

Pearl Place Building 1 & 2 Portland, Maine

Developer
Avesta Pearl Street One, L.P.

Architect
Winton Scott Architects

Landscape Architect
Carroll Associates
Civil
Gorill Palmer Consulting Engineers
Structural
Becker Structural
Mechanical / Plumbing
Mechanical Systems Engineers
Electrical
Bartlett Designs

BUILDINGS 1 & 2

EROSION AND SEDIMENTATION CONTROL DETAILS

C-6
Scale: NTS
September 1, 2006

Erosion and Sedimentation Control Plan

Erosion Control Measures and Site Stabilization

The primary emphasis of the erosion/sedimentation control plan, which will be implemented for this project, is as follows:

- Development of a careful construction sequence.
- Rapid revegetation of denuded areas to minimize the period of soil exposure.
- Rapid stabilization of drainage paths to avoid fill and gully erosion.
- The use of on-site measures to capture sediment (stabilized construction entrance/stone check dams/silt fence, etc.)

The following temporary and permanent erosion and sediment control devices will be implemented as part of the site development. These devices shall be installed as indicated on the plans or as described within this report. For further reference, see the Maine Erosion and Sediment Control BMP's, published by the Maine DEP in March 2003 or current revision.

Temporary Erosion Control Measures

The following measures are planned as temporary erosion/sedimentation control measures during construction:

- Crushed stone-stabilized construction entrance shall be placed at the construction entrance used for the proposed development.
- Siltation fence shall be installed downstream of any disturbed areas to trap runoff-borne sediments until grass areas are revegetated. The silt fence shall be installed per the details provided in this package and inspected immediately after each rainfall and at least daily during prolonged rainfall. Repairs shall be made if there are any signs of erosion or sedimentation below the fence line. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind the fence, the barrier shall be replaced with a stone check dam.
- Straw or hay mulch including hydroseeding is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed between April 15 and September 15 on slopes of less than 15 percent shall be anchored by applying water; mulch placed on slopes of equal to or steeper than 15 percent shall be covered by a fabric netting and anchored with staples in accordance with manufacturer's recommendation. Fabric netting and staples shall be used on disturbed areas within 100 feet of lakes, streams, and wetlands regardless of the upstream slope. Mulch placed between September 15 and April 15 on slopes equal to or steeper than 8 percent shall be covered with a fabric netting and anchored with staples in accordance with the manufacturer's recommendations. Slopes steeper than 3H:1V and equal to or flatter than 2H:1V, which are to be revegetated, shall receive Curtex blankets manufactured by American Excelsior or approved equivalent. Slopes steeper than 2H:1V shall receive riprap as noted on the plans. Mulch application rates are provided in Attachment A within the Temporary & Permanent Seeding Plans. Mulch shall not be placed over snow.
- Temporary stockpiles of stumps, grubbing, or common excavation will be protected as follows:
 - Temporary stockpiles shall not be located within 50 feet of any wetlands, which will not be disturbed and located away from drainage swales.
 - Stockpiles shall be stabilized within 7 days by either temporarily seeding the stockpile by a hydroseed method containing an emulsified mulch tackifier or by covering the stockpile with mulch, such as hay, straw, or erosion control mix.
 - Stockpiles shall be surrounded by sedimentation barrier at the time of formation.
- All denuded areas that are within 100 feet of an undisturbed wetland, which have been rough graded and are not located within a building pad, parking area, or access drive subbase area, shall receive mulch or erosion control mesh fabric within 7 days of initial disturbance of soil. All areas within 100 feet of an undisturbed wetland shall be mulched prior to any predicted rain event regardless of the 7-day window. In other areas, the time period may be extended to 14 days.
- For work, which is conducted between September 15 and April 15 of any calendar year, all denuded areas will be covered with hay mulch or wood-waste erosion control mix, applied at twice the normal application rate and anchored with a fabric netting. The time period for applying mulch shall be limited to 7 days for all areas.
- Lancaster and Pearl Streets shall be swept to control mud, dust, and debris caused by construction as necessary. Additional stone shall be added to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways.
- During grubbing operations stone check dams shall be installed at any evident concentrated flow discharge points and as shown on the plans.
- Silt fencing with a minimum stake spacing of 6 feet should be used, unless the fence is supported by wire fence reinforcement of minimum 14 gauge and with a maximum mesh spacing of 6 inches, in which case stakes may be spaced a maximum of 10 feet apart. The bottom of the fence should be anchored.
- Water and/or calcium chloride shall be furnished and applied in accordance with MDOT specifications - Section 637 - Dust Control.
- Loam and seed is intended to serve as the primary permanent revegetative measure for all denuded areas not provided with other erosion control measures, such as riprap. Application rates for temporary and permanent seeding are provided in Attachment A of this section. Seeding shall not occur over snow.
- Storm drain catch basin inlet protection shall be provided through the use of stone sediment barriers. Installation details are included within the plan set. The barriers shall be inspected after each rainfall and repairs made as necessary. Sediment shall be removed and the barrier restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the barrier. The barrier shall be removed when the tributary drainage area has been stabilized.

Permanent Erosion Control Measures

The following permanent erosion control measures have been designed as part of the Erosion/Sedimentation Control Plan:

- All areas disturbed during construction, but not subject to other restoration (building, paving, riprap, etc.) will be loamed, limed, fertilized, mulched, and seeded. Fabric netting, anchored with staples, shall be placed over the mulch in areas as noted in paragraph 3 of Temporary Erosion Control Measures. Native topsoil shall be stockpiled and reused for final restoration when it is of sufficient quality.
- Catch Basins will be provided with 3-foot deep sediment sumps and inlet hoods for all outlet pipes that are 12 inches in diameter.

Implementation Schedule

The following construction sequence shall be required to ensure the effectiveness of the erosion and sedimentation control measures are optimized:

Note: For all grading activities, the contractor shall exercise extreme caution not to overexpose the site by limiting the disturbed area.

- Install crushed stone stabilized construction entrance at the site entrance.
- Clear area as necessary for buildings and parking.
- Install perimeter siltation fence as required.
- Grub work area and remove existing pavement and buildings.
- Commence earthwork operations.
- Install catch basins and storm drain piping.
- Commence installation of underground utilities.
- Continue earthwork and grading to subgrade as necessary for construction.
- Complete installation of underground utilities.
- Complete remaining earthwork operations.
- Install subbase and base course gravels within parking areas and driveways.
- Install base course paving for driveways and parking areas.
- Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
- Install surface course paving for access drive and parking areas. Stripe pavement as indicated on plan.
- Once the site is stabilized and a 90 percent catch of vegetation has been obtained, remove all temporary erosion control devices.
- Touch up loam and seed.

Note: All denuded areas not subject to final paving shall be revegetated.

Prior to construction of the project, the contractor shall submit to the owner a schedule for the completion of the work, which will satisfy the following criteria:

- The above construction sequence should generally be completed in the specified order; however, several separate items may be constructed simultaneously. Work must also be scheduled or phased to prevent the extent of the exposed areas as specified below. The intent of this sequence is to provide for erosion control and to have structural measures such as silt fence and construction entrances in place before large areas of land are denuded.
- The work shall be conducted in sections which will:
 - Revegetate disturbed areas as rapidly as possible. All areas shall be permanently stabilized within 14 days.
 - Incorporate planned inlets and drainage system as early as possible into the construction phase.

Erosion, Sedimentation and Stabilization Control Plan

The Erosion Control Plan is included in the plan set.

Details and Specifications

The Erosion Control details and specifications are included in the plan set.

Winter Stabilization Plan

As a summer/fall construction schedule to complete the project is not possible and construction is necessary between November 15 and April 15 of any calendar year, the contractor shall submit a schedule, which will satisfy the following criteria:

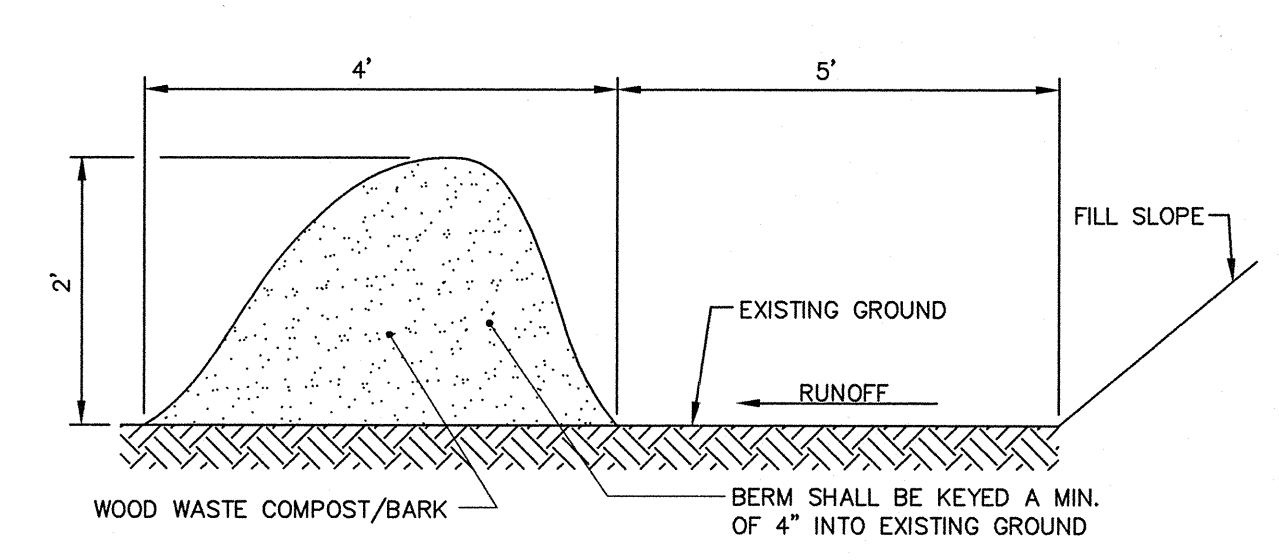
- Limit the amount of exposed area to those areas in which work is expected to be undertaken during the preceding 15 days and that which can be mulched in the event of a predicted snow event.
- During the construction process, all disturbed areas shall be covered with mulch within 7 days of final grading. Mulch shall not be placed over snow.
- Once final grade has been established, the contractor may choose to dormant seed the disturbed areas prior to placement of mulch and placement of fabric netting anchored with staples.
 - If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5 pounds/1000 s.f. Seeding shall not occur over snow.
 - All areas seeded during the winter months will be inspected in the spring for adequate catch. All areas sufficiently vegetated (less than 90 percent catch) shall be revegetated by replacing loam, seed and mulch.
 - If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

The Contractor must install any added measures, which may be necessary to control erosion/sedimentation from the site dependent upon the actual site and weather conditions.

The Contractor shall note that all areas shall be temporarily stabilized with 7 days.

Conclusion

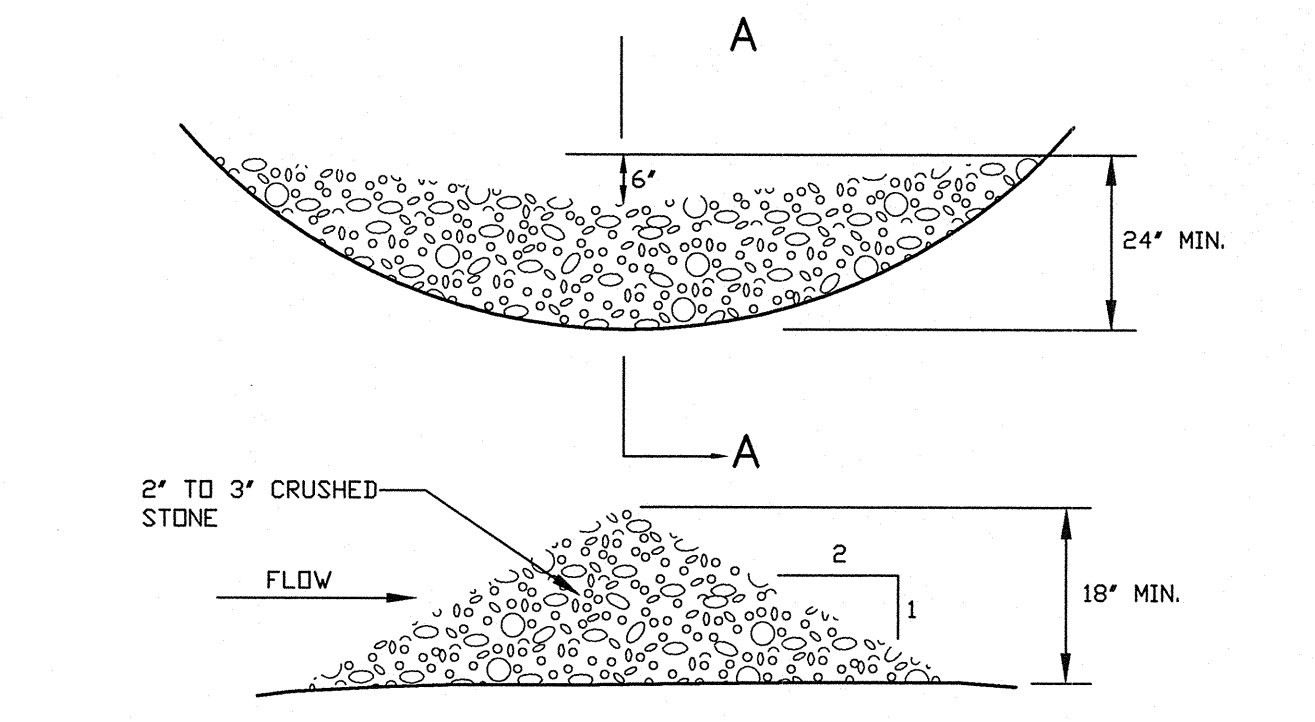
The Applicant has provided temporary and permanent erosion control measures as well as specifying a sequence of construction as measures to minimize erosion and sedimentation.



- NOTES:
- THE WOOD WASTE COMPOST/BARK 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 1".
 - NO LESS THAN 40% ORGANIC MATERIAL (DRY WEIGHT) BY LOSS OF IGNITION.
 - NO STONES LARGER THAN 2" IN DIAMETER.
 - SILTS, CLAYS OR SUGAR SANDS ARE NOT ACCEPTABLE IN THE MIX.
 - THE COMPOST BERM SHALL BE PLACED, UNCOMPACTED, ALONG A RELATIVELY LEVEL CONTOUR.
 - THE WOOD WASTE COMPOST/BARK FILTER BERM MAY BE USED IN LIEU OF SILTATION FENCE, AT THE TOE OF SHALLOW SLOPES, ON FROZEN GROUND, LEDGE OUT CROPS, VERY ROOTED FORESTED AREA OR AT THE EDGE OF GRAVEL PARKING AREAS.
 - BERMS SHALL REMAIN IN PLACE UNTIL UPSTREAM AREA IS COMPLETED OR 70% CATCH OF VEGETATION IS ATTAINED. BERMS SHALL BE REMOVED BY SPREADING SUCH THAT NATIVE EARTH CAN BE SEEN BELOW.
 - WOOD WASTE COMPOST/BARK FILTER BERM SHALL NOT BE USED IN WETLAND AREAS.

WOOD WASTE COMPOST/BARK FILTER BERM

N.T.S.

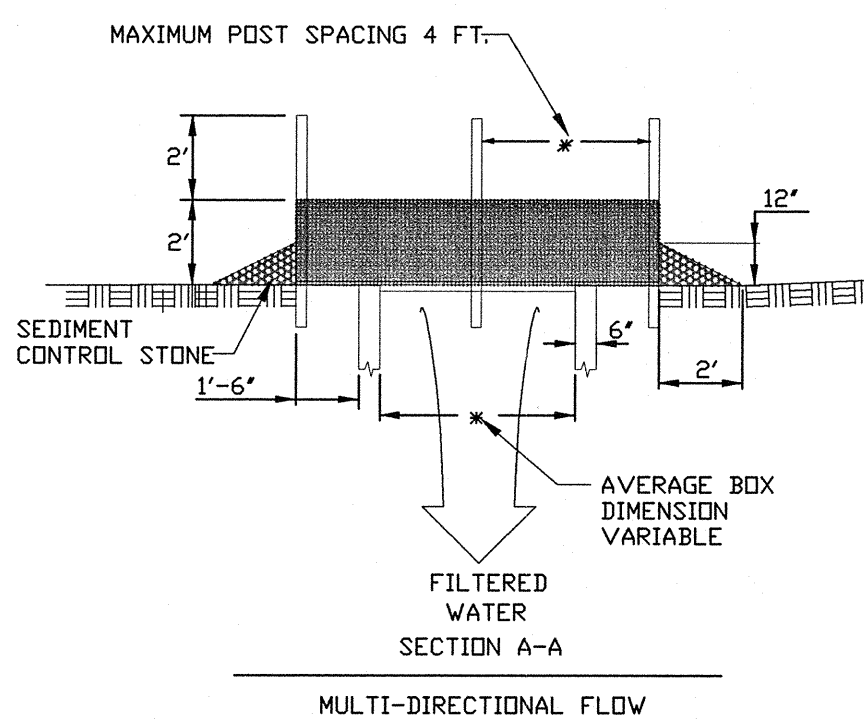


STONE CHECK DAM

N.T.S.

SPACING BETWEEN CHECK DAMS

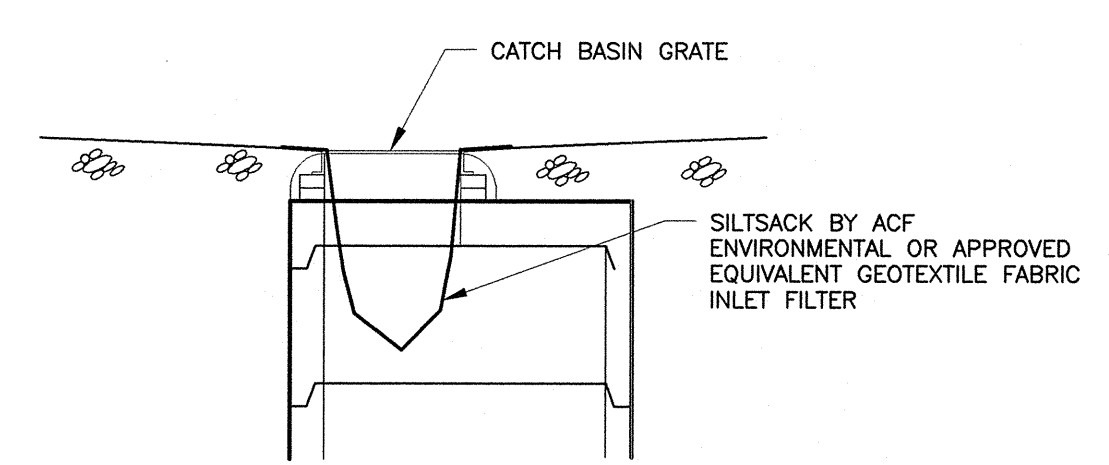
S ₀ (FT./FT.)	L (FT.)
0.020	75
0.030	50
0.040	40
0.050	30
0.080	20
0.100	15'



- NOTE
- SEDIMENT CONTROL STONE SHALL BE NO. 5 OR NO. 57.
 - WIRE MESH SHALL BE HARDWARE CLOTH 23 GAUGE MIN. AND SHALL HAVE 1/4 INCH MESH OPENINGS.
 - TOP OF WIRE MESH SHALL BE A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR ANY DIVERSION POINT.
 - STEEL POST SHALL BE 5 FT. IN HEIGHT, BE INSTALLED 15 FT. DEEP MINIMUM, AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE.
 - WOOD POST SHALL BE 6 FT. IN HEIGHT, BE INSTALLED TO 15 FT. DEEP MINIMUM, AND BE 3 INCHES IN DIAMETER.
 - POST SPACING SHALL BE A MAXIMUM OF 4 FT.
 - USE 'SILT SACK' OR ENGINEER APPROVED EQUIVALENT FOR INLET PROTECTION IN TRAVELWAY.

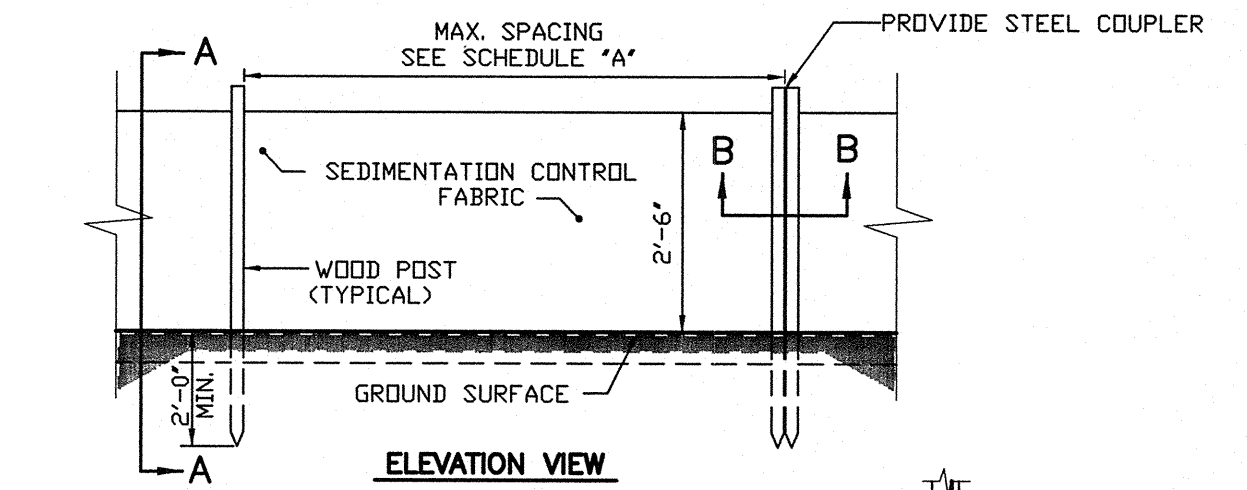
INLET PROTECTION

N.T.S.



CATCH BASIN INLET FILTER

N.T.S.

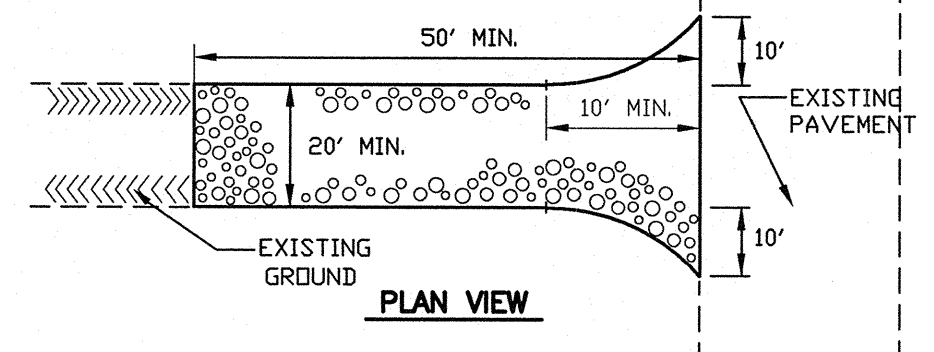
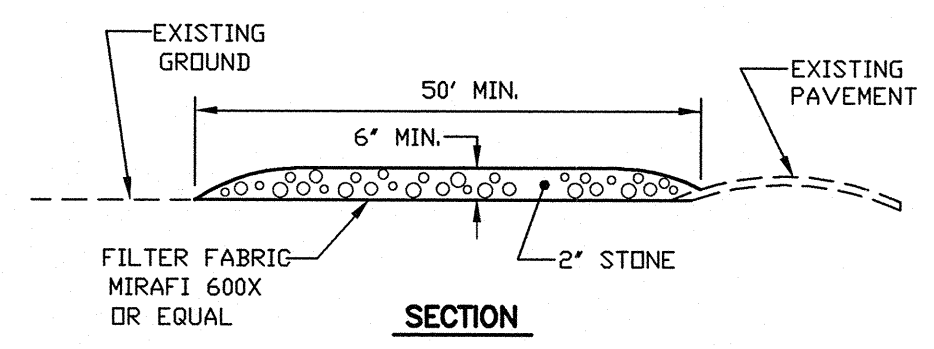


SCHEDULE 'A'

SILT FENCE REINFORCEMENT	MAX. SPACING
NONE	6'
WIRE REINFORCEMENT 14 GAUGE, 6" MESH	10'

SILTATION FENCE

N.T.S.



Note: Contractor shall add stone to entrance as mud/silt materials accumulate.

STABILIZED CONSTRUCTION ENTRANCE

N.T.S.