EROSION CONTROL NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE #42 (CORRUGATED METAL PLATE PIPE) ON VT 15 SPANNING 15 FEET OVER THE BODY OF WATER KNOWN AS CENTERVILLE BROOK IN THE TOWN OF HYDE PARK. THE PROJECT BEGINS AT A POINT 0.5 MILES SOUTHEASTERLY OF ITS INTERSECTION WITH VT ROUTE 100 AND PROCEEDS SOUTHEASTERLY ALONG VT ROUTE 15 FOR 0.045 MILES. WORK WILL INVOLVE REMOVAL OF EXISTING PIPE, CONSTRUCTION OF NEW ABUTMENTS AND CONSTRUCTION OF THE BRIDGE SUPERSTRUCTURE ON THE EXISTING ALIGNMENT. ALSO INCLUDED WILL BE RELATED TEMPORARY ROADWAY DETOUR, PERMANENT CHANNEL, AND APPROACH WORK.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA AND SUGGESTED MOT METHOD 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 84,035 SQUARE FEET (1.93 ACRES).

IT IS ANTICIPATED THAT THE PROJECT WILL LAST TWO CONSTRUCTION SEASONS.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY, EXISTING ROADS, UTILITIES

THE TOPOGRAPHY ON BOTH SIDES OF VT 15 SLOPES DOWN STEEPLY AWAY FROM THE ROADWAY AND CONSISTS MOSTLY OF FIELD GRASS ON THE SLOPES AND LIGHTLY WOODED AREAS NEAR THE TOE OF SLOPE. PORTIONS NEAR THE WATER BODY ARE LIGHTLY WOODED WITH SHALLOW SLOPES. THE GENERAL TOPOGRAPHY OF THE AREA SLOPES FROM EAST TO WEST. ALL ROAD SURFACES IN THE PROJECT AREA ARE BITUMINOUS CONCRETE PAVEMENT. ONE COMMERCIAL PROPERTY BORDERS THE PROJECT ON THE SOUTHEASTERLY CORNER AND ONE RESIDENTIAL PROPERTY ON THE SOUTHWEST CORNER. BOTH ARE OUTSIDE THE PROJECT LIMITS.

THERE ARE OVERHEAD ELECTRICAL LINES ALONG THE EASTERLY SIDE OF THE NORTH APPROACH. THE LINES CROSS TO THE WESTERLY SIDE OF THE SOUTH APPROACH. THESE WILL BE RELOCATED TO ACCOMMODATE THE PROJECT. THERE ARE NO UNDERGROUND UTILITIES WITHIN THE PROJECT SITE.

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 CENTERVILLE BROOK. THE BROOK IS CLASSIFIED AS SINUOUS. IN THE REACH INFLUENCED BY THE BRIDGE THE BROOK IS CHANNELIZED AND STRAIGHT, ITS BOUNDARIES ARE ALLUVIAL, AND ITS STREAM BANKS ARE INCISED WITH A NARROW FLOOD PLAIN. THE STREAM BED CONSISTS OF SAND AND GRAVEL AND LEDGE. CONSTRUCTION OF THE NEW BRIDGE WILL REQUIRE SOME PERMANENT IMPACTS OF CENTERVILLE BROOK. IT IS ANTICIPATED THAT EXISTING SOILS WILL BE DISTURBED IN THE BROOK DURING THE REMOVAL OF THE EXISTING CULVERT.

THE FOLLOWING DESCRIPTIONS ARE FOR THE EXISTING SITE PLANS: SURFACE DRAINAGE FROM VT 15 FLOWS DOWN EXISTING VEGETATED AND WOODED SIDESLOPES AND INTO CENTERVILLE BROOK.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF WELL ESTABLISHED FIELD AND LIGHTLY WOODED AREAS. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS REQUIRED FOR REPLACEMENT OF THE EXISTING CULVERT WITH A NEW BRIDGE. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES OR REPLACED WITH STONE FILL COVERED WITH GRUBBING MATERIAL.

1.2.4 SOILS

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

NEAR THE SOUTHERN PROJECT LIMITS AND NEAR THE NORTHERLY END OF THE BRIDGE THE SOIL TYPE IS BOOTHBAY SILT LOAM, 3 TO 8 PERCENT SLOPE, “K FACTOR” = 0.49. THE EROSION HAZARD IS “HIGH” DUE TO ITS K FACTOR.

NEAR THE NORTHERLY PROJECT LIMITS THE SOIL TYPE IS SALMON VERY FINE SANDY LOAM, 8 TO 15 PERCENT SLOPE, “K FACTOR” = 0.49. THE EROSION HAZARD IS “HIGH” DUE TO ITS K FACTOR.

NEAR CENTERVILLE BROOK THE SOIL TYPE IS BOOTHBAY SILT LOAM, 15 TO 25 PERCENT SLOPE, “K” FACTOR = 0.49. THE EROSION HAZARD IS “HIGH” DUE TO ITS K FACTOR.

1.2.4 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHAEOLOGICAL AREAS: YES (AREA OF ARCHAEOLOGICAL SIGNIFICANCE ALONG THE SOUTHEAST APPROACH BEYOND THE PROJECT LIMITS OF WORK.)
PRIME AGRICULTURE LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: CENTERVILLE BROOK
WETLANDS: YES, CLASS II, ADJACENT TO SOUTHEAST APPROACH QUADRANT
FISH & WILDLIFE HABITAT: COLDWATER FISHERY W/SEASONAL RESTRICTIONS

1.3 RISK EVALUATION

THE 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 CONSISTS 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 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 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 THE 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 SHOULD BE INSTALLED PRIOR TO ANY UPSLOPE WORK.

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

DIVERSION OF UPLAND RUNOFF NOT ANTICIPATED.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

THE USE OF STONE CHECK DAMS IS ANTICIPATED FOR THIS PROJECT IF A TEMPORARY ROADWAY DETOUR IS UTILIZED.

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. STONE FILL WILL BE USED TO STABILIZE THE SLOPES AND STREAMBED AROUND ABUTMENTS.

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.

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 ENGINEER PRIOR TO AUGUST 15 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

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 NOT ANTICIPATED.

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.

PROJECT NAME: HYDE PARK
PROJECT NUMBER: STP CULV(26)

T.Y.LIN INTERNATIONAL

FILE NAME: z11b292bdr_epscn.dgn
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PLOT DATE: 11/6/2013
DRAWN BY: D. BRYANT
CHECKED BY: D. BURHANS
SHEET 50 OF 60