EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION: THE PURPOSE OF THIS PROJECT IS TO REPLACE AGED WATERLINE IN THE ROANOKE CITY SERVICE AREA. THE PROJECT CONSISTS OF 1,260 LF OF NEW WATER PIPE INSTALLATION UNDER EXISTING HARD PAVED SURFACES.

THIS PROJECT IS EXEMPT FROM EROSION AND SEDIMENT CONTROL PLAN REQUIREMENTS PURSUANT ARTICLES § 62.1-44.15:51 & § 62.1-44.15:55 OF THE CODE OF VIRGINIA.

EXISTING SITE CONDITIONS: THE PROPERTY CONSISTS OF URBAN RESIDENTIAL HOUSING & ROANOKE CITY ROAD RIGHT OF WAY. THE PROPERTY DRAINS TO THE NORTHWEST (OVERLAND & IN CLOSED STORM WATER SYSTEM) TO THE ROANOKE RIVER. THE MAJORITY OF THE WORK IS ALONG THE ROANOKE CITY ROAD RIGHT OF WAY.

ADJACENT PROPERTY: THE PROJECT IS BOUNDED BY URBAN RESIDENTIAL PROPERTIES IN ALL DIRECTIONS.

SOILS: A SUBSURFACE INVESTIGATION HAS NOT BEEN PROVIDED. SOIL INFORMATION IS AVAILABLE ON THE RESIDUAL SOILS THAT IS SUGGESTED BY THE WEB SOIL SURVEY (WSS) WEBSITE, WHICH IS OPERATED BY THE USDA NATURAL RESOURCES CONSERVATION SERVICE (NRCS). THIS SURVEY REFERENCES 2 CATEGORIES CONSISTING OF SPEEDWELL-URBAN LAND COMPLEX, 0 TO 2 PERCENT SLOPES, OCCASIONALLY FLOODED AND WHEELING-URBAN LAND COMPLEX, 0 TO 2 PERCENT SLOPES, RARELY FLOODED.

CRITICAL EROSION AREAS: STEEP SLOPES SHALL BE STABILIZED IMMEDIATELY. THE CONTRACTOR SHALL INSTALL ALL INITIAL EROSION AND SEDIMENT CONTROL MEASURES TO CONTROL SEDIMENT LADEN RUNOFF FROM ENTERING ADJACENT PROPERTIES AND/OR STREAMS AND SWALES. THE CONTRACTOR SHALL KEEP EQUIPMENT ON SITE TO REMOVE ANY DIRT OR MUD FROM PAVED AREAS. THE CONTRACTOR SHALL INSTALL AND MAINTAIN SILT FENCE AS SHOWN ON THE PLANS TO CAPTURE SEDIMENT LADEN RUNOFF AND FILTER RUNOFF PRIOR TO ENTERING DOWNSTREAM AREAS AND ADJACENT PROPERTIES. ALL ESC MEASURES SHALL BE INSTALLED AND MAINTAINED TO THE MINIMUM REQUIRED STANDARDS.

EROSION AND SEDIMENT CONTROL MEASURES:
UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION" (VESCH). THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE DIRECTED BY THE LOCAL PROGRAM ADMINISTRATOR.

OFF SITE AREAS: THESE PLANS DO NOT PROVIDE FOR ANY LAY DOWN AREA, BORROW/DISPOSAL SITE, STOCK PILE AREA, OR ANY OTHER FORM OF STAGING ACTIVITY. THE CONTRACTOR EXECUTING WORK SHOWN ON THESE PLANS SHALL BE RESPONSIBLE FOR SECURING ACCESS AND ALL APPROPRIATE PERMITTING FOR OFF-SITE AREAS. CONTRACTOR SHALL SECURE APPROVAL FROM GOVERNING LOCALITY FOR ANY OFF-SITE LAND DISTURBANCE. THE LOCATION AND DESCRIPTION OF ANY SUCH AREAS SHALL BE PROVIDED TO WVWA PRIOR TO THE PRE-CONSTRUCTION MEETING. UPON REQUEST, SUPPORTING APPROVAL DOCUMENTATION SHALL BE PROMPTLY PROVIDED TO WVWA.

EROSION AND SEDIMENT CONTROL MEASURES:

(CE) TEMPORARY STONE CONSTRUCTION ENTRANCE-VESCH STD. & SPEC. 3.02: A STABILIZED STONE PAD WITH FILTER FABRIC UNDERLINER LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE.

(SF) SILT FENCE-VESCH STD. & SPEC. 3.05: A TEMPORARY SEDIMENT BARRIER CONSTRUCTED OF POSTS, FILTER FABRIC AND IN SOME CASES WIRE SUPPORT FENCE TO INTERCEPT AND DETAIN SEDIMENT.

(CIP) CULVERT INLET PROTECTION-VESCH STD. & SPEC. 3.08: SHALL BE INSTALLED AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN IN CONFORMANCE WITH VESCH STD. & SPEC. OR WVWA AS&S. CULVERT INLET PROTECTIONS ARE PROVIDED IN ORDER TO FILTER RUNOFF BEFORE IT ENTERS A STORM DRAINAGE SYSTEM.

(TS) TEMPORARY SEEDING-VESCH STD. & SPEC. 3.31: ESTABLISHMENT OF TEMPORARY VEGETATIVE COVER BY SEEDING WHERE EXPOSED SOIL SURFACES WILL NOT BE AT FINAL GRADE FOR MORE THAN 14 DAYS.

(PS) PERMANENT SEEDING-VESCH STD. & SPEC. 3.32: ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER BY PLANTING SEED IN AREAS WHERE PERMANENT, LONG-LIVED VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL AND IN ROUGH GRADED AREAS WHICH WILL NOT BE BROUGHT TO FINAL GRADE FOR A YEAR OR MORE.

(MU) MULCHING-VESCH STD. & SPEC. 3.35: PLANT RESIDUAL OR OTHER SUITABLE MATERIALS APPLIED TO SOIL SURFACE TO PREVENT EROSION FROM RAINDROP IMPACT, REDUCE VELOCITY OF OVERLAND FLOW, FOSTER VEGETATION GROWTH BY INCREASING AVAILABLE MOISTURE, & PROVIDE INSULATION AGAINST EXTREME HEAT AND COLD.

MANAGEMENT STRATEGIES:
A) CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
B) SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING.
C) THE LOCAL PROGRAM ADMINISTRATOR RESERVES THE RIGHT TO ADD TO, DELETE OR OTHERWISE CHANGE THE EROSION CONTROL MEASURES AS DEEMED NECESSARY DUE TO ACTUAL FIELD CONDITIONS BY WRITTEN NOTIFICATION TO THE CONTRACTOR.
D) ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN SEVEN (7) DAYS OF ACHIEVING FINAL GRADE.
E) ONLY AFTER INSPECTION AND APPROVAL FROM THE LOCAL PROGRAM ADMINISTRATOR MAY ITEMS BE REMOVED FOLLOWING THE STABILIZATION OF THE CONTRIBUTING AREAS.

INSPECTIONS:
THE WVWA SHALL INSPECT DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED, AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND THE AREA OF CONSTRUCTION VEHICLE ACCESS AT LEAST EVERY FOURTEEN (14) CALENDAR DAYS, AND WITHIN 48 HOURS OF THE END OF A STORM EVENT PRODUCING 1/2" OR GREATER OF PRECIPITATION. WHERE AREAS HAVE BEEN FINALLY OR TEMPORARILY STABILIZED OR RUNOFF IS UNLIKELY DUE TO WINTER CONDITIONS (SITE IS COVERED WITH SNOW, ICE, OR FROZEN GROUND EXISTS) SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH.

A) INSPECT DISTURBED AREAS AND AREAS OF MATERIALS STORAGE THAT ARE EXPOSED TO PRECIPITATION FOR EVIDENCE OF, OR THE POTENTIAL FOR SEDIMENT ENTERING THE STORM DRAIN SYSTEM. INSPECT E&S CONTROLS IN ACCORDANCE WITH REQUIREMENTS STATED HEREIN, AND INSPECT POINTS OF STORM DRAIN DISCHARGE FOR EXCESSIVE SEDIMENTATION. CORRECT SITE CONTROLS AS REQUIRED TO REDUCE SEDIMENTATION OF STORM DRAINS, CULVERTS, AND RECEIVING CHANNELS.

B) IF CONTROLS OR SEDIMENT PREVENTION AREAS ARE FOUND TO BE IN NEED OF REPAIR OR MODIFICATION, THE WVWA SHALL PROVIDE ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING MEASURES AS REQUIRED. ANY ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING MEASURES SHALL BE RECORDED AS FIELD REVISIONS TO THESE PLANS. IN THE EVENT THAT ADDITIONAL CONTROLS ARE FOUND TO BE REQUIRED, THE WVWA SHALL BE RESPONSIBLE FOR IMPLEMENTING THESE CONTROLS BEFORE THE NEXT ANTICIPATED STORM EVENT. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICAL, THEY SHALL BE IMPLEMENTED AS SOON AS PRACTICAL.

MINIMUM STANDARDS

THE FOLLOWING STANDARDS ARE TO BE PROVIDED OR ADDRESSED ON EVERY DEVELOPMENT PROJECT EXCEEDING 10,000 S.F. IN AREA OF DISTURBANCE. THESE STANDARDS ARE CONSIDERED A MINIMUM AND MAY REQUIRE ADDITIONAL MEASURES AS DEEMED NECESSARY BY THE LOCAL APPROVING AUTHORITY OR THE CONSULTING ENGINEER.

No.	CRITERIA, TECHNIQUE OR METHOD	PRACTICES PROVIDED
1	PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAYNOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.	(TS) (PS) (MU) FOR ALL DENUDED AREAS
2	DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE OWNER IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.	(TS) (PS) (MU) (SF)
3	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 OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR DESIGNATED AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.	(TS) (PS) (MU) FOR ALL DENUDED AREAS
4	SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.	(SF) (CIP)
5	STABILIZATION METHODS SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.	(TS) (PS) (MU)
6	SEDIMENT TRAPS AND BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.	NOT APPLICABLE
7	CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZATION MEASURES UNTIL THE PROBLEM IS CORRECTED.	(TS) (PS) (MU) ALL ERODING SLOPES
8	CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.	NOT APPLICABLE
9	WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.	SHOULD SEEPS OCCUR IN ANY EXISTING OR NEW CUT OR FILL SLOPE, THE CONTRACTOR SHALL FIRST INSURE THAT THERE ARE NOT AREAS OF PONDED WATER AT THE TOPS OF THE SLOPES, AND THEN SHALL CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT GEOTECHNICAL ENGINEER FOR ON-SITE EVALUATION OF THE AREAS OF SEEPAGE.
10	ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.	(CIP) ALL STORM INLETS
11	BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.	NOT APPLICABLE
12	WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.	NOT APPLICABLE
13	WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX (6) MONTH PERIOD, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL, SHALL BE PROVIDED.	NOT APPLICABLE
14	ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.	NOT APPLICABLE
15	THE BEDS AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	NOT APPLICABLE
16	UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA: 1) NO MORE THAN 500 LINEAR FEET OF ANY TRENCH MAY BE OPENED AT ONE TIME. 2) EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. 3)EFFLUENT FROM DEWATERING 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 OFF-SITE PROPERTY. 4)MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. 5)RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS. 6)APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.	(TS) (PS) (MU) SEE PLANS
17	WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.	ALL POINTS INGRESS/EGRESS
18	ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.	(TS) (PS) (MU) (CIP) SELF-EXPLANATORY

	CRITERIA, TECHNIQUE OR METHOD	PRACTICES PROVIDED
19	PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MAN-MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS: 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. (B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR 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 CHANNELS TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO CHANNEL THE BED OR BANKS; OR 2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES; 3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TOWER STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PREDEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MANMADE CHANNEL; OR 4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP 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 CONDITION OF THE SUBJECT PROJECT. F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP 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 CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY. J. IN APPLYING THESE STORMWATER MANAGEMENT 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 PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE 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. L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO I. DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; II. DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24- HOUR STORM; AND III. REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 10.1-562 OR 10.1-570 OF THE ACT. M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 10.1-561 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 10.1-603.2 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 4VAC50-60-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS. N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 4VAC50-60-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF MINIMUM STANDARD 19.	(TS) (PS) (MU) (SF) (CIP) WORK DOES NOT SIGNIFICANTLY ALTER PRE- VS. POST - DEVELOPMENT CONDITIONS

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

ES-I: 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 9VAC25-840 EROSION AND SEDIMENT CONTROL REGULATIONS.
ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION 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 MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.
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 ACTIVITIES 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 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 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.

INSPECTION:

THE GENERAL CONTRACTOR SHALL INSPECT DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN FULLY STABILIZED, AREAS USED FOR MATERIALS STORAGE AND STOCKPILE AREAS WHICH ARE EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND CONSTRUCTION VEHICLES ACCESS AREAS AT LEAST EVERY (14) CALENDAR DAYS, AND WITHIN FORTY-EIGHT (48) HOURS OF THE END OF A STORM EVENT PRODUCING ONE-HALF (½) INCH OR GREATER OF PRECIPITATION. WHERE AREAS HAVE BEEN PERMANENTLY OR TEMPORARILY STABILIZED, OR RUNOFF IS UNLIKELY DUE TO WINTER CONDITIONS, SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH.

INSPECT DISTURBED AREAS, MATERIALS STORAGE AREAS AND STOCKPILE AREAS WHICH ARE EXPOSED TO PRECIPITATION FOR EVIDENCE OF, OR THE POTENTIAL FOR SEDIMENT ENTERING THE STORM DRAIN SYSTEM. INSPECT EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH REQUIREMENTS STATED IN THE CONTRACT DOCUMENTS, AND INSPECT STORM DRAINS DISCHARGE POINTS FOR EXCESSIVE SEDIMENTATION. CORRECT SITE CONTROLS AS REQUIRED TO REDUCE SEDIMENTATION OF STORM DRAINS, CULVERTS, AND RECEIVING CHANNELS.

IF CONTROLS OR SEDIMENT PREVENTION AREAS ARE FOUND TO NEED REPAIR OR MODIFICATION, THE GENERAL CONTRACTOR SHALL PROVIDE ADDITIONAL MEASURES OR MODIFICATIONS AS REQUIRED. ANY ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING CONTROLS SHALL BE RECORDED AS FIELD REVISIONS TO THESE PLANS. IN THE EVENT THAT ADDITIONAL CONTROLS ARE FOUND TO BE REQUIRED, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND INSTALLING THESE CONTROLS BEFORE THE NEXT ANTICIPATED STORM EVENT.

A REPORT SUMMARIZING THE SCOPE OF THE INSPECTIONS, NAME OF INSPECTOR, INSPECTOR'S CERTIFICATION, DATES OF INSPECTIONS, MAJOR OBSERVATIONS PERTAINING TO THE IMPLEMENTATION OF THESE EROSION CONTROL PLANS, AND ACTIONS TAKEN SHALL BE DOCUMENTED AND RETAINED AS A PART OF THESE PLANS. MAJOR OBSERVATIONS SHALL INCLUDE: THE LOCATIONS OF EXCESSIVE SEDIMENTATION FROM THE SITE, LOCATIONS OF CONTROLS REQUIRING REPAIR, LOCATIONS OF FAILED OR INADEQUATE CONTROLS, AND LOCATIONS WHERE ADDITIONAL CONTROLS ARE NECESSARY.

STORM WATER NOTES:

1. THIS PLAN HAS BEEN DEVELOPED WITH THE INTENT THAT THIS PROJECT DOES NOT SIGNIFICANTLY ALTER THE PREDEVELOPMENT RUNOFF CHARACTERISTICS OF THE LAND SURFACE AFTER THE COMPLETION OF CONSTRUCTION AND FINAL STABILIZATION.
2. CONTRACTOR SHALL MANAGE THIS SITE SO THAT LESS THAN ONE (1) ACRE OF LAND DISTURBANCE OCCURS ON A DAILY BASIS.
3. CONTRACTOR SHALL ADEQUATELY STABILIZE THE SITE ON A DAILY BASIS.
4. CONTRACTOR SHALL AT ALL TIMES PROTECT THE ENVIRONMENT FROM EROSION AND SEDIMENTATION DAMAGE ASSOCIATED WITH LAND-DISTURBING ACTIVITY.
5. CONTRACTOR SHALL MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATERS.
6. CONTRACTOR SHALL MINIMIZE THE EXPOSURE OF BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE, AND OTHER MATERIALS PRESENT ON-SITE TO PRECIPITATION AND STORM WATER.
7. CONTRACTOR SHALL MINIMIZE THE DISCHARGE OF POLLUTANTS FROM SPILLS AND LEAKS AND IMPLEMENT CHEMICAL SPILL AND LEAK PREVENTION AND RESPONSE PROCEDURES.
8. THE DISCHARGE OF WASTEWATER FROM THE WASHOUT FROM CONCRETE IS PROHIBITED.
9. THE DISCHARGE OF WASTEWATER FROM THE WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS, AND OTHER CONSTRUCTION MATERIALS IS PROHIBITED.
10. THE DISCHARGE OF FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE IS PROHIBITED.

THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF ALL EROSION CONTROL MEASURES ON SITE.
ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED DAILY AND AFTER EACH RUN-OFF PRODUCING RAINFALL. THE FOLLOWING ITEMS SHALL BE CHECKED IN PARTICULAR:

1. SILT FENCE, AFTER EVERY STORM EVENT TO ENSURE EFFECTIVE OPERATION AND REMOVE SEDIMENT WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF THE BARRIER.
2. PROVIDE PERIODIC TOP DRESSING OF CONSTRUCTION ENTRANCES WITH ADDITIONAL STONE AND REPAIR OR CLEAN OUT ANY OF THE STRUCTURES USED TO TRAP SEDIMENT.
3. CHECK GRAVEL INLET PROTECTION FOR SEDIMENT BUILDUP WHICH WILL PREVENT DRAINAGE. IF THE GRAVEL IS CLOGGED BY SEDIMENT, REMOVE AND CLEAN, OR REPLACE.
4. CHECK THE SEEDED AREAS TO ENSURE THAT A STAND OF GRASS IS MAINTAINED. FERTILIZE AND RESEED AS NEEDED.

WESTERN VIRGINIA WATER AUTHORITY
ENGINEERING SERVICES
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COMMONWEALTH OF VIRGINIA
JEFFREY W. ROGERS
Lic. No. 027009
02/13/2020
PROFESSIONAL ENGINEER

GORDON AVENUE WATERLINE REPLACEMENT

DETAILS

Rev	Description	Date	By

Designed: AJC, DRJ
Drawn: AJC
Checked: DRJ
Approved: JWR
Date: FEB 2020
Project: WCIP