

EROSION CONTROL NARRATIVE

PROJECT DESCRIPTION

- THE BENNINGTON AC NH 019-1(51) PROJECT CONSISTS OF THE CONSTRUCTION OF A NEW 4.210-KM LIMITED ACCESS HIGHWAY IN BENNINGTON, VERMONT. BEGINNING AT STA. NB 6+013.726, AT VT ROUTE 9, AND EXTENDING NORTHERLY TO STA. NB 6+540.000 AT A POINT APPROXIMATELY 223 METERS NORTH OF THE ROARING BRANCH AND VT ROUTE 9 BEGINNING AT STA. VT 1+200.000 AND ENDING AT STA. VT 1+820.000. WORK TO BE PERFORMED INCLUDES GRADING, DRAINAGE, SUBBASE, PAVEMENT, AND LANDSCAPING. ADDITIONAL WORK OCCURS FROM STA. NB 6+540.000 AND EXTENDS NORTHERLY AND WESTERLY, ENDING AT STA. NB 9+672.770, TO A POINT APPROXIMATELY 400 METERS WEST OF EAST ROAD. WORK UNDER THIS PORTION OF THE PROJECT INCLUDES A PAVEMENT OVERLAY, PAVEMENT MARKINGS, SIGNING, AND OTHER INCIDENTAL ITEMS.
- THE TOTAL DISTURBANCE ASSOCIATED WITH CONSTRUCTION OF THIS PROJECT IS APPROX. 16.0 ACRES.
- THIS PROJECT IS BEING CONSTRUCTED ON NEW ALIGNMENT THROUGH A LARGELY UNDEVELOPED AREA OF BENNINGTON. BETWEEN VERMONT ROUTE 9 AND THE ROARING BRANCH CROSSING AT THE SOUTHERN END OF THE HIGHWAY, THE ROADWAY ALIGNMENT TRAVERSES A WOODED, LEVEL AREA. NORTH OF THE ROARING BRANCH, THE WOODED SLOPE RISES SHARPLY ABOVE THE RIVER AT A 1:2 GRADE OR GREATER FOR APPROXIMATELY 40 METERS. BETWEEN STATIONS NB 6+370 AND 6+560, THE TOPOGRAPHY CONTINUES TO RISE TOWARD THE NORTH, HOWEVER AT A MORE MODERATE GRADE OF APPROXIMATELY 10%, WHERE THIS PROJECT WILL CONNECT WITH THE BENNINGTON AC NH 019-1(52) PROJECT.
- SOILS THROUGHOUT THE PROJECT ARE PRIMARILY LOAMS, SILT LOAMS, AND FINE SANDY LOAMS. THE FOLLOWING TABLE LISTS THE MAJOR SOILS TYPES AND THEIR ASSOCIATED K-FACTORS:

SYMBOL	SOIL TYPE	K-FACTOR
3B	COPAKE GRAVELLY FINE SANDY LOAM, 3-8% SLOPES	0.24
3D	COPAKE GRAVELLY FINE SANDY LOAM, 15-25%	0.24
3E	COPAKE GRAVELLY FINE SANDY LOAM, 25-60%	0.24
28A	UDIFLUVENTS, LOAMY - SKELETAL	
67B	GEORGIA LOAM, 3-8% SLOPES, VERY STONY	0.28
69B	MASSENA SILT LOAM, 3-8% SLOPES, VERY STONY	0.20
94C	PITTSFIELD FINE SANDY LOAM, 8-15% SLOPES, VERY STONY	0.20

- THIS PROJECT HAS THREE DISCREET DISCHARGE POINTS TO THE RECEIVING WATER, THE ROARING BRANCH OF THE WALLOOMASAC RIVER AND ONE NON-DISCREET DISCHARGE TO THE FURNACE BROOK. EACH DISCHARGE CORRESPONDS TO A DRAINAGE AREA IN WHICH THE PROJECT HAS BEEN DIVIDED.
 - DRAINAGE AREA 1**
LOCATED DIRECTLY NORTH OF THE ROARING BRANCH AND INCLUDES DISTURBANCE OF 4.3 ACRES. RUNOFF WILL FLOW FROM NORTH TO SOUTH AND INTO THE ROARING BRANCH. A CLOSED COLLECTION SYSTEM IS PROPOSED THAT WILL DISCHARGE RUNOFF TO THE ROARING BRANCH AT A DISCREET DISCHARGE POINT LOCATED JUST EAST OF THE BRIDGE ABUTMENT AT STATION D 1+364 RT. THIS CLOSED COLLECTION SYSTEM WILL BE CONNECTED TO THE CLOSED COLLECTION SYSTEM FOR CONTRACT #52 AT STATION NB 6+594 RT. THE CONTRACT #52 SYSTEM CURRENTLY DISCHARGES INTO A TEMPORARY SEDIMENT BASIN THAT IS LOCATED WITHIN THE PROPOSED CONTRACT #51 CONSTRUCTION LIMITS AT STATION D 1+500 RT.
 - DRAINAGE AREA 2**
INCLUDES MOST OF THE AREA SOUTH OF THE ROARING BRANCH AND THE VT ROUTE 9 WORK EAST OF STATION VT 1+400. THE ASSOCIATED AREA OF DISTURBANCE IS 5.4 ACRES. RUNOFF WILL GENERALLY FLOW SOUTH TO NORTH AND INTO THE ROARING BRANCH. A CLOSED COLLECTION SYSTEM WILL DISCHARGE MOST RUNOFF TO A VEGETATED TREATMENT SWALES #6B WHICH DISCHARGES TO THE RECEIVING WATER NORTH OF THE BRIDGE ABUTMENT AT STATION D 1+257 LT.
 - DRAINAGE AREA 3**
CONSISTS OF THE REMAINDER OF THE VT ROUTE 9 CONSTRUCTION AND INCLUDES EARTH DISTURBANCE OF 3.5 ACRES. RUNOFF FROM THE WEST EMBANKMENT OF RAMP A WILL FLOW OVERLAND TO THE RECEIVING WATER. ROUTE 9 WEST OF STATION VT 1+400 WILL BE CONVEYED TO A VEGETATED TREATMENT SWALE #6A WHICH DISCHARGES INTO THE RECEIVING WATER APPROXIMATELY 600 FEET DOWNSTREAM OF VEGETATED TREATMENT SWALE #6B.
 - DRAINAGE AREA 4**
NEAR THE BALD MOUNTAIN TRAIL CROSSING (APPROXIMATELY STA NB 7+080 TO NB 7+330) INCLUDES DISTURBANCE OF 2.8 ACRES. RUNOFF WILL SHEET FLOW OVER LAWNS AND PASTURE AND EVENTUALLY DISCHARGE INTO FURNACE BROOK.

DRAINAGE AREA SUMMARY

DRAINAGE AREA	TOTAL DISTURB. (ACRES)	LIMIT OF CONCURRENT DISTURBANCE	RECEIVING WATER
1	4.3	1 ACRE	ROARING BRANCH
2	5.4	3 ACRES	ROARING BRANCH
3	3.5	3.5 ACRES	ROARING BRANCH
4	2.8	1 ACRE	FURNACE BROOK

CONTRACTOR RESPONSIBILITIES, LIMITATIONS & PROHIBITIONS

1. GENERAL NOTES

- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO AMEND/UPDATE ALL PLANS AND EXISTING PERMITS WHEN ADDING DETAILED CONSTRUCTION PHASING OR ANYTHING ELSE THAT MAY DEVIATE FROM THE APPROVED PLANS AS DIRECTED BY THE RESIDENT ENGINEER.
- OTHER THAN THOSE SHOWN ON THE PLANS ALL LAND DISTURBANCES WITHIN 15M OF ALL WATER BODIES, MEASURED FROM THE TOP OF BANK, AND WETLANDS, ARE PROHIBITED WITHOUT FURTHER REGULATORY REVIEW.
- CONTRACTOR TO MAINTAIN ALL EXISTING STREAMS AND RIPARIAN BUFFER ZONES IN THEIR NATURAL CONDITION.
- OFF-SITE DISCHARGES OF ANY MATERIAL OTHER THAN STORMWATER, SUCH AS VEHICLE AND EQUIPMENT MAINTENANCE SPILLS, FUELS, WASH WATER, CONSTRUCTION DEBRIS, OIL, WET CONCRETE (INCLUDING WASHOUT WATER FROM CONCRETE BATCH TRUCKS OR EQUIPMENT USED TO MIX CONCRETE), AND OTHER SUBSTANCES, ARE PROHIBITED.
- THE FAILURE TO PROMPTLY ABATE THE DISCHARGE OF SEDIMENT OR ANY OTHER WASTE WHICH CAUSES A VISIBLE DISCOLORATION OF SURFACE WATERS (INCLUDING WETLANDS), OR IS FOUND TO BE VIOLATING WATER QUALITY STANDARDS IS PROHIBITED. ANY CORRECTIVE ACTION UNDERTAKEN TO REMOVE SEDIMENT FROM SURFACE WATERS (INCLUDING WETLANDS), WITHOUT PRIOR REGULATORY COORDINATION, IS ALSO PROHIBITED.
- WEATHER CONDITIONS WILL BE MONITORED DURING THE CONSTRUCTION SEASON. IF AN EXTENDED RAIN PERIOD OR HEAVY RAIN IS PREDICTED, EXPOSED SOIL AREAS WILL BE MULCHED PRIOR TO AND DAILY DURING THE RAIN EVENT. IF DETERMINED NECESSARY BY THE RESIDENT ENGINEER, WORK MAY BE SUSPENDED OR LIMITED DURING THE STORM.

2. CONSTRUCTION NOTES

- CONSTRUCTION HAUL ROADS SHALL BE MAINTAINED WITH A STABLE SURFACE. IN THE EVENT THAT A PORTION OF THE HAUL ROADS IS DEEMED UNSTABLE, THE CONTRACTOR SHALL IMPLEMENT STABILIZATION MEASURES, AS DIRECTED BY THE RESIDENT ENGINEER.
- STABILIZATION OF OPERATIONAL STORMWATER TREATMENT PRACTICES SHALL BE COMPLETE PRIOR TO DIRECTING RUNOFF TO THEM.

3. EPSC PLAN

THE CONTRACTOR SHALL SUBMIT AN EPSC PLAN IN ACCORDANCE WITH SPECIAL PROVISION SECTION 652 EROSION PREVENTION AND SEDIMENT CONTROL PLAN. IN ADDITION TO ITEMS SPECIFIED ELSEWHERE, THE PLAN SHALL INCLUDE INFORMATION REGARDING:

- STREAM DIVERSION, TEMPORARY BRIDGES, AND ASSOCIATED STONE PADS OR TEMPORARY FILL FOR EITHER.
- METHOD FOR TREATMENT OF DEWATERING ASSOCIATED WITH BRIDGE CONSTRUCTION AS WELL AS ANY POTENTIAL DEWATERING NEEDED DURING RECONSTRUCTION OF ROUTE 9.
- DRAINAGE AREA 1**
 - THE DISTURBANCE AT ANY ONE TIME IN THIS AREA SHALL BE LIMITED TO 1 ACRES.
 - ACCESS TO THE AREA SHALL STAY WITHIN THE CONTRACT CONSTRUCTION LIMITS AND BE CONSTRUCTED IN A MANNER THAT IS STABLE BOTH DURING AND AFTER CONSTRUCTION.
 - STORMWATER RUNOFF TO BE CONTROLLED PRIOR TO, DURING, AND THEN FOLLOWING THE FULL COMPLETION OF STONE-FACING THE RIVER EMBANKMENT ON THE NORTH SIDE OF THE RIVER.
 - THE EXISTING SEDIMENT CONTROL POND (APPROX. STA NB 6+460) IS TO BE MAINTAINED UNTIL EARTH DISTURBANCE FOR CONTRACT 52 HAS BEEN PERMANENTLY STABILIZED AND CLOSED DRAINAGE SYSTEMS FOR 51 AND 52 HAVE BEEN COMPLETED AND CONNECTED. AFTER WHICH TIME, THE EXISTING SEDIMENT POND IS TO BE REMOVED IN ACCORDANCE WITH THE PLANS.
- DRAINAGE AREA 2**
 - THE DISTURBANCE AT ANY ONE TIME IN THIS AREA SHALL BE LIMITED TO 3 ACRES.

- SWALE 6B, TO BE CONSTRUCTED WITH A TEMPORARY OUTLET CONTROL DEVICE AND FUNCTION AS A SEDIMENT BASIN DURING CONSTRUCTION.
- STORMWATER FROM DISTURBED AREAS ON THE SOUTH SIDE OF THE RIVER SHALL BE DIVERTED TO THE TEMPORARY SEDIMENT BASIN.
- THE TEMPORARY SEDIMENT BASIN SHALL BE RESTORED TO THE DOUBLE GRASSED LINED SWALE, WHICH SHALL HAVE ADEQUATE VEGETATIVE GROWTH PRIOR TO DISCHARGING RUNOFF TO IT.
- THE SEDIMENT TRAP AT STA. NB 6+180 IS TO BE USED FOR DEWATERING ABUTMENT AND PIER EXCAVATIONS. THE TRAP SHALL BE SIZED BASED UPON THE PUMPING RATE SHOWN IN THE "SEDIMENT TRAP SIZING CRITERIA" TABLE ON THE DETAIL.

• DRAINAGE AREA 3

- THE DISTURBANCE AT ANY ONE TIME IN THIS AREA SHALL BE LIMITED TO 3.5 ACRES.
- SWALE 6A SHALL BE CONSTRUCTED AND STABILIZED PRIOR TO RECEIVING RUNOFF FROM THE CLOSED DRAINAGE SYSTEM.
- STONE OR ROLLED EROSION CONTROL PRODUCT IS TO BE PLACED CONCURRENTLY WITH THE FORMATION OF SWALE 6A, AS SHOWN ON THE PLANS OR DIRECTED BY THE RESIDENT ENGINEER OR ON-SITE PLAN COORDINATOR.

• DRAINAGE AREA 4

- THE DISTURBANCE AT ANY ONE TIME IN THIS AREA SHALL BE LIMITED TO 1 ACRE.
- TO MINIMIZE THE AMOUNT OF DISTURBED SOILS THE SIDE SLOPES SHALL BE ROUGH GRADED AND TEMPORARILY STABILIZED EVERY 4' OF EMBANKMENT HEIGHT.
- TOP LIFT OF EMBANKMENT SHALL BE SLOPED BACK SLIGHTLY TOWARD THE ROADWAY
- RUNOFF FROM SURROUNDING AREAS SHALL BE DIVERTED AWAY FROM OR AROUND THE EMBANKMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

THE EPSC PLAN SHALL ALSO INCLUDE INFORMATION REGARDING:

- THE CONSTRUCTION OF STONE PADS, INCLUDING STREAM DIVERSION PLANS
- CONSTRUCTION OF TEMPORARY BRIDGES (OR TEMPORARY FILL)
- METHOD FOR TREATMENT OF DISCHARGE FROM DEWATERING.

4. WASTE, BORROW, AND STAGING AREAS

- OFF-SITE WASTE AND BORROW AREAS HAVE NOT BEEN IDENTIFIED FOR THIS PROJECT. LARGE QUANTITIES OF WASTE AND BORROW ARE NOT ANTICIPATED, HOWEVER, AS THIS PROJECT HAS CUT AND FILL OPERATIONS THAT ARE ROUGHLY BALANCED IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PERMIT, AS NECESSARY, ANY OFF-SITE WASTE AND BORROW AREAS THAT ARE NEEDED. ALL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES NECESSARY FOR WASTE, BORROW, AND STAGING AREAS OUTSIDE THE PROJECT LIMITS SHALL BE PAID FOR PER 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

- LOCATE ADDITIONAL AREAS FOR DISPOSAL OF STUMPS, EXCESS SOILS AND COLLECTED SEDIMENT, IF NECESSARY. DISPOSE OF THESE MATERIALS IN A MANNER THAT WILL NOT RESULT IN SEDIMENTS ENTERING WATERS OF THE STATE.

- DISPOSAL SITES REQUIRE RELATIVELY LEVEL TERRAIN WITH AN ISOLATION DISTANCE OF AT LEAST 30M FROM ANY SURFACE WATERS, INCLUDING WETLANDS.

- VEHICLE AND EQUIPMENT STORAGE AREAS OR AREAS ADJACENT TO CONSTRUCTION TRAILERS OR OTHER HIGH TRAFFIC AREAS SHALL BE COVERED WITH GEOTEXTILE FABRIC AND 300MM OF GRAVEL. FOLLOWING COMPLETION OF CONSTRUCTION, ALL NON-NATIVE MATERIALS SHALL BE REMOVED FROM THE STAGING AREA. COMPACTED, RUTTED, OR OTHERWISE DISTURBED SOILS SHALL BE TILLED, RAKED, SEEDED AND MULCHED.

- ERODIBLE MATERIALS STOCKPILED WITHIN THE MATERIAL STORAGE AREAS SHALL BE ISOLATED WITH SILT FENCE OR OTHER ACCEPTABLE SEDIMENT BARRIER. SOIL STOCKPILED ON THE SITE SHALL BE SEEDED AND MULCHED.

5. STABILIZATION NOTES

- SEED AND MULCH WILL BE USED FOR BOTH PERMANENT AND TEMPORARY STABILIZATION MEASURES. ROLLED EROSION CONTROL PRODUCT (RECP) WILL BE USED IN PLACE OF MULCH FOR SLOPES GREATER THAN 1V:3H. MULCH IS TO BE APPLIED AT A MINIMUM APPLICATION RATE SHOWN ON SHEET TS-05, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
- SOIL STOCKPILES AND DISTURBED AREAS THAT WILL NOT BE WORKED FOR MORE THAN 7 DAYS SHALL BE TEMPORARILY STABILIZED WITH MULCH/RECP WITHIN 48 HOURS.
- SOIL STOCKPILES AND DISTURBED AREAS THAT WILL NOT BE WORKED FOR MORE THAN 30 DAYS SHALL BE TEMPORARILY STABILIZED WITH SEED AND MULCH/RECP WITHIN 48 HOURS.
- EXPOSED AREAS THAT HAVE ACHIEVED FINAL GRADE SHALL BE PERMANENTLY STABILIZED WITHIN 48 HOURS.
- IN AREAS WHERE VEGETATIVE COVER WILL PROVIDE PERMANENT STABILIZATION, SEEDING TO BE COMPLETED BETWEEN APRIL 15 AND SEPTEMBER 15.

VERMONT AGENCY OF TRANSPORTATION



PROJECT NAME: BENNINGTON
PROJECT NUMBER: AC NH 019-1(51)

FILE NAME: ...\\plot files\zd307\cldet_epsc.pff PLOT DATE: 2/27/2009
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EP & SC DETAILS ECD-01 SHEET 98 OF 367

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