

PROCEDURES

BEST MANAGEMENT PRACTICES (BMPs)

10.0 PURPOSE

The purpose of this section is to establish the minimum requirements for Best management Practices (BMPs) to be exercised during to construction, operations and maintenance of the gas system so as to protect environmental quality.

10.1 SCOPE

- A. Every effort shall be taken to protect environment quality in and around gas installation and repair work. This may include but not be limited to the use of weed free straw bails, filter fabric fencing, and / or other methods for:
1. Erosion control
 2. Inlet protection
 3. Slope stabilization
 4. Mulching
- B. Construction plans shall include full restoration of disturbed surfaces to pre-construction conditions.

10.2 EROSION CONTROL

- A. Prevention and Control of Pollution from Toxic Materials:
1. Dispose of wastes in accordance with Federal, State and Local regulations.
 2. Do not apply asphalt sealer, emulsified asphalt, or solvents before precipitation events (rain or snow).
 3. Do not leave tools or equipment in the dirt, street, gutter, storm drain or stream.
- B. Erosion and Sediment Control Practices:
1. General Practices:
 - Clearing and grading to be only as far in advance of work as reasonably required.
 - Wherever possible, plants and trees need to be protected and preserved.
 - Construction of BMPs (silt fences, etc.) should be placed in advance of disturbance.
 - Re-grading, reclamation and reseeding should follow as closely as possible after completion of pipeline construction and testing activity.
 - BMP removal only after completion of reclamation.

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2. Housekeeping:
 - Keep adjacent roadway and sidewalks free of dirt, mud or other materials subject to tracking by vehicles or foot traffic.
 - Sweep, shovel or otherwise clear dirt, mud or other materials subject to mobilization by rainfall as needed in anticipation of predicted or observed approaching precipitation events.
 - Sweep, shovel or otherwise clear dirt, mud or other materials subject to mobilization by rainfall at the close of construction each day.
3. Training:
 - Employees shall be trained in the purpose, construction and maintenance of BMPs.
 - Employees shall be familiar with BMPs and be alert to conditions that may result in uncontrolled runoff.
 - Supervisory personnel shall be trained to inspect all storm water runoff controls each day, including both general practices and BMPs.

10.3 SOIL STABILIZATION PRACTICES

- A. General Revegetation Requirements:
 1. Obtain the written recommendations of the local soil conservation authorities regarding the need for and the amount of fertilizer and soil pH modifying agents.
 2. These materials are to be applied in accordance with the written recommendations obtained.
 3. If manure is applied, the nitrogen application shall be reduced by half for each 10 tons/acre of manure applied.
 4. Where possible, incorporate soil pH modifying agents and fertilizer into the top 2 inches of soil.
 5. Prepare a firm seedbed in disturbed areas to a depth of 3 to 4 inches using appropriate equipment. If hydroseeding is to be done, scarify the seedbed to facilitate lodging and germination of the seed.
 6. The project area should be seeded in accordance with written recommendations on seeding mixes, rates and dates obtained from the local soil conservation authority. Alternative seed mixes specifically requested by the landowner or land-managing agency may be used. Any soil disturbance that occurs outside of the recommended vegetation shall be treated as a winter construction problem and mulched as described later. Except in lawns, all seeding of permanent cover should be done

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within the recommended seeding dates. If seeding cannot be done within those dates, temporary erosion control measures shall be done at the beginning of the next recommended seeding season.

7. Seed slopes steeper than 33 percent immediately after final grading, weather permitting, subject to the limitations addressed above in the General Requirements section.
8. Seed rights-of-way within 10 working days of final grading, weather and soil conditions permitting, subject to the limitations addressed in the limitations addressed above in the General Requirements section.
9. Develop specific procedures in coordination with the appropriate agency to prevent the introduction or spread of noxious weeds and soil pests resulting from construction and restoration activities.

B. Temporary Erosion Control Measures:

1. In the event that final cleanup is deferred more than 10 days after the trench is backfilled, all slopes adjacent to wetlands and water bodies shall be mulched with 2 tons/acre of hay or straw, or its equivalent, for a minimum of 100 feet on each side of the wetland or water body. Mulch other areas as described in the section on mulching.
2. All Best Management Practices (BMPs) shall be installed and maintained.

C. Seed Specifications:

1. Purchase seed in accordance with the pure live seed (PLS) specifications for seed mixes.
2. Seed should be used within 12 months of acquisition
3. Treat legume seed with an inoculant specific to the species. For conventional seeding, use 4 times the manufacturer's recommended rate of inoculant, and 10 times the recommended rate if hydroseeding methods are being used.
4. Uniformly apply and cover seed in accordance with the written recommendations of the local soil conservation authorities. A seed drill equipped with a cultipacker is preferred for application, but broadcast or hydroseeding can be used at double the recommended seeding rates. Where broadcast seeding is used, firm the seedbed with a cultipacker or roller after seeding.

D. Mulch Specifications:

1. Mulch all dry sandy sites and all slopes greater than 8 percent with 2 tons/acre of straw or hay or its equivalent. Clearing slash and other native materials including rock may be used.
2. Spread mulch uniformly over the area so that at least 75 percent of the

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- ground surface is covered.
3. Anchor loose mulch immediately after placing to minimize loss by wind and water. Use a mulch-anchoring tool to crimp the mulch to a depth of 2 to 3 inches. A regular farm disc should not be used.
 4. Mulch may also be anchored using a liquid mulch binder, except within 100 feet of wetlands or water bodies. Synthetic binders should be used at rates recommended by the manufacturer. Use caution in residential areas or areas of pedestrian traffic, because asphaltic and some synthetic binders can damage shoes, clothing and automobile paint.
 5. Use jute thatching or bonded fiber blankets (instead of straw or hay) on banks of water-bodies to stabilize seeded areas. Anchor the thatching with pegs or staples.

10.4 CONTROLLING RUNOFF

- A. Silt Fences:
1. Silt fences are particularly well suited to linear construction projects because they too are linear construction.
 2. Silt fences should be constructed according to specifications set forth in the Erosion and Sediment Control Field Manual published by the California Regional Water Quality Control Board-San Francisco Bay Region, or equivalent. See drawing titled “Erosion and Sediment Transport Best Management Practices.”
- B. Straw Bale Dike:
1. Straw bail dikes can be good temporary barriers.
 2. Straw bail dikes should be constructed according to specifications set forth in the Erosion and Sediment Control Field Manual published by the California Regional Water Quality Control Board-San Francisco Bay Region, or equivalent. See drawing titled “Erosion and Sediment Transport Best Management Practices.”
- C. Storm Drain Inlet Protection:
1. Elevated barriers can be temporarily installed around storm drains to prevent silt-laden water from discharging directly. The elevated drain protection allows silt to settle before water entering the drain. The construction contractor can retrieve and manage the collected silt in a suitable manner following the storm event. See drawing titled “Erosion and Sediment Transport Best Management Practices.”

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- D. Pre-construction Control Practices:
1. The predominant pre-construction control is street paving with curbs, gutters and a storm-water collection and control system. Collected storm water flows to nearby creeks and channels and rivers.
 2. Local waterways generally follow well-established creek beds. These streams cross roads in concrete boxes and galvanized steel culverts.
 3. A field survey should be conducted in advance of construction to identify areas where stream run-on might affect construction storm water control.
 4. Pipeline construction BMPs will minimize run-on from road and roadside surfaces. BMPs will also minimize flow of sediment-laden waters into the storm water system.
 5. Some areas have no curb, gutters or other controls. These areas may require special attention and additional control measures to prevent run-on.

10.5 DUST CONTROL

- A. Air quality may be impacted during construction by emissions from construction equipment and from fugitive dust from earth moving or stockpiling. Neither is normally significant. Both are temporary.
- B. Using modern equipment in good repair can best minimize emissions from construction equipment.
- C. Maintaining existing vegetation, mulching, and revegetation will minimize fugitive dust in the long term. (See “Erosion and Sediment Control Practices”)
- D. Good housekeeping during construction, i.e., minimizing dirt on traffic surfaces, and proper cleanup will best control fugitive dust in the short term. (See “Erosion and Sediment Control Practices”)
- E. Other measures, such as applying water to disturbed areas and stockpiles, should be considered if fugitive dust emissions from those sources become a problem in the judgment of the environmental supervisor. These techniques are well established and need not be further described here.

10.6 CONSTRUCTION VEHICLES AND EQUIPMENT

- A. Maintenance:

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1. Maintain all construction equipment to prevent oil or other fluid leaks.
 2. Keep vehicles and equipment clean; prevent excessive build-up of oil and grease.
 3. Use off-site repair shops.
 4. Keep stockpiled spill cleanup materials readily accessible.
 5. Regularly inspect on-site vehicles and equipment for leaks and repair immediately.
 6. Check incoming vehicles and equipment (including delivery trucks and employee and subcontractor vehicles) for leaking oil and fluids.
 7. Do not allow leaking vehicles or equipment on-site.
 8. Segregate and recycle wastes, such as greases, used oil or oil filters, anti-freeze, cleaning solutions, automotive batteries, hydraulic, and transmission fluids.
- B. Fueling:
1. If fueling must occur on-site, use designated areas away from drainage.
 2. Locate on-site fuel storage tanks within a bermed area designed to hold the tank volume. (No on-site fuel storage planned at this time)
 3. Cover retention area with an impervious material and install it in a manner to ensure that any spills will be contained in the retention area.
 4. Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
 5. Use drip pans for any oil or fluid changes.
- C. Washing
1. Use as little water as possible to avoid installing erosion and sediment controls for the wash area.
 2. If washing must occur on-site, use designated bermed wash areas to prevent wastewater discharge into storm water, creeks, rivers, and other water bodies.
 3. Use phosphate-free, biodegradable soaps.
 4. Do not permit steam cleaning on any construction site.

10.7 HAZARDOUS MATERIALS

- A. Some materials used in the construction and maintenance of gas pipeline and pipeline facilities that may be present at the construction site or in construction yards may be detrimental to groundwater. Exposure of these materials to

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precipitation could result in their mobilization and contribution to storm water pollution.

1. Pipe and pipeline appurtenances containing packaging materials such as grease or other corrosion protective materials.
3. Steel pipeline coating material, coating compound, or primer.
4. CAD welding materials.
5. General construction materials including sand, gravel, cement, asphalt, and others.

B Minimization Methods:

1. Supervisors will endeavor to minimize quantities of materials stored in on construction sites or site yards.
2. Only the amount of material needed for each day's activities should be stored at the construction site.
3. Likewise, unused materials will be returned to the construction yard after each day's work.
4. Excavation and backfill materials on site shall be protected to prevent discharges during a rain event.
5. Keep chemicals in their original containers and well labeled at all times.
6. Surplus or waste earthen materials will be disposed of at a local landfill.

10.8 NON-STORM WATER MANAGEMENT

A. Dewatering:

1. Discharging sediment-laden water from a dewatering site into any water of the state without filtration is strictly prohibited.
2. Water from a dewatering site shall be sent to a "High and Dry Site".
3. Listed below are several approved methods for filtering sediment-laden water that must be removed from construction sites using dewatering pumps:

B Hydrostatic Testing:

1. All hydrostatic tests shall be conducted such that water is either reused or disposed of in compliance with all applicable rules and regulations.
2. Hydrostatic test water cannot be discharged to waters of the State or tributaries thereto.
3. Drying of the pipeline shall be accomplished by means of pigging. No hazardous materials shall be used for drying purposes.

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Filter Box

Simple box with filter media. Provides portable filtering capability for low-flow applications.

Portable Sediment Tank



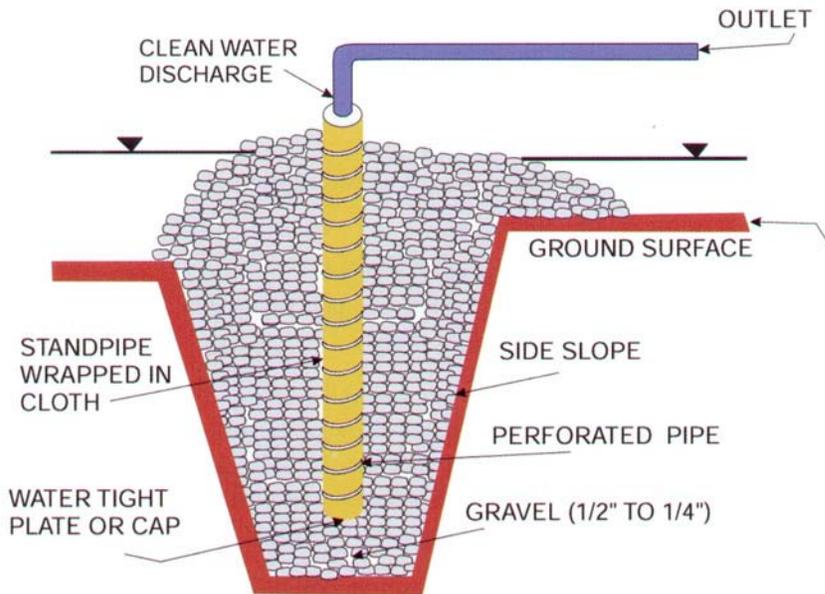
Dewatering Pit

Similar to Filter Box, but larger capacity.

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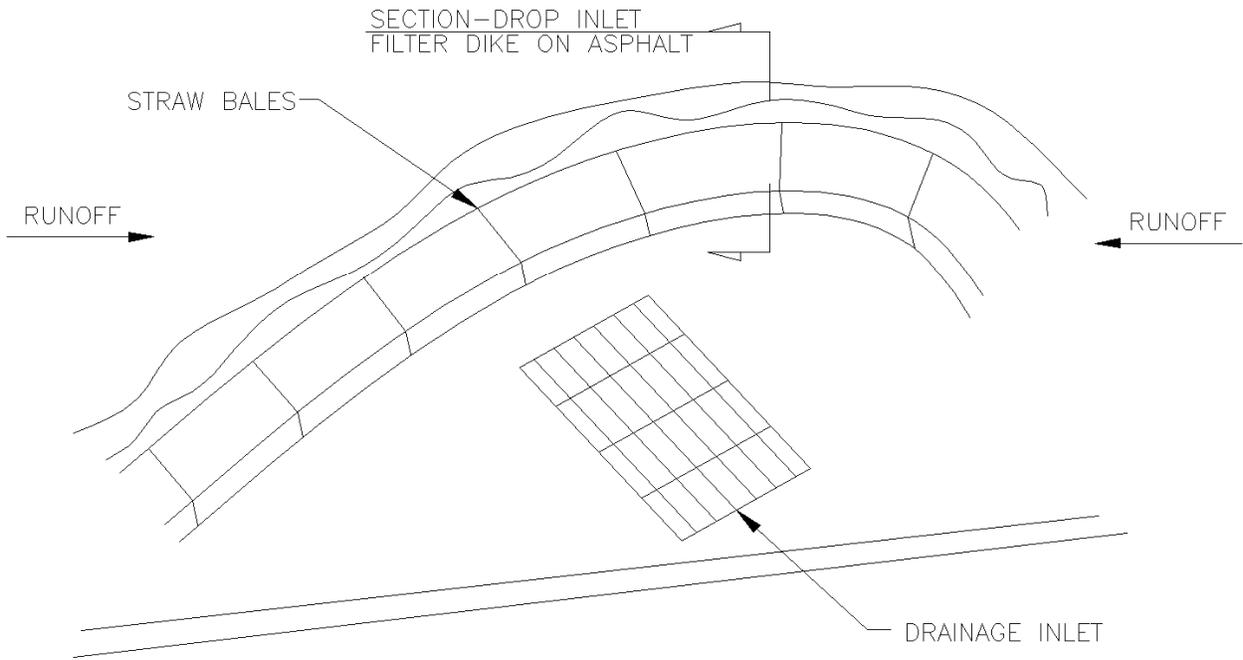
Sediment-laden water flows first into dewatering pit. Clarified water discharges.



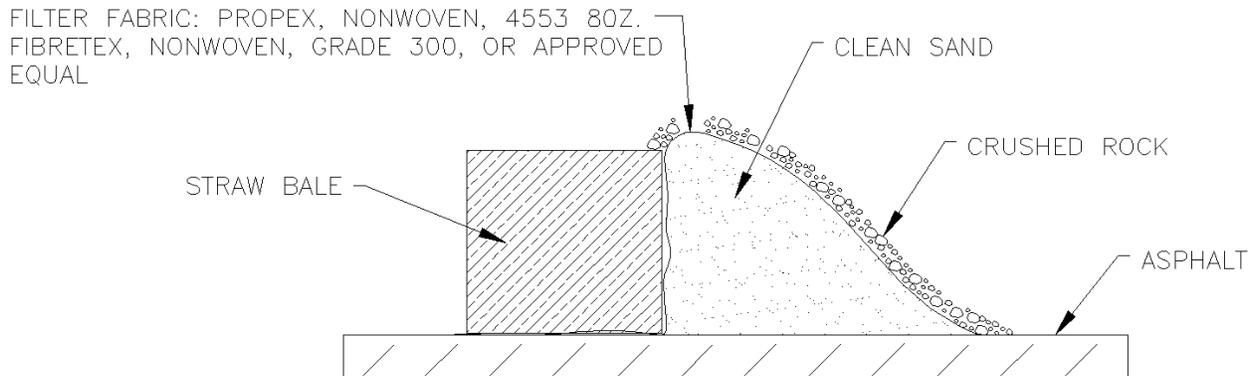
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DETAIL-DROP INLET FILTER DIKE ON ASPHALT



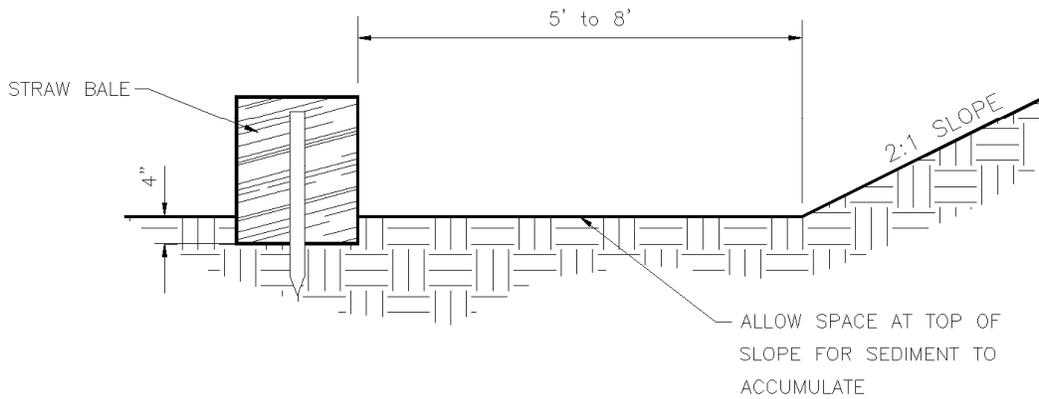
SECTION-DROP INLET FILTER DIKE ON ASPHALT



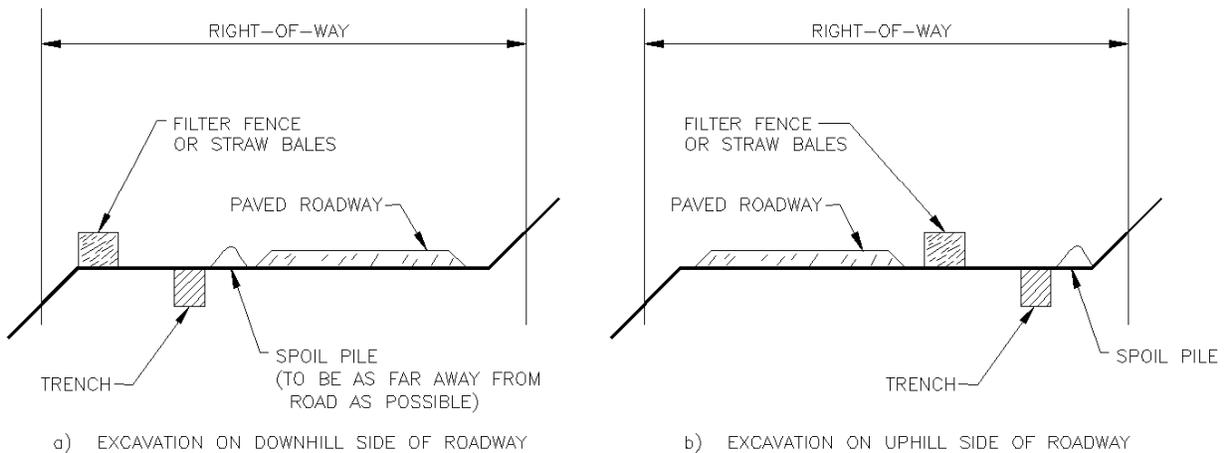
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DETAIL-STRAW BALE DIKE



DETAIL-EROSION CONTROL

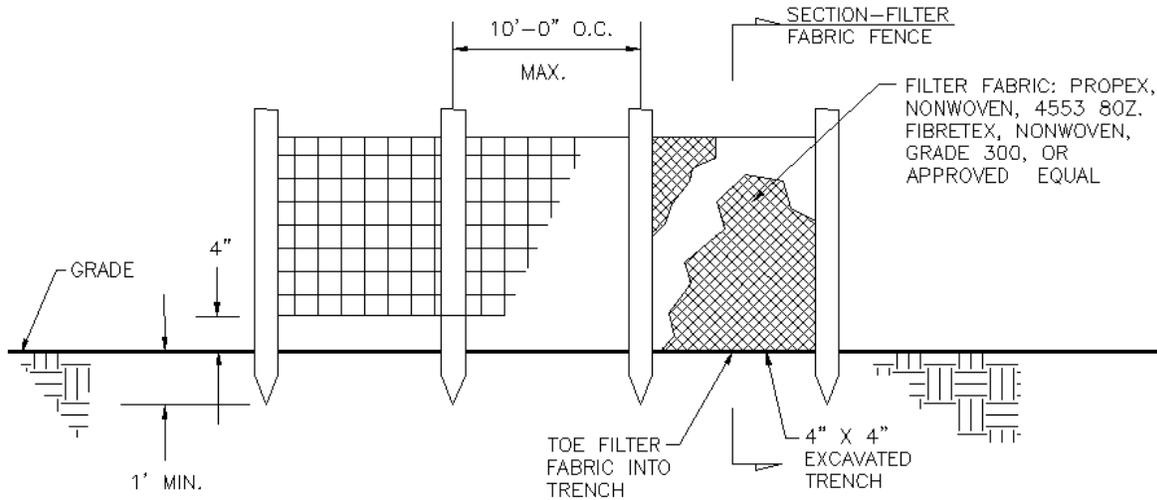


NOTE: FIELD MODIFICATIONS OF THESE INSTALLATIONS MAY BE NECESSARY AS SUGGESTED BY REGULATORY INSPECTORS OR ENGINEER.

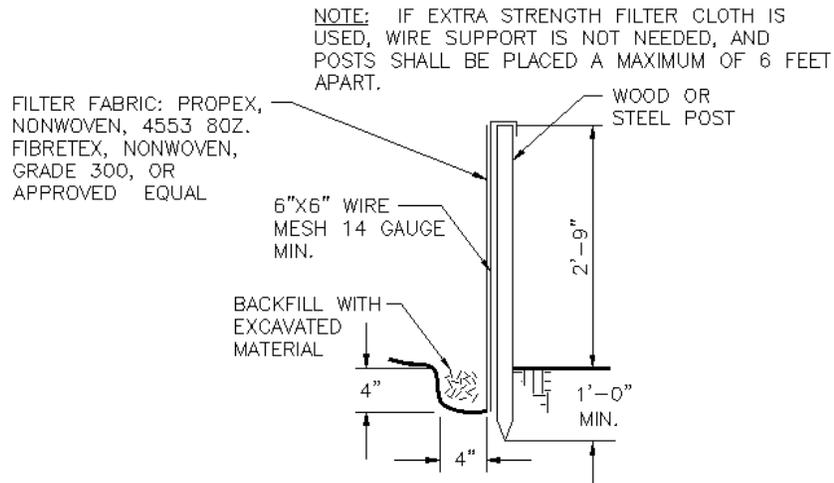
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DETAIL-FILTER FABRIC FENCE



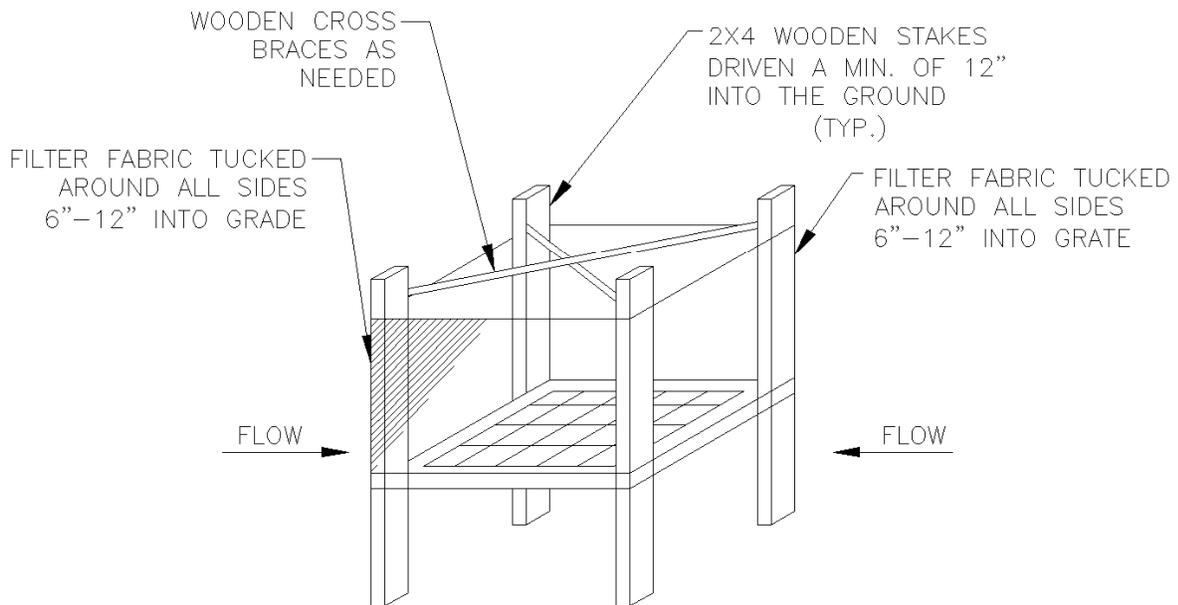
SECTION-FILTER FABRIC FENCE



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DETAIL-DROP INLET FILTER



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DETAIL—VEGETATION PROTECTION FENCING

