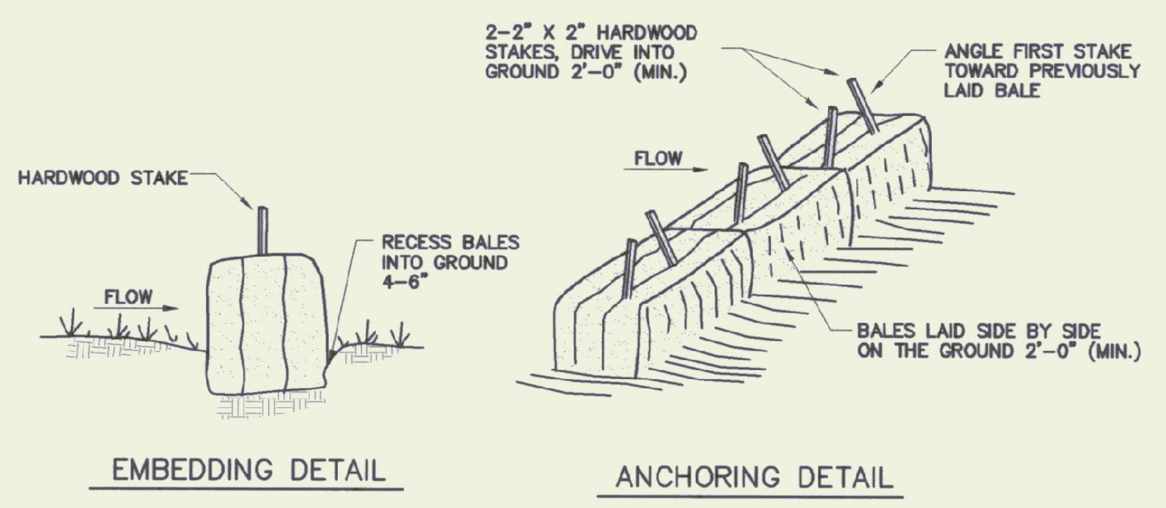
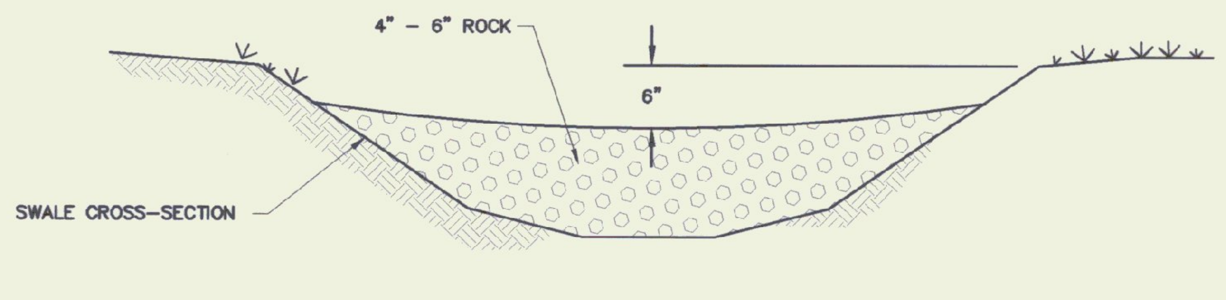
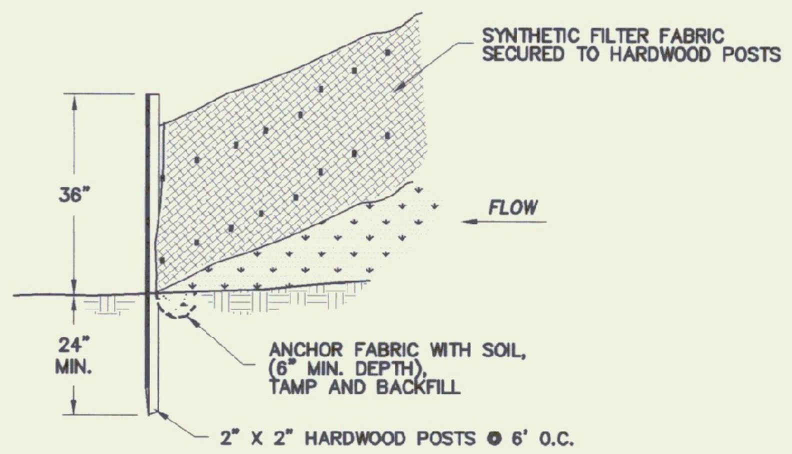


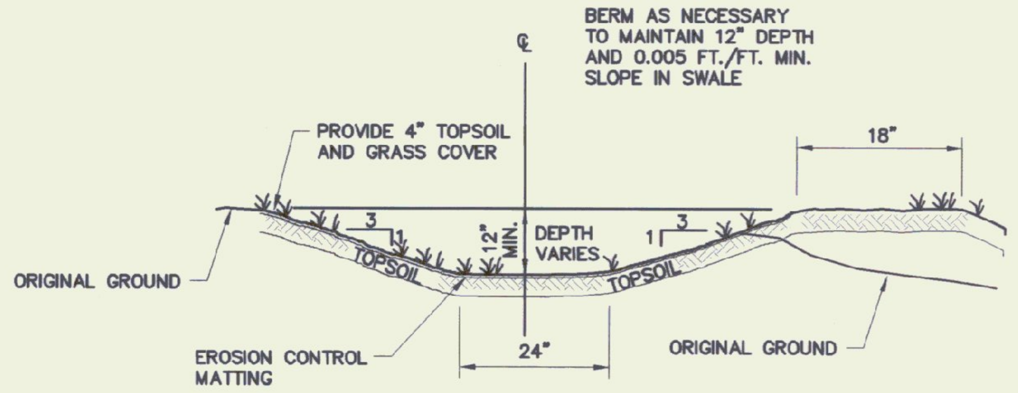
1 / C-5 BALED HAY EROSION CHECKS
N.T.S.



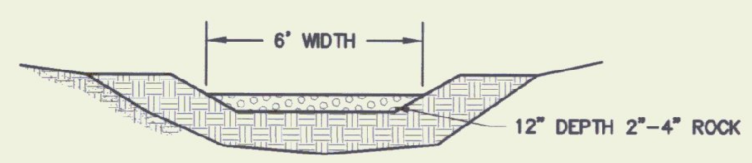
2 / C-5 ROCK CHECK DAM
N.T.S.



5 / C-5 SILT FENCE DETAIL
N.T.S.



6 / C-5 TYPICAL DRAINAGE SWALE
N.T.S.



EMBANKMENT CROSS–SECTION

SEEDING SPECIFICATION

URBAN MIX GRASS SEED– FOR USE IN GRASSED ISLAND IN FRONT OF GARAGE AND IN R.O.W. ALONG AIRPORT ROAD		
% BY WEIGHT	LBS. LIVE SEED PER ACRE	TYPE OF SEED
37.5	45	CREEPING RED FESCUE
31.25	37.5	KENTUCKY BLUEGRASS
31.25	37.5	WINTER HARDY, PERENNIAL RYE
100	120 # LIVE SEED/ACRE	

CONSERVATION MIX GRASS SEED– FOR USE IN ALL OTHER AREAS		
% BY WEIGHT	LBS. LIVE SEED PER ACRE	TYPE OF SEED
35	35	CREEPING RED FESCUE
23	23	KENTUCKY BLUEGRASS
15	15	ANNUAL RYE
11	11	WINTER HARDY, PERENNIAL RYE (VARIETY PENNFINE, MANHATTAN OR SIMILAR VARIETY)
6	6	WHITE CLOVER
10	10	HIGHLAND BENTGRASS
100	100 # LIVE SEED/ACRE	

FERTILIZER – 10 LBS PER 1000 S.F.
SPRING SEEDING
FALL SEEDING

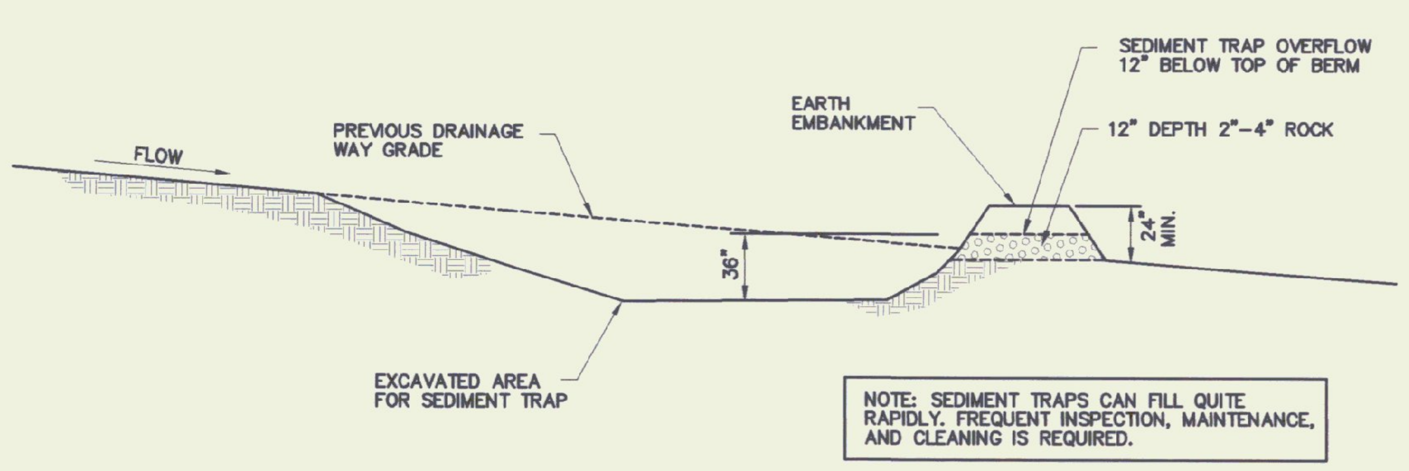
LIME – 90 LBS PER 1000 S.F.
DOLOMITIC GROUND LIMESTONE
NOT LESS THAN 85% OF THE TOTAL CARBONATE

TOPSOIL
4" MINIMUM APPROVED TOPSOIL

STRAW MULCH – 2 BALES PER 1000 S.F.
APPLY BINDER OR NETTING AS NEEDED

MAINTENANCE, GUARANTEE AND ACCEPTANCE OF SEEDING
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CARE AND MAINTENANCE, INCLUDING WATERING, OF SEEDED AREA UNTIL THE SEEDING IS INSPECTED AND ACCEPTED BY THE ENGINEER. INSPECTION SHALL BE MADE AFTER THE SECOND MOWING. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HOURS IN ADVANCE WHEN THE SECOND MOWING IS SCHEDULED.
RESEEDING SHALL BE DONE UNTIL ALL AREAS ARE COMPLETELY COVERED WITH A MATURE STAND OF GRASS. AN AREA SHALL BE CONSIDERED COVERED WHEN THE ENTIRE SURFACE CONTAINS A VIGOROUS STAND OF GRASS. AREAS THAT, IN THE OPINION OF THE ENGINEER, ARE PREDOMINANTLY WEEDS SHALL BE TILLED, FINE GRADED, FERTILIZED AND RESEEDED IN THE MANNER SPECIFIED ABOVE.

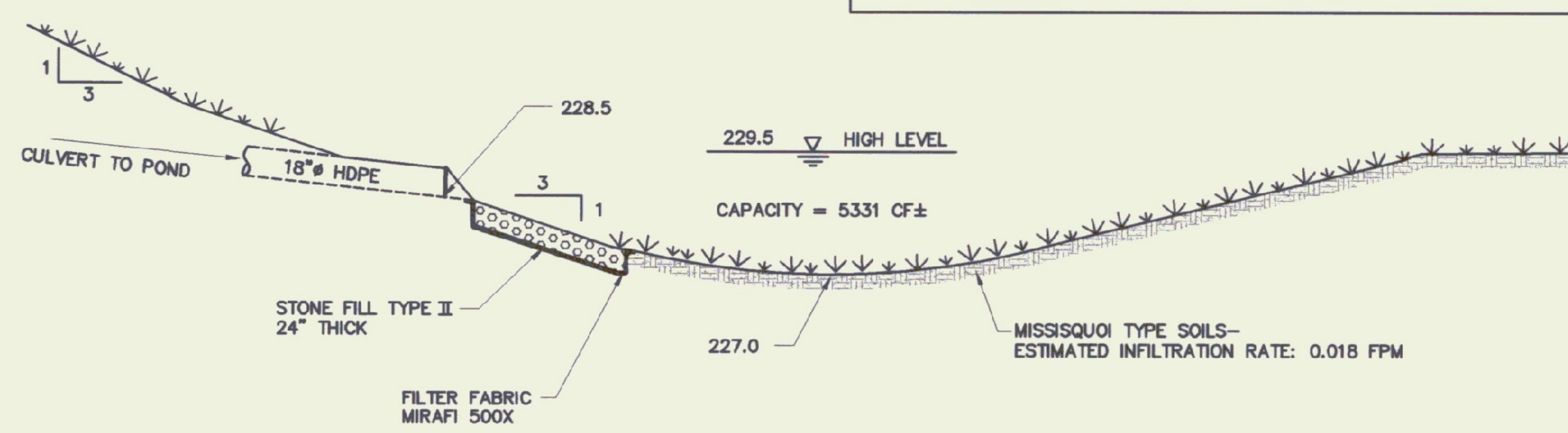
7 / C-5 SITE RESTORATION
N.T.S.



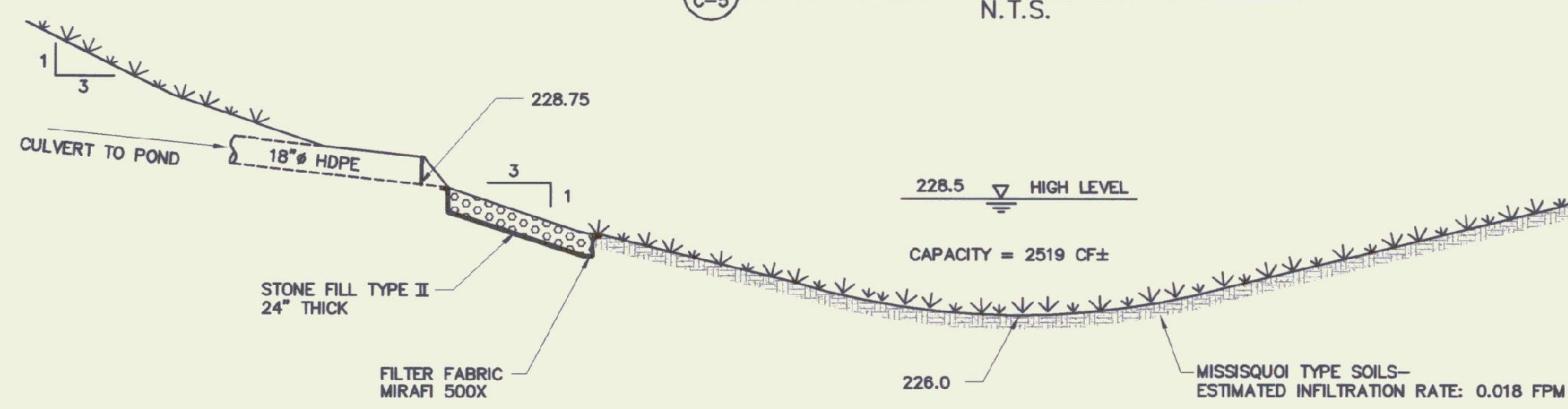
NOTE: SEDIMENT TRAPS CAN FILL QUITE RAPIDLY. FREQUENT INSPECTION, MAINTENANCE, AND CLEANING IS REQUIRED.

8 / C-5 TEMPORARY SEDIMENT TRAP DETAIL
N.T.S.

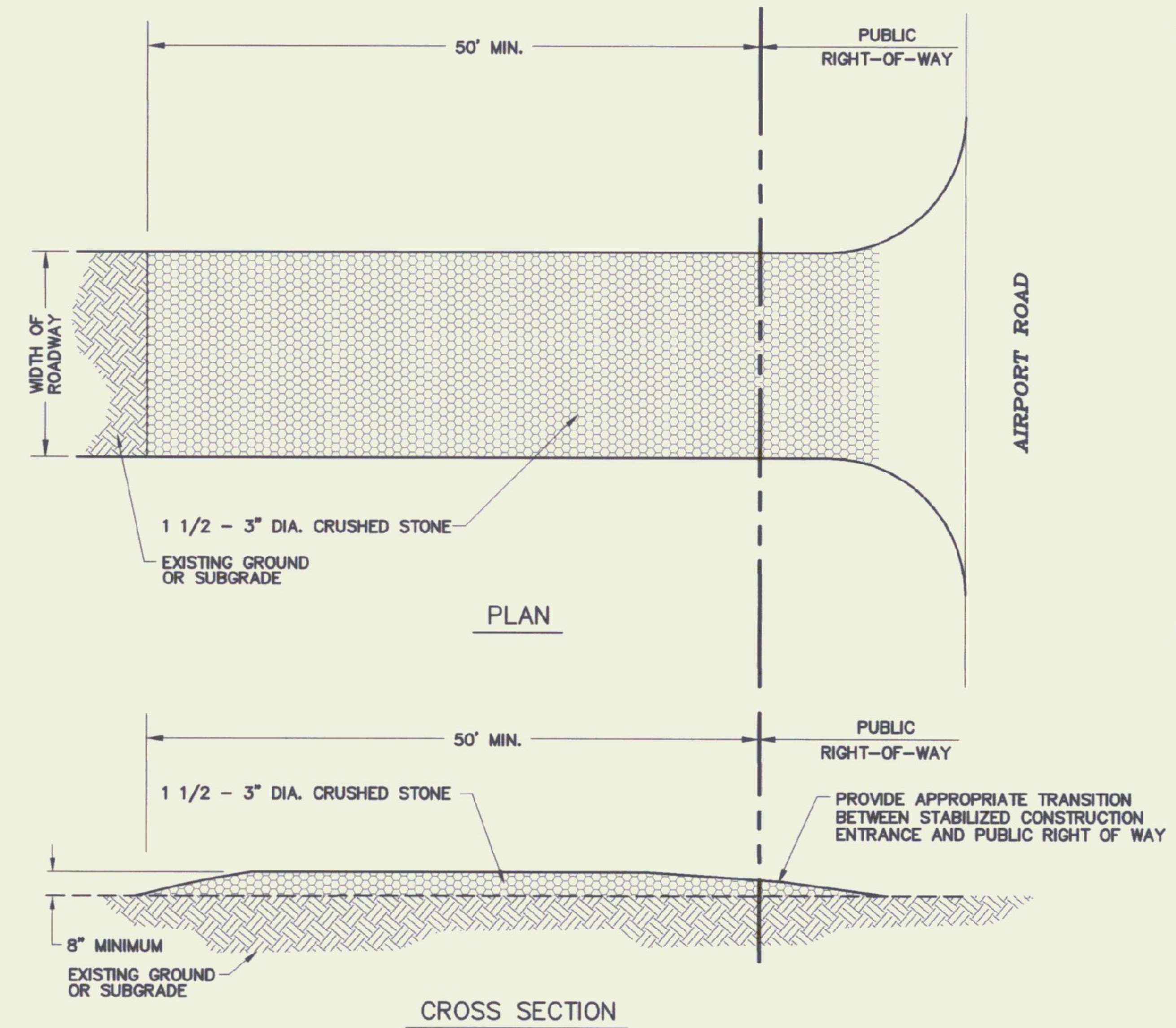
MAINTENANCE SCHEDULE:
The basin should be inspected for sediment build–up, which causes a loss in infiltration rate. Maintenance for sediment build–up should include brushing or scraping the floor and sides to remove caked on silt. Live vegetation is the most effective way to maintain good infiltration rates. Bermuda grass in particular has been shown to withstand long periods of submersion and drought without a decline in soil cover.
Sediment infusion from any earthmoving in the basin's collection area should be prevented. Use a silt fence or other sediment control measures at the sediment source.
The pond should be inspected for erosion after intense rainfall. Erosion control measures such as riprap should be used as necessary.



3 / C-5 INFILTRATION BASIN #1 DETAIL
N.T.S.



4 / C-5 INFILTRATION BASIN #2 DETAIL
N.T.S.



NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT TRACKED, SPILLED, OR WASHED ONTO PUBLIC RIGHTS–OF–WAY SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
2. THE USE OF CALCIUM CHLORIDE OR WATER MAY BE NECESSARY TO CONTROL DUST DURING THE SUMMER.

9 / C-5 TEMPORARY STABILIZED CONSTRUCTION ENTRANCE DETAIL
N.T.S.

EROSION CONTROL

1. General Notes
   a. The Contractor shall construct and maintain all erosion measures in accordance with the "Vermont Handbook for Soil Erosion and Sediment Control on Construction Sites, Special Publication no. 3".
2. Construction Sequence
   a. The Contractor shall be responsible for establishing all erosion control measures delineated on the plans and any additional measures that are necessary to minimize erosion. The Contractor shall have erosion control materials and installation equipment on site at all times.
   b. Silt fences shall be installed along the base of the fill slopes. This shall remain in place until the project site has been stabilized. Install hay bales in grass–lined swales 50 feet on center to prevent silt from washing into the drainage system during construction. Hay bales shall be removed when vegetation is established.
   c. Dust shall be controlled through the application of calcium chloride or water.
   d. Excavated material from earth excavation and ditch digging shall be disposed of offsite or used for project fill material if determined suitable by the Owner's Representative.
   e. All temporary erosion control measures required for any proposed winter work shall be installed prior to October 1. These measures shall be in place prior to the commencement of any site work or earth–moving.
3. Temporary Measures
   a. Hay Bale Check Dam and Inlet Protection – Bales shall be placed in a row with ends tightly abutting the adjacent bales. Each bale shall be imbedded in the soil a minimum of 4 inches. Bales shall be securely anchored in place by stakes driven through the bales. The first stake in each bale shall be driven toward the previously laid bale to force the bales together.

      Bales shall be repaired or replaced as needed. Once vegetation is established and the bales are no longer needed for erosion control, they shall be removed. Sediment deposits shall then be removed and placed in an upland area where there is no danger of further erosion.
   b. Silt Fences – The silt fences shall be constructed in accordance with the construction detail. The fence shall generally be placed 10 feet from the toe of the slope or as shown on the plan. The ends of the fence shall be placed uphill to form a horseshoe shape to trap all runoff.

      The silt fences shall be inspected periodically for damage or buildup of sediment. All damaged silt fence shall be repaired or replaced. Sediment deposits shall be removed from the fence as they accumulate and placed in an area where there is no danger of further erosion.
   c. Erosion Matting – Erosion matting shall be placed on all grass–lined swales. Matting shall be placed and maintained in accordance with the Vermont Agency of Transportation Standard Specifications Sections 654 and 755.07.
   d. Dust Control – During construction, dust will be controlled with water distributed by a truck–mounted spray bar. At the direction of the Engineer, Calcium Chloride AASHTO M 144 or Sodium Chloride M 143 may be used.
   e. All stockpile material (topsoil, borrow, etc.) will a have a hay bale dike or silt fence constructed around the perimeter. Seed and mulch stockpile material as soon as possible to prevent soil erosion and sedimentation off site. Locate stockpiles on the uphill side of disturbed areas, if possible. During windy conditions, stockpiled material shall be covered or watered appropriately to prevent wind erosion.
   f. Slopes greater than 1:3 shall have erosion control netting installed to stabilize the slope and reduce the erosion potential. Install netting over mulched slopes so that all parts are in contact with the soil and mulch. Pin netting with wire staples 3 feet o.c. to ensure full bonding with soil surface.
4. Permanent Measures
   a. Grass Lined Swales – All swales that are not stone–lined shall be topsoiled, seeded, fertilized and mulched. Any area which shows signs of erosion shall be reseeded immediately and maintained until permanent vegetation is established.
   b. Restoration – As soon as construction is completed in a given area, it shall be topsoiled, seeded, fertilized and mulched.

      The topsoil shall be submitted to the Extension Service for analysis. Fertilizer shall be applied at approximately a rate of 400 pounds per acre depending on soil analysis. If necessary, lime shall be applied to the topsoil to produce a soil PH of approximately 6.0.

      After the finished grade has been established and the fertilizer spread, plant the specific seed mixture and work firmly into the soil. Apply seed on the prepared seed bed with approved mechanical seeders or hydroseeding equipment. Upon completion of the above planting operations, roll all areas, leaving the surface of all area true to grade, smooth, and free from hollows or other irregularities. Thoroughly water all newly planted areas immediately after planting using a fine spray. Protect banks and swales from erosion and repair erosion that occurs. Banks, swales or other graded areas that have been washed out or have become damaged shall be repaired immediately. Unless approval is granted by the Engineer to plant off season, seeding will be conducted only during the period from April 15th to October 15th. Seeding shall not proceed before other phases of the work have progressed sufficiently and shall not interfere with other phases of work.

      After seeding, mulch shall be applied at a rate of 2 tons per acre.
5. Maintenance, Guarantee and Acceptance
   a. The Contractor shall be responsible for the care and maintenance including watering of seeded areas, until the seeding is inspected and accepted by the Owner.
   b. Reseeding shall be done until all areas are completely covered with a mature stand of grass. An area shall be considered covered when the entire surface contains a verdurous stand of grass. Areas that, in the opinion of the Engineer, are predominantly weeds shall be plowed up, fine graded, fertilized and reseeded in the manner specified previously, exercising caution not to cause damage to new or existing plant material.
   c. Maintain and guarantee all seeded area until acceptance.

EROSION CONTROL FOR WINTER CONSTRUCTION

1. Winter Construction is that occurring between October 15 and May 1.
2. Winter Construction should be avoided wherever possible. When it is deemed necessary, the contractor should follow the winter construction procedures outlined in the "Vermont Handbook for Soil Erosion and Sediment Control on Construction Sites". Area and amount of disturbance shall be minimized.
3. Establish vegetation in all non winter construction areas prior to October 15. All erosion control measures indicated on the site plan shall also be in place prior to October 15th.
4. Mulch shall be applied to all disturbed areas at a rate of 90 pounds per 1,000 square feet. The Contractor shall maintain all areas that are mulched until permanent vegetation can be established.
5. Sediment Traps shall be installed where indicated to collect spring time sediment runoff. Additional hay bale dams, silt fences, snow fences, or diversion swales may be necessary depending on the amount and location of the winter disturbance.
6. Erosion control measures shall be inspected weekly and after every storm. More frequent inspections will be necessary during the spring thaw. Any damaged devices shall be repaired immediately. To insure the effectiveness of the erosion control measures, all potential snow and ice blockages shall be cleared.

Champlain Consulting ENGINEERS
85 PRIM ROAD, P.O. BOX 453
COLCHESTER, VERMONT 05446
PHONE: (802) 863–6060
FAX: (802) 864–1678

STATE OF VERMONT – PAUL DUCHESNEAU – No. 3567 – REGISTERED PROFESSIONAL ENGINEER

DORE AND WHITTIER, INC.
Architects • Project Managers
1795 WILLISTON RD, STE 5
S. BURLINGTON, VT 05403
Phone: (802) 863-1428
Fax: (802) 863-6955
1400 HANCOCK STREET
QUINCY, MA 02169
Phone: (617) 471-2897
Fax: (617) 471-2516

STATE OF VERMONT
DEPARTMENT OF BUILDINGS AND GENERAL SERVICES
AGENCY OF ADMINISTRATION
MONTPELIER, VERMONT

AGENCY OF TRANSPORTATION
HIGHGATE MAINTENANCE FACILITY
HIGHGATE VERMONT

SCALE:	N.T.S.	REVISIONS
DATE:	09/24/01	
DRAWN BY:	CCE	
APPR. BY:	PD	

HIGHGATE
MAINTENANCE GARAGE
EROSION CONTROL AND STORMWATER

C–5

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