Storm Water Pollution Prevention Plan

For

Baxter Multifamily
4220 Baxter Road
Anchorage, Alaska 99504
Cook Inlet Housing Authority
Contact: Tyler Robinson

Operator(s)

TBD

SWPPP Contact(s)

Triad Engineering, LLC
615 E. 82nd Ave. 101
Anchorage, AK 99518
(907) 206-2509 (ext. 105)
Contact: Yubi Bhattarai

SWPPP Preparation Date

2/28/2025

Estimated Project Dates

Start of Construction	Completion of Construction
5/1/2025	10/15/2028

APDES Project or Permit Authorization Number:
TBD

RECORD OF SWPPP AMENDMENTS

Date of Revision	Section	Description

4

OPERATOR PLAN AUTHORIZATION/CERTIFICATION/DELEGATION

(To be signed by Responsible Corporate Officer)

I state that based on my review this SWPPP meets the minimum requirements of the Construction General Permit and that TBD has day-to-day operational control of the project site. TBD is responsible for the maintenance and implementation of the SWPPP including inspections, documentation, and application of the Best Management Practices at the site TBD will notify all subcontractors of the requirement of this SWPPP. TBD has operational control over the project specifications, including the ability to make changes to the project specifications.

I hereby designate TBD, SWPPP Administrator as my authorized representative. This designee is responsible for the overall operations of the site and will be responsible for the implementation of the Storm Water Pollution Prevention Plan, compliance with the Construction General Permit, selecting and implementing additional Best Management Practices as conditions warrant, and signing all inspection reports required.

I certify under penalty of law that this document and all attachments were prepared under the direction of Tyler Robinson in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Tyler Robinson

Signature	Date
Printed Name	Title

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1.0 PERMITTEE (5.3.1)

Identify permittee and any subcontractors.

1.1 Operator(s)/Contractor(s)

Operator Information			
Organization: TBD	Name:	Title:	
Phone:	Fax (optional): Enter Text	Email:	
Mailing Address:	Street (PO Box):		
	City:	State:	Zip:
Area of Control	Day-to-day operational control of those activities at a site which are necessary to ensure compliance with a SWPPP or other permit conditions.		

Owner/Operator Information			
Organization: Cook Inlet Housing Authority	Name: Tyler Robinson	Title: Vice President	
Phone: (907) 793-3000	Fax (optional): N/A	Email:	
Mailing Address:	Street (PO Box): 3510 Spenard Road, Suite 100		
	City: Anchorage	State: AK	Zip: 99518
Area of Control	Operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications.		

1.2 Subcontractors

Subcontractor Information			
Organization: Enter Text	Name: Enter Text	Title: Enter Text	
Phone: Enter Text	Fax (optional): Enter Text	Email: Enter Text	
Mailing Address:	Street (PO Box): Enter Text		
	City: Enter Text	State: Enter Text	Zip: Enter Text
Area of Control	Insert Area of Control (if more than one operator at site)		

2.0 STORM WATER CONTACTS (5.3.2)

Identify the qualified persons responsible for the following required positions (note: a small project may have all these responsibilities carried out by one person):

- Storm Water Lead (5.3.2); person updating the SWPPP (5.3.2.2); Person(s) Conducting Inspections (5.3.2.3); Person(s) Conducting Monitoring (if applicable, 5.3.2.4), and Person(s) Operating Active Treatment System (if applicable, 5.3.2.5).
- Document that the named individuals are Qualified Persons as described in CGP Appendix C. Include documentation of qualifications in Appendix E of the SWPPP.

Qualified Personnel	Responsibility
Storm Water Lead Tyler Robinson Cook Inlet Housing Authority 3510 Spenard Road, Suite 100 Anchorage, AK 9958 (907) 793-3000	Authority to stop and/or modify construction activities as necessary to comply with the SWPPP and the terms and conditions of the permit.
SWPPP Preparer Yubi Bhattarai Triad Engineering, LLC 615 E. 82nd Ave. Suite 101 Anchorage, AK 99518 907-206-2509 ext. 105 yubarajbhattarai@triadak.com	Possess the skills to assess conditions at the construction site that could impact storm water quality. Familiar with Part 5 as a means to implement the permit.
Storm Water Inspector Yubi Bhattarai Triad Engineering, LLC 615 E. 82nd Ave. Suite 101 Anchorage, AK 99518 907-206-2509 ext. 105 yubarajbhattarai@triadak.com	Assess conditions at the construction site that could impact storm water quality. Assess the effectiveness of any erosion and sediment control measures selected to control the quality of storm water discharge, and familiar with Part 6 as a means to ensure compliance with the permit.
Monitoring Person (If Applicable) Company Name Address City, State, Zip Code Telephone # Fax/Email	Knowledgeable in the principles and practices of water quality monitoring who is familiar with Part 7 and the monitoring plan for the site and how to conduct water quality sampling, testing, and reporting.
Active Treatment System Operator (If Applicable) Company Name Address City, State, Zip Code Telephone # Fax/Email	Knowledgeable in the principles and practices of treatment systems that employs chemical coagulation, chemical flocculation or electrocoagulation to aid in the treatment of storm water runoff. Familiar with Part 4.5 as a means to implement and comply with the permit.

3.0 PROJECT INFORMATION (5.3.3)

This section gathers all relevant site data together to assist with filing for permit coverage.

3.1 Project Information

Project Name: Baxter Multifamily			
Location Address:	Street: 4220 Baxter Road	Borough or similar government subdivision: Municipality of Anchorage	
	City: Anchorage	State: Alaska	Zip: 99504
	Latitude (decimal degree, 5 places): 61.217381	Longitude (decimal degree, 5 places): -149.863129	
	Determined By: ☐ GPS ☐ Web Map: Enter Text ☐ USGS Topo Map, Scale: Enter Text x Other: Google Earth		

3.2 Project Site Specific Conditions (5.3.3)

Instructions:
Briefly describe the existing site conditions, including:

- Mean annual precipitation based on nearest appropriate weather station (5.3.3.1). Precipitation data for Alaska weather-recording stations are available at the Western Regional Climate Center Internet website: https://xmacis.rcc-acis.org/.
- Soils, topography, drainage patterns, approximate growing season, and vegetation.
- Evidence of site contamination.

Mean annual precipitation based on nearest weather stations (inches): 16.7/yr.

Soil Type(s) and Slopes *(describe soil type(s) and current slopes; note any changes due to grading or fill activities)*:
The generalized subsurface conditions at the project site consisted of an approximate 0.5 ft top layer of organics or silt with organics across the site. The underlying subsurface conditions are split into two main sections: Fill Stockpiles and Native Soils. The ground surface at the site generally slopes downward from east to west.

Landscape Topography: The project site was developed with several residential structures that have been demolished.

Drainage Patterns (*describe current drainage patterns and note any changes due to grading or fill activities*):

Drainage is split and flows to the west towards Chester Creek, and to the east. Outfall is to the Northeast (NE). Runoff from the property would flow into the existing drainage infrastructure that drains into the existing wetlands. Minimum 5 % and 2% positive drainage patterns away from the buildings in areas of landscaping and hardscaping respectively shall be maintained.

Approximate Growing Season: May to September

Type of Existing Vegetation: Trees, grasses, and brushes.

Historic site contamination evident from existing site features and known past usage of the site: No known contamination exists onsite or nearby.

4.0 NATURE OF CONSTRUCTION ACTIVITY (5.3.4)

4.1 Scope of Work

Describe the general scope of work for the project, major phases of construction, etc.

2.74 acres of land will be developed for the construction of multi-family dwelling units. The project is divided into Phase 1 and Phase 2 so the total number of units are yet to be determined.

4.2 Project Function (5.3.4.1)

Briefly describe the function of the construction activity (e.g., low-density residential, shopping mall, subdivision, airport, highway, etc.).

The function of the construction is multifamily dwelling units' residential development with strip paved driveway, paved roads with curb and sidewalk and landscaping.

4.3 Support Activities (As Applicable)

Support activities for this project are:

Support Activity	Location	Dedicated	
		Yes	No
Concrete Batch Plant		☐	☑
Asphalt Batch Plant		☐	☑
Equipment Staging Yards		☐	☑
Material Storage Areas		☐	☑
Excavated Material Disposal Areas		☐	☑
Borrow Areas		☐	☑

4.4 Sequence and Timing of Soil-disturbing Activities (5.3.4.2)

Briefly describe the intended sequence and timing of activities that disturb soils at the site.

Clearing and grubbing will occur followed by cutting and filling of native soils, followed by utility installation, placement of gravel, pavement and building construction.

4.5 Size of property and total area expected to be disturbed (5.3.4.3)

- Estimate the area to be disturbed by excavation, grading, or other construction activities, including support activities described in CGP Section 1.4.2.3 (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, and/or borrow areas).
- Calculate the percentage of impervious surface area before and after construction.
- Calculate the run-off coefficients before and after construction.

The following are estimates of the construction site:

Total Project Area:.....	2.74	Acres (total)
Construction-site area to be disturbed:	2.50	Acres (total)
Percentage impervious area BEFORE construction:.....	0.07%	% (On-site)
Runoff coefficient BEFORE construction:	0.35	(On-Site)
Percentage impervious area AFTER construction:	0.35%	% (on-site)
Runoff coefficient AFTER construction:.....	0.55	(on-site)

4.6 Identification of All Potential Pollutant Sources (5.3.4.5)

- Identify and list all potential sources of sediment from construction materials and activities which may affect the quality of storm water discharges from the construction site.
- Identify and list all potential sources of pollution, other than sediment, from construction materials and activities which may affect the quality of storm water discharges from the construction site.

Potential sources of sediment to storm water runoff:

The main potential sources of pollution for the new project area are sediment generated during ground disturbing activities that include the following: excavation of vegetation and grubbing for the construction of a driveway and landscaping/hydro-seeding operations.

Potential pollutants and sources, other than sediment, to storm water runoff:

Trade Name Material	Storm Water Pollutants	Location

5.0 SITE MAPS (5.3.5)

The SWPPP must include a legible site map (or set of maps for large projects) showing the entire site and identifying the following site-specific information:

- North arrow and bar scale
- Property boundaries
- Locations where earth-disturbing activities will occur, noting phasing
- Location of areas that will not be disturbed and natural features to be preserved
- Location of all storm water conveyances including ditches, pipes, and swales
- Locations of storm water inlets and outfalls, with a unique identification code for each outfall
- Locations where storm water and/or authorized non-storm water discharges to waters of the U.S. (including wetlands) or a Municipal Separate Storm Sewer System (MS4).
- Direction of storm water flow and approximate slopes anticipated after grading activities
- Locations where control measures will be or have been installed
- Locations where exposed soils will be or have been stabilized
- Locations where post-construction storm water controls will be or have been installed
- Locations of support activities
- Locations where authorized non-storm water will be used
- Locations and sources of run-on to the site from adjacent property that may contain quantities of pollutants which could be exposed to precipitation.
- Locations of all waters of the U.S. on-site (including significant wetland areas ≥10,000 ft^2) and those within 2,500 feet of the site boundary
- Location of existing public water system (PWS) drinking water protection areas (DWPA) for PWS sources (e.g., springs, wells, or surface water intakes) that intersect the boundary of the project area. *(The DWPAs can be found using the interactive web map application, "Alaska DEC Drinking Water Protection Areas" located at http://dec.alaska.gov/das/GIS/apps.htm.)*
- Sampling point(s), if applicable
- Areas where final stabilization has been accomplished
- Staging and material storage areas (construction materials, hazardous materials, fuels, etc.)
- Dumpsters
- Porta-potties
- Concrete, paint, or stucco washout areas
- Stabilized construction exits

Include a general location map in Appendix A of this SWPPP. (5.3.4.4)

Include site maps in Appendix A of this SWPPP. (5.3.5)

6.0 DISCHARGES

Subject to compliance with the terms and conditions of the CGP, the permittee is authorized to discharge pollutants in storm water discharges from the site. If the permittee is eligible for coverage under this permit and does not comply with the requirements of this general permit, the permittee may be in violation of this general permit for otherwise eligible discharges.

Instructions:

- Describe and identify the location of any storm water discharge associated with support activities, including discharges from dedicated asphalt and concrete plants covered by this permit (5.3.8).
- Identify all allowable sources of non-storm water discharges to be used at the site (5.3.9).

6.1 Locations of Other Industrial Storm Water Discharges (5.3.8)

N/A

6.2 Allowable Non-Storm Water Discharges (1.4.3; 4.3.7; 5.3.9)

N/A

7.0 DOCUMENTATION OF PERMIT ELIGIBILITY RELATED TO TOTAL MAXIMUM DAILY LOADS (3.2, 5.6)

If the permittee is discharging into a water body with an EPA-established or approved Total Maximum Daily Load (TMDL), the permittee must implement measures to ensure the discharge of pollutants from the site is consistent with the assumptions and requirements of the TMDL. Refer to the CGP for additional requirements.

The SWPPP must include documentation supporting a determination of permit eligibility with regard to waters that have a TMDL.

7.1 Identify Receiving Waters (5.3.3.3)

Instructions:

- List any water bodies that would receive storm water from the site, including rivers, streams, lakes, coastal waters, and wetlands. Describe each as clearly as possible (e.g., Noyes Slough, a tributary to the Chena River, etc.).
- Indicate location of all water bodies on site map.
- Note any stream crossings, if applicable.
- List storm sewer and/or drainage systems into which storm water from the site could discharge and water body(ies) the system(s) ultimately discharge to.

Description of receiving waters: Existing wetlands to the NE

Description of storm sewer and/or drainage systems: Drainage connects into the existing drainage infrastructure in Baxter prior to outfall to wetlands.

Other:

7.2 Identify TMDLs (5.6.1)

Determine whether the project may discharge into a water body with an EPA-established or approved Total Maximum Load (TMDL) for turbidity or sediment.

Instructions:

- See ADEC web site for a listing of impaired water bodies: http://dec.alaska.gov/water/water-quality/impaired-waters.
- Look through all impaired water body categories -- 4a, 4b, and 5.

Is an EPA-established or approved TMDL published for the receiving water(s) listed in Section 7.1? ☐ Yes ☑ No.

If YES, list the TMDL(s) here. Include a summary of consultations with state or federal TMDL authorities. Include correspondence or other supporting documentation in Appendix D.

TMDL: N/A

Summary of consultation with state or federal TMDL authorities (5.6.2): N/A

Measures taken to ensure compliance with TMDL (5.6.3): N/A

8.0 DOCUMENTATION OF PERMIT ELIGIBILITY RELATED TO ENDANGERED SPECIES (3.3, 5.7)

The SWPPP must include documentation supporting a determination of permit compliance with regard to the Endangered Species Act.

Instructions:

- Determine whether endangered or threatened species or their critical habitats are on or near your site.
- Attach any correspondence for any stage of the project planning between the USFWS, EPA, National Marine Fisheries Service (NMFS), or others and the permittee regarding listed species and critical habitat, including any notification that delays the permittee's authorization to discharge under this permit (Appendix D).

8.1 Information on Endangered or Threatened Species or Critical Habitat (5.7.1)

Are endangered or threatened species and critical habitats on or near the project area? ☐ Yes ☑ No.

Describe how this determination was made: Of the species listed on the Endangered, Threatened, Proposed, Candidate, and Delisted Species in Alaska (May 13, 2014) list, none occur in the area.

Will species or habitat be adversely affected by storm water discharge? ☐ Yes ☑ No.

Describe the species and/or critical habitat, if species or habitat will be affected by storm water discharge.

No endangered or threatened species are commonly found at or near the project area. No critical habitat for any endangered, threatened, or candidate species will be adversely affected by the project activities.

Include any agency correspondence in the SWPPP (5.7.4). N/A

Provide summary of necessary measures (5.7.5): N/A

9.0 APPLICABLE FEDERAL, STATE, TRIBAL, OR LOCAL REQUIREMENTS (4.15)

A permittee must ensure storm water control measures implemented at the site are consistent with all applicable federal, state, tribal, or local requirements for soil and erosion control and storm water management.

Instructions:

Describe applicable federal, state, tribal, or local requirements, if any.

All known Federal, State, Tribal, and local requirements have been satisfied for this Project and all required permitting is in place. If any additional permits related to the environment, wildlife, or storm water are

obtained, copies will be placed in Appendix D and this SWPPP will be amended as required. Control Measures will be outlined accordingly.

Instructions:

Describe the Best Management Practices (BMPs) to be implemented to control pollutants in storm water discharges. For each major activity identified:

- Clearly describe appropriate control measures.
- Describe general sequence during the construction process in which the measures will be implemented.
- Describe maintenance and inspection procedures to be undertaken for that specific BMP.
- Include protocols, thresholds, and schedules for cleaning, repairing, and/or replacing damaged or failing BMPs.
- Identify staff responsible for maintaining BMPs. (If your SWPPP is shared by multiple operators, indicate the operator responsible for each BMP.)

Categorize each BMP under one of the following areas of BMP activity as described below:

1. *Minimize disturbed area (preserve native topsoil, phase construction activities) (4.2.2)*
2. *Maintain natural buffer areas (4.2.3)*
3. *Control storm water discharges and flow rates (4.2.5)*
4. *Protect steep slopes (4.2.6)*
5. *Storm drain inlet protection measures (4.3.1)*
6. *Water body protection measures (4.3.2)*
7. *Down-slope sediment controls (4.3.3)*
8. *Stabilized construction vehicle access and exit points (4.3.4)*
9. *Dust generation and track-out from vehicles (4.3.5, 4.3.6)*
10. *Stockpile Management (4.3.7)*
11. *Authorized Non-Storm Water Discharges (4.3.8)*
12. *Sediment basins (4.3.9)*
13. *Dewatering (4.4)*
14. *Soil stabilization (4.5)*
15. *Treatment chemicals/Active treatment Systems (4.6)*
16. *Good housekeeping measures (4.8)*
17. *Any additional BMPs*
    - Note the location of each BMP on your site map(s).
    - Any structural BMPs should have design specifications and details referred to in Appendix B.
    - For more information or ideas on BMPs, see the ADEC Alaska Storm Water Guide: http://dec.alaska.gov/water/wastewater/stormwater/guidance/

10.0 CONTROL MEASURES/BEST MANAGEMENT PRACTICES (4.0; 5.3.6)

Use this section to describe the types and locations of control measures and BMPs to be installed and maintained in accordance with Section 4.0 of the CGP.

Describe each control measure and BMP, including installation schedule and maintenance, inspection, and removal requirements. You may include a brief description of each BMP in this section and refer to detailed installation, maintenance, inspection, removal requirements, and manufacturer's specifications to be included in Appendix B.

If a control measure or BMP will be used to comply with more than one element of this section, you do not need to repeat the detailed installation, maintenance, inspection, removal requirements, and manufacturer's

information. For each element, identify the control measure or BMP to be used, and refer to the section or Appendix B where the detailed information is presented.

The person(s) identified in Section 2.0 of this SWPPP will be responsible for ensuring compliance with the installation, maintenance, inspection, and removal of these control measures.

***BMP Description*:**	Vegetated buffers
Installation Schedule:	Undisturbed when possible surrounding the site.
Maintenance and Inspection:	Vegetated buffers will be inspected for bare spots, washouts, healthy growth, and debris. Maintenance will not be needed unless deemed necessary by inspection staff in accordance with the CGP.
Responsible Staff:	Civil Contractor

***BMP Description*:** Straw wattles – staked and keyed into substrate along the down gradient boundary of the active site

Installation Schedule:	Prior to active construction on lot until final stabilization of that lot.
Maintenance and Inspection:	The Straw wattles will be inspected for sediment accumulation, damage, and proper installation and function. Sediment should be removed when it has reached 1/2 of the height of the Straw wattles. Maintenance will be provided by the Civil Contractor within 24 hours of the observance or when deemed necessary by inspection staff in accordance with the CGP.
Responsible Staff:	Civil Contractor.

***BMP Description*:** Silt fence installed on the down gradient sides of lot to prevent slope erosion.

Installation Schedule:	Immediately after clearing and grubbing.
Maintenance and Inspection:	The Silt fences shall be keyed in the ground 12" the entire length of the fence. The silt fences will be inspected for sediment accumulation, damage, proper installation, and function. Sediment will be removed when it has reached 1/3 of the height of the BMP.

	Maintenance will be provided by Civil Contractor within 24 hours of the observance or when deemed necessary by inspection staff in accordance with the CGP.
Responsible Staff:	Civil Contractor
BMP Description: Stabilization)	Stockpile Management (Temporary
Installation Schedule:	
Maintenance and Inspection:	Stockpiles (if any) will be located in areas that will not interfere with construction activities and will be a safe distance from areas of concentrated water flow and wetlands. Slopes of stockpiles that contain erodible material will be removed, covered, sprayed with tackifier, or surrounded by sediment barriers within 14 days of inactivity.

10.1 Minimize Amount of Soil Exposed During Construction Activity (4.2.2)

Instructions:

Describe the areas that will be disturbed with each phase of construction and methods (signs, fences, etc.) you will use to protect those areas that should not be disturbed.

Describe natural features identified and how each will be protected during construction activity.

Describe how topsoil will be preserved.

All vegetation and topsoil beyond the site limits of disturbance shown on the SWPPP Maps is NOT to be disturbed. This area is primarily along the North, South and East lot boundary.

BMP Description: **Preservation of Existing Vegetation**

The purpose of preserving existing vegetation is to limit site disturbance and protect pre-existing vegetation on and beyond the construction site. Existing vegetation must be preserved in all areas where no earthwork is planned. Equipment operators will be instructed to work only within the designated project limits. The surveyor will flag or stake the clearing/excavation/construction limits.

Maintenance and Inspection: Inspect work limits during regular SWPPP inspections. Repair damaged boundary markings. Existing water or new vegetation as needed to support plant health.

Responsible Staff:

The Storm Water Inspector is responsible for inspecting limits of disturbance and preserved vegetation along the project perimeter. The Superintendent is responsible for ensuring protective

and corrective measures are implemented in a timely manner and for informing equipment operators where vegetation is not to be disturbed.

10.2 Maintain Natural Buffer Areas (4.2.3)

Are stream crossings or waters of the U.S. located within or immediately adjacent to the property? ☐ Yes ☑ No.

If YES, describe the control measures to be implemented to comply with the CGP Section 4.2.3 (e.g., buffer areas, perimeter controls, etc.)

10.3 Control Storm Water Discharges and Flow Rates (4.2.5)

Instructions:

Describe control measures to comply with the CGP (e.g., divert storm water around the site, slow down or contain storm water, use of velocity dissipation devices, installing permanent storm water management controls prior to construction of site improvements to the extent practicable, etc.).

N/A

10.3.1 Protect Steep Slopes (4.2.6)

Will steep slopes be present at the site during construction? ☐ Yes ☑ No.

If YES, describe control measures to be implemented to comply with CGP Section 4.2.6 (e.g., reduce continuous slope length, divert storm water around slopes, stabilized exposed areas, etc.).

BMP Description: Surface roughening techniques will be implemented on the disturbed steep

slopes to minimize the run-off velocity and to reduce the shear stress.

Installation Schedule: As necessary and within 14 days of inactivity.

Maintenance and Inspection: Surface roughening techniques will be inspected for erosion, slope stability, and washouts. Maintenance will be provided by Civil Contractor within 24 hours of the observance of failure or when deemed necessary by inspection staff in accordance with the CGP.

Responsible Staff: Civil Contractor

10.4 Storm Water Inlet Protection Measures (4.3.1)

Instructions:

Describe control measures (e.g., filter berms, perimeter controls, temporary diversion dikes, etc.) to be implemented to protect all inlets receiving storm water from the project during the duration of the project.

N/A

10.5 Water Body Protection Measures (4.3.2)

Instructions:

Describe control measures selected to minimize discharge of sediment prior to entry into water bodies located on or immediately downstream of the site.

Water bodies to which the project discharges will be protected by implementing silt fences and straw wattles prior to clearing and grubbing along with daily inspections and maintenance.

10.6 Down-Slope Sediment Controls (4.3.3)

Instructions:

Describe sediment controls (e.g., silt fence or temporary diversion dike) for any portion of the down-slope perimeter where storm water will be discharged from disturbed areas of the site.

Down-slope and side slope controls consist of perimeter sediment controls (berm, sediment trap, wattle, and silt fence). Temporary gravel surfaces and temporary seeding will allow infiltration of water so that down-slope surface flow is minimal. Final stabilization will prevent erosion and the discharge of sediment in surface storm water runoff for the long term.

10.7 Stabilized Construction Vehicle Access and Exit Points (4.3.4)

Describe location(s) of vehicle entrance(s) and exit(s), procedures to remove accumulated sediment off-site (i.e., vehicle tracking), and stabilization practices (i.e., stone pads and/or wash racks) to minimize off-site vehicle tracking of sediments and discharges to storm water.

Public traffic will not travel through project disturbed areas. The contractor will direct employees to park at the site perimeter near public access to minimizing traffic through disturbed areas. Street sweeping will be performed as necessary. Streets will be inspected for vehicle tracking associated with construction. Inspections will occur daily during periods of active construction and maintained within 24 hours. Maintenance will be provided by the Civil Contractor within 24 hours of the observance or when deemed necessary by inspection staff in accordance with the CGP.

10.8 Dust Generation and Track-Out from Vehicles (4.3.5 and 4.3.6)

Describe control measures to minimize the generation of dust and off-site vehicle tracking of sediment.

Dust Control is an essential BMP during periods of dry weather. Dust that settles on exposed surfaces may be introduced into storm water during inclement weather. Dust will be controlled by minimizing traffic speed and using a water truck to increase soil moisture levels and thereby reduce dust. Dust Control watering equipment and rate of flow will be adjusted to ensure the application does not result in runoff, washout, or mud formation on driving surfaces. Disturbed areas will be inspected for excessively dusty conditions. Inspections will be conducted weekly by the Civil Contractor SWPPP inspector. Maintenance will be provided by the Civil Contractor within 24 hours of the observance or when deemed necessary by inspection staff in accordance with the CGP.

10.9 Soil Management (4.3.7)

Will soil stockpiles be at the site during construction? ☑ Yes ☐ No.

If YES, describe control measures intended to control sediment loss from the stockpiles (e.g., tarps or perimeter straw wattles). Show location(s) of stockpile(s) on site maps.

BMP Description: Stockpile Management (Temporary Stabilization)

Installation Schedule: Initiated no later than the next work day after the cessation of activity on the piles, when the stockpiles will remain inactive for 14 days or more, and completed within 14 days.

Maintenance and Inspection: Stockpiles will be located in areas that will not interfere with construction activities and will be a safe distance from areas of concentrated water flow and wetlands. Slopes of stockpiles that contain erodible material will be removed, covered, sprayed with tackifier, or temporarily vegetated within 14 days of inactivity. Maintenance will be provided by the Civil Contractor within 14 days of the observance or when deemed necessary by inspection staff in accordance with the CGP.

Responsible Staff: The Superintendent is responsible for ensuring initial installation and corrective measures are implemented. The SWPPP Inspector is responsible for inspection of soil piles and their BMPs.

10.10 Authorized Non-Storm Water Discharges (4.3.8)

Describe any measures taken to minimize any non-storm water authorized by this permit.

10.11 Sediment Basins (4.3.9)

Refer to CGP Section 4.3.9 to determine if a sediment basin is required for your site.

Will a sediment basin be required during construction? ☐ Yes, ☑ No.

If YES, provide a brief description of the sediment basin here. Append detailed design information in Appendix B (e.g., calculated volume of runoff from a two-year, 24-hour storm, or other assumptions used to calculate appropriate sediment-basin size). Show location of sediment basin(s) on site maps.

10.12 Dewatering (4.4)

Describe dewatering practices to be implemented if water must be removed from an area so construction activity can continue.

Will dewatering be conducted during construction? ☑ Yes, ☐ No.

Will excavation dewatering be conducted within 1,500 feet of a DEC mapped contaminated site found on the following website? ☐ Yes, ☑ No.http://www.arcgis.com/home/item.html?id=315240bfbaf84aa0b8272ad1cef3cad3

If yes to above question, review and comply with the DEC Excavation Dewatering General Permit (AKG002000 http://dec.alaska.gov/water/wastewater/stormwater/dewater-hydrostatic/#dewater) or most current version, for specific requirements.

Describe control measures to be implemented to comply with dewatering discharges authorized either under the CGP or the DEC Excavation Dewatering general permit requirements.

N/A

10.13 Soil Stabilization (4.5, 5.3.6.3)

A permittee must stabilize all disturbed areas of the site to minimize on-site erosion and sedimentation and the resulting discharge of pollutants.

Soil stabilization requirements vary depending on the mean annual precipitation for the site. Refer to CGP Section 4.5 for specific requirements.

Deadline to Initiate Stabilization. Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased on any portion of the site or temporarily ceased on any portion of the site and will not resume for a period exceeding:

- Seven (7) calendar days for those areas of the state with a mean annual precipitation of forty (40) inches or greater; or
- Fourteen (14) calendar days for those areas of the state with a mean annual precipitation less than forty (40) inches.

Note: In the context of this provision, "immediately" means no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased.

Deadline to Complete Temporary Stabilization Activities. As soon as practicable, but no later than 14 calendar days after the initiation of soil stabilization measures consistent with Part 4.5.1.1, the following are required to be completed:

- For vegetative stabilization, all activities necessary to initially seed or plant the area to be stabilized; and/or
- For non-vegetative stabilization, the installation or application of all such non-vegetative measures.

Instructions:

Refer to the Alaska Plant Materials Center's *A Revegetation Manual for Alaska and Coastal Revegetation & Erosion Control Guide* at http://plants.alaska.gov for help in selecting appropriate seed mixes and information on methods for revegetation.

Describe temporary stabilization control measures and sequence of installation.

Describe final stabilization control measures and sequence of installation.

BMP Description: Hydroseeding

☐ **Permanent**, ☑ **Temporary**

Installation Schedule: During seasons of thaw, seeding will occur on areas where soil disturbing activities have permanently ceased. This will be initiated no later than the next work day after the cessation of earth disturbing activity in the area and completed within seven days.

Maintenance and Inspection: Seeding and plan debris, and healthy growth. Top soil will also be inspected for bare spots, washouts, and debris. Maintenance will be provided by Civil Contractor during within 72 hours of the observance or when deemed necessary by inspection staff in accordance with the CGP.

10.14 Treatment Chemicals (4.6; 5.3.6.4)

The use of treatment chemicals to reduce erosion from the land or sediment in a storm water discharge is allowed provided all the requirements of CGP Section 4.6 are met.

Will treatment chemicals be used to control erosion and/or sediment during construction? ☐ Yes, ☑ No.

If YES, comply with CGP Section 4.5 and complete the following subsections.

10.15 Treatment Chemicals (4.6.1)

Describe what chemicals will be used, including information required by CGP Section 4.6.1.

N/A

10.15.1 Treatment Chemical Use Procedures (4.6.2)

Describe training for employees using treatment chemicals at the site. Document this training in either Appendix E (Employee Qualifications) or Appendix G (Training Records).

N/A

10.15.2 Application of Treatment Chemicals (4.6.3)

The application of treatment chemicals shall be in combination with appropriate physical control measures to ensure effectiveness of treatment chemical.

Instructions:

Briefly describe treatment chemical application procedures to be used. Append detailed treatment chemical application procedures to this SWPPP in Appendix B.

N/A

10.16 Active Treatment System Information or cationic treatment chemicals (4.6.7)

A permittee who uses an Active Treatment System (ATS) or cationic treatment chemicals as a control measure *(as defined in the CGP Appendix C)* must submit information required by the ADEC for review at least 14 days prior to start of operation of the ATS at the project. Specific submittal requirements can be found at 4.6.7.

Will an ATS or cationic treatment chemicals be used as a control measure at the site? ☐ Yes, ☑ No.

If YES, briefly describe the ATS process below and submit information required by CGP Section 4.6.7 to the ADEC.

N/A

10.17 Good Housekeeping Measures (4.8)

A permittee must design, install, implement, and maintain effective good housekeeping measures to prevent and/or minimize the discharge of pollutants. A permittee must include appropriate measures for any of the following activities at the site.

Consult the ADEC Storm Water Guide or other resources for more information or ideas on BMPs. See also the EPA's National Menu of BMPs at https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater

10.17.1 Washing of Equipment and Vehicles (4.8.1)

Will equipment and vehicle washing and/or wheel wash-down be conducted at the site? ☐ Yes, ☑ No.

If YES, describe the control measures to be implemented to comply with CGP Section 4.8.1.

N/A

10.17.2 Fueling and Maintenance Areas (4.8.2)

Describe equipment/vehicle fueling and maintenance practices to be implemented to control pollutants to storm water (e.g., secondary containment, drip pans, spill kits, etc.).

Describe spill prevention and control measures to be implemented, including ways to reduce the chance of spills, stop the source of spills, contain and clean up spills, dispose of materials contaminated by spills, and train personnel responsible for spill prevention and control.

Will equipment and vehicle fueling or maintenance be conducted at the site? ☑ Yes, ☐ No.

If YES, describe the control measures to be implemented to comply with CGP Section 4.8.2.

Equipment fueling will be performed on site by a mobile fuel truck operated by a vendor or subcontractor. Vehicle (diesel) fueling may also be performed onsite. Vehicle (gasoline) fueling will not be performed onsite. Those vehicle operators will purchase fuel at off-site commercial fuel stations.

Routine maintenance of equipment will be performed on-site. This includes checking/filling hydraulic fluids, motor oil, coolant, windshield washer fluid, greasing, changing tires, and other routine maintenance. Major repair of equipment will not take place on site.

Safe on-site fueling/maintenance practices

The Fueler/Mechanic will carry absorbent pads in the fueling/maintenance vehicle. Minimal amounts of supplies may be carried on each piece of equipment and a Spill Kit will be staged on site at all times when work is active.

Equipment will be parked at designated locations during non-working hours. The Superintendent will designate parking areas based on the work activity at the time. He will also consider public safety, natural drainage ways, and storm drain inlet locations. Fuelers will use a strict “No Drip” policy. Safe fueling practices include but are not limited to:

- The operator is required to keep his/her hand on the nozzle and level at all times during fueling
- The operator is required to maintain eye contact with the fuel dispensing nozzle
- Absorbent pads and other cleanup supplies are to be carried on all fuel trucks

Only trained/qualified fuelers and mechanics are allowed to perform these activities. This includes training in spill prevention, cleanup, and proper control and storage of substances. The Superintendent is responsible to ensure vendors and subcontractors are aware of and follow project safe practices.

10.17.3 Staging and Material Storage Areas (4.8.3)

Designate areas to be used for staging and material storage areas. Locate such activities, to the extent practicable, away from storm water conveyance channels, storm water inlets, and waters of the U.S.; and minimize the exposure to precipitation and storm water and vandalism for all chemicals, treatment chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment.

10.17.4 Washout of Applicators/Containers Used for Paint, Concrete, and Other Materials (4.8.4)

Describe location(s) and controls to minimize the potential for storm water pollution from washout areas for concrete mixers, paint, stucco, etc.

Will washout areas for trucks, applicators, or containers of concrete, paint, or other materials be used at the site? ☑ Yes, ☐ No.

If YES, describe control measures to be implemented to comply with CGP Section 4.8.4.

N/A

10.17.5 Fertilizer or Pesticide Use (4.8.5)

Describe fertilizers and/or pesticides expected to be used and/or stored on-site and procedures for storage of materials to minimize exposure of the materials to storm water.

Will fertilizers or pesticides be used at the site? ☐ Yes, ☑ No.

If YES, describe control measures to be implemented to comply with CGP Section 4.8.5.

N/A

10.18 Spill Notification (4.9)

Describe spill-notification procedures, including relevant federal, state, tribal, and local agency contact information, to be implemented in the event of a leak, spill, or release of hazardous substances or oil that occur at the construction site. Refer to CGP Section 4.9 for permit requirements.

All employees will be instructed to immediately report any spill to the on-site Superintendent who will contact the main office for reporting action. All construction-related discharges of petroleum fuels, oils, dry chemicals, and other substances which may be hazardous to land, water, or people will be reported in compliance with 33 U.S.C. 1251-1387 and 42 U.S.C. 9601-9675 of the Federal Code, 40 CFR 300 of the Federal Regulations, Chapter 75 of Title 18 of the Alaska administrative Code, and Title 46 of the Alaska Statutes.

Notification will also be made to the Alaska Department of Environmental Conservation (ADEC), the Federal Environmental Protection Agency (EPA) and other agencies that may be affected.

1. Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
2. An effort will be made to store only enough products required to do the job.
3. All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
4. Substances will be kept in their original containers with the original manufacturers' label.
5. Substances will not be mixed with one another unless recommended by the manufacturer.
6. Whenever possible, all of a product will be used up before disposing of the container.
7. Manufacturers' recommendations for proper use and disposal will be followed.
8. Materials and equipment necessary for spill cleanup will be made available on short notice.
9. All spills will be cleaned up immediately upon discovery, taking precedence over all other matters, except the health and safety of personnel. Spills will be cleaned up using absorbent pads or other Alaska State DEC approved methods. The containment materials will be disposed of in accordance with 18 ACC 75 and title 46 of the Alaska statues.

10. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
11. Spills of oil and toxic or hazardous material will be reported to the project Engineer and the ADEC (Anchorage office at 907-269-3063 daytime. A 24-hour spill reporting number is 800-478-9300). The following schedule applies to spill reporting:
    a) "as soon as the person has knowledge of a discharge or release of a hazardous substance other than oil
    b) as soon as the person has knowledge of a discharge or release, including a cumulative discharge or release, of oil solely to land in excess of 55 gallons outside an impermeable secondary containment area or structure
    c) within 48 hours after the person has knowledge of discharge or release, including a cumulative discharge, of oil solely to land in excess of 10 gallons, but less than 55 gallons if the discharge or release is the result of the escape or release of oil from its original storage tank, pipeline, or another immediate container into an impermeable secondary containment area or structure" -ADEC 18AAC 75.300
12. After a spill, an oil and hazardous substance spill form will be completed and submitted to ADEC after telephone notification.
13. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it and the cleanup measures will also be included.
14. The site superintendent responsible for the day-to-day site operations will be the spill prevention and cleanup coordinator. The contractor will not store hazardous materials in significant quantities on site, however, the name of responsible spill personnel will be posted at the site entrance with the SWPPP document location.

10.19 Construction and Waste Materials (4.8.6, 5.3.7)

Describe in general terms the type of construction and waste materials expected to be stored at the site, with updates as appropriate, and describe the measures for handling and disposal all wastes generated at the site, including clearing and demolition debris or other waste soils removed from the site, construction and domestic waste, hazardous or toxic waste, and sanitary waste. Refer also to CGP Sections 4.8.3, Staging and Material Storage Areas, and 4.8.6, Storage, Handling, and Disposal of Construction Waste.

The following materials are expected to be on the site at some time during the work and are assumed to be hazardous or contain hazardous substances (toxic, corrosive, ignitable, or explosive). No BMP publication or manual was used for the BMPs described in this sub-section.

- Vehicle and equipment fuels and fluids, oil, and grease
- Vehicle and equipment coolants and windshield washer fluid
- Acid from vehicle and equipment batteries
- Cleaning and disinfecting products, □ Survey marking paints, Fertilizers used in seeding and landscaping
- General litter and waste
- Human sanitary waste and portable toilet chemicals and cleaners.

Litter will be removed from site and placed in designated dumpsters. Dumpsters and waste receptacles will be inspected for over filling and waste/debris surrounding the designated receptacle. Maintenance will be provided by the Civil Contractor within 24 hours of the observance or when deemed necessary by inspection staff in accordance with the CGP.

Portable chemical toilets will be located within the staging area. Portable chemical toilets will be inspected for leaks and receptacle capacity exceedances. Maintenance will be provided by the Civil Contractor within 24 hours of the observance or when deemed necessary by inspection staff in accordance with the CGP.

11.0 INSPECTIONS (5.4; 6.0)

- Minimum requirements for the locations and scope of site inspections are described in the CGP Part 6.4.
- Inspection requirements for linear projects are described in the CGP Part 6.5.
- The person(s) identified in Section 2.0 will be responsible for conducting inspections. Reference or attach the inspection form to be utilized.
- Describe the frequency inspections will occur at your site, including any correlations to storm frequency and intensity.
- Note that inspection details for particular BMPs should be included in Section 11 or Appendix B.
- Document repairs and maintenance you undertake as a result of your inspections. These actions can be documented in the corrective actions log described in Section 11.3 below.
- See suggested inspection form in Section 11.2.
- Retain inspection records in Appendix K.

Inspections will be performed by the on-site Superintendent or the Storm Water Inspector. The inspector will perform the inspection on the schedule described below.

11.1 Inspection Schedules (5.4.1.2; 6.1; 6.2)

- Refer to CGP Part 6.1 for inspection frequency requirements.
- Required inspection frequency is based on mean annual precipitation for the site. Refer to SWPPP section 3.2 for annual precipitation data.
- A permittee may reduce the inspection frequency as described in the CGP Part 6.2. Document the justification for a reduction in inspection frequency, if applicable.
- Identify dates of winter shutdown, if applicable. Refer to CGP Appendix C for definitions of Winter Shutdown, Fall Freeze-Up, and Spring Thaw.
- A permittee must allow an authorized representative of ADEC, EPA or the MS4 operator to conduct a site inspection in accordance with the CGP Section 6.6.

Inspections will be performed by the SWPPP Inspector.

During earth disturbing work inspections are to be conducted once every 7 calendar days.

If the entire site is at least temporarily stabilized, inspection frequency may be reduced to once per month and within 24 hours of the end of a storm event that results in a discharge of pollutants from the site. A storm event is defined as a rainfall event that produces more than 0.5 inch of precipitation in 24 hours and is separated from the previous storm event by at least 3 days of less than 0.1 inch of rain per day and is followed by at least 3 days of weather with less than 0.1 inch of rain per day (inspect on the '4th day'). Rain

event inspections need not be conducted during this period unless the site is active. All changes in inspection frequency must be documented as a SWPPP Amendment.

Estimated date of winter shutdown: Winter shutdown is not anticipated for this site. All areas will be permanently stabilized by the end of October 15th, 2026.

11.2 Inspection Form or Checklist (5.4.1.3; 6.7)

During the project the SWPPP and inspection records will be maintained at the site project office. Records will be maintained for a minimum period of at least three (3) years after the Project is terminated. See sub-section 14.1 for additional requirements and long-term records maintenance locations.

11.3 Corrective Action Procedures (5.4.1.4; 8.0)

Describe actions you will take to repair, replace, and maintain BMPs undertaken based on the inspections and maintenance procedures described above. Include a corrective action log, placed below or as an attachment. This log should describe actions taken, date completed, and note the person who completed the work. Actions related to the findings of inspections should reference the specific inspection report.

The Corrective Action Log in Appendix J will be used for this project. The on-site Superintendent or the Storm Water Lead will maintain the Corrective Action Log according to the following requirements. The Superintendent and Storm Water Lead are the only persons authorized to make entries on the SWPPP Corrective Action Log. The need for corrective action will be documented within 24 hours of discovery. After each Inspection Report has been completed, the corrective action log will be updated with the date of inspection and all proposed corrective actions noted on the Inspection Report. Modification or replacement of a BMP, installation of a new BMP not shown in the original SWPPP, or overdue maintenance (after a sediment trap exceeds design capacity) are corrective actions and must be documented on the Corrective Action Log. After the corrective action has been accomplished, the action taken and whether a SWPPP amendment was needed will be noted and the entry will be dated and initialed.

Corrective Action Log

Records will be maintained for a minimum period of at least three (3) years after the permit is terminated.

11.4 Inspection recordkeeping (5.4.2)

Records will be maintained for a minimum period of at least three (3) years after the permit is terminated.

12.0 MONITORING PLAN (If Applicable) (5.5; 7.0)

12.1 Determination of Need for Monitoring Plan

Use the information collected and presented in Section 7.0 of this SWPPP to help complete this section.

If storm water discharges from the site into a water body with an EPA-established or approved Total Maximum Load (TMDL) for turbidity or sediment, the water body is considered impaired for turbidity or sediment.

If the receiving water is impaired for turbidity or sediment AND the project disturbance is 20 acres or more, then turbidity must be monitored during duration of disturbance and stabilization.

Instructions:

Answer briefly the following questions and determine whether the project has a monitoring requirement for turbidity.

Is there an EPA-established or approved TMDL for?

No.

Is the receiving water listed as impaired for turbidity and/or sediment? ☐ Yes, ☑ No.

If no, there is no monitoring requirement. If YES, answer the following questions.

What is the acreage of the disturbance in the proposed construction project? 2.50 Acres

Is the disturbed acreage equal to or greater than 20 acres? ☐ Yes, ☑ No.

If no, there is no monitoring requirement. If YES, proceed with monitoring template.

A permittee subject to the monitoring requirements of CGP Part 3.2 is required to collect and analyze storm water discharge samples and document monitoring activities with the procedures described in CGP Part 7.0.

12.2 Monitoring Plan Development

If subject to the monitoring requirements of CGP Part 3.2, the permittee must develop a written site-specific monitoring plan for analytical monitoring that includes all the requirements of CGP Part 7.0 and follows the applicable ADEC Quality Assurance Guide for a Water Quality Monitoring Plan (see http://dec.alaska.gov/water/water-quality/quality-assurance/). Most monitoring projects should fall under the Tier 2 Water Quality Monitoring Quality Assurance Project Plan criteria. A *Generic Tier 2 Quality Assurance Project Plan* (http://dec.alaska.gov/media/13137/generictier2qapp.doc) has been developed to assist applicants in developing a project specific QA Water Quality Monitoring QA Plan.

Also see the ADEC storm water website (http://dec.alaska.gov/water/wastewater/stormwater/construction) for information to use in developing the monitoring plan.

Instructions:

- The monitoring plan must be included as a part of the SWPPP as either an appendix or separate SWPPP section. Appendix H of the SWPPP template may be used for this purpose.
- At a minimum, the SWPPP must document the person(s) responsible for conducting monitoring, schedules to be followed for monitoring, any checklist or form that will be used to record monitoring results, and correct action procedures.

Monitoring schedules (5.5.1.2; 7.3.2):

Monitoring form or checklist (5.5.1.3; 7.3.9):

Corrective action procedures (5.5.1.4; 8.0):

12.3 Monitoring Considerations

This section does not need to be filled out but is a list of reminders for the applicant.

- Locate upstream/upgradient sampling point(s) to determine background turbidity in the receiving water body. The location should be reasonably close to discharge but not so close as to experience increased turbidity from discharge. Clearly mark in field and on map in SWPPP.
- Sample the discharge where it enters the receiving water body or where it leaves the construction site. Clearly mark in field and on map in SWPPP.
- The discharge entering the water body impaired for turbidity or sediment must not exceed 5 nephelometric turbidity units (NTU) above natural conditions when the natural turbidity is 50 NTU or less, and may not have more than a 10-percent increase in turbidity when the natural turbidity is more than 50 NTU, not to exceed a maximum increase of 25 NTU.

IF TURBIDITY EXCEEDS ALLOWABLE LEVELS:

- Correct control measures within seven (7) calendar days, update your SWPPP to reflect improvements, submit a Corrective Action Report consistent with the CGP, AND continue daily sampling until discharge meets allowable turbidity.
- If a specific waste-load allocation has been established for turbidity or sediment that would apply to the discharge of storm water from the construction site, the permittee must implement necessary steps to meet that allocation.
- If there is only a general waste-load allocation applicable to construction storm water discharges, the permittee must consult the ADEC to confirm consistency with approved TMDL.

13.0 POST-AUTHORIZATION RECORDS (5.8)

This section does not have to be filled out but is a list of reminders for the applicant. Refer to CGP 5.8 for additional details.

Copy of Permit Requirements (5.8.1)

The SWPPP must contain the following documents:

- copy of CGP (5.8.1.1);
- copy or signed and certified NOI form submitted to ADEC (5.8.1.2);
- upon receipt, a copy of letter from ADEC authorizing permit coverage, providing tracking number (5.8.1.3); and

These documents must be included in Appendix F.

13.1 Additional Documentation Requirements (5.8.2)

- Dates when grading activities occur (5.8.2.1; insert in Appendix G).
- Dates when construction activities temporarily or permanently cease on a portion of the site (5.8.2.1.3; insert in Appendix G).

- Dates when stabilization measures are initiated (5.8.2.1.4; insert in Appendix G).
- Date of beginning and ending period for winter shutdown (5.8.2.2; insert in Appendix G).
- Copies of inspection reports (5.4.2; 5.8.2.3; insert in Appendix K).
- Copies of monitoring reports, if applicable (5.8.2.4; insert in Appendix H).
- Documentation in support of chemical-treatment processes (4.6; 5.8.2.6; insert in Appendix H).
- Documentation of maintenance and repairs of control measures (5.8.2.8; 8.1; 8.2; insert in Appendix J).
- Documentation of any rainfall monitoring records (6.7.1.3)

13.1.1 Records of Employee Training (4.14; 5.8.2.7)

Training staff and subcontractors is an effective BMP. Document all training conducted for your staff, those with specific storm water responsibilities (e.g. installing, inspecting, and maintaining BMPs), and subcontractors. Include dates, number of attendees, subjects covered, and length of training.

Describe Training Conducted:

General storm water and BMP awareness training for staff and subcontractors:

General storm water and BMP awareness training will be conducted by project superintendent.

Detailed training for staff and subcontractors with specific storm water responsibilities:

Those who install and implement BMPs in the project site need to be AK-CESCL certified or at least have some basic understanding of the SWPPP.

Individual(s) Responsible for Training:

Civil contractor / superintendent.

14.0 MAINTAINING AN UPDATED SWPPP (5.9)

This section does not need to be filled out but is a list of reminders for the applicant.

The permittee must modify the SWPPP, including site map(s), in response to any of the following:

- whenever changes are made to construction plans, control measures, good housekeeping measures, monitoring plan (if applicable), or other activities at the site that are no longer accurately reflected in SWPPP (5.9.1.1);
- if inspections of site investigations by staff or by local, state, tribal, or federal officials determine SWPPP modifications are necessary for permit compliance (5.9.1.2); and
- to reflect any revisions to applicable federal, state, tribal, or local laws that affect control measures implemented at the construction site (5.9.1.3).

14.1 Log of SWPPP Modifications (5.9.2)

A permittee must keep a log showing dates, name of person authorizing the change, and a brief summary of changes for all significant SWPPP modifications (e.g., adding new control measures, changes in project design, or significant storm events that cause replacement of control measures). A form to document SWPPP amendments has been placed at the beginning of this template.

14.2 Deadlines for SWPPP Modifications (5.9.3)

Revisions to the SWPPP must be completed within seven days of the inspection that identified the need for a SWPPP modification or within seven days of substantial modifications to the construction plans or changes in site conditions.

15.0 ADDITIONAL SWPPP REQUIREMENTS (5.10)

This section does not have to be filled out but is a list of reminders for the applicant. Refer to the CGP Part 5.10 for additional detail.

15.1 Retention of SWPPP (5.10.1)

A copy of the SWPPP (including a copy of the permit), NOI, and acknowledgement letter from ADEC must be retained at the construction site.

15.2 Main Entrance Signage (5.10.2)

A sign or other notice must be posted conspicuously near the main entrance of the site. The sign or notice must include the permit authorization number assigned to the NOI, Operator Contact Name and phone number for obtaining additional construction site information, and location of the SWPP or name and telephone number of the contact person for scheduling SWPPP viewing times. If the location of the SWPPP or the name and telephone number of the contact person for scheduling SWPPP viewing times has changed (i.e., is different than that submitted to DEC in the NOI), the current location of the SWPPP or name and telephone number of a contact person for scheduling viewing times.

15.3 Availability of SWPPP (5.10.3)

The permittee must keep a current copy of the SWPPP at the site. The SWPPP must be made available to subcontractors, government and tribal agencies, and MS4 operators, upon request.

15.4 Signature and Certification (5.10.4)

The SWPPP must be signed and certified in accordance with the requirements of the CGP Appendix A, Part 1.12. The certification form on page ii of this template meets the requirements of this paragraph.

15.5 Submittal of a Modification to NOI (2.7)

Note: A permittee must file an NOI modification form to DEC (see Permit Part 2.3) to update or correct the following information on the original NOI within 30 calendar days of the change:

- Owner/Operator address and contact information;
- Site information;
- Estimated start or end dates;
- Number of acres to be disturbed; or
- SWPPP location and contact information.

APPENDICES

APPENDIX A – SITE MAPS AND DRAWINGS

APPENDIX B – BMP DETAILS

APPENDIX C – PROJECT SCHEDULE

APPENDIX D – SUPPORTING DOCUMENTATION:

- TMDL
- ENDANGERED SPECIES
- OTHER PERMITS

APPENDIX E – DELEGATION OF AUTHORITY, SUBCONTRACTOR CERTIFICATIONS

APPENDIX F – PERMIT CONDITIONS:

- COPY OF SIGNED NOTICE OF INTENT
- COPY OF LETTER FROM ADEC AUTHORIZING COVERAGE
- ADEC NOI TRACKING NUMBER
- COPY OF ALASKA CONSTRUCTION GENERAL PERMIT

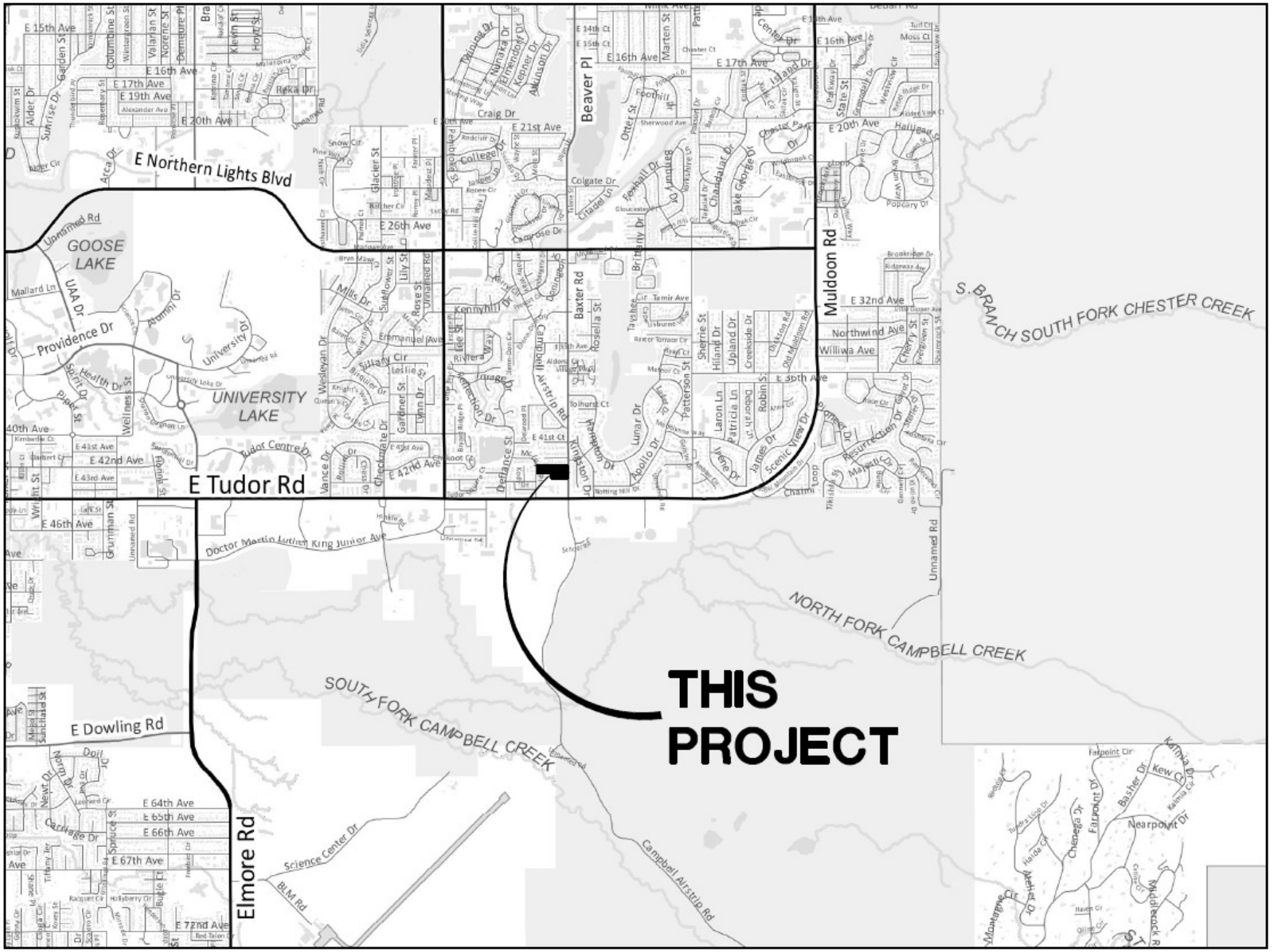
APPENDIX G – GRADING AND STABILIZATION RECORDS

APPENDIX H – MONITORING PLAN (IF APPLICABLE) AND REPORTS

APPENDIX I – TRAINING RECORDS

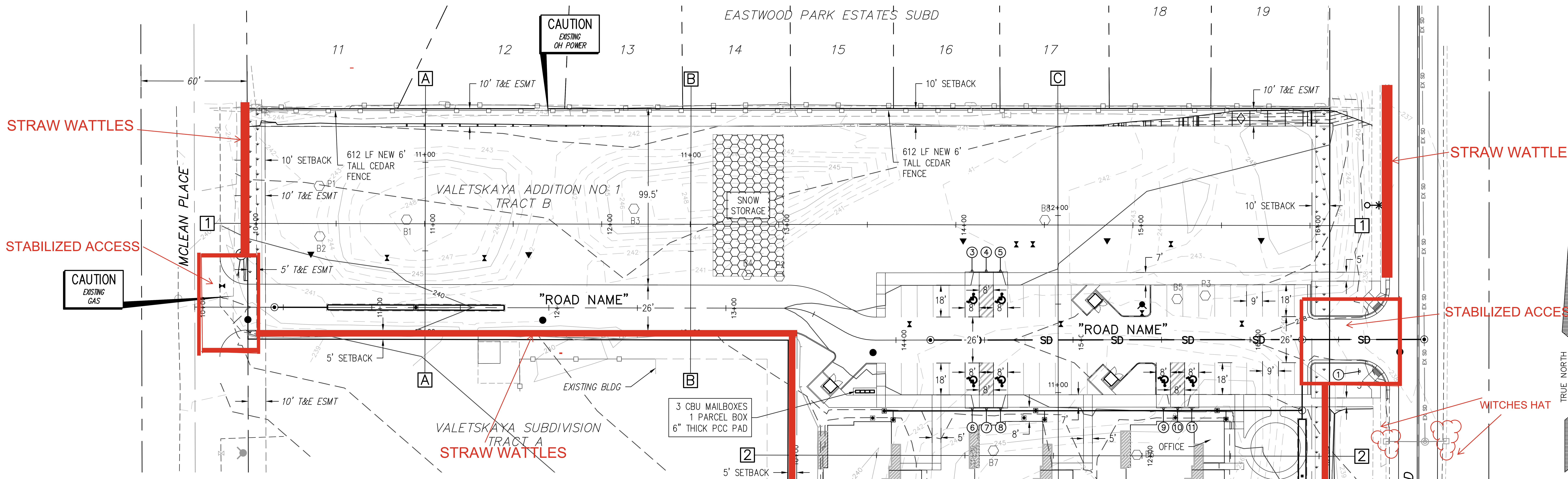
APPENDIX J – CORRECTIVE ACTION LOG

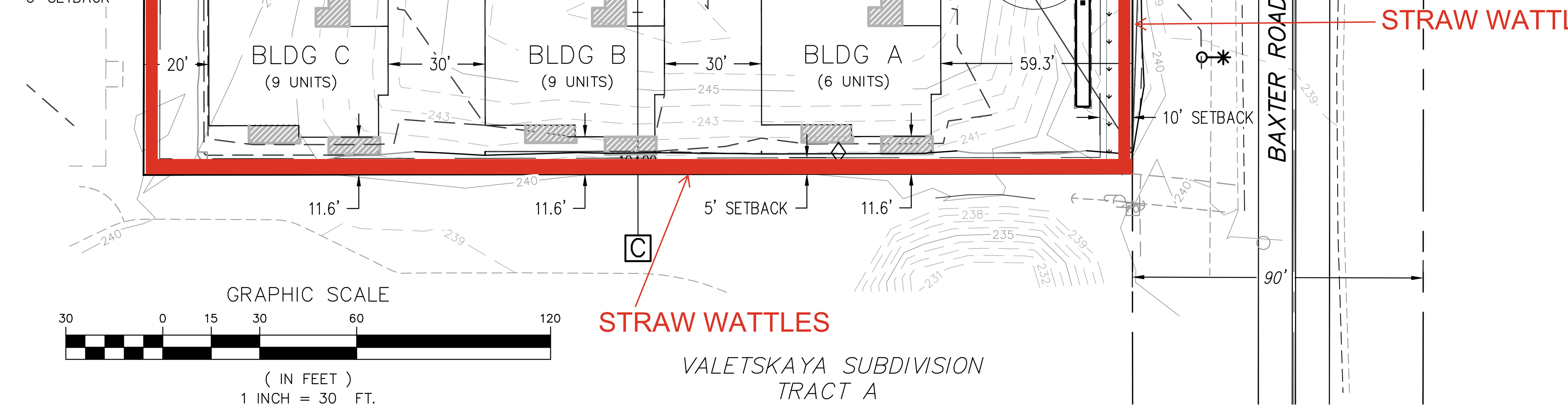
APPENDIX K – INSPECTION RECORDS



LOCATION MAP

SEE SHEET C2 FOR TYPICAL SECTIONS
SEE SHEET C4 FOR DEMO PLAN
SEE SHEET C5 FOR SITE PLAN





GRADING NOTES

1. STABILIZE ALL DISTURBED AREAS AFTER CONSTRUCTION IN COMPLIANCE WITH THE LANDSCAPING PLAN AS WELL AS THE EROSION AND SEDIMENTATION CONTROL PLAN.
2. ALL FILL SHALL BE PLACED IN ONE FOOT LIFTS, MAXIMUM, AND COMPACTED TO 95% MINIMUM AND IN COMPLIANCE WITH THE SOILS ENGINEER'S RECOMMENDATIONS. NO ROCK OR SIMILAR IRREDUCIBLE MATERIAL WITH A MAXIMUM DIMENSION GREATER THAT 12 INCHES SHALL BE BURIED OR PLACED IN FILLS.
3. PER AMCR 23.105.111.3, THE TOE OF FILL SLOPES SHALL BE MADE NOT NEARER TO THE SITE BOUNDARY LINE THAN ONE-HALF THE HEIGHT OF THE SLOPE WITH A MINIMUM OF TWO (2) FEET AND A MAXIMUM OF TWENTY (20) FEET.
4. THE CONTRACTOR SHALL SCHEDULE INSPECTIONS AT THE START OF WORK, FIFTY PERCENT (50%) COMPLETION, ONE HUNDRED PERCENT (100%) COMPLETION AND AT SIGNIFICANT STAGES OUTLINED BY THE ENGINEER.
5. FILL SLOPES SHALL NOT BE CONSTRUCTED ON NATURAL SLOPES STEEPER THAN 1 UNIT VERTICAL IN 2 UNITS HORIZONTAL (50% SLOPE). WHERE SLOPES ARE STEEPER THAN 1 UNIT VERTICAL IN 5 UNITS HORIZONTAL (20% SLOPE) AND THE FILL HEIGHT IS GREATER THAN 5 FEET, A BENCH UNDER THE TOE OF THE FILL SHALL BE INSTALLED AT LEAST 10 FEET WIDE.
6. AREA OF DISTURBANCE 1.65 ACRES.
7. HOURS OF OPERATION WILL BE BETWEEN 6:00 A.M. TO 10:00 P.M., MON.-SAT. ANY WORK SCHEDULED TO OCCUR OUTSIDE THESE HOURS OF OPERATION WILL REQUIRE A NOISE PERMIT PER AMC 15.07.070.
8. TYLER ROBINSON, OF COOK INLET HOUSING AUTHORITY, HAS HIRED TERRA FIRMA TESTING, TO PERFORM THE SPECIAL INSPECTIONS.
9. TERRA FIRMA TESTING WILL PERFORM THE REQUIRED TESTING FOR COMPACTION AS WELL AS OBSERVATIONS DURING PREPARATION OF THE NATURAL GROUND PRIOR TO FILL OPERATIONS PER IBC TABLE 1704.7 WHICH REQUIRES CONTINUOUS INSPECTION DURING FILL PLACEMENT.
10. HAUL ROUTE FROM PROJECT SITE IS: E. 11TH COURT, MULDOON ROAD, GLENN HIGHWAY, EKLUTNA PARK DRIVE TO EKLUTNA PIT. TO PROJECT SITE: EKLUTNA PARK DRIVE, GLENN HIGHWAY, MULDOON ROAD, E. 11TH COURT TO PROJECT ENTRANCE.
11. PERMANENT CUT/FILL SLOPES TO BE 2:1 MAX.
12. QUANTITIES: CUT = 1,000 C.Y., FILL = 7,000 C.Y. (INCLUDES IMPORT)
13. PER AMCR 23.105.111.2, THE TOP OF CUT SLOPES SHALL NOT BE MADE NEARER TO A SITE BOUNDARY LINE THAN ONE-FIFTH OF THE VERTICAL HEIGHT OF CUT WITH A MINIMUM OF TWO (2) FEET AND A MAXIMUM OF TEN (10) FEET. THE SETBACK MAY NEED TO BE INCREASED FOR ANY REQUIRED INTERCEPTOR DRAINS.
14. THE CONTRACTOR SHALL MAINTAIN OPEN AND UNOBSTRUCTED ROUTES DAILY UNTIL CONSTRUCTION IS COMPLETE.
15. NO FILL MATERIAL WILL BE PLACED IF FROZEN AND NO FILL SHALL BE PLACED ON FROZEN MATERIAL.
16. A RIGHT OF WAY PERMIT IS REQUIRED FOR ANY WORK WITHIN THE MOA RIGHTS OF WAY.
17. MAINTAIN MINIMUM 5% AND 2% POSITIVE DRAINAGE PATTERNS AWAY FROM THE BUILDINGS IN AREAS OF LANDSCAPING AND HARDSCAPING RESPECTIVELY.
18. ALL ORGANICS AND LOOSE FILL ENCOUNTERED BELOW THE BUILDING FOOTPRINT SHALL BE REMOVED RECOMPACTED TO MINIMUM 95% OF MAXIMUM DENSITY. THE BUILDING FOOTPRINT EXTENDS AT A 1:1 SLOPE FROM THE BOTTOM OF THE FOUNDATION AND SHALL BE FOUNDED ON COMPETENT SOILS.
19. THE GROUND SURFACE SHALL BE PREPARED TO RECEIVE FILL BY REMOVING VEGETATION AND SCARIFYING TO PROVIDE A BOND WITH THE NEW FILL.
20. CONFIGURE DOWNSPOUTS SUCH THAT WATER DOES NOT DRAIN ONTO THE SIDEWALK.

SPECIAL INSPECTION NOTES

1. ITEMS MARKED WITH AN "X" REQUIRE INSPECTION BY A SPECIAL INSPECTOR.
2. TESTING AND INSPECTION REPORTS SHALL BE SUBMITTED TO THE ARCHITECT-ENGINEER, BUILDING OFFICIAL, OWNER AND CONTRACTOR.

SPECIAL SOIL INSPECTION & TESTING SCHEDULE (IBC 1704.7 & TABLE 1704.7) VERIFICATION AND INSPECTION TASK	CONTINUOUS INSPECTION	PERIODIC INSPECTION
1. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.		X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.		X
3. PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS.		X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL.	X	
5. PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.		X

SIGN SCHEDULE

POST	SHEET	POST SIZE (TELSPAR)	STREET	STATION	OFFSET	DIRECTION SIGN FACES	NAME	SIGN CODE	SIZE	AREA(SF)	STREET BLOCK NO.
1	C6	2.5"x2.5"	NEW ROAD	16+61.76	18.00 R	WEST	STOP	R1-1	30"x30"	6.25	-
						N/S	NEW ROAD	D3-1P	8"x VARIES	VARIES	????
						E/W	BAXTER ROAD	D3-101	8"x VARIES	VARIES	????
2	C6	2.5"x2.5"	NEW ROAD	10+24.28	18.20 L	EAST	STOP	R1-1	30"x30"	6.25	-
						N/S	NEW ROAD	D3-1P	8"x VARIES	VARIES	????
						E/W	MCLEAN PLACE	D3-101	8"x VARIES	VARIES	????
3	C6	2.0"x2.0"	NEW ROAD	14+43.03	39.00' L	SOUTH	RESERVED PARKING	R7-8	12"x18"	1.50	
						SOUTH	VAN ACCESSIBLE	R7-8A	12"x6"	0.50	-
4	C6	2.0"x2.0"	NEW ROAD	14+51.03	39.00' L	SOUTH	NO PARKING	R7P-101	12"x18"	1.50	-
5	C6	2.0"x2.0"	NEW ROAD	14+59.03	39.00' L	SOUTH	RESERVED PARKING	R7-8	12"x18"	1.50	-
6	C6	2.0"x2.0"	NEW ROAD	14+43.04	39.00' R	NORTH	RESERVED PARKING	R7-8	12"x18"	1.50	-
7	C6	2.0"x2.0"	NEW ROAD	14+51.04	39.00' R	NORTH	NO PARKING	R7P-101	12"x18"	1.50	-
8	C6	2.0"x2.0"	NEW ROAD	14+59.04	39.00' R	NORTH	RESERVED PARKING	R7-8	12"x18"	1.50	-
						NORTH	VAN ACCESSIBLE	R7-8A	12"x6"	0.50	-
9	C6	2.0"x2.0"	NEW ROAD	15+51.04	39.00' R	NORTH	RESERVED PARKING	R7-8	12"x18"	1.50	-
10	C6	2.0"x2.0"	NEW ROAD	15+59.04	39.00' R	NORTH	NO PARKING	R7P-101	12"x18"	1.50	-
11	C6	2.0"x2.0"	NEW ROAD	15+67.04	39.00' R	NORTH	RESERVED PARKING	R7-8	12"x18"	1.50	-
						NORTH	VAN ACCESSIBLE	R7-8A	12"x6"	0.50	-

SIGN NOTES
1. SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH MASS.
2. UPPER/LOWER CASE DESIGN TO BE USED FOR ALL STREET NAME SIGNS (D3-101) & D3-1P PER MUTCD SECTION 2D.43.

AWWU Private Systems Number PS25-___
Master Fill & Grade Permit Number C25-____

AWWU PLAN SET NO. 00000

STATE OF ALASKA 49TH BRANDON J. MARCOTT CE 12601 2.28.2025 REGISTERED PROFESSIONAL ENGINEER

TRIAD ENGINEERING, LLC
P.O. Box 111989
Anchorage, Alaska 99511
(907) 561-6537
www.triadak.com
COA# 128635

RECORD DRAWING
1. DATA PROVIDED
BY:
This will serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
CONTRACTOR:
BY:
TITLE: DATE:
2. DATA TRANSFERRED
BY:
COMPANY:
DATE:
3. DATA TRANSFER CHECKED
Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
BY:
COMPANY:
BY:
TITLE: DATE:

VALETSKAYA ADDITION NO 1
TRACT B
GRADING PLAN

DATE	REVISIONS	BY	CKD

DESIGNED BJM | DRAWN BJM | CHECKED GWM
FILE: BAXTER MULTI-FAMILY
JOB NO. 24-155 | CASE: N/A | DATE: FEB 2025
SCALE: HORIZ: 1"=30' VERT: | GRID: SW1738

SHEET C6 OF 14

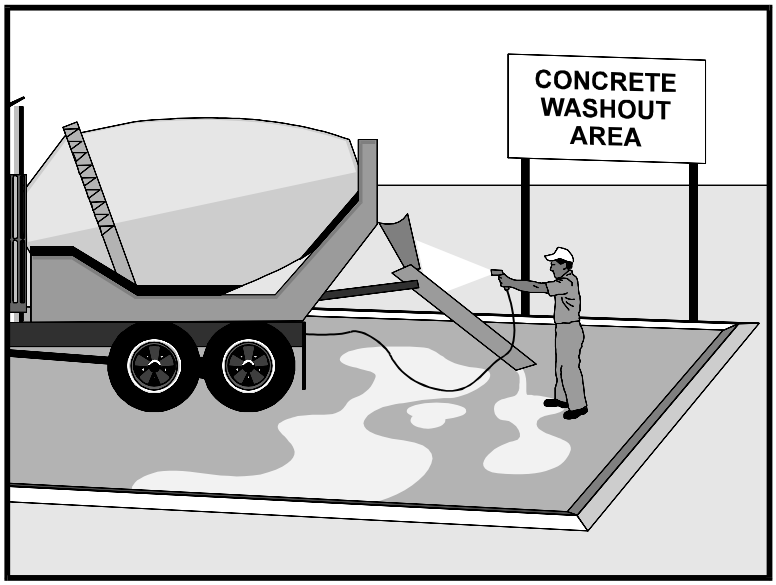
Appendix B

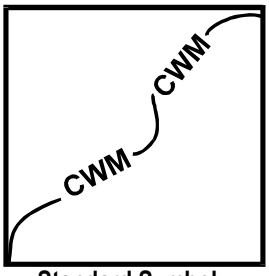
BMP Details

1. Concrete Washout
2. Dust Control
3. Hydraulic Planting
4. Inlet Protection
5. Paving
6. Retention Pond
7. Septic Waste Management
8. Silt Fence
9. Site Waste Management
10. Spill Control
11. Stockpile Management
12. Straw Wattles
13. Street Sweeping
14. Surface Roughening
15. Vegetation Preservation
16. Vegetation Buffer Strip
17. Vehicle Fueling
18. Vehicle Maintenance
19. Vehicle Tracking Entry

Concrete Waste Management

WM-8





Standard Symbol

P ecti es

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

These are procedures and practices that are designed to minimize or eliminate the discharge of concrete waste materials to the storm drain systems or watercourses.

Appropriate Applications

- Concrete waste management procedures and practices are implemented on construction projects where concrete is used as a construction material or where concrete dust and debris result from demolition activities.
- Where slurries containing portland cement concrete (PCC) or asphalt concrete (AC) are generated, such as from sawcutting, coring, grinding, grooving, and hydro-concrete demolition.
- Where concrete trucks and other concrete-coated equipment are washed on site, when approved by the Resident Engineer (RE). See also NS-8, "Vehicle and Equipment Cleaning."
- Where mortar-mixing stations exist.

Limitations

- None identified.

Standards and Specifications

Education

- Educate employees, subcontractors, and suppliers on the concrete waste management techniques described herein.
- The Contractor's Water Pollution Control Manager (WPCM) shall oversee and enforce concrete waste management procedures.

Concrete Demolition Wastes

- Stockpile concrete demolition wastes in accordance with BMP WM-3, "Stockpile Management."
- Disposal of hardened PCC and AC waste shall be in conformance with

Standard Specifications Section 7-1.13 or 15-3.02.

Concrete Slurry Waste Management and Disposal

- PCC and AC waste shall not be allowed to enter storm drainage systems or watercourses.
- A sign shall be installed adjacent to each temporary concrete washout facility to inform concrete equipment operators to utilize the proper facilities as shown on Page 7.
- A foreman and/or construction supervisor shall monitor onsite concrete working tasks, such as saw cutting, coring, grinding and grooving to ensure proper methods are implemented.
- Residue from saw cutting, coring and grinding operations shall be picked up by means of a vacuum device. Residue shall not be allowed to flow across the pavement and shall not be left on the surface of the pavement. See also BMP NS-3, "Paving and Grinding Operations."
- Vacuumed slurry residue shall be disposed in accordance with BMP WM-5, "Solid Waste Management" and Standard Specifications Section 7-1.13. Slurry residue shall be temporarily stored in a facility as described in "Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures" below), or within an impermeable containment vessel or bin approved by the Engineer.
- Collect and dispose of all residues from grooving and grinding operations in accordance with Standard Specifications Section 7-1.13, 42-1.02 and 42-2.02.

Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures

- Temporary concrete washout facilities shall be located a minimum of 15 m (50 ft) from storm drain inlets, open drainage facilities, and watercourses, unless determined infeasible by the RE. Each facility shall be located away from construction traffic or access areas to prevent disturbance or tracking.
- A sign shall be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities. The sign shall be installed as shown on the plans and in conformance with the provisions in Standard Specifications Section 56-2, Roadside Signs.
- Temporary concrete washout facilities shall be constructed above grade or below grade at the option of the Contractor. Temporary concrete washout facilities shall be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations.
- Temporary washout facilities shall have a temporary pit or bermed areas of sufficient volume to completely contain all liquid and waste concrete

materials generated during washout procedures.

- Perform washout of concrete mixers, delivery trucks, and other delivery systems in designated areas only.
- Wash concrete only from mixer chutes into approved concrete washout facility. Washout may be collected in an impermeable bag or other impermeable containment devices for disposal.
- Pump excess concrete in concrete pump bin back into concrete mixer truck.
- Concrete washout from concrete pumper bins can be washed into concrete pumper trucks and discharged into designated washout area or properly disposed offsite.
- Once concrete wastes are washed into the designated area and allowed to harden, the concrete shall be broken up, removed, and disposed of in conformance with the provisions in Standard Specifications Section 7-1.13 or 15-3.02.

Temporary Concrete Washout Facility Type "Above Grade"

- Temporary concrete washout facility Type "Above Grade" shall be constructed as shown on Page 6 or 7, with a recommended minimum length and minimum width of 3 m (10 ft), but with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations. The length and width of a facility may be increased, at the Contractor's expense, upon approval from the RE.
- Straw bales, wood stakes, and sandbag materials shall conform to the provisions in BMP SC-9, "Straw Bale Barrier."
- Plastic lining material shall be a minimum of 10-mil polyethylene sheeting and shall be free of holes, tears or other defects that compromise the impermeability of the material. Liner seams shall be installed in accordance with manufacturers' recommendations.
- Portable delineators shall conform to the provisions in Standard Specifications Section 12-3.04, "Portable Delineators." The delineator bases shall be cemented to the pavement in the same manner as provided for cementing pavement markers to pavement in Standard Specifications Section 85-1.06, "Placement." Portable delineators shall be applied only to a clean, dry surface.

Temporary Concrete Washout Facility (Type Below Grade)

- Temporary concrete washout facility Type "Below Grade" shall be constructed as shown on page 6, with a recommended minimum length and minimum width of 3m (10 ft). The quantity and volume shall be sufficient to contain all liquid and concrete waste generated by washout operations. The length and width of a facility may be increased, at the Contractor's expense,

upon approval of the RE. Lath and flagging shall be commercial type.

- Plastic lining material shall be a minimum of 10-mil polyethylene sheeting and shall be free of holes, tears or other defects that compromise the impermeability of the material. Liner seams shall be installed in accordance with manufacturers' recommendations.

- The soil base shall be prepared free of rocks or other debris that may cause tears or holes in the plastic lining material.

Removal of Temporary Concrete Washout Facilities

- When temporary concrete washout facilities are no longer required for the work, as determined by the RE, the hardened concrete shall be removed and disposed of in conformance with the provisions in Standard Specifications Section 7-1.13 or 15-3.02. Disposal of PCC dried residues, slurries or liquid waste shall be disposed of outside the highway right-of-way in conformance with provisions of Standard Specifications Section 7-1-13. Materials used to construct temporary concrete washout facilities shall become the property of the Contractor, shall be removed from the site of the work, and shall be disposed of outside the highway right-of-way in conformance with the provisions of the Standard Specifications, Section 7-1.13.

- Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities shall be backfilled and repaired in conformance with the provisions in Standard Specifications Section 15-1.02, "Preservation of Property."

Maintenance and Inspection

- The Contractor's Water Pollution Control Manager (WPCM) shall monitor on site concrete waste storage and disposal procedures at least weekly or as directed by the RE.

- The WPCM shall monitor concrete working tasks, such as saw cutting, coring, grinding and grooving daily to ensure proper methods are employed or as directed by the RE.

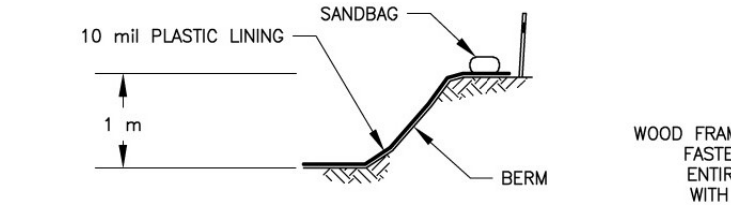
- Temporary concrete washout facilities shall be maintained to provide adequate holding capacity with a minimum freeboard of 100 mm (4 inches) for above grade facilities and 300 mm (12 inches) for below grade facilities. Maintaining temporary concrete washout facilities shall include removing and disposing of hardened concrete and returning the facilities to a functional condition. Hardened concrete materials shall be removed and disposed of in conformance with the provisions in Standard Specifications Section 7-1.13 or 15-3.02.

- Existing facilities must be cleaned, or new facilities must be constructed and ready for use once the washout is 75% full.

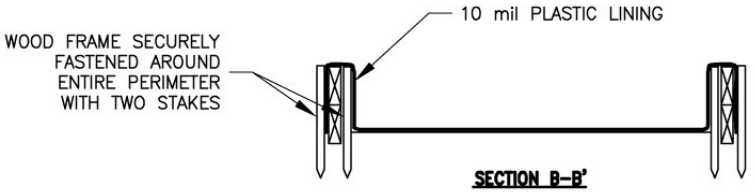
- Temporary concrete washout facilities shall be inspected for damage (i.e.

tears in polyethylene liner, missing sandbags, etc.). Damaged facilities shall be repaired.

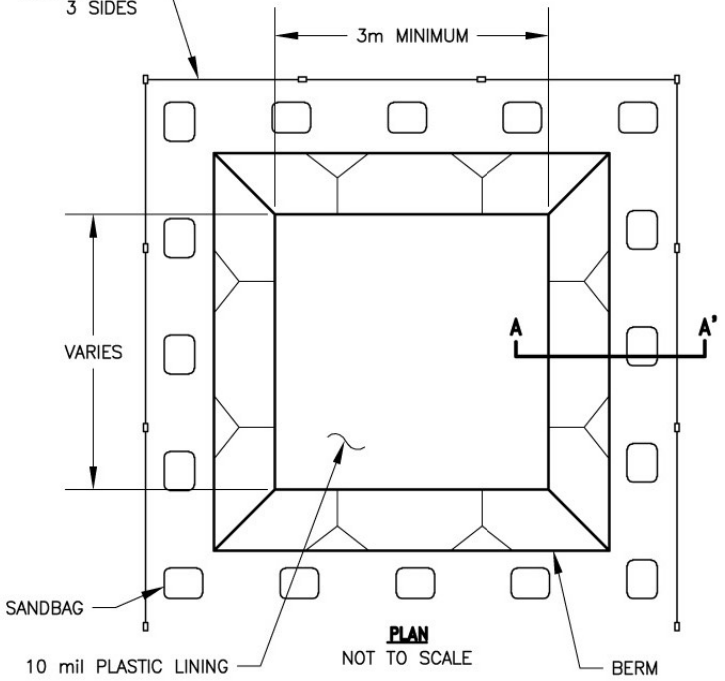
Concrete Waste Management



SECTION A–A'
NOT TO SCALE

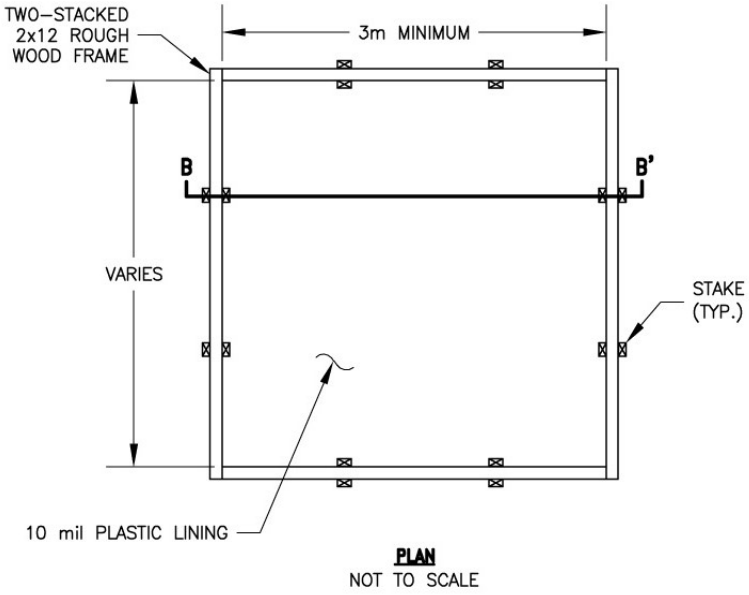


SECTION B–B'
NOT TO SCALE



PLAN
NOT TO SCALE

TYPE "BELOW GRADE"



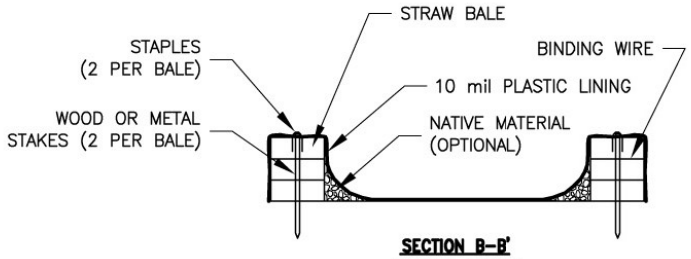
PLAN
NOT TO SCALE

TYPE "ABOVE GRADE" WITH WOOD PLANKS

NOTES:

1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN (SEE PAGE 6) SHALL BE INSTALLED WITHIN 10 m OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

Concrete Waste Management



SECTION B–B'
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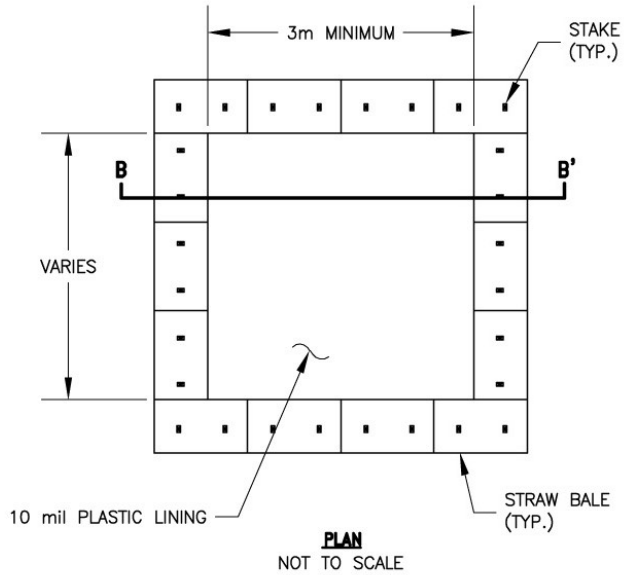
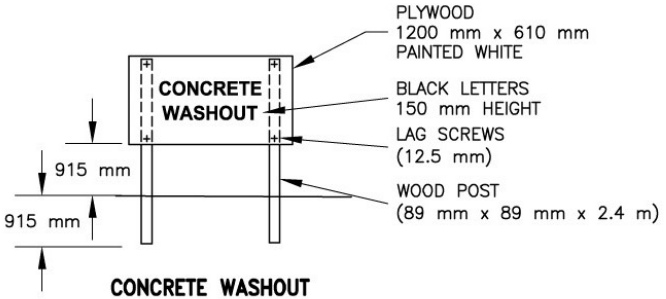
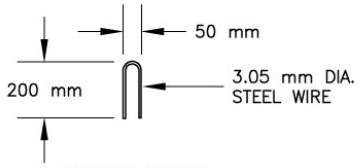


PLAN
NOT TO SCALE

TYPE "ABOVE GRADE" WITH STRAW BALES



CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)



STAPLE DETAIL

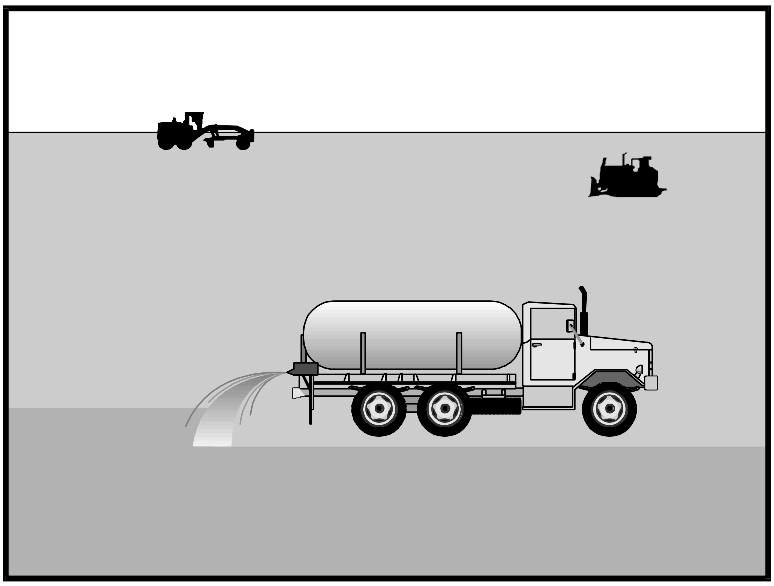
NOTES:

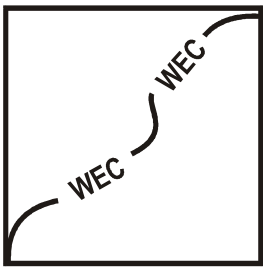
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN (SEE FIG. 4–15) SHALL BE INSTALLED WITHIN 10 m OF THE TEMPORARY CONCRETE WASHOUT FACILITIY.

CALTRANS/FIG4–14.DWG SAC 8–14–02

Wind Erosion Control

WE-1





Standard Symbol

BMP Objectives

- ● Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ● Wind Erosion Control
- ○ Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Wind erosion control consists of applying water and/or other dust palliatives as necessary to prevent or alleviate erosion by the forces of wind. Dust control shall be applied in accordance with Caltrans standard practices. Covering of small stockpiles or areas is an alternative to applying water or other dust palliatives.

Appropriate Applications

- This practice is implemented on all exposed soils subject to wind erosion.

Limitations

- Effectiveness depends on soil, temperature, humidity and wind velocity.

Standards and Specifications

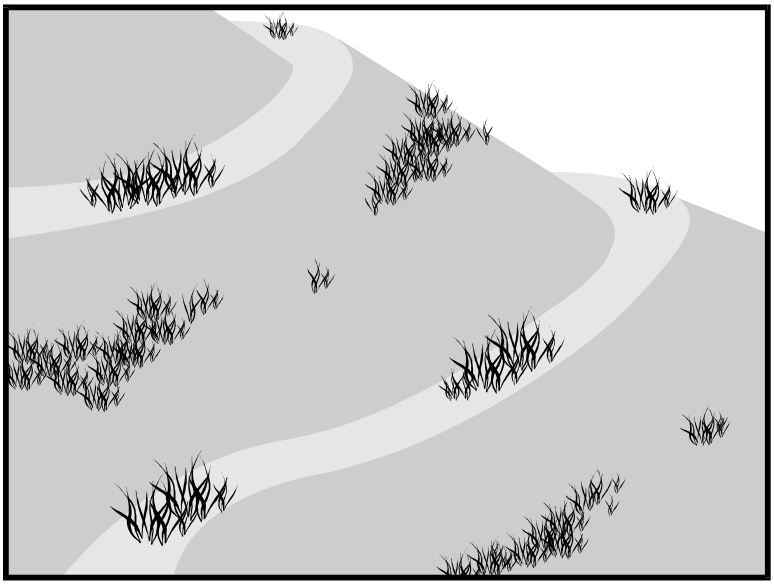
- Water shall be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution.
- All distribution equipment shall be equipped with a positive means of shutoff.
- Unless water is applied by means of pipelines, at least one mobile unit shall be available at all times to apply water or dust palliative to the project.
- If reclaimed water is used, the sources and discharge must meet California Department of Health Services water reclamation criteria and the Regional Water Quality Control Board requirements. Non-potable water shall not be conveyed in tanks or drain pipes that will be used to convey potable water and there shall be no connection between potable and non-potable supplies. Non-potable tanks, pipes and other conveyances shall be marked "NON-POTABLE WATER - DO NOT DRINK."
- Materials applied as temporary soil stabilizers and soil binders will also provide wind erosion control benefits.

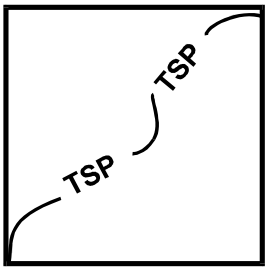
Maintenance and Inspection

- Check areas that have been protected to ensure coverage.

Hydroseeding

SS-4





Standard Symbol

BMP Objectives

- ● Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ● Wind Erosion Control
- ○ Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Hydroseeding typically consists of applying a mixture of wood fiber, seed, fertilizer, and stabilizing emulsion with hydro-mulch equipment, which temporarily protects exposed soils from erosion by water and wind. This is one of five temporary soil stabilization alternatives to consider.

Appropriate Applications

- Hydroseeding is applied on disturbed soil areas requiring temporary protection until permanent vegetation is established or disturbed soil areas that must be re-disturbed following an extended period of inactivity.

Limitations

- Hydroseeding may be used alone only when there is sufficient time in the season to ensure adequate vegetation establishment and erosion control. Otherwise, hydroseeding must be used in conjunction with a soil binder or mulching (i.e., straw mulch), refer to BMP SS-5, Table 1 for options.
- Steep slopes are difficult to protect with temporary seeding.
- Temporary seeding may not be appropriate in dry periods without supplemental irrigation.
- Temporary vegetation may have to be removed before permanent vegetation is applied.
- Temporary vegetation is not appropriate for short-term inactivity.

Hydroseeding

SS-4

Standards and Specifications

To select appropriate hydroseeding mixtures, an evaluation of site conditions shall be performed with respect to:

- Soil conditions
- Site topography
- Season and climate
- Vegetation types
- Maintenance requirements
- Sensitive adjacent areas
- Water availability
- Plans for permanent vegetation

- Selection of hydroseeding mixtures shall be approved by the District Landscape Architect and the Construction Storm Water Coordinator.

The following steps shall be followed for implementation:

- Seed mix shall comply with the Standard Specifications Section 20-2.10, and the project's special provisions.

- Hydroseeding can be accomplished using a multiple-step or one-step process; refer to the special provisions for specified process. The multiple-step process ensures maximum direct contact of the seeds to soil. When the one-step process is used to apply the mixture of fiber, seed, etc., the seed rate shall be increased to compensate for all seeds not having direct contact with the soil.

- Prior to application, roughen the slope, fill area, or area to be seeded with the furrows trending along the contours. Rolling with a crimping or punching type roller or track walking is required on all slopes prior to hydroseeding. Track walking shall only be used where other methods are impractical.

- Apply a straw mulch to keep seeds in place and to moderate soil moisture and temperature until the seeds germinate and grow, refer to Standard Specifications Sections 20-2.06 and 20-3.03.

- All seeds shall be in conformance with the California State Seed Law of the Department of Agriculture. Each seed bag shall be delivered to the site sealed and clearly marked as to species, purity, percent germination, dealer's guarantee, and dates of test; provide the Resident Engineer (RE) with such documentation. The container shall be labeled to clearly reflect the amount of Pure Live Seed (PLS) contained. All legume seed shall be pellet-inoculated. Inoculant sources shall be species-specific and shall be applied at a rate of 2 kg of inoculant per 100 kg of seed (2-lb inoculant per 100-lb seed), refer to Standard Specifications Section 20-2.10.

- Commercial fertilizer shall conform to the requirements of the California Food and Agricultural Code. Fertilizer shall be pelleted or granular form.

- Follow-up applications shall be made as needed to cover weak spots, and to maintain adequate soil protection.
- Avoid over-spray onto the traveled way, sidewalks, lined drainage channels, and existing vegetation.

Maintenance and Inspection

- All seeded areas shall be inspected for failures and re-seeded, fertilized, and mulched within the planting season, using not less than half the original application rates. Any temporary revegetation efforts that do not provide adequate cover must be reapplied at a scheduled recommended by the Caltrans Landscape Architect or RE.
- After any rainfall event, the Contractor is responsible for maintaining all slopes to prevent erosion.

Ultra-Drain Guard

Part# 9217 / 9356	Oil & Sediment Model, 1-Pack	Part# 9376	Ultimate Model, 1-Pack
Part# 9218	Oil & Sediment Model, 10-Pack	Part# 9377	Ultimate Model, 10-Pack
Part# 9393	Oil & Sediment Model, High Capacity, 1-Pack	Part# 9378	Recycled Model, 1-Pack
Part# 9219 / 9358	Oil & Sediment Plus Model, 1-Pack	Part# 9379	Recycled Model, 10-Pack
Part# 9220	Oil & Sediment Plus Model, 10-Pack		

I STA ATI A AI T A C I ST CTI S

Installation:

1. Remove catch basin grating
2. Clean dirt and debris from grating ledge
3. Insert Drain Guard. If using the Ultra-Drain Guard High Capacity Model, Part# 9393, Ultra-Drain Guard Retainers must be used – see below for installation instructions
4. Reinstall grate. To insure maximum effectiveness, Drain Guard skirt should be secured (pinched) between grating and ledge.
5. Cut the excess fabric off with a blade or knife if desired.

Installation ith o tional ltra rain uar etainers Part

- Follow steps 1 and 2 above. Insert Retainer through handling straps of Drain Guard. (Each Retainer should be holding two straps).
- Insert Drain Guard, placing Retainers across basin opening so that flat plates lay on grating ledge.
- Follow steps 4 and 5 above.

Maintenance and disposal:

1. The Ultra-Drain Guard filters are designed to be used for 3 to 6 months under normal conditions. Where heavy contamination is present the unit will have a reduced life expectancy. When the unit has collected about 6 inches of sediment it is recommended that it be replaced. The unit should also be replaced if free oil can be seen floating and is not being absorbed. The Ultra-Drain Guards should be inspected on a regular basis.
2. Dispose of unit in accordance with applicable Federal, state and local environmental laws and regulations. The user is solely responsible for compliance with maintenance and disposal laws and regulations. The manufacturer or seller assumes no responsibility for proper or improper maintenance or disposal.
3. Part# 9393 (High Capacity model) is equipped with two lifting straps to facilitate in removal of the Ultra-Drain Guard using a forklift or other lifting device, as this model can hold up to 300 lbs. of sediment.

Catch asin Inserts BMP 6

Description

Catch basin inserts are devices installed under a storm-drain grate that provide water quality treatment through filtration, settling, or adsorption. Catch basin inserts are commercially available products and are generally configured to remove one or more of the following contaminants: coarse sediment, oil and grease, and litter and debris. Units should be routinely maintained to achieve maximum removal efficiency. Maintenance frequency will vary depending on the amount and type of pollutant targeted.

Applications

Studies performed by King County, WA, have found catch basin inserts to be nominally effective at removing fine (silt and clay) sediment and associated pollutants. Inserts were successful in capturing coarse material and debris. Hydrocarbons. Product removal efficiencies for inserts in good condition ranged from 20 to 90% when exposed to oil concentrations near the high end for urban runoff, and performance dropped off rapidly with use. Possible locations for catch-basin insert implementation include parking lots, gas stations, golf courses, streets, driveways, industrial or commercial facilities, and municipal corporation yards.

Limitations

Drainage area – 5000 square feet
Minimum bedrock depth - N/A
NRCS soil type – N/A
Drainage/flood control – no
Max slope – unlimited
Minimum water table – N/A
Freeze/thaw – fair

The greatest difficulties facing those implementing catch-basin inserts for stormwater treatment lie in the small space inside the catch basin, the tendency for sediments to clog or blind filter media, and the fluctuating nature of the flow. Catch-basin inserts are very maintenance-intensive. Check with the parties that will be required to maintain these systems prior to design and installation. The problems may be compounded from street sanding and other activities.

Targeted Pollutants

Sediment – 35%
Phosphorus – 5%
Trace metals
Hydrocarbons

Design Parameters

The catch-basin insert should meet the following criteria:

- The total maximum tributary area should be 5,000 square feet (+ 5%) per unit for new development projects and 7, 000 feet per unit for redevelopment projects.
- A catch-basin insert for a new development project should be designed to fit with a standard grate. If the insert is installed in an existing catch basin, the insert should be demonstrated to fit properly so that there is a positive

seal around the grate to prevent low-flow bypass. The maximum height of the grate above the top of the frame, with the insert installed, should not exceed 3/16 inch, and the grate should be non-rocking.

- The bottom of the filter media (oil absorbent/absorbent material) should be above the level of normal low flows. If the media is above the crown of the outlet pipe, it is assumed to be above the normal low flows. An alternative method to demonstrate that the media is above the normal low flow is to show (by backwater analysis method) that the bottom of the media is above the water surface elevation corresponding to the water quality design flow.
- The catch basin insert should be located to be accessible as needed for maintenance and not limited by continuous vehicle parking. This may require elimination of a parking stall for redevelopment projects.
- While no pretreatment is required with a catch-basin insert, the use of source control BMPs on the site will decrease maintenance needs.

Construction Guidelines

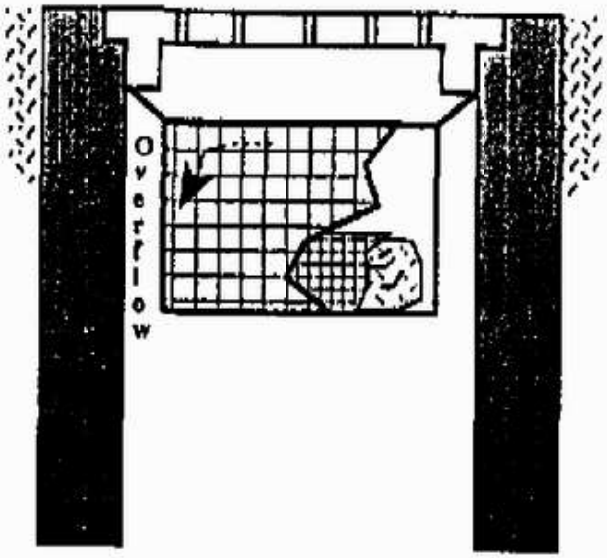
Installation of a catch-basin insert for a new or redevelopment project should follow the manufacturer's recommended procedures. The catch-basin insert should be installed in the catch basin after the site has been paved or stabilized (for new development) or after completion of construction (for a redevelopment site that is already paved).

If the catch-basin insert is used for sediment control during construction, it should be reconfigured in accordance with the manufacturer's recommendations. When used for sediment control, the insert should be inspected at least weekly and maintained if needed.

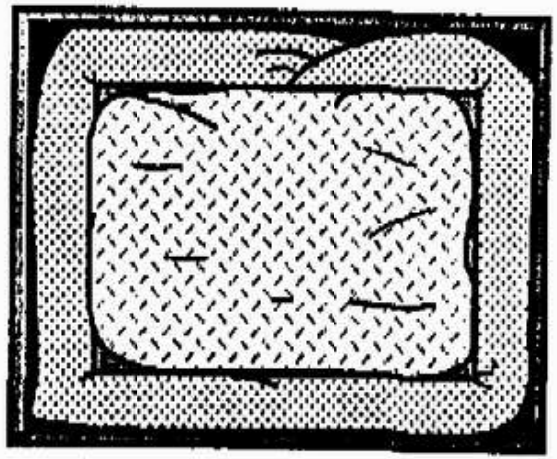
To minimize the generation of solid waste and the consumption of natural resources, systems constructed of or using recycled products are preferred. Reusable filter materials should be refreshed according to the manufacturer's instructions.

Maintenance

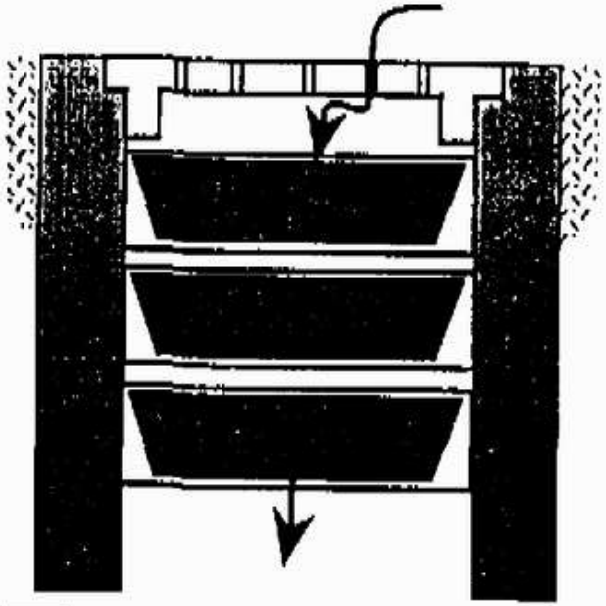
The catch-basin insert should be fitted with oil-absorbent/absorbent filter media, which should be inspected monthly and changed whenever the filter media surface is covered with sediment. Inspections are especially important during the wet season. Acceptable filter media include absorbent W, whole fibrous moss (not necessarily sphagnum moss), Petrolok, and general purpose absorbent (i.e., wood fiber).



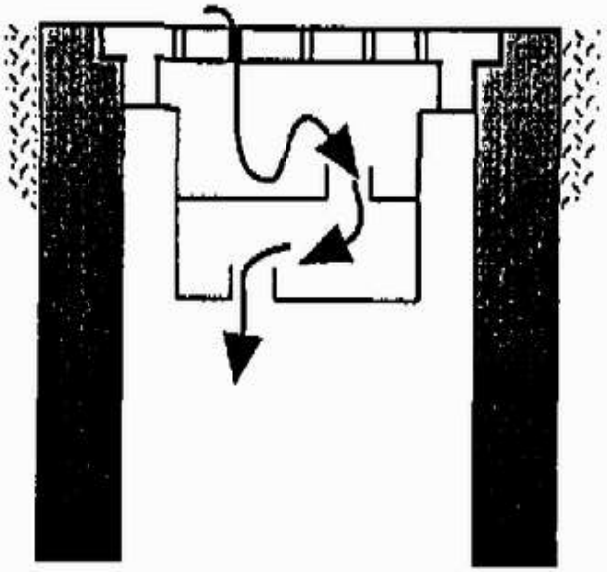
a. **Aqua-net Gullywasher Model 10001**
Side view with cut-outs to show interior



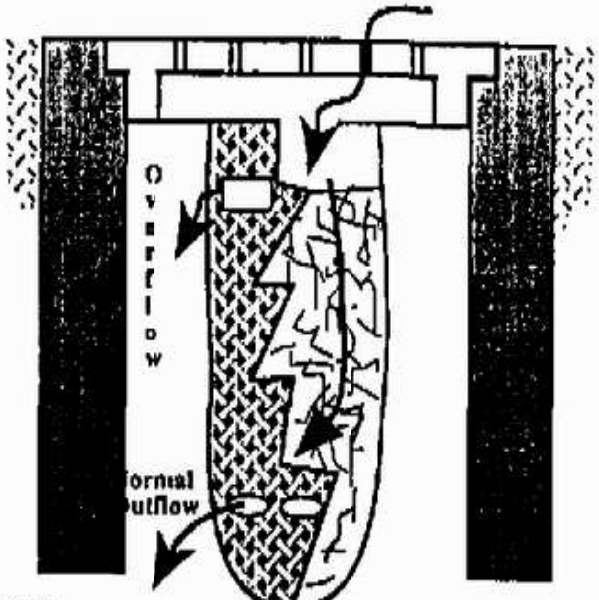
b. **Aqua-net Gullywasher Model 10003**
Top view shows revised containment system



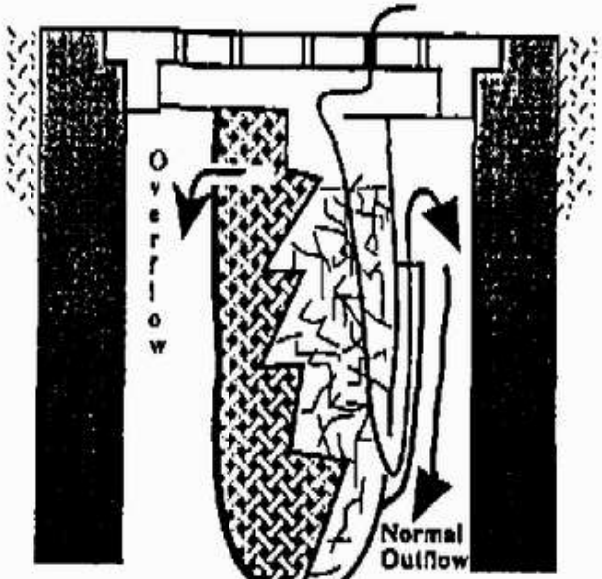
c. **Enviro-drain**
Side view



d. **Stormwater Services type I**
Cross section



e. **Stormwater Services Type II**
Side view with cut-outs to show absorbent



f. **StreamGuard (replaced e)**
Side view with cut-outs to show absorbent

Figure Detail Notes

a) Aqua-Net Gullywasher Model 10001: A wire mesh outer basket fitted with an inner basket made of fine stainless-steel screen. The inner basket contains an "onion sack" filled with an absorbant made from a wood by-product. The primary outlet is through the bottom of the sack, while high-flow relief is through the sides of the upper part of the wire mesh basket.

b) Aqua-Net Gullywasher Model 10003: A more advanced version of the "Gullywasher" described above. In this version, the stainless steel inner basket has been replaced with a second wire mesh basket. A long sock filled with oil-absorbing material is coiled between the inner and outer basket. As with the above product, an "onion sack" filled with absorbant is inserted in the bottom of the basket. The primary outlet is through the absorbant in the bottom and sides. High-flow relief is through the upper part of the basket.

c) Enviro-Drain: A system of up to three trays, each with solid sides and mesh bottoms. The trays may be filled with an absorbant, activated carbon, or used simply as a debris-catching screen. The screens may be changed to meet specific site conditions. The system is typically installed with the top tray in a screen-only configuration, and the second two trays filled with an absorbant. All components are stainless steel.

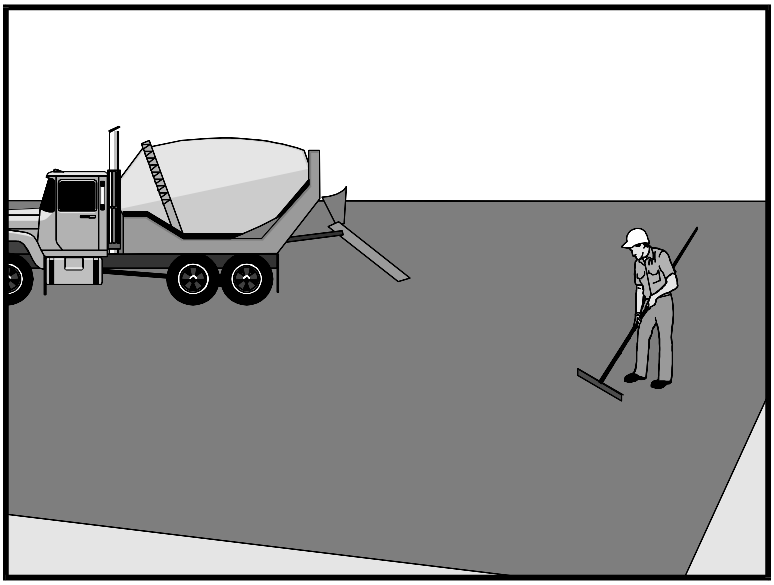
d) Stormwater Services Type I: A set of two interlocking trays that create standing water in which solids are allowed to settle. The overflow from the upper tray discharges to the second tray. The trays are molded in a standard size from recycled plastic. A variety of steel adapters allow the unit to be used in larger drain inlets.

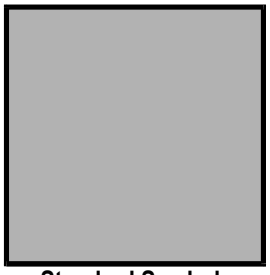
e) Stormwater Services Type II: A filter fabric sack filled with a polypropylene absorbent. Primary discharge is through the small holes near the bottom of the sack. A secondary outlet is near the top of the device. This model was discontinued during the study.

f) StreamGuard: This product replaced the Stormwater Services Type II-O, with the principle difference being that the primary outlet has been routed through a pocket on the outside of the sack. A secondary outlet is still provided near the top of the device.

Paving and Grinding Operations

NS-3





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Procedures and practices for conducting paving, saw cutting, and grinding operations to minimize the transport of pollutants to the storm drain system or receiving water body.

Appropriate Applications

These procedures are implemented where paving, surfacing, resurfacing, grinding or sawcutting, may pollute storm water runoff or discharge to the storm drain system or watercourses.

Limitations

- Finer solids are not effectively removed by filtration systems.
- Paving opportunities may be limited during wet weather.

Standards and Specifications

- Substances used to coat asphalt transport trucks, asphalt trucks, and asphalt spreading equipment shall not contain soap and shall be non-foaming and non-toxic.
- Place plastic materials under asphaltic concrete (AC) paving equipment while not in use, to catch and/or contain drips and leaks. See also BMP WM-4, "Spill Prevention and Control."
- When paving involves AC, the following steps shall be implemented to prevent the discharge of uncompacted or loose AC, tack coats, equipment cleaners, or other paving materials:
  - Minimize sand and gravel from new asphalt from getting into storm drains, streets, and creeks by sweeping.
  - Old or spilled asphalt must be recycled or disposed as approved by the Resident Engineer (RE).

- AC grindings, pieces, or chunks used in embankments or shoulder backing must not be allowed to enter any storm drain or watercourses. Install silt fence until structure is stabilized or permanent controls are in place.
- Collect and remove all broken asphalt and recycle when practical; otherwise, dispose in accordance with Standard Specification 7-1.13.
- Any AC chunks and pieces used in embankments must be placed above the water table and covered by at least 0.3 m (1 ft) of material.
- During chip seal application and sweeping operations, petroleum or petroleum covered aggregate must not be allowed to enter any storm drain or water courses. Use silt fence until installation is complete.
- Use only non-toxic substances to coat asphalt transport trucks and asphalt spreading equipment.

- Drainage inlet structures and manholes shall be covered with filter fabric during application of seal coat, tack coat, slurry seal, and/or fog seal.
- Seal coat, tack coat, slurry seal, or fog seal shall not be applied if rainfall is predicted to occur during the application or curing period.
- Paving equipment parked onsite shall be parked over plastic to prevent soil contamination.
- Clean asphalt-coated equipment off-site whenever possible. When cleaning dry, hardened asphalt from equipment, manage hardened asphalt debris as described in BMP WM-5, "Solid Waste Management." Any cleaning onsite shall follow BMP NS-8, "Vehicle and Equipment Cleaning."
- Do not wash sweepings from exposed aggregate concrete into a storm drain system. Collect and return to aggregate base stockpile, or dispose of properly.
- Allow aggregate rinse to settle. Then, either allow rinse water to dry in a temporary pit as described in BMP WM-8, "Concrete Waste Management," or dispose in accordance with Standard Specifications Section 7-1.13.
- Do not allow saw-cut Portland Concrete Cement (PCC) slurry to enter storm drains or watercourses.

Pavement Grinding or Removal

- Residue from PCC grinding operations shall be picked up by means of a vacuum attachment to the grinding machine, shall not be allowed to flow across the pavement, and shall not be left on the surface of the pavement. See also BMP WM-8, "Concrete Waste Management;" and BMP WM-10, "Liquid Waste Management," and Standard Specifications Section 42-2

"Grindings."

- Collect pavement digout material by mechanical or manual methods. This material may be recycled if approved by the RE for use as shoulder backing or base material at locations approved by the RE.
- If digout material cannot be recycled, transport the material back to a maintenance facility or approved storage site.
- Digout activities shall not be conducted in the rain.
- When approved by the RE, stockpile material removed from roadways away from drain inlets, drainage ditches, and watercourses and stored consistent with BMP WM-3, "Stockpile Management."
- Disposal or use of AC grindings shall be approved by the RE. See also BMP WM-8, "Concrete Waste Management."

Thermoplastic Striping

- All thermoplastic striper and pre-heater equipment shutoff valves shall be inspected to ensure that they are working properly to prevent leaking thermoplastic from entering drain inlets, the storm water drainage system, or watercourses.
- The pre-heater shall be filled carefully to prevent splashing or spilling of hot thermoplastic. Leave six inches of space at the top of the pre-heater container when filling thermoplastic to allow room for material to move when the vehicle is deadheaded.
- Contractor shall not pre-heat, transfer, or load thermoplastic near drain inlets or watercourses.
- Clean truck beds daily of loose debris and melted thermoplastic. When possible recycle thermoplastic material. Thermoplastic waste shall be disposed of in accordance with Standard Specification 7-1.13.

Raised/Recessed Pavement Marker Application and Removal

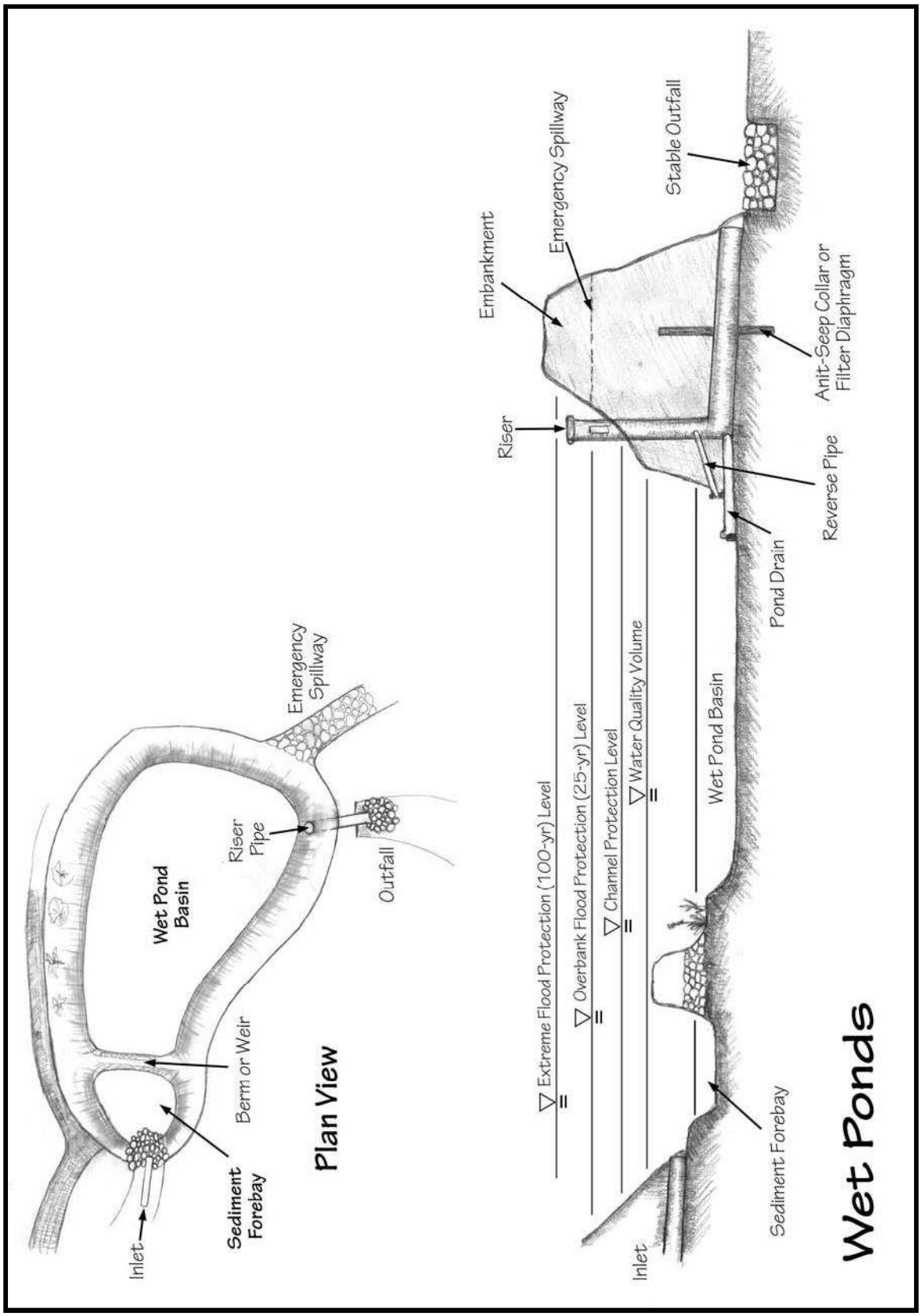
- Do not transfer or load bituminous material near drain inlets, the storm water drainage system or watercourses.
- Melting tanks shall be loaded with care and not filled to beyond six inches from the top to leave room for splashing when vehicle is deadheaded.
- When servicing or filling melting tanks, ensure all pressure is released before removing lids to avoid spills.
- On large scale projects, use mechanical or manual methods to collect excess

bituminous material from the roadway after removal of markers.

- Waste shall be disposed of in accordance with Standard Specification 7-1.13.

Maintenance and Inspection

- Inspect and maintain machinery regularly to minimize leaks and drips.
- Ensure that employees and subcontractors are implementing appropriate measures during paving operations.


Wet Ponds
Plan View
Wet Pond Basin
Inlet
Sediment Forebay
Berm or Weir
Riser Pipe
Outfall
Emergency Spillway
Embankment
Emergency Spillway
Stable Outfall
Riser
Anit-Seep Collar or Filter Diaphragm
Reverse Pipe
Pond Drain
Extreme Flood Protection (100-yr) Level
Overbank Flood Protection (25-yr) Level
Channel Protection Level
Water Quality Volume
Wet Pond Basin
Inlet
Sediment Forebay

Wet Pond Design Adaptation for Alaska

STP	Alaskan climatic regions				
	Coastal	Southcentral	Western	Interior	Arctic
	○	□	■	■	■
Basic Wet Pond Design Adaptation for Alaska	• Basic wet ponds are generally not recommended in four of the five climatic regions because of a lack of capacity to accept spring snowmelt, poor winter performance from ice and stratification, and difficulty in maintaining a constant water level in the summer. • A wet ED pond design might work more effectively, particularly if the ED treats larger runoff volumes in the spring (see MSSC 2006). • Salt-tolerant vegetation should be planted in pond benches. • Inlet pipes should not be submerged. • A minimum 1% pipe slope should be provided to discourage ice formation. • Low-flow orifices should be located so they withdraw at least 6 inches below the typical ice layer. • Trash racks should be angled to prevent ice formation. • Riser and weir structures should be oversized to avoid ice formation and to prevent freezing of the pipe. • The forebay size should be increased if road sanding is prevalent in the contributing drainage area.				
Extreme Design	• Several designers report difficulty in maintaining ponds in summer without resorting to the use of expensive liners. If soils are so permeable that a constant water table cannot be maintained in summer, designers should consider ED wetlands or an infiltration basin as alternatives.				

Feasibility symbols:

○ Widely feasible

□ Might be feasible in certain situations

✪ Feasible only with major design adaptation

■ Infeasible and not recommended

Note

For an extensive discussion of pond performance in extremely cold climates, see MSSC (2005) and Oberts (2007).

Sanitar Se tic Waste anagement P

Description

Prevent the discharge of pollutants to stormwater from sanitary/septic waste by providing convenient, well-maintained facilities, and arranging for regular service and disposal.

Applications

All construction sites where portable facilities are used.

Limitations

Drainage area – N/A
Minimum bedrock depth - N/A
NRCS soil type - N/A
Drainage/flood control – N/A
Maximum slope – N/A
Minimum water table - N/A
Freeze/thaw – N/A

No major limitations.

Targeted Pollutants

Nutrients
Bacteria

Approach

Sanitary and septic wastes should be disposed of in accordance with state and local requirements. Some of these requirements are listed below:

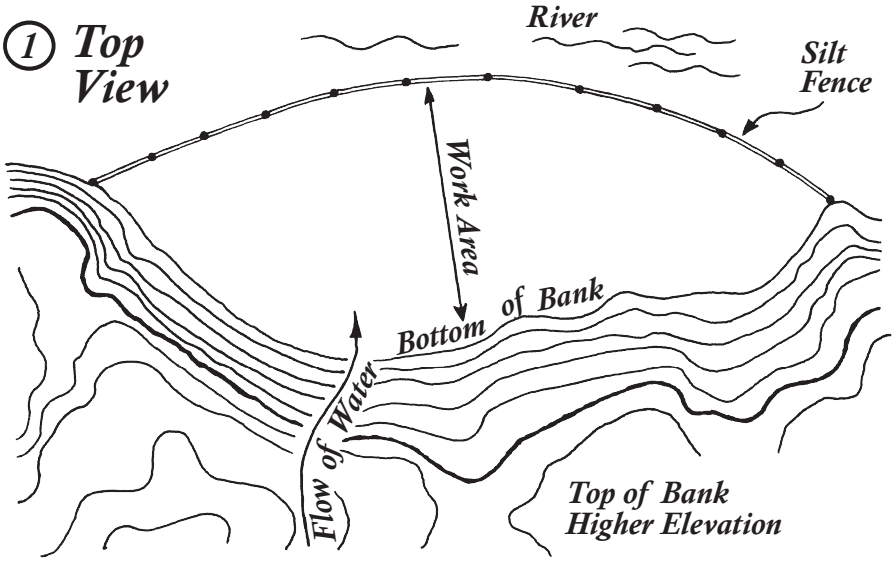
- Locate sanitary facilities in a convenient location.
- Avoid discharging or burying untreated raw wastewater.
- Ensure that temporary septic systems treat wastes to appropriate levels before discharging.
- If using an on-site disposal system (OSDS) such as a septic system, comply with local health agency requirements.
- Ensure that temporary sanitary facilities that discharge to the sanitary sewer system are properly connected. This practice will help eliminate illicit discharges.
- If discharging to the sanitary sewer, contact the local wastewater treatment plant for their requirements.
- Ensure that a licensed service maintains sanitary/septic facilities in good working order.
- Portable units may need to be staked or secured to a fixed object.

Maintenance

- Inspect facilities regularly.
- Arrange for regular waste collection.

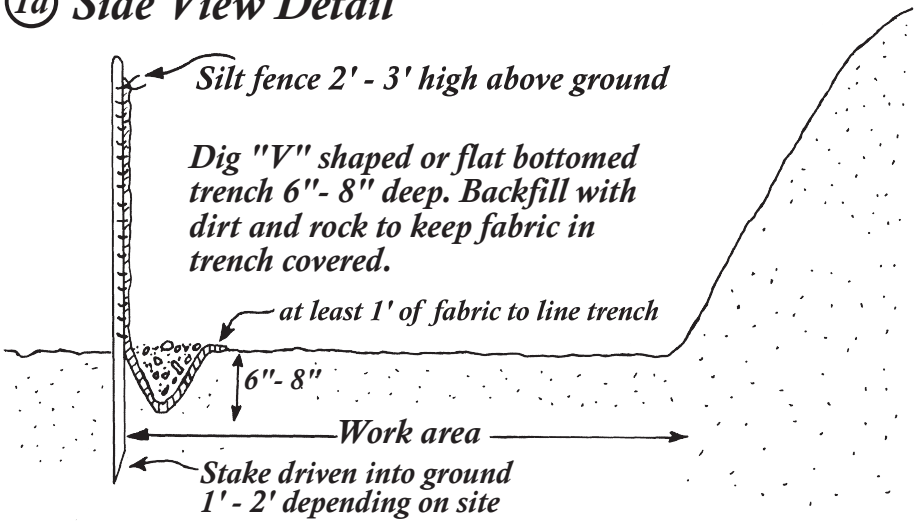
Silt Fence Installation *Step-by-Step*

① Top View



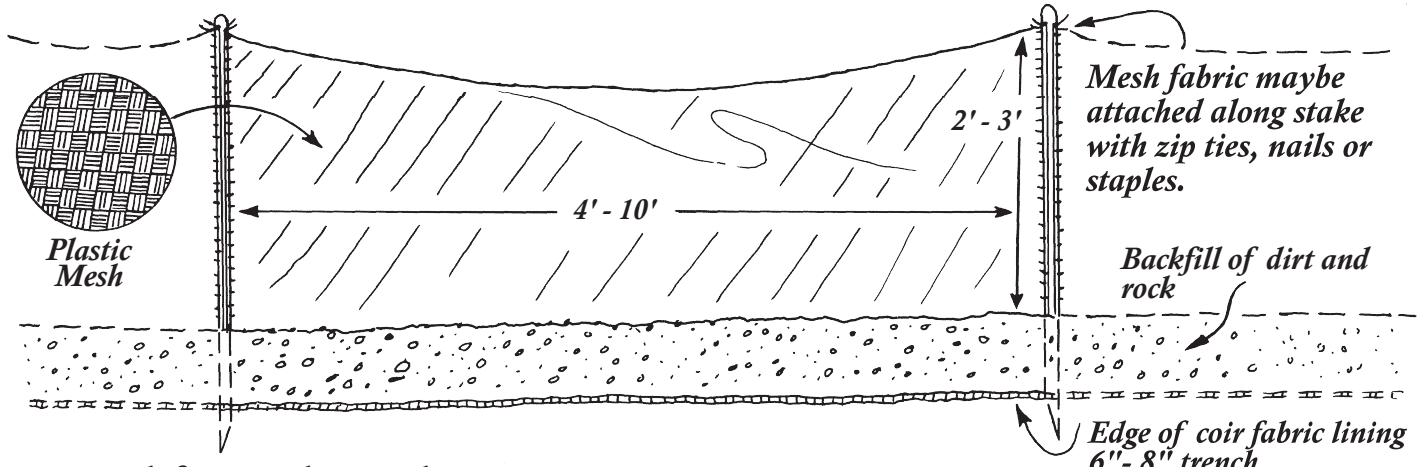
Prepare a stormwater pollution prevention plan. Set up silt fences according to terrain, soil and run-off consideration. Prevent soil migration by decreasing soil exposure, steep unvegetated slopes and construction time. Revegetate as soon as possible in the SAME SEASON.

①a Side View Detail



Moniter integrity of installed silt fence and remove sediment before it reaches 1/3 the height of the silt fence. It is especially important to moniter during and after rain and break-up events.

①b Front View Detail (One Section of Silt Fence)



Leave silt fence in place until vegetation is established and sediment is stabilized.

Silt (Sediment) Fence Installation

When installing a silt fence, first choose the appropriate place to set up a silt fence by considering site terrain and slope, water flow and projected soil disturbance during construction.

Set the silt fence perpendicular to the slope of the land, curving the fence inward towards slope.

Place the silt fence spaced away from the toe-of-slope, leaving enough room to accumulate sediment and to perform work.

Dig a six to eight-inch trench (either V shaped or flat-bottomed) directly up-slope or upstream of the silt fence. On the downstream edge, drive in wood stakes, rebar or steel stakes at least 1 foot down into the sediment. The stakes or rebar should be long enough to accommodate the trench depth and height of the silt fence fabric.

Run a continuous length of fabric along the inside of the stakes and secure with nails,
staples or zip ties allowing at least 1 foot to line the trench. Extend termination points uphill one full panel length.

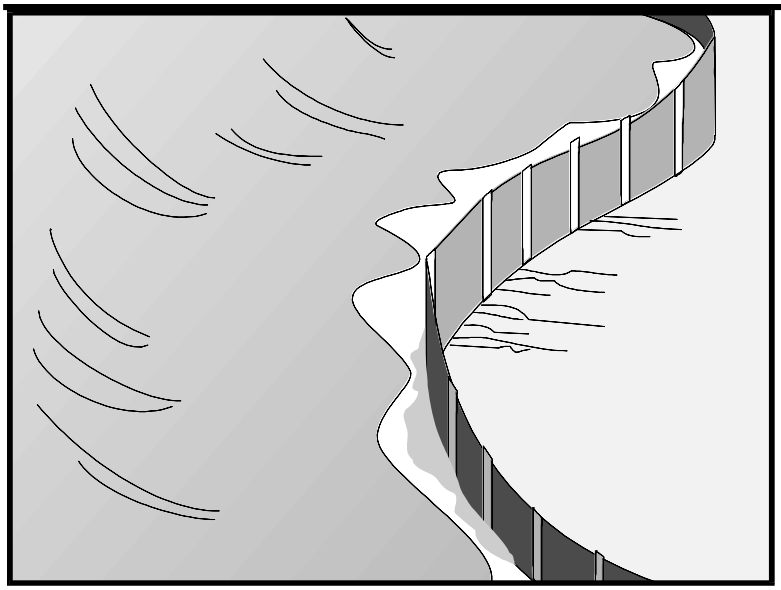
Use continuous fabric piece for the silt fence. If one is unavailable and a joint is necessary, overlap the fabric at least the width of one stake spacing and secure in place using a wooden lath, staples, zip ties or nails.

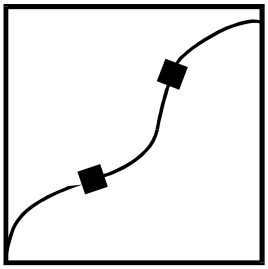
Cover the trench with backfilled and compacted soil, gravel or rock.

Maintain the fence by checking the fabric for damage, failure of fence to withhold sediment, and damage to posts. Install additional back-up silt fence if needed.

Silt Fence

SC-1





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

A silt fence is a temporary linear sediment barrier of permeable fabric designed to intercept and slow the flow of sediment-laden sheet flow runoff. Silt fences allow sediment to settle from runoff before water leaves the construction site.

Appropriate Applications

Silt fences are placed:

- Below the toe of exposed and erodible slopes.
- Down-slope of exposed soil areas.
- Around temporary stockpiles.
- Along streams and channels.
- Along the perimeter of a project.

Limitations

- Not effective unless trenched and keyed in.
- Not intended for use as mid-slope protection on slopes greater than 1:4 (V:H).
- Must be maintained.
- Must be removed and disposed of.
- Don't use below slopes subject to creep, slumping, or landslides.
- Don't use in streams, channels, drain inlets, or anywhere flow is concentrated.
- Don't use silt fences to divert flow.

Standards and Specifications

Design and Layout

- The maximum length of slope draining to any point along the silt fence shall be 61 m (200 ft) or less.
- Slope of area draining to silt fence shall be less than 1:1 (V:H).
- Limit to locations suitable for temporary ponding or deposition of sediment.
- Fabric life span generally limited to between five and eight months. Longer periods may require fabric replacement.
- Silt fences shall not be used in concentrated flow areas.
- Lay out in accordance with Pages 5 and 6 of this BMP.
- For slopes steeper than 1:2 (V:H) and that contain a high number of rocks or large dirt clods that tend to dislodge, it may be necessary to install additional protection immediately adjacent to the bottom of the slope, prior to installing silt fence. Additional protection may be a chain link fence or a cable fence.
- For slopes adjacent to water bodies or Environmentally Sensitive Areas (ESAs), additional temporary soil stabilization BMPs shall be used.

Materials

- Silt fence fabric shall be woven polypropylene with a minimum width of 900 mm (36 inches) and a minimum tensile strength of 0.45-kN. The fabric shall conform to the requirements in ASTM designation D4632 and shall have an integral reinforcement layer. The reinforcement layer shall be a polypropylene, or equivalent, net provided by the manufacturer. The permittivity of the fabric shall be between 0.1 sec^{-1} and 0.15 sec^{-1} in conformance with the requirements in ASTM designation D4491. Contractor must submit certificate of compliance in accordance with Standard Specifications Section 6-1.07.
- Wood stakes shall be commercial quality lumber of the size and shape shown on the plans. Each stake shall be free from decay, splits or cracks longer than the thickness of the stake or other defects that would weaken the stakes and cause the stakes to be structurally unsuitable.
- Bar reinforcement may be used, and its size shall be equal to a number four (4) or greater. End protection shall be provided for any exposed bar reinforcement.
- Staples used to fasten the fence fabric to the stakes shall be not less than 45 mm (1.75 inches) long and shall be fabricated from 1.57 mm (0.06 inch) or heavier wire. The wire used to fasten the tops of the stakes together when

joining two sections of fence shall be 3.05 mm (0.12 inch) or heavier wire. Galvanizing of the fastening wire is not required.

Installation

- Generally, silt fences shall be used in conjunction with soil stabilization source controls up slope to provide effective erosion and sediment control.
- Bottom of the silt fence shall be keyed-in a minimum of 150 mm (12 inches).
- Trenches shall not be excavated wider and deeper than necessary for proper installation of the temporary linear sediment barriers.
- Excavation of the trenches shall be performed immediately before installation of the temporary linear sediment barriers.
- Construct silt fences with a set-back of at least 1m (3 ft) from the toe of a slope. Where a silt fence is determined to be not practical due to specific site conditions, the silt fence may be constructed at the toe of the slope, but shall be constructed as far from the toe of the slope as practical.
- Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/3 the height of the barrier; in no case shall the reach exceed 150 meters (490 ft).
- Cross barriers shall be a minimum of 1/3 and a maximum of 1/2 the height of the linear barrier.
- Install in accordance with Pages 5 and 6 of this BMP.

Maintenance and Inspection

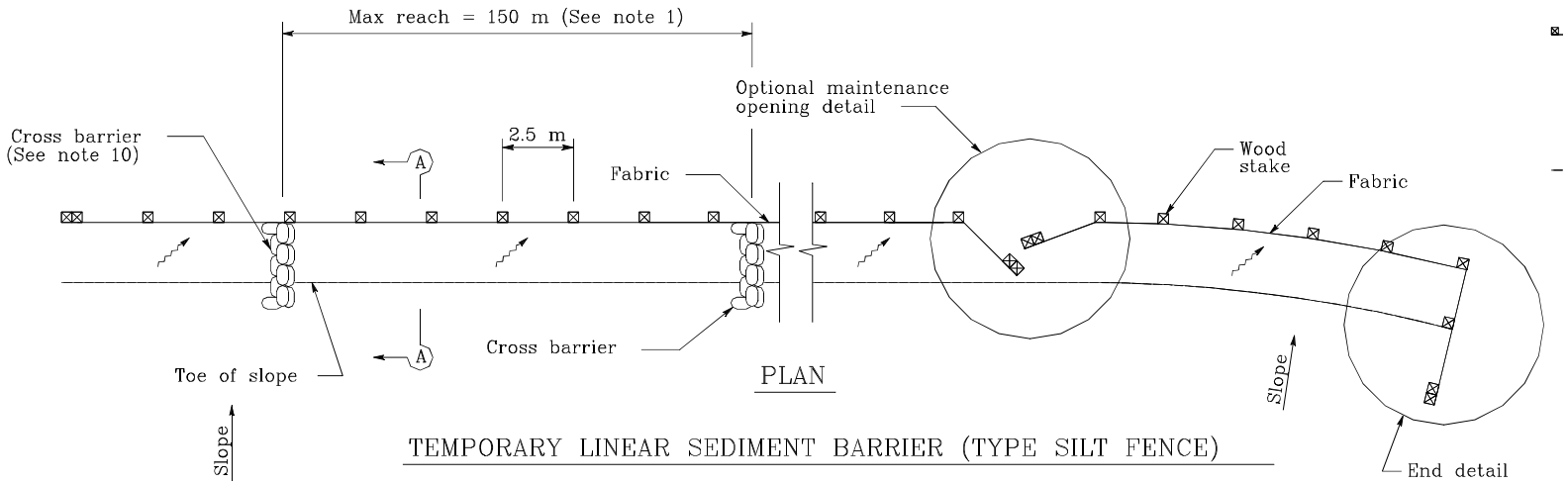
- Repair undercut silt fences.
- Repair or replace split, torn, slumping, or weathered fabric.
- Inspect silt fence when rain is forecast. Perform necessary maintenance, or maintenance required by the Resident Engineer (RE).
- Inspect silt fence following rainfall events. Perform maintenance as necessary, or as required by the RE.
- Maintain silt fences to provide an adequate sediment holding capacity. Sediment shall be removed when the sediment accumulation reaches one-third (1/3) of the barrier height. Removed sediment shall be incorporated in the project at locations designated by the RE or disposed of outside the right-of-way in conformance with the Standard Specifications.
- Silt fences that are damaged and become unsuitable for the intended purpose, as determined by the RE, shall be removed from the site of work, disposed of outside the highway right-of-way in conformance with the Standard Specifications, and replaced with new silt fence barriers.

- Holes, depressions or other ground disturbance caused by the removal of the temporary silt fences shall be backfilled and repaired in conformance with the Standard Specifications.

- Remove silt fence when no longer needed or as required by the RE. Fill and compact post holes and anchorage trench, remove sediment accumulation, and grade fence alignment to blend with adjacent ground.

Silt Fence

SC-1



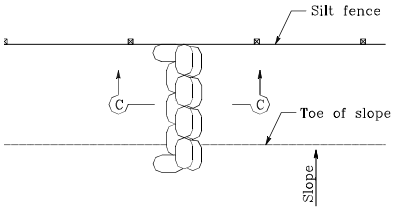
TEMPORARY LINEAR SEDIMENT BARRIER (TYPE SILT FENCE)

NOTES

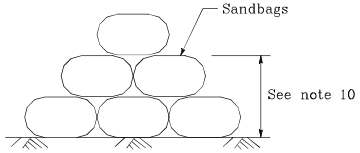
1. Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/3 the height of the linear barrier, in no case shall the reach length exceed 150m.
2. The last 2.5 m of fence shall be turned up slope.
3. Stake dimensions are nominal.
4. Dimension may vary to fit field condition.
5. Stakes shall be spaced at 2.5 m maximum and shall be positioned on downstream side of fence.
6. Stakes to overlap and fence fabric to fold around each stake one full turn. Secure fabric to stake with 4 staples.
7. Stakes shall be driven tightly together to prevent potential flow-through of sediment at joint. The tops of the stakes shall be secured with wire.
8. For end stake, fence fabric shall be folded around two stakes one full turn and secured with 4 staples.
9. Minimum 4 staples per stake. Dimensions shown are typical.
10. Cross barriers shall be a minimum of 1/3 and a maximum of 1/2 the height of the linear barrier.
11. Maintenance openings shall be constructed in a manner to ensure sediment remains behind silt fence.
12. Joining sections shall not be placed at sump locations.
13. Sandbag rows and layers shall be offset to eliminate gaps.

LEGEND

- Tamped backfill
- Slope direction
- Direction of flow



CROSS BARRIER DETAIL



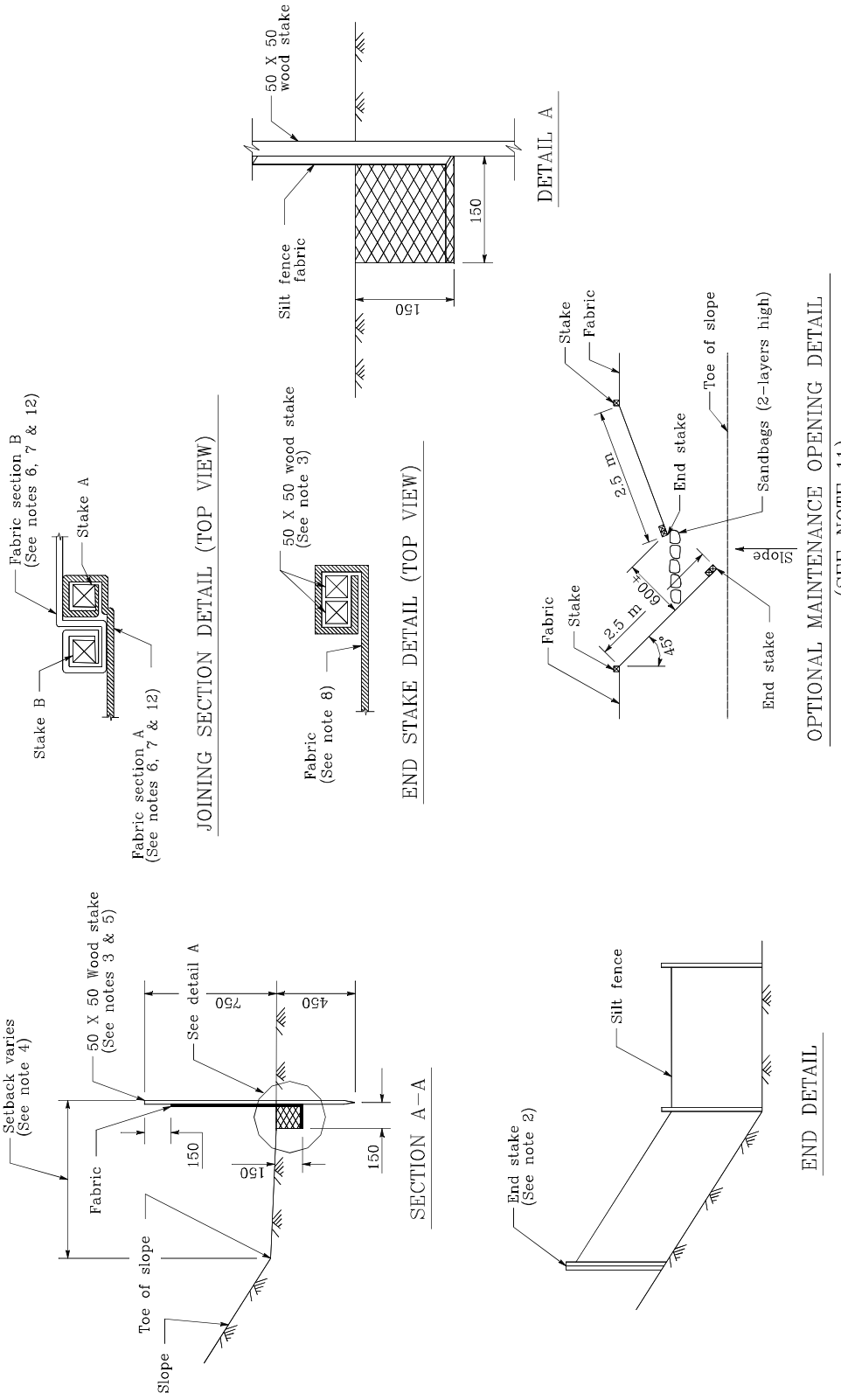
SECTION C–C

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY LINEAR SEDIMENT BARRIER
(TYPE SILT FENCE)

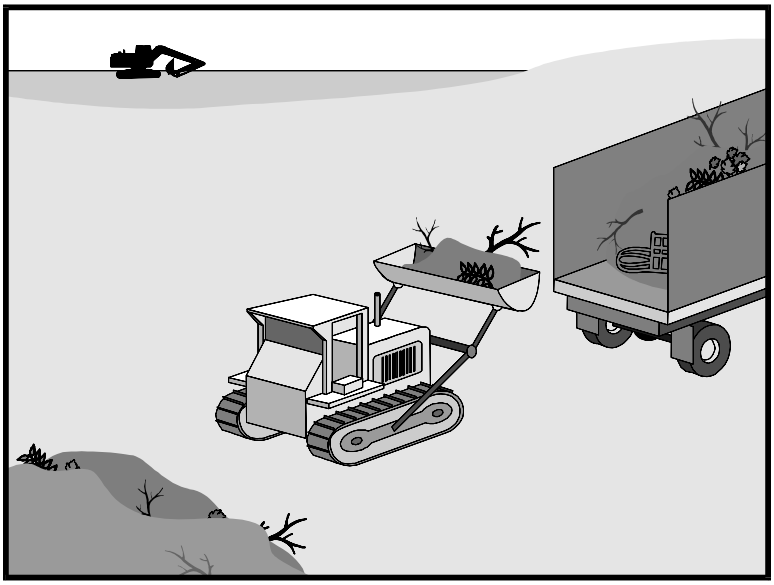
NO SCALE

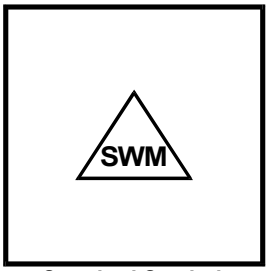
ALL DIMENSIONS ARE IN
MILLIMETERS UNLESS OTHERWISE SHOWN


50 X 50 wood stake
Silt fence fabric
150
150
DETAIL A
Fabric section B (See notes 6, 7 & 12)
Stake A
Stake B
Fabric section A (See notes 6, 7 & 12)
JOINING SECTION DETAIL (TOP VIEW)
50 X 50 wood stake (See note 3)
Fabric (See note 8)
END STAKE DETAIL (TOP VIEW)
Stake
Fabric
Toe of slope
2.5 m
End stake
Sandbags (2-layers high)
Slope
600±
2.5 m
45°
Fabric
Stake
End stake
OPTIONAL MAINTENANCE OPENING DETAIL
(SEE NOTE 11)
Setback varies (See note 4)
50 X 50 Wood stake (See notes 3 & 5)
See detail A
750
450
150
150
150
Fabric
Toe of slope
Slope
SECTION A-A
Silt fence
End stake (See note 2)
END DETAIL

Solid Waste Management

WM-5





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

Solid waste management procedures and practices are designed to minimize or eliminate the discharge of pollutants to the drainage system or to watercourses as a result of the creation, stockpiling, or removal of construction site wastes.

Appropriate Applications

Solid waste management procedures and practices are implemented on all construction projects that generate solid wastes.

Solid wastes include but are not limited to:

- Construction wastes including brick, mortar, timber, steel and metal scraps, sawdust, pipe and electrical cuttings, non-hazardous equipment parts, styrofoam and other materials used to transport and package construction materials.
- Highway planting wastes, including vegetative material, plant containers, and packaging materials.
- Litter, including food containers, beverage cans, coffee cups, paper bags, plastic wrappers, and smoking materials, including litter generated by the public.

Limitations

- Temporary stockpiling of certain construction wastes may not necessitate stringent drainage related controls during the non-rainy season or in desert areas with low rainfall.

Standards and Specifications

Education

- The Contractor's Water Pollution Control Manager (WPCM) shall oversee and enforce proper solid waste procedures and practices.
- Instruct employees and subcontractors on identification of solid waste and hazardous waste.
- Educate employees and subcontractors on solid waste storage and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Require that employees and subcontractors follow solid waste handling and storage procedures.
- Prohibit littering by employees, subcontractors, and visitors.
- Wherever possible, minimize production of solid waste materials.

Collection, Storage, and Disposal

- Dumpsters of sufficient size and number shall be provided to contain the solid waste generated by the project and properly serviced.
- Littering on the project site shall be prohibited.
- To prevent clogging of the storm drainage system litter and debris removal from drainage grates, trash racks, and ditch lines shall be a priority.
- Trash receptacles shall be provided in the Contractor's yard, field trailer areas, and at locations where workers congregate for lunch and break periods.
- Construction debris and litter from work areas within the construction limits of the project site shall be collected and placed in watertight dumpsters at least weekly regardless of whether the litter was generated by the Contractor, the public, or others. Collected litter and debris shall not be placed in or next to drain inlets, storm water drainage systems or watercourses.
- Full dumpsters shall be removed from the project site and the contents shall be disposed of outside the highway right-of-way in conformance with the provisions in the Standard Specifications Section 7-1.13.
- Litter stored in collection areas and containers shall be handled and disposed of by trash hauling contractors.
- Construction debris and waste shall be removed from the site every two weeks or as directed by the RE.

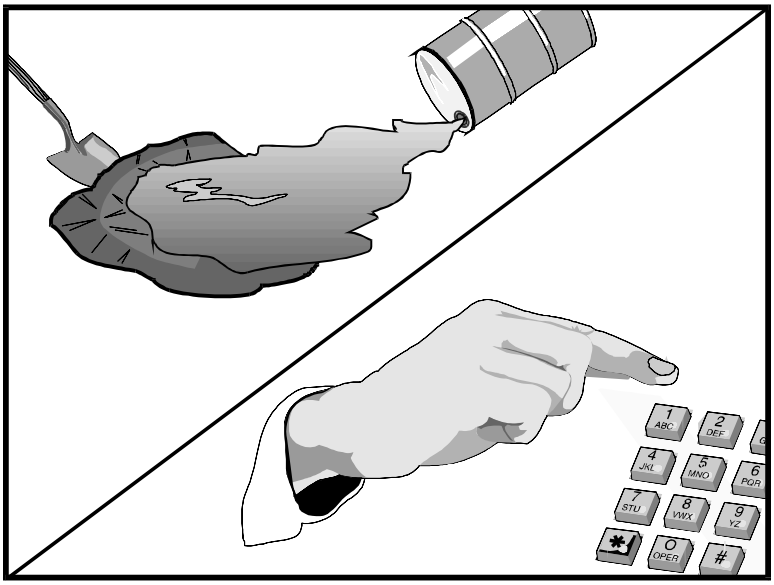
- Construction material visible to the public shall be stored or stacked in an orderly manner to the satisfaction of the RE.
- Storm water run-on shall be prevented from contacting stored solid waste through the use of berms, dikes, or other temporary diversion structures or through the use of measures to elevate waste from site surfaces.
- Solid waste storage areas shall be located at least 15 m (50 ft) from drainage facilities and watercourses and shall not be located in areas prone to flooding or ponding.
- Except during fair weather, construction and highway planting waste not stored in watertight dumpsters shall be securely covered from wind and rain by covering the waste with tarps or plastic sheeting or protected in conformance with the applicable Disturbed Soil Area protection section.
- Dumpster washout on the project site is not allowed.
- Notify trash hauling contractors that only watertight dumpsters are acceptable for use on-site.
- Plan for additional containers during the demolition phase of construction.
- Plan for more frequent pickup during the demolition phase of construction.
- Construction waste shall be stored in a designated area approved by the RE.
- Segregate potentially hazardous waste from non-hazardous construction site waste.
- Keep the site clean of litter debris.
- Make sure that toxic liquid wastes (e.g., used oils, solvents, and paints) and chemicals (e.g., acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Dispose of non-hazardous waste in accordance with Standard Specification 7-1.13, Disposal of Material Outside the Highway Right of Way.
- For disposal of hazardous waste, see BMP WM-6, “Hazardous Waste Management.” Have hazardous waste hauled to an appropriate disposal and/or recycling facility.
- Salvage or recycle useful vegetation debris, packaging and/or surplus building materials when practical. For example, trees and shrubs from land clearing can be converted into wood chips, then used as mulch on graded areas. Wood pallets, cardboard boxes, and construction scraps can also be recycled.

Maintenance and Inspection

- The WPCM shall monitor onsite solid waste storage and disposal procedures.
- Police site for litter and debris.

Spill Prevention and Control

WM-4



Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

These procedures and practices are implemented to prevent and control spills in a manner that minimizes or prevents the discharge of spilled material to the drainage system or watercourses.

Appropriate Application

This best management practice (BMP) applies to all construction projects. Spill control procedures are implemented anytime chemicals and/or hazardous substances are stored. Substances may include, but are not limited to:

- Soil stabilizers/binders.
- Dust Palliatives.
- Herbicides.
- Growth inhibitors.
- Fertilizers.
- Deicing/anti-icing chemicals.
- Fuels.
- Lubricants.
- Other petroleum distillates.

To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110, 117, and 302, and sanitary and septic wastes shall be contained and cleaned up immediately.

Limitations

- This BMP only applies to spills caused by the contractor.
- Procedures and practices presented in this BMP are general. Contractor shall identify appropriate practices for the specific materials used or stored on-site.

Standards and Specifications

- To the extent that it doesn't compromise clean up activities, spills shall be covered and protected from storm water run-on during rainfall.
- Spills shall not be buried or washed with water.
- Used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose shall be stored and disposed of in conformance with the special provisions.
- Water used for cleaning and decontamination shall not be allowed to enter storm drains or watercourses and shall be collected and disposed of in accordance with BMP WM-10, "Liquid Waste Management."
- Water overflow or minor water spillage shall be contained and shall not be allowed to discharge into drainage facilities or watercourses.
- Proper storage, clean-up and spill reporting instruction for hazardous materials stored or used on the project site shall be posted at all times in an open, conspicuous and accessible location.
- Waste storage areas shall be kept clean, well organized and equipped with ample clean-up supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers and liners shall be repaired or replaced as needed to maintain proper function.

Education

- Educate employees and subcontractors on what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.
- The Contractor's Water Pollution Control Manager (WPCM) shall oversee and enforce proper spill prevention and control measures.

Cleanup and Storage Procedures

- Minor Spills
  - Minor spills typically involve small quantities of oil, gasoline, paint, etc., which can be controlled by the first responder at the discovery of the spill.
  - Use absorbent materials on small spills rather than hosing down or burying the spill.
  - Remove the absorbent materials promptly and dispose of properly.
  - The practice commonly followed for a minor spill is:
    - Contain the spread of the spill.
    - Recover spilled materials.
    - Clean the contaminated area and/or properly dispose of contaminated materials.
- Semi-Significant Spills
  - Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.
  - Clean up spills immediately:
    - Notify the project foreman immediately. The foreman shall notify the Resident Engineer (RE).
    - Contain spread of the spill.
    - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
    - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
    - If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

- Significant/Hazardous Spills
  - For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps shall be taken:
    - Notify the RE immediately and follow up with a written report.
    - Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
    - Notify the Governor's Office of Emergency Services Warning Center, (805) 852-7550.
    - For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor shall notify the National Response Center at (800) 424-8802.
    - Notification shall first be made by telephone and followed up with a written report.
    - The services of a spills contractor or a Haz-Mat team shall be obtained immediately. Construction personnel shall not attempt to clean up the spill until the appropriate and qualified staff have arrived at the job site.
    - Other agencies which may need to be consulted include, but are not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, Cal/OSHA, RWQCB, etc.

Maintenance and Inspection

- Verify weekly that spill control clean up materials are located near material storage, unloading, and use areas.
- Update spill prevention and control plans and stock appropriate clean-up materials whenever changes occur in the types of chemicals used or stored onsite.

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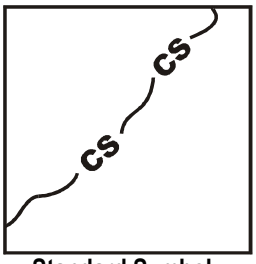
Stockpile Management

WM-3



Standard Symbol

BMP Objectives

- ● Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

Stockpile management procedures and practices are designed to reduce or eliminate air and storm water pollution from stockpiles of soil, and paving materials such as portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate subbase or pre-mixed aggregate, asphalt binder (so called "cold mix" asphalt) and pressure treated wood.

Appropriate Applications

Implemented in all projects that stockpile soil and other materials.

Limitations

- None identified

Standards and Specifications

- Protection of stockpiles is a year-round requirement.
- Locate stockpiles a minimum of 15 m (50 ft)away from concentrated flows of storm water, drainage courses, and inlets.
- Implement wind erosion control practices as appropriate on all stockpiled material. For specific information see BMP WE-1, "Wind Erosion Control."
- Stockpiles of contaminated soil shall be managed in accordance with BMP WM-7, "Contaminated Soil Management."
- Bagged materials should be placed on pallets and under cover.

Protection of Non-Active Stockpiles

Non-active stockpiles of the identified materials shall be protected further as follows:

- ***Soil stockpiles:***
  - During the rainy seasons, soil stockpiles shall be covered or protected with soil stabilization measures and a temporary perimeter sediment barrier at all times.
  - During the non-rainy season, soil stockpiles shall be covered and protected with a temporary perimeter sediment barrier prior to the onset of precipitation.
- ***Stockpiles of portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, or aggregate subbase:***
  - During the rainy season, the stockpiles shall be covered or protected with a temporary perimeter sediment barrier at all times.
  - During the non-rainy season, the stockpiles shall be covered or protected with a temporary perimeter sediment barrier prior to the onset of precipitation.
- ***Stockpiles of "cold mix":***
  - During the rainy season, cold mix stockpiles shall be placed on and covered with plastic or comparable material at all times.
  - During the non-rainy season, cold mix stockpiles shall be placed on and covered with plastic or comparable material prior to the onset of precipitation.
- ***Stockpiles/Storage of pressure treated wood with copper, chromium, and arsenic or ammonical, copper, zinc, and arsenate:***
  - During the rainy season, treated wood shall be covered with plastic or comparable material at all times.
  - During the non-rainy season, treated wood shall be covered with plastic or comparable material and shall be placed on pallets prior to the onset of precipitation.

Protection of Active Stockpiles

Active stockpiles of the identified materials shall be protected further as follows:

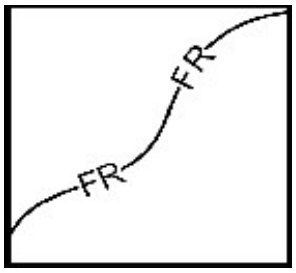
- All stockpiles shall be covered, stabilized, or protected with a temporary linear sediment barrier prior to the onset of precipitation.
- Stockpiles of "cold mix" shall be placed on and covered with plastic or comparable material prior to the onset of precipitation.

Maintenance and Inspections

- Repair and/or replace perimeter controls and covers as needed, or as directed by the RE, to keep them functioning properly. Sediment shall be removed when sediment accumulation reaches one-third (1/3) of the barrier height.

Fiber Rolls

SC-5



Standard Symbol

P ecti es

- ● Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

A fiber roll consists of wood excelsior, rice or wheat straw, or coconut fibers that is rolled or bound into a tight tubular roll and placed on the toe and face of slopes to intercept runoff, reduce its flow velocity, release the runoff as sheet flow and provide removal of sediment from the runoff. Fiber rolls may also be used for inlet protection and as check dams under certain situations.

Appropriate Applications

- This BMP may be implemented on a project-by-project basis with other BMPs when determined necessary and feasible by the RE.
- Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
- Below the toe of exposed and erodible slopes.
- Fiber rolls may be used as check dams in unlined ditches if approved by the Resident Engineer (RE) or the District Construction Storm Water Coordinator (refer to SC-4 “Check Dams”).
- Fiber rolls may be used for drain inlet protection if approved by the RE or the District Construction Storm Water Coordinator (refer to SC-10 “Storm Drain Inlet Protection”).
- Down-slope of exposed soil areas.
- Around temporary stockpiles.
- Along the perimeter of a project.

Limitations

- Runoff and erosion may occur if fiber roll is not adequately trenched in.
- Fiber rolls at the toe of slopes greater than 1:5 may require the use of 500 mm (20" diameter) or installations achieving the same protection (i.e., stacked smaller diameter fiber rolls, etc.).
- Fiber rolls may be used for drainage inlet protection if they can be properly anchored.
- Difficult to move once saturated.
- Fiber rolls could be transported by high flows if not properly staked and trenched in.
- Fiber rolls have limited sediment capture zone.
- Do not use fiber rolls on slopes subject to creep, slumping, or landslide.

Standards and Specifications

Fiber Roll Materials

- Fiber rolls shall be either:

  (1) Prefabricated rolls.

  (2) Rolled tubes of erosion control blanket.

Assembly of Field Rolled Fiber Roll

- Roll length of erosion control blanket into a tube of minimum 200 mm (8 in) diameter.
- Bind roll at each end and every 1.2 m (4 ft) along length of roll with jute-type twine.

Installation

- Slope inclination of 1:4 or flatter: fiber rolls shall be placed on slopes 6.0 m apart.
- Slope inclination of 1:4 to 1:2: fiber rolls shall be placed on slopes 4.5 m apart.
- Slope inclination 1:2 or greater: fiber rolls shall be placed on slopes 3.0 m apart.
- Stake fiber rolls into a 50 to 100 mm (2 to 4 in) trench.

- Drive stakes at the end of each fiber roll and spaced 600 mm (2 ft) apart if Type 2 installation is used (refer to Page 4). Otherwise, space stakes 1.2 m (4 ft) maximum on center if installed as shown on Pages 5 and 6.
- Use wood stakes with a nominal classification of 19 by 19 mm (3/4 by 3/4 in), and minimum length of 600 mm (24 in).
- If more than one fiber roll is placed in a row, the rolls shall be overlapped; not abutted.

Removal

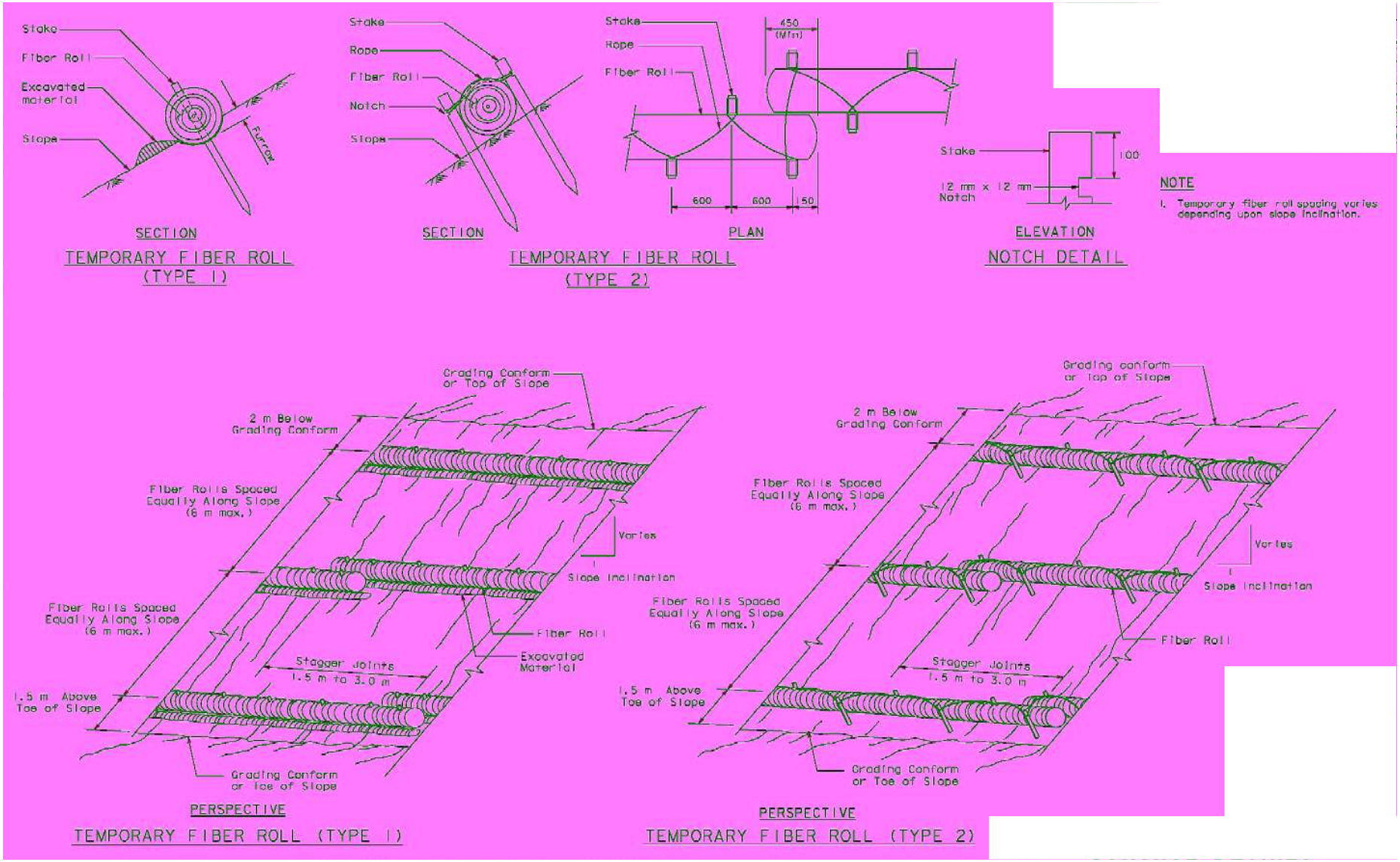
- Fiber rolls are typically left in place.
- If fiber rolls are removed, collect and dispose of sediment accumulation, and fill and compact holes, trenches, depressions or any other ground disturbance to blend with adjacent ground.

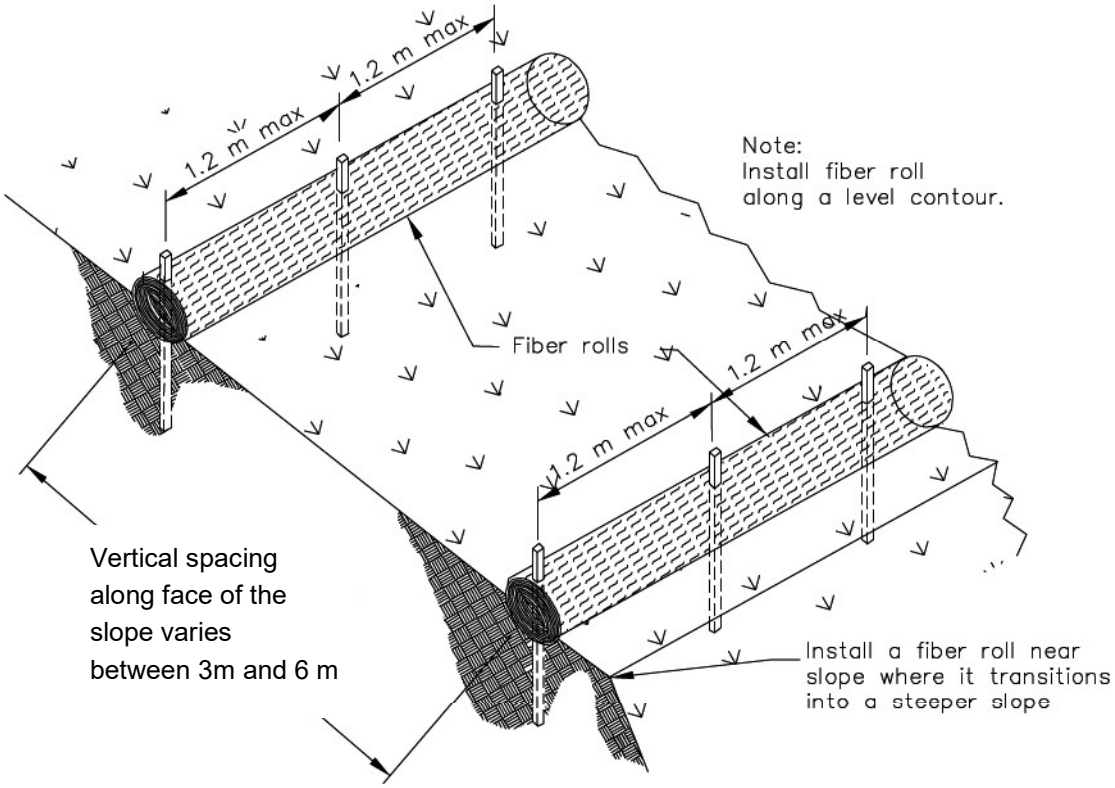
Maintenance and Inspection

- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- Inspect fiber rolls when rain is forecast. Perform maintenance as needed or as required by the RE.
- Inspect fiber rolls following rainfall events and a least daily during prolonged rainfall. Perform maintenance as needed or as required by the RE.
- Maintain fiber rolls to provide an adequate sediment holding capacity. Sediment shall be removed when the sediment accumulation reaches three quarters (3/4) of the barrier height. Removed sediment shall be incorporated in the project at locations designated by the RE or disposed of outside the highway right-of-way in conformance with the Standard Specifications.

Fiber Rolls

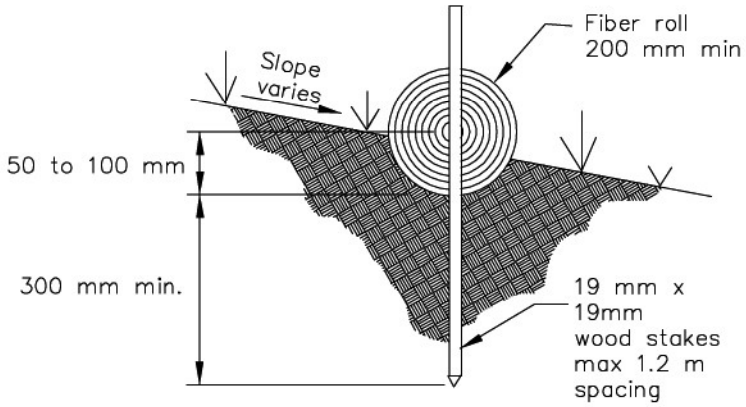
SC-5





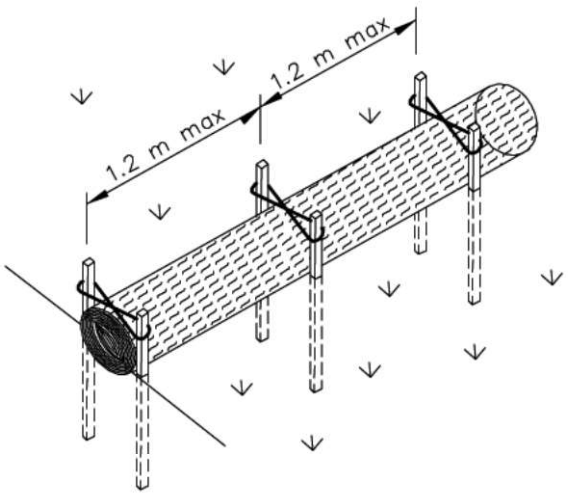
TYPICAL FIBER ROLL INSTALLATION

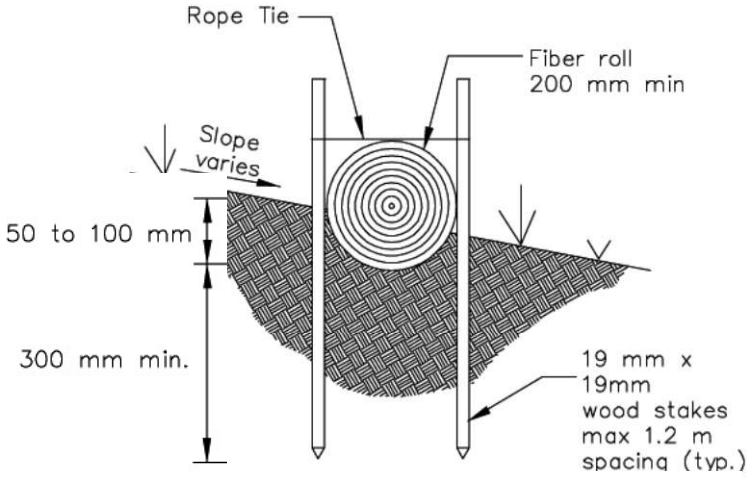
N.T.S.



ENTRENCHMENT DETAIL

N.T.S.





OPTIONAL ENTRENCHMENT DETAIL

N.T.S.

Erosion Control Wattle Installation Guide

Below you find the typical installation for straw and coconut coir wattles. Installation requirements and methods may vary depending on the specifications of your location.

STEP 1: Dig a small trench where the wattles need to be placed. Trenches are generally anywhere from 2" to 5" in size depending on the soil in your location (soft or hard) and the diameter of the wattle.

Vertical Spacing General Guideline:

1:1 Slopes– 10 ft. Apart

2:1 Slopes– 20 ft. Apart

3:1 Slopes– 30 ft. Apart

4:1 Slopes– 40 ft. Apart

STEP 2: Place the wattles in the trench and backfill with soil so that wattles are tightly packed within the slope. Wattles should be joined together tightly so that one end is tightly packed against the end of the adjacent wattle. Ends of the wattles can be tied together, but they should not be overlapping.

STEP 3: Stake the wattles along each end and every 4 ft. on center. Stakes should be driven through the center of the wattle until only 2-3" of the stake is visible. The first stake on the end of the second wattle should be angled towards the first wattle for a more secure joining.

Stake Placement:

Flat Areas– Stakes should be placed straight down into the ground

Slopes– Stakes should be placed perpendicular to the slope

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PC-37 STREET SWEEPING

BMP Objectives

- ☒ **Perimeter Control**
- ☐ **Slope Protection**
- ☐ **Borrow and Stockpiles**
- ☐ **Drainage Areas**
- ☒ **Sediment Trapping**
- ☐ **Stream Protection**
- ☐ **Temporary Stabilizing**
- ☐ **Permanent Stabilizing**

Definition and Purpose

In this BMP, mechanical vehicles are used to physically remove solids and other pollutants from impervious surfaces. New street sweeping technologies, including vacuum-assisted sweeping, can potentially reduce total annual suspended solids and pollutants up to 80 percent.

Appropriate Applications

- Well-suited in urban environments where little land is available for structural or sediment controls.
- Can be used in commercial districts and industrial sites and in intensely developed areas near receiving waters.
- Should be considered for highway applications along road shoulders, rest stops, parking areas, or maintenance yards.
- Best results when most sophisticated sweepers are used at a weekly to bimonthly frequency, depending on local regulations and conditions.
- Types of sweepers and practices include: vacuum-assisted sweepers, mechanical sweepers, regenerative air sweepers, vacuum-assisted dry sweepers, and tandem sweeping.

Limitations

- Not a good application in removing oil and grease.
- Older mechanical sweepers are limited in their ability to remove fine sediment.

Design Parameters

- Sweepers need to be operated at optimum speeds and sweeping patterns, with brushes properly adjusted, for maximum particulate removal from surfaces.

- Generally, 50 percent of particulates can be removed if sweeping is done at least once between storms with two passes per run. Depending on local traffic conditions and storm frequencies, sweeping may need to be done at more frequent intervals to achieve desired particulate removal.
- Arrangements shall be made for the disposal of collected wastes.
- Street sweeping is more effective if upstream erosion control and stormwater BMPs are implemented, especially at construction sites.

Maintenance and Inspection

- Conduct inspections as required by the NPDES permit or contract specifications during construction.
- Periodic inspection and maintenance will be required based on post-construction site conditions.
- Make any repairs necessary to ensure the measure is operating properly.
- Maintenance requirements are greater for certain types of sweepers.

Soil Preparation/Roughening EC-15

Categories

EC	rosion ontrol	☑
SE	edi ent ontrol	☒
TC	rac in ontrol	
WE	ind rosion ontrol	
NS	on tor ater Mana e ent ontrol	
WM	aste Mana e ent and Materials Pollution ontrol	

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents

edi ent	☑
utrients	
ras	
Metals	
Bacteria	
Oil and rease	
Or anics	

Potential Alternatives

draulic Mulc

oil Binders

eotextiles and Mats

l ser u scri er odi ies t is act s eet in an a , t e A A na e lo o and ooter elo ust e re o ed ro eac pa e and not appear on t e odi ied ersion

Description and Purpose

Soil Preparation/Roughening involves assessment and preparation of surface soils for BMP installation. This can include soil testing (for seed base, soil characteristics, or nutrients), as well as roughening surface soils by mechanical methods (including sheepsfoot rolling, track walking, scarifying, stair stepping, and imprinting) to prepare soil for additional BMPs, or to break up sheet flow. Soil Preparation can also involve tilling topsoil to prepare a seed bed and/or incorporation of soil amendments, to enhance vegetative establishment.

Suitable Applications

Soil preparation: Soil preparation is essential to proper vegetative establishment. In particular, soil preparation (i.e. tilling, raking, and amendment) is suitable for use in combination with any soil stabilization method, including RECPs or sod. Soil preparation should not be confused with roughening.

Roughening: Soil roughening is generally referred to as track walking (sometimes called imprinting) a slope, where treads from heavy equipment run parallel to the contours of the slope and act as mini terraces. Soil preparation is most effective when used in combination with erosion controls. Soil Roughening is suitable for use as a complementary process for controlling erosion on a site. Roughening is not intended to be used as a stand-alone BMP, and should be used with perimeter controls, additional erosion control measures, grade breaks, and vegetative establishment for maximum effectiveness. Roughening is intended to only affect surface soils and should not compromise slope stability or overall compaction. Suitable applications for soil roughening include:

- Along any disturbed slopes, including temporary stockpiles, sediment basins, or compacted soil diversion berms and swales.

- Roughening should be used in combination with hydraulically applied stabilization methods, compost blanket, or straw mulch; but should not be used in combination with RECPs or sod because roughening is intended to leave terraces on the slope.

Limitations

- Preparation and roughening must take place prior to installing other erosion controls (such as hydraulically applied stabilizers) or sediment controls (such as fiber rolls) on the faces of slopes.

- In such cases where slope preparation is minimal, erosion control/revegetation BMPs that do not require extensive soil preparation - such as hydraulic mulching and seeding applications - should be employed.

- Consideration should be given to the type of erosion control BMP that follows surface preparation, as some BMPs are not designed to be installed over various types of tillage/roughening, i.e., RECPs (erosion control blankets) should not be used with soil roughening due to a "bridging" effect, which suspends the blanket above the seed bed.

- Surface roughness has an effect on the amount of mulch material that needs to be applied, which shows up as a general increase in mulch material due to an increase in surface area (Topographic Index -see EC-3 Hydraulic Mulching).

Implementation

- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

General

A roughened surface can significantly reduce erosion. Based on tests done at the San Diego State Erosion Research Laboratory, various roughening techniques on slopes can result in a 12 - 76% reduction in the erosion rate versus smooth slopes.

Materials

Minimal materials are required unless amendments and/or seed are added to the soil. The majority of soil roughening/preparation can be done with equipment that is on hand at a normal construction site, such as bull dozers and compaction equipment.

Installation Guidelines

Soil Preparation

- Where appropriate or feasible, soil should be prepared to receive the seed by disking or otherwise scarifying the surface to eliminate crust, improve air and water infiltration and create a more favorable environment for germination and growth.

- Based upon soil testing conducted, apply additional soil amendments (e.g. fertilizers, additional seed) to the soil to help with germination. Follow EC-4, Hydroseeding, when selecting and applying seed and fertilizers.

Cut Slope Roughening:

- Stair-step grade or groove the cut slopes that are steeper than 3:1.
- Use stair-step grading on any erodible material soft enough to be ripped with a bulldozer. Slopes consisting of soft rock with some subsoil are particularly suited to stair-step grading.
- Make the vertical cut distance less than the horizontal distance, and slightly slope the horizontal position of the "step" in toward the vertical wall.
- Do not make individual vertical cuts more than 2 feet (0.6 m) high in soft materials or more than 3 feet (0.9 m) high in rocky materials.
- Groove the slope using machinery to create a series of ridges and depressions that run across the slope, on the contour.

Fill Slope Roughening:

- Place on fill slopes with a gradient steeper than 3:1 in lifts not to exceed 8 inches (0.2 m), and make sure each lift is properly compacted.
- Ensure that the face of the slope consists of loose, uncompacted fill 4-6 inches (0.1-0.2 m) deep.
- Use grooving or tracking to roughen the face of the slopes, if necessary.
- Do not blade or scrape the final slope face.

Roughening for Slopes to be Mowed:

- Slopes which require mowing activities should not be steeper than 3:1.
- Roughen these areas to shallow grooves by track walking, scarifying, sheepsfoot rolling, or imprinting.
- Make grooves close together (less than 10 inches), and not less than 1 inch deep, and perpendicular to the direction of runoff (i.e., parallel to the slope contours).
- Excessive roughness is undesirable where mowing is planned.

Roughening With Tracked Machinery:

- Limit roughening with tracked machinery to soils with a sandy textural component to avoid undue compaction of the soil surface.
- Operate tracked machinery up and down the slope to leave horizontal depressions in the soil. Do not back-blade during the final grading operation.
- Seed and mulch roughened areas as soon as possible to obtain optimum seed germination and growth.

Costs

Costs are based on the additional labor of tracking or preparation of the slope plus the cost of any required soil amendment materials.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Check the seeded slopes for signs of erosion such as rills and gullies. Fill these areas slightly above the original grade, then reseed and mulch as soon as possible.
- Inspect BMPs weekly during normal operations, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

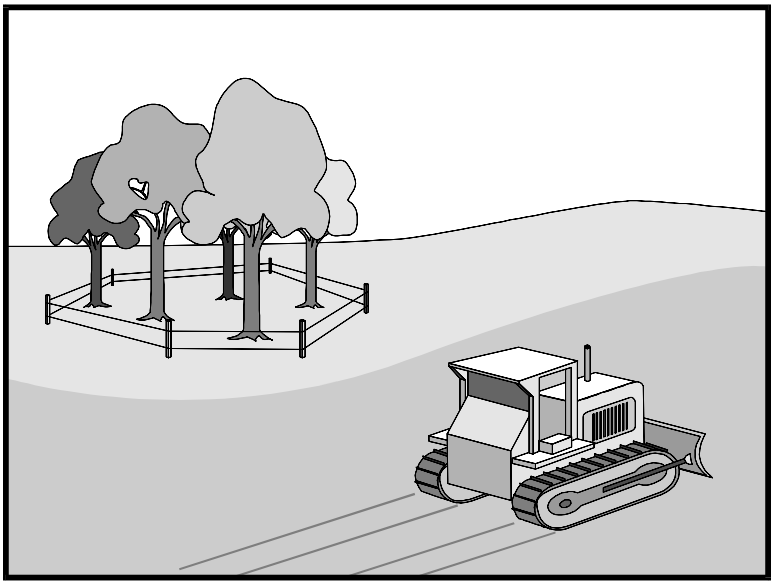
References

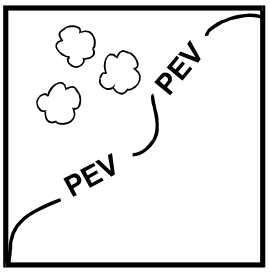
Soil Stabilization BMP Research for Erosion and Sediment Controls: Cost Survey Technical Memorandum, State of California Department of Transportation (Caltrans), July 2007.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Preservation of Existing Vegetation

SS-2





Standard Symbol

BMP Objectives

Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ○ Materials and Waste Management
- ○

Definition and Purpose

Preservation of existing vegetation is the identification and protection of desirable vegetation that provides erosion and sediment control benefits.

Appropriate Applications

- Preserve existing vegetation at areas on a site where no construction activity is planned or will occur at a later date. Specifications for preservation of existing vegetation can be found in Standard Specifications, Section 7-1.11.
- On a year-round basis, temporary fencing shall be provided prior to the commencement of clearing and grubbing operations or other soil-disturbing activities in areas.
- Clearing and grubbing operations should be staged to preserve existing vegetation.

Limitations

Protection of existing vegetation requires planning, and may limit the area available for construction activities.

Standards and Specifications

Timing

- Preservation of existing vegetation shall be provided prior to the commencement of clearing and grubbing operations or other soil-disturbing activities in areas identified on the plans to be preserved, especially on areas designated as Environmentally Sensitive Areas (ESAs).
- Preservation of existing vegetation shall conform to scheduling requirements set forth in the special provisions.

Design and Layout

- Mark areas to be preserved with temporary fencing made of orange polypropylene that is stabilized against ultraviolet light. The temporary fencing shall be at least 1 meter (3.2. ft) tall and shall have openings not larger than 50 mm by 50 mm (2 in by 2 in).

- Fence posts shall be either wood or metal, at the Contractor's discretion, as appropriate for the intended purpose. The post spacing and depth shall be adequate to completely support the fence in an upright position.

- Minimize the disturbed areas by locating temporary roadways to avoid stands of trees and shrubs and to follow existing contours to reduce cutting and filling.

- Consider the impact of grade changes to existing vegetation and the root zone.

Installation

- Construction materials, equipment storage, and parking areas shall be located where they will not cause root compaction.

- Keep equipment away from trees to prevent trunk and root damage.

- Maintain existing irrigation systems.

- Employees and subcontractors shall be instructed to honor protective devices. No heavy equipment, vehicular traffic, or storage piles of any construction materials shall be permitted within the drip line of any tree to be retained. Removed trees shall not be felled, pushed, or pulled into any retained trees. Fires shall not be permitted within 30 m (100 ft) of the drip line of any retained trees. Any fires shall be of limited size, and shall be kept under continual surveillance. No toxic or construction materials (including paint, acid, nails, gypsum board, chemicals, fuels, and lubricants) shall be stored within 15 m (50 ft) of the drip line of any retained trees, nor disposed of in any way which would injure vegetation.

Trenching and Tunneling

- Trenching shall be as far away from tree trunks as possible, usually outside of the tree drip line or canopy. Curve trenches around trees to avoid large roots or root concentrations. If roots are encountered, consider tunneling under them. When trenching and/or tunneling near or under trees to be retained, tunnels shall be at least 450 mm (18 in) below the ground surface, and not below the tree center to minimize impact on the roots.

- Tree roots shall not be left exposed to air; they shall be covered with soil as soon as possible, protected, and kept moistened with wet burlap or peat moss until the tunnel and/or trench can be completed.

- The ends of damaged or cut roots shall be cut off smoothly.

- Trenches and tunnels shall be filled as soon as possible. Careful filling and tamping will eliminate air spaces in the soil which can damage roots.

- Remove any trees intended for retention if those trees are damaged seriously enough to affect their survival. If replacement is desired or required, the new tree shall be of similar species, and at least 50 mm (2 in) caliper, unless

otherwise required by the contract documents.

- After all other work is complete, fences and barriers shall be removed last. This is because protected trees may be destroyed by carelessness during the final cleanup and landscaping.

Maintenance and Inspection

During construction, the limits of disturbance shall remain clearly marked at all times. Irrigation or maintenance of existing vegetation shall conform to the requirements in the landscaping plan. If damage to protected trees still occurs, maintenance guidelines described below shall be followed:

- Serious tree injuries shall be attended to by an arborist.
- During construction, District Environmental shall be contacted to ensure that ESAs are protected.

egetati e u er Stri P

Description

A vegetative buffer strip is a gently sloping area of vegetative cover that runoff water flows through before entering a stream, storm sewer, or other conveyance. The buffer strip may be an undisturbed strip of natural vegetation or it can be a graded and planted area.

Vegetative buffer strips act as living sediment filters that intercept and detain stormwater runoff. They reduce the flow and velocity of surface runoff, promote infiltration, and reduce pollutant discharge by capturing and holding sediments and other pollutants carried in the runoff water. Vegetative buffer strips function much like vegetated or grassed swales. Buffer strips, however, are fairly level and treat sheet flow across them, whereas grassed swales are indentations that treat concentrated flows running along them (see BMP 40-Temporary Swale).

Applications

- Used for temporary or permanent control, usually in conjunction with other sediment collection and slope protection practices. Consider use with level spreaders or diversion measures such as earth dikes (BMP 41) and slope drains (BMP 24). Also, silt fences (BMP 36) installed upgradient can prevent overloading of the buffer strip.
- May be placed at many locations between the source of sediment (road surface, side slopes) and a natural or constructed waterway. They are inexpensive and easily constructed, and can be put into place at any time if climatic conditions allow for planting.
- May be used at almost any site that can support vegetation, but is best suited for areas where the soils are well drained or moderately well drained and where the bedrock and the water table are well below the surface.
- Provides low to moderate treatment of pollutants in stormwater while providing a natural look to a site.
- Can provide habitat for wildlife.
- Can screen noise and views if trees or high shrubs are planted on the filter strips.

Limitations

Drainage area - unlimited
Minimum bedrock depth – 5 ft
NRCS soil type – ABCD
Drainage/flood control – no
Maximum slope – 20%
Minimum water table – 3 ft
Freeze/thaw – fair

- Not effective for filtering high velocity flows from large paved areas, steep slopes, or hilly areas. Consider other measures if slopes exceed 15%.
- Requires significant land space.
- May have a short useful life due to clogging by sediments and oil and grease.
- Do not use planted or seeded ground as a buffer strip for sediment trapping until the vegetation is well established.

Targeted Pollutants

Sediment

Design Parameters

- A buffer strip should be at least 20 ft wide to function well. Along live streams or above wetlands, the minimum width should be 100 ft. The length of the strip should be approximately 50 to 82 ft. Where slopes become steeper, increase the length of the strip.
- Tall, dense stands of grass form good sediment traps, as do willows and alder. The willows and alder can be native or planted. A combination of grasses with willows or alder is also effective. Any planted species should be deep rooted and able to adjust to low oxygen levels. Vegetative cover should be at least 75% to assure adequate removal of sediments. Forested strips are always preferred to vegetated strips, and existing vegetation is preferred to planted vegetation. In planning for vegetated strips, consider climatic conditions, since vegetation may not take hold in especially dry and/or cold regions.
- In many cases, a vegetative buffer strip will not effectively control runoff and retain sediments unless employed in conjunction with other control measures. Where heavy runoff or large volumes of sediment are expected, provide diversion measures or other filtering measures above or below the buffer strip.

Construction Guidelines

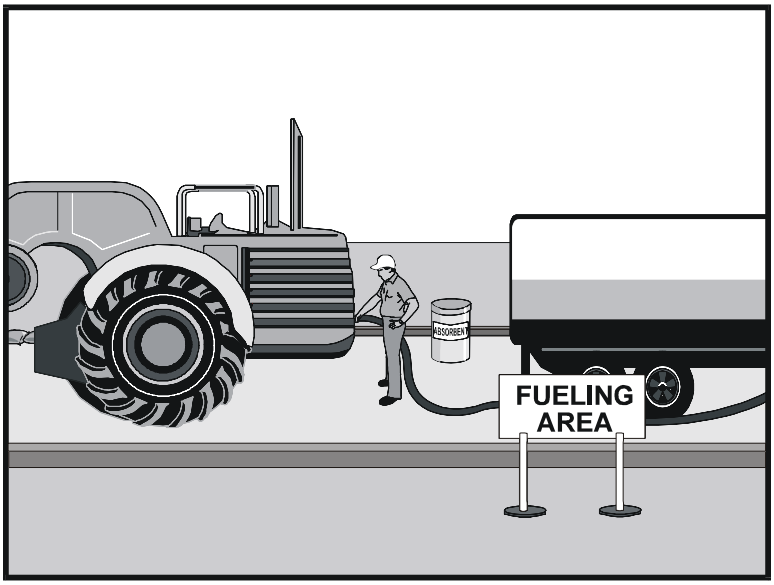
- Try to direct sediment-laden water onto naturally vegetated or stabilized planted ground.
- Fertilizing seeded or planted ground may enhance growth (and improve its effectiveness as a buffer strip).
- Do not place any equipment, construction debris, or extra soil in the buffer strip (or the strip will be damaged).

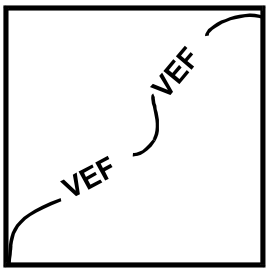
Maintenance

- Inspect the buffer strip at regular intervals to ensure proper functioning. Check for damage by equipment and vehicles. In newly planted areas, check the progress of germination and plant growth, and arrange for fertilizing, if needed, to enhance growth and establishment. (Planted ground should not be used for a sediment trap until the vegetation is well established.) Make sure that water flowing through the buffer strip is not causing additional erosion nearby and not forming ponds due to erosion within the buffer strip.
- Buffer strips in natural vegetation do not generally require maintenance; however, on some sites it may be necessary to remove sediments and replant on a regular basis. Promptly repair any damage from equipment, vehicles, or erosion.

Vehicle and Equipment Fueling

NS-9





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Vehicle and equipment fueling procedures and practices are designed to minimize or eliminate the discharge of fuel spills and leaks into storm drain systems or to watercourses.

Appropriate Applications

These procedures are applied on all construction sites where vehicle and equipment fueling takes place.

Limitations

- Onsite vehicle and equipment fueling shall only be used where it's impractical to send vehicles and equipment off-site for fueling.

Standards and Specifications

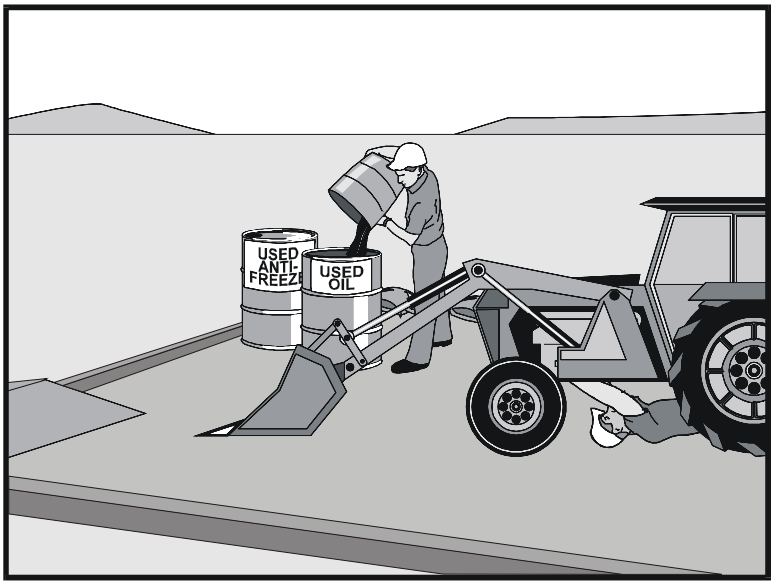
- When fueling must occur onsite, the contractor shall select and designate an area to be used, subject to approval of the Resident Engineer (RE).
- Absorbent spill clean-up materials and spill kits shall be available in fueling areas and on fueling trucks and shall be disposed of properly after use.
- Drip pans or absorbent pads shall be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area.
- Dedicated fueling areas shall be protected from storm water run-on and runoff, and shall be located at least 15 m (50 ft) from downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
- Nozzles used in vehicle and equipment fueling shall be equipped with an automatic shut-off to control drips. Fueling operations shall not be left unattended.
- Protect fueling areas with berms and/or dikes to prevent run-on, runoff, and to contain spills.

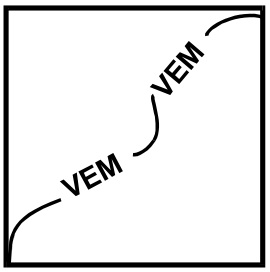
- Use vapor recovery nozzles to help control drips as well as air pollution where required by Air Quality Management Districts (AQMD). Ensure the nozzle is secured upright when not in use.
- Fuel tanks shall not be "topped-off."
- Vehicles and equipment shall be inspected on each day of use for leaks. Leaks shall be repaired immediately or problem vehicles or equipment shall be removed from the project site.
- Absorbent spill clean-up materials shall be available in fueling and maintenance areas and used on small spills instead of hosing down or burying techniques. The spent absorbent material shall be removed promptly and disposed of properly.
- Federal, state, and local requirements shall be observed for any stationary above ground storage tanks. Refer to WM-1, “Material Delivery and Storage.”
- Mobile fueling of construction equipment throughout the site shall be minimized. Whenever practical, equipment shall be transported to the designated fueling area.

Maintenance and Inspection

- Fueling areas and storage tanks shall be inspected regularly.
- Keep an ample supply of spill cleanup material on the site.
- Immediately cleanup spills and properly dispose of contaminated soil and cleanup materials.

Vehicle and Equipment Maintenance NS-10





Standard Symbol

P ecti es

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Procedures and practices to minimize or eliminate the discharge of pollutants to the storm drain systems or to watercourses from vehicle and equipment maintenance procedures.

Appropriate Applications

These procedures are applied on all construction projects where an onsite yard area is necessary for storage and maintenance of heavy equipment and vehicles.

Limitations

- None identified.

Standards and Specifications

- Drip pans or absorbent pads shall be used during vehicle and equipment maintenance work that involves fluids, unless the maintenance work is performed over an impermeable surface in a dedicated maintenance area.
- All maintenance areas are required to have spill kits and/or use other spill protection devices.
- Dedicated maintenance areas shall be protected from storm water run-on and runoff, and shall be located at least 15 m (50 ft) from downstream drainage facilities and watercourses.
- Drip Pans or plastic sheeting shall be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies when the vehicle or equipment is planned to be idle for more than one hour.
- Absorbent spill clean-up materials shall be available in maintenance areas and shall be disposed of properly after use. Substances used to coat asphalt transport trucks and asphalt-spreading equipment shall be non-toxic.
- Use off-site maintenance facilities whenever practical.

- For long-term projects, consider constructing roofs or using portable tents over maintenance areas.
- Properly dispose of used oils, fluids, lubricants, and spill cleanup materials.
- Do not dump fuels and lubricants onto the ground.
- Do not place used oil in a dumpster or pour into a storm drain or watercourse.
- Properly dispose or recycle used batteries.
- Do not bury used tires.
- Repair of fluid and oil leaks immediately.
- Provide spill containment dikes or secondary containment around stored oil and chemical drums.

Maintenance and Inspection

- Maintain waste fluid containers in leak proof condition.
- Vehicle and equipment maintenance areas shall be inspected regularly.
- Vehicles and equipment shall be inspected on each day of use. Leaks shall be repaired immediately or the problem vehicle(s) or equipment shall be removed from the project site.
- Inspect equipment for damaged hoses and leaky gaskets routinely. Repair or replace as needed.

GEOSYNTHETICS

MUD MATS

A New revolutionary product to keep you out of the mud!

Unroll this amazing new product and drive on any muddy, swampy ground without getting stuck, rutting or tracking mud off site. Mud Mats consist of pocketed, double-wall, high-strength fabric with high tensile reinforcing ribs confined within each sleeve which allows for easy deployment and amazing structural stability. Mats connect together to form custom sizes. Ground pressure from vehicle tires is reduced up to 40x causing minimal ground disturbance!

Each mat is made up of a double layer of high strength woven fabric that is stitched in such a way to encapsulate the reinforcing members that run perpendicular to the direction of traffic.

These reinforcing ribs are secured individually within each pocket. There are approx. 24-26 pockets that each holds 1 bamboo post of approx. 2” diameter.

This combination of reinforcing member and confining fabric result in a portable mat that can be rolled up for transport and ease of deployment.

Mud Mats can be used in construction site access, agriculture, golf & parks, other soft or sensitive ground condition areas where vehicle access is required.

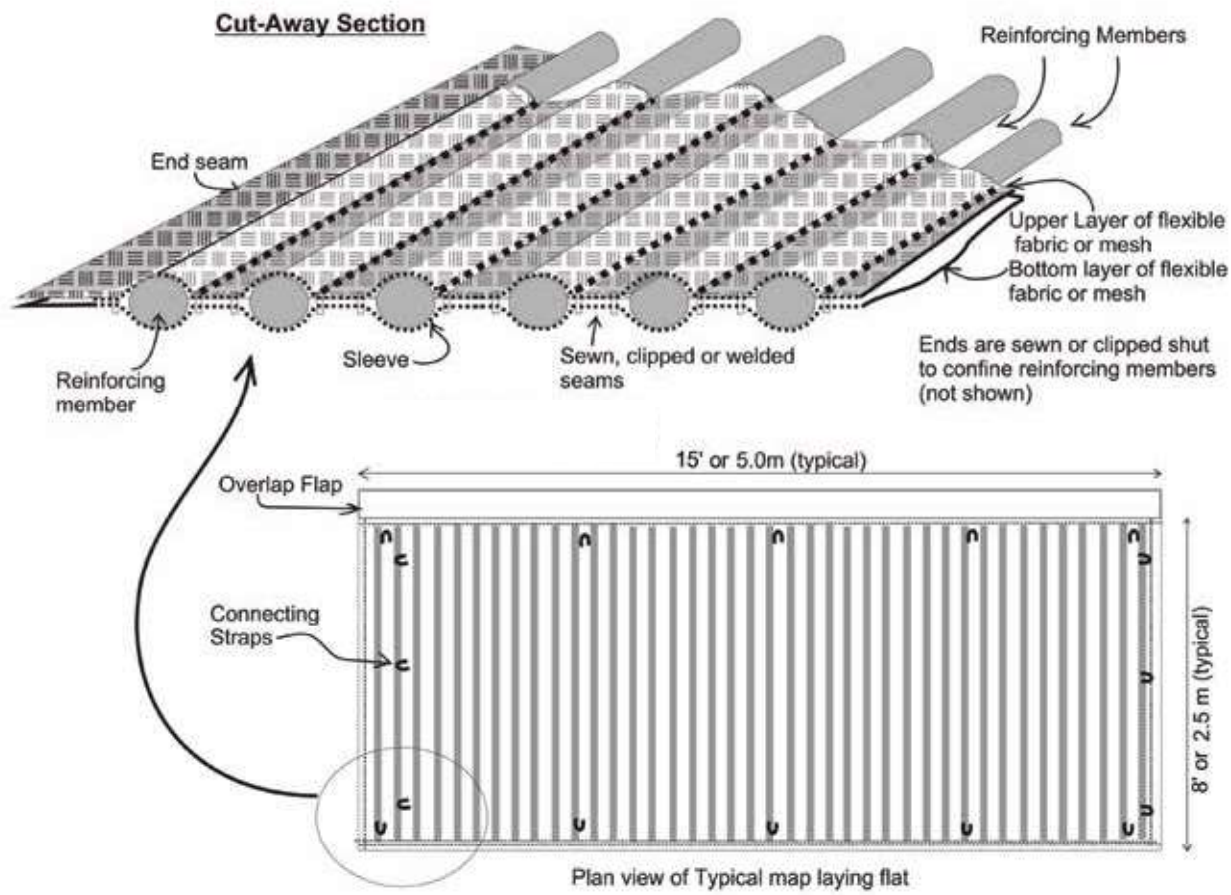
ADVANTAGES:

- Easy to Deploy
- Alternative to Rock
- Protects Turf
- Allows Site Access
- Residential Construction

For more information about Geosynthetic products, contact Inside Sales at 800.448.3636
email at info@acfenv.com

ACF ENVIRONMENTAL

SPECIFICATIONS



SPECIFICATIONS:

PROPERTY	TEST METHOD	MARV
Grab Tensile Strength	ASTM D4632	802.6 lbs
Apparent Breaking Elongation	ASTM D4632	25% / 18%
Trapezoid Tearing Strength	ASTM D4533	607 lbs
Puncture Resistance	ASTM D4833	374.3 lbs
Mullen Burst	ASTM D3786	456.88 psi
Apparent Opening Size	ASTM D4751	70 US Sieve / 0.212mm
Constant Head Permittivity	ASTM D4491	20.16 g/m/ft^2
Wide Width Tensile	ASTM D4595	685.7 lbs / in%
Materital	Woven Geotextile	100% polypropylene

PACKAGING:

Roll Size	8' X 15'
Weight	100 lbs each

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LET'S GET IT DONE
800.448.3636
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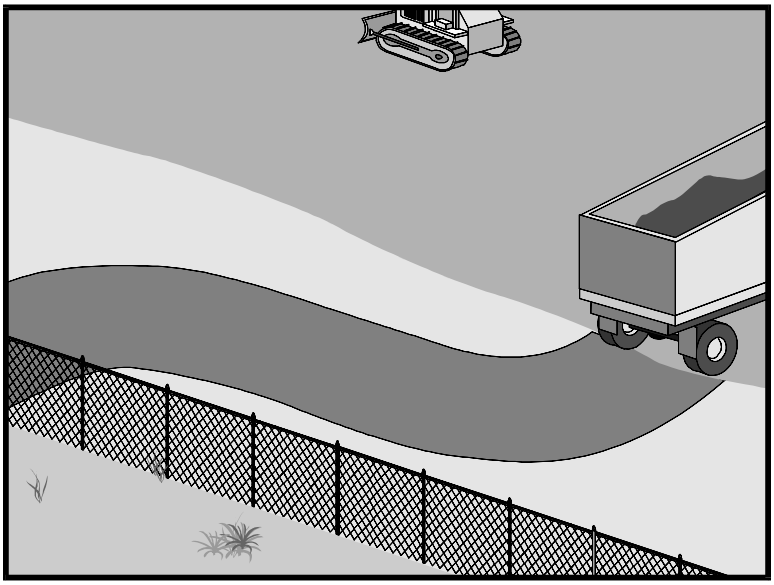
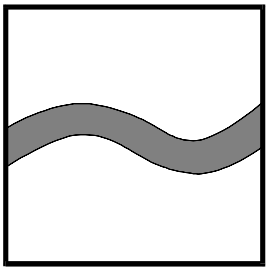
Stabilized Construction Roadway

TC-2





Standard Symbol

BMP Objectives

- ● Soil Stabilization
- ○ Sediment Control
- ● Tracking Control
- ● Wind Erosion Control
- ○ Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

A stabilized construction roadway is a temporary access road. It is designed for the control of dust and erosion created by vehicular tracking.

Appropriate Applications

- Construction roadways and short-term detour roads:
  - Where mud tracking is a problem during wet weather.
  - Where dust is a problem during dry weather.
  - Adjacent to water bodies.
  - Where poor soils are encountered.
  - Where there are steep grades and additional traction is needed.
- This BMP may be implemented on a project-by-project basis with other BMPs when determined necessary and feasible by the Resident Engineer (RE).

Limitations

- Materials will likely need to be removed prior to final project grading and stabilization.
- Site conditions will dictate design and need.
- May not be applicable to very short duration projects.
- Limit speed of vehicles to control dust.

Stabilized Construction Roadway

TC-2

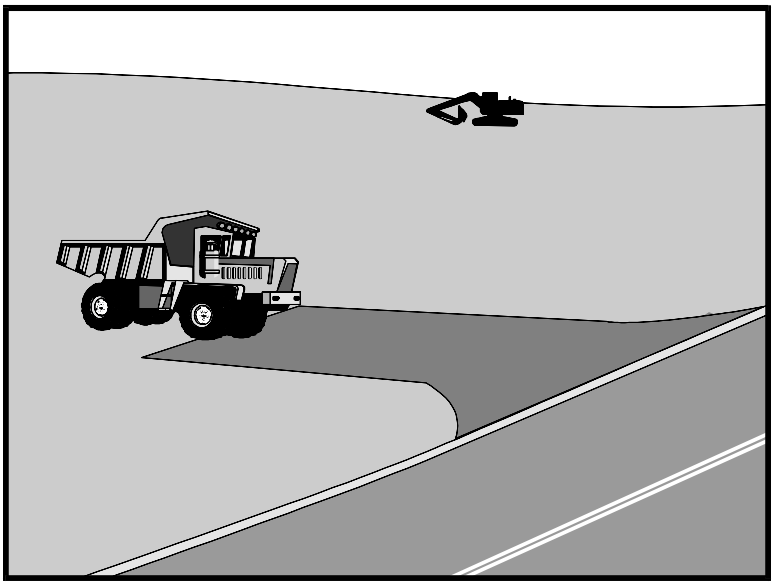
Standards and Specifications

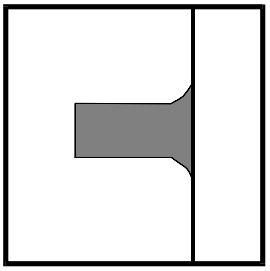
- Properly grade roadway to prevent runoff from leaving the construction site.
- Design stabilized access to support the heaviest vehicles and equipment that will use it.
- Stabilize roadway using aggregate, asphalt concrete, or concrete based on longevity, required performance, and site conditions. The use of cold mix asphalt or asphalt concrete (AC) grindings for stabilized construction roadway is not allowed.
- Coordinate materials with those used for stabilized construction entrance/exit points.
- If aggregate is selected, place crushed aggregate over geotextile fabric to at least 300 mm (12 in) depth, or place aggregate to a depth recommended by the RE or Construction Storm Water Coordinator. Crushed aggregate greater than 75 mm (3 inches) and smaller than 150 mm (6 inches) shall be used.

Maintenance and Inspection

- Inspect routinely for damage and repair as needed, or as directed by the RE.
- Keep all temporary roadway ditches clear.
- When no longer required, remove stabilized construction roadway and re-grade and repair slopes.

Stabilized Construction Entrance/Exit TC-1





Standard Symbol

BMP Objectives

- ● Soil Stabilization
- ○ Sediment Control
- ● Tracking Control
- ● Wind Erosion Control
- ○ Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

A stabilized construction access is defined by a point of entrance/exit to a construction site that is stabilized to reduce the tracking of mud and dirt onto public roads by construction vehicles.

Appropriate Applications

- Use at construction sites:
  - Where dirt or mud can be tracked onto public roads.
  - Adjacent to water bodies.
  - Where poor soils are encountered.
  - Where dust is a problem during dry weather conditions.
- This BMP may be implemented on a project-by-project basis in addition to other BMPs when determined necessary and feasible by the Resident Engineer (RE).

Limitations

- Site conditions will dictate design and need.

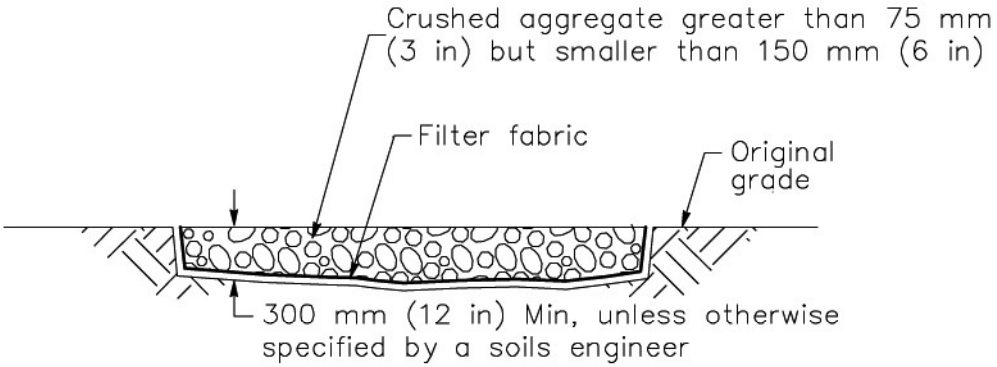
Standards and Specifications

- Limit the points of entrance/exit to the construction site.
- Limit speed of vehicles to control dust.
- Properly grade each construction entrance/exit to prevent runoff from leaving the construction site.
- Route runoff from stabilized entrances/exits through a sediment-trapping device before discharge.
- Design stabilized entrance/exit to support the heaviest vehicles and equipment that will use it.

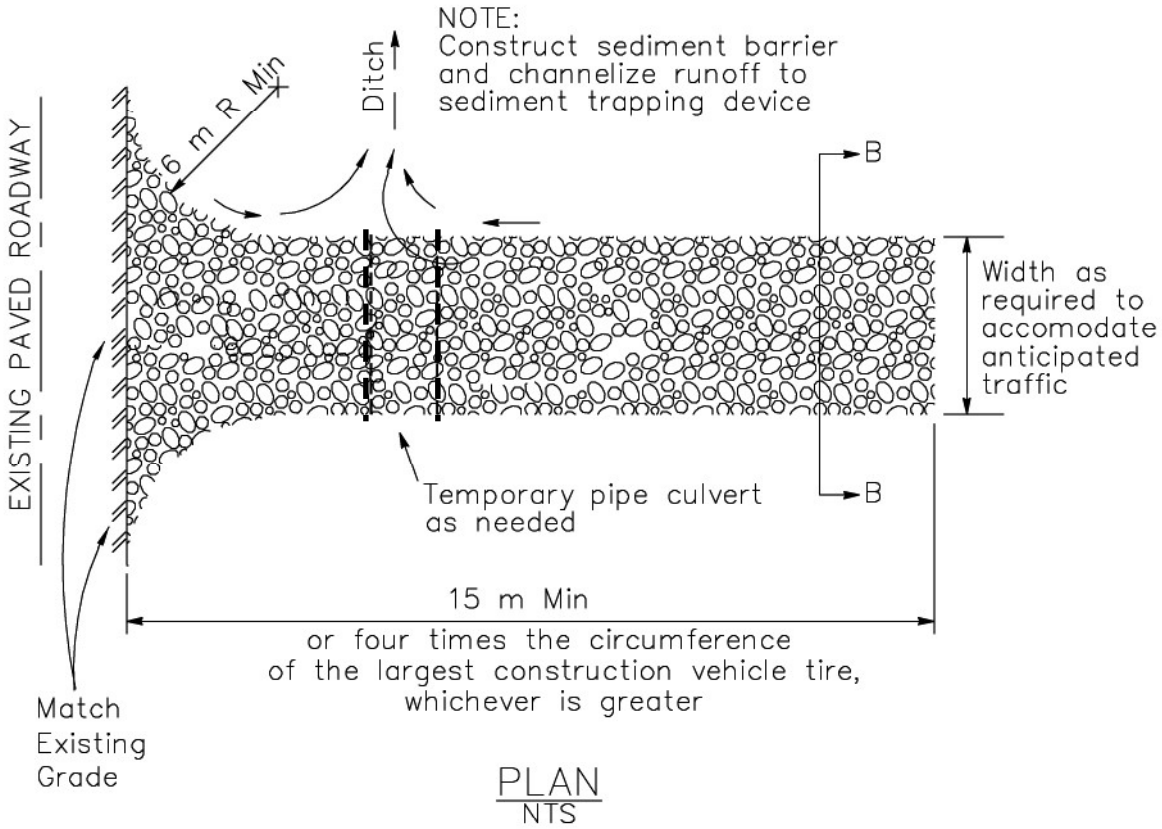
- Select construction access stabilization (aggregate, asphaltic concrete, concrete) based on longevity, required performance, and site conditions. The use of asphalt concrete (AC) grindings for stabilized construction access/roadway is not allowed.
- Use of constructed/manufactured steel plates with ribs for entrance/exit access is allowed with written approval from the RE.
- If aggregate is selected, place crushed aggregate over geotextile fabric to at least 300 mm (12 in) depth, or place aggregate to a depth recommended by the RE. Crushed aggregate greater than 75 mm (3 inches) and smaller than 150 mm (6 inches) shall be used.
- Designate combination or single purpose entrances and exits to the construction site.
- Implement BMP SC-7, "Street Sweeping and Vacuuming" as needed and as required.
- Require all employees, subcontractors, and suppliers to utilize the stabilized construction access.
- All exit locations intended to be used continuously and for a period of time shall have stabilized construction entrance/exit BMPs (TC-1 "Stabilized Construction Entrance/Exit" or TC-3 "Entrance/Outlet Tire Wash").

Maintenance and Inspection

- Inspect routinely for damage and assess effectiveness of the BMP. Remove aggregate, separate and dispose of sediment if construction entrance/exit is clogged with sediment or as directed by the RE.
- Keep all temporary roadway ditches clear.
- Inspect for damage and repair as needed.



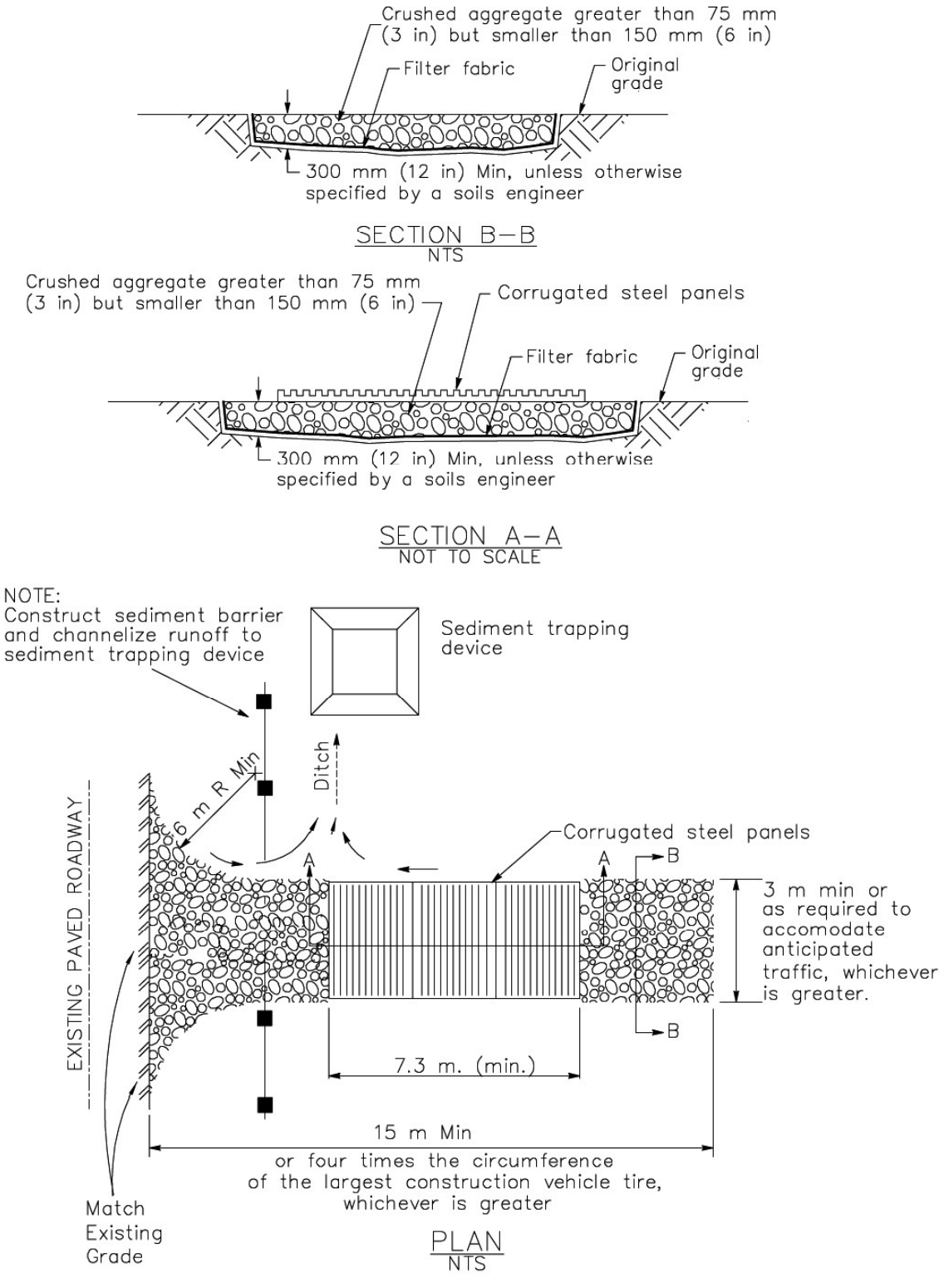
SECTION B–B
NTS



PLAN
NTS

Stabilized Contraction Entrance/Exit (Type 1)

Stabilized Construction Entrance/Exit TC-1



Stabilized Construction Entrance/Exit (Type 2)

MUNICIPALITY OF ANCHORAGE
Owner's Statement for Type 2 and 3 SWPPPs

This statement is required for Type 2 and 3 SWPPP submittals. See Submittal Requirement Table for additional information.

Project Name: Baxter Multifamily Permit Number: TBD

Area of Disturbance (acres/sf): 2.0

Project Type: ___Single Family ___Duplex ____ Commercial _x__ Other Multifamily

Subdivision: Valetskaya Addition No 1 Lot:_____ Block:_____ Tract: B Parcel:_____ Street

Address: 4220 Baxter Rd. Anchorage, AK, 99504 Contact Name Tyler Robinson

Phone Number: (907) 793-3000

I have completed the submittal requirements outlined in the Submittal Requirements Table (Table 2.2-1) and have enclosed the necessary design information for the above-referenced project for MOA review. I understand that a review does not necessarily guarantee that an approval to construct will be issued by this Department. By my signature I certify that I will install or perform necessary BMPs, maintain them throughout the project, keep a copy of my approved SWPPP on the construction site. I certify that this project is (check one):

____ privately owned and that I am the owner or duly authorized representative responsible for the overall management of the project.

____ owned by a sole proprietorship and that I am the proprietor or duly authorized representative responsible for the overall management of the project.

____ owned by a partnership of which I am a general partner or duly authorized representative responsible for the overall management of the project.

X owned by a corporation of which I am a principal executive officer of at least the level of vice-president, or a duly authorized representative responsible for the overall management of the project.

____ owned by a municipal, state, or federal or other public agency, of which I am a principal executive officer, ranking elected official, or other duly authorized employee

If a Type 2 SWPPP is included in the submittal, I further certify that the project

____ is not part of a larger common plan of development OR

____ is part of a larger common plan of development which collectively disturbs _____ acres.

(If the project is part of a common plan of development that collectively disturbs 1 or more acres, submit a Type 3 SWPPP and a copy of the NOI.)

MUNICIPALITY OF ANCHORAGE

Owner's Statement for Type 2 and 3 SWPPPs

Municipal inspections and inspection fees will start with permit issuance. **It is your responsibility to notify Watershed Management Services if the project start will be later than the permit issuance date.**

Signature (please sign in ink)_____ Date _____

Name and Official Title (print or type)Tyler Robinson_____

Company or Agency (if applicable) Cook Inlet Housing Authority_____

ID	NAME	DURATION	START DATE	END DATE
1	Survey	TBD	TBD	TBD
2	SWPPP Installation	TBD	TBD	TBD
3	Mobilization	TBD	TBD	TBD
4	Clearing & Grubbing	TBD	TBD	TBD
5	Building	TBD	TBD	TBD
6	Landscape	TBD	TBD	TBD
7	Cleanup	TBD	TBD	TBD
8				
9				
10				
11				
12				
13				
14				
15				

APPENDIX D – Supporting Documentation

- TMDLs
- Endangered Species
- Other Permits

ENDANGERED, THREATENED, PROPOSED, CANDIDATE, AND DELISTED SPECIES IN ALASKA (Updated May 13, 2014)

SPECIES MANAGED BY THE UNITED STATES FISH AND WILDLIFE SERVICE

Species and Status	Date of status	Critical Habitat Designated	Lead Office	Range in Alaska (AK)
Endangered				
Short-tailed albatross (*Phoebastria albatrus*)	7/31/2000	n/a	Anchorage	Bering Sea, Aleutian Islands, Gulf of AK
Aleutian shield fern (*Polystichum aleuticum*)	2/17/1988	n/a	Anchorage	Adak Island
Eskimo curlew (*Numenius borealis*)	3/11/1967	n/a	Fairbanks	No longer occurs in AK
Threatened				
Polar bear (*Ursus maritimus*)	05/15/2008	n/a	MMM[1]	On sea ice and coastlines of Chukchi, Beaufort, and Bering Seas
Northern sea otter (*Enhydra lutris kenyoni*) Southwest Alaska DPS[2]	8/09/2005	10/08/2009	MMM	Aleutian Islands, Kodiak Island, and AK Peninsula
Steller's eider (*Polysticta stelleri*)	6/11/1997	2/2/2001	Fairbanks	Arctic Coastal Plain, Yukon Delta, all coastal waters except southeast Alaska
Spectacled eider (*Somateria fischeri)*	5/10/1993	2/6/2001	Fairbanks	Yukon Delta, Arctic Coastal Plain, St. Lawrence Island, Bering Sea, Chukchi Sea, and Beaufort Sea
Wood bison (*Bison bison athabascae*)	6/2/1970	n/a	RO[3]	Not currently in the wild in AK
Proposed for Listing				
None				
Candidates for Listing				
Yellow-billed loon (*Gavia adamsii*)	3/25/2009	n/a	Fairbanks	Arctic Coastal Plain, Seward Peninsula, St. Lawrence Island and all coastal waters
Pacific walrus *(Odobenus rosmarus divergens)*	2/10/2011	n/a	MMM	Continental shelf waters Bering & Chukchi Seas
Delisted				
Aleutian Canada goose (*Branta canadensis leucopareia*)	3/20/2001	n/a	Anchorage	Aleutian Islands, Semidi Islands
American peregrine falcon (*Falco peregrinus anatum)*	8/25/1999	n/a	Fairbanks	Interior Alaska
Arctic peregrine falcon (*Falco peregrinus tundrius*)	10/5/1994	n/a	Fairbanks	Northern and western AK

ENDANGERED, THREATENED, PROPOSED, CANDIDATE, AND DELISTED SPECIES IN ALASKA (*cont.*)

SPECIES MANAGED BY NATIONAL MARINE FISHERIES SERVICE[4]

Species and Status	Occurrence	Range in Alaska (AK)[5]
Endangered		
Steller sea lion *(Eumetopias jubatus)* Western DPS	Regular	Bering Sea, Aleutian Islands, Cook Inlet, Gulf of AK, Southeast AK
Bowhead whale (*Balaena mysticetus)*	Regular	Beaufort Sea, Chukchi Sea, Bering Sea
Cook Inlet beluga whale (*Delphinapterus leucas)*	Regular	Cook Inlet
Fin whale (*Balaenoptera physalus)*	Rare Regular	Beaufort Sea Chukchi Sea, Bering Sea, Cook Inlet, Gulf of AK, Aleutian Islands, Southeast AK
Humpback whale (*Megaptera novaeangliae)*	Rare Regular	Beaufort Sea Chukchi Sea, Bering Sea, Cook Inlet, Gulf of AK, Aleutian Islands, Southeast AK
Sperm whale (*Physeter macrocephalus)*	Regular	Bering Sea, Gulf of AK, Southeast AK, Aleutian Islands
Leatherback sea turtle (*Dermochelys coriacea)*[6]	Rare	Gulf of AK
Blue whale (*Balaenoptera musculus*)	Rare	Bering Sea, Gulf of AK
North Pacific right whale (*Eubalaena japonica)*	Rare	Bering Sea, Gulf of AK
Sei whale *(Balaenoptera borealis)*	Rare	Gulf of AK southwestern Bering Sea and Aleutian Islands
Gray whale *(Eschrichtius robustus)* Western North Pacific DPS	Rare	Bering Sea, Gulf of AK
Threatened		
Green sea turtle (*Chelonia mydas*, including *agassizi*)[6]	Rare	Gulf of AK
Loggerhead sea turtle (*Caretta caretta)*[6]	Rare	Gulf of AK
Bearded seal (*Erignathus barbatus nauticus*) Beringia DPS	Regular	Bering Sea, Chukchi Sea, Beaufort Sea
Ringed seal, Arctic subspecies (*Phoca hispida hispida*)	Regular	Bering Sea, Chukchi Sea, Beaufort Sea
Olive Ridley sea turtle (*Lepidochelys olivacea*)[6]	Rare	Gulf of AK
Proposed for Listing	**Date**	
None		
Candidates for Listing	**Year**	
Iliamna Harbor Seal (*Phoca vitulina richardii*)	2013	Iliamna Lake
Pinto abalone (*Haliotis kamtschatkana*)	2013	Southeast AK
Delisted		
Gray whale (*Eschrichtius robustus*) Eastern North Pacific DPS	Recovered	Eastern North Pacific Ocean
Steller sea lion (*Eumetopias jubatus*) Eastern DPS	Recovered	Bering Sea, Gulf of Alaska, Southeast Alaska

ENDANGERED, THREATENED, PROPOSED, CANDIDATE, AND DELISTED SPECIES IN ALASKA (*cont.*)

[1] MMM refers to the office of Marine Mammals Management, located in the Alaska Regional Office. MMM personnel prepared the federal rules for both polar bear and northern sea otter. The Fairbanks (polar bear) or Anchorage (northern sea otter) field offices are responsible for section 7 consultations under the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et seq., as amended).

[2] DPS refers to a "Distinct Population Segment" that exhibits both "discreteness" in relation to the remainder of the species and "significance" to the species to which it belongs.

[3] RO refers to the Alaska Regional Office.

[4] Under the ESA, the National Marine Fisheries Service (NMFS) is responsible for listed anadromous fishes, marine fishes, and marine mammals other than sea otter, polar bear, walrus, manatee, and dugong. A number of listed fish species that spawn in the lower 48 may occur in Alaskan waters during the marine phase of their life cycles. See the full NMFS Alaska species list at this site: http://www.alaskafisheries.noaa.gov/protectedresources/esa/ak_nmfs_species.pdf.

[5] Detailed range maps for species managed by NMFS in Alaska can be found at this website: http://mapping.fakr.noaa.gov/esa/.

[6] Free-swimming turtles, or turtles caught in fishing gear, fall under the jurisdiction of NMFS, whereas turtles on Alaska's beaches fall under the jurisdiction of the United States Fish and Wildlife Service (USFWS). More information about USFWS species is available at 907.786.3323 or http://alaska.fws.gov/fisheries/endangered/index.htm.

STATUS DEFINITIONS

Endangered: A species which is in danger of extinction throughout all or a significant portion of its range.

Threatened: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Proposed: A proposal rule to list this species as either threatened or endangered has been published in the Federal Register.

Candidate: USFWS: a species with sufficient information on biological vulnerability and threat(s) to support a proposal to list as threatened or endangered,
NMFS: (1) species that are the subject of a petition to list and for which it is determined that listing may be warranted, pursuant to section 4(b)(3)(A), and (2) [currently unlisted] species that are not the subject of a petition but for which we have announced the initiation of a status review in the Federal Register.

Delisted: A species that has been removed from the list of threatened and endangered species. The USFWS or NMFS monitor these species for a period of at least 5 years following delisting.

ADDRESSES AND PHONE NUMBERS

United States Fish and Wildlife Service
Anchorage Fish and Wildlife Field Office
605 West 4th Avenue, Room G-61
Anchorage, Alaska 99501
Phone: 907.271.2888
Fax: 907.271.2786

United States Fish and Wildlife Service
Fairbanks Fish and Wildlife Field Office
101 12th Avenue, Box 19, Room 110
Fairbanks, Alaska 99701
Phone: 907.456.0203
Fax: 907.456.0208

United States Fish and Wildlife Service
Alaska Regional Office
Division of Endangered Species
1011 East Tudor Road
Anchorage, Alaska 99503
Phone: 907.786.3323
Fax: 907.786.3350

National Marine Fisheries Service
National Oceanic and Atmospheric Administration
Anchorage Field Office
222 West 7th Avenue, Box 43
Anchorage, Alaska 99513-7577
Phone: 907.271.5006
Fax: 907.271.3030

National Marine Fisheries Service
National Oceanic and Atmospheric Administration
Protected Resources Division
P.O. Box 21668
Juneau, AK 99802-1668
Phone: 907.586.7235
Fax: 907.586.7012

NOAA FISHERIES SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Appendix E – Delegation of Authority and Subcontractor Certification

Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

_____ (name of person or position)

_____ (company)

_____ (address)

_____ (city, state, zip)

_____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix I of EPA's Construction General Permit (CGP), and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix I.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____

Company: _____

Title: _____

Signature: _____ **Date:**_____

Subcontractor Certification

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

_____

Signature: _____

Title: _____

Date: _____

APPENDIX F – Permit Conditions

- Copy of Letter from ADEC Authorizing Coverage & ADEC NOI Tracking Number
- Copy of Signed Notice of Intent
- Copy of 2021 Alaska Construction General Permit

Appendix G – Grading and Stabilization Records

Grading and Stabilization Activities Log				
Date Grading Activity Initiated	Description of Grading Activity	Description of Stabilization Measure and Location	Date Grading Activity Ceased (Indicate Temporary or Permanent)	Date When Stabilization Measures Initiated

Grading and Stabilization Activities Log				
Date Grading Activity Initiated	Description of Grading Activity	Description of Stabilization Measure and Location	Date Grading Activity Ceased (Indicate Temporary or Permanent)	Date When Stabilization Measures Initiated

Appendix I – Training Records

Project Name: _____

Project Location: _____

Instructor(s) Name: _____

Instructor(s) Title: _____

Course Location: _____ Date: _____

Course Length (hours): _____

Stormwater Training Topic: *(check as appropriate)*

- ❑ **Sediment and Erosion Controls**
- ❑ **Emergency Procedures**
- ❑ **Stabilization Controls**
- ❑ **Inspections/Corrective Actions**
- ❑ **Pollution Prevention Measures**

Specific Training Objective:_____

_____

Attendee Roster: *(attach additional pages as necessary)*

No.	**Name of Attendee**	**Company**
1		
2		
3		
4		
5		
6		
7		
8		

Appendix J – Corrective Action Log

SWPPP Corrective Action Log			
Corrective Action #	Inspection Date	Description of Corrective Action and Related SWPPP Amendment #	Date Action Taken/ Responsible Person

Appendix K – Inspection Reports

General Information			
Project Name			
NPDES Tracking No.		**Location**	
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications			
Describe present phase of construction			

Type of Inspection:

❑ Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event

Weather Information

Has there been a storm event since the last inspection? ❑Yes ❑No

If yes, provide:

Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):

Weather at time of this inspection?

❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds

❑ Other: Temperature:

Have any discharges occurred since the last inspection? ❑Yes ❑No

If yes, describe:

Are there any discharges at the time of inspection? ❑Yes ❑No

If yes, describe:

Site-specific BMPs

- *Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1		❑Yes ❑No	❑Yes ❑No	
2		❑Yes ❑No	❑Yes ❑No	
3		❑Yes ❑No	❑Yes ❑No	
4		❑Yes ❑No	❑Yes ❑No	
5		❑Yes ❑No	❑Yes ❑No	
6		❑Yes ❑No	❑Yes ❑No	
7		❑Yes ❑No	❑Yes ❑No	
8		❑Yes ❑No	❑Yes ❑No	
9		❑Yes ❑No	❑Yes ❑No	
10		❑Yes ❑No	❑Yes ❑No	
11		❑Yes ❑No	❑Yes ❑No	
12		❑Yes ❑No	❑Yes ❑No	
13		❑Yes ❑No	❑Yes ❑No	
14		❑Yes ❑No	❑Yes ❑No	
15		❑Yes ❑No	❑Yes ❑No	

Overall Site Issues

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	❑Yes ❑No	❑Yes ❑No	
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	❑Yes ❑No	❑Yes ❑No	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	❑Yes ❑No	❑Yes ❑No	

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
4	Are discharge points and receiving waters free of any sediment deposits?	❑Yes ❑No	❑Yes ❑No	
5	Are storm drain inlets properly protected?	❑Yes ❑No	❑Yes ❑No	
6	Is the construction exit preventing sediment from being tracked into the street?	❑Yes ❑No	❑Yes ❑No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	❑Yes ❑No	❑Yes ❑No	
8	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	❑Yes ❑No	❑Yes ❑No	
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	❑Yes ❑No	❑Yes ❑No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	❑Yes ❑No	❑Yes ❑No	
11	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	❑Yes ❑No	❑Yes ❑No	
12	(Other)	❑Yes ❑No	❑Yes ❑No	

Non-Compliance

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print name and title: _____

Signature:_____ Date:_____

Appendix L

SWPPP Amendment Log			
Amendment #	Date	Brief Description of Amendment	Prepared By

ALASKA DEC CONTAMINANT SITE MAP