

## EPSC PLAN NARRATIVE

### 1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES REHABILITATION OF BRIDGE 19A ON U.S. ROUTE 5 OVER INTERSTATE 91 IN PUTNEY, VERMONT. IT INCLUDES REPLACEMENT OF THE EXISTING BRIDGE DECK, GUARDRAIL, CURB, STEEL BEAMS AND PIER CAPS AS WELL AS THE REPLACEMENT OF THE ABUTMENTS AND WING WALLS DOWN TO THE EXISTING FOOTINGS. THE PROJECT WILL ALSO INCLUDE THE INSTALLATION OF A TWO WAY TEMPORARY BRIDGE DETOUR LOCATED IMMEDIATELY NORTH OF THE EXISTING STRUCTURE THAT WILL REQUIRE FILLED APPROACHES AND TEMPORARY ABUTMENTS TYPICALLY UTILIZING DRIVEN SHEET PILES. THE TOTAL DISTURBED AREA (EXCLUDING OFFSITE WASTE, BORROW AND STAGING AREAS) IS 2.20 ACRES. THE SITE, BASED ON NAD 83/92, IS LOCATED AT 84516.5014 N, 48529.9546 E.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS ON-SITE 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.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST TWO CONSTRUCTION SEASONS WITH MINIMUM WINTER WORK.

### 1.2 SITE INVENTORY

#### 1.2.1 TOPOGRAPHY

THE LONG GRADUAL CURVED ALIGNMENT HAS FILLED APPROACHES ON EACH END WITH THE FOLLOWING FEATURES:  
A PRIVATE DRIVE TO A SINGLE FAMILY HOME IMMEDIATELY PRECEEDS THE SOUTHERN APPROACH AND THE FRONT LAWN FOR THIS RESIDENCE RUNS ALONG THE TOE OF THE EXISTING 2-3 FEET HIGH FILL SLOPE. ON THE OTHER SIDE OF U.S. ROUTE 5, A SMALL SEASONAL DRAINAGE DITCH RUNS ALONG THE WOODED TOE OF FILL SLOPE. THIS DITCH LINE DRAINS BACK TOWARDS INTERSTATE 91 AND IS APPROXIMATELY 2 FEET BELOW THE ROADWAY AT THE BEGIN APPROACH AND APPROXIMATELY 10 FEET BELOW THE ROADWAY AT THE WINGWALL OF ABUTMENT 1. THE TEMPORARY DETOUR WILL BE LOCATED IN THIS AREA AND THE DITCHLINE WILL REQUIRE A SLIGHT RELOCATION SIX TO EIGHT FEET OUTSIDE ITS EXISTING LOCATION TO ACCOMODATE THE SHEET PILES OR OTHER MEANS ASSOCIATED WITH THE TEMPORARY ABUTMENT. THE NORTHERN APPROACH IS COMPRISED OF HIGHER FILL SLOPES 30 FEET HIGH OR MORE ON EACH SIDE OF U.S. ROUTE 5.

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

THERE IS A SINGLE DROP INLET LOCATED APPROXIMATELY 75 FEET BEYOND THE BRIDGE ON THE NORTH SIDE OF THE ROADWAY. IT IS PRESUMED TO DRAIN INTO A DITCH AT THE TOE OF THE FILL SLOPE ALTHOUGH NO PIPE WAS IDENTIFIED IN THE SURVEY. THIS DITCHLINE RECEIVES WATER FROM THE OPPOSITE SIDE OF INTERSTATE 91 THROUGH A LONG CULVERT, DRAINS NORTH ALONGSIDE U.S. ROUTE 5 AND LIES WELL OUTSIDE THE PREDICTED LIMITS OF CONSTRUCTION FOR THE TEMPORARY DETOUR. HOWEVER, MEASURES WILL HAVE TO BE TAKEN TO PREVENT SEDIMENT ASSOCIATED WITH THE TEMPORARY DETOUR FROM ENTERING THIS DRAINAGE FEATURE.

#### 1.2.3 VEGETATION

WOODS OCCUPY THE AREAS BEYOND THE TOE OF SLOPE ON THE NORTH SIDE OF U.S. ROUTE 5 AT THE SOUTHERN END OF THE PROJECT AND BOTH SIDES OF ROUTE 5 AT THE NORTHERN END OF THE PROJECT. THE WOODED AREAS CONSIST OF MIXED HARDWOOD AND SOFTWOOD.

#### 1.2.4 SOILS

ACCORDING TO THE SOIL CONSERVATION SERVICE, THE SOIL TYPE FOR THIS AREA OF VERMONT IS CLASSIFIED AS DUMMERSTON (60"+ DEEP)-MACOMBER (20"-40"+ DEEP)-TACONIC (0"-20") AND DESCRIBED AS VERY DEEP TO SHALLOW, GENTLY SLOPING TO VERY STEEP, SOMEWHAT EXCESSIVELY DRAINED AND WELL DRAINED SOILS THAT FORMED IN LOAMY GLACIAL TILL. THE RESPECTIVE SOIL ERODIBILITY COEFFICIENTS ARE 0.32 - 0.24 - 0.24. THERE ARE NO KNOWN SENSITIVE RESOURCE AREAS WITHIN OR IMMEDIATELY OUTSIDE THE PROJECT LIMITS.

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: NO  
HISTORICAL OR ARCHEOLOGICAL AREAS: NO  
PRIME AGRICULTURAL LAND: NO  
THREATENED AND ENDANGERED SPECIES: NO  
WATER RESOURCE: JOINER BROOK

WETLANDS: NO

### 1.3 RISK EVALUATION

THIS PROJECT FALLS UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES FOR LOW RISK PROJECTS. ANY MODIFICATIONS TO THE PROJECT THAT INCREASE THE RISK TO ENVIRONMENTAL RESOURCES SHALL BE EVALUATED IN ACCORDANCE WITH THE PERMIT REQUIREMENTS. 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 USED TO PHYSICALLY MARK SITE BOUNDARIES. BECAUSE THIS PROJECT FALLS UNDER THE CGP 3-9020, BARRIER FENCE SHALL BE USED INSTEAD OF PROJECT DEMARCATION FENCE WITHIN 100 FEET OF A WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC).

#### 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 PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

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 SHALL 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 WORK.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN. BECAUSE THIS PROJECT FALLS UNDER THE CGP 3-9020, WOVEN WIRE REINFORCED SILT FENCE SHALL BE USED INSTEAD OF SILT FENCE WITHIN 100 FEET UPSLOPE OF RECEIVING WATERS.

STONE AND BLOCK INLET PROTECTION SHALL BE USED AROUND ALL DRAINAGE INLETS IN PAVEMENT.

FILTER FABRIC INLET PROTECTION SHALL BE USED AROUND ALL DRAINAGE INLETS IN VEGETATED AREAS.

#### 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.

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

#### 1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

#### 1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

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 WILL BE NECESSARY WHEN THE PROJECT EXTENDS 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.

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 ANTICIPATED. A LOCATION FOR TREATMENT HAS BEEN PROPOSED AND IS SHOWN ON THE PLANS. HOWEVER THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR.

#### 1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

### 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.

#### 1.5.3 UPDATES



PROJECT NAME: PUTNEY  
PROJECT NUMBER: IM 091-1(31)

FILE NAME: ...\\21z93a148ero narrative.ptf PLOT DATE: 10/19/2009  
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
DESIGNED BY: E. ALLING CHECKED BY: G. GOYETTE  
EPSC NARRATIVE SHEET 15 OF 75