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Skagit County Auditor

Permanent Stormwater Control Facilities Operation and Maintenance (O&M) Manual

for:

GETAWAY SKAGIT

Located at:

21700 State Route 9
Mount Vernon, WA 98274

Prepared for:

Getaway Mount Vernon LLC
c/o Jaquelyn Baines
147 Prince Street
Brooklyn, NY 11201
(775)-901-0970

Prepared by:

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2118 Riverside Dr., Suite 208
Mount Vernon, WA 98273
c/o John B. Semrau, PE & PLS
(360) 424-9566

June 22, 2022

Grantor –	***Getaway Mount Vernon LLC***
Grantee –	***Skagit County Public***
Parcel Number –	***P18166***
Assessor Number –	***330519-3-001-0032***
Sec/Twp/Rng –	***Section 19, Township 33N, Range 05E***

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1. INTRODUCTION

This Operations and Maintenance Manual (Manual) has been prepared for use by the Owners and maintenance person for the operation and maintenance of stormwater facilities on the Upper 9 RV pads at Getaway Skagit Valley. The Manual has been prepared in accordance with the 2012 Stormwater Management Manual for Western Washington (SWMMWW 2012), as amended in 2014, maintenance Standards for Drainage Facilities (Volume V, Section 4.6). The record drawings should be consulted during inspection, maintenance, and repair activities, a copy of which is available at the Skagit County Planning & Development Services AND in **APPENDIX A** of this manual.

The intent of this stormwater maintenance manual is to provide the owner/property manager of Getaway Skagit Valley assistance in performing proper maintenance of their stormwater facilities. Private property owners are responsible for maintaining their own stormwater management structures. The Department of Ecology and Skagit County Planning & development Services suggest regular, routine inspections and maintenance of the system to ensure the facilities perform properly.

Inspection and maintenance requirements may change in the future and this manual does not exempt the responsible party from providing adequate maintenance of all facilities.

1.1. Drainage Narrative

The new 9 pad area of the facility is located higher than the remainder of the units in what was previously primitive camping offerings. The site has been graded for use by Getaway's mobile small cabins and for access. Overall, the site drains west and east, either side of the upper 20ft wide access road.

The access roads handle stormwater runoff by sheet flow dispersion. Gavel berms across the drives direct water towards dispersion trenches that evenly disperse to 25' to 50' long vegetated flow paths.

The roof from each Cabin flows towards the front, where the water splashes down to the gravel pad. From the gravel pad, the water disperses out through 50LF of a maintained vegetated flow path.

The driveways to each RV pad are sloped to direct the sheet flows towards a continuous 1-foot-wide dispersion strip. From the strip, the stormwater sheet flows through a filter strip (min 25ft long vegetated flow path).

1.2. Facility Maintenance Responsibility

The Property Ownership is responsible for the maintenance of the storm water facilities and devices that direct water to those facilities, including the dispersion strips, gravel berms, dispersion trenches, filter strips, and the plan-denoted vegetative flow path lengths.

1.3. Facility Description

The following describes the drainage system components and functions in use with the 9 Pad addition.

Dispersion Trench:

A dispersion trench is a rock filled trench with a notched grade board used to prevent erosion and disperse drainage into vegetated areas which helps prevent erosion that would occur at a typical pipe outfall.

Filter Strip

A filter strip is a basic treatment facility, typically flat with no side slopes. Contaminated water is distributed as sheet flow across the inlet width and treatment is by passage of this water over the surface and through grass.

2. OWNERS MAINTENANCE REQUIREMENTS

The following are general guidelines for maintenance of the stormwater facilities. Included are excerpts from the Stormwater Manual-referenced *Western Washington Low Impact Development Operation and Maintenance* guidance document that describes each LID, its maintenance schedule, required time, and tools. with references to the maintenance standards from the SWMMWW Manual Vol V, Chapter 4.6. These guidelines are included in Appendices.

General:

1. Proper maintenance of private stormwater facilities is necessary to ensure they serve their intended function.
2. Drainage systems shall be inspected at least annually. Skagit County does not yet have an annual reporting requirement, but does reserve the right to inspect if conditions indicate that proper maintenance is not occurring.
3. Any deterioration threatening the structural integrity of the facilities shall be immediately repaired. These include such things as replacement of grates and lids, dispersion trench rock, dispersion strip rock, or plantings.
4. Trash debris shall be regularly removed from strips and inlets to maintain adequate drainage

2.1. Description

The runoff from the RV roofs flow onto the gravel splash pad below and disperse through vegetation to the south. The driveways are graded to sheet flowthrough dispersion strips and into filter strip that have grasses planted over amended or native, uncompacted soils. The access road sheet flows till intercepted by a rock berm, before being directed into a gravel dispersion trench.

2.2. Operation

Regular inspections and maintenance will insure proper operation of the stormwater conveyance and dispersion system for many years.

2.3. Maintenance

Sheet flow and Concentrated Dispersion Systems

Dispersion systems attenuates peak flows by slowing the runoff entering the conveyance system, allowing some infiltration, and providing some water quality benefits. **Appendix B** includes the maintenance considerations, procedures, and frequency for these dispersion systems, including the dispersion trenches.

Compost Amended Soils

Any areas that were disturbed and NOT covered with an impervious surface were amended to return the soil to a pre-disturbed state to aid filtration and infiltration. These areas include the filtration strip vegetated areas and flow paths downstream of the RV pads. **Appendix C** includes guidance on the maintenance of these areas including frequency and time/material required.

3. FINANCIAL LIABILITY, MAINTENANCE, & REPORTING

The on-site permanent stormwater facilities shall be maintained in perpetuity in a manner that allows them to function as originally designed. The owner of the property or its designated representative, is solely responsible for the inspection, maintenance, repair and replacement of all permanent stormwater facilities located on site and any and all costs associated therewith. Skagit County Planning & Development is under no obligation to maintain or repair permanent stormwater facilities located on this site.
While there is currently no requirement for annual reporting to Skagit County, the owner or its designated representative shall document these regular (annual) maintenance and inspections of the permanent stormwater facilities. The report shall include any remedial actions taken, how the actions were completed, who performed them, any problems encountered, and any required follow-up actions such as maintenance, repair or replacement. Annual report and other maintenance records shall be maintained on-site and available to the County upon request.

Whenever there is cause to believe that a violation of this Chapter has been or is being committed, The County may inspect per SCC Chapter 14.44 Enforcement/Penalties.

4. SOURCE CONTROL BEST MANAGEMENT PRACTICES

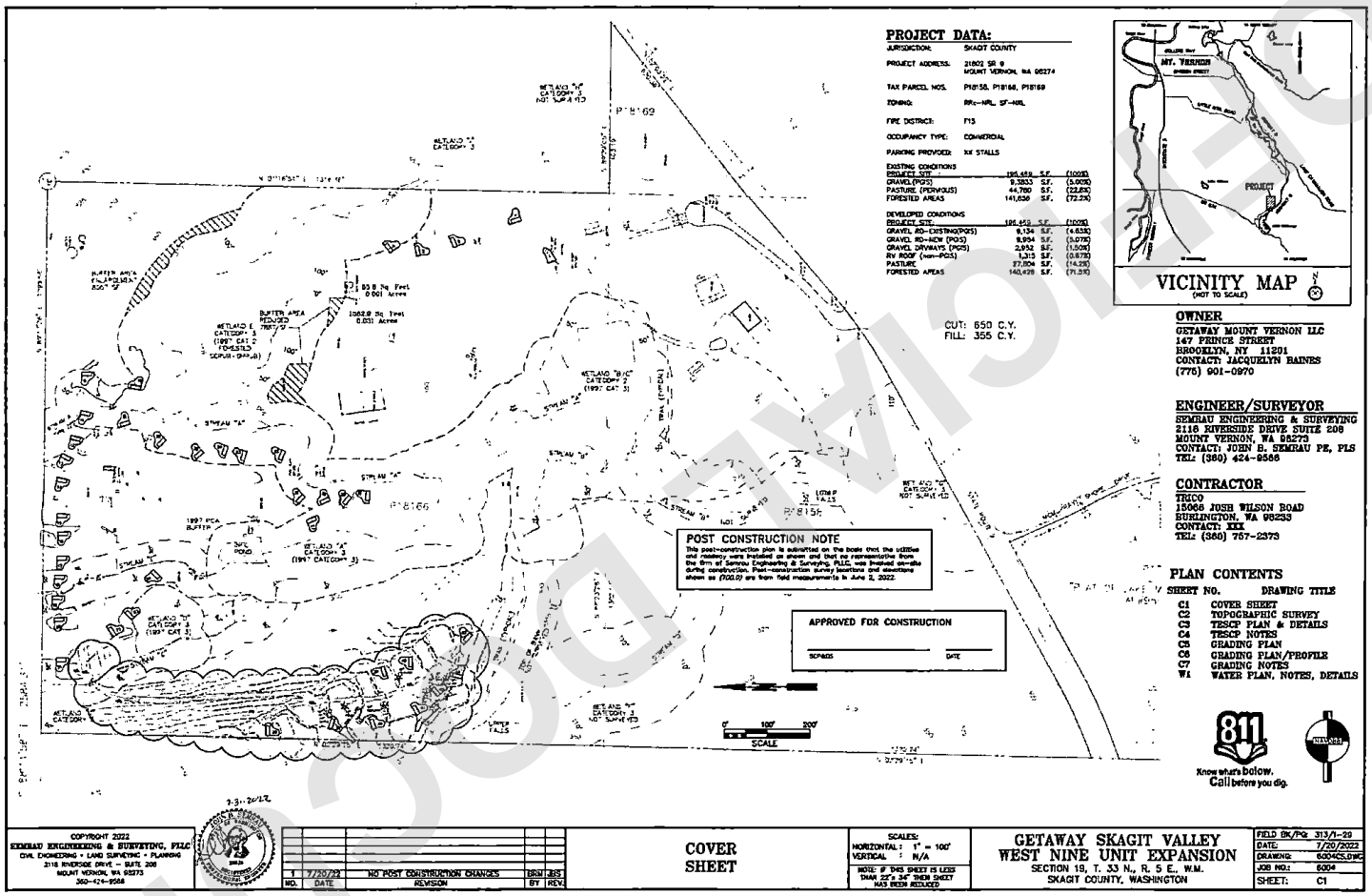
Source Control Best Management Practices address multiple situations that may occur at the proposed development Source control of pollution can prevent damage to the onsite stormwater system and its components. Source Control Best Management Practices (as found in the 2014 Stormwater manual, Chapter IV, can be found in the attached Appendix D, and as listed below:

- Landscaping and Lawn/Vegetation Management (S411 BMP)
- Maintenance of Stormwater Drainage and Treatment Systems (S417 BMP)

8.9.2022

APPENDIX A

DESIGN PLANS



PROJECT DATA:

JURISDICTION:	SKAGIT COUNTY
PROJECT ADDRESS:	21802 SR 9 MOUNT VERNON, WA 98274
TAX PARCEL NOS.	P18158, P18166, P18169
ZONING:	RR-NRL, SF-NRL
FIRE DISTRICT:	FI3
OCCUPANCY TYPE:	COMMERCIAL
PARKING PROVIDED:	XX STALLS

EXISTING CONDITIONS			
PROJECT SITE	196,459	S.F.	(100%)
GRAVEL (PGS)	9,3833	S.F.	(5.00%)
PASTURE (PERVIOUS)	44,700	S.F.	(22.8%)
FORESTED AREAS	141,636	S.F.	(72.2%)

DEVELOPED CONDITIONS			
PROJECT SITE	196,459	S.F.	(100%)
GRAVEL RD-EXISTING(PGS)	9,134	S.F.	(4.65%)
GRAVEL RD-NEW (PGS)	8,954	S.F.	(4.07%)
GRAVEL DRIVWAYS (PGS)	2,952	S.F.	(1.50%)
RV ROOF (non-PGS)	1,313	S.F.	(0.67%)
PASTURE	27,804	S.F.	(14.2%)
FORESTED AREAS	140,498	S.F.	(71.5%)

CUT: 650 C.Y.
FILL: 355 C.Y.

POST CONSTRUCTION NOTE

This post-construction plan is submitted on the basis that the utilities and roadway were installed as shown and that no representative from the firm of Semrau Engineering & Surveying, PLLC, was involved on-site during construction. Post-construction survey locations and elevations shown as (100.0) are from field measurements in June 2, 2022.

APPROVED FOR CONSTRUCTION

SCHOOL DISTRICT — DATE

VICINITY MAP
(NOT TO SCALE)

OWNER
GETAWAY MOUNT VERNON LLC
147 PRINCE STREET
BROOKLYN, NY 11201
CONTACT: JACQUELYN HAINES
(775) 901-0970

ENGINEER/SURVEYOR
SEMRAU ENGINEERING & SURVEYING
2118 RIVERSIDE DRIVE SUITE 208
MOUNT VERNON, WA 98273
CONTACT: JOHN S. SEMRAU PE, PLS
TEL: (360) 424-9588

CONTRACTOR
TRICO
15066 JOSH WILSON ROAD
BURLINGTON, WA 98233
CONTACT: XXX
TEL: (360) 757-2373

PLAN CONTENTS

SHEET NO.	DRAWING TITLE
C1	COVER SHEET
C2	TOPOGRAPHIC SURVEY
C3	TESCP PLAN & DETAILS
C4	TESCP NOTES
C5	GRADING PLAN
C6	GRADING PLAN/PROFILE
C7	GRADING NOTES
W1	WATER PLAN, NOTES, DETAILS

811 Know what's below. Call before you dig.

7-21-2022

NO.	DATE	REVISION	BY	REV.
1	7/20/22	NO POST CONSTRUCTION CHANGES	BSH	JSS

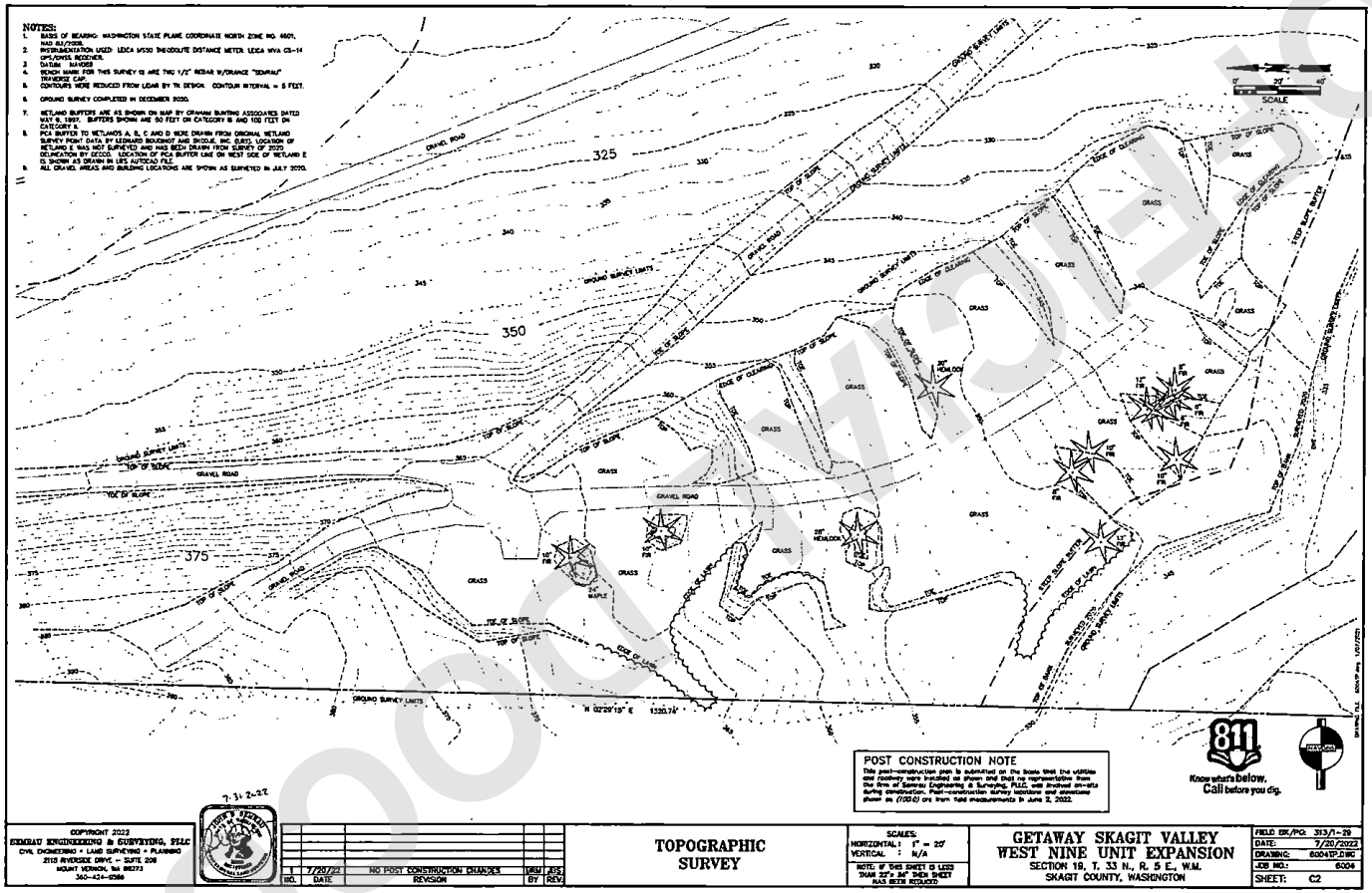
COVER SHEET

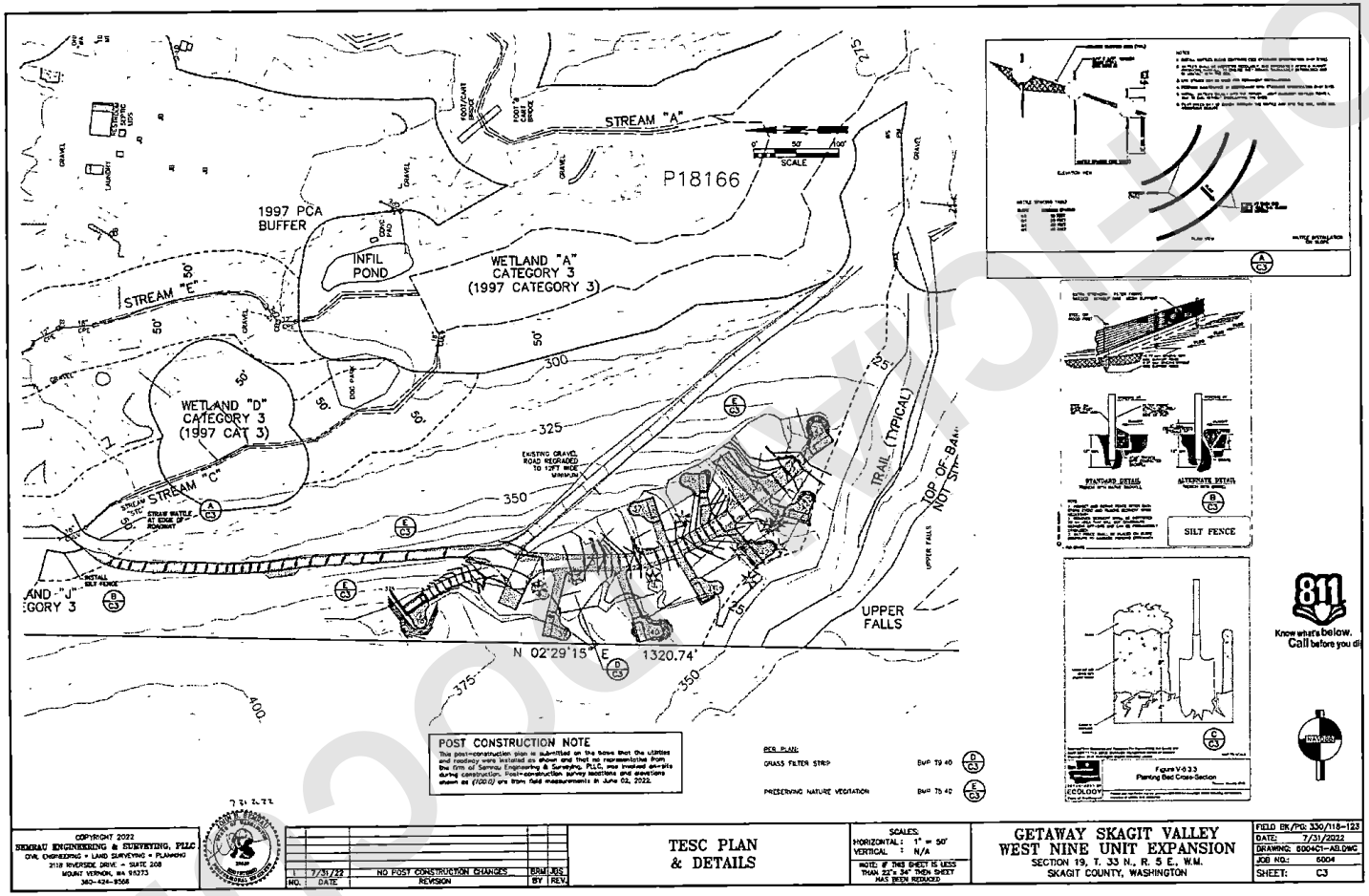
SCALES:
HORIZONTAL: 1" = 100'
VERTICAL: N/A
NOTE: IF THIS SHEET IS LESS THAN 22" x 34" THEN SHEET HAS BEEN REDUCED

GETAWAY SKAGIT VALLEY WEST NINE UNIT EXPANSION

SECTION 19, T. 33 N., R. 5 E., W.M.
SKAGIT COUNTY, WASHINGTON

FIELD BK/PG:	313/1-29
DATE:	7/20/2022
DRAWING:	6004CS.DWG
JOB NO.:	6004
SHEET:	C1





NO.	DATE	REVISION	BY	JOB REV.
1	7/31/22	NO POST CONSTRUCTION CHANGES	BRM	

TESC PLAN & DETAILS

SCALES:
HORIZONTAL : 1" = 50'
VERTICAL : N/A
NOTE: IF THIS SHEET IS LESS THAN 22" x 34" THEN SHEET HAS BEEN REDUCED

GETAWAY SKAGIT VALLEY WEST NINE UNIT EXPANSION

SECTION 19, T. 33 N., R. 5 E., W.M.
SKAGIT COUNTY, WASHINGTON

FIELD BK/PG:	330/118-123
DATE:	7/31/2022
DRAWING:	8004C1-AS.DWG
JOB NO.:	8004
SHEET:	C3

STANDARD EROSION & SEDIMENTATION CONTROL NOTES

ESC-1 STANDARD ESC NOTES

1. AS DIRECTED BY SKAGIT COUNTY INSPECTOR (INSPECTOR PRIOR TO COMMENCING CONSTRUCTION, ALL CRITICAL AREAS, INCLUDING WETLAND BUFFERS, STREAM CORRIDOR, LANDFILL AREAS, AND STEEP SLOPES SHALL BE CONSPICUOUSLY DEMARCATED IN THE FIELD USING FLAGGING TAPE OR FENCING

2. EROSION CONTROL METHODS AND MATERIALS SHALL MEET MINIMUM REQUIREMENTS OF SECTION 8-01 OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION 2021 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, AND REQUIREMENTS SET FORTH IN VOLUME 1 OF THE "STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON (THE TECHNICAL MANUAL)" BY THE WASHINGTON STATE DEPARTMENT OF ECOLOGY, CURRENT EDITION. THE CONTRACTOR SHALL FOLLOW RECOMMENDATIONS MADE BY SUPPLIERS AND MANUFACTURERS OF MATERIALS AND EQUIPMENT USED

3. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT-LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM OR VIOLATE APPLICABLE WATER STANDARDS, AND MUST BE INSTALLED AND IN OPERATION PRIOR TO ANY GRADING OR LAND CLEARING WHEREVER POSSIBLE, MAINTAIN NATURAL VEGETATION FOR SILT CONTROL

4. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED (E.G., ADDITIONAL SUMPS, RELOCATION OF DITCHES AND SILT FENCES, ETC.) AS NEEDED FOR UNEXPECTED STORM EVENTS ADDITIONALLY, WHERE ESC FACILITIES MAY BE REQUIRED TO ENSURE COMPLETE SEDIMENT CONTROL, THEREFORE, DURING THE COURSE OF CONSTRUCTION, IT SHALL BE THE DIRECTION AND RESPONSIBILITY OF THE CONTRACTOR TO SUPERVISE ANY AND ALL ADDITIONS THAT MAY BE CREATED BY HIS ACTIVITIES AND TO PROVIDE ADDITIONAL FACILITIES OVER AND ABOVE THE MINIMUM REQUIREMENTS AS MAY BE NEEDED

5. ANY PERMANENT RETENTION/DETENTION FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. IF THE PERMANENT FACILITY IS TO FUNCTION ULTIMATELY AS AN INFILTRATION OR DISPERSION SYSTEM, THE FACILITY SHALL NOT BE USED AS A TEMPORARY SETTLING BASIN. NO UNDERGROUND DETENTION TANK, DETENTION VAULT, OR SYSTEM, WHICH BACKS UNDER OR INTO A POND, SHALL BE USED AS A TEMPORARY SETTLING BASIN

6. WHERE TEMPORARY EROSION CONTROL IS REQUIRED, WOOD CHIP MULCH SHALL BE APPLIED AT AN APPROPRIATE RATE.

7. WHERE STRAW MULCH IS REQUIRED FOR TEMPORARY EROSION CONTROL, IT SHALL BE APPLIED AT A MINIMUM THICKNESS OF TWO (2) INCHES.

8. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH SKAGIT COUNTY STANDARDS AND SPECIFICATIONS

9. THE ESC FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS ON THE APPROVED PLANS. LOCATIONS MAY BE MOVED TO SUIT FIELD CONDITIONS, SUBJECT TO APPROVAL BY THE SKAGIT COUNTY INSPECTOR.

10. A COPY OF THE APPROVED EROSION CONTROL PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS

11. ALL LOTS ADJOINING OR HAVING ANY NATIVE GROWTH PROTECTION EASEMENTS (NGPE) SHALL HAVE A FOUR (4) FOOT HIGH TEMPORARY CONSTRUCTION FENCE (CYCLONE OR PLASTIC MESH) SEPARATING THE LOT FROM THE NGPE PORTIONS OF THE LOTS FROM THE AREA RESTRICTED TO THE NGPE AND SHALL BE INSTALLED PRIOR TO ANY GRADING OR CLEARING AND REMAIN IN PLACE UNTIL A DWELLING IS CONSTRUCTED AND OWNERSHIP TRANSFERRED TO THE FIRST OWNER/OCCUPANT.

12. A CLEARING CONTROL FENCE SHALL BE INSTALLED AT THE DRIP LINE OF TREES TO BE SAVED WHEREVER THE TREE CANOPIES EXTEND INTO THE AREA TO BE CLEARED. ON-SITE SUPERVISION SHALL BE PROVIDED WHENEVER EQUIPMENT MUST OPERATE UNDER TREE CANOPIES, AND FENCING SHALL BE REPLACED WHEN NECESSARY.

13. THE CLEARING CONTROL FENCE SHALL CONSIST OF A SINGLE STRAND OF WIRE ATTACHED ABOUT THREE (3) FEET HIGH TO WOOD LATH AT A TWELVE (12) FOOT MAXIMUM SPACING AND FLAGGED WITH SURVEY RIBBON AT FOUR (4) FOOT INTERVALS

14. OFF-SITE STREETS MUST BE KEPT CLEAN AT ALL TIMES. IF DIRT IS DEPOSITED ON THE PUBLIC STREET SYSTEM, THE STREET SHALL BE IMMEDIATELY CLEANED WITH POWER SWEEPER OR OTHER EQUIPMENT AS NEEDED. ALL VEHICLES SHALL LEAVE THE SITE BY WAY OF THE CONSTRUCTION ENTRANCE AND SHALL BE CLEANED OF ALL DIRT THAT WOULD BE DEPOSITED ON THE PUBLIC STREETS.

15. ANY CATCH BASINS COLLECTING RUNOFF FROM THE SITE, WHETHER THEY ARE ON OR OFF THE SITE, SHALL HAVE THEIR GRATES COVERED WITH FILTER FABRIC DURING CONSTRUCTION.

16. THE WASHED GRAVEL BACKFILL ADJACENT TO THE FILTER FABRIC FENCE SHALL BE REPLACED AND THE FILTER FABRIC CLEANED IF IT IS DEMONSTRATED BY PONDED SILT ACCUMULATION AS DETERMINED BY THE CITY OF MOUNT VERNON. ALSO, ALL INTERCEPTOR SWALES SHALL BE CLEANED IF SILT ACCUMULATION EXCEEDS ONE-QUARTER DEPTH.

17. ROCK FOR EROSION PROTECTION OF ROADWAY DITCHES, WHERE REQUIRED, MUST BE OF SOUND QUARRY ROCK, PLACED TO DEPTH OF ONE (1) FOOT AND MUST MEET THE FOLLOWING SPECIFICATIONS: 4" - 8" ROCK/40% TO 70% PASSING, 2"-4" ROCK/30%-40% PASSING, AND 1"-2" ROCK/15%-30% PASSING

18. IF ANY PART (S) OF THE CLEARING LIMIT, BOUNDARY OR TEMPORARY EROSION/SEDIMENTATION CONTROL PLAN IS/ARE DAMAGED, IT SHALL BE REPAIRED IMMEDIATELY.

19. ALL PROPERTIES ADJACENT TO THE PROJECT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, AND PLANTS DO NOT FLUSH CONCRETE BY-PRODUCTS OR TRUCKS NEAR OR INTO THE STORM DRAINAGE SYSTEM. IF EXPOSED AGGREGATE IS FLUSHED INTO THE STORM SYSTEM, IT COULD MEAN RELEASING THE ENTIRE DOWNSTREAM STORM SYSTEM OR POSSIBLY RELAYING THE STORM LINE

20. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/ESC SUPERVISOR UNTIL ALL CONSTRUCTION IS APPROVED

20 THE ESC SUPERVISORS NAME IS, SEVERN ENGINEERING AND SURVEYING

21. CONTRACTOR SUPERINTENDENT'S NAME IS : 24 HR. CONTACT NUMBER

22. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED BY A CONTINUOUS LENGTH OF SURVEY TAPE (OR FENCING IF REQUIRED) PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE CLEARING LIMITS SHALL BE MAINTAINED BY THE APPLICANT/ESC SUPERVISOR FOR THE DURATION OF CONSTRUCTION.

23. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/ESC SUPERVISOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE ESC FACILITIES DURING THE WET SEASON (OCT. 1 TO APRIL 30) AND OF THE MONTHLY REVIEWS DURING THE DRY SEASON (MAY 1 TO SEPT. 30)

24. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR TWO DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.)

25. ANY AREA NEEDING ESC MEASURES NOT REQUIRING IMMEDIATE ATTENTION SHALL BE ADDRESSED WITHIN FIFTEEN (15) DAYS

7-13-22

26. THE ESC FACILITIES ON ACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN FORTY-EIGHT (48) HOURS FOLLOWING A STORM EVENT

27. AT NO TIME SHALL MORE THAN ONE (1) FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT -LADEN WATER INTO THE DOWNSTREAM SYSTEM.

28. STABILIZED CONSTRUCTION ENTRANCES AND ROADS SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES, SUCH AS WASH RACKS, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

29. ANY PERMANENT FLOW CONTROL FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. IF THE FACILITY IS TO FUNCTION AS ULTIMATELY AS AN INFILTRATION SYSTEM, THE TEMPORARY FACILITY MUST BE GRADED SO THAT THE BOTTOM AND SIDES ARE AT LEAST THREE FEET ABOVE THE FINAL GRADE OF THE PERMANENT FACILITY.

30. PRIOR TO THE BEGINNING OF THE WET SEASON (OCT. 1), ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDED IN PREPARATION FOR THE WINTER RAINS. DISTURBED AREAS SHALL BE SEEDED WITHIN ONE WEEK OF THE BEGINNING OF THE WET SEASON. A SKETCH MAP OF THOSE AREAS TO BE SEEDED AND THOSE AREAS TO REMAIN UNSEEDED SHALL BE SUBMITTED TO THE CITY INSPECTOR. THE CITY INSPECTOR CAN REQUIRE SEEDING OF ADDITIONAL AREAS IN ORDER TO PROTECT SURFACE WATERS, ADJACENT PROPERTIES, OR DRAINAGE FACILITIES.

ESC-3 WET SEASON SPECIAL PROVISIONS
(OCTOBER 1, - APRIL 30)

1. THE ALLOWED TIME THAT A DISTURBED AREA CAN REMAIN UNWORKED WITHOUT COVER MEASURES IS REDUCED TO TWO DAYS, RATHER THEN SEVEN

2. STOCKPILES AND STEEP CUT AND FILL SLOPES ARE TO BE PROTECTED IF UNWORKED FOR MORE THAN 12 HOURS.

3. COVER MATERIALS SUFFICIENT TO COVER ALL DISTURBED AREAS SHALL BE STOCK-PILED ON SITE

4. ALL AREAS THAT ARE TO BE UNWORKED DURING THE WET SEASON SHALL BE SEEDED WITHIN ONE WEEK OF THE BEGINNING OF THE WET SEASON.

5. MULCH IS REQUIRED TO PROTECT ALL SEEDED AREAS

6. FIFTY LINEAR FEET OF SILT FENCE (AND THE ACCESSARY STAKES) PER ACRE OF DISTURBANCE MUST BE STOCKPILED ON SITE.

7. CONSTRUCTION ROAD AND PARKING LOT STABILIZATION ARE REQUIRED FOR ALL SITES UNLESS THE SITE IS UNDERLAIN BY COARSE-GRAINED SOIL.

8. SEDIMENT RETENTION IS REQUIRED UNLESS NO OFFSITE DISCHARGE IS ANTICIPATED FOR THE SPECIFIED DESIGN FLOW.

9. SURFACE WATER CONTROLS ARE REQUIRED UNLESS NO OFFSITE DISCHARGE IS ANTICIPATED FOR THE SPECIFIED DESIGN FLOW.

10. PHASING AND MORE CONSERVATIVE BMP'S MUST BE EVALUATED FOR CONSTRUCTION ACTIVITY NEAR SURFACE WATERS.

11. ANY RUNOFF GENERATED BY DEWATERING SHALL BE TREATED THROUGH CONSTRUCTION OF A SEDIMENT TRAP WHEN THERE IS SUFFICIENT SPACE OR BY RELEASING THE WATER TO A WELL-VEGETATED, GENTLY SLOPING AREA. SPACE PUMPS ARE USED FOR DEWATERING, IT MAY BE POSSIBLE TO PUMP THE SEDIMENT-LADEN WATER WELL AWAY FROM THE SURFACE WATER SO THAT VEGETATION CAN BE MORE EFFECTIVELY UTILIZED FOR TREATMENT. A STRAW BALE FILTER SHALL BE PLACED AROUND THE DISCHARGE FROM THE DEWATERING PUMP. IF THERE IS NOT SPACE FOR A SEDIMENT TRAP OR 25 FEET OF SUITABLE VEGETATION, OTHER FILTRATION METHODS SHALL BE REQUIRED

12. THE FREQUENCY OF MAINTENANCE REVIEW INCREASES FROM MONTHLY TO WEEKLY.

ESC-3 SEASONAL AREAS, SPECIAL PROVISIONS

1. WHENEVER POSSIBLE, PHASE ALL OR PART OF THE PROJECT SO THAT IF OCCURS DURING THE DRY SEASON IF THIS IS IMPOSSIBLE, NOVEMBER THROUGH FEBRUARY SHALL BE AVOIDED SINCE THIS IS THE MOST LIKELY PERIOD FOR LARGE, HIGH-INTENSITY STORMS

2. ALL PROJECT SHALL BE COMPLETED AND STABILIZED AS QUICKLY AS POSSIBLE. LIMITING THE SIZE AND DURATION OF A PROJECT IS PROBABLY THE MOST EFFECTIVE FORM OF EROSION CONTROL

3. WHERE APPROPRIATE, SANDBAGS OR AN EQUIVALENT BARRIER SHALL BE CONSTRUCTED BETWEEN THE PROJECT AREA AND THE SURFACE WATER IN ORDER TO ISOLATE THE CONSTRUCTION AREA FROM HIGH WATER THAT MIGHT RESULT DUE TO PRECIPITATION.

4. ADDITIONAL PERIMETER PROTECTION SHALL BE CONSIDERED TO REDUCE THE LIKELIHOOD OF SEDIMENT ENTERING THE SURFACE WATERS. SUCH PROTECTION MIGHT INCLUDE MULTIPLE SILT FENCES, SILT FENCES WITH A HIGHER ROS, CONSTRUCTION OF A BERM, OR A THICK LAYER OF ORGANIC MULCH UPSLOPE OF A SILT FENCE.

5. IF WORK IS TO OCCUR WITHIN THE ORDINARY HIGH WATER MARK OF A STREAM, MOST PROJECTS MUST ISOLATE THE WORK AREA FROM THE STREAM BY DIVERTING THE STREAM OR CONSTRUCTING A COFFERDAM. CERTAIN SMALL PROJECTS THAT PROPOSE ONLY A SMALL AMOUNT OF GRADING MAY NOT REQUIRE ISOLATION. SINCE DIVERSIONS TYPICALLY RESULT IN DISTURBANCE AND THE RELEASE OF SOME SEDIMENT TO THE STREAM FOR SUCH SMALL PROJECTS THE POTENTIAL IMPACTS FROM CONSTRUCTION WITH AND WITHOUT A DIVERSION MUST BE EVALUATED.

6. IF A STREAM MUST BE CROSSED, A TEMPORARY BRIDGE SHALL BE CONSIDERED RATHER THAN ALLOWING EQUIPMENT TO UTILIZE THE STREAMBED FOR A CROSSING.

7. ANY RUNOFF GENERATED BY DEWATERING SHALL BE TREATED THROUGH CONSTRUCTION OF A SEDIMENT TRAP WHEN THERE IS SUFFICIENT SPACE OR BY RELEASING THE WATER TO A WELL-VEGETATED, GENTLY SLOPING AREA. SPACE PUMPS ARE USED FOR DEWATERING, IT MAY BE POSSIBLE TO PUMP THE SEDIMENT-LADEN WATER WELL AWAY FROM THE SURFACE WATER SO THAT VEGETATION CAN BE MORE EFFECTIVELY UTILIZED FOR TREATMENT. A STRAW BALE FILTER SHALL BE PLACED AROUND THE DISCHARGE FROM THE DEWATERING PUMP. IF THERE IS NOT SPACE FOR A SEDIMENT TRAP OR 25 FEET OF SUITABLE VEGETATION, OTHER FILTRATION METHODS SHALL BE REQUIRED

ESC-4 FINAL SITE STABILIZATION NOTES

TO OBTAIN FINAL CONSTRUCTION APPROVAL, THE FOLLOWING CONDITIONS MUST BE MET.

1. ALL DISTURBED AREAS OF THE SITE SHALL BE VEGETATED OR OTHERWISE PERMANENTLY STABILIZED AT A MINIMUM DISTURBED AREAS SHALL BE MULCH

2. STRUCTURAL MEASURES SUCH AS, BUT NOT LIMITED TO, SILT FENCES, PIPE SLOPES DRAINS, CONSTRUCTION ENTRANCES, STORM DRAIN INLET PROTECTION, AND SEDIMENT TRAPS AND PONDS SHALL BE REMOVED FROM THE SITE. MEASURES THAT WILL QUICKLY DECOMPOSE, SUCH AS BRUSH BARRIERS AND ORGANIC MULCHES, MAY BE LEFT IN PLACE. IN THE CASE OF SILT FENCE, IT MAY BE BEST TO REMOVE FENCES IN CONJUNCTION WITH THE MULCHING, SINCE IT MAY BE NECESSARY TO BRING MACHINERY BACK IN TO REMOVE THEM

ESC-4 FINAL SITE STABILIZATION NOTES (CONTINUED)

THIS WILL RESULT IN DISTURBED SOILS THAT WILL AGAIN REQUIRE PROTECTION. THE DOES INSPECTOR MUST APPROVE AN APPLICANT'S PROPOSAL TO REMOVE FENCING PRIOR TO THE ESTABLISHMENT OF VEGETATION. IN SOME CASES, SUCH AS RESIDENTIAL BUILDING FOLLOWING PLAT DEVELOPMENT, IT MAY BE APPROPRIATE TO LEAVE SOME OR ALL ESC MEASURES FOR USE DURING SUBSEQUENT DEVELOPMENT. THIS SHALL BE DETERMINED ON A SITE-SPECIFIC BASIS

3. ALL PERMANENT SURFACE WATER FACILITIES, INCLUDING CATCH BASINS, MANHOLES, PIPES, DITCHES, CHANNELS, R/D FACILITIES, AND WATER QUALITY FACILITIES, SHALL BE CLEANED. ANY OFFSITE CATCH BASIN THAT REQUIRED PROTECTION DURING CONSTRUCTION SHALL ALSO BE CLEANED

4. IF ONLY THE INFRASTRUCTURE OF THE SITE HAS BEEN DEVELOPED (E.G. SUBDIVISIONS AND SHORT PLATS) WITH BUILDING CONSTRUCTION TO OCCUR UNDER A DIFFERENT PERMIT, THEN THE SENSITIVE AREA BUFFERS, SENSITIVE AREA TRACTS, OR SENSITIVE AREA LITTORAL AREAS SHALL BE CLEARLY MARKED AS DESCRIBED IN SECTION 9-A.1 IN ORDER TO ALERT FUTURE BUYERS AND BUILDERS.

ESC-5 ROAD AND UTILITIES ESC NOTES

1. PHASE THE PROJECT SO THAT THE SITE IS WORKED PROGRESSIVELY FROM END TO END, RATHER THAN CLEARING AND GRUBBING THE ENTIRE LENGTH OF THE PROJECT

2 MULCH AND VEGETATE CUT AND FILL SLOPES AS SOON AS THEY ARE GRADED.

3. PROTECT ALL CATCH BASIN INLETS WITH CATCH BASIN INSERTS IF PRESENT

4. PHASE THE PROJECT SO THAT ALL CLEARING AND GRADING IN SENSITIVE AREA BUFFERS OCCURS IN THE DRY SEASON.

ESC-6 CONSTRUCTION SEQUENCE

1. ATTEND PRE-CONSTRUCTION MEETING
2. FLAG OR FENCE CLEARING LIMITS
3. POST SIGN WITH NAME AND PHONE NUMBER OF ESC SUPERVISOR
4. INSTALL CATCH BASIN PROTECTION IF REQUIRED.
5. INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC.)
6. CONSTRUCT SURFACE WATER CONTROLS (INTERCEPTOR DIKES, PIPE SLOPE DRAINS, ETC.) SIMULTANEOUSLY WITH CLEARING AND GRADING FOR PROJECT DEVELOPMENT.
7. MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH DOE/SWM STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
8. RELOCATE SURFACE WATER CONTROLS AND EROSION CONTROL MEASURES OR INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE THE EROSION AND SEDIMENT CONTROL IS ALWAYS IN ACCORDANCE WITH THE 4580 COUNTY EROSION AND SEDIMENT CONTROL STANDARDS
9. COVER ALL AREAS THAT WILL BE UNWORKED FOR MORE THAN SEVEN DAYS OR TWO DAYS DURING THE WET SEASON WITH STRAW, WOOD FIBER MULCH, COMPOST, PLASTIC SHEETING OR EQUIVALENT.
10. STABILIZE ALL AREAS THAT REACH FINAL GRADE WITHIN SEVEN DAYS
11. SEED OR SOD ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS
12. UPON COMPLETION OF THE PROJECT, ALL DISTURBED AREAS MUST BE STABILIZED AND BMP'S REMOVED IF APPROPRIATE.

STANDARD EROSION & SEDIMENTATION CONTROL DETAILS

WSDOT STANDARD DETAILS

1. WHERE APPLICABLE PER THE TESC PLAN, UTILIZE WSDOT STANDARD DETAILS FOR EROSION CONTROL MEASURES THESE INCLUDE, BUT MAY NOT BE LIMITED TO

PER PLAN AND AS NOTED:

HIGH VISIBILITY SILT FENCE	8-30.17-00

AS NOTED:

HIGH VISIBILITY FENCE	8-10.10.01
BATTLE INSTALLATION ON SLOPES	8-30.30.01
CHECK DAMS ON CHANNELS	8-30.20.01
MISCELLANEOUS EROSION CONTROL DETAILS	8-80.10-02

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NO.	DATE	REVISION	BY	REV.
1	7/20/22	NO POST CONSTRUCTION CHANGES	BRM	BS

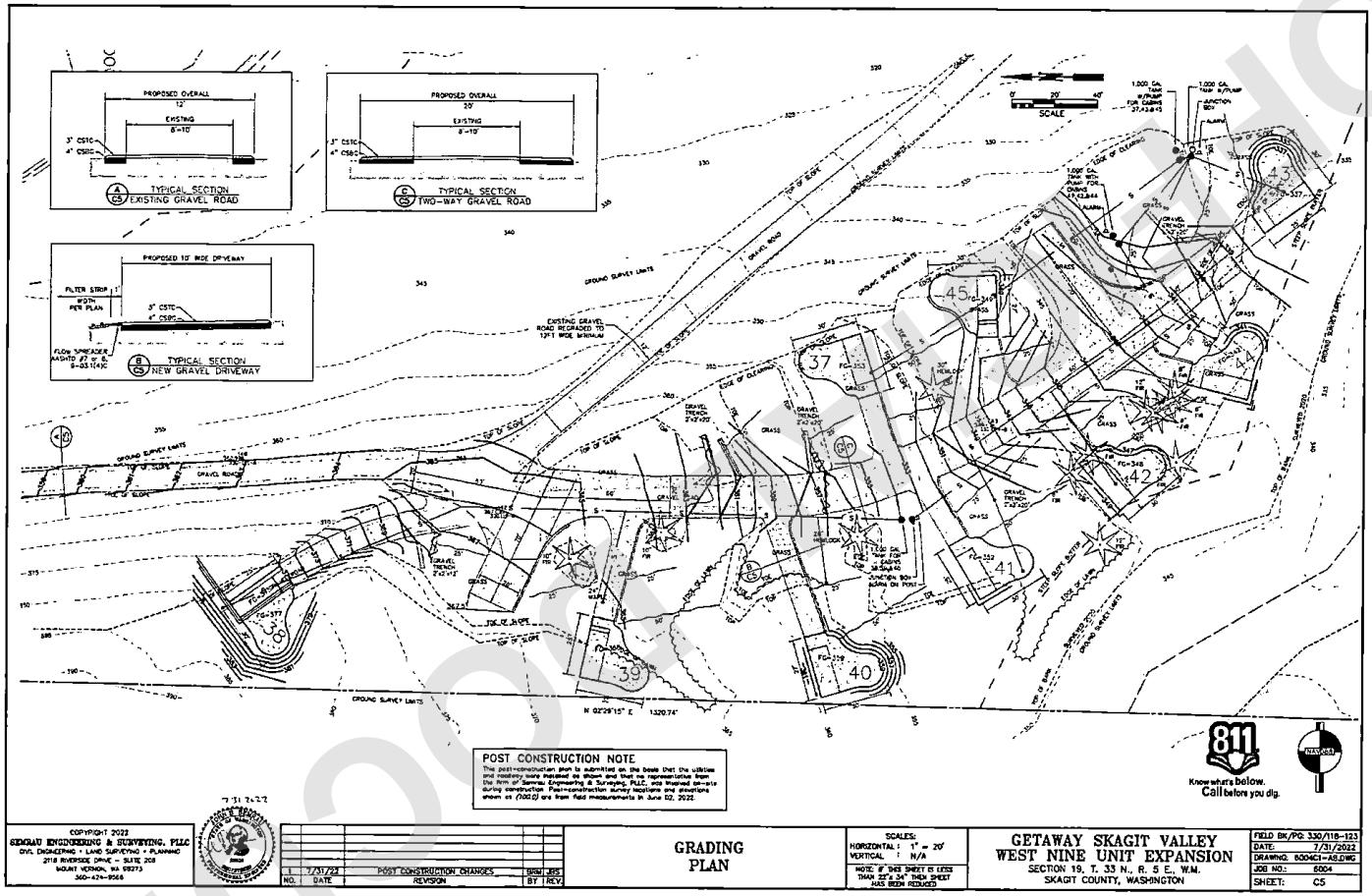
TESC NOTES

SCALES:
HORIZONTAL : N/A
VERTICAL : -

NOTE: IF THIS SHEET IS LESS THAN 22" x 34" THEN SHEET HAS BEEN REDUCED

GETAWAY SKAGIT VALLEY
WEST NINE UNIT EXPANSION
SECTION 19, T. 33 N., R. 5 E., W.M.
SKAGIT COUNTY, WASHINGTON

FIELD BK/PG:	313/1-28
DATE:	7/20/2022
DRAWING:	6004ND.DWG
JOB NO.:	6004
SHEET:	C4



7/31/2022

NO.	DATE	REVISION	BY
1	7/31/22	POST CONSTRUCTION CHANGES	BRM/JBS

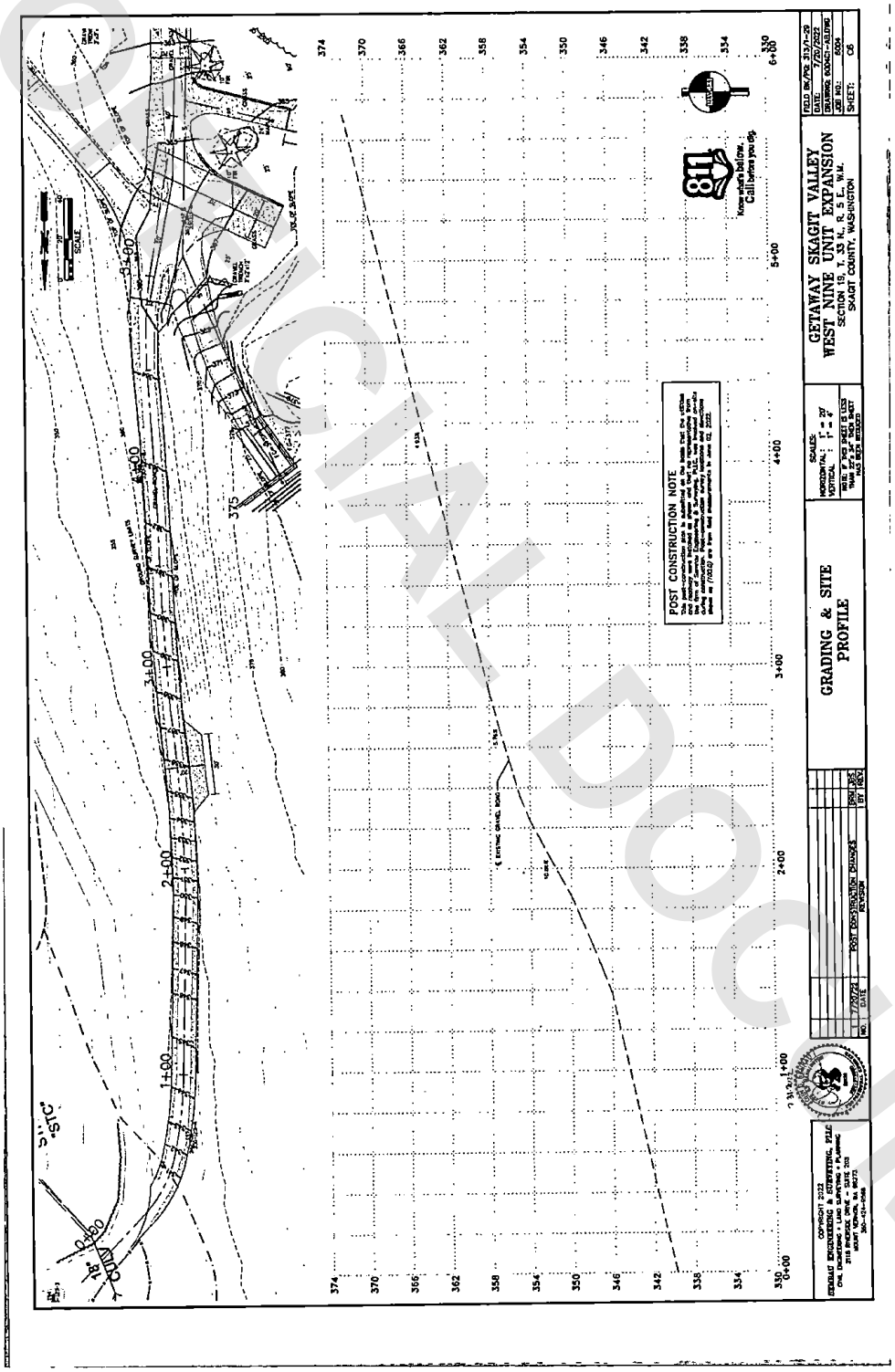
GRADING PLAN

SCALES:
HORIZONTAL : 1" = 20'
VERTICAL : N/A
NOTE: IF THIS SHEET IS LESS THAN 22" X 34" THEN SHEET HAS BEEN REDUCED

GETAWAY SKAGIT VALLEY WEST NINE UNIT EXPANSION

SECTION 19, T. 33 N., R. 5 E., W.M.
SKAGIT COUNTY, WASHINGTON

FIELD BK/PG:	330/118-123
DATE:	7/31/2022
DRAWING:	6004C1-AS.DWG
JOB NO.:	6004
SHEET:	C5



GENERAL/GRADING

1. ALL CONSTRUCTION AND INSTALLATION WORK SHALL CONFORM TO APPLICABLE 2021 STANDARD SPECIFICATIONS AND STANDARD PLANS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION PREPARED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) AND ACCORDING TO THE RECOMMENDATIONS OF THE MANUFACTURERS OF THE MATERIAL OR EQUIPMENT USED AND IN COMPLIANCE WITH APPLICABLE, FEDERAL, STATE AND/OR COUNTY REGULATIONS, REQUIREMENTS AND STANDARDS, INCLUDING APPLICABLE LABOR LAWS, WASHINGTON INDUSTRIAL SAFETY AND HEALTH ACT, AND OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970.
2. CONTRACTOR IS REQUIRED TO PREPARE FOR AND ATTEND A PRE-CONSTRUCTION MEETING PRIOR TO BEGINNING WORK.
3. LOCATIONS OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE, AND ARE NOT NECESSARILY COMPLETE. THE CONTRACTOR SHALL INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN, AND SHALL FURTHER DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN HEREON WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN. IF CONFLICTS WITH EXISTING UTILITIES ARISE DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND ANY CHANGES REQUIRED SHALL BE APPROVED BY THE OWNER PRIOR TO COMMENCEMENT OF RELATED CONSTRUCTION ON THE PROJECT. IF EXISTING UTILITIES ARE DAMAGED BY THE CONTRACTOR, SAID UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER OR ENGINEER.
4. CONTRACTOR SHALL UTILIZE THE ONE CALL SYSTEM FOR UTILITY UNDERGROUND LOCATION AND ABIDE BY THE REQUIREMENTS THEREOF. CALL 1-800-424-5555.
5. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS AND SHALL ABIDE BY THE CONDITIONS AND REQUIREMENTS RELATED TO SAID PERMITS AND APPROVALS.
6. OTHER UTILITIES MAY BE WORKING WITHIN THE LIMITS OF THE PROJECT, INCLUDING, BUT NOT LIMITED TO, PUGET SOUND ENERGY.
7. ALL WORK SHALL BE STAKED BY THE ENGINEER'S SURVEYOR PRIOR TO STARTING CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL STAKING AND SURVEY MARKERS DURING THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 2 WORKING DAYS IN ADVANCE OF ALL REQUESTS FOR CONSTRUCTION STAKING.
8. AN APPROVED COPY OF THESE CONSTRUCTION DRAWINGS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF CERTIFIED AS-CONSTRUCTED DRAWINGS TO THE ENGINEER UPON COMPLETION OF THE CONSTRUCTION.
9. CONSTRUCTION REVIEW SHALL BE PERFORMED BY THE ENGINEER AND THEIR APPOINTED REPRESENTATIVES. THE CONTRACTOR SHALL PROVIDE 24 HOURS NOTICE IN ADVANCE OF ANY CONSTRUCTION REVIEW OR SPECIAL INSPECTIONS TO BOTH THE ENGINEER AND THE INSPECTOR. THESE MAY BE SCHEDULED AT THE WEEKLY SITE MEETING.
10. NO PART OF THE CONSTRUCTION SHALL BE COVERED, CONCEALED OR PUT INTO USE UNTIL IT HAS BEEN INSPECTED AND ACCEPTED BY THE OWNER AND THE ENGINEER.
11. THE CONTRACTOR SHALL MAINTAIN THE SITE IN A NEAT AND ORDERLY CONDITION. ALL REFUSE, DEBRIS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AT LEAST WEEKLY, OR MORE OFTEN IF DIRECTED BY THE ENGINEER. ROUTINE AND FINAL CLEANUP ARE TO BE AN INTEGRAL PART OF ALL BID ITEMS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTRACTOR FURNISHED MATERIAL. ALL SUCH MATERIAL WHICH IS DEFECTIVE BY MANUFACTURE OR HAS BEEN DAMAGED IN TRANSIT OR HAS BEEN DAMAGED AFTER DELIVERY SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFE STORAGE OF ALL MATERIALS FURNISHED AND ACCEPTED UNTIL IT HAS BEEN INCORPORATED IN THE COMPLETED PROJECT.
14. DATUM - NAVD 88. SEE PROJECT BENCHMARK.

(ALSO SEE OTHER NOTES)

POST CONSTRUCTION NOTE

This post-construction plan is submitted on the basis that the utilities and roadway were installed as shown and that no representative from the firm of Semrau Engineering & Surveying, PLLC, was involved on-site during construction. Post-construction survey locations and elevations shown as (100.0) are from field measurements in June 02, 2022.

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7-31 2022

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NO.	DATE	REVISION	BY	REV.
1	7/20/22	NO POST CONSTRUCTION CHANGES	BRM	JBS

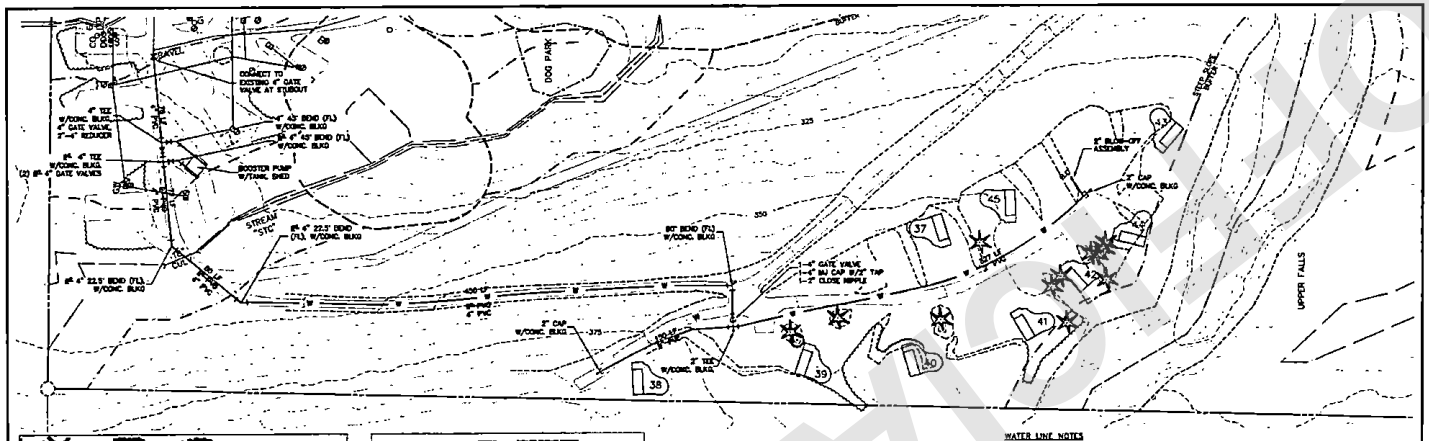
GRADING NOTES

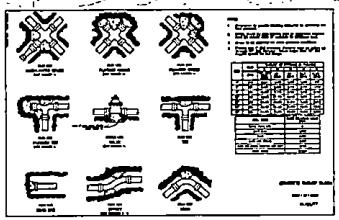
SCALES:
HORIZONTAL : 1" = 20'
VERTICAL : 1" = 4'

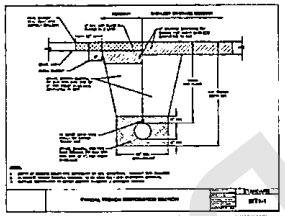
NOTE: IF THIS SHEET IS LESS THAN 22"x 34" THEN SHEET HAS BEEN REDUCED

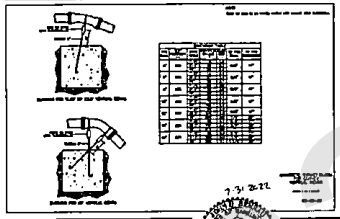
GETAWAY SKAGIT VALLEY WEST NINE UNIT EXPANSION
SECTION 19, T. 33 N., R. 5 E., W.M.
SKAGIT COUNTY, WASHINGTON

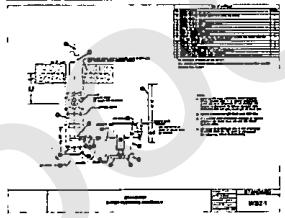
FIELD BK/PG:	313/1-29
DATE:	7/20/2022
DRAWING:	6004C1-AB.DWG
JOB NO.:	6004
SHEET:	C7











POST CONSTRUCTION NOTE

This post-construction plan is submitted on the basis that utilities and roadway were installed as shown and that no representative from the firm of Semrau Engineering & Surveying, PLLC, was involved on-site during construction. Post-construction survey locations and elevations shown on (ASBUILT) are from field measurements to June 2, 2022.

WATER LINE NOTES

1. ALL WORK SHALL CONFORM WITH THE 2016 STANDARD SPECIFICATIONS AND PLANS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, WASHINGTON STATE DEPARTMENT OF TRANSPORTATION, HEREINAFTER CALLED "WSDOT", AND ACCORDING TO THE RECOMMENDATIONS OF THE MANUFACTURERS OF THE MATERIAL OR EQUIPMENT USED AND IN COMPLIANCE WITH APPLICABLE FEDERAL, STATE AND/OR COUNTY REGULATIONS, REQUIREMENTS AND STANDARDS, INCLUDING STANDARDS AND LAWS, WASHINGTON INDUSTRIAL SAFETY AND HEALTH ACT, AND OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970.
2. CONTRACTOR SHALL NOTIFY AND COORDINATE WITH GETAWAY-SKAGIT VALLEY PRIOR TO START OF CONSTRUCTION AND PRIOR TO ANY WATER SHUT-OFF OR TURN-ON AFFECTING THE WATER SYSTEM CONTRACTOR SHALL NOT OPERATE ANY VALVES WITHOUT APPROVAL AND COOPERATION WITH GETAWAY.
3. ALL MATERIALS ARE TO BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
4. PVC PIPE SHALL MEET THE REQUIREMENTS OF AWWA C-900. JOINTS SHALL BE RUBBER GASKETS WITH TYTON-TYPE MECHANICAL JOINTS MEETING AWWA SPECIFICATIONS.
5. ALL HYDRANTS SHALL BE CLOW MEDALLION FIRE HYDRANTS AND SHALL BE APPROVED BY THE SKAGIT COUNTY FIRE MARSHAL.
6. ALL VALVES SHALL BE RESILIENT WEDGE GATE VALVES. ALL VALVES SHALL BE PROVIDED WITH CAST IRON VALVE BOXES.
7. ALL WATER INSTALLATIONS REQUIRE A 36" MINIMUM COVER AND A 48" MAXIMUM TRENCH DEPTH TO ANTICIPATED FINISH GRADE.
8. MINIMUM 1 FOOT VERTICAL AND 5 FOOT HORIZONTAL CLEARANCE BETWEEN WATER LINE AND ALL OTHER UTILITIES. HORIZONTAL SEPARATION BETWEEN WATER LINE AND SANITARY SEWER OR STORM DRAINS SHALL BE 10 FEET MINIMUM EXCEPT AS NOTED ON THE PLANS.
9. BEDDING MATERIAL FOR PVC PIPE SHALL BE APPROVED PIPE BEDDING PER WSDOT SPECIFICATIONS 9-03.16.
10. BACKFILL TRENCHES IN PAVEMENT AREAS WITH GRAVEL BORROW PER WSDOT SPECIFICATION 9-03.14 COMPACTED TO 95% OF MAXIMUM DENSITY PER ASTM 1557.
11. BLOCK ALL FITTINGS WITH POURED CONCRETE ACCORDING TO THE WSDOT STANDARD PLAN.
12. AFTER THE PIPE HAS BEEN LAID, ALL NEWLY LAID PIPE OR ANY VALVED SECTION THEREOF SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST IN CONFORMANCE WITH AWWA 603 SPECIFICATIONS, CHAPTER 5 (TESTING AND SANITIZATION), WITH THE REQUIRED HYDROSTATIC TEST PRESSURE BEING 150% OF THE MAX NORMAL PRESSURE FOR A 1 HOUR DURATION.
TEST DATE 8/01/2022 TEST PRESSURE 135 PSI TIME START 2:00 PM TIME STOP 3:00 PM
PRESSURE DROP 0.0 PSI MAKEUP WATER 0.0 GAL
13. DISINFECTION AND FLUSHING OF THE WATER LINES TO BE PER WSDOT SPECIFICATIONS. FLUSH AFTER LETTING SOAK A MINIMUM OF 24 HOURS AND 48 PER WSDOT STANDARDS. USE DECHLORINATION EQUIPMENT WHEN FLUSHING OR FLUSH INTO SANITARY SEWER MANHOLE. DO NOT FLUSH INTO OR ALLOW TO DRAIN INTO ANY CREEK OR SURROUNDING CATCH BASINS.
14. COORDINATE ALL SHUTDOWN, FLUSHING AND HEALTH SAMPLES WITH GETAWAY SKAGIT VALLEY.
15. A PRE-CONSTRUCTION CONFERENCE MUST BE SCHEDULED BY THE CONTRACTOR WITH GETAWAY SKAGIT VALLEY PRIOR TO CONSTRUCTION.
16. CONTRACTOR SHALL MAKE ALL PAVEMENT REPAIR AND PERFORM ALL CLEANUP TO THE SATISFACTION OF GETAWAY SKAGIT VALLEY.
17. ALL SALVAGED EXISTING MATERIALS ARE TO BE REMOVED BY THE CONTRACTOR.
18. WHEN INSTALLING WATER PIPELINE ACROSS EXISTING OR PROPOSED SANITARY SEWER, A FULL LENGTH OF PIPE SHALL BE INSTALLED WITH NO SPLICE OR PIPE OVER THE SEWER.
19. THE EXISTING UNDERGROUND UTILITIES SHOWN ARE BASED ON THE RECOLLECTION OF THE PREVIOUS OWNER (MIKE KING) THE CONTRACTOR SHALL CONTRACT WITH A UTILITY LOCATOR COMPANY TO LOCATE THE EXISTING UNDERGROUND UTILITIES BEFORE BEGINNING INSTALLATION OF THE WATER PIPELINE. THE COST FOR LOCATING THE UNDERGROUND UTILITIES SHALL BE INCLUDED IN THE CONTRACTORS COST ESTIMATE TO GETAWAY SKAGIT VALLEY.

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NO.	DATE	REVISION	DRW BY	REV
1	7/20/22	POST CONSTRUCTION CHANGES		

WATER PLAN

SCALES:
HORIZONTAL: 1" = 40'
VERTICAL: N/A
NOTE: IF THIS SHEET IS LESS THAN 22" x 34" THEN SHEET HAS BEEN REDUCED

GETAWAY SKAGIT VALLEY WEST NINE UNIT EXPANSION

SECTION 19 T. 33 N., R. 5 E., W.M.
SKAGIT COUNTY, WASHINGTON

FIELD BK/PG:	330/118-123
DATE:	7/20/2022
DRAWING:	6004WT-ASLDWG
JOB NO.:	6004
SHEET:	WT

APPENDIX B

MAINTENANCE

DISPERSION SYSTEMS

Downspout, Sheet Flow, and Concentrated Dispersion Systems

Dispersion attenuates peak flows by slowing the runoff entering into the conveyance system, allowing some infiltration, and providing some water quality benefits. The following three types of dispersion systems are covered in this section:

- **Downspout dispersion systems**: Splash blocks or gravel-filled trenches, which serve to spread roof runoff over vegetated pervious areas.
- **Sheet flow dispersion systems**: Sheet flow dispersion is the simplest method of runoff control. This BMP can be used for any impervious or pervious surface that is graded to avoid concentrating flows. Because flows are already dispersed as they leave the surface, they need only traverse a narrow band of adjacent vegetation for effective attenuation and treatment.
- **Concentrated dispersion systems**: Dispersion of concentrated flows from driveways or other pavement through a vegetated pervious area.

Key Maintenance Considerations

The main components of dispersion systems are listed below with descriptions of their function and key maintenance considerations.

- **Splash block (downspout dispersion):** Splash blocks are used to spread stormwater runoff from a downspout drain over vegetated pervious area. A downspout extension may be included if the ground is fairly level, if the structure includes a basement, or if foundation drains are proposed.
- **Dispersion trench (downspout dispersion):** Gravel-filled trenches are also used to spread stormwater runoff from a downspout drain over a vegetated pervious area. Downspout drains are routed to a trench via a perforated or slotted pipe. The trench typically includes a notched grade board or other device to distribute flow equally along the length of the trench. This board must be maintained at a level grade to prevent concentrated flow. Downspout drains are directed to the trench via a storage sump that must be maintained to remove accumulated sediment.
- **Transition zone (sheet flow dispersion):** A 2-foot-wide transition zone is typically included to discourage channeling between the edge of the impervious surface (or building eaves) and the downslope vegetation. This transition zone may consist of an extension of subgrade material (crushed rock), modular pavement, drain rock, or other material.
- **Rock pad at discharge point (concentrated flow dispersion):** A rock pad must be maintained at any point that a concentrated flow enters a dispersion area.
- **Dispersal area:** Stormwater is dispersed to an area vegetated with well-established lawn or pasture, landscaping with well-established groundcover, or native vegetation with natural groundcover. The required vegetated flow path is 50 feet for splash

blocks and concentrated dispersion, 25 feet when using a dispersion trench and varies for sheet flow dispersion. The groundcover for the extent of the flow must be maintained to be dense enough to help disperse and infiltrate flows and to prevent erosion.

Key Operations to Preserve Facility Function

For dispersion practices to be effective, the dispersion area must remain covered with dense, well-established vegetation. Site uses should protect vegetation and avoid compaction.

Maintenance Standards and Procedures

Table 16 provides the recommended maintenance frequencies, standards, and procedures for dispersion system components.

Table 16. Maintenance Standards and Procedures for Downspout, Sheet Flow, and Concentrated Dispersion Systems.

Component	Recommended Frequency [a] Inspection	Recommended Frequency [a] Routine Maintenance	Condition when Maintenance Is Needed (Standards)	Action Needed (Procedures)
Splash Block (Downspout Dispersion)				
Splash block	B		Water is being directed towards building structure	Reconfigure/ repair blocks to direct water away from building structure
	B		Water disrupts soil media	Reconfigure/ repair blocks
Transition Zone (Sheet Flow Dispersion)				
Transition zone	A		Adjacent soil erosion; uneven surface creating concentrated flow discharge; or less than 2 foot of width	Repair/replace transition zone to meet design criteria and eliminate concentrated flows
Dispersion Trench (Downspout Dispersion)				
Dispersion trench	A		Visual evidence of water discharging at concentrated points along trench (normal condition is a "sheet flow" from edge of trench; intent is to prevent erosion damage)	• Remove debris from trench surface, if necessary • Realign notched grade board or other distributor type, if possible • Rebuild trench to standards, if necessary
Surface of trench	Fall and Spring		Accumulated trash, debris, or sediment on drain rock surface impedes sheet flow from facility	• Remove/dispose in accordance with local solid waste requirements
	A, W		Vegetation/moss present on drain rock surface impedes sheet flow from facility	• Maintain open, freely draining drain rock surface
Pipe(s) to trench	A, W		Accumulation of trash, debris, or sediment in roof drains, gutters, driveway drains, area drains, etc.	• Remove/ dispose
	A, W		Pipe from sump to trench or drywell has accumulated sediment or is plugged	• Clear sediment from inlet/outlet pipe screen and inlet/outlet pipe
	A, W		Cracked, collapsed, broken, or misaligned drain pipes	• Repair/seal cracks • Replace when repair is insufficient
Sump	A		Sediment in the sump	• Remove/ dispose in accordance with local solid waste requirements • Clear sediment from inlet/outlet pipe screen and/or inlet/outlet pipe
Access lid	A		Cannot be easily opened	• Repair/ replace
	A		Buried	• Refer to record drawings for design intent. If the access lid was designed to be exposed, expose and restore to surface grade
	A		Cover missing	• Replace
Rock Pad (Concentrated Flow Dispersion)				
Rock pad	A		Only one layer of rock exists above native soil in area 6 square feet or larger, or any exposure of native soil	• Replace/ repair rock pad to meet design standards • Enlarge pad size or add additional courses of rock, if necessary
	A		Soil erosion in or adjacent to rock pad	Repair/replace rock pad to meet design standards
Dispersal Area				
Dispersal area (general)	B, S		Erosion (gullies/ rills) greater than 2 inches deep in dispersal area	Eliminate cause of erosion and stabilize damaged area (regrade, rock, revegetate)
	B, S		Accumulated sediment or debris to extent that blocks or channelizes flow path	• Remove excess sediment or debris • Identify and control the sediment source (if feasible)
Ponded water	B, S		Standing surface water in dispersion area remains for more than 3 days after the end of a storm event	• Identify the cause of the standing water (e.g., grade depressions, compacted soil) and take appropriate actions to address the problem (e.g., regrade to eliminate depressions or aerate/ amend soils)

[a] Frequency: A= Annually; B= Biannually (twice per year); W = At least once during the wet season (for debris/clog related maintenance, this visit should occur in the early fall, after deciduous trees have lost their leaves); S = Perform inspections after major storm events (24-hour storm event with a 10-year or greater recurrence interval).

[b] Inspection should occur during plant establishment period (1-2 years, or additional 3rd year during extreme dry weather). IPM – Integrated Pest Management

Table 16 (continued). Maintenance Standards and Procedures for Downspout, Sheet Flow, and Concentrated Dispersion Systems.

Component	Recommended Frequency [a]		Condition when Maintenance is Needed (Standards)	Action Needed (Procedures)
	Inspection	Routine Maintenance		
Dispersal Area (cont'd)				
Plant establishment	B	Once every 1-2 weeks or as needed during prolonged dry periods [b]	Dispersal area vegetation in establishment period (1-2 years, or additional 3rd year during extreme dry weather)	Water weekly during periods of no rain to ensure plant establishment
Vegetation	As needed		Poor vegetation cover such that erosion is occurring	• Ensure proper care (e.g., watering) • Assess for nutrient deficiencies • Replant as needed with appropriate plant species for the soil and moisture conditions • Consider amending soils to promote plant health
	B, S		Vegetation inhibits dispersed flow along flow path	Trim, weed or replant to restore dispersed flow path
Storage Sump				
Sump	A		Accumulated sediment in the sump	• Remove/ dispose in accordance with local solid waste requirements • Clear sediment from inlet/outlet pipe screen and/or inlet/outlet pipe
Access lid	A		Cannot be easily opened	Repair/ replace
	A		Buried	Expose and restore to surface grade
	A		Cover missing	Replace
Pest Control				
General Pests	As needed		Signs of pest infestations (IPM protocol threshold(s) are exceeded)	• Follow IPM protocols for weed and pest management (see "Additional Maintenance Resources" in Bioretention Facilities section for more information on IPM protocols)
Mosquitoes	B, S		Standing surface water in dispersion area remains for more than 3 days after the end of a storm	• Identify the cause of the standing water and take appropriate actions to address the problem (see "Ponded water") • Do not use pesticides or *Bacillus thuringiensis israelensis* (Bti)
Rodents	As needed		Rodent holes or mounds disturb dispersion flow paths	Fill and compact soil around the holes and vegetate to restore flow path

[a] Frequency: A= Annually; B= Biannually (twice per year); W = At least once during the wet season (for debris/clog related maintenance, this visit should occur in the early fall, after deciduous trees have lost their leaves); S = Perform inspections after major storm events (24-hour storm event with a 10-year or greater recurrence interval).

[b] Inspection should occur during plant establishment period (1-2 years, or additional 3rd year during extreme dry weather).

Equipment and Materials

Table 17 includes recommendations for equipment and materials commonly used to maintain downspout, sheet flow, and concentrated dispersion systems.

Table 17. Downspout, Sheet Flow, and Concentrated Dispersion Systems Equipment and Materials List.

Pipe/ structure system inspection and maintenance equipment	*General landscaping equipment and materials to maintain dispersal area*
☐ Hand tools	☐ Mower
☐ Flashlight	☐ Gloves
☐ Mirror (for viewing pipe s without entering structure)	☐ Weeding tool
☐ Garden hose	☐ Soil knife
☐ Plumbing snake	☐ Manual edger
☐ Level	☐ Line trimmer (also known as a string trimmer, weed eater, or weed whacker)
Equipment to clear accumulated sediment from sump	☐ Hoe
☐ Shop-Vac	☐ Rake
☐ Shovel	☐ Shovel
Material to replenish rock pad for concentrated dispersion	☐ Push broom
☐ Aggregate	☐ Compost
	☐ Seeds
	☐ Plants
	☐ Watering equipment

* Items not required for routine maintenance

Skills

The skills required for the maintenance of downspout, sheet flow, and concentrated dispersion systems are listed in the text box to the right. Additional specialized skills may also be required for corrective maintenance such as: horticulturalists, arborists, erosion control specialists, and soil scientists.

Skills Needed for Maintenance of Dispersion Systems

- General drainage system maintenance skills (e.g., inlet/pipe cleaning experience, inlet/pipe maintenance or repair experience)
- Landscaping skills (e.g., general plant care)
- Landscape or drainage contractor for major maintenance

APPENDIX D

SOURCE CONTROL

BEST MANAGEMENT PRACTICES

- S411—LANDSCAPING AND LAWN MAINTENANCE
- S417--MAINTENANCE OF STORM DRAINAGE AND TREATMENT SYSTEMS

S411 BMPs for Landscaping and Lawn/ Vegetation Management

Description of Pollutant Sources: Landscaping can include grading, soil transfer, vegetation removal, pesticide and fertilizer applications, and watering. Stormwater contaminants include toxic organic compounds, heavy metals, oils, total suspended solids, coliform bacteria, fertilizers, and pesticides.

Lawn and vegetation management can include control of objectionable weeds, insects, mold, bacteria, and other pests with pesticides. Examples include weed control on golf course lawns, access roads, and utility corridors and during landscaping; sap stain and insect control on lumber and logs; rooftop moss removal; killing nuisance rodents; fungicide application to patio decks, and residential lawn/plant care. It is possible to release toxic pesticides such as pentachlorophenol, carbamates, and organometallics to the environment by leaching and dripping from treated parts, container leaks, product misuse, and outside storage of pesticide contaminated materials and equipment. Poor management of the vegetation and poor application of pesticides or fertilizers can cause appreciable stormwater contamination.

Pollutant Control Approach: Control of fertilizer and pesticide applications, soil erosion, and site debris to prevent contamination of stormwater.

Develop and implement an Integrated Pest Management Plan (IPM) and use pesticides only as a last resort. Carefully apply pesticides/ herbicides, in accordance with label instructions. Maintain appropriate vegetation, with proper fertilizer application where practicable, to control erosion and the discharge of stormwater pollutants. Where practicable grow plant species appropriate for the site, or adjust the soil properties of the subject site to grow desired plant species.

Applicable Operational BMPs for Landscaping:

- Install engineered soil/landscape systems to improve the infiltration and regulation of stormwater in landscaped areas.
- Do not dispose of collected vegetation into waterways or storm sewer systems.

Recommended Additional Operational BMPs for Landscaping:

- Conduct mulch-mowing whenever practicable
- Dispose of grass clippings, leaves, sticks, or other collected vegetation, by composting, if feasible.
- Use mulch or other erosion control measures on soils exposed for more than one week during the dry season or two days during the rainy season.
- Store and maintain appropriate oil and chemical spill cleanup materials in readily

accessible locations when using oil or other chemicals. Ensure that employees are familiar with proper spill cleanup procedures.

- Till fertilizers into the soil rather than dumping or broadcasting onto the surface. Determine the proper fertilizer application rate for the types of soil and vegetation encountered.
- Till a topsoil mix or composted organic material into the soil to create a well-mixed transition layer that encourages deeper root systems and drought-resistant plants.
- Use manual and/or mechanical methods of vegetation removal rather than applying herbicides, where practical.

Applicable Operational BMPs for the Use of Pesticides:

- Develop and implement an IPM (See section on IPM in Applicable Operational BMPs for Vegetation Management) and use pesticides only as a last resort.
- Implement a pesticide-use plan and include at a minimum: a list of selected pesticides and their specific uses; brands, formulations, application methods and quantities to be used; equipment use and maintenance procedures; safety, storage, and disposal methods; and monitoring, record keeping, and public notice procedures. All procedures shall conform to the requirements of Chapter 17.21 RCW and Chapter 16-228 WAC (Appendix IV-D: Regulatory Requirements That Impact Stormwater Programs (p.723) R.7).
- Choose the least toxic pesticide available that is capable of reducing the infestation to acceptable levels. The pesticide should readily degrade in the environment and/or have properties that strongly bind it to the soil. Conduct any pest control activity at the life stage when the pest is most vulnerable. For example, if it is necessary to use a Bacillus thuringiens application to control tent caterpillars, apply it to the material before the caterpillars cocoon or it will be ineffective. Any method used should be site-specific and not used wholesale over a wide area.
- Apply the pesticide according to label directions. Do not apply pesticides in quantities that exceed manufacturer's instructions.
- Mix the pesticides and clean the application equipment in an area where accidental spills will not enter surface or ground waters, and will not contaminate the soil.
- Store pesticides in enclosed areas or in covered impervious containment. Do not discharge pesticide contaminated stormwater or spills/leaks of pesticides to storm sewers. Do not hose down the paved areas to a storm sewer or conveyance ditch. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.
- Clean up any spilled pesticides. Keep pesticide contaminated waste materials in

designated covered and contained areas.

- The pesticide application equipment must be capable of immediate shutoff in the event of an emergency.
- Spraying pesticides within 100 feet of open waters including wetlands, ponds, and rivers, streams, creeks, sloughs and any drainage ditch or channel that leads to open water may have additional regulatory requirements beyond just following the pesticide product label. Additional requirements may include:
    - Obtaining a discharge permit from Ecology.
    - Obtaining a permit from the local jurisdiction.
    - Using an aquatic labeled pesticide.
- Flag all sensitive areas including wells, creeks, and wetlands prior to spraying.
- Post notices and delineate the spray area prior to the application, as required by the local jurisdiction or by Ecology.
- Conduct spray applications during weather conditions as specified in the label direction and applicable local and state regulations. Do not apply during rain or immediately before expected rain.

Recommended Additional Operational BMPs for the use of pesticides:

- Consider alternatives to the use of pesticides such as covering or harvesting weeds, substitute vegetative growth, and manual weed control/moss removal.
- Consider the use of soil amendments, such as compost, that are known to control some common diseases in plants, such as Pythium root rot, ashy stem blight, and parasitic nematodes. The following are three possible mechanisms for disease control by compost addition (USEPA Publication 530-F-9-044):
    1. Successful competition for nutrients by antibiotic production;
    2. Successful predation against pathogens by beneficial microorganism; and
    3. Activation of disease-resistant genes in plants by composts.

  Installing an amended soil/landscape system can preserve both the plant system and the soil system more effectively. This type of approach provides a soil/-landscape system with adequate depth, permeability, and organic matter to sustain itself and continue working as an effective stormwater infiltration system and a sustainable nutrient cycle.
- Once a pesticide is applied, evaluate its effectiveness for possible improvement. Records should be kept showing the effectiveness of the pesticides considered.
- Develop an annual evaluation procedure including a review of the effectiveness of

pesticide applications, impact on buffers and sensitive areas (including potable wells), public concerns, and recent toxicological information on pesticides used/-proposed for use. If individual or public potable wells are located in the proximity of commercial pesticide applications, contact the regional Ecology hydrogeologist to determine if additional pesticide application control measures are necessary.

- Rinseate from equipment cleaning and/or triple-rinsing of pesticide containers should be used as product or recycled into product.

For more information, contact the Washington State University (WSU) Extension Home-Assist Program, (253) 445-4556, or Bio-Integral Resource Center (BIRC), P.O. Box 7414, Berkeley, CA.94707, or EPA to obtain a publication entitled "Suspended, Canceled, and Restricted Pesticides" which lists all restricted pesticides and the specific uses that are allowed.

Applicable Operational BMPs for Vegetation Management:

- Use at least an eight-inch "topsoil" layer with at least 8 percent organic matter to provide a sufficient vegetation-growing medium. Amending existing landscapes and turf systems by increasing the percent organic matter and depth of topsoil can substantially improve the permeability of the soil, the disease and drought resistance of the vegetation, and reduce fertilizer demand. This reduces the demand for fertilizers, herbicides, and pesticides. Organic matter is the least water-soluble form of nutrients that can be added to the soil. Composted organic matter generally releases only between 2 and 10 percent of its total nitrogen annually, and this release corresponds closely to the plant growth cycle. Return natural plant debris and mulch to the soil, to continue recycling nutrients indefinitely.
- Select the appropriate turfgrass mixture for the climate and soil type. Certain tall fescues and rye grasses resist insect attack because the symbiotic endophytic fungi found naturally in their tissues repel or kill common leaf and stem-eating lawn insects. However, they do not, repel root-feeding lawn pests such as Crane Fly larvae, and are toxic to ruminants such as cattle and sheep. The fungus causes no known adverse effects to the host plant or to humans. Endophytic grasses are commercially available; use them in areas such as parks or golf courses where grazing does not occur. Local agricultural or gardening resources such as Washington State University Extension office can offer advice on which types of grass are best suited to the area and soil type.
- Use the following seeding and planting BMPs, or equivalent BMPs to obtain information on grass mixtures, temporary and permanent seeding procedures, maintenance of a recently planted area, and fertilizer application rates: BMP C120: Temporary and Permanent Seeding (p.278), BMP C121: Mulching (p.284), BMP C123: Plastic Covering (p.294), and BMP C124: Sodding (p.296).
- Adjusting the soil properties of the subject site can assist in selection of desired

plant species. For example, design a constructed wetland to resist the invasion of reed canary grass by layering specific strata of organic matters (e.g., composted forest product residuals) and creating a mildly acidic pH and carbon-rich soil medium. Consult a soil restoration specialist for site-specific conditions.

- Aerate lawns regularly in areas of heavy use where the soil tends to become compacted. Conduct aeration while the grasses in the lawn are growing most vigorously. Remove layers of thatch greater than ¾-inch deep.
- Mowing is a stress-creating activity for turfgrass. Grass decreases its productivity when mown too short and there is less growth of roots and rhizomes. The turf becomes less tolerant of environmental stresses, more disease prone and more reliant on outside means such as pesticides, fertilizers, and irrigation to remain healthy. Set the mowing height at the highest acceptable level and mow at times and intervals designed to minimize stress on the turf. Generally mowing only 1/3 of the grass blade height will prevent stressing the turf.

Irrigation:

- The depth from which a plant normally extracts water depends on the rooting depth of the plant. Appropriately irrigated lawn grasses normally root in the top 6 to 12 inches of soil; lawns irrigated on a daily basis often root only in the top 1 inch of soil. Improper irrigation can encourage pest problems, leach nutrients, and make a lawn completely dependent on artificial watering. The amount of water applied depends on the normal rooting depth of the turfgrass species used, the available water holding capacity of the soil, and the efficiency of the irrigation system. Consult with the local water utility, Conservation District, or Cooperative Extension office to help determine optimum irrigation practices.

Fertilizer Management:

- Turfgrass is most responsive to nitrogen fertilization, followed by potassium and phosphorus. Fertilization needs vary by site depending on plant, soil, and climatic conditions. Evaluation of soil nutrient levels through regular testing ensures the best possible efficiency and economy of fertilization. For details on soils testing, contact the local Conservation District, a soils testing professional, or a Washington State University Extension office.
- Apply fertilizers in amounts appropriate for the target vegetation and at the time of year that minimizes losses to surface and ground waters. Do not fertilize when the soil is dry. Alternatively, do not apply fertilizers within three days prior to predicted rainfall. The longer the period between fertilizer application and either rainfall or irrigation, the less fertilizer runoff occurs.
- Use slow release fertilizers such as methylene urea, IDBU, or resin coated fertilizers when appropriate, generally in the spring. Use of slow release fertilizers is especially important in areas with sandy or gravelly soils.

- Time the fertilizer application to periods of maximum plant uptake. Ecology generally recommends application in the fall and spring, although Washington State University turf specialists recommend four fertilizer applications per year.
- Properly trained persons should apply all fertilizers. Apply no fertilizer at commercial and industrial facilities, to grass swales, filter strips, or buffer areas that drain to sensitive water bodies unless approved by the local jurisdiction.

Integrated Pest Management

An IPM program might consist of the following steps:

Step 1: Correctly identify problem pests and understand their life cycle

Step 2: Establish tolerance thresholds for pests.

Step 3: Monitor to detect and prevent pest problems.

Step 4: Modify the maintenance program to promote healthy plants and discourage pests.

Step 5: Use cultural, physical, mechanical or biological controls first if pests exceed the tolerance thresholds.

Step 6: Evaluate and record the effectiveness of the control and modify maintenance practices to support lawn or landscape recovery and prevent recurrence.

For an elaboration of these steps, refer to Appendix IV-F: Example of an Integrated Pest Management Program (p.739).

S417 BMPs for Maintenance of Stormwater Drainage and Treatment Systems

Description of Pollutant Sources: Facilities include roadside catch basins on arterials and within residential areas, conveyance systems, detention facilities such as ponds and vaults, oil/water separators, biofilters, settling basins, infiltration systems, and all other types of stormwater treatment systems presented in Volume V (p.765). Oil and grease, hydrocarbons, debris, heavy metals, sediments and contaminated water are found in catch basins, oil and water separators, settling basins, etc.

Pollutant Control Approach: Provide maintenance and cleaning of debris, sediments, and oil from stormwater collection, conveyance, and treatment systems to obtain proper operation.

Applicable Operational BMPs:

Maintain stormwater treatment facilities per the operations and maintenance (O&M) procedures presented in V-4.6 Maintenance Standards for Drainage Facilities (p.829) in addition to the following BMPs:

- Inspect and clean treatment BMPs, conveyance systems, and catch basins as needed, and determine necessary O&M improvements.
- Promptly repair any deterioration threatening the structural integrity of stormwater facilities. These include replacement of clean-out gates, catch basin lids, and rock in emergency spillways.
- Ensure adequacy of storm sewer capacities and prevent heavy sediment discharges to the sewer system.
- Regularly remove debris and sludge from BMPs used for peak-rate control, treatment, etc. and discharge to a sanitary sewer if approved by the sewer authority, or truck to an appropriate local or state government approved disposal site.

- Clean catch basins when the depth of deposits reaches 60 percent of the sump depth as measured from the bottom of basin to the invert of the lowest pipe into or out of the basin. However, in no case should there be less than six inches clearance from the debris surface to the invert of the lowest pipe. Some catch basins (for example, WSDOT Type 1L basins) may have as little as 12 inches sediment storage below the invert. These catch basins need frequent inspection and cleaning to prevent scouring. Where these catch basins are part of a stormwater collection and treatment system, the system owner/operator may choose to concentrate maintenance efforts on downstream control devices as part of a systems approach.
- Clean woody debris in a catch basin as frequently as needed to ensure proper operation of the catchbasin.
- Post warning signs; "Dump No Waste - Drains to Ground Water," "Streams," "Lakes," or emboss on or adjacent to all storm drain inlets *where possible*.
- Disposal of sediments and liquids from the catch basins must comply with Appendix IV-G: Recommendations for Management of Street Wastes (p.743).

Additional Applicable BMPs: Select additional applicable BMPs from this chapter depending on the pollutant sources and activities conducted at the facility. Those BMPs include:

- S425 BMPs for Soil Erosion and Sediment Control at Industrial Sites (p.665)
- S427 BMPs for Storage of Liquid, Food Waste, or Dangerous Waste Containers (p.667)
- S426 BMPs for Spills of Oil and Hazardous Substances (p.666)
- S410 BMPs for Illicit Connections to Storm Drains (p.633)
- S430 BMPs for Urban Streets (p.684)