9VAC25-840-40 VIRGINIA EROSION AND SEDIMENT CONTROL MINIMUM STANDARDS

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 MAY NOT 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.

RESPONSE: CONTRACTOR SHALL ADHERE TO THESE STANDARDS BY PROVIDING MULCHING, TEMPORARY SEEDING, AND PERMANENT SEEDING. SEE THE EROSION AND SEDIMENT CONTROL NOTES, NARRATIVE, AND PLAN.

2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT 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.

RESPONSE: ANY STOCKPILES OF SOIL ON SITE SHALL BE STABILIZED ACCORDINGLY.

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, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.

RESPONSE: SEE THE EROSION AND SEDIMENT CONTROL NOTES, NARRATIVE, AND PLAN.

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.

RESPONSE: ONLY APPLICABLE DUE TO SILT FENCE. SEE THE EROSION AND SEDIMENT CONTROL NOTES, NARRATIVE, AND PLAN.

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

RESPONSE: NOT APPLICABLE TO THIS PROJECT.

6. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
   A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
   B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A TWENTY-FIVE YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.

RESPONSE: NOT APPLICABLE TO THIS PROJECT.

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

RESPONSE: SEE THE EROSION AND SEDIMENT CONTROL NOTES, NARRATIVE, AND PLAN.

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.

RESPONSE: NO MAJOR CUT SLOPES ARE ANTICIPATED AND RUNOFF TO FILL SLOPES WILL BE SHEET FLOW ACROSS A GRASS AREA.

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

RESPONSE: NO WATER SEEPAGE FROM A SLOPE FACE IS ANTICIPATED.

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.

RESPONSE: SEE THE EROSION AND SEDIMENT CONTROL NOTES, NARRATIVE, AND PLAN.

11. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES 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.

RESPONSE: THE OUTLET OF THE STORMWATER PIPES ON THIS PROJECT IS AN EXISTING STORM DRAIN STRUCTURE AND STORM DRAIN SYSTEM. THE CALCULATIONS SHOW THIS IS AN ADEQUATE RECEIVING CHANNEL. NO OUTLET PROTECTION IS REQUIRED AT THE END OF THE NEW STORMWATER PIPING WHERE IT CONNECTS TO THE EXISTING STORM DRAIN STRUCTURE.

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.

RESPONSE: NOT APPLICABLE TO THIS PROJECT.

13. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.

RESPONSE: NOT APPLICABLE TO THIS PROJECT.

14. ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.

RESPONSE: NOT APPLICABLE TO THIS PROJECT.

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

RESPONSE: NOT APPLICABLE TO THIS PROJECT.

16. UNDERGROUND UTILITY LINES 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 OPENED AT ONE TIME.
   B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
   C. 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.
   D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
   E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
   F. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

RESPONSE: CONTRACTOR SHALL ADHERE TO THESE STANDARDS.

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. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.

RESPONSE: A CONSTRUCTION ENTRANCE WILL BE PLACED AT THE NORTH SIDE OF THE SITE. STREET SWEEPING OR OTHER MAINTENANCE SHALL BE REQUIRED.

18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

RESPONSE: SEE THE EROSION AND SEDIMENT CONTROL NOTES, NARRATIVE, AND PLAN.

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:
   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 MAN-MADE 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 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 WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM 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, THEY 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 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 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 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 IF THE PRATICES ARE DESIGNED TO (i) DETAIN THE WATER QUALITY VOLUME AND 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 § 62.1-44.15:54 OR 62.1-44.15:65 OF THE ACT.
   M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 62.1-44.15:24 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES (i) ARE IN ACCORDANCE WITH PROVISIONS FOR TIME LIMITS ON APPLICABILITY OF APPROVED DESIGN CRITERIA IN 9VAC25-870 OR CRITERIA CONTAINED HEREIN IN 9VAC25-870 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATION, IN WHICH CASE THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT SHALL CONTINUE TO BE EXEMPT PURSUANT TO § 62.1-44.15:34 C 7 OF THE ACT.
   N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATION SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF THIS SUBDIVISION 19.

RESPONSE: THE STORMWATER MANAGEMENT PLAN IS DESIGNED TO COMPLY WITH VIRGINIA WATER QUANTITY AND QUALITY REGULATIONS. AN APPROVED COMMON PLAN OF DEVELOPMENT WAS ESTABLISHED IN 2009 FOR THE FULL DEVELOPMENT OF THE ENTIRE RIVERSIDE PROPERTY, AND DETERMINED THE MAXIMUM ALLOWABLE RELEASE RATES FOR WATER QUANTITY. THE CALCULATIONS SHOW THAT THE 2- AND 10-YEAR FLOWS DO NOT EXCEED THE MAXIMUM ALLOWABLE RATES AND ARE THEREFORE DEEMED ADEQUATE FOR CHANNEL PROTECTION (2-YEAR) AND FLOOD PROTECTION (10-YEAR). WATER QUALITY COMPLIANCE FOR THIS PROJECT WAS DETERMINED AND USING THE VIRGINIA RUNOFF REDUCTION METHOD, VERSION 3. THE WATER QUALITY DESIGN INCLUDES RAINWATER HARVESTING, VEGETATED ROOF (LEVEL 1 DESIGN), AND PURCHASE OF NUTRIENT CREDITS FOR ANY REMAINING REDUCTION REQUIRED FOR WATER QUALITY COMPLIANCE.

THE EROSION AND SEDIMENT CONTROL PLAN IS DESIGNED TO PREVENT SEDIMENT FROM LEAVING THE SITE. TOGETHER, THE STORMWATER MANAGEMENT PLAN, AND THE EROSION AND SEDIMENT CONTROL PLAN ARE DESIGNED TO PROTECT DOWNSTREAM WATERWAYS.

VIRGINIA EROSION AND SEDIMENT CONTROL NOTES

THESE NOTES COME FROM TABLE 6-1 ON PAGE VI-15 OF THE VIRGINIA DEQ EROSION AND SEDIMENT CONTROL HANDBOOK.

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 9VAC25-840 EROSION AND SEDIMENT CONTROL REGULATIONS.

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 SUPPLEMENT TO THE 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-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.

CONSTRUCTION SEQUENCE

1. INSTALL ALL PERIMETER EROSION CONTROLS.
2. INSTALL TEMPORARY SIDEWALK.
3. STRIP AND STOCKPILE TOPSOIL ON SITE. COORDINATE LOCATION OF STOCKPILE WITH THE OWNER.
4. DEMOLISH SITE FEATURES AS INDICATED ON C-101.
5. GRADE THE SITE.
6. SPREAD TOP SOIL ON UNPAVED DISTURBED AREAS, THEN SEED AND MULCH.
7. ONCE SITE ACHIEVES FINAL STABILIZATION, REMOVE ALL TEMPORARY EROSION CONTROLS.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

THE PURPOSE OF THE EROSION CONTROL MEASURES SHOWN ON THESE PLANS SHALL BE TO PRECLUDE THE TRANSPORT OF ALL WATERBORNE SEDIMENTS RESULTING FROM CONSTRUCTION ACTIVITIES FROM ENTERING ONTO ADJACENT PROPERTIES OR STATE WATERS. IF FIELD INSPECTION REVEALS THE INADEQUACY OF THE MEASURES TO CONFINE SEDIMENT TO THE PROJECT SITE, APPROPRIATE MODIFICATIONS SHALL BE MADE TO CORRECT ANY PLAN DEFICIENCIES.

1. THE CONTRACTOR SHALL BE THOROUGHLY FAMILIAR WITH ALL APPROVED PROCEDURES WHICH MAY BE PERTINENT TO THE PROJECT. MAINTENANCE WILL INCLUDE THE REPAIR OF MEASURES DAMAGED BY ANY SUBCONTRACTOR INCLUDING THOSE OF THE PUBLIC UTILITY COMPANIES. SUPPLY THE CITY OF ROANOKE WITH THE NAME OF THE INDIVIDUAL WHO WILL BE RESPONSIBLE FOR ENSURING MAINTENANCE OF INSTALLED MEASURES ON A DAILY BASIS PRIOR TO THE PRE-CONSTRUCTION MEETING.
2. SEDIMENT CONTROL DEVICES NOT LOCATED IN PROPOSED FILL OR EXCAVATION AREAS SHALL BE CONSTRUCTED PRIOR TO ALL OTHER LAND DISTURBANCE. A PRE-CONSTRUCTION MEETING WILL BE HELD AT THE CITY OF ROANOKE OFFICES BETWEEN THE CITY OF ROANOKE AND THE CONTRACTOR TO IDENTIFY THOSE MEASURES TO BE INITIALLY INSTALLED.
3. SURFACE FLOWS OVER CUT AND FILL SLOPES SHALL BE CONTROLLED BY REDIRECTING FLOWS FROM TRAVERSING THE SLOPES.
4. SEDIMENT CONTROL MEASURES MAY REQUIRE MINOR FIELD ADJUSTMENTS AT THE TIME OF CONSTRUCTION TO INSURE THEIR INTENDED PURPOSE IS ACCOMPLISHED. CITY OF ROANOKE APPROVAL WILL BE REQUIRED FOR OTHER DEVIATION FROM THE APPROVED PLANS.
5. THE CONTRACTOR SHALL STRIP AND PILE TOPSOIL AT THE LOCATIONS INDICATED ON THE PLANS. SILT FENCE SHALL BE PLACED AT THE TOE OF THE STOCKPILE AFTER STRIPPING OF TOPSOIL IS COMPLETE.
6. THE CONTRACTOR SHALL COMPLETE DRAINAGE FACILITIES WITHIN 30 DAYS FOLLOWING COMPLETION OF ROUGH GRADING AT ANY POINT WITHIN THE PROJECT. THE INSTALLATION OF DRAINAGE FACILITIES SHALL BE IN ACCORDANCE WITH PRECEDENCE OVER ALL UNDERGROUND UTILITIES. OUTFALL DITCHES FROM DRAINAGE STRUCTURES SHALL BE STABILIZED IMMEDIATELY AFTER CONSTRUCTION OF SAME. THIS INCLUDES INSTALLATION OF EROSION CONTROL STONE WHERE REQUIRED.
7. TEMPORARY VEGETATIVE COVER SHALL BE PROVIDED IN ALL AREAS WHICH ARE NOT DESIGNATED FOR PAVING, UNDERGROUND UTILITIES OR STRUCTURAL USES. SUCH AREAS SHALL NOT BE EXPOSED FOR PERIODS EXCEEDING 7 DAYS. TEMPORARY VEGETATIVE COVER MAY BE ELIMINATED IN FAVOR OF FINAL VEGETATIVE COVER IF CONSTRUCTION AND SEASONAL CONDITIONS PERMIT.
8. ALL AREAS DESIGNATED FOR PAVING, UNDERGROUND UTILITIES, AND STRUCTURAL USE SHALL BE STABILIZED AS SOON AS POSSIBLE, BUT NOT EXCEEDING 15 DAYS FOLLOWING INSTALLATION. NO MORE THAN 300' OF UTILITY TRENCHES ARE TO BE OPEN AT ONE TIME.
9. THE TERM SEEDING, FINAL VEGETATIVE COVER OR STABILIZATION, ON THIS PLAN SHALL MEAN THE SUCCESSFUL ESTABLISHMENT AND ESTABLISHMENT OF A STABLE GRASS COVER FROM A PROPERLY PREPARED SEEDBED CONTAINING THE SPECIFIED AMOUNTS OF SEED, LIME, AND FERTILIZER. IRRIGATION SHALL BE REQUIRED AS NECESSARY TO ENSURE ESTABLISHMENT OF GRASS COVER.
10. INLET PROTECTION SHALL BE PROVIDED FOR ALL STORM DRAIN INLETS AS SOON AS PRACTICAL FOLLOWING CONSTRUCTION OF SAME.
11. BASE COURSE MATERIAL SHALL BE PLACED IN ALL PAVED AREAS WITHIN 30 DAYS OF FINAL GRADING.
12. TEMPORARY EROSION CONTROL MEASURES ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. AFTER STABILIZATION IS COMPLETE, ALL MEASURES SHALL BE REMOVED WITHIN 30 DAYS. TRAPPED SEDIMENT SHALL BE SPREAD AND SEEDED.
13. SEED AND MULCH AND PROVIDE TOPSOIL TO ALL DISTURBED AREAS THAT WILL NOT BE COVERED WITH PAVEMENT.
14. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. THE CONTRACTOR SHALL BE THOROUGHLY FAMILIAR WITH ALL APPLICABLE MEASURES CONTAINED THEREIN WHICH MAY BE PERTINENT TO THIS PROJECT. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AFTER COMPLETION OF THE PROJECT. MEASURES INDICATED ARE THE MINIMUM AND OTHER MEASURES MAY BE REQUIRED BY THE EROSION CONTROL INSPECTOR. CONTRACTOR SHALL FURNISH AND INSTALL ALL MEASURES REQUIRED TO COMPLY WITH APPLICABLE REGULATIONS. REMOVE EROSION CONTROL MEASURES WHEN THE SITE HAS BEEN STABILIZED. INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS THE FIRST STEP IN GRADING OPERATIONS. SEE THIS SHEET FOR ADDITIONAL EROSION CONTROL NOTES.

WESTERN VIRGINIA WATER AUTHORITY (WVWA) NOTES

THE FOLLOWING NOTES ARE APPLICABLE FOR ALL WATER AND SANITARY SEWER WORK.

GENERAL NOTES

1. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO THE LATEST WVWA DESIGN AND CONSTRUCTION STANDARDS.
2. THE CONTRACTOR OR DEVELOPER IS REQUIRED TO NOTIFY THE WESTERN VIRGINIA WATER AUTHORITY IN WRITING AT LEAST THREE (3) DAYS PRIOR TO ANY CONSTRUCTION. PLEASE CONTACT MARK SINK AT 537-3460.
3. ALL WORK SHALL BE SUBJECT TO INSPECTION BY THE WESTERN VIRGINIA WATER AUTHORITY.
4. FIELD CORRECTIONS SHALL BE APPROVED BY THE WESTERN VIRGINIA WATER AUTHORITY PRIOR TO SUCH CONSTRUCTION.
5. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 18" CLEARANCE VERTICALLY AND MINIMUM OF 2' MINIMUM HORIZONTALLY FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE AT ALL WATER, SANITARY SEWER CROSSINGS OF ANY OTHER UTILITIES. WHERE THIS CANNOT BE ACHIEVED, ADDITIONAL MEASURES IN ACCORDANCE WITH WVWA STANDARDS SHALL BE ENFORCED.
6. ANY EXISTING APPURTENANCES SHALL BE ADJUSTED TO MATCH GRADE USING NEW FRAME AND COVERS.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE ALL EXISTING UTILITIES LOCATED AND POTHOLED TO VERIFY LOCATIONS. PLAN REVIEW BY THE WVWA DOES NOT REMOVE THE CONTRACTOR'S RESPONSIBILITY TO RELOCATE ANY EXISTING CONFLICTS FOUND DURING CONSTRUCTION.

SANITARY SEWER NOTES

1. ALL SANITARY SEWER CONNECTIONS TO EXISTING LINES SHALL BE COORDINATED WITH AND PERFORMED BY THE WESTERN VIRGINIA WATER AUTHORITY.
2. ALL WATER AND SANITARY SEWER FACILITIES SHALL BE INSTALLED ACCORDING TO THE WESTERN VIRGINIA WATER AUTHORITY DESIGN AND CONSTRUCTION STANDARDS.
3. SANITARY SEWER TAP TO EXISTING MANHOLE TO BE MADE BY CONTRACTOR. MANHOLE CONNECTION MUST BE CORED WITH A BOOT INSTALLED.
4. PROVIDE A TABLE OF LATERAL ELEVATIONS AT SERVICE CLEANOUTS AND MINIMUM BUILDING SEWER ELEVATIONS.

WATER NOTES

1. WESTERN VIRGINIA WATER AVAILABILITY NUMBER: 18-049.
2. ALL WATER CONNECTIONS TO EXISTING LINES SHALL BE COORDINATED WITH AND PERFORMED BY THE WESTERN VIRGINIA WATER AUTHORITY.
3. ALL WATER AND SANITARY SEWER FACILITIES SHALL BE INSTALLED ACCORDING TO THE WESTERN VIRGINIA WATER AUTHORITY DESIGN AND CONSTRUCTION STANDARDS.
4. CONTRACTOR SHALL FURNISH AND INSTALL TAPPING SLEEVE AND VALVE. TAP WILL BE MADE BY THE WVWA. CONTRACTOR IS RESPONSIBLE FOR EXCAVATION AND SHORING PER OSHA REGULATIONS.
5. THE WATER SERVICE FOR THIS PROJECT WILL REQUIRE A CONCRETE VAULT. PLEASE CONTACT CLEAR FLOW AT (540) 942-3300 TO ORDER THE VAULT. THE APPLICANT IS RESPONSIBLE FOR PAYMENT, DELIVERY AND COORDINATION OF THE VAULT, AND INSTALLATION OF THE WATER SERVICE BETWEEN THE AUTHORITY MAIN AND THE VAULT INCLUDING THE TAPPING SLEEVE AND VALVE. CONTRACTOR SHALL EXCAVATE AND INSTALL TAPPING SLEEVE AND VALVE. THE WET TAP WILL BE MADE BY THE AUTHORITY UPON PAYMENT AND SCHEDULING.

LEGEND

NEW	EXISTING	
		CONCRETE CURB
		CONCRETE CURB AND GUTTER
	ASPH	ASPHALT PAVEMENT
CONC	CONC	CONCRETE SIDEW