRADE OR THAT WILL REMAIN UNWORKED FOR MORE THAN 30 DAYS.
2. THE OPTIMUM SEEDING WINDOWS ARE APRIL 1 THROUGH JUNE 30 AND SEPTEMBER 1 THROUGH OCTOBER 1.
3. BETWEEN OCTOBER 1 AND MARCH 30 SEEDING REQUIRES A COVER OF MULCH WITH STRAW OR AN EROSION CONTROL BLANKET UNTIL 75 PERCENT GRASS COVER IS ESTABLISHED.
4. REVIEW ALL DISTURBED AREAS IN LATE AUGUST TO EARLY SEPTEMBER AND COMPLETE ALL SEEDING BY THE END OF SEPTEMBER.
 - 4.1. MULCH IS REQUIRED AT ALL TIMES FOR SEEDING. MULCH CAN BE APPLIED ON TOP OF THE SEED OR SIMULTANEOUSLY BY HYDROSEEDING (SEE ECOLOGY BMP C121 MULCHING FOR SPECIFICATIONS).
 - 4.2. SEED AND MULCH ALL DISTURBED AREAS NOT OTHERWISE VEGETATED AT FINAL SITE STABILIZATION.

MAINTENANCE OF SILTATION BARRIERS

1. SILTATION BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED EROSION CONTROL ELEMENTS, ESPECIALLY END-RUNS AND SEDIMENT BUILD-UP. NECESSARY REPAIRS TO BARRIERS SHALL BE ACCOMPLISHED THE SAME DAY.
2. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. SEDIMENT DEPOSITS MUST BE REMOVED WHEN THE SEDIMENT LEVEL REACHES APPROXIMATELY ONE-HALF THE SILTATION BARRIER HEIGHT.
3. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE CHECK DAM IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDDED.

CONSTRUCTION NOTES


- ① BMP C105: STABILIZED CONSTRUCTION ENTRANCE
- ② BMP C103: HIGH VISIBILITY PLASTIC FENCE
- ③ BMP C233: SILT FENCE
- ④ EXIST SIGN TO REMOVE
- ⑤ RELOCATE POWER VAULT. COORDINATE W/ PUD
- ⑥ FENCE REMOVAL/RELOCATE PER ARCHITECTURAL PLANS

LEGEND

HATCH

 STABILIZED ENTRANCE

LINES

 HIGH VISIBILITY / SILT FENCE

FILE: C-3.dwg		⑥			
PROJECT: 19-CC06		④			
		③			
CHECKED BY: CJM		②			
DETAILED BY: CJM		①			
DESIGNED BY: CJM	DATE	NO.	REVISION	BY	

PERMIT SET



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COMBINED CONSTRUCTION SITE RE-DEVELOPMENT

3701 SOUTH ROAD
MUKILTEO, WA 98275

COMBINED CONSTRUCTION

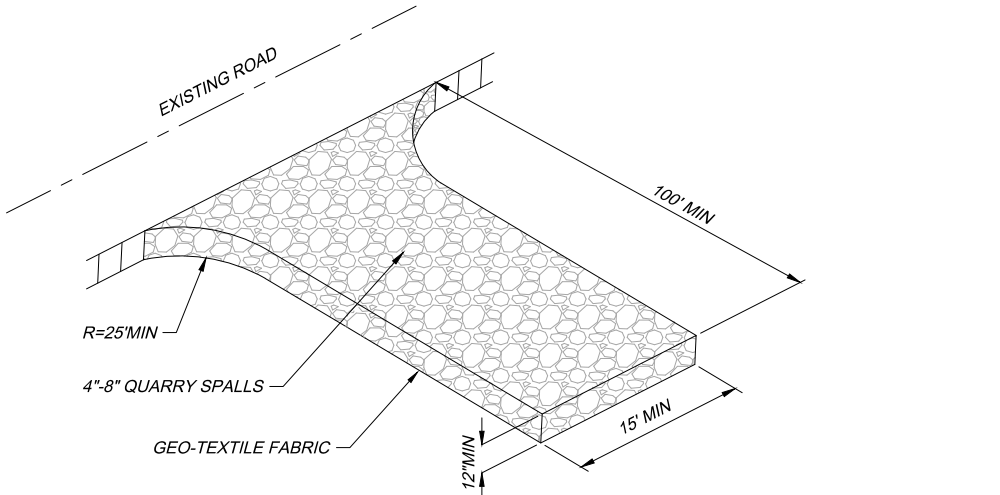
3701 SOUTH ROAD
MUKILTEO, WA 98275

C-3

SWPPP PLAN

SHT 3 OF 8

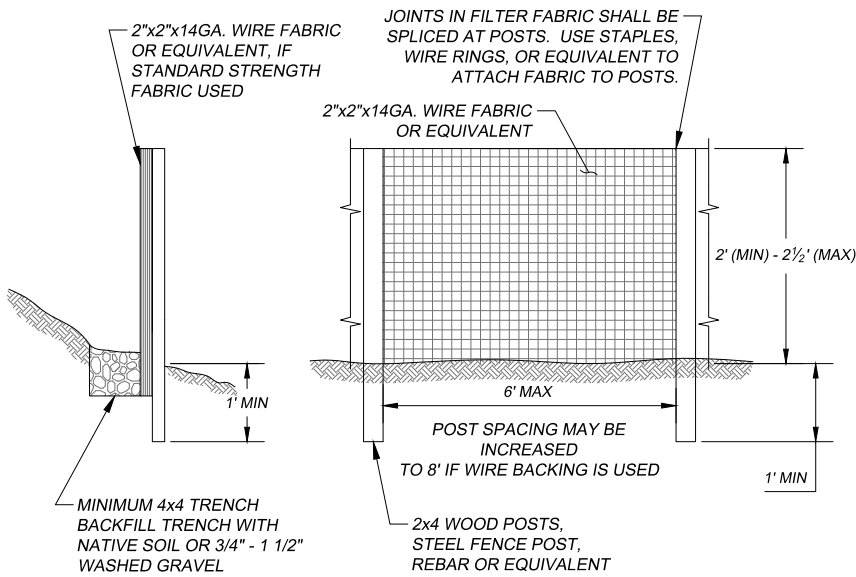
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BMP C105: STABILIZED CONSTRUCTION ENTRANCE/EXIT NOTES:

1. THE ROCK PAD SHALL BE AT LEAST 12 INCHES THICK AND 100 FEET LONG. WIDTH SHALL BE AT LEAST 15 FEET AND BE THE FULL WIDTH OF THE VEHICLE INGRESS AND EGRESS AREA. SMALLER PADS MAY BE APPROVED WHERE REQUIRED SIZE IS IMPRACTICAL.
2. MATERIAL SHALL BE 4" TO 8" QUARRY SPALLS, A 4-INCH COURSE OF ASPHALT TREATED BASE (ATB), OR USE EXISTING PAVEMENT. DO NOT USE BROKEN/CRUSHED CONCRETE, CEMENT, OR CALCIUM CHLORIDE.
3. A SEPARATION GEOTEXTILE SHALL BE PLACED UNDER THE SPALLS TO PREVENT FINE SEDIMENT FROM PUMPING UP INTO THE ROCK PAD. THE GEOTEXTILE SHALL MEET THE FOLLOWING STANDARDS:
 - GRAB TENSILE STRENGTH (ASTM D4751): 200 PSI MINIMUM
 - GRAB TENSILE ELONGATION (ASTM D4632): 30 PERCENT MAXIMUM
 - MULLEN BURST STRENGTH (ASTM D3786-80A): 400 PSI MINIMUM
 - AOS (ASTM D4751): 20 TO 45 (U.S. STANDARD SIEVE SIZE)
4. FOR SINGLE-FAMILY RESIDENTIAL LOTS PAD MAY BE REDUCED IN LENGTH TO FIT SITE, TO NO LESS THAN 20 FEET LONG, AND IN DEPTH, TO 6 INCHES THICK WITH 4-INCH TO 6-INCH QUARRY SPALLS.
5. ADDITIONAL QUARRY SPALLS SHALL BE ADDED PERIODICALLY TO MAINTAIN PROPER FUNCTION OF THE PAD.
6. IF THE ENTRANCE IS NOT PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT, THEN ALTERNATIVE MEASURES TO KEEP THE STREETS FREE OF SEDIMENT SHALL BE USED. THIS MAY INCLUDE REPLACEMENT/CLEANING OF THE EXISTING QUARRY SPALLS, AN INCREASE IN THE DIMENSIONS OF THE ENTRANCE, OR THE INSTALLATION OF A WHEEL WASH.

1 **BMP C105: STABILIZED CONSTRUCTION ENTRANCE**
C-7 SCALE: N.T.S.



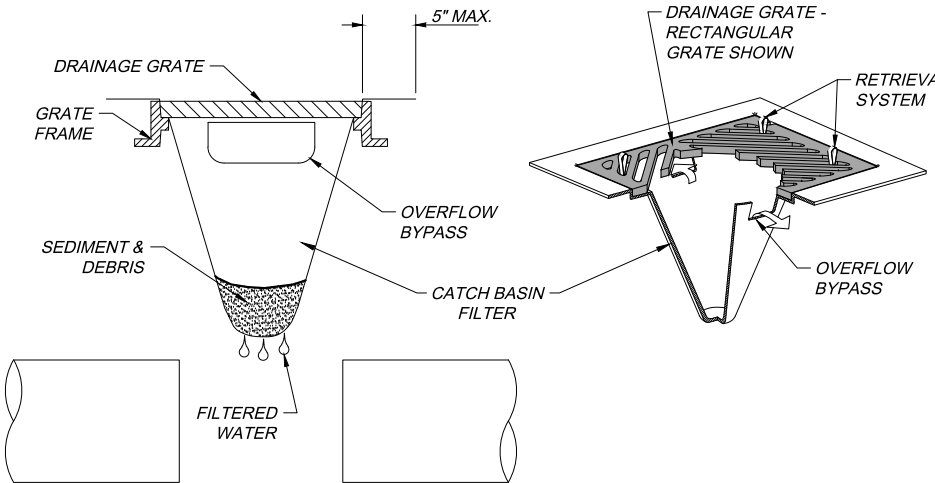
GEOTEXTILE SPECIFICATIONS	
POLYMERIC MESH AOS (ASTM D4751)	0.60 mm MAX. FOR SLIT FILM WOVEN (#30 SIEVE) 0.30 mm FOR ALL OTHER GEOTEXTILE TYPES (#50 SIEVE) 0.15 mm MIN. FOR ALL FABRIC TYPES (#100 SIEVE)
WATER PERMITTIVITY (ASTM D4491)	0.02 SEC ⁻¹
GRAB TENSILE STRENGTH (ASTM D4632)	180 LB. MIN. FOR EXTRA STRENGTH 100 LB. MIN. FOR STANDARD STRENGTH
GRAB TENSILE STRENGTH (ASTM D4632)	30% MAXIMUM
ULTRAVIOLET RESISTANCE (ASTM D4355)	70% MINIMUM

ALL GEOTEXTILE PROPERTIES LISTED ABOVE ARE MINIMUM AVERAGE ROLL VALUES

2 **BMP C233: SILT FENCE**
C-7 SCALE: N.T.S.

BMP C233: SILT FENCE NOTES

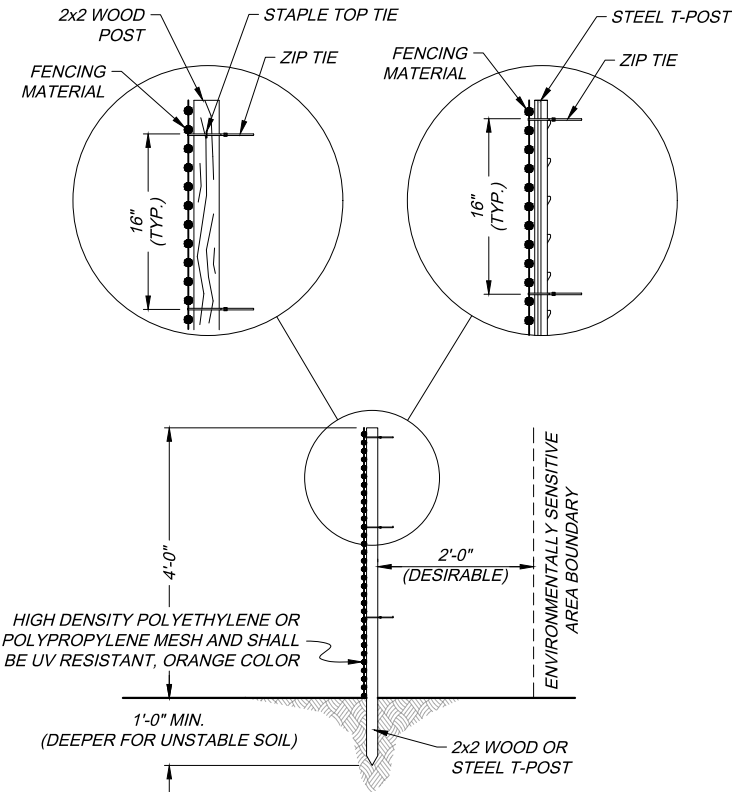
1. THE CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY SILT FENCES AT THE LOCATIONS SHOWN IN THE PLANS.
2. CONSTRUCT SILT FENCES IN AREAS OF CLEARING, GRADING, OR DRAINAGE PRIOR TO STARTING THOSE ACTIVITIES.
3. THE SILT FENCE SHALL HAVE A 2-FEET MIN. AND A 2 1/4-FEET MAX. HEIGHT ABOVE THE ORIGINAL GROUND SURFACE.
4. THE FILTER FABRIC SHALL BE SEWN TOGETHER AT THE POINT OF MANUFACTURE TO FORM FILTER FABRIC LENGTHS AS REQUIRED. LOCATE ALL SEWN SEAMS AT SUPPORT POSTS. ALTERNATIVELY, TWO SECTIONS OF SILT FENCE CAN BE OVERLAPPED, PROVIDED THE CONTRACTOR CAN DEMONSTRATE, TO THE SATISFACTION OF THE ENGINEER, THAT THE OVERLAP IS LONG ENOUGH AND THAT THE ADJACENT FENCE SECTIONS ARE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP.
5. ATTACH THE FILTER FABRIC ON THE UP-SLOPE SIDE OF THE POSTS AND SECURE WITH STAPLES, WIRE, OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ATTACH THE FILTER FABRIC TO THE POSTS IN A MANNER THAT REDUCES THE POTENTIAL FOR TEARING.
6. SUPPORT THE FILTER FABRIC WITH WIRE OR PLASTIC MESH, DEPENDENT ON THE PROPERTIES OF THE GEOTEXTILE SELECTED FOR USE. IF WIRE OR PLASTIC MESH IS USED, FASTEN THE MESH SECURELY TO THE UP-SLOPE SIDE OF THE POSTS WITH THE FILTER FABRIC UP-SLOPE OF THE MESH.
7. MESH SUPPORT, IF USED, SHALL CONSIST OF STEEL WIRE WITH A MAXIMUM MESH SPACING OF 2-INCHES, OR A PREFABRICATED POLYMERIC MESH. THE STRENGTH OF THE WIRE OR POLYMERIC MESH SHALL BE EQUIVALENT TO OR GREATER THAN 180 LBS. GRAB TENSILE STRENGTH. THE POLYMERIC MESH MUST BE AS RESISTANT TO THE SAME LEVEL OF ULTRAVIOLET RADIATION AS THE FILTER FABRIC IT SUPPORTS.
8. BURY THE BOTTOM OF THE FILTER FABRIC 4-INCHES MIN. BELOW THE GROUND SURFACE. BACKFILL AND TAMP SOIL IN PLACE OVER THE BURIED PORTION OF THE FILTER FABRIC, SO THAT NO FLOW CAN PASS BENEATH THE FENCE AND SCOURING CANNOT OCCUR. WHEN WIRE OR POLYMERIC BACK-UP SUPPORT MESH IS USED, THE WIRE OR POLYMERIC MESH SHALL EXTEND INTO THE GROUND 3-INCHES MIN.
9. DRIVE OR PLACE THE FENCE POSTS INTO THE GROUND 18-INCHES MIN. A 12-INCH MIN. DEPTH IS ALLOWED IF TOPSOIL OR OTHER SOFT SUBGRADE SOIL IS NOT PRESENT AND 18-INCHES CANNOT BE REACHED. INCREASE FENCE POST MIN. DEPTHS BY 6 INCHES IF THE FENCE IS LOCATED ON SLOPES OF 3H:1V OR STEEPER AND THE SLOPE IS PERPENDICULAR TO THE FENCE. IF REQUIRED POST DEPTHS CANNOT BE OBTAINED, THE POSTS SHALL BE ADEQUATELY SECURED BY BRACING OR GUYING TO PREVENT OVERTURNING OF THE FENCE DUE TO SEDIMENT LOADING.
10. USE WOOD, STEEL OR EQUIVALENT POSTS. THE SPACING OF THE SUPPORT POSTS SHALL BE A MAXIMUM OF 6-FEET. POSTS SHALL CONSIST OF EITHER:
 - 10.1. WOOD WITH DIMENSIONS OF 2-INCHES BY 2-INCHES WIDE MIN. AND A 3-FEET MIN. LENGTH. WOOD POSTS SHALL BE FREE OF DEFECTS SUCH AS KNOTS, SPLITS, OR GOUGES.
 - 10.2. NO. 6 STEEL REBAR OR LARGER.
 - 10.3. ASTM A 120 STEEL PIPE WITH A MINIMUM DIAMETER OF 1-INCH.
 - 10.4. U, T, L, OR C SHAPE STEEL POSTS WITH A MINIMUM WEIGHT OF 1.35 LBS./FT.
 - 10.5. OTHER STEEL POSTS HAVING EQUIVALENT STRENGTH AND BENDING RESISTANCE TO THE POST SIZES LISTED ABOVE.
11. LOCATE SILT FENCES ON CONTOUR AS MUCH AS POSSIBLE, EXCEPT AT THE ENDS OF THE FENCE, WHERE THE FENCE SHALL BE TURNED UPHILL SUCH THAT THE SILT FENCE CAPTURES THE RUNOFF WATER AND PREVENTS WATER FROM FLOWING AROUND THE END OF THE FENCE.
12. IF THE FENCE MUST CROSS CONTOURS, WITH THE EXCEPTION OF THE ENDS OF THE FENCE, PLACE GRAVEL CHECK DAMS PERPENDICULAR TO THE BACK OF THE FENCE TO MINIMIZE CONCENTRATED FLOW AND EROSION. THE SLOPE OF THE FENCE LINE WHERE CONTOURS MUST BE CROSSED SHALL NOT BE STEEPER THAN 3H:1V.
 - 12.1. GRAVEL CHECK DAMS SHALL BE APPROXIMATELY 1-FOOT DEEP AT THE BACK OF THE FENCE. GRAVEL CHECK DAMS SHALL BE CONTINUED PERPENDICULAR TO THE FENCE AT THE SAME ELEVATION UNTIL THE TOP OF THE CHECK DAM INTERCEPTS THE GROUND SURFACE BEHIND THE FENCE.
 - 12.2. GRAVEL CHECK DAMS SHALL CONSIST OF CRUSHED SURFACING BASE COURSE, GRAVEL BACKFILL FOR WALLS, OR SHOULDER BALLAST. GRAVEL CHECK DAMS SHALL BE LOCATED EVERY 10 FEET ALONG THE FENCE WHERE THE FENCE MUST CROSS CONTOURS.



BMP C220: INLET PROTECTION NOTES:

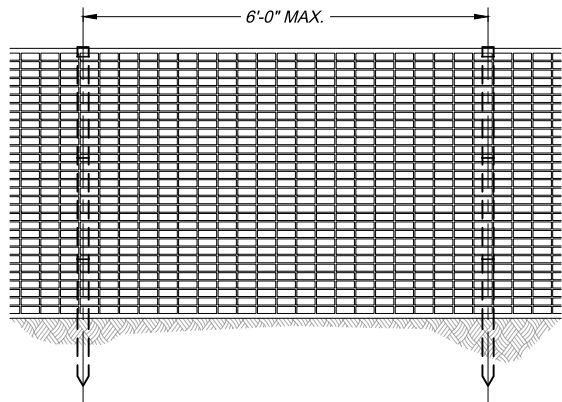
1. SIZE THE CATCH BASIN FILTER (CBF) FOR THE STORM WATER STRUCTURE IT WILL SERVICE.
2. THE CBF SHALL HAVE A BUILT-IN HIGH-FLOW RELIEF SYSTEM (OVERFLOW BYPASS).
3. THE RETRIEVAL SYSTEM MUST ALLOW REMOVAL OF THE CBF WITHOUT SPILLING THE COLLECTED MATERIAL.
4. PERFORM MAINTENANCE WHEN DEPTH OF ACCUMULATED SEDIMENT AND DEBRIS REACHES APPROX. 1/2 THE HEIGHT OF THE FILTER (OR LESS WHEN SO SPECIFIED BY THE MANUFACTURER).
5. AT ALL PROPOSED CATCH BASINS, CATCH BASIN PROTECTION SHALL ABE INSTALLED IMMEDIATELY UPON CATCH BASIN INSTALLATION AND SHALL REMAIN UNTIL FINAL SITE STABILIZATION.

3 **BMP C220: STORM DRAIN INLET PROTECTION**
C-7 SCALE: N.T.S.

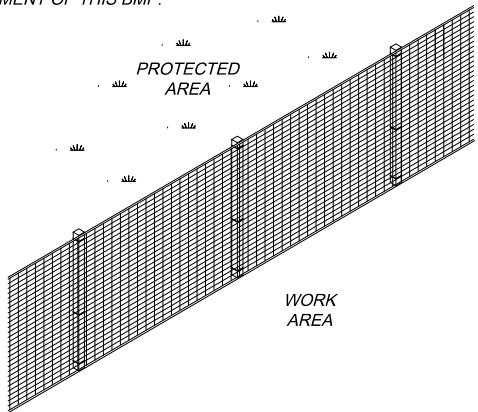


BMP C103: HIGH VISIBILITY FENCE NOTES:

1. FENCING COLOR SHALL BE HIGH VISIBILITY ORANGE.
2. FENCING TENSILE STRENGTH SHALL BE 360 LB/FT (ASTM D4595).
3. POSTS SHALL HAVE SUFFICIENT STRENGTH AND DURABILITY TO SUPPORT THE FENCE THROUGH THE LIFE OF THE PROJECT.
4. IF APPROPRIATE, INSTALL FABRIC SILT FENCE IN ACCORDANCE WITH BMP C233 TO ACT AS HIGH VISIBILITY FENCE. EXCEPT THAT THE SILT FENCE SHALL BE AT LEAST 3 FEET HIGH AND MUST BE HIGHLY VISIBLE TO MEET THE REQUIREMENT OF THIS BMP.



4 **BMP C103: HIGH VISIBILITY FENCE**
C-7 SCALE: N.T.S.



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BY: _____ DATE: _____

CITY OF MUKILTEO
DIRECTOR OF PUBLIC WORKS

APPROVAL EXPIRES: _____

FILE: C-7.dwg		6		
PROJECT: 19-CC06		4		
		3		
CHECKED BY: CJM		2		
DETAILED BY: CJM		1		
DESIGNED BY: CJM	DATE	NO.	REVISION	BY

PERMIT SET



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COMBINED CONSTRUCTION SITE RE-DEVELOPMENT

3701 SOUTH ROAD
MUKILTEO, WA 98275

COMBINED CONSTRUCTION

3701 SOUTH ROAD
MUKILTEO, WA 98275

C-7

SHT 7 OF 8

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STANDARD CONSTRUCTION SWPPP NOTES

1. SITE INSPECTIONS SHALL BE CONDUCTED BY A PERSON WHO IS KNOWLEDGEABLE IN THE PRINCIPLES AND PRACTICES OF EROSION AND SEDIMENT CONTROL. FOR PROJECT SITES THAT THAT REQUIRE A CONSTRUCTION SWPPP, A CERTIFIED EROSION AND SEDIMENT CONTROL LEAD (CESCL) SHALL BE IDENTIFIED IN THE CONSTRUCTION SWPPP AND SHALL BE ON SITE OR ON CALL AT ALL TIMES.
2. APPROVAL OF THE CONSTRUCTION SWPPP DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION/DETENTION/INFILTRATION FACILITIES, UTILITIES, ETC.).
3. THE IMPLEMENTATION OF THE CONSTRUCTION SWPPP AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE CONSTRUCTION SWPPP FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
4. THE CLEARING LIMIT BOUNDARIES SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
5. THE CONSTRUCTION SWPPP FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE STANDARDS FOR SURFACE WATER QUALITY, GROUNDWATER QUALITY, OR SEDIMENT QUALITY.
6. THE CONSTRUCTION SWPPP FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE CONSTRUCTION SWPPP FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE DURING THE COURSE OF CONSTRUCTION, INCLUDING CONSTRUCTION ON INDIVIDUAL LOTS.
7. THE CONSTRUCTION SWPPP FACILITIES ON ACTIVE SITES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR. THE FACILITIES SHALL BE MAINTAINED, REPAIRED, OR AUGMENTED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTION.
8. THE CONSTRUCTION SWPPP FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AT LEAST MONTHLY AND WITHIN 48 HOURS FOLLOWING A MAJOR STORM EVENT (≥ 1" RAINFALL IN 24 HOURS) BY THE APPLICANT/CONTRACTOR. THE FACILITIES SHALL BE MAINTAINED, REPAIRED, OR AUGMENTED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTION.
9. STORM DRAIN INLETS OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT STORMWATER RUNOFF DOES NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR TREATED TO REMOVE SEDIMENT. AT NO TIME SHALL MORE THAN 1 FOOT OR 1/3 OF THE BMP VOLUME (WHICHEVER IS LESS) OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A STORM DRAIN INLET PROTECTION BMP. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED AS PART OF PROJECT COMPLETION AND ACCEPTANCE. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
10. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
11. ROADS SHALL BE INSPECTED DAILY AND CLEANED THOROUGHLY AS NEEDED TO PROTECT DOWNSTREAM WATER RESOURCES OR STORMWATER INFRASTRUCTURE. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR PICKUP SWEEPING AND SHALL BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.
12. FROM OCTOBER 1 THROUGH APRIL 30, NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN 2 DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN 7 DAYS. SOILS SHALL BE STABILIZED AT THE END OF THE SHIFT BEFORE A HOLIDAY OR WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST. LINEAR CONSTRUCTION ACTIVITIES, SUCH AS RIGHT-OF-WAY AND EASEMENT CLEARING, ROADWAY DEVELOPMENT, PIPELINES, AND TRENCHING FOR UTILITIES, SHALL COMPLY WITH THESE REQUIREMENTS. THESE STABILIZATION REQUIREMENTS APPLY TO ALL SOILS ON SITE, WHETHER AT FINAL GRADE OR NOT. THE CITY OF LACEY MAY DECREASE THESE TIME LIMITS IF IT CAN BE SHOWN THAT A DEVELOPMENT SITE'S EROSION OR RUNOFF POTENTIAL JUSTIFIES A DIFFERENT STANDARD.
13. CONTACT THE CITY FOR APPROVAL PRIOR TO ALL CLEARING, GRADING, AND OTHER SOILDISTURBING ACTIVITIES THAT OCCUR BETWEEN OCTOBER 1 AND APRIL 30. SUCH WORK SHALL ONLY BE PERMITTED IF SHOWN TO THE SATISFACTION OF THE CITY THAT THE TRANSPORT OF SEDIMENT FROM THE CONSTRUCTION SITE TO RECEIVING WATERS WILL BE PREVENTED. THE CITY MAY REQUIRE SUPPLEMENTAL SWPPP DOCUMENTATION FOR WET SEASON WORK.
14. SOIL STOCKPILES MUST BE STABILIZED AND PROTECTED FROM EROSION.
15. HANDLE AND DISPOSE OF ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLITION DEBRIS THAT OCCUR ON SITE IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORMWATER. WOODY DEBRIS MAY BE CHOPPED AND SPREAD ON SITE.
16. USE SPILL PREVENTION MEASURES, SUCH AS DRIP PANS, WHEN CONDUCTING MAINTENANCE AND REPAIR OF VEHICLES AND EQUIPMENT.
17. REPORT SPILLS MONDAY THROUGH FRIDAY, 7:00 A.M. TO 3:30 P.M. (360) 491-5644. AFTER HOURS, YOU CAN LEAVE A VOICEMAIL AT THE NUMBER ABOVE, OR SELECT THE OPTION TO BE CONNECTED TO THURSTON COUNTY CENTRAL DISPATCH, WHO WILL NOTIFY THE CITY'S STAND-BY SPILL RESPONSE STAFF.

BMP C120: TEMPORARY AND PERMANENT SEEDING NOTES

1. SEED MIXTURE AND APPLICATION RATE SHALL BE:

(DESIGNER SHALL INSERT APPROPRIATE SEED MIX TABLE FROM SDM CHAPTER 5).

2. WHEN APPLIED WITH HYDROMULCH, APPLY IN TWO PHASES:
 - a. PHASE 1 – INSTALL ALL SEED AND FERTILIZER WITH 25 TO 30 PERCENT MULCH AND TACKIFIER ONTO SOIL IN THE FIRST LIFT.
 - b. PHASE 2 – INSTALL THE REST OF THE MULCH AND TACKIFIER IN THE SECOND LIFT.
3. IF FEASIBLE, SEED BETWEEN APRIL 1 AND JUNE 30 OR BETWEEN SEPTEMBER 1 AND OCTOBER 1.
4. SEED BEDS PLANTED BETWEEN JULY 1 AND AUGUST 30 SHALL BE IRRIGATED UNTIL 75 PERCENT GRASS COVER IS ESTABLISHED.
5. SEED BEDS PLANTED BETWEEN OCTOBER 1 AND MARCH 30 SHALL BE MULCHED WITH STRAW OR AN EROSION CONTROL BLANKET UNTIL 75 PERCENT GRASS COVER IS ESTABLISHED.
6. CONFIRM THE INSTALLATION OF ALL REQUIRED SURFACE WATER CONTROL MEASURES PRIOR TO SEEDING.
7. SEED BEDS SHALL BE FIRM AND ROUGH PRIOR TO SEEDING. WHERE COMPACTION IS REQUIRED FOR ENGINEERING PURPOSES, SLOPES SHALL BE TRACK WALKED BEFORE SEEDING.
8. BACKBLADING OR SMOOTHING IS PROHIBITED ON SEED BEDS STEEPER THAN 4:1.
9. IT IS RECOMMENDED THAT AREAS BEING SEEDED FOR FINAL LANDSCAPING CONDUCT SOIL TESTS TO DETERMINE THE EXACT TYPE AND QUANTITY OF FERTILIZER NEEDED. MINIMIZE USE OF FERTILIZER ADJACENT TO WATER BODIES AND WETLANDS.

BMP C209: OUTLET PROTECTION NOTES

1. PROTECT THE RECEIVING CHANNEL AT THE OUTLET OF A CULVERT FROM EROSION BY ROCK LINING A MINIMUM OF 6 FEET DOWNSTREAM AND EXTENDING UP THE CHANNEL SIDES A MINIMUM OF 1 FOOT ABOVE THE MAXIMUM TAILWATER ELEVATION OR 1 FOOT ABOVE THE CROWN, WHICHEVER IS HIGHER. FOR LARGE PIPES (MORE THAN 18 INCHES IN DIAMETER), OUTLET PROTECTION LINING OF THE CHANNEL SHALL BE FOUR TIMES THE DIAMETER OF THE PIPE.
2. WHERE DISCHARGE VELOCITY AT THE OUTLET IS LESS THAN 5 FEET PER SECOND (PIPE SLOPE TYPICALLY LESS THAN 10 PERCENT), USE 2- TO 8-INCH RIPRAP. MINIMUM THICKNESS IS 1 FOOT.
3. AT THE BASE OF SLOPES STEEPER THAN 10 AN ENGINEERED ENERGY DISSIPATER SHALL BE USED.
4. PLACE FILTER FABRIC OR EROSION CONTROL BLANKETS UNDER RIPRAP TO PREVENT SCOUR AND CHANNEL EROSION.
5. BANK STABILIZATION, BIOENGINEERING, AND HABITAT FEATURES MAY BE REQUIRED FOR DISTURBED AREAS.
6. ADD ROCK AS NEEDED TO MAINTAIN THE INTENDED FUNCTION.
7. REMOVE ANY ACCUMULATED SEDIMENT FROM THE ENERGY DISSIPATER.

APPROVED FOR CONSTRUCTION

BY: _____ DATE: _____

CITY OF MUKILTEO
DIRECTOR OF PUBLIC WORKS

APPROVAL EXPIRES: _____

FILE: C-8.dwg		<div>6</div>		
PROJECT: 19-CC06		<div>4</div>		
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CHECKED BY: CJM		<div>2</div>		
DETAILED BY: CJM		<div>1</div>		
DESIGNED BY: CJM	DATE	NO.	REVISION	BY

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COMBINED CONSTRUCTION SITE RE-DEVELOPMENT

3701 SOUTH ROAD
MUKILTEO, WA 98275

C-8

COMBINED CONSTRUCTION

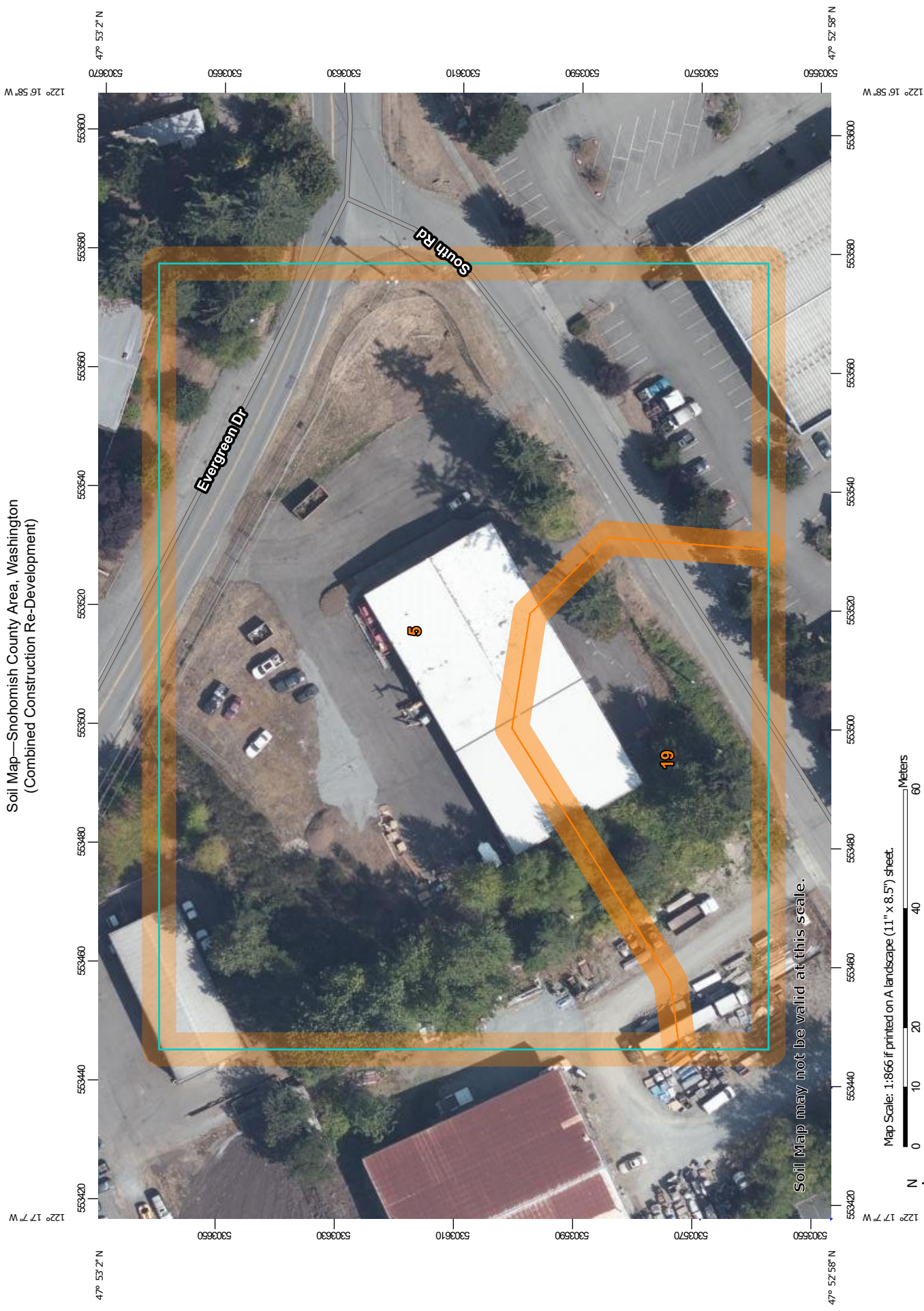
3701 SOUTH ROAD
MUKILTEO, WA 98275

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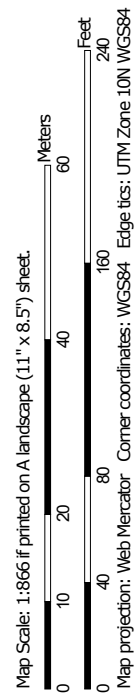
Appendix B

Site Soil Data

Soil Map—Snohomish County Area, Washington
(Combined Construction Re-Development)



Soil Map may not be valid at this scale.



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Snohomish County Area, Washington
Survey Area Data: Version 22, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 2, 2018—Sep 25, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
5	Alderwood-Urban land complex, 2 to 8 percent slopes	2.7	80.4%
19	Everett very gravelly sandy loam, 15 to 30 percent slopes	0.7	19.6%
Totals for Area of Interest		3.4	100.0%

Snohomish County Area, Washington

5—Alderwood-Urban land complex, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2hz9

Elevation: 50 to 800 feet

Mean annual precipitation: 25 to 60 inches

Mean annual air temperature: 48 to 52 degrees F

Frost-free period: 180 to 220 days

Farmland classification: Not prime farmland

Map Unit Composition

Alderwood and similar soils: 60 percent

Urban land: 25 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alderwood

Setting

Landform: Till plains

Parent material: Basal till

Typical profile

H1 - 0 to 7 inches: gravelly ashy sandy loam

H2 - 7 to 35 inches: very gravelly ashy sandy loam

H3 - 35 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 2 to 8 percent

Depth to restrictive feature: 20 to 40 inches to densic material

Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: About 18 to 36 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: B

Forage suitability group: Limited Depth Soils (G002XN302WA)

Hydric soil rating: No

Minor Components

Mckenna

Percent of map unit: 5 percent

Landform: Depressions

Hydric soil rating: Yes

Norma, undrained

Percent of map unit: 5 percent

Landform: Depressions

Hydric soil rating: Yes

Terric medisaprists, undrained

Percent of map unit: 5 percent

Landform: Depressions

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Snohomish County Area, Washington

Survey Area Data: Version 21, Sep 16, 2019

Snohomish County Area, Washington

19—Everett very gravelly sandy loam, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2t62c

Elevation: 30 to 900 feet

Mean annual precipitation: 35 to 91 inches

Mean annual air temperature: 48 to 52 degrees F

Frost-free period: 180 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Everett and similar soils: 80 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Everett

Setting

Landform: Eskers, moraines, kames

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Sandy and gravelly glacial outwash

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material

A - 1 to 3 inches: very gravelly sandy loam

Bw - 3 to 24 inches: very gravelly sandy loam

C1 - 24 to 35 inches: very gravelly loamy sand

C2 - 35 to 60 inches: extremely cobbly coarse sand

Properties and qualities

Slope: 15 to 30 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High
(1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

Forage suitability group: Droughty Soils (G002XS401WA),
Droughty Soils (G002XN402WA)
Hydric soil rating: No

Minor Components

Indianola

Percent of map unit: 10 percent
Landform: Eskers, kames, terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Alderwood

Percent of map unit: 10 percent
Landform: Ridges, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, nose slope, talf
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Snohomish County Area, Washington
Survey Area Data: Version 22, Jun 4, 2020