

I. PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO CARRY OUT MAINTENANCE ACTIVITIES TO AN EXTENSIVE ERODED DITCHLINE DRAINAGE CHANNEL THAT CONVEYS STORM WATER TO AN EXISTING STORMWATER MANAGEMENT FACILITY LOCATED AT THE ROANOKE CENTER FOR INDUSTRY AND TECHNOLOGY ON 2051 BLUE HILLS DRIVE NE (TM 7230108) IN ROANOKE. THE ERODED DITCH IS LOCATED WITHIN AN EXISTING 25 FEET DRAINAGE EASEMENT. THE DISTURBED AREA FOR THIS PROJECT, AS SHOWN ON SHEET ES2, IS APPROXIMATELY 0.717 ACRES (31,240 SF).

II. EXISTING SITE CONDITIONS

THE SITE IS LOCATED ON PARCEL WHICH WAS PREVIOUSLY OWNED BY THE CITY OF ROANOKE. THE NEW OWNER IS THE ROANOKE COOPERATIVE ASSOCIATION LIMITED. THE PARCEL IS LOCATED IN AN INDUSTRIAL AREA CONTAINING AN ERODED DITCH WITH EROSION DEPTH VARYING FROM 5 TO 8 FEET, STORMWATER MANAGEMENT DETENTION POND, GRASS SWALES, GRASS AREA, SANITARY SEWER, UNDERGROUND ELECTRIC, STORM DRAINS, CULTIVATED CROPS, AND FARM STRUCTURES AND BUILDING. THE DRAINAGE AREA TO THE DETENTION POND, BASED ON PREVIOUS CALCULATIONS (LUMSDEN ASSOCIATES, P.C. DATED 7/1/97) IS APPROXIMATELY 251.9 ACRES.

III. ADJACENT PROPERTIES

THE NORTHERN PORTION OF THE PROJECT SITE IS BOUNDED BY THE BLUE HILLS GOLF CLUB, BLUE HILLS DRIVE TO THE SOUTH, SEMCO DUCT AND ACOUSTICAL PRODUCTS TO THE EAST, AND RESIDENTIAL PROPERTY WITHIN TAX MAP # 7250101 TO THE WEST.

IV. OFF-SITE AREAS

FILL MATERIAL SHALL BE OBTAINED FROM AN APPROVED SOURCE. UNSUITABLE MATERIAL SHALL BE HAULED FROM THE SITE AND DISPOSED OF IN AN APPROVED MANNER TO AN APPROVED DISPOSAL SITE. ANY BORROW/FILL SITES ASSOCIATED WITH THE PROJECT MUST HAVE A VALID LAND DISTURBANCE PERMIT AND THAT SITE MUST BE APPROVED BY THE PLANNING DEPARTMENT BEFORE ANY HAULING OCCURS.

V. SOILS

ACCORDING TO THE USDA SCS SOILS MAPPING, THE PROJECT SITE LIES ON:
48B -- TIMBERVILLE SILT LOAM, 2 TO 7 PERCENT SLOPES, OCCASIONALLY FLOODED.

THIS SOIL IS GENTLY SLOPING, VERY DEEP, AND WELL DRAINED. IT IS ON NARROW TO MODERATELY BROAD UPLAND FOOT SLOPES AND IN DRAINAGEWAYS IN AREAS OF LIMESTONE. INDIVIDUAL AREAS ARE LONG AND WINDING. THEY RANGE FROM ABOUT 6 TO 15 ACRES IN SIZE. THE TYPICAL SEQUENCE, DEPTH, AND COMPOSITION OF THE LAYERS OF THIS SOIL ARE AS FOLLOWS:
SURFACE LAYERS: 0 TO 11 INCHES, DARK YELLOWISH BROWN SILT LOAM
SUBSOIL: 11 TO 21 INCHES, DARK YELLOWISH BROWN SILTY CLAY LOAM
21 TO 27 INCHES, YELLOWISH BROWN SILTY CLAY THAT HAS STRONG BROWN AND YELLOWISH RED MOTTLES.
27 TO 42 INCHES, YELLOWISH BROWN SILTY CLAY THAT HAS STRONG BROWN AND YELLOWISH RED MOTTLES.
42 TO 48 INCHES, BROWNISH YELLOW CLAY THAT HAS BROWN AND YELLOWISH RED MOTTLES.
48 TO 62 INCHES, MOTTLED BROWNISH YELLOW, YELLOWISH RED, AND BROWN GRAVELLY SILTY CLAY LOAM.

VI. CRITICAL AREAS

THE ENTIRE PROJECT IS CONSIDERED CRITICAL DUE OF ITS ASSOCIATED EROSION PROBLEMS AND THE CLOSE PROXIMITY OF THE SITE TO TINKER CREEK.

VII. EROSION AND SEDIMENT CONTROL MEASURES

ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. SYMBOLS, DETAILS, AND DIMENSIONS ARE TAKEN FROM THE HANDBOOK, AS WELL AS THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S ROAD AND BRIDGE STANDARDS, VOLUME 1, 2001.

A. STRUCTURAL PRACTICES

1. CONSTRUCTION ENTRANCE (CE), SPEC 3.02 SHALL BE PROVIDED AS SHOWN ON PLAN TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO GRAVELLED AND PAVED PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF.
2. SILT FENCE (SF), SPEC 3.05 SHALL BE PROVIDED AROUND STOCKPILE AREA AS SHOWN ON PLANS.
3. RIPRAP (RR), SPEC 3.19 SHALL BE PROVIDED AS A PROTECTIVE GROUND COVER AROUND TIE-IN CONCRETE CHANNEL ANT AT THE OUTFALL OF THE CONCRETE CHANNEL TO THE DETENTION POND.

B. VEGETATIVE PRACTICES

1. PERMANENT SEEDING (PS), SPEC 3.32 WILL BE PROVIDED ON ALL DISTURBED AREAS.
2. TEMPORARY SEEDING (TS), SPEC 3.31 WILL BE PROVIDED ON ALL DISTURBED AREAS.
3. MULCHING (MU), SPEC 3.35 WILL BE USED IN CONJUNCTION WITH PERMANENT SEEDING.
4. SOIL STABILIZATION BLANKETS & MATTING (B/M), SPEC 3.36 WILL BE PROVIDED ON CUT/FILL GRADING SLOPES ON THE EDGE OF CONCRETE CHANNEL.

C. MANAGEMENT STRATEGIES

1. EROSION CONTROL PRACTICES SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
3. ALL STORM SEWER INLETS SHALL BE PROTECTED SO THAT SEDIMENT LADEN WATER CAN NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED.
4. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED ONLY AFTER AUTHORIZATION BY THE LOCAL PROGRAM AUTHORITY (CITY OF ROANOKE).

D. MAINTENANCE

ALL EROSION AND SEDIMENT CONTROL STRUCTURES AND SYSTEMS SHALL BE MAINTAINED, INSPECTED, AND REPAIRED AS NEEDED TO INSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED AFTER EACH RAINFALL EVENT.

1. DAMAGE TO EROSION CONTROL MEASURES CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY SHALL BE REPAIRED BEFORE THE END OF EACH WORKING DAY.
2. PROVIDE EQUIPMENT WASHING AS NEEDED TO PREVENT THE TRANSPORT OF SOIL ONTO EXISTING PAVED ROADWAYS. ANY SEDIMENT ON THE PAVEMENT SHALL BE REMOVED IMMEDIATELY.
3. SILT FENCE BARRIERS WILL BE CHECKED DAILY FOR UNDERMINING OR DETERIORATION OF THE FABRICE. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL REACHES HALF WAY TO THE TOP OF THE BARRIER.

VIII. MINIMUM STANDARDS (MS):

ALL APPLICABLE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS AND MINIMUM STANDARDS SHALL BE ADHERED TO DURING ALL PHASES OF CONSTRUCTION. THESE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

MS-1: STABILIZATION OF DENUDED AREAS:
PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO BARE AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE UNLESS OTHERWISE SHOWN. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN 7 DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE, BUT REMAIN DORMANT OR UNDISTURBED FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

RESPONSE: DISTURBED AREAS WILL BE STABILIZED WITH SEEDING AS SHOWN ON PLAN DRAWINGS.

MS-2: STABILIZATION OF SOIL STOCKPILES
DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL STOCKPILES ON THE SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

RESPONSE: STOCKPILES WILL BE PROTECTED WITH SILT FENCE AS SHOWN ON PLANS.

MS-3: PERMANENT VEGETATIVE COVER
A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPTION OF THE LOCAL AUTHORITY (CITY OF ROANOKE), IS UNIFORM AND MATURE ENOUGH TO SURVIVE.

RESPONSE: DISTURBED AREAS WILL BE STABILIZED WITH SEEDING AS SHOWN ON PLAN DRAWINGS.

MS-4: TIMING AND STABILIZATION OF SILT TRAPPING MEASURES
SEDIMENT TRAPS, STORM DRAIN INLET PROTECTION, SILT FENCING AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY. THE STRUCTURES SHALL BE MADE FUNCTIONAL BEFORE UP SLOPE LAND DISTURBANCE TAKES PLACE.

RESPONSE: SILT FENCE SHALL BE INSTALLED AS SHOWN ON PLANS PRIOR TO ANY UP SLOPE LAND DISTURBANCE ACTIVITY.

MS-5: STABILIZATION OF EARTHEN STRUCTURES:
STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

RESPONSE: NOT APPLICABLE.

MS-6: SEDIMENT BASINS:
A SEDIMENT BASIN SHALL CONTROL SURFACE RUNOFF FROM DISTURBED AREAS THAT ARE COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO 3 ACRES. THE SEDIMENT BASIN SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE THE ANTICIPATED SEDIMENT LOADING FOR THE LAND DISTURBING ACTIVITY. THE OUTFALL DEVICE OR SYSTEM DEVICE SHALL TAKE INTO ACCOUNT THE TOTAL DRAINAGE AREA FLOWING THROUGH THE DISTURBED AREA TO BE SERVED BY THE BASIN.

RESPONSE: NOT APPLICABLE.

MS-7 CUT AND FILL SLOPES:
CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL PROBLEM IS CORRECTED.

RESPONSE: SOIL STABILIZATION BLANKET WILL BE PROVIDED ON ALL CUT/FILL SLOPES AT THE TOP EDGE OF PROPOSED CONCRETE CHANNEL.

MS-8 CONCENTRATED RUNOFF DOWN CUT OR FILL SLOPES:
CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.

RESPONSE: ALL CONCENTRATED RUNOFF SHALL FLOW DOWN PROPOSED CONCRETE CHANNEL.

MS-9 WATER SEEPS FROM A SLOPE FACE:
WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

RESPONSE: NOT APPLICABLE.

MS-10 STORM SEWER INLET PROTECTION:
ALL STORM SEWER INLETS SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

RESPONSE: NOT APPLICABLE.

MS-11 STABILIZATION OF OUTLETS:
BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERTIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

RESPONSE: PROPOSED CONCRETE CHANNEL OUTFALL OR THE RECEIVING CHANNEL WILL BE ARMORED WITH RIPRAP AS SHOWN ON PLAN DRAWINGS.

MS-12 WORK IN LIVE WATERCOURSES:
PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT AND SEDIMENT TRANSPORT WHEN WORKING IN LIVE WATERCOURSES. THE WORK AREA SHALL BE STABILIZED TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.

RESPONSE: NOT APPLICABLE.

MS-13 CROSSING A LIVE WATERCOURSE:
WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ONE MONTH PERIOD, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIALS SHALL BE PROVIDED.

RESPONSE: NOT APPLICABLE.

MS-14 APPLICABLE REGULATIONS:
ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING A LIVE WATERCOURSE SHALL BE MET.

RESPONSE: NOT APPLICABLE.

MS-15 STABILIZATION OF BED AND BANKS
THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

RESPONSE: NOT APPLICABLE.

MS-16 UNDERGROUND UTILITIES
UNDERGROUND UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

- A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPEN AT ONE TIME.
- B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
- C. EFFLUENT FOR DE-WATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFFSITE PROPERTY.
- D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
- E. RE-STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
- F. APPLICABLE SAFETY REGULATIONS SHALL BE COMPILED WITH AT ALL TIMES

RESPONSE: CONTRACTOR SHALL FOLLOW THIS UNDERGROUND UTILITY CRITERIA AT ALL TIMES.

MS-17 CONSTRUCTION ACCESS ROUTES:
WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ON TO PAVED SURFACES.

RESPONSE: A TEMPORARY CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AS SHOWN ON PLAN DRAWINGS TO MINIMIZE THE AMOUNT OF MUD TRANSPORTED ONTO CITY STREETS.

MS-18 TEMPORARY E&S CONTROL MEASURE REMOVAL:
ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL AUTHORITY (CITY OF ROANOKE).

RESPONSE: CONTRACTOR SHALL INSTALL E&S MEASURES AS SHOWN ON PLANS, STABILIZE THE DISTURBED AREAS, AND REQUEST PERMISSION FROM THE PLANNING DEPARTMENT TO REMOVE THE E&S MEASURES.

MS-19 ADEQUACY OF RECEIVING CHANNELS
PROPERTIES AND WATERWAYS DOWNSTREAM FROM THE DEVELOPMENT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION, AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY, AND PEAK FLOW RATES OF STORM WATER RUNOFF FOR STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA:

- A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.
- B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
 1. THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR
 - 2 a. NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS; AND
 - b. ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND
 - c. PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.

C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:

1. IMPROVE THE CHANNEL TO A CONDITION WHERE A TEN-YEAR STORM WILD NOT OVERTOP THE BANKS AND A TWO-YEAR WILL NOT CAUSE EROSION TO THE CHANNEL BED OR BANKS; OR
 2. IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES; OR
 3. DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR
 4. PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE PLAN-APPROVING AUTHORITY TO PREVENT DOWNSTREAM EROSION.
- D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.
- E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT OF THE SUBJECT PROJECT.
- F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION HE SHALL OBTAIN APPROVAL FROM THE LOCALITY OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.
- G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.
- H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.
- I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSED EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTFLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.
- J. IN APPLYING THESE STORMWATER RUNOFF CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.
- K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.

RESPONSE: THIS PROJECT IS CLASSIFIED AS A MAINTENANCE PROJECT SINCE ITS INTENTION IS TO FIX A DENUDED AREA FROM FURTHER EXCESSIVE EROSION OVER THE YEARS. THE ORIGINAL LINE AND GRADE, AND CONSTRUCTION OF THE GRASS CHANNEL HAS CHANGED. THE TOTAL DISTURBED AREA FOR THIS MAINTENANCE PROJECT IS LESS THAN FIVE (5) ACRES. THE DENUDED AND UPSTREAM AREA FROM THE PROJECT, DISCHARGE INTO AN EXISTING STORMWATER MANAGEMENT FACILITY.

IX. STORMWATER MANAGEMENT:

SEE MS-19 RESPONSE.

X. SOIL STOCKPILES AND BORROW AREAS:

SEE NOTE IV AND MS-2 RESPONSE.

XI. SEQUENCE OF CONSTRUCTION

1. AT THE DOWNSTREAM END AND MOVING UPSTREAM, DEMOLISH AND REMOVE GROUTED RIPRAP, CONCRETE DITCH AND WOOD FENCE. AFTER DEMOLITION AND REMOVAL WORK, INSTALL CLASS II RIPRAP DITCH IMMEDIATELY.
2. PROGRESSING UPSTREAM, CONSTRUCTION GRADE BREAK WALL AT THE OUTFALL OF CONCRETE CHANNEL, AND INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN DRAWINGS.
3. MOVING UPSTREAM, SIMULTANEOUSLY CONSTRUCT CONCRETE CHANNEL AND GRADE BREAK WALLS, AND INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN DRAWINGS. DEMOLISH EXISTING BRIDGE AND WOOD FENCE AND DISPOSED OF FROM SITE.
4. CONSTRUCT PEDESTRIAN BRIDGE AS SHOWN ON PLANS.
5. CONSTRUCT NEW WOOD FENCE IN "LIKE KIND" AS SHOWN ON PLAN DRAWINGS.
6. STABILIZE ALL DISTURBED AREAS AS SHOWN ON PLANS.
7. REMOVE ALL EROSION AND SEDIMENT CONTROL MEASURE AFTER STABILIZATION AND CITY PLANNING DEPARTMENT APPROVAL.
8. CLOSE OUT PROJECT

XII. PROPERTY OWNER

COMMERCIAL/INDUSTRIAL -- 2051 BLUE HILLS DRIVE NE
ROANOKE COOPERATIVE ASSOCIATION LTD.
1319 GRANDIN ROAD SW
ROANOKE, VA 24015
CONTACT NAME: MR. SEAN JORDAN
OFFICE: 540-519-7205

EROSION AND SEDIMENT CONTROL NOTES (VA DCR HANDBOOK, VI-15, TABLE 6-1):

ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS.

ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRECONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURE ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP AT ALL TIMES.

ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION AND CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

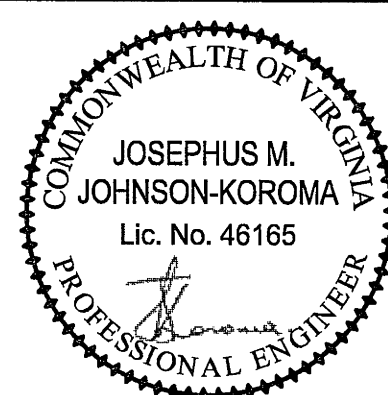
ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.



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DESIGNED:
JJK
DRAWN:
JJK
CHECKED:
PCS



REV.	DATE:	DESCRIPTION

DATE:
08/02/13
SCALE:
AS SHOWN
24"x36" SHEET

RCIT/HERITAGE POINT EROSION REPAIR
EROSION AND SEDIMENT CONTROL NARRATIVE & MS-19

CITY OF ROANOKE, VIRGINIA

APPROVED
AUG 04 2014

SHEET
ES1
PLAN NO.
6743