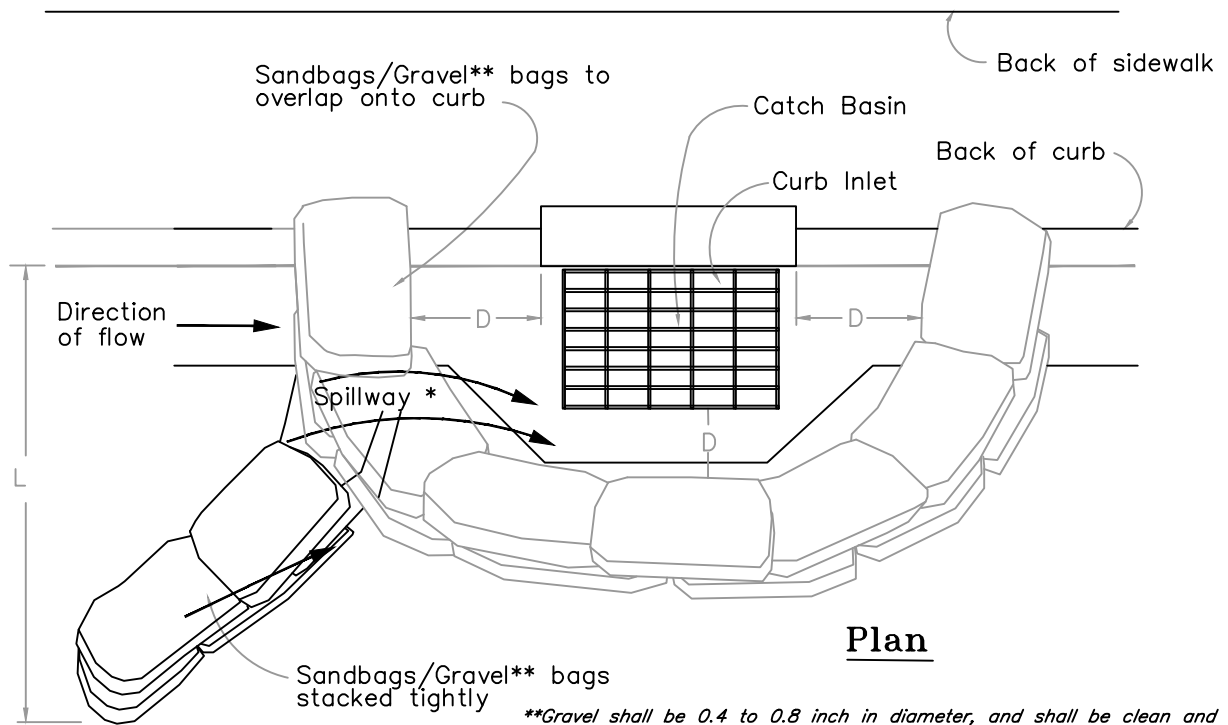


BEST MANAGEMENT PRACTICES (BMP's)

General Notes

1. *Best Management Practices (BMP's) contained herein reflect the minimum requirements. Alternate methods providing equal or greater protection may be utilized. For in depth information on BMP's refer to the California Storm Water BMP Handbooks, available at www.cabmphandbooks.com, California Department of Transportation Construction Site BMP Fact Sheets at www.dot.ca.gov/hq/construc/stormwater/factsheets.htm, and/or USEPA BMP Fact sheet @ <http://cfpub.epa.gov/npdes/stormwater>.*
2. *All construction activity shall be performed in accordance with a Stormwater Pollution Prevention Plan (SWPPP) developed and implemented in compliance with the requirements of the National Pollutant Discharge Elimination System (NPDES) Construction General Permit Order No. 2009-009-DWQ and as amended by Order No. 2010-0014-DWQ.*
3. *The SWPPP shall:*
 - a. *Identify potential pollutant sources and include the design and placement of BMP's to effectively prohibit the entry of pollutants from the construction site onto the street and/or into a storm drain system during construction.*
 - b. *Be kept on site and amended to reflect changing conditions throughout the course of construction.*
 - c. *Be kept up to date. Any additional updates requested by agency representative are to be made immediately.*
4. *Non-Stormwater discharges are prohibited from entering any storm drain system and/or street.*
5. *Discharges of pumped ground water require a discharge permit from the State of California Regional Water Quality Control Board (RWQCB).*
6. *Pollutants shall be removed from stormwater discharges to the Maximum Extent Practicable (MEP) through design & implementation of the SWPPP.*
7. *A standby crew for emergency work shall be available at all times during the wet weather season, which is typically Oct 1 through May 30. Necessary materials shall be available on site and stockpiled at convenient locations to facilitate rapid construction of emergency devices when rain is imminent.*
8. *Portable sanitary facilities shall be located on relatively level ground away from traffic areas, drainage courses, and storm drain inlets.*
9. *Employees, subcontractors and suppliers shall be educated on all BMP's including concrete waste storage and disposal procedures.*
10. *Sediment control practices shall effectively prevent a net increase of sediment load in stormwater discharge.*

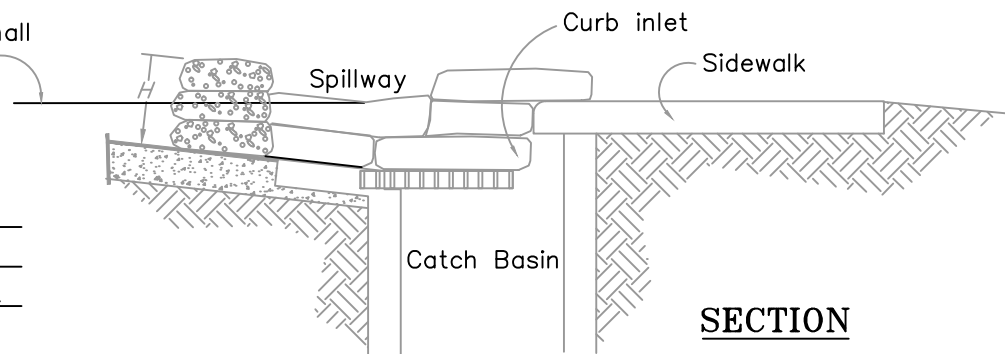
Revisions		DATE:	COUNTY OF KERN STATE OF CALIFORNIA DEVELOPMENT STANDARD	NPDES BMP SEDIMENT AND EROSION CONTROL	PLATE NO. BMP 1
Date	Desc	06/16/2003			
5/12	UPDATE	DESIGNED BY:			
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****Gravel shall be 0.4 to 0.8 inch in diameter, and shall be clean and free from clay balls, organic matter, and other deleterious materials.**

* Spillway elevation shall match top of curb

D = 12" Min.
H = 8" Min.
L = 36" Max.



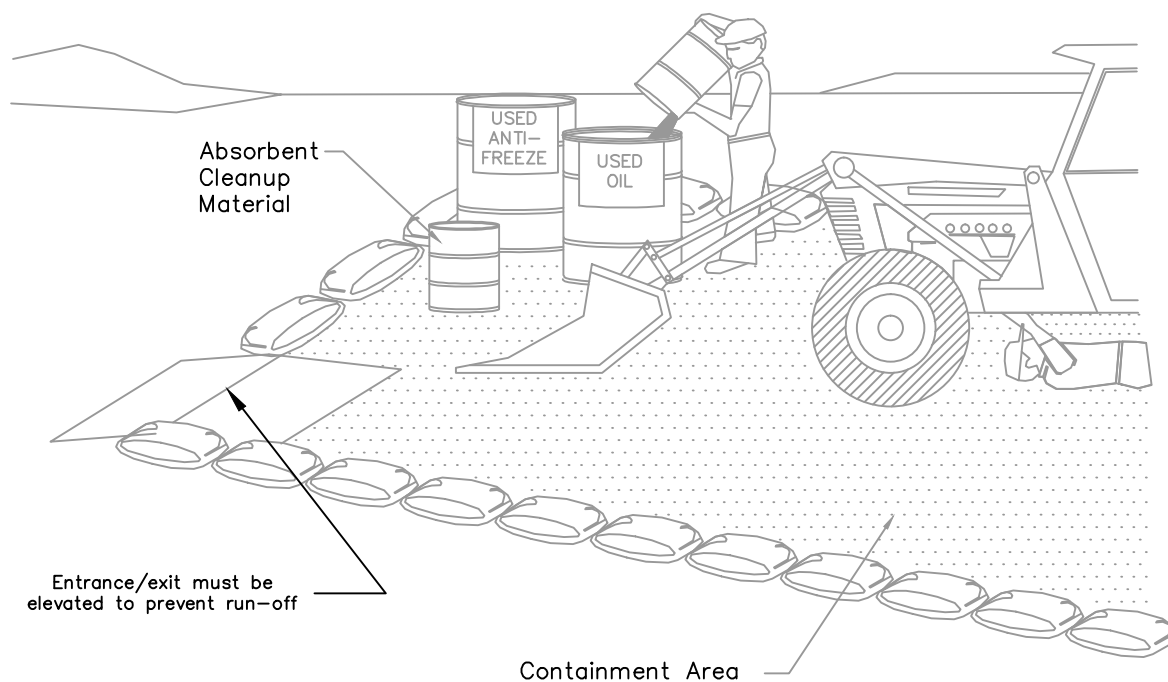
Notes:

1. Catch Basin/Inlet protection shall be installed wherever there is a potential of stormwater or non-stormwater being discharged into it.
2. Inlet protection is required along with other pollution prevention measures such as; erosion control, soil stabilization, and measures to prevent tracking onto paved surfaces.
3. Modify inlet protection as needed to avoid creating traffic hazards.
4. Include inlet protection measures at hillside v-ditches and misc. drainage swales.
5. Inlet protection shall be inspected and accumulated sediments removed. Sediment shall be disposed of properly and in a manner that assures that the sediment does not enter the storm drain system
6. Damaged bags shall be replaced immediately.
7. Additional sandbag sediment traps shall be placed at intervals as indicated on site plan.



CATCH BASIN/INLET PROTECTION

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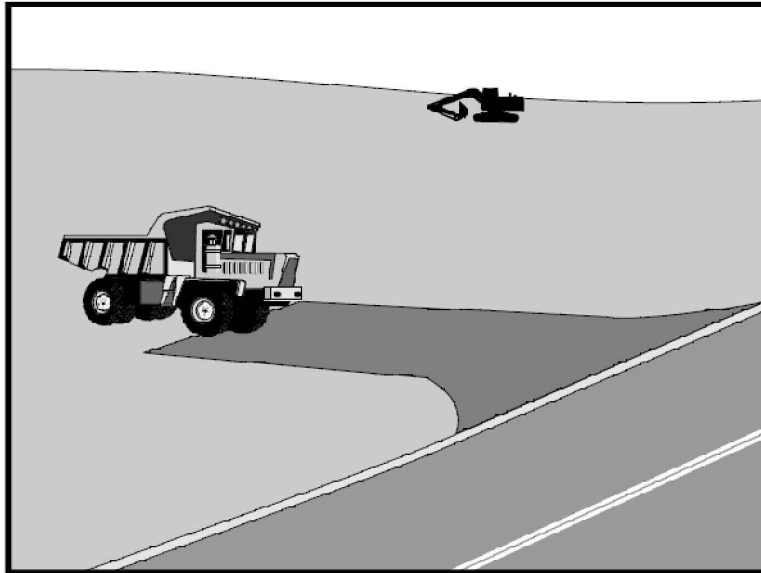
Notes:

1. Leaking vehicles and equipment shall not be allowed onsite. Equipment and vehicles shall be inspected frequently for leaks and shall be repaired immediately. Clean up spills and leaks promptly with absorbent materials; do not flush with water.
2. Vehicles and equipment shall be maintained, and repaired onsite only in designated areas. Prevent run-on and run-off from designated areas. Containment devices shall be provided and areas shall be covered if necessary.
3. Designate onsite vehicle and equipment maintenance areas, away from storm drain inlets and watercourses.
4. Always use secondary containment, such as a drain pan or drop cloth, to catch spills and leaks when removing or changing fluids.
5. Legally dispose of used oils, fluids, lubricants, and batteries.
6. Provide spill containment dikes or secondary containment around stored oil, fuel, and chemical drums.
7. Maintain an adequate supply of absorbent spill cleanup materials in designated area.
8. It is the contractors responsibility to regularly inspect the vehicle and equipment maintenance area(s).



EQUIPMENT MAINTENANCE AREAS

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Date	Desc	06/16/2003			
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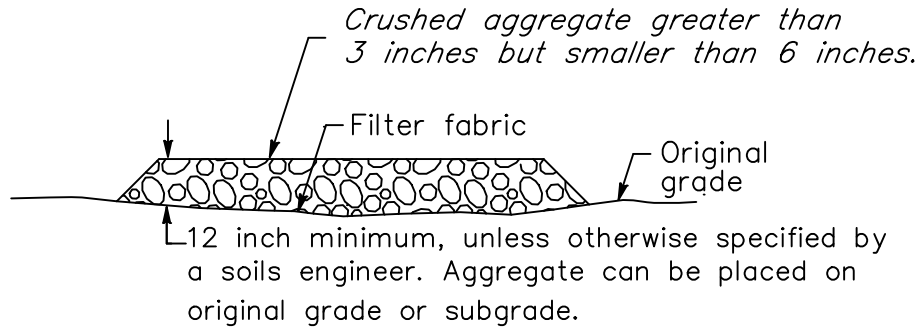
Notes:

1. Sediments and other materials shall not be tracked from the site by vehicle traffic. The construction entrance roadways shall be stabilized so as to prevent sediments from being deposited into the public roads. Sediment deposited on the roadway must be swept up immediately and may not be washed down by rain or other means into the storm drain system. See Type 1 and Type 2 details.
2. Stabilized construction entrance shall be:
 - a. Located at any point where traffic will be entering or leaving a construction site to or from a public right of way, street, alley, and sidewalk or parking area.
 - b. A series of steel plates with "rumble strips", and/or min >3" to <6" crushed aggregate with length, width & thickness as needed to adequately prevent any tracking onto paved surfaces.
3. Adding a wash rack with a sediment trap large enough to collect all wash water can greatly improve efficiency.
4. All vehicles accessing the construction site shall utilize the stabilized construction entrance sites.
 - a. Remove all sediment deposited on paved roadways immediately.
 - b. Sweep paved areas that receive construction traffic whenever sediment becomes visible.
 - c. Pavement washing with water is prohibited if it results in a discharge to the storm drain system.

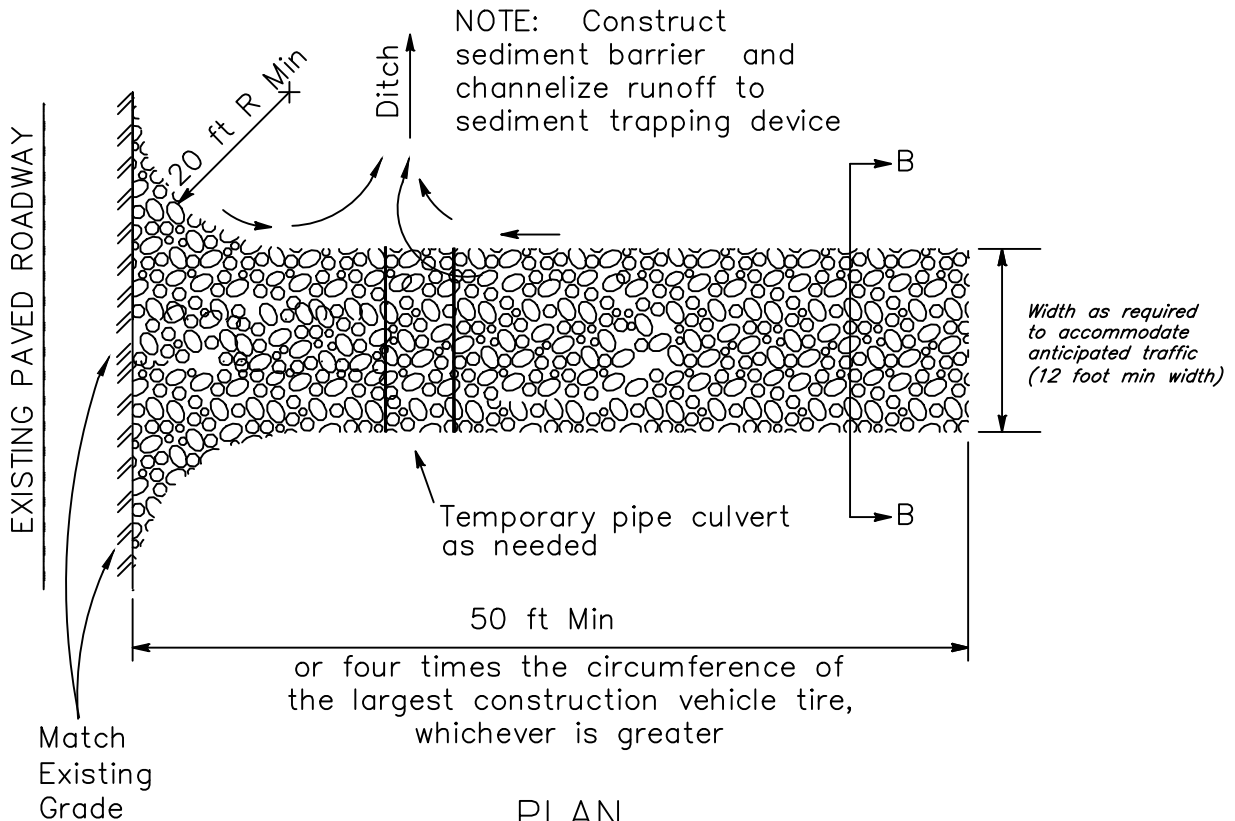


STABILIZED CONSTRUCTION ENTRANCE/EXIT

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SECTION B-B
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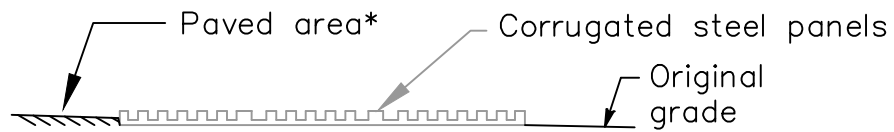


PLAN
NTS

TYPE 1 GRAVEL ENTRANCE/EXIT

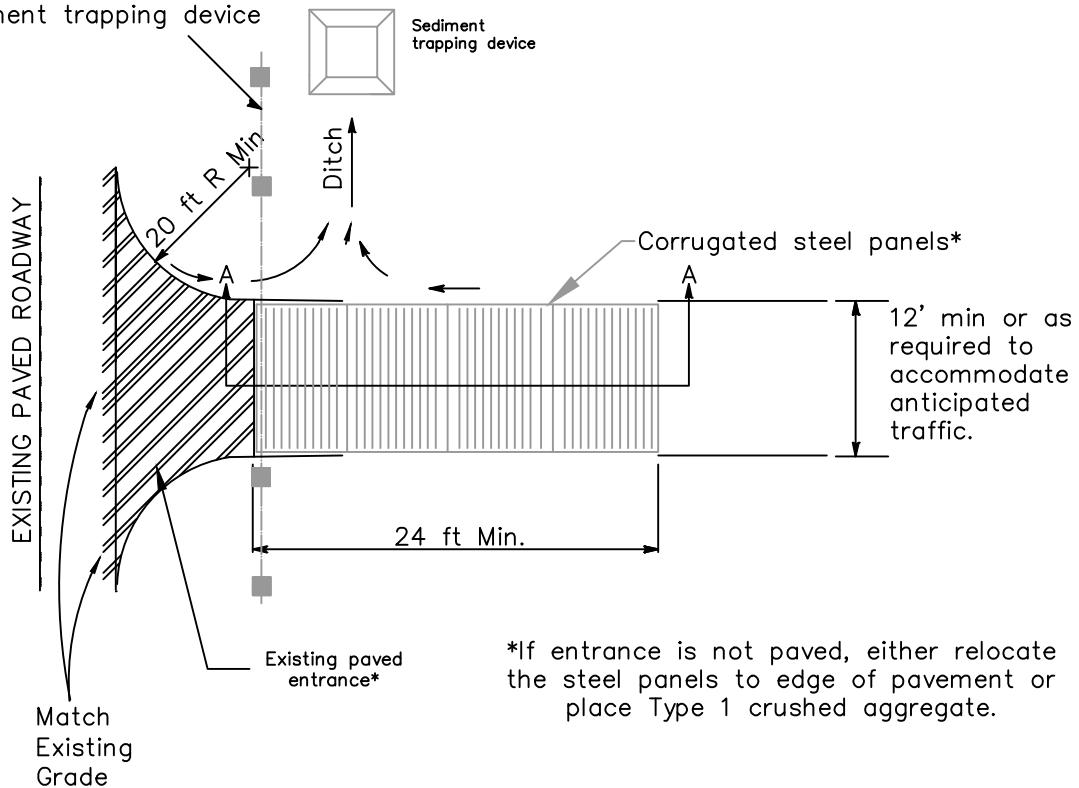
C-1 STABILIZED CONSTRUCTION ENTRANCE/EXIT

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SECTION A-A
NOT TO SCALE

NOTE:
Construct sediment barrier
and channelize runoff to
sediment trapping device



PLAN
NTS

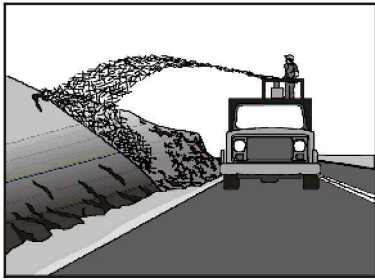
TYPE 2 ALTERNATIVE ENTRANCE/EXIT

use of corrugated steel plates, shaker plates, rumble plates, etc.

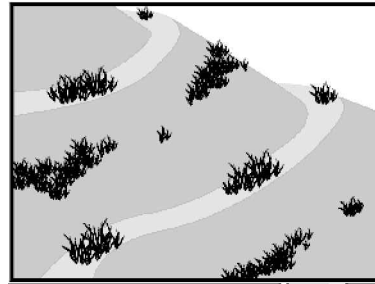
C-2

STABILIZED CONSTRUCTION ENTRANCE/EXIT

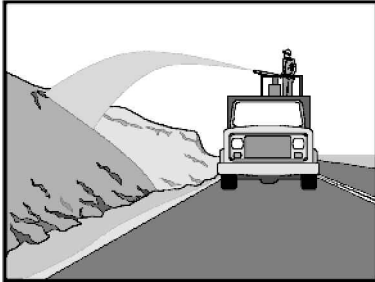
Revisions Date Desc 5/12 UPDATE	DATE: 03/19/23 DESIGNED BY: KH DRAWN BY: BH CHECKED BY: GF	COUNTY OF KERN STATE OF CALIFORNIA DEVELOPMENT STANDARD	NPDES BMP SEDIMENT AND EROSION CONTROL	PLATE NO. BMP C-2
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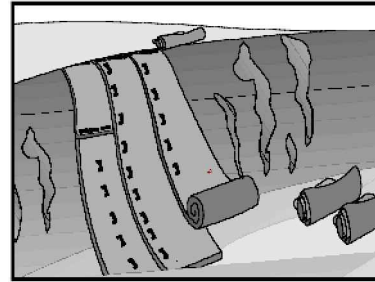
Straw Mulch



Hydroseeding



Hydraulic Mulch



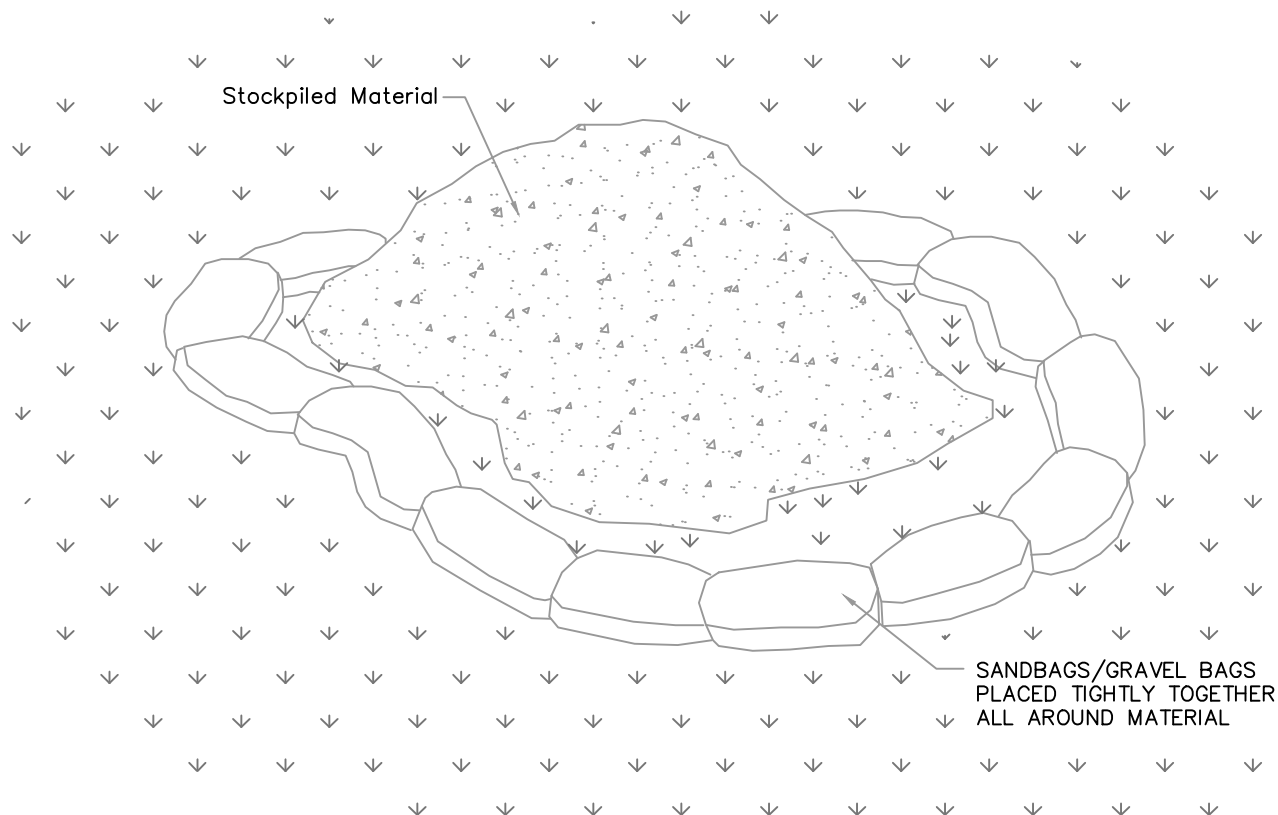
Geotextiles, Mats, Plastic Covers and Erosion Control Blankets

Notes:

1. Soil/Slope stabilization practices shall be designed to preserve existing vegetation where feasible and to revegetate open areas as soon as feasible after grading. These control practices shall include temporary seeding, permanent seeding, mulching, sod stabilization, vegetative buffer strips, protection of trees, or other soil stabilization practices.
2. Soil stabilization shall be implemented on all inactive disturbed areas from October 1 thru May 30 and on all disturbed areas during a rain event or potential rain.
3. Stabilization practices shall control/prevent erosion from the forces of wind and water.
4. Stabilization practices shall be implemented in conjunction with sediment trapping/filtering practices and practices to reduce the tracking of sediment onto paved roads.
5. When using straw mulching, the minimum application shall be 2 tons/acre. Mulch must be anchored immediately to minimize loss by wind or water.
6. When using hydroseeding/mulching, the minimum, application of wood fiber shall be 1,500 lbs/acre, that does not contain more than 50 percent newsprint.
7. For seeding recommendations, contact: USDA, Natural Resources Conservation Service at 5000 California Avenue, Bakersfield, CA 93309-0725. Phone: (661) 336-0967.
8. When using hydraulic mulch, the application shall be between 1 to 2 tons per acre.
9. Geotextiles, mats, plastic covers and erosion control blankets should be considered when disturbed soils may be particularly difficult to stabilize.
10. For geotextiles, mats, and erosion control blankets, installation should be in accordance with manufactures recommendations. Typically overlap of geotextiles/mats edges is 2 to 3 in. and stapled every 6 in. When blankets are to be spliced, place blankets end-over-end (shingle style) with 6 in. overlap and staple through overlapped area, approximately 12 in. apart.

D EROSION CONTROL

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Notes:

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

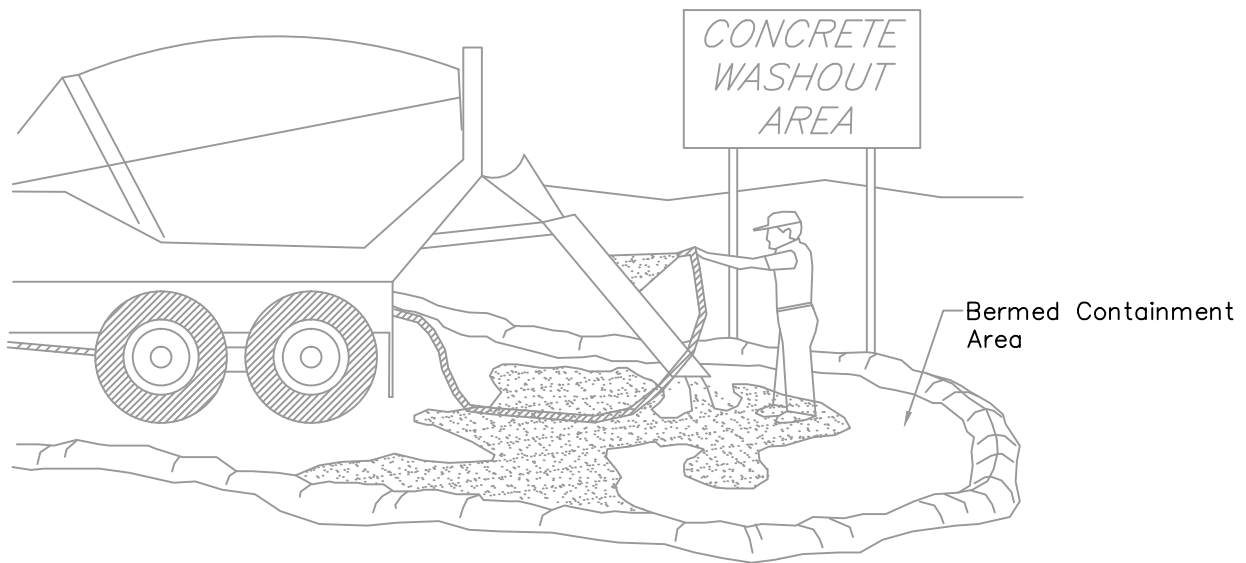
Notes:

- 1. Protection of stockpiles is a year-round requirement.*
- 2. Locate stockpiles a minimum of 50 feet away from concentrated flows of storm water, drainage courses, and drain inlets.*
- 3. Implement wind erosion/transport control practices as appropriate.*
- 4. All stockpiles shall be covered, stabilized, or protected with a temporary linear barrier (i.e. sandbags, etc.) prior to the onset of precipitation.*



MATERIAL STORAGE

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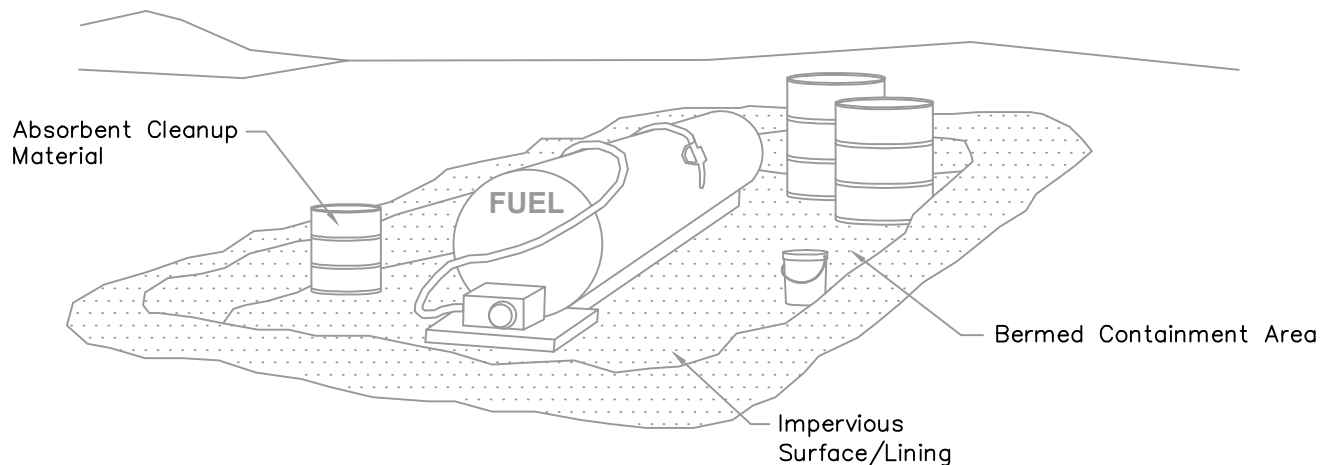
Notes:

1. Excess and waste concrete shall not be washed into the street or into a drainage system.
2. For washout of concrete and mortar products, a designated containment facility of sufficient capacity to retain liquid and solid waste shall be provided on site and disposed of properly off site.
3. Slurry from concrete and asphalt saw cutting shall be vacuumed or contained, dried, picked up and disposed of properly.



CONCRETE WASTE MANAGEMENT

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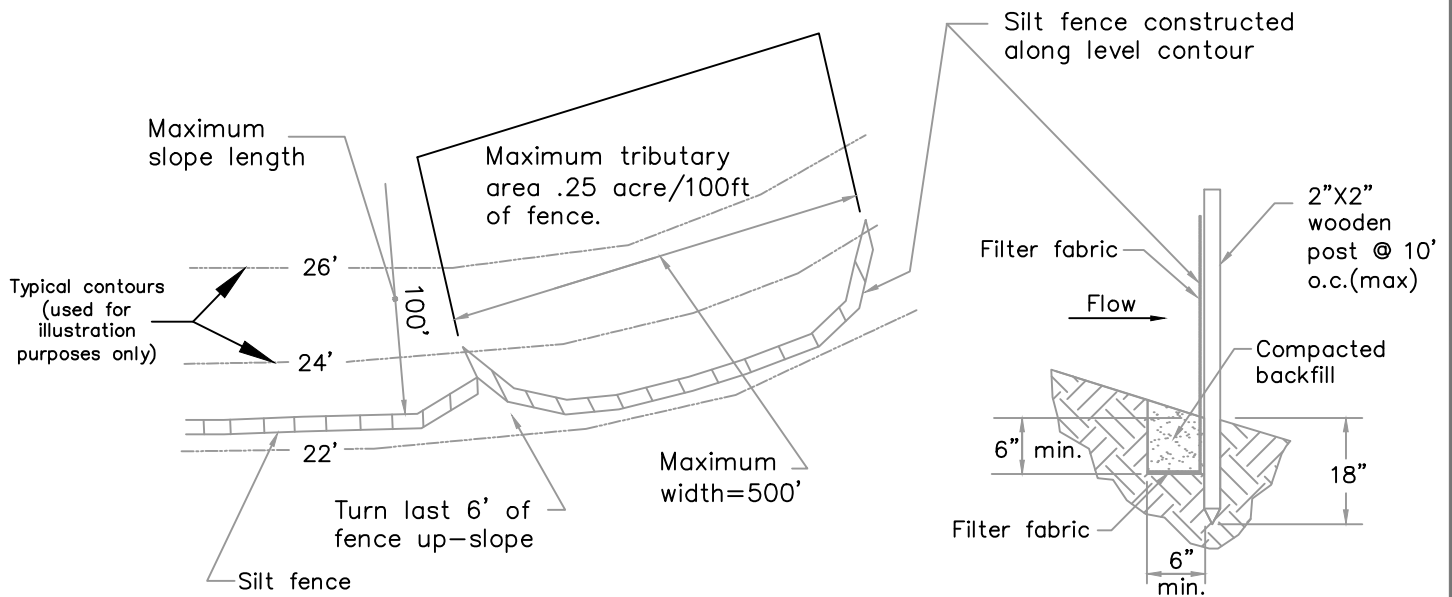
Notes:

1. Fueling shall be performed in a designated area, away from drainage courses.
2. Absorbent cleanup material shall be on site and used immediately in the event of a spill.
3. Drip pans or absorbent pads shall be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area.
4. Dedicated fueling areas shall be protected from storm water run-on and runoff, and shall be located at least 50 feet from downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
5. Protect fueling areas with berms and/or dikes to prevent run-on, runoff, and to contain spills.



VEHICLE/ EQUIPMENT FUELING

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Date	Desc	06/16/2003			
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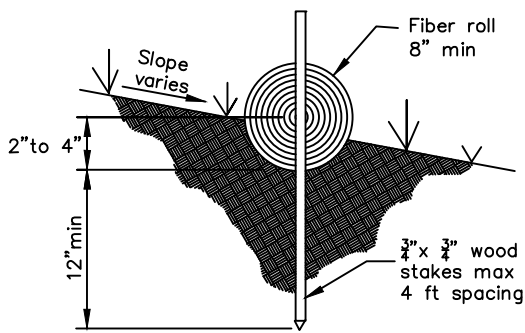


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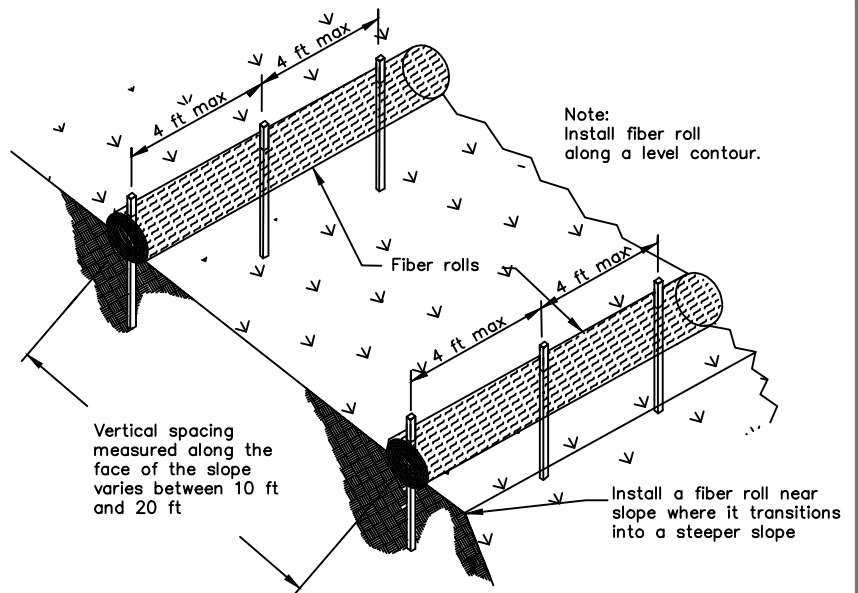
1. Construct the silt fence along a level contour.
2. Silt fences shall remain in place until the disturbed area is permanently stabilized.
3. Provide sufficient room for runoff to pond behind the fence and allow sediment removal equipment to pass between the silt fence and toe of slope or other obstructions. About 1200 sq. ft. of ponding area shall be provided for every acre draining to the fence.
4. Turn the ends of the filter fence uphill to prevent stormwater from flowing around the fence.
5. Leave an undisturbed or stabilized area immediately downslope from the fence.
6. Do not place in live stream or intermittently flowing channels.
7. When standard filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy-duty (0.6 inch) wire staples at least 1.75 inches long, tie wires or hog rings.
8. Filter fabric shall be woven polypropylene geotextile with a minimum width of 36 inches and a minimum tensile strength of 100 lb force.
9. Wood stakes shall be commercial quality lumber no less than 2 inch by 2 inch. Wood stakes shall be driven to a depth of no less than 18 inches from surface.



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ENTRENCHMENT DETAIL
N.T.S.



TYPICAL FIBER ROLL INSTALLATION
N.T.S.

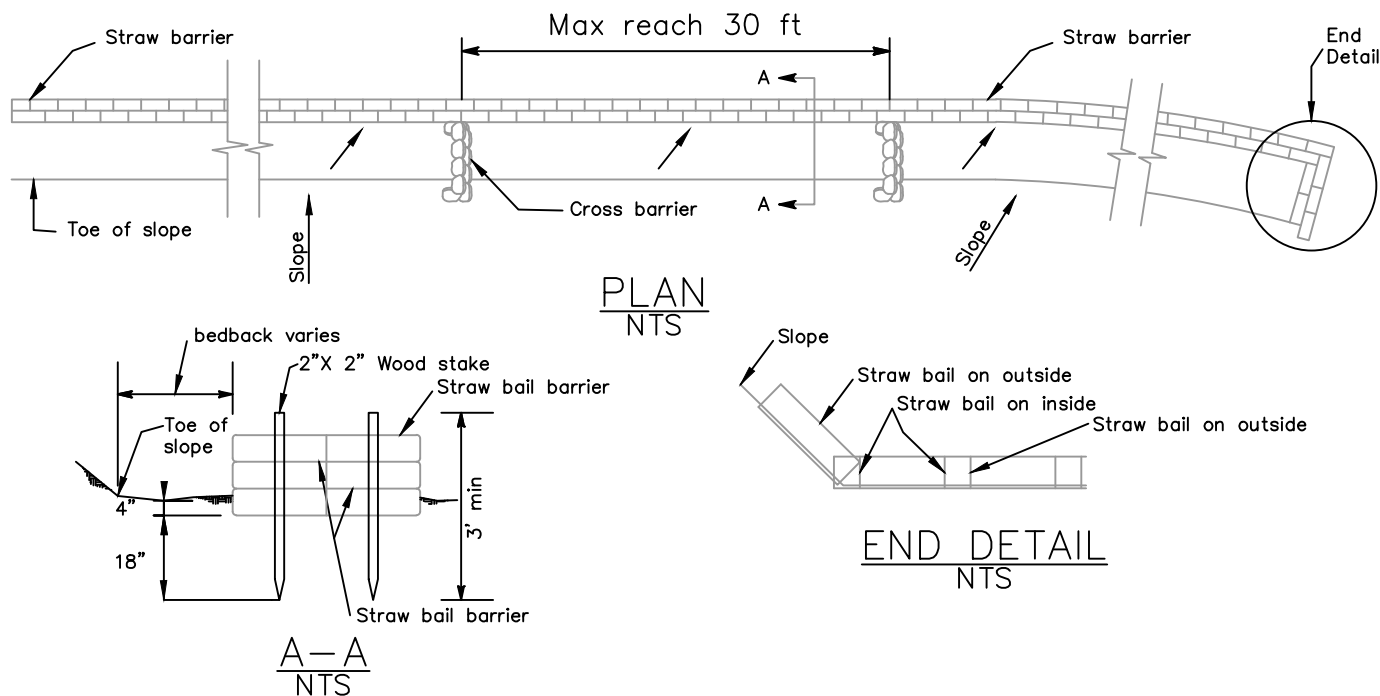
Notes:

1. Place along the toe, top, face, and at grade breaks of exposed and erodible slopes.
2. Place on the down-slope of exposed soil areas.
3. Place around temporary stockpiles.
4. Place along the perimeter of a project.
5. Slopes greater than 1:5 may require the use of 20 inch diameter fiber rolls at the top of slopes.
6. Fiber rolls shall be either prefabricated or rolled tubes of erosion control blankets with a minimum 8 inch diameter.
7. Slopes 1:4 or flatter require fiber rolls to be placed no more than 20 feet apart.
8. Slopes 1:4 to 1:2 require fiber rolls to be placed no more than 15 feet apart.
9. Slopes 1:2 or greater require fiber rolls to be placed no more than 10 feet apart.
10. Fiber rolls shall be placed in a 2 to 4 inch deep trench.
11. Wooden commercial grade stakes, $\frac{3}{4}$ " X $\frac{3}{4}$ ", shall be used to secure the fiber roll to the ground surface. Stakes shall be a minimum length of 24 inches and driven a minimum of 12 inches.
12. A single-stake installation requires the stakes to be placed no more than 2 feet apart.
13. If more than one fiber roll is placed in a row, the rolls shall be overlapped, not abutted, a minimum of 1 foot.



FIBER ROLL

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A straw bale barrier is a temporary linear sediment barrier consisting of straw bales, designed to intercept and slow sediment laden sheet flow runoff. Straw bale barriers allow sediment to settle from runoff before water leaves the construction site.

Notes:

1. Place along the perimeter of a site, streams and channels, and/or around stockpiles.
2. Place below the toe of exposed and erodible slopes.
3. Place down slope of exposed soil areas.
4. Place parallel to roadway to keep sediment off paved areas.
5. Do not use for drain inlet protection or in areas of concentrated flows.
6. Straw bale to be a minimum of 14 inches wide, 18 inches in height and 36 inches in length.
7. Shall be composed entirely of vegetative material, except for the binding material.
8. Bale bindings shall be either steel wire, nylon or polypropylene string placed horizontally.
9. Commercial quality lumber shall be used for 2 inch by 2 inch wood stakes of adequate length.
10. Limit the drainage area upstream of the barrier to 0.25ac/100 ft.
11. Limit the slope length draining to the straw bale barrier to 100ft.
12. Slopes of 2% or flatter are preferred.
13. If slope exceeds 10%, the length of the slope upstream of the barrier must be less than 50 ft.
14. Install straw barrier along a level contour, in a trench and tightly about adjacent bales.
15. Last straw bale on end needs to be turned up slope.
16. Inspect straw bale barriers before and after each rain event.
17. Inspect straw bale barriers for sediment accumulations and remove sediment when depth reaches one third of the barrier height.
18. Replace or repair damaged bales as needed.



STRAW BALE BARRIER

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