Administrative/Site Management Practices

BMP Description	Administrative and site management practices are those non-structural practices which can be implemented on the site to reduce the potential of pollutants from leaving the site.
Function	Administrative and site management practices function to control the work load and access to the site in a manner to reduce the potential for tracking and release of pollutants from the site.
Installation	Administrative and site management practices shall include but is not limited to: training of and communication with staff and contractors/subcontractors; minimizing the number of areas for loading and unloading operations; phasing of construction activities; disturbing the least amount of the site at any one time whenever possible; minimizing the number and locations of soil stockpiles; minimize the number of exit and entry point into the site; limiting the number of vehicles to disturbed areas of the site; and minimizing the amount of pollution sources on the site as much as possible.
Phasing	Administrative and site management practices shall be used during all phases of construction and generally starts during the planning and bidding process.
Implementation	Administrative and site management practices shall be implemented wherever the use aids in the reduction of sediment or other pollutants.
BMP Location (List all locations where BMP is used on site)	This is a practice not an item.
Inspections	Administrative and site management practices should be evaluated for its effectiveness and implementation.
Maintenance	Changes to practices shall be implemented if deems inefficient or ineffective.

Back of Curb Protection

BMP Description*	Back of curb protection includes, but is not limited to: wattles, curb cut backs, silt fence, earthen or mulch berms, vegetative buffer strips or any combination thereof, placed behind the curb.	
Function	Back of curb protection functions to reduce the velocity of over-land sheet flow and encourage the deposition of any sediment prior to it reaching a paved surface.	
Installation	As soon as curb, gutter and paving operations are complete, areas where individual lots will be accessed for construction activities may have back of curb BMPs installed. See the specific BMP details for the type of back of curb protection chosen for the site.	
Phasing	Back of curb protection shall be used during all phases of construction where curbs and paved surfaces are present where the installation of the BMP will reduce sediment movement onto the paved surface.	
Implementation	Back of curb protection shall be implemented wherever the use aids in the reduction of sediment movement onto paved surfaces. If the area will be seeded and stabilized with no construction activity anticipated for a lengthy period of time, back of curb protection may not be necessary.	
BMP Location (List all locations where back of curb protection is used on site)	Individual active lots	
Inspections	Back of curb protection should be inspected for proper installation, structural integrity, sediment or spoils deposition or other issues that would reduce its effectiveness.	
Maintenance	Maintenance would be specific to the type of BMP chosen for back of curb protection including, but not limited to: removing soil/sediment material from behind the BMP, repairing or replacing damaged sections, etc.	

^{*} See specific design and installation details for BMP chosen for back of curb protection. Provide the appropriate details to the BMP installer for proper installation.

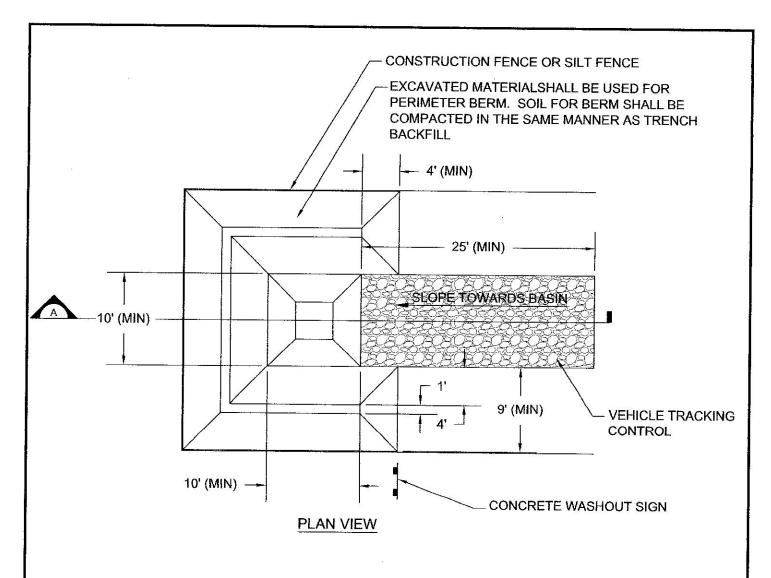
Concrete Washout

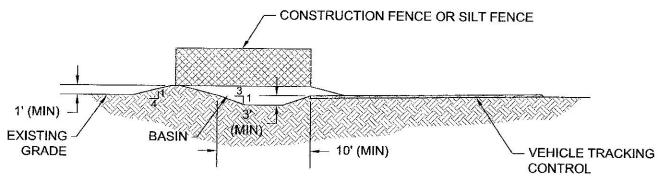
BMP Description*	A concrete washout is designed to capture waste water and waste products resulting from the cleaning of concrete and masonry equipment.
Function	Concrete washouts are used to contain concrete and liquids from chutes of concrete mixers and hoppers that are rinsed out after delivery. The washout consolidates solids and allows for infiltration or evaporation of liquids for easier disposal and to prevent runoff into storm sewers or waters on the site.
Installation	Concrete washout shall be installed or provided prior to any construction activities that include the handling of materials containing cement (e.g. concrete, masonry, etc.). A concrete washout may not be necessary if all wash-out operations are performed off-site. Examples of installations include a bermed excavation with appropriate tracking and access control, children's rigid swimming pool, or a mobile disposal unit, etc. Concrete washouts should not be sited within 50 feet of storm drains, open ditched/swales, or water bodies. They should be sized to accommodate the anticipated concrete use on the site.
Phasing	Concrete washouts shall be used during all phases of construction where concrete or similar products will be used.
Implementation	Concrete washout areas shall be implemented on all sites where concrete or similar products are used.
BMP Location (List all concrete washout areas used on site)	See site map for specific location of the concrete washout.
Inspections	A concrete wash-out should be inspected to make sure appropriate access control, tracking and containment is in place.
Maintenance	Maintenance would include the removal of hardened material or excess liquid, cleaning or replacing the tracking material and general structural integrity of the installation. Concrete washouts should be cleaned of excess water and solids when the capacity of the washout reaches no more than 50%.

^{*}The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.

Concrete Washout (ECOPAN Style)

BMP Description*	A concrete washout is designed to capture waste water and waste products resulting from the cleaning of concrete and masonry equipment.	
Function	Concrete washouts are used to contain concrete and liquids from chutes of concrete mixers and hoppers that are rinsed out after delivery. The washout consolidates solids and allows for containment and evaporation of liquids for easier disposal and to prevent runoff into storm sewers or waters on the site.	
Installation	Concrete washout shall be installed or provided prior to any construction activities that include the handling of materials containing cement (e.g. concrete, masonry, etc.). A concrete washout may not be necessary if all wash-out operations are performed offsite. Ecopan are all steel slope sided boxes delivered to the site and placed at convient locations Concrete washouts should not be sited within 50 feet of storm drains, open ditched/swales, or water bodies. They should be sized to accommodate the anticipated	
Phasing	Concrete use on the site. Concrete washouts shall be used during all phases of construction where concrete or	
	similar products will be used.	
Implementation	Concrete washout areas shall be implemented on all sites where concrete or similar products are used.	
BMP Location	Concrete washout is located on ar adjacent to active lots as needed. See SWMP MAP	
(List all concrete washout areas used on site)	for exact location if needed on site.	
Inspections	A concrete wash-out should be inspected to make sure appropriate access control, tracking and containment is in place.	
Maintenance	Maintenance would include the removal of hardened material or excess liquid, cleaning or replacing the tracking material and general structural integrity of the installation. Concrete washouts should be cleaned of excess water and solids when the capacity of the washout reaches no more than 50%.	



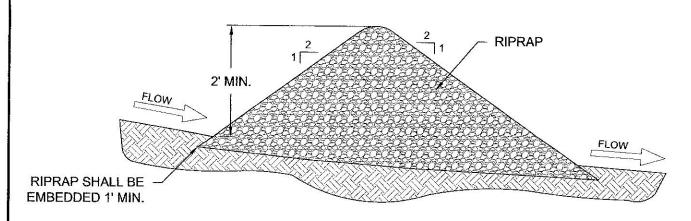


SECTION A

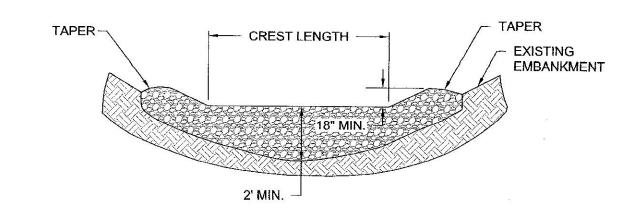
Check Dams

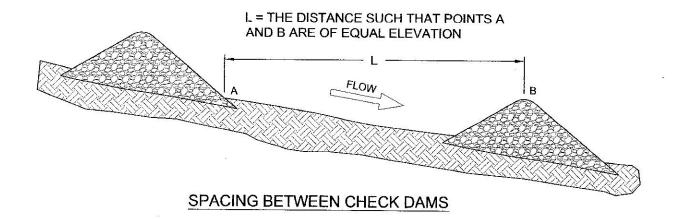
BMP Description*	A check dam is generally constructed from rock, rock socks or straw wattles.	
Function	They are designed to slow water velocity allowing some sediment to settle.	
Installation	Check dams are generally used in areas of concentrated flows (along drainage swales). Installation includes stacked rock, rock socks or use of straw wattles so that the center of the check dam is lower than the sides. The check dam must be installed across the entire width of the drainage swale in order to function properly.	
Phasing	Check dams shall be used during all phases of construction where the potential of concentrated flows are present and there is a need to reduce the velocity of the flow.	
Implementation	Check dams shall be implemented in drainage channels or swales where there is a need to reduce the velocity of the flow.	
BMP Location (List all locations where check dams are used on site)		
Inspections	Check dams should be inspected for proper installation and sediment accumulation on the up-gradient side.	
Maintenance	Maintenance includes cleaning, repairing, or replacing damaged sections as needed.	

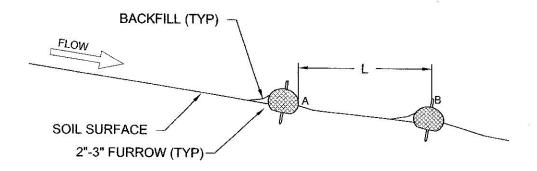
^{*} The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.



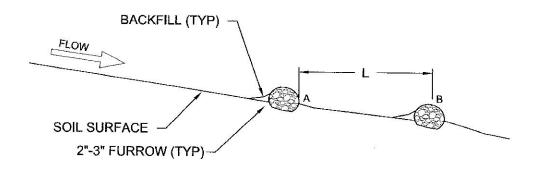
OPTION 1 - RIPRAP CHECK DAM







OPTION 2 - WATTLE CHECK DAM INSTALL WATTLE PER WATTLE DETAILS



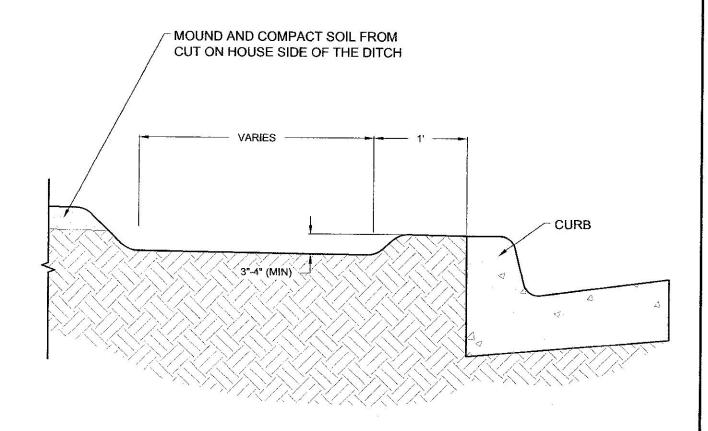
OPTION 3 - ROCK SOCK CHECK DAM CONSTRUCT ROCK SOCK PER ROCK SOCK DETAILS

L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

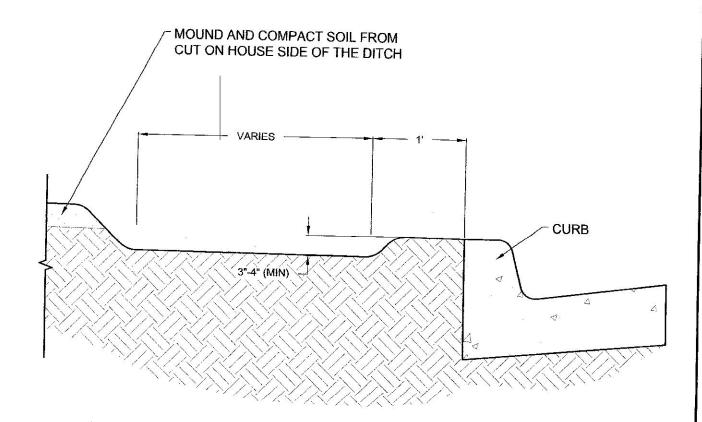
Cut Back Curb

BMP Description*	A cut back curb is a depression or swale installed along a curb line, similar to a diversion ditch.
Function	This depression or swale functions to retain storm water runoff long enough for sediment to settle out prior to topping over the curb and into the street.
Installation	A cut back curb is a shallow depression dug into the soil adjacent the curb line. Care should be taken when using cut back curbs if cut too deep, the freeze/thaw cycle could damage adjacent concrete.
	NOTE: Some local ordinances do not allow for cut back curbs. Check with your local MS4 prior to installing cut back curbs.
Phasing	Curb cut backs can be used during those phases of construction after which the curbs are constructed.
Implementation	This application is generally used in lower velocity areas where storm water flow can be reduced or diverted to another BMP. Often is used in conjunction with other BMPs such as surface roughening and mulching.
BMP Location (List all locations where cut back curb is used on site)	At the rear of all curbs with sloped areas draining to the curb, and in all island areas.
Inspections	Cut back curbs should be inspected for proper installation and compaction of the soil, erosion, sediment accumulation or other structural problems
Maintenance	Maintenance would include re-grading of the cut back area, re-compaction of the surrounding soil, and removal of excess sediment.

The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.



CURB CUT NOT TO SCALE



CUT BACK CURB NOT TO SCALE

Curb Checks

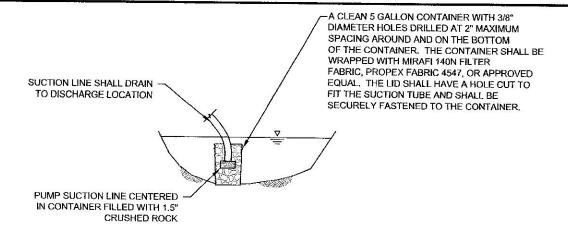
BMP Description*	Curb checks/socks are generally constructed from wire wrapped rock (rock socks) and are used as inlet protection in the street gutters up-gradient from inlets.	
Function	They are designed as a type of inlet protection to slow water velocity in curb gutters allowing some sediment to settle prior to the water reaching an inlet.	
Installation	Curb checks/socks are generally installed in curb gutters along paved roads. Installation includes a series of curb checks spaced according to the street slope. Curb checks are place tight to the curb at a 30° angle from perpendicular to the curb and are generally no longer than 24". Often they are used with traffic delineators.	
Phasing	Curb checks shall be used during those phase of construction where inlets are on-grade or with sloping streets.	
Implementation	Curb checks are generally implemented in areas with on-grade inlets or on sloping streets where water velocity needs to be reduced.	
BMP Location (List all locations where curb check/socks are used on site)	Used as inlet protection and flow control devices along street gutters.	
Inspections	Curb checks/socks should be inspected for proper installation and construction, proper placement and sediment accumulation on the upgradient side.	
Maintenance	Maintenance items would include cleaning and replacing materials as needed.	

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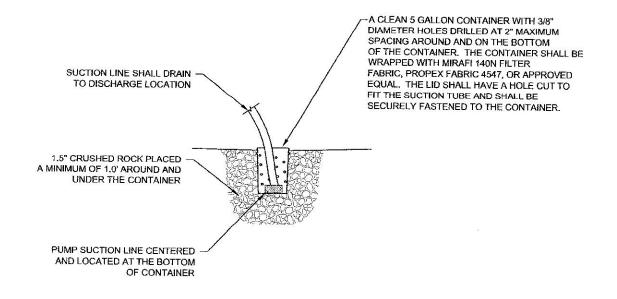
Dewatering

BMP Description*	Dewatering techniques include the removal of accumulated stormwater from the site through pumping as an appropriate treatment provided to prevent the discharge of sediment.	
Function	Dewatering techniques are designed to remove accumulated stormwater from excavations or depressions in the site to allow the area to dry so that construction activities can continue.	
Installation	Dewatering techniques generally include the use of a portable pump submerged into the area of collected water. The pump is generally placed in a bucket or other container which has holes placed in the sides and rock in the bottom. Filter fabric and bags are placed on the output end of the pump hoses to trap sediment prior to discharge. BMPs used during pumping activities include, but are not limited to, structural practices such as intake filtering and discharge BMPs such as filter berms or use of an appropriately sized sediment bag.	
Phasing	Dewatering is generally used during the vertical phase of construction where exposed excavations may be present.	
Implementation	Dewatering techniques are generally implemented in areas where stormwater has accumulated and there is a need to remove the water and dry the area for construction to continue.	
DMD I		
BMP Location	Any dewatering that occurs will be noted on the site plan.	
(List all locations where dewatering is preformed on site)	If no dewatering occurred then no notations need to be made on the site plan.	
Inspections	Discharge operations should be monitored to ensure that sediment is not being discharged off site.	
Maintenance	Maintenance would include cleaning and replacement of filtering devices.	

^{*} The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.



DEWATERING FOR AREA FILLED WITH WATER



DEWATERING SUMP FOR SUBMERSED PUMP

Diversion Ditches/Dikes

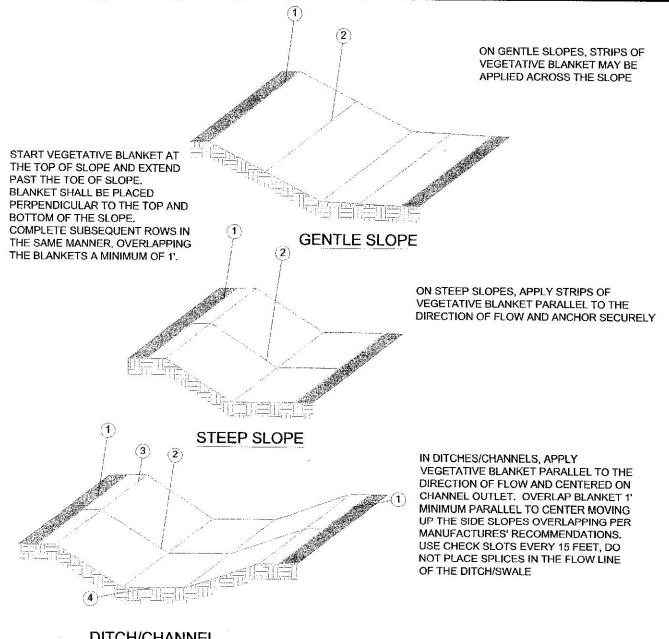
BMP Description*	Temporary diversion ditch/dikes are berms or swales constructed of soil on site generally down-gradient of disturbed areas.	
Function	Temporary diversion ditches/dikes function to slow the velocity of stormwater runoff and allow a place for water to pool in order to infiltrate into the ground or allow sediment to settle prior to flowing onto a down-gradient location on or off site.	
Installation	A ditch is cut into the soil and the soil removed from the ditch is mounded and compacted on the down-gradient side of the ditch forming a mound (dike).	
Phasing	Diversion ditches/dikes are generally used during all phases of construction where stormwater needs to be diverted to another location to reduce erosion and sediment movement.	
Implementation	Diversion ditches/dikes should be considered at locations where their use can aid in reducing the velocity of stormwater run off and/or allow for stormwater run off to be diverted to a permenant or temporary channel prior to leaving the site.	
BMP Location (List all locations where diversion ditches/dikes are used on site)		
Inspections	Diversion ditches/dikes should be inspected for proper installation and compaction of the soil, erosion, sediment accumulation or other structural problems.	
Maintenance	Maintenance would include re-grading of the ditch, re-compaction of the dike, and removal of excess sediment.	

The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.

Erosion Control Blankets (ECB) Turf Reinforcement Mats (TRM)

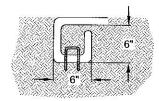
BMP Description*	ECB/TRM are a sheet of straw, excelsior, coconut, manmade fiber, or combination there of, contained between (usually) layers of plastic or natural fiber netting to provide structural integrity.	
Function	ECBs/TRMs function by providing a ground cover that reduces erosive action. TRMs are able to handle higher levels of concentrated flows and are used mainly in channel applications. ECBs and TRMs may be used in conjunction with other velocity reducing BMPs.	
Installation	ECB/TRM applications include, but are not limited to, slope and swale protection. The type of ECB or TRM selected for the site should be based on soil conditions, slope and anticipated water velocity.	
Phasing	ECB/TRMs are generally used during phases of construction where exposed/disturbed ground needs to be temporarily or permanently stabilized.	
Implementation	ECB/TRM use should be considered anytime slopes are greater than 4:1, or in areas of concentrated flow. TRMs are generally used for permanent installations, where many ECBs can be used for temporary measures such as stabilization under roof downspouts or along curbs prior to final landscaping installation.	
BMP Location (List all locations where ECB/TRMs are used on site)	Slope stabilization.	
Inspections	ECB/TRMs should be inspected for erosion underneath and at the sides of the material, sediment accumulation, rips, tears and other structural problems.	
Maintenance	Maintenance would include removing sediment, re-securing material to ground and re-trenching at up-gradient portions and either side.	

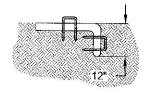
^{*} The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.



DITCH/CHANNEL

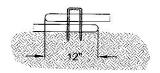
- WHERE THERE IS A BERM AT THE TOP OF THE SLOPE, BRING THE VEGETATIVE BLANKET OVER THE BERM AND ANCHOR IT BEHIND THE BERM
- EXTEND VEGETATIVE BLANKET TO A RELATIVELEY FLAT AREA, TURN THE END UNDER 6" AND STAPLE AT 12" INTERVALS.
- ANCHOR SLOTS-BURY THE UP-CHANNEL END OF THE VEGETATIVE BLANKET IN A 6" TRENCH, TAMP THE SOIL FIRMLY, STAPLE AT 12" INTERVALS ACROSS THE NET.
- ANCHOR ENDS AT STRUCTURES: PLACE THE END OF THE VEGETATIVE BLANKE IN A 6" TRENCH ON UP CHANNEL SIDE OF THE STRUCTURE, FILL THE TRENCH WITH SOIL AND TAMP FIRMLY. ROLL THE VEGETATIVE BLANKET UP THE CHANNEL, PLACE STAPLES AT 12" INTERVALS ALONG THE ANCHOR END OF THE VEGETATIVE BLANKET.
- OVERLAP EDGES OF THE STRIPS AT LEAST 4". STAPLE EVERY 3 FEET DOWN THE CENTER OF THE STRIP.
- JOINING STRIPS: INSERT THE NEW ROLL OF NET IN A TRENCH, AS WITH THE ANCHOR SLOT, OVER LAP THE UP-CHANNEL END OF THE PREVIOUS ROLL 18" AND TURN THE END UNDER 6". STAPLE THE END OF THE PREVIOUS ROLL JUST BELOW THE ANCHOR SLOT AND AT THE END AT 12" INTERVALS.
- INSTALL CHECK SLOTS ON ERODIBLE SOILS OR STEEP SLOPES. CHECK SLOTS SHOULD BE MADE EVERY 15 FEET. INSERT A FOLD OF THE VEGETATIVE BLANKET INTO A 6" TRENCH AND TAMP FIRMLY. LAY THE NET SMOOTHLY ON THE SURFACE OF THE SOIL-DO NOT STRETCH THE VEGETATIVE BLANKET, DO NOT ALLOW WRINKLES AND DO NOT PLACE ON TOP OF ROCKS, TALL GRASS, SHRUBS, ETC.



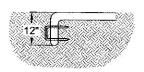


1) TOP SLOPE ANCHOR SLOT

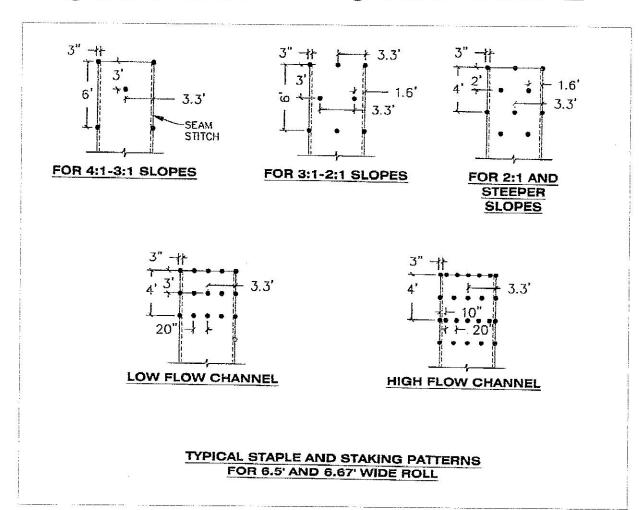
3 TOP SIDE SLOPE EDGE OF BLANKET



2 BLANKET OVERLAP



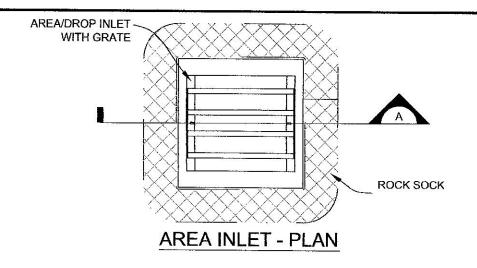
(4) BLANKET TERMINAL ENDS

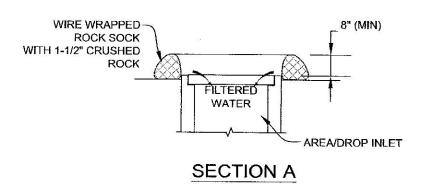


Inlet Protection

BMP Description*	Inlet protection consists of a barrier material place in front, around, or immediately up-
	gradient from the inlet. The most common forms of inlet protection are wire or fabric socks filled with rock.
	As appropriate, curb check dams may be used to reduce storm water velocity and increase the effectiveness of other forms of inlet protection.
Function	Inlet protection is designed to slow storm water flow into the inlet, allowing sediment time to settle and accumulate on the up-gradient side to the structure.
Installation	Inlet protection shall be installed prior to earth disturbing activity for all existing inlets and as soon as inlet are constructed. If conditions warrant, protection shall be provided to prevent sediment from entering the inlet from above or behind the opening.
	Several different types of inlet protection are designed based on sump, on-grade or drop inlets. Tubular traffic markers may be required for use with inlet protection.
Dhasing	Inlet metastic shall be and the state of the
Phasing	Inlet protection shall be used during those phase of construction where inlets are pre- existing or have been constructed.
Implementation	Inlet protection shall remain in place until all up-gradient areas are stabilized.
BMP Location	Inlet protection shall be used on all existing inlets where site can drain to. See site plan
(List all locations	for exact locations.
where inlet	
protection is used on	
site)	
Inspections	Inlet protection shall be inspected for damage, structural integrity, proper installation in relationship to the curb and need for sediment removal.
Maintenance	Maintenance includes repairing or replacing components as needed, repositioning the inlet protection properly to the inlet/curb and/or removing accumulated sediment.

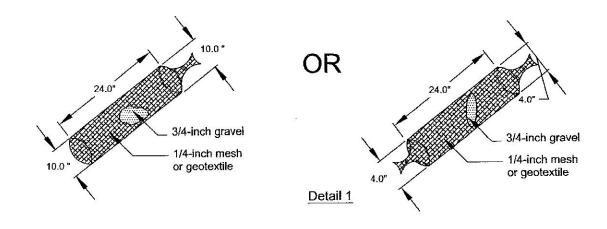
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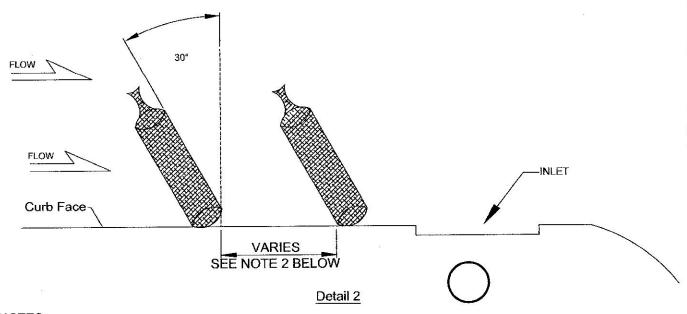




INLET PROTECTION INSTALLATION NOTES

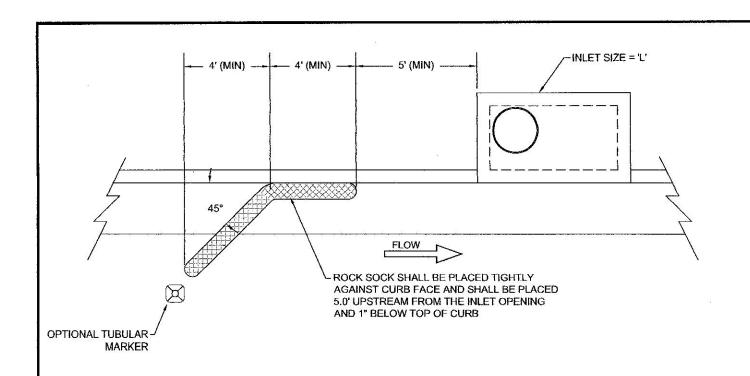
- SEE ROCK SOCK DETAILS FOR PROPER CONSTRUCTION.
- 2. INLET PROTECTION AT AREA INLETS SHALL BE INSTALLED WITHIN 48 HOUR AFTER POURING OF INLET
- 3. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF ROCK BERM 1/2 THE HEIGHT OF THE ROCK SOCK.

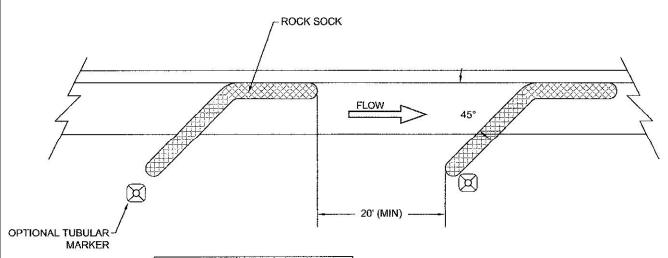




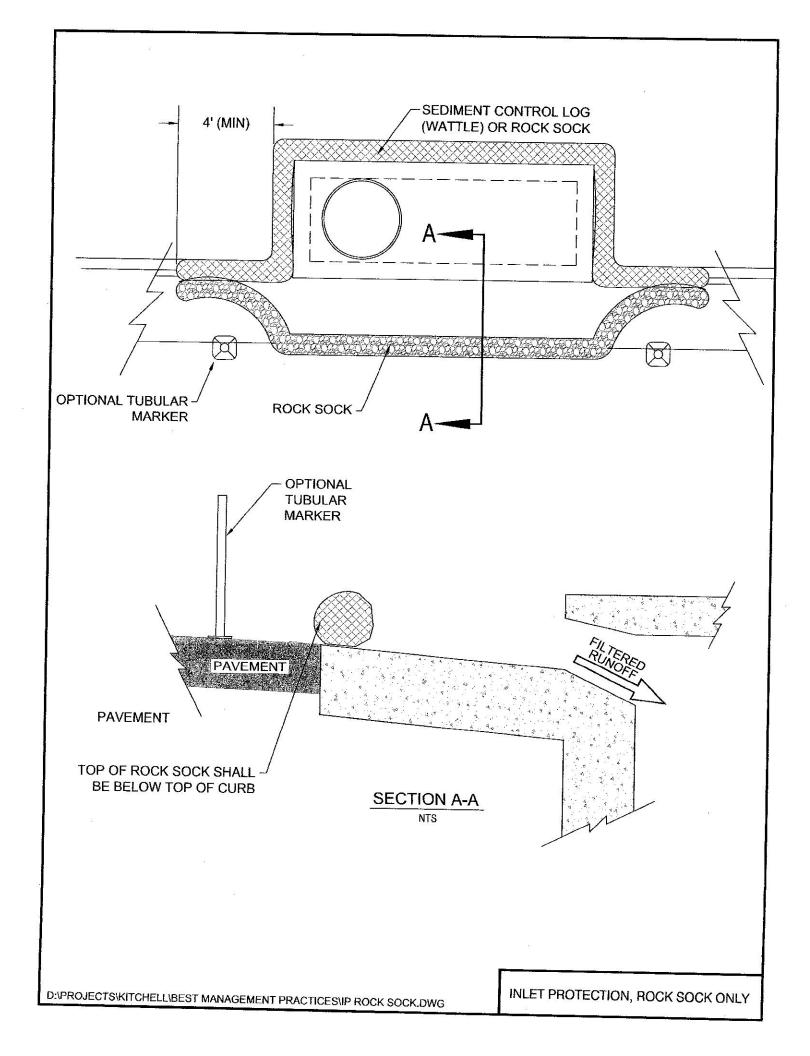
NOTES:

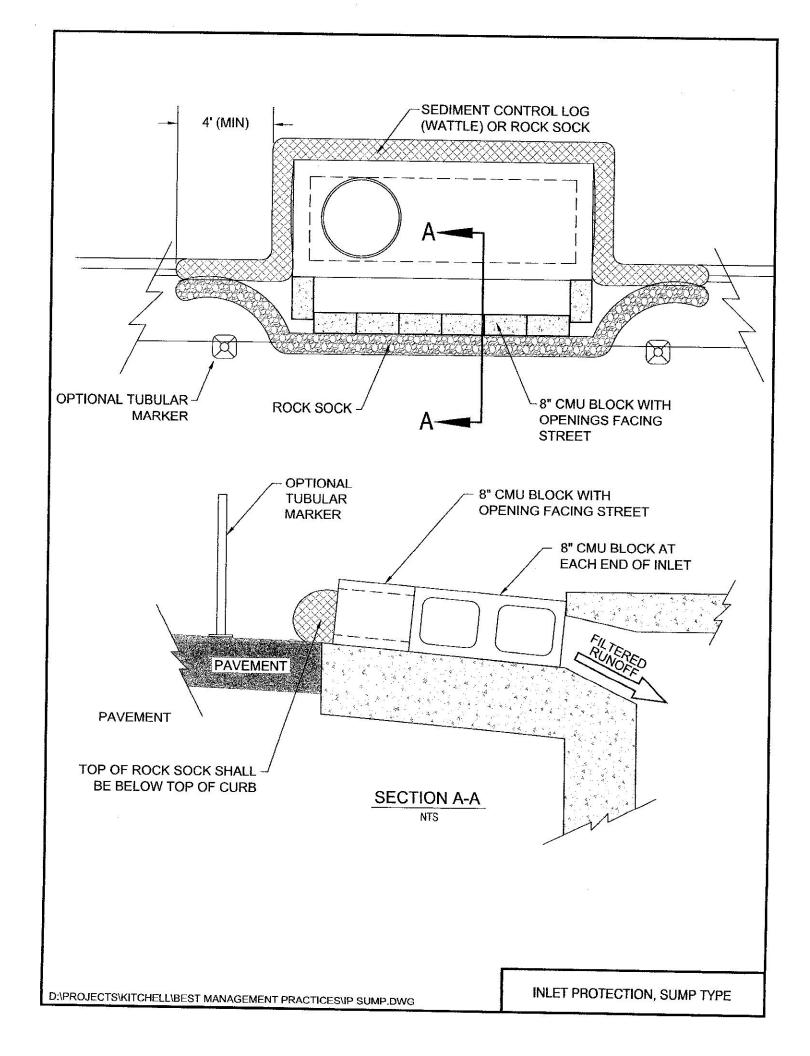
- Socks will be used upgradient of inlet perpendicular to and flush with curb.
- 2. No less than two 10-inch diameter socks must be used in sequence, spaced no more than five feet apart, upgradient of inlet. No less than six socks shall be used if the 6-inch sock is used, also spaced at no more than 5 feet apart.
- 3. Incline at 30 degrees from perpendicular, opposite the direction of flow (see Detail 2).

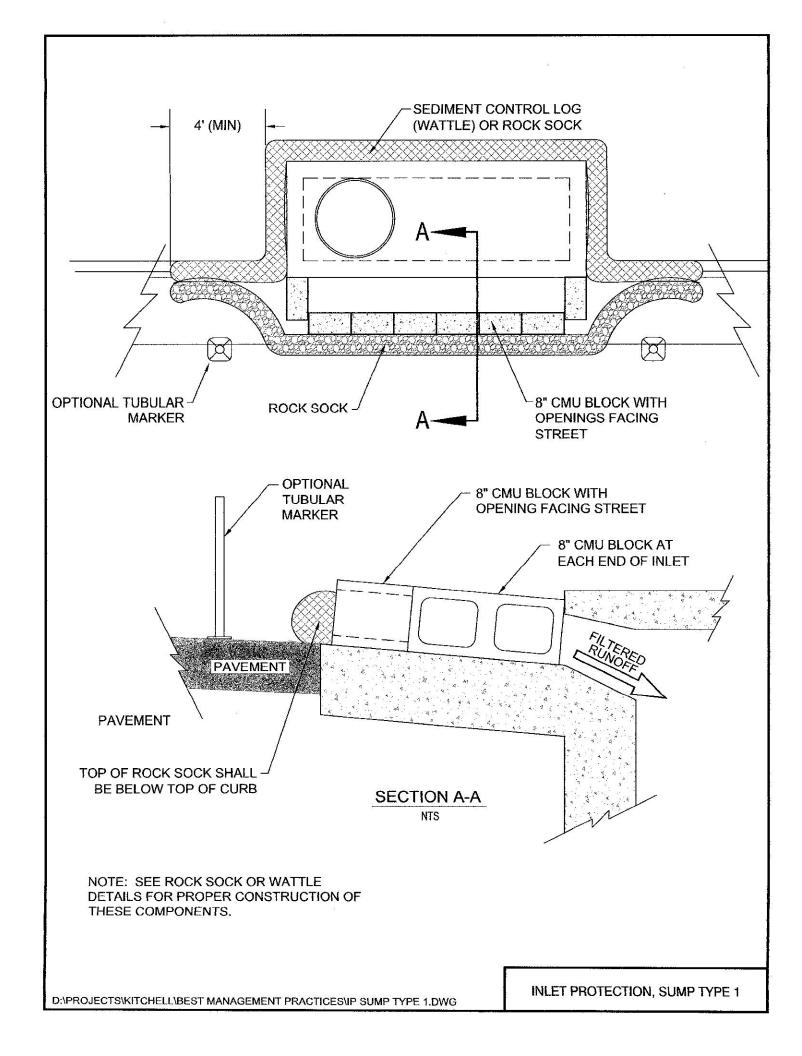


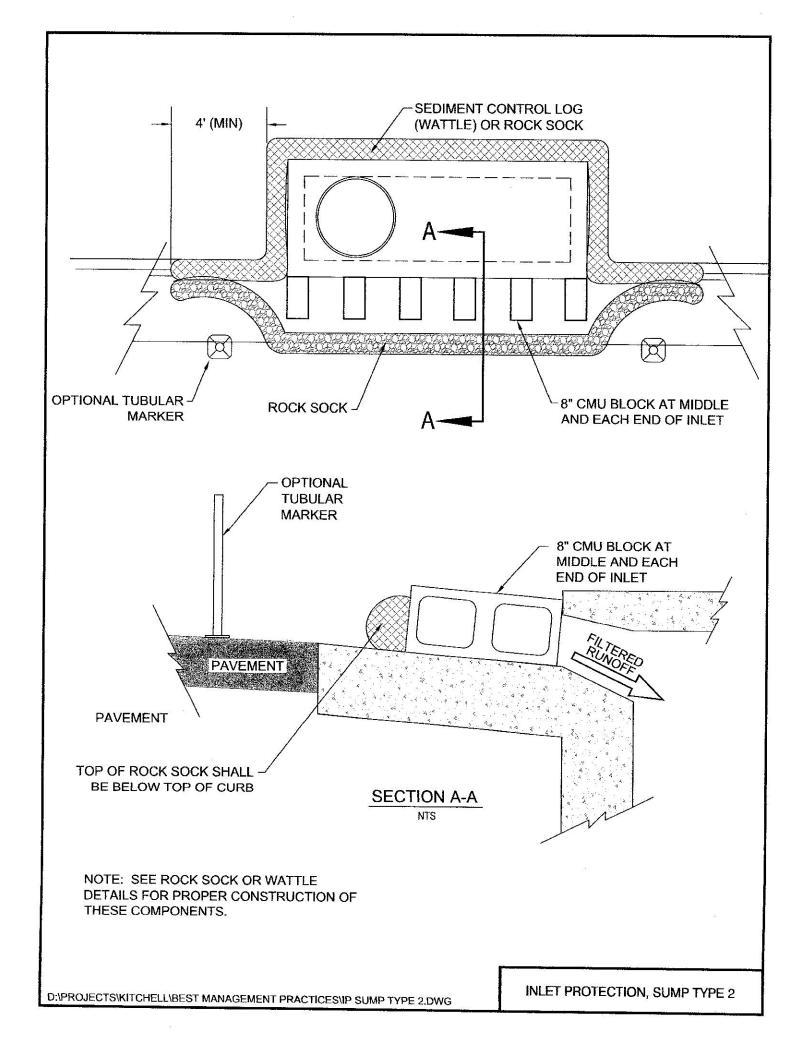


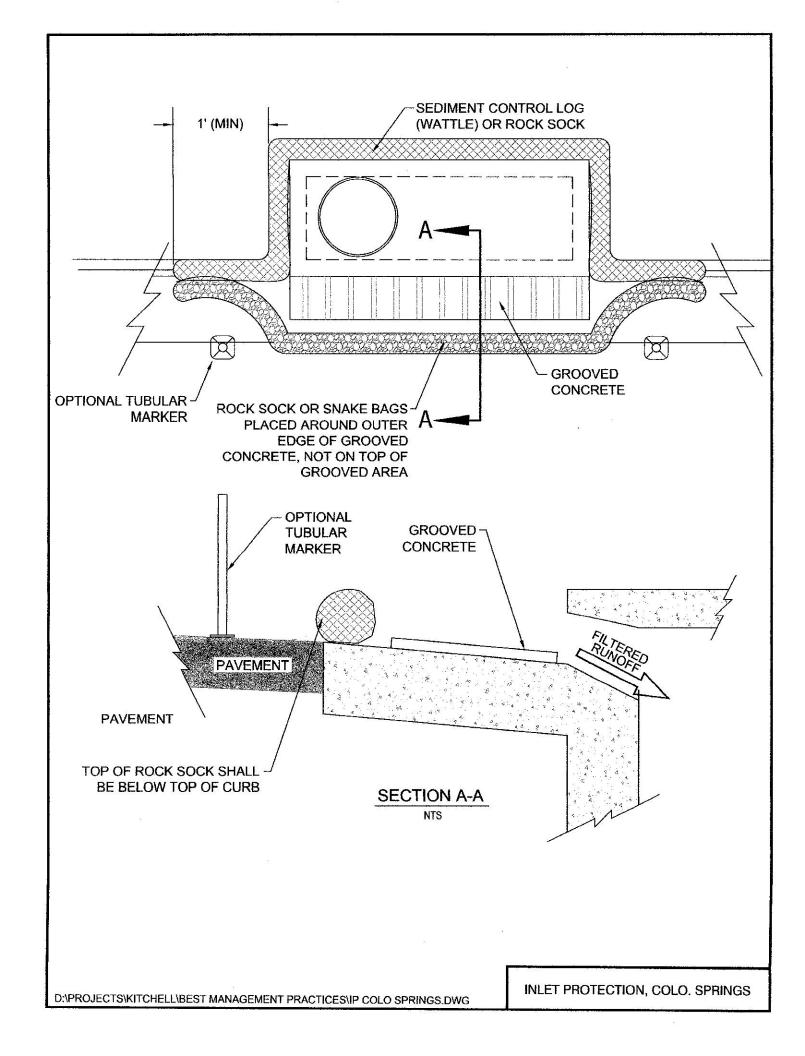
INLET SIZE L=	NO. OF SOCKS UPSTREAM OF INLET
0' - 5'	01
6' - 10'	02
L > 10'	03











Masonry Work Protection

BMP Description*	Masonry work protection is designed to provide down-gradient protection around masonry sand piles and mixing equipment.
Function	Masonry work protection are used to contain mortar components that generated during masonry work and reduce the likelihood of those items from becoming pollutants in storm water run off from the site.
Installation	Masonry work protection may consist of any number of BMPs, including, but not limited to earthen berms, wattles/sediment control logs, silt fence, rock socks, etc. Masonry work protection shall remain in place until masonry work is completed and the pollutants are removed from the site. See individual BMP detail sheets for proper installation techniques.
Phasing	Masonry work protection shall be used during all phases of construction where masonry work will be preformed.
Implementation	Masonry work protection shall be implemented on all sites where masonry products are used.
BMP Location	Portable mortar mixers used on site shall have perimeter containment.
	Specific locations of portable mixers shall be marked on the site map.
(List all locations where masonry work protection is used on site)	Specific rocations of portable infacts shall be marked on the site map.
Inspections	See BMP specific detail sheets for inspection recommendations.
Maintenance	See BMP specific detail sheets for maintenance recommendations.

^{*} See specific design and installation details for BMP chosen for masonry work protection. Provide these details to the BMP installer for proper installation.

Outlet Protection

BMP Description*	Outlet protection consists of a barrier material place in front and around, an outlet to reduce erosion in the area. The most common form of outlet protection is riprap rock.
Function	Outlet protection is designed to slow storm water flow out of the outlet and disperse the water over a larger area thus reducing erosion immediately down-gradient of the outlet structure.
Installation	Outlet protection shall be installed immediately following the installation of the outlet structure. Outlet protection shall remain in place until all up-gradient areas are stabilized and most often becomes a permanent feature.
Phasing	Outlet protection is generally installed during initial phase of construction when the outlet structures are constructed.
Implementation	Outlet protection should be used whenever an outlet structure is constructed and most often becomes a permanent feature on the site.
BMP Location (List all locations where outlet protection is used on site)	
Inspections	Outlet protection shall be inspected for damage, structural integrity, proper installation and need for sediment removal.
Maintenance	Maintenance includes repairing or replacing as needed and/or removing accumulated sediment.

 $^{^*}$ The following page(s) provide specific design and installation details. Provide these details to the BMP installar for proper installation.

Perimeter Controls

BMP Description*	Perimeter control can be a variety of BMPs which serve as erosion and sediment control and, when appropriate, access control.
Function	Perimeter controls function to contain or reduce sediment movement off-site generally from the down-gradient portions of the site. Perimeter controls are also used on individual lots especially when work is being done on a lot surrounded by lots owned or operated by other parties. Often perimeter containment is also used to define the boundary of the site.
Installation	Perimeter control may consist of any number of BMPs, including, but not limited to earthen berms, wattles/sediment control logs, silt fence, construction fencing, etc. Perimeter control shall remain in place until areas up-gradient of areas are stabilized. See individual BMP detail sheets for proper installation techniques.
Phasing	Perimeter control is generally installed during initial phase of construction prior to earth disturbing activities.
Implementation	Perimeter control is installed at down-gradient locations on the perimeter of the site where overland sheet flow has the potential to leave the site. Perimeter controls may also be installed in up-gradient areas to define project boundaries, limit on-site flows, or protect off-site features. Such controls should be suitable to the application.
BMP Location (List all locations where perimeter control is used on site)	Controls shall be used on the down-gradient perimeter of the site. Perimeter controls for this site generally consist on silt fence or wattles installed along the down-gradient perimeter of the site. Firestone requires wattles at back of curb and silt fence along the rest of the site perimeter. Individual lots should be protected where in-fill construction is occurring. Refer to site plan for specific perimeter controls used on this site.
Inspections	See BMP specific detail sheets for inspection recommendations.
Maintenance	See BMP specific detail sheets for maintenance requirements.

^{*} See specific design and installation details for BMP chosen for perimeter control. Provide these details to the BMP installer for proper installation.

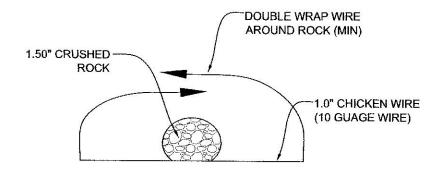
Portable Toilets

BMP Description	Portable toilets are mobile sanitary waste units.
Function	Portable toilets function to collect human waste.
Installation	Portable toilets shall be installed away from curb gutters, inlets, drainage swales, surface waters, and temporary/permanent sedimentation basins. Portable toilets shall be adequately anchored at all times and shall not be placed on hard surfaces without perimeter containment installed.
Phasing	Perimeter control is generally installed during initial phase of construction prior to earth disturbing activities and remain on site until project completion.
Implementation	Portable toilets shall be installed prior to start of construction activities and remain in place until all construction activities are completed.
BMP Location	Locations of toilets shall be marked on the site map.
(List all locations	
where portable	
toilets will be placed	
on site)	
	Details to lists shall be inspected for any allocations of intensity, and
Inspections	Portable toilets shall be inspected for proper placement, structural integrity and anchoring.
Maintenance	Maintenance includes cleaning and waste removal as appropriate intervals to eliminate the possibility of overflow, relocating for proper placement, anchoring and replacement of damaged units.

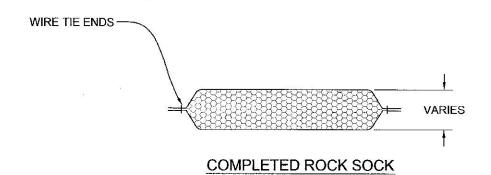
Rock Socks

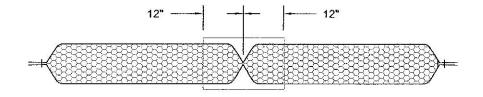
BMP Description*	Rock socks are a wire or Geotextile tube filled with rock material.
Function	Rock socks serve to reduce water velocity, thus decreasing erosion potential and sediment transport, and by allowing time for sediment to settle out.
Installation	Installation techniques for rock socks depend on their intended use. When used for swale protection, rock socks need to extend the entire width of the expected flow with the center lower than the sides. For use as inlet or culvert protection, the rock sock should extend beyond the width of the inlet/culvert. Also rock socks are used as curb socks (curb checks). In some cases, rock socks may be stacked to maximize performance. Refer to specific use BMP for installation details.
Phasing	Rock socks installation timing is based on their intended use. Refer to specific BMP detail sheets for installation phasing (e.g. inlet protection, check dams, etc.).
Implementation	Rock socks are utilized in various installations including, but not limited to: inlet protection, curb checks, check dams, outlet/culvert protection or in any area where concentrated flows need to be broken up and velocity reduced to prevent erosion.
BMP Location	Rock socks may be used as part of inlet protection.
(List all locations where rock socks are used on site)	
Inspections	Rocks socks should be inspected for proper installation, structural integrity and accumulated sediment.
Maintenance	Maintenance would include repairing or replacing damaged sections and removing accumulated sediment.

^{*} The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.



CROSS SECTION





ANY GAP AT JOINT SHALL EITHER BE FILLED WITH ADEQUATE AMOUNT OF ROCK AND DOUBLE WRAPPED WITH ADDITIONAL CHICKEN WIRE SECURED TO ENDS OF ROCK REINFORCED SOCK OR TIGHTLY ABUTTED.

JOINT ELEVATION

Rough-Cut Street Control

BMP Description*	Rough-cut street control consists of barriers installed along a rough-cut road surface prior to paving or application of roadbase.
	prior to paving or apprication of roadbase.
Function	Surface roughening works by reducing water velocity along the exposed road surface promoting infiltration, thus decreasing the potential for erosion to occur.
Installation	If the rough-cut roads are not planned for paving within 30 days of construction, rough-cut street controls should be installed. Rough-cut street controls can be installed using a variety of BMPs including but not limited to straw bales, straw wattles, silt fence, compacted soil berm, or similar BMPs. These BMPs should be installed based on their specific design details. The barriers are installed alternating right and left side of the street still allowing traffic to flow through the area. The barriers are installed perpendicular to the longitudinal slope of the road in the road swale or gutter.
Phasing	Rough-cut street control is generally used during the overlot grading and infrastructure construction phase of site development prior to paving the road surface.
Implementation	Rough-cut street control should be implemented if the road is not planned for paving or application of road base within 30 days of construction.
BMP Location	
(List all locations	
where rough-cut	
street control will be	
used on site)	
Inspections	Inspection of rough-cut street control would include proper implementation, structural integrity, areas of erosion or sediment accumulation and proper installation of the specific BMP used.
Maintenance	Maintenance for rough-cut street control would include cleaning the barriers, repairing or replacing of barrier or installation of new or additional BMPs.

^{*} The following page(s) provide specific design and installation details. In addition, see the installation details for the specific BMP type used. Provide these details to the BMP installer for proper installation.

Secondary Containment

BMP Description	Secondary containment are practices used to contain materials or products which could become pollutants if mixed with stormwater.
Function	Secondary containment function to contain the materials or products in case of an accidental spill or leak and prevent the material or product from collecting on the ground surface, seeping into the ground or entering a storm sewer inlet or water body on or near the site.
Installation	Secondary containment shall be used on sites where large quantities of materials or products, such as fuels, oils, bagged mortar, etc., will be used and stored for extended period of time on the site. Different products can be used for secondary containment for example metal or plastic troughs, sand bags, wattles, rock bags, soil berms, lined pits or basins. Products used would depend on the nature of the product it will contain, the length of time it will be needed, and compatibility of the product it will contain. The size of the containment should be large enough to hold at least 110% of the volume of the containers that it will contain. Expected precipitation must be taken into consideration if the containment will be exposed to the elements and not covered. Therefore the containment shall also be large enough to hold anticipated precipitation at least for a 72-hour period providing ample time to remove and properly dispose of collected water and or product.
Phasing	Secondary containment may be necessary during all phased of construction depending on the materials or products used on site.
Implementation	Dumpsters shall be installed prior to start of construction activities and remain in place until all construction activities are completed.
BMP Location (List all locations this BMP will be placed on site)	
Inspections	Secondary containment shall be inspected for proper placement, structural integrity, leaking or spillage of contained products, and collection of precipitation.
Maintenance	Maintenance includes replacement of damaged containment, removal of damaged containers, and removal of precipitation collected in containment area. Note that any product mixed with stormwater shall be properly tested and disposed of according to Federal, State and local regulations.

^{*} The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.

Sediment Basin (Temporary)

BMP Description	Temporary sediment basins are areas with a depression or pond generally with both inlet and outlet structures which allow stormwater to collect and sediment to settle out.
Function	Temporary sediment basins generally collect stormwater from overland sheet flow or from inlet structures on the site. As water pools in the basin sediment settles out before discharging from the basin either via an outlet structure, rock weir, or riser pipe.
Installation	Temporary sediment basins may be installed using natural depressions, or by excavating or berming material. All bermed material should be properly compacted and stabilized. A sediment basin should be constructed with a protected, out flow/spillway (e.g. concrete, rip-rap, fabric or other material) or using a riser pipe for an outfall. Temporary sediment basins may be converted to permanent detention ponds upon completion of construction. Proper design and construction are imperative to proper functioning.
Phasing	Temporary sediment basins are generally constructed during the overlot grading and infrastructure construction phase.
Implementation	Temporary sediment basins are generally required with drainage areas greater than one acre.
BMP Location (List locations of all temporary sediment basins on site)	See site map for specific location
Inspections	Sediment basins shall be inspected for excess sediment accumulation, proper function of inlet and outlet structures, and integrity of the basin construction.
Maintenance	Maintenance activities include removal of excess sediment, repair of basin sides and bottom, and cleaning and repairing of inlet and outlet structures.

^{*} The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.

Sediment Trap (Temporary)

BMP Description	Temporary sediment traps are areas with a depression and generally surrounded on two or three sides with a berm which allow stormwater to collect and sediment to
	settle out.
Function	Temporary sediment basins generally collect stormwater from overland sheet flow on the site. As water pools in the trap and sediment settles out before discharging from the trap either via a slope drain, rock weir, or riser pipe.
Installation	Temporary sediment traps may be installed using natural depressions, or by excavating or berming material. All bermed material should be properly compacted and stabilized. A sediment trap should be constructed with a protected, out flow/spillway (e.g. concrete, slope drain, rip-rap, fabric, erosion control blankets or other material) or using a riser pipe for an outfall. Proper design and construction are imperative to proper functioning.
Phasing	Temporary sediment traps are generally constructed during the overlot grading and infrastructure construction phase but an be constructed during any phase of construction in which they are deemed needed.
Implementation	Temporary sediment traps are generally used with drainage areas less than five acreand may be used along with other BMPs.
BMP Location	
(List locations of all	
temporary sediment	
traps on site)	
	Sediment traps shall be inspected for excess sediment accumulation, proper function
Inspections	of outlet structures, and integrity of the trap construction.
	in include removal of excess sediment, renair of tran herm and
Maintenance	Maintenance activities include removal of excess sediment, repair of trap berm and bottom, and cleaning and repairing of outlet structures.

^{*} The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.

Seeding and Mulching

BMP Description*	Seeding involves the mechanical or hand application of specific seed mixes appropriate for the site location and soil type. Seeding can be used as a permanent or temporary BMP.
	Mulching is hay or straw material that is subsequently machine crimped into the soil to provide stability. Mulch may be used on its own as a temporary soil stabilization method, or in conjunction with seeding for final stabilization. Hydromulch is a sprayed on product which is applied over a seeded area, or along with seeds, or disturbed ground surface to provide stability.
Function	Seeding provides plant growth to stabilize the soil reducing the likelihood of erosion or sediment transport.
	Mulch and hydromulch functions as soil stabilizers by decreasing the velocity of sheet flow. It also helps retain moisture in the soil for seed germination and plant growth.
Installation	As soon as practicable, after the completing of construction activities soil should be properly prepared and seeded. The choice of seed mix will dictate application rates and methods. Seeding should always be accompanied by an additional BMP, such as mulching, to protect the seed and soil from erosion during the germination and growth process.
×	Mulch may be hay or cereal grain straw. At least 50% of the material, (by weight) should be ten inches or more in length. A basic application rate is 2 tons per acre, although this can vary depending on slope and soil type. To be effective, mulch needs to be crimped into the soil using either a drill seeder or notched disk plow to the minimum depth of 2 inches and a maximum depth of 4 inches. To maximize effectiveness crimping equipment must run parallel to the contours of the land. Crimp mulch should provide at least 80% uniform coverage while hydromulch should be a uniform 100% coverage.
Phasing	Temporary or permanent seeding may be preformed to re-vegetate disturbed areas that will remain exposed for a long period of time prior to the start of vertical construction.
	Mulching techniques shall be used during all phases of construction. Mulching shall be considered in all areas that will be idle with no construction activities for extended periods of time.

Seeding and Mulching (concluded)

Implementation	Seeding should be considered for temporary stabilization measures for all previously disturbed areas that will remain idle for long periods of time. Open space and naturalized area of sites are generally seeded with native seed mixes. Crimp mulch may not be appropriate for slopes that are equal to or greater than 3:1 or in areas with hard or rocky soil in which the crimper cannot penetrate. Hydromulching is an appropriate technique for areas where crimp mulching would not be effective, such as slopes greater than 3:1 or rocky areas. Hydromulching would not be appropriate in areas with heavy foot traffic. The Town of Castle Rock must approve use of hydromulches prior to application.
BMP Location	See the site GESC plans for specific locations of seeding and mulching.
(List all locations	
where areas will be	
seeded on site)	
	
Inspections	Seed areas should be inspected to ensure that the soil stabilization method (e.g. surface roughening, crimp mulch, hydromulch, etc.) was applied correctly and has not been compromised. The area should also be inspected for plant growth and coverage, and erosion and/or sediment deposition.
	Inspections should include observing mulched areas where mulch is missing, thin, or
	for areas where erosion has occurred.
	_ xor would milete erestout also occurred.
Maintenance	Maintenance items would include re-grading and seeding bare or areas of thin vegetative growth and/or adding additional BMPs as appropriate.
	Maintenance items would include re-grading as necessary and reapplying as appropriate.

^{*} Refer to the Town of Castle Rock GESC Standard Details for specific construction design

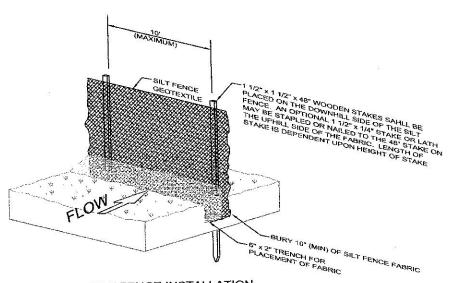
SITE GEOGRAPHY

BMP Description	In certain circumstances the site geography can be used as a BMP to control
Bivir Description	stormwater flow on a site. This includes the use of slopes and topographic changes to
	manage stormwater on site.
Function	Site geography functions to direct and control the flow of stormwater from one area
runction	cally site to enother. In this case the slopes on the side of the on/oil rainps and the
	along of the highway through the center of the site which is capped to run toward the
	sides of the road act as directional BMP to move stormwater to the side of the roads
*	in to the swales and toward the inlets at the down-gradient portion of the site.
	Site geography is an existing natural feature or man-made element existing on the
Installation	site.
	Site.
	Site geography shall be used during all phases of construction.
<u>Phasing</u>	Site geography shari or used dams
	The use of site geography as a BMP shall be utilized wherever the use aids in the
Implementation	The use of site geography as a Bivir shall be unified whether the control of stormwater on the site. Site geography is generally used along with other
(19 1 0)	control of stormwater on the site. Site geography is generally
	sediment and erosion control BMPs.
	The state of existing readways on the site
BMP Location	On/off ramp slopes and crown of existing roadways on the site.
(List all locations	
where BMP is used on	
site)	
- 101 - 101	1 . 1 C. it. offertiganger
Inspections	Site geography should be evaluated for its effectiveness.
	1.5 the age of existing gite geography deem
Maintenance	Other BMPs should be implemented if the use of existing site geography deem
	inefficient or ineffective.

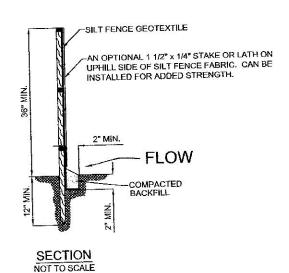
Silt Fence

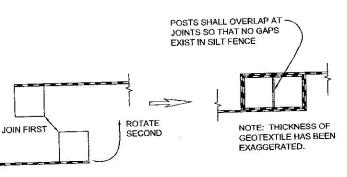
BMP Description*	Silt fence consists of geotextile fabric installed with at least six inches of the fabric entrenched into the soil attached to wooden stakes on the down-gradient side.
Function	Silt fence provides runoff control by reducing water velocity and ponding area to
1 unetton	facilitate the deposition of sediment on the up-gradient side of the fence.
Installation	Silt fence applications include, but are not limited to: project perimeter control,
	secondary containment, back of curb protection and containment for any disturbed or
	staging area. Proper installation is key to the proper function of the silt fence. Wire-
	backed fence may be used or additional stakes or lathe may be added on the up-
	gradient side for strengthening the fence around corners or in high wind conditions.
<u> </u>	
Phasing	Silt fence shall be used during those phase of construction where its function is
	warranted.
	Silt fence can be used in areas to intercept sheet flow from limited areas based on
Implementation	slope. Its use should be limited to ¼ acre of sheet flow area per 100 linear feet of silt
	fence.
	ichice.
BMP Location	Used for perimeter containment. See site plan for specific locations.
(List all locations silt	
fence is used on site)	
tence is used on site)	
	The second secon
Inspections	Silt fence shall be inspected regularly for sediment accumulation one-third (in no case
	more than one-half) the height of the fence, tears, gaps or holes in the fabric, broken
	stakes, areas where the fabric needs to be re-attached to the stakes, and proper
	trenching. Silt fence shall be installed so that the fabric is tight between the stakes
	without sagging.
Maintananco	Maintenance includes removing accumulated sediment, repairing the items noted or
Maintenance	replacing the fence as needed.
	Tables and research

^{*} The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.

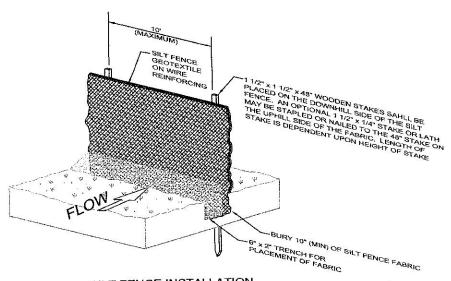


SILT FENCE INSTALLATION NOT TO SCALE

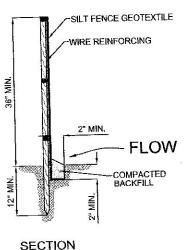




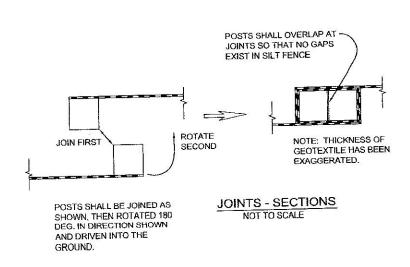
POSTS SHALL BE JOINED AS SHOWN, THEN ROTATED 180 DEG. IN DIRECTION SHOWN AND DRIVEN INTO THE GROUND. JOINTS - SECTIONS
NOT TO SCALE



SILT FENCE INSTALLATION NOT TO SCALE



SECTION NOT TO SCALE



Slope Drain (Temporary)

BMP Description	Temporary slope drains are a conveyance which diverts stormwater and serve as a
Divisi Deserva	temporary outlet to reduce erosion on slopes.
Ttion	Temporary slope drains convey runoff from the top of a slope to the bottom without
Function	causing erosion of the slope.
	Causing Crosson of the Cope.
	Temporary slope drains are generally installed using a flexible conduit for similar
Installation	devise along with a diversion ditch/dike at the top of the slope. The diversion device
	functions to route the runoff to the slope drain. Open chute protector may also be
	used. Generally protection at the base of the pipe is also needed to reduce erosion
	from the output end. Proper design and construction are imperative to proper
	from the output end. Proper design and constitution are supported
	functioning.
	the state of the overlet grading and
Phasing	Temporary slope drains are generally constructed during the overlot grading and
	infrastructure construction phase but an be constructed during any phase o
	construction in which they are deemed needed.
65% 95.50% 96.50% 97.50%	1 less flow will cause
Implementation	Temporary slope drains are generally used where concentrated sheet flow will cause
	significant erosion if not controlled. These areas may be designed to have permanen
	slope drains installed following site development.
BMP Location	
(List locations of all	
temporary slope	
drains on site)	
	Temporary slope drains shall be inspected for proper installation and function, by
Inspections	passing or undercutting the device, and integrity of the diversion at the top of the
	slope.
7.5	Maintenance activities include removal of excess sediment or debris from diversion
Maintenance	structures, inlet and outlet, and repair of the drain.
(Situation, interview of the second

^{*} The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.

Stockpile Protection

BMP Description*	Stockpile is designed to provide down-gradient protection around exposed stockpiles.
30.994	
Function	Stockpile protection is used to contain the stockpile and reduce the likelihood of soil/sediment from becoming pollutants in storm water run off from the site.
	\$ 500 Million
Installation	Stockpile protection may consist of any number of BMPs, including, but not limited to earthen berms, wattles/sediment control logs, silt fence, rock socks, etc. Stockpile protection shall remain in place until the stockpile is otherwise stabilized or removed from the site. See individual BMP detail sheets for proper installation techniques.
Phasing	Stockpile protection shall be used during all phases of construction where stockpiles will be located on the site
Implementation	Stockpile protection shall be implemented as soon as stockpiles are placed on the site.
BMP Location	Specific stockpile locations shall be indicated on the site map.
(List all areas where stockpile protection will be used on site)	Perimeter controls may be used for stockpile protection if appropriate.
<u> </u>	
Inspections	See BMP specific detail sheets for inspection recommendations.
Maintenance	See BMP specific detail sheets for maintenance recommendations.

^{*} See specific design and installation details for BMP chosen for stockpile protection. Provide these details to the BMP installer for proper installation.

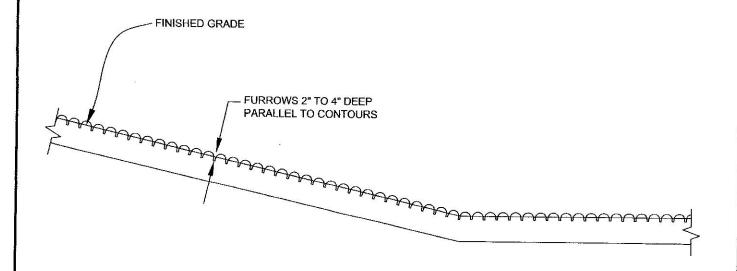
Street Sweeping

BMP Description	Soile de la
Distr Description	Soils deposited on paved surfaces should be swept/cleaned as needed to reduce the potential of sediment transport and tracking.
Function	Sweeping operations consist of the scraping large quantities of sediment from pavement and/or sweeping, via hand or mechanical means to remove as much deposited sediment as possible.
Installation	Cyronia 1 111
Installation	Sweeping should be considered in all paved areas. Sweeping may be implemented on an as-needed basis or pre-scheduled throughout the length of the project.
Phasing	Cum
T masting	Street sweeping shall be used during all phases of construction where paved surfaces are present.
Implementation	Street sweeping techniques shall be implemented for all areas of the site where paved surfaces exist, including streets, curb, gutter, sidewalks and driveways.
BMP Location	
	Used on all paved surfaces, including curb gutters and attached sidewalks.
List all locations	
where street sweeping	
will be performed on site)	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
nspections	Streets and other neved ourfered by III
Petrons	Streets and other paved surfaces should be inspected for sediment/soil and debris deposition.
Maintenance	Maintenance includes removing accumulated sediment, via hand or mechanical means to remove as much deposited sediment as possible.

Surface Roughening

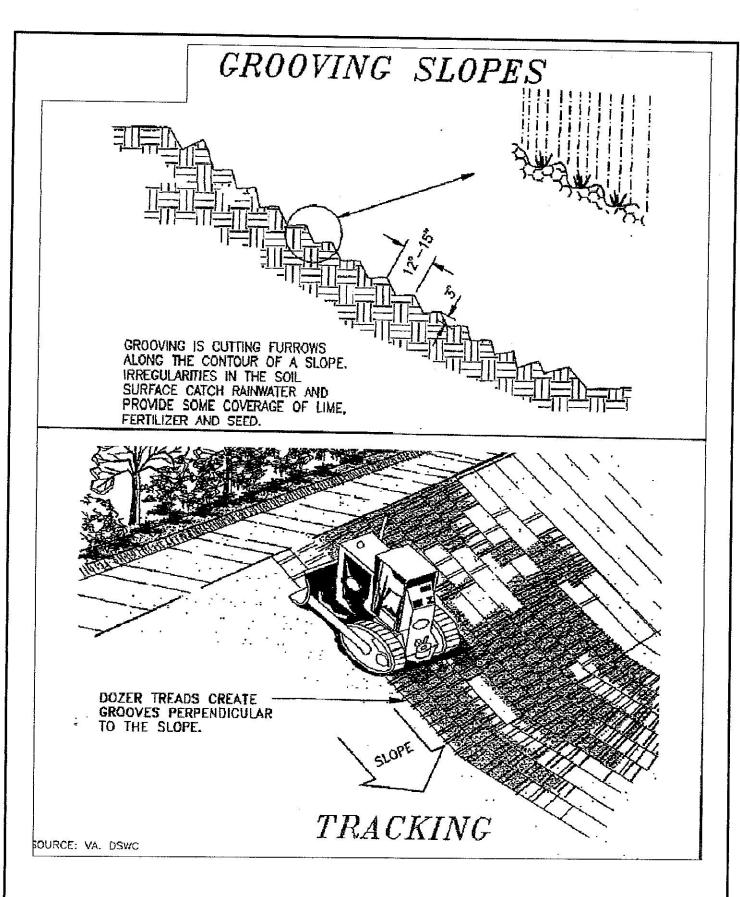
DMD D	
BMP Description*	Surface roughening consists of grooves or tracks installed in the soil surface, parallel to the slope. This is a temporary soil stabilization technique that works well in areas that will remain inactive for a short time.
Function	Surface roughening works by reducing water velocity and promoting infiltration, thus decreasing the potential for erosion to occur.
Installation	
installation	Any disturbed areas with no construction activity planned for longer than 14 days may be surface roughened. This may include areas where scheduling prevents the immediate implementation of final stabilization practices, side of stock piles, or other slopes. Surface roughening may be applied by creating a continuous furrow parallel to the slope. This can be done with the teeth on a loader bucket, ripping, disking or plowing equipment. Surface roughening can also be created by running tracked equipment up and down the slope.
Phasing	Surface roughening may be used during all phases of construction where temporary stabilization measures can reduce erosion and sediment movement is disturbed areas.
Implementation	Stabilized staging areas should be implemented as needed on site but should be sited to reduce the need for relocation and out of areas of active construction activity.
BMP Location	
(List all locations	
where surface roughening will be performed on site)	
Inspections	Inspection of surface roughened areas would include proper implementation, structural integrity and areas of erosion or sediment accumulation.
Maintenance	Maintenance for surface roughening would include re-applying the technique or installation of new or additional BMPs.

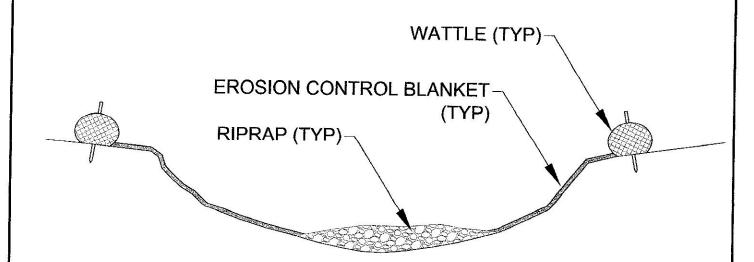
^{*} The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.



NOTES

- AREAS WHERE BUILDING FOUNDATIONS, PAVEMENT, OR SOD IS TO BE PLACED WITHIN 14-DAYS OF FINISHED GRADING DO NOT NEED TO BE SURFACE ROUGHENED.
- 2. DISTURBED SURFACES SHALL BE ROUGHENED USING RIPPING OR TILLING EQUIPMENT ON THE CONTOUR OR TRACKING UP AND DOWN A SLOPE USING EQUIPMENT TREADS.
- FOLLOWING ROUGHING, VEHICLES AND EQUIPMENT SHALL BE RESTRICTED TO ACCESS AREAS THAT HAVE BEEN SURFACE ROUGHENED.
- 4. SEEDING AND MULCHING CAN TAKE PLACE DIRECTLY OVER SURFACE ROUGHENED AREAS WITHOUT FIRST SMOOTHING OUT THE SURFACE.
- FOR AREAS NOT SEEDED AND MULCHED OR LANDSCAPED AFTER SURFACE ROUGHENING, SURFACES SHALL BE RE-ROUGHENED AS NECESSARY TO MAINTAIN GROOVE DEPTH AND SMOOTH OVER ANY RILL EROSION.





SWALE

Temporary Soil Stabilization

BMP Description*	Temporary Soil Stabilization consists of surface roughening or us of tackifiers on exposed soils. Temporary soil stabilization techniques work well in areas that will remain inactive for a short time.
Function	Surface roughening works by reducing water velocity and promoting infiltration, thus decreasing the potential for erosion to occur. Soil tackifiers work to bond soils with a medium that prevents/reduces soil erosion.
	Soft deckriters work to bond softs with a medium mat prevents/reduces soft erosion.
Installation	Disturbed areas with no construction activity must be temporarily stabilized daily per CDOT specifications. See Surface roughening sheets for proper installation. Tackifiers should be installed according to manufacturers directions.
Phasing	Temporarily stabilization measures may be used during all phases of construction where such measures can reduce erosion and sediment movement is disturbed areas.
Implementation	Temporary soil stabilization should be implemented as needed on site where soils will be exposed for a period of time and not worked but yet cannot be permanently stabilized.
BMP Location	Exposed slopes within construction 1. 1.
(List all locations	Exposed slopes within construction boundaries.
where surface	
roughening will be	
performed on site)	
F	
Inspections	Inspection of temporarily stabilized areas would include proper implementation, structural integrity and areas of erosion.
Maintenance	Maintenance for temporarily stabilized areas would include re-applying the technique or installation of new or additional BMPs.

^{*} The following page(s) provide specific design and installation details for tackifiers used on site. Provide these details to the BMP installer for proper installation.

Vegetative Buffer Strips/ Maintain Existing Vegetation

BMP Description*	Vegetative buffer strips are preexisting vegetated, landscaped or sod/seed areas that are established to reduce sheet flow over disturbed soil.
Function	Vegetative buffer strips provide a barrier zone where overland sheet flow velocity is dissipated and sediment trapped, reducing sediment discharge offsite. Vegetative buffer strips installed between the sidewalk and curb, and along the site perimeter, are particularly effective.
	Existing vegetation functions to hold soil in place and reduce erosion from overland sheet flow. Existing vegetation aids in the reductions of stormwater flow velocity on slopes and embankment.
Installation	Vegetative buffer strips are encouraged for any perimeter or environmentally sensitive areas.
	Whenever vegetation exists on a site prior to construction activities, this vegetation should be maintained as long as possible to reduce the need for temporary sediment and erosion control BMPs.
Phasing	Vegetative buffer strips and maintenance of existing vegetation may be used during all phases of construction.
Implementation	Buffer strips and maintenance of existing vegetation may be implemented by leaving pre-existing vegetation in place, planting seed, installing sod or other permanent landscaping materials.
BMP Location	See site map for specific locations.
(List all locations of all	To specific focultors.
vegetative buffer strips on site)	
Inspections	Inspections include observation for sediment accumulation, erosion to the area, or the need to re-vegetate.
Maintenance	Maintenance would be to remove or grade out sediment, re-grade and stabilize the eroded area or plant additional seed/sod or other appropriate landscape materials. Should damage occur to a vegetative buffer strip a new or additional BMP should be considered.

Waste Management

BMP Description	Practices to be used to minimize and contain solid waste generated during construction activities. BMPs used for waste management generally include trash dumpsters and site management practices.
Function	Dumpsters function to collect solid waste. Site management practices would be routine pick up and collection of solid waste materials and training subcontractors in the maintaining the site in an orderly manner.
Installation	Dumpsters shall be installed on level surfaces and away from inlets, drainage swales, surface waters, and temporary/permanent sedimentation basins. If dumpsters are not water tight it is recommended that they are not placed on solid surfaces unless space restrictions prohibit the placement on soil surfaces. Liquid wastes should not be placed in dumpsters.
Phasing	Solid waste management containers and site management practices is generally implemented during all phases of construction, specifically the interim and final phases.
Implementation	Dumpsters shall be installed prior to start of construction activities and remain in place until all construction activities are completed.
BMP Location	Dumpsters will be located as needed throughout the site.
(List all locations where dumpsters will be located on site)	See site map for specific locations.
site)	
Inspections	Dumpsters shall be inspected for proper placement, structural integrity and whether they need to be emptied.
Maintenance	Maintenance includes waste removal as appropriate intervals to eliminate the possibility of overflow, relocating for proper placement, and replacement of damaged units.

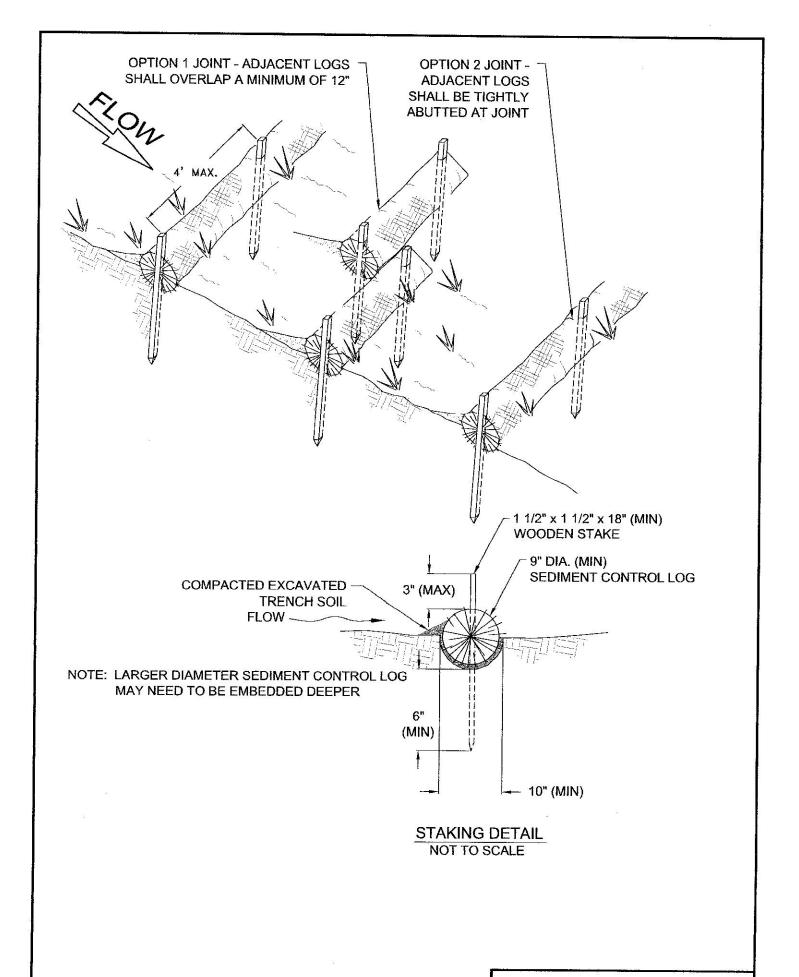
Waste Management

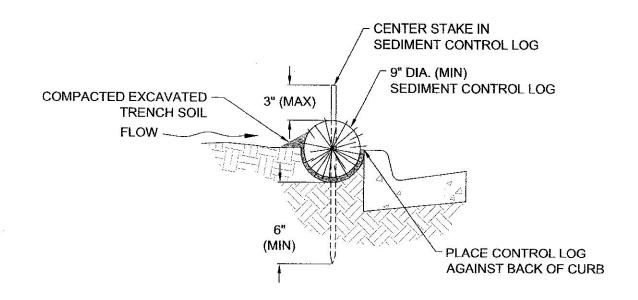
Practices to be used to minimize and contain solid waste generated during construction activities. BMPs used for waste management generally include trash dumpsters and site management practices. However in November of 2011 Richmond American Homes implemented a trash and debris policy requiring all trade partners to take primary responsibility for all trash and debris removal.
All Trades Partners will be responsible for removing and legally disposing of trash and debris resulting from work on any Richmond American Homes' job regardless of whether the material is supplied by a Trade Partner or Richmond American Homes.
Each trade partner must create and implement a comprehensive trash removal program. The company's trash removal program should be clearly communicated to and understood by all employees, subcontractors and all other relevant parties. Trade partners will be responsible for ensuring compliance with their own policies and procedures to remove and legally dispose of all trash and debris.
Solid waste management containers and site management practices is generally implemented during all phases of construction, specifically the interim and final phases.
Trade partners will implement trash control at all times they are engaged in activities on site.
This is a practice and cannot be noted on the maps.
If trade partners chose to implement dumpsters or other practices these
Will be noted on the map as appropriate
6 10 20 10 10 10 10 10 10 10 10 10 10 10 10 10
Construction site will be monitored for trash and debris.
Trade partners will be responsible for ensuring compliance with their own policies and procedures to remove and legally dispose of all trash and debris.

Wattle (Sediment Control Logs or Fiber Logs Including Eco-Guard and Filtrexx)

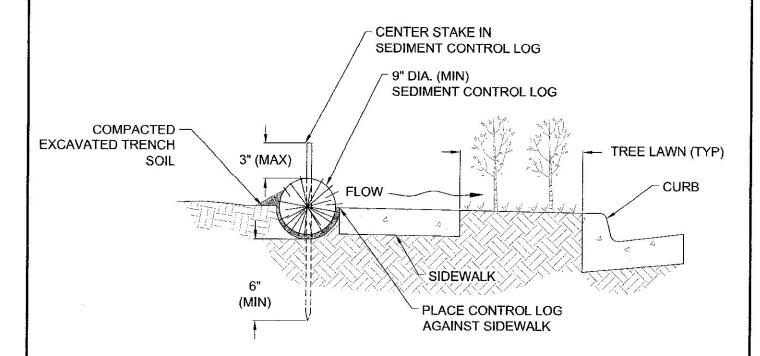
BMP Description*	Wattle (aka sediment control logs) consists of a net or geotextile fabric filled with straw, excelsior, wood mulch or other man made fillers.
Function	Wattles reduce water velocity allowing sediment to accumulate on the upgradient side of the wattle.
Installation	The basic installation for a net wrapped wattle is to prepare a trench approximately three inches deep, secure the wattle in the trench using a stake or landscape pin, and backfill approximately 1/3 of the wattle on the upgradient side. Wattles should be installed based on manufactures directions Wattles with a high weight per foot may not need to be staked. Wattles that conform to the ground may not need to be trenched in to accomplish water tight seal
Phasing	Wattles may be used during all phases of construction.
Implementation	Wattle applications include, but are not limited to, slope stabilization, check dams in swales, back of curb protection and temporary secondary containment for stock piles, materials storage, or masonry.
BMP Location (List all locations	Back of curb protection, masonry mixer protection, stockpile protection
where wattles will be used on site)	
Inspections	Wattles should be inspected for proper installation, structural integrity and sediment accumulation.
Maintenance	The most common maintenance items include the removal of accumulated soil and replacement with a new wattle.

^{*} The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.

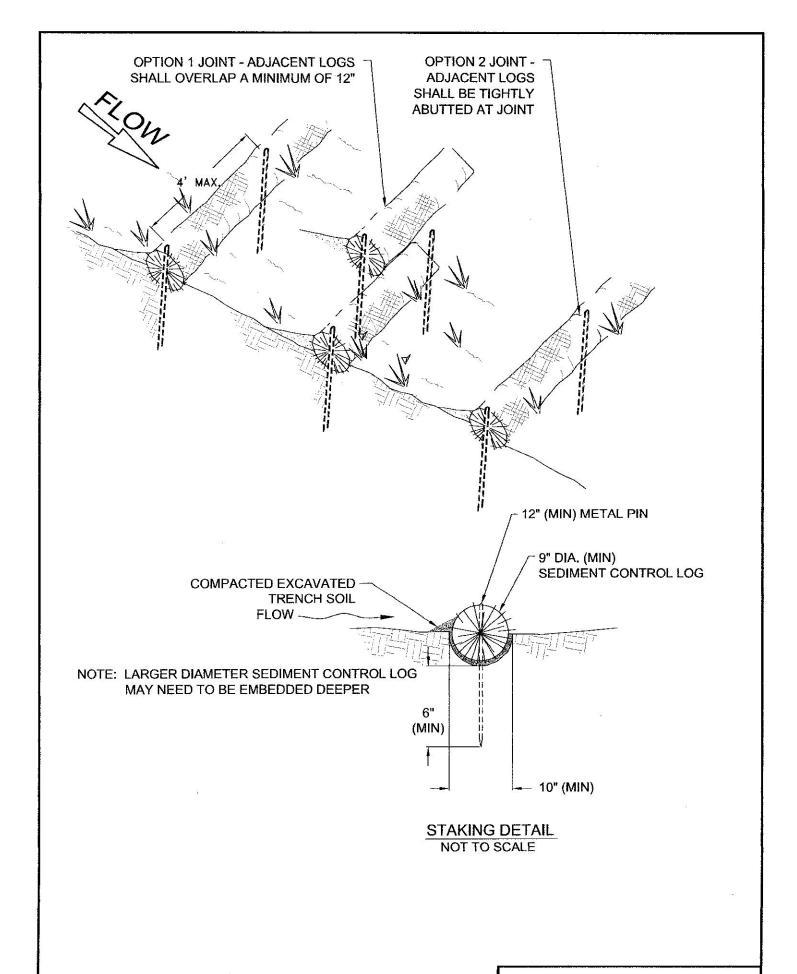




SEDIMENT CONTROL LOG AT BACK OF CURB NOT TO SCALE



SEDIMENT CONTROL LOG AT SIDEWALK WITH TREE LAWN
NOT TO SCALE

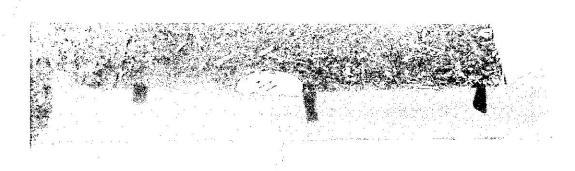




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Recycled & Reusable Fill



- Description: Inlet protection/Multi use
- · Manufactured from 9 oz. high UV, coated PVC mesh
- · Available with handles for handling ease
- **Durability:** Significantly heavier and stronger than most common imported gravel tubes
- Bursting Strength: ASTM D-3786: 414 psi
- Weight: ASTM D-3776: 6.9 oz sq-vd
- Breaking Strength: ASTM D-ASTM D-5034: 120/265 lbs
- Breaking Elongation Grab: ASTM D-5034: 77/55%
- Tear Strength Trapezoid (lbs): ASTM D-5587 Opt 1: 58/103 lbs
- Percent Open Area: WC-02215 Mod: 32%
- Water Flow Rate: ASTM D-4991: 200+ qpm/ft
- Sizes Available:

4' length, 34 lb., 7" diameter 6' length, 42 lb., 7" diameter 8' length, 51 lb., 7" diameter 8' length, 51 lb., 7" diameter

Custom sizes available—allow 2-4 weeks lead time for custom orders

For more information, call 970-737-1100 office
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Recycled & Reusable Fill



- Perimeter control
- Rachel knitted fabric
- UV Stabilized
- 3.42 oz/y²
- Bursting Strength: 127 psi
- Sieve Size: #12 US
- Anchoring systems available

Sizes Available:

10', 85 lb., 8" diameter

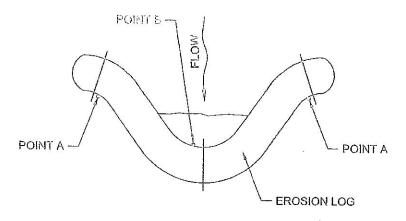


Custom sizes available

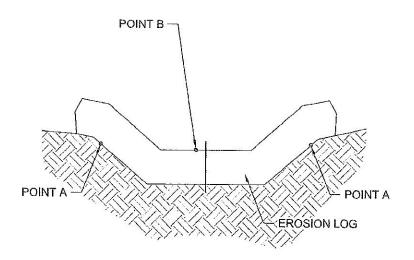
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PLAN

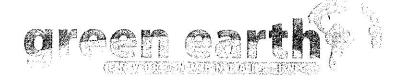


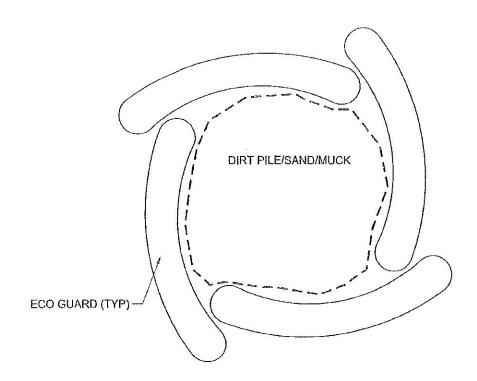
ELEVATION

EROSION LOG DETAIL DITCH INSTALLATION

NOT TO SCALE



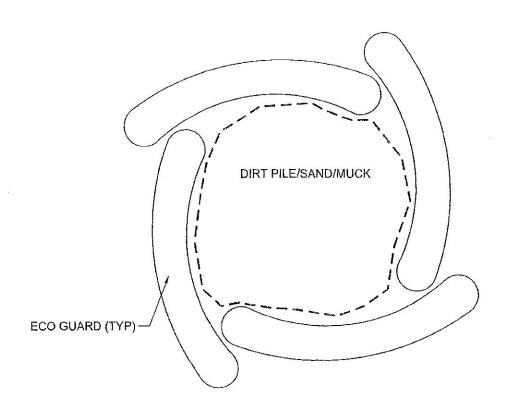




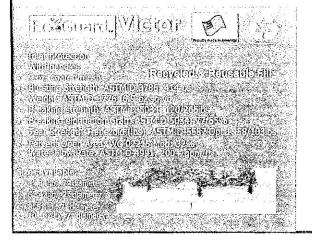
PLAN
ECO GUARD DETAIL CONTAINMENT PLACEMENT
NOT TO SCALE

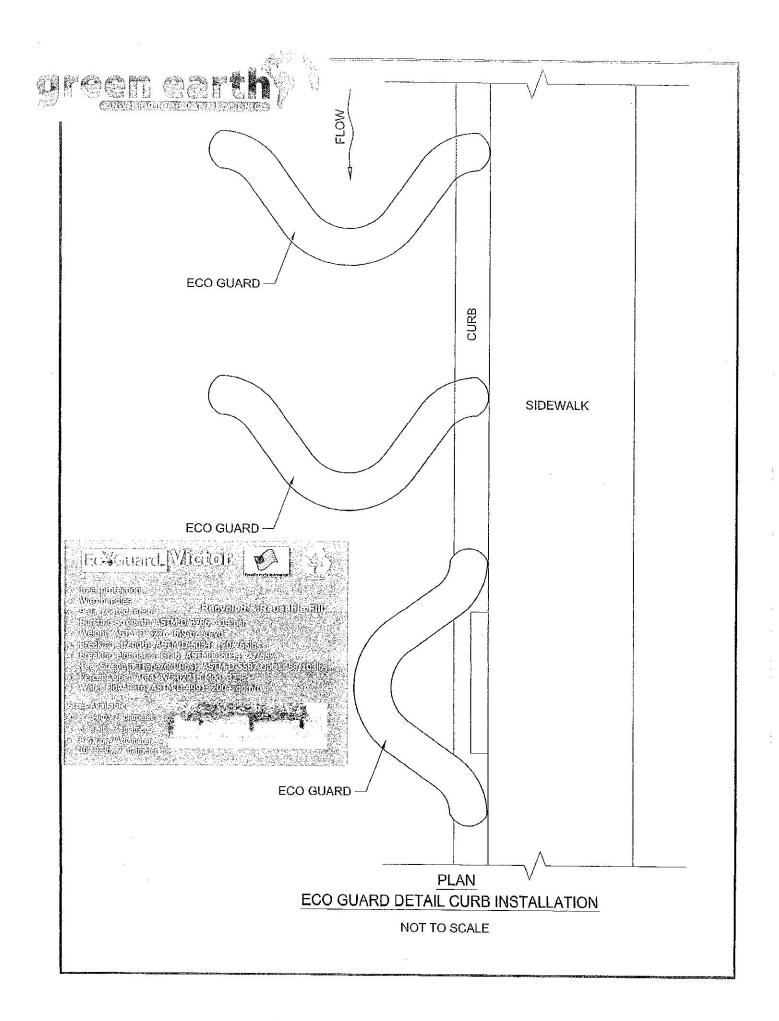






PLAN ECO GUARD DETAIL CONTAINMENT PLACEMENT NOT TO SCALE





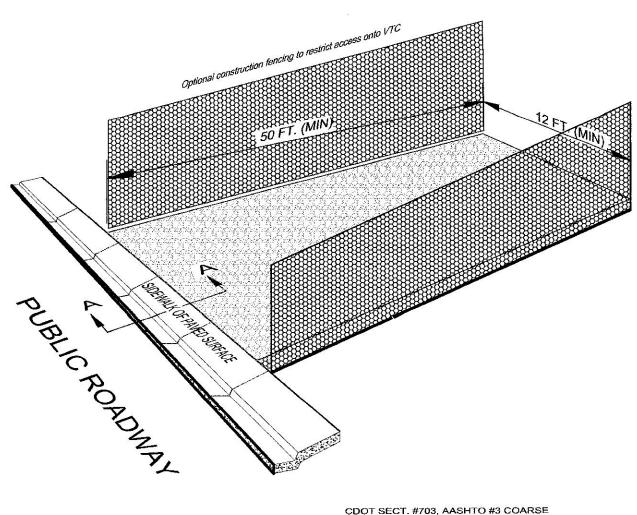
Vegetative Buffer Strips/ Maintain Existing Vegetation

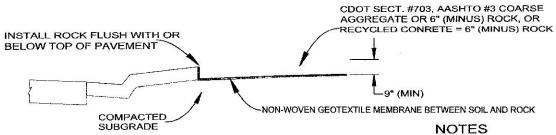
BMP Description*	Vegetative buffer strips are preexisting vegetated, landscaped or sod/seed areas that are established to reduce sheet flow over disturbed soil.
Function	Vegetative buffer strips provide a barrier zone where overland sheet flow velocity is dissipated and sediment trapped, reducing sediment discharge offsite. Vegetative buffer strips installed between the sidewalk and curb, and along the site perimeter, are particularly effective.
	Existing vegetation functions to hold soil in place and reduce erosion from overland sheet flow. Existing vegetation aids in the reductions of stormwater flow velocity on slopes and embankment.
Installation	Vegetative buffer strips are encouraged for any perimeter or environmentally sensitive areas.
	Whenever vegetation exists on a site prior to construction activities, this vegetation should be maintained as long as possible to reduce the need for temporary sediment and erosion control BMPs.
Phasing	Vegetative buffer strips and maintenance of existing vegetation may be used during all phases of construction.
Implementation	Buffer strips and maintenance of existing vegetation may be implemented by leaving pre-existing vegetation in place, planting seed, installing sod or other permanent landscaping materials.
BMP Location	For all individual lots, existing vegetation shall be maintained as long as
(List all locations of all	possible prior to construction. See site map for specific locations.
vegetative buffer strips on site)	See site map for specific rotations.
Inspections	Inspections include observation for sediment accumulation, erosion to the area, or the need to re-vegetate.
Maintenance	Maintenance would be to remove or grade out sediment, re-grade and stabilize the eroded area or plant additional seed/sod or other appropriate landscape materials. Should damage occur to a vegetative buffer strip a new or additional BMP should be considered.

Vehicle Tracking Control

BMP Description*	Vehicle tracking control may consist of a vehicle tracking pad including an excavated area with a Geotextile liner and gravel, metal grate or asphalt/concrete "rumble strip". Another form of vehicle tracking control includes limiting access to non-paved areas of the site. Utilizing street sweeping is not an adequate vehicle tracking control.
Function	Tracking control functions to reduce or eliminate tracking of sediment and mud onto paved surfaces on or adjacent the site. Vehicle tracking pads are designed to cause soil to vibrate off equipment and vehicles as they transition from disturbed soils to paved areas.
Installation	All points of ingress and egress, from where traffic transitions from a stabilized road surface (e.g. gravel or pavement) to disturbed soil, shall have a vehicle tracking control installed. The vehicle tracking control shall remain in place until access to the areas utilized by the control are stabilized or no longer needed. Tracking control may be moved or eliminated as onsite conditions and activities change.
Phasing	Vehicle tracking control may be used during all phases of construction but are generally installed prior to start of construction activities.
Implementation	During overlot grading, vehicle tracking control shall be implemented prior to construction activities for access to the site. During the vertical stage of construction vehicle tracking controls can be used for individual lot access, at concrete washout areas or staging areas.
BMP Location (List all vehicle tracking control locations on site)	Used for all areas where access is needed onto disturbed soil from paved surfaces. See site map for specific locations.
Inspections	Tracking control should be inspected for depth of gravel/rock, presence of excess soil, proper usage and the overall general condition.
Maintenance	The most common maintenance items include the removal of accumulated soil and addition of gravel/rock.

^{*} The following page(s) provide specific design and installation details. Provide these details to the BMP installer for proper installation.





SECTION A-A

- ALL ROCK TO BE REMOVED UPON COMPLETION OF CONSTRUCTION.
- 2. PUBLIC ROADWAY TO BE KEPT CLEAN AND FREE OF MUD, DIRT AND DEBRIS AT ALL TIMES.

Wind Erosion & Dust Control

BMP Description	Wind erosion and dust control are generally soil wetting techniques to reduce or prevent wind erosion and aid in dust control. Wind erosion and dust controls measure may also be the use of tackifiers, surface roughening, stabilization measures such as crimp mulching, seeding, and landscaping.
Function	Wind erosion controls function to stabilize the soil surface reducing the potential for wind erosion.
Installation	Wind erosion and dust controls shall consist of wetting exposed soils as needed and using temporary ground cover (e.g. seeding and crimp mulching). If needed, a soil tackifier can be applied or other BMPs installed to control wind erosion.
Phasing	Wind erosion and dust control measures may be used during all phases of construction where exposed soil exists.
Implementation	Wind erosion and dust controls may be necessary if wind is transporting soil within or off site.
BMP Location (List locations where wind erosion controls will be performed on site)	Watering of soils shall be a practice on all disturbed areas.
Inspections	Disturbed areas should be inspected for obvious signs of wind erosion and BMPs implemented if needed. Areas with wind erosion controls in place should be inspected for structural integrity.
Maintenance	Maintenance includes addition of water to the soil surface, or repair or replacement of other BMPs as appropriate.