

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE RECONSTRUCTION OF APPROXIMATELY 450-FEET OF RIVER EMBANKMENT AND ARMORING OF ABOUT 400-FEET OF RIVER BOTTOM. THE EMBANKMENT WILL BE RECONSTRUCTED WITH SUBBASE OF DENSE GRADED CRUSHED STONE AND STONE FILL ARMORING. THE CHANNEL BOTTOM WILL BE ARMORED WITH STONE FILL AND THE VOIDS WILL BE FILLED WITH NATIVE COBBLE MATERIAL THAT IS WASHED IN TO ALLOW FOR FUTURE AQUATIC ORGANISM PASSAGE. THE PROJECT IS LOCATED IN THE TOWN OF WOODFORD, NEAR THE INTERSECTION OF VT ROUTE 9 AND NOTCH ROAD.

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 1.90 ACRES.

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

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS A VALLEY THAT IS MOSTLY WELL ESTABLISHED FOREST. VT ROUTE 9 AND NOTCH ROAD ARE IN THE PROJECT AREA. VT ROUTE 9 CROSSES OVER AND NOTCH ROAD RUNS ALONG CITY STREAM. THERE ARE NO RESIDENCES ON THE PROJECT, HOWEVER, THERE IS ONE HOUSE APPROXIMATELY 0.37 MILES UP NOTCH ROAD ALONG CITY STREAM.

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

CITY STREAM IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE STREAM BED CONSISTS OF GRAVEL, COBBLES AND BOULDERS AT THE SITE. THE TRIBUTARY AREA AT THE CULVERT CROSSING IS APPROXIMATELY 15.6 MILES². THERE IS ONE DROP INLET ON SITE DRAINING FROM THE ROADWAY TO CITY STREAM DOWNSTREAM OF THE PROPOSED WORK. DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE COULD RECEIVE RUNOFF WATER FROM A FEW NEARBY SLOPES.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY WITHIN THE PROJECT LIMITS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF BENNINGTON, VERMONT. SOILS ON THE PROJECT SITE ARE MUNDAL-WILMINGTON ASSOCIATION, ROLLING, VERY STONY, "K FACTOR" = 0.37 AND TUNBRIDGE-BERKSHIRE ASSOCIATION, VERY STEEP, ROCKY "K FACTOR" = 0.64. THE SOIL IS CONSIDERED HIGHLY ERODIBLE DUE TO SIGNIFICANT SLOPES.

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: CITY STREAM
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.

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.

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.

WORK SHALL TAKE PLACE DURING THE LOW FLOW SEASON, BETWEEN JULY 1ST AND OCTOBER 1ST.

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 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.

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

1.5.1 CONSTRUCTION SEQUENCE

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST. THE CONTRACTOR SHALL SEQUENCE CONSTRUCTION ACTIVITIES TO MINIMIZE THE EXTENT OF DISTURBED SOILS LEFT OPEN TO EROSION AT ANY GIVEN TIME TO 2 ACRE OR LESS. A SUGGESTED GENERAL SEQUENCE OF CONSTRUCTION FOR EACH OF THE MAJOR ACTIVITIES IS AS FOLLOWS:

• CHANNEL-SOUTH EMBANKMENT AND SOUTH PORTION OF CHANNEL BOTTOM

- 1) ESTABLISH PERIMETER CONTROLS AND MARK BOUNDARIES FOR SENSITIVE RESOURCE AREAS.
- 2) INSTALL WATER DIVERSION BARRIER TO BLOCK FLOW FROM PART OF THE CHANNEL AND LOW FLOW CHANNEL OUTSIDE WORK ZONE FOR AQUATIC ORGANISM PASSAGE, AS SHOWN ON PLANS.
- 3) INSTALL SEDIMENT CONTROL MEASURES AT DOWN STREAM END OF WORK AREA, AS SHOWN ON PLANS.
- 4) CLEAR AND GRUB WORK AREAS AS NECESSARY, WORK SHALL PROCEED FROM UPSTREAM TO DOWNSTREAM.
- 5) BEGIN CUT & FILL OPERATIONS, LIMIT AREA OF DISTURBANCE TO < 2 ACRE AT ANY ONE TIME. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 7-DAYS OF DISTURBANCE.
- 6) CONCURRENTLY INSTALL TEMPORARY AND PERMANENT STABILIZATION AND EPSC MEASURES AS WORK PROGRESSES SO THAT CHANNEL IS STABILIZED PRIOR TO ALLOWING RUNOFF TO DISCHARGE TO IT.
- 7) WASH NATIVE SAND, GRAVEL, AND COBBLE LAYER INTO THE STONE FILL TO FILL VOIDS AND PREVENT UNDERFLOW ALLOWING FOR AQUATIC ORGANISM PASSAGE.

• CHANNEL - NORTH EMBANKMENT AND NORTH PORTION OF RIVER BOTTOM

- 1) ESTABLISH PERIMETER CONTROLS AND MARK BOUNDARIES FOR SENSITIVE RESOURCE AREAS.
- 2) INSTALL WATER DIVERSION BARRIER TO BLOCK FLOW FROM PART OF THE CHANNEL AND LOW FLOW CHANNEL OUTSIDE WORK ZONE FOR AQUATIC ORGANISM PASSAGE, AS SHOWN ON PLANS.
- 3) INSTALL SEDIMENT CONTROL MEASURES AT DOWNSTREAM END OF WORK AREA, AS SHOWN ON PLANS.
- 4) CLEAR AND GRUB WORK AREAS AS NECESSARY, WORK SHALL PROCEED FROM UPSTREAM TO DOWNSTREAM.
- 5) BEGIN CUT & FILL OPERATIONS, LIMIT AREA OF DISTURBANCE TO < 2 ACRE. EMBANKMENT WORK SHALL PROGRESS FROM THE TOE OF SLOPE UP, LIMITING EXPOSED SOILS TO NO MORE THAN 7 DAYS WITHOUT STABILIZATION.
- 6) CONCURRENTLY INSTALL TEMPORARY AND PERMANENT STABILIZATION AND EPSC MEASURES AS WORK PROGRESSES SO THAT CHANNEL IS STABILIZED PRIOR TO ALLOWING RUNOFF TO DISCHARGE TO IT.
- 7) WASH NATIVE SAND, GRAVEL, AND COBBLE LAYER INTO THE STONE FILL TO FILL VOIDS AND PREVENT UNDERFLOW ALLOWING FOR AQUATIC ORGANISM PASSAGE.

• NOTCH ROAD

- 1) ESTABLISH PERIMETER CONTROLS AND MARK BOUNDARIES FOR SENSITIVE RESOURCE AREAS.
- 2) INSTALL SEDIMENT CONTROL MEASURES AS NECESSARY.
- 3) CLEAR AND GRUB AS NECESSARY.
- 4) INSTALL GUARDRAIL, AS SHOWN ON PLANS.
- 5) PLACE LARGE PROTECTIVE BOULDERS BETWEEN PARKING AREA AND EMBANKMENT, AS SHOWN ON PLANS.

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: WOODFORD
PROJECT NUMBER: ER NH 010-1(47)

FILE NAME: z12b402er0nar.dgn
PROJECT LEADER: E. ATKINS
DESIGNED BY: M. BRADLEY
EPSC NARRATIVE

PLOT DATE: 12/03/2014
DRAWN BY: M. BRADLEY
CHECKED BY: E. ATKINS
SHEET 17 OF 35