

DESCRIPTION OF PROJECT

THIS PROJECT INCLUDES REMOVAL AND REPLACEMENT OF BRIDGE #60 ON ROUTE 5 OVER LULLS BROOK AND THE NECESSARY ROADWAY APPROACH IMPROVEMENTS ASSOCIATED WITH THE BRIDGE. THE PROJECT IS LOCATED APPROXIMATELY 2.135 KM NORTH OF THE WINDSOR-HARTLAND TOWN LINE AND EXTENDS NORTH 0.110 KM. TOTAL ROADWAY WORK, INCLUDING BOTH APPROACHES, IS APPROXIMATELY 160 METERS. AN EXISTING PRIVATELY OWNED TOOL SHED WILL BE RELOCATED TO ALLOW FOR CONSTRUCTION OF A TEMPORARY DETOUR ROADWAY AND BRIDGE JUST NORTH OF THE EXISTING STRUCTURE. CONSTRUCTION OF THE PROPOSED BRIDGE WILL OCCUR ABOVE THE ORDINARY HIGH WATER ELEVATION AND NO WORK WITHIN THE FLOWING WATER IS ANTICIPATED DURING CONSTRUCTION. LULLS BROOK IS CLASSIFIED AS CLASS B WATERS AND IS LOCATED IN THE LOWER CONNECTICUT RIVER BASIN. THE LIMITS OF CONSTRUCTION DO NOT ENCRoACH UPON WETLANDS. NO THREATENED OR ENDANGERED SPECIES HAVE BEEN IDENTIFIED IN THE PROJECT AREA. THE PROJECT WILL INVOLVE AN ADVERSE EFFECT ON A MULTIPLE RESOURCE DISTRICT CONSISTING OF THE EXISTING BRIDGE, STANDING STRUCTURES AND ARCHAEOLOGICAL SITES DETERMINED ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES. THESE EFFECTS WILL BE MITIGATED BY IMPLEMENTATION OF THE STIPULATIONS CONTAINED IN A SECTION 106 MOA SIGNED BY THE FHWA ON JULY 13, 1998.

THE SITE IS LOCATED AT APPROXIMATELY 433218 N, 722407 W (NAD 83/92) IT IS ANTICIPATED THAT THE PROJECT WILL LAST TWO CONSTRUCTION SEASONS. NO WINTER CONSTRUCTION IS ANTICIPATED.
TOTAL DISTURBED AREA (EXCLUDING WASTE, BORROW AND STAGING AREAS):
0.293 ha (0.70 ACRES)

SITE INVENTORY & ANALYSIS

OFF SITE DRAINAGE CHARACTERISTICS:

THE PROPERTY SURROUNDING THE PROJECT SITE CONSISTS OF WELL ESTABLISHED VEGETATION WITH STEEP SLOPES OF VARIOUS GRASSES, SHRUBS AND TREES. STORMWATER RUNOFF FROM AREAS NORTHWEST AND SOUTHEAST OF THE CROSSING ARE CONVEYED INTO LULLS BROOK VIA A SERIES OF ROADSIDE DITCHES AND CULVERTS UNDER US RT 5. SOUTHWEST AND NORTHEAST OF THE CROSSING RUNOFF IS CONVEYED AS SHEET FLOW AND DISCHARGED DIRECTLY INTO LULLS BROOK.

DRAINAGE, WATERWAYS, BODIES OF WATER:

LULLS BROOK IS LOCATED WITHIN THE PROJECT AREA. THERE ARE NO OTHER WATER BODIES OR WETLANDS WITHIN THE PROJECT AREA. LULLS BROOK IS CLASSIFIED AS A CLASS B STREAM AND IS A COLD WATER FISHERY. THE BROOK IS A TRIBUTARY OF THE CONNECTICUT RIVER. THE CONTRIBUTING DRAINAGE AREA OF LULLS BROOK AT THE EXISTING CROSSING IS 55.4 SQ. KM. (21.4 SQ. MI.). THE FEMA DELINEATED 100-YEAR FLOODPLAIN IS EXTREMELY NARROW THROUGHOUT THE PROJECT AREA DUE TO STEEP OVBANK SIDESLOPES AND CHANNEL SLOPE.

TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES:

THE TOPOGRAPHY OF THE PROJECT SITE CONSISTS OF A ROCKY GORGE IMMEDIATELY UPSTREAM AND DOWNSTREAM OF THE EXISTING BRIDGE. SLOPES ON EITHER SIDE OF THE STREAM ARE PARTIALLY WOODED. EXISTING LAND USE IS LOW DENSITY RESIDENTIAL AND COMMERCIAL. THE LAND IMMEDIATELY SURROUNDING THE BRIDGE IS UNDEVELOPED DUE TO STEEP SLOPES ASSOCIATED WITH LULLS BROOK GORGE. A SMALL HYDROELECTRIC FACILITY IS LOCATED SOUTHEAST OF THE EXISTING BRIDGE. UTILITY POLES WILL BE RELOCATED AS PART OF THE PROJECT.

VEGETATION:

VEGETATION ON EITHER SIDE OF THE STREAM IS PARTIALLY WOODED WITH SPECIES SUCH AS AMERICAN ELM, BOX ELDER AND STAGHORN SUMAC. OTHER SPECIES OBSERVED ARE BUSH HONEYSUCKLE, RASPBERRY AND TIGER LILLIES. NORTHEAST OF THE BRIDGE IS DOMINATED BY MATURE WHITE PINES. NORTHWEST AND SOUTHWEST OF THE EXISTING BRIDGE IS SIMILAR. THE STEEP ROCKY SLOPES CONSIST A MIX OF SEVERAL TREE SPECIES THAT INCLUDE WHITE PINE, RED OAK, BOX ELDER, AMERICAN ELM AND BASSWOOD. BUSH HONEYSUCKLE, BRAMBLES AND STAGHORN SUMAC ARE THE PRIMARY UNDERSTORY VEGETATION.

SOILS:

THE SOIL SURVEY IDENTIFIES TWO SOIL TYPES IN THE WORK AREA: SHELBURNE ON THE NORTH AND RUMNEY ON THE SOUTH. A DESCRIPTION OF THE SOIL TYPES IS INCLUDED IN THE PLAN SHEET TITLED "EXISTING CONDITIONS SITE PLAN".

SHELBURNE:
SHELBURNE FINE, SANDY LOAM IS A HIGHLY ERODIBLE SOIL.
RUMNEY:
RUMNEY FINE, SANDY LOAM IS NOT HIGHLY ERODIBLE

SEVEN SOIL BORINGS WERE TAKEN IN THE PROJECT AREA. ALL BORINGS INDICATED BEDROCK WITHIN THE TOP 3.3M OF THE SAMPLES. MATERIALS BETWEEN THE SURFACE AND THE BEDROCK WERE CLASSIFIED AS SILT, SAND, STONES, LOOSE AND/OR SOFT ROCK OR GRAVEL.

SENSITIVE RESOURCE AREAS:

NO THREATENED OR ENDANGERED SPECIES HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS AND ADVERSE EFFECTS TO HISTORIC OR ARCHAEOLOGICAL FEATURES WILL BE MITIGATED AS STATED IN THE MOA. LULLS BROOK IS AN IDENTIFIED RESOURCE. THERE ARE NO WETLANDS WITHIN THE VICINITY OF THE PROJECT.

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 AND THE TEMPORARY DETOUR ROADWAY AND BRIDGE. TEMPORARY DISTURBANCES TO THE STREAM BANKS DURING CONSTRUCTION WILL BE STABILIZED WITH STONE FILL, TYPE II. STONE FILL WILL BE REMOVED UPON REMOVAL OF THE TEMPORARY ROADWAY AND BRIDGE.

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.

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 FOLLOWING CRITERIA: (SEE SEDIMENT SETTLING BASIN SIZING CRITERIA ON NEXT SHEET.)

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 FILL, TYPE I WILL BE UTILIZED TO LINE THE DRAINAGE DITCH ON THE NORTH SIDE OF THE PROJECT. STONE FILL, TYPE II WILL BE UTILIZED AT THE OUTLET OF THE DRAINPIPE AT THE SOUTH END OF THE PROJECT.

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. SLOPES GREATER THAN 3:1 SHALL RECEIVE EROSION CONTROL MATTING. 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.

IF THE CONTRACTOR WOULD LIKE TO IMPLEMENT ALTERNATE TEMPORARY EROSION CONTROL MEASURES, A 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 ECONOMIC, 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 2001.

THE TYPE, SIZE, AND LOCATION OF ANY EROSION CONTROL DEVICES SHALL NOT BE CHANGED UNLESS PRIOR APPROVAL IS OBTAINED FROM THE ENGINEER. ANY APPROVED CHANGES SHALL BE NOTED ON THE EROSION CONTROL PLANS AND DISCUSSED IN THE WEEKLY REPORT.

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.

PREVENTING INITIAL SOIL EROSION IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. THE CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS PROMPTLY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY VEGETATION SHALL BE ESTABLISHED IF THE AREA IS TO BE WITHOUT CONSTRUCTION ACTIVITY FOR A PERIOD OF 14 DAYS. PERIMETER CONTROL MEASURES SHALL BE INSTALLED FOLLOWING CLEARING, BUT PRIOR TO THE START OF ANY GRUBBING OR GRADING ACTIVITY, OTHER TEMPORARY CONTROLS SHALL BE INSTALLED IN INCREMENTAL STAGES AS CONSTRUCTION PROCEEDS.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHALL BE ESTABLISHED WHEREVER POSSIBLE.

THE CONTRACTOR NEED ONLY CONTROL SEDIMENT-LADEN RUNOFF GENERATED BY THE PROJECT SITE. THE CONTRACTOR SHALL COLLECT AND ROUTE CLEAN OFFSITE RUNOFF AROUND OR THROUGH THE PROJECT SITE USING DIVERSION BERMS, DIVERSION CHANNELS, CULVERTS, AND/OR TEMPORARY PIPES.

CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED ON THE DOWN SLOPE SIDE OF PERIMETER CONTROL MEASURES.

CONSTRUCTION EQUIPMENT WILL NOT BE ALLOWED TO CROSS THE FLOWING STREAM OR DISTURB THE EXISTING STREAM BANKS UNLESS AUTHORIZED BY THE ENGINEER.

IN GENERAL, PRESERVE EXISTING VEGETATION, SHRUBS, AND TREES WHENEVER POSSIBLE.

SILT FENCE SHALL BE PLACED AT THE TOES OF ALL FILL SLOPES AND SHALL BE CONSTRUCTED SO THAT FLOWS CANNOT BYPASS THE ENDS, AREAS DIRECTLY BELOW (DOWNHILL) OF THE SILT FENCES MUST BE UNDISTURBED AND VEGETATED.

STRAW MATTING WILL BE INSTALLED AS SOON AS PRACTICAL ON ALL TEMPORARY DETOUR CUT AND FILL SLOPES AND PERMANENT CUT AND FILL SLOPES.

AS CONSTRUCTION PROGRESSES, IMPLEMENTATION OF ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY THE ON-SITE COORDINATOR AND AS APPROVED BY THE RESIDENT ENGINEER.

THE PROJECT COMPLETION DATE HAS BEEN SET FOR OCTOBER 15TH TO ENSURE ALL FINAL EROSION CONTROL MEASURES FOR THE ESTABLISHMENT OF PERMANENT VEGETATION WILL TAKE PLACE DURING THE GROWING SEASON. THEREFORE WINTER STABILIZATION METHODS WILL NOT BE SHOWN ON THE PLANS OR DESCRIBED IN THE NARRATIVE.

PERIMETER EROSION CONTROLS

PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE PROJECT DEMARCATION FENCING SHALL BE PLACED ALONG THE PERIMETER OF THE PROJECT AS SHOWN ON THE EROSION CONTROL PLANS. THE INSTALLATION OF THE DEMARCATION FENCING SHALL BE PERFORMED SUCH THAT NO VEGETATION ON THE OUTSIDE OF THE FENCING IS DISTURBED.

PRIOR TO ANY CONSTRUCTION OR STAGING THE CONTRACTOR SHALL INSTALL STABILIZED CONSTRUCTION ENTRANCES LEADING TO STAGING AREAS AND THE PROJECT SITE TO PREVENT THE TRACKING OF SILTS AND SEDIMENTS OFFSITE. COARSE STONE FILL OVER FILTER FABRIC SHOULD BE UTILIZED WHERE AN ALREADY ESTABLISHED STABLE ENTRANCE DOES NOT EXIST. THE CRUSHED STONE PRODUCT USED FOR THE CONSTRUCTION OF THE STABILIZED ENTRANCES SHALL BE MONITORED FOR SEDIMENT ACCUMULATION AND REPLACED AS NECESSARY OR AS DIRECTED BY THE

PROJECT NAME:	U.S. 5 OVER LULLS BROOK		
PROJECT NUMBER:			
FILE NAME:	ZF204EC.XLS	PLOT DATE:	7/29/2004
PROJECT LEADER:	J. MIECZKOWSKI	DRAWN BY:	A. DUGON
DESIGNED BY:	A. DUGON/L. DOLPHIN	CHECKED:	L. DOLPHIN
EROSION CONTROL NARRATIVE		SHEET	24B OF 86