

# EROSION CONTROL NARRATIVE

## DESCRIPTION OF PROJECT

This project involves the rehabilitation of the covered bridge (No. 27) over the Ompompanoosuc River. The project is on TH-6 (Tucker Hill Rd.), a paved town road that is narrow at the project site. The bridge is also situated at the bottom of a vertical sag.

Traffic will be detoured around the project and the bridge will be closed for rehabilitation. The rehabilitation will consist of: removal and replacement of the concrete abutment cap at abutment #1, Removal and replacement of bridge bearings (at abutment #1), Cleaning and repainting of the steel girders. Replace nail laminated deck with a glue laminated deck. Place timber wearing surface on the deck. Placement of a wooden guard rail through the structure. The timber truss will have all broken/damaged members replaced in a manner consistent with the original construction methods. The approaches will have new pavement, wooden rail, and side slopes. All of this work will take place within the existing R.O.W.

There is no channel work needed with this project. Existing Side slopes are steep and all new slopes will be steep (especially near R.O.W. lines).

It is anticipated that this project will last one construction season.

## SITE INVENTORY & ANALYSIS

### OFF SITE DRAINAGE CHARACTERISTICS:

The property surrounding the project site consists of well established vegetation with moderate to steeply sloping banks. The surrounding area consists of mixed softwood and hardwood forest with defined drainage ways. Due to the nature of the surrounding terrain, runoff water entering the project site will be primarily limited to that which is conveyed along roadway ditches. Because the bridge is in a vertical sag, temporary asphalt diversionary berms should be placed in roadway to control offsite water from entering the project site.

### DRAINAGE, WATERWAYS, BODIES OF WATER:

The Ompompanoosuc River is located in the project area. There are no other water bodies or wetlands within the project area. The Ompompanoosuc River, at normal water levels, is a slow velocity river. The river bed is shallow to deep with a sandy silt bottom. Around the bridge abutments there are sandy silt beaches. At ordinary high water these beaches are submerged.

### TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES:

The topography of the project site is mountainous with various sized wooded growth around toe of project slopes. The Ompompanoosuc River runs perpendicular to the structure and has medium to steep banks with dense, varied growth overhanging the river. There are three driveways with two all season residences near the project. There are overhead utilities that will be maintained and the need for relocation of the utility poles is unlikely.

### VEGETATION:

A mix of hardwood and softwood trees of all sizes exist along Tucker Hill Rd. (TH-6). The two residences near the bridge site have small areas of lawn and landscape plantings. The one land owner at Stations 8+25 thru 8+64 has hedges within the existing R.O.W. and these hedges will be retained. During the bridge rehabilitation, the original concrete cap at abutment #1 is to be replaced. This will require a small amount of soil excavation around the old cap. During this time, the entire project may not have all the erosion controls in place. Placement of proper erosion controls around the abutment cap will be needed at this time. The rest of the erosion controls may be placed once the project proceeds to the approach work and guard rail slopes phase. During the approach work, slopes greater than 3:1 will require erosion control matting. Slopes will be vegetated/reestablished with standard seed & mulching practices.

### SOILS:

The Soil Conservation Service has mapped the soils throughout Orange County. The soil type identified for this project site is as follows:

(NnB) Ninigret-fine sandy loam, 0 to 8% slopes. This soil type is described as "...Level to gently sloping soil is depression areas on stream terraces and are irregular in shape. This soil is considered to be potentially highly erodible. The soil is somewhat poorly drained to moderately well drained.

The erodibility coefficient for this soil is rated (k value) is 0.32.

The other soil found at this site is: (HdD) Hartland silt loam 15 to 25%

(HdD) Hartland silt loam 15 to 25% slopes. This type of soil is described as "...Moderately steep soil on strongly dissected terraces, also included are areas of soil that have a surface layer of very fine sandy loam, steep spots, out crop of bedrock, and small eroded spots. This soil is considered to be highly erodible in areas of no vegetative cover. This soil is somewhat poorly drained to moderately well drained.

The erodibility coefficient for this soil is rated (k value) of 0.49.

Generally, K-values indicate the following: 0.0 - 0.23 = low erodibility; 0.24 - 0.36 = moderate erodibility; 0.37 and higher = higher erodibility.

### SENSITIVE RESOURCE AREAS:

No 'Threatened & Endangered Species' have been identified within the project limits. There is a Historic site and archeologically sensitive areas in the vicinity of the project, but not within the project limits. There are wetlands in the vicinity of the project, these also are not within the project limits. The only resource within the project limits is the Ompompanoosuc river.

### PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES:

Disturbance of soils near natural or man-made waterways consists of that which is necessary to construct two new concrete abutment caps and applicable roadway approaches as well as guard rail flares with slopes. No stabilization of stream banks will be included with this project since this project does not have any channel work associated with it.

## TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL

Temporary erosion prevention measures to be utilized include:

"Project Demarcation Fencing," denoted -PDF- on the plans, to delineate the limits the contractor can access. This measure limits the area that the contractor may, but not necessarily will, disturb and expose soils to erosion.

Seeding, mulching and biodegradable erosion control matting, or an equivalent product, will be utilized on all slopes steeper than 3:1.

These slopes shall be stabilized within 48 hours of reaching final grade or during intermittent phases of construction activity.

Temporary mulching and or matting, will be utilized on a regular basis. Any slopes to be exposed for several days prior to final grading shall be mulched and or matted. The forecast of rainfall events shall also trigger protection of exposed slopes and matting of slopes greater than 3:1.

Temporary asphalt diversionary berms will be placed on the existing asphalt surfaces to channel off site roadway water flow from entering the project and thus reduce the potential for erosion. Placed at the end of the asphalt diversionary berms will be flow decelerators and silt fencing to slow the water flow and trap any sediment. See 'Erosion Controls Details' sheet. The diversionary berms may be removed once the all slopes (including slopes greater than 3:1) and surrounding areas are stabilized.

Temporary measures to control sediment transport include:

Silt fence will be installed and maintained as indicated in "erosion & sediment control plan". The contractor may need to adjust locations as indicated on the plans to better suit their construction needs. Proposed and or alternate silt fence locations will prevent sediment transport to down gradient areas. Each line of silt fence will be placed along the contour with ends turned slightly uphill to create a ponding effect should water try to run along the fencing and around the ends. Because of narrow width of the project, short effective runs of silt fencing should be installed. Silt fence shall be installed prior to any upslope earthwork.

Measures such as temporary asphalt diversionary berms, silt fence, and diversionary flow decelerators shall be checked regularly for accumulation of sediment. Sediment build-up shall be removed when the level of sediment reaches one-half the height of the control measure or if sediment renders the erosion control device ineffective for its intended purpose. Sediments shall be disposed of in an approved area such that they will not be subject to erosion.

Temporary sediment settling basins may not be utilized on this project.

## PERMANENT EROSION CONTROL MEASURES

Grass, or other suitable ground cover will be established outside of the roadway limits. Specifically, 3:1 and greater slopes shall be matted and seeded promptly upon achieving final grade.

## GENERAL EROSION & SEDIMENT CONTROL GUIDELINES

The Erosion Control Plans are meant as a guideline for preventing erosion and controlling sediment transport. The work outlined in this narrative consists of applying measures throughout the life of the project to control erosion and minimize the sedimentation of receiving waters. The measures include stabilization and structural practices, storm water controls and other pollution prevention controls.

Coordinate the installation, use, and removal of erosion and sediment control measures with construction activities to ensure economical, effective and continuous erosion and sediment control. Employ temporary stabilization practices in incremental stages as construction proceeds. The contractor will use additional erosion control measures as necessitated by the sequence of construction and as directed by the Engineer. See section 105.23 of the Vermont AOT Standard Specifications for Construction, dated 2001.

Install all erosion and sediment control measures as shown in the Erosion Control Plan or as directed by the Engineer. Do not modify the type, size or location of any control or practice without approval of the Engineer. Any changes shall be noted on the plans, in the weekly inspection report, and reported to the appropriate authority in a timely manner. Inspect all control measures weekly and after each rainfall event. Repair measures promptly once damage is discovered.

Preventing initial soil erosion is much more effective than treating eroded sediment. Therefore, stabilize all disturbed areas promptly after construction activity has temporarily or permanently ceased. Temporary vegetation shall be established if the area is to be without construction activity for a period of 14 days. Perimeter control measures shall be installed following clearing, but prior to the start of any grubbing or grading activity, install other temporary controls in incremental stages as construction proceeds.

Maintaining vegetated buffers along stream banks, wetlands or other sensitive areas is a crucial erosion and sediment control measure that should be utilized wherever possible.

Control only sediment-laden runoff generated by the project site. Collect and route clean offsite runoff around or through the project site using diversion berms, diversion channels, culverts and/or temporary pipes.

Do not allow construction equipment to operate on the down slope side of perimeter control measures.

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PROJECT NAME:	THETFORD	PLOT DATE:	1/31/2006
PROJECT NUMBER:	BHO 1444 (43)	DRAWN BY:	G.ROKES
FILE NAME:	structures/sj036ero.dgn	CHECKED BY:	M. E-MONGEON
PROJECT LEADER:	M. EVANS-MONGEON	SHEET	20 OF 60
DESIGNED BY:	G.ROKES		
IPARM	s03j036ena.i		