

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES PREVENTATIVE MAINTENANCE TO TWO EXISTING CULVERTS INCLUDING INSTALLATION OF A PIPE LINER, REINFORCED CONCRETE INVERT AND RELATED CHANNEL WORK. CULVERT 59-2 IS IN THE TOWN OF RICHMOND AND CROSSES UNDER BOTH THE NORTHBOUND AND SOUTHBOUND LANES OF I-89 AT MILE MARKER 79.5. CULVERT 59-4S IS IN THE TOWN OF WILLISTON AND CROSSES UNDER SOUTH ROAD AND THE SOUTHBOUND LANES OF I-89 AT MILE MARKER 81.5.

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.

THE AREA OF DISTURBANCE FOR CULVERT 59-2 IS 0.83 ACRES AND THE AREA OF DISTURBANCE FOR CULVERT 59-4S IS 0.29 ACRES. THESE AREAS ARE BASED ON THE WORK AREA LIMITS PLUS AN AVERAGE 35' WIDE DISTURBED AREA ALONG THE ASSUMED CONSTRUCTION ACCESS ROUTE AS SHOWN ON THE PLANS.

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

1.2A SITE INVENTORY (BR 59-2)

1.2A.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS GRASSY INTERSTATE BACKSLOPES, BOTH THE INLET AND OUTLET ARE SURROUNDED BY SMALL WETLANDS. INTERSTATE 89 AND A FARM ROAD ARE WITHIN THE PROJECT SITE. THERE ARE NO BUILDINGS OR UTILITIES NEAR THE PROJECT SITE.

1.2A.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

AN UNNAMED BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROOK PASSES THROUGH THE EXISTING CULVERT. DUE TO THE NATURE OF THE SURROUNDING TERRAIN, THE PROJECT SITE WILL RECEIVE WATER FROM A FEW NEARBY SLOPES.

1.2A.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD AND SOFTWOOD TREES AND UNDERGROWTH. VEGETATION IMPACTS RESULTING FROM THIS PROJECT INCLUDE CLEARING OF VEGETATION ON EMBANKMENT SIDE SLOPES BETWEEN THE EXISTING EDGES OF PAVEMENT AND TOES OF SLOPE WITHIN THE CONSTRUCTION LIMITS SHOWN ON THE PLANS. THERE ARE NO PROPOSED TREE REPLACEMENTS AS PART OF THIS PROJECT. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED AS PART OF THIS PROJECT. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE IV AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2A.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF CHITTENDEN, VERMONT. SOILS ON THE PROJECT SITE ARE LIMERICK SILT LOAM, "K FACTOR" = 0.49. THE SOIL IS CONSIDERED HIGHLY ERODIBLE DUE TO THE HIGH K VALUE.

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

1.2A.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: NO
PRIME AGRICULTURAL LAND: YES
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: UNNAMED BROOK
WETLANDS: CLASS 2 WETLANDS ARE PRESENT AT BOTH THE INLET AND OUTLET OF THE CULVERT.

1.2B SITE INVENTORY (BR 59-4S)

1.2A.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS GRASSY INTERSTATE BACKSLOPES. THE INLET IS SURROUNDED BY A SMALL WETLAND. INTERSTATE 89 AND SOUTH ROAD ARE WITHIN THE PROJECT SITE. THERE ARE A FEW HOUSES NEAR THE PROJECT SITE. THERE ARE NO UTILITIES IN THE PROJECT SITE.

1.2B.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

ALLEN BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROOK PASSES THROUGH THE EXISTING CULVERT. DUE TO THE NATURE OF THE SURROUNDING TERRAIN, THE PROJECT SITE WILL RECEIVE WATER FROM A FEW NEARBY SLOPES.

1.2B.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD AND SOFTWOOD TREES AND UNDERGROWTH. VEGETATION IMPACTS RESULTING FROM THIS PROJECT INCLUDE CLEARING OF VEGETATION ON EMBANKMENT SIDE SLOPES BETWEEN THE EXISTING EDGES OF PAVEMENT AND TOES OF SLOPE WITHIN THE CONSTRUCTION LIMITS SHOWN ON THE PLANS. THERE ARE NO PROPOSED TREE REPLACEMENTS AS PART OF THIS PROJECT. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED AS PART OF THIS PROJECT. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2B.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF CHITTENDEN, VERMONT. SOILS ON THE PROJECT SITE ARE WINOOSKI VERY FINE SANDY LOAM, "K FACTOR" = 0.49. THE SOIL IS CONSIDERED HIGHLY ERODIBLE DUE TO THE HIGH K VALUE.

1.2B.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: NO
PRIME AGRICULTURAL LAND: YES
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: ALLEN BROOK
WETLANDS: CLASS 3 WETLANDS ARE PRESENT AT THE INLET OF THE CULVERT.

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.

DUE TO THE PRESENCE OF WETLANDS AT THE SITES, AN ASSUMED AREA OF THE WETLANDS HAS BEEN IDENTIFIED IN THE SITE PLANS AS BEING DISTURBED AND THE PROJECT HAS BEEN PERMITTED FOR THAT DISTURBANCE. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ADDITIONAL DISTURBANCE TO THE WETLANDS THEN THE SELECTED CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL PERMITTING WITH THE APPROPRIATE REGULATORY AGENCIES. PREPERATION AND COSTS ASSOCIATED WITH ADDITIONAL PERMITTING SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

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 MAY NEED TO BE MODIFIED 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

BARRIER FENCING SHALL BE USED TO DELINEATE THE LIMITS THE CONTRACTOR CAN ACCESS WITH CONSTRUCTION EQUIPMENT. THIS MEASURE LIMITS THE AREA THAT CAN BE DISTURBED AND EXPOSED TO EROSION.

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.

WOVEN WIRE REINFORCED SILT FENCE SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

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.

TEMPORARY SWALES SHALL BE UTILIZED AS NECESSARY AND AS DIRECTED BY THE ENGINEER. SEE SHEET 13 FOR DETAIL.

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 NECESSARY AND AS DIRECTED BY THE ENGINEER. SEE SHEET 11 FOR DETAIL.

1.4.7 CONSTRUCT PERMANENT CONTROLS

TYPE II & IV STONE FOR SLOPE LINING AND CHANNEL PROTECTION, SEED AND MULCH.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF REACHING INTERMITTENT PHASES OF CONSTRUCTION.

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.

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.

SEDIMENT CONTAINMENT BAGS (FILTER BAGS) FOR HEADWALL WORK SHALL BE USED AS NECESSARY AND AS DIRECTED BY THE ENGINEER. SEE SHEET 12 FOR DETAIL.

1.4.12 INSPECT YOUR SITE

INSPECT SITE BASED ON PERMIT AUTHORIZATION OR SPECIAL PROVISION REQUIREMENTS.

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

EPSC NARRATIVE

PROJECT NAME: RICHMOND - WILLISTON

PROJECT NUMBER: IM CULV(16)

FILE NAME: ...\\08-epsc narrative.dgn

PROJECT LEADER: G. BOGUE

DESIGNED BY: M. CHENETTE

EPSC NARRATIVE SHEET

PLOT DATE: 2/25/2010

DRAWN BY: E. ALLING

CHECKED BY: G. BOGUE

SHEET 8 OF 18

