



DESCRIPTION OF PROJECT

This project involves reconstruction of bridge #3 over Mendon Brook on Town Highway #1 in the Town of Mendon. Mendon Brook is characterized as a steep watercourse with a streambed of cobbles to large boulders, and has a drainage area of 46.8 square kilometers (18.0 square miles). The total disturbed construction area (excluding waste, borrow, and staging areas) is 0.64 hectares (1.57 acres). The names of the receiving waters are: East Creek & Otter Creek.

Features of concern with respect to erosion control include steep embankments immediately adjacent to the project, and three seasonal watercourses involving pipe replacements. The City of Rutland's Water Intake Facility is located approximately 77 meters (252 feet) downstream of the center of the proposed bridge. The proximity of the Water Intake Facility to the project will result in erosion control practices being a very high priority. A new single span bridge will be constructed on existing alignment. Traffic will be maintained on a two-way temporary bridge to be located downstream of the existing bridge. A significant portion of the project footprint will be impervious, such as the entire detour will be paved. The construction limits do not approach any buildings or any other structures outside the project limits. Overhead utility lines will be relocated as indicated on the project plans.

DESCRIPTION OF EXISTING SOILS

A detailed description of the soil types expected to be encountered in the project area is included in the project plan sheet titled "Soil Narratives." The following data represents the soil "K" values as described in the Soil Conservation Service's Rutland County Soils Book. This data was taken from Table 16, titled "Physical & Chemical Properties of the Soils."

Table with 4 columns: Soil Name, Depth, Erosion Factor (K), Erosion Factor (T). Rows include various soil types like 13B Hinkley, 13E Hinkley, 14B Sudbury, 31C Paxton, 56B Colton, Duxbury, Udifluvents, and Fluvaquents.

The following chart was taken directly from the "Vermont Handbook for Soil & Erosion and Sediment Control on Construction Sites," and describes the level of soil erodability within a given range of "K" values. See Soil Type Narratives on sheet 33.

Chart mapping K Value to Level of Erodability: 0.23 and lower (Low erodability), 0.23 to 0.36 (Moderate erodability), 0.37 and higher (Higher erodability).

The majority of this project is considered to be "in a fill typical," meaning that the roadway is higher than the surrounding mean ground elevation. Due to engineering requirements for selective fill material depths, much of this fill material will need to be brought in from an outside source. Since we do not know where this source pit will be, we cannot provide a "K" value as to its erodability properties.

DESCRIPTION OF EXISTING VEGETATIVE COVER

In the immediate vicinity of the Town Highway, the existing ground cover is mostly open and grassy with intermittent deciduous shrubs. As depicted on the plans by the area survey, the wooded areas are mainly outside of the project footprint. The major species of trees found in the open woods include Sugar Maple, Northern Red Oak, with some Eastern White Pine, Red Spruce, Eastern Hemlock, and Balsam Fir.

DESCRIPTION OF SLOPES

The existing shape of the project area can be seen by looking at the erosion control phase I sheet where the existing contours are shown. The contours are shown in two line styles. The Major Contours lines are solid lines (with elevations) at one meter intervals while the Minor Contour Lines are dashed and depict the half meter interval between two Major Contour Lines.

EXISTING SLOPES

Generally speaking, the project impacts both flat and steep areas. Beginning at station 2+000 (the point furthest from U.S. Route 4) the existing slopes on the south side of TH#1 are very steep and continue for approximately 80 meters. At this point, station 2+080, the existing slopes flatten out considerably. This is the area where the temporary detour alignment veers south from the existing alignment. These relatively flat area continues across Mendon Brook to station 2+200 where the detour is realigned with TH#1. The access drive to the Water Intake Facility is located at this point on the south side of TH#1. From this point to the intersection of U.S. Route 4, the existing slopes on both the north and south side of TH#1 become very steep. See Roadway Sections (sheets 66 thru 88) for existing slopes (represented by dashed lines), and existing conditions on sheet 32.

PROPOSED SLOPES

The proposed roadway embankments will have all have relatively steep slopes. The roadway fill slopes on the south side from the beginning of the project to Mendon Brook are all 1-2 slopes (50%) and require the installation of guard rail. The slopes on the north side are flatter due to a portion of this area being in a cut condition. There is a drive being retained on the south side at station 2+095 with guard rail beginning immediately afterwards at station 2+100. The slopes behind the guardrail are 1-2 (50%) and continue until the brook.

The slopes along the channel banks are lined with heavy stone and are at 1-1.5 (67%).

From the east end of the bridge to the Water Intake Facility on the south side, the slopes are 1-2 (50%) behind guardrail. East of this drive towards U.S. Route 4, there is a stone lined ditch for the remainder of the length of the project on the south side. The slopes on the north side are 1-2 (50%) from the bridge to station 2+240 where a stone fill blanket begins. These slopes are 1-1.5 (67%) to the end of the project. The entire north side is behind guardrail.

GENERAL EROSION & SEDIMENT CONTROL GUIDELINES

The Erosion Control plans are intended as a guide for preventing soil erosion and controlling sediment. The work outlined in this narrative consists of applying measures throughout the duration of the project to control erosion and minimizes the sedimentation of the receiving waters.

An alternate temporary erosion control plan may be submitted by the contractor for approval by the Agency of Transportation.

The contractor will use other temporary or permanent erosion control devices as necessitated by the sequence of construction and as directed by the Resident Engineer. See Section 105.23 of the 2001 Vermont Standard Specifications for Construction.

The contractor shall coordinate the installation, use, and removal of erosion and sediment control measures with construction activities to assure economical, effective, and continuous erosion and sediment control. The contractor shall employ temporary stabilization practices in incremental stages as construction activities proceed.

The Resident Engineer may direct the installation of certain erosion control measures in order to forestall or mitigate potential erosion problems, or to respond to storm events or damage by construction operations.

The contractor shall install erosion and sediment control measures as sequenced on the Erosion Control Plan sheets, or as directed by the Resident Engineer. The type, size, and location of any erosion control device shall not be changed unless prior approval is obtained from the Resident Engineer. Any approved changes shall be noted on the Erosion Control plans and discussed in the weekly report. The contractor shall inspect all erosion control measures daily and after each rainfall event. The contractor shall repair all damaged erosion control measures immediately. All erosion control measures that trap sediment, such as sediment basins and silt fences, shall be cleaned out when their capacity reaches 50%.

The Resident Engineer's approval should be obtained prior to installing any erosion controls not specified in the Erosion Control Plans. However, in emergency situations where the Resident Engineer is not immediately available, the contractor should repair or install the erosion controls as they deem necessary and report the incident to the Resident Engineer as soon as practical.

The contractor shall control all sediment-laden runoff generated within the project site. Clean runoff from outside the project site shall be routed through the project site using diversion berms, diversion channels, and temporary or permanent culverts.

Construction equipment will not be allowed to operate on the downhill side of the perimeter control measures.

Construction equipment will not be allowed to cross a flowing stream, or disturb the existing stream banks, unless authorized by the Resident Engineer.

All in-stream construction must take place in a dry channel between June 1st and October 1st.

In general, preserve existing vegetation, shrubs, and trees whenever possible.

Silt fence shall be placed at the toes of all fill slopes and shall be constructed so that flows cannot bypass the ends. Areas directly below (downhill) of the silt fences must be un-disturbed and vegetated.

STRAW Matting will be installed as soon as practical on all temporary detour cut & fill slopes and permanent cut & fill slopes.

As construction progresses, implementation of additional erosion control measures may be required as deemed necessary by the On-Site Coordinator and as approved by the Resident Engineer.

The City of Rutland's potable water intake facility is located approximately 77 meters downstream of the existing bridge. The contact person at Rutland's water treatment facility is Michael Garofano (phone 802-773-0379).

SHEET #1 EROSION CONTROL NOTES

Table with project details: PROJECT: MENDON, PROJECT NO.: BRO 1443(35), DESIGN FILE NAME, IPARM FILE NAME, SURVEYED BY: L. ORVIS, SQUAD LEADER: C. KELLER, PLOT DATE: 18-NOV-2005, SURVEY DATE: 2/96, DRAWN BY: G. SHANGRAW, SHEET: 24 OF 94.