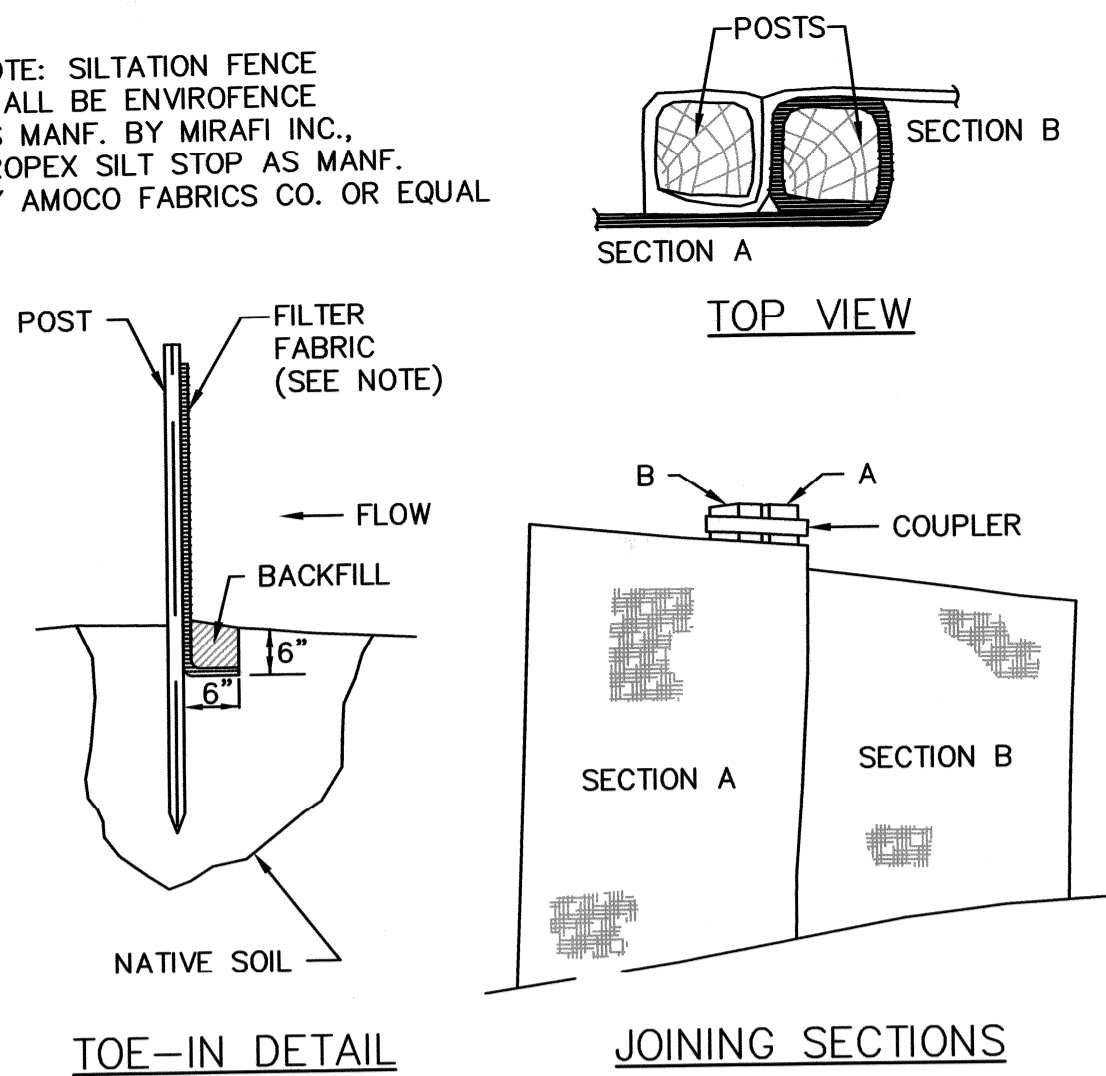
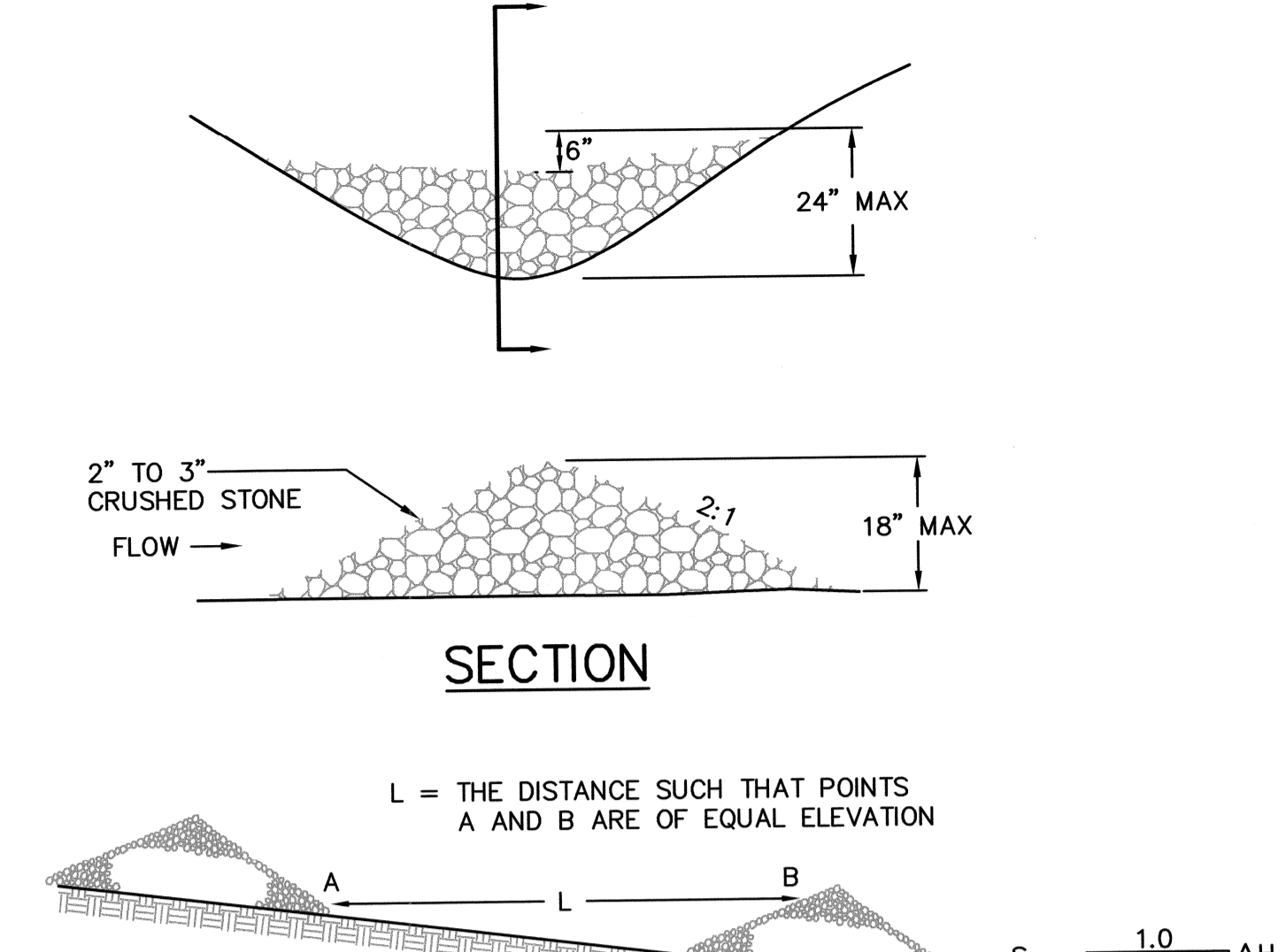


NOTE: SILTATION FENCE SHALL BE ENVIROFENCE AS MANF. BY MIRAFI INC., PROPEX SILT STOP AS MANF. BY AMOCO FABRICS CO. OR EQUAL



SILTATION FENCE
NTS



STONE CHECK DAM
NTS

SPACING BETWEEN CHECK DAMS	
S_o (FT/FT)	L (FT)
0.020	75
0.030	50
0.040	40
0.050	30
0.080	20
0.100	10

TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL

A. GENERAL

- All soil erosion and sediment control will be done in accordance with the Erosion and Sediment Control Handbook for Construction: Best Management Practices, Cumberland County Soil and Water Conservation District, Department of Environmental Protection, March 1991, and as currently revised.
- B & L Partners or its agent will be responsible for the repair/replacement/maintenance of all erosion control measures until all disturbed areas are stabilized.
- Disturbed areas will be permanently stabilized within 15 days of final grading. Disturbed areas not to be worked upon within 30 days of disturbance, shall be temporarily stabilized within 7 days of the disturbance.
- In all areas, removal of trees, bushes and other vegetation, as well as disturbance of topsoil will be kept to a minimum while allowing proper site operations.
- Any suitable topsoil will be stripped and stockpiled for reuse in final grading. Topsoil will be stockpiled in a manner such that natural drainage is not obstructed and no off-site sediment damage will result. If a stockpile is necessary, the side slopes of the topsoil stockpile will not exceed 2:1. Silt fence will be installed around the perimeter of all topsoil stockpiles. Topsoil stockpiles will be surrounded with siltation fencing and will be temporarily seeded with arrostook rye, annual or perennial ryegrass, within 7 days of formation, or temporarily mulched if seeding cannot be done within the recommended seeding dates. Recommended seeding dates and application rates are as follows:
Arrostook Rye: Recommended Seeding Dates: 9/15 - 11/1
Application Rate: 112 lbs/acre
Annual Ryegrass: Recommended Seeding Dates: 4/1 - 7/1
Application Rate: 40 lbs/acre
Perennial Ryegrass: Recommended Seeding Dates: 8/15 - 9/15
Application Rate: 40 lbs/acre
Mulch:
o Hay or Straw Application Rate: 1.5 - 2.0 tons/acre. Anchor with mulch netting (installed per manufacturer's recommendations)
o Wood Fiber Cellulose Application Rate: 4,000 lbs/acre. Anchoring not required

- The structure shall be inspected after each rain and repairs made as needed. Sediment shall be removed and the bales restored to their original dimensions when the sediment has accumulated to 1/2 the height of the bale. Removed sediment shall be deposited on an approved area on site and then stabilized. Structures shall be removed and the area stabilized when the remaining drainage area has been properly stabilized.
- Wood Waste Compost/Bark Filter Berms
 - The filter berm shall consist of an approved wood waste compost/bark mulch mix or recycled composted bark flume grit and fragmented wood generated from water-flume log handling systems or small shredding of stumpage (6 inches long x 1/2" dia.). The mixture needs to be a well-graded blend of organic and mineral substance. The composition is usually manufactured on or off site and by blending it with a well graded sand and gravel. The objective is a tight, heavy, non-erodible mixture that is not composed of one uniform material, i.e. just bark mulch will not suffice. Comparable composted mixes can be used upon approval of the Department of Environmental Protection, Bureau of Land and Water Quality.
 - The mix shall conform to the following standards:
* Moisture Content 30 - 60%
* PH-5.0-8.0
* Screen Size - 100% less than 3" max.; 70% less than one inch.
* No less than 40% organic material (dry weight) by loss of ignition.
* No stones larger than 2 inch diameter.
* Silts, clays or sugar sands are not acceptable in the mix.
 - Installation and Size of Berm:
The dimensions of the berm are more a function of the strength of the material than the flows (forces) it will encounter. At a minimum the berm shall be 4 feet wide and 18 inches high. The berm shall be placed, uncompacted along a relatively level contour. Wherever possible the existing surface must be scoured and the mixture keyed in like any other sediment control measure.
 - Maintenance:
All deficiencies shall be immediately corrected with additional material placed on top of the berm to reach the desired height. When the berm is decomposed, clogged with sediment, eroded, or becomes ineffective, it shall be replaced.
 - Clean up and Retrieval:
At the end of the job, an erosion control berm shall be removed or spread out so that the native earth can be seen below.
- Stabilized Construction Entrance
 - Aggregate size: Use 2 inch stone, or reclaimed or recycled concrete equivalent.
 - aggregate thickness: Not less than eight inches.
 - Width: 16 foot minimum, but not less than the full width of where ingress or egress occurs.
 - Length: as required, but not less than 50 feet.
 - Geotextile: To be placed over the entire area to be covered with aggregate. Piping of surface water under entrance shall be provided as required. All piping is impossible, a mountable berm with 5:1 slopes will be permitted.
 - Criteria for Geotextile: The filter cloth shall be woven or non-woven fabric consisting only of continuous chain polymeric filaments or yards of polyester. The fabric shall be inert to commonly encountered chemicals, hydrocarbons, mildew and rot resistant.
(1) Acceptable materials are Trivira Spunbound 1135, Miraf 700X, or equivalent.
(2) Fabrics not meeting these specifications may be used only when design procedure and supporting documentation are supplied to determine aggregate depth and fabric strength.
 - Maintenance: The entrance shall be maintained in a condition which will prevent tracking of sediment onto public rights-of-way. Additional stone may be needed to be added periodically to maintain the line and grade. When washing is required it shall be done in an area stabilized with aggregate with drains into an approved sediment trapping device. All sediment shall be prevented from entering storm drains, ditches, or waterways. Soil that is tracked onto the adjoining roadway shall be swept off. Remove the entrance only immediately before final grading and paving of the entry way(s).

SEEDING SPECIFICATIONS

- Seed:

Mixture	Roadside lbs/acre	Lawn lbs/acre
Kentucky Bluegrass	20	55
White Clover	5	0
Creeping Red Fescue	20	55
Perennial Ryegrass	5	15
- Fertilizer: Apply 800 pounds per acre of 10-20-20 fertilizer or equivalent per acre (18.4 lbs/1,000 sq. ft.).
- Lime: Apply ground limestone at a rate of 3 tons per acre (138 lbs/1,000 sq. ft.).
- Mulch: Mulch with hay or straw at 1.0 - 2.0 tons per acre.
Anchor mulch with mulch netting installed per manufacturer's recommendations.
- If permanent vegetative stabilization cannot be established due to the season of the year, all exposed and disturbed areas not to undergo further disturbance are to have dormant seeding applied and be temporarily mulched to protect the site. The following methods may be used to perform a dormant seeding:
 - Prepare the seedbed, add the required amounts of lime and fertilizer, then mulch and anchor. After the first killing frost and before snow fall, broadcast or hydroseed the selected seed mixture. Double the regular seeding rates for this type seeding.
 - When soil conditions permit, between the first killing frost and before snow fall, prepare the seedbed, lime and fertilize, apply the selected seed mixture, and mulch and anchor. Double the regular seeding rates for this type of seeding.
Dormant seedings need to be anchored extremely well on slopes, ditch bases and areas of concentrated flows.
Dormant seeding requires inspection and reseeding as needed in the spring. All areas where cover is inadequate must be immediately reseeded and mulched as soon as possible.
- Erosion Control Mats
 - During the growing season (April 15-Sept 15) use mats (North American Green S150 or equal) or mulch with netting on:
The base of grassed waterways
Steep slopes (>15%)
Any disturbed soil within 100 feet of lakes, streams and wetlands
During the late fall and winter (Sept 15-April 15) use heavy grade mats (North American Green SC150 or equal) on all areas noted above plus use lighter grade mats or mulch with netting on:
Side slopes of grassed waterways
Moderate slopes (>8%)
 - Install mats in accordance with manufacturers' recommendations

B. TEMPORARY MEASURES

- Silt Fence
 - Silt fence will be installed prior to and down-gradient of all construction activity where soil disturbance may result in erosion.
 - The height of a silt fence will not exceed 36 inches.
 - The filter fabric will be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are necessary, filter cloth will be spliced together only at a support post, with a minimum 6-inch overlap, and securely sealed.
 - Posts will be spaced a maximum of 10 feet apart at the barrier location and driven securely into the ground (minimum of 12 inches). When extra strength fabric is used without the wire support fence, post spacing will not exceed 6 feet.
 - A trench will be excavated approximately 4 inches wide and 4 inches deep along the line of posts and upgradient from the barrier.
 - The standard strength of filter fabric will be stapled or wired to the fence, and 8 inches of the fabric will be extended into the trench. The fabric will not extend more than 36 inches above the original ground surface. Filter fabric will not be stapled to existing trees.
 - When extra strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In such a case, the filter fabric will be stapled or wired directly to the posts with all other provisions of item (f) applying.
 - The trench will be backfilled and the soil compacted over the filter fabric.
 - Silt fences will be inspected immediately after each rainfall and at least daily during prolonged rainfall. They will be inspected if there are any signs of erosion or sedimentation below them. Any required repairs will be made immediately. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind them, they will be replaced with a temporary crushed stone check dam.
 - Should the fabric on a silt fence decompose or become ineffective prior to the end of the expected usable life, and the barrier still be necessary, the fabric will be replaced promptly.
 - Sediment deposits should be removed after each storm event if significant buildup has occurred or if deposits exceed 15 inches in depth. Sediments removed must be placed in an approved area on the site and then stabilized.
 - Silt fences will be removed when they have served their useful purpose, but not before the upgradient areas have been permanently stabilized.
- Catch Basin Hay Bale Barrier
 - Bales shall be either wire-bound or string-tied with the bindings oriented around the sides rather than over and under the bales.
 - Bales shall be placed lengthwise in a single row surrounding the inlet, with the ends of adjacent bales pressed together (See detail this drawing).
 - The filter barrier shall be entrenched and backfilled. A trench shall be excavated around the inlet the width of a bale to a minimum depth of 4 inches. After the bales are staked, the excavated soil shall be backfilled and compacted against the filter barrier.
 - Each bale shall be securely anchored and held in place by at least two stakes or rebars driven through the bale.
 - Loose straw shall be wedged between bales to prevent water from entering between bales.

C. PERMANENT MEASURES

- Riprapped Aprons
 - Stone for riprap will consist of sub-angular field stone or rough unheun quarry stone. The stone will be hard and of such quality that it will not disintegrate on exposure to water or weathering, be chemically stable and suitable in all other respects for the purpose intended. The bulk specific gravity (saturated surface-dry basis) of the individual stones will be at least 2.5.
 - The riprap should be placed so that it produces a dense well-graded mass of stone with a minimum of voids. The desired distribution of stones throughout the mass may be obtained by selective loading at the quarry, controlled clumping of successive loads during final placing, or by combination of these methods. The riprap should be placed to its full thickness on one operation. The riprap should not be placed in layers. The riprap should not be placed by dumping into chutes or similar methods which are likely to cause segregation of the various stone sizes. Care should be taken not to dislodge the underlying material when placing the stones.
The finished slope should be free of pockets of small stone or clusters of large stones. Hand placing may be necessary to achieve the required grades and a good distribution of stone sizes. Final thickness of the riprap blanket should be within plus or minus 1/4 of the specified thickness.
 - Riprap will be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stones. If repairs are needed, they should be accomplished immediately.
- Topsoil, Seed, Mulch
 - Topsoil: Use stockpiled materials spread to the depths shown on the plans, if available. Approved topsoil substitutes may be used (refer to Section 13.0 of Best Management Practices Handbook, see Note 2).
 - Seeding should be completed by August 15 of each year. Late season seeding may be done between August 15 and September 15. Areas not seeded or which do not obtain satisfactory growth by October 1, will be seeded with Arrostook Rye or mulched at rates previously specified herein. After November 1, or the first killing frost, disturbed areas should be seeded at double the specified application rates, mulched and anchored.

D. MAINTENANCE PLAN

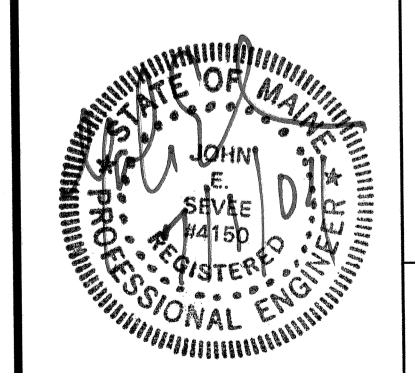
- Routine Maintenance

Inspection shall be performed annually by a qualified person during wet weather to ensure that the facility performs as intended. Inspection priorities shall include checking erosion controls for accumulation of sediments.
- Grassed Areas
 - Lime according to a soil test or at a minimum of every five years using a rate of 2 tons per acre (100 pounds per 1,000 sq. ft.).
 - Topdress with fertilizer in the early spring (before May 15) one year after planting with a balanced fertilizer, applying 50 pounds of nitrogen/acre (500 pounds of 10-20-20 per acre). Thereafter, fertilize according to a soil test or broadcast biennially, 300 pounds of 10-10-10 or equivalent per acre (7.5 pounds per 1,000 sq. ft.).

E. INSPECTIONS

Inspections will be undertaken by qualified personnel to ensure that temporary and permanent erosion and sedimentation controls are properly installed and correctly functioning, and that additional erosion control measures are installed if needed. Such inspections will occur bi-weekly and after each significant rainfall event (1 inch or more within a 24 hour period) during construction until permanent erosion control measures have been properly installed and the site is stabilized.
Inspections shall be conducted by:
Will Boyle, Rainmaker Inc., 70 Bishop Street, Portland, ME 04103
Tel: (207) 797-4764.

REV.	BY	DATE	STATUS
		7/1/04	REVISED PER CITY COMMENTS
	PJD	4/26/04	SUBMITTED TO CITY OF PORTLAND PLANNING DEPARTMENT



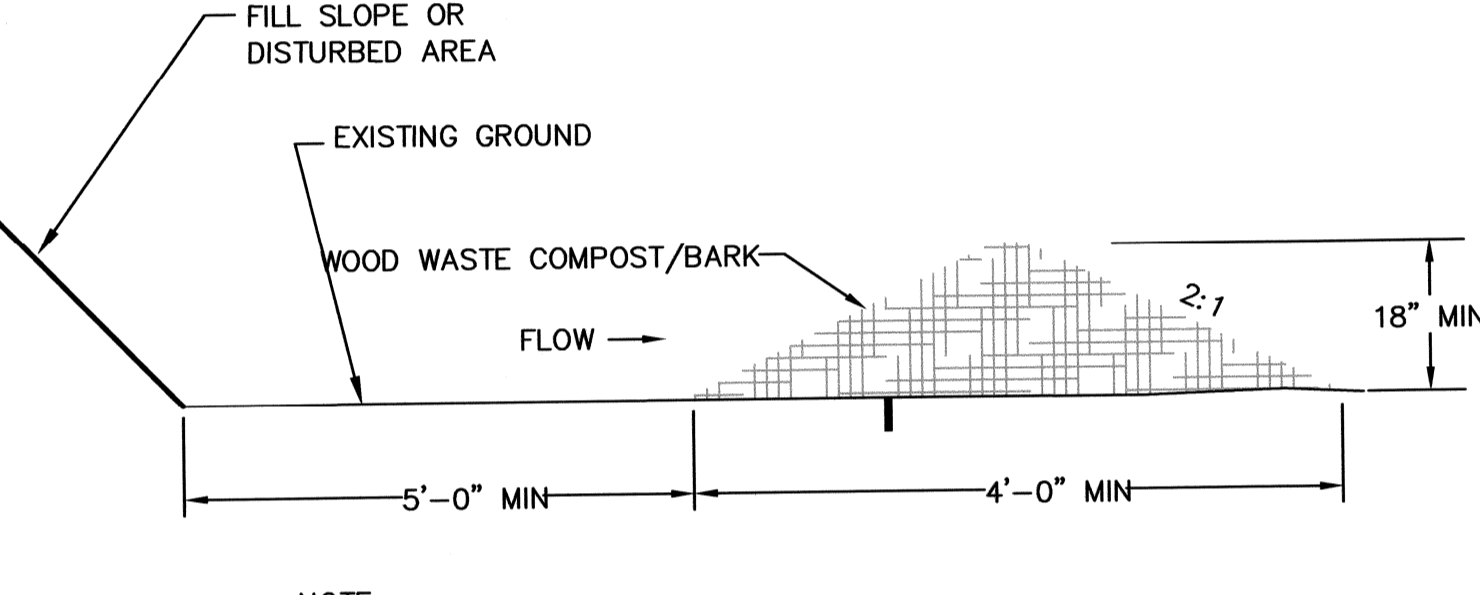
B & L PARTNERS, LLC
RAINMAKER BUSINESS PARK
585 RIVERSIDE STREET
PORTLAND, MAINE

SECTIONS AND DETAILS

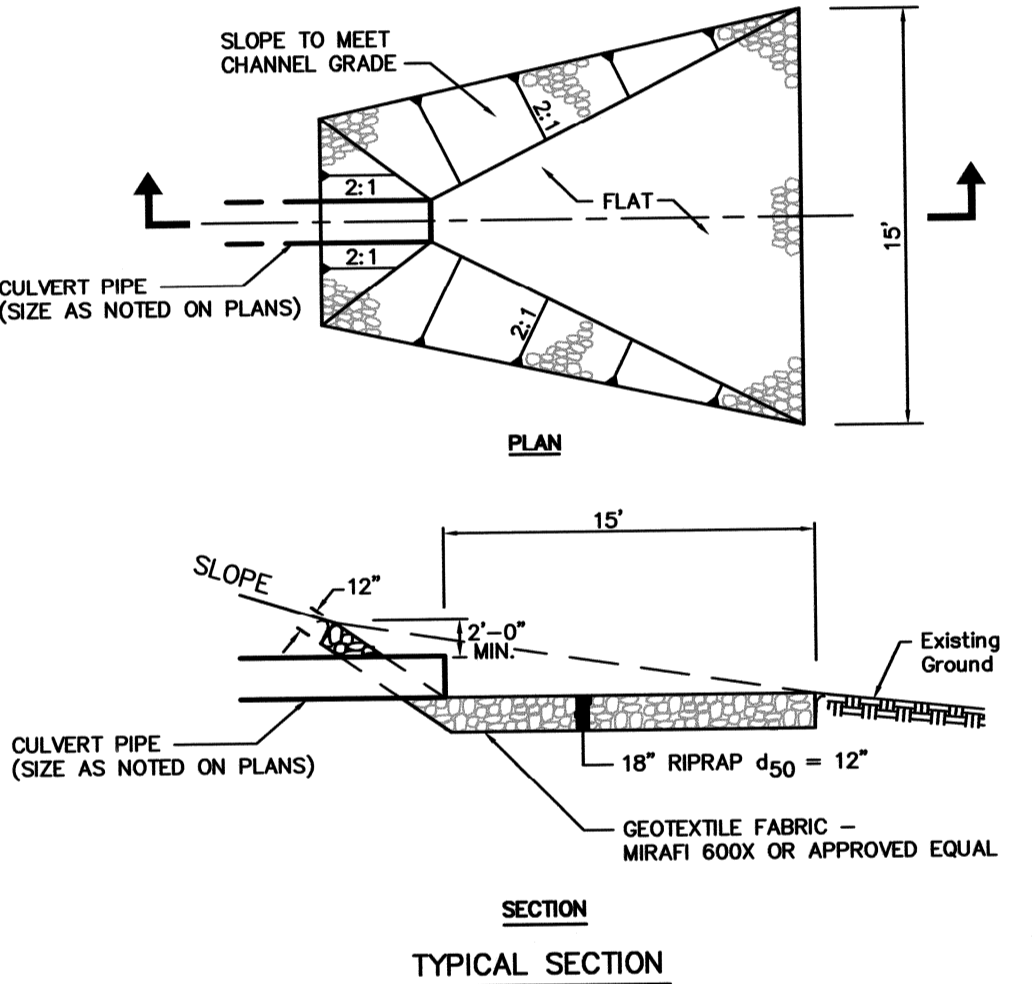
SME
Sevee & Maher Engineers, Inc.
Consulting Engineers
Cumberland Center, Maine

DESIGN BY:	PJD
DRAWN BY:	MBISK
DATE:	3/28/04
LMN:	DETAILS
CTB:	HPSTD

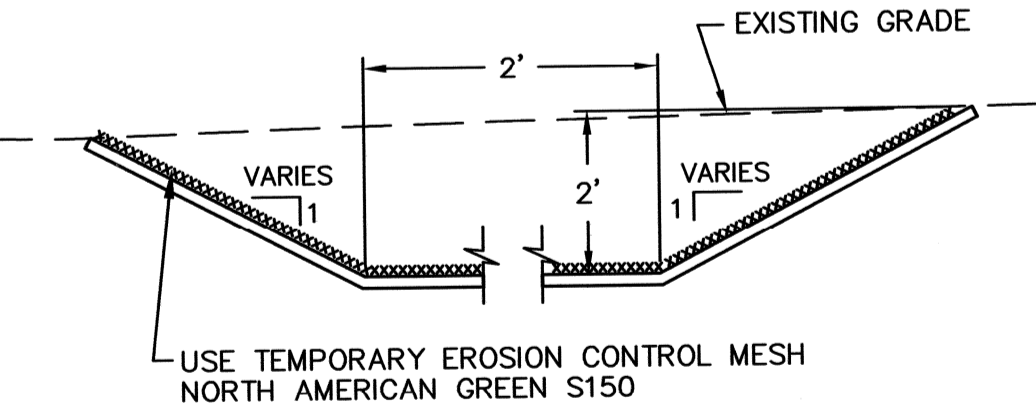
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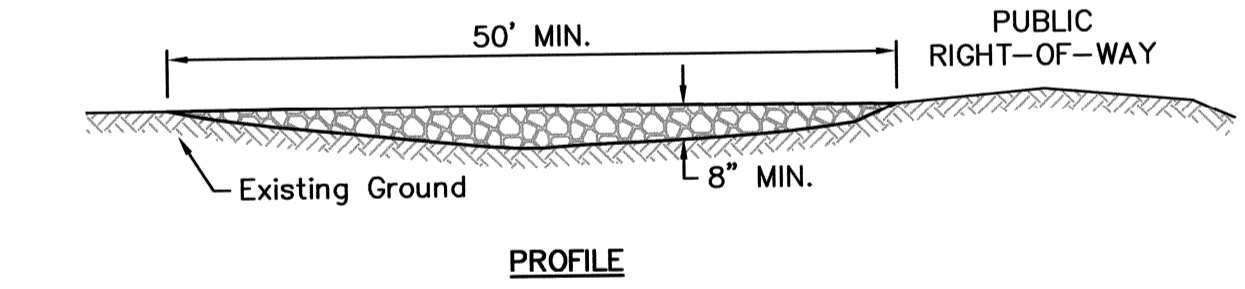
BARK MULCH SEDIMENT BARRIER
NTS



PIPE OUTLET (TYP)
NTS



GRASS LINED DITCH
NTS



STABILIZED CONSTRUCTION ENTRANCE
NTS

- CONSTRUCTION SPECIFICATIONS
- STONE SIZE - AASHTO DESIGNATION M 43, SIZE NO. 2 (2 1/2" TO 1 1/2"). USE CRUSHED STONE.
 - LENGTH - AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.
 - THICKNESS - NOT LESS THAN EIGHT (8) INCHES.
 - WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
 - MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC REPAIR AND TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

CONSTRUCTION SEQUENCE

- Install siltation fence and stabilized construction entrance(s).
- Clear site of any trees designated to be removed. Remove stumps.
- Grub and excavate building areas.
- Install building foundation.
- Backfill building foundation.
- Install utility systems including storm drains, sewer, water, electrical and telephone.
- Grub and excavate site as necessary to subgrade.
- Construct embankments. Install hay bale barriers at catch basin inlets.
- Gravel and pave parking areas. (Base layer of pavement only).
- Install curbing, construct sidewalks, loam and seed embankments.
- Place bituminous concrete surface on parking areas and entrance drives.
- Complete landscaping, striping and signage.
- Remove silt fence and any other remaining temporary erosion/sediment control measures.