

1.3 RISK EVALUATION

THIS PROJECT DOES FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES AND HAS BEEN ISSUED UNDER #4022-9020. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN TWO 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.

EROSION CONTROL PLANS HAVE BEEN PREPARED FOR THE PROJECT AND ARE INCLUDED AS PART OF THIS EPSC PLAN. MEASURES TO BE USED DURING CONSTRUCTION INCLUDE SILT BARRIERS ALONG THE TOE OF EMBANKMENTS AND STONE CHECK DAMS AT DRAINAGE CHANNELS. BOTH OF THESE MEASURES DECREASE RUNOFF VELOCITIES AND THEREBY PREVENT SEDIMENT TRANSPORT.

ADDITIONAL MEASURES THAT WILL BE EMPLOYED DURING CONSTRUCTION INCLUDE CONSTRUCTING THE PROJECT IN PHASES, IDENTIFYING THE LIMITS OF DISTURBANCE IN THE FIELD, TEMPORARILY STABILIZING THOSE AREAS THAT ARE NOT ACTIVELY BEING WORKED WITH SEED, MULCH, OR EROSION CONTROL MATTING. PERMANENT STABILIZATION MEASURES WILL ALSO BE INSTALLED AS EARLY AS POSSIBLE. TOGETHER, THESE MEASURES WILL PREVENT EROSION BY LIMITING BOTH THE AMOUNT OF DISTURBED AREAS AND THE LENGTH OF TIME THAT SOIL IS EXPOSED.

INTERIM CONTROL MEASURES WILL INCLUDE SURFACE ROUGHENING OR TRACKING THE SLOPES OF THE LARGE EMBANKMENT AREAS TO CREATE GROOVES THAT RUN PERPENDICULAR TO THE DIRECTION OF THE SLOPE. THIS PRACTICE WILL HELP TO REDUCE STORM-WATER VELOCITIES AND INCREASE INFILTRATION RATES FOR THE SIDE SLOPES THAT HAVE NOT YET REACHED FINAL GRADES AND HAVE NOT OTHERWISE BEEN STABILIZED. IN ADDITION, EXCAVATION AND EMBANKMENT AREAS WILL BE SHAPED, TO THE EXTENT POSSIBLE, IN SUCH A MANNER THAT RUNOFF IS INTERCEPTED AND DIRECTED TO AREAS YET UNDISTRIBUTED BY CONSTRUCTION. IN PARTICULAR, THE DITCHES, AND ASSOCIATED CULVERT CROSSINGS, THAT RUN ALONG THE NORTH SIDE OF THE ROADWAY WILL BE COMPLETED IN THE EARLY STAGES OF CONSTRUCTION. THE DITCHES AND CULVERTS WILL DIVERT OFF-SITE STROM-WATER AWAY FROM THE PROJECT AREA. THEY WILL REDUCE THE POTENTIAL FOR EROSION OF EXPOSED AREAS DUE TO OFF-SITE WATER DRAINING ACROSS THE PROJECT.

THE PROJECT SITE SHALL REMAIN ROUGH GRADED UNTIL APPLICATION OF FINAL LAND TREATMENT, WHICH WILL BE APPLIED CONCURRENTLY WITH ROADWAY CONSTRUCTION TO THE EXTENT POSSIBLE.

PERMANENT CONTROL MEASURES SHALL CONSIST OF PAVING THE ROADWAY, SEEDING (WITH MULCH OR MATTING) OF LANDSCAPING OF ALL DISTURBED SOIL AREAS. THERE ARE SEVERAL STEEP SIDE SLOPES WITHIN THE PROJECT AREA THAT WILL RECEIVE A FINAL APPLICATION OF STONE STABILIZATION. THE SLOPE BETWEEN THE AREA OF STREAM CHANNEL RELOCATION AND THE ROADWAY WILL BE STABILIZED WITH BIOTECHNICAL MEASURES. (SEE PLAN SHEET 81). DRAINAGE PATHS WILL BE PERMANENTLY STABILIZED WITH SEED AND MULCH (SLOPES < 1%) OR SEED AND MATTING (SLOPES > 1%). STONE SPLASH PADS WILL ALSO BE INSTALLED AT CULVERT OUTLETS TO DISSIPATE ENERGY AND PREVENT EROSION.

SEED TO BE USED FOR THIS PROJECT WILL PRIMARILY BE THE STANDARD VTRANS RURAL FORMULA MIX, WHILE THE STANDARD URBAN FORMULA SEED MIX IS USED IN ANY LAWN AREA. APPLICATION RATES AND METHODS FOR THE SEED, FERTILIZER, AND LIMESTONE WILL FOLLOW THE VTRANS STANDARD SPECIFICATIONS. HAY MULCH WILL ALSO BE APPLIED AT THE VTRANS STANDARD RATE OF 2 TONS PER ACRE.

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. THE LIMITS OF DISTURBANCE WILL BE LOCATED 10' BEYOND THE CUT AND FILL LIMITS FOR THE PROJECT AND WILL BE IDENTIFIED WITH PROJECT PDF. IN SOME LOCATIONS WHERE THE PROJECT IS WITHIN OR ADJACENT TO A SENSITIVE AREA; THE LIMITS OF DISTURBANCE MAY BE LESS THAN 10' FROM THE CUT AND FILL LIMITS. IN THOSE AREAS, BARRIER FENCE WILL BE USED INSTEAD OF PDF AS A THE METHOD OF DEMARCATION THROUGH THESE SENSITIVE AREAS. 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

THE MAXIMUM CONCURRENT EARTH DISTURBANCE IS 2 ACRES, AS IDENTIFIED IN THE RISK ASSESSMENT FOR THIS PROJECT. 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.

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.

THE USE OF VEGETATED BUFFERS WAS NOT INCLUDED IN THE RISK ASSESSMENT FOR THIS PROJECT, AS THERE ARE PROJECT COMPONENTS LOCATED WITHIN 50 FEET OF THE RECEIVING WATERS. HOWEVER, IT SHOULD BE NOTED THAT A MAJORITY OF THE PROJECT DOES INCLUDE A VEGETATIVE BUFFER OF 50 FEET OR MORE.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MNIMIZED 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. THE METHOD TO PROTECT THE INLETS OF CULVERTS AND DROP INLETS WILL BE TO SURROUND THE INLET OPENING WITH A STONE CHECK DAM AND FILTER FABRIC. DURING CONSTRUCTION, THE CULVERT OUTLETS WILL BE SIMILARLY PROTECTED WITH A COMBINATION OF STONE CHECKS AND FILTER FABRIC. THE INSTALLATION OF THIS PROTECTION METHOD WILL FOLLOW THE VTRANS STANDARD DETAILS.

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 CONSTRUCITON 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.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORM WATER TREATMENT DEVICES SUCH AS JURISDICTIONAL GRASS LINED DITCHES, STONE FILL PADS AND/OR STONE LINED DITCHES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS. DRAINAGE PATHS WITH SLOPES GREATER THAN ONE PERCENT, SHALL BE GRASSED WITH EROSION MATTING, WHILE DRAINAGE PATHS WITH SLOPES LESS THAN 1%, WILL ONLY NEED TO BE GRASS LINED.

SIDE SLOPES LESS THAN 1:3 SHALL BE SEEDED AND MULCHED. SIDE SLOPES GREATER THAN 1:3 SHALL BE SEEDED AND MATTED WITH GEOTEXTILE EROSION MATTING. SLOPES OF 1:1.5 SHALL BE REINFORCED WITH TYPE II STONE STABILIZATION.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL SOIL STOCKPILES AND DISTURBED AREAS THAT WILL NOT BE WORKED FOR MORE THAN 7 DAYS MUST BE TEMPORARILY STABILIZED WITH MULCH 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

IF THE CONTRACTOR ELECTS TO CONTINUE CONSTRUCTION BETWEEN OCTOBER 15 AND APRIL 15, A "NOTICE OF WINTER CONSTRUCTION" WILL BE FILED WITH ANR AND SPECIFIC WINTER CONDITIONS, OUTLINED IN THE VERMONT STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL, WILL BE ADHERED TO. VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY. REFER TO THE LOW RISK SITE HANDBOOK FOR MORE 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

DEWATERING MAY BECOME NECESSARY AS PART OF THE INSTALLATION OF DRAINAGE CROSSINGS, HOWEVER THE LOCATIONS AND INSTANCES OF GROUNDWATER CONDITIONS THAT MAY PRECIPITATE THE NEED FOR DEWATERING ARE UNPREDICTABLE. THE STANDARD METHOD FOR DEWATERING WILL BE TO PUMP THE WATER IN A LEVEL VEGETATED AREA THAT DRAINS AWAY FROM THE WORK AREA AND IS AT LEAST 100 FEET FROM IDENTIFIED SENSITIVE AREAS.

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

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

1.5.1 CONSTRUCTION SEQUENCE

CONSTRUCTION ACTIVITIES WILL BE PHASED OVER TWO CONSTRUCTION SEASONS. THE GENERAL GOAL OF THE PROJECT SCHEDULE WILL BE TO COMPLETE MOST OF THE DRAINAGE WORK IN THE FIRST SEASON. THIS WILL INCLUDE CONSTRUCTION OF THE STREAM CROSSINGS AND CULVERT WORK, STREAM CHANNEL RELOCATION, AND MUCH OF THE SWALES.

THIS APPROACH OF INSTALLING MOST OF THE DRAINAGE WORK IN THE FIRST YEAR WILL ESTABLISH THE DESIGNATED STORMWATER PATHWAYS THAT WILL THEN BE IN PLACE AND STABILIZED WHILE THE ROADWAY IS CONSTRUCTED IN THE SECOND SEASON. THE DRAINAGE PATHS, SUCH AS THE SWALES RUNNING ALONG THE NORTH (OR LEFT) SIDE OF THE ROADWAY, AND THEIR ASSOCIATED CROSS CULVERTS, WILL THEN AID IN DIVERTING OFF-SITE STORMWATER AWAY FROM THE DISTURBED AREAS.

1.5.2 OFF-SITE ACTIVITIES

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

AS THE US ROUTE 2 RECONSTRUCTION PROJECT IS A "FILL JOB", MOST OF THE EXCAVATED MATERIAL WILL BE REUSED IN THE BORROW AREAS. IT IS ESTIMATED THAT APPROXIMATELY 12,000 CUBIC YARDS OF ADDITIONAL BORROW WILL BE REQUIRED. IT IS EXPECTED THAT THE ADDITIONAL BORROW MATERIAL AND ANY UNUSABLE EXCAVATED MATERIAL WILL EITHER BE HANDLED AT PRE-APPROVED BORROW AND WASTE AREAS, OR THAT SEPARATE NOTICES OF INTENT WILL BE FILED FOR THESE AREAS.

1.5.3 UPDATES

PROJECT NAME: CABOT-DANVILLE
PROJECT NUMBER: FEgc F 028-3(26) C/1

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