

## **EROSION CONTROL NARRATIVE**

### **1.1 PROJECT DESCRIPTION**

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE #8 ON VT 100A SPANNING 63 FEET OVER THE BODY OF WATER KNOWN AS PINNEY HOLLOW BROOK IN THE TOWN OF PLYMOUTH. THE PROJECT BEGINS AT A POINT APPROXIMATELY 1.00 MILES SOUTH OF THE BRIDGEWATER TOWN LINE AND EXTENDS EASTERLY FOR 0.04 MILES. WORK WILL INVOLVE CONSTRUCTION OF NEW ABUTMENTS, CONSTRUCTION OF THE BRIDGE SUPERSTRUCTURE ALONG WITH RELATED ROADWAY, CHANNEL WORK, AND THE MAINTENANCE AND REMOVAL OF AN EMERGENCY REPAIR TEMPORARY DETOUR BRIDGE AND APPROACHES.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA AS SHOWN ON THE ATTACHED EPSC PLAN. THE AREA OF DISTURBANCE DOES NOT INCLUDE WASTE, BORROW AND STAGING AREAS. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE LOCATION OF THE WASTE, BORROW AND STAGING AREAS, AS WELL AS THE MATERIAL STOCKPILE, REFUELING AND MAINTENANCE AREAS. A MAP SHALL BE ATTACHED IF NECESSARY.

TOTAL AREA OF DISTURBANCE IS APPROXIMATELY 42,215 SQUARE FEET (0.97 ACRES).

IT IS ANTICIPATED THAT THE PROJECT WILL LAST ONE CONSTRUCTION SEASON.

### **1.2 SITE INVENTORY**

#### **1.2.1 TOPOGRAPHY, EXISTING ROADS, UTILITIES**

THE TOPOGRAPHY SURROUNDING THE PROJECT SITE CONSISTS OF MODERATELY STEEP SLOPES ON THE NORTH SIDE OF THE PROJECT AND GENTLY SLOPING SLOPES ON THE SOUTH SIDE OF THE PROJECT. THERE IS ONE RESIDENTIAL PROPERTY ON THE SOUTHEAST CORNER OF THE PROJECT. THE GENERAL TOPOGRAPHY OF THE AREA SLOPES FROM THE NORTH TO THE SOUTH. ALL ROAD SURFACES IN THE PROJECT AREA ARE BITUMINOUS CONCRETE PAVEMENT.

THERE ARE OVERHEAD ELECTRICAL AND TELEPHONE LINES ON THE EAST END OF THE PROJECT THAT CROSS VT 100A AND PINNEY HOLLOW BROOK.

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

THE BRIDGE SPANS THE BODY OF WATER KNOWN AS PINNEY HOLLOW BROOK. IN GENERAL THE BROOK IS CLASSIFIED AS MEANDERING. WITHIN THE REACH INFLUENCED BY THE BRIDGE THE BROOK IS CHANNELIZED WITH A BEND UP-RIVER. THE BROOK BOUNDARIES ARE ALLUVIAL AND STREAM BANKS ARE GENERALLY SHALLOW. THE STREAM BED CONSISTS OF GRAVEL AND COBBLE. THE TRIBUTARY AREA AT THE BRIDGE IS 8.6 SQUARE MILES. CONSTRUCTION OF THE NEW BRIDGE WILL REQUIRE SOME TEMPORARY AND PERMANENT IMPACTS TO PINNEY HOLLOW BROOK. THERE ARE ALSO EXISTING WETLANDS ON THE SOUTHWEST END OF THE PROJECT THAT WILL BE IMPACTED.

THE FOLLOWING DESCRIPTIONS ARE FOR THE EXISTING SITE PLANS: SURFACE DRAINAGE FROM VT 100A FLOWS DOWN WOODED SIDESLOPES INTO EXISTING DITCHES AND DRAINAGE STRUCTURES WHICH OUTLET TOWARDS PINNEY BROOK.

#### **1.2.3 VEGETATION**

THE VEGETATION IN THE PROJECT AREA CONSISTS OF A SMALL AREA OF A WELL ESTABLISHED LAWN AND MEDIUM TO HEAVILY WOODED AREAS. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS REQUIRED FOR REPLACEMENT OF THE EXISTING BRIDGE AND REMOVAL OF THE EMERGENCY REPAIR TEMPORARY DETOUR BRIDGE AND APPROACHES. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

#### **1.2.4 SOILS**

SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE FOR THE COUNTY OF WINDSOR, VERMONT. SOILS ON THE PROJECT SITE ARE:

TUNBRIDGE-LYMAN COMPLEX;  
BERKSHIRE AND MONADNOCK;  
AND CROGHAN AND SHEEPSCOT.

SEE EPSC EXISTING CONDITIONS LAYOUT SHEETS FOR SOIL LOCATIONS AND ADDITIONAL INFORMATION.

#### **1.2.4 SENSITIVE RESOURCE AREAS**

CRITICAL HABITATS: NO  
HISTORICAL OR ARCHAEOLOGICAL AREAS: NO  
PRIME AGRICULTURE LAND: NO  
THREATENED AND ENDANGERED SPECIES: NO  
WATER RESOURCE: PINNEY HOLLOW BROOK  
WETLANDS: CLASS III WETLANDS ON SOUTHWEST CORNER OF PROJECT.  
TOTAL IMPACTED AREA IS 331 SF.

### **1.3 RISK EVALUATION**

THE 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 THE LIFE OF THE PROJECT TO AVOID 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 BASED UPON 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 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.

#### **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.

ENTRANCE/EXIT STABILIZATION MEASURES ARE NOT ANTICIPATED ON THIS PROJECT.

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

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHOULD BE INSTALLED PRIOR TO ANY UPSLOPE WORK.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND DETAIL SHEETS.

DROP INLET PROTECTION WILL BE UTILIZED AS SHOWN ON THE EPSC PLAN AND DETAIL SHEETS.

#### **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.

DIVERSION OF UPLAND RUNOFF IS NOT ANTICIPATED.

#### **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 SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND OTHER AREAS AS DIRECTED BY THE RESIDENT ENGINEER.

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

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS.

SEED AND MULCH WILL BE USED AS PERMANENT CONTROLS TO STABILIZE EXPOSED SOIL. RIPRAP AND STONE FILL WILL BE USED TO STABILIZE THE STREAMBED AROUND THE ABUTMENTS.

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

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE. THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

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 3:1.

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.

SHOULD EARTH DISTURBANCE 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<sup>TH</sup> FOR APPROVAL.

#### **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**

THE USE OF COFFERDAMS ARE NOT ANTICIPATED.

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

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS.

### **1.5 SEQUENCE AND STAGING**

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR CHECKLIST 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. WASTE, BORROW AND STAGING SITES MUST BE APPROVED BY VTRANS ENVIRONMENTAL SECTION.

<b>TYL</b> INTERNATIONAL	PROJECT NAME: PLYMOUTH	FILE NAME: zilc330bdr_ero.dgn	PLOT DATE: 9/20/2012
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