



CIVIL ENGINEERING ASSOCIATES, INC.
 P.O. BOX 485 SHELBOURNE, VT 05482
 802-885-5233 FAX 802-885-5271 WWW.CEAA-VERMONT.COM
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DESIGN BY
PJM
 CHECKED BY
BCE
 APPROVED BY
BCE



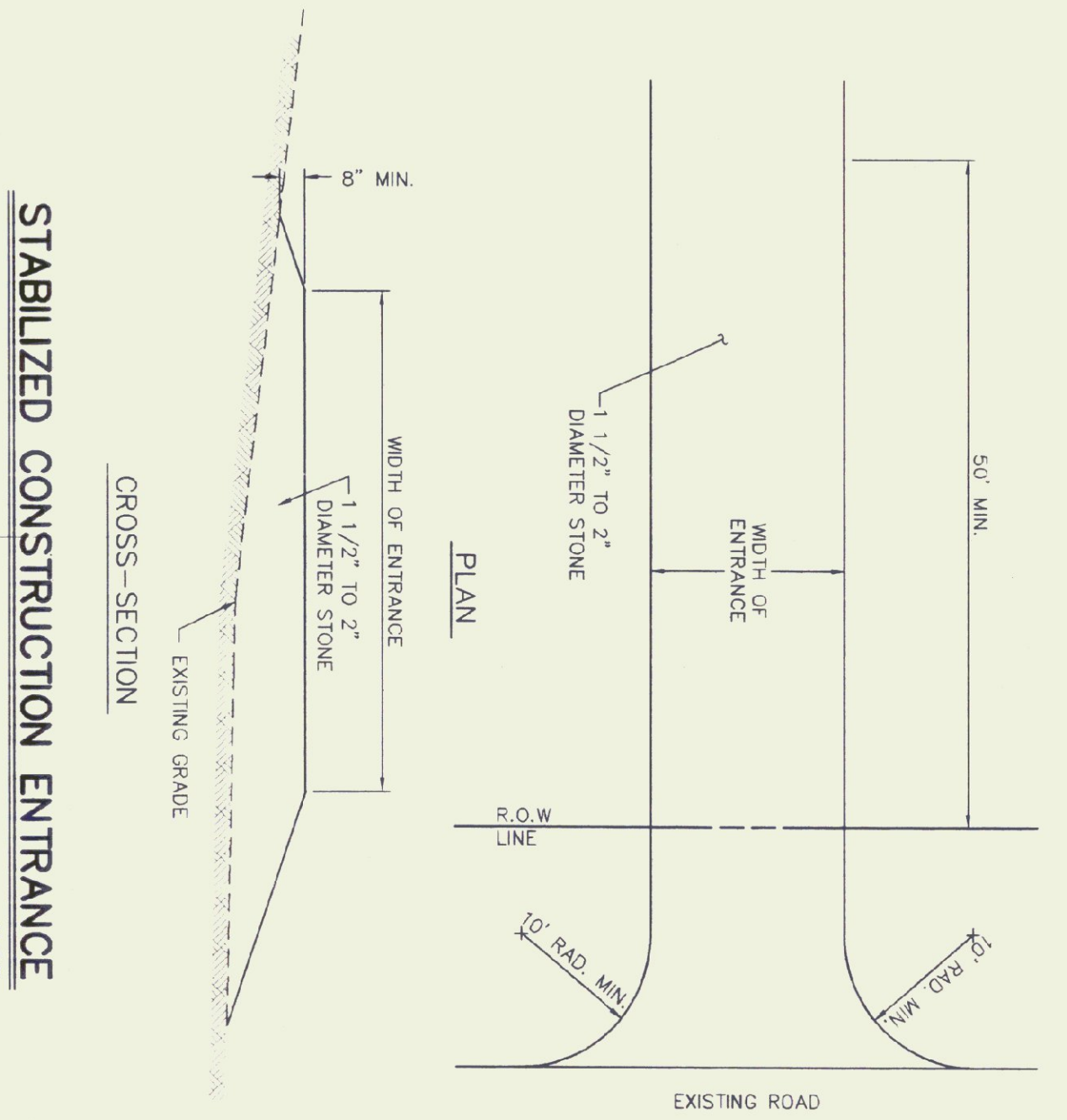
STATE OF VERMONT
 DEPARTMENT OF BUILDINGS AND GENERAL SERVICES
 MONTPELIER, VERMONT

PROJECT:
DERBY SALT and STORAGE SHEDS
 US ROUTE 5
 DERBY, VERMONT

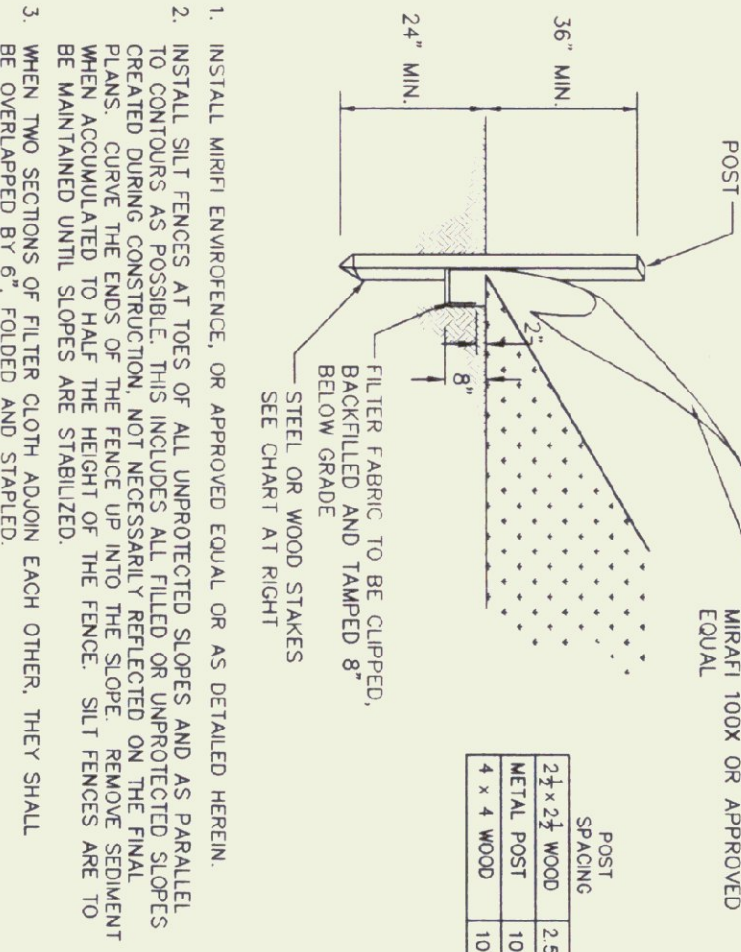
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EROSION CONTROL DETAILS

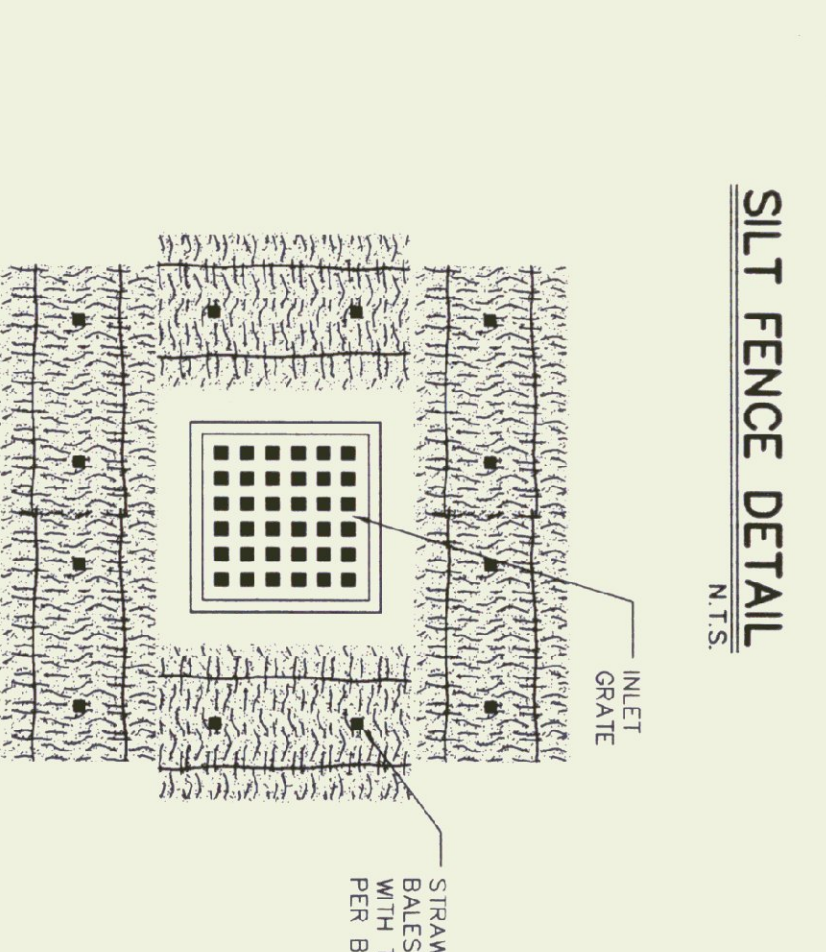
DATE: MARCH, 2003
 SCALE: AS SHOWN
 DRAWING NUMBER: **C5**



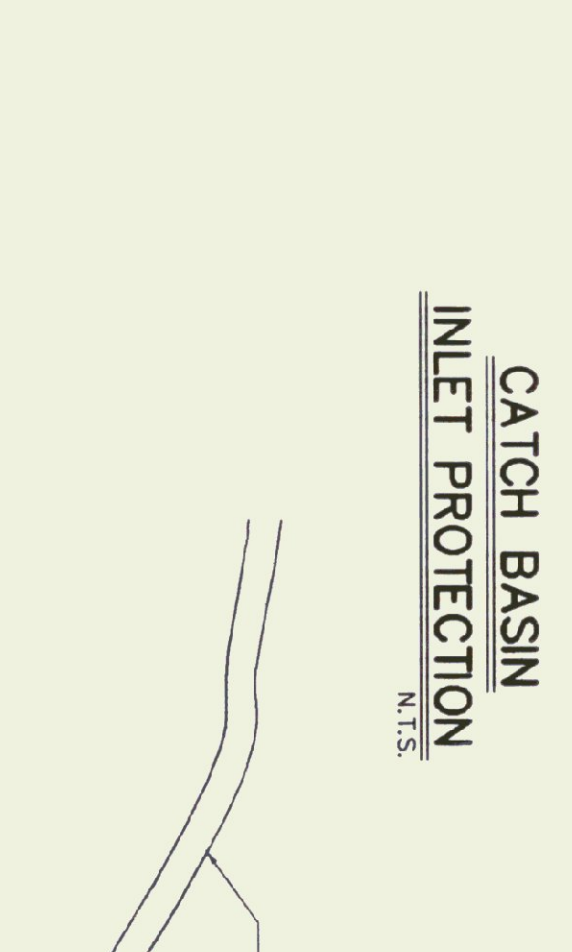
STABILIZED CONSTRUCTION ENTRANCE
 N.T.S.



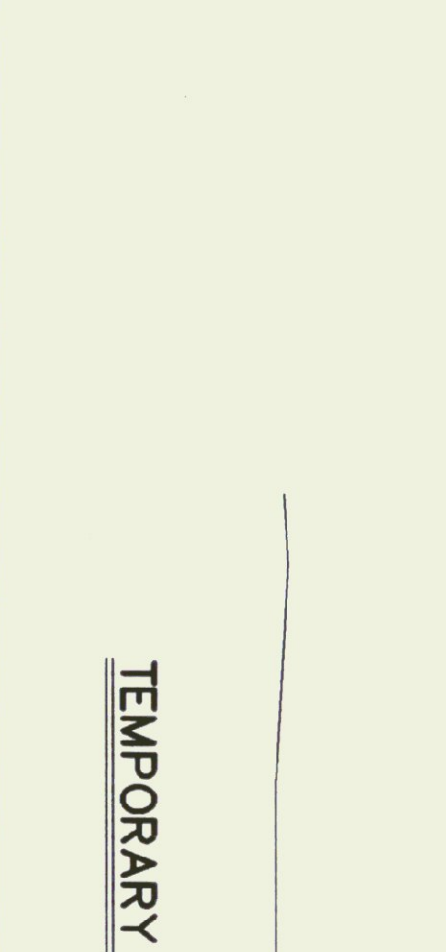
SILT FENCE DETAIL
 N.T.S.



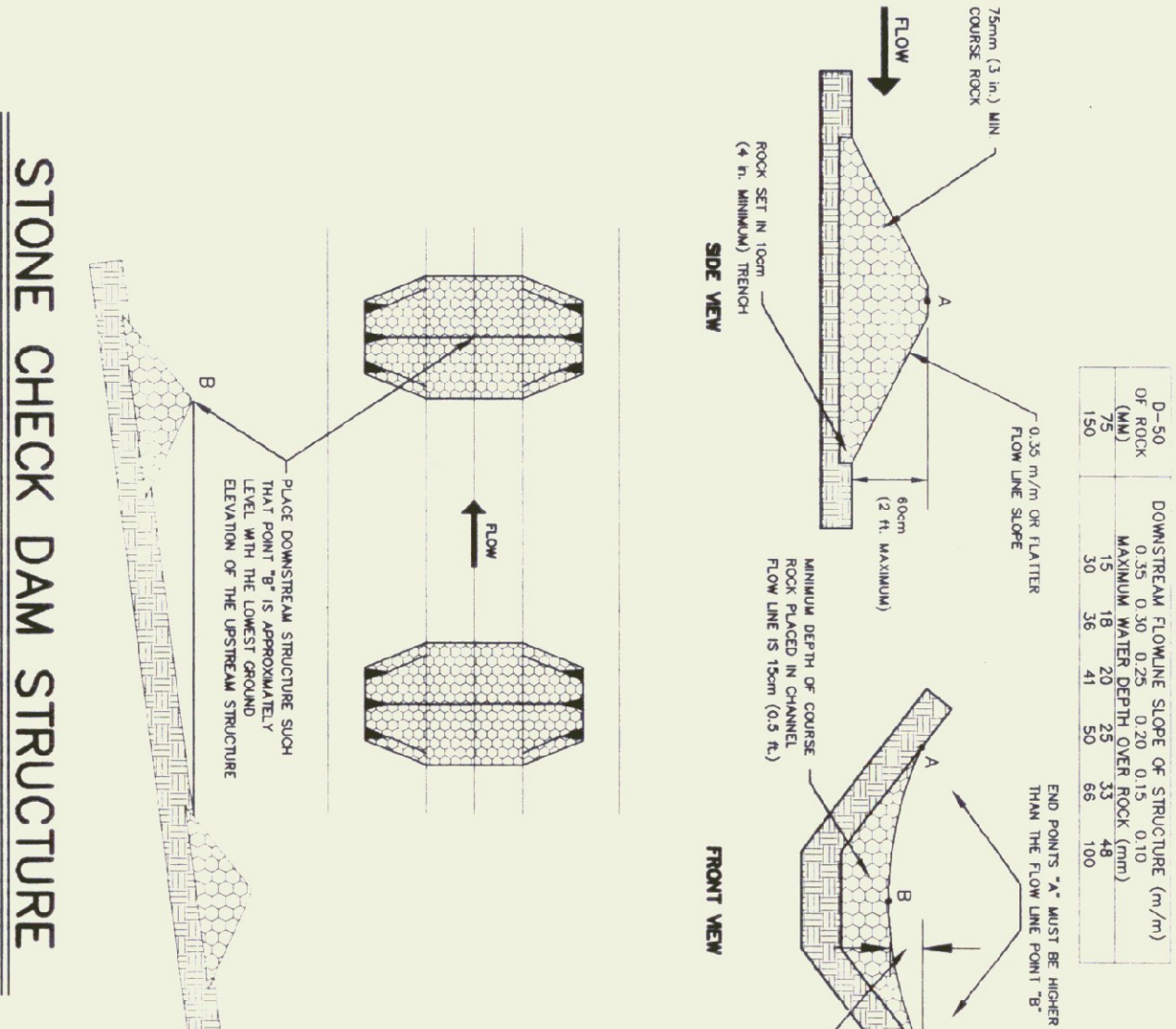
CATCH BASIN
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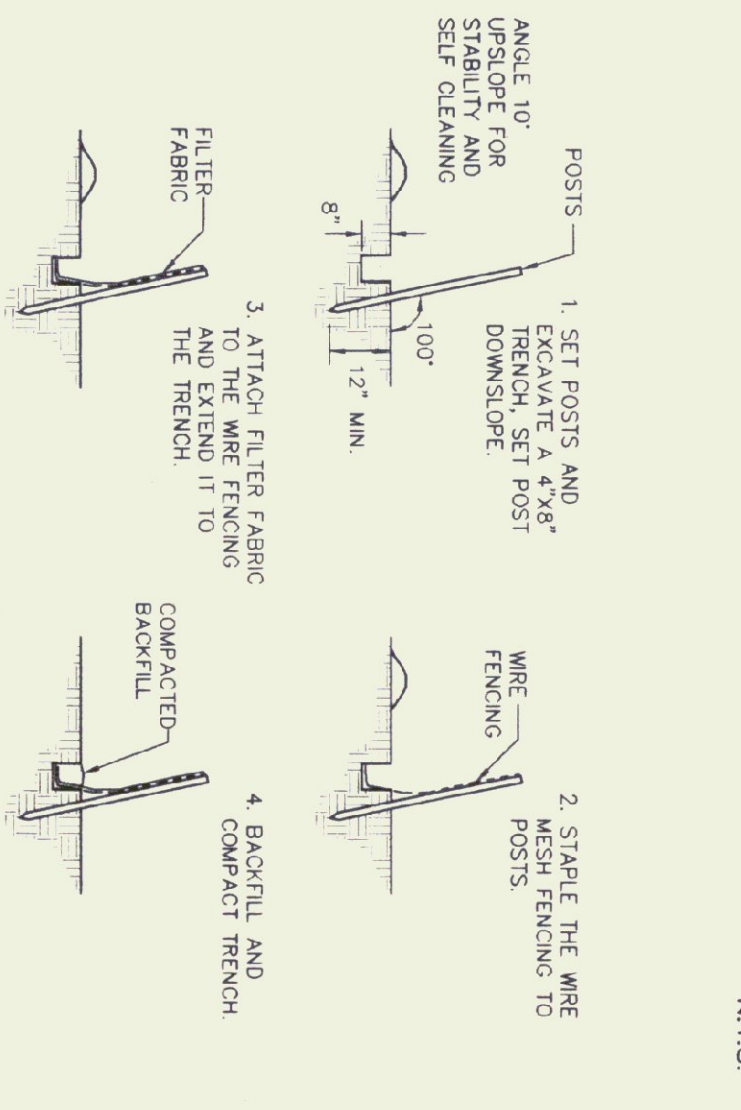
INLET PROTECTION
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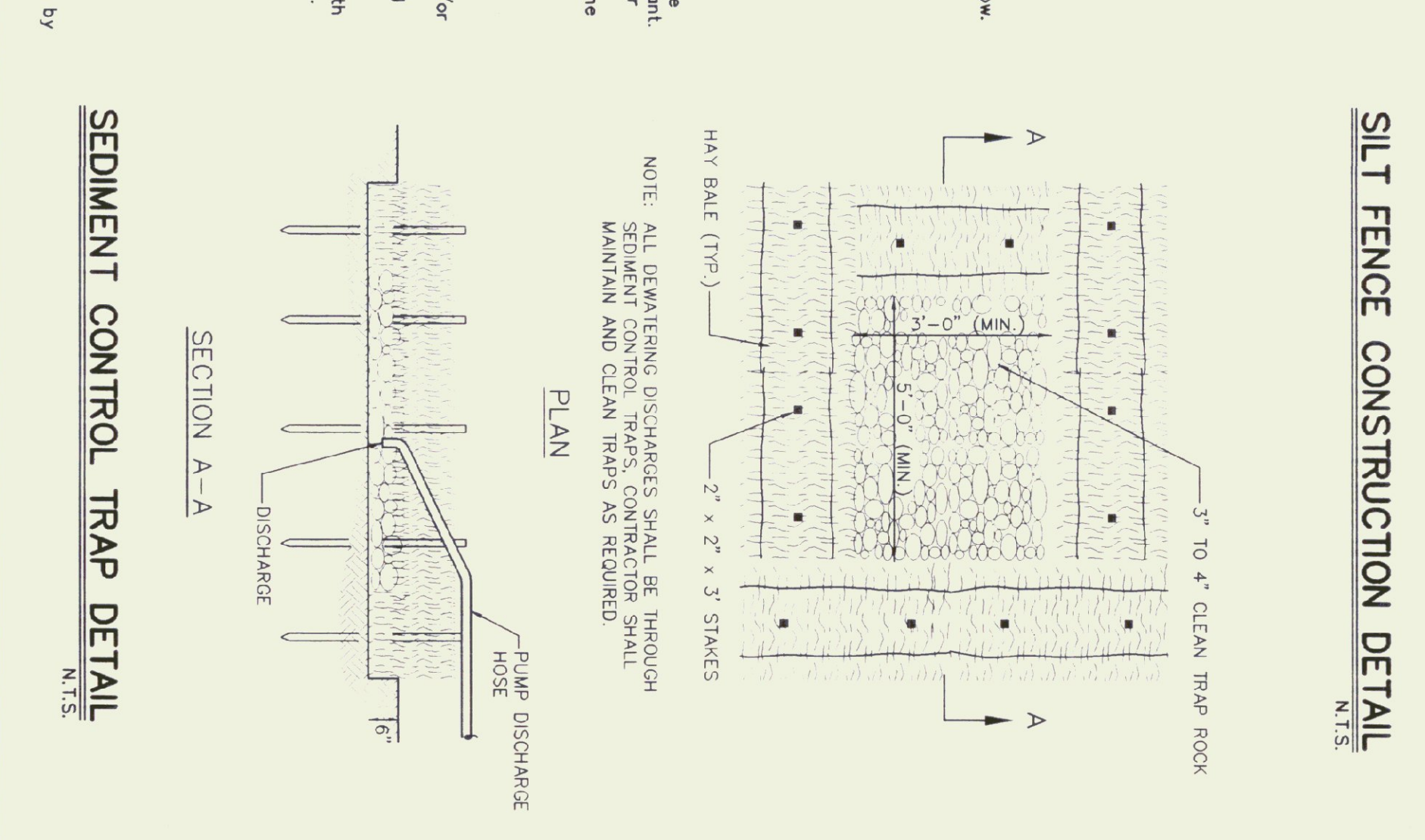
END SECTION DETAIL
 N.T.S.



STONE CHECK DAM STRUCTURE
 N.T.S.



SILT FENCE CONSTRUCTION DETAIL
 N.T.S.



SEDIMENT CONTROL TRAP DETAIL
 N.T.S.

EROSION CONTROL REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. The work under this section includes but is not limited to providing all labor, equipment and materials for the installation of all required site related erosion control measures. If not otherwise directed on the plans, erosion control shall be in strict conformity with the latest edition of the Vermont Erosion Control Manual and Vermont Control on Construction Sites.

1.02 GENERAL NOTES

- A. The discharge of sediment laden water from the project site is prohibited. All discharged water from dewatering operations shall discharge into a temporary sedimentation basin.
- B. Contractor shall install all erosion control measures as depicted on plans and details or as recommended by the Vermont Agency of Natural Resources, or Soil Conservation Service, prior to any construction. Contractor shall also be responsible for inspecting and maintaining all erosion control measures until project is completed.
- C. Contractor shall also limit the soil disturbance and seeding application dates to between May 1st and October 15th. If soil disturbance occurs later than October 15th and prior to May 1st, winter erosion control measures will be necessary. Winter erosion control measures include additional site specific winter erosion control measures.
- D. All stockpile material (topsoil, borrow, etc.) will have a hay bale dike or silt fence constructed around the soon as possible. Seed and mulch stockpiled material or soil shall be protected from erosion. Local stockpiles on the uphill side of the disturbed areas, if possible, during windy conditions, stockpiled material shall be covered or watered appropriately to prevent wind erosion.
- E. 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 pits are in contact with the soil and mulch. Pin netting with wire staples 3' o.c. to ensure full bonding with soil surface.
- F. 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.
- G. Control dust through the application of calcium chloride or water. An average application of one pound of calcium chloride per square yard of exposed area should be considered for each treatment. The exact number of applications and amount of dust controller shall be based upon field and weather conditions. The dust controller shall be applied during the entire area on which it is ordered placed.

PART 2 - PRODUCTS

- 2.01 EROSION CONTROL NETTING**
 - A. Jute netting shall consist of unjuted and unbleached jute woven into a uniform open plain weave mesh.
- 2.02 EROSION CONTROL MATTING**
 - A. Where required on the plans or where directed by the Engineer, erosion control blankets (matting) shall be North American Green C125 for swales, and SC150 for slope stabilization, or approved equal.
- 2.03 FILTER FABRIC**
 - A. When filter fabric is required, it shall conform to the requirements of Mifflin 140MS or approved equivalent.
- 2.04 CALCIUM CHLORIDE**
 - A. Calcium chloride shall conform to the requirements of AASHTO M 144. Either regular flake calcium chloride, Type 1 or color-extended flake, pellet or other granular calcium chloride, Type 2, may be used.
- 2.05 MULCH**
 - A. All water used shall be clean and free of harmful amounts of salts, oils, acids, or other substances injurious to the finished product, plant life or the establishment of vegetation.

PART 3 - EXECUTION

- 3.01 HAY BALE CHECK DAM AND INLET PROTECTION**
 - A. Bales shall be placed in a row with ends tightly abutting the adjacent bales. Each bale shall be embedded in the soil a minimum of 4 inches. Bales shall be secured in the place by stakes or rebar, driven through the bales. The stakes or rebar shall be driven through the bales and the previously laid bale to force the bales together.
 - B. 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.
- 3.02 SILT FENCES**
 - A. 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 plans. The ends of the fence shall be placed 10 feet from the toe of the slope to trap all runoff.
 - B. The silt fences shall be inspected periodically for damage or build-up of sediments. All damaged fences shall be repaired or replaced. Sediment deposits shall be removed from the fence as they build up and be placed in an area where there is no danger of further erosion.
- 3.03 EROSION MATTING**
 - A. Erosion matting shall be placed on all grass-lined ditches with profile grades exceeding 3% and shall be placed and secured in accordance with the construction detail and Transportation Standard Specifications Sections 654 and 755.07.
- 3.04 RESTORATION**
 - A. As soon as construction is completed in a given area, it shall be topsoiled, seeded, fertilized and mulched as specified in the Permanent Seeding Section.

3.05 STABILIZED ROAD ENTRANCE

- A. A stabilized pad of compacted stone located as shown on the drawings shall be constructed for the purpose of preventing the tracking of sediment onto public rights-of-way.
- B. Design Criteria:
 1. Design width shall be 4.0 inch stone.
 2. Use 8 inch layer of stone.
 3. Stone pad shall be full width of entrance.
 4. Minimum length shall be 50 feet.

3.06 GRASS-LINED DITCHES

- A. All ditches that are not stone-lined shall be topsoiled, seeded, fertilized and mulched. Any area which shows signs of erosion shall be repaired immediately and maintained until permanent vegetation is established.

3.07 TEMPORARY DIVERSION DITCH

- A. Some diversion ditches will be temporary in nature with stone or seeding. These ditches will act as infiltrative areas and will have hydrology check dams to minimize the move of fine grained materials.

3.08 MAINTENANCE

- A. All erosion control measures shall be inspected weekly and repaired and/or replaced as needed.
- B. All erosion control measures shall be inspected after periods of heavy rain.
- C. The stabilized road entrance shall be top dressed with additional stone should the existing stone become clogged with sediment.
- D. Hay or straw mulch is subject to wind action. Mulch may require anchoring as the weather conditions warrant.

3.09 WINTER CONSTRUCTION

- A. If, due to the project schedule, construction during the winter construction procedures outlined in the Vermont Handbook for Soil Erosion and Sediment Control on Construction Sites:
 1. Minimize disturbance between October and May.
 2. All erosion control measures shall be in place prior to snowfall.
 3. Mulch shall be applied to all disturbed areas of a rate of 90 pounds per 1000 square feet. The Contractor shall maintain all areas that are mulched until permanent vegetation can be established.

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes:
 1. Furnishing all labor, materials and equipment to complete all seeding required to provide temporary protection against wind or water erosion.

1.02 GENERAL NOTES

- A. Adequate seed bed preparation, use of quality seed, and timely planting are required to achieve a good stand of vegetation to control erosion.

PART 2 - PRODUCTS

2.01 GENERAL

- A. At a minimum, all products shall meet the requirements of the Permanent Seeding Section.

PART 3 - EXECUTION

3.01 SEEDING CONDITIONS

- A. All essential grading and all temporary structures, such as diversions, dams, ditches, and drains needed to prevent gulping and reduce siltation, should be completed prior to seeding.

3.02 SEED AND SEEDING

- A. Seed and seeding rates may be selected from the table below. Seeding rates shall be based on the seed purity and germination. The length of time the vegetation is to afford the protection. The seed should be spread uniformly over the area. After seeding, the soil should be firmed by rolling or packing. Where rolling or packing is not desired, the seed should be covered lightly by raking, dragging, or disking.
- B. Plant Section and Seeding Rates:

| Species | Per Acre | Sq. Ft. | Remarks |
|--------------------|----------|----------|---|
| Annual Ryegrass | 40 lbs. | 1 lb. | Grows quickly, but is of short duration. Use where appearances are important. |
| Perennial Ryegrass | 30 lbs. | 0.7 lbs. | Good cover which is longer lasting than annual ryegrass. Seed between August 15 and September 15. Mulching will allow seeding throughout the growing season. Seed to a depth of approximately 3 inch. |

3.04 MULCHING

- A. Where it is impracticable to incorporate fertilizer and seed into the soil, the seeded area should be mulched to facilitate germination.

3.05 MAINTENANCE

- A. If the seeding fails to grow, it may need to be re-established to provide adequate erosion control.
- B. If weeds become a problem, they may need to be controlled by mowing.