

EROSION PREVENTION & SEDIMENT CONTROL NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REHABILITATION OF THE GIFFORD COVERED BRIDGE (BRIDGE NO. 34) OVER THE 2ND BRANCH WHITE RIVER. THE PROJECT IS ON T.H. NO. 66, AN UNPAVED, CLASS III TOWN HIGHWAY, IN THE TOWN OF RANDOLPH. THE EXISTING COVERED BRIDGE IS CURRENTLY OPEN TO TRAFFIC, BUT WILL REMAIN CLOSED DURING CONSTRUCTION. TRAFFIC WILL BE DETOURED DURING CONSTRUCTION ALONG OTHER TOWN HIGHWAYS. THE PROJECT CONSISTS OF REPLACING THE DETERIORATED BRIDGE MEMBERS, INSTALLATION OF A NEW STANDING SEAM METAL ROOF, NEW GLULAM MEMBERS, SAWN FLOOR BEAMS AND DECK, SUBSTRUCTURE REPAIRS, AND INSTALLATION OF PERMANENT SHEETING. NO THREATENED AND ENDANGERED SPECIES, WETLANDS, STORMWATER, FLOOD PLAINS HAZARDOUS WASTE SITE, GREEN MOUNTAIN NATIONAL FOREST LAND, 4F PROPERTY, 6F PROPERTY HAVE BEEN IDENTIFIED IN THE PROJECT AREA. AN HISTORIC RESOURCE (GIFFORD COVERED BRIDGE) HAS BEEN IDENTIFIED IN THE PROJECT AREA AND WILL BE REHABILITATED BY PROPOSED PROJECT WORK. AN ARCHAEOLOGICAL RESOURCE HAS BEEN IDENTIFIED BEYOND THE ROW, TO THE SOUTHEAST OF THE PROJECT AREA AND WILL BE AVOIDED. THE SITE IS LOCATED, BASED UPON NAVD 83/(CON) AT 521893.79 N, 1626547.81 E (HVCTRL #1 - SEE TIE SHEET).

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE (1) CONSTRUCTION SEASON.

TOTAL AREA OF DISTURBANCE INCLUDING LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, INCLUDING ANY WASTE, STAGING AND BORROW AREAS WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS IS APPROXIMATELY 0.045 ACRE.

1.2 SITE INVENTORY

1.2.1 OFF SITE DRAINAGE CHARACTERISTICS (UP AND DOWN-GRADIENT)

THE PROPERTY SURROUNDING THE PROJECT SITE CONSISTS OF WELL ESTABLISHED VEGETATION, MODERATE TO STEEPLY SLOPING, MIXED SOFTWOOD AND HARDWOOD TREES WITH WELL DEFINED DRAINAGE WAYS. DUE TO THE NATURE OF THE SURROUNDING TERRAIN, RUNOFF WATER ENTERING THE PROJECT SITE WILL BE PRIMARILY LIMITED TO THAT WHICH IS CONVEYED ALONG ROADWAY DITCHES, AND THAT WHICH FOLLOWS T.H. NO. 66 ALONG THE 4% EAST APPROACH GRADE AND THE 0.6% GRADE AT THE WEST APPROACH OF THE PROJECT LIMITS. THE CURRENT ROADWAY DITCHES ARE FAIRLY WELL DEFINED AND CONSIST OF GRAVEL AND GRASS BUT ARE NOT LINED WITH STONE.

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

2ND BRANCH WHITE RIVER IS LOCATED ON THE PROJECT AREA. THERE ARE NO OTHER WATER BODIES WITHIN THE PROJECT AREA. THE STREAMBED OF THE RIVER IS MAINLY COMPOSED OF SAND AND SILT, ARMORED WITH COBBLES. THE RIVER IS CLASSIFIED AS SINUOUS, INCISED, ALLUVIAL-RURAL MIXTURE OF FOREST AND OPEN LAND SURROUNDINGS. THE CONTRIBUTING DRAINAGE AREA AT THE BRIDGE CROSSING IS 51.7 SQUARE MILES.

1.2.3 TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES

THE TOPOGRAPHY OF THE PROJECT SITE IS HILLY WITH WOODED AREAS ALONG WITH FARM LANDS. VERMONT ROUTE 14 RUNS PARALLEL ALONG THE WEST SIDE OF 2ND BRANCH WHITE RIVER. THE WEST AND EAST BANKS OF 2ND BRANCH WHITE RIVER ARE RELATIVELY STEEP WITHIN THE PROJECT VICINITY. DEVELOPMENT ALONG T.H. NO. 66 CONSISTS OF FARMS AND FARM LANDS. NO OVERHEAD UTILITY SERVICE EXISTS ALONG T.H. NO. 66 AT THE BRIDGE SITE. AN OVERHEAD UTILITY LINE CROSSES T.H. NO. 66, 0.2 MILES FROM THE BRIDGE, AND ANOTHER FOLLOWS VT. RTE. 14, 400' FROM THE BRIDGE SITE. THE LINES ARE LOCATED A SUFFICIENT DISTANCE FROM THE BRIDGE THAT IT IS NOT ANTICIPATED THAT THERE WILL BE ANY IMPACTS TO THEM FROM THE PROJECT. THERE ARE NO UNDERGROUND UTILITIES WITHIN THE PROJECT AREA.

1.2.4 VEGETATION

THE LAND ON AND ADJACENT TO THE PROJECT SITE IS RURAL AND CONSISTS OF A MIX OF HARDWOOD AND SOFTWOOD TREES OF ALL SIZES ALONG T.H. 66 AND AREA FARM LANDS. THE FARM RESIDENCE NEAR THE BRIDGE SITE HAS SMALL AREAS OF LAWN AND LANDSCAPE PLANTINGS. FIELDS AND AGRICULTURAL CROPS EXIST NEAR THE PROJECT. IMPACTS TO VEGETATION WILL BE LIMITED TO THAT WHICH ARE AFFECTED BY THE BRIDGE REHABILITATION CONSTRUCTION INSIDE THE EXISTING TOWN'S RIGHT-OF-WAY (R.O.W.). SOME SMALL SOFTWOOD TREES WILL BE REMOVED. THERE IS NO LEDGE ALONG THE RIVER BANK. FOLLOWING CONSTRUCTION OF THE REHABILITATED COVERED BRIDGE, VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.5 SOILS

ACCORDING TO THE NATURAL RESOURCES CONSERVATION SERVICE (NRCS) THERE ARE THREE SOIL TYPES PRESENT ON THIS PROJECT SITE. BUCKLAND STONY LOAM (K=0.32) IS LOCATED IN THE EASTERN PORTION OF THE PROJECT LAYOUT AREA. DUE TO RELATIVE STEEPNESS OF THE LAND, THIS REGION HAS THE POTENTIAL FOR BEING MODERATE TO HIGHLY ERODABLE. MERIMACK FINE SANDY LOAM (K=0.17) IS FOUND IN THE WESTERN PORTION OF THE PROJECT LAYOUT AREA. THIS AREA HAS A POTENTIAL FOR BEING LOW ERODABLE DUE TO RELATIVE FLAT LAND IN THIS REGION. WINOOSKI VERY FINE SANDY LOAM (K=0.49) IS FOUND IN THE CENTRAL PORTION OF THE PROJECT LAYOUT AREA AND IS CONSIDERED MODERATE TO HIGHLY ERODABLE. SLOPES WITHIN THE VICINITY OF THE PROJECT RANGE FROM 0 - 25%.

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.

1.2.6 SENSITIVE RESOURCE AREAS

NO THREATENED & ENDANGERED SPECIES HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS AND THERE WILL BE NO ADVERSE EFFECT TO HISTORIC FEATURES. ARCHAEOLOGICAL FEATURES HAVE BEEN IDENTIFIED (SEE SECTION 1.1) WITHIN THE PROJECT LIMITS AND WILL BE AVOIDED. 2ND BRANCH WHITE RIVER IS THE ONLY WATER RESOURCE WITHIN THE PROJECT SITE. PRIME AND STATEWIDE AGRICULTURAL LAND IS IDENTIFIED WITHIN THE VICINITY OF THE PROJECT. THERE WILL BE MINIMAL IMPACTS TO THESE TYPES OF LAND IN THE AREA OF CONSTRUCTION.

DISTURBANCE OF SOILS NEAR NATURAL OR MAN-MADE WATERWAYS CONSISTS OF THAT WHICH IS NECESSARY TO CONSTRUCT THE NEW BRIDGE SEATS AND PERMANENT SHEETING.

1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF CONSTRUCTION GENERAL PERMIT 3-9020 BASED ON THE PROJECT IMPACT AREA. SHOULD CHANGES PRIOR TO, OR DURING CONSTRUCTION, RESULT IN ONE (1) OR MORE ACRES OF EARTH DISTURBANCE, OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THEN THE SELECTED CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL PERMITTING WITH THE VERMONT AGENCY OF NATURAL RESOURCES VIA FILING OF THE APPROPRIATE "NOTICE OF INTENT" UNDER THE GENERAL CONSTRUCTION PERMIT PROCESS.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

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 MINIMIZING SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION CONTROLS.

PREVENTING INITIAL SOIL EROSION IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. 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.

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

PROJECT DEMARCATION FENCING IS 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

EMPLOY TEMPORARY STABILIZATION PRACTICES IN INCREMENTAL STAGES (PHASING) AS CONSTRUCTION PROCEEDS. ADDITIONAL MEASURES MAY BE NEEDED DUE TO THE PHASING OF THE PROJECT AND AS DIRECTED BY THE ENGINEER.

1.4.3 STABILIZE CONSTRUCTION EXIT

STABILIZED CONSTRUCTION ENTRANCE AND EXIT ARE NOT USED IN THIS PROJECT.

1.4.4 INSTALL SILT FENCE

SILT FENCE SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK AS NECESSARY.

1.4.5 INSTALL FILTER CURTAIN

FILTER CURTAIN SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF STEEL SHEET PILING.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK DAMS SHALL NOT BE REQUIRED.

1.4.7 STABILIZE EXPOSED SOILS

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. SEE ROADWAY SECTIONS FOR SIDESLOPE GRADES. THESE SLOPES SHALL BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE OR DURING INTERMITTENT PHASES OF CONSTRUCTION ACTIVITY.

SURFACE ROUGHENING 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.

1.4.8 WINTER STABILIZATION

IF CONSTRUCTION ACTIVITIES INVOLVING EARTH DISTURBANCE CONTINUE PAST OCTOBER 15 OR BEGIN BEFORE APRIL 15, THE FOLLOWING REQUIREMENTS MUST BE ADHERED TO:

1. ENLARGED ACCESS POINTS STABILIZED TO PROVIDE FOR SNOW STOCKPILING.
2. A MINIMUM 25 FOOT BUFFER SHALL BE MAINTAINED FROM PERIMETER CONTROLS SUCH AS SILT FENCE.
3. IN AREAS OF DISTURBANCE THAT DRAIN TO A WATER BODY WITHIN 100 FEET, TWO ROWS OF SILT FENCE MUST BE INSTALLED ALONG THE CONTOUR.

4. SILT FENCE AND OTHER PRACTICES REQUIRING EARTH DISTURBANCE MUST BE INSTALLED AHEAD OF FROZEN GROUND.

5. MULCH USED FOR TEMPORARY STABILIZATION MUST BE APPLIED AT DOUBLE THE STANDARD RATE, OR A MINIMUM OF 3 INCHES WITH AN 80-90% COVER.

6. TO ENSURE COVER OF DISTURBED SOIL IN ADVANCE OF A MELT EVENT, AREAS OF DISTURBED SOIL MUST BE STABILIZED AT THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS:

- IF NO PRECIPITATION WITHIN 24 HOURS IS FORECAST AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
- DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS HOUSE FOUNDATIONS OR OPEN UTILITY TRENCHES.

7. PRIOR TO STABILIZATION, SNOW OR ICE MUST BE REMOVED TO LESS THAN 1 INCH THICKNESS.

8. USE STONE TO STABILIZE AREAS WHERE CONSTRUCTION VEHICLE TRAFFIC IS ANTICIPATED. STONE PATHS SHOULD BE 10-20 FEET WIDE TO ACCOMMODATE VEHICULAR TRAFFIC.

1.4.9 STABILIZE SOIL AT FINAL GRADE

SEEDING, MULCHING AND BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3. THESE SLOPES SHALL BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

1.4.10 DE-WATERING ACTIVITIES

SEDIMENT BASINS FOR SUBSTRUCTURE WORK SHALL BE USED AS NECESSARY.

SEDIMENT SETTLING BASIN SIZING CRITERIA TABLE:

PUMP FLOW RATE		REQUIRED SURFACE AREA		LENGTH = 2:1 WIDTH			
Q (gpm)	Q (m ³ /s)	(ft ²)	(m ²)	L (ft)	W (ft)	L (m)	W (m)
50	0.0032	595	55	35.0	17.0	10.6	5.3
100	0.0063	1200	111	49.0	24.5	15.0	7.5
150	0.0095	1776	165	59.6	29.8	18.2	9.1
200	0.0126	2368	220	68.8	34.4	21.0	10.5
250	0.0158	2970	276	77.0	38.5	23.4	11.7
300	0.0189	3560	330	84.4	42.2	25.8	12.9
350	0.0221	4155	386	91.2	45.6	27.8	13.9

1.4.11 INSPECT YOUR SITE

INSPECT SITE BASED ON PERMIT AUTHORIZATION OR SPECIAL PROVISION REQUIREMENTS.

1.4.12 SECTION 106 STIPULATIONS

ALL IDENTIFIED RESOURCES WITHIN THE PROJECT LIMITS ARE TO BE PROTECTED AND AVOIDED AS IT HAS BEEN DETERMINED THAT THIS PROJECT WILL NOT:

REQUIRE A TEMPORARY DETOUR OUTSIDE EXISTING RIGHT-OF-WAY, OR A TEMPORARY WETLAND OR STREAM CROSSING WHICH WILL REQUIRE NON-ROUTINE MITIGATION, OR A RAMP CLOSURE, UNLESS THE FOLLOWING CONDITIONS ARE MET

- (1) PROVISIONS ARE MADE FOR ACCESS BY LOCAL TRAFFIC AND THE FACILITY IS POSTED ACCORDINGLY,
- (2) BUSINESSES DEPENDENT UPON THROUGH TRAFFIC WILL NOT BE UNDULY AFFECTED,
- (3) THE TEMPORARY DETOUR OR RAMP CLOSURE WILL NOT INTERFERE WITH LOCAL SPECIAL EVENTS,
- (4) THE TEMPORARY DETOUR, RAMP CLOSURE, WETLAND OR STREAM CROSSING WILL NOT SUBSTANTIALLY INCREASE THE ENVIRONMENTAL CONSEQUENCES OF THE ACTION (PROJECT).

INVOLVE CONSTRUCTION IN WETLANDS AND/OR STREAMS (BELOW ORDINARY HIGH WATER) TOTALING MORE THAN 5,000 SQUARE FEET, THUS NOT REQUIRING THE ARMY CORP OF ENGINEERS TO COORDINATE WITH RESOURCE AGENCIES PER GENERAL PERMIT #NAE-2007-24.

REQUIRE A RISK ANALYSIS FOR AN INCREASE IN 100-YEAR FLOOD WATER SURFACE ELEVATIONS, PER EO 11988.

PROJECT NAME:	RANDOLPH
PROJECT NUMBER:	BHO 1444(53)
FILE NAME:	s06j092notes.dgn
PROJECT LEADER:	M. SARGENT
DESIGNED BY:	J. WEAVER
EPSC NARRATIVE	
PLOT DATE:	09-NOV-2010
DRAWN BY:	C. WEEBER
CHECKED BY:	M. SARGENT
SHEET	10 OF 27