### SOIL EROSION CONTROL NARRATIVE

THE PURPOSE OF THIS PROJECT IS THE INSTALLATION OF NEW PAVEMENT OVER AN AREA OF ALREADY IMPERVIOUS COMPACTED GRAVEL, AND CHANGING A CERTAIN AMOUNT OF EXISTING GRASSED AREAS TO IMPERVIOUS PAVEMENT FOR USE AS A USED AUTOMOBILE SALES FACILITY. THE PROJECT AREA CURRENTLY DRAINS IN SHEET FLOW TO ORANGE AVENUE, AND WILL CONTINUE TO DO SO FOLLOWING COMPLETION OF THIS PROJECT. THE PROPERTY IS LOCATED AT 2405 ORANGE AVENUE, NE IN THE CITY OF ROANOKE, VIRGINIA. THE AREA OF LAND DISTURBANCE IS ESTIMATED. TO BE 0.23 ACRES (9,872 SQ. FT.).

**EXISTING SITE CONDITIONS:** AS SHOWN ON REMAINING SHEETS OF THESE PLANS, THE AREA OF DISTURBANCE IS CURRENTLY A MIXTURE OF COMPACTED CRUSHED STONE AND THINLY VEGETATED GRASS AREAS. THE SUBJECT SITE LIES WITHIN "ZONE X" AS SHOWN ON FEMA FLOOD INSURANCE RATE MAPS (FIRM MAP NUMBER

51161C0166G, EFFECTIVE DATE 09/28/2007). EXISTING SOIL CONDITIONS:

THERE HAVE BEEN NO COMPREHENSIVE SUBSURFACE INVESTIGATIONS FOR THE SUBJECT DEVELOPMENT. THE USDA WEB SOIL SURVEY IDENTIFIES THE SOILS IN THE AREA OF PROPOSED CONSTRUCTION AS BELONGING TO THE FOLLOWING SOIL UNIT GROUP(S), AND PROVIDES THE SPECIFIC SOIL CHARACTERISTICS INDICATED. SEE PLAN SHEET FOR SOIL BOUNDARIES.

EROSION POTENTIAL DEPTH TO SEASONAL HIGH WATER HYDROLOGIC SOIL GROUP UNIT CODE 10 in to 40 in Chiswell-Litz complex, 7 to 15 percent slopes Well-Drained Channery Silt Loams

ADJACENT PROPERTY THE SUBJECT SITE IS BOUNDED TO THE NORTHWEST BY ORANGE AVENUE, NE; TO THE SOUTHWEST AND NORTHEAST BY COMMERCIAL PROPERTIES, AND TO THE SOUTHEAST BY UNIMPROVED PUBLIC RIGHT OF WAY (SEE SHEET C-02 FOR INDIVIDUAL OWNERS).

THE SITEWORK CONTRACTOR SHALL REMOVE AND DISPOSE OF EXCESS CUT AND/OR UNSUITABLE MATERIAL OFF-SITE. THE CONTRACTOR HOLDING THE LAND DISTURBING PERMIT WILL BE REQUIRED TO VERIFY THAT AN APPROVED SOIL EROSION CONTROL PLAN AND PERMIT ARE IN PLACE FOR ANY OFF-SITE BORROW OR WASTE SITE(S) USED IN CONJUNCTION WITH THIS PROJECT. THE CITY OF ROANOKE OR ITS APPROVED AGENT RESERVES THE RIGHT TO PLACE A STOP WORK ORDER ON THE SUBJECT SITE AND ANY OFF-SITE WASTE AREAS, SHOULD APPROVED PLANS AND PERMITS NOT EXIST FOR ALL SITES, ANY SEDIMENT FROM THE PROPOSED DEVELOPMENT THAT ENCROACHES OUTSIDE THE LIMITS OF CONSTRUCTION OR ONTO ADJACENT PROPERTIES SHALL BE IMMEDIATELY REMOVED AND THE AFFECTED AREAS RESTORED TO PRE-CONSTRUCTION CONDITIONS OR BETTER, IN ACCORDANCE

WITH THESE PLANS.

- SILT FENCE BARRIERS SHALL BE INSPECTED DAILY AND CLEANED OR REPLACED AS REQUIRED. CLEAN SILT FENCE WHEN SILT MEASURES ONE-HALF THE HEIGHT OF THE FENCE, OR AS REQUIRED. - PUBLIC STREETS AND ADJACENT PAVED AREAS SHALL REMAIN IN A DUST AND MUD-FREE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. SHOULD OFF-SITE SEDIMENTATION OCCUR, IT IS THE CONTRACTOR'S RESPONSIBILITY TO RETURN ALL AFFECTED AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE ORIGINAL CONDITION, AT NO ADDED COST TO THE OWNER.
- DISTURBED AREAS THAT ARE NOT PERMANENTLY STABILIZED WITHIN FOURTEEN (14) DAYS SHALL BE TEMPORARILY SEEDED IN ACCORDANCE WITH STANDARD AND SPECIFICATION 3.31 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. - ALL PROTECTIVE MEASURES WHICH PERTAIN TO, OR INCLUDE CUT AND FILL SLOPES (SILT FENCE, DIVERSION DIKES, ETC.) SHALL BE INSTALLED AND MAINTAINED AS THE SLOPES COME TO GRADE. ADDITIONAL DIVERSION DIKES WILL BE REQUIRED TO PROTECT DISTURBED AREAS, UNTIL SUCH TIME THAT THE STORM DRAIN SYSTEM IS IN PLACE, AND FUNCTIONALLY PROTECTED FROM SEDIMENT INFILTRATION.

THE CONTRACTOR IS REQUIRED TO PROVIDE AND MAINTAIN ALL EROSION CONTROL MEASURES AT THEIR OPTIMUM PERFORMANCE, SUCH THAT ADJOINING AREAS AND DRAINAGEWAYS ARE PROVIDED THE BEST AVAILABLE PROTECTION AT EVERY PHASE OF CONSTRUCTION. IT IS IMPERATIVE

### 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", THIRD EDITION. 1. GIVEN THE NATURE AND LOCATION OF THE PROPOSED PROJECT, A FORMAL TEMPORARY CONSTRUCTION ENTRANCE IS NOT WARRANTED. HOWEVER, ALL TRACKED CONSTRUCTION EQUIPMENT SHALL BE UNLOADED / LOADED DIRECTLY FROM THE AREA OF DISTURBANCE ONTO THE TRAILER, TO AVOID (1) DISTURBANCE OF THE EXISTING PAVEMENT WHICH IS TO REMAIN, AND (2) TO AVOID THE DEPOSITION OF DIRT AND MUD ONTO PAVED AREAS WHICH MAY BE BEYOND THE APPROVED LIMITS OF WORK.
- IN AREAS OF LAND DISTURBANCE, IT IS CRITICAL THAT NEW BASE STONE IS INSTALLED AS SOON AS POSSIBLE FOLLOWING STRIPPING OF SURFICIAL SOILS, TO STABILIZE AGAINST EROSION UNTIL SUCH TIME THAT PAVEMENT SURFACING MAY BE INSTALLED.
- 2. REGARDLESS OF FUTURE DEVELOPMENT PLANS, THE CONTRACTOR SHALL IMMEDIATELY INSTALL EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE PLANS, THIS WORK SHALL BE COORDINATED IN ORDER TO PROTECT AREAS FROM THE WORK WHICH IS TO FOLLOW. CONTROL AT
- CENTERS OF FLOW AND OTHER POINTS OF CONCENTRATION SHOWN HEREIN SHALL BE CONSTRUCTED FIRST 3. FOLLOWING INSTALLATION OF THE PERIMETER CONTROLS, THE SITEWORK CONTRACTOR SHALL BEGIN EARTHWORK OPERATIONS. THE CONTRACTOR SHALL IMMEDIATELY PROCEED WITH STRIPPING OF PAVEMENT AND GRADING OPERATIONS.
- 4. IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL. IN PARTICULAR: A. ALL INLET PROTECTION MEASURES SHALL BE INSPECTED FOR SEDIMENT COLLECTION AND TO INSURE THAT THE INTENDED PURPOSE OF PREVENTING SEDIMENT TRANSPORT INTO THE STORM SYSTEM IS BEING MAINTAINED.
- B. ALL SILT FENCE BARRIERS (STD & SPEC 3.05) AND INLET PROTECTIONS (STD & SPEC 3.07) SHALL BE CHECKED REGULARLY FOR UNDERMINING AND SEDIMENT BUILDUP.
- C. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEEDED AS NEEDED. 5. THE SOIL EROSION CONTROL MEASURES INSTALLED FOR THIS CONTRACT SHALL REMAIN IN PLACE UNTIL REMOVAL IS APPROVED BY THE CITY OF ROANOKE INSPECTOR, AT WHICH TIME IT SHALL BE THE SITEWORK CONTRACTOR'S RESPONSIBILITY TO REMOVE ALL TEMPORARY MEASURES FROM THE SITE UNLESS OTHERWISE REQUIRED HEREIN, REMOVE ACCUMULATED SEDIMENT FROM THE STORMWATER COLLECTION SYSTEMS TO AN APPROVED WASTE AREA, AND STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH THESE PLANS.

### UPON ACHIEVING FINISH GRADE ELEVATIONS, ALL AREAS NOT TO RECEIVE HARD SURFACING SHALL BE PERMANENTLY SEEDED (STD & SPEC 3.32). AS AN ALTERNATIVE, THREE TO FOUR INCHES OF SHREDDED HARDWOOD MULCH MAY BE PLACED IN AREAS TO BE LANDSCAPED (ALONG WITH REQUIRED PLANTINGS), IF WRITTEN DIRECTION FROM THE OWNER IS GIVEN TO INSTALL THESE MULCH AREAS.

THE RESPONSIBLE LAND DISTURBER ON RECORD WITH THE CITY FOR THIS PROJECT IS RESPONSIBLE FOR IMPLEMENTATION, MAINTENANCE, AND REMOVAL OF ALL EROSION CONTROL MEASURES, AS APPLICABLE. ALL MEASURES REQUIRED HEREIN SHALL BE MAINTAINED AS OUTLINED IN "CRITICAL AREAS" AND "EROSION AND SEDIMENT CONTROL MEASURES" SECTIONS ABOVE.

1. THE SITEWORK CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.

DRAIN OR STORMWATER MANAGEMENT FACILITIES.

STORMWATER MANAGEMENTS IN ACCORDANCE WITH CHAPTER 11.7 OF THE CODE OF THE CITY OF ROANOKE, SECTION 11.7-6(B)2, PROJECTS THAT HAVE GREATER THAN 2,500 AND LESS THAN 10,000 SQUARE FEET OF LAND DISTURBANCE NEED NOT ADDRESS MINIMUM STANDARD 19 CONCERNING STORMWATER MANAGEMENT REQUIREMENTS, AS LONG AS THE RECEIVING CHANNEL DOES NOT HAVE DOCUMENTED FLOODING ISSUES, AND SO LONG AS THE PROPOSED WORK WILL NOT IMPEDE FLOW CAUSING UPSTREAM FLOODING. TO THE BEST OF THE ENGINEER'S KNOWLEDGE, THE RECEIVING STORM DRAIN SYSTEM IN ORANGE AVENUE DOES NOT HAVE DOCUMENTED FLOODING ISSUES IN THIS LOCATION, AND THE PROPOSED PAVING WILL NOT IMPEDE UPSTREAM FLOWS, THEREFORE THESE PLANS DO NOT PROPOSE ANY NEW STORM

### GENERAL COMMENTS:

- 2. THE CITY OF ROANOKE OR THEIR AUTHORIZED AGENT RESERVES THE RIGHT TO ADD TO, DELETE, OR OTHERWISE CHANGE EROSION CONTROL DEVICES AS MAY BE DEEMED NECESSARY, BY WRITTEN NOTIFICATION TO THE CONTRACTOR.
- 3. NO WORK SHALL PROCEED ON THE SITE UNTIL THE PROPER AUTHORIZATION OR PERMIT HAS BEEN OBTAINED FROM THE CITY OF ROANOKE. 4. THE ENGINEER, CALDWELL WHITE ASSOCIATES, ASSUMES NO RESPONSIBILITY FOR ANY WORK BEING PERFORMED.

### VESCH TABLE 6-1: GENERAL EROSION AND SEDIMENT CONTROL NOTES:

- 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 4VAC50-30 FROSION AND SEDIMENT CONTROL REGULATIONS
- ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE FINAL INSPECTION.
- ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING. FS-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR MATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (1) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (II) DETAIN AND RELEASE OVER A 24—HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24—HOUR STORM; AND (III) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10—YEAR, 24—HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD

10.1-562 OR 10.1-570 OF THE ACT. M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF \$ 10.1-561 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER

MANAGEMENT ACT (\$ 10.1-603.2 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 4VAC50-60-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS. N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 4VAC50-60-66 OF THE

TORESTED 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 \$

MENT PROGRAM (VSMP) PERMIT REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF MINIMUM STANDARD 19.

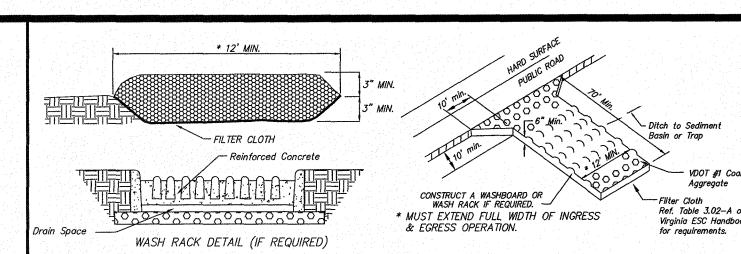
- ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
- ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY. ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED. ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
- ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUN-OFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

### <u>STATE IMPOSED MINIMUM STANDARDS</u>

THE FOLLOWING STANDARDS ARE TO BE PROVIDED OR ADDRESSED ON EVERY DEVELOPMENT PROJECT EXCEEDING 10,000 S.F. IN AREA OF DISTURBANCE THESE STANDARDS ARE

No.	CRITERIA, TECHNIQUE OR METHOD	REMARKS		
1	PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE HAS BEEN REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN FOURTEEN (14) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.	SEE "PERMANENT SEEDING" AND "TEMPORARY SEEDING" REQMNTS, SHEET C-02 AND THIS SHEET.		
2	DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.	NOT APPLICABLE TO THIS PROJECT  SELF EXPLANATORY — REFER TO THE SEEDING SPECS, THIS SHEET.		
3	A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR DESIGNATED AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND MILL INHIBIT EROSION.			
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.	INSTALL NEW SILT FENCE PRIOR TO LAND DISTURBANCE.		
5	STABILIZATION METHODS SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.	NOT APPLICABLE TO THIS PROJECT		
5	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 TO THIS PROJECT		
7	CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZATION MEASURES UNTIL THE PROBLEM IS CORRECTED.	NOT APPLICABLE TO THIS PROJECT		
3	CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.	NOT APPLICABLE TO THIS PROJECT		
3	WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.	NOT APPLICABLE TO THIS PROJECT		
0	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.	NOT APPLICABLE TO THIS PROJECT		
1	BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.	NOT APPLICABLE TO THIS PROJECT		
<u>.                                    </u>	WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.	NOT APPLICABLE TO THIS PROJECT		
3	WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX (6) MONTH PERIOD, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL.	NOT APPLICABLE TO THIS PROJECT		
4	ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET. THE BEDS AND BANKS OF ANY WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	NOT APPLICABLE TO THIS PROJECT		
5	THE BEDS AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	NOT APPLICABLE TO THIS PROJECT		
5	UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA: 1)NO MORE THAN 500 LINEAR FEET OF ANY TRENCH MAY BE OPENED AT ONE TIME. 2)EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. 3)EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. 5)RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS. 6)APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.	NOT APPLICABLE TO THIS PROJECT		
7	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.	NOT APPLICABLE TO THIS PROJECT, SEE 'TEMPORARY CONSTRUCTION ENTRANCE', SHEET C-		
8	ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.	REMOVAL OF TEMPORARY MEASURES SHALL BE IN ACCORDANCE WITH MS-18 AND "EROSION & SEDIMENT CONTROL MEASURES" SECTION OF NARRATIVE, THIS SHEET.		
19	PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SIES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, REDSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND DEACHANCE STATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND DETERIAL STEAD REPOLICE THAT THOUGHT STEED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE 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 SHOW DEMONSTRATE THAT THE TOTAL OF THE POTOL CONTRIBUTION DAY.  PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE UTTALL OF THE CONTRIBUTION DAY.  PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE UTTALL OF THE CONTRIBUTION DAY.  PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE UTTALL OF THE CONTRIBUTION DAY.  PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE UTTALL OF THE CONTRIBUTION DAY.  PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE UTTALL OF THE CONTRIBUTION DAY.  PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE UTTALL OF THE CONTRIBUTION DAY.  PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES BY THE USE OF A THOU-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL SON OF CHANNEL SON OF CHANNEL SON OF CHANNEL SON AND OF THE WEST OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL SON OF PIPE SYSTEM TO A CONDITION WHERE THE APPLICANT SHALL:  PECHANGE CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS AND OF PIPE SYSTEM TO A CONDITION WHERE A TEN-YEAR STORM OF CONTRACT WHITE AND A CONDITION WHERE A TEN-YEAR STORM O	SEE "STORMWATER MANAGEMENT" SECTION OF NARRATIVE, THIS SHEET  City of Roanoke Planning, Building, & Development COMPREHENSIVE DEVELOPMENT PLAN		

City of Roanoke Planning, Building, & Development OMPREHENSIVE DEVELOPMENT PLAN by Aaron Cypher | 06/05/2020





### TEMPORARY GRAVEL CONSTRUCTION ENTRANCE DETAIL ADDED

# TEMPORARY SEEDING

DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 14 DAYS SHALL BE STABILIZED WITH TEMPORARY SEEDING MEASURES AS SHOWN HEREON, 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 14 DAYS, THE FOLLOWING SPECIFIC E&S MEASURES SHALL BE STABILIZED WITH TEMPORARY SEEDING IMMEDIATELY UPON COMPLETION OF CONSTRUCTION OF THE TEMPORARY MEASURE

### DIKES, DAMS, 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.

SEEDBED 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 APPLICATION OF AGRICULTURAL LIMESTONE

### BELOW 4.2 3 TONS PER ACRE 2 TONS PER ACRE 1 TON PER ACRE LIME NOT REQUIRED ABOVE 6.0

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 SEEDED 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)

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

RE—SEEDING: AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION SHALL BE RE—SEEDED AS SOON AS SUCH AREAS

ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS BY RANGE OF PLANTING DATES: ANNUAL RYEGRASS @ 50 LB / ACRE 09/01 TO 02/15 WINTER RYE @ 50 LB / ACRE 02/16 TO 04/30 ANNUAL RYEGRASS @ 100 LB / ACRE

05/01 TO 08/31 GERMAN MILLET @ 50 LB / ACRE

AREA WHICH HAVE BEEN PERMANENTLY SEEDED SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING. AREAS WHICH CANNOT BE SEEDED BECAUSE OF THE SEASON SHALL BE MULCHED TO PROVIDE SOME PROTECTION TO THE SOIL SURFACE. AN ORGANIC MULCH SHOULD BE USED, AND THE AREA THEN SEEDED AS SOON AS WEATHER OR SEASONAL CONDITIONS PERMIT. IULCHES ARE APPLIED TO THE SOIL SURFACE TO CONSERVE A DESIRABLE SOIL PROPERTY OR TO PROMOTE PLANT GROWTI ORGANIC MULCH MATERIALS SUCH AS STRAW, WOOD CHIPS, BARK AND FIBER MULCH HAVE BEEN FOUND TO BE THE MOST EFFECTIVE. CHEMICAL SOIL STABILIZERS OR SOIL BINDERS SHALL NOT BE USED ALONE FOR MULCH, AS THESE MATERIALS ARE PRIMARILY USEFUL TO

ORGANIC MULCHES WHEAT OR OAT, FREE OF TROUBLESOME WEED SEEDS, SPREAD BY HAND OR MACHINE. MUST BE ANCHORED DOWN BY AN ACCEPTABLE METHOD.

BIND ORGANIC MULCHES TO PREVENT DISPLACEMENT.

BARK-CHIPS OR SHREDDED

FIBER MULCH

MAY BE USED IN LIEU OF STRAW WHERE VOLUNTEERS WILL NOT PRESENT A PROBLEM. APPLY SAME AS

SHALL BE SHREDDED INTO 4 INCH TO 6 INCH LENGTHS. CORN STALKS

SUITABLE FOR AREAS THAT WILL NOT BE CLOSELY MOWED, AND AROUND ORNAMENTAL PLANTINGS. TACKING IS NOT REQUIRED, HOWEVER, CHIPS MUST BE TREATED WITH 12 LBS NITROGEN PER TON TO WOOD CHIPS PREVENT NUTRIENT DEFICIENCY IN PLANTS.

APPLICATION SIMILAR TO WOOD CHIPS; ADDITIONAL NITROGEN NOT REQUIRED.

USED IN HYDROSEEDING OPERATIONS, AND DOES NOT REQUIRE TACKING. MAY NOT BE USED IN DRY

SUMMER MONTHS OR FOR LATE FALL COVER, USE STRAW DURING THESE PERIODS. CHEMICAL MULCHES AND SOIL BINDERS: NOT RECOMMENDED FOR THIS PROJECT

BLANKETS AND MATTING; GENERALLY USED FOR SLOPE OF DITCH / CHANNEL STABILIZATION - NOT RECOMMENDED FOR THIS PROJECT

MULCHES	RATES			
	PER ACRE	PER 1000 SQ. FT.		
STRAW OR HAY	1-1/2 - 2 TONS (MIN. 2 TONS FOR WINTER)	70-90 LBS	FREE FROM WEEDS AND COARSE MATTER. MUST BE ANCHORED. SPREAD WITH MULCH BLOWER OR BY HAND	
FIBER MULCH	MINIMUM 1500 LBS	35 LBS	DO NOT USE AS MULCH FOR WINTER COVER OR DURING HOT, DRY PERIODS**. APPLY AS SLURRY.	
CORN STALKS	4-6 TONS	185–275 LBS	CUT OR SHREDDED IN 4-6" LENGTHS. AIR DRIED. DO NOT USE IN FINE TURF AREAS. APPLY WITH MULCH BLOWER OR BY HAND.	
WOOD CHIPS	4-6 TONS	185–275 LBS	FREE OF COARSE MATTER. AIR—DRIED. TREAT WITH 12 LBS NITROGEN PER TON. DO NOT USE IN FINE TURF AREAS. APPLY WITH MULCH BLOWER, CHIP HANDLER, OR BY HAND.	
BARK-CHIPS OR SHREDDED	50-70 CUBIC YARDS	1-2 CUBIC YARDS	FREE OF COARSE MATTER. AIR-DRIED. DO NOT USE IN FINE TURF AREAS. APPLY WITH MULCH BLOWER, CHIP HANDLER, OR BY HAND.	

APPLICATION, ANCHORING AND MAINTENANCE SHALL BE IN STRICT ACCORDANCE WITH STANDARD AND SPECIFICATION 3.35 OF THE

VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

The series of th

## GENERAL EROSION AND SEDIMENT CONTROL NOTES

- 1. 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,
- 2. 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
- 3. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLAN SHALL BE PLACED IN ADVANCE OF THE WORK BEING PERFORMED.
- 4. IN NO CASE DURING CONSTRUCTION SHALL WATER RUNOFF BE DIVERTED OR ALLOWED TO FLOW TO LOCATIONS WHERE ADEQUATE PROTECTION HAS NOT BEEN PROVIDED.

EROSION, SEDIMENTATION, OR ANY DAMAGE TO ANY ADJACENT PROPERTY AT THE END OF EACH DAY'S WORK.

- 5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LEAVE THE SITE ADEQUATELY PROTECTED AGAINST
- 6. 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.

## SOIL EROSION CONTROL CONSTRUCTION SEQUENCING

REVISED NOTES 1 AND 3 X 1 FOLLOWING ISSUANCE OF A LAND DISTURBING PERMIT FROM THE CITY OF ROANOKE, THE CONTRACTOR SHALL

PERFORM HIS SITEWORK IN GENERAL ACCORDANCE WITH THE FOLLOWING: INSTALL NEW SILT FENCE BARRIERS AND NEW TEMPORARY CONSTRUCTION ENTRANCE.

CONSTRUCT NEW SANITARY SEWER LATERAL AS A FIRST STEP. COMPACT TRENCHES UNDER NEW PAVEMENT TO 95% OF STANDARD PROCTOR (ASTM D698).

FOLLOWING COMPLETION OF SEWER LATERAL, INSTALL CONCRETE WASHOUT AND PROCEED WITH CONSTRUCTION OF NEW CONCRETE ENTRANCE APRON & NEW SIDEALK. CONCURRENTLY, REPLACE ANY EXISTING CURB & GUTTER THAT MAY HAVE BEEN DAMAGED / REMOVED BY SANITARY WORK.

. FOLLOWING COMPLETION OF CONCRETE WORK, PERFORM MINOR GRADING OPERATIONS IN AREAS OF PROPOSED LAND DISTURBANCE TO STRIP SURFICIAL SOILS (TOPSOIL). REMOVE EXCESS MATERIALS FROM SITE AND DISPOSE PLACE AND COMPACT NEW BASE STONE AND HARD SURFACING GIVEN THAT THE SITE DRAINS IN SHEET FLOW

TO ORANGE AVENUE, IT IS EXTREMENLY IMPORTANT THAT THE CONTRACTOR TIME HIS COMPLETION OF LAND DISTURBANCE AND PLACEMENT OF BASE STONE AS CLOSELY TOGETHER AS POSSIBLE, SUCH THAT THE BARE SOIL EXPOSURE TIME IS MINIMIZED. COORDINATE THIS WORK CLOSELY WITH WET-WEATHER FORECASTS. PERFORM SEEDING OF ANY DISTURBED AREAS AT THE PERIMETER OF THE NEW HARD SURFACING.

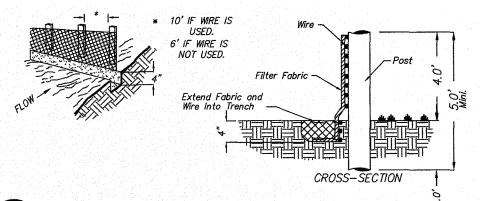
COORDINATE WITH CITY INSPECTOR FOR REMOVAL OF TEMPORARY SILT FENCE BARRIERS IN CONJUNCTION WITH PLACEMENT OF NEW PAVEMENT

### 8. THE SITEWORK CONTRACTOR SHALL CLEAN, REPAIR, OR OTHERWISE MAINTAIN CONTROL MEASURES THROUGHOUT THE CONSTRUCTION.

## 9. UPON AUTHORIZATION FROM ROANOKE CITY, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY MEASURES FROM

## LAND DISTURBANCE NOTES

ALL OFF-SITE DISPOSAL OF MATERIALS, AND ASSOCIATED FEES, WILL BE THE SITEWORK CONTRACTOR'S RESPONSIBILITY, AND IS TO BE PERFORMED IN A LEGAL FASHION (APPROVED WASTE SITE). ALL HAULING IS TO BE PERFORMED IN STRICT ACCORDANCE WITH LOCAL, STATE, AND FEDERAL RULES AND REGULATIONS PERTAINING



(SF) CONSTRUCTION OF A SILT FENCE (STD & SPEC 3.05)

# PERMANENT SEEDING MIXTURE

DISTURBED AREAS SHALL BE PERMANENTLY SEEDED WITHIN SEVEN (7) DAYS OF ACHIEVING FINAL GRADE, OR ON DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE WITHIN ONE YEAR. TYPE B (SLOPES 3:1 OR STEEPER)

TYPE A 15 OCTOBER TO 1 FEBRUARY 15 MARCH TO 1 MAY K-31 FESCUE @ 5 LB / 1000 SF CROWN VETCH @ 1/2 LB / 1000 SF BORZY WINTER RYE @ 1/2 LB / 1000 SF PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF RED TOP @ 1/8 LB / 1000 SF 1 FEBRUARY TO 1 JUNE

K-31 FESCUE @ 5 IR / 1000 SF 15 AUGUST TO 1 OCTOBER CROWN VETCH @ 1/2 LB / 1000 SF ANNUAL RYE @ 1/2 LB / 1000 SF PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF 1 JUNE TO 1 SEPTEMBER RED TOP @ 1/8 LB / 1000 SF K-31 FESCUE @ 5 LB / 1000 SF

GERMAN MILLET @ 1/2 LB / 1000 SF K-31 FESCUE @ 5 LB / 1000 SF

ANNUAL RYE @ 1/2 LB / 1000 SF

SOIL CONDITIONING:

140 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE

FERTILIZER: 5-20-10 @ 25 LB / 1000 SF 38-0-0 @ 7 LB / 1000 SF

MULCH: SHALL BE USED OVER ALL SEEDED AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 1.75 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED SEED, MULCHING, MAINTENANCE OF NEW SEEDLINGS, 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 INSPECTOR. SEED APPLICATION: APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRIL

CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRIABLE, SEEDBED. MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.

## TOTAL DISTURBED AREA = = 9,872 SF = 0.23 ACRE DETAILS - SOIL EROSION AND SEDIMENTATION ALTH OF CORBIN L. WHITE License No. 23843

CONTROL NEW AUTOMOBILE SALES LOT - USED ADIB OMANOVIC

SHOWING THE CONVERSION OF A FORMER SINGLE-FAMILY DWELLING PARCEL INTO A USED AUTOMOBILE SALES FACILITY SITUATE 2405 ORANGE AVENUE, NE

CITY OF ROANOKE, VIRGINIA

esigned: C.L. White C.L. White Date: April 14, 2020 As Shown Tax Parcel: 7070103 Field Book: \_\_\_(none)\_\_

W.O. No.: <u>20-0012</u>

05-11-20

\*CWA CALDWELL WHITE ASSOCIATES ENGINEERS / SURVEYORS / PLANNERS

P.O. BOX 6260 ROANOKE, VIRGINIA 24017-0260 FAX: (540) 366-8702

SHEET C-03 OF 3