

## EROSION CONTROL NARRATIVE

### 1.1 DESCRIPTION OF PROJECT

THIS PROJECT CONSISTS OF LENGTHENING THE EXISTING INTERSTATE 89 (I-89) SOUTHBOUND EXIT 12 OFF-RAMP (RAMP C) AND WIDENING THIS RAMP TO PROVIDE AN ADDITIONAL TRAVEL LANE. ADDITIONAL WORK INCLUDES NEW SIGNS, GUARDRAIL, AND ASSOCIATED SLOPE WORK. THIS PROJECT MAINTAINS THE EXISTING ALIGNMENT.

THE PROJECT IS LOCATED ON I-89 SOUTHBOUND AND BEGINS AT MILEMARKER 84.24. THE PROJECT EXTENDS SOUTHEASTERLY A DISTANCE OF 1,943 FEET DOWN THE EXIT 12 SOUTHBOUND RAMP. PRIOR TO CONSTRUCTION, TRAFFIC CONTROL WILL INCLUDE BLOCKING OFF THE RIGHT TRAVEL LANE OF I-89 SOUTHBOUND PRIOR TO THE PROJECT AREA USING TEMPORARY TRAFFIC BARRIERS. TEMPORARY TRAFFIC BARRIERS WILL ALSO BE PLACED ALONG THE LEFT SIDE OF THE EXISTING RAMP (NORTH SIDE) TO ALLOW FOR CONSTRUCTION ON THIS SIDE OF THE RAMP. THIS PROJECT IS EXPECTED TO LAST ONE CONSTRUCTION SEASON.

THE MATERIAL TO BE EXCAVATED FROM THE SITE WILL INCLUDE COLD PLANING OF EXISTING BITUMINOUS CONCRETE PAVEMENT SURFACE ALONG THE EXISTING RAMP AND FULL DEPTH CONSTRUCTION ALONG PORTIONS WHERE WIDENING OCCURS. STOCKPILING OF ANY EXCAVATED MATERIAL TO BE REUSED IS EXPECTED TO TAKE PLACE WITHIN THE PROJECT LIMITS OF THE PAVEMENT RESURFACING PROJECT FOR THE I-89 MAINLINE. LIKEWISE, STOCKPILING OF ANY NEW MATERIAL TO BE USED IS EXPECTED TO TAKE PLACE WITHIN THE PROJECT LIMITS. THE LIMIT OF CONSTRUCTION AND ASSOCIATED MAXIMUM SOIL DISTURBANCE AREA FOR THIS PROJECT IS APPROXIMATELY 2.0 ACRES.

THE ONLY EXISTING ENVIRONMENTAL RESOURCE ELEMENT IN THE VICINITY OF THE PROJECT IS A WETLAND ON THE RIGHT SIDE (SOUTH SIDE) OF THE OFF-RAMP. THIS WETLAND IS NOT BEING IMPACTED AS PART OF THIS PROJECT.

### 1.2 SITE INVENTORY AND ANALYSIS

#### 1.2.1 OFFSITE DRAINAGE CHARACTERISTICS

THIS PROJECT SITE IS LOCATED IN AN URBAN, HIGHLY TRAVELED AREA IN THE TOWN OF WILLISTON. THE AREA TO THE SOUTH OF THE PROJECT AREA IS MODERATELY SLOPED AND DEVELOPED TO THE NORTH. ESTABLISHED VEGETATION AND TREE LINE EXISTS ON THE SOUTH SIDE OF THE PROJECT AREA. ON THE NORTH SIDE OF THE PROJECT AREA IS THE I-89 MAINLINE AND BRIDGE OVER VT ROUTE 2A. RUNOFF FROM THE PROJECT AREA DRAINS INTO A 48-INCH DIAMETER CULVERT UNDER THE I-89 MAINLINE.

#### 1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER

THERE ARE NO WATERWAYS WITHIN THE PROJECT AREA. DRAINAGE STRUCTURES ARE LOCATED WITHIN THE PROJECT AREA TO COLLECT RUNOFF FROM I-89 AND THE I-89 EXIT 12 SOUTHBOUND OFF-RAMP.

#### 1.2.3 TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES

THE TOPOGRAPHY OF THE PROJECT AREA CONSISTS OF MODERATE SLOPES. THERE ARE NO BUILDINGS WITHIN THE PROJECT AREA. SIGNAL EQUIPMENT, INCLUDING MAST ARMS, PULL BOX AND OTHER SIGNAL EQUIPMENT IS LOCATED AT THE INTERSECTION WITH VT ROUTE 2A. THERE ARE NO OTHER KNOWN UTILITIES WITHIN THE PROJECT AREA.

#### 1.2.4 VEGETATION

THE PROJECT AREA OUTSIDE OF I-89 TRAVEL LANES CONSISTS OF GRASSED SIDE-SLOPES WITH TREES NEAR THE RIGHT-OF-WAY FENCE. IMPACTS TO VEGETATED AREAS WILL BE LIMITED TO THE SIDE SLOPES OF THE ROAD AND SLOPE WORK ON THE OUTSIDE OF DITCHES ALONG THE SOUTH SIDE OF THE INTERSTATE AND THE NORTH SIDE OF THE OFF-RAMP. FOLLOWING THE COMPLETION OF CONSTRUCTION, THE GRASSY VEGETATION WILL BE RE-ESTABLISHED USING STANDARD SEED AND MULCH PRACTICES.

#### 1.2.5 SOILS

THE NATURAL RESOURCES CONSERVATION SERVICE (NRCS) HAS MAPPED THE SOILS THROUGHOUT CHITTENDEN COUNTY. SOIL TYPES IDENTIFIED FOR THIS PROJECT INCLUDE PERU EXTREMELY STONY LOAM, CABOT EXTREMELY STONY SILT LOAM, PERU STONY LOAM, SCANTIC SILT LOAM, AND MUNSON AND RAYNHAM SILT LOAMS. ALL OF THESE SOILS ARE POTENTIALLY HIGHLY ERODIBLE. SOILS HAVE BEEN PREVIOUSLY DISTURBED WITH THE CONSTRUCTION OF THE INTERSTATE AND OFF-RAMP.

#### 1.2.6 SENSITIVE RESOURCE AREAS

THERE IS A WETLAND ON THE SOUTH SIDE OF THE OFF-RAMP. THIS WETLAND IS NOT BEING IMPACTED WITH THIS PROJECT. RESULTS OF AN ARCHEOLOGICAL ASSESSMENT INDICATED LIMITED CONCERNS FOR HISTORIC ARCHEOLOGICAL FEATURES ALONG THE RIGHT-OF-WAY FENCE AT THE OFF-RAMP. THIS ASSESSMENT INDICATED A BUFFER OF 16.4-FEET FROM THE FENCE LINE AT THE OFF-RAMP IS SUFFICIENT TO PROTECT ANY ARCHEOLOGICALLY SENSITIVE LOCATIONS ON THIS RAMP. THERE ARE THREE STATEWIDE (B) SOIL TYPES ALONG THE OFF-RAMP. SOILS IN THIS VICINITY HAVE BEEN PREVIOUSLY DISTURBED WITH THE CONSTRUCTION OF I-89 AND THE OFF-RAMP. THERE ARE NO OTHER CRITICAL HABITATS OR THREATENED AND ENDANGERED SPECIES WITHIN THE PROJECT AREA.

#### 1.2.7 PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE ONLY WATER FEATURES WITHIN THE PROJECT AREA INCLUDE DITCHES ALONG THE TOE OF SLOPE TO CARRY RUNOFF FROM I-89 AND THE OFF-RAMP. THESE DITCHES CARRY WATER TO AN EXISTING 48-INCH DIAMETER CULVERT UNDER I-89. THIS EROSION PREVENTION AND SEDIMENT CONTROL PLAN CONTAINS MEASURES TO PREVENT THE MOBILIZATION AND TRANSPORT OF SEDIMENT INTO DITCHES AND CULVERTS WITHIN THE PROJECT AREA.

### 1.3 TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL

PROJECT DEMARCATION FENCE SHALL BE INSTALLED TO DELINEATE THE LIMITS THE CONTRACTOR CAN ACCESS WITH CONSTRUCTION EQUIPMENT. THIS MEASURE LIMITS THE AREA THAT CAN BE DISTURBED AND EXPOSED TO EROSION.

TO MINIMIZE THE POTENTIAL FOR STORM WATER RUNOFF TO TRANSPORT SEDIMENT, SEVERAL KEY EROSION CONTROL DEVICES AND GENERAL PRACTICES WILL BE USED. DETAILS OF THE DEVICES AND THE LOCATION OF THEIR PLACEMENT CAN BE FOUND IN THE EROSION CONTROL PLANS AND DETAILS.

SILT FENCE, AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN, SHALL BE PLACED PARALLEL TO, OR ALONG, THE CONTOUR, SO THE STORM WATER WILL RUN PERPENDICULAR TO THE SILT FENCE. THE ENDS SHALL BE "J" HOOKED UP GRADIENT TO CREATE A PONDING EFFECT FOR WATER TRYING TO RUN ALONG THE FENCE AND AROUND THE ENDS.

EACH CATCH BASIN SHALL RECEIVE TEMPORARY SILT FENCE PROTECTION (UNPAVED AREAS). INLETS AND OUTLETS OF CULVERTS WITHIN THE PROJECT AREA SHALL RECEIVE TEMPORARY ROCK BARRIER PROTECTION. THESE TEMPORARY MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS IN THESE PLANS.

TEMPORARY STONE CHECK DAMS WILL BE PLACED ALONG DITCHES IN THE VICINITY OF THE PROJECT AREA. THE TEMPORARY STONE CHECK DAMS WILL REDUCE THE VELOCITIES OF THE WATER, ALLOWING SEDIMENT TO SETTLE AND REDUCE THE POTENTIAL FOR EROSION.

EROSION MATTING WILL BE PLACED ON SLOPES STEEPER THAN 3H:1V. MATTING WILL REDUCE SEDIMENT TRANSPORT FROM THE SIDE SLOPES, AS IT WILL SLOW DOWN THE RAIN PARTICLES AND ALLOW FOR RAIN TO DISSIPATE INTO THE SOIL, RATHER THAN FLOWING INTO THE CONSTRUCTION AREA. THESE TEMPORARY MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS IN THESE PLANS.

THE EROSION CONTROL MEASURES SHALL BE PERIODICALLY INSPECTED AND MAINTAINED ON A REGULAR BASIS. INSPECTION OF THE EROSION CONTROL MEASURES SHALL TAKE PLACE BEFORE AND AFTER MAJOR STORM EVENTS TO INSURE THEY ARE IN GOOD CONDITION AND TO REMOVE EXCESSIVE BUILDUP OF SILT AND DEBRIS AFTER THE STORM EVENTS. A REPORT ON THE EFFECTIVENESS OF THE EROSION CONTROL MEASURES SHALL BE PRESENTED TO THE RESIDENT ENGINEER AND ONSITE COORDINATOR UPON THE COMPLETION OF EACH INSPECTION. MODIFICATIONS OR IMPROVEMENTS TO THE EROSION CONTROL PLAN SHOULD BE COORDINATED WITH THE RESIDENT ENGINEER AND ONSITE COORDINATOR.

ALL EROSION CONTROL MEASURES SHALL BE PLACED IN ACCORDANCE WITH THE EROSION CONTROL DETAILS IN THESE PLANS.

STAGING AND STOCKPILING AREAS WILL BE LOCATED ALONG THE I-89 MAINLINE PROJECT, (IM 089-2(36)). THESE AREAS WILL BE COMPLETELY WITHIN THE PROJECT LIMITS AND WILL UTILIZE THE AFOREMENTIONED TEMPORARY EROSION CONTROL MEASURES. NO ADDITIONAL TEMPORARY EROSION CONTROL MEASURES WILL BE NEEDED.

IN THE EVENT THAT A SEPARATE OR TEMPORARY STOCKPILE AREA IS USED OUTSIDE THE LIMITS OF CONSTRUCTION, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE PLANS. THE CONSTRUCTION ENTRANCE SHALL BE APPROVED BY THE RESIDENT ENGINEER AND ONSITE COORDINATOR.

SEE EROSION CONTROL DETAILS FOR PAY ITEMS OF TEMPORARY EROSION CONTROL MEASURES.

### 1.4 FINAL EROSION CONTROL MEASURES

STONE FILL, TYPE II, WILL BE PLACED ALONG ALL SLOPES STEEPER THAN 2H:1V.

ALL DISTURBED AREA OUTSIDE OF THE ROADWAY SHALL RECEIVE TOPSOIL, SEED AND MULCH TO REESTABLISH GRASS AND VEGETATION. TOPSOILING, SEEDING AND MULCHING SHALL BE IN ACCORDANCE WITH THE SEEDING FORMULA FOR RURAL AREAS AND ASSOCIATED NOTES AS SHOWN IN THE CONTRACT PLANS. THIS SHALL BE COMPLETED IMMEDIATELY FOLLOWING FINAL GRADING.

## GENERAL EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL SUBMIT AN EROSION PREVENTION & SEDIMENT CONTROL PLAN AT THE PRE-CONSTRUCTION CONFERENCE WITH A SCHEDULE OF EVENTS. THIS PLAN WILL BE SITE SPECIFIC.
2. THE CONTRACTOR SHALL DESIGNATE THE RESPONSIBILITIES FOR IMPLEMENTING THE EROSION PREVENTION & SEDIMENT CONTROL PLAN TO ONE INDIVIDUAL. THE CONTRACTOR SHALL ENSURE THAT ALL WORKERS UNDERSTAND THE MAJOR PROVISIONS OF THE EROSION PREVENTION & SEDIMENT CONTROL PLAN. PHYSICALLY MARK OFF LIMITS OF NECESSARY ON-SITE LAND DISTURBANCE WITH CONSTRUCTION BARRIER FENCING AND REVIEW WITH WORKERS AND SUBCONTRACTORS SO THAT ALL WORKERS CAN SEE THE AREAS TO BE PROTECTED.
3. TEMPORARY EROSION CONTROL MEASURES ARE REQUIRED THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL THE PROJECT HAS BEEN COMPLETED. INSTALL PERIMETER SILT FENCE PRIOR TO CLEARING AND GRUBBING AND INSTALL NECESSARY EROSION AND SEDIMENT CONTROL PRACTICES AS WORK TAKES PLACE.
4. EROSION CONTROL MEASURES SHALL BE PERIODICALLY INSPECTED TO ENSURE THEY ARE IN GOOD CONDITION AND THAT AN EXCESSIVE BUILDUP OF SILT AND DEBRIS HAS NOT OCCURRED.
5. THE CONTRACTOR SHALL MINIMIZE THE AMOUNT OF DISTURBED SOIL EXPOSED TO EROSION FROM WIND AND WATER BY USING VEGETATIVE AND STRUCTURAL CONTROLS AND PROPER TIMING AND SEQUENCING OF CONSTRUCTION ACTIVITIES.
6. IF NEEDED, DIVERT OFF-SITE STORMWATER RUNOFF FROM HIGHLY ERODIBLE AREAS AND STEEP SLOPES AND CONVEY OFF-SITE STORMWATER RUNOFF TO STABLE AREAS.
7. APPLY TEMPORARY OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS WHERE WORK IS DELAYED OR COMPLETED.
8. ANY EARTH STOCKPILES SHALL BE PROTECTED BY A SILT FENCE AT THE PERIMETER AND COVERED WITH A BLANKET OF MULCH.
9. EROSION CHECKS SHALL BE INSTALLED AS INDICATED AND WHERE DESIGNATED ON THE DRAWINGS AND AS NECESSARY TO PREVENT EROSION DAMAGE FROM ANY CONSTRUCTION ACTIVITY.
10. TEMPORARY EROSION CONTROL MEASURES SHALL BE IMMEDIATELY INSPECTED BEFORE AND AFTER RAINFALL EVENTS TO INSURE THEY ARE IN GOOD CONDITION BEFORE RAINFALL AND TO REMOVE EXCESSIVE BUILDUP OF SILT AND DEBRIS AFTER THE STORM EVENT.
11. ALL EROSION CONTROL MEASURES SHALL COMPLY WITH STANDARD VERMONT AGENCY OF NATURAL RESOURCES PERMIT, THE "VERMONT HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL" DATED 2003, SHALL BE UTILIZED AS A GUIDE FOR THE CONTROL OF EROSION ON THE SITE. THE CONTRACTOR SHALL BE FAMILIAR WITH THE STANDARDS AND SPECIFICATIONS IN THIS PUBLICATION.
12. EROSION MATTING SHALL BE INSTALLED IN PLACE OF MULCH FOR ANY AREAS NOT SEEDED AND MULCHED BY OCTOBER 1 OF THE CONSTRUCTION YEAR.
13. ANY EROSION CONTROL MEASURES THAT WILL BE NECESSARY DURING THE WINTER CONSTRUCTION PERIOD (OCTOBER 15 TO MAY 10) SHALL BE INSTALLED BEFORE THE GROUND FREEZES AND FREQUENTLY INSPECTED AND MAINTAINED THROUGHOUT THE WINTER.
14. EROSION MEASURES SHALL REMAIN IN PLACE UNTIL PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED AND APPROVED BY THE RESIDENT ENGINEER.
15. UNLESS OTHERWISE NOTED IN THE PLANS, ALL MATERIALS, INSTALLATION, MAINTENANCE AND REMOVAL OF THOSE EROSION CONTROL MEASURES WHICH ARE ITEMS IN THE CONTRACT WILL BE PAID FOR AT THE APPROPRIATE CONTRACT UNIT PRICE BID. ALL MATERIALS, INSTALLATION, MAINTENANCE AND REMOVAL FOR ALL OTHER EROSION CONTROL ITEMS REQUIRED BY THE PLANS AND THE RESIDENT ENGINEER WILL BE PAID FOR UNDER ITEM 652.30.

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