COUNTY OF ROANOKE, VA

GENERAL NOTES

PRE-CONSTRUCTION MEETING AND CONSTRUCTION COMMENCEMENT:

1. All construction methods and materials shall conform to the Construction Standards and Specifications of Roanoke County, the Western Virginia Water Authority, and the Virginia Department of Transportation.
2. ~~Stormwater Management Agreements with an attached 8 1/2" x 11" or 8 1/2" x 14" plat must be approved and recorded prior to the pre-construction meeting.~~
3. Once all required items are submitted to Roanoke County, the developer must contact the Development Review Coordinator to indicate that a pre-construction meeting needs to be scheduled. The pre-construction meeting will be scheduled with the owner/developer two (2) working days later.
4. All land disturbing projects that require approval of an erosion and sediment control plan, grading or clearing permit shall require that the applicant provide the name of an individual who will be responsible for land disturbing activities and that this individual hold a Responsible Land Disturber (RLD) Certificate from the Department of Environmental Quality. The Responsible Land Disturber can be anyone from the Project team that is certified by the Commonwealth of Virginia to be in charge of carrying out the land disturbing activity for the project.
5. It is the responsibility of the owner/developer to notify the certified Responsible Land Disturber and the Utility Contractor to attend the pre-construction meeting.
6. The Development Review Coordinator will schedule the pre-construction meeting with the County Review Engineer, the County Inspector, and the Western Virginia Water Authority and the Town of Vinton Public Works Department if applicable.
7. An approved set of plans, ~~Storm Water Pollution Prevention Plan (SWPPP), VSMP coverage letter~~, and all permits must be available at the construction site at all times.
8. The developer and/or contractor shall supply all utility companies with copies of approved plans, advising them that all grading and installation shall conform to approved plans.
9. The project engineer will inform the owner/developer verbally and in writing of the County's obligation to perform inspections on site. Everyone in the meeting will be required to sign a pre-construction checklist indicating their knowledge of Roanoke County's obligation to perform inspections on site.
10. The Erosion Control Permit or Combined Erosion Control & VSMP Permit is given to the developer at this pre-construction meeting.
11. Notify Roanoke County prior to beginning installation of ESC measures. The County will inspect initial installations to ensure compliance with approved plan prior to start of grading. The developer SHALL contact the project inspector 24 hours before beginning any grading or construction on the property.
12. County inspectors must inspect storm drain /~~stormwater management / BMP~~ installations during the process of installation. Please contact the site inspector 24 hours in advance.
13. All work shall be subject to inspection by Roanoke County, the Western Virginia Water Authority and the Virginia Department of Transportation Inspectors.
14. Contractors shall notify utilities of proposed construction at least two (2), but not more than ten (10) working days in advance. Area public utilities may be notified thru "Miss Utility": 1-800-552-7001 or VA 811.
15. ~~The 100 year Floodway shall be staked prior to any construction.~~
16. Grade stakes shall be set for all curb and gutter, culvert, sanitary sewer and storm sewer at all times of construction.
17. Roanoke County shall be notified when a spring is encountered during construction.
18. Construction debris shall be containerized in accordance with the Virginia Litter Control Act. No less than one litter receptacle shall be provided on site.
19. The contractor shall provide adequate means of cleaning mud from trucks and/or other equipment prior to entering public streets or rights of ways. It is the contractors responsibility to insure that the streets are in a clean, mud and dust free condition at all times.
20. Plan approval in no way relieves the developer or contractors of the responsibilities contained within the erosion and sediment control or stormwater management policies.
21. Field construction shall honor proposed drainage divides as shown on plans.
22. Field corrections shall be approved by the Roanoke County and/or the Western Virginia Water Authority and the Professional of Record, prior to such construction.
23. The developer or contractor shall supply the County and the Western Virginia Water Authority with correct As-Built plans before final acceptance.

VIRGINIA DEPARTMENT OF TRANSPORTATION:

1. Plan approval by Roanoke County does not guarantee issuance of any permits by the Virginia Department of Transportation.
2. A permit must be obtained from the Virginia Department of Transportation, Salem Residency Office prior to construction in the highway right-of-way.
3. ~~The preliminary pavement designs should be based on a predicted sub-grade CBR value of 7.0 and with a Resiliency Factor (RF) of 2.0 as shown in the current edition of the Virginia Department of Transportation Pavement Design Guide for Subdivision and Secondary Roads. The sub-grade soil is to be tested by an independent laboratory and the results submitted to the Virginia Department of Transportation prior to base construction. Should the sub-grade CBR value and/or the RF value be less than the predicted values, additional base material will be required in accordance with Departmental specifications. Refer to the same manual as the number and locations of the required soil samples to be tested. All pavement designs shall be submitted to the Department for review and approval. The sub-grade shall be approved by the Virginia Department of Transportation prior to placement of the base. Base shall be approved by the Virginia Department of Transportation for depth, template, and compaction before the surface is applied.~~
4. ~~Standard guardrail with safety end sections may be required on fills or in areas where hazards exist as deemed necessary. After completion of rough grading operations, the County Engineer and Virginia Department of Transportation shall be contacted to schedule a field review. Where guard rail is warranted, the standard shoulder width shall be provided and the guard rail shall be installed in accordance with the current edition of the VDOT Road and Bridge Standards as part of this development.~~
5. ~~Standard street and traffic control signs shall be erected at each intersection by the developer prior to final street acceptance.~~
6. All traffic devices shall be in accordance with current edition of the "Manual on Uniform Traffic Control Devices" (MUTCD).
7. All unsuitable material shall be removed from the construction limits of the roadway before placing embankment.

See Sheet N/A for Stormwater Site Statistics Table.
See Sheet N/A for New BMP Information Table.

The Project Engineer shall provide electronic copies of the approved plans to the Development Review Coordinator within 5 working days of the pre-construction meeting.
The notes on this sheet shall not be modified.

NAME OF DEVELOPMENT	TULLY DRIVE STORM DRAIN PROJECT
MAGISTERIAL DISTRICT(S)	CATAWBA
OWNER (name, address, telephone)	VARIES, PRIMARILY WITHIN THE PUBLIC STREET RIGHT OF WAY CONTACT: MR. BUTCH WORKMAN–ROANOKE COUNTY STORMWATER OPERATIONS MANAGER TEL: (540) 772–2037 BWorkman@RoanokeCountyVA.gov
DEVELOPER (name, address, telephone)	(SAME AS OWNER)
ENGINEER, ARCHITECT OR SURVEYOR (name, address, telephone)	CALDWELL WHITE ASSOCIATES PO BOX 6260 ROANOKE, VA 24017 ATTN: CORBIN L. WHITE, PE TEL.: (540) 366–3400 EMAIL: CWAroanoke@aol.com
TAX MAP NO(S)	(varies)

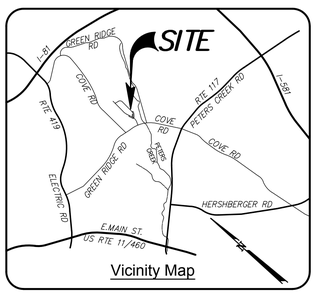
I, _____ **OWNER/DEVELOPER,** AM AWARE OF THE SITE DESIGN REQUIREMENTS IMPOSED BY THIS SITE DEVELOPMENT PLAN, ALL REVISIONS THEREOF, AND OTHER APPLICABLE ROANOKE COUNTY CODES AND ORDINANCES.

I HEREBY CERTIFY THAT I AGREE TO COMPLY WITH THESE REQUIREMENTS SHOWN ON THIS COVER SHEET UNLESS MODIFIED IN ACCORDANCE WITH LOCAL LAW.

WATER AND SEWER NOTES

1. All construction methods and materials shall conform to the latest edition of the Design and Construction Standards and Specifications of the Western Virginia Water Authority (WVWA) available at www.westernvawater.org or by contacting the authority at 540-853-5700. The project shall also comply with the governing jurisdiction's standards and other agency standards (e.g. VDOT, DEQ, DCR, VDH, etc.) where applicable.
2. A minimum cover of three (3) feet is required on all WVWA water and sewer lines.
3. All existing utilities may not be shown in their exact locations. The contractor shall notify Miss Utility and shall verify location and elevation of all underground utilities in the areas of construction prior to starting work.
4. Please show all WVWA water and sewer utilities on any development plan.
5. The location of existing utilities across or along the line of proposed work are not necessarily shown on the plans and where shown are only approximately correct. The contractor shall on his own initiative and at no extra cost, locate all underground lines and structures and pothole as necessary. The contractor shall be responsible for any damage to underground structures. All damage incurred to existing utilities during construction shall be repaired at the contractor's expense.
6. Plan approval by the WVWA does not remove the contractor's responsibility to remove or relocate any existing conflicts found during construction.
7. The contractor shall maintain a minimum of 18" clearance vertically and two (2) feet minimum horizontally from the outside of pipe to outside of pipe with all other underground utilities. Where this cannot be achieved, additional measures in accordance with the WVWA standards shall be enforced.
8. All utility grade adjustments shall be in accordance with WVWA standards and are the responsibility of the contractor.
9. Field changes shall be submitted by the engineer of record to the locality and approved by the WVWA.

Western Virginia Water Authority
Availability letter number: N/A



Vicinity Map

LEGEND

- Property Line — PL
- Right-of-way — R/W
- Centerline — CL
- Minimum Building Line — MBL — MBL
- Existing Storm Sewer
- Existing Sanitary Sewer
- Existing Water Main
- Existing Contour — 1045
- Proposed Contour — 1045
- Proposed Drainage Divide
- Proposed Limits of Clearing
- Proposed Storm Sewer — 24" S.D.
- Proposed Sanitary Sewer — 8" M.H.
- Proposed Water Main — HYDRANT — VALVE — BLOWOFF

PRIVATE UTILITIES

Underground utilities installed on private property or in private utility easements and building related storm drains shall be designed and installed per the current edition of the Virginia Uniform Statewide Building Code (including amendments). Design and installation requirements issued by the Western Virginia Water Authority that meet or exceed the USBC requirements are acceptable for private utilities. All private utilities are to be permitted through and inspected by the Roanoke County Inspections Office. Vaults, valves and other devices installed by or under the control of the Western Virginia Water Authority may not substituted for the code required devices.

PR #:	NOTES:
⇨	Revised August 23, 2023 Per 1st Municipal Review – C.L. White

Revision Table

Sheet Index

SURVEY INFORMATION

Horizontal and vertical control surveys were performed in year: 2022
By: CALDWELL WHITE ASSOCIATES

All vertical elevations must be referenced to the National Geodetic Vertical Datum of 1929 or 1988. All horizontal elevations must be referenced to the North American Datum of 1927 or 1983.

Horizontal Datum: ASSUMED PROJECT DATUM Vertical Datum: NAVD 1988

Source of topographic mapping is dated CWA FIELD SURVEY SEPTEMBER 2022
1961 ORIG. SUBDIVISION MAP

Boundary was performed by TP PARKER dated: PINS RECOVERED BY CWA 09/2022

Benchmark Information: RIM OF EXISTING SANITARY SEWER MANHOLE "B"= 1091.96, TAKEN FROM WESTERN VA WATER AUTHORITY GIS.

The professional seal and signature certifies the boundary survey and topographic mapping to be accurate and correct.

(PUBLIC IMPROVEMENTS PROJECT, SURETY NOT APPLICABLE)

QUANTITY & COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CLEARING AND GRUBBING		AC			
EXCAVATION (ON-SITE)		C.Y.			
EMBANKMENT		C.Y.			
GRATE INLET DI-1		EA			
CURB INLET DI-		EA			
STORM DRAIN MANHOLE ASS'Y		EA			
MANHOLE MH-		EA			
15 - IN. CONCRETE PIPE, CLASS III		LF			
18 IN. STORM PIPE, VDOT CL. III RCP OR DUAL WALL HDPE		LF			
36 IN. STORM PIPE, VDOT CL. III RCP OR DUAL WALL HDPE		LF			
-IN. C.M. CULVERT		LF			
-IN. C.M. CULVERT		LF			
BOX CULVERT		LS			
PAVED SWALE		LF			
RIPRAP - CLASS		SF			
PERMANENT GRASS SWALE		LF			
-IN. CONCRETE ENDWALL EW-		EA			
-IN. END SECTION ES-		EA			
STAND-UP CONCRETE CURBING CG-2		LF			
CUR8 & GUTTER CG-6		LF			
VALLEY GUTTER		EA			
GRAVEL BASE		SY			
GRAVEL SHOULDER		SY			
SURFACE TREATMENT		SY			
2 -IN. BIT. CONC.; TYPE BM25.0		SY			
2 -IN. BIT. CONC.; TYPE SM9.5A		SY			
1-1/2 IN. BIT. CONC.; TYPE SM9.5A		SY			
VDOT TYPE 21-A BASE STONE		C.Y.			
TRAFFIC BARRICADE		EA			
8" WATER LINE		LF			
6" WATER LINE		LF			
AIR RELEASE VALVES W/ VAULT, FRAME & COVER		EACH			
FIRE HYDRANT ASSEMBLIES		EA			
BLOW OFFS W/ VAULT, FRAME & COVER		EA			
8 -IN. GATE VALVES, W/ VAULT, FRAME & COVER		EACH			
-IN. GATE VALVES, W/ VAULT, FRAME & COVER		EA			
8" SANITARY SEWER		LF			
STANDARD MANHOLE W/FRAME & COVER		EA			
SAMPLING MANHOLE/PORT		EA			
LANDSCAPING		LS			
AMENITIES (INCLUDING BUT NOT LIMITED TO TRAILS, ETC...)		LS			
STORMWATER MANAGEMENT		LS			
AS-BUILT PLANS (STORM SEWER SYSTEMS)		LS			
AS-BUILT PLANS (STORMWATER MANAGEMENT)		LS			
SUBTOTAL					
10% CONTINGENCY					
ESTIMATED TOTAL					

BY SEALING THE PLANS, THE DESIGN PROFESSIONAL HEREBY CERTIFIES THAT THE FOREGOING ESTIMATE REFLECTS THE CURRENT IMPROVEMENT COSTS OF THIS PROJECT.

COMMONWEALTH OF VIRGINIA
CORBIN L. WHITE
License No. 23643
04-01-2024
PROFESSIONAL ENGINEER

APPROVED

CWA
CALDWELL WHITE ASSOCIATES
ENGINEERS / SURVEYORS / PLANNERS
4203 MELROSE AVENUE
P.O. BOX 6260
ROANOKE, VIRGINIA 24017–0260
(540) 366–3400
FAX: (540) 366–8702

PLAN APPROVED
REVIEW COORDINATOR, 8/7/2024

TULLY DRIVE / NEIL DRIVE STORM DRAIN PROJECT

FOR

ROANOKE COUNTY DEPARTMENT OF STORMWATER OPERATIONS

Situate Generally the Intersection of Tully Drive and Neil Drive
Catawba Magisterial District
County of Roanoke, Virginia

Designed: C.L. White
Drawn: C.L. White
Checked:
Date: November 17, 2022
Field Book: Roanoke Co. #9
W.O. No.: 22–0070

SHEET C-01 OF 9

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO REMOVE SECTIONS OF EXISTING BITUMINOUS CURBING AND SAW-CUT EXISTING PAVEMENT FOR THE INSTALLATION OF NEW CONCRETE CURB & GUTTER, INSTALL ADDITIONAL STORM DRAIN INLET STRUCTURES AND PIPING, AND TO REPLACE CERTAIN RUNS OF EXISTING STORM DRAIN PIPE WITH LARGER DIAMETER PIPE.

EXPLORATORY EXCAVATIONS REQUIRED

DURING THE COURSE OF DESIGN, THE ENGINEER INITIATED MISS UTILITY TICKET NUMBER B223002105 FOR LOCATION OF UNDERGROUND UTILITIES. ALTHOUGH IT IS KNOWN THAT EACH DEVELOPED LOT IS SERVED BY A SANITARY SEWER LATERAL, ONLY A FEW IN THE WORK AREA WERE MARKED. THOSE THAT WERE MARKED WERE FIELD-LOCATED BY CWA. ADDITIONALLY, CWA FIELD LOCATED ANY SEWER CLEANOUTS THAT WERE VISIBLE, BUT NOT MARKED. AT THESE LOCATIONS WE HAVE ASSUMED THE LATERAL RUNS FROM THE CLEANOUT PERPENDICULAR TO THE SEWER MAIN.

DURING THE COURSE OF PLAN REVIEW, THE WVWA PROVIDED CWA WITH THE ORIGINAL 1961 'DEVELOPMENT PLAN' FOR THE GLEN COVE SUBDIVISION, WHICH SHOWED NEW SANITARY LATERAL ALIGNMENTS, WITH NO INFORMATION RELATIVE TO LATERAL SLOPE OR ELEVATION AT THE PROPERTY LINES. THESE APPROXIMATE SANITARY LATERAL LOCATIONS HAVE BEEN SHOWN HEREIN, SEE SHEET C-04. FOR VERTICAL ALIGNMENT OF THESE LATERALS, CWA ASSUMED THEY WERE INSTALLED FROM THE MAIN AT 2.08% SLOPE.

FOR THE MOST PART, THE ALIGNMENTS AND ELEVATIONS OF THE EXISTING SANITARY LATERALS DO NOT SEEM TO CONFLICT WITH THE PROPOSED WORK. HOWEVER, THERE ARE THREE (3) LOCATIONS WHERE THE SANITARY LATERAL LOCATIONS SHOWN ON THE 1961 DEVELOPMENT PLAN MAY BE EITHER TOO CLOSE HORIZONTALLY TO THE PROPOSED INLETS, OR MAY CONFLICT VERTICALLY WITH THE NEW STORM DRAIN PIPING. THE FIRST ACTIONS OF THE CONTRACTOR, FOLLOWING EXECUTION OF A MISS UTILITY TICKET BUT PRIOR TO INITIATING FABRICATION OF NEW STORM STRUCTURES, SHALL BE TO PERFORM EXPLORATORY EXCAVATIONS FOR THE FOLLOWING SANITARY SEWER LATERALS, TO CONFIRM LOCATION AND TO DETERMINE DEPTH OF LINE AT THE LOCATIONS INDICATED:

1. AT 2801 NEIL DRIVE, CONFIRM LOCATION AND ELEVATION OF EXISTING SANITARY LATERAL AT THE BACK OF CURB, OR AS NEAR AS POSSIBLE GIVEN LOCATIONS OF OTHER UTILITIES. AVAILABLE RECORDS INDICATE THIS LATERAL MAY CONFLICT VERTICALLY WITH NEW STORM DRAIN PIPING, AND MAY LIE TOO CLOSE (< 4') HORIZONTALLY TO THE PROPOSED CURB INLET.
2. AT 2804 NEIL DRIVE, CONFIRM LOCATION AND ELEVATION OF EXISTING SANITARY LATERAL AT THE BACK OF CURB, OR AS NEAR AS POSSIBLE GIVEN LOCATIONS OF OTHER UTILITIES. AVAILABLE RECORDS INDICATE THIS LATERAL MAY LIE TOO CLOSE (< 4') HORIZONTALLY TO THE PROPOSED CURB INLET.
3. AT 2804 TULLY DRIVE, CONFIRM LOCATION AND ELEVATION OF EXISTING SANITARY LATERAL AT THE BACK OF CURB, OR AS NEAR AS POSSIBLE GIVEN LOCATIONS OF OTHER UTILITIES. AVAILABLE RECORDS INDICATE THIS LATERAL MAY LIE TOO CLOSE (< 4') HORIZONTALLY TO THE PROPOSED CURB INLET.

UPON PERFORMING THE EXPLORATORY EXCAVATIONS, CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH THE RESULTS, AND THE ENGINEER WILL DETERMINE WHETHER FIELD REVISIONS ARE REQUIRED FOR EITHER HORIZONTAL PLACEMENT OF NEW STRUCTURES, OR VERTICAL REVISIONS TO INVERTS OF NEW PIPES AND STRUCTURES.

ENGINEER'S NOTES

CALDWELL WHITE ASSOCIATES ASSUMES NO RESPONSIBILITY FOR ADEQUACY OF PLANS OR FOR INFORMATION ON PLANS UNTIL SUCH PLANS HAVE BEEN APPROVED BY THE REQUIRED PUBLIC AGENCIES.

ANY WORK COMMENCED ON A PROJECT PRIOR TO PLAN APPROVAL IS AT SOLE RISK OF THE DEVELOPER.

CALDWELL WHITE ASSOCIATES DOES NOT GUARANTEE THE COMPLETION OR QUALITY OF PERFORMANCE OF THE CONTRACTS BY CONTRACTORS OR OTHER THIRD PARTIES.

ALL TRENCHING AND EXCAVATION SHALL BE PERFORMED IN STRICT ACCORDANCE WITH OSHA RULES AND REGULATIONS PERTAINING THERETO.

GRADING, COMPACTION AND FINISH SURFACE NOTES

FINISH GRADE FOR NEW CURB & GUTTER SHALL BE ESTABLISHED BY USING TOP OF EXISTING PAVEMENT ELEVATIONS AS THE FINISH ELEVATION OF THE FREE EDGE OF THE NEW GUTTER PAN. IN THE AREA WHERE STORM DRAIN REPLACEMENT IS IN THE REAR & SIDE YARDS OF THE RESIDENCES, FINISH GRADE SHALL MATCH EXISTING.

ALL DENUDED AREAS SHALL BE PERMANENTLY SEEDED WITHIN SEVEN (7) DAYS OF REACHING FINAL GRADE. TEMPORARY SEEDING SHALL BE APPLIED, WITHIN SEVEN (7) DAYS, TO DENUDED AREAS NOT AT FINAL GRADE BUT THAT WILL REMAIN UNDISTURBED FOR MORE THAN 14 DAYS.

PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON ALL DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED.

A MINIMUM OF 4" OF TOPSOIL SHALL BE PLACED IN ALL AREAS TO RECEIVE PERMANENT SEEDING OR AREAS OF NEW LANDSCAPING.

ALL STRUCTURAL FILL SHALL BE COMPACTED TO 98% OF STANDARD PROCTOR (ASTM D698). STRUCTURAL FILL IS DEFINED AS ANY AREA WITHIN 5' HORIZONTALLY OF ANY BUILDING, ROAD, WALK, OR OTHER HARD SURFACE, PROPOSED OR FUTURE.

AREAS OF LANDSCAPING OR OTHER NON-STRUCTURAL USES SHALL BE COMPACTED TO MINIMUM 80% OF STANDARD PROCTOR.

UNLESS OTHERWISE DIRECTED BY THE OWNER, ALL WORK PERFORMED IS UNCLASSIFIED, AND THE CONTRACTOR IS REQUIRED TO PERFORM CUT / FILL OPERATIONS NECESSARY TO PERFORM HIS TRADE.

TRAFFIC CONTROL AND SAFETY

ALTHOUGH FULL-WIDTH STREET CLOSURES SHALL BE AVOIDED WHENEVER POSSIBLE, TULLY DRIVE AND NEIL DRIVE FORM A LOOP, AND THEREFORE PERIMETER ACCESS WILL BE AVAILABLE TO RESIDENTS AND VISITORS SHOULD FULL-WIDTH TEMPORARY CLOSURES BE UNAVOIDABLE.

THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THE COUNTY OF ROANOKE AND VIRGINIA DEPARTMENT OF TRANSPORTATION RELATIVE TO PROVIDING TEMPORARY TRAFFIC CONTROL MEASURES AND SCHEDULING PARTIAL TRAVELWAY CLOSURES, PARTICULARLY RELATIVE TO THE WORK THAT IS REQUIRED FOR THE NEW STORM DRAIN CONSTRUCTION. TEMPORARY CONSTRUCTION BARRIERS SHALL BE IN PLACE AT ALL TIMES TO PHYSICALLY SEPARATE THE CONSTRUCTION AREA FROM THE PUBLIC.

THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL BARRELS, CONES, ETC. TO ENSURE THE SAFETY OF RESIDENTS, VISITORS, AND CONSTRUCTION PERSONNEL.

PROVIDE PROPERTY OWNERS A MINIMUM 48 HOURS NOTICE PRIOR TO RESTRICTING RESIDENTS' ACCESS TO THEIR DRIVEWAYS.

VIRGINIA DEPARTMENT OF TRANSPORTATION NOTES

THE CONTRACTOR WILL BE REQUIRED TO OBTAIN A LAND USE PERMIT AND POST APPLICABLE SURETY FROM VDOT. ADDITIONAL INFORMATION RELATIVE TO TRAFFIC CONTROL PLANS MAY BE REQUIRED AT THAT TIME.

ALL PERMITS & FEES WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

WESTERN VIRGINIA WATER AUTHORITY NOTES

THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THE WESTERN VIRGINIA WATER AUTHORITY RELATIVE TO RELOCATION OF EXISTING WATER METER BOXES AND LATERALS, SEE KEY NOTES, SHEETS C-03 AND C-04.

SHOULD UNFORESEEN CIRCUMSTANCES CAUSE ANY WORK TO BE PERFORMED RELATIVE TO SANITARY SEWER, SUCH WORK MUST BE REVIEWED AND APPROVED BY THE WESTERN VIRGINIA WATER AUTHORITY, PRIOR TO ANY SUCH WORK COMMENCING.

LEGEND

SYMBOLS

EXISTING	NEW	
100.5	100.5	SPOT ELEVATION
100	100	CONTOURS
===8"SS===	8"SS	SANITARY SEWER LINE
==SS (1961)==		SANITARY SEWER LATERAL (APPROXIMATE), SEE EXPLORATORY EXCAVATION NOTES, THIS SHEET
4"W	4"W	WATERLINE
===8"SD===		STORM DRAIN
2"G	2"G	GAS LINE
E	E	OVERHEAD ELECTRIC LINE
FO	FO	FIBER OPTIC LINE
T	T	OVERHEAD TELEPHONE LINE
CATV	CATV	OVERHEAD CABLE TELEVISION LINE
UE UT	UE UT	UNDERGROUND TEL OR ELEC LINE
M	M	WATER OR GAS METER
		VALVE
F.H.	F.H.	FIRE HYDRANT
		MANHOLE
C.O.	C.O.	CLEANOUT
		DROP INLET (CURB OR GRATE)
		UTILITY POLE, GUY & ANCHOR
		DITCH OR SWALE
℄ ℄	℄ ℄	CENTERLINE OR BASELINE
ℙ	ℙ	PROPERTY LINE
		BENCHMARK
x x		FENCE
		HANDICAPPED SPACE

ABBREVIATIONS

AHFH	ARROW HEAD TOP OF FIRE HYDRANT
APPROX	APPROXIMATE
ASPH	ASPHALT
BC	BOTTOM OF CURB
BIT	BITUMINOUS
BLDG	BUILDING
BM	BENCHMARK
C&G	CURB & GUTTER
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
DI	DROP INLET
DIA	DIAMETER
ELEC	ELECTRIC
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EXIST	EXISTING
FF	FINISHED FLOOR
FG	FINISH GRADE
FOPB	FIBER OPTIC PULL BOX
HPT	HIGH POINT
INV	INVERT
IP	IRON PIN
MBL	MINIMUM BUILDING LINE
MH	MANHOLE
MIN	MINIMUM
MON	MONUMENT
PVMT	PAVEMENT
R	RADIUS
R/W	RIGHT OF WAY
REQD	REQUIRED
SAN	SANITARY
SS	SANITARY SEWER
STA	STATION
STD	STANDARD
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TEL	TELEPHONE
TYP	TYPICAL
UTPB	UNDERGROUND TELEPHONE PULL BOX
VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
VERT	VERTICAL

ADDED

ADDED

Revised August 23, 2023 Per 1st Municipal Review – C.L. White

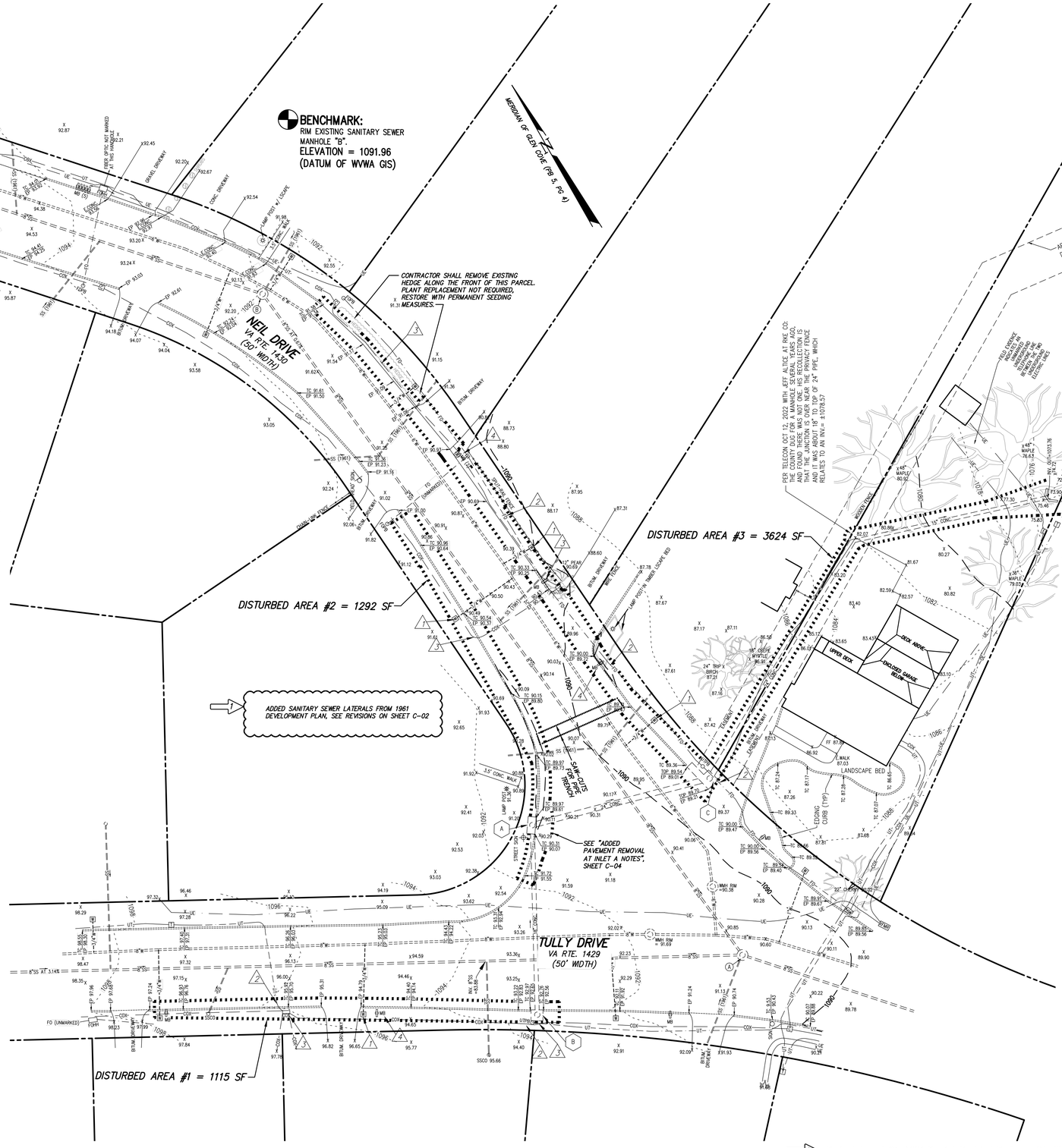
COMMONWEALTH OF VIRGINIA
CORBIN L. WHITE
License No. 23843
04-01-2024
PROFESSIONAL ENGINEER

NOTES AND LEGEND
FOR
TULLY DRIVE / NEIL DRIVE STORM DRAIN PROJECT
PERFORMED FOR
ROANOKE COUNTY DEPARTMENT OF STORMWATER OPERATIONS
CATAWBA MAGISTERIAL DISTRICT
COUNTY OF ROANOKE, VIRGINIA

Designed: C.L. White
Drawn: C.L. White
Checked:
Date: November 17, 2022
Scale: As Shown
Tax Parcel: (varies-see plan)
Field Book: Roanoke County #9
W.O. No.: 22-0070

CWA
CALDWELL WHITE ASSOCIATES
ENGINEERS / SURVEYORS / PLANNERS
4203 MELROSE AVENUE
P.O. BOX 6260
ROANOKE, VIRGINIA 24017-0260
(540) 366-3400
FAX: (540) 366-8702

APPROVED, 8/7/2024



GENERAL DEMOLITION NOTES

WHERE SELECTIVE DEMOLITION AND CONSTRUCTION OF NEW IMPROVEMENTS WILL REQUIRE TEMPORARY CLOSURE OF RESIDENTIAL DRIVEWAYS, THE CONTRACTOR SHALL COORDINATE CLOSELY WITH RESIDENTS TO KEEP THE ACCESS INCONVENIENCES TO THE ABSOLUTE MINIMUM.

IN THE EVENT THAT THERE ARE QUESTIONS REGARDING THE DISPOSITION OF CERTAIN IMPROVEMENTS, THE CONTRACTOR SHALL VERIFY WITH THE ENGINEER PRIOR TO ENGAGING IN ANY DEMOLITION WORK RELATIVE TO THE ITEM(S) IN QUESTION.

DEMOLITION SHALL INCLUDE, UNLESS OTHERWISE NOTED ON DRAWINGS, REMOVAL OF EXISTING OBJECTS OR IMPROVEMENTS, WHETHER INDICATED ON THE DRAWINGS OR NOT, THAT WOULD IN THE OPINION OF THE OWNER, PREVENT OR INTERFERE WITH THE PROGRESS OR COMPLETION OF THE PROPOSED WORK.

PERMITS, FEES AND LICENSES SHALL BE SECURED AND PAID FOR BY THE CONTRACTOR, INCLUDING DISPOSAL CHARGES AS REQUIRED.

WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE GOVERNING AUTHORITIES IN DEMOLITION OF EXISTING PAVEMENT, CURBS AND GUTTERS, DRAINAGE STRUCTURES AND UTILITIES AS MAY BE REQUIRED.

CONTRACTOR SHALL SAW-CUT ALL JOINTS WHERE EXISTING CURBING, PAVEMENT AND SIDEWALK IS TO BE DEMOLISHED AND NEW CONSTRUCTION JOINS THE EXISTING.

ALL EXISTING CURBING, CONCRETE SIDEWALK, ENTRANCES, BUILDING FOUNDATIONS AND TREES AND BRUSH THAT ARE DEMOLISHED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR. DEMOLITION DEBRIS, ETC. SHALL NOT BE USED AS FILL MATERIAL ON THE SITE.

CONTRACTOR SHALL PROVIDE THE FOLLOWING PROTECTIONS AT THE JOB SITE:

- *MAKE ARRANGEMENTS, BEFORE INITIATING DEMOLITION, FOR RELOCATING, DISCONNECTION, REROUTING, ABANDONING, OR SIMILAR ACTION AS MAY BE REQUIRED RELATIVE TO UTILITIES AND OTHER UNDERGROUND PIPING, TO PERMIT WORK TO PROCEED WITHOUT DELAY.*
- *ARRANGEMENTS SHALL BE MADE IN ACCORDANCE WITH REGULATIONS OF AUTHORITIES OF UTILITIES MENTIONED, SUCH AS OVERHEAD / UNDERGROUND POWER AND TELECOMMUNICATION LINES AND EQUIPMENT, GAS PIPING, STORM SEWERS, SANITARY SEWERS, OR WATER PIPING.*
- *CONTRACTOR SHALL NOT USE WATER WHEN IT MAY CREATE HAZARDOUS OR OBJECTIONABLE CONDITIONS SUCH AS ICE, FLOODING AND/ OR POLLUTION.*
- *ENSURE SAFE PASSAGE OF PERSONS AROUND ALL AREAS OF DEMOLITION.*
- *CONDUCT OPERATIONS TO PREVENT DAMAGE TO ADJACENT BUILDINGS, STRUCTURES, OTHER FACILITIES, OR INJURY TO PERSONS.*
- *PROMPTLY REPAIR DAMAGES CAUSED TO ADJACENT FACILITIES BY DEMOLITION OPERATIONS AT NO COST TO THE OWNER.*
- *MAINTAIN EXISTING UTILITIES INDICATED TO REMAIN, KEEP IN SERVICE, AND PROTECT AGAINST DAMAGE DURING DEMOLITION OPERATIONS.*
- *PREVENT INTERRUPTION OF EXISTING UTILITIES SERVING OCCUPIED OR USED FACILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY AUTHORITIES HAVING JURISDICTION.*
- *PROVIDE TEMPORARY SERVICES DURING INTERRUPTIONS TO EXISTING UTILITIES AS ACCEPTABLE TO UTILITY OWNER AND GOVERNING AUTHORITIES.*
- *PROVIDE TRAFFIC CONTROL MEASURES AS DEEMED NECESSARY FOR CONTROL OF VEHICULAR ROUTES DURING TIMES OF DEMOLITION OR RECONSTRUCTION WITHIN OR ADJACENT TO PUBLIC STREETS OR OTHER OFF-SITE VEHICULAR ROUTES. CONTROLS MAY INCLUDE, BUT NOT BE LIMITED TO, CONES, BARRELS, BARRICADES, SIGNAGE (STATIC AND/OR ELECTRONIC) AND FLAGMEN.*
- *CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT, AND DEBRIS CAUSED BY DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITIONS EXISTING PRIOR TO THE START OF WORK, OR BETTER.*

PROJECT DESCRIPTION & GENERAL NOTES

THE PURPOSE OF THIS PROJECT IS TO REMOVE SECTIONS OF EXISTING BITUMINOUS CURBING AND SAW-CUT EXISTING PAVEMENT FOR THE INSTALLATION OF NEW CONCRETE CURB & GUTTER, INSTALL ADDITIONAL STORM DRAIN INLET STRUCTURES AND PIPING, AND TO REPLACE CERTAIN RUNS OF EXISTING STORM DRAIN PIPE WITH LARGER DIAMETER PIPE.

ALL STREET CURB IS BITUMINOUS. IN MOST PLACES THE HEIGHT IS WELL BELOW 4".

THE SURVEYORS WERE NOT ABLE TO LOCATE A JUNCTION MANHOLE IN THE LOWER PORTION OF THE DRIVEWAY AT 2737 TULLY DRIVE. SEE PLAN FOR BEST INFORMATION AVAILABLE RELATIVE TO STORM DRAIN DIRECTION CHANGE IN THIS AREA.

SUMMARY OF DISTURBED AREAS

DISTURBED AREA #1 = 1,115 SF
DISTURBED AREA #2 = 1,292 SF
DISTURBED AREA #3 = 3,624 SF
TOTAL DISTURBED = 6,031 SF = 0.138 ACRE

△ KEY NOTES – SITE PREPARATION △

1. *REMOVE & RESET WATER METER, BOX AND SETTER. DEPENDING ON DEPTH, THERE MAY BE SOME DEEPENING OF LATERAL REQUIRED.*
2. *REMOVE & RELOCATE UNDERGROUND TELEPHONE LINE(S) AS NECESSARY FOR CONSTRUCTION CLEARANCES*
3. *REMOVE & RELOCATE COX CABLE BOX AND LINES AS NECESSARY FOR CONSTRUCTION CLEARANCES*
4. *REMOVE MAILBOX(ES) & POST(S). RESET FOR TEMPORARY SERVICE, THEN REPLACE ONCE CONSTRUCTION IS COMPLETE.*

20' 10' 0' 20' 40' 1" = 20'

GRAPHIC SCALE

Revised August 23, 2023 Per 1st Municipal Review – C.L. White

COMMONWEALTH OF VIRGINIA
CORBIN L. WHITE
License No. 23843
04-01-2024
PROFESSIONAL ENGINEER

EXISTING CONDITIONS AND SITE DEMOLITION PLAN FOR

TULLY DRIVE / NEIL DRIVE STORM DRAIN PROJECT

PERFORMED FOR

ROANOKE COUNTY DEPARTMENT OF STORMWATER OPERATIONS

CATAWBA MAGISTERIAL DISTRICT
COUNTY OF ROANOKE, VIRGINIA

Designed:	C.L. White
Drawn:	C.L. White
Checked:	
Date:	November 17, 2022
Scale:	1" = 20'
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APPROVED, 8/7/2024

ADDED PAVEMENT REMOVAL AT INLET A NOTES

UNDER EXISTING CONDITIONS, IT APPEARS THAT THE PAVEMENT IN THE VICINITY OF EXISTING INLET A WILL BE APPROXIMATELY 6" HIGHER THAN THE FREE EDGE OF THE NEW CG-6 CURB & GUTTER. AS SUCH, THE CONTRACTOR SHALL INCLUDE TIME AND MATERIALS TO REMOVE AND REPLACE ± 10 SY OF FULL DEPTH PAVEMENT, TO SMOOTHLY TRANSITION FROM EXISTING PAVEMENT GRADES TO NEW FREE EDGE OF GUTTER PAN.

ADDED NEW EASEMENT TABLE AND EASEMENT ON PLAN

NEW 2,142 SQ. FT. (0.0492 AC.) DRAINAGE EASEMENT, BOUNDED BY CORNERS 1 THROUGH 7 INCLUSIVE, TO 1

1 to 2	S 72° 14' 13" E	61.68
2 to 3	N 85° 08' 35" E	11.37'
3 to 4	N 85° 08' 35" E	13.98'
4 to 5	S 17° 45' 47" W	39.50'
5 to 6	N 54° 35' 45" W	32.17'
6 to 7	N 72° 14' 13" W	72.08'
7 to 1	N 59° 12' 00" E	26.68'

3 to 6 (TIE ONLY) = 30.15'

NEW 1,427 SQ. FT. (0.0328 AC.) DRAINAGE EASEMENT ACROSS LOT 5, BOUNDED BY CORNERS 1 to 2 to 3 to 6 to 7 to 1.

NEW 715 SQ. FT. (0.0164 AC.) DRAINAGE EASEMENT ACROSS LOT 6, BOUNDED BY CORNERS 3 to 4 to 5 to 6 to 3.

BENCHMARK:
RIM EXISTING SANITARY SEWER MANHOLE "B".
ELEVATION = 1091.96
(DATUM OF WVWA GIS)
PROPERTY OF CLAUDE R. & ATHA REBECCA COLLINS 2827 NEIL DRIVE TAX PARCEL 036.16-01-07.00-0000
PROPERTY OF SONNY CAO & DONG HUU 2819 NEIL DRIVE TAX PARCEL 036.20-01-07.00-0000 LOT 1
PROPERTY OF OTEY LIVING TRUST, KENNETH RAY OTEY TRUSTEE 2813 NEIL DRIVE TAX PARCEL 036.20-01-06.00-0000 LOT 2
BLOCK 2 GLEN COVE PB 5, PG 4
PROPERTY OF F. ANTHONY BROWN, JR 2807 NEIL DRIVE TAX PARCEL 036.20-01-05.00-0000 LOT 3
PROPERTY OF MICHAEL R. & LINDA M. WALKER 2801 NEIL DRIVE TAX PARCEL 036.20-01-04.00-0000 LOT 4
LOT 5
LOT 6
PROPERTY OF SON X HA 2828 NEIL DRIVE TAX PARCEL 036.20-01-08.00-0000 LOT 12
PROPERTY OF LATIA BRYANT & KEVIN COURTNEY JOHNSON 2822 NEIL DRIVE TAX PARCEL 036.20-01-09.00-0000 LOT 13
NEIL DRIVE VA RTE. 1430 (50' WIDTH)
PROPERTY OF SANG NGO & HUONG T. DUONG 2812 NEIL DRIVE TAX PARCEL 036.20-01-10.00-0000 LOT 14
BLOCK 3 GLEN COVE PB 5, PG 4
DISTURBED AREA #2 = 1292 SF
DISTURBED AREA #3 = 3624 SF
PROPERTY OF ROBERT W. & PATRICIA A. MARTIN 2722 TULLY DRIVE TAX PARCEL 036.20-01-03.00-0000
PROPERTY OF NGUYEN HA 2811 TULLY DRIVE TAX PARCEL 036.20-01-12.00-0000 LOT 30
PROPERTY OF DEBORAH L. GRISSO 2804 NEIL DRIVE TAX PARCEL 036.20-01-11.00-0000 LOT 15
SEE "ADDED PAVEMENT REMOVAL AT INLET A NOTES", THIS SHEET
TULLY DRIVE VA RTE. 1429 (50' WIDTH)
DISTURBED AREA #1 = 1115 SF
PROPERTY OF HUNG XUAN HA 2810 TULLY DRIVE TAX PARCEL 036.20-01-20.00-0000 LOT 20
PROPERTY OF DENNIS R. & GLORIA H. MORGAN 2804 TULLY DRIVE TAX PARCEL 036.20-01-21.00-0000 LOT 21
PROPERTY OF ST PAUL UNITED METHODIST CHURCH BD TRS 2740 TULLY DRIVE TAX PARCEL 036.20-01-22.00-0000 LOT 22
BLOCK 4 GLEN COVE PB 5, PG 4
NEW STORM DRAIN EASEMENT
CLARIFIED RE-SURFACING ENTIRE DRIVE AREA

◯ EXISTING SANITARY SEWER ◯

A — EXIST. SSMH
RIM=1090.83
INV. IN FROM NORTH=1080.93
INV. IN FROM EAST =1080.83
INV. OUT=1080.63

B — EXIST. SSMH
RIM=1091.96
INV. IN =1082.96
INV. OUT=1082.86

C — EXIST. SSMH
RIM=1103.51
INV. OUT=1093.41

STORM DRAIN REQUIREMENTS

ALL NEW STORM DRAIN STRUCTURES SHALL BE PRE-CAST CONCRETE. ALL STORM DRAIN MATERIALS, FABRICATION, AND INSTALLATION SHALL BE IN ACCORDANCE WITH VDOT STANDARDS AND SPECIFICATIONS.

ALL NEW STORM DRAIN STRUCTURES SHALL INCLUDE VDOT ST'D. IS-1 INLET SHAPING.

NEW STORM DRAIN PIPE SHALL BE VDOT CLASS III REINFORCED CONCRETE PIPE. ALL STORM DRAIN SHALL BE BEDDED IN ACCORDANCE WITH VDOT ST'D PB-1.

IN ACCORDANCE WITH THE ROANOKE COUNTY STORMWATER MANAGEMENT DESIGN MANUAL, BEDDING MATERIAL AND INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF THE VDOT SPECIFICATIONS. USE CLASS I BACKFILL (CRUSHER-RUN OR VDOT #21) UP TO THE SPRING LINE FOR RCP. VDOT #57 STONE IS NOT ALLOWED AS PIPE BEDDING.

PROVIDE ADDITIONAL TEMPORARY COVER ON ALL NEW STORM DRAIN AS REQUIRED BY VDOT ST'D PC-1.

STRUCTURES

A — EXIST. CURB INLET
RIM=1090.86
INV. IN=1086.86
INV. OUT=1086.76

B — EXIST. CURB INLET
RIM=1093.48
INV. =1089.48
REPLACE EXISTING INLET TOP WITH NEW, VDOT T-DI-3, L=18'.
NEW INV. IN = 1089.58
(CONTRACTOR MAY CORE OR REMOVE AND REPLACE INLET BASE)

C — EXIST. CURB INLET
RIM=1089.63
INV. IN FROM A=1082.53
INV. OUT=1082.43
TO BE REMOVED. REPLACE BASE, RISERS & ADAPTER SLAB AS NECESSARY AND RE-SET TOP TO MATCH EXIST.
INV. IN FROM A=1082.53 (MATCH EXIST.)
NEW INV. IN FROM 104=1080.57
NEW INV. OUT=1080.47

100 — PROVIDE NEW VDOT ST'D DI-3B, L=14'
RIM=1096.40
INV.=1091.73

101 — PROVIDE NEW VDOT ST'D DI-3B, L=14'
RIM=1091.10
INV.=1086.10

102 — PROVIDE NEW VDOT ST'D DI-3B, L=14'
RIM=1090.36
INV. IN = 1084.63
INV. OUT=1084.53

103 — PROVIDE NEW VDOT ST'D DI-3B, L=14'
RIM=1091.05
INV.=1086.38

104 — PROVIDE NEW VDOT ST'D DI-3B, L=10'
RIM=1089.85
INV. IN FROM 102=1081.50
INV. IN FROM 103=1084.68
INV. OUT=1081.40

105 — PROVIDE NEW VDOT ST'D STORM MANHOLE
RIM=1082.07
INV. IN=1075.70
INV. OUT=1075.60

PIPES

100-B — PROVIDE 102.8' NEW 15" RCP AT 2.09%
INV. IN=1091.73
INV. OUT=1089.58

101-102 — PROVIDE 81.7' NEW 18" RCP AT 1.80%
INV. IN=1086.10
INV. OUT=1084.63

102-104 — PROVIDE 40.3' NEW 24" RCP AT 7.52%
INV. IN=1084.53
INV. OUT=1081.50

103-104 — PROVIDE 89.3' NEW 15" RCP AT 1.90%
INV. IN=1086.38
INV. OUT=1084.68

104-C — PROVIDE 41.6' NEW 24" RCP AT 2.00%
INV. IN=1081.40
INV. OUT=1080.57

C-105 — PROVIDE 103.6' NEW 30" RCP AT 4.60%
INV. IN=1080.47
INV. OUT=1075.70

105-OUT — PROVIDE 72.5' NEW 30" RCP AT 2.54%
INV. IN=1075.60
INV. OUT=1073.76
PROVIDE VDOT EW-1 ENDWALL AT OUTLET END

STORMWATER MANAGEMENT – WATER QUALITY

AS THIS PROJECT IS A LINEAR UTILITY PROJECT WITH LESS THAN 1 ACRE OF TOTAL LAND DISTURBANCE, THERE ARE NO REQUIREMENTS FOR PHOSPHOROUS REMOVAL OR VSMP PERMITTING.

STORMWATER MANAGEMENT – QUANTITY

AS GROUND COVERS UNDER PRE- AND POST-DEVELOPMENT CONDITIONS WILL NOT RESULT IN AN INCREASE IN IMPERVIOUS SURFACES, AND STORMWATER FLOW TIMES WILL NOT BE APPRECIABLY ALTERED, RUNOFF ON ANY GIVEN DESIGN STORM WILL REMAIN UNCHANGED. THEREFORE NO STORMWATER MANAGEMENT STORAGE FACILITIES ARE WARRANTED.

KEY NOTES – NEW CONSTRUCTION

1. REMOVE AND REPLACE COMPLETE WATER SERVICES AND BOX PER W-2 WATER DETAIL.
2. REMOVE & RELOCATE UNDERGROUND TELEPHONE LINE(S) AS NECESSARY FOR CONSTRUCTION CLEARANCES
3. REMOVE & RELOCATE COX CABLE BOX AND LINES AS NECESSARY FOR CONSTRUCTION CLEARANCES
4. REMOVE MAILBOX(ES) & POST(S). RESET FOR TEMPORARY SERVICE, THEN REPLACE ONCE CONSTRUCTION IS COMPLETE.
5. PROVIDE NEW VDOT ST'D. CG-6 CONCRETE CURB & GUTTER. SEE DETAIL 'C', SHEET C-07.
6. PROVIDE NEW VDOT ST'D. CG-9B CONCRETE ENTRANCE APRON (NO PEDESTRIAN ACCESS ROUTES). TIE SMOOTHLY TO EXISTING BITUMINOUS DRIVEWAY.
7. NEATLY SAW-CUT EXISTING DRIVEWAY, WITH SAW-CUT PLACED A MINIMUM OF SIX INCHES BEYOND LIMITS OF PAVEMENT BASE REMOVAL. REPLACE DAMAGED PAVEMENT WITH STANDARD DUTY BITUMINOUS PAVEMENT, WITH WEAR COURSE OVERLAPPING EXISTING BASE STONE BY SIX INCHES MIN. SEE DETAIL A/C-07 FOR PAVEMENT. MILL AND OVERLAY OTHERWISE UNDISTURBED PORTIONS OF ENTIRE DRIVEWAY AND REAR PARKING AREAS WITH 1-1/2" VDOT SM9.5A BITUMINOUS WEAR COURSE.

SUMMARY OF DISTURBED AREAS

DISTURBED AREA #1 = 1,115 SF
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DISTURBED AREA #3 = 3,624 SF
TOTAL DISTURBED = 6,031 SF = 0.138 ACRE

20' 10' 0' 20' 40' — 1" = 20'
GRAPHIC SCALE

COMMONWEALTH OF VIRGINIA
CORBIN L. WHITE
License No. 23843
04-01-2024
PROFESSIONAL ENGINEER

NEW STORM DRAIN PLAN
FOR
TULLY DRIVE / NEIL DRIVE STORM DRAIN PROJECT
PERFORMED FOR
ROANOKE COUNTY DEPARTMENT OF STORMWATER OPERATIONS
CATAWBA MAGISTERIAL DISTRICT
COUNTY OF ROANOKE, VIRGINIA

Designed: C.L. White
Drawn: C.L. White
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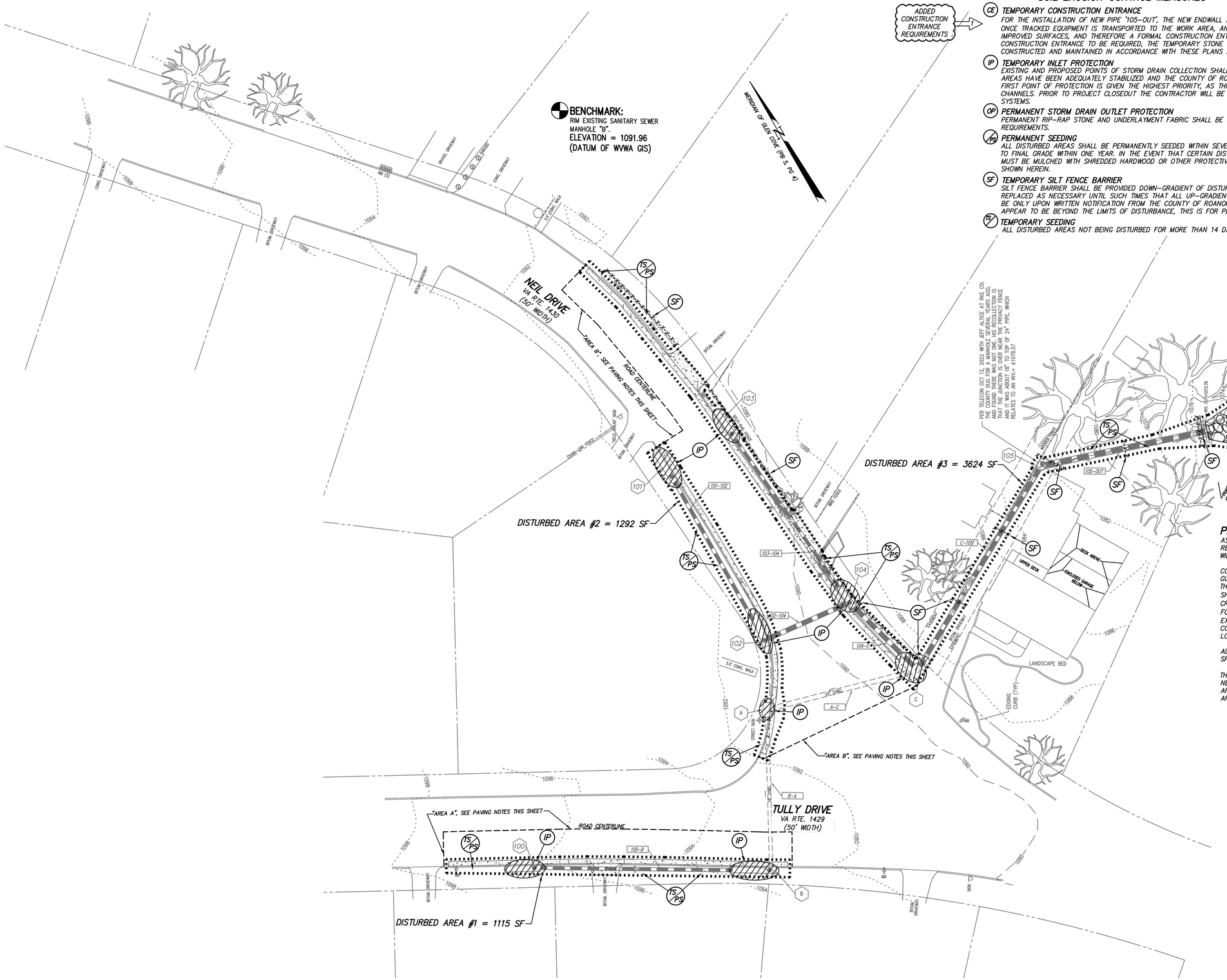
APPROVED, 8/7/2024



SOIL EROSION CONTROL MEASURES

ADDED CONSTRUCTION ENTRANCE REQUIREMENTS → 1

(CE) TEMPORARY CONSTRUCTION ENTRANCE
FOR THE INSTALLATION OF NEW PIPE '105-OUT', THE NEW ENDWALL AND THE OUTLET PROTECTION IN THE REAR YARD OF 2737 TULLY DRIVE, IT IS EXPECTED THAT ONCE TRACKED EQUIPMENT IS TRANSPORTED TO THE WORK AREA, ANY ON-ROAD VEHICLES WILL ENTER AND EXIT TO/FROM TULLY DRIVE BY TRAVELLING ONLY ON IMPROVED SURFACES, AND THEREFORE A FORMAL CONSTRUCTION ENTRANCE IS NOT WARRANTED. HOWEVER, IN THE EVENT THE COUNTY INSPECTOR DEEMS A FORMAL CONSTRUCTION ENTRANCE TO BE REQUIRED, THE TEMPORARY STONE CONSTRUCTION ENTRANCE SHALL BE PROVIDED OFF OF EXISTING PAVED SURFACE, AND SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THESE PLANS AND THE VIRGINIA EROSION AND SEDIMENTATION CONTROL HANDBOOK, LATEST EDITION.

(IP) TEMPORARY INLET PROTECTION
EXISTING AND PROPOSED POINTS OF STORM DRAIN COLLECTION SHALL BE PROTECTED FROM SEDIMENTATION UNTIL SUCH TIME THAT ALL UPGRADIENT DISTURBED AREAS HAVE BEEN ADEQUATELY STABILIZED AND THE COUNTY OF ROANOKE ALLOWS REMOVAL OF TEMPORARY MEASURES. IT IS OF UTMOST IMPORTANCE THAT THIS FIRST POINT OF PROTECTION IS GIVEN THE HIGHEST PRIORITY, AS THIS WILL REDUCE THE OVERALL MAINTENANCE BURDEN OF RECEIVING STORM DRAIN SYSTEMS AND CHANNELS. PRIOR TO PROJECT CLOSEOUT THE CONTRACTOR WILL BE REQUIRED TO ENSURE ALL SEDIMENT HAS BEEN REMOVED FROM ALL PARTS OF STORM DRAIN SYSTEMS.

(OP) PERMANENT STORM DRAIN OUTLET PROTECTION
PERMANENT RIP-RAP STONE AND UNDERLAYMENT FABRIC SHALL BE PLACED AT THE STORM DRAIN OUTFALL. SEE SHEET C-09 FOR DIMENSIONS AND STONE SIZING REQUIREMENTS.

(PS) PERMANENT SEEDING
ALL 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. IN THE EVENT THAT CERTAIN DISTURBED AREAS ARE TO BE LANDSCAPE MULCHED IN LIEU OF PERMANENT SEEDING, THE AREAS MUST BE MULCHED WITH SHREDDED HARDWOOD OR OTHER PROTECTIVE COVERINGS IN ACCORDANCE WITH THE TIMELINES FOR TEMPORARY AND PERMANENT SEEDING, SHOWN HEREIN.

(SF) TEMPORARY SILT FENCE BARRIER
SILT FENCE BARRIER SHALL BE PROVIDED DOWN-GRADIENT OF DISTURBED AREAS, AS SHOWN HEREON. THE BARRIER SHALL BE MAINTAINED, CLEANED, AND / OR REPLACED AS NECESSARY UNTIL SUCH TIMES THAT ALL UP-GRADIENT DISTURBED AREAS ARE STABILIZED AGAINST EROSION AND SEDIMENTATION, AND REMOVAL SHALL BE ONLY UPON WRITTEN NOTIFICATION FROM THE COUNTY OF ROANOKE. IT IS NOTED THAT CERTAIN PORTIONS OF THE SILT FENCE LOCATION ON THE PLAN MAY APPEAR TO BE BEYOND THE LIMITS OF DISTURBANCE, THIS IS FOR PLAN CLARITY ONLY, THE CONTRACTOR SHALL PLACE THE SILT FENCE AT LIMITS OF DISTURBANCE.

(TS) TEMPORARY SEEDING
ALL DISTURBED AREAS NOT BEING DISTURBED FOR MORE THAN 14 DAYS SHALL RECEIVE TEMPORARY SEEDING.

PAVING NOTES – PUBLIC STREET PORTIONS

AS SHOWN HEREON, IN THE AREAS OF PROPOSED WORK WITHIN THE PUBLIC RIGHT OF WAY, REPAVING SHALL BE PERFORMED FOR A MINIMUM ONE-LANE WIDTH, AND IN AREAS FOR FULL WIDTH OF THE ROADWAY.

CONTRACTOR SHALL SAW-CUT EXISTING PAVEMENT AS NECESSARY TO INSTALL NEW CURB & GUTTER AND STORM DRAIN. REPLACE FULL-DEPTH PAVEMENT A MINIMUM OF TWO FEET BEYOND THE EDGE OF THE GUTTER PAN. FULL-DEPTH PAVEMENT REPLACEMENT ADJACENT TO CURBING SHALL BE PER DETAIL A/C-07. REPLACE FULL-DEPTH PAVEMENT AT STORM DRAIN STREET CROSSING PER DETAIL E/C-07.
FOR THE REMAINDER OF THE AREA TO BE REPAVED, THE CONTRACTOR SHALL MILL 1-1/2" OF EXISTING BITUMINOUS PAVEMENT AND INSTALL 1-1/2" OF NEW VDOT SM9.5A BITUMINOUS WEAR COURSE. MATCH EXISTING PAVEMENT AND GUTTER PAN AT EDGES, AND MATCH EXISTING LONGITUDINAL AND CROSS-SLOPES.

ALL PAVING SHALL BE PERFORMED IN ACCORDANCE WITH VDOT ROAD AND BRIDGE SPECIFICATIONS.

THE FOLLOWING ARE THE ENGINEER'S ESTIMATED AREAS OF REPAVING, TO THE EDGE OF THE NEW GUTTER PAN:
AREA A = 220 SY
AREA B = 672 SY

SUMMARY OF DISTURBED AREAS

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1" = 20'
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PROFESSIONAL ENGINEER

SOIL EROSION & SEDIMENTATION CONTROL PLAN AND STREET REPAVING PLAN
FOR
TULLY DRIVE / NEIL DRIVE STORM DRAIN PROJECT
PERFORMED FOR
ROANOKE COUNTY DEPARTMENT OF STORMWATER OPERATIONS
CATAWBA MAGISTERIAL DISTRICT
COUNTY OF ROANOKE, VIRGINIA

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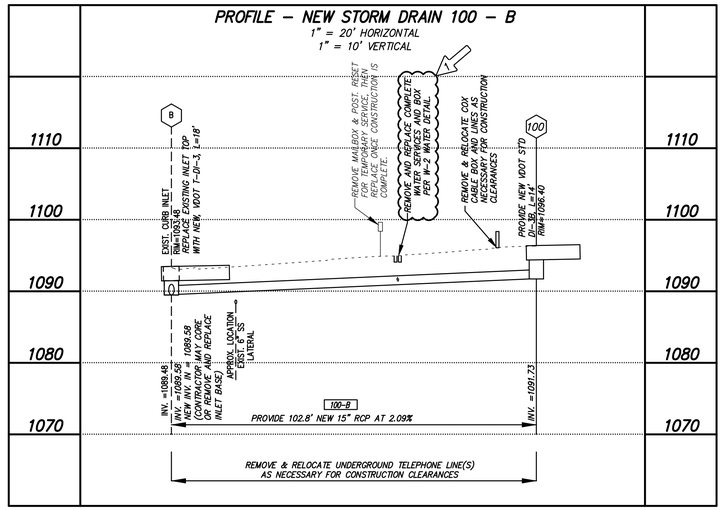

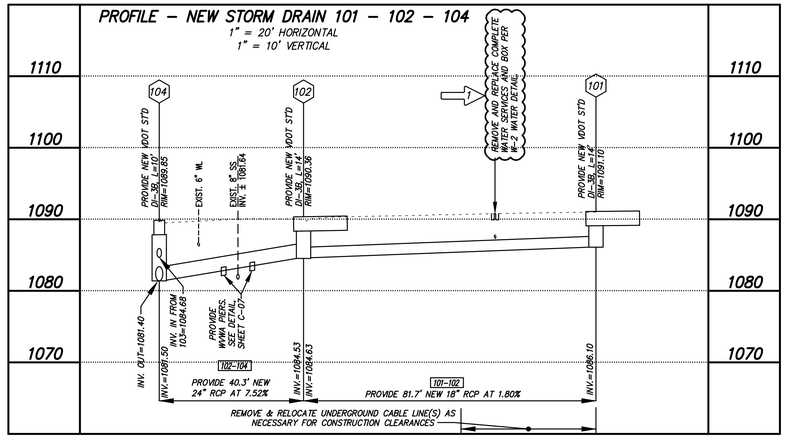

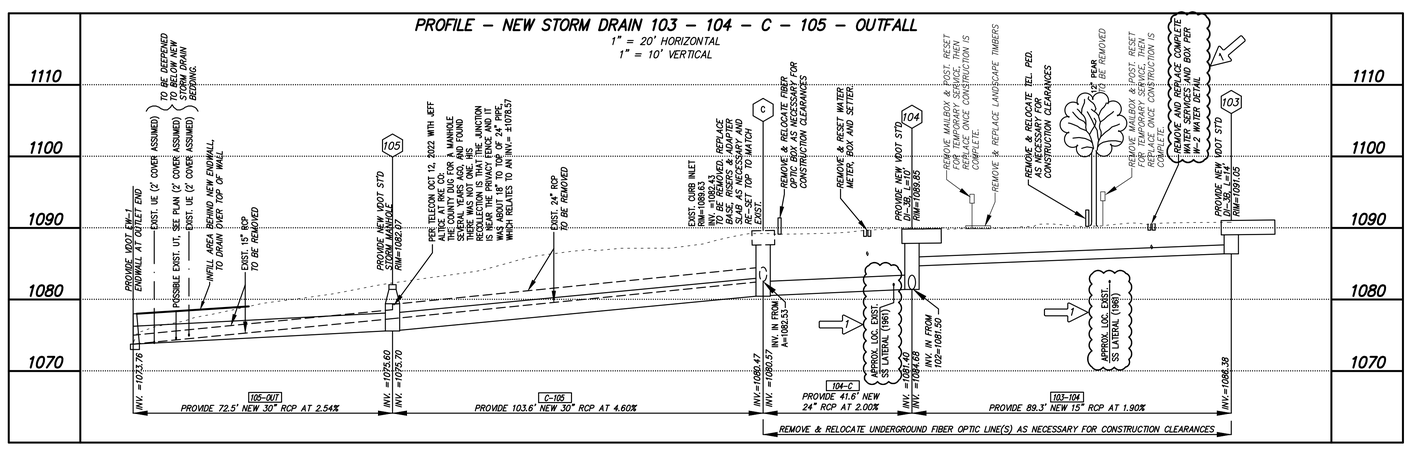

FOR PROFILE PURPOSES, ALL EXISTING WATERLINES ARE ASSUMED TO HAVE THREE FEET OF COVER, CONTRACTOR SHALL VERIFY BY 'POTHOLING' AS REQUIRED PRIOR TO INSTALLATION OF NEW STORM DRAIN SYSTEMS.

10' 5' 0' 10' 20' 1" = 10'
GRAPHIC SCALE

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PROFILES – STORM DRAIN
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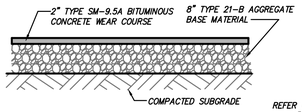
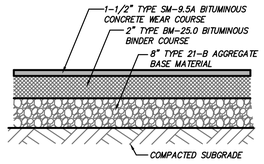
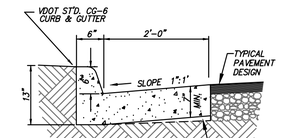


REFER TO VDOT SPECIFICATIONS FOR INDIVIDUAL PAVEMENT COURSES SHOWN HEREON



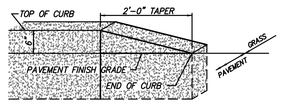
A C-07 — STANDARD-DUTY BITUMINOUS PAVEMENT
NO SCALE

B C-07 — HEAVY-DUTY BITUMINOUS PAVEMENT
NO SCALE

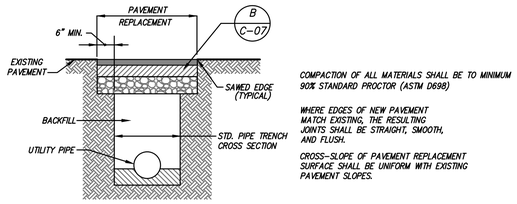


SAW-CUT EXISTING PAVEMENT A MINIMUM OF ONE FOOT BEYOND THE FREE EDGE OF NEW GUTTER. FOLLOWING INSTALLATION OF NEW CURB & GUTTER, INSTALL HEAVY DUTY BITUMINOUS PAVEMENT FROM FREE EDGE OF GUTTER TO SAW-CUT. NEW PAVEMENT SHALL MATCH ADJOINING SLOPES. 'PINCH' PAVEMENT JOINT TO PROVIDE AS SEAMLESS A JOINT AS POSSIBLE. SEE DETAIL 'B' THIS SHEET FOR PAVEMENT.

C C-07 — CONCRETE CURB & GUTTER
NO SCALE

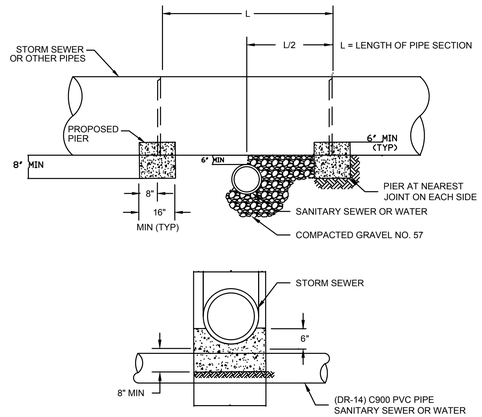


D C-07 — CURB TAPER
NO SCALE



E C-07 — PAVEMENT REPLACEMENT-PUBLIC STREET TRENCH
NO SCALE

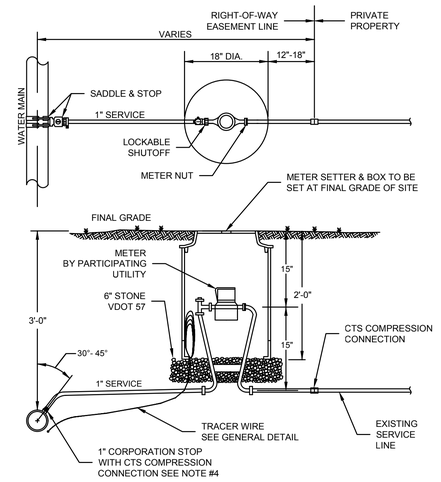
1. PIER REQUIRED WHEN STORM DRAIN OR OTHER PIPES CROSSES OVER THE OTHER UTILITY WITH A VERTICAL CLEARANCE OF LESS THAN 18".
2. PIER TO BE BUILT ON UNDISTURBED EARTH.
3. CONCRETE TO BE READY MIX, CLASS A3.



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

CONCRETE PIER — **G-8**
01/01/14

1. SETTER TO BE A.Y. McDONALD 720-215WXDD33, FORD VB72-15W-11-33 OR APPROVED EQUAL.
2. SADDLES MUST BE USED WITH ALL PLASTIC & DUCTILE IRON PIPE. SERVICE SADDLES SHALL BE USED IN ACCORDANCE WITH WATER DISTRIBUTION PIPING SPECIFICATION. SERVICE SADDLES FOR PLASTIC PIPE SHALL BE: POWERSEAL 3417, OR 3412AS, ROMAC 202S, OR 306, OR FORD METER FS202 OR FS303. FOR DUCTILE IRON PIPE USE THE ABOVE OR POWERSEAL 3413, ROMAC 202 OR FORD METER F202.
3. METER BOX SHALL BE CARSON/MID-STATES PLASTICS, INC. PLASTIC BOX WITH FORD "A" DOMESTIC SERIES FRAME WITH A NICOR DOMESTIC 12.25 CX LID WITH SENSUS RECESS AND WVWA LOGO, ADS CORRUGATED HDPE BOX WITH FORD "A" DOMESTIC SERIES FRAME WITH A NICOR DOMESTIC 12.25 CX LID WITH SENSUS RECESS AND WVWA LOGO OR APPROVED EQUAL. METER BOX SHALL NOT BE PLACED IN AREAS SUBJECT TO VEHICULAR TRAFFIC. IF TRAFFIC BEARING BOX IS REQUIRED, DESIGN ENGINEER SHALL CONSULT WITH PARTICIPATING UTILITY TO DETERMINE SITE SPECIFIC REQUIREMENTS.
4. CORPORATION STOP SHALL BE FORD FB1000-4-G-NL, MUELLER B-25008 OR APPROVED EQUAL.
5. SERVICE SHALL BE "K" TYPE COPPER, OR COPPER TUBE SIZE POLYETHYLENE (PE) 4710, SDR-9 (200 psi).
6. WHENEVER SIDEWALK EXISTS OR IS PROPOSED, MODIFY METER LOCATION AS DIRECTED.



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

SINGLE RESIDENTIAL WATER SERVICE
(REPLACEMENT OF EXISTING SERVICE) — **W-2**
09/07/17

DETAIL ADDED 1

1 Revised August 23, 2023 Per 1st Municipal Review - C.L. White

COMMONWEALTH OF VIRGINIA
CORBIN L. WHITE
License No. 23843
04-01-2024
PROFESSIONAL ENGINEER

DETAILS - SITE CONSTRUCTION
FOR
TULLY DRIVE / NEIL DRIVE STORM DRAIN PROJECT
PERFORMED FOR
ROANOKE COUNTY DEPARTMENT OF STORMWATER OPERATIONS
CATAWBA MAGISTERIAL DISTRICT
COUNTY OF ROANOKE, VIRGINIA

Designed: C.L. White
Drawn: C.L. White
Checked:
Date: November 17, 2022
Scale: As Shown
Tax Parcel: (varies-see plan)
Field Book: Roanoke County #9
W.O. No.: 22-0070

CWA
CALDWELL WHITE ASSOCIATES
ENGINEERS / SURVEYORS / PLANNERS
4203 MELROSE AVENUE
P.O. BOX 6260
ROANOKE, VIRGINIA 24017-0260
(540) 366-3400
FAX: (540) 366-8702

APPROVED, 8/7/2024

SOIL EROSION CONTROL NARRATIVE

PROJECT DESCRIPTION:
THE PURPOSE OF THIS PROJECT IS THE CONSTRUCTION OF SUPPLEMENTAL STORM DRAIN COLLECTION INLETS AND INCREASED PIPE DIAMETERS TO ALLEVIATE LOCALIZED FLOODING OF RESIDENTS DURING LARGE STORM EVENTS. ALSO INCLUDED IS THE INSTALLATION OF NEW CONCRETE CURB AND GUTTER IN THE AREAS OF STORM DRAIN COLLECTION, TO KEEP RUNOFF FROM JUMPING TO OLD WORN DOWN BITUMINOUS CURBING AND DAMAGING / FLOODING FRONT YARDS OF RESIDENTS. BOTH TULLY DRIVE AND NEIL DRIVE DRAIN NORTH TO SOUTH, AND THIS CONDITION WILL NOT BE CHANGED BY THE CURRENT PROJECT. THE PROJECT IS LOCATED GENERALLY AT THE INTERSECTION OF TULLY DRIVE AND NEIL DRIVE IN THE CATAWBA MAGISTERIAL DISTRICT OF THE COUNTY OF ROANOKE, VIRGINIA. THE AREA OF LAND DISTURBANCE IS ESTIMATED TO BE 0.138 AC (6,031 SQ. FT.).

EXISTING SITE CONDITIONS:
THE SITE IS CURRENTLY PRIMARILY PUBLIC STREET RIGHT OF WAY, WHICH IS COMPRISED OF BITUMINOUS PAVEMENT AND GRASS SHOULDERS, AND DRAINS AS DESCRIBED ABOVE. THE SUBJECT SITE LIES WITHIN "ZONE "X" AS SHOWN ON FEMA FLOOD INSURANCE RATE MAPS (FIRM MAP NUMBER 51161C0134G, EFFECTIVE DATE 09/28/2007).

EXISTING SOIL CONDITIONS:
THERE HAVE BEEN NO COMPREHENSIVE ON-SITE GEOTECHNICAL INVESTIGATIONS PERFORMED. THE USDA WEB SOIL SURVEY IDENTIFIES THE SOILS IN THE AREA OF PROPOSED CONSTRUCTION AS BELONGING TO THE SOIL UNIT GROUP SHOWN BELOW AND ON THE PLAN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF SUBSURFACE CONDITIONS THAT EXHIBIT RUTTING, PUMPING, OR EXCESSIVE LATERAL MOVEMENT OF SOILS, AS THESE MAY BE INDICATIVE OF UNSUITABLE SUBGRADE CONDITIONS.

UNIT CODE	NAME	CHARACTERISTICS	DEPTH TO RESTRICTIVE FEATURE	EROSION POTENTIAL	DEPTH TO SEASONAL HIGH WATER	HYDROLOGIC SOIL GROUP
37B	SEQUOIA SILT LOAM, 2 TO 7 PERCENT SLOPES	SILT LOAMS, SILT CLAYS	20 TO 40 INCHES TO PARALITHIC BEDROCK	MODERATE	> 80 INCHES	C

ADJACENT PROPERTY:
THE PROJECT SITE IS BOUNDED TO ALL SIDES BY RESIDENTIAL USES, SEE PLAN SHEETS FOR INDIVIDUAL PROPERTY OWNERS OF RECORD.

OFF-SITE AREAS:
IT IS EXPECTED THERE WILL BE EXPORT MATERIAL FROM PIPE TRENCH SPOILS. THE CONTRACTOR SHALL WASTE THESE MATERIALS AT A PERMITTED OFF-SITE LOCATION.

CRITICAL AREAS
THE FOLLOWING AREAS HAVE THE POTENTIAL FOR SERIOUS SOIL EROSION OR WARRANT ADDITIONAL ATTENTION BY THE CONTRACTOR. THE CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO WORK IN AND STABILIZATION OF THESE AREAS:
- MAINTENANCE OF SILT FENCE BARRIERS AND INLET PROTECTIVE MEASURES WILL BE CRITICAL, TO ENSURE SEDIMENT LADEN RUNOFF IS PROPERLY FILTERED PRIOR TO ENTERING THE STORM DRAIN SYSTEM, AND TO PROTECT THE DOWNGRADIENT AREAS FROM SEDIMENTATION.
- EXISTING AND NEW STORM STRUCTURES SHALL BE PROTECTED PROPERLY. THIS IS THE MOST IMPORTANT AND USUALLY THE LEAST PROTECTED POINT OF SEDIMENT COLLECTION. IT IS CRITICAL THAT THE STRUCTURES ARE ADEQUATELY PROTECTED AGAINST SEDIMENTATION, WHICH WILL ENSURE MINIMAL CLEANING EFFORTS OF THE CONTRACTOR ON THE EXISTING AND NEW STORM DRAIN PIPEWORKS.

STORMWATER RUNOFF:
SEE NOTES, SHEET C-04 CONCERNING RUNOFF QUANTITY AND QUALITY.

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. 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.
2. FOLLOWING INSTALLATION OF THE PERIMETER CONTROLS, THE SITEWORK CONTRACTOR SHALL BEGIN EARTHWORK OPERATIONS. THE CONTRACTOR SHALL IMMEDIATELY PROCEED WITH CLEARING, GRUBBING, AND GRADING OPERATIONS. DENUDED AREAS INDICATED ON THESE PLANS TO RECEIVE PERMANENT SEEDING (STD & SPEC 3.32) SHALL BE SEEDED WITHIN SEVEN (7) DAYS AFTER FINAL GRADING, AND SHALL BE IN STRICT ACCORDANCE WITH THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK", THIRD EDITION.
3. IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL. IN PARTICULAR:
   A. THE CONSTRUCTION ENTRANCE (STD & SPEC 3.02) SHALL BE MAINTAINED IN A CONDITION TO PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAYS.
   B. ALL SILT FENCE BARRIERS (STD & SPEC 3.05) SHALL BE CHECKED REGULARLY FOR UNDERMINING AND SEDIMENT BUILDUP.
   C. INLET PROTECTION MEASURES SHALL BE INSPECTED TO INSURE FILTRATION MEASURES ARE EFFECTIVE, AND ARE NOT CHOKED WITH SILT. CLEAN AS NECESSARY TO PREVENT EXCESSIVE PONDING.
   D. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEEDED AS NEEDED.
4. THE SOIL EROSION CONTROL MEASURES INSTALLED FOR THIS CONTRACT SHALL REMAIN IN PLACE UNTIL REMOVAL IS APPROVED BY THE COUNTY 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, AND STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH THESE PLANS.

MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES:
- 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.
- STORM DRAIN COLLECTION POINTS SHALL BE PROTECTED USING INLET PROTECTION MEASURES AS OUTLINED HEREIN. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF EXCESS SEDIMENT FROM THE STORM DRAIN STRUCTURES AT ALL TIMES UNTIL THE PROJECT IS COMPLETED AND TURNED OVER TO OWNER.
- 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. TEMPORARY SEEDING OF SLOPES IS TO BE PERFORMED ON A WEEKLY BASIS, UNLESS THE SLOPES ARE TO FINAL GRADE. SLOPES AT FINAL GRADE ARE TO BE PERMANENTLY SEEDED WITHIN SEVEN DAYS OF REACHING FINAL GRADE.

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 THAT SEDIMENT TRANSFER FROM THIS SITE IS MINIMIZED.

PERMANENT STABILIZATION:
UPON ACHIEVING FINISH GRADE ELEVATIONS, ALL DISTURBED AREAS NOT TO RECEIVE HARD SURFACING SHALL BE PERMANENTLY SEEDED (STD & SPEC 3.32) AS OUTLINED HEREON AND ON THE SOIL EROSION CONTROL PLAN AND DETAIL SHEETS, UNLESS OTHER STABILIZATION MEASURES SUCH AS LANDSCAPE MULCHING ARE PROVIDED.

MAINTENANCE:
THE RESPONSIBLE LAND DISTURBER ON RECORD WITH THE COUNTY 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.

GENERAL COMMENTS:
1. THE SITEWORK CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
2. THE COUNTY 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 COUNTY OF ROANOKE.
4. THE ENGINEER, CALDWELL WHITE ASSOCIATES, ASSUMES NO RESPONSIBILITY FOR ANY WORK BEING PERFORMED.

STATE IMPOSED MINIMUM STANDARDS

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 CONSIDERED A MINIMUM AND MAY REQUIRE ADDITIONAL MEASURES AS DEEMED NECESSARY BY THE LOCAL APPROVING AUTHORITY OR THE CONSULTING ENGINEER.

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" REQUIREMENTS, SHEETS C-05 AND C-09
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 - NO STOCKPILES ANTICIPATED
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 WILL INHIBIT EROSION.	SELF EXPLANATORY - REFER TO THE SEEDING SPECIFICATIONS HEREIN.
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.	SELF EXPLANATORY - REFER TO SILT FENCE BARRIER REQUIREMENTS
5	STABILIZATION METHODS SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.	NOT APPLICABLE TO SUBJECT DEVELOPMENT
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 TO SUBJECT DEVELOPMENT
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 SUBJECT DEVELOPMENT
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
9	WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.	REPORT EVIDENCE OF SEEPS TO 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.	PROVIDE INLET PROTECTION AS OUTLINED ON THE PLAN
11	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 SUBJECT DEVELOPMENT
12	WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.	NOT APPLICABLE TO SUBJECT DEVELOPMENT
13	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 SUBJECT DEVELOPMENT
14	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 SUBJECT DEVELOPMENT
15	THE BEDS AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	NOT APPLICABLE TO SUBJECT DEVELOPMENT
16	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.	SELF-EXPLANATORY. NEW UTILITY LINE CONSTRUCTION SHALL CONFORM TO THESE REQUIREMENTS.
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.	GIVEN THAT MOST OF THE WORK WILL BE PERFORMED ON OR ADJACENT TO PAVED STREET, NO FORMAL CONSTRUCTION ENTRANCE IS WARRANTED
18	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.
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 AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED. B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER: (1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR (2) (A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS. (B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND (C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM. C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL: (1) IMPROVE THE 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 WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR (4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE PLAN-APPROVING AUTHORITY TO PREVENT DOWNSTREAM EROSION. D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS. E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT OF THE SUBJECT PROJECT. F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, 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 DISSIPATERS 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 (I) 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 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 § 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 VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF MINIMUM STANDARD 19.	SEE NOTES, SHEET C-04 CONCERNING RUNOFF QUANTITY AND QUALITY.

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 EROSION AND SEDIMENT CONTROL REGULATIONS

ES-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.

ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.

ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON 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.

CONSTRUCTION SEQUENCING – SITE SPECIFIC

DURING ALL PHASES OF THIS PROJECT, THE CONTRACTOR SHALL LIMIT LAND DISTURBANCE TO THE AREAS SHOWN HEREIN. ANY LAND DISTURBANCE, SOIL COMPACTION, OR ANY TYPE OF IMPACT TO THE SOILS BEYOND THE APPROVED LIMITS OF CONSTRUCTION MAY RESULT IN A STOP WORK ORDER, NEW DESIGN REQUIREMENTS, ADDITIONAL REVIEW TIME, AND ADDITIONAL CONSTRUCTION REQUIREMENTS.

1. PRIOR TO ANY WORK, THE CONTRACTOR SHALL COORDINATE WITH ALL UNDERGROUND CABLE UTILITY OWNERS, TO DETERMINE THE SCHEDULE FOR RELOCATION OF EXISTING UTILITIES BEYOND THE AREAS OF WORK NECESSARY FOR INSTALLATION OF THE NEW STORM DRAIN SYSTEMS.
2. PRIOR TO ANY STORM DRAIN WORK COMMENCING, THE CONTRACTOR SHALL INSTALL SOIL EROSION CONTROL BARRIERS SHOWN HEREIN.
3. THE FIRST STEP SHALL BE TO INSTALL THE OUTLET PROTECTION AT THE MOST DOWNSTREAM END OF THE PROJECT, SUCH THAT ANY CATASTROPHIC RAINFALL EVENTS WILL FLOW ACROSS A PROTECTED AREA PRIOR TO LEAVING THE CONSTRUCTION SITE.
4. STORM DRAIN INSTALLATION SHALL PROCEED IN AN UPSTREAM DIRECTION.
5. AT THE END OF EACH DAY'S WORK, THERE SHALL BE CONTINUOUS PIPE RUNS TO DRAIN ALL IN-PLACE INLET STRUCTURES.
6. UPON COMPLETION OF THE MOST DOWNSTREAM PIPE RUN, THE CONTRACTOR SHALL FINE-GRADE, PERMANENTLY SEED AND STRAW-MULCH THE REAR YARD AREA, TO ACQUIRE SUBSTANTIAL STABILIZATION AS SOON AS POSSIBLE.
7. UPON COMPLETION OF ALL NEW AND UPSIZED PIPES AND INLET STRUCTURES, THE CONTRACTOR SHALL PROCEED WITH INSTALLATION OF NEW CONCRETE CURB AND GUTTER, CONSTRUCTION OF NEW CONCRETE RESIDENTIAL ENTRANCES, AND PAVEMENT REPLACEMENT.
8. UPON COMPLETE STABILIZATION OF ALL DISTURBED AREAS, THE CONTRACTOR MAY REQUEST ROANOKE COUNTY TO PERFORM THEIR FINAL E&S INSPECTION, AND UPON WRITTEN NOTIFICATION, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
9. UNLESS OTHERWISE DIRECTED BY THE OWNER, ALL WORK PERFORMED IS UNCLASSIFIED, AND THE CONTRACTOR IS REQUIRED TO PERFORM CUT / FILL OPERATIONS NECESSARY TO PERFORM HIS TRADE.

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 THERETO.

COMMONWEALTH OF VIRGINIA
Corbin L. White
CORBIN L. WHITE
License No. 23843
04-01-2024
PROFESSIONAL ENGINEER

EROSION CONTROL NARRATIVE, MEASURES & CONSTRUCTION SEQUENCING
FOR
TULLY DRIVE / NEIL DRIVE STORM DRAIN PROJECT
PERFORMED FOR
ROANOKE COUNTY DEPARTMENT OF STORMWATER OPERATIONS
CATAWBA MAGISTERIAL DISTRICT
COUNTY OF ROANOKE, VIRGINIA

Designed: C.L. White
Drawn: C.L. White
Checked:
Date: November 17, 2022
Scale: As Shown
Tax Parcel: (varies-see plan)
Field Book: Roanoke County #9
W.O. No.: 22-0070

CWA
CALDWELL WHITE ASSOCIATES
ENGINEERS / SURVEYORS / PLANNERS
4203 MELROSE AVENUE
P.O. BOX 6260
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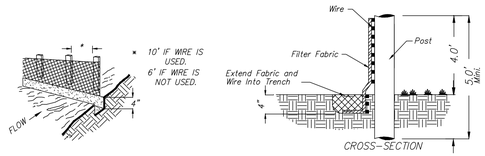
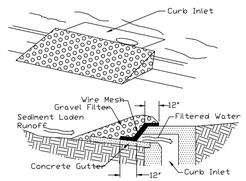
APPROVED, 8/7/2024

NO.	TITLE	KEY	SYMBOL
3.01	SAFETY FENCE	SAF	
3.02	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE	CE	
3.03	CONSTRUCTION ROAD STABILIZATION	CRS	
3.04	STRAW BALE BARRIER	STB	
3.05	SILT FENCE	SF	
3.06	BRUSH BARRIER	BB	
3.07	STORM DRAIN INLET PROTECTION	IP	
3.08	CULVERT INLET PROTECTION	CIP	
3.09	TEMPORARY DIVERSION DIKE	DD	
3.10	TEMPORARY FILL DIVERSION	FD	
3.11	TEMPORARY RIGHT-OF-WAY DIVERSION	RWD	
3.12	DIVERSION	DV	
3.13	TEMPORARY SEDIMENT TRAP	ST	
3.14	TEMPORARY SEDIMENT BASIN	SB	
3.15	TEMPORARY SLOPE DRAIN	TSD	
3.16	PAVED FLUME	PF	
3.17	STORMWATER CONVEYANCE CHANNEL	SCC	
3.18	OUTLET PROTECTION	OP	
3.19	RIPRAP	RR	
3.20	ROCK CHECK DAMS	CD	
3.21	LEVEL SPREADER	LS	
3.22	VEGETATIVE STREAMBANK STABILIZATION	VSS	
3.23	STRUCTURAL STREAMBANK STABILIZATION	SSS	
3.24	TEMPORARY VEHICULAR STREAM CROSSING	VSC	
3.25	UTILITY STREAM CROSSING	USC	
3.26	DEWATERING STRUCTURE	DS	
3.27	TURBIDITY CURTAIN	TC	
3.28	SUBSURFACE DRAIN	SD	
3.29	SURFACE ROUGHENING	SR	
3.30	TOPSOILING	TO	
3.31	TEMPORARY SEEDING	TS	
3.32	PERMANENT SEEDING	PS	
3.33	SODDING	SO	
3.34	BERMUDA GRASS AND ZOYSIAURASS ESTABLISHMENT	BE / ZE	B OR M
3.35	MULCHING	MU	
3.36	SOIL STABILIZATION BLANKETS AND MATTING	B / M	TREAT. 1 TREAT. 2
3.37	TREES, SHRUBS, VINES AND GROUND COVERS	VEG	
3.38	TREE PRESERVATION AND PROTECTION	TP	
3.39	DUST CONTROL	DC	



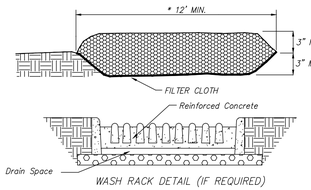
SF CONSTRUCTION OF A SILT FENCE
(ST'D & SPEC 3.05)



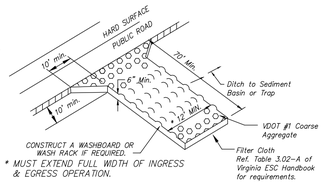
GRAVEL CURB INLET SEDIMENT FILTER

AS AN ALTERNATIVE, THE CONTRACTOR MAY USE PRE-FABRICATED SEDIMENT BOOMS OR WATTLES. LENGTHS SHALL BE MIN. 4' LONGER THAN THROAT LENGTH, AND SHALL BE INSTALLED CENTERED ON INLET THROAT.

IP STORM DRAIN INLET PROTECTION
(ST'D & SPEC 3.07)



WASH RACK DETAIL (IF REQUIRED)



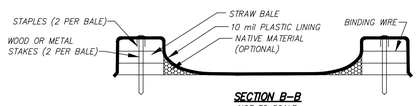
* MUST EXTEND FULL WIDTH OF INGRESS & EGRESS OPERATION.

CE TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
(ST'D & SPEC 3.02)

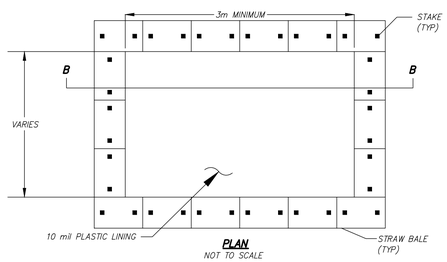
BMP DESCRIPTION: A DESIGNATED TEMPORARY, ABOVE-GRADE CONCRETE WASHOUT AREA WILL BE CONSTRUCTED AT A LOCATION SELECTED BY THE CONTRACTOR AND APPROVED BY THE COUNTY INSPECTOR. THE TEMPORARY CONCRETE WASHOUT AREA WILL BE CONSTRUCTED AS SHOWN, WITH A RECOMMENDED MINIMUM LENGTH AND MINIMUM WIDTH OF 10 FEET, BUT WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. THE WASHOUT AREA WILL BE LINED WITH PLASTIC SHEETING AT LEAST 10 MILS THICK AND FREE OF ANY HOLES OR TEARS. SIGNS SHALL BE POSTED MARKING THE LOCATION OF THE WASHOUT AREA. TO ENSURE THAT CONCRETE EQUIPMENT OPERATORS USE THE PROPER FACILITY, ALTERNATELY, A PRE FABRICATED CONCRETE WASHOUT FACILITY MAY BE USED, PROVIDED IT RESULTS IN THE SAME OR BETTER PROTECTION AND RETAINAGE OF THE CONCRETE WASTE. CONCRETE POURS WILL NOT BE CONDUCTED DURING OR BEFORE AN ANTICIPATED STORM EVENT. CONCRETE MIXER TRUCKS AND CHUTES WILL BE WASHED IN THE DESIGNATED AREA OR CONCRETE WASTES WILL BE PROPERLY DISPOSED OF OFF-SITE. WHEN THE TEMPORARY WASHOUT AREA IS NO LONGER NEEDED FOR THE CONSTRUCTION PROJECT, THE HARDENED CONCRETE AND MATERIALS USED TO CONSTRUCT THE AREA WILL BE REMOVED AND DISPOSED OF ACCORDING TO THE MAINTENANCE SECTION BELOW, AND THE AREA WILL BE STABILIZED.

INSTALLATION SCHEDULE: THE WASHOUT AREA WILL BE CONSTRUCTED BEFORE CONCRETE POURS OCCUR AT THE SITE.

MAINTENANCE AND INSPECTION: THE WASHOUT AREAS WILL BE INSPECTED DAILY TO ENSURE THAT ALL CONCRETE WASHING IS BEING DISCHARGED INTO THE WASHOUT AREA, NO LEAKS OR TEARS ARE PRESENT, AND TO IDENTIFY WHEN CONCRETE WASTES NEED TO BE REMOVED. THE WASHOUT AREAS WILL BE CLEANED OUT ONCE THE AREA IS FILLED TO 75 % OF THE HOLDING CAPACITY. ONCE THE AREA'S HOLDING CAPACITY HAS BEEN REACHED, THE CONCRETE WASTES WILL BE ALLOWED TO HARDEN; THE CONCRETE WILL BE BROKEN UP AND REMOVED FOR DISPOSAL. THE PLASTIC SHEETING WILL BE REPLACED IF TEARS OCCUR DURING REMOVAL OF CONCRETE WASTES FROM THE WASHOUT AREA.



SECTION B-B
NOT TO SCALE



PLAN
NOT TO SCALE

TYPE "ABOVE GRADE" WITH STRAW BALES

CONCRETE WASHOUT

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.

PERMANENT SEEDING SPECIFICATIONS FOR APPALACHIAN / MOUNTAIN AREA

LAND USE	SPECIES	APPLICATION RATES
MINIMUM CARE LAWN (COMMERCIAL OR RESIDENTIAL)	TALL FESCUE(1) PERENNIAL RYEGRASS (2) KENTUCKY BLUEGRASS	90-100% 0-10% 0-10% TOTAL 200-250LBS/ACRE
HIGH-MAINTENANCE LAWN	MINIMUM OF THREE UP TO FIVE VARIETIES OF KENTUCKY BLUEGRASS FROM APPROVED LIST FOR USE IN VIRGINIA(1)	TOTAL 125 LBS/ACRE
GENERAL SLOPE (3:1 OR LESS)	TALL FESCUE (1) RED TOP GRASS OR CREEPING RED FESCUE SEASONAL NURSE CROP (3)	128 LBS 2 LBS 20 LBS TOTAL 150 LBS/ACRE
LOW-MAINTENANCE SLOPE (STEEPER THAN 3:1)	TALL FESCUE (1) RED TOP GRASS OR CREEPING RED FESCUE SEASONAL NURSE CROP (3) CROWNVETCH (4)	108 LBS 2 LBS 20 LBS 20 LBS TOTAL 150 LBS/ACRE

(1) WHEN SELECTING VARIETIES OF TURFGRASS, USE THE VIRGINIA CROP IMPROVEMENT ASSOCIATION (VCIA) RECOMMENDED TURFGRASS VARIETY LIST. QUALITY SEED WILL BEAR A LABEL INDICATING THAT THEY ARE APPROVED BY VCIA. A CURRENT TURFGRASS VARIETY LIST IS AVAILABLE AT THE LOCAL COUNTY EXTENSION OFFICE OR THROUGH VCIA AT 804-746-4884.
(2) PERENNIAL RYEGRASS WILL GERMINATE FASTER AND AT LOWER SOIL TEMPERATURES THAN TALL FESCUES, THEREBY PROVIDING COVER AND EROSION RESISTANCE FOR SEEDBED.
(3) USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:
MARCH, APRIL - MAY 15TH---------- ANNUAL RYE
MAY 16TH - AUGUST 15TH---------- FOXTAIL MILLET
AUGUST 16TH - SEPTEMBER, OCTOBER------ ANNUAL RYE
NOVEMBER-FEBRUARY---------- WINTER RYE
(4) ALL LEGUME SEED MUST BE PROPERLY INOCULATED. IF FLATPEA IS USED, INCREASE TO 30 LBS/ACRE. IF WEEPING LOVEGRASS IS USED, INCLUDE IN ANY SLOPE OR LOW MAINTENANCE MIXTURE DURING WARMER SEEDING PERIODS, INCREASE TO 30-40 LBS/ACRE.

FERTILIZER & LIME
- APPLY 10-20-10 FERTILIZER AT A RATE OF 500 LBS/ACRE (OR 12 LBS/1000 SQUARE FEET)
- APPLY PULVERIZED AGRICULTURAL LIMESTONE AT A RATE OF 2 TONS/ACRE (OR 90 LBS/1000 SQUARE FEET)

NOTE:
- A SOIL TEST IS NECESSARY TO DETERMINE THE ACTUAL AMOUNT OF LIME REQUIRED TO ADJUST THE SOIL pH OF SITE.
- INCORPORATE THE LIME AND FERTILIZER INTO THE TOP 4-6 INCHES OF SOIL BY DISKING OR OTHER MEANS.
- WHEN APPLYING SLOWLY AVAILABLE NITROGEN, USE RATES AVAILABLE IN "EROSION & SEDIMENT CONTROL TECHNICAL BULLETIN #4, 2003 NUTRIENT MANAGEMENT FOR DEVELOPMENT SITES" AT http://www.deq.virginia.gov/Portals/0/DEQ/Water/Publications/ESCTechnicalBulletin4.pdf.

MULCH:
IF REQUIRED, 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.

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

PS PERMANENT SEEDING MIXTURE
(ST'D & SPEC 3.32)

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:

- *SOIL STOCKPILES*
- *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.

LIME APPLICATION:
ADJUSTING THE SOIL pH BETWEEN 6.25 TO 6.5 IS EXTREMELY IMPORTANT FOR GRASS ESTABLISHMENT. A SOIL TEST IS NECESSARY TO DETERMINE THE ACTUAL AMOUNT OF LIME REQUIRED TO ADJUST THE SOIL pH OF DENUDED SITES. HOWEVER, WHEN A SOIL TEST HAS NOT BEEN PERFORMED, APPLY 2 TONS/ACRE (90 POUNDS/1,000 SQUARE FEET) OF PULVERIZED AGRICULTURAL GRADE LIMESTONE.

FERTILIZER SHALL BE APPLIED AS 450 LBS/ACRE OF 10-10-10 OR EQUIVALENT NUTRIENTS. LIME (AS APPLICABLE) AND FERTILIZER SHALL BE INCORPORATED INTO THE TOP 4 TO 6 INCHES OF SOIL BY DISKING OR OTHER MEANS. WHEN APPLYING SLOWLY AVAILABLE NITROGEN, USE RATES AVAILABLE IN "EROSION & SEDIMENT CONTROL TECHNICAL BULLETIN #4, 2003 NUTRIENT MANAGEMENT FOR DEVELOPMENT SITES" AT http://www.deq.virginia.gov/Portals/0/DEQ/Water/Publications/ESCTechnicalBulletin4.pdf.

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)

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

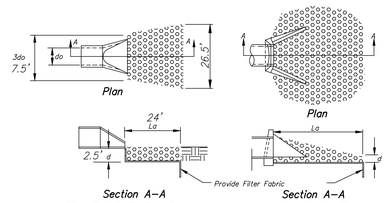
TS TEMPORARY SEEDING
(ST'D & SPEC 3.31)

SOIL EROSION AND SEDIMENTATION CONTROL COST ESTIMATE

ALL COSTS GIVEN ARE COMPLETE IN PLACE

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
SUB-TOTAL				
10% CONTINGENCY				
TOTAL BONDABLE COST				

(PUBLIC IMPROVEMENTS PROJECT, SURETY NOT APPLICABLE)



NOTES
1. *Apron lining may be rip-rap, grouted rip-rap, gabion basket, or concrete.*
2. *Lo is the length of the rip-rap apron as calculated using plates 3.18-3 and 3.18-4.*
3. *d = 1.5 times the maximum stone diameter, but not less than 6".*

RIP-RAP SHALL HAVE A MEDIAN SIZE (d_{50}) = 1.1'

OP OUTLET PROTECTION
(ST'D & SPEC 3.18)

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, LATEST EDITION.*
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 MODIFICATIONS.*
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.*
5. *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.*
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.*

COMMONWEALTH OF VIRGINIA
CORBIN L. WHITE
License No. 23843
04-01-2024
PROFESSIONAL ENGINEER

DETAILS - SOIL EROSION & SEDIMENTATION CONTROL
FOR
TULLY DRIVE / NEIL DRIVE STORM DRAIN PROJECT
PERFORMED FOR
ROANOKE COUNTY DEPARTMENT OF STORMWATER OPERATIONS
CATAWBA MAGISTERIAL DISTRICT
COUNTY OF ROANOKE, VIRGINIA

Designed: C.L. White
Drawn: C.L. White
Checked:
Date: November 17, 2022
Scale: As Shown
Tax Parcel: (varies-see plan)
Field Book: Roanoke County #3
W.O. No.: 22-0070

CWA
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ENGINEERS / SURVEYORS / PLANNERS
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APPROVED, 8/7/2024