

EROSION & SEDIMENT NARRATIVE

PROJECT DESCRIPTION:

THIS PROPERTY IS LOCATED ON A VACANT PARCEL, SOUTHWEST OF THE INTERSECTION OF DEACON ROAD AND CLEMSON DRIVE IN STAFFORD COUNTY, VIRGINIA. THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT AN O'REILLY AUTO PARTS WITH ASSOCIATED PARKING AND SITE IMPROVEMENTS ON THE UNDISTURBED SITE. THE TOTAL DISTURBED AREA FOR THE CONSTRUCTION ACTIVITY IS ANTICIPATED TO BE APPROXIMATELY 1.02 ACRES UPON COMPLETION OF THE PROJECT. THERE IS ONE (1) ACRES OF IMPERVIOUS AREA WITHIN THE DISTURBED AREA.

EXISTING SITE CONDITIONS:

THE EXISTING 0.98 ACRE SITE IS CURRENTLY A VACANT SITE THAT HAS BEEN CROPPED FOR DEVELOPMENT AND CONSISTS CURRENTLY OF MAINTAINED GRASSES AND SCATTERED TREES. THE SITE SLOPES VARY FROM 1% TO 20% WITH THE STEEPEST SLOPES BEING AT THE NORTHEAST AND SOUTHWEST CORNERS OF THE PROJECT BOUNDARY. THERE IS ONE (1) ACRES OF OPEN (PO) ON THIS SITE. FOR ANALYSIS PURPOSES THE WATER DRAINING TO THIS POINT CONSISTS OF 0.2 ACRES OF DISTURBED AREA. DRAINAGE WILL BE IMPROVED BY GRADING THE PARKING LOT SO THAT THERE IS A MINIMUM OF A ONE PERCENT SLOPE TO ANY DRAINAGE STRUCTURE. A SWALE HAS BEEN LOCATED ON THE EAST SIDE OF THE BUILDING TO ENSURE THAT WATER IS DIRECTED AWAY FROM THE BUILDING. THE PROPOSED STORMWATER MANAGEMENT FACILITY WILL DETAIN WATER FROM THE SITE TO MEET WATER QUANTITY REQUIREMENTS.

ADJACENT AREAS:

THE PROPERTY IS BORDERED TO THE SOUTH BY A VACANT LOT AND PRIVATE ACCESSIBLE. THE PROPERTY IS BORDERED TO THE WEST BY AN EXISTING DRIBBERY STONE AND PARKING LOT. THE PROPERTY IS BORDERED TO THE NORTH BY DEACON ROAD. THE PROPERTY IS BORDERED TO EAST BY CLEMSON DRIVE.

OFF-SITE AREAS:

NO OFF-SITE AREAS REQUIRED FOR EXPORT OF MATERIALS ARE ANTICIPATED WITH THE PROJECT. IF EXCAVATED MATERIAL IS GENERATED, IT SHALL BE DISPOSED OF IN A lawful MANNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE HAIL ROUTE WITH THE JURISDICTIONAL INSPECTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE ALL OFF-SITE HAIL/BORROW AREAS ARE PROPERLY RESTORED.

SOILS:

PER NRCS INFORMATION, 55% OF THE SITE IS CLASSIFIED AS SOIL TYPE Bm2c, BOURNE FINE SANDY LOAM. THIS TYPE OF SOIL IS NOT WELL DRAINED, THE DRAINAGE CLASS IS 1% OF THE TOTAL DISTURBED AREA. THE REMAINING 45% AS AN ALLUVIAL LAND, WET THIS TYPE OF SOIL IS NOT WELL DRAINED, THE HYDROLOGIC SOIL CLASSIFICATION IS D.

CRITICAL AREAS:

NO CRITICAL AREAS SUCH AS CHANNELS, OR UNDERGROUND SPRINGS HAVE BEEN IDENTIFIED WITHIN THE PROJECT BOUNDARY. PROPOSED STEEP SLOPES ARE TO BE REINFORCED WITH SOIL STABILIZATION BANKS AND MATTING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE APPROPRIATE SAFETY MEASURES AND CONTROL MEASURES DURING THE CONSTRUCTION ACTIVITIES.

EROSION AND SEDIMENT CONTROL MEASURES:
UNLESS OTHERWISE NOTED ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED TO THE MINIMUM STANDARD OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH) SHALL BE ADHERED TO UNLESS OTHERWISE APPROVED BY A VARIANCE.

SPECIFIC EROSION AND SEDIMENT MEASURES UTILIZED IN THIS PROJECT INCLUDE THE FOLLOWING:

- SAFETY FENCE - 3.01 - A PROTECTIVE BARRIER INSTALLED TO PREVENT ACCESS TO AN EROSION CONTROL MEASURE. SAFETY FENCE SHALL BE INSTALLED AROUND THE LIMITS OF DISTURBANCE AS SHOWN ON THE PLAN TO PREVENT TRAFFIC ON SITE.
- TEMPORARY CONSTRUCTION ENTRANCE - 3.02 - A TEMPORARY CONSTRUCTION ENTRANCE WITHOUT A WASH RACK SHALL BE INSTALLED PRIOR TO THE CONSTRUCTION ACTIVITIES. SAFETY FENCE SHALL BE REQUIRED TO PROTECT THEIR WHEELS BEFORE EXISTING THE PROPERTY.
- SILT FENCE - 3.05 - A PROTECTIVE BARRIER TO INTERCEPT AND DETAIN SILT. SUPER SILT FENCE - N/A - A REINFORCED SILT FENCE TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM DISTURBED AREAS DURING CONSTRUCTION OPERATIONS IN ORDER TO PREVENT SEDIMENT FROM LEAVING THE SITE.
- SUPER SILT FENCE - N/A - A REINFORCED SILT FENCE TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM DISTURBED AREAS DURING CONSTRUCTION OPERATIONS IN ORDER TO PREVENT SEDIMENT FROM LEAVING THE SITE.
- STORM DRAIN INLET PROTECTION - 3.07 - ALL STORM SEWER INLETS SHALL BE PROTECTED WITH THE INSTALLATION OF VARIOUS KINDS OF SEDIMENT TRAPPING MEASURES.
- TEMPORARY DIVERSION DIKE - 3.09 - A TEMPORARY RIDGE OF COMPACTED SOIL CONSTRUCTED AT THE TOP OR BASE OF A SLOPING DISTURBED AREA TO DIVERT FLOW.
- OUTLET PROTECTION - 3.18 - STRUCTURALLY LINED APRONS OR OTHER ACCEPTABLE ENERGY DISSIPATING DEVICES PLACED AT THE OUTLETS OF PIPES OR OTHER CONVEYANCE SYSTEMS.
- ROCK CHECK DAMS - 3.20 - SMALL TEMPORARY STONE DAMS CONSTRUCTED ACROSS A SMALL OR DRAINAGE DITCH.
- TEMPORARY SEEDING - 3.31 - ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS TO PREVENT EROSION WITH APPROPRIATE RAPIDLY GROWING ANNUAL PLANTS.
- PERMANENT SEEDING - 3.32 - ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER BY PLANTING SEEDS TO REDUCE EROSION AND DECREASE SEDIMENT YIELD. IMPROVED WILDLIFE HABITAT, ENHANCE NATURAL SCENICITY AND TO PERMANENTLY STABILIZE DISTURBED AREAS IN A MANNER THAT IS ECONOMICALLY ADAPTABLE TO SITE CONDITIONS, AND ALLOWS SELECTION OF THE MOST APPROPRIATE SEED MATERIALS.
- SOIL STABILIZATION BANKNETS & MATTING - 3.36 - THE INSTALLATION OF A PROTECTIVE COVERING (BLANKET) OR A SOIL STABILIZATION MAT ON A SHORELINE PLANTING AREA OF A STEEP SLOPE, CHANNEL OR SHORELINE.
- TREE PRESERVATION AND PROTECTION - 3.38 - PROTECTION OF DESIRABLE TREES FROM MECHANICAL AND OTHER INJURY DURING LAND DISTURBING AND CONSTRUCTION ACTIVITY.
- DUST CONTROL - 3.39 - REDUCING SURFACE AND AIR MOVEMENTS OF DUST DURING LAND DISTURBING, DEMOLITION AND CONSTRUCTION ACTIVITIES.

MAINTENANCE PROGRAM:

SAFETY FENCE - 3.01 - THE MEASURE SHALL BE INSPECTED WEEKLY AND AFTER EVERY RAINFALL AND REPAIRS MADE AS NEEDED. SAFETY FENCE SHALL BE CHECKED REGULARLY FOR WEATHER RELATED OR OTHER DAMAGE. ANY NECESSARY REPAIRS MUST BE MADE IMMEDIATELY. CARE SHOULD BE TAKEN TO SECURE ALL ACCESS POINTS (GATES) AT THE END OF EACH WORKING DAY.

TEMPORARY CONSTRUCTION ENTRANCE - 3.02 - THE MEASURE SHALL BE INSPECTED WEEKLY AND AFTER EVERY RAINFALL AND REPAIRS MADE AS NEEDED. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRAFFIC OR FLOW OF MUD OR PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH CRUSHED STONE OR THE WASHING AND REPAIR AND/OR CLEANING OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY. THE USE OF WATER TRUCKS TO REMOVE MATERIAL DROPPED, WASHED, OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.

SILT FENCE - 3.05 - SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. CARE SHOULD BE TAKEN TO SECURE ALL ACCESS POINTS (GATES) AT THE END OF EACH WORKING DAY. THE FABRIC ON A SILT FENCE SHOULD BE REMOVED AT THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE REMOVED IMMEDIATELY. THE FABRIC SHOULD BE REUSED. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. SEDIMENT MUST BE REMOVED WHEN THE LEVEL OF DEPOSITS REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. ANY LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

SUPER SILT FENCE - N/A - SUPER SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. CARE SHOULD BE TAKEN TO SECURE ALL ACCESS POINTS (GATES) AT THE END OF EACH WORKING DAY. THE FABRIC ON A SILT FENCE SHOULD BE REMOVED AT THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE REMOVED IMMEDIATELY. THE FABRIC SHOULD BE REUSED. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. SEDIMENT MUST BE REMOVED WHEN THE LEVEL OF DEPOSITS REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. ANY LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

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EROSION AND SEDIMENT CONTROL MINIMUM STANDARDS (MS-19)

MS-1: PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENuded AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADING. APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. ANY LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

R-1: TEMPORARY SOIL STABILIZATION WILL BE APPLIED TO NEWLY GRADED AND DENuded AREAS THAT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 7 DAYS. PERMANENT STABILIZATION WILL BE APPLIED WITHIN 14 DAYS TO DENuded AREAS WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED FOR LONGER THAN 14 DAYS.

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

R-2: ALL STOCKPILES WILL BE STABILIZED AND PROTECTED WITH SEDIMENT TRAPPING MEASURES.

MS-3: A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENuded AREAS NOT OTHERWISE STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GOOD STAND IS IN PLACE. IT IS UNIFORM, MATURE ENOUGH TO SURVIVE, AND WILL INHIBIT EROSION.

R-3: PERMANENT VEGETATION WILL BE PROVIDED FOR ALL DENuded AREAS.

MS-4: SEDIMENT BASINS AND TRAPS, PERMETER 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.

R-4: SILT FENCE, DIVERSION DIKES, AND CHECK DAMS ARE PROPOSED TO MAINTAIN THE INTEGRITY OF THE BASIN DURING CONSTRUCTION. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

R-8: STABILIZATION MEASURES SHALL BE APPLIED TO PROPOSED CHECK DAMS AND DIVERSION DIKES IMMEDIATELY AFTER INSTALLATION.

MS-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 (3) ACRES.
B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE (3) 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 ORIGINAL 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.

R-6: NOT APPLICABLE.

MS-7: CUT AND FILL SLOPES SHALL BE ASSIGNED AND CONSTRUCTED TO MEET THE MINIMUM 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.

R-7: CUT AND FILL SLOPES WILL 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.

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.

R-8: CONCENTRATED RUN-OFF IS NOT EXPECTED DURING CONSTRUCTION. ANY CONCENTRATED RUN-OFF ENCOUNTERED DURING CONSTRUCTION WILL BE CONTAINED WITHIN THE CHANNEL, FLUME OR SLOPE DRAIN.

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

R-8: CONTRACTOR SHALL PROVIDE ADEQUATE MEASURES ARE PROVIDED TO PREVENT EROSION.

MS-10: 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.

R-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.

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 RECEIVING CHANNEL.

R-11: STORMWATER CONVEYANCE CHANNELS WILL HAVE ADEQUATE LININGS AND OUTFALL TO PREVENT EROSION.

MS-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. NON-ERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NON-ERODIBLE COVER MATERIALS.

R-12: NOT APPLICABLE. THE PROPOSED WORK DOES NOT CROSS A LIVE WATERCOURSE.

MS-13: WHEN A LIVE WATERCOURSE SHALL BE CROSSED BY CONSTRUCTION DEVICES MORE THAN TWICE IN ANY SIX (6) MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NON-ERODIBLE MATERIALS SHALL BE PROVIDED.

R-13: NOT APPLICABLE. THE PROPOSED WORK DOES NOT CROSS A LIVE WATERCOURSE.

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

R-14: NOT APPLICABLE. THE PROPOSED WORK DOES NOT CROSS A LIVE WATERCOURSE.

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

R-15: NOT APPLICABLE. THE PROPOSED WORK DOES NOT CROSS A LIVE WATERCOURSE.

ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA.

- NO MORE THAN 500 LINEAR FEET OF TRENCH SHALL BE OPENED AT ONE TIME.
- EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
- 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.
- MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
- RE-STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
- APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

R-16: INSTALLATION OF PROPOSED UNDERGROUND UTILITY LINES SHALL FOLLOW THE ABOVE STANDARDS.

MS-17: WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE TRACKING ON THE PAVED SURFACE. ANY AND ALL MATERIAL OR DEBRIS TRACKED ONTO A PUBLIC OR PRIVATE ROAD SURFACE WILL BE REMOVED THOROUGHLY AT THE END OF EACH DAY BY THE CONTRACTOR. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT. EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BUNDLES OF STRAW OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.

R-17: A PROPOSED CONSTRUCTION ENTRANCE / EXIT HAS BEEN PLACED TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ON THE PAVED SURFACE. ANY AND ALL MATERIAL OR DEBRIS TRACKED ONTO A PUBLIC OR PRIVATE ROAD SURFACE WILL BE REMOVED THOROUGHLY AT THE END OF EACH DAY BY THE CONTRACTOR. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A SEDIMENT CONTROLLED DISPOSAL AREA.

MS-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 PERMITS 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.

R-18: TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WILL BE REMOVED UPON APPROVAL BY THE COUNTY INSPECTOR AND ANY AREA DISTURBED BY THE REMOVAL WILL BE IMMEDIATELY STABILIZED.

MS-19: PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASED 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.

- CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED INTO EITHER TO 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. PIPE OR PIPE STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.
- ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
 - THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA OF THE POINT OF ANALYSIS WITHIN THE CHANNEL BE HUNDREDS TIMES GREATER THAN THE TOTAL DRAINAGE AREA OF THE PROJECT IN QUESTION.
 - NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO (2) YEAR STORM TO VERIFY THAT THE CHANNEL WILL NOT OVERTOP CHANNEL BANKS, NOR THE EROSION OF CHANNEL BED OR BANKS, AND
 - ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN (10) YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS BY THE USE OF A TWO (2) YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS, AND PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN (10) 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:

- IMPROVE THE CHANNEL TO A CONDITION WHERE A TEN (10) YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO (2) YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL BED OR BANKS.
- IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN (10) YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES OR
- DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO (2) YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN (10) YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL.
- 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 TO RECEIVE 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.

I. 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.

R-19: SEE STORMWATER MANAGEMENT NARRATIVE ON SHEET C3.4

EROSION CONTROL NOTES DURING WINTER CONSTRUCTION

1. WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15

2. WATER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.

3. EXPOSED AREA SHOULD BE LIMITED TO THAT WHICH CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOOW EVENT.

4. CONTINUATION OF EARTHWORK OPERATION ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.

5. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR STRAW AT A RATE OF 100 LB PER 1,000 SQUARE FEET WITH OR WITHOUT SEEDING OR DORMANT SEEDED, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE.

6. BETWEEN THE DATES OF OCTOBER 15 AND APRIL 15, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE TEMPORARY AREA HAS BEEN LOAMED, FINAL GRADED AND IS SMOOTH THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 200 - 300% HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED.

7. CONSTRUCTION CONTINUES DURING FREEZING WEATHER. ALL EXPOSED AREAS SHALL BE CONTINUOUSLY GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT UNEXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BUNDLES OF STRAW OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.

8. MULCHING REQUIREMENTS:

7.1. BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH TRACKING ON THE PAVED SURFACE, ANY AND ALL MATERIAL OR DEBRIS TRACKED ONTO A PUBLIC OR PRIVATE ROAD SURFACE WILL BE REMOVED THOROUGHLY AT THE END OF EACH DAY BY THE CONTRACTOR. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A SEDIMENT CONTROLLED DISPOSAL AREA.

7.2. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN AREAS WITH SLOPES GREATER THAN 15% AFTER OCTOBER 15TH THAT APPLIES FOR ALL SLOPES GREATER THAN 5%.

7.3. AFTER NOVEMBER 1ST THE CONTRACTOR SHALL APPLY DORMANT SEEDING TO ALL AREAS ANCHORED ON ALL BARE EARTH AT THE END OF EACH WORKING DAY.

7.4. DURING THE WINTER CONSTRUCTION PERIOD, ALL SNOOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING TO BE PLANTED.

7.5. STOCKPILING OF MATERIALS (E.G. WOOD, CONSTRUCTION MATERIALS, ETC.) MUST REMAIN COVERED AT ALL TIMES TO MINIMIZE ANY DUST PROBLEMS THAT MAY OCCUR WITH ADJACENT PROPERTIES. TO PROTECT MAXIMUM PROTECTION AGAINST EROSION, STOCKPILES SHALL BE COVERED WITH MULCH.

7.6. EXISTING ON-SITE BASIN STRUCTURES SHALL BE PROTECTED UNTIL SUCH TIME AS THEY ARE REMOVED.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

SOURCE: TABLE 6-1, CHAPTER 6, VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK

E6.1 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 4VAC50-30 EROSION AND SEDIMENT CONTROL REGULATIONS.

E6.2 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.

E6.3 ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING AND GRADING.

E6.4 A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLANS SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

E6.5 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.

E6.6 THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES AS NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

E6.7 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.

E6.8 DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

E6.9 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.

E6.10 SEEDING OPERATIONS SHALL BE INITIATED WITHIN 7 DAYS AFTER REACHING FINAL GRADE OR UPON COMPLETION OF GRADING OPERATIONS FOR A SPECIFIC AREA.

E6.11 PERMANENT VEGETATION SHALL NOT BE CONSIDERED ADEQUATELY STABILIZED UNTIL THE VEGETATION IS UNIFORM IN HEIGHT, THICK ENOUGH TO PREVENT EROSION AND MATURE ENOUGH TO SURVIVE.

E6.12 THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING SURFACE AND AIR MOVEMENT OF DUST FROM EXPOSED SOILS WHICH MAY PRESENT HEALTH HAZARDS, TRAFFIC SAFETY PROBLEMS, OR HARM ANIMAL OR PLANT LIFE.



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