EROSION AND SEDIMENT CONTROL NARRATIVE

LOCATION

THIS PROPERTY IS LOCATED NORTH OF GOVERNOR BERKELEY RD ON THE WEST SIDE OF RICHMOND ROAD IN THE CITY OF WILLIAMSBURG, VA LOCATED IN JAMES CITY COUNTY.

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE DEVELOPMENT OF A 1-STORY, 7,777 SF FIRESTONE COMPLETE AUTO CARE WITH THE APPROPRIATE AMOUNT OF PARKING AND UTILITIES NECESSARY TO SUPPORT THIS DEVELOPMENT. THE TOTAL AREA TO BE DISTURBED FOR THE DEVELOPMENT IS 2.15 ACRES WITH 1.22 ACRES BEING REDEVELOPED FOR FIRESTONE AND REMAINING AREA TO BE SUBDIVIDED AND REDEVELOPED AT ANOTHER TIME.

EXISTING SITE CONDITIONS

THE EXISTING SITE DRAINS TO THE NORTH SIDE OF THE SITE AND DRAINS THROUGH AN EXISTING OFFSITE STORM PIPE IN AN EASEMENT ACROSS THE SITE TO THE NORTH. THE PIPE EVENTUALLY OUTFALLS TO THE CITY-OWNED SKIPWITH REGIONAL STORMWATER MANAGEMENT FACILITY

OFFSITE AREAS

THE RIGHT-OF-WAY FOR RICHMOND ROAD WILL BE DISTURBED TO CONSTRUCT THE IMPROVEMENTS ASSOCIATED WITH THIS SITE AS WELL AS A SMALL PORTION IN THE EASEMENT TO THE NORTH TO CONNECT POWER TO AN EXISTING TRANSFORMER. NO OTHER OFF-SITE AREAS WILL BE DISTURBED.

ADJACENT AREA

THIS SITE IS LOCATED IN AN AREA OF JAMES CITY COUNTY. THE PARCELS TOWARD NORTH, SOUTH, AND EAST ARE COMMERCIAL USE AND THE AREA TO THE WEST IS RESIDENTIAL.

CRITICAL AREA

THERE ARE A FEW CRITICAL AREAS ON THIS PROJECT, AREA TO THE SOUTH OF THE SITE IS A SHARED ACCESS DRIVE THAT WILL NEED TO REMAIN OPEN AND CLEAR OF DEBRIS.THE WESTERN PORTION OF THE SITE AND THE AREA LOCATED IN AN EASEMENT NORTH OF THE SITE HAVE SEVERAL LARGE TREES THAT WILL NEED TO REMAIN UNDISTURBED.

SOIL CONDITIONS

SEE THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR SOILS MAP AND DESCRIPTION. THE SITE CONSISTS OF MOSTLY DISTURBED LAND WITH AREAS WEST ON THE SITE THAT ARE HEAVILY WOODED.

EROSION AND SEDIMENT CONTROL MEASURES

THE FOLLOWING EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARD OUTLINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (LATEST EDITION):

STRUCTURAL MEASURES

3.02 CONSTRUCTION ENTRANCE
A TEMPORARY ENTRANCE IN ACCORDANCE WITH THE STATE STANDARDS WITH A LENGTH OF AT LEAST 70 LINEAR FEET WILL BE PROVIDED AT THE LOCATION SHOWN ON THE PLANS WHICH IS AT THE APPROXIMATE POINT OF THE PAVED ACCESS. THE ENTRANCE SHALL BE MAINTAINED IN GOOD REPAIR AND SHALL PROVIDE REMOVAL OF DEBRIS FROM VEHICLES PRIOR TO LEAVING THE CONSTRUCTION SITE. WATER FOR THE WASH RACK TO BE PROVIDED BY A WATER TANK TRUCK IF PUBLIC WATER IS NOT AVAILABLE.

3.05 SILT FENCE
SILT FENCING SHALL CONSIST OF SILT FENCING. SILT FENCE SHALL BE PROVIDED FOR PERIMETER CONTROL OR PROTECTION OF EXISTING OUTFALL SWALES THROUGH PLACEMENT AT THE BASE OF DENUDED SLOPE AREAS. INSTALLATION SHALL BE ON CONTOUR IN CONFORMANCE WITH THE STATE RECOMMENDATIONS. MAXIMUM DRAINAGE TO THE SILT FENCE STRUCTURE WILL BE ONE-HALF ACRES PER 100 LINEAR FEET. SILT FENCE SHALL BE INSTALLED PER DETAIL SHEET IV (SHEET C 13).

3.07 STORM DRAIN INLET PROTECTION
INLET PROTECTION SHALL BE PROVIDED AT ALL EXISTING AND PROPOSED INLETS AND SHALL CONSIST OF STRUCTURAL MEASURES OUTLINED IN THE EROSION CONTROL HANDBOOK.MEASURES SHALL CONSIST OF CURB INLET PROTECTION WITH A BLOCK & GRAVEL BARRIER ACROSS THE THROAT OR AN EXCAVATION AND GRAVEL PROTECTION AROUND EXISTING OR PROPOSED YARD INLETS. THE CONTRACTOR SHALL MONITOR STRUCTURAL PROTECTION AND REMOVE DEPOSITED SEDIMENTS WHEN THE CAPACITY OF THE MEASURE HAS BEEN REDUCED BY ONE-HALF.

VEGETATIVE MEASURES

TOPSOILING

3.30 TOP SOIL
TOPSOIL SHALL BE STRIPPED AND STOCKFILED FOR FUTURE USE STOCKPILE SHALL BE PROTECTED WITH ADEQUATE SEDIMENT CONTROL MEASURES. EXCESS TO BE DISPOSED OF AT A SITE WITH ADEQUATE SEDIMENTATION CONTROL MEASURES. TOPSOIL SHALL BE RE-UTILIZED FOR AREAS TO BE VEGETATIVELY STABILIZED TO A DEPTH OF 4 INCHES.

3.31 TEMPORARY SEEDING (PER VESCH 3.31)
SPRING PLANTING (FEBRUARY TO APRIL 30) - ANNUAL RYE GRASS SEED (LOLIUM MULTI-FLORUM) AT 3 LB/1,000 SQ. FT. (60-10 LBS/AC).
SUMMER PLANTING (MAY 1 TO SEPTEMBER 1) - GERMAN MILLET SEED AT 1 LB/1,000 SQ. FT. (50LBS/AC).

FALL PLANTING (SEPTEMBER 1 TO NOVEMBER 15) - 50/50 MIX OF ANNUAL RYE GRASS (LOLIUM MULTI-FLORIUM) (50-100 LBS/AC).

LIME (IF NECESSARY) - 90 LB/1,000 SQ. FT. PULVERIZED AGRICULTURAL LIMESTONE. FERTILIZER (IF NECESSARY) - 10 LB/1,000 SQ. FT. OF 10-20-10 GRAVEL.

MULCHING - APPLY STRAW AT RATE OF 70 - 90 LB/1,000 SQ. FT (MUST BE ANCHORED).

3.32 PERMANENT SEEDING (PER VESCH 3.32)

SEED MIXTURE - 45% YOUKON GOLD BERMUDAGRASS, 45% MAJESTIC BURMUDAGRASS AND 10% CENTIPEDE (COATED) GRASS AT A SEEDING RATE OF - 3 LB/1000 SF.
LIME (IF NECESSARY) - 90 LB/1,000 SQ. FT. PULVERIZED AGRICULTURAL FERTILIZER (IF NECESSARY) - 25 LB/1.000 SQ. FT. OF 5-20-10 AND 7 LB/1,000 SQ. FT. OF 38-8-0 (SPRING); 25 LB/1.000 SQ.FT. OF 10-20-10 AND 7 LB/1,000 SQ. FT. OF 38-0-0 (FALL).
MULCHING - APPLY STRAW AT RATE OF 79-90 LB/1000 SQ. FT.

3.33 SODDING (PER VESCH 3.33)

SOD TYPE SHALL BE BERMUDAGRASS. LIME (IF NECESSARY) - 100 LB/1,000 SQ. FT. OF PULVERIZED AGRICULTURAL DOLOMITE. FERTILIZER (IF NECESSARY) - 25 LB/1,000 SQ. FT. OF 10-10-10 (FALL); 25 LB/1,000 SQ. FT. OF 5-10-10 (SPRING). SODDING DATES - ANY SEASON PROVIDED SOIL SURFACE IS NOT FROZEN; MUST BE HARVESTED, DELIVERED AND INSTALLED WITHIN 36 HOURS.

SPECIFICATIONS FOR SEEDING & SODDING

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. THE SELECTION OF PLANT MATERIAL SHALL BE BASED ON TABLES 3.32A & B OF THE VIRGINIA EROSION CONTROL HANDBOOK AND BE BASED ON CLIMATE, TOPOGRAPHY, SOILS AND SITE CONDITIONS.

SEE EROSION CONTROL PLAN FOR DETAILED CONSTRUCTION SEQUENCE.

PERMANENT STABILIZATION

WHEN THE TOPSOIL IS PLACED, IT SHALL BE LEFT IN A ROUGHENED CONDITION. ALL GRADES ON THE SITE ARE LESS THAN 3:1' THEREFOR, THE SOIL SHOULD BE LIGHTLY ROUGHENED AND LOOSE TO A DEPTH OF 2 INCHES PRIOR TO SEEDING. ROUGHENING SHALL BE COMPLETED IN ACCORDANCE WITH THE SPECIFICATION FOR: CUTS, FILLS, AND GRADED AREAS THAT WILL BE MOWED IN SECTION 3.29 OF THE VAESCH.

ONCE THE TOPSOIL HAS BEEN ROUGHENED , PERMANENT SEEDING SHALL BE APPLIED IMMEDIATELY. AREAS THAT HAVE BEEN PERMANENTLY SEEDED SHALL BE MULCHED IMMEDIATELY AFTER SEEDING. EITHER STRAW OR FIBER MULCH SHALL BE USED, DEPENDING ON WHAT TIME OF THE YEAR THE MULCH IS TO BE PACED. REFER TO SECTION 3.35 IN THE VAESCH FOR MULCH SPECIFICATIONS.

AFTER GRADING ACTIVITIES HAVE BEEN COMPLETED AND ALL DENUDED AREAS HAVE BEEN STABILIZED, SEDIMENT CONTROL MEASURES MAY BE REMOVED FROM THE ENTIRE SITE, AND THE GROUND PERMANENTLY STABILIZED WITH VEGETATION UPON APPROVAL OF THE WYTHE COUNTY INSPECTOR.

STORMWATER MANAGEMENT CONSIDERATIONS

THERE IS AN OVERALL DECREASE IN THE PEAK RATES AFTER THE SITE IS CONSTRUCTED DUE TO LESS IMPERVIOUS SURFACE AFTER DEVELOPMENT.

CALCULATIONS

STORMWATER MANAGEMENT CALCULATIONS ARE PROVIDED UNDER A SEPARATE COVER.

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE MINIMIZED.
2. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE UP SLOPE DRAINAGE AREA HAS BEEN STABILIZED.
3. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER (EXCEPT FOR EXCAVATED, WET STORAGE AREAS WHICH MAY BE AT A MAXIMUM 1:1 GRADE).
4. ADEQUATE DRAINAGE PROTECTION SHALL BE MADE WHENEVER WATER SEEPS FROM A SLOPE FACE.

MAINTENANCE NOTES

1. MAINTENANCE OF THE TEMPORARY CONSTRUCTION ENTRANCE SHALL BE REQUIRED TO PREVENT MUD DEPOSITS FROM ENTERING THE RIGHT-OF-WAY.
2. SILT FENCES SHALL BE INSPECTED AT THE END OF EACH DAY AND AFTER EACH RAINFALL. ANY REQUIRED REPAIRS OR REPLACEMENTS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS WILL BE REMOVED AFTER EACH RAINFALL AND AT ANY TIME THE DEPOSITS REACH APPROXIMATELY ONE-HALF THE WEIGHT OF THE BARRIER.
3. INLET PROTECTION SHALL BE INSPECTED AT THE END OF EACH DAY AND AFTER EACH RAINFALL WITH REQUIRED REPAIRS TO BE MADE IMMEDIATELY.
4. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED IN PLACE UNTIL THE GROUND DISTURBING CONSTRUCTION AND PERMANENT STABILIZATION IS COMPLETE AND SHALL BE REMOVED BY PERMISSION OF THE COUNTY INSPECTOR.
5. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ½ THE DESIGN VOLUME OF THE WET STORAGE. SEDIMENT REMOVAL FROM THE BASIN SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS.
6. FILTER STONE SHALL BE REGULARLY CHECKED TO ENSURE THAT FILTRATION PERFORMANCE IS MAINTAINED. STONE CHOKED WITH SEDIMENT SHALL BE REMOVED AND CLEANED OR REPLACED.
7. THE STONE STRUCTURES SHOULD BE CHECKED REGULARLY TO ENSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. THE HEIGHT OF THE STONE OUTLET SHOULD BE CHECKED SO THAT IT S CENTER IS AT LEAST ONE FOOT BELOW THE TOP OF THE EMBANKMENT.
8. THE SITE SUPERINTENDENT, OR HIS/HER REPRESENTATIVE, SHALL MAKE A VISUAL INSPECTION OF ALL MECHANICAL CONTROLS AND NEWLY STABILIZED AREAS (I.E. SEEDED AND MULCHED AND/OR SODDED AREAS) ON A DAILY BASIS; ESPECIALLY AFTER A HEAVY RAINFALL EVENT TO INSURE THAT ALL CONTROLS ARE MAINTAINED AND PROPERLY FUNCTIONING. ANY DAMAGED CONTROLS SHALL BE REPAIRED PRIOR TO THE END OF THE WORK DAY INCLUDING RE-SEEDING AND MULCHING OR RE-SODDING IF NECESSARY.

GENERAL LAND CONSERVATION NOTES

1. NO DISTURBED AREAS WILL BE DENUDED FOR MORE THAN 14 CALENDAR DAYS UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR OR HIS AGENT.
2. ALL EROSION AND SILTATION CONTROL MEASURES (INCLUDING ANY SILT FENCE/TREE PROTECTION FENCE) ARE TO BE PLACED PRIOR TO, OR AS THE FIRST STEP IN, GRADING. FIRST AREAS TO BE CLEARED ARE TO BE THOSE REQUIRED FOR THE PERIMETER CONTROLS.
3. ALL STORM, WATER AND SANITARY LINES NOT IN THE STREETS ARE TO BE MULCHED AND SEEDED WITHIN 5 DAYS AFTER BACKFILL. NO MORE THAN 150 METERS ARE TO BE OPEN AT ANY ONE TIME.
4. DURING CONSTRUCTION, ALL STORM INLETS SHALL BE PROTECTED WITH INLET PROTECTION DEVICES AS DETAILED ON THE FOLLOWING SHEETS. THESE DEVICES SHALL BE MAINTAINED DURING CONSTRUCTION.
5. ADEQUATE OUTLET PROTECTION AND TEMPORARY OR PERMANENT LINING SHALL BE INSTALLED IN BOTH CONVEYANCE CHANNEL AND RECEIVING CHANNEL BEFORE MADE OPERATIONAL.
6. IF THE MAXIMUM PERIOD FOR DENUDATION IS EXCEEDED AND ANY AREAS REMAIN EXPOSED WITHOUT PROPER COVER, THE COUNTY MAY, IN THE EVENT THE DEVELOPER DOES NOT, INSTALL SUCH GROUND COVER OR OTHER STABILIZING DEVICES AND/OR MATERIAL TO THE MINIMUM EXTENT NECESSARY TO ACHIEVE EROSION AND SEDIMENT CONTROL EQUAL TO THAT WHICH WOULD HAVE FURNISHED BY THE PERMANENT COVER SHOWN ON THE APPROVED PLANS. THE COST OF ANY SUCH TEMPORARY MEASURES TAKEN BY THE COUNTY SHALL BE BORNE BY THE DEVELOPER AND SHALL BE A CHARGE AGAINST THE CONSERVATION DEPOSIT.
7. TEMPORARY DIVERSION, SEEDED AND MULCHED OR SILT FENCE AND OTHER CONTROL MEASURES AS NECESSARY ARE TO BE PLACED AS INDICATED ON THE DRAWINGS PRIOR TO OR AS THE FIRST STEP IN EXCAVATION.

8. WHERE CONSISTENT WITH JOB SAFETY REQUIREMENTS, ALL EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES. NO MATERIAL IS TO BE PLACED IN STREAM BEDS NO STOCKPILE IS PERMITTED. WHERE SOIL IS TO BE PLACED ON DOWNHILL SIDE OF TRENCHES, IT IS TO BE BACK-SLOPED TO DRAIN TOWARD THE TRENCH. WHEN IT IS NECESSARY TO DEWATER THE TRENCHES, THE PUMP DISCHARGE HOSES MUST OUTLET IN A STABILIZED AREA TO AN EXISTING STORM INLET.
9. ALL SUPER SILT FENCE/TREE PROTECTION FENCE SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS, AND TO BE LOCATED ON SITE PER THE EROSION CONTROL SHEET (SHEETS C 4).
10. ALL SUPER SILT FENCE/TREE PROTECTION FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED, AND CHECKED AT THE END OF EACH DAY.

STATE MINIMUM STANDARDS, MS-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. RE-STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
F. COMPLY WITH APPLICABLE SAFETY REGULATIONS.

NOTES
1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL CONFORM TO THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
2. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT WYTHE COUNTY AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

CUT & FILL SLOPES
1. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER (EXCEPT FOR EXCAVATED, WET STORAGE AREA WHICH MAY BE AT A MAXIMUM 1:1 GRADE) AND BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION.
2. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, OR SLOPE DRAIN STRUCTURE.

STATE MINIMUM STANDARDS, MS-19

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.

MS-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. SEE SPECIFICATIONS FOR SEEDING AND SODDING ON THIS SHEET.
MS-2 DURING CONSTRUCTION, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. TEMPORARY PROTECTION AND PERMANENT STABILIZATION SHALL BE APPLIED TO ALL SOIL STOCKPILES ON SITE AND BORROW AREAS OR SOIL INTENTIONALLY TRANSFERRED OFF SITE. SEE TOPSOILING ON THIS SHEET.
MS-3 A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. SEE PERMANENT STABILIZATION NOTE ON THIS SHEET.
MS-4 SEDIMENT BASINS, SEDIMENT 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 UP SLOPE LAND DISTURBANCE TAKES PLACE. SEE EROSION CONTROL PLAN ON SHEET C4.1.
MS-5 STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION. SEE NOTE 3 UNDER CONSTRUCTION SPECIFICATIONS ON THIS SHEET.
MS-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 WITH THIS PROJECT.
MS-7 CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED. SEE CUT AND FILL SLOPES ON THIS SHEET.
MS-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. SEE NOTE #2 UNDER CUT AND FILL SLOPES ON THIS SHEET.
MS-9 WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED. SEE NOTE #7 UNDER CONSTRUCTION SPECIFICATIONS ON THIS SHEET.
MS-10 ALL STORM SEWER INLETS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED. SEE NOTE #4 UNDER GENERAL LAND CONSERVATION NOTES ON THIS SHEET.
MS-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 THE RECEIVING CHANNEL. SEE NOTE #5 UNDER LAND CONSERVATION NOTES ON THIS SHEET.
MS-12 PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT, AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION WORK IN A LIVE WATERCOURSE. NOT APPLICABLE WITH THIS PROJECT.
MS-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 NON-ERODIBLE MATERIAL SHALL BE PROVIDED. NOT APPLICABLE WITH THIS PROJECT.
MS-14 ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET. NOT APPLICABLE WITH THIS PROJECT.
MS-15 THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED. NOT APPLICABLE WITH THIS PROJECT.
MS-16 UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA SHOWN CHAPTER 8 OF VESCH PAGE 22. PROVIDE NOTES (A) THROUGH (F) ON THE SUBMITTED PLANS. SEE STATE MINIMUM STANDARDS, MS-16 ON THIS SHEET.
MS-17 PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE, WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS. SEE NOTE 1 UNDER MAINTENANCE NOTES ON THIS SHEET.
MS-18 ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION AFTER THE PERMISSION OF THE INSPECTOR. SEE EROSION CONTROL (SHEET C4.1).
MS-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. PROPERTIES AND WATERWAYS DOWNSTREAM WILL BE PROTECTED AS PROVEN WITH ADEQUATE STORMWATER OUTFALL ANALYSIS.

GENERAL EROSION NOTES

A. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN AND THE STATE OF VIRGINIA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.

B. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA, EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS AND TOILET FACILITIES. THE EXACT LOCATIONS SHALL BE COORDINATED WITH THE OWNER'S CONSTRUCTION MANAGER.

C. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT BETWEEN THESE MATERIALS AND STORM WATER THAT IS DISCHARGED FROM THE SITE.

D. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN UP FUEL OR CHEMICAL SPILLS AND LEAKS.

E. DUST ON THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.

F. NO RUBBISH, TRASH, GARBAGE OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.

G. ALL STORM WATER POLLUTION PREVENTION MEASURES PRESENTED ON THIS PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE INITIATED AS SOON AS PRACTICABLE.

H. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY WILL STOP FOR AT LEAST 14 DAYS, SHALL BE TEMPORARILY SEEDED IMMEDIATELY.

I. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE PERMANENTLY SEEDED. THESE AREAS SHALL BE SEEDED NO LATER THAN 14 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS. REFER TO THE LANDSCAPING PLAN.

J. IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION ENTRANCE IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE. THE EXACT LOCATIONS SHALL BE COORDINATED WITH THE OWNERS CONSTRUCTION MANAGER.

K. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

L. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.

M. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.

N. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.

O. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, SWP-CI (BIG RED), ETC.) TO HELP PREVENT EROSION AND STORM WATER POLLUTION.

P. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY, THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAINS & UTILITY CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

MAINTENANCE
ALL MEASURES STATED ON THIS EROSION AND SEDIMENT CONTROL PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED.
3. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES 6 INCHES IN HEIGHT ON THE SILT FENCE.
4. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
5. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.

SEQUENCE OF CONSTRUCTION:
1. INSTALL STABILIZED CONSTRUCTION ENTRANCES.
2. PREPARE TEMPORARY PARKING AND STORAGE AREA.
3. CONSTRUCT THE SILT FENCES ON THE SITE.
4. CONSTRUCT THE TEMPORARY SEDIMENTATION AND SEDIMENT TRAP BASINS.
5. CLEAR AND GRUB THE SITE.
6. BEGIN GRADING THE SITE.
7. START CONSTRUCTION OF BUILDING PAD AND STRUCTURES.
8. TEMPORARILY SEED DENUDED AREAS.
9. INSTALL UTILITIES, UNDERDRAINS, STORM SEWERS, CURBS AND GUTTERS.
10. INSTALL INLET PROTECTION DEVICES.
11. INSTALL RIP RAP AROUND OUTLET STRUCTURES.
12. PREPARE SITE FOR PAVING.
13. PAVE SITE.
14. COMPLETE GRADING AND INSTALL PERMANENT SEEDING AND PLANTING.
15. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (ONLY IF SITE IS STABILIZED).

*ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

*ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL CONFORM TO THE LATEST EDITION OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK".

STANDARD EROSION AND SEDIMENT CONTROL NOTES FOR THE CITY OF WILLIAMSBURG, VIRGINIA REVISED JULY 1, 2014

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 plan to confine sediment to the project site, appropriate modifications will be made to correct any plan deficiencies. In addition to these notes, all provisions of the Erosion and Sediment Control Ordinance of the City of Williamsburg (Chapter 7, Article II of Code of the City of Williamsburg) and the Virginia Erosion and Sediment Control Regulations (9VAC25-840 et. seq.) shall apply to this project.

1. All erosion and sediment control measures shall be installed and maintained in accordance with the "Virginia Erosion and Sediment Control Handbook," (VESCH) latest edition. The Contractor shall be thoroughly familiar with all applicable Minimum Standards & Specs (MSS) and Minimum Standards (MS) contained therein that may be pertinent to this project.
2. For disturbances greater than 1 Ac, and where required by City ordinances or State regulations, Contractor shall register for coverage under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Construction Activities. The construction general permit requires the construction site operator to develop and implement a site specific Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must be prepared prior to submitting a registration statement for permit coverage. The SWPPP is to be retained at the construction site along with a copy of the permit and permit coverage letter.
3. The Contractor shall supply the City with the name of the individual who will be responsible for ensuring maintenance of installed measures on a daily basis. If required, this individual shall be the lead in developing, implementing and maintaining the SWPPP and committing the resources necessary to prevent pollution. Maintenance of all erosion and sediment control practices shall be scheduled on a weekly basis and after each runoff producing rainfall event per the VESCH.
4. Erosion and sediment control measures may require minor field adjustments at time of construction to insure their intended purpose is accomplished. City approval will be required for any deviations from the approved plans.
5. Permanent or temporary soil stabilization shall be applied to denuded areas within 7 days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied to denuded areas that may not be at final grade but will remain dormant (undisturbed) for longer than 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.
6. The Contractor shall place soil stockpiles at the locations shown on this plan or as approved by the City. Soil stockpiles shall be stabilized and protected with sediment trapping measures at the toe of slopes. Offsite waste or borrow areas shall be approved by the City prior to the import of any borrow or export of any waste to or from the project site.
7. Temporary soil stabilization measures include vegetative establishment, mulching, and the early application of crushed stone base material on areas to be paved. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, mature enough to survive, and will inhibit erosion. Permanent vegetative cover (stabilization) shall consist of placing top soil, incorporating lime, fertilizing, seeding, and mulching to assure a firm stand of vegetation. Irrigation may be required to ensure establishment of vegetative cover.
8. All temporary or permanent erosion and sediment control practices necessary for retaining sediments on the construction site shall be installed and tree protection fencing shall be erected at the locations as specified on the approved plans prior to any land clearing, grubbing, grading or earth moving activities.
9. Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment onsite must be constructed as a first step in grading and be made functional before upslope land disturbance takes place. Earthen structures such as dams, dikes, and diversions must be seeded and mulched immediately after installation. The basin(s) are to be kept clear of debris and sediments shall be cleaned out periodically during and after construction activities.
10. All slopes steeper than 3:1 shall require the use of erosion control matting (EC-2 or EC-3) to aid in the establishment of a vegetative cover. No slopes shall be created steeper than 2:1 without prior approval from the City.
11. Surface flows over cut and fill slopes shall be controlled by redirecting flows from traversing the slopes or by installing structural devices (paved flumes, channels, or slope drains) to safely convey water down-slope without causing erosion. Adequate drainage or other protection shall be provided to minimize the potential for water seeps from slope faces. Additional slope stabilization measures shall be necessary for slopes found to be eroding excessively within one year of permanent stabilization.
12. Inlet protection in accordance with MSS 3.07 shall be provided for all storm drain inlets as soon as practical following construction. Storm drain and culvert inlet protections, in accordance with MSS 3.07 and 3.08, may be removed at the discretion of the City on a case-by-case basis should placement of the measure result in excessive street flooding or traffic hazard or result in the redirection of drainage onto or toward existing lots, driveways or structures.
13. Paved ditches shall be required wherever erosion is evident. Particular attention shall be paid to those areas where grades exceed 3 percent. Temporary liners, such as polyethylene sheets, shall be provided for all paved ditches until the permanent concrete liner is installed.
14. 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 take precedence over all underground utilities. Outfall ditches from drainage structures shall be stabilized immediately after construction of the structures. This includes installation of outlet protection, erosion control stone, or paved ditches where required. Any drainage outfalls required for a street must be completed before street grading or utility installation begins.
15. Construction within streams shall be such that damage to the existing stream is minimized. Where applicable, temporary stream crossings shall be constructed using non-erodible materials. Contractor shall stabilize bed and banks of a watercourse immediately after the work within the watercourse is complete. All applicable federal, state, and local regulations pertaining to working in or crossing live watercourses shall be addressed.
16. All areas designated for underground utilities shall be stabilized as soon as practical but not exceeding 14 days following their installation and backfilling. Trench length to be opened at any one time is not to exceed 300 feet. Excavated material shall be placed on the uphill side of trenches. Effluent from dewatering operations shall be filtered or passed through approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property.
17. All points of construction ingress and egress shall be protected by a temporary construction entrance to prevent tracking of mud onto public rights-of-way. A right-of-way permit from the City of Williamsburg is required prior to any construction activity within City rights-of-way. Where sediment is transported onto a public street, the road shall be thoroughly cleaned at the end of each day.
18. Temporary erosion control measures are not to be removed until all disturbed areas are stabilized. After stabilization is complete, and upon approval by the City, all measures shall be removed within 30 days. Trapped sediment shall be spread and seeded.
19. Concentrated runoff leaving the development site shall discharge to an adequate channel, pipe, or storm sewer system. Outfalls from a detention facility discharging to a receiving channel shall have adequate energy dissipators provided. Increased volumes of sheet flows shall be diverted to a stable outlet, adequate channel, pipe or storm sewer system, or detention facility. All measures shall be employed in a manner that minimizes impacts to state waters and downstream properties.
20. Record Drawings (As-Builts) are required for all stormwater management/BMP facilities. Also upon completion, the construction of all stormwater management/BMP facilities shall be certified by a professional engineer who inspected the structure during construction. The certification shall state that to the best of their judgment, knowledge, and belief, the structure was constructed in accordance with the approved plans and specifications.

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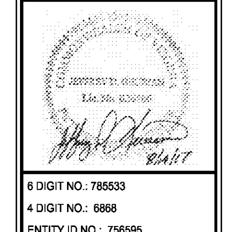

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