

## **EPSC PLAN NARRATIVE**

### **1.1 PROJECT DESCRIPTION**

THIS PROJECT INVOLVES THE REMOVAL OF BRIDGE #166 WHICH IS A 71 FOOT LONG MULTI-STRINGER ROLLED STEEL BEAM BRIDGE. BRIDGE #166 WILL BE REPLACED BY A 105 FOOT SIMPLE SPAN STRUCTURE FOUNDED ON PRECAST INTEGRAL ABUTMENTS AND STEEL BEARING PILES ALONG THE EXISTING VT 100 ALIGNMENT. BRIDGE #166 IS LOCATED IN THE TOWN OF WARREN, ON VT ROUTE 100, APPROXIMATELY 8.3 MILES SOUTH OF THE INTERSECTION OF VT 17 AND VT 100. THIS PROJECT WILL UTILIZE ACCELERATED BRIDGE CONSTRUCTION METHODS SO THE BRIDGE WILL BE CLOSED TO TRAFFIC FOR APPROXIMATELY 14 DAYS.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.40 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL BE COMPLETED IN LESS THAN ONE CONSTRUCTION SEASON.

### **1.2 SITE INVENTORY**

#### **1.2.1 TOPOGRAPHY**

THE TOPOGRAPHY OF THE AREA IS HILLY WITH MOSTLY WELL ESTABLISHED FOREST AND OCCASIONAL OPEN AREAS WITHIN THE GREEN MOUNTAIN NATIONAL FOREST. ROADWAY SIDE SLOPES CONSIST OF VEGETATED UNDERGROWTH WITH SEVERAL EXPOSED LEDGE FACES.

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

THE MAD RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE MAD RIVER IS CLASSIFIED AS FLAT, WITH A NARROW SEMI-ARMORED CHANNEL UPSTREAM AND A WIDE EARTH LINED CHANNEL DOWNSTREAM OF THE SITE. THE STREAM BED CONSISTS OF GRAVEL, COBBLES AND BOULDERS.

#### **1.2.3 VEGETATION**

THE VEGETATION IN THE PROJECT AREA CONSISTS OF MIXED HARDWOOD AND SOFTWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING BRIDGE AND RECONSTRUCTION OF THE ROADWAY AND SIDE SLOPES WITHIN THE PROJECT LIMITS. UPON PROJECT COMPLETION, THE CHANNEL SIDE SLOPE ADJACENT TO THE BRIDGE WILL BE ARMORED WITH STONE FILL TYPE IV AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES. BECAUSE THIS AREA IS WITHIN THE GREEN MOUNTAIN NATIONAL FOREST, CLEARING SHALL BE KEPT TO A MINIMUM.

#### **1.2.4 SOILS**

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF WASHINGTON, VERMONT. SOILS ON THE PROJECT SITE ARE ADAMS LOAMY FINE SAND, 3% TO 8% SLOPES, "K FACTOR" = 0.17. THE SOIL IS CONSIDERED SLIGHTLY ERODIBLE.

**NOTE:** K-VALUES GENERALLY INDICATE THE FOLLOWING:

0.0-0.23 = LOW EROSION POTENTIAL  
0.24-0.36 = MODERATE EROSION POTENTIAL  
0.37 AND HIGHER = HIGH EROSION POTENTIAL

#### **1.2.5 SENSITIVE RESOURCE AREAS**

CRITICAL HABITATS: EXISTING MAPPED DEER YARDS ON THE EASTERN SIDE OF THE ROADWAY.

HISTORICAL OR ARCHEOLOGICAL AREAS: NO  
PRIME AGRICULTURAL LAND: NO  
THREATENED AND ENDANGERED SPECIES: NO  
WATER RESOURCE: MAD RIVER  
WETLANDS: NO

### **1.3 RISK EVALUATION**

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. 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, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

### **1.4 EROSION PREVENTION AND SEDIMENT CONTROL**

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFIC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

#### **1.4.1 MARK SITE BOUNDARIES**

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

PROJECT DEMARCATION FENCING (PDF) SHALL BE PLACED 5 FEET FROM THE TOE OF SLOPE TO PHYSICALLY MARK SITE BOUNDARIES. PDF CAN BE LOCATED CLOSER TO THE PROPOSED SLOPE LIMITS IN SENSITIVE AREAS OR AS DIRECTED BY THE ENGINEER. PDF SHALL BE INSTALLED PRIOR TO THE BEGINNING OF ANY EARTHWORK ON THE PROJECT.

#### **1.4.2 LIMIT DISTURBANCE AREA**

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS CONSTRUCTION CHANGES.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

#### **1.4.3 SITE ENTRANCE/EXIT STABILIZATION**

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTOR'S PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHOULD BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

#### **1.4.4 INSTALL SEDIMENT BARRIERS**

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE EARTHWORK IN ACCORDANCE WITH THE EROSION PREVENTION AND CONTROL PLANS.

SILT FENCE WILL BE INSTALLED AT THE TOE OF SLOPE AS PROPOSED ON THE EPSC PLAN.

AT LOCATIONS WHERE CONSTRUCTION IS IN OR NEAR WATERCOURSES OF THE STATE OF VERMONT, GEOTEXTILE FOR FILTER CURTAIN SHALL BE USED TO MINIMIZE SEDIMENT FROM ENTERING THESE WATERCOURSES. THE FILTER CURTAIN SHALL EXTEND FROM THE BOTTOM OF THE WATERCOURSE TO THE TOP OF THE WATER SURFACE. GEOTEXTILE SHALL ALSO BE PLACED ALONG THE BOTTOM OF THE WATERCOURSE WITHIN THE LIMITS OF THE FILTER CURTAIN TO FACILITATE THE REMOVAL OF SEDIMENT AND PROTECT THE EXISTING WATERCOURSE BOTTOM. IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD FOR CONTAINING SEDIMENT IN THE WATERCOURSES, THE CONTRACTOR SHALL SUBMIT THE ALTERNATE METHOD TO THE ENGINEER FOR APPROVAL AT LEAST 14 DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING. FILTER CURTAIN SHALL BE INSTALLED AS SHOWN ON THE EROSION PREVENTION AND SEDIMENT CONTROL PLANS PRIOR TO ANY CONSTRUCTION WITHIN 50 FEET OF WATERS OF THE STATE.

#### **1.4.5 DIVERT UPLAND RUNOFF**

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

THE PROJECT AREA IS RELATIVELY FLAT. THEREFORE IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

#### **1.4.6 SLOW DOWN CHANNELIZED RUNOFF**

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSION POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

TEMPORARY STONE CHECK DAMS, TYPE I WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN, AT A MINIMUM.

#### **1.4.7 CONSTRUCT PERMANENT CONTROLS**

PERMANENT STORMWATER TREATMENT DEVICES, SUCH AS STONE SLOPES, SHALL BE INSTALLED AS SHOWN ON THE PLANS.

#### **1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION**

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

#### **1.4.9 WINTER STABILIZATION**

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

#### **1.4.10 STABILIZE SOIL AT FINAL GRADE**

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE. SEEDING AND MULCHING SHALL BE USED TO STABILIZE SOIL. SEE THE EROSION CONTROL DETAILS FOR SEED TYPES AND APPLICATION RATES.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

#### **1.4.11 DE-WATERING ACTIVITIES**

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

TREATMENT OF DEWATERING COFFERDAM IS NOT ANTICIPATED ON THIS PROJECT.

#### **1.4.12 INSPECT YOUR SITE**

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR AFTER ANY RAINFALL EVENT THAT RESULTS IN DISCHARGE FROM THE SITE.

### **1.5 SEQUENCE AND STAGING**

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

#### **1.5.1 CONSTRUCTION SEQUENCE**

#### **1.5.2 OFF-SITE ACTIVITIES**

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SUBSECTIONS 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

PROJECT NAME: WARREN  
PROJECT NUMBER: BRF 013-4(32)

FILE NAME: z10b424ero\_nar.dgn  
PROJECT LEADER: R. YOUNG  
DESIGNED BY: J. SANTACRUCE  
EPSC PLAN NARRATIVE

PLOT DATE: 03-OCT-2013  
DRAWN BY: J. SANTACRUCE  
CHECKED BY: T. KENDRICK  
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