

EROSION CONTROL NARRATIVE

PROJECT DESCRIPTION

1. THE BENNINGTON NH 019-1(54) PROJECT CONSISTS OF THE COMPLETION OF THE SYSTEMS INTERCHANGE, WHICH PROVIDES THE LINK BETWEEN VT ROUTE 279 AND US ROUTE 7 AND IS LOCATED NORTH OF DOWNTOWN BENNINGTON. WORK UNDER THIS PROJECT INCLUDES GRADING, DRAINAGE, SUBBASE, PAVEMENT, LANDSCAPING, AND REHABILITATION OF THREE BRIDGES. THE TOTAL LENGTH OF PROJECT IS 1.34 KILOMETERS.
2. THE TOTAL DISTURBANCE ASSOCIATED WITH CONSTRUCTION OF THIS PROJECT IS APPROX. 49.3 ACRES.
3. THIS PROJECT IS BEING CONSTRUCTED THROUGHOUT THE "SYSTEMS INTERCHANGE" AREA, WHICH CONSISTS OF EXISTING HIGHWAY, RAMPS, AND SIDE SLOPES. AS SUCH, THIS PROJECT IS IN A PREVIOUSLY DEVELOPED AREA OF BENNINGTON AND VERY LITTLE CLEARING IS REQUIRED. THE TOPOGRAPHY OF THE AREA IS MOSTLY GENTLY SLOPING AREAS WITH SOME MODERATE SIDE SLOPES THAT DROP DOWN INTO THE "GORE" AREAS ON THE INTERIOR OF THE RAMPS. SOME OF THESE INTERIOR AREAS CONTAIN WETLANDS. DURING CONSTRUCTION THE BUFFERS AROUND THE WETLANDS WILL BE CLEARLY DEMARCATED TO ENSURE THEIR PROTECTION.
4. SOILS THROUGHOUT THE PROJECT ARE PRIMARILY LOAMS AND FINE SANDY LOAMS. THE FOLLOWING TABLE LISTS THE MAJOR SOILS TYPES AND THEIR ASSOCIATED K-FACTORS:

SYMBOL	SOIL TYPE	K-FACTOR
18B	WINDSOR LOAMY FINE SAND, 0-8%, VERY STONY	0.32
27B	UDIPSAMMENTS AND UDORTMENTS, GENTLY SLOPING	0.37
34A	POOTATUCK FINE SANDY LOAM, 0-3%	0.20
40D	GALWAY-NELLIS-FARMINGTON COMPLEX, 15-25%, ROCKY	0.24
67C	GEORGIA LOAM, 8-15% SLOPES, VERY STONY	0.32

5. THIS PROJECT HAS THREE DISCREET DISCHARGE POINTS TO THE RECEIVING WATER, THE FURNACE BROOK. EACH DISCHARGE CORRESPONDS TO A DRAINAGE AREA IN WHICH THE PROJECT HAS BEEN DIVIDED.
 - **DRAINAGE AREA 1**
LOCATED AT THE NORTHERN HALF OF THE SYSTEM INTERCHANGE, THIS AREA INCLUDES DISTURBANCE OF 22.3 ACRES. RUNOFF IS COLLECTED IN A SERIES OF SWALES AND CLOSED SYSTEMS THAT DRAIN TO DISCHARGE POINT #1, LOCATED NORTH OF STA WB 11+071. FROM THERE, STORMWATER IS CONVEYED TO FURNACE BROOK VIA AN EXISTING SYSTEM OF STRUCTURES AND OPEN CHANNELS. A DETAILED BREAKDOWN OF SUBAREAS WITHIN DRAINAGE AREA 1 IS SHOWN IN THE SUMMARY TABLE BELOW.

DRAINAGE AREA	DISTURBANCE (ACRES)	DRAINS TO	PROPOSED EPSC MEASURES
1A	3.2	SWALE 1A AND 1H	TEMP SEDIMENT BASIN
1B	2.6	SWALE 1C	TEMP SEDIMENT TRAP
1C	1.3	SWALE 1F	INLET PROTECTION, TEMP STABILIZATION
1D	4.2	SWALE 1B	TEMP SEDIMENT TRAP
1E	0.6	PIPE 726	TEMP STABILIZATION
1F	3.6	SWALE 1G	TEMP SEDIMENT TRAP
1G	1.8	TRIB TO FURNACE BROOK	INLET PROTECTION, TEMP STABILIZATION
1H	0.2	EXISTING DI AT PIPE 768 OUTLET	INLET PROTECTION, TEMP STABILIZATION
1I	0.8	EXISTING DI AT PIPE 763 OUTLET	INLET PROTECTION, TEMP STABILIZATION
1J	1.5	PIPE 732	INLET PROTECTION, TEMP STABILIZATION
1K	0.9	PIPE 730	INLET PROTECTION, TEMP STABILIZATION
1L	1.6	PIPE 733	INLET PROTECTION, TEMP STABILIZATION
TOTAL:	22.3	AMOUNT OF CONCURRENT DISTURBANCE: 9 ACRES	

- **DRAINAGE AREA 2**
INCLUDES THE MIDDLE PORTION OF THE SYSTEMS INTERCHANGE AND WILL REQUIRE 14.2 ACRES OF DISTURBANCE. RUNOFF IS COLLECTED IN SERIES OF SWALES AND CLOSED STRUCTURES THAT DRAIN TO A TEMPORARY SEDIMENT BASIN LOCATED JUST NORTH OF STA EB 10+460. FROM THERE, STORMWATER WILL TRAVEL THROUGH A NEW CLOSED DRAINAGE SYSTEM THAT WILL DISCHARGE DIRECTLY TO FURNACE BROOK AT DISCHARGE POINT #2.

DRAINAGE AREA	DISTURBANCE (ACRES)	DRAINS TO	PROPOSED EPSC MEASURES
2	14.2	FURNACE BROOK	TEMP SEDIMENT BASIN
TOTAL:	14.2	AMOUNT OF CONCURRENT DISTURBANCE: 6 ACRES	

- **DRAINAGE AREA 3**
COVERING THE SOUTHERN MOST PORTION OF THE SYSTEMS INTERCHANGE, THE AREA WILL COMPRISE 12.8 ACRES OF DISTURBANCE DURING CONSTRUCTION. STORMWATER FROM THE EASTERN HALF OF DRAINAGE AREA 3 WILL COLLECT IN AN EXISTING STORMWATER BASIN WHICH THEN DISCHARGES TO THE EXISTING SWALE 3, CONSTRUCTED UNDER CONTRACT BENNINGTON AC NH 019-1(53). RUNOFF FROM THE WESTERN HALF OF DRAINAGE AREA 3 WILL BE COLLECTED IN A SWALE THAT RUNS ALONG THE SOUTHWESTERN LIMITS OF CONSTRUCTION, DRAINS TO A TEMPORARY SEDIMENT BASIN AND THEN ALSO OUTLETS TO SWALE 3, WHICH DISCHARGES TO FURNACE BROOK.

DRAINAGE AREA	DISTURBANCE (ACRES)	DRAINS TO	PROPOSED EPSC MEASURES
3A	8.9	SWALE 3C	TEMP SEDIMENT BASIN
3B	3.9	EXISTING STORMWATER BASIN	TEMP SEDIMENT BASIN (EXISTING)
TOTAL:	12.8	AMOUNT OF CONCURRENT DISTURBANCE: 6 ACRES	

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 BASED ON MONITORING, IS PROHIBITED. ANY CORRECTIVE ACTION UNDERTAKEN TO REMOVE SEDIMENT FROM A WETLAND IS ALSO PROHIBITED WITHOUT PRIOR APPROVAL FROM THE DESIGNATED AUTHORITY.
- 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, NON-EROSIVE 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.
- THE PIPES, STRUCTURES, AND OUTLETS ASSOCIATED WITH DRN 1+000 TO DRN 1+217 SHALL BE CONSTRUCTED IN ADVANCE OF ANY EARTHWORK WITHIN THE CONTRIBUTING DRAINAGE AREA.
- THE OUTLET TO TEMPORARY SEDIMENT BASIN 2 WILL BE TO PROPOSED PIPE 204 WITH ELEVATIONS AS SHOWN ON SHEET ECD-08.

- STABILIZATION OF OPERATIONAL STORMWATER TREATMENT PRACTICES SHALL BE COMPLETE PRIOR TO DIRECTING RUNOFF TO THEM.
- IN AREAS WHERE EXISTING STORMWATER FEATURES ARE UTILIZED DURING CONSTRUCTION (SWALE 3, "L" POND), CONTRACTOR TO REMOVE ACCUMULATED SEDIMENTS AND RESTORE FEATURES TO THEIR OPERATIONAL DESIGN ONCE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.

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:

- THE PRESCRIBED LIMITS OF CONCURRENT DISTURBANCE FOR EACH DRAINAGE AREA
- METHOD FOR TREATMENT OF DISCHARGE FROM DEWATERING, IF NEEDED.
- SIZING OF TEMPORARY SWALES, GRASS WATERWAYS, TEMPORARY SEDIMENT TRAPS AND BASINS TO MANAGE THE ALLOWED AREAS OF CONCURRENT DISTURBANCE

4. WASTE, BORROW, AND STAGING AREAS

- OFF-SITE WASTE AND BORROW & STAGING 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 & STAGING AREAS THAT ARE NEEDED.
- 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.
- 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.

5. STABILIZATION NOTES

- DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMIT AUTHORIZATION.
- 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, WITH THE EXCEPTION THAT RECP IS NOT TYPICALLY USED FOR STOCKPILE SLOPES. MULCH IS TO BE APPLIED AT A MINIMUM APPLICATION RATE SHOWN ON SHEET LANDSCAPING-01, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
- IN AREAS WHERE VEGETATIVE COVER WILL PROVIDE PERMANENT STABILIZATION, ALL EFFORTS SHALL BE MADE TO COMPLETE SEEDING BETWEEN APRIL 15 AND SEPTEMBER 15.

6. INSPECTION & MONITORING NOTES

- CONTRACTOR TO CONDUCT INSPECTIONS AND MONITORING IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND PERMIT SPECIFIC REQUIREMENTS.
- THE CONTRACTOR SHALL KEEP TWO (2) TURBIDITY MONITORS ONSITE AND HAVE PERSONNEL ON HAND THAT ARE TRAINED IN THEIR OPERATION.

PROJECT NAME:	BENNINGTON
PROJECT NUMBER:	NH 019-1(54)
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DESIGN SUPERVISOR:	DUBOIS & KING
DESIGNED BY:	DUBOIS & KING
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DRAWN BY:	STANTEC
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