

STATE IMPOSED MINIMUM STANDARDS - 9VAC25-840-40

THE FOLLOWING STANDARDS ARE TO BE PROVIDED OR ADDRESSED ON EVERY DEVELOPMENT PROJECT EXCEEDING 5000 S.F. IN AREA OF DISTURBANCE. THESE STANDARDS ARE CONSIDERED A MINIMUM AND MAY REQUIRE ADDITIONAL MEASURES AS DEEMED NECESSARY BY THE LOCAL VIRGINIA EROSION & SEDIMENT CONTROL PROGRAM AUTHORITY OR THE CONSULTING ENGINEER.

CRITERIA, TECHNIQUE OR METHOD	REMARKS
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.	SELF-EXPLANATORY. THE BLD SHALL BE RESPONSIBLE TO INSURE COMPLIANCE WITH THIS STANDARD. TEMPORARY & PERMANENT SEEDING SPECIFICATIONS ARE PROVIDED ON THIS SHEET.
2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES 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.	NOT APPLICABLE. AREA HAS BEEN PREVIOUSLY GRADED AND CURRENT LIMITS OF DISTURBANCE CONTAINS MINIMAL AMOUNTS OF SOIL THAT WILL REQUIRE STOCKPILING.
3. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS 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.	SELF-EXPLANATORY. THE BLD SHALL BE RESPONSIBLE TO INSURE COMPLIANCE WITH THIS STANDARD.
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 UP-SLOPE LAND DISTURBANCE TAKES PLACE.	SELF-EXPLANATORY. THE BLD SHALL BE RESPONSIBLE TO INSURE COMPLIANCE WITH THIS STANDARD.
5. STABILIZATION METHODS SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.	SELF-EXPLANATORY. THE BLD SHALL BE RESPONSIBLE TO INSURE COMPLIANCE WITH THIS STANDARD.
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 OUTLET SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.	NOT APPLICABLE. NO EXCAVATED SEDIMENT TRAPPING FACILITIES ARE REQUIRED BASED ON THE DRAINAGE AREA.
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 90 DAYS OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SOIL STABILIZATION MEASURES UNTIL THE PROBLEM IS CORRECTED.	SELF-EXPLANATORY. THE BLD SHALL BE RESPONSIBLE TO INSURE COMPLIANCE WITH THIS STANDARD.
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.	SELF-EXPLANATORY. THE BLD SHALL BE RESPONSIBLE TO INSURE COMPLIANCE WITH THIS STANDARD. NO CONCENTRATED FLOWS ARE ALLOWED.
9. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.	THE BLD SHALL BE RESPONSIBLE TO INSURE COMPLIANCE WITH THIS STANDARD AND REPORT ANY EVIDENCE TO THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY. ADDITIONAL MEASURES MAY BE REQUIRED.
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.	SELF-EXPLANATORY. THE BLD SHALL BE RESPONSIBLE TO INSURE COMPLIANCE WITH THIS STANDARD.
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.	NOT APPLICABLE. NO NEW CONVEYANCE CHANNELS OR PIPES ARE PROPOSED.
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 CONFERMAS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NON-ERODIBLE COVER MATERIALS.	NOT APPLICABLE. NO LIVE WATERCOURSES ARE LOCATED WITHIN THE LIMITS OF DISTURBANCE.
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. NO LIVE WATERCOURSES ARE LOCATED WITHIN THE LIMITS OF DISTURBANCE.
14. ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.	NOT APPLICABLE. NO LIVE WATERCOURSES ARE LOCATED WITHIN THE LIMITS OF DISTURBANCE.
15. THE BEDS AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	NOT APPLICABLE. NO LIVE WATERCOURSES ARE LOCATED WITHIN THE LIMITS OF DISTURBANCE.
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 DE-WATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR 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 COMPLETED IN ACCORDANCE WITH THIS CHAPTER. F) APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.	SELF-EXPLANATORY. THE BLD SHALL BE RESPONSIBLE TO INSURE COMPLIANCE WITH THIS STANDARD. NO CONCENTRATED FLOWS ARE ALLOWED.
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.	SELF-EXPLANATORY. THE BLD SHALL BE RESPONSIBLE TO INSURE COMPLIANCE WITH THIS STANDARD.
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 VESCP 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.	SELF-EXPLANATORY. PER REQUIREMENTS OF THE CITY OF ROANOKE IT SHALL BE NOTED THAT NO EROSION CONTROL STRUCTURAL MEASURES INDICATED ON THESE PLANS ARE TO BE REMOVED WITHOUT APPROVAL FROM THE CITY.
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 SHALL BE PERFORMED TO VERIFY THAT THE PIPE OR PIPE SYSTEM SHALL BE CAPABLE OF HANDLING THE DISCHARGE. 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) THE 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; (3) 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 (4) 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 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 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 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 (1) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (2) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (3) 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 1.5, 2 AND 10-YEAR, 24-HOUR STORMS IN A GOOD FORESTED CONDITION, WHEN THE PEAK FLOW RATE IS REDUCED 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 LOC. #621-14.15-54 OR #621-14.15-55 OF THE ACT. M) FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF LOC. #621-14.15-52 OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUALITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (LOC. #621-14.15-24 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 9VAC25-840-40 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (SMP) REGULATIONS. N) COMPLIANCE WITH THE WATER QUALITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (SMP) REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF SUBDIVISION 19 OF THIS SUBSECTION. DUE TO THE SIMPLICITY OF THE PROJECT, THE DESIGN ENGINEER WILL RESPOND BY SHOWING COMPLIANCE WITH SUBSECTION N. IN RESPONSE TO 9VAC25-870-66: A. REGULATORY INFORMATION - NO ACTION REQUIRED. B. CHANNEL PROTECTION - A REVIEW OF THE CONSTRUCTION PLANS INDICATES THAT NO NEW CONCENTRATED STORMWATER FLOWS ARE BEING CREATED. THE PLANS ALSO IDENTIFY THAT THERE ARE NOT ANY EXISTING FORMS OF CONCENTRATED STORMWATER FLOW WITHIN THE LIMITS OF DISTURBANCE. C. FLOOD PROTECTION - A REVIEW OF THE CONSTRUCTION PLANS INDICATES THAT NO NEW CONCENTRATED STORMWATER FLOWS ARE BEING CREATED. THE PLANS ALSO IDENTIFY THAT THERE ARE NOT ANY EXISTING FORMS OF CONCENTRATED STORMWATER FLOW WITHIN THE LIMITS OF DISTURBANCE. D. INCREASED VOLUMES OF SHEET FLOW - A REVIEW OF THE CONSTRUCTION PLANS INDICATES THAT THERE ARE NO NEW IMPERVIOUS AREAS PROPOSED THAT WOULD CREATE AN INCREASE IN STORMWATER FLOWS. THERE ARE NO PROPOSED OR EXISTING LEVEL SPREADERS LOCATED WITHIN THE LIMITS OF DISTURBANCE THAT ARE BEING UTILIZED TO PHYSICALLY SPREAD ANY FORMS OF CONCENTRATED STORMWATER FLOW. E. RUNOFF COMPUTATIONS - NO ACTION REQUIRED. F. RUNOFF CHARACTERISTICS - NO ACTION REQUIRED.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- ALL SOIL EROSION & SEDIMENT CONTROL MEASURES SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
- THE APPROVING AUTHORITY MAY ADD TO, DELETE, RELOCATE, CHANGE, OR OTHERWISE MODIFY CERTAIN EROSION AND SEDIMENT CONTROL MEASURES WHERE FIELD CONDITIONS ARE ENCOUNTERED THAT WARRANT SUCH MODIFICATIONS.
- ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLAN SHALL BE PLACED IN ADVANCE OF THE WORK BEING PERFORMED.
- IN NO CASE DURING CONSTRUCTION SHALL WATER RUNOFF BE DIVERTED OR ALLOWED TO FLOW TO LOCATIONS WHERE ADEQUATE PROTECTION HAS NOT BEEN PROVIDED.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LEAVE THE SITE ADEQUATELY PROTECTED AGAINST EROSION, SEDIMENTATION, OR ANY DAMAGE TO ANY ADJACENT PROPERTY AT THE END OF EACH DAY'S WORK.
- FOR THE EROSION CONTROL KEY SYMBOLS SHOWN ON THE PLANS, REFER TO THE VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL PRACTICES CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

TS TEMPORARY SEEDING

DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE STABILIZED WITH TEMPORARY SEEDING MEASURES AS SHOWN HEREIN, AND AS FURTHER DETAILED AS "STANDARD AND SPECIFICATION 3.31 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK", LATEST EDITION. IN ADDITION TO AREAS OF GENERAL GRADING THAT WILL NOT BE FINE-GRADED FOR GREATER THAN 30 DAYS, THE FOLLOWING SPECIFIC EAS MEASURES SHALL BE STABILIZED WITH TEMPORARY SEEDING IMMEDIATELY UPON COMPLETION OF CONSTRUCTION OF THE TEMPORARY MEASURE:

- SOIL STOCKPILES
 - DAMS, DIKES, AND SIDES OF SEDIMENT BASINS
 - TEMPORARY ROADWAY EMBANKMENTS
- PRIOR TO SEEDING, INSTALL NECESSARY EROSION CONTROL PRACTICES SUCH AS DIKES, WATERWAYS, AND BASINS. PROVIDE PLANTS AS SPECIFIED HEREIN, OR ENGINEER-APPROVED EQUAL.
- SEEDING PREPARATION:
LIME SHALL BE APPLIED IF DISTURBED AREAS WILL REMAIN DORMANT BETWEEN 30 DAYS AND 120 DAYS. IF REQUIRED, LIME SHALL BE APPLIED AS SHOWN, BASED ON SOIL ACIDITY.
- PHL APPLICATION OF AGRICULTURAL LIMESTONE
- | | |
|------------|-------------------|
| BELOW 4.2 | 3 TONS PER ACRE |
| 4.2 TO 5.2 | 2 TONS PER ACRE |
| 5.2 TO 6.0 | 1 TON PER ACRE |
| ABOVE 6.0 | LIME NOT REQUIRED |

FERTILIZER SHALL BE APPLIED AS 600 LBS/ACRE OF 10-20-10 OR EQUIVALENT NUTRIENTS. LIME (AS APPLICABLE) AND FERTILIZER SHALL BE INCORPORATED INTO THE TOP 2 TO 4 INCHES OF SOIL, IF POSSIBLE.

SURFACE ROUGHENING SHALL BE REQUIRED WHERE AREAS TO BE SEEDING HAVE BEEN COMPACTED, CRUSTED, OR HARDENED BY CONSTRUCTION TRAFFIC. AS REQUIRED, SEEDBEDS SHALL BE ROUGHENED IN ACCORDANCE WITH STANDARD AND SPECIFICATION 3.29 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. (TRACKING WITH BULLDOZER CLEATS SHALL BE USED IN SANDY SOILS)

SEEDING:
SEED SHALL BE EVENLY APPLIED WITH THE SAME MEANS SPECIFIED HEREIN FOR PERMANENT SEEDING. SMALL GRAINS SHALL BE PLANTED NO MORE THAN ONE INCH DEEP. GRASSES AND LEGUMES SHALL BE PLANTED WITH NO LESS THAN 1/4" OF SOIL COVER.

MULCHING:
SEEDINGS MADE IN FALL FOR WINTER COVER AND DURING HOT AND DRY SUMMER MONTHS SHALL BE MULCHED ACCORDING TO STANDARD AND SPECIFICATION 3.35 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, EXCEPT THAT FIBER MULCH MAY NOT BE USED. STRAW MULCH SHALL BE USED DURING THESE PERIODS.

TEMPORARY SEEDINGS MADE UNDER FAVORABLE SOIL AND SITE CONDITIONS DURING OPTIMUM SPRING AND FALL SEEDING DATES MAY NOT REQUIRE MULCH.

RE-SEEDING:
AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION SHALL BE RE-SEEDING AS SOON AS SUCH AREAS ARE IDENTIFIED.

ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS BY RANGE OF PLANTING DATES:

09/01 to 02/15	ANNUAL RYEGRASS @ 50 LB / ACRE WINTER RYE @ 50 LB / ACRE
02/16 to 04/30	ANNUAL RYEGRASS @ 100 LB / ACRE GERMAN MILLET @ 50 LB / ACRE
05/01 to 08/31	

PS PERMANENT SEEDING MIXTURE

DISTURBED AREAS SHALL BE PERMANENTLY SEEDING WITHIN SEVEN (7) DAYS OF ACHIEVING FINAL GRADE, OR ON DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE WITHIN ONE YEAR.

AREAS SHOWN WITHIN THESE SITE CONSTRUCTION PLANS AS RECEIVING PERMANENT SEEDING SHALL BE COORDINATED WITH THE LANDSCAPING PLANS (SEE LANDSCAPING NOTE, SHEET C-02). THE PERMANENT SEEDING MIXTURES, AND AREAS OF PERMANENT SEEDING SHOWN ON SHEET C-03 AND THIS SHEET ARE FOR EROSION CONTROL PURPOSES ONLY. IF THE SEEDING AREAS OR MIXTURES SHOWN HEREON DIFFER FROM THOSE REQUIRED BY THE LANDSCAPING PLANS, THE LANDSCAPING PLANS SHALL GOVERN.

DATE	TYPE A	TYPE B (SLOPES 3:1 OR STEEPER)
03/15 to 05/15 OR 08/16 to 10/31:	ANNUAL RYEGRASS @ 20 LB / ACRE RED TOP @ 2 LB / ACRE TALL FESCUE @ 150 LB / ACRE	CROWN VETCH @ 20 LB / ACRE ANNUAL RYEGRASS @ 20 LB / ACRE RED TOP @ 20 LB / ACRE KY 31 FESCUE @ 108 LB / ACRE
05/16 to 08/15:	FOXTAIL MILLET @ 20 LB / ACRE RED TOP @ 20 LB / ACRE TALL FESCUE @ 150 LB / ACRE	05/16 to 08/15: CROWN VETCH @ 20 LB / ACRE FOXTAIL MILLET @ 20 LB / ACRE RED TOP @ 20 LB / ACRE KY 31 FESCUE @ 108 LB / ACRE
11/01 to 02/28:	WINTER RYE @ 20 LB / ACRE RED TOP @ 20 LB / ACRE TALL FESCUE @ 150 LB / ACRE	11/01 to 02/28: CROWN VETCH @ 20 LB / ACRE WINTER RYE @ 20 LB / ACRE RED TOP @ 20 LB / ACRE KY 31 FESCUE @ 108 LB / ACRE

LIME: 4,000 LB / ACRE PULVERIZED AGRICULTURAL LIMESTONE

FERTILIZER: 10-20-10 @ 1,000 LB / ACRE

MULCH:
SHALL BE USED OVER ALL SEEDING AREAS AND SHALL BE APPLIED IN STRICT ACCORDANCE WITH STANDARD AND SPECIFICATION 3.35 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

SOIL CONDITIONING:
INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED SEED, MULCHING, MAINTENANCE OF NEW SEEDINGS, AND RESEEDING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN THE VIRGINIA SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. ADDITIONAL SEEDING TO BE PERFORMED AS REQUIRED BY THE CITY ENGINEER.

SEED APPLICATION:
APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRIABLE, SEEDBED. MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.

REV.	DATE	BY	DESCRIPTION

QUEEN AVENUE, N.W. - COURTLAND ROAD, N.W. WATERLINE REPLACEMENT PROJECT

EROSION AND SEDIMENT CONTROL
NOTES AND DETAILS

SOIL EROSION CONTROL NARRATIVE

TOTAL DISTURBED AREA: 0.048 AC. (2110 S.F.)

PROJECT DESCRIPTION: THE PURPOSE OF THIS PROJECT IS TO INSTALL NEW RESIDENTIAL WATERLINE WITHIN THE RIGHTS OF WAY OF QUEEN AVENUE, N.W., LYNHURST STREET, N.W. AND COURTLAND ROAD, N.W.. THE PROJECT CONSISTS OF 1) INSTALLING EROSION & SEDIMENT CONTROL MEASURES, 2) INSTALL THE NEW WATERLINES AND, METER SETTERS, FIRE HYDRANTS AND VALVE BOXES AND VAULTS 3) STABILIZE THE REMAINING DENUDED AREAS WITH SEEDING AND MULCH.

EXISTING SITE CONDITIONS: THE PROJECT IS LOCATED ALONG THE RIGHTS OF WAY OF QUEEN AVENUE, N.W., LYNHURST STREET, N.W. AND COURTLAND ROAD, N.W. IN THE CITY OF ROANOKE, VIRGINIA. THE LIMITS OF DISTURBANCE IS RESTRICTED TO THE RIGHTS OF WAY OF THE NAMED ROADWAYS. ALL OF THE PROPERTY LIES WITHIN ZONE X AS IDENTIFIED ON FEMA PANEL NUMBER 51161C0162G, DATED SEPTEMBER 28, 2007.

ADJACENT AREAS: THE LIMITS OF DISTURBANCE ARE CONFINED TO THE RIGHTS OF WAY NAMED ABOVE. ALL OF THE ADJACENT PROPERTIES AFFECTED BY THIS PROJECT ARE RESIDENTIAL.

OFF-SITE AREAS: THE LOCATION OF ALL OFF-SITE FILL OR BORROW AREAS ASSOCIATED WITH THE CONSTRUCTION PROJECT WILL BE PROVIDED TO THE CITY OF ROANOKE, PLANNING BUILDING AND DEVELOPMENT DEPARTMENT.

SOILS: SOILS IN THIS AREA ARE IDENTIFIED BY THE "SOIL SURVEY OF ROANOKE COUNTY AND THE CITIES OF ROANOKE AND SALEM, AS 20C (Frederick silt loam)". THIS NATIVE MATERIAL IS RESIDUUM WEATHERED FROM LIMESTONE AND DOLOMITE. THE TOP 12" LAYER 1'-6" LAYER IS CLAY. THE NATURAL DRAINAGE CLASS IS CONSIDERED WELL DRAINED. THE RUNOFF CLASS IS CONSIDERED MEDIUM. DEPTH TO WATER TABLE IS IN EXCESS OF 80-INCHES. THE HYDROLOGIC SOIL GROUP IS TYPE B.

CRITICAL AREAS: DUE TO THE NATURE OF THE PROJECT BEING A RESTORATION OF A PREVIOUS GRADING OPERATION NO CRITICAL AREAS ARE ANTICIPATED.

EROSION AND SEDIMENT CONTROL MEASURES: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK", LATEST EDITION. THE MINIMUM STANDARDS OF THE VESCP (SEE THIS SHEET) SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY VARIANCE BY THE VESCP. IN PARTICULAR THE FOLLOWING MEASURES ARE REFERENCED ON THE PLAN VIEW:
SILT FENCE-Std. 3.05 a temporary barrier constructed of posts, filter fabric and, in some case a wire support fence, placed across or at the toe of a slope to intercept and detain sediment.

TEMPORARY SEEDING-Std. 3.31 establishment of temporary vegetative cover on disturbed areas that will not be brought to final grade, with appropriate rapidly growing plants. Refer to the Minimum Standards, this Sheet.

PERMANENT SEEDING-Std. 3.32 establishment of perennial vegetative cover by planting seed on rough-graded areas that will not be brought to final grade for a year or more or where permanent, long-lived vegetative cover is needed on fine-graded areas.

MULCHING-Std. 3.35 application of plant residues or other suitable materials to the soil surface. Mulching will prevent erosion by protecting the soils surface from rainfall impact and reducing the velocity of overland flow. After seeding, mulching will foster the growth of vegetation by increasing available moisture and providing insulation against extreme heat and cold.

DUST CONTROL-Std. 3.39 the application of measures to prevent surface and air movement of dust from exposed soil surfaces and reduce the presence of airborne substances which may present health hazards, traffic safety problems or harm animal or plant life.

PERMANENT STABILIZATION: FOLLOWING FINAL GRADING OPERATIONS, ALL REMAINING DISTURBED AREAS LOCATED WITHIN THE LIMITS OF DISTURBANCE SHALL BE SEEDING AND STABILIZED WITHIN SEVEN (7) DAYS. SEEDING SHALL BE DONE ACCORDING TO THE STD. & SPEC. 3.32, PERMANENT SEEDING. IN ALL SEEDING OPERATIONS, SEED, AND ANY REQUIRED CHEMICALS SHALL BE APPLIED PRIOR TO MULCHING.

MAINTENANCE: THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL MAINTENANCE REQUIREMENTS OF THE EROSION AND SEDIMENT CONTROL MEASURES AS OUTLINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

STORMWATER RUNOFF CONSIDERATIONS: THERE ARE NO PROPOSED IMPERVIOUS AREA INDICATED THAT WOULD INCREASE RUNOFF, PEAK OR QUANTITY. THERE ARE NO PROPOSED FORMS OF CONCENTRATED RUNOFF THAT WOULD CREATE FLOODING OR CHANNEL DEGRADATION DOWNSTREAM.

RESTORATION: PER REQUIREMENTS OF THE CITY OF ROANOKE IT SHALL BE NOTED THAT NO EROSION CONTROL STRUCTURAL MEASURES INDICATED ON THESE PLANS ARE TO BE REMOVED WITHOUT APPROVAL FROM THE CITY.

MU MULCHING

THE APPLICATION OF MULCH TO THE SOIL SURFACE, FOR BOTH TEMPORARY AND PERMANENT SEEDING, IS ONE OF THE MOST EFFECTIVE MEANS OF CONTROLLING RUNOFF AND EROSION ON DISTURBED LAND. ALL PERMANENT SEEDING MUST BE MULCHED IMMEDIATELY UPON COMPLETION OF SEED BY APPLICATION. MULCHING PREVENTS EROSION, AND THEREBY LULLATION, BY PROTECTING THE SOIL SURFACE AND FOSTERING THE GROWTH OF VEGETATION BY INCREASING THE MOISTURE CONTENT AND PROVIDING INSULATION FROM EXTREME TEMPERATURES. REFER TO THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (STD & SPEC 3.35) FOR DETAILS AND MULCH SPECIFICATIONS, INCLUDING A LIST OF THE TYPICAL MATERIALS USED TO MULCH (FOR EXAMPLE STRAW, WOOD CHIPS, AND FIBER MULCH).

DC DUST CONTROL

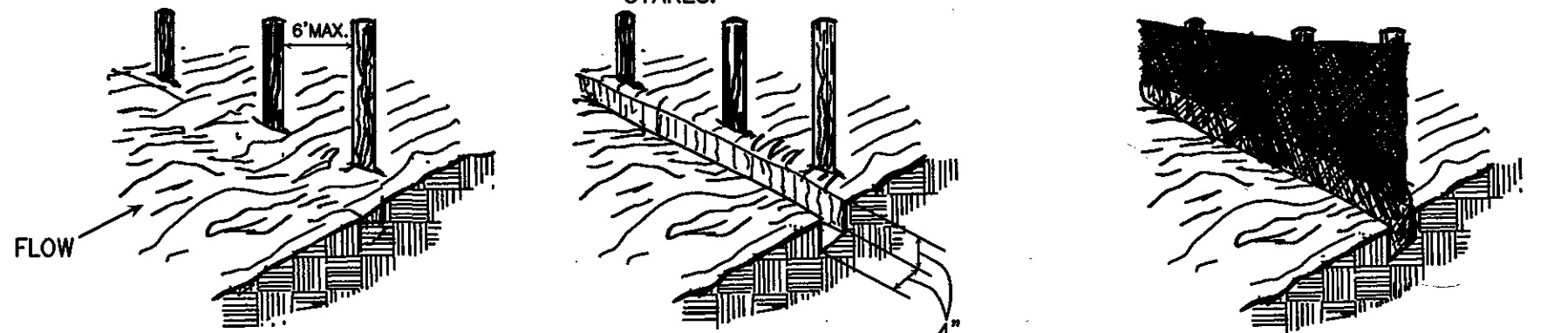
ON AN AS-NEEDED BASIS OR AS DIRECTED BY THE VESCP INSPECTOR, THE GENERAL CONTRACTOR SHALL UTILIZE ONE OF THE FOLLOWING METHODS TO CONTROL DUST:

A. WATER - THE EXPOSED SOIL SURFACE SHOULD BE MOISTENED PERIODICALLY WITH AN ADEQUATE SUPPLY OF WATER TO CONTROL DUST.

B. CALCIUM CHLORIDE - CHEMICAL COMPONENT SHALL BE EITHER LOOSE DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH A SPREADER AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE.

SF SILT FENCE

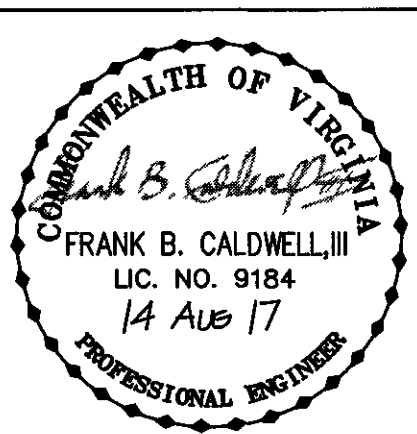
- SET THE STAKES.
- EXCAVATE A 4'x4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.
- PLACE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.



SHEET FLOW INSTALLATION

CWA
CALDWELL WHITE ASSOCIATES
ENGINEERS / SURVEYORS / PLANNERS
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DATE AUGUST 14, 2017
PROJECT 17-0007
DESIGNED CLH
DRAWN CLH
CHECKED FBC
FIELD BOOK WVWA #1
SCALE 1"=20'



sheet

C-2

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