

EROSION CONTROL NARRATIVE

1.1. PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REHABILITATION OF AN EXISTING 84-INCH CORRUGATED METAL CULVERT ON INTERSTATE 91 IN THE TOWN OF DERBY. THE CULVERT IS LOCATED NEAR MILE MARKER 172.565 ON THE INTERSTATE AND IS DESIGNATED AS STRUCTURE BR 111-1. THE 794 FT LONG CULVERT HAS APPROXIMATELY 35 FEET OF COVER AND CONVEYS STORMWATER FROM AN UNNAMED BROOK UNDER THE INTERSTATE. THE EXISTING CULVERT WILL BE SLIP-LINED WITH THE PROPOSED 72" CORRUGATED ALUMINUM ALLOY PIPE AS THE CULVERT IS BEYOND ITS DESIGN LIFE AND SHOWS SIGNS OF DETERIORATION AND STRUCTURAL DEFICIENCY. THE PROJECT ALSO INCLUDES THE CONSTRUCTION OF A NEW FULL BEVELED HEADWALL AT THE INLET OF THE CULVERT TO IMPROVE HYDRAULICS. THERE WILL BE NO IMPACT TO THE EXISTING ROADWAY. TOTAL DISTURBED AREA (EXCLUDING WASTE, BORROW, AND CONTRACTOR'S OFF-SITE STAGING AREAS) EQUALS 0.70 ACRES. THE TOTAL DISTURBED AREA INCLUDES THE ENTIRE AREA LOCATED WITHIN THE PROJECT DEMARCATION FENCING SHOWN.

IT IS ANTICIPATED THAT THIS WILL BE A SINGLE CONSTRUCTION SEASON PROJECT.

1.2. SITE INVENTORY

OFF-SITE DRAINAGE CHARACTERISTICS:

THE PROPERTY SURROUNDING THE PROJECT SITE CONSISTS OF WELL ESTABLISHED VEGETATION WITH MODERATE TO STEEP SLOPING TERRAIN. THE AREA IS PARTIALLY FORESTED WITH CLEARINGS AND CAN BE DESCRIBED AS HILLY TO MOUNTAINOUS WITH WELL DEFINED DRAINAGE WAYS. THERE IS A LARGE WETLAND DIRECTLY UPSTREAM OF THE CULVERT. DUE TO THE NATURE OF THE SURROUNDING TERRAIN, RUNOFF STORMWATER ENTERING THE PROJECT SITE WILL BE PRIMARILY LIMITED TO THAT WHICH IS CONVEYED WITHIN THE UNNAMED BROOK. THE ROADWAY EMBANKMENTS ARE GRASSSED WITH WELL ESTABLISHED VEGETATION AND WERE CONSTRUCTED AT A 1:2 (VERTICAL: HORIZONTAL) SLOPE.

1.2.2. DRAINAGE, WATERWAYS, BODIES OF WATER:

THE UNNAMED BROOK IS LOCATED WITHIN THE PROJECT AREA. THE BROOK FLOWS WEST TO EAST BENEATH BOTH BARRELS OF INTERSTATE 91 AND TWO INTERSTATE RAMPS. THERE IS A LARGE WETLAND LOCATED UPSTREAM OF THE CULVERT. THERE ARE NO OTHER WATERWAYS OR BODIES OF WATER WITHIN THE PROJECT AREA. RUNOFF STORMWATER ENTERING THE PROJECT AREA WILL BE PRIMARILY LIMITED TO THAT WHICH IS CONVEYED VIA GRASSSED ROADWAY DITCHES ALONG INTERSTATE 91.

1.2.3. TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES:

ON EITHER SIDE OF THE CULVERT THE TOPOGRAPHY OF THE SITE CONSISTS OF GRASSY INTERSTATE EMBANKMENTS WITH SOME LIGHT BRUSH AND GENERALLY FLAT TERRAIN AT THE BOTTOM OF THE EMBANKMENTS. THE ROADWAY EMBANKMENTS ARE CONSTRUCTED WITH APPROXIMATE 1:2 (VERTICAL: HORIZONTAL) SLOPES. THE PROJECT AREA DOES NOT ENCR OACH UPON ANY BUILDINGS.

1.2.4. VEGETATION:

THE VEGETATION WITHIN THE PROJECT AREA CONSISTS OF MOSTLY GRASS WITH SOME BRUSH ON BOTH SIDES OF THE INTERSTATE. THE INTERSTATE EMBANKMENTS ARE GRASSSED WITH BRUSH ON EITHER SIDE. THE IMPACT TO THE VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY IMPACTED BY THE CULVERT SLIP-LINING OPERATIONS AND THE CONSTRUCTION OF THE PROPOSED HEADWALL. DISTURBED SOILS AND VEGETATION WILL BE REESTABLISHED USING STONE AND STANDARD SEED AND MULCH PRACTICES.

1.2.5. SOILS:

THE SOIL FOUND AT THE OUTLET SIDE OF THE PROJECT SITE IS PRIMARILY DUMMERSTON VERY FINE SANDY LOAM (CL), 8 TO 15 % SLOPES. THE DUMMERSTON SERIES IS A WELL DRAINED SOIL WITH AN ERODIBILITY FACTOR (K-VALUE) OF 0.32. THE SOIL FOUND AT THE INLET SIDE OF THE PROJECT SITE IS PRIMARILY BUCKLAND FINE SANDY LOAM (ML), 3 TO 8 % SLOPES. THE BUCKLAND SERIES IS A MODERATELY WELL DRAINED SOIL WITH AN ERODIBILITY FACTOR (K-VALUE) OF 0.32. THE ROADWAY EMBANKMENTS ARE MOST LIKELY A COMMON FILL MATERIAL THAT WAS PLACED DURING THE CONSTRUCTION OF THE INTERSTATE.

GENERALLY, K-VALUES INDICATE THE FOLLOWING:
 0.23 AND LOWER - LOW ERODIBILITY
 0.24 TO 0.36 - MODERATE ERODIBILITY
 0.37 AND HIGHER - HIGH ERODIBILITY

1.2.6. SENSITIVE RESOURCE AREAS

NO THREATENED OR ENDANGERED SPECIES OR ARCHEOLOGICAL RESOURCES HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS AND THERE WILL BE NO ADVERSE EFFECT TO AGRICULTURAL FEATURES. A CLASS II WETLAND IS LOCATED UPSTREAM AND A CLASS III WETLAND IS LOCATED DOWNSTREAM OF THE CULVERT. DISTURBANCE OF SOILS NEAR THE WATERWAY WILL CONSIST OF THAT WHICH IS NECESSARY TO CONSTRUCT THE PROPOSED HEADWALL AT THE INLET END OF THE EXISTING CULVERT AND IMPACTS NECESSARY FOR THE CULVERT SLIP-LINING OPERATIONS. PROJECT DEMARCATION FENCING (PDF) SHALL BE CONSTRUCTED ALONG THE PROJECT LIMITS TO PREVENT IMPACTS OUTSIDE THE PROJECT AREA.

1.3. RISK EVALUATION

SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE 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 VANR VIA FILING FOR THE APPROPRIATE NOTICE OF INTENT UNDER THE CONSTRUCTION GENERAL 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.

COORDINATE THE INSTALLATION, USE, AND REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES WITH CONSTRUCTION ACTIVITIES TO ENSURE ECONOMICAL, EFFECTIVE, AND CONTINUOUS EROSION AND SEDIMENT CONTROL. EMPLOY TEMPORARY STABILIZATION PRACTICES IN INCREMENTAL STAGES AS CONSTRUCTION PROCEEDS. THE CONTRACTOR SHALL USE ADDITIONAL EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION, FIELD CONDITIONS, AND AS DIRECTED BY THE ENGINEER OR ONSITE COORDINATOR. SEE SECTION 105.23 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006.

INSTALL EROSION AND SEDIMENT CONTROLS MEASURES AS SHOWN IN THE EROSION CONTROL PLAN OR AS DIRECTED BY THE ENGINEER OR ONSITE COORDINATOR. DO NOT MODIFY THE TYPE, SIZE, OR LOCATION OF ANY CONTROL OR PRACTICE WITHOUT APPROVAL OF THE ENGINEER OR ONSITE COORDINATOR. ANY CHANGES SHALL BE NOTED ON THE PLANS, IN THE WEEKLY INSPECTION REPORT, AND REPORTED TO THE APPROPRIATE AUTHORITY IN A TIMELY MANNER. INSPECT ALL CONTROL MEASURES WEEKLY AND AFTER EACH RAINFALL EVENT THAT PRODUCES RUNOFF FROM THE PROJECT SITE. REPAIR MEASURES PROMPTLY ONCE DAMAGE IS DISCOVERED.

PREVENTING 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.

REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR EACH PRACTICE REQUIRED ON THE PROJECT TO INCLUDE BUT NOT LIMITED TO THE FOLLOWING:

1.4.1. MARK SITE BOUNDARIES
 PROJECT DEMARCATION FENCE, DENOTED -PDF- IN THE PLANS, IS USED TO DELINEATE THE LIMITS THE CONTRACTOR CAN ACCESS WITH CONSTRUCTION EQUIPMENT. THIS MEASURE LIMITS AREA THAT CAN BE DISTURBED AND EXPOSED TO EROSION. DISTURBANCE OUTSIDE THE LIMITS OF THE PROJECT DEMARCATION FENCE WILL REQUIRE ADDITIONAL PERMIT COVERAGE.

CONTROL ONLY SEDIMENT LADEN STORMWATER RUNOFF GENERATED BY THE PROJECT SITE. COLLECT AND ROUTE CLEAN STORMWATER AROUND THE PROJECT SITE WHENEVER POSSIBLE USING DIVERSION BERMS, CHANNELS, CULVERTS, OR TEMPORARY PIPES.

1.4.2. LIMIT DISTURBANCE AREA
 CONTRACTOR SHALL LIMIT THE DISTURBANCE TO WITHIN THE IMPACT LINES SHOWN ON THE PLANS. CONTRACTOR SHALL NOT DISTURB ANY AREA OUTSIDE OF THE EXISTING RIGHT OF WAY.

DO NOT ALLOW CONSTRUCTION EQUIPMENT TO OPERATE OUTSIDE OF PERIMETER CONTROL MEASURES.

1.4.3. STABILIZE CONSTRUCTION EXIT

AT LOCATIONS WHERE CONSTRUCTION VEHICLES WILL BE ENTERING OR LEAVING THE CONSTRUCTION SITE/STAGING AREAS, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED TO LIMIT THE AMOUNT OF SEDIMENT THAT IS TRANSPORTED OFF OF THE SITE BY CONSTRUCTION VEHICLES. STONE WILL BE USED TO REMOVE SEDIMENT FROM THE TIRES OF CONSTRUCTION VEHICLES. IF SEDIMENT IS STILL BEING TRACKED ONTO PUBLIC ROADS, THE LENGTH OF THE PAD SHALL BE EXTENDED OR VEHICLES SHALL BE RINSED WITH A HOSE PRIOR TO LEAVING THE SITE.

1.4.4. INSTALL SILT FENCE

SILT FENCE WILL BE INSTALLED AT THE TOE OF FILL SLOPES TO PREVENT SEDIMENT TRANSPORT TO DOWN GRADIENT AREAS. EACH LINE OF SILT FENCE WILL BE PLACED ALONG THE CONTOUR WITH THE LOWER EDGE BURIED 6" TO PREVENT UNDERFLOW AND ENDS TURNED SLIGHTLY UP GRADE TO CREATE A PONDING EFFECT. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY UPSLOPE EARTHWORK. SILT FENCE SHALL BE PLACED AS SHOWN ON THE EROSION CONTROL PLAN AND AS DIRECTED BY THE ENGINEER.

1.4.5. DIVERT UPLAND FLOW

THE EXISTING STREAM WILL BE DIVERTED AS DESCRIBED IN THE DEWATERING SECTION BELOW. NO OTHER UPLAND FLOW DIVERSION WILL BE REQUIRED.

1.4.6. SLOW DOWN CHANNELIZED RUNOFF

CHECK DAMS TO BE USED AS NECESSARY.

1.4.7. CONSTRUCT PERMANENT CONTROLS

ALL DISTURBED SOIL SHALL BE STABILIZED WITH SEED AND MULCH.

1.4.8. STABILIZE EXPOSED SOILS

SEEDING AND MULCHING SHALL BE UTILIZED TO STABILIZE SOIL. SOIL SHALL BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE AND/OR DURING INTERMITTENT PHASES OF CONSTRUCTION. MULCHING WILL BE UTILIZED ON A REGULAR BASIS. ANY SOIL TO BE EXPOSED FOR SEVERAL DAYS PRIOR TO FINAL GRADING SHALL BE MULCHED. SOIL SHALL BE STABILIZED WITHIN 48 HOURS PRIOR TO FORECASTED RAIN. THEREFORE, 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 PRIOR TO ANY CONSTRUCTION ACTIVITY. INSTALL OTHER TEMPORARY CONTROLS IN INCREMENTAL STAGES AS CONSTRUCTION PROCEEDS.

1.4.9. WINTER STABILIZATION

THE NON-WINTER EPSC SEASON SHALL BE FROM MAY 1 TO OCTOBER 15. IF ANY EARTHWORK IS TO BE PERFORMED OUTSIDE THE CONSTRUCTION SEASON, A WINTER EROSION AND SEDIMENT CONTROL PLAN DESCRIBING ALTERNATIVE STABILIZATION METHODS SHALL BE SUBMITTED TO THE RESIDENT ENGINEER PRIOR TO AUGUST 15 FOR APPROVAL.

1.4.10. STABILIZE SOIL AT FINAL GRADE

SEEDING AND MULCHING SHALL BE UTILIZED TO STABILIZE SOIL. SOIL SHALL BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

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

1.4.11. DEWATERING ACTIVITIES

STREAM DIVERSION IS REQUIRED DURING THE GROUT PLACEMENT OPERATIONS AND DURING THE CONSTRUCTION OF THE HEADWALLS AND CRADLE WALLS. THE IMPACTS SHOWN ON THIS PLAN ASSUME THAT STREAM DIVERSIONS WILL BE ACCOMPLISHED THROUGH THE USE OF SAND BAGS TO DIVERT WATER INTO A SMALLER PIPE INSERTED INTO THE LINER.

1.4.12. SITE INSPECTION

TEMPORARY EROSION CONTROL MEASURES SHALL BE REGULARLY INSPECTED AND MAINTAINED FOR SEDIMENT BUILDUP. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT REACHES ONE-HALF THE HEIGHT OF THE CONTROL MEASURE. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE SUCH THAT IT WILL NOT BE SUBJECT TO EROSION.

PROJECT NAME: LYNDON - DERBY

PROJECT NUMBER: IM CULV (19)

FILE NAME: z08a192ern03dy.dgn

PROJECT LEADER: DMB

DESIGNED BY: MHM

ESPC NARRATIVE - DERBY III-1

PLOT DATE: 24-AUG-2009

DRAWN BY: MAL

CHECKED BY: DMB

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