

# EROSION CONTROL NARRATIVE

## 1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REHABILITATION OF THE BRIDGE AT THE INTERSECTION OF CARON ROAD AND FOUNDARY ROAD, OVER THE FIRST BRANCH WHITE RIVER, IN TUNBRIDGE VERMONT. THE EXISTING ABUTMENTS WILL BE MODIFIED. THE TOTAL ROADWAY WORK, INCLUDING THE APPROACHES, IS APPROXIMATELY 405 FEET. A REPLACEMENT OF AN EXISTING DRAINAGE PIPE WILL ALSO BE INCLUDED. NATURAL RESOURCES NEAR THAT PROJECT AREA HAVE BEEN CLEARLY IDENTIFIED AND SHOWN ON THE RESOURCE LAYOUT SHEET.

IT IS ANTICIPATED THAT THIS PROJECT WILL BE COMPLETED IN TWO CONSTRUCTION SEASONS WITH NO WORK BEING DONE OUTSIDE THE PLANTING SEASON.

TOTAL DISTURBED AREA (EXCLUDING WASTE, BORROW, AND STAGING AREAS): 8482 SF (0.19 ACRES)

## 1.2 SITE INVENTORY & ANALYSIS

### 1.2.1 OFF SITE DRAINAGE CHARACTERISTICS

THE PROPERTY SURROUNDING THE PROJECT SITE CONSISTS OF RESIDENTIAL PROPERTY EXCEPT FOR A PORTION OF WOODS LOCATED TO THE SOUTHWEST. THE RESIDENTIAL AREAS ARE GENERALLY FLAT WHILE THE WOODED AREA SLOPES DOWN TO THE RIVER. THERE ARE SCATTERED SMALL TREES LOCATED ON THE RESIDENTIAL PROPERTIES. ADJACENT TO THE RIVER ARE MEDIUM SIZE TREES LOCATED ALONG THE BANKS OF THE RIVER. THERE ARE STONE RETAINING WALLS LOCATED ON THE NORTHWEST, NORTHEAST, AND SOUTHEAST SIDES OF THE RIVER.

### 1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE FIRST BRANCH WHITE RIVER IS LOCATED IN THE PROJECT AREA. THE FIRST BRANCH WHITE RIVER IS A RURAL MEANDERING WATERWAY THAT FLOWS IN AN OVERALL NORTH-SOUTH DIRECTION FROM ITS HEADWATERS IN WASHINGTON TO ITS OUTLET AT THE WHITE RIVER IN ROYALTON. THE FIRST BRANCH WHITE RIVER IS A SMALL STREAM WITH PERENNIAL, FLASHY FLOW. THE BED MATERIAL CONSISTS OF GRAVEL, COBBLES, BOULDERS, AND LEDGE. IN THE IMMEDIATE BRIDGE REACH, THE CHANNEL BED IS COMPRISED PRIMARILY OF LEDGE WITH POCKETS OF GRAVEL AND SMALL COBBLES. THE VALLEY SETTING PROVIDES MODERATE RELIEF WITH LITTLE OR NO NATURAL LEVEES AND FLOOD PLAINS. THE STREAM IS PROBABLY INCISED AND HAS NON-ALLOUVIAL CHANNEL BOUNDARIES. NO WETLANDS OCCUR WITHIN THE PROJECT LIMITS. HOWEVER, SMALL FRINGES OF WETLAND VEGETATION THAT OCCUR ALONG THE RIVER ARE BELOW THE OHW LINE AND THEREFORE ARE CONSIDERED PART OF THE WATER BODY. THERE ARE NO OTHER PRIMARY WATER BODIES OR WETLANDS WITHIN THE PROJECT AREA. ARCHAEOLOGICAL AND HISTORICAL AREAS ARE LOCATED WITHIN THE AREA AND ARE SHOWN ON THE RESOURCE LAYOUT SHEET.

TREES GENERALLY COVER 50 TO 90 PERCENT OF THE BANK, AND THE STREAM IS NOT BRAIDED OR ANABRANCHED WITHIN IMMEDIATE REACHES. THE CONTRIBUTING DRAINAGE AREA AT THE BRIDGE CROSSING IS 71.4 SQUARE MILES.

### 1.2.3 TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES

THE TOPOGRAPHY OF THE RESIDENTIAL PROPERTIES IS GENERALLY FLAT WITH THE GROUND SLOPING STEEPLY ADJACENT TO THE RIVER. THE WOODED AREA SLOPES STEEPLY DOWN TO THE RIVER AS WELL. FOUNDARY ROAD AND CARON ROAD ARE BOTH DIRT ROADS. THERE ARE RESIDENTIAL HOMES LOCATED ADJACENT TO THE PROJECT AREA WHICH CAN BE SEEN ON THE EXISTING CONDITIONS PLAN. AN OVERHEAD UTILITY LINE EXISTS ALONG THE DOWNSTREAM SIDE OF THE BRIDGE.

### 1.2.4 VEGETATION

THE VEGETATION ALONG FOUNDARY ROAD AND CARON ROAD IS A MIX OF GRASS AND SMALL TREES. THE MAJORITY OF VEGETATION ON THE RESIDENTIAL PROPERTIES IS GRASS WITH THE TREES BEING LOCATED CLOSE TO THE RIVER AND ALONG THE HILLSIDE LOCATED TO THE SOUTHWEST.

FOLLOWING CONSTRUCTION OF THE NEW BRIDGE, ANY DISTURBED CHANNEL SLOPES WILL BE STABILIZED WITH STONE FILL. ANY DISTURBED AREAS ADJACENT TO THE ROADWAY WILL BE REESTABLISHED WITH STANDARD SEEDING AND MULCHING PRACTICES. STEEP SLOPES SURROUNDING THE PROPOSED WINGWALLS WILL BE STABILIZED USING STONE FILL.

### 1.2.5 SOILS

THE SOILS IN THE AREA CONSIST OF A STETSON LOAM. THIS TYPE OF SOIL IS CONSIDERED TO HAVE A LOW ERODABILITY POTENTIAL.

### 1.2.6 SENSITIVE RESOURCE AREAS

HISTORICAL AND ARCHAEOLOGICAL AREAS ARE LOCATED ADJACENT TO THE PROJECT AREA. NONE OF THESE SENSITIVE AREAS ARE LOCATED WITHIN THE LIMITS OF DISTURBANCE, BUT THEY ARE LOCATED IN CLOSE PROXIMITY TO THE PROJECT. EACH OF THESE AREAS IS CLEARLY MARKED ON SHEET 8, RESOURCE LAYOUT SHEET. TEMPORARY EROSION CONTROL MEASURES WILL BE USED TO ENSURE THAT CONSTRUCTION ACTIVITIES WILL NOT AFFECT ANY SENSITIVE RESOURCE AREAS.

THERE HAVE BEEN NO THREATENED AND ENDANGERED SPECIES IDENTIFIED WITHIN THE PROJECT LIMITS.

## 1.3 RISK EVALUATION

THE DISTURBANCE OF SOIL WILL BE NECESSARY TO CONSTRUCT THE NEW WINGWALLS ADJACENT TO THE EXISTING ABUTMENT. THE DISTURBED AREAS WILL BE STABILIZED WITH STONE FILL ONCE THE CONSTRUCTION IS COMPLETE.

SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT THEN THE SELECTED CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL PERMITTING WITH VANR VIA FILING OF THE APPROPRIATE NOTICE OF INTENT UNDER THE CONSTRUCTION GENERAL PERMIT PROCESS.

## 1.4 EROSION PREVENTION AND SEDIMENT CONTROL

IF ANY EARTHWORK IS TO BE PERFORMED OUTSIDE THE CONSTRUCTION SEASON, A WINTER EROSION AND SEDIMENT CONTROL PLAN DESCRIBING ALTERNATIVE STABILIZATION METHODS SHALL BE SUBMITTED TO THE RESIDENT ENGINEER PRIOR TO AUGUST 15 FOR APPROVAL.

FUELING AND MAINTENANCE OF CONSTRUCTION VEHICLES SHALL BE LIMITED TO THE STAGING AREAS AND SHALL BE DONE BY QUALIFIED PERSONNEL.

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 SHALL USE ADDITIONAL EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION AND AS DIRECTED BY THE ENGINEER OR ONSITE COORDINATOR. SEE SUBSECTION 105.23 OF THE VERMONT AOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006.

INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN IN THE EROSION CONTROL PLAN OR AS DIRECTED BY THE ENGINEER OR ONSITE COORDINATOR. DO NOT MODIFY THE TYPE, SIZE, OR LOCATION OF ANY CONTROL OR PRACTICE WITHOUT APPROVAL OF THE ENGINEER OR ONSITE COORDINATOR. 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 THAT PRODUCES RUNOFF FROM THE PROJECT SITE. 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 PRIOR TO ANY CONSTRUCTION ACTIVITY. INSTALL OTHER TEMPORARY CONTROLS IN INCREMENTAL STAGES AS CONSTRUCTION PROCEEDS.

MAINTAINING VEGETATED BUFFERS ALONG THE STREAM BANKS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE EMPLOYED WHENEVER POSSIBLE.

CONTROL ONLY SEDIMENT LADEN STORMWATER RUNOFF GENERATED BY THE PROJECT SITE. COLLECT AND ROUTE CLEAN STORMWATER AROUND THE PROJECT SITE WHENEVER POSSIBLE USING DIVERSION BERMS, CHANNELS, CULVERTS, OR TEMPORARY PIPES.

DO NOT ALLOW CONSTRUCTION EQUIPMENT TO OPERATE OUTSIDE OF PERIMETER CONTROL MEASURES.

TEMPORARY EROSION PREVENTION MEASURES TO BE UTILIZED INCLUDE:

PROJECT DEMARCATION FENCING, DENOTED -PDF- ON THE PLANS, TO DELINEATE THE LIMITS THE CONTRACTOR CAN ACCESS WITH CONSTRUCTION EQUIPMENT. THIS MEASURE LIMITS THE AREA THAT CAN BE DISTURBED AND EXPOSED TO EROSION. PDF MAY BE LOCATED IN CLOSE PROXIMITY TO THE LIMITS OF THE PROPOSED TOE OF SLOPES IN ORDER TO KEEP ALL WORK WITHIN THE EXISTING RIGHT-OF-WAY LIMITS.

SEEDING SHALL BE USED TO STABILIZE SLOPES FLATTER THAN 1:3. THESE SLOPES SHALL BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE OR DURING INTERMITTENT PHASES OF CONSTRUCTION.

SILT FENCE WILL BE INSTALLED AT THE TOE OF FILL SLOPES TO PREVENT SEDIMENT TRANSPORT TO DOWN GRADIENT AREAS. EACH LINE OF SILT FENCE WILL BE PLACED ALONG THE CONTOUR WITH THE LOWER EDGE BURIED 6" TO PREVENT UNDERFLOW AND ENDS TURNED SLIGHTLY UP GRADE TO CREATE A PONDING EFFECT. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY UPSLOPE EARTHWORK.

ROCK CHECK DAMS WILL BE INSTALLED IN DITCH LINES TO FORCE STORMWATER TO POND AND LIMIT SEDIMENT TRANSPORT. ROCK CHECK DAMS WILL BE PLACED AS SHOWN ON THE EROSION CONTROL PLAN AND PER THE DETAIL SHOWN IN THE PLANS.

TEMPORARY EROSION CONTROL MEASURES SHALL BE REGULARLY INSPECTED AND MAINTAINED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF THE SEDIMENT REACHES ONE-HALF THE HEIGHT OF THE CONTROL MEASURE. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE SUCH THAT IT WILL NOT BE SUBJECT TO EROSION.

DUE TO THE FACT THAT THE ROAD WILL BE CLOSED DURING CONSTRUCTION OF THE SUPERSTRUCTURE, THE STAGING AREA SHALL BE LOCATED ON THE EXISTING ROAD WITHIN THE EXISTING RIGHT-OF-WAY LIMITS. ONCE THE ROAD HAS BEEN RE-OPENED TO TRAFFIC, THE STAGING AREA SHALL BE MAINTAINED IN ONE LANE OF THE ROADWAY WITH TRAFFIC BEING MAINTAINED IN THE OTHER LANE. THE STAGING AREA SHALL NOT BE LOCATED OUTSIDE THE EXISTING RIGHT-OF-WAY LIMITS.

PERMANENT EROSION CONTROL MEASURES

PERMANT EROSION CONTROL MEASURES TO BE UTILIZED INCLUDE:

STEEP SLOPES WILL BE STABILIZED WITH STONE FILL.

ALL DISTURBED SOIL WILL BE STABILIZED WITH SEED IN AREAS FLATTER THAN 1:3. AREAS STEEPER THAN 1:3 WILL BE STABILIZED WITH STONE FILL.

### 1.4.8 STABILIZE EXPOSED SOILS

SEEDING AND MULCHING

TRACKING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, WILL BE UTILIZED ON A REGULAR BASIS. SLOPES SHALL BE STABILIZED WITHIN 48 HOURS OF FORECASTED RAIN. SEEDING, MULCHING AND BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3. THESE SLOPES SHALL BE STABILIZED WITHIN 48 HOURS OF REACHING INTERMITTENT PHASES OF CONSTRUCTION.

### 1.4.9 WINTER STABILIZATION

IF WINTER CONSTRUCTION IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A WINTER EPSC PLAN.

### 1.4.10 STABILIZE SOIL AT FINAL GRADE

SEEDING AND MULCHING

### 1.4.11 DE-WATERING ACTIVITIES

NO DEWATERING ACTIVITIES ANTICIPATED

### 1.4.12 SEEDING AND MULCHING

### 1.4.13 INSPECT YOUR SITE

INSPECT SITE BASED ON PERMIT AUTHORIZATION OR SPECIAL PROVISION REQUIREMENTS.

PROJECT NAME:	<b>TUNBRIDGE</b>		
PROJECT NUMBER:	<b>BRO 1444 (39)</b>		
FILE NAME:	<b>z99j110ero.xls</b>	PLOT DATE:	<b>5/22/2009</b>
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