

DESCRIPTION OF PROJECT

THIS PROJECT INVOLVES THE RECONSTRUCTION OF A BRIDGE OVER THE LADD BROOK. THE PROJECT IS ON VT ROUTE 346, A MAJOR COLLECTOR ROUTE IN THE TOWN OF POWNAL. A NEW PRECAST CONCRETE BOX CULVERT WILL BE CONSTRUCTED ON EXISTING ALIGNMENT WHILE THE TRAFFIC IS REROUTED DOWN TOWN HIGHWAY #1. TOTAL ROADWAY WORK, INCLUDING BOTH APPROACHES, IS APPROXIMATELY 65 METERS. THE LIMITS OF CONSTRUCTION DO NOT ENCR OACH UPON WETLANDS. THERE ARE SEVERAL BUILDINGS AND ONE LEACH FIELD THAT BORDER THE CONSTRUCTION LIMITS. NO THREATENED OR ENDANGERED SPECIES OR HISTORICAL RESOURCES HAVE BEEN IDENTIFIED IN THE PROJECT AREA. THE SITE IS LOCATED, BASED ON NAD 83/92, AT 29760.517 N, 4939766.076 E.

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

TOTAL DISTURBED AREA (EXCLUDING WASTE, BORROW AND STAGING AREAS): 0.046 ha (0.11 ACRES).

SITE INVENTORY & ANALYSIS

OFF SITE DRAINAGE CHARACTERISTICS:

THE PROPERTY SURROUNDING THE PROJECT SITE CONSISTS OF WELL ESTABLISHED VEGETATION WITH GENTLE SLOPES OF VARIOUS GRASSES, SHRUBS AND TREES. DRAINAGE WAYS ARE NOT WELL DEFINED BUT RUNOFF WATER ENTERING THE PROJECT SITE IS LIMITED TO WATER CONVEYED ALONG ROUTE 346. THERE ARE NO ROADWAY DITCHES ALONG ROUTE 346.

DRAINAGE, WATERWAYS, BODIES OF WATER:

LADD BROOK IS LOCATED WITHIN THE PROJECT AREA. THERE ARE NO OTHER WATER BODIES OR WETLANDS WITHIN THE PROJECT AREA. THE LADD BROOK IS CLASSIFIED AS A SMALL PERENNIAL BUT FLASHY BROOK IN MOUNTAINOUS TERRAIN. THE BROOK IS A TRIBUTARY OF THE HOOSIC RIVER WITH A STREAMBED OF GRAVEL, COBBLES, AND BOULDERS OVER SANDY SILT. THE CONTRIBUTED DRAINAGE AREA OF THE STRUCTURE CROSSING IS 4.33 SQ. KM. (1.67 SO. MI.).

TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES:

THE TOPOGRAPHY OF THE PROJECT SITE IS MOSTLY LEVEL LAWNS AND WOODS, WITH ROUTE 346 PERPENDICULAR TO THE BROOK. LADD BROOK IS CONTAINED BY STEEP BANKS ALONG EACH SIDE AT THE STRUCTURE. DEVELOPMENT ALONG ROUTE 346 CONSISTS OF MOSTLY RESIDENTIAL DWELLINGS WITH A FEW BUSINESSES IN THE AREA. OVERHEAD UTILITIES RUN ALONG ROUTE 346 AND TH1. BURIED UTILITIES ARE LOCATED ALONG ROUTE 346 ACROSS THE EXISTING STRUCTURE. THE PLANS CALL FOR RELOCATION OF BOTH OVERHEAD AND BURIED UTILITIES.

VEGETATION:

A MIX OF HARDWOOD AND SOFTWOOD TREES OF ALL SIZES EXIST ALONG ROUTE 346. THE RESIDENTS ON EACH SIDE OF THE STRUCTURE HAVE LAWNS WITH LANDSCAPE PLANTINGS. BOTH BANKS OF THE BROOK HAVE BRUSH COVER. NO FIELDS OR OTHER AGRICULTURAL CROPS EXIST NEAR THE PROJECT. IMPACTS TO VEGETATION WILL BE LIMITED TO THAT WHICH ARE AFFECTED BY THE CONSTRUCTION OF THE NEW STRUCTURE ON THE EXISTING ALIGNMENT.

SOILS:

THE SOIL CONSERVATION SERVICE HAS MAPPED THE SOILS THROUGHOUT BENNINGTON COUNTY. THE SOIL TYPE IDENTIFIED FOR THIS PROJECT SITE IS COPAKE. THE DESCRIPTION IS AS FOLLOWS:

"THE COPAKE SERIES CONSISTS OF COARSE-LOAMY OVER SANDY OR SANDY SKELETAL, MIXED, MESIC DYSTRIC EUTHROCHREPTS. THE SOILS ARE DEEP AND SOMEWHAT EXCESSIVELY DRAINED. THEY HAVE AN A HORIZON OF VERY DARK GRAYISH BROWN FINE SANDY LOAM, A B HORIZON OF DARK BROWN SANDY LOAM AND DARK YELLOWISH BROWN GRAVELLY SANDY LOAM, AND A C HORIZON OF DARK BROWN AND VERY DARK GRAYISH BROWN GRAVELLY COARSE SAND AND GRAVELLY SAND. THE SOILS FORMED IN GRAVELLY, WATER-DEPOSITED MATERIAL."

THE EROSION FACTOR "K" VALUES FOR COPAKE SOILS ARE AS FOLLOWS:

DEPTH (mm)	EROSION FACTOR
0-200	0.32
200-525	0.24
525-1500	0.17

SOILS BORINGS TAKEN AT THE SITE WERE CLASSIFIED AS FOLLOWS:

DEPTH (m)	CLASSIFICATION
0 - 0.6	SILTY GRAVELLY SAND
0.6 - 1.2	SANDY GRAVEL
1.2 - 1.8	UNKNOWN
1.8 - 2.4	UNKNOWN
2.4 - 3.0	SILTY CLAY
3.0 - 3.6	SILT
3.6 - 4.2	SILT

SENSITIVE RESOURCE AREAS:

NO THREATENED OR ENDANGERED SPECIES HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS AND THERE WILL BE NO ADVERSE EFFECT TO HISTORIC OR ARCHAEOLOGICAL FEATURES. LADD BROOK IS THE ONLY IDENTIFIED RESOURCE AND BEING A STEEP, HIGH GRADIENT STREAM THERE ARE NO WETLANDS WITHIN THE VICINITY OF THE PROJECT.

A HISTORICAL SITE IS LOCATED NEAR THE PROJECT SITE AND THE FOLLOWING CONDITIONS SHALL BE MET.

A. TEMPORARY CONSTRUCTION FENCING SHALL BE ERECTED AROUND THE ARCHAEOLOGICAL SITE VT-BE-128.

B. THE SITE SHALL BE MARKED "DO NOT DISTURB".

C. THE VAOT ARCHEOLOGIST WILL BE PRESENT AT THE PRE-CONSTRUCTION MEETING TO ENSURE THAT THE CONTRACTOR IS AWARE OF THE SENSITIVE ARCHAEOLOGICAL AREA.

PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES: DISTURBANCE OF SOILS NEAR NATURAL OR MAN-MADE WATERWAYS CONSISTS OF THAT WHICH IS NECESSARY TO CONSTRUCT THE NEW STRUCTURE. STABILIZATION OF DISTURBANCES TO STREAM BANKS WILL BE ACCOMPLISHED WITH TYPE III STONE FILL.

TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL

TEMPORARY EROSION PREVENTION MEASURES TO BE UTILIZED INCLUDE:

"PROJECT DEMARCATION FENCING," DENOTED -PDF- ON THE PLANS, TO DELINEATE THE LIMITS THE CONTRACTOR CAN ACCESS WITH CONSTRUCTION EQUIPMENT. THIS MEASURE LIMITS THE AREA THAT CAN BE DISTURBED AND EXPOSED TO EROSION.

SEEDING, MULCHING AND BIODEGRADABLE EROSION CONTROL MATTING, OR AN EQUIVALENT PRODUCT, WILL BE UTILIZED ON ALL SLOPES STEEPER THAN 3:1 THAT ARE NOT LINED WITH STONE FILL. THESE SLOPES SHALL BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE OR DURING INTERMITTENT PHASES OF CONSTRUCTION ACTIVITY UNLESS THE FORECAST OF RAINFALL DICTATES STABILIZATION SOONER.

TRACKING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, WILL ALSO BE UTILIZED ON A REGULAR BASIS. ANY SLOPES TO BE EXPOSED FOR SEVERAL DAYS PRIOR TO FINAL GRADING SHALL BE TRACKED AND MULCHED. THE FORECAST OF RAINFALL EVENTS SHALL ALSO TRIGGER PROTECTION OF EXPOSED SLOPES.

WHERE NECESSARY TEMPORARY STONE CHECK DAMS WILL BE PLACED IN DITCHES TO REDUCE FLOW VELOCITIES AND THUS REDUCE THE POTENTIAL FOR EROSION. CHECK DAMS WILL BE PLACED ALONG THE DITCHES SUCH THAT THE ELEVATION OF THE TOP OF EACH CHECK DAM CORRESPONDS WITH THE ELEVATION OF THE TOE OF THE PRECEDING UPSLOPE CHECK DAM. SEE 'EROSION CONTROL DETAILS' SHEET. THE CHECK DAMS MAY BE REMOVED ONCE THE STONE LINING OF THE DITCHES IS COMPLETE AND THE SURROUNDING AREA STABILIZED.

TEMPORARY MEASURES TO CONTROL SEDIMENT TRANSPORT INCLUDE:

SILT FENCE WILL BE INSTALLED FROM THE TOE OF SLOPES TO PREVENT SEDIMENT TRANSPORT TO DOWN GRADIENT AREAS. EACH LINE OF SILT FENCE WILL BE PLACED ALONG THE CONTOUR WITH ENDS TURNED SLIGHTLY UPHILL TO CREATE A PONDING EFFECT SHOULD WATER TRY TO RUN ALONG THE FENCING AND AROUND THE

ENDS. THE MAXIMUM SLOPE LENGTH BETWEEN SEPARATE RUNS OF SILT FENCE IS 30 M (100'). SILT FENCE SHALL BE INSTALLED PRIOR TO ANY UPSLOPE EARTHWORK.

SAND BAGS FILLED WITH CLEAN, SMALL DIAMETER STONE, OR AN EQUIVALENT BARRIER, WILL BE UTILIZED AROUND THE DROP INLET TO CREATE A TEMPORARY PONDING AREA FOR PARTICLES TO SETTLE OUT AS WATER DRAINS THROUGH THE BARRIER. INLET PROTECTION SHALL BE INSTALLED AS SOON AS THERE IS THE POSSIBILITY OF WATER FLOWING TO THE STRUCTURE. THE HEIGHT OF THE BARRIER SHALL BE LIMITED SUCH THAT THE PONDING AREA DOES NOT PRESENT A HAZARD TO THE TRAVELING PUBLIC. ALTERNATIVE INLET CONTROL MEASURES SHALL BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION. THIS WILL BE PAID FOR UNDER 653.41, INLET PROTECTION DEVICE, TYPE II.

MEASURES SUCH AS TEMPORARY STONE CHECK DAMS, SILT FENCE, AND SAND BAGS SHALL BE CHECKED EACH WORKDAY AND AFTER EACH RAINFALL EVENT FOR ACCUMULATION OF SEDIMENT. SEDIMENT BUILD-UP SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT REACHES ONE-HALF THE HEIGHT OF THE CONTROL MEASURE. SEDIMENTS SHALL BE DISPOSED OF IN AN APPROVED AREA SUCH THAT THEY WILL NOT BE SUBJECT TO EROSION.

TEMPORARY SEDIMENT SETTLING BASINS MAY OR MAY NOT BE UTILIZED ON THIS PROJECT. IF A SEDIMENT SETTLING BASIN IS TO BE USED FOR DEWATERING A COFFERDAM, IT SHOULD BE SIZED BASED UPON THE CRITERIA FOUND ON THE NEXT SHEET. (SEE SEDIMENT SETTLING BASIN SIZING CRITERIA.)

THE RESIDENT ENGINEER MAY DIRECT THE INSTALLATION OF CERTAIN EROSION CONTROL MEASURES IN ORDER TO AVOID POTENTIAL EROSION PROBLEMS, OR TO RESPOND TO STORM EVENTS, OR DAMAGE BY CONSTRUCTION OPERATIONS.

PERMANENT EROSION CONTROL MEASURES

SEVERAL PERMANENT EROSION CONTROL MEASURES WILL BE UTILIZED: STONE LINING OF THE STREAM BANKS WITH STONE FILL, TYPE III AS SPECIFIED BY VTRANS HYDRAULICS PERSONNEL IS SPECIFIED. THIS STONE WILL PROTECT FROM STREAM BANK EROSION DURING STORM EVENTS.

STONE FILL, TYPE III WILL BE UTILIZED AT CULVERT OUTLETS TO DISSIPATE WATER VELOCITIES AND REDUCE EROSION POTENTIAL.

GRASS, OR OTHER SUITABLE GROUND COVER WILL BE ESTABLISHED OUTSIDE OF THE ROADWAY LIMITS WHERE STONE LINING HAS NOT BEEN SPECIFIED. ALL 3:1 SLOPE SHALL BE SEEDED AND MULCHED PROMPTLY UPON ACHIEVING FINAL GRADE.

AFTER PLACEMENT, GRUBBING MATERIAL SHALL BE STABILIZED WITH STRAW MATTING AND/OR SEED AND MULCH AS DIRECTED BY THE RESIDENT ENGINEER.

EROSION & SEDIMENT CONTROL GUIDELINES

GENERAL EROSION CONTROLS: THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE WORK OUTLINED IN THIS NARRATIVE CONSISTS OF APPLYING MEASURES THROUGHOUT THE LIFE OF THE PROJECT TO CONTROL EROSION AND MINIMIZE THE SEDIMENTATION OF RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION CONTROLS.

AN ALTERNATE TEMPORARY EROSION CONTROL PLAN SHALL BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL BY THE AGENCY OF TRANSPORTATION.

THE CONTRACTOR SHALL COORDINATE THE INSTALLATION, USE, AND REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES WITH CONSTRUCTION ACTIVITIES TO ENSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS EROSION AND SEDIMENT CONTROL. THE CONTRACTOR SHALL EMPLOY TEMPORARY STABILIZATION PRACTICES IN INCREMENTAL STAGES AS CONSTRUCTION PROCEEDS. THE CONTRACTOR WILL USE ADDITIONAL EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION AND AS DIRECTED BY THE ENGINEER. SEE SECTION 105.23 OF THE VERMONT AOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006.

PROJECT NAME:	POWNAL		
PROJECT NUMBER:	STP RS 0107(8)		
FILE NAME:	/B4c028/str/sc028ecn.xls	PLOT DATE:	4/25/2007
PROJECT LEADER:	W. SYMONDS	DRAWN BY:	R. PELLETT
DESIGNED BY:	R. PELLETT	CHECKED BY:	T. SUMNER
EROSION CONTROL NARRATIVE #1		SHEET	25 OF 65