GENERAL NOTES AND SPECIFICATIONS FOR EROSION CONTROL

1. The contractor is responsible for water control during all phases of construction. No work shall be permitted in flowing water. Streams shall be temporarily dammed by use of sand bags or other suitable means. The diversion shall be accomplished by temporary culverts or by pumping. All diverted water shall be discharged to stone fill or other suitable energy dissipater surrounded by silt fence.

2. This plan is to be used as a guideline only. Additional silt fence, stone check dams, or other measures may be dictated by field conditions.

3. The Contractor is responsible for complying with all local, state, and federal regulations.

4. Clearing for Development Area

A. Delineate the limits of work with the continuous heavy duty flagging, construction fence, etc.

B. Install stabilization entrance where construction vehicles will access paved roadways from active construction areas.

C. Improve existing upgradient water bars or construct new water bars to divert upgradient runoff around the work. Temporarily extend existing culverts as necessary.

D. Install silt fence and stone check dams as shown on the plan and as may be further required in the field.

E. Extend culverts as necessary and install stone outlet aprons.

F. Install permanent water bars or diversions to control runoff. Provide stable outfalls.

G. Seed and mulch all exposed areas as progress is made. Erosion prevention and sediment control measures shall remain in place until the site is stabilized. Measures are to be removed within thirty days of stabilization.

H. Sequence work <2 acre sections. Stabilize on section before moving to the next section.

5. Temporary Stabilization:

All disturbed areas shall have temporary or permanent stabilization within 14 days of initial disturbance. After this time any disturbance shall be stabilized by the end of the day, with the following exceptions:

(1) Stabilization is not required if work is to continue in the area in the next 24 hours and there is no precipitation forecast for the next 24 hours.

(2) Stabilization is not required if the work is in a self-contained excavation with a depth of 2 feet or more.

Temporary Stabilization Measures:

(1) Hay or straw mulch with a thickness of at least 2 inches.

(2) Soil tracking with tracked equipment. Should be limited to small areas with slopes less than 100 feet long (less than 50 feet with slopes steeper than 3:1)

(3) A combination of the above.

(4) Erosion control matting.

6. Materials

A. Mulch material: Select mulch material for erosion control that will best meet the site conditions from the following.

(1) Hay or straw – Shall be dry, free of mold and weed seeds. Hay or straw can be used on disturbed areas that will not be reworked for 7 to 30 days. Application rate of 100 lbs /1000 sq. ft.

(2) Wood Chips – Shall be dry, free of soil and other foreign material. Application rate of 500–900 lbs/1000 sq. ft.

(3) Rolled Erosion Control Products (RECP) – Shall be dry, and shall be made of straw or hay, coconut and related fibers, wood excelsior, jute, polypropylene, nylon, or an approved combination of different materials.

B. Mulch Anchoring: When mulch must be held in place, the following mulch anchoring material shall be used:

(1) Mulch Netting (Paper, twine, plastic, or plastic and wood fiber).

C. Fertilizer: Complete fertilizer 10–20–20 (Standard Product) – Class A
10–10–10 (Standard Product) – Class B

D. Lime: Ground limestone containing not less than 95% total carbonates (calcium or magnesium).

E. Temporary Seed Mixture: When it is impractical to establish permanent protective vegetation on disturbed earth by October 15, use "Conservation Mix" or the following seed mixture. Disturbed areas that will not be reworked for 30 days or more shall also receive temporary seed and mulch.

Kind of Seed:	% By Weight
Annual Ryegrass	50
Perennial Ryegrass	50

Apply seed mixture at 50 pounds per acre.

F. Permanent Seed Mixtures:	% By Weight
(1) Creeping Red Fescue	30%
Tall Fescue	40%
Birdsfoot Trefoil	10%
Cereal Ryegrass	8%
Red Topl	10%
Inert Matter, Crop Seed, Weed Seed	2%
Total	100%

Apply seed mixture at 60 pounds per acre.

(2) Lawn:
Shall normally be used on loam areas and applied at 5 pounds/1000 square feet. This seed shall conform to the following.

Class A	
Kind of Seed:	Percent of Mix
Kentucky Bluegrass	40%
Red Fescue	30%
Redtop	20%
Creeping Bentgrass	10%
Total	100%

G. Permanent seeding shall only be undertaken in the spring from April through May, and in the later summer and early fall until September 15th, except that permanent seeding may by undertaken during the summer months if there are plans to provide adequate watering. During the peak summer months and in the fall after September 15 temporary stabilization shall be specified.

7. Seeding and Mulching:

A. All areas shall be seeded and mulched within 48 hours of final grading.

B. Soil samples may be sent to the county extension service for analysis to determine the proper seed mixture and fertilizer requirements.

C. The following procedures shall be followed for temporary seeding:

(1) Apply lime at a rate of 75 to 100 pounds per 1000 square feet. Incorporate into top two inches of soil.

(2) Apply fertilizer at a rate of 30 pounds per 1000 square feet. Mix thoroughly into the top two inches of soil.

(3) Apply seed mixture at the rate shown in 6F evenly in two intersecting directions. Rake lightly.

(4) Apply mulch material within 24 hours after seeding in accordance with the following:

(A) Hay or Straw: Application rate – 75 to 100 pounds per 1000 square feet. Spread by hand or with machine. Anchor on slopes and where subject to blowing or slipping.

(B) Wood Chips – Application rate – Two to six inches deep. Use for tree and shrub planting.

(5) Anchor mulch on all slopes exceeding 5% and other areas as required using the following method:

(A) Mulch Netting: Spread over loose mulch and pin to the soil in accordance with the manufacturer's instructions.

D. When temporary seeding cannot be accomplished to have established or visible growth by October 15, the disturbed areas shall be covered with 6 inches of anchored mulch or erosion control blankets for the duration of the winter.

8. Maintenance of Erosion Control Structures:

A. Stone check dams shall be replaced when they become clogged with soil particles or as directed by the owner/representative.

B. When the sediment accumulation reaches a depth of 12 inches behind the silt fence, it shall be disposed of.

C. All sediment from sediment control practices as a part of maintenance shall be disposed of in an area that is:
a. Less than 5% in slope.
b. At least 100 feet from any down slope water body or conveyance to a water body, including storm drain inlets or ditchs.

D. Repair all damages caused by soil erosion or construction equipment at or before the end of each working day.

E. Stone stabilized construction entrances shall be inspected to ensure no tracking of soil onto public rights-of-way or streets. Maintenance may include periodic top dressing with additional aggregate to ensure a minimum thickness of eight inches.

F. All measures shall be removed within 30 days of final stabilization.

9. Winter Erosion Control

A. Authorization of all winter work (October 14 – April 15) requires the authorization of the Vermont water quality division.

B. All temporary erosion control features such as silt fence must be in place prior to the ground freezing.

C. All disturbed areas of the site shall be seeded and mulched from October 15 to April 15 regardless of whether final grading has been finished. The following winter erosion controls are to be implemented.

(1) Oat seeds shall be substituted for any other temporary annual grass seeds.

(2) All exposed earth shall be mulched with 6 inches of hay or straw. Slopes over 5% shall have an additional covering of staked jute mat or its equivalent.

C. The following maintenance items should be performed specifically for the various erosion control devices:

(1) Diversion Dike or Swale:
(A) Minimum inspection frequency – Weekly.
(B) Remove any flow blockage caused by ice or sediment.

(2) Mulch:
(A) Minimum inspection frequency – Daily.
(B) Replace mulch on any area where original mulch cover has been lost.

(3) Silt Fence:
(A) Minimum inspection frequency – Weekly.
(B) Clean and remove any collected sediment before predicted thaws or rainy periods.

(4) Stone Check Dam:
(A) Minimum inspection frequency – Weekly.
(B) Remove and replace clogged stone.

Practice	Weekly (April 16 – Oct. 14)	Daily (Oct. 15 – April 15)
Catch Basin Filter	X	X
Channel Linings, Embankments & Channel Beds	X	X
Cofferdam	X	X
Discharge Points	X	X
Diversion Dike / Swale	X	X
Erosion Control Fabric	X	X
Fertilizer	X	X
Mulch	X	X
Mulch Anchoring	X	X
On-Site Coordinator Reporting	X	X
Seeding	X	X
Silt Fence	X	X
Snow Fence/Limit of Disturbance	X	X
Stabilized Construction Entrance	X	X
Staging/Storage Area Stabilization	X	X
Stone Check Dam	X	X
Surface Roughening	X	X

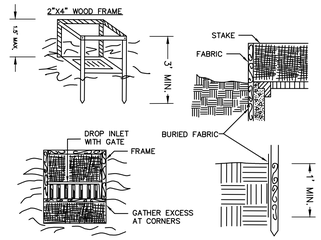
NOTES:
1. The On-Site Coordinator shall inspect all erosion prevention and sediment control features per the table above, and within 24 hours of any storm resulting in a discharge of stormwater from the site.

2. During winter construction (October 15 – April 15) all measures shall be inspected daily in work areas and weekly in finished areas. Winter work requires the preparation of a Winter Erosion Prevention and Sediment Control Plan and the authorization of the Vermont Water Quality Division. This plan must be submitted for approval by September 15.

3. For final cleanup the coordinator shall ensure that all temporary measures have been removed within 30 days of final stabilization.

4. The On-Site Coordinator is required to prepare a weekly report summarizing the inspection of the erosion and sediment control features, as well as discussing the status of site grading and stabilization efforts, releases of sediment, and the actions taken to address the release. The Vermont Water Quality Division shall be notified immediately (within 24 hours by phone, email or fax) of any release of sediment exceeding Vermont Water Quality Standards. A written report fully describing the condition, including the source, cause, why the implementation of the EPSC Plan did not prevent the problem, how the problem was addressed, and a time table describing when the violation occurred and when corrective action was taken shall be filed within seven (7) days of when the problem is first identified.

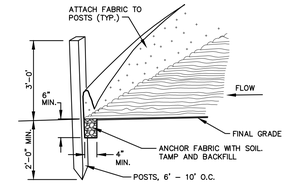
EROSION CONTROL CHART OF INSPECTION



CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40–85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

INLET PROTECTION DETAIL
NOT TO SCALE

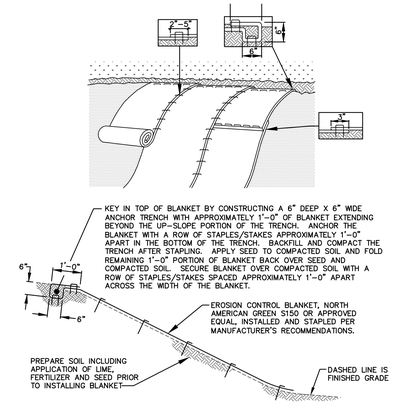


NOTES:
1. POSTS FOR ATTACHING FABRIC TO BE PLACED A MINIMUM 6' FROM TOE OF THE SLOPE.

2. TO BE USED WHERE EXISTING GROUND SLOPES AWAY FROM THE TOE OF THE EMBANKMENT.

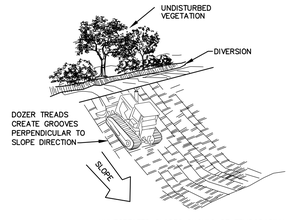
3. CONTRACTOR TO INSPECT THE SILT FENCE FREQUENTLY, AND REPAIR OR REPLACE ANY DAMAGED SECTIONS. REMOVE SILT FROM BEHIND THE FENCE WHEN IT HAS REACHED ONE-HALF THE HEIGHT OF THE FENCE, OR WHEN HEAVY RUNOFF OR SILTATION IS EXPECTED.

SILT FENCE DETAIL
NOT TO SCALE



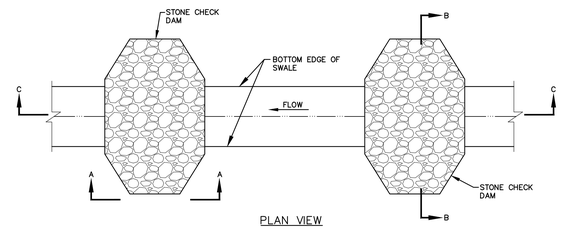
NOTE: TO BE USED ON SLOPES 3 HORIZONTAL TO 1 VERTICAL OR STEEPER

TYPICAL EROSION CONTROL BLANKET DETAIL
NOT TO SCALE
(INSTALLATION ON SLOPES STEEPER THAN 3:1)

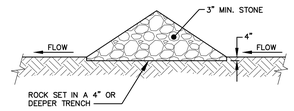


UNVEGETATED SLOPES SHOULD BE TEMPORARILY SCARIFIED TO MINIMIZE RUNOFF VELOCITIES, CAN ALSO BE USED TO ANCHOR MULCH.

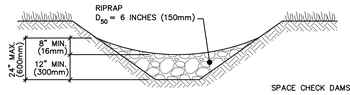
TYPICAL BANK STABILIZATION DETAIL
NOT TO SCALE



PLAN VIEW



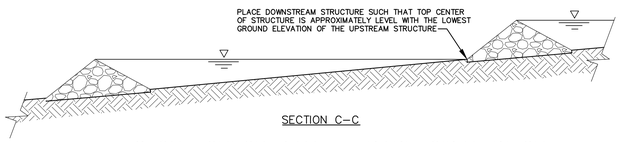
SECTION A–A



SECTION B–B

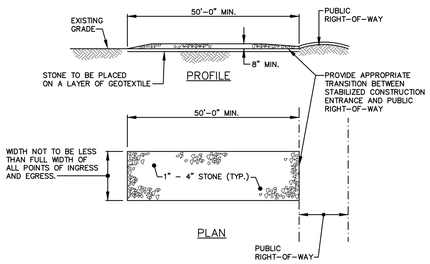
SPACE CHECK DAMS PER THE FOLLOWING:

$$\text{SPACING} = \frac{2\ \text{FT}}{\text{SLOPE RISE FT/RUN FT}} = \text{CHECK DAM SPACING IN FEET}$$



SECTION C–C

STONE CHECK DAM – TRAPEZOIDAL DITCH
NOT TO SCALE



STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

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Consultant

DD Approval Signature | Date

Project North

Key Plan N.T.S.

SCHEMATIC DESIGN	08.15.14	

Revision | Date | No.

Fletcher Allen HEALTH CARE
In alliance with The University of Vermont

INPATIENT BUILDING

MorrisSwitzer Project Number	201254
Drawn By	G. MERKLE
Date	15 AUGUST 2014
Scale	NO SCALE

Sheet Title and Number

EROSION CONTROL DETAILS

C-504

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