USWAC
Preferred BMP List
For Permitted Construction Sites

Adopted January 1, 2025

Revised December 3, 2024

Introduction

The operator is responsible for selecting effective site specific Best Management Practices (BMPs) for erosion and sediment control as well as pollution prevention operations according to the site's unique current conditions and the conditions that will occur throughout construction. A qualified person (as described in 7.2 of the Construction General Permit) should evaluate the site to ensure the selected BMP is suitable and may need to consider a series of BMPs based on site conditions and construction operations. Conditions such as slope, proximity to water, soil type, infiltration rates, feasibility, etc should all be considered.

BMPs that do not meet their performance criteria can result in oversight authority notice of Storm Water Pollution Prevention Plan (SWPPP) violation(s) and potential enforcement.

Purpose

The purpose of the State Preferred BMP List is to meet the requirements of Utah Code 19-5-108.3. Each MS4 in the State of Utah will select which BMPs from this Preferred BMP List document are acceptable for use within that jurisdiction at permitted construction sites.

Applicability

This Preferred BMP List document shall be applicable to all sites that require regulation under the General Permit for Storm Water Discharges from Construction Activities (CGP).

The USWAC Preferred BMPs are intended to be installed and maintained specifically as described. The operator or SWPPP agent is responsible for choosing BMP(s) that are applicable and will be effective at containing and managing the project sites unique exposures and construction operations. The USWAC Preferred BMP List does not contain all BMPs for every situation or imply that all Preferred BMPs are agreeable to the operator.

When necessary, the operator or SWPPP agents may need to use BMPs not found in the USWAC BMPs Preferred List. Where this is the case, a BMP Template is provided as the basis to describe the alternative BMP. In addition to BMPs not covered with the preferred list, the operator or SWPPP agents are invited to modify any of the USWAC BMPs to manage project exposures and operations. However, in both cases the alternative BMPs must be designed to satisfy or exceed the minimum performance criteria. The minimum performance criteria is identified with the USWAC Preferred BMPs to satisfy the purpose of CGP regulation. In the case of BMP alternatives and modifications, the operator or SWPPP agents will need to submit BMP(s) to the oversight authority for review.

Stormwater pollution control requirements are intended to be implemented on a year-round basis at an appropriate level. The requirements must be implemented in a proactive manner during all seasons while construction is ongoing. Appropriate water pollution control includes the implementation of an effective combination of both soil stabilization and sediment controls, implementation of wind erosion, tracking

controls, non-stormwater and waste management, and material pollution BMPs. Some BMPs can be implemented as a stand-alone device while others can be combined to improve effectiveness and compliance.

Acknowledgement

The creation of this USWAC Preferred BMP List would not have been possible without the support of the Utah Storm Water Advisory Committee and BMP Subcommittee. We take this opportunity to express gratitude to the MS4 Unification Committee who have been instrumental in the successful completion of this project.
And to many others who contributed their time and effort to the contents of this document, thank you!

TABLE OF CONTENTS

…

Template for Adding an Alternate BMP (Operator Version)

"Operators are invited to use an alternative BMP or modify a BMP from the USWAC Preferred List so long as the BMP has the same performance criteria or better as the preferred BMP. Any deviations from the preferred BMP installation and use parameters must be reviewed and accepted by the oversight authority."

[BMP # - Title]

Replace all blue text in brackets with BMP specific data. Then delete any remaining unnecessary blue instructional text.

[Insert the BMP detail drawing specific to the proprietary device you will use. It should illustrate the structure of the BMP, installation requirements, and any typical variances due to site conditions.]

[IMAGE]

APPLICATION

- [Describe specifically when and where this BMP will be used on site]

INSTALLATION/USE PROCEDURES

- [Describe how this BMP should be installed or how it should be practiced]
- [Describe further so that it is very clear, such as minimum length of structure, etc]

~~**BMP MODIFICATION OR REPLACEMENT JUSTIFICATION**~~

- ~~[Describe why this BMP must be used rather than a similar BMP on the State Preferred BMP List]~~

MAINTENANCE/MANAGEMENT

- [Add maintenance criteria for proper BMP performance]
- [Describe how the BMP should look or function during an inspection]
- [Describe when maintenance is necessary]
- [Describe when replacement is necessary]
- [Describe when no action is needed]

PERFORMANCE

- This BMP is replacing or augmenting [list the preferred BMP that is being replaced]
-

GENERAL

- [Include other information, direction, instruction, and BMP criteria that does not fit well into the other categories.]

REFERENCE

- [CGP and Federal Regulations sections, numbers, link to proprietary documentation, etc]

Template for Adding a New BMP (MS4 Version)

[BMP # - Title]

Replace all blue text in brackets with BMP specific data, try to limit each BMP to 2 pages.

[Insert the BMP detail drawing. It should illustrate the structure of the BMP, installation requirements, and any typical variances due to site conditions.]

[IMAGE]

APPLICATION

- [Describe specifically when and where this BMP should be used]
- [Describe specifically when and where this BMP should NOT be used]

INSTALLATION/USE PROCEDURES

- [Describe how this BMP should be installed or how it should be practiced]
- [Describe further so that anyone could install or use the BMP well]

MAINTENANCE/MANAGEMENT

- [Add maintenance criteria for proper BMP performance]
- [Describe how the BMP should look or function during an inspection]
- [Describe when maintenance is necessary]
- [Describe when replacement is necessary]
- [Describe when no action is needed]

PERFORMANCE

- [identify BMP performance expectations intended by the CGP]
- [Identify safety needs and local construction nuisance related ordinances to help the operator recognize the environmental and general public concerns of poor or absent BMP performance]
- [Describe performance expectations]

GENERAL

- [Include other information, direction, instruction, and BMP criteria that does not fit well into the other categories.]

REFERENCE

- [CGP and Federal Regulations sections, numbers, as needed etc]

For site inspection and correction methodology use:
"*Electronic Site Inspection Guide for Operators*"

Electronic SWPPP Document Inspection and Correction Reporting:

The CGP requires Inspection and Correction documentation to demonstrate the SWPPP BMPs are effective at containing construction pollution sources. Utah State Code 19-05-108.3 requires municipalities to provide an electronic SWPPP system. The local municipalities electronic system allows operators to include electronic geolocated time-stamped photos with the SWPPP inspection and correction documentation in place of oversight authority onsite inspections unless onsite inspections are warranted. Utah State Code 19-05-108.3.

Inspection and Correction SWPPP Reporting per CGP and Utah State Code 19-05-108.3

1. Identify the site condition and each BMP's status, necessary during the report period, as effective or ineffective. Report the status on the SWPPP inspection and correction Report form(s) per municipalities local MS4 Programs.

CGP 4.6, 4.7

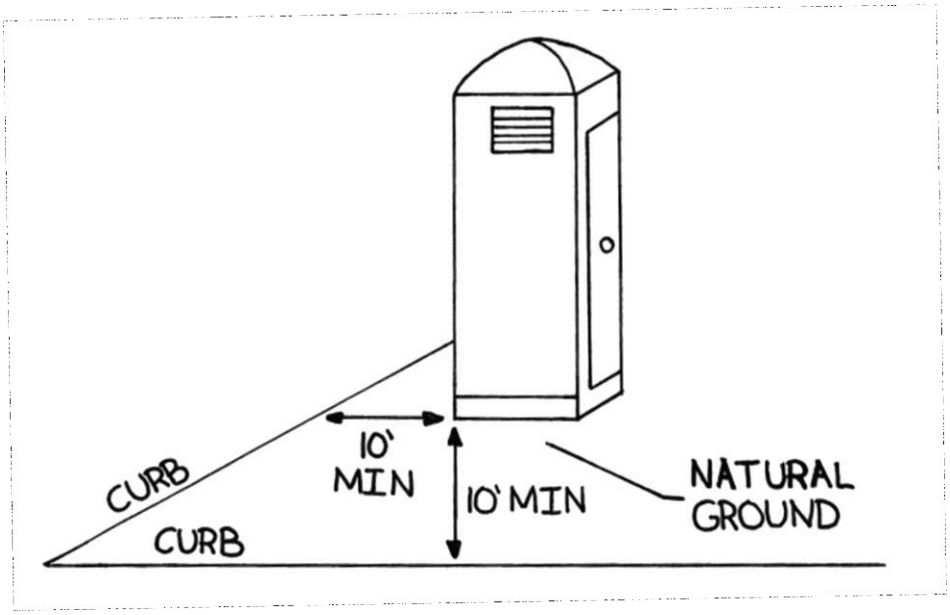
2. For BMPs that do not meet the installation, maintenance and performance criteria. Provide a description of the BMP cause of failure in the SWPPP's electronic Inspection Report Form. After the BMP is corrected, provide a description of how the BMP was corrected in the SWPPP's electronic Inspection Report Forms. Attach the supporting geolocated time-stamp photo(s) into the local MS4 SWPPP electronic system adequate to show SWPPP and BMP compliance. Photos may be both before and or after correction status showing BMPs are adequate. Per CGP, address any oversight authority inspection notices on the local electronic system for each report period.

CGP 4.6, 4.7, 4.8, 5.1, 5.3, 5.4, MS4 4.2.4.2

3. Inadequate BMP reporting can result in oversight authority inspection notices, onsite inspections and potential enforcement. Coherent and detailed SWPPP inspection and correction reports documenting BMP success or recognition of BMP failure, regular BMP maintenance and repair records will help prevent the need for oversight authority involvement.

CGP 4.8, MS4 4.2.4.

BMP 1- Portable Toilet



APPLICATION

- Provide temporary sanitary facilities when permanent facilities are too far from activities or are unavailable.

INSTALLATION/USE PROCEDURE

- Locate portable toilets away from waters of the state, and at least 10 feet from any storm water conveyance, inlet, curb and gutter, or conduit to a waterway.
- Wherever possible, locate portable toilet upon natural ground and not on impervious surfaces such as asphalt, concrete, or similar
- Prepare a level surface and provide clear access to the toilet(s) for servicing and for on-site personnel
- Wherever possible, locate a portable toilet next to track out pad or provide gravel access pad for maintenance pick up to reduce occurrence of mud track out by service provider.
- Secure portable toilets to prevent tipping

ALTERNATIVE DESIGN

- If it is not possible to locate toilets away from waters of the state, storm water conveyances, or paved surfaces, evaluate the need for additional controls such as secondary containment, additional surface preparation, or berms and implement as appropriate

MAINTENANCE

- Portable toilets should be maintained in good working order by licensed service
- Portable toilets should be inspected daily to detect any leaks
- Damaged toilets must be repaired/replaced immediately
- All waste must be deposited in the sanitary sewer system for treatment with appropriate agency approval

- If track out from the service provider occurs, debris must be removed as soon as practicable.

PERFORMANCE

- Portable toilets must be placed, secured, and maintained in such a way that sanitary waste is contained without leaks.
- Portable toilets must be placed, secured, and maintained in such a way that in the event of a spill or leak, sanitary waste would not enter any waters of the state, storm water conveyance, inlet, curb and gutter, or conduit to a waterway.

REFERENCE

- Construction General Storm Water Permit (CGP) 2.3.3(f) For sanitary waste, position portable toilets so that they are secure and will not be tipped or knocked over. Locate them away from waters of the state and, when possible, at least 10 feet from any storm water conveyance, inlet, curb and gutter, or conduit to a waterway. If it is not possible to maintain at least 10 feet of separation, evaluate the need for additional controls such as secondary containment, additional surface preparation, or berms and implement as appropriate.
- Common Plat Permit (CPP) 2.4.4: Portable Toilet. Portable toilets must be tied down, staked down, or secured using other measures to prevent turn over, and they must be placed away from a road gutter, storm water inlet, or waterbody.

BMP 2- Portable Toilet on Pavement

APPLICATION

- Use pavement located portable toilet BMPs for roadway projects without practical off roadway staging areas.
- Do not use pavement located portable toilets when private property is expected to be used. Generally, pavement located portable toilets are not acceptable for commercial and residential projects.

OPERATION/INSTALLATION PROCEDURE

- Always locate BMPs downstream of inlet BMPs. Identify on SWPPP BMP map.
- Place portable toilet on a surface no steeper than 2% grade.
- Provide each corner with 50# weights or as specified by the manufacturer. For trailer mounted systems, provide a plan for securing the trailer. Attach anti-tipping specifications with your SWPPP when not available from the manufacturer or portable toilet provider.
- Provide secondary containment. Submit for oversight authority review. A logical BMP is a gutter dam.
- Obtain private or public right of way encroachment permit (or local equivalent) when required by the local authority.
- Attach a copy of manufacturers maintenance literature.
- Ensure the spill prevention program includes containment materials for potential pavement located portable toilet spills..
- Ensure maintenance personnel and site workers involved in site operations understand BMP requirements.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- The operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- Check system matches BMP and site BMP map. Street liner projects are often dynamic.
- Inspect maintenance per manufacturer requirements
- Inspect for leaks and tank levels
- Inspect anti-tipping system

PERFORMANCE

Non-compliant BMPs include but limited to:

- Portable Toilet system out of compliance with operations, installation and maintenance procedures.
- Leaking or overflowing toilets
- Non-compliance with manufactures/toilet service companies requirements

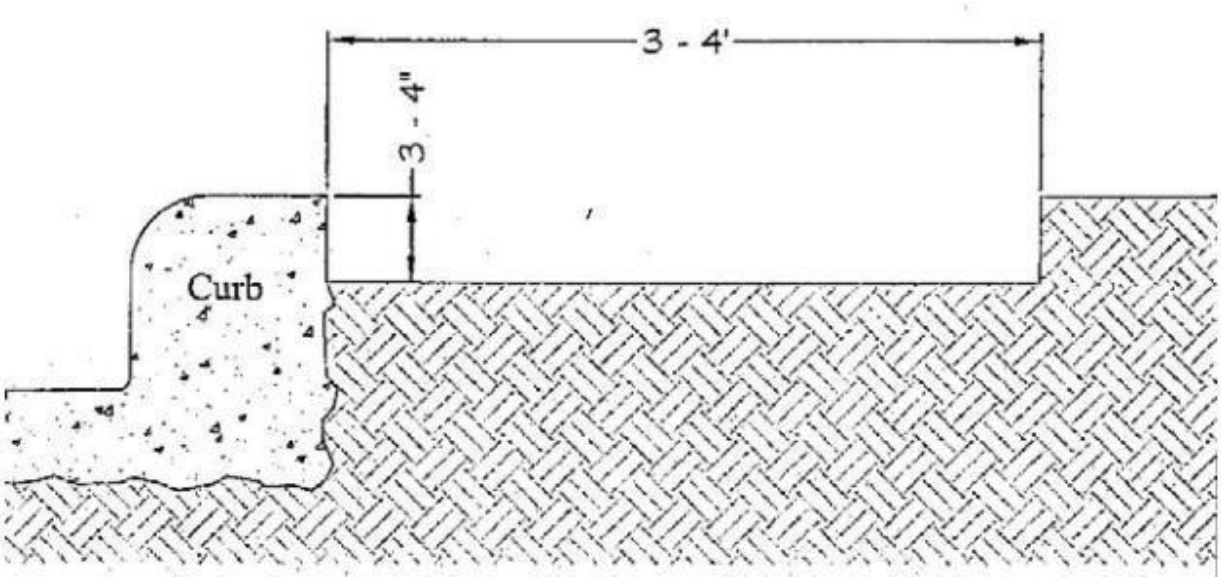
GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance, safety, and water quality risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.3.3(f)
- Common Plat Permit (CPP) 2.4.4

BMP 3- Curb Sedimentation Trap



APPLICATION

- Intercept runoff containing sediment from the site during construction
- Retain sediment onsite

INSTALLATION PROCEDURE

- Excavate soil behind curb to a depth of 3-4 inches
- Extend the excavation 3-4 feet behind the curb to form a sediment trap
- Only applicable when the site is sloped towards the curb such that runoff overtops the curb
- Should not be installed on a slope that exceeds 5% as it may be ineffective and compromise the integrity of the curb
- Not suitable if underlying soil is expansive or collapsible, refer to the soils report.
- Take care not to chip new curb and sidewalk edges

ALTERNATIVE DESIGN

- The sedimentation trap may be implemented behind a sidewalk instead of the curb
- The depth and width of the excavation may be increased if more sediment storage is necessary

MAINTENANCE

- Inspect at least once every seven calendar days, or once every 14 calendar days and within 24 hours of the occurrence of a storm event of 0.5 inches or greater.
- Remove accumulated sediment when it reaches ½ height of original excavation.
- Additional excavation may be required if dirt from construction fills the trap.

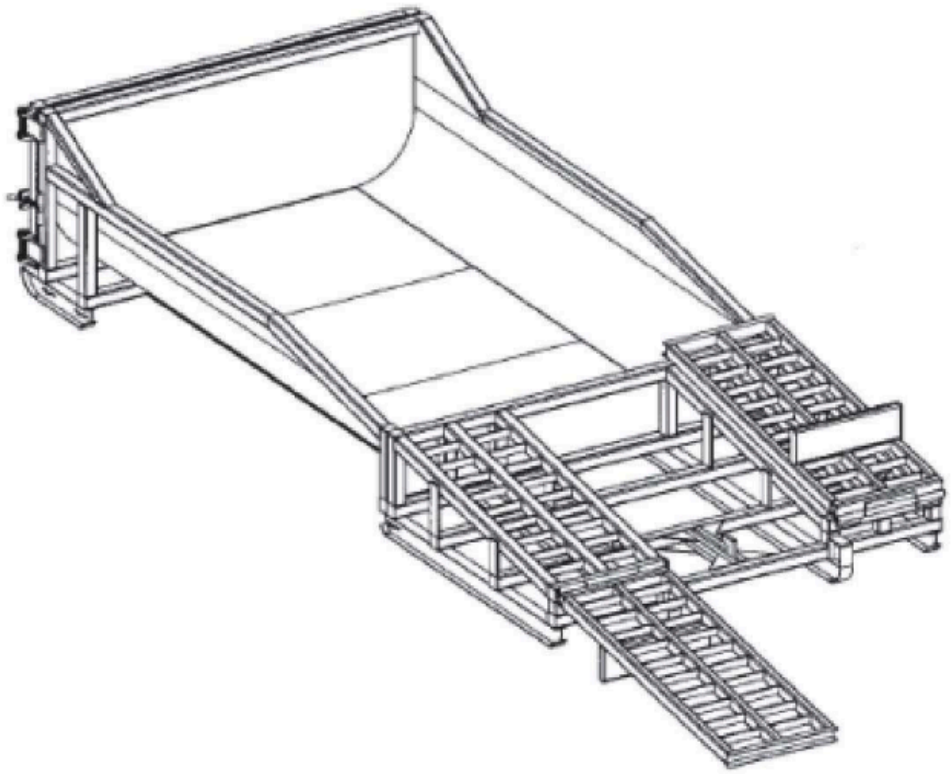
PERFORMANCE

- Sediment, or sediment laden water overtopping the curb, leaving the site, and entering the roadway constitutes BMP failure and must be corrected immediately.

REFERENCE

- Construction General Storm Water Permit (CGP) 2.2.3: Install sediment controls along any perimeter areas of the site that will receive pollutant discharges.
- Common Plan Permit (CPP) 2.1.2: Perimeter Controls. Perimeter controls such as silt fences, straw wattles, other filter berms, cut back curbs, vegetative buffers, etc., must be properly
- placed on the downslope sides of the project to prevent sediment from leaving the site during a storm event. As perimeter controls become loaded to 1/3 of capacity, they must be cleaned.

BMP 4- Concrete Wash Out Pan



NOT TO SCALE

Picture for concept only, attach detail for provided pan system

APPLICATION

Concrete waste management is necessary on construction sites when:

- Concrete, grout, or mortar is used as a construction material.
- Concrete truck drums, chutes, and hoses, or other concrete equipment (e.g. hand tools, screeds, shovels, rakes, floats, trowels, and wheelbarrows) are washed on-site and it is not possible to dispose of all concrete wastewater and washout off-site (ready mix plant, etc.).
- Grout or mortar mixing stations are used.

INSTALLATION PROCEDURES

- Provide water-tight pan or pans with sufficient volume for the concrete washout needs anticipated for the project in between maintenance/service intervals.
- Pans must be designed with 1 foot of freeboard. Attach a copy of the volume calculations with this BMP.
- Provide a liquids disposal operations plan when intended evaporation rates will not be sufficient (common).
- Attach a copy of the licensed receiving facility of the concrete waste.

- When access to the washout pan is over trackable surfaces, provide track-out prevention BMPs. Attach illustration with dimensions and locate on SWPPP map.
- A sign shall be installed at each washout location.
- Install the washout at the location specified in the SWPPP.
- Locate washout facilities a minimum of 50 feet from sensitive areas such as storm drains, open ditches, water bodies, wetlands, or where an infiltration feature will be installed. Protect downstream inlets.
- Where this minimum distance to sensitive areas cannot be maintained, provide secondary containment and attach containment information to this BMP.
- Keep the washout areas away from other construction traffic and access areas to reduce the likelihood of accidental damage, spills, or tracking.

OPERATION PROCEDURE

- Empty excess concrete onto the ground near the pour site until only liquid cement remains on tools and equipment.
- Wash cement off of the chute, pump equipment, and tools directly into the washout pan.
- Pump and haul off excess liquid prior to hauling solid concrete waste. Do not haul non solids or any excess liquid in open containers. Haul to the identified service location.
- Ensure concrete truck operators and concrete transport/disposal service providers have the necessary support to protect water quality.
- Applicant is expected to modify the concrete waste management system, location and capacity when necessary as site conditions and operations warrant.
- The Contractor's SWPPP BMP Manager shall oversee and enforce concrete waste management procedures.
- Educate employees, concrete suppliers, and subcontractors of these concrete waste management requirements. Discuss the concrete management techniques with concrete suppliers before any deliveries are made.
- Incorporate requirements for concrete waste management into concrete supplier and subcontractor agreements.

BMP MODIFICATION OR REPLACEMENT

"Operator is invited to use an alternative BMP or modify this BMP so long as the BMP has the same performance criteria or better as this preferred BMP. Any deviations from this preferred BMP installation and use parameters must be reviewed and accepted by the oversight authority."

MAINTENANCE

- Washouts must be maintained to provide adequate holding capacity with one foot of freeboard.
- Washout pan must be cleaned, or additional pans provided and ready for use once the concrete washout pan is 70% full.
- Maintenance includes removal and disposal of hardened concrete and excess liquid or slurry. Excess liquid and slurry shall be pumped or evaporated prior to removal of solids.
    - Attach method of liquid disposal including licensed dumping location.
- Dispose of all materials in conformance with applicable federal, state, and local regulations.
    - Do not discharge liquid or slurry to waterways, storm drains or directly onto ground.
- Inspect and verify that concrete washout areas are in place prior to the commencement of concrete work.

- Inspect washout pans at least weekly, and before and after each concrete operation. During extended wet weather conditions, ensure track out is not occurring.
    - Check overall condition and performance.
    - Check remaining capacity (% full)
    - If using prefabricated pan containers, check for leaks.
- Damaged or leaking washout facilities shall be addressed immediately.

PERFORMANCE

It is considered a concrete waste management failure when any of the following occur:

- There are leaks, overflows, or spills of concrete waste. The discharge of concrete washout waters is classified as a “Prohibited Discharge”
- Concrete washout or excess concrete is discharged to any other location outside of designated washout location.
- Track-out associated with the concrete washout BMP operation.

GENERAL

- The applicant is responsible for selecting site specific effective concrete waste management.
- All projects require immediate containment and cleanup of spilled concrete waste exposed to drainage systems and bare dirt.
- Local authorities shall be notified in accordance with regulations when concrete wash water is spilled or discharged to storm drain or drainage system.

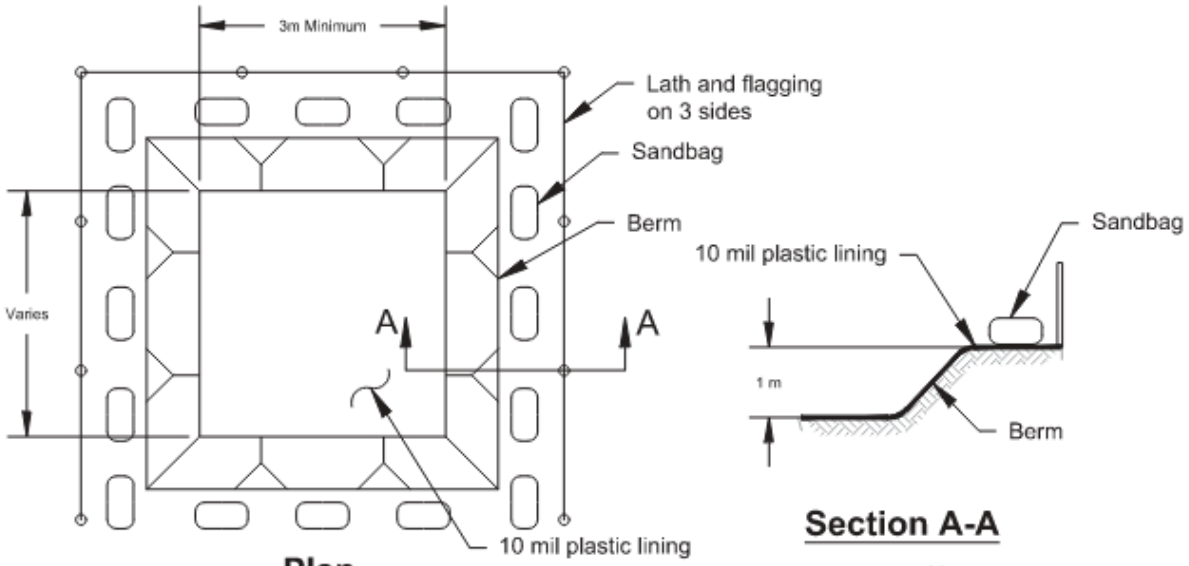
REMOVAL

- When concrete washout areas are no longer required for the work, the hardened concrete, slurries and liquids shall be removed and properly disposed of.
- Materials used to construct the washout facility become the property of the contractor and shall be removed and disposed of properly or recycled.
- Holes, depressions, or other ground disturbances caused by the removal of concrete washout areas shall be backfilled, repaired, and stabilized to prevent erosion.

REFERENCE

- Construction General Storm Water Permit (CGP) 2.3.4
- Common Plan Permit (CPP) 2.9.1

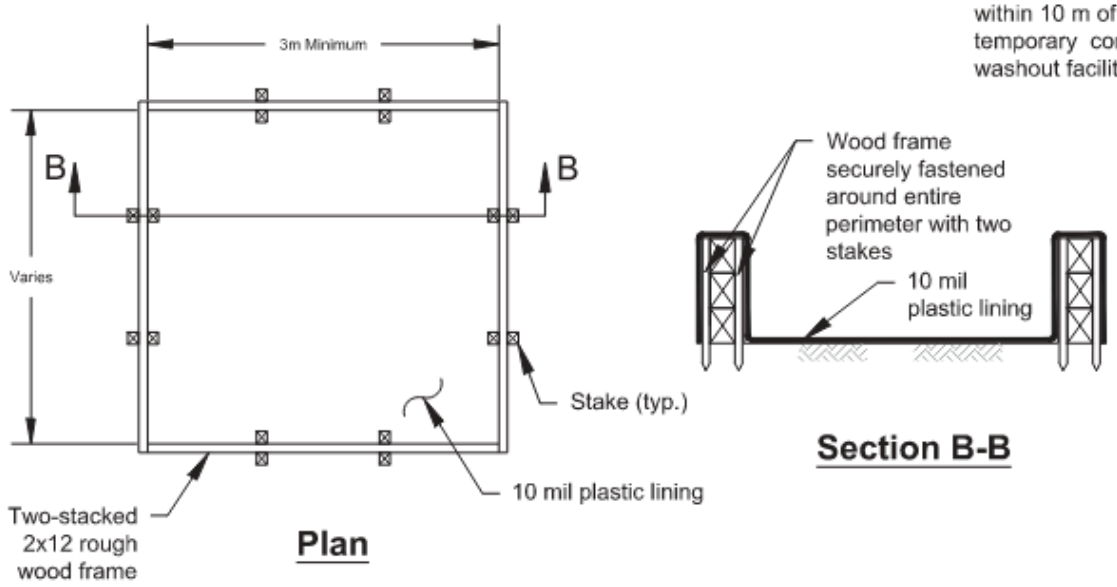
BMP 5- Concrete Washout Ground Fixed Systems



Type "Below Grade"

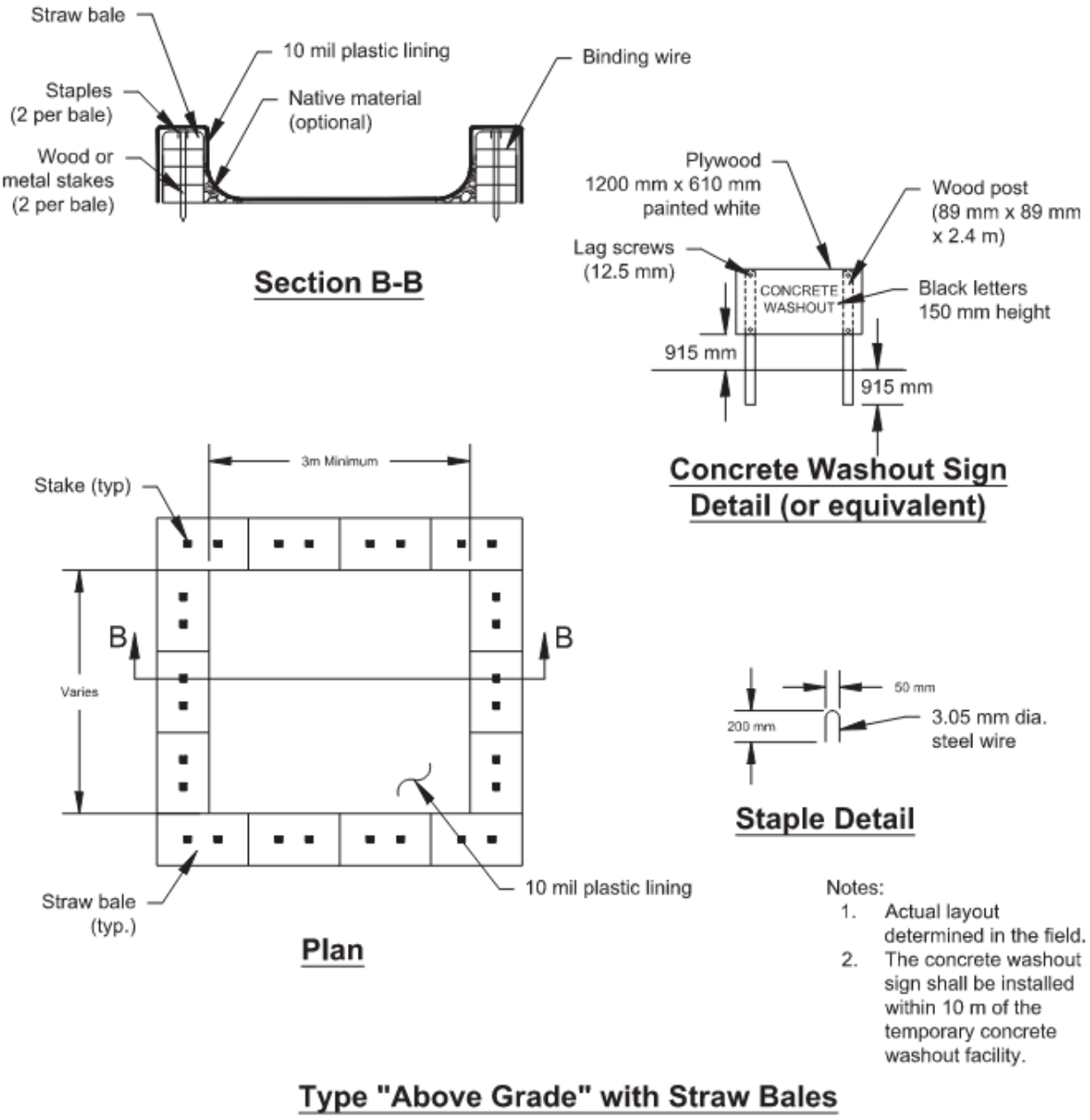
Notes:

1. Actual layout determined in the field.
2. A concrete washout sign shall be installed within 10 m of the temporary concrete washout facility.



Type "Above Grade" with Wood Planks

NOT TO SCALE



Type "Above Grade" with Straw Bales

NOT TO SCALE

APPLICATION

Concrete waste management is necessary on construction sites when:

- Concrete, grout, or mortar is used as a construction material.
- Concrete truck drums, chutes, and hoses, or other concrete equipment (e.g. hand tools, screeds, shovels, rakes, floats, trowels, and wheelbarrows) are washed on-site and it is not possible to dispose of all concrete wastewater and washout off-site (ready mix plant, etc.).
- Grout or mortar mixing stations are used.

INSTALLATION PROCEDURES

- The washout facility shall be watertight and impermeable.

- The washout facility may be a self-installed structure or a pre-fabricated structure (below-grade)
- For self-installed washout structures, Lining material shall be a minimum of 10-mil polyethylene sheeting and must be free of holes, tears, or other defects that compromise the impermeability of the material. Liner materials shall be installed in accordance with manufacturer's recommendations.
    - No seams in the plastic are allowed at the bottom of the washout. The soil base shall be prepared free of rocks or other debris that may cause tears or holes in the plastic lining material.
- Washout facilities shall be constructed and maintained with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations.
- On large sites with extensive concrete work, multiple washouts may be needed to assume adequate capacity.
- Locate washout systems next to track-out or parking pad or provide its own anti-track-out system and area for driver chassis washing. Attach illustration with dimensions.
- Pours are often in the path of wet soils. Reference the other track-out BMPs planned to manage this site condition.
- A sign shall be installed at each washout location.
- Install the washout at the location specified in the SWPPP.
- Locate washout facilities a minimum of 50 feet from sensitive areas such as storm drains, open ditches, water bodies, wetlands, or where an infiltration feature will be installed. Protect downstream inlets.
- Where this minimum distance to sensitive areas cannot be maintained, provide secondary containment and attach containment information to this BMP.
- Keep the washout areas away from other construction traffic and access areas to reduce the likelihood of accidental damage, spills, or tracking.

MAINTENANCE

- When materials are removed from self-installed concrete washout areas, build a new structure; or, if the previous structure is still intact, inspect for signs of weakening or damage, and make any necessary repairs. Re-line the structure with new plastic after each cleaning.

PERFORMANCE

- There are rips, tears, or defects in the washout facility which may result in seepage or discharge of concrete waste onto underlying soil or to the surrounding areas.

MAINTENANCE

- When materials are removed from ground fixed concrete washout systems, build a new structure; or, if the previous structure is still intact, inspect for signs of weakening or damage, and make any necessary repairs. Re-line the structure with new plastic after each cleaning.

- Washouts must be maintained to provide adequate holding capacity with one foot of freeboard.

- Dispose of all materials in conformance with applicable federal, state, and local regulations.

- Inspect and verify that concrete washout areas are in place prior to the commencement of concrete work.

- Inspect ground fixed concrete washout systems at least weekly, and before and after each concrete operation. During extended wet weather conditions, ensure track out is not occurring

- Check overall condition and performance.
- Check remaining capacity. Compare to volume calculations
- If using prefabricated washout containers, check for leaks.

- Damaged or leaking washout facilities shall be addressed immediately.

- When concrete washout areas are no longer required for the work, the hardened concrete, container system shall be removed and disposed at licensed waste facilities. Attach information of disposal facility. Where concrete is recycled attach recycling facility information.

- Holes, depressions, or other ground disturbances caused by the removal of concrete washout areas shall be backfilled, repaired, and stabilized to prevent erosion.

PERFORMANCE

It is considered a concrete waste management failure when any of the following occur:

- There are rips, tears, defects, seepage overflows, waste outside of container.
- Concrete washout or excess concrete is discharged to any other location outside of designated washout location.
- Track-out associated with the concrete washout BMP operation.

GENERAL

- The applicant is responsible for selecting site specific effective concrete waste management.
- All projects require immediate containment and cleanup of spilled concrete waste exposed to drainage systems and bare dirt.
- Local authorities shall be notified in accordance with regulations when concrete wash water is spilled or discharged to storm drain or drainage system.

REFERENCE

- Construction General Storm Water Permit (CGP) 2.3.4
- Common Plan Permit (CPP) 2.4.5, 2.9.1

BMP 6- Small Concrete Management Operations

APPLICATION

- Use for small pours only. Usually for small individually built residential homes or other minor projects where the washout volume is small and renting a proprietary concrete washout pan system is not necessary.

INSTALLATION AND OPERATION

- Plastic kiddie pool or equal watertight disposable container. Attach dimensioned detail or picture of pool or disposable container selection planned for the project.
- Calculate concrete waste volume required. Attach calculations and identify the number of plastic pools or watertight disposable containers are necessary. Simply repeat this BMP for each day's concrete operation lot. Always provide one additional pool for redundancy.
- Place containers on a flat, surface, near the track-out or parking BMPs where there is enough room to wash the chassis and remove mud from the tires. Locate on the site BMP map.
- Containers are not allowed in roadway right of ways.
- Do not haul containers away until the waste concrete is set and all water has evaporated.
- Ensure the workforce is informed how to use your concrete management BMP.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- This is a one time disposable BMP, no maintenance is necessary. Any exposed concrete washing and disposal operations are considered a BMP failure because the operation was not adequately anticipated and implemented.
- When the daily concrete management operation is completed simply repeat this BMP.

PERFORMANCE:

Non-compliant BMPs include but limited to:

- Washout container overflows.
- Containers that are hauled away prior to set concrete and when liquid was not completely evaporated.
- When track-out or drivers washing chassis in the street caused by washout container inadequate placement.

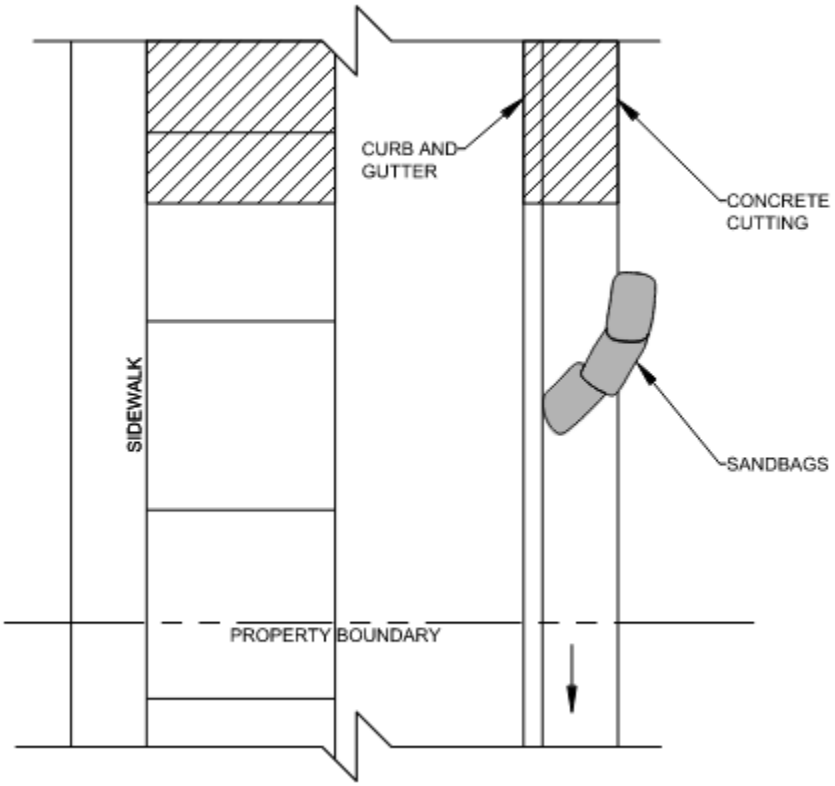
GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance, safety, and water quality risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.3.4
- Common Plan Permit (CPP) 2.4.5, 2.9.1

BMP 7- Curb & Sidewalk Cutting Wet Saw



APPLICATION

- Use Curb & Sidewalk Cutting BMP when cutting curb and sidewalk with wet saw.

INSTALLATION AND OPERATION

- Install 6” min dia sand or gravel bags. Double up bags as necessary.
- Install enough bags anticipating the volume of cut slurry.
- Schedule cutting during dry periods.
- Remove slurry at the end of day or prior to wet condition which comes first. When wet conditions exist, mix slurry with dirt or other absorbing material and remove immediately. Dump waste in concrete washout BMP.
- Sweep until no more waste can be picked up with square nose shovel

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- BMP is installed and removed with each cutting operation lot, no maintenance is necessary.

PERFORMANCE: [BMP failure]

BMP failure

- When dam overflows.
- When conditions expose site to spill over.
- When cutting operation is not cleaned up by end of day or prior to wet conditions.
- Any waste material is not disposed at licensed locations.

GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance, safety, and water quality risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.3.4
- Common Plan Permit (CPP) 2.9.1

BMP 8- Curb & Sidewalk Cutting Dry

APPLICATION

- Use Curb & Sidewalk Cutting BMP when dry cutting curb and sidewalk.

INSTALLATION AND OPERATION

- Schedule cutting during dry periods.
- Remove cutting dust immediately following cutting operation.
- Sweep until no more waste can be picked up with square nose shovel
- Dispose of cutting dust in concrete washout or dumpster BMP.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- BMP is installed and removed with each cutting operation lot, no maintenance is necessary.

PERFORMANCE: [BMP failure]

BMP failure

- When cutting operation is not cleaned up immediately following cutting operations or prior to wet conditions.
- When waste material is not disposed in concrete washout BMP or dumpster.

GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance, safety, and water quality risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.3.4
- Common Plan Permit (CPP) 2.9.1

BMP 9- Pavement Cutting

APPLICATION

- Use pavement Cutting BMP when cutting concrete or asphalt.

INSTALLATION AND OPERATION

- Schedule cutting during dry periods.
- Sweep cutting dust immediately following cutting operation with vacuum operated sweeper.
- Employ Cutting Curb and Sidewalk wet cutting BMP when necessary to contain flowing saw slurry.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- BMP is installed and removed with each cutting operation lot, no maintenance is necessary.

PERFORMANCE: [BMP failure]

BMP failure

- When cutting operation is not cleaned up immediately following cutting operations or prior to wet conditions.

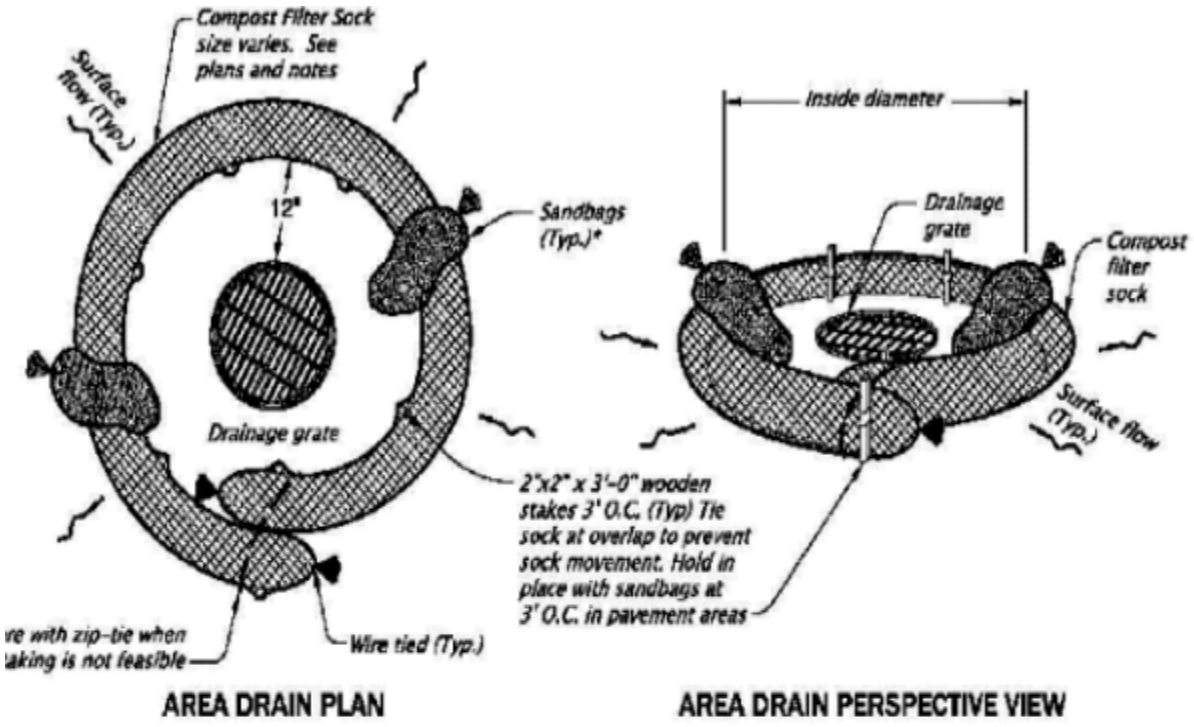
GENERAL:

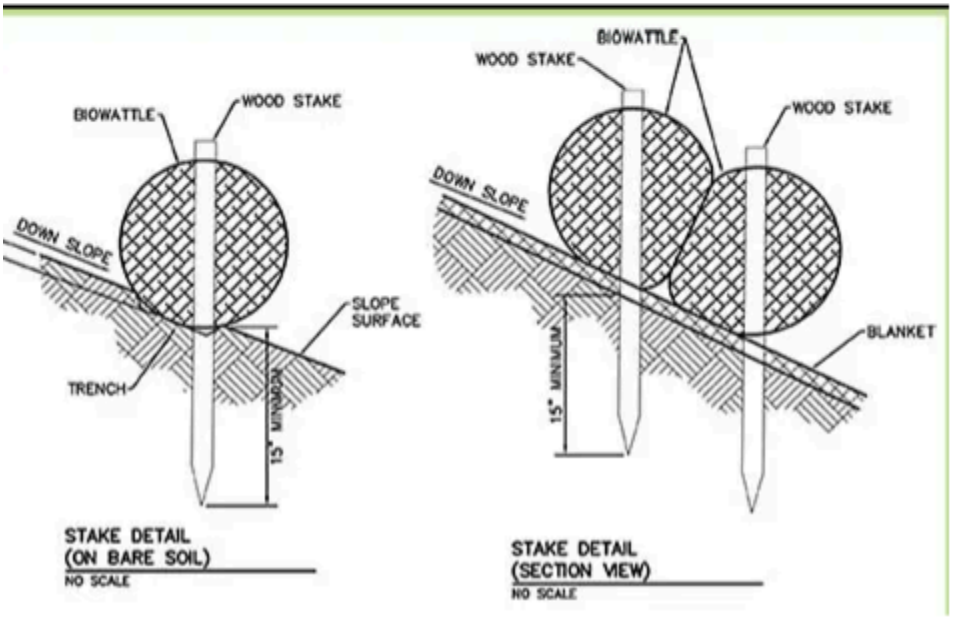
- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance, safety, and water quality risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.3.4
- Common Plan Permit (CPP) 2.9.1

BMP 10- Area Filtration





APPLICATION

- Straw wattles or filter tubs are an open weave, mesh tube that is filled with a filter material (compost, wood chips, straw, coir, aspen fiber, or a mixture of materials) used to divert or filter stormwater.

- Straw wattles are a temporary BMP that can be used in the rough grading process of construction. Straw wattles and large filter sock can be used with or without storm drain inlet tops, but not ready for grading of roadway.
- Can be used for area drains until final stabilization is complete.
- Follow manufacturer recommendations and submit any recommendations with the SWPPP document.

INSTALLATION/USE PROCEDURES

- Tubes shall be staked with 2 inch by 2 inch wooden stakes at a maximum spacing of 4 feet. Rebar or similar metal stakes may be used instead of wooden stakes. The end of tubes shall overlap a minimum of 18 inches.
- Straw wattles should wrap around the entirety of the storm drain to prevent sediment and other pollutants from entering the storm drain.
- Follow manufacturer's recommendations for staking or other methods of approved securement.

BMP MODIFICATION OR REPLACEMENT JUSTIFICATION

The operator may use an alternative BMP or modify the preferred BMP, provided the alternative meets or exceeds the same performance criteria. Any deviations from the preferred BMP installation and usage parameters must be reviewed and approved by the St. George Stormwater Team, the oversight authority.

MAINTENANCE/MANAGEMENT

- Check straw wattles material to make sure it has not become clogged with sediment or debris. Clogged filter tubes usually lead to standing water behind the filter tube after a rain event. Sediment shall be removed from behind the filter tube before it reaches half the height of the exposed portion of the tube.
- The straw wattles should be checked to ensure it is in continuous contact with the soil at the bottom of the embedment trench. Closely check for rill erosion that may develop under the filter tubes. Eroded spots must be repaired and monitored to prevent reoccurrence. If erosion under the tube continues, additional controls are needed.
- Any straw wattles destroyed by equipment or UV degradation will need to be removed and replaced.

PERFORMANCE

- Additionally, performance is achieved if the the straw wattle barrier is effectively minimizing the off-site discharge of sediment from the drainage area it is controlling and does not develop erosive rills/gullies between filter tubes and the tubes are not being undercut by erosion or eroded to either side of the barrier.
- Organic filter tubes are performing as intended if sheet flow of runoff is passing over or through the barrier and not simply around it, bypassing the control.

GENERAL

- Operators are responsible for selecting and installing effective site-specific BMPs.
- Ensure all workers are trained on proper installation, maintenance, and inspection.

REFERENCE

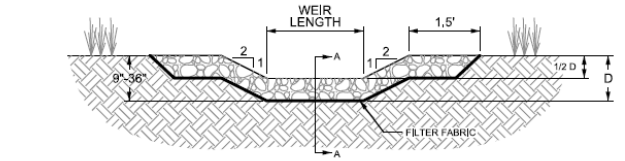
Section 2.2.10 of the Utah construction General Stormwater Permit (July 2024)

a. Install inlet protection measures that remove sediment from discharges prior to entry into any storm drain inlet that carries storm water from your site to waters of the state, provided you have

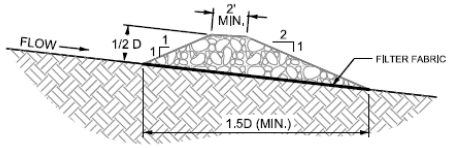
authority to access the storm drain inlet. You do not need inlet protection measures for storm drain inlets that convey to a sediment basin, sediment trap, or similarly effective control; and

a. Clean, or remove and replace, the inlet protection measures as sediment accumulates, the filter becomes clogged, and/or there is a compromise in performance. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of

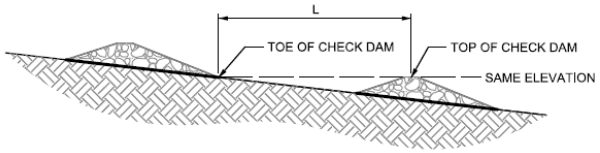
BMP 11- Check Dams

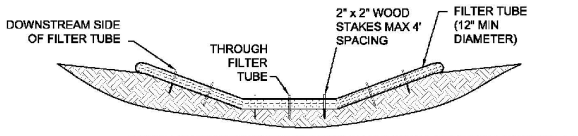


ROCK CHECK DAM VIEW LOOKING UPSTREAM
N.T.S.

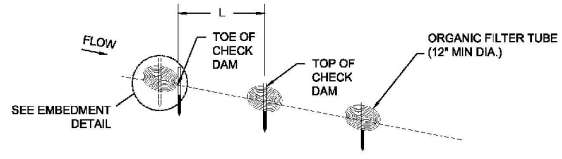


CROSS SECTION A-A
N.T.S.

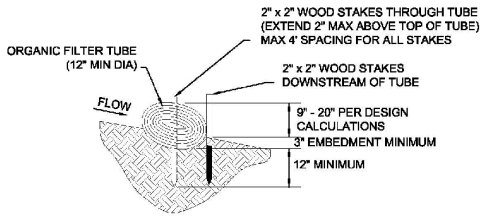




ORGANIC FILTER TUBE CHECK DAM VIEW LOOKING UPSTREAM
N.T.S.



ORGANIC FILTER TUBE CHECK DAM PROFILE
N.T.S.



EMBEDMENT DETAIL FOR ORGANIC FILTER TUBE CHECK DAM
N.T.S.

In my opinion it is ok to split these into (2) separate BMPs details. It is ok to let the operator choose between a rock or wattle type dam. Then the installation and maintenance requirements can be written more specific. We need to encourage BMPs to be more literal. Too often installed BMPs are not even close to the SWPPP required BMP. This creates ambiguity, confusion and unhappy bill sponsors. Also this is a duplicate to Organic Filter tubes.

SITE OPERATIONS AND CONDITIONS

[Operator to replace this text with why this BMP was selected for this project]

APPLICATION

- Check dams are used in swales and drainage ditches (including those along linear projects such as roadways).
- They can also be used in short swales down a steep slope to reduce velocities.
- Check dams shall not be used in live stream channels.
- Check dams should be installed before the contributing drainage area is disturbed, so as to mitigate the effects on the swale from the increase in runoff.
- If the swale itself is graded as part of the construction activities, check dams are installed immediately upon completion of grading to control velocities in the swale until stabilization is completed.

OPERATION PROCEDURE

- Dam height should be between 9 and 36 inches and less than one-third the depth of the channel
- Dams should be spaced such that the top of the downstream dam is at the same elevation as the toe of the upstream dam. On channel grades flatter than 0.4 percent, check dams should be placed at a distance that allows small pools to form between each check dam.
- The top of the side of the check dam shall be a minimum of 12 inches higher than the middle of the dam. In addition, the side of the dams shall be embedded a minimum of 18 inches into the side of the drainage ditch, swale or channel to minimize the potential for flows to erode around the side of the dam.
- Check dams should be used in conjunction with other sediment reduction techniques prior to releasing flow offsite.
- Use geotextile fabric (of appropriate tensile strength, puncture rating and apparent opening size) under check dams of 12 inches in height or greater.
- Loose soil, wood chips, compost, and other floatable materials that are transportable during runoff should not be used to construct a check dam.

ALTERNATIVE DESIGN

- **Rock Check Dams:**
    - Stone shall be well graded with stone size ranging from 3 to 6 inches in diameter for a check dam height of 24 inches or less. The stone size range for check dams greater than 24 inches is 4 to 8 inches in diameter.
- **Rock Bag Check Dams:**
    - Rock bag check dams should have a minimum top width of 16 inches.
    - Minimum rock bag dam height of 12 inches would consist of one row of bags stacked on top of two rows of bag. The dam shall always be one more row wide than it is high, stacked pyramid fashion.
    - Bags should be filled with pea gravel, filter stone, or aggregate that is clean and free of deleterious material.
    - Sand bags shall not be used for check dams, due to their propensity to break and release sand that is transported by the concentrated flow in the drainage swale or ditch.
    - Bag material shall be polypropylene, polyethylene, polyamide or cotton burlap woven fabric, minimum unit weight 4-ounces-per-square-yard, Mullen burst strength exceeding 300-psi as determined by ASTM D3786, Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, and ultraviolet stability exceeding 70 percent.

    - **o** PVC pipes may be installed through the dam to allow for controlled flow through the dam. Pipe should be schedule 40 or heavier polyvinyl chloride (PVC) having a nominal internal diameter of 2 inches.
- **Sack Gabion Check Dams:**
    - o Sack gabion check dams may be used in channels with a contributing drainage area of 5 acres or less.
    - o Sack gabions shall be wrapped in galvanized steel, woven wire mesh. The wire shall be 20 gauge with 1 inch diameter, hexagonal openings.
    - o Wire mesh shall be one piece, wrapped around the rock, and secured to itself on the downstream side using wire ties or hog rings.
    - o Sack gabions shall be staked with ¾ inch rebar at a maximum spacing of three feet. Each wire sack shall have a minimum of two stakes.
    - o Stone shall be well graded with a minimum size range from 3 to 6 inches in diameter.
- **Organic Filter Tube Check Dams:**
    - o Organic filter tubes may be used as check dams in channels with a contributing drainage area of 5 acres or less.
    - o Organic filter tubes shall be a minimum of 12 inches in diameter.
    - o Filter material used within tubes to construct check dams shall be limited to coir, straw, aspen fiber and other organic material with high cellulose content. The material should be slow to decay or leach nutrients in standing water.
    - o Staking of filter tubes shall be at a maximum of 4 foot spacing and shall alternate through the tube and on the downstream face of the tube.

MAINTENANCE

- Check dams should be inspected regularly (at least as often as required by the UPDES Construction General Permit).
- Silt must be removed when it reaches approximately 1/3 the height of the dam
- Inspectors should monitor the edges of the dam where it meets the sides of the drainage ditch, swale or channel for evidence of erosion due to bypass or high flows. Eroded areas shall be repaired. If erosion continues to be a problem, modifications to the check dam or additional controls are needed.
- Care must be used when taking out rock check dams in order to remove as much rock as possible. Loose rock can create an extreme hazard during mowing operations once the area has been stabilized.

PERFORMANCE

- Rock check dams are performing as intended if the drainage channel they are protecting does not develop deep erosive gulleys between dams and the dam itself is not being undercut by erosion or eroded to either side of the dam.
- Due to the minimal sediment capture capability of check dams, good performance will include accumulations of sediment on the upstream side of dams until maintenance occurs.

GENERAL

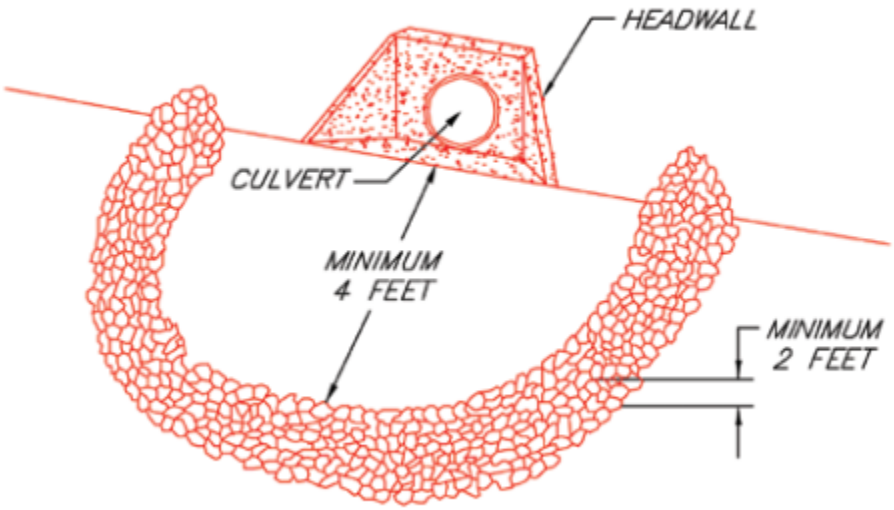
- N/A

REFERENCE

- U-CGP 2.2.11 – “Minimize erosion of constructed or natural site drainage feature channels and their embankments, outlets, adjacent streambanks, slopes, and downstream waters. Use erosion

controls and velocity dissipation devices within and along the length of any constructed or natural site drainage feature channel and at any outlet to slow down runoff and minimize erosion."

BMP 12- Culvert Drainage



[Insert the detail drawing should show/provide/instruct the BMP location, installation, structure etc. Perhaps we should make it direct and simple. We should put as much BMP information as is practical here]

SITE OPERATIONS AND CONDITIONS

A culvert inlet sediment barrier is a temporary rock barrier at a culvert inlet. This line is for the swppp writer and operator to help them engage with their BMP and hopefully take more ownership.

APPLICATION

Consider Use this BMP with the site has open culverts within the project area exposed to runoff. ~~The purpose of the barrier is to reduce the amount of sediment that enters the culvert by creating a small ponding area for the sediment to settle out~~ The goal of line is to prevent swppp writers and operators from choosing the wrong BMP.

OPERATION PROCEDURE

Consider~~ The barrier should~~ surround all sides of the culvert with Class II Channel Lining that receives runoff and ~~should be placed~~ with a minimum of 4 feet from the culvert. If the swppp writer or operator does not like this the 2" rock, that is ok, let them propose a modification and update the detail. The barrier must be designed to ensure that no bypasses occur for events exceeding ½" we should use a measurable requirement consistent with the CGP and or Federal requirements…maybe 2y 24hr storm or whatever it says. ~~and that adjacent property will not be damaged by the ponded water~~. Control the location of the sediment barrier spillway by placing an overflow notch at a selected location in the middle portion of the barrier. The notch should be at least six inches lower than the rest of the barrier. The downgradient portion of the overflow notch should be protected from spillover scouring with rock, ~~turf matting~~ detail does not show this?, ~~or other appropriate energy dissipator~~ If we want a dissipator we should show it . The stone ~~should be~~ Class II Channel Lining. The upstream face of the barrier should

consist of smaller stone such as to decrease the flow rate through the stone. A geotextile should be placed between the stone and the soil. Perhaps we should include this with the illustration

ALTERNATIVE DESIGN

- ~~Can be used for inlet or outlet culvert protection.~~
- Consider Submit alternative to oversight authority including but not limited to:, Sandbags, strawbales, wattles, siltfence… Attach alternative this this BMP detail.

MAINTENANCE

- Consider ~~The barrier should be~~ inspect~~ed~~ barrier weekly and after every rainfall greater than one-half inch. The barrier must be kept free of trash and debris,. ~~and~~ Remove sediments ~~should be removed~~ when it reaches one-half the height of the barrier. ~~The barrier should be removed after the disturbed area has been stabilized.~~ I think this is understood and we as the oversight authority should not release them if they have not removed it anyway.

PERFORMANCE

- Culvert inlet sediment barrier stone berms placed in front of culvert inlets can trap large volumes of sediment. Make sure sediment is removed as it accumulates before entering waters of the state.
- Consider By-passing sediments for storm event greater that ½" of rain. Measurable performance is key. It removes subjectivity which frustrates operators

GENERAL

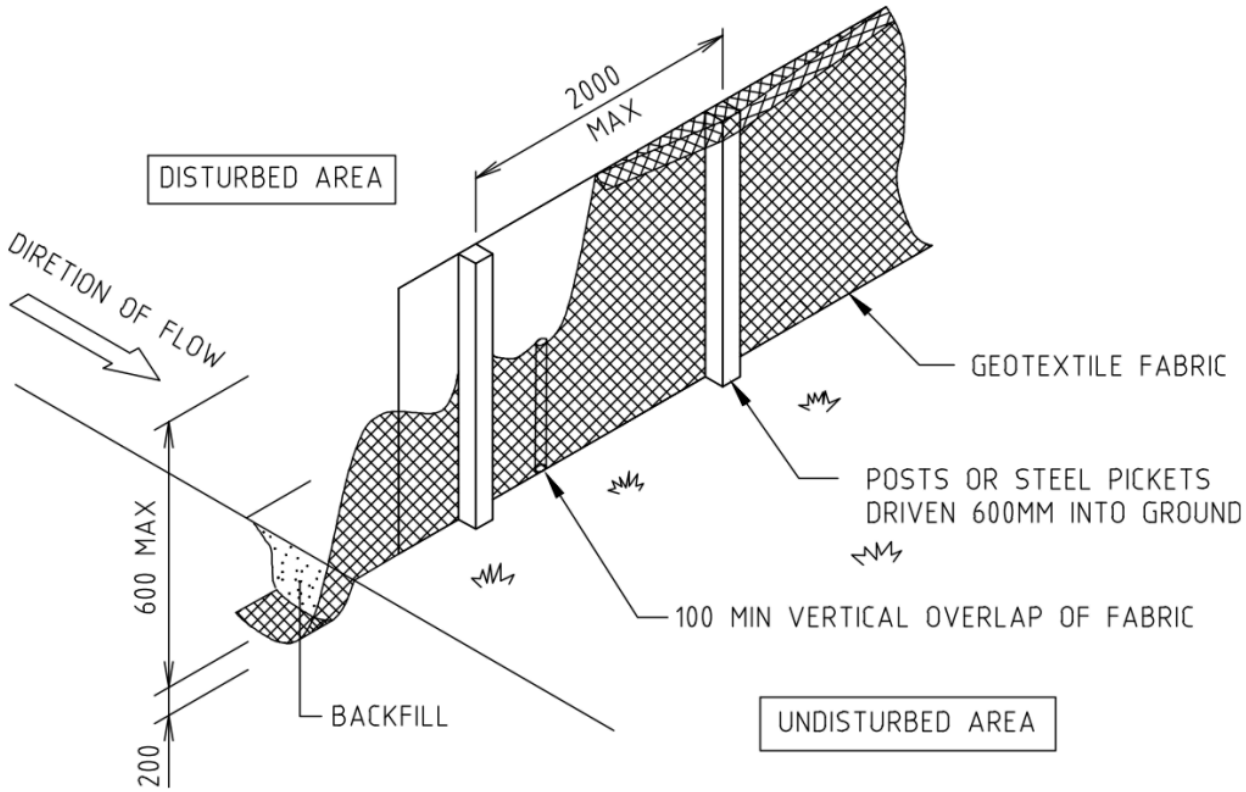
- If culvert inlet sediment barrier is used for a LID culvert inlet sediment barrier will need to be approval from and accredited engineer.
- Consider the template language The operator is responsible for selecting effective site specific BMPs according to the site's unique conditions and the operator's unique construction operation choices.

REFERENCE

- **2.2.11 Minimize erosion of constructed or natural site drainage feature channels and their embankments, outlets, adjacent streambanks, slopes, and downstream waters**. Use erosion controls and velocity dissipation devices[18] within and along the length of any constructed or natural site drainage feature channel and at any outlet to slow down runoff and minimize erosion.

[18] Examples of velocity dissipation devices include check dams, sediment traps, riprap, and grouted riprap at outlets.

BMP 13- Silt Fence



SEDIMENT FENCE DETAIL

NOT TO SCALE

APPLICATION

- Use silt fence to trap and filter sediment in runoff water from construction sites.
- Ideal for areas with exposed soil, slopes, and drainage channels.
- Not intended to control large volumes of concentrated water flow.

~~**OPERATION PROCEDURE**~~ It could make sense to change this to **INSTALLATION REQUIREMENTS** Don't be afraid to tweak the template when it makes sense understanding the intent is to maintain uniformity as much as possible

- Install silt fence along contours of the slope to maximize effectiveness.
- Ensure the bottom of the fence is trenched into the ground at least 6 inches to prevent water from flowing underneath.
- The silt fence should be secured with stakes spaced no more than 6 feet apart.

- Overlap ends of fence sections by at least 6 inches to prevent gaps.
- CGP-2.2.3. Install sediment controls along any consider down gradient perimeter areas ~~of the site that will receive pollutant discharges~~.
- ~~a.~~ note perhaps we should move maintenance items to the maintenance section. Remove sediment before it has accumulated to the point where the control has become ineffective. ~~Often that is one~~ Maintain half of the above-ground height of any perimeter control. It is good practice to maintain strong language. Remember we are providing BMP HB507 demanded so lets make is strong enough to reduce the risk of failing. Maybe that should be ¼ the height. However we should check that we are not more strict than federal requirements. If the operator wants to submit an alternative they can and it will need to literally conform to its installation requirements.
- ~~b.~~ Exception. For areas at "linear construction sites" (as defined in Part 10) where perimeter controls are infeasible (e.g., due to a limited or restricted right-of-way), implement other practices as necessary to minimize pollutant discharges to perimeter areas of the site. Maybe we should move b. to Alternative Design

ALTERNATIVE DESIGN

- Alternative sediment control devices may be used if they demonstrate equal or better performance.
- ~~Alternatives should be submitted~~ consider Submit alternative design, illustrations, installation and maintenance requirements to the oversight authority for approval.
- ~~Document any alternative designs with detailed installation procedures and maintenance requirements.~~

MAINTENANCE

- Inspect silt fences regularly, especially after storm events.
- Remove accumulated sediment when it reaches one-third the height [be consistent federal requirements] of the fence.
- Repair or replace damaged sections of the silt fence ~~immediately~~ consider prior to any anticipated event forecast or wet conditions and within the inspection period whichever comes first. Maybe we should be lenient when we can but hold the line when it makes a difference.
- Maintain a clear area on both sides of the fence to facilitate inspections and sediment removal.

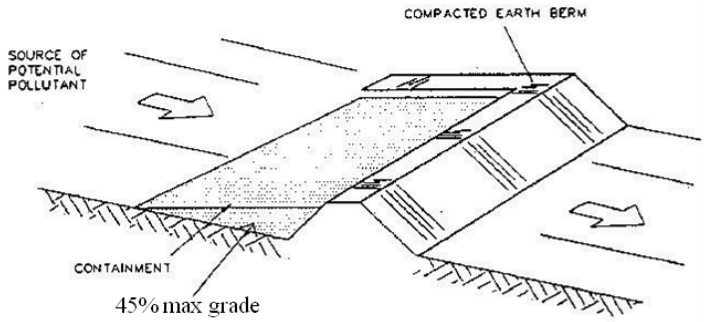
PERFORMANCE

- A silt fence is considered effective if it retains sediment and prevents sediment-laden water from leaving the construction site.
- Consider. Silt fence is required to manage a 2yr 24hr event CGP 2.2.12 I think the CGP infers this, otherwise a sediment basin is required. Ultimately, we should try back what we can with the CGP and federal requirements. Where we can it might be wise to include measurable requirements. Note: part of Operator / municipality conflict is the operator not understanding basis for violation. We want to do your best to remove subjectivity.
- Regularly assess the performance and replace or repair the silt fence as needed. Maybe this is a maintenance item
- Address any signs of underperformance immediately to prevent environmental impacts. Maybe this is a maintenance item

GENERAL

- Operators are responsible for selecting and installing effective site-specific BMPs.
- Ensure all workers are trained on proper installation, maintenance, and inspection of silt fences.
- Follow local regulations and guidelines for sediment control and erosion prevention.

BMP 14- Earth Berm Barrier



APPLICATION

A temporary containment control constructed of compacted soil.

- Construct around waste and materials storage area.
- Construct around staging and maintenance areas.
- Construct around vehicle parking and servicing areas.

OPERATION PROCEDURE

- Construct an earthen berm downhill of the area to be controlled. The berm should surround fueling facilities and maintenance areas on three sides to provide containment.
- Berm needs to be a minimum of 1 foot tall by 1 foot wide and be compacted by earth moving equipment.

ALTERNATIVE DESIGN

- Silt fence, straw waddle barrier.

MAINTENANCE

- Observe daily for any non-stormwater discharge.
- Look for runoff bypassing ends of berms or undercutting berms.
- Repair or replace damaged areas of the berm and remove accumulated sediment.
- Recompact soil around berm as necessary to prevent piping.

INSPECTION

- BMP inspection report.

1. For successful BMPs, record the BMPs success in the inspection form in your SWPPP. Upload your geo-located time stamp photos to the inspection appendix of the local electronic SWPPP document. Repeat per SWPPP inspection interval. CGP-2.2.4, 4.6,4.7
2. For failing BMPs, record a description of BMP problems, cause of failure and a description of the correction in the inspection form in your SWPPP. Upload the geolocated time stamp photos to the inspection appendix of the local electronic SWPPP report system within 24hrs. Provide photos of BMP failure and the corrected BMP condition. Include responses/correction descriptions from inspection reports or other notices given by oversight authority. Oversight authority must respond to situations resulting in safety, water quality risks and public complaint concerns. CGP 5.3, MS4 4.2.4.2, and CGP 2.2.4, 4.6, 4.8, 5.1, 5.2.1, 5.4.1

3. Incomplete reporting of BMP successes and failures can result in oversight authority inspection notice and potential enforcement. CGP 5.3, MS4 4.2.4.2. Successful BMP management and detailed SWPPP inspection reports showing BMP success, or recognition of BMP failure and regular BMP maintenance, repair/correction records will help prevent the need for oversight authority involvement.

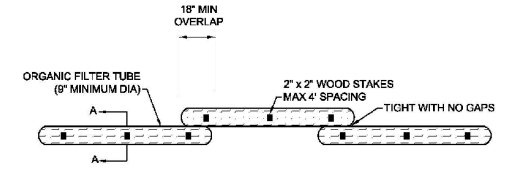
PERFORMANCE

GENERAL

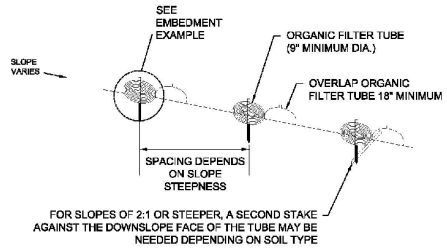
- The operator is responsible for selecting effective site specific BMPs according to the site's unique conditions and the operator's unique construction operation choices.

BMP 15- Organic Filter Tubes

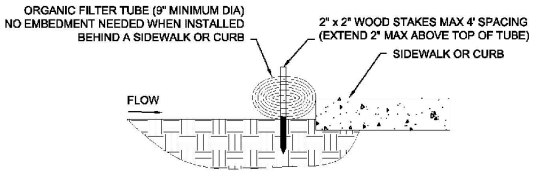
This is a duplicate to check dams. Maybe we can take the best from both and merge into one. Also in my opinion we should create separate filter BMPs such as silt fence, wattles, rock wattles, haybales, etc. Each product system have different installation and maintenance requirements. It is my opinion operators have been confused by this. It is ok to have a specific detail for each BMP product. I suspect part of the reason actual site BMPs, many times do not match swppp bmps is because may BMPs out there are trying to be a one size fits all. The swppp writers and operators are confused. It is ok to provide them separate BMP product choices that manage the same site exposure and operation with the potential to result in polluted runoff.



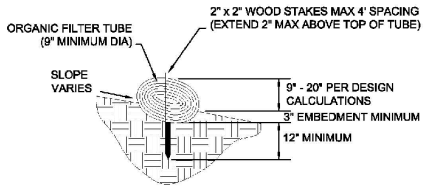
ORGANIC FILTER TUBE PERIMETER CONTROL PLAN VIEW
N.T.S.



ORGANIC FILTER TUBE SLOPE PROTECTION PROFILE
N.T.S.



INSTALLATION EXAMPLE FOR ORGANIC FILTER TUBEABUTTING PAVEMENT
N.T.S.



EMBEDMENT EXAMPLE FOR ORGANIC FILTER TUBE
N.T.S.

APPLICATION

- Organic filter tubes are an effective means to treat sheet flow over a short distance and can be used on steep slopes as both sediment and erosion control. They can also be used as check dams in a swale/ditch when used correctly. Inlet protection is yet another use for these BMPs.

- Filter tubes can provide perimeter control on disturbed areas, paved surfaces, or where soil type prevents embedment of other controls, and work well as perimeter controls around small drainage areas, stockpiles, demolition zones, linear construction projects, and utility trenching.
- Filter tubes work by detaining flow and capturing sediment as a linear control along the contours of a slope, or as a perimeter control down-slope of a disturbed area (when appropriately sized).
- Filter tubes are most effective with coarse to silty soil types; additional controls may be needed to remove fine silts and clays soils suspended in stormwater.
- Filter tubes are comprised of an open weave, mesh tube that is filled with a filter material (compost, wood chips, straw, coir, aspen fiber, or a mixture of materials).
- The tube may be constructed of geosynthetic material, plastic, or natural materials. If the tubes will be left onsite as part of the final stabilization plan (such as in Arid and Semi-Arid areas with exceptions to final stabilization timeline requirements, they must be constructed of 100 percent biodegradable jute, coir, sisal or similar natural fiber or 100 percent UV photodegradable plastic, polyester or geosynthetic material.
- Organic filter tubes are also called fiber rolls, fiber logs, wattles, mulch socks, and/or coir rolls.

OPERATION PROCEDURE

- Filter tubes should be installed along the contour.
- Tubes shall be staked with 2 inch by 2 inch wooden stakes at a maximum spacing of 4 feet. Rebar or similar metal stakes may be used instead of wooden stakes.
- When placed on pavement, sand or rock bags shall be placed abutting the down-slope side of the tubes to prevent runoff from dislodging the tubes. At a minimum, bags shall be placed one foot from each end of the tube and at the middle of the tube.
- Filter tubes shall be embedded a minimum of three inches when placed on soil. Placement on rock shall be designed as placement on pavement.
- The end of tubes shall overlap a minimum of 18 inches when multiple tubes are connected to form a linear control along a contour or a perimeter.
- Loose mulch material shall be placed against the log on the upstream side to facilitate contact with the ground.
- The last 10 feet (or more) at the ends of a line of tubes shall be turned upslope to prevent bypass by stormwater. Additional turned-upslope lengths of tubes may be needed every 200 to 400 linear feet, depending on the traverse slope along the line of tubes.
- The most common sizes of tubes are 6 to 24 inches in diameter; however, tubes are available in sizes as small as 4 inches and up to 36 inches in diameter. The designer shall specify a diameter based on the site application. Tubes less than 8 inches in diameter when filled will require more frequent maintenance if used.
- When using manufactured tubes, the manufacturer's recommendations for diameter and spacing based on slope, flow velocities, and other site conditions shall be followed and documented in a site's SWPPP as justification for their placement and use.

ALTERNATIVE DESIGN

- **Organic Filter Tube Inlet Protection:**
    - The diameter of the tube shall be at least 2 inches less than the height of the inlet opening. The tube should not be allowed to block the entire opening, as it will clog.
    - The tube shall be placed on 4 inch x 4 inch or 2 inch x 4 inch wire mesh to prevent the tube from sagging into the inlet.

    - The tube should be long enough to extend a minimum of 12 inches past the curb opening on each side of the inlet.
    - The tube should be weighted down with gravel bags (not sand) at the ends and in the middle to prevent the wattle from lifting during stormwater runoff.
- **Organic Filter Tube Check Dams:**
    - Organic filter tubes may be used as check dams in channels with a contributing drainage area of 5 acres or less.
    - Organic filter tubes shall be a minimum of 12 inches in diameter.
    - Filter material used within tubes to construct check dams shall be limited to coir, straw, aspen fiber and other organic material with high cellulose content. The material should be slow to decay or leach nutrients in standing water.
    - Staking of filter tubes shall be at a maximum of 4 foot spacing and shall alternate through the tube and on the downstream face of the tube.

MAINTENANCE

- Organic filter tubes should be inspected regularly (at least as often as required by the UPDES Construction General Permit).
- The filter tube should be checked to ensure that it is in continuous contact with the soil at the bottom of the embedment trench. Closely check for rill erosion that may develop under the filter tubes. Eroded spots must be repaired and monitored to prevent reoccurrence. If erosion under the tube continues, additional controls are needed.
- Staking shall be checked to ensure that the filter tubes are not moving due to stormwater runoff. Repair and re-stake slumping filter tubes. Tubes that are split, torn or unraveling shall be repaired or replaced.
- Check the filter tube material to make sure that it has not become clogged with sediment or debris. Clogged filter tubes usually lead to standing water behind the filter tube after the rain event. Sediment shall be removed from behind the filter tube before it reaches half the height of the exposed portion of the tube.

PERFORMANCE

- Organic filter tubes are performing as intended if sheet flow of runoff is passing over or through the barrier and not simply around it, bypassing the control.
- Additionally, performance is achieved if the filter tube barrier is effectively minimizing the off-site discharge of sediment from the drainage area it is controlling and does not develop erosive rills/gullies between filter tubes and the tubes are not being undercut by erosion or eroded to either side of the barrier.
- Due to the relatively smaller sediment capture capability of these filter tubes, as compared to taller barriers, good performance will include accumulations of sediment on the upstream side of filter tubes until maintenance occurs, which will likely require more frequent maintenance.

GENERAL

- N/A

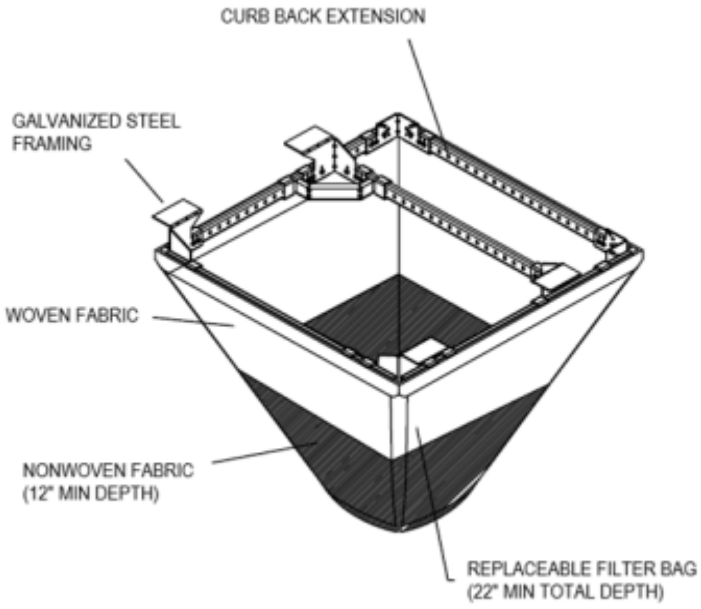
REFERENCE

- U-CGP 2.2.3 – “Install sediment controls along any perimeter areas of the site that are downslope from any exposed soil or other disturbed areas: **a.** You must install the perimeter control upgradient of any natural buffers established under Part 2.2.1, unless you are implementing the control pursuant to Part 2.2.1.a(1) or (2); **b.** To prevent stormwater from circumventing the edge of the perimeter control, install the perimeter control on the contour of

the slope and extend both ends of the control up slope (e.g., at 45 degrees) forming a crescent rather than a straight line; **c.** After installation, to ensure that perimeter controls continue to work effectively: (1) Remove sediment before it has accumulated to one-half of the above-ground height of any perimeter control; and (2) After a storm event, if there is evidence of stormwater circumventing or undercutting the perimeter control, extend controls and/or repair undercut areas to fix the problem. **d.** Exception. For areas at "linear construction projects" (as defined in Part 10) where perimeter controls are infeasible (e.g., due to a limited or restricted right-of-way), implement other practices as necessary to minimize pollutant discharges to perimeter areas of the site. "

- U-CGP 2.2.5 – "Manage stockpiles or land clearing debris piles composed, in whole or in part, of sediment and/or soil: b. Install a sediment barrier along all downgradient perimeter areas of stockpiled soil or land clearing debris piles"
- U-CGP 2.2.10 – "Protect storm drain inlets. **a.** Install inlet protection measures that remove sediment from discharges prior to entry into any storm drain inlet that carries storm water from your site to waters of the state, provided you have authority to access the storm drain inlet, and **b.** Clean, or remove and replace, the inlet protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same business day in which you found it.
- U-CGP 2.2.11 – "Minimize erosion of constructed or natural site drainage feature channels and their embankments, outlets, adjacent streambanks, slopes, and downstream waters. Use erosion controls and velocity dissipation devices within and along the length of any constructed or natural site drainage feature channel and at any outlet to slow down runoff and minimize erosion."

BMP 16- Drop in inlet



I am not aware of any non-proprietary drop inlet systems so maybe we can eliminate the illustration. We could write this to accommodate any proprietary system

Detail

- Curb back extensions
- Galvanized Steel Framing
- Woven Fabric followed by Non Woven Fabric 12” Min
- Replaceable filter bag 22” Min total Depth

APPLICATION

- Use inlet protection methods to trap sediment and debris from runoff before it enters the stormwater system.
- Ideal for areas near storm drains, curb inlets, and other drainage structures.
- Not intended for high-flow areas without additional support measures.
- Consider adding Systems without an overflow are not appropriate for sag locations where hydroplaning is a risk.
-
- **OPERATION PROCEDURE** it could make sense to changing to **SUBMITAL AND OPERATION**
- Consider adding Submit manufactures detail to the oversight authority and attach to this detail. Basically, most if not all drop inlet control devices will be proprietary, so it should not be wrong to acknowledge and anticipate it. This way we do not need to provide a detail with this manual BMP. Also by requiring illustrations the swppp writer and operator will facility BMP engagement and ownership.
- Attached manufacturer installation and maintenance literature.
- ~~Install inlet protection devices around storm drains and inlets as per project requirements.~~ I don’t understand how this applies?

- Ensure the devices are securely fastened and properly positioned to maximize effectiveness.
- Regularly inspect and maintain the devices to ensure they are functioning correctly. Perhaps this could be moved to the maintenance line.
- Use appropriate types of inlet protection based on site-specific conditions. Perhaps be specific such as "Do not install drop inlet systems without overflows in sag locations where hydroplaning is a risk" The swppp writer or operator do not understand this critical problem we municipalities understand all too well.
- CGP-2.2.10. Protect storm drain inlets.
- Install inlet protection measures that remove sediment from discharges prior to entry into any storm drain inlet that carries storm water flow from your site to surface water of the state, provided you have authority to access the storm drain inlet.
- Clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same business day in which it is found Perhaps this could be moved to the maintenance line.

ALTERNATIVE DESIGN

- Alternative inlet protection devices may be used if they demonstrate equal or better performance.
- ~~Alternatives should be submitted~~ (consider Submit) alternatives to the oversight authority for approval. Where it makes sense use strong language. Avoid using words like should
- Document any alternative designs with detailed installation procedures and maintenance requirements. Consider moving this to the inspection line.

MAINTENANCE

- Inspect inlet protection devices regularly, especially after storm events.
- Remove accumulated sediment and debris as needed to maintain effectiveness.
- Repair or replace damaged inlet protection devices ~~immediately~~ (consider prior to the next wet condition risk. This could be a storm event or irrigation overspray sources etc).
- Ensure a clear area around inlet protection devices to facilitate inspections and maintenance.
- Consider Inspector for water spreading into the driving lane.
- Consider include maintenance indicated with manufacturer see attached.

INSPECTION

- BMP inspection report.

1. For successful BMPs, record the BMPs success in the inspection form in your SWPPP. Upload your geo-located time stamp photos to the inspection appendix of the local electronic SWPPP document. Repeat per SWPPP inspection interval. CGP-2.2.4, 4.6,4.7
2. For failing BMPs, record the BMP failure description and cause of failure in the inspection form in your SWPPP. Upload the geolocated time stamp photos to the inspection appendix of the local electronic SWPPP report system within 24hrs. Provide photos of BMP failure and the corrected BMP condition. Include responses/correction descriptions from inspection reports or other

notice given by oversight authority. CGP 5.3, MS4 4.2.4.2, and CGP 2.2.4, 4.6, 4.8, 5.1, 5.2.1, 5.4.1

3. Incomplete reporting of BMP successes and failures can result in oversight authority inspection notice and potential enforcement. CGP 5.3, MS4 4.2.4.2. Successful BMP management and detailed SWPPP inspection reports showing BMP success, or recognition of BMP failure and regular BMP maintenance, repair/correction records will help prevent the need for oversight authority involvement.

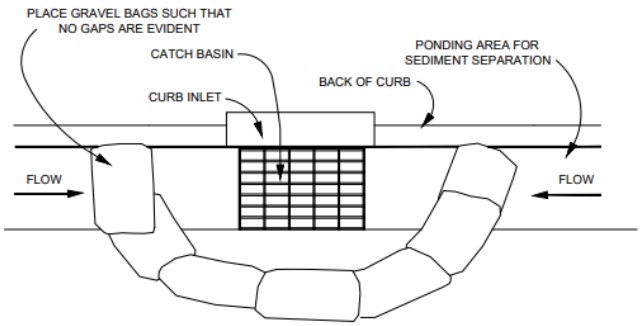
PERFORMANCE

- Inlet protection is considered effective if it prevents sediment and debris from entering the stormwater system.
- Consider "Drop Inlet systems resulting water reaching the driving lane is considered a failure."
- Consider "Drop Inlet systems resulting in street pollution by-passing to the downstream unprotected inlet is considered a failure"
- Regularly assess the performance and replace or repair the devices as needed. Consider moving this to the inspection line
- Address any signs of underperformance immediately to prevent environmental impacts Consider moving this to the inspection line

GENERAL

- Operators are responsible for selecting and installing effective site-specific BMPs.
- Ensure all workers are trained on proper installation, maintenance, and inspection of silt fences.
- Follow local regulations and guidelines for sediment control and erosion prevention.

BMP 17- Gravel Bag



PLAN VIEW

APPLICATION

- Use inlet protection methods to trap sediment and debris from runoff before it enters the stormwater system.
- Ideal for areas near storm drains, curb inlets, and other drainage structures.
- Not intended for high-flow areas without additional support measures.
- Consider adding>>> “Do not use on collector roadways and where hydroplaning is a risk”.
- Consider adding Warning: Gravel bag system are easily damaged by vehicles and snow plows but can be necessary to address the limitations with inlet cover, drop inlet system BMPs and other inlet protection systems.

- **OPERATION PROCEDURE**
- Install inlet protection devices around storm drains and inlets as per project requirements. Perhaps this is understood?
- Ensure the devices are securely fastened If we mention fasteners we should show it with the detail??? and properly positioned to maximize effectiveness.
- Consider adding Position bags and manage bag height to prevent water pooling conditions that will result in hydroplaning.
- Regularly inspect and maintain the devices to ensure they are functioning correctly. Consider moving this to the maintenance line.
- Use appropriate types of inlet protection based on site-specific conditions.
- CGP-2.2.10. Protect storm drain inlets.
- Install inlet protection measures that remove sediment from discharges prior to entry into any storm drain inlet that carries storm water flow from your site to surface water of the state, provided you have authority to access the storm drain inlet.
- Clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same business day in which it is found Consider moving this to the maintenance line.

ALTERNATIVE DESIGN

- Alternative inlet protection devices may be used if they demonstrate equal or better performance.
- ~~Alternatives should be submitted~~ (consider Submit) alternatives to the oversight authority for approval. Where it makes sense use strong language. Avoid using words like should
- Consider. Attach illustrations, installation maintenance to this BMP.
- Document any alternative designs with detailed installation procedures and maintenance requirements. Consider moving this to the inspection line.

MAINTENANCE

- Inspect inlet protection devices regularly, especially after storm events.
- Remove accumulated sediment and debris as needed to maintain effectiveness.
- Repair or replace damaged inlet protection devices ~~immediately~~ (consider prior to the next forecast storm or wet condition risk. This could be a storm event or irrigation overspray sources etc)..
- Ensure a clear area around inlet protection devices to facilitate inspections and maintenance.

INSPECTION

- BMP inspection report.

1. For successful BMPs, record the BMPs success in the inspection form in your SWPPP. Upload your geo-located time stamp photos to the inspection appendix of the local electronic SWPPP document. Repeat per SWPPP inspection interval. CGP-2.2.4, 4.6,4.7
2. For failing BMPs, record the BMP failure description and cause of failure in the inspection form in your SWPPP. Upload the geolocated time stamp photos to the inspection appendix of the local electronic SWPPP report system within 24hrs. Provide photos of BMP failure and the corrected BMP condition. Include responses/correction descriptions from inspection reports or other notice given by oversight authority. CGP 5.3, MS4 4.2.4.2, and CGP 2.2.4, 4.6, 4.8, 5.1, 5.2.1, 5.4.1
3. Incomplete reporting of BMP successes and failures can result in oversight authority inspection notice and potential enforcement. CGP 5.3, MS4 4.2.4.2. Successful BMP management and detailed SWPPP inspection reports showing BMP success, or recognition of BMP failure and regular BMP maintenance, repair/correction records will help prevent the need for oversight authority involvement.

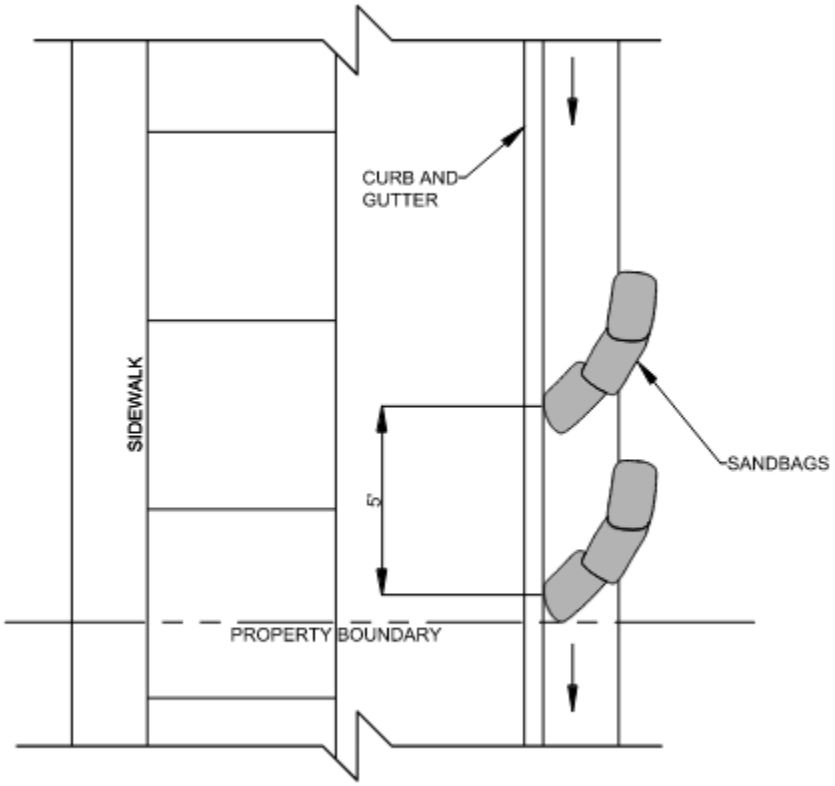
PERFORMANCE

- Inlet protection is considered effective if it prevents sediment and debris from entering the stormwater system.
- Consider “Inlet bag protection systems resulting in water reaching the driving lane is considered a failure.”
- Consider “Inlet bag protection systems resulting in street pollution spilling over bags during event less than 0.25” of rain is considered a failure”
- Regularly assess the performance and replace or repair the devices as needed. Consider moving this to the inspection item?
- Address any signs of underperformance immediately to prevent environmental impacts. Consider moving this to the inspection item?

GENERAL

- Operators are responsible for selecting and installing effective site-specific BMPs.
- Ensure all workers are trained on proper installation, maintenance, and inspection of silt fences.
- Follow local regulations and guidelines for sediment control and erosion prevention.

BMP 18- Gutter Dam



APPLICATION

- Use Gutter Dam BMP upstream of at-grade gutter inlets.
- Use Gutter Dam BMP for residential project property boundary containment.
- Warning; This BMP is easily damaged by snow removal operations and anyone who parks along the gutter.

INSTALLATION AND OPERATION

- Install 6” min dia sand or gravel bags. Double up bags as necessary.
- Install just upstream of inlets.
- Install at residential projects at downstream boundary.
- Inform subcontractors and suppliers to prevent damage resulting from roadside parking.
- This BMP is designed for 1/3” rain storm events.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- Inspect for damage prior to storm forecast and when residential irrigation overspray is expected.
- Anticipate significant storm events and remove sediment build up prior to the event that could scour build up from the gutter dam.
- Inspect repair bags and remove sediment following storm events and regularly during the report period when residential overspray is a water source.
- Bring awareness to workforce and suppliers.
- Excessive or equal amount of dirt in downstream dam could indicate inadequate maintenance or storm event was exceeded. When inspection shows failure with regular maintenance and failure persist then add a third dam. Non-performing dams warrant a stronger inlet BMP.

PERFORMANCE:

- Regular damage warrants choosing another inlet BMP.
- Excessive or equal amount of dirt in downstream dam could indicate BMP is not adequate for the sites sediment exposure.

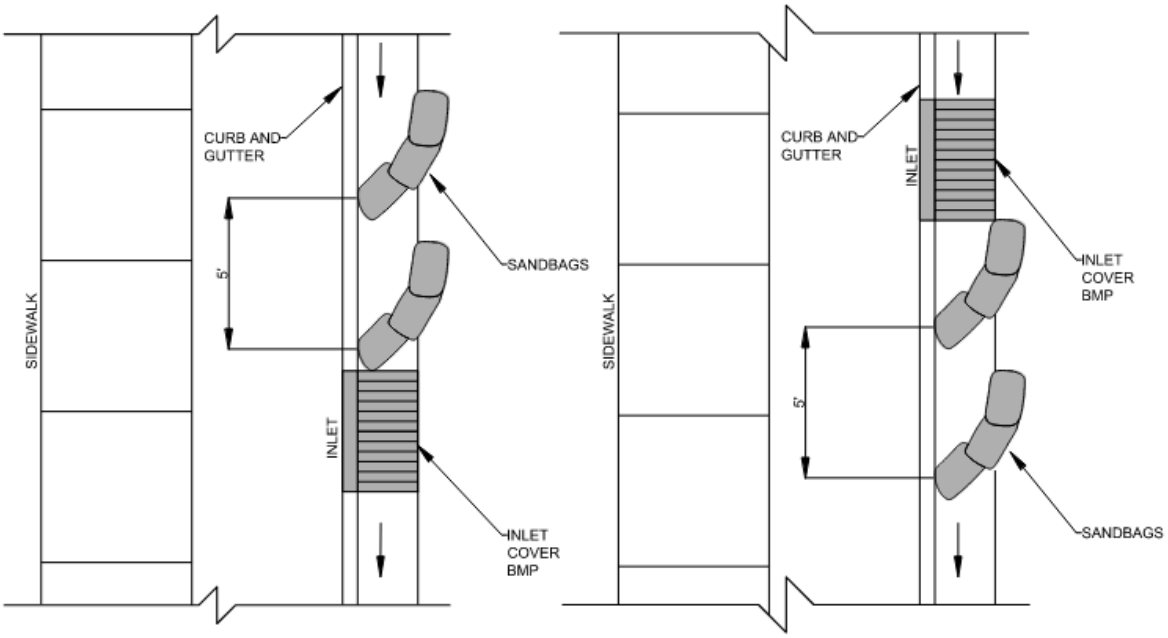
GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance, safety, and water quality risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.2.10
- Common Plan Permit (CPP) 2.1.3

BMP 19- Gutter Dam Inlet Cover Combo



APPLICATION

- Use Gutter Dam BMP in combination with inlet coverer BMPs to prevent sediment by-pass. At grade inlets with filter covers only, can result in sediment by-passing to unprotected downstream inlets.
- Warning; This BMP is easily damaged by snow removal operations and anyone who parks along the gutter.

INSTALLATION AND OPERATION

- Install 6” min dia sand or gravel bags. Double up bags as necessary.
- Install just upstream or downstream of inlet cover BMPs.
- Inform subcontractors and suppliers to prevent damage.
- Reference the Inlet Cover BMP. Or provide a proprietary Inlet Cover BMP specification and illustrations or describe your plan to wrap the inlet with fabric and attach this information to this BMP.
- This BMP is designed for 1/3” rain storm events.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- Inspect for damage prior to storm forecast and when residential irrigation overspray is expected.
- Anticipate significant storm events and remove sediment build up prior to the event that could scour build up from the gutter dam inlet cover BMP.
- Inspect repair bags and remove sediment following storm events and regularly during the report period when residential overspray is a water source.
- Bring awareness to workforce and suppliers.
- Excessive or equal amount of dirt in downstream dam could indicate inadequate maintenance or storm event was exceeded. When inspection shows failure when maintenance is regular and failure persist then add a third dam. Non-performing dams warrant a stronger inlet BMP.

PERFORMANCE:

- Regular damage warrants choosing another inlet BMP.
- Excessive or equal amount of dirt in downstream dam could indicate BMP is not adequate for the sites sediment exposure.

GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance, safety, and water quality risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.2.10
- Common Plan Permit (CPP) 2.1.3

BMP 20- Inlet Cover

APPLICATION

- Use inlet protection methods to trap sediment and debris from runoff before it enters the stormwater system.
- Ideal for areas near storm drains, curb inlets, and other drainage structures.
- Not intended for high-flow areas without additional support measures.
- Consider adding Do not use for sag locations where hydroplaning is a risk.
- Consider adding Do not use for at grade inlet without a redundant by-pass BMP is installed in tandem.

- Consider changing **OPERATION PROCEDURE** to **INSTALLATION, DESIGN AND OPERATION PROCEDURE**
- Consider adding Submit manufactures detail to the oversight authority and attach to this detail. Basically, most inlet cover control devices will be proprietary, so it should not be wrong to acknowledge and anticipate it. However, operators can make their own so we should consider a non-proprietary inlet cover BMP detail with installation instructions for closed and open-face inlets.
- Consider Submit illustrated detail. If proprietary attach installation, inspection and maintenance requirements.
- Install inlet protection devices around storm drains and inlets as per project requirements.
- Ensure the devices are securely fastened and properly positioned to maximize effectiveness.
- Regularly inspect and maintain the devices to ensure they are functioning correctly. Consider moving this to the maintenance line.
- Use appropriate types of inlet protection based on site-specific conditions. Perhaps be specific such as "Do not install inlet cover systems without overflows in sag locations where hydroplaning is a risk" The swppp writer or operator do not understand this critical problem we municipalities understand all too well. Remember the call we get when the road is filled with water during a storm event.
- Consider adding When installing inlet covers on at grade inlets locations address unprotected downstream inlets by combining inlet cover systems with with daming type inlet control systems
- CGP-2.2.10. Protect storm drain inlets.
- Install inlet protection measures that remove sediment from discharges prior to entry into any storm drain inlet that carries storm water flow from your site to surface water of the state, provided you have authority to access the storm drain inlet.
- Clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same business day in which it is found. Consider moving this to the maintenance line.

ALTERNATIVE DESIGN

- Alternative inlet protection devices may be used if they demonstrate equal or better performance.
- ~~Alternatives should be submitted~~ (consider Submit) alternatives to the oversight authority for approval. Where it makes sense use strong language. Avoid using words like should
- Document any alternative designs with detailed installation procedures and maintenance requirements. Consider moving this to the inspection line.

MAINTENANCE

- Inspect inlet protection devices regularly, especially after storm events.
- Remove accumulated sediment and debris as needed to maintain effectiveness.
- Repair or replace damaged inlet protection devices ~~immediately~~ (consider prior to the next wet condition risk. This could be a storm event or irrigation overspray sources etc).
- Ensure a clear area around inlet protection devices to facilitate inspections and maintenance.

INSPECTION

- BMP inspection report.

1. For successful BMPs, record the BMPs success in the inspection form in your SWPPP. Upload your geo-located time stamp photos to the inspection appendix of the local electronic SWPPP document. Repeat per SWPPP inspection interval. CGP-2.2.4, 4.6,4.7
2. For failing BMPs, record the BMP failure description and cause of failure in the inspection form in your SWPPP. Upload the geolocated time stamp photos to the inspection appendix of the local electronic SWPPP report system within 24hrs. Provide photos of BMP failure and the corrected BMP condition. Include responses/correction descriptions from inspection reports or other notice given by oversight authority. CGP 5.3, MS4 4.2.4.2, and CGP 2.2.4, 4.6, 4.8, 5.1, 5.2.1, 5.4.1
3. Incomplete reporting of BMP successes and failures can result in oversight authority inspection notice and potential enforcement. CGP 5.3, MS4 4.2.4.2. Successful BMP management and detailed SWPPP inspection reports showing BMP success, or recognition of BMP failure and regular BMP maintenance, repair/correction records will help prevent the need for oversight authority involvement.

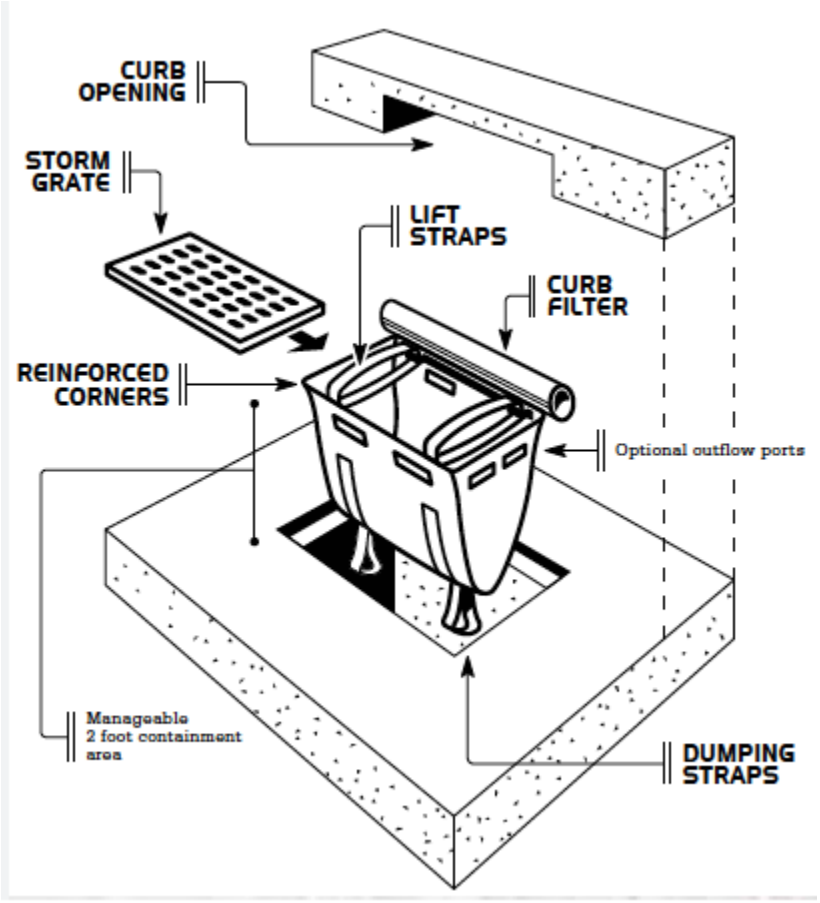
PERFORMANCE

- Inlet protection is considered effective if it prevents sediment and debris from entering the stormwater system.
- Consider "Inlet cover protection systems resulting water reaching the driving lane is considered a failure."
- Consider "Inlet cover protection systems resulting in street pollution by-passing to the downstream unprotected inlet is considered a failure"
- Regularly assess the performance and replace or repair the devices as needed. Isn't this an inspection item?
- Address any signs of underperformance immediately to prevent environmental impacts. Isn't this an inspection item?

GENERAL

- Follow local regulations and guidelines for sediment control and erosion prevention.

BMP 21- State BMP Drop Inlet



*Detail for reference only, submit proprietary drop inlet bag system, illustrations, and literature with this BMP"

APPLICATION

- Drop inlet filter bags are temporary and allow storm drain inlets onsite to remain operational prior to permanent site stabilization. Construction staff install temporary inlet protection controls before any soil disturbance occurs in the drainage area on all existing roadways going in their project. The purpose of the basin insert is to catch sediment before entering the storm drain system.

OPERATION PROCEDURE

- Should be used for larger roadway systems that other inlet filters might interfere with vehicle or pedestrian traffic.
- Can be used in high traffic construction sites that other types of filtration style BMPs are constantly damaged or ineffective.
- Must be designed so that when the grate lids are removed the inlet bag does not drop in the storm inlet box.
- Consider "Submit proprietary system illustrations and literature and attach to this BMP"
- Consider " install and ensure the overflow system is adequate. Remain aware of runoff on the street surface with every storm event"

ALTERNATIVE DESIGN

- Pig mats can be utilized to separate petroleum from stormwater runoff.

- Allows street sweeping to be conducted without blocking the curb conveyance system.
- Can be used in conjunction with other types of storm drain filtration BMPs that produce heavy sediment.

MAINTENANCE

- Must be inspected weekly or by-weekly.
- Maintenance is to be conducted if sediment bag is 50% full.
- May require a 2 person lift to remove from the inlet box.
- Dispose any and all pollutants including sediment, trash and debris properly.
- Replace ripped or torn drop inlet bags with a new bag.

PERFORMANCE

BMP considered inadequate when:

- Poorly maintained inlet protection can promote sediment and other pollutants to enter the storm drain system.
- Consider “un-replaced torn or damaged bags”
- Any storm drain filters can be removed in emergencies to prevent flooding.

GENERAL

- The applicant is responsible for selecting all BMPs.
- All projects require storm inlet protection to protect waters of the state.

REFERENCE

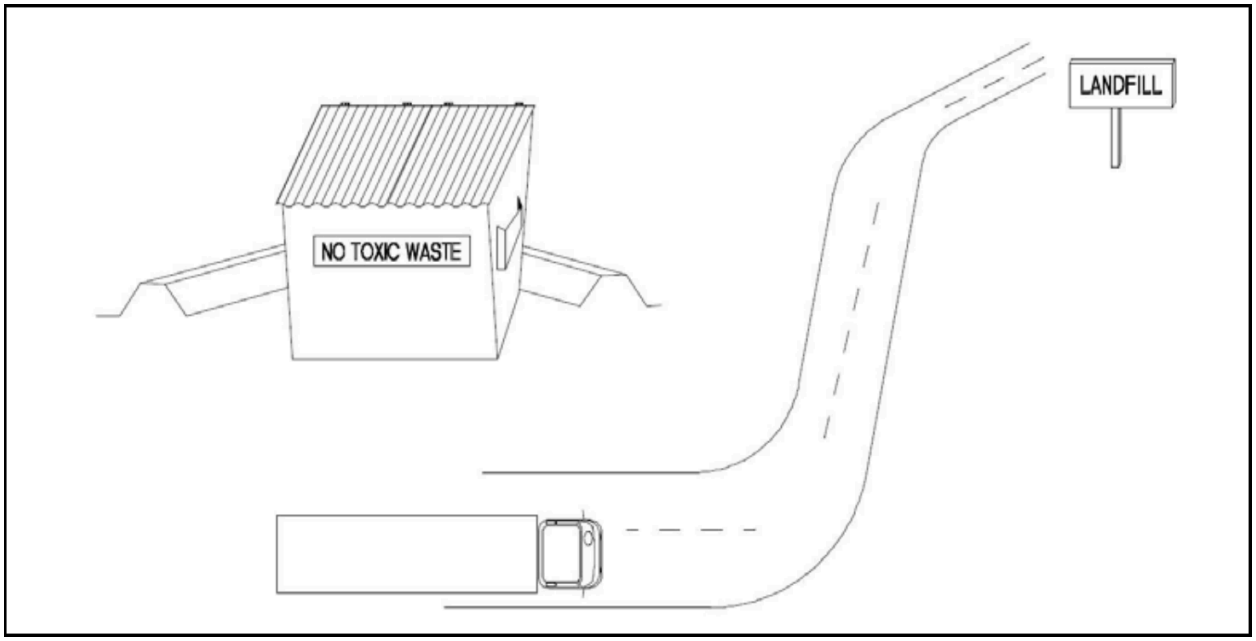
UTRC00000

2.2.10

1. **Protect storm drain inlets.**
    a. Install inlet protection measures that remove sediment from discharges prior to entry into any storm drain inlet that carries storm water from your site to waters of the state, provided you have authority to access the storm drain inlet. You do not need inlet protection measures for storm drain inlets that convey to a sediment basin, sediment trap, or similarly effective control; and

    a. Clean, or remove and replace, the inlet protection measures as sediment accumulates, the filter becomes clogged, and/or there is a compromise in performance. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same business day in which you found it.

BMP 22- Solid Waste Management



APPLICATION

- This BMP is necessary when construction activities generate solid waste that needs to be collected and disposed of properly to prevent environmental contamination.
- Use this BMP when: The site generates solid waste, including packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, styrofoam, concrete, demolition debris; and other trash or building materials that could potentially contaminate stormwater if not managed correctly.

OPERATION PROCEDURE

- **Selection Criteria**:
    - Use watertight containers (e.g., dumpster, trash receptacle) that are appropriately sized for the volume of waste generated on-site.
    - Ensure waste containers are constructed of durable, leak-proof materials.
- **Placement**: position dumpsters on a flat, stabilized surface, away from storm drains and water bodies. Identify these locations on the site plan.
- **Usage**: ensure all construction waste is placed inside the dumpster. Do not overfill; waste should not extend beyond the sides or top of the dumpster.
- Clean up immediately if containers overflow.
- **Containment:** Provide containment or cover for waste that is blowable or that can leach nutrients, metals, pesticides, herbicides, oil, grease, bacteria, or other pollutants.
- **Segregation:** separate hazardous waste from non-hazardous waste and use appropriately labeled and secured containers for hazardous materials.
- **Training:** ensure the workforce is informed about proper waste disposal procedures and the importance of maintaining the integrity of waste management BMPs.

ALTERNATIVE DESIGN

- Applicant is invited to modify or provide their own solid waste management BMP that satisfies the performance and general criteria of this BMP.
- Applicant is expected to modify the solid waste management system, location and capacity when necessary as site conditions and operations warrant.

- Submit all alternative waste management systems to the oversight authority. The alternative system may replace or augment this standard.
- Design systems to conform to the performance criteria and the intent of this solid waste management BMP.

MAINTENANCE

- Inspect dumpsters for leaks, damage, and proper cover.
- Collect site trash daily and deposit in dumpster at designated collection areas.
- Arrange for regular dumpster pickup to prevent overflow.
- Clean the area around the dumpster to remove any spilled waste or debris.

PERFORMANCE

- A solid waste management BMP is considered effective if it contains all construction and domestic waste, zero incidents of dumpster overflow or leaks, and no visible waste or debris around the construction site or dumpster area.
- Trash containers that are filled above the top of the container, or have trash blowing out of container will constitute BMP failure.

GENERAL

- The operator is responsible for selecting effective site specific BMPs according to the site's unique conditions and the operator's unique construction operation choices.

REFERENCE

- Construction General Permit 2.3.3 (e).

BMP 23- Onsite Equipment Fueling

APPLICATION

- Use when fixed onsite fueling tanks are planned. Fueling vehicles and equipment outdoors or in areas where fuel may spill/leak onto paved surfaces or into drainage pathways can pollute stormwater. Prevent fuel spills and leaks and reduce their impacts to storm water by fueling equipment in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors, or using off-site facilities.

OPERATION PROCEDURE AND SITE POLICY

- Store fuels and regulated substances in sealed, clearly labeled containers.
- Submit illustration or detail for secondary containment including but not limited to: drain pan or drop cloth, when fueling to catch spills/leaks.
- Discourage topping-off of fuel tanks.
- Carry out all Federal and State requirements regarding stationary above ground storage tanks. (40 CF Sub. J) Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. Except for tracked equipment such as bulldozers and perhaps forklifts, most vehicles should be able to travel to a designated area with little lost time.
- Train employees and subcontractors in proper fueling and cleanup procedures.
- Refer to the Spill Plan BMP prepared to account for our project fueling plan.

ALTERNATIVE DESIGN

- Submit alternative fueling system BMP to the oversight authority for approval.
- If you fuel many vehicles or pieces of equipment, consider using an off-site fueling station. These areas are better equipped to handle fuel and spills properly.
- Provide a copy of your off site written policy, provide your workforce for oversight authority review and insert a copy in the BMP appendix.

MAINTENANCE

- Regularly check for leaks and damage including but not limited to: tanks, secondary containment…
- Keep ample supplies of spill cleanup materials on-site and inspect fueling areas and storage systems regularly and perform any repairs needed immediately.
- Immediately report significant or uncontrolled spills.

PERFORMANCE

- **NO** fuel, oil, solvents, or other pollutants are allowed to reach storm water or spill onto the ground while being transferred to machinery or while being stored on site. Any incidental spillage is easily cleaned up and removed before it is allowed to seep into the ground or runoff site. Storage of fuel must not allow running on of storm water or runoff of spills.

GENERAL

- The operator is responsible for selecting effective site specific BMPs according to the site's unique conditions and the operator's unique construction operation choices.

REFERENCE

- UPDES 2.3.1 For equipment and vehicle fueling and maintenance

BMP 24- Water Bars

APPLICATION

Water Bars are necessary on construction sites when:

- When clearing right-of-way and construction of access for power lines, poplins, and other similar installations that often require long narrow rights-of-way over sloping terrain.
- Disturbance and compaction promote gully formation in these cleared strips by increasing the volume and velocity of runoff
- Gully formation may be especially severe in tire tracks and ruts. To prevent gullying, runoff can often be diverted across the width of the right-of-way to undisturbed areas by using small predesigned diversions.

DESIGN, SIZING, AND INSTALLATION

- Give special consideration to each outlet area individually, as well as to the cumulative effect of added diversions. Use gravel to stabilize the diversion where significant vehicular traffic is anticipated.
- Design the height of the Water Bar with the slope in mind to effectively divert the volume needed.
- Design the base width of the ridge with the slope and volume of water diverted in mind.
- Locate well-vegetated and stable areas to use natural drainage systems and to discharge into well-vegetated stable areas.

OPERATION PROCEDURE

- During a rain event ensure that the installed Water Bars are effective in diverting the runoff away from the road, or path and that the discharge areas are effective at handling the volume of water being diverted.

ALTERNATIVE DESIGN

- Applicant is invited to provide their own Water Bars BMP that satisfies the performance and general criteria of this Water Bar BMP.
- Submit all alternative Water Bar systems to the oversight authority. The alternative system may replace or augment this water-diverting management system standard.

MAINTENANCE

- Periodically inspect right-of-way diversions for wear and after every heavy rainfall for erosion damage.
- Immediately remove sediment from the flow area and repair the dike.
- Check outlet areas and make timely repairs as needed.
-

PERFORMANCE

It is considered a Water Bar management failure when any of the following occurs:

- Water is not being properly diverted from the intended area.

- Sediment is built up in diverted flow areas and needs to be maintained.

GENERAL

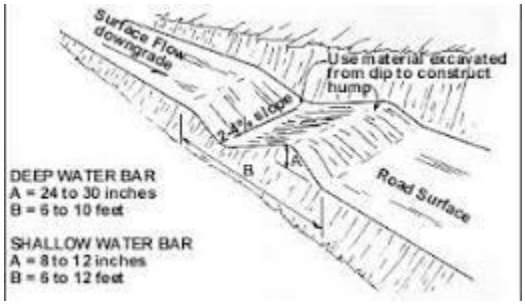
- The applicant is responsible for selecting site-specific effective Water Bar management.
- All projects require immediate containment and cleanup of sediment build-up.

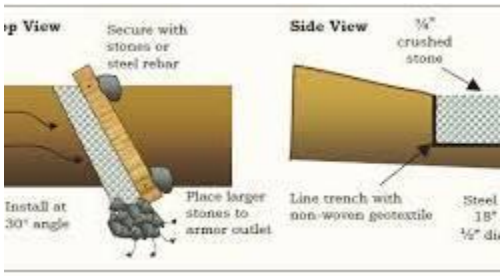
REMOVAL

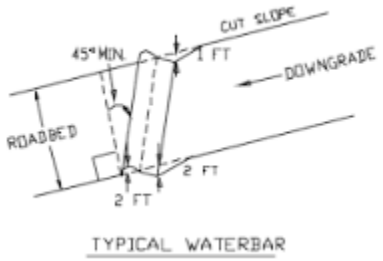
- When permanent road drainage is established and the area above the temporary right-of-way diversion is permanently stabilized, remove the dikes and fill the channel to blend with the natural ground, and appropriately stabilize the disturbed area.

ATTACHMENTS

[add all information behind this page necessary for adequate containment and management for your Water Bar management plan]







TYPICAL WATERBAR

BMP 25- Portable Sediment Tank

APPLICATION

- This BMP is necessary when construction activities generate significant amounts of sediment-laden water that need to be managed to prevent environmental contamination.
- Use this BMP when: The site requires the temporary storage and treatment of sediment-laden water due to construction activities such as excavation, dewatering, or stormwater runoff collection.

OPERATION PROCEDURE

- **Placement:** position the portable sediment tank (frac tank) on a flat, stabilized surface, away from storm drains and water bodies. Identify these locations on the site plan.
- **Connection:** ensure all hoses and connections are secure and leak-free. Properly connect the inlet and outlet hoses to direct sediment-laden water into the tank.
- **Filling:** gradually fill the tank with sediment-laden water, allowing sediments to settle out. Avoid overfilling the tank.
- **Sediment removal:** periodically remove accumulated sediments from the tank to maintain capacity and effectiveness. Follow appropriate disposal methods for the removed sediments.
- **Discharge:** discharge the treated water in compliance with local regulations, ensuring that it meets the required water quality standards.
- **Training:** ensure the workforce is informed about the correct operation and maintenance procedures for portable sediment tank (frac tank).

ALTERNATIVE DESIGN

- Applicant is invited to modify or provide their own portable sediment tank BMP that satisfies the performance and general criteria of this BMP.
- Applicant is expected to modify the portable sediment tank system, location and capacity when necessary as site conditions and operations warrant.
- Submit all alternative portable sediment tank systems to the oversight authority. The alternative system may replace or augment this standard.
- Design systems to conform to the performance criteria and the intent of this portable sediment tank BMP.

MAINTENANCE

- Inspect the portable sediment tank (frac tank) and associated equipment for leaks, damage, and proper functioning.
- Ensure that sediment levels are monitored and sediments are removed as needed to maintain tank capacity.

PERFORMANCE

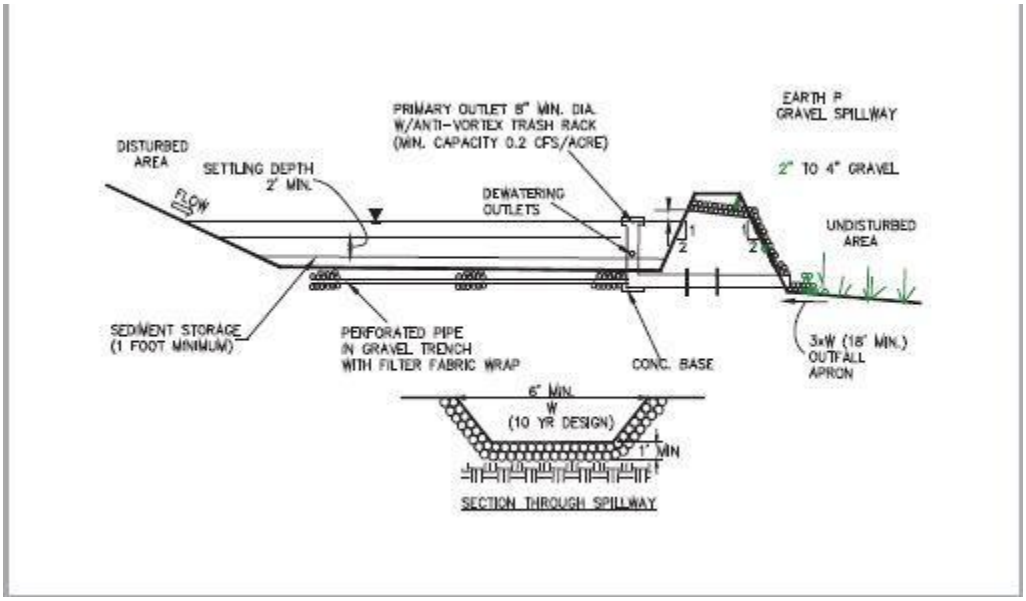
- Ensure that the discharge from the frac tank meets local, state, and federal water quality standards for sediment and turbidity. Any discharge with visible sediment or cloudiness constitutes bmp failure and requires immediate corrective action.
- Any leak or spill around the tank area indicates BMP failure.
- Sediment within the tank must be kept below the manufactures recommended level.

GENERAL

- The operator is responsible for selecting effective site specific BMPs according to the site's unique conditions and the operator's unique construction operation choices.

REFERENCE

BMP 26- Sediment Basin



APPLICATION

Sediment basins serve as treatment devices which can be used on a variety of project types. They are normally used in construction projects where:

- Large areas of land drain to the basin
- At the outlet of disturbed watersheds 10 acres or larger
- At the outlet of smaller watersheds as necessary
- Where post construction basins will be located

OPERATION PROCEDURE

- Determine the number of basins needed. In some cases, it is more effective to have multiple smaller basins versus one large basin. This is particularly important in areas with larger-grained sediments. In addition, potential damage from basin failure can be minimized by using multiple smaller basins, versus one large basin.
- Construct sediment basins at locations that are accessible for cleanout.
- Situate the basin or impoundment outside of any water of the state and any natural buffers.
- Design the basin or impoundment to avoid collecting water from wetlands.
- Design the basin or impoundment to provide for either:
  (1) The calculated volume of runoff from the 2-year, 24-hour storm; or
  (2) 3600 cubic feet per acre drained.
- Utilize outlet structures that withdraw water from near the surface of the sediment basin or similar impoundment, unless infeasible.
- Use erosion controls and velocity dissipation devices to prevent erosion at inlets and outlets.

-ALTERNATIVE DESIGN

- Floating Skimmer: A type of outlet being used with increasing frequency is the floating skimmer. Some early tests indicate that the skimmer (which draws water only from the surface) might be more effective at retaining sediment in the basin than the standard riser and barrel configuration.

MAINTENANCE

- Inspect after each rainfall event and at a minimum as part of any regularly scheduled inspections.
- Repair any damage to the berm, spillway, sidewalls and outlet structures or mechanisms.
- Remove accumulated sediment to maintain at least one-half of the design capacity and conduct all other appropriate maintenance to ensure the basin or impoundment remains in effective operating condition.
- Check outlet for sedimentation/erosion of downgradient area and remediate and/or install downgradient BMP's as necessary.

PERFORMANCE

- Sediment basins are at best only 70-80 percent effective in trapping sediment which flows into them. Therefore, they should be used in conjunction with erosion control practices such as temporary seeding, mulching, diversion dikes, etc. to reduce the amount of sediment flowing into the basin.
- Whenever possible, construct the sedimentation basins before clearing and grading work begins.

GENERAL

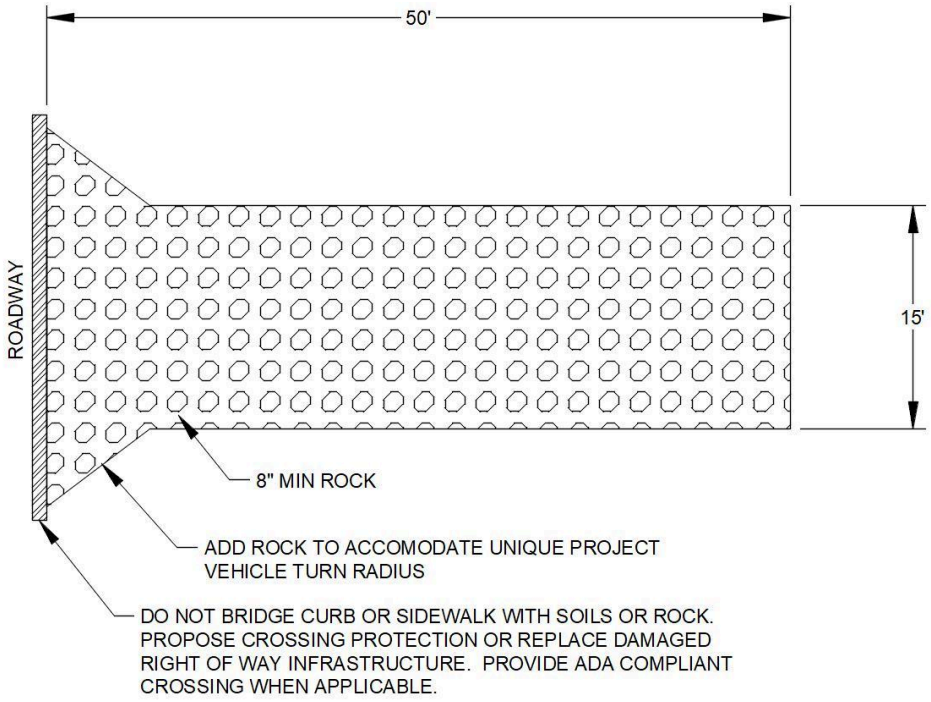
Sediment basins and ponds must be installed only within the property limits where failure of the structure would not result in loss of life, damage to homes or buildings, or interruption of use or service of public roads or utilities. Also, sediment basins and ponds are attractive to children and can be very dangerous. Local ordinances regarding health and safety must be adhered to. If fencing of the pond is required, the type of fence and its location should be shown on the Stormwater Pollution Prevention Plan (SWPPP).

- Generally temporary sedimentation basins are for disturbed upstream drainage areas of 5 acres or more.
- Because of additional detention time, sediment basins may be capable of trapping smaller sediment particles than traps. However, they are most effective when used in conjunction with other BMPs such as seeding or mulching.
- Sediment basins may become attractive to children and care must be taken to adhere to all safety practices. Also, standing water can attract mosquitoes.
- Sediment basins can be converted to permanent structures after completion of the construction project. Remove all excess sediment from the basin. The containment volume of permanent sediment basins will need to be expanded to meet the design storm requirements in the local jurisdiction's standards and specifications. The inside of a permanent sediment basin should be stabilized to meet local and UPDES requirements.

REFERENCE

- UPDES Construction General Permit Number UTRC00000
- Drainage Design Manual for Maricopa County
- Salt Lake County Best Management Practices for Construction Activities

BMP 27- Tire Mud Removal 8” Rock



APPLICATION

- Use this BMP when vehicles and equipment operations require egress from the project property during wet conditions resulting in mud sticking to vehicle tires.

OPERATION PROCEDURE

- Determine the ingress/egress location(s) allowed by the oversight authority and show them on the site plan.
- Do not drive around rock pad.
- Move vehicle forward and in reverse until mud is removed from tires.
- Stop, check for rocks wedged in dual tires.
- Ensure the workforce is trained regarding track-out BMP requirements.
- Use of Sweeping BMP is still usually necessary at the end of day minimum.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT CGP 2.2.4

- Rake or wash rock as necessary when BMP is not working.
- Add, extend or replace rock as necessary to achieve performance criteria results.

- Train workforce when BMP improper use is recognized.
- When sediment, rock, or gravel track out occurs due to BMP failure or misuse, the road must be cleaned to the BMP performance and CGP criteria.
    - Street clean-up operations are separate from this 8" rock pad BMP but necessary to address unacceptable track out until the 8"Rock Track out BMP is corrected. CGP-2.2.4, 5.2.1

PERFORMANCE:

- Slick conditions, slurry, mud chucks, rocks, gravel, water quality risk and driver hazards constitute BMP failure and require immediate sufficient action. CGP-2.2.4, 5.1, 5.2.1
- Light tracking on dry days is expected and requires regular maintenance but not usually immediate action. Light tracking is defined as minor residual dirt that can't be picked up by a square nose shovel.
    - Remove/sweep prior to unsafe and wet conditions or end of workday, whichever is first.

- Light tracking on wet days is expected and requires regular maintenance but not always immediate action. Light tracking on wet days is defined as minor residual dirt that can't be picked up by a square nose shovel or tires, does not result in slick conditions, not likely to result in motorist complaints and does not fail downstream BMPs.
    - Remove/sweep prior to unsafe conditions, resulting in motorist complaints, not failing downstream BMPs or end of workday, whichever is first.

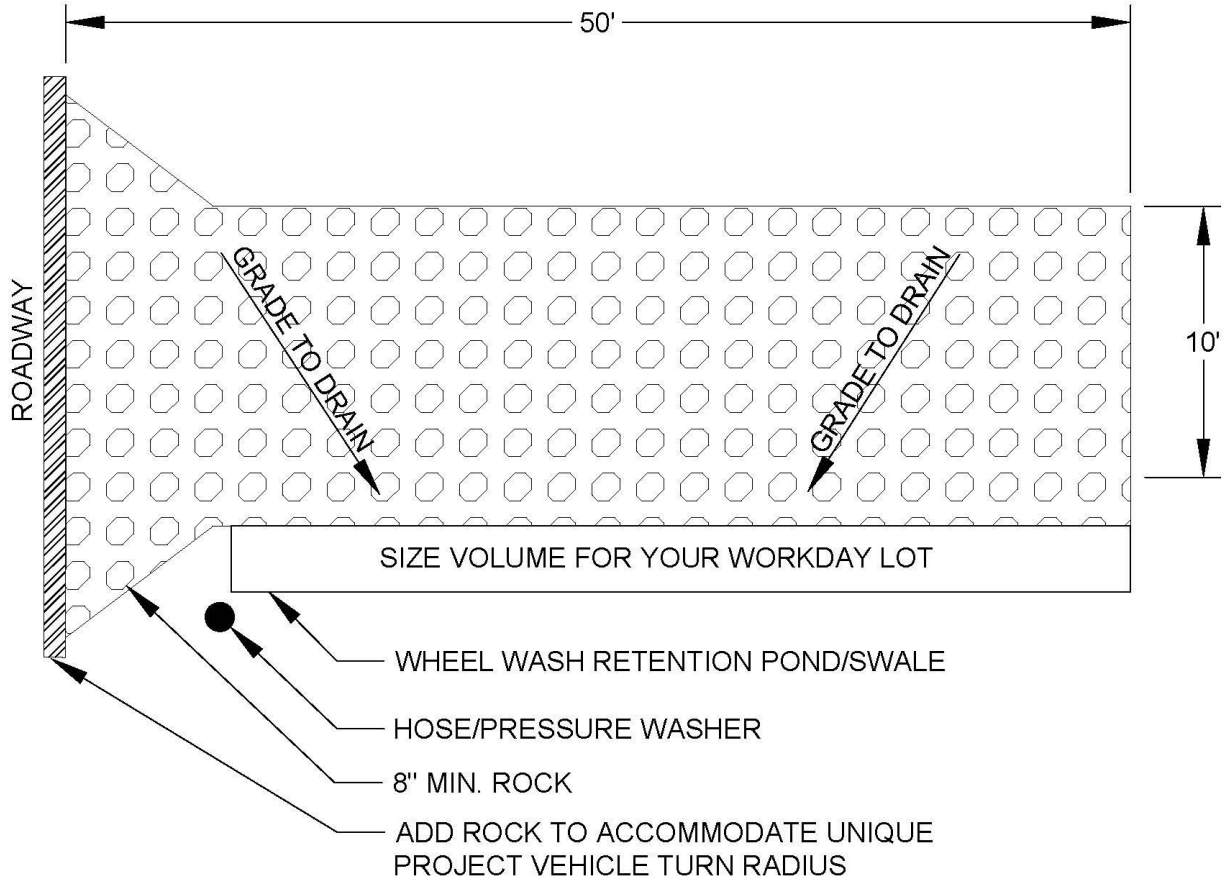
GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance, safety, and water quality risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.2.4
- Common Plan Permit (CPP) 2.4.1

BMP 28- Wheel Wash



APPLICATION

- Use this BMP when vehicles and equipment operations require egress from the project property during wet conditions resulting in mud sticking to vehicle tires and tracks.
- Use wheel wash BMP when mud needs to be removed from tires.
- Wheel washes are a logical redundant option during very wet conditions when other wheel agitating type tire mud management systems are not effective.

OPERATION PROCEDURE

- Determine the ingress/egress location(s) allowed by the oversight authority and show them on the site plan.
- Do not drive around wheel wash when track out prevention is necessary.
- Wash all wheels with a hose or pressure washer provided. Pull forward as necessary to remove all mud from tires and tread.
- Stop and remove any rocks wedged in dual tires.
- Identify the necessary retention volume and attach to this BMP.
- Ensure the workforce is trained regarding track-out BMP requirements.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.

- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- Rake or wash rock as necessary when BMP is not working.
- Remove pond/swale sedimentation at 50% capacity.
- Expand wash- water retention volume as necessary for wash-water containment.
- Train workforce when BMP improper use is recognized.
- When sediment, rock, or gravel track out occurs due to BMP failure or misuse, the road must be cleaned to the BMP performance and CGP criteria.
    - Street clean-up operations are separate from this wheel wash BMP but necessary to address unacceptable track out until the Wheel Wash BMP is corrected. CGP-2.2.4, 5.2.1

PERFORMANCE:

- Slick conditions, slurry, mud chucks, rocks, gravel, water quality risk and driver hazards constitute BMP failure and require immediate sufficient action. CGP-2.2.4, 5.1, 5.2.1
- Light tracking on dry days is expected and requires regular maintenance but not usually immediate action. Light tracking is defined as minor residual dirt that can't be picked up by a square nose shovel.
    - Remove/sweep prior to unsafe and wet conditions or end of workday, whichever is first.

- Light tracking on wet days is expected and requires regular maintenance but not always immediate action. Light tracking on wet days is defined as minor residual dirt that can't be picked up by a square nose shovel or tires, does not result in slick conditions, not likely to result in motorist complaints and does not fail downstream BMPs.
    - Remove/sweep prior to unsafe conditions, resulting in motorist complaints, not failing downstream BMPs or end of workday, whichever is first.

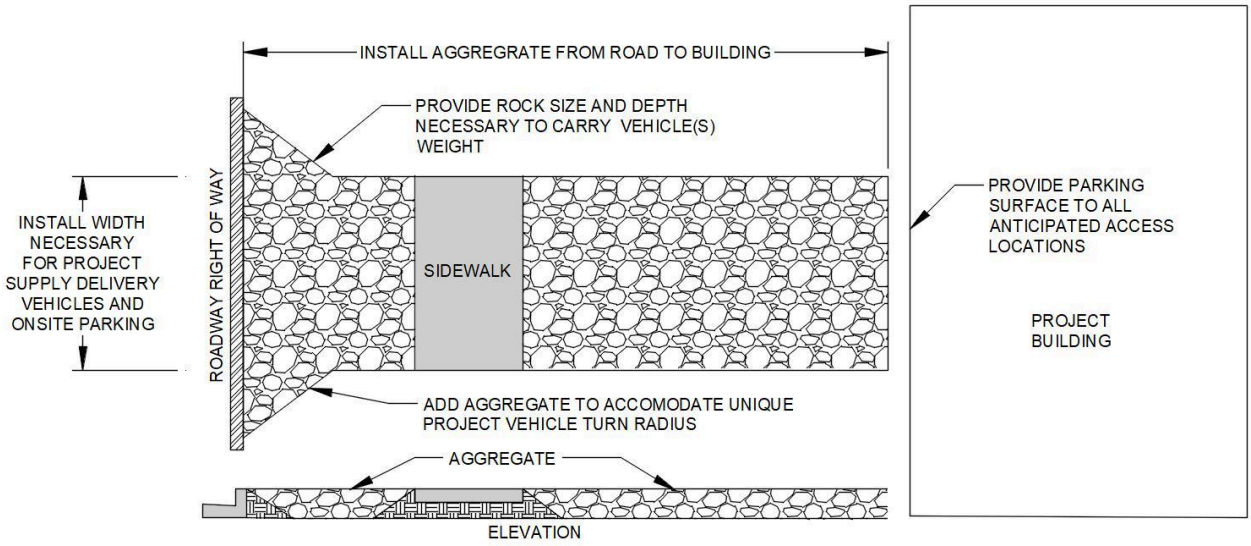
GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance, safety, and water quality risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.2.4
- Common Plan Permit (CPP) 2.4.1

BMP 29- Parking Pad & Supplier Access



APPLICATION

- Use parking pad for supply delivery vehicles, tool drop off and onsite project parking etc.
- Use this BMP to prevent mud from sticking to tires. This BMP will not remove mud sticking to tires.

OPERATION PROCEDURE

- Determine where supplies and tools need to be delivered or dropped off show them on the site plan. Coordinate with oversight authority for any prohibited access locations.
- Do not drive beyond the parking pad.
- Size pad to accommodate project supply vehicles and any necessary onsite parking. Attach project specific dimensioned parking pad illustration with this BMP detail.
- Ensure the workforce is trained regarding track-out BMP requirements.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- Rake or wash rock as necessary when BMP is not working.
- Add, extend or replace rock as necessary to achieve performance criteria results.
- Train workforce when BMP improper use is recognized.

- When sediment, rock, or gravel track out occurs due to BMP failure or misuse, the road must be cleaned to the BMP performance and CGP criteria.
    - A Sweeping BMP that is separate from this Parking Pad BMP is necessary to address unacceptable track out until any Parking Pad BMP system and maintenance concerns are corrected. CGP-2.2.4, 5.2.1

PERFORMANCE:

- Slick conditions, slurry, mud chucks, rocks, gravel, water quality risk and driver hazards constitute BMP failure and require immediate sufficient action. CGP-2.2.4, 5.1, 5.2.1
- Light tracking on dry days is expected and requires regular maintenance but not usually immediate action. Light tracking is defined as minor residual dirt that can't be picked up by a square nose shovel.
    - Remove/sweep prior to unsafe and wet conditions or end of workday, whichever is first.

- Light tracking on wet days is expected and requires regular maintenance but not always immediate action. Light tracking on wet days is defined as minor residual dirt that can't be picked up by a square nose shovel or tires, does not result in slick conditions, not likely to result in motorist complaints and does not fail downstream BMPs.
    - Remove/sweep prior to unsafe conditions, resulting in motorist complaints, not failing downstream BMPs or end of workday, whichever is first.

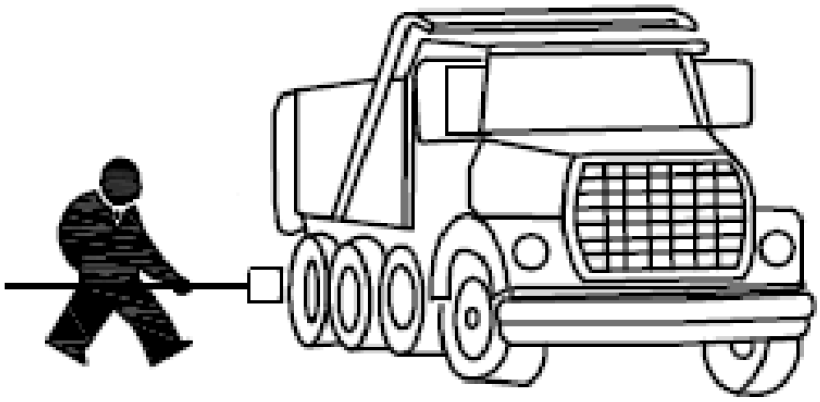
GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance, safety, and water quality risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.2.4
- Common Plan Permit (CPP) 2.4.1

BMP 30- Tire and Track Mud Removal Scrape Tires



APPLICATION

- Use this BMP when vehicles and equipment operations require egress from the project property during wet conditions resulting in mud sticking to vehicle tires and tracks.
- Use this BMP when non-regular egress is necessary or using the primary track out BMP is not practical for a unusual situation.
- Use this BMP as a redundant BMP when the primary track out BMP(s) are not working.
- Use this BMP for short transfer of vehicles for short distances, e.g. across the street.

OPERATION PROCEDURE

- Stop on rock pad or pavement and use square nose shovel or stiff broom to remove mud from tires and remove mud tracks when applicable. When scraping tires on pavement shovel and sweep with each operation event and always perform this BMP upstream of inlet BMPs.
- Check for and remove rocks wedged in dual tires.
- Ensure the workforce is trained regarding scrape tire and tracks BMP requirements.
- Use of Sweeping BMP is still usually necessary at the end of day minimum.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT CGP 2.2.4

- When scraping tires or tracks on pavement sweep prior to wet conditions or end of day, whichever comes first.
- Train workforce when BMP improper use is recognized.
- When sediment, rock, or gravel track out occurs due to BMP failure or misuse, the road must be cleaned to the BMP performance and CGP criteria.

- Street clean-up operations are separate from this scrape tire and tracks BMP but necessary to address unacceptable track out in a timely manner. CGP-2.2.4, 5.2.1

PERFORMANCE:

- Slick conditions, slurry, mud chucks, rocks, gravel, water quality risk and driver hazards constitute BMP failure and require immediate sufficient action. CGP-2.2.4, 5.1, 5.2.1
- Light tracking on dry days is expected and requires regular maintenance but not usually immediate action. Light tracking is defined as minor residual dirt that can't be picked up by a square nose shovel.
  - Remove/sweep prior to unsafe and wet conditions or end of workday, whichever is first.

- Light tracking on wet days is expected and requires regular maintenance but not always immediate action. Light tracking on wet days is defined as minor residual dirt that can't be picked up by a square nose shovel or tires, does not result in slick conditions, not likely to result in motorist complaints and does not fail downstream BMPs.
  - Remove/sweep prior to unsafe conditions, resulting in motorist complaints, not failing downstream BMPs or end of workday, whichever is first.

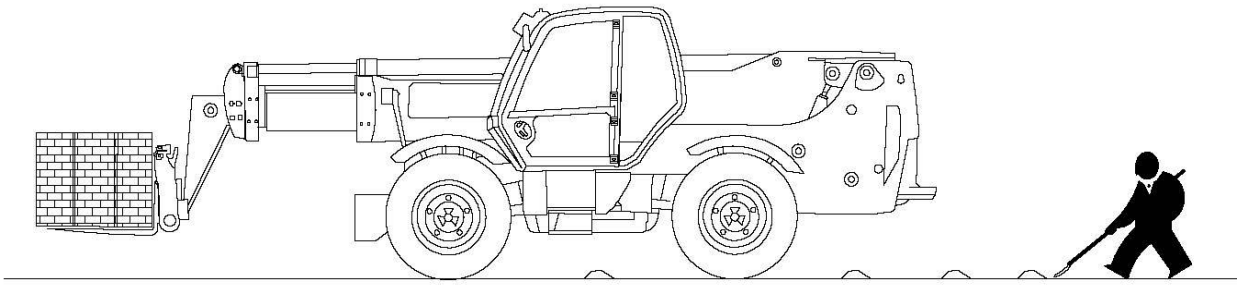
GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance, safety, and water quality risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.2.4
- Common Plan Permit (CPP) 2.4.1

BMP 31- Telehandler



APPLICATION

- Use when telehandler road crossing for multiple project sites is planned.

OPERATION PROCEDURE

- When road crossings are short distances, remove track out with square nose shovel with each crossing.
- When distant crossings are necessary, scraping or wheel washing BMPs are usually necessary.
- Ensure the workforce is trained regarding track-out BMP requirements.
- Use of Sweeping BMP is still usually necessary at the end of day minimum.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- Regular sweeping is usually necessary daily. Shovels are intended to remove the dirt/mud clumps but will not move residual slurry that collects over multiple days.
- Train workforce when BMP improper use is recognized.
- When sediment, rock, or gravel track out occurs due to BMP failure or misuse, the road must be cleaned to the BMP performance and CGP criteria.
    - Street clean-up operations are separate from this telehandler operation BMP but necessary to address unacceptable telelift operation management. CGP-2.2.4, 5.2.1

PERFORMANCE:

- Slick conditions, slurry, mud chucks, rocks, gravel, water quality risk and driver hazards constitute BMP failure and require immediate sufficient action. CGP-2.2.4, 5.1, 5.2.1
- Light tracking on dry days is expected and requires regular maintenance but not usually immediate action. Light tracking is defined as minor residual dirt that can't be picked up by a square nose shovel.
    - Remove/sweep prior to unsafe and wet conditions or end of workday, whichever is first.

- Light tracking on wet days is expected and requires regular maintenance but not always immediate action. Light tracking on wet days is defined as minor residual dirt that can't be

picked up by a square nose shovel or tires, does not result in slick conditions, not likely to result in motorist complaints and does not fail downstream BMPs.

- Remove/sweep prior to unsafe conditions, resulting in motorist complaints, not failing downstream BMPs or end of workday, whichever is first.

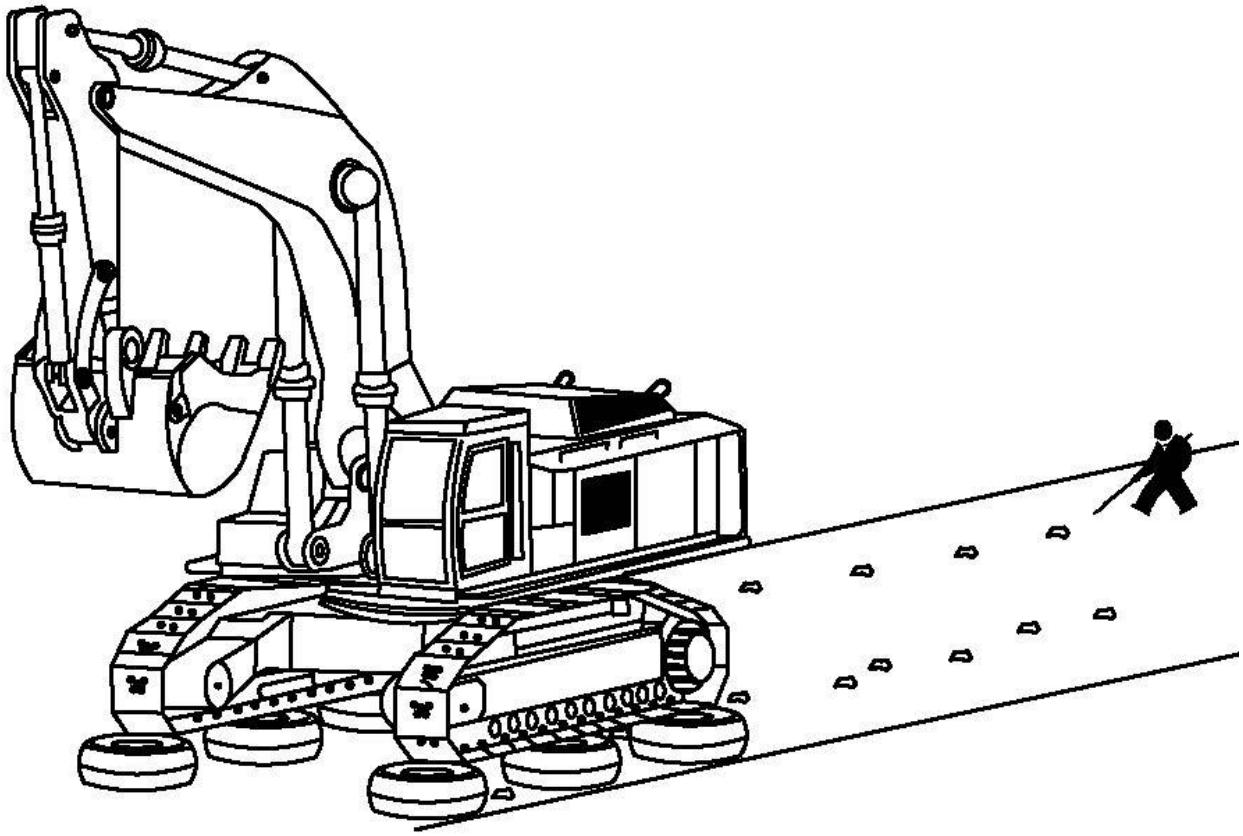
GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance, safety, and water quality risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.2.4
- Common Plan Permit (CPP) 2.4.1

BMP 32- Track Vehicle Crossing



APPLICATION

- Use when track vehicle road crossing for multiple project sites is planned.
- It is not practical to remove mud from most tracked construction equipment. Even track washing is usually impractical.

OPERATION PROCEDURE

- When road crossings are short distances, remove clumps with square nose shovel and broom at each crossing. The clumps will be compacted to the road reducing vacuum sweeper effectiveness.
- When distant crossings are necessary, scraping or track washing BMPs are usually necessary. Machinery bucket blade can also work but follow up with a vacuum operated sweeper is also necessary.
- Protect roadway infrastructure from vehicle tracks. Placing tires beneath tracks are usually effective. Decide the track buffer method and attach your plan to this BMP.
- Ensure the workforce is trained regarding track-out BMP requirements.
- Use of Sweeping BMP is still usually necessary at the end of day minimum.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- Regular sweeping is usually necessary daily. Shovels are intended to remove the dirt/mud clumps but will not move residual slurry that collects over multiple days.
- Train workforce when BMP improper use is recognized.
- When sediment, rock, or gravel track out occurs due to BMP failure or misuse, the road must be cleaned to the BMP performance and CGP criteria.
    - Street clean-up operations are separate from this Track Vehicle BMP but necessary to address the immediate unacceptable track vehicle management operations. CGP-2.2.4, 5.2.1

PERFORMANCE:

- Slick conditions, slurry, mud chucks, rocks, gravel, water quality risk and driver hazards constitute BMP failure and require immediate sufficient action. CGP-2.2.4, 5.1, 5.2.1
- Light tracking on dry days is expected and requires regular maintenance but not usually immediate action. Light tracking is defined as minor residual dirt that can't be picked up by a square nose shovel.
    - Remove/sweep prior to unsafe and wet conditions or end of workday, whichever is first.

- Light tracking on wet days is expected and requires regular maintenance but not always immediate action. Light tracking on wet days is defined as minor residual dirt that can't be picked up by a square nose shovel or tires, does not result in slick conditions, not likely to result in motorist complaints and does not fail downstream BMPs.
    - Remove/sweep prior to unsafe conditions, resulting in motorist complaints, not failing downstream BMPs or end of workday, whichever is first.

GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance, safety, and water quality risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.2.4
- Common Plan Permit (CPP) 2.4.1

BMP 33- Street Sweeping

APPLICATION

- A Sweeping BMP is necessary to address the immediate safety, water quality and project complaint issues that exist resulting from failing and sometimes the practical limitations of egress track out BMPs.
- Sweeping BMPs do not eliminate the requirement for egress track out BMPs but are necessary to compensate for the practical limitations most egress track out BMPs. No tire agitating BMP is expected to work perfectly, therefore even property installed tire agitating BMPs will leave small amounts of sediment over time.

OPERATION PROCEDURE

- Use vacuum type sweeping machinery.
- Anticipate end of day sweeping or multiple times a day as needed. The better the egress track out BMP the less sweeping operations are necessary.
- Square nose shovel and broom are also always a good sediment and debris removal option.
- Identify sweeper hopper licensed dump location. Attach dump location information to this BMP.
- Ensure the workforce is trained regarding track-out BMP requirements.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- Employ sweeping operations at end of the workday and as necessary.
- Train workforce when BMP improper use is recognized.

PERFORMANCE:

- Slick conditions, slurry, mud chucks, rocks, gravel, water quality risk and driver hazards constitute BMP failure and require immediate sufficient action. CGP-2.2.4, 5.1, 5.2.1
- Light tracking on dry days is expected and requires regular maintenance but not usually immediate action. Light tracking is defined as minor residual dirt that can't be picked up by a square nose shovel.
    - Remove/sweep prior to unsafe and wet conditions or end of workday, whichever is first.

- Light tracking on wet days is expected and requires regular maintenance but not always immediate action. Light tracking on wet days is defined as minor residual dirt that can't be picked up by a square nose shovel or tires, does not result in slick conditions, not likely to result in motorist complaints and does not fail downstream BMPs.
    - Remove/sweep prior to unsafe conditions, resulting in motorist complaints, not failing downstream BMPs or end of workday, whichever is first.

GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance, safety, and water quality risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.2.4
- Common Plan Permit (CPP) 2.4.1

BMP 34- Fugitive Dust Control Plan

APPLICATION

- Dust suppression is necessary for all areas where vegetation is removed.
- A good BMP for dust management is to minimize and phase vegetation removal. See Phase Clearing BMP.

OPERATION PROCEDURE

- Attach a copy of the Permit and all DAQ contacts.
- Attach a copy of the Fugitive Dust Control Plan
- Attach a copy of the Dust Control Plan Tools and details for suppression, including but not limited to equipment information, methods, inhouse provided, subcontracted, etc.,
- Attach a list of all dust generation operations, including but not limited to; vehicle traffic, dirt processing, load and haul, brick mason operations, etc.,
- Ensure the workforce is trained regarding track-out BMP requirements.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- Implement Fugitive Dust Control plan per DAQ permit.
- Train workforce when BMP improper use is recognized.

PERFORMANCE:

- UAC section R307-309-5. Typically this means no greater than 10% opacity at property boundaries.
- Any neighbor complaints warrants an inspection.

GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance and safety, risk.

REFERENCE:

- UAC section R307-309-5
- Construction General Storm Water Permit (CGP) 2.2.6
- Common Plan Permit (CPP)

BMP 35 - Vegetation Removal Phasing

APPLICATION

- Erosion and dust suppression is necessary for all areas where vegetation is removed.
- Apply vegetation removal management to minimize dust and erosion risk. Many large projects can benefit from this BMP.

OPERATION PROCEDURE

- Attach a copy of phasing maps clearing showing no disturbance areas for each phase.
- Ensure the workforce are informed regarding no disturbance areas.

MAINTENANCE/MANAGEMENT

- Train workforce when encroachment into no disturbance areas are found. Update no disturbance maps and SWPPP document appurtenance.
- Address encroachment exposures and add or amend BMPs to compensate for the exposure as necessary.

PERFORMANCE:

- Encroachment of no disturbance phasing plan areas constitutes BMP non-compliance.

GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation.

REFERENCE:

- UAC section R307-309-5
- Construction General Storm Water Permit (CGP) 2.2.2, 2.2.9, 2.2.6, 7.3.2.f
- Common Plan Permit (CPP)

BMP 36 - Final Stabilization

APPLICATION

- Project with bare, unimproved, erodible surfaces require a final stabilization plan.
- Projects with temporary exposed surfaces exceeding the CGP cover and time limits.
- Final Stabilization Plan is necessary for most projects. The final stabilization CGP goal is when the final landscape plan achieves surface stabilization 70% uniformly distributed cover by either finish grade mulch or established vegetation.

OPERATION PROCEDURE

- Attach a copy of the final landscaping plan, including but not limited to vegetation establishment periods.
- Attach a copy temporary vegetation, including but not limited to temporary seed plan, chemical treatment of erodible surfaces, etc.,
- Provide a list of all the SWPPP erosion, operation and fugitive dust BMPs that must remain in place through the final stabilization installation and establishment period.
- Ensure the workforce is informed of the final stabilization BMP requirements.

MAINTENANCE/MANAGEMENT

- Ensure all other SWPPP containment BMPs are installed, maintained and inspected throughout the installation of the final landscaping infrastructure and vegetation establishment period.
- Train workforce when final stabilization plan and site BMP non-containment is recognized.

PERFORMANCE:

- Erosion beyond the disturbance boundary or a risk to water resources is present.
- Fugitive dust opacity exceeds DAQ Permit requirements which is usually opacity exceeding 10% at the property boundary.
- Any neighbor complaints warrants an inspection.

GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance and safety, risk.

REFERENCE:

- UAC section R307-309-5
- Construction General Storm Water Permit (CGP) 2.2.6, 2.2.14, 2.2.14.a, 7.3.5.b
- Common Plan Permit (CPP)

BMP 37 - Topsoil Preservation

APPLICATION

- Projects where topsoil is stripped and final non-impervious landscaping is required.

OPERATION PROCEDURE

- Provide topsoil staging area location on the BMP map.
- Provide stockpile toe BMP when sediment is not adequately contained by other boundary BMPs. Reference other boundary BMPs managing the stockpile exposure risk.
- Ensure the workforce is informed of the CGP topsoil BMP requirements.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- Ensure all other SWPPP containment BMPs are installed, maintained and inspected throughout staging period and topsoil redistribution operations.
- Train workforce when non-containment is recognized.

PERFORMANCE:

- Erosion beyond the disturbance boundary or a risk to water resources is present.
- Fugitive dust opacity exceeds DAQ Permit requirements which is usually opacity exceeding 10% at the property boundary.
- Any neighbor complaints warrants an inspection.

GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance and safety, risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 2.2.8
- Common Plan Permit (CPP)

BMP 38 - Construction Dewatering Retention

APPLICATION

- Project where waterline system commissioning is necessary
- A DEQ Dewatering permit is not required when full retention is provided onsite. Note, groundwater warranted dewatering operations usually do not qualify for a DEQ Dewatering Permit waiver. The exposure period and amount of groundwater results in uncertain volume calculations.

OPERATION PROCEDURE

- Provide a retention location on BMP map.
- Provide a simple detail of retention pond and operation volume necessary for full retention of anticipated dewatering volume. Attached copy of volume calculations to this BMP.
- Ensure the workforce is informed of the CGP dewatering BMP requirements.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- Inspect following dewatering operation and ensure volume exist for any subsequent dewatering operations.
- Train workforce when non-containment is recognized.

PERFORMANCE:

- Any uncontained dewatering volume constitutes BMP failure.

GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance and safety, risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 1.2.2, 1.2.4, 2.3.7, 7.3.4
- Common Plan Permit (CPP)

BMP 39 - Construction Dewatering Water Truck

APPLICATION

- Project where waterline system commissioning is necessary
- A DEQ Dewatering permit is not required when dispersing water onsite. Note, groundwater warranted dewatering operations usually do not qualify for a DEQ Dewatering Permit waiver. The exposure period and amount of groundwater results in uncertain volume calculations.

OPERATION PROCEDURE

- Pump hyperchlorinated water to water truck and use for dust suppression. Attach operation details.
- Show dispersal areas on BMP site map. Not allowed on impervious surfaces are directly connected to inlets or other waterways
- Ensure the workforce is informed of the CGP dewatering BMP requirements.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- Train workforce when non-containment is recognized.

PERFORMANCE:

- Any uncontained dewatering volume constitutes BMP failure.

GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance and safety, risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 1.2.2, 1.2.4, 2.3.7, 7.3.4
- Common Plan Permit (CPP)

BMP 40 - Construction Dewatering DEQ Permit Required

APPLICATION

- Projects where groundwater is anticipated or other dewatering operation volumes are larger in available space for onsite retention.
- Project where pressure system and waterline commissioning is necessary
- Projects where groundwater warranted dewatering operations are anticipated. Usually groundwater dewatering operations do not qualify for a DEQ Dewatering Permit waiver. The exposure period and amount of groundwater results in uncertain volume calculations.

OPERATION PROCEDURE

- Provide dewatering operation location(s) on BMP map.
- Attach a copy of the DEQ Dewatering Permit to this BMP.
- Attach a copy of all permit required inspection, monitoring requirements, operator prepared BMPs or proprietary systems and chemical treatment methods.
- Ensure the workforce is informed of the DEQ permit dewatering BMP requirements.

OPERATOR BMP MODIFICATION OR REPLACEMENT

- Operator is invited to propose an alternative BMP or modify this preferred BMP. The proposed BMP must match or exceed performance requirements as this preferred BMP. Any deviations from this preferred BMP must be reviewed and accepted by the oversight authority.
- Submit BMP modifications or replacements to the oversight authority for review; including but not limited to; Proprietary system literature, modified illustrations, any operation procedures and maintenance adjustments, etc.

MAINTENANCE/MANAGEMENT

- Ensure proprietary system, inspection, monitoring maintenance and application methods are followed.
- Train workforce when non-containment is recognized.

PERFORMANCE:

- Any uncontained dewatering volume constitutes BMP failure.
- Any DEQ Dewatering Permit non-compliance.

GENERAL:

- Operator may request variance with oversight authority and coordinate temporary mitigation. Oversight authority determines allowances in accordance with local ordinance and safety, risk.

REFERENCE:

- Construction General Storm Water Permit (CGP) 1.2.2, 1.2.4, 2.3.7, 7.3.4
- Common Plan Permit (CPP)